

APPENDIX N
Transportation Impact Analysis

Transportation Impact Analysis of the:

Agua Hedionda South Shore Specific

Plan for 85% Open Space and 15% Retail

in Carlsbad, California

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1.0 EXECUTIVE SUMMARY

The purpose of this report is to identify impacts of the proposed Specific Plan on the surrounding transportation system in the City of Carlsbad. The Specific Plan proposes to develop 585,000 square feet (SF) of visitor-serving commercial (comprising 488,000 SF of regional shopping center, a 2,500 seat (51,000 SF) movie theater, and 46,000 SF of supermarket) and 176.7 acres of passive parks/agriculture uses. The Specific Plan is expected to be fully operational by 2019.

The Specific Plan area is bound by Agua Hedionda Lagoon to the north, Cannon Road to the south, I-5 to the west, and Faraday Avenue to the east. Site access will be provided via two driveways: 1) one located opposite the existing signalized intersection at Paseo del Norte serving all outbound traffic and an inbound lane for the westbound right-turn movement on Cannon Road, and 2) a second driveway serving inbound traffic only at a new signalized intersection located midway between Paseo del Norte and Car Country Drive. In addition to constructing intersection improvements for the new driveways, the Specific Plan also proposes to construct a second westbound right-turn lane on Cannon Road at the I-5 NB on-ramp. To facilitate multi-modal travel to and from the site, as well as enhancing east-west mobility, the Specific Plan includes the construction of a shared use path for bicyclists and pedestrians along the southern site frontage on Cannon Road from the I-5 Northbound Ramps to Car Country Drive.

The Specific Plan trip generation estimates were developed using SANDAG rates and guidelines published in the *(Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region* (SANDAG, 2002). Based on these guidelines, the number of gross vehicle trips was reduced to account for internalization (where visitors will access one or more of the shopping, center, theater, and supermarket uses in one trip to the site), as well as for pass-by and diverted trips (i.e., made by vehicles already traveling by or near the site). Ultimately, the Specific Plan is estimated to generate a total of 24,102 net new daily trips, 905 net new AM peak hour trips, and 1,822 net new PM peak hour trips. It is important to note that the SANDAG AM peak hour trip rate used for the shopping center results in overestimate of AM peak hour trips (by as much as 50%) based on comparable information published by the Institute of Transportation Engineers (ITE). Since most of the center would not open before 9:00 AM, the AM peak hour trip generation and any associated impacts are considered very conservative.

This study evaluates Existing, Year 2019, and Year 2035 Conditions for intersections, roadway segments, freeway segments, and freeway on-ramps surrounding the Specific Plan site. The study area includes 34 study intersections (including the new Specific Plan driveway intersection), 31 roadway segments, five (5) freeway segments, and eight (8) freeway on-ramps. The impacts of the Specific Plan to the surrounding transportation system were evaluated following guidelines established by the City of Carlsbad Growth



Management Plan and the regionally accepted traffic guidelines published by the San Diego Regional Traffic Engineers (SANTEC)/Institute of Transportation Engineers (ITE). This approach is consistent with the methods used to conduct environmental assessments of all similar developments in the City of Carlsbad and the County of San Diego.

Implementation of the Specific Plan is expected to result in significant transportation intersection impacts under each scenario as follows:

- Existing Conditions – 0 locations
- Year 2019 Conditions – 2 locations
- 2035 Conditions – 9 locations

All of the impacted intersection impacts can be significantly reduced through improvements that: 1) the City of Carlsbad is currently constructing, 2) are or will be part of the city's Capital Improvement Program (CIP), or 3) will be constructed as part of Specific Plan implementation. Under Year 2019 Conditions, the two intersection impacts caused by the Specific Plan are the exacerbation of intersection operations that will already be below the City's desired goal of Level of Service (LOS) D. At both impacted intersections (#14 Cannon Road at El Camino Real and #32 Alga Road-Aviara Parkway at El Camino Real), the City has programmed improvements that significantly reduces the Specific Plan's impact. Thus, the Specific Plan's payment of the Citywide Traffic Impact Fee (TIF) represents its fair share contribution towards these improvements.

As noted above, the 2035 Plus Specific Plan Conditions analysis showed that the proposed development is expected to result in a significant impact at nine (9) study intersections, and those locations can be fully significantly reduced as follows (listed by study intersection number):

4. Tamarack Avenue / El Camino Real – provide a second westbound left-turn lane on Tamarack Avenue. This could be accomplished by implementing a road diet on Tamarack Avenue east of El Camino Real, which will also allow for widening and/or buffering of bicycle lanes on Tamarack Avenue. (Note: The City's TIF program includes other improvements at this intersection towards which the Specific Plan will contribute through payment of the TIF, but the TIF improvements by themselves would not significantly reduce the Specific Plan's impacts). The Specific Plan will fund the re-striping of Tamarack Avenue as part of a City pavement resurfacing project.
9. Cannon Road / Paseo del Norte/Specific Plan Outbound Driveway – construct an outbound right-turn only lane at the inbound only driveway to provide another option for vehicles exiting the site. The Specific Plan will fully fund and build this improvement.
14. Cannon Road / El Camino Real – provide a third exclusive through lane and separate right-turn lane on northbound El Camino Real. This is part of a TIF improvement, and payment of the City's TIF by the Specific Plan represents its contribution to this improvement.



19. El Camino Real / Faraday Avenue – install right-turn overlap phasing on the southbound and westbound intersection approaches. The Specific Plan will fund this improvement.
23. Palomar Airport Road / Paseo del Norte – provide a separate eastbound right-turn lane on Palomar Airport Road, lengthen the eastbound left-turn pockets on Palomar Airport Road, re-stripe the shared through/right-turn lane on the southbound Paseo del Norte approach as a right-turn only lane, and install right-turn overlap phasing for this movement. The Specific Plan will contribute to the Palomar Airport Road improvements and will fund the re-striping/overlap improvement.
24. Palomar Airport Road / Armada Drive – restripe the southbound-thru lane on Armada Drive as southbound thru/right-turn lane, re-stripe the northbound approach with two left-turns, one through lane, and one right turn lane, and install right-turn overlap phasing on the northbound approach. The Specific Plan will fund this improvement
26. Palomar Airport Road / College Boulevard – provide a second southbound thru lane on College Boulevard by widening the street. This is a TIF improvement and payment of the City's TIF by the Specific Plan represents its contribution to this improvement.
27. Palomar Airport Road / El Camino Real – install adaptive signals at all seven (7) of the impacted intersections on Cannon Road, El Camino Real, Palomar Airport Road, and Paseo del Norte. The Specific Plan will fund the improvements at these seven (7) locations as part of a larger City project to install the technology at all 22 signalized intersections on these corridors.
32. Alga Road-Aviara Parkway / El Camino Real – provide a separate northbound right-turn lane on El Camino Real. This is a TIF improvement and payment of the City's TIF by the Specific Plan represents its contribution to this improvement.

Roadway peak hour segment analysis was conducted to satisfy the City of Carlsbad Growth Management Plan requirements. Based on the analysis, no significant impacts were identified for any study roadway segment under any scenario.

The addition of Specific Plan traffic is expected to result in significant impacts to all but one of the I-5 study mainline segments from south of Poinsettia Lane to north of Tamarack Avenue under both the Existing and Year 2019 Scenarios. With the planned implementation of additional mainline capacity in the form of new express lanes and auxiliary lanes, the Specific Plan will continue to impact all mainline sections of I-5 from La Costa Avenue to Carlsbad Village Drive under 2035 Conditions. In addition, the Specific Plan would significantly impact the metered on-ramp from Tamarack Avenue to southbound I-5 in the AM peak hour under all scenarios, as well as the metered on-ramp from Cannon Road to southbound I-5 in the PM peak hour under 2035 Conditions only. (Note: The Tamarack Avenue on-ramp impact would not occur if the lower AM peak hour trip generation rate (noted above) was applied).

The I-5 North Coast Corridor Program (NCCP), which includes mainline, ramp and auxiliary lane improvements from La Jolla to Oceanside, will help to significantly reduce the Specific Plan impacts and will begin construction in the next several years. Because freeway Environmental Protection Features (EPFs) are



beyond the scope of a single development, the Specific Plan applicant proposes to pay a fair share contribution towards the I-5 NCCP and is currently in discussions with Caltrans to determine the amount and timing of an appropriate contribution towards freeway-related improvements.



2.0 INTRODUCTION

The Agua Hedionda South Shore Specific Plan for 85% Open Space and 15% Retail (Agua Hedionda 85/15 Specific Plan or Specific Plan) is comprised of approximately 203.4 acres of land between the south shore of the Agua Hedionda Lagoon and Cannon Road in the City of Carlsbad, California. The Specific Plan will permanently protect and conserve approximately 176.7 acres for open space, the continuation of strawberry farming and coastal agricultural (more than 85% of the Specific Plan area), and will reserve approximately 26.7 acres (less than 15% of the Specific Plan area) for a new pedestrian-friendly visitor serving outdoor retail, shopping, dining and entertainment promenade, all at no tax burden to the residents of Carlsbad. The Specific Plan requires that the open space lands be improved with low impact public access by providing passive recreation amenities including miles of new nature trails and walkways, picnic and rest areas, lagoon vistas, an outdoor classroom, parking and an integrated resource and educational signage program. The Outdoor Shopping, Dining and Entertainment Promenade, together with supporting uses including a farm-to-table restaurant and farm stand will provide for a total of approximately 585,000 square feet of visitor serving uses within the Specific Plan. The implementation of the Specific Plan is anticipated to occur between 2017 and 2019. This report has been prepared consistent with the Specific Plan.

This transportation impact analysis report presents the results of the study conducted by Fehr & Peers for the proposed Specific Plan area located north of Cannon Road between the Interstate 5 (I-5) freeway and Faraday Avenue in the City of Carlsbad. The purpose of this analysis is to identify the impacts of the proposed Specific Plan on the surrounding transportation system. Impacts to all modes of travel were evaluated including automobile, transit, biking and walking. The report includes a description of the assumptions and methods used to conduct the study, as well as a discussion of the results. This transportation impact analysis was conducted in compliance with the City of Carlsbad Growth Management Plan and with the regionally accepted traffic study guidelines published by the San Diego Regional Traffic Engineers (SANTEC)/Institute of Transportation Engineers (ITE).

2.1 SPECIFIC PLAN DESCRIPTION

The Specific Plan area includes a total of 203.4 acres bound by Agua Hedionda Lagoon to the north, Cannon Road to the south, I-5 to the west, and Faraday Avenue to the east. The proposed uses within the Specific Plan area consist of 585,000 square feet (SF) of visitor-serving commercial (comprising 488,000 square feet (SF) of regional shopping center, 2,500 seat movie theater (51,000 SF), 46,000 SF of supermarket) and 176.7 acres of passive parks/agriculture uses. The site is currently occupied by the Carlsbad Strawberry Fields and other agricultural uses, and these will continue to operate in a different configuration and at a reduced level.



Site access will be provided via driveways located opposite the existing signalized intersections at Paseo del Norte and at a new signalized intersection located between Paseo del Norte and Car Country Drive.

Figure 1 illustrates the study area and site location of the Specific Plan area, while **Figure 2** illustrates the proposed land use plan.





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- Study Intersection
- New Specific Plan Driveway
- Future Roadway
- Specific Plan Site



Figure 1
 Specific Plan Site and Study Intersections

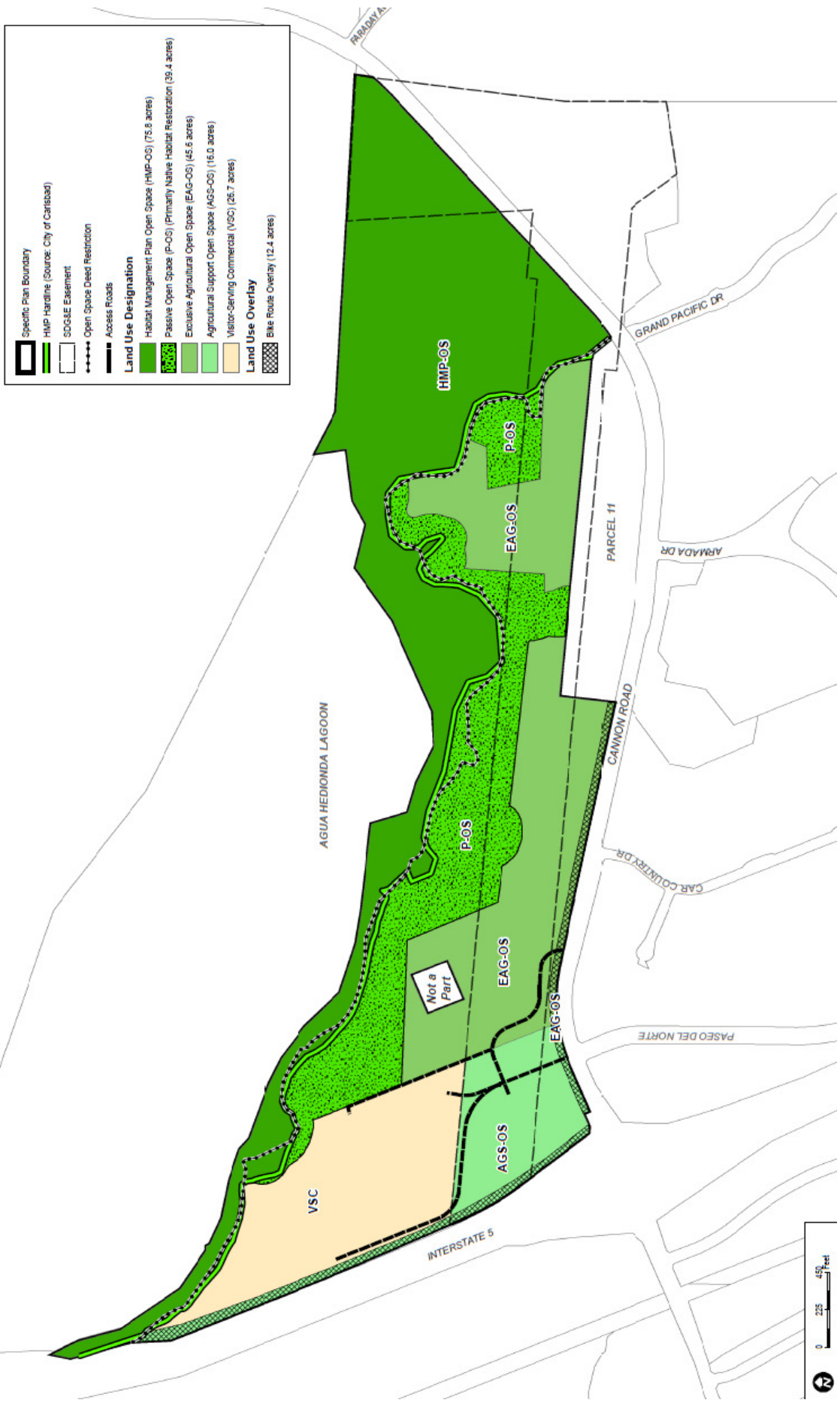


Figure 2
Conceptual Land Use Plan



2.2 SPECIFIC PLAN STUDY AREA

The study analyzed the potential Specific Plan-related traffic impacts under typical weekday AM and PM peak hour traffic conditions under Near-Term Conditions in 2019 when the Specific Plan is scheduled to open. The transportation analysis evaluated the operations at 33 existing intersections, including the two (2) site driveway intersections, 31 roadway segments, five (5) freeway segments, and eight (8) freeway on-ramp meters. The analyzed facilities are listed below and are shown on **Figure 1**:

Intersections

1. Tamarack Avenue / Carlsbad Boulevard
2. Tamarack Avenue / I-5 Southbound (SB) Ramps
3. Tamarack Avenue / I-5 Northbound (NB) Ramps
4. Tamarack Avenue / El Camino Real
5. Cannon Road / Carlsbad Boulevard
6. Cannon Road / Avenida Encinas
7. Cannon Road / I-5 SB Ramps
8. Cannon Road / I-5 NB Ramps
9. Cannon Road / Paseo Del Norte
10. Cannon Road / Car Country Drive
11. Cannon Road / Armada Drive
12. Cannon Road / Grand Pacific Drive
13. Cannon Road / Faraday Avenue
14. Cannon Road / El Camino Real
15. Paseo Del Norte / Car Country Drive
16. Paseo Del Norte / Outlets Driveway
17. College Boulevard / Faraday Avenue
18. College Boulevard / El Camino Real
19. El Camino Real / Faraday Avenue
20. Palomar Airport Road / Avenida Encinas
21. Palomar Airport Road / I-5 SB Ramps
22. Palomar Airport Road / I-5 NB Ramps
23. Palomar Airport Road / Paseo Del Norte
24. Palomar Airport Road / Armada Drive
25. Palomar Airport Road / Hidden Valley Rd
26. Palomar Airport Road / College Boulevard
27. Palomar Airport Road / El Camino Real



28. Poinsettia Lane / I-5 SB Ramps
29. Poinsettia Lane / I-5 NB Ramps
30. Poinsettia Lane / Paseo Del Norte
31. Poinsettia Lane / Aviara Parkway
32. Alga Road-Aviara Parkway / El Camino Real
33. Poinsettia Lane / El Camino Real
34. Cannon Road / Specific Plan Driveway (Future Intersection)

Roadway Segments

1. Tamarack Avenue between Carlsbad Boulevard and I-5 SB Ramps
2. Tamarack Avenue between I-5 SB Ramps and I-5 NB Ramps
3. Tamarack Avenue between I-5 NB Ramps and El Camino Real
4. Cannon Road between I-5 SB Ramps and I-5 NB Ramps
5. Cannon Road between I-5 NB Ramps and Paseo Del Norte
6. Cannon Road between Paseo Del Norte and Car Country Drive
7. Cannon Road between Car Country Drive and Armada Drive
8. Cannon Road between Armada Drive and Grand Pacific Drive
9. Cannon Road between Grand Pacific Drive and Faraday Avenue
10. Cannon Road between Faraday Avenue and El Camino Real
11. Carlsbad Boulevard north of Tamarack Avenue
12. Carlsbad Boulevard between Tamarack Avenue and Cannon Road
13. Carlsbad Boulevard south of Cannon Road
14. El Camino Real north of Tamarack Avenue
15. El Camino Real between Tamarack Avenue and Cannon Road
16. El Camino Real between Cannon Road and College Boulevard
17. El Camino Real between College Boulevard and Faraday Avenue
18. El Camino Real between Faraday Avenue and Palomar Airport Road
19. El Camino Real between Palomar Airport Road and Poinsettia Lane
20. El Camino Real between Poinsettia Lane and Aviara Parkway-Alga Road
21. El Camino Real south of Aviara Parkway-Alga Road
22. Paseo Del Norte between Cannon Road and Car Country Drive
23. Paseo Del Norte between the Outlets North Entrance and Palomar Airport Road
24. Palomar Airport Road between Paseo Del Norte and Armada Drive
25. Palomar Airport Road between Armada Drive and Hidden Valley Road
26. Palomar Airport Road between Hidden Valley Road and College Boulevard
27. Palomar Airport Road between College Boulevard and El Camino Real



28. College Boulevard between Palomar Airport Road and Faraday Avenue
29. Faraday Avenue Between Cannon Road and College Boulevard
30. Poinsettia Lane between Paseo Del Norte and Aviara Parkway
31. Aviara Parkway between Palomar Airport Road and Poinsettia Lane

Freeway Segments

1. I-5 between La Costa Avenue and Poinsettia Lane
2. I-5 between Poinsettia Lane and Palomar Airport Road
3. I-5 between Palomar Airport Road and Cannon Road
4. I-5 between Cannon Road and Tamarack Avenue
5. I-5 between Tamarack Avenue and Carlsbad Village Drive

Ramp Meters

1. I-5 SB on-ramp at Tamarack Avenue
2. I-5 SB on-ramp at Cannon Road
3. I-5 NB on-ramp at Cannon Road
4. I-5 SB on-ramp at Eastbound (EB) Palomar Airport Road
5. I-5 SB on-ramp at Westbound (WB) Palomar Airport Road
6. I-5 NB on-ramp at Palomar Airport Road
7. I-5 SB on-ramp at Poinsettia Lane
8. I-5 NB on-ramp at Poinsettia Lane

2.3 ANALYSIS SCENARIOS

The operations of the study intersections were evaluated during the weekday morning (AM) and evening (PM) peak hours for the following scenarios:

- **Existing (2014) Conditions** – The analysis of existing traffic conditions was based on 2014 counts collected for the analyzed peak hours. The existing conditions analysis includes a description of key area streets, transit services, active transportation facilities, and an analysis of traffic volumes and intersection operating conditions.
- **Existing Plus Specific Plan Conditions** – The traffic scenario provides forecasts of traffic volumes and an assessment of operating conditions under existing baseline conditions with the addition of Specific Plan-generated traffic. This hypothetical scenario isolates the potential impacts of the Specific Plan and the analysis eliminates the impacts of both ambient growth and other proposed projects.



- **Year 2019 Conditions without the Specific Plan** – Future traffic forecasts without the Specific Plan were developed for the near-term by adding traffic from approved development and roadway system projects in the vicinity of the Specific Plan area superimposed on existing counts. The objective of this analysis is to identify potential impacts by projecting future traffic growth and operating conditions that are anticipated from regional growth and from projects expected to be occupied at the time the Specific Plan is fully developed. This is the baseline against which impacts were assessed.
- **Year 2019 Plus Specific Plan Conditions** – This traffic scenario provides projected traffic volumes and an assessment of operating conditions under near-term conditions with the addition of Specific Plan-generated traffic. The near-term impacts of the Specific Plan on future traffic conditions were then identified.
- **Year 2035 (Long-Term) Baseline Conditions without the Specific Plan**– Future traffic forecasts without the Specific Plan area were developed for the long-term with a 2035 horizon year, by the SANDAG Series 12 travel demand forecasting model. This is the cumulative baseline against which long-term Project impacts are assessed.
- **Year 2035 Plus Specific Plan Conditions** – This traffic scenario provides projected traffic volumes and an assessment of operating conditions under 2035 conditions with the addition of the Specific Plan area generated traffic. The long-term impacts of the Specific Plan area on future traffic conditions were then identified.

2.4 TRAFFIC ANALYSIS METHODS

The study intersections were analyzed according to the Carlsbad Growth Management Plan using the Intersection Capacity Utilization (ICU) methodology to analyze intersection level of service (LOS) for Existing Conditions and the *Highway Capacity Manual* (HCM) for all future conditions.

2.4.1 INTERSECTION CAPACITY UTILIZATION (ICU)

The ICU methodology calculates the volume to capacity (V/C) ratio and critical movements based on per lane capacity and intersection movement volumes. Lane capacities of 1,800 vehicles per hour (vph) for each left-turn and right-turn lanes, and 2,000 vph for each thru-lane were used to calculate the ICU ratio. The intersection LOS is based on the sum of critical movements



TABLE 1 – ICU INTERSECTION LOS THRESHOLDS

V/C Ratio	LOS
0.00 – 0.60	A
0.61 – 0.70	B
0.71 – 0.80	C
0.81 – 0.90	D
0.91 – 1.00	E
>1.00	F

2.4.2 INTERSECTION HIGHWAY CAPACITY MANUAL (HCM)

The analysis of roadway operations performed for this study is based on procedures presented in the *Highway Capacity Manual* (HCM), published by the Transportation Research Board. Although the 2010 HCM was available at the time this report was published, the HCM 2000 methodology was applied for our analysis considering that the HCM 2010 methodology has limitations for calculating delay for intersections with unique signal timings or intersection configurations. Differences in analysis results for intersection LOS evaluation have been found to be negligible between the 2000 and 2010 HCM and are not expected to change the conclusions of this report.

The operations of roadway facilities are described with the term level of service (LOS). LOS is a qualitative description of traffic flow based on such factors as speed, travel time, delay, and freedom to maneuver. Six levels are defined from LOS A, with the least congested operating conditions, to LOS F, with the most congested operating conditions. LOS E represents “at-capacity” operations. Operations are designated as LOS F when volumes exceed capacity, resulting in stop-and-go conditions.

2.4.2.1 Signalized Intersections

The method described in Chapter 16 of the *2000 Highway Capacity Manual* was used to prepare the LOS calculations for the signalized study intersections. This LOS method analyzes a signalized intersection’s operation based on average control delay per vehicle. Control delay includes the initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The average control delay for signalized intersections is calculated using Synchro 8.0 analysis software and is correlated to a LOS designation as shown in **Table 2**.



TABLE 2 – SIGNALIZED INTERSECTION LOS CRITERIA

Level of Service	Description	Delay in Seconds
A	Progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	≤ 10.0
B	Progression is good, cycle lengths are short, or both. More vehicles stop than with LOS A, causing higher levels of average delay.	> 10.0 to 20.0
C	Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.	> 20.0 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	> 35.0 to 55.0
E	This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 to 80.0
F	This level is considered oversaturated, which is when arrival flow rates exceed the capacity of the intersection. This level may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels.	> 80.0

Source: *Highway Capacity Manual*, Transportation Research Board, 2000.



2.4.3 ROADWAY SEGMENTS

Roadway segment LOS volume thresholds provide the basis for evaluation of arterial roadway segment performance. The analysis of roadway segment LOS is based on the peak hour segment volumes to calculate the volume to capacity ratio (V/C) for each direction of the street segment. The City of Carlsbad assumes a one-way direction of 1,800 vehicles per hour per lane (vphpl).

2.4.4 FREEWAY SEGMENT LEVEL OF SERVICE

Freeway segment Level of Service and performance is based upon procedures developed by Caltrans District 11, which are derived from the *2000 Highway Capacity Manual*. The procedure for determining freeway Level of Service involves calculating a peak hour volume-to-capacity (V/C) ratio. Peak hour volumes were calculated by multiplying the average daily traffic (ADT) by the design factor ("K") and directional factor ("D"), and then dividing by the Heavy Vehicle Percentage ("HV%"). The analysis assumes a capacity of 2,350 passengers-cars hour per lane (pc/h/ln) for freeway mainlines. The resulting V/C is then compared to the ranges of V/C values corresponding to the various Levels of Service for each facility classification, as shown in **Table 3**.

TABLE 3 – FREEWAY SEGMENT LEVEL OF SERVICE DEFINITIONS

LOS	V/C	Congestion/Delay	Traffic Description
"A"	<0.41	None	Free Flow.
"B"	0.42-0.62	None	Free to stable flow, light to moderate volumes.
"C"	0.63-0.79	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"	0.93-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
"F"	>1.00	Considerable	Forced or breakdown. Delay measured in average flow, travel speed (MPH). Signalized segments experience delays >60.0 seconds/vehicle

Source: *Highway Capacity Manual 2000, TRB Special Report 209*



2.4.5 FREEWAY RAMP OPERATIONS

Ramp metering analyses to calculate delays at the study area freeway on-ramps were conducted based upon procedures outlined in the *SANTEC/ITE Guidelines for Traffic Impact Studies (TIS) in the San Diego Region*. Ramp meter delays were calculated by dividing the Excess Ramp Demand (Ramp Demand – Ramp Meter Rate) by the most restrictive meter rate provided by Caltrans, and multiplying the result by 60 minutes/hour (Delay = Excess Demand/Ramp Meter Rate x 60 minutes/hour). Ramp queue lengths are calculated by multiplying the Excess Ramp Demand by the average car length of 29 feet.

2.4.6 SIGNIFICANT IMPACT CRITERIA

The analysis of Year 2019 or Near-Term Conditions compares baseline conditions (without the Specific Plan) to conditions with full buildout and occupancy of the Specific Plan area to determine whether or not the new traffic is expected to significantly impact the surrounding roadways and intersections.

Per *The City of Carlsbad Growth Management Plan*, the minimum acceptable operating standards for all roadways is LOS D and the minimum acceptable operating standards for all intersections is LOS D during peak hours and LOS C during non-peak hours. If the addition of the Specific Plan's traffic is expected to degrade desirable service levels (LOS D or better) to more congested service levels (LOS E or F) at an intersection, then the Specific Plan is considered to have a significant direct impact. Alternatively, if the LOS for any intersection without the Specific Plan is already LOS E or F and the Specific Plan adds traffic to this location, causing the delay to increase by more than two seconds, then this is characterized as a significant impact. These City's LOS standards and significant impact criteria are considered acceptable within the San Diego Region and consistent with the information presented in the *SANTEC/ITE Guidelines for Traffic Impact Studies (TIS) in the San Diego Region*.

Based on the *SANTEC/ITE Guidelines for Traffic Impact Studies (TIS) in the San Diego Region*, LOS D or better is used in this study as the threshold for acceptable freeway operations. A significant impact to freeway mainline lanes is defined to when the Specific Plan causes:

1. a segment operating at LOS D or better (under baseline conditions without the proposed Specific Plan) to degrade to LOS E or F, or
2. an increase in per lane V/C ratio greater than 0.1 (1%) for segments already operating at LOS E or F

Ramp meter delays greater than 15 minutes are considered undesirable when the ramp is accessing a freeway segment operating at LOS E or F. If a ramp meter is operating unacceptably (i.e. delay is 15 minutes or greater) and the Specific Plan adds traffic to the on-ramp, causing the delay to increase greater than two



seconds, the this would be characterized as a significant impact. **Table 4** summarizes the impact thresholds as identified by the SANTEC/ITE guidelines.

TABLE 4 – MEASURE OF SIGNIFICANT TRAFFIC IMPACTS

Level of Service (LOS) with Specific Plan*	Allowable Change Due to Specific Plan Impact**					
	Freeways		Roadway Segments		Intersections	Ramp Metering
	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec)	Delay (min.)
LOS D, E, & F (or ramp meter delays above 15 min.)	0.01	1	0.02	1	2	2

Notes:

- * All level of service (LOS) measurements are based upon HCM procedures for peak-hour conditions. However, vehicle to capacity (V/C) ratios for Roadway Segments may be estimated on an ADT/24-hour traffic volume basis (using Table 2.1 or a similar LOS chart for each jurisdiction). The acceptable LOS for freeways, roadways, and intersections is generally "D" ("C" for undeveloped or not densely developed locations per jurisdiction definitions). For metered freeway ramps, LOS does not apply. However, ramp meter delays above 15 minutes are considered excessive.
- ** If the Specific Plan's traffic causes the values shown in the table to be exceeded, the impacts are determined to be significant. These impact changes may be measured from appropriate computer programs or expanded manual spreadsheets. The Specific Plan developer shall then identify feasible EPFs (within the Traffic Impact Study report) that will maintain the traffic facility at an acceptable LOS. If the LOS with the Specific Plan becomes LOS E or F (see above * note), or if the Specific Plan adds a significant amount of peak-hour trips to cause any traffic queues to exceed on- or off-ramp storage capacities, the Specific Plan developer shall be responsible for significantly reducing significant impact changes.

Source: SANTEC/ITE Guidelines for Traffic Impact Studies (TIS) In the San Diego Region (2000)

The City of Carlsbad does not have adopted impact criteria for pedestrian, bicycle, and transit impacts. For this study, however, these impacts are generally evaluated based on whether the proposed Specific Plan would: 1) conflict with existing or planned pedestrian, bicycle, or transit facilities, or 2) create walking, bicycling, or transit use demand without providing adequate and appropriate facilities for non-motorized mobility. The existing amenities for pedestrians, bicycles, and transit users were inventoried to evaluate the quality of the facilities in place today. The assessments of planned facilities outlined in planning documents, such as the *San Diego Regional Bicycle Plan*, were used to evaluate future conditions for non-automobile modes. For these modes, if the Specific Plan is expected to conflict with existing or planned improvements to pedestrian and bicycle facilities, or if the Specific Plan is expected to generate a substantial demand which could warrant additional transit service, then the Specific Plan is expected to have a direct impact. It is important to note that the City's draft General Plan Mobility Element update includes specific methodologies for analyzing operating levels and impacts for all non-automobile travel modes.



2.5 REPORT ORGANIZATION

The remainder of this report is divided into six chapters. The existing transportation system serving the Specific Plan site and the current operating conditions of the key intersections and roadways are described in **Chapter 3**, Existing Conditions. **Chapter 4** describes the Specific Plan's trip generation, distribution, and assignment used in the transportation impact analysis. **Chapter 5** presents the analysis of the Existing Plus Specific Plan scenario. **Chapter 6** identifies the approved development projects that are expected to influence the study area and summarizes the methodologies used to forecast traffic volumes generated by these projects. This chapter also presents the Year 2019 Baseline Conditions analysis, which forms the baseline against which Specific Plan traffic impacts are identified. **Chapter 7** presents the analysis of the Year 2019 Plus Specific Plan scenario. **Chapter 8** presents the analysis of the Year 2035 (long-term) scenario without the Specific Plan. **Chapter 9** presents the analysis of the Year 2035 Plus Specific Plan scenario. **Chapter 10** identifies any potential traffic impacts at intersections, roadways, freeway segments, and ramp meters in the surrounding area and identifies EPFs to address any Specific Plan impacts. **Chapter 11** contains an assessment of the potential effect of the Specific Plan on transit, bicycle, and pedestrian facilities and services.



3.0 EXISTING CONDITIONS

This chapter describes the existing roadway network and includes a discussion of the bicycle, pedestrian, and transit facilities located in the Specific Plan study area. This chapter also includes a discussion of the existing intersection LOS results.

3.1 EXISTING TRANSPORTATION FACILITIES

A comprehensive data collection effort was undertaken to identify existing transportation conditions in the vicinity of the proposed Specific Plan. The assessment of existing conditions relevant to this study includes an inventory of the street system, traffic volumes on these facilities, and operating conditions at key intersections. Existing public transit service and bicycle and pedestrian facilities are also described.

3.1.1 EXISTING STREET SYSTEM

The key roadways providing access to the site are described below. **Figure 1** illustrates the proposed Specific Plan location and the surrounding roadway system.

3.1.1.1 Key East/West Roadways

Tamarack Avenue is an east-west undivided roadway that connects Carlsbad Boulevard west of I-5 to College Boulevard and is bounded by primarily residential units on both sides of the road. Within the study area, Tamarack Avenue includes four-lanes, except for the segments between Carlsbad Boulevard and Jefferson Street and Adams Street and High Ridge Avenue, which includes two travel lanes. Tamarack Avenue is classified as a Secondary Arterial based on the *City of Carlsbad Circulation Element* and has a posted speed limit of 30 miles per hour (mph). Regional access is provided via the Tamarack Avenue and I-5 interchange.

Cannon Road is four-lane east-west arterial that begins at Carlsbad Boulevard on its western end and extends easterly through the City of Carlsbad terminating at College Boulevard. It has a posted speed limit of 35 mph west of I-5 and 50 mph east of I-5 and is separated by a center median. Cannon Road provides regional access at its interchange with I-5. All public street intersections along Cannon Road east of I-5 are signalized and driveway access points are not provided in between intersections, except for a single inbound driveway on eastbound Cannon Road west of Paseo del Norte. Cannon Road forms the southern boundary of the Specific Plan area and will provide direct access to the Specific Plan site.



Palomar Airport Road is a six-lane east-west divided roadway that begins at Carlsbad Boulevard on the west, extends easterly through the City of Carlsbad, and transitions into San Marcos Boulevard, east of Rancho Sante Fe Road. Within the study area, the adjacent land uses on Palomar Airport Road include residential units, retail, and office uses. According to the *City of Carlsbad Circulation Element*, Palomar Airport Road is considered a prime arterial with a posted speed limit of 55 mph. Palomar Airport Road provides regional access via its I-5 interchange.

Poinsettia Lane is a four-lane east-west divided roadway that extends from Carlsbad Boulevard to its current terminus at Cassia Road. A second segment of Poinsettia Lane extends from west of El Camino Real to Melrose Drive. Poinsettia Lane is proposed to be extended from Cassia Road to El Camino Real to eliminate the existing gap section. This street is classified as a Major Arterial in the *City of Carlsbad Circulation Element*, and has a posted speed limit of 50 mph. Within the study area, Poinsettia Lane is generally fronted by residential units on both sides of the road except for a short segment west of I-5. Poinsettia Lane provides regional access via its I-5 interchange.

3.1.1.2 Key North/South Roadways

Carlsbad Boulevard is a north-south undivided roadway that begins at Beech Avenue, extends southerly through the City of Carlsbad, and transitions to North Coast Highway south of La Costa Avenue. Within the study area, Carlsbad Boulevard provides two lanes from Poinsettia Lane to Cannon Road, then widens to four-lanes north of Cannon Road. It has a posted speed limit of 35 mph and unpaved parallel parking is permitted on the west side of the road.

Paseo del Norte is a north-south divided roadway that connects Cannon Road to Poinsettia Lane. South of Cannon Road, Paseo del Norte is divided with a raised median, then south of Car Country Drive is separated by a two-way-left-turn lane (TWLTL). According to the *City of Carlsbad Circulation Element*, Paseo del Norte is a secondary arterial with a posted speed limit of 35 mph. The northern section of Paseo del Norte, between Cannon Road and Palomar Airport Road, is fronted by car dealerships and retail uses, while the southern section between Palomar Airport Road and Poinsettia Lane is generally fronted by residential units except close to Palomar Airport Road.

College Boulevard is a north-south divided roadway that connects Palomar Airport Road to El Camino Real with its terminus approximately 800 feet east of El Camino Real. College Boulevard transitions to Aviara Parkway south of Palomar Airport Road. According to the *City of Carlsbad Circulation Element*, College Boulevard is a major arterial and has a posted speed limit 50 mph. College Boulevard is primarily fronted by office and industrial uses, as well as a golf course north of Palomar Airport Road. This street is proposed to be extended from east of El Camino Real to Cannon Road to provide an additional subregional connection and to provide access to future adjacent land uses.



El Camino Real is north-south divided roadway that begins at Manchester Avenue in the City of Encinitas to the south, extends northerly through Carlsbad and terminates north of Highway 76 in the City of Oceanside. Within the study area, El Camino Real provides four lanes from Tamarack Avenue to Cannon Road, then widens to six lanes south of Cannon Road. El Camino Real is classified as a prime arterial according to the *City of Carlsbad Circulation Element* and has a posted speed limit of 55 mph.

3.1.2 EXISTING TRANSIT SERVICES

Existing transit service near the Specific Plan site includes commuter rail and bus services provided by Amtrak and the North County Transit District (NCTD). These services are described below, and the routes are shown on **Figure 3**.

The *COASTER* is a commuter train serving a total of eight stations between Oceanside (northern terminus) and downtown San Diego (southern terminus). This north-south commuter train includes two stations in the City of Carlsbad: one located west of Avenida Encinas and north of Poinsettia Lane, and the second is located east of Carlsbad Boulevard and north of Carlsbad Village Drive. Both stations are less than three miles from the Specific Plan area. The *COASTER* operates primarily on weekdays during the weekday morning and afternoon commuter periods, with a total of 11 round trips between Oceanside and Downtown San Diego. It takes approximately one hour to travel the entire *COASTER* route. The earliest northbound train arrives at 7:17 AM and 7:25 AM at the Poinsettia and Carlsbad Village stations, respectively, and latest train northbound train arrive at 7:59 PM and 8:05 PM at the Poinsettia and Carlsbad Village stations, respectively. The earliest southbound train arrives at 5:19 AM and 5:25 AM at the Carlsbad Village and Poinsettia stations, respectively, and latest train northbound train arrive at 5:45 PM and 5:51 PM at the Carlsbad Village and Poinsettia stations, respectively.

Amtrak's Pacific Surfliner is an inter-city rail service that connects San Diego with Orange County, Los Angeles, Riverside, San Luis Obispo, and Santa Barbara. While Amtrak runs through the City of Carlsbad, the nearest Amtrak station is in Oceanside. However, the Amtrak does make a few daily stops at the two Carlsbad Coaster stations: Carlsbad Village and Poinsettia. In the northbound direction, the Amtrak has three stops in the Poinsettia and Carlsbad Village stations; the earliest arriving at 9:11 AM and the latest at 9:17 AM. In the southbound direction, the Amtrak has three consecutive stops at the Carlsbad Coaster stations; the earliest arriving at 7:09 PM and latest at 11:58 PM.

The *North Coast Transit District (NCTD)* provides bus service within the City of Carlsbad and this service is referred to as the *BREEZE*. The NCTD *BREEZE* routes 101, 444, 445, 446, and 309 provides service along Carlsbad Boulevard, Avenida Encinas, Palomar Airport Road, College Boulevard, Faraday Avenue, El Camino Real, Paseo Del Norte and Cannon Road.



Route 101 provides daily serves from the Oceanside Transit Center to Westfield UTC in La Jolla. This route extends north-south on Carlsbad Boulevard and includes two stops within the City of Carlsbad: one stop at the Carlsbad Village Drive COASTER Station and the second at the Poinsettia COASTER Station. During weekdays, this route operates from 5:00 AM to 10:20 PM in the southbound direction and 5:30 AM to 11:00 PM in the northbound direction.

Route 444 provides weekday peak period services from the Poinsettia COASTER Station to Cannon Road. This route travels along Avenida Encinas, Palomar Airport Road, College Boulevard, Rutherford Road, Faraday Avenue, and Cannon Boulevard. During weekdays, this route provides northbound service from the Poinsettia station to Cannon Road in the AM peak hour between 7:15 to 9:00 AM, and southbound service from Cannon Road to the Poinsettia Station in the PM peak hour between 4:45 to 5:55 PM. Route 444's Cannon Road bus stop is located immediately adjacent to the Specific Plan area between Armada Drive and Grand Pacific Drive.

Route 445 provides weekday peak period service from the Poinsettia Coaster Station to Palomar College. This route extends along Avenida Encinas, Palomar Airport Road, San Marcos Boulevard, and Las Posas Road. During weekdays, this route operates between 7:15 to 9:00 AM and 3:00 to 4:00 PM in the eastbound direction, and between 6:30 to 10:00AM and 4:30 to 6:00 PM in the westbound direction.

Route 446 provides weekday service peak period from the Poinsettia Coaster Station to LEGOLAND. This route extends along Avenida Encinas, Paseo del Norte, and Armada Drive and includes bus stops at the Carlsbad Premium Outlet and at LEGOLAND via Armada Drive. Route 446 operates in the AM peak period between 7:15 to 9:00 AM in the eastbound direction and terminates at LEGOLAND; it also operates in the PM peak period between 4:45 to 6:00 PM in the westbound direction and terminates at the Poinsettia Coaster Station.

Route 309 provides daily service from Encinitas City Hall to the San Luis Rey Transit Center in Oceanside. In the study area, the route extends north-south on El Camino Real and includes stops at Sage Creek High School on Cannon Road. Peak headways are approximately 30 minutes and the span of services range from 4:00 AM to 10:00 PM in the southbound direction and 5:30 AM to 11:00 PM in the northbound direction.









-  Coastal Commuter Rail
-  NCTD Local Bus - Breeze and Stops
-  Coaster Carlsbad Stations
-  Specific Plan Site



Figure 3
Existing Transit Facilities

3.1.3 EXISTING AND PLANNED BICYCLE CIRCULATION

Bicycle facilities generally consist of three types of facilities, which are outlined below:

- *Bike or Shared Use Paths* provide a completely separate right-of-way and are designated for the exclusive use of bicycles and pedestrians with vehicle and pedestrian cross-flow minimized. Generally, the recommended pavement width for a two-directional shared use path is ten (10) feet.

CLASS I - Multi-Use Path
 Provides a completely separated right-of-way for exclusive use of bicycles and pedestrians with crossflow minimized.
 MUTCD R44A (CA)

Graded Shoulders Recommended

- *Bike Lanes* provide a restricted right-of-way and are designated for the use of bicycles with a striped lane on a street or highway. Bicycle lanes are generally five (5) feet wide. Adjacent vehicle parking and vehicle/pedestrian cross-flow are permitted.

CLASS II - Bike Lane
 Provides a striped lane for one-way bike travel on a street or highway.
 MUTCD R81 (CA)

Bike Lane Sign

Bike Lane Sign

Parking and Bike Lane

Travel Lane

Travel Lane

Bike Lane

Solid White Stripe

Solid White Stripe

- *Bike Route or Signed Shared Roadways* provide for a right-of-way designated by signs or shared lane pavement markings, or "sharrows," for shared use with pedestrians or motor vehicles.

CLASS III - Bike Route
 Provides a shared use with pedestrians or motor vehicle traffic, typically on lower volume roadways.
 MUTCD D11-1

Bike Route Sign

Bike Route Sign

Shared Use Travel Lane

Shared Use Travel Lane



The study area is well served with bicycle facilities. The City of Carlsbad has approximately 98 miles of bicycle facilities; this includes approximately 92 miles of bike lanes located on most of the city's arterial streets, including Cannon Road, Paseo del Norte, Palomar Airport Road, College Boulevard, and Carlsbad Boulevard.

Bike lanes currently exist on Cannon Road from El Arbol Drive, west of I-5, to College Boulevard. The segment of Cannon Road between Paseo Del Norte and the I-5 NB ramps includes a bike route on the north side of the road and a bike lane on the south side. This segment is a challenge for westbound cyclists as they conflict with the heavy westbound right-turn traffic volume from Cannon Road to the I-5 NB on-ramp.

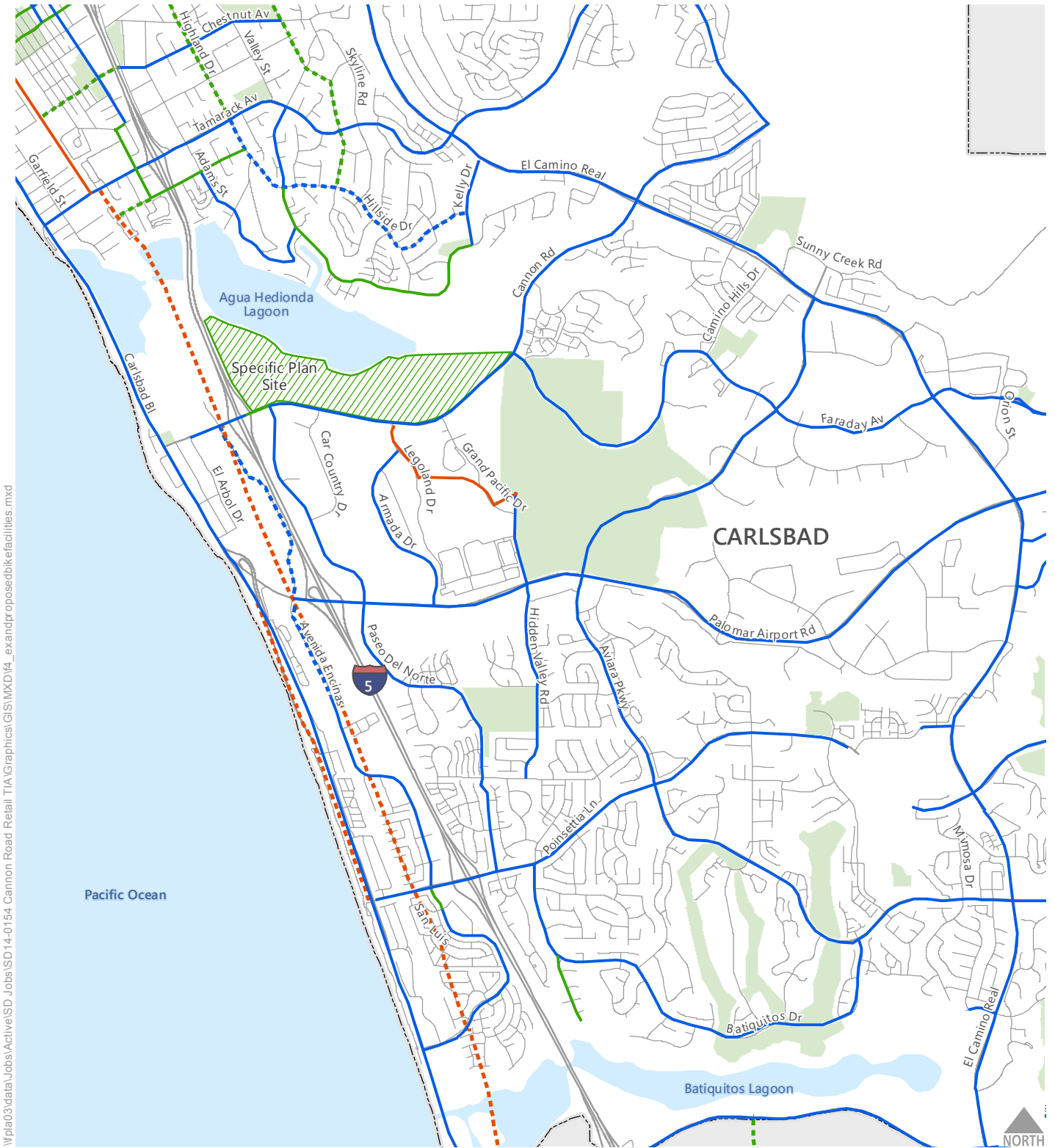
Per the *San Diego Regional Bicycle Plan*, the bike lane on Avenida Encinas is planned to be extended from its existing terminus south of Palomar Airport Road to Cannon Road. Additionally, the I-5 North Coast Corridor Project proposes to construct a new 27-mile bike route called the North Coast Bike Trail that travels north-south from La Jolla to Oceanside. The proposed North Coast Bike Trail would extend along the western edge of the Specific Plan area immediately adjacent to I-5 up to Tamarack Avenue.

The existing and planned bicycle facilities are shown in **Figure 4**.

3.1.4 EXISTING PEDESTRIAN CIRCULATION

Pedestrian facilities are available in the Specific Plan study area and comprise sidewalks, crosswalks, and pedestrian push buttons and indications at signalized intersections. Sidewalks are present along both sides of all street segments within the study area, except for the segment of westbound Cannon Road, along the Specific Plan frontage, from east of Car Country Drive to the I-5 NB Ramps. The signalized study intersections also provide pedestrian push buttons.





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- | | | |
|---|---|--|
| Existing | Planned | |
| — Class I Bike Path | - - - Class I Bike Path | Specific Plan Site |
| — Class II Bike Lane | - - - Class II Bike Lane | |
| — Class III Bike Route | - - - Class III Bike Route | |



Figure 4
Existing and Proposed Bicycle Network

3.2 EXISTING NETWORK AND INTERSECTION VOLUMES

The operations of the 33 study intersections were evaluated during weekday morning (6:30 to 9:30 AM) and weekday evening (3:30 to 6:30 PM) peak period conditions. Traffic counts were initially obtained from the *City of Carlsbad 2014 Traffic Monitoring Program (TMP)*. The TMP collected traffic data during the summer of 2014, which include data on Carlsbad Boulevard, Cannon Road, El Camino Real, and Palomar Airport Road. Of the Specific Plan's 33 existing study intersections, 22 intersections were included in the TMP. For the 11 intersections not included in the TMP, new intersection counts were conducted in mid-November 2014 on a typical weekday when local schools were in session.

Prior to conducting the existing intersection analysis, the raw traffic data collected was adjusted and modified to account for the following:

- The 2014 TMP summer counts were compared to the mid-November 2014 counts on Cannon Road to determine if there was a notable difference between the fall (November) and summer (July) counts. The volume comparison was made at adjacent intersections and revealed that the summer and fall counts were close in magnitude. The summer volumes on Cannon Road were marginally higher than fall counts; thus, fall counts were adjusted by increasing the thru volumes on Cannon Road by 5% to consistently reflect peak season demand.
- During both the 2014 TMP summer counts and mid-November 2014 counts, the number of travel lanes on Cannon Road between LEGOLAND Drive and Faraday Avenue was affected by the Carlsbad desalination plant and pipeline construction activities. During both count periods, the number of through lanes on Cannon Road on these segments was reduced to one lane in each direction. To determine the potential effect of construction and the reduced number of lanes, the 2014 peak hour roadway counts were compared to 2013 counts for segments of Cannon Road and Palomar Airport Road, between El Camino Real and I-5. Our evaluation revealed that peak hour volumes were generally the same from 2013 to 2014, where peak hour volumes on Cannon Road were slightly less (between 5 and 7%) in 2014 than 2013. Given that the volume difference between the two years was nominal and within the normal daily variation of traffic volumes, it was concluded 2014 volumes were appropriate for use in the analysis.

Existing lane configurations and signal controls were obtained through field observations. **Figure 5** presents the study area's existing AM and PM peak-hour turning movement volumes, corresponding lane configurations, and traffic control devices. The unadjusted or raw traffic count data sheets are provided in **Appendix A**.





1. Tamarack Ave/Carlsbad Blvd 	2. Tamarack Ave/I-5 SB Ramps 	3. Tamarack Ave/I-5 NB Ramps 	4. Tamarack Ave/El Camino Real 	5. Cannon Rd/Carlsbad Blvd
6. Cannon Rd/Avenida Encinas 	7. Cannon Rd/I-5 SB Ramps 	8. Cannon Rd/I-5 NB Ramps 	9. Cannon Rd/Paseo Del Norte 	10. Cannon Rd/Car Country Dr
11. Cannon Rd/LEGOLAND Dr 	12. Cannon Rd/Grand Pacific Dr 	13. Cannon Rd/Faraday Ave 	14. Cannon Rd/El Camino Real 	15. Paseo Del Norte/Car Country Dr
16. Paseo Del Norte/Outlet Dwy 	17. College Blvd/Faraday Ave 			

Figure 5
Peak Hour Traffic Volumes and Lane Configurations
Existing Conditions



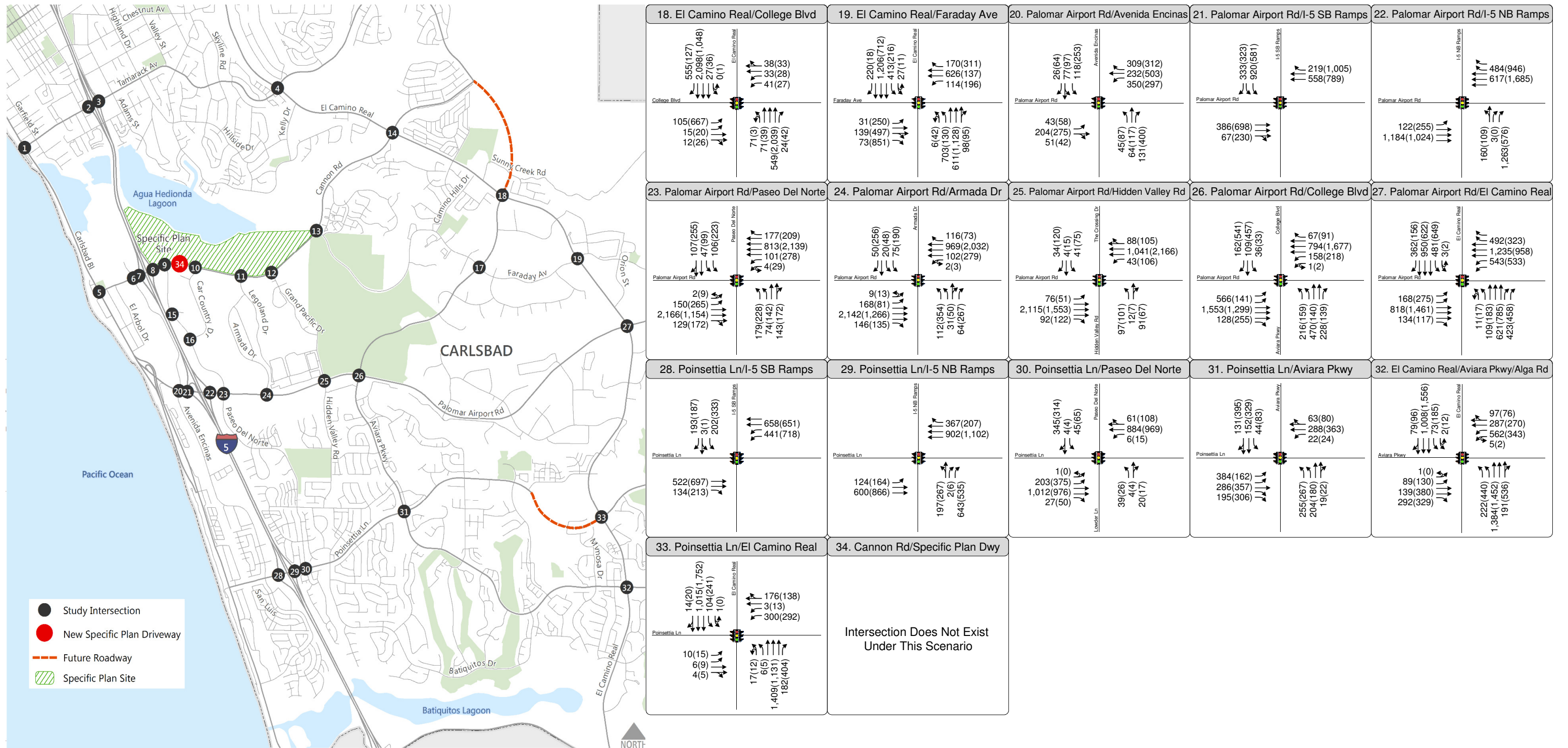


Figure 5
Peak Hour Traffic Volumes and Lane Configurations
Existing Conditions



3.3 EXISTING INTERSECTION ANALYSIS

Existing peak-hour volumes and lane configurations were used to calculate levels of service for each of the study intersections. The results of the existing LOS analysis are presented in **Table 5** and the corresponding LOS calculation sheets are included in **Appendix B**.

The ICU analysis results indicate that all 33 existing intersection are operating at LOS D or better under Existing Conditions.

TABLE 5 – EXISTING INTERSECTION LEVEL OF SERVICE

Intersection	Peak Hour	ICU	LOS ²
		V/C ¹	
1. Carlsbad Blvd / Tamarack Ave	AM	0.57	B
	PM	0.59	B
2. I-5 SB Ramps / Tamarack Ave	AM	0.65	C
	PM	0.63	B
3. I-5 NB Ramps / Tamarack Ave	AM	0.65	C
	PM	0.63	B
4. Tamarack Ave / El Camino Real	AM	0.60	B
	PM	0.55	B
5. Cannon Rd / Carlsbad Blvd	AM	0.49	A
	PM	0.69	C
6. Cannon Rd / Avenida Encinas	AM	0.36	A
	PM	0.46	A
7. I-5 SB Ramps / Cannon Rd	AM	0.48	A
	PM	0.70	C
8. I-5 NB Ramps / Cannon Rd	AM	0.48	A
	PM	0.70	C
9. Cannon Rd / Paseo Del Norte	AM	0.56	B
	PM	0.57	B
10. Cannon Rd / Car Country Dr	AM	0.52	A
	PM	0.58	B
11. Cannon Rd / Armada Dr	AM	0.39	A
	PM	0.44	A
12. Cannon Rd / Grand Pacific Dr	AM	0.35	A
	PM	0.46	A
13. Cannon Rd / Faraday Ave	AM	0.47	A
	PM	0.58	B



TABLE 5 – EXISTING INTERSECTION LEVEL OF SERVICE

14. Cannon Rd / El Camino Real	AM	0.68	C
	PM	0.80	D
15. Paseo Del Norte / Car Country Dr	AM	0.40	A
	PM	0.38	A
16. Paseo Del Norte / Outlets Dwy	AM	0.26	A
	PM	0.41	A
17. College Blvd / Faraday Ave	AM	0.44	A
	PM	0.54	A
18. College Blvd / El Camino Real	AM	0.60	B
	PM	0.62	B
19. El Camino Real / Faraday Ave	AM	0.66	C
	PM	0.66	C
20. Palomar Airport Rd / Avenida Encinas	AM	0.56	B
	PM	0.62	B
21. I-5 SB Ramps / Palomar Airport Rd	AM	0.49	A
	PM	0.49	A
22. I-5 NB Ramps / Palomar Airport Rd	AM	0.75	D
	PM	0.66	C
23. Palomar Airport Rd / Paseo Del Norte	AM	0.71	C
	PM	0.70	C
24. Palomar Airport Rd / Armada Dr	AM	0.69	C
	PM	0.69	C
25. Palomar Airport Rd / Hidden Valley Rd	AM	0.66	C
	PM	0.70	C
26. Palomar Airport Rd / College Blvd	AM	0.68	C
	PM	0.82	D
27. Palomar Airport Rd / El Camino Real	AM	0.62	B
	PM	0.77	D
28. I-5 SB Ramps / Poinsettia Ln	AM	0.52	A
	PM	0.69	C
29. I-5 NB Ramps / Poinsettia Ln	AM	0.52	A
	PM	0.69	C
30. Poinsettia Ln / Paseo Del Norte	AM	0.70	C
	PM	0.73	C
31. Poinsettia Ln / Aviara Pkwy	AM	0.55	B
	PM	0.68	C
32. Alga Rd-Aviara Pkwy / El Camino Real	AM	0.60	B
	PM	0.67	C



TABLE 5 – EXISTING INTERSECTION LEVEL OF SERVICE

33. Poinsettia Ln / El Camino Real	AM	0.50	A
	PM	0.55	B
34. Cannon Rd / Project Dwy	AM	Does Not Exist	
	PM		

Source: Fehr & Peers, 2015.

Notes:

¹ Volume to Capacity Ratio.

² LOS calculations performed using the ICU methodology

3.4 EXISTING ROADWAY SEGMENT OPERATIONS

Table 6 displays the LOS analysis for the Specific Plan study roadway segments under Existing Conditions. As shown in the table, all roadway segments currently operate acceptably at LOS D or better.



TABLE 6 – EXISTING CONDITIONS ROADWAY PEAK HOUR VOLUMES AND LEVEL OF SERVICE

Roadway Segment	Direction	Number of Lanes	Capacity (1,800 vphpl)	Peak Hour Volume		V/ C Ratio		LOS	
				AM	PM	AM	PM	AM	PM
Cannon Road									
I-5 SB Ramps to I-5 NB Ramps	EB	2	3,600	1,054	918	0.29	0.26	A	A
	WB	2	3,600	612	873	0.17	0.24	A	A
I-5 NB Ramps to Paseo Del Norte	EB	2	3,600	1,295	949	0.36	0.26	A	A
	WB	3	5,400	684	1,714	0.13	0.32	A	A
Paseo Del Norte to Car Country	EB	2	3,600	1,040	799	0.29	0.22	A	A
	WB	2	3,600	610	1,292	0.17	0.36	A	A
Car Country Dr to Armada Dr	EB	2	3,600	913	829	0.25	0.23	A	A
	WB	2	3,600	636	1,211	0.18	0.34	A	A
Armada Dr to Grand Pacific Dr	EB	2	3,600	574	990	0.16	0.28	A	A
	WB	2	3,600	856	909	0.24	0.25	A	A
Grand Pacific Dr to Faraday Ave	EB	2	3,600	542	989	0.15	0.27	A	A
	WB	2	3,600	877	903	0.24	0.25	A	A
Faraday Ave to El Camino Real	EB	2	3,600	195	952	0.05	0.26	A	A
	WB	2	3,600	762	318	0.21	0.09	A	A
Tamarack Avenue									
Carlsbad Blvd to I-5 SB Ramps	EB	1	1,800	712	356	0.40	0.20	A	A
	WB	1	1,800	526	199	0.29	0.11	A	A
I-5 SB Ramps to I-5 NB Ramps	EB	2	3,600	487	643	0.14	0.18	A	A
	WB	2	3,600	784	668	0.22	0.19	A	A
I-5 NB Ramps to El Camino Real	EB	2	3,600	292	870	0.08	0.24	A	A
	WB	2	3,600	211	592	0.06	0.16	A	A
Palomar Airport Road									
Paseo Del Norte to Armada Dr	EB	3	5,400	2,465	1,578	0.46	0.29	A	A
	WB	3	5,400	1,140	2,655	0.21	0.49	A	A
Armada Dr to The Crossings Dr	EB	3	5,400	2,283	1,726	0.42	0.32	A	A
	WB	3	5,400	1,172	2,387	0.22	0.44	A	A
The Crossings Dr to College Blvd	EB	3	5,400	2,247	1,695	0.42	0.31	A	A
	WB	3	5,400	1,172	2,377	0.22	0.44	A	A
College Blvd to El Camino Real	EB	3	5,400	1,120	1,473	0.21	0.27	A	A
	WB	3	5,400	1,706	1,988	0.32	0.37	A	A
College Boulevard									
Palomar Airport Rd to Faraday Ave	EB/NB	2	3,600	1,103	372	0.31	0.10	A	A
	WB/SB	1	1,800	307	1,031	0.17	0.57	A	A
Poinsettia Ln									
Paseo Del Norte to Aviara Pkwy	EB	2	3,600	865	1,077	0.24	0.30	A	A
	WB	2	3,600	674	951	0.19	0.26	A	A
Carlsbad Boulevard									
North of Tamarack Ave	NB	2	3,600	254	918	0.07	0.26	A	A
	SB	2	3,600	563	536	0.16	0.15	A	A



TABLE 6 – EXISTING CONDITIONS ROADWAY PEAK HOUR VOLUMES AND LEVEL OF SERVICE

Roadway Segment	Direction	Number of Lanes	Capacity (1,800 vphpl)	Peak Hour Volume		V/ C Ratio		LOS	
				AM	PM	AM	PM	AM	PM
Tamarack Ave to Cannon Rd	NB	2	3,600	277	1,147	0.08	0.32	A	A
	SB	1	1,800	826	663	0.46	0.37	A	A
South of Cannon Rd	NB	1	1,800	272	926	0.15	0.51	A	A
	SB	1	1,800	798	628	0.44	0.35	A	A
Paseo del Norte									
Cannon Rd to Car Country Dr	NB	2	3,600	205	613	0.06	0.17	A	A
	SB	2	3,600	386	341	0.11	0.09	A	A
Outlets North Entrance to Palomar Airport Rd	NB	2	3,600	401	616	0.11	0.17	A	A
	SB	2	3,600	260	577	0.07	0.16	A	A
Faraday Avenue									
Cannon Rd to College Blvd	NB	1	1,800	484	625	0.27	0.35	A	A
	SB	1	1,800	414	543	0.23	0.30	A	A
Aviara Parkway									
Palomar Airport Rd to Poinsettia Ln	NB	2	3,600	914	438	0.25	0.12	A	A
	SB	2	3,600	395	930	0.11	0.26	A	A
El Camino Real									
North of Tamarack Ave	NB	2	3,600	442	1,517	0.12	0.42	A	A
	SB	2	3,600	1,247	618	0.35	0.17	A	A
Tamarack Ave to Cannon Rd	NB	2	3,600	511	1,885	0.14	0.52	A	A
	SB	2	3,600	1,788	723	0.50	0.20	A	A
Cannon Rd to College Blvd	NB	3	5,400	692	2,740	0.13	0.51	A	A
	SB	3	5,400	2,680	1,212	0.50	0.22	A	A
College Blvd to Faraday Ave	NB	3	5,400	839	2,123	0.16	0.39	A	A
	SB	3	5,400	2,222	1,104	0.41	0.20	A	A
Faraday Ave to Palomar Airport Rd	NB	3	5,400	1,418	1,395	0.26	0.26	A	A
	SB	3	5,400	1,796	1,801	0.33	0.33	A	A
Palomar Airport Rd to Poinsettia Ln	NB	3	5,400	1,596	1,443	0.30	0.27	A	A
	SB	3	5,400	1,638	2,013	0.30	0.37	A	A
Poinsettia Ln to Aviara Pkwy	NB	3	5,400	1,614	1,670	0.30	0.31	A	A
	SB	3	5,400	1,336	2,061	0.25	0.38	A	A
South of Aviara Pkwy	NB	3	5,400	2,428	1,797	0.45	0.33	A	A
	SB	3	5,400	2,228	1,862	0.41	0.34	A	A

Source: Fehr & Peers, 2015



3.5 EXISTING FREEWAY SEGMENT LEVEL OF SERVICE

Table 7 displays the freeway mainline LOS analysis for I-5 under Existing Conditions. The freeway segment analysis was performed using the methodology presented in Chapter 2. As shown, all freeway mainline segments on I-5 operate unacceptably at LOS E during peak hours under Existing Conditions, except for the I-5 segment between Tamarack Avenue and Carlsbad Village Drive which operates at LOS D.

3.6 EXISTING RAMP METERING ANALYSIS

Table 8 displays the ramp metering analysis conducted at the Tamarack Avenue, Cannon Road, Palomar Airport Road, and Poinsettia Lane southbound and northbound on-ramps on I-5 under existing conditions. The following ramp meters either do not exist at these locations or do not operate under one or both peak hours:

- I-5 SB on-ramp from Tamarack Avenue – PM peak hour
- I-5 NB on-ramp from Tamarack Avenue – AM and PM peak hours
- I-5 NB on-ramp from Cannon Road – AM peak hour
- I-5 NB on-ramp from Palomar Airport Road – AM peak hour
- I-5 NB on-ramp from Poinsettia Lane – AM Peak hour

As shown in **Table 8**, the peak hour capacities of the on-ramps are greater than the peak hour demands and minimal queuing of traffic is experienced with one exception. At the I-5 SB on-ramp from Tamarack Avenue, vehicles on this ramp are calculated to experience a 14.8 minute delay with a 3,750-foot queue in the AM peak hour. The Tamarack Avenue on-ramp capacity is not sufficient to accommodate all AM peak hour volumes; thus, ramp queues spill back onto the arterial street, which was validated through field observations.



TABLE 7 – EXISTING CONDITIONS FREEWAY SEGMENT LEVEL OF SERVICE

Segment	Number of Lanes	Capacity Per Lane	Peak Hour %	Direction Split	HV%	ADT	Peak Hour Per Lane	V/C	LOS
Interstate 5									
La Costa Ave to Poinsettia Ln	8	2,350	7%	60%	4.5%	204,000	2243	0.95	E
Poinsettia Ln to Palomar Airport Rd	8	2,350	7%	60%	4.5%	201,000	2210	0.94	E
Palomar Airport Rd to Cannon Rd	8	2,350	7%	60%	4.5%	198,000	2177	0.93	E
Cannon Rd to Tamarack Ave	8	2,350	7%	60%	4.5%	199,000	2188	0.93	E
Tamarack Ave to Carlsbad Village Dr	8	2,350	7%	60%	4.5%	196,000	2155	0.92	D

Source: Fehr & Peers, 2015

Bold LOS indicates LOS E or F operations

TABLE 8 – EXISTING CONDITIONS RAMP METERING ANALYSIS

Location	Peak Hour	Total # of Mixed Flow Lanes	Demand ¹ (veh/hr)		Meter Rate (veh/hr)	Excess Demand (veh/hr)	Delay (min)	Queue (ft)
			Mixed Flow & HOV	Mixed Flow only				
I-5 SB - Tamarack Ave On-Ramp	AM	1	771	655	526	129	14.8	3,750
I-5 SB - Cannon Rd On-Ramp	AM	1	368	313	734	0	0.0	0
	PM	2	508	432	734	0	0.0	0
I-5 NB - Cannon Rd On-Ramp	PM	2	1,327	1,128	1,416	0	0.0	0
I-5 SB - EB Palomar Airport Rd On-Ramp	AM	2	67	57	343	0	0.0	0
	PM	1	230	196	246	0	0.0	0
I-5 SB - WB Palomar Airport Rd On-Ramp	AM	1	219	186	492	0	0.0	0
	PM	1	1,005	854	895	0	0.0	0
I-5 NB - Palomar Airport Rd On-Ramp	PM	1	1,201	1,021	988	33	2.0	475
I-5 SB - Poinsettia Ln On-Ramp	AM	2	578	491	1,094	0	0.0	0
	PM	2	932	792	796	0	0.0	0
I-5 NB - Poinsettia Ln On-Ramp	PM	2	377	320	576	0	0.0	0

Source: Fehr & Peers, 2015. Analysis based on Caltrans District 11 Ramp Meter methodology

¹Assumed 15% of on-ramp traffic uses the HOV lane. Used the "mixed-flow only" volume for analysis and did not include HOV lane capacity in analysis.



4.0 SPECIFIC PLAN TRAVEL CHARACTERISTICS

This chapter describes the anticipated number of vehicle trips and directionality of those trips that would result from implementation of the proposed Specific Plan. Future traffic added to the roadway system by the Specific Plan is estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. The first step estimates the amount of site-generated traffic that will be added to the roadway network. The second step estimates the direction of travel to and from the site. The new trips were then assigned to specific street segments and intersection turning movements during the third step. This process is described in more detail in the following sections.

4.1 SPECIFIC PLAN TRIP GENERATION

In accordance with the City of Carlsbad and SANTEC/ITE Guidelines for Traffic Impact Studies, trip generation rates from the *(Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region* (SANDAG, 2002) were used to estimate the number of trips associated with the Specific Plan. As discussed in Chapter 2, the Specific Plan proposes to develop 488,000 SF regional shopping center, a 2,500-seat (51,000 SF) movie theater, a 46,000 SF supermarket, and, 175 acres of passive parks, agriculture uses, and habitat management preservation areas. The corresponding weekday AM and PM peak hour trip rates were applied to each use, and a total number gross vehicle trips for each time period was estimated. However, the number of trips added to the study area roadways is expected to be lower due to several factors including internalization within the Specific Plan area and the presence of significant traffic volumes already traveling on roads near the site.

For developments that include several different types of land use and common parking areas, visitors will often access multiple uses within one trip to a given site. This is the case with the visitor-serving commercial uses where it is very likely that someone shopping at the supermarket will also visit the retail or restaurant uses, and people watching a movie at the theater will eat at a restaurant. This trip internalization will reduce the number of trips to the site compared to the trips generated by each of the uses in an isolated situation. For this study a trip internalization rate of 10% was applied to the shopping center, theater and supermarket uses, and the number of trips among the uses was checked for reasonableness. For developments similar to the size and uses in the Specific Plan, trip reduction due to internalization typically ranges from 10% to 20%. The lower end of this range (10%) was applied to the trip generation estimates to provide a more conservative analysis.



A second set of trip reductions was applied to account for both pass-by and diverted trips. Pass-by trips are made by those vehicles already passing by the site on Cannon Road, where vehicles simply turn into and out of the site during a trip that is already being made. Diverted trips are those made by vehicles traveling on a roadway close to, but not immediately adjacent to the site, and those vehicles must turn onto Cannon Road from another roadway to get to the site. In both cases, these are not new trips generated by the site or new to the roadway network, but they still comprise a portion of site-generated traffic. All of the diverted trips are assumed to come from I-5 given the visibility of the visitor-serving commercial area from the freeway. In both cases, the pass-by and diverted trip reductions were obtained directly from the same SANDAG source document listed above.

The gross and net vehicle trip generation estimates for the Specific Plan area are presented in **Table 13**. As shown in **Table 13**, the Specific Plan is expected to generate approximately 24,102 net new daily weekday trips, 910 net new AM peak hour trips, and 1,820 net new PM peak hour trips.

It is important to note that the estimated number of AM peak hour trips for the regional shopping center appears excessively high given the types of uses that are anticipated (e.g., anchor and specialty retail stores, quality restaurants serving only lunch and dinner). A comparison with AM peak hour trip rates from ITE show that the gross trip generation may be overestimated by nearly 100% (ITE = 500 trips vs SANDAG = 922). Because most of the center would not even be open before 9:00am and using ITE as a basis of comparison, the AM peak hour trip generation and any associated impacts are considered very conservative.



TABLE 9 – SPECIFIC PLAN ESTIMATED TRIP GENERATION

Land Use	Quantity	Units	Daily Trip Rates	Daily Trips	AM Peak Hour % of Daily Trips	AM Trips			PM Peak Hour % of Daily Trips	PM Trips		
						IN	OUT	TOTAL		IN	OUT	TOTAL
Regional Shopping Center	488	kSF	50	24,400	4%	683	293	976	9%	1,098	1,098	2,196
Theater	2,500	seat	1.8	4,500	0.33%	10	4	15	8%	216	144	360
Supermarket	46	kSF	150	6,900	4%	193	83	276	10%	345	345	690
Passive Parks/AG Uses ¹	176.7	acre	5	884	2%	9	9	18	5%	22	22	44
			Subtotal	36,684		895	389	1,285		1,681	1,609	3,290
			Internalization ²	-3,580		-89	-38	-127		-166	-159	-325
			Vehicle Trips after Internalization	33,104		806	351	1,157		1,515	1,450	2,965
			Pass By ³	-4,036		-95	-41	-136		-349	-349	-698
			Diverted Trips ⁴	-4,966		-81	-35	-116		-227	-218	-445
			Total Net New Trips	24,102		630	275	905		939	883	1,822

Notes:
 Trip rates and pass-by/diverted trip reductions obtained from SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rate for the San Diego Region (SANDAG, 2002)
¹Assumed AM and PM %'s of Daily Trips and in/out splits for passive parks/AG Uses
²Assumed 10% internalizations for Regional Shopping Center, Theater, and Supermarket
³Pass By Percentages:
 Regional Shopping Center: 11% reduction for Daily and AM peak hour; 20% reduction during PM peak hour
 Theater: 17% reduction for daily – same reduction applied to AM and PM peak hour
 Supermarket: 15% reduction for Daily and AM peak hour; 40% reduction during PM peak hour
⁴Diverted Trips Percentages: 15% reduction for Daily and PM Peak Hour and 10% reduction for AM Peak Hour
 Source: Fehr & Peers, 2015



4.2 SPECIFIC PLAN TRIP DISTRIBUTION AND ASSIGNMENT

This section describes the anticipated number of vehicle trips and directionality of those trips that would result from the proposed project.

4.2.1 SPECIFIC PLAN TRIP DISTRIBUTION

An initial trip distribution estimate was based on a “select zone” analysis of the SANDAG Series 12 travel demand mode. This process identifies the number of trips on each roadway segment included in the model that is generated by the single traffic analysis zone (TAZ) representing the Specific Plan area. The distribution was further refined and adjusted based on:

- existing traffic volumes
- the level of accessibility of routes to and from the proposed site
- the location of complementary land uses (residential areas from which visitors and employees would be drawn), and
- locations of other similar land uses.

Based on these factors, the vehicle trip distribution of Specific Plan-generated traffic is estimated to be:

- 35% to/from the north of the study area
- 28% to/from the south of the study area
- 15% to/from the east of the study area
- 22% from within the immediate study area

Figure 6 illustrates and provides more detail as to the trip distribution patterns described above.

4.2.2 SPECIFIC PLAN TRIP ASSIGNMENT

Specific Plan trips were assigned to the study intersections based on the characteristics of the streets within the study area, anticipated congestion, and directness of route. **Figure 7** shows the assignment of trips generated by the proposed Specific Plan.



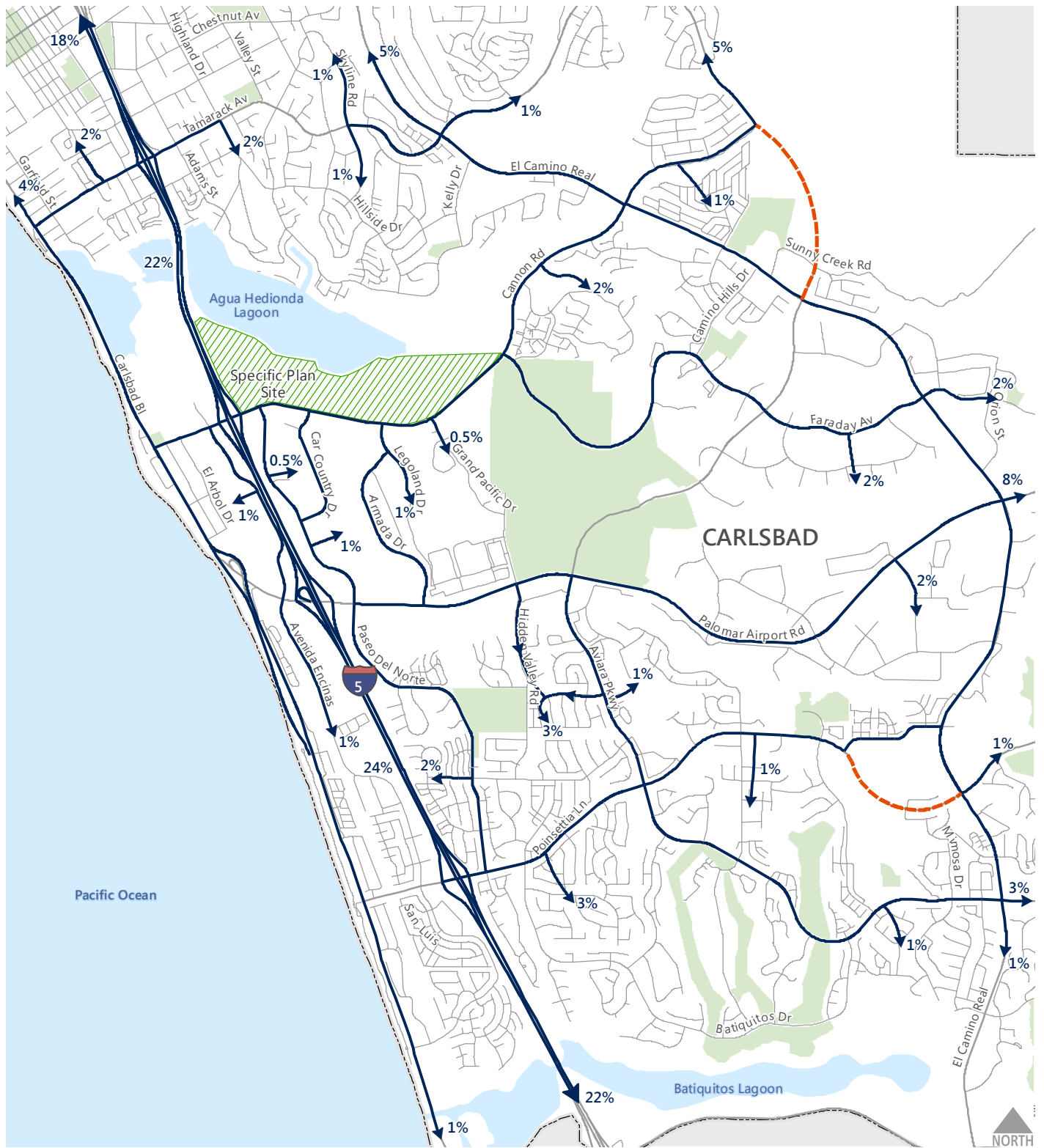
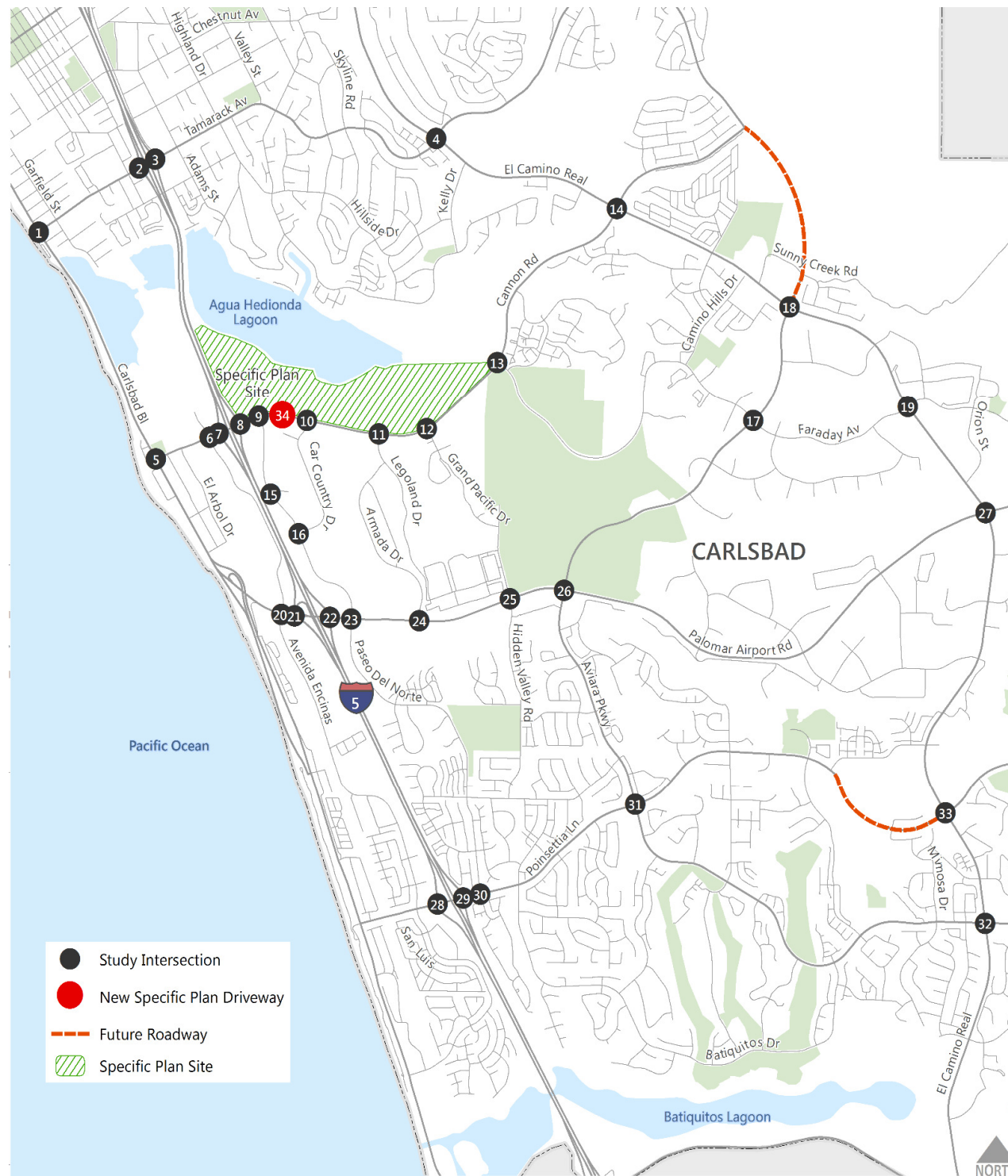


Figure 6
Specific Plan Site Trip Distribution





1. Tamarack Ave/Carlsbad Blvd 	2. Tamarack Ave/I-5 SB Ramps 	3. Tamarack Ave/I-5 NB Ramps 	4. Tamarack Ave/El Camino Real 	5. Cannon Rd/Carlsbad Blvd
6. Cannon Rd/Avenida Encinas 	7. Cannon Rd/I-5 SB Ramps 	8. Cannon Rd/I-5 NB Ramps 	9. Cannon Rd/Paseo Del Norte/Specific Plan Dwy* 	10. Cannon Rd/Car Country Dr
11. Cannon Rd/LEGOLAND Dr 	12. Cannon Rd/Grand Pacific Dr 	13. Cannon Rd/Faraday Ave 	14. Cannon Rd/El Camino Real 	15. Paseo Del Norte/Car Country Dr
16. Paseo Del Norte/Outlet Dwy 	17. College Blvd/Faraday Ave 	<p>Note: Negative vehicle trips reflect pass-by trips for through movements on Cannon Road.</p>		

Figure 7
Peak Hour Traffic Volumes and Lane Configurations
Specific Plan Trips Only



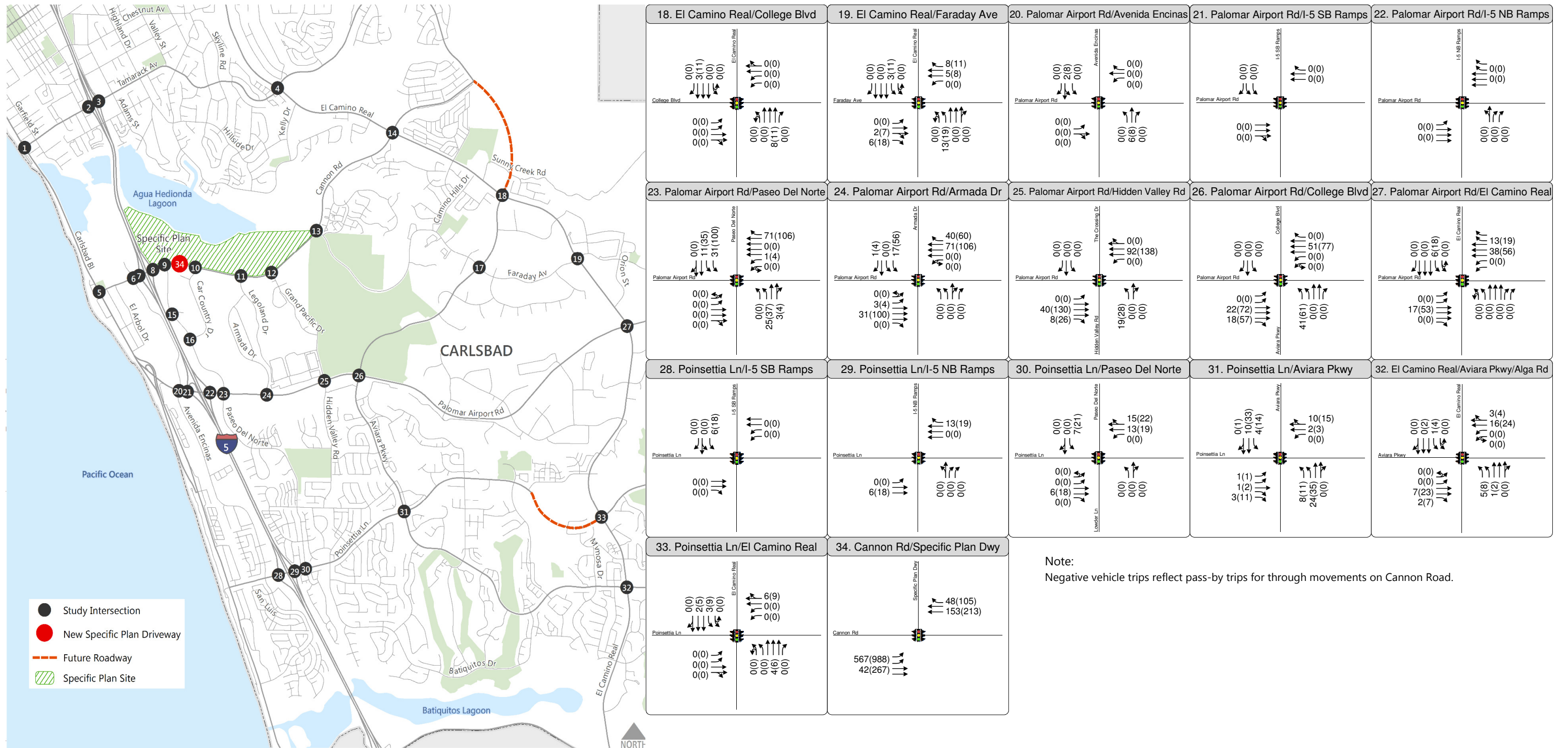


Figure 7
 Peak Hour Traffic Volumes and Lane Configurations
 Specific Plan Trips Only



4.3 SPECIFIC PLAN DRIVEWAY ACCESS AND ROADWAY SYSTEM IMPROVEMENTS

The proposed Specific Plan will take vehicle access directly from Cannon Road in the vicinity of the Paseo del Norte and Car Country Drive intersections. In general, the visitor-serving commercial area will be the primary traffic generator within the Specific Plan area. A much lower traffic generator will be the passive park and agriculture uses that will generate trips by people parking to hike trails and to visit the strawberry fields and other low-intensity agriculture attractions.

To serve the site, several access options were initially evaluated to balance among several key goals:

- Maximizing vehicle flow and minimizing delays along Cannon Road
- Providing direct access to the site and minimizing driver confusions
- Reducing the potential for queuing at key locations including on the I-5 off-ramps, where queues could result in safety issues on the freeway mainline

Several options for access were considered including full or partial access at some combination of three intersections on Cannon Road: 1) Paseo del Norte, 2) Car Country Drive, and 3) a new signalized intersection approximately midway between the two existing intersections. Ultimately two access options were evaluated:

- Access Option 1 (Couplet) included outbound access and an inbound lane for the westbound right-turn on Cannon Road at Paseo del Norte and inbound access at the new midblock signalized intersection.
- Access Option 2 (Full Access) included full access at both Paseo del Norte and at Car Country Drive.

After evaluating both of these driveway configurations, the optimal driveway layout was determined to be Access Option 1. Although this configuration creates a new intersection along the Cannon Road corridor, the use of a T-configuration at two of the three intersections (i.e. the new mid-block intersection and Car Country Drive intersection) would minimize conflicting movements and maximize corridor efficiency. Other options that included two-way travel on both driveways and a fourth intersection approach (e.g., opposite the existing Car Country Drive approach) were much less efficient and resulted in worse operations (see Appendix D for a summary of intersection operations in 2019 and 2035 with each access option). Design details of this option are presented below, and the proposed site access configuration is illustrated on **Figure 8**.



This configuration assumes that all eastbound inbound traffic will be served at the new T-intersection on Cannon Road located approximately halfway between Paseo del Norte and Car Country Drive, and westbound inbound traffic will be served at both the new T-intersection driveway and at the Paseo del Norte intersection. The new T-intersection will be located approximately 600 feet from the adjacent intersections and will be signalized. All outbound site traffic would be served by a new driveway located opposite Paseo del Norte. For this layout, the Specific Plan proponent will construct the following intersection improvements for the two driveway access points:

Cannon Road / Paseo del Norte-Specific Plan Site Driveway:

- Construct one additional eastbound thru lane that will be an exclusive left-turn storage lane for the new downstream inbound intersection between Paseo del Norte and Car Country Drive. The existing landscaped median on Cannon Road will be modified to provide this additional lane.
- Construct a westbound right-turn lane to serve inbound traffic to the Specific Plan site. This lane will turn into the Specific Plan driveway slightly upstream of the Paseo del Norte intersection and will be controlled by a separate signal where the lane crosses the planned shared use path. This signal will facilitate bicycle and pedestrian traffic on the shared use path by periodically stopping westbound right-turning traffic into the Specific Plan site.
- Construct a new north leg (i.e., southbound approach) for the Specific Plan outbound driveway, which will include two left-turn lanes, one thru lane, and two right-turn lanes for the outbound movements at this intersection.
- Modify the traffic signal to control the new movements and install appropriate signage prohibiting selected movements that will not be allowed (e.g., eastbound left and northbound through movements into the site).

Cannon Road / Specific Plan Inbound Driveway

- Construct a new signalized T-intersection on Cannon Road between Paseo del Norte and Car Country Drive.
- Construct two eastbound left-turn lanes. The existing landscaped median on Cannon Road will be modified to provide these new turn lanes.
- Construct one westbound right-turn lane to serve westbound inbound traffic to the Specific Plan site.

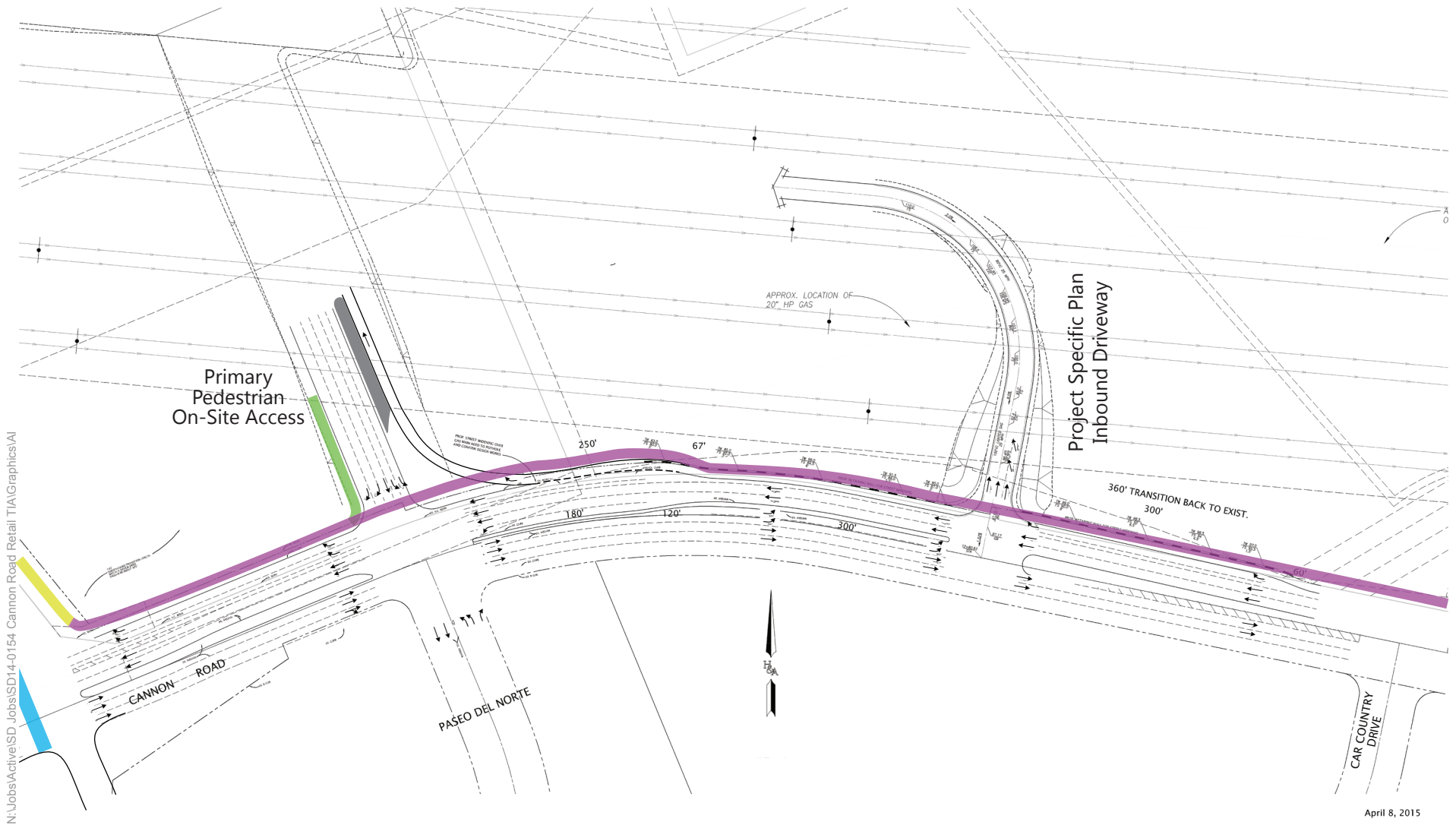
In addition to constructing the intersection improvements for the new driveways, the Specific Plan also proposes to dedicate Specific Plan right-of-way to implement an additional improvement along the site frontage. The Specific Plan will dedicate land and build a second westbound right turn lane on Cannon Road at the I-5 NB on-ramp, and convert the existing westbound shared-through/right-turn lane to a second exclusive through lane. The second right-turn lane will provide additional storage for vehicles traveling to





the I-5 NB on-ramp and also improve vehicle capacity for westbound traffic traveling through the interchange.





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April 8, 2015

- New Shared-Use Path (Bicycle and Pedestrian)
- Planned I-5 North Coast Bike Trail
- Stripe Existing Pedestrian Crossing
- Primary On-Site Pedestrian Access



Figure 8
Specific Plan Site Access

5.0 EXISTING PLUS SPECIFIC PLAN CONDITIONS

This chapter summarizes and presents the results of the operations analysis under the hypothetical Existing Plus Specific Plan scenario. This scenario is typically required for the environmental assessment of substantive land use or roadway network modifications and provides decision-makers and the public with development impacts referenced to an “observable” baseline. Under Existing Plus Specific Plan Conditions, Specific Plan-generated traffic volumes were added to existing study intersection and roadway segment traffic volumes. This hypothetical scenario isolates the potential impacts of the Specific Plan by eliminating the impacts from both ambient growth and other proposed projects.

5.1 INTERSECTION ANALYSIS

Table 10 presents the potential intersection operating conditions and traffic impacts under the Existing Plus Specific Plan conditions and compares the projected levels of service at each study intersection with Existing Conditions. Similar to the results of the intersection analysis under Existing Conditions, all intersections are expected to operate at LOS D or better with the addition of Specific Plan traffic.

As indicated in **Table 10**, after applying the aforementioned City of Carlsbad and SANTEC/ITE significant impact criteria, it is determined that the proposed Specific Plan would not result in any significant impacts under Existing Plus Specific Plan Conditions.

Turning movement traffic volumes and intersection lane configurations for the Existing Plus Specific Plan Conditions are shown in **Figure 9**.





1. Carlsbad Blvd/Tamarack Ave 	2. Tamarack Ave/ I-5 SB Ramps 	3. Tamarack Ave/I-5 NB Ramps 	4. Tamarack Ave/El Camino Real 	5. Carlsbad Blvd/Cannon Rd
6. Cannon Road/Avenida Encinas 	7. Cannon Road/I-5 SB Ramps 	8. Cannon Road/I-5 NB Ramps 	9. Cannon Rd/Paseo Del North/Specific Plan Dwy 	10. Cannon Road/Car Country Dr
11. Cannon Rd/LEGOLAND Dr 	12. Cannon Road/Grand Pacific Dr 	13. Cannon Rd/Faraday Ave 	14. Cannon Road/El Camino Real 	15. Paseo Del Norte/Car Country Dr
16. Paseo Del Norte/Outlet Dwy 	17. College Blvd/Faraday Ave 			



Figure 9
Peak Hour Traffic Volumes and Lane Configurations
Existing Plus Specific Plan Conditions

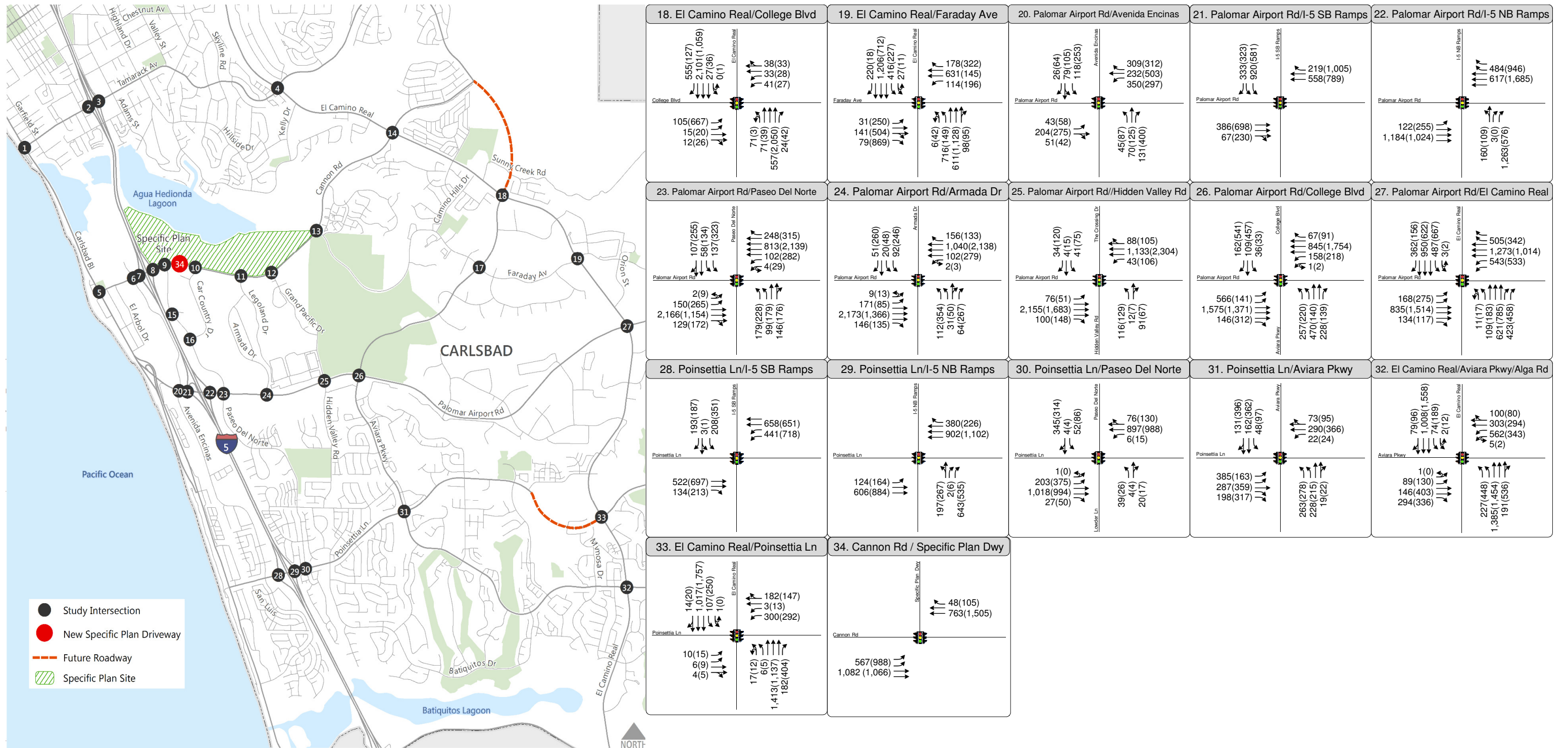


Figure 9
Peak Hour Traffic Volumes and Lane Configurations
Existing Plus Specific Plan Conditions



TABLE 10 – EXISTING PLUS SPECIFIC PLAN INTERSECTION LEVEL OF SERVICE

Intersection	Peak Hour	No Specific Plan		Plus Specific Plan		Change in V/C ³	Significant Impact?
		ICU	LOS ²	ICU	LOS ²		
		V/C ¹		V/C ¹			
1. Carlsbad Blvd / Tamarack Ave	AM	0.57	B	0.58	B	0.01	NO
	PM	0.59	B	0.60	B	0.01	NO
2. I-5 SB Ramps / Tamarack Ave	AM	0.65	C	0.67	C	0.02	NO
	PM	0.63	B	0.65	C	0.02	NO
3. I-5 NB Ramps / Tamarack Ave	AM	0.65	C	0.67	C	0.02	NO
	PM	0.63	B	0.65	C	0.02	NO
4. Tamarack Ave / El Camino Real	AM	0.60	B	0.61	B	0.01	NO
	PM	0.55	B	0.56	B	0.01	NO
5. Cannon Rd / Carlsbad Blvd	AM	0.49	A	0.49	A	0.00	NO
	PM	0.69	C	0.71	C	0.02	NO
6. Cannon Rd / Avenida Encinas ⁴	AM	0.36	A	0.37	A	0.01	NO
	PM	0.46	A	0.48	A	0.02	NO
7. I-5 SB Ramps / Cannon Rd	AM	0.48	A	0.57	B	0.10	NO
	PM	0.70	C	0.82	D	0.12	NO
8. I-5 NB Ramps / Cannon Rd	AM	0.48	A	0.57	B	0.10	NO
	PM	0.70	C	0.82	D	0.12	NO
9. Cannon Rd / Paseo Del Norte	AM	0.56	B	0.58	B	0.03	NO
	PM	0.57	B	0.77	D	0.20	NO
10. Cannon Rd / Car Country Dr	AM	0.52	A	0.53	A	0.02	NO
	PM	0.58	B	0.67	C	0.09	NO
11. Cannon Rd / Armada Dr	AM	0.39	A	0.41	A	0.01	NO
	PM	0.44	A	0.49	A	0.06	NO
12. Cannon Rd / Marriot Hotel Dwy	AM	0.35	A	0.39	A	0.04	NO
	PM	0.46	A	0.49	A	0.03	NO
13. Cannon Rd / Faraday Ave	AM	0.47	A	0.51	A	0.04	NO
	PM	0.58	B	0.65	C	0.07	NO
14. Cannon Rd / El Camino Real	AM	0.68	C	0.68	C	0.00	NO
	PM	0.80	D	0.81	D	0.02	NO
15. Paseo del Norte / Car Country Dr	AM	0.40	A	0.40	A	0.00	NO
	PM	0.38	A	0.39	A	0.00	NO
16. Paseo del Norte / Outlets Dwy	AM	0.26	A	0.28	A	0.02	NO
	PM	0.41	A	0.45	A	0.04	NO
17. College Blvd / Faraday Ave	AM	0.44	A	0.45	A	0.01	NO
	PM	0.54	A	0.55	B	0.01	NO
18. College Blvd / El Camino Real	AM	0.60	B	0.60	B	0.00	NO
	PM	0.62	B	0.62	B	0.00	NO
19. El Camino Real / Faraday Ave	AM	0.66	C	0.67	C	0.00	NO
	PM	0.66	C	0.67	C	0.01	NO
20. Palomar Airport Rd / Avenida Encinas	AM	0.56	B	0.56	B	0.00	NO
	PM	0.62	B	0.63	B	0.01	NO
21. I-5 SB Ramps / Palomar Airport Rd	AM	0.49	A	0.49	A	0.00	NO
	PM	0.49	A	0.49	A	0.00	NO
22. I-5 NB Ramps / Palomar Airport Rd	AM	0.75	D	0.75	D	0.00	NO
	PM	0.66	C	0.66	C	0.00	NO
23. Palomar Airport Rd / Paseo Del Norte	AM	0.62	B	0.63	B	0.00	NO
	PM	0.59	B	0.61	B	0.02	NO
24. Palomar Airport Rd / Armada Dr	AM	0.69	C	0.70	C	0.01	NO
	PM	0.69	C	0.71	C	0.02	NO
25. Palomar Airport Rd / Hidden Valley Rd	AM	0.66	C	0.68	C	0.02	NO
	PM	0.70	C	0.74	D	0.04	NO
26. Palomar Airport Rd / College Blvd	AM	0.57	B	0.68	C	0.11	NO
	PM	0.67	C	0.70	C	0.02	NO
27. Palomar Airport Rd / El Camino Real	AM	0.62	B	0.62	B	0.00	NO
	PM	0.77	D	0.78	D	0.01	NO
28. I-5 SB Ramps / Poinsettia Ln	AM	0.52	A	0.53	A	0.01	NO
	PM	0.69	C	0.70	C	0.01	NO
29. I-5 NB Ramps / Poinsettia Ln	AM	0.52	A	0.53	A	0.01	NO
	PM	0.69	C	0.70	C	0.01	NO
30. Poinsettia Ln / Paseo Del Norte	AM	0.70	C	0.71	C	0.01	NO

TABLE 10 – EXISTING PLUS SPECIFIC PLAN INTERSECTION LEVEL OF SERVICE

	PM	0.73	C	0.74	D	0.01	NO
31. Poinsettia Ln / Aviara Pkwy	AM	0.55	B	0.56	B	0.01	NO
	PM	0.68	C	0.70	C	0.01	NO
32. Alga Rd-Aviara Pkwy / El Camino Real	AM	0.60	B	0.60	B	0.00	NO
	PM	0.67	C	0.68	C	0.01	NO
33. Poinsettia Ln / El Camino Real	AM	0.50	A	0.50	A	0.00	NO
	PM	0.55	B	0.55	B	0.00	NO
34. Cannon Rd / Specific Plan Dwy	AM	Does Not Exist		0.46	A	0.46	NO
	PM	Does Not Exist		0.76	D	0.76	NO

Source: Fehr & Peers, 2015.

Notes:

¹ Volume to Capacity Ratio.

² LOS calculations performed using the ICU methodology

³ Change in delay between the "Plus Specific Plan" Condition and "No Specific Plan" Condition
 Shaded cells identify significant impact.

⁴ Our analysis does not include the pre-emption at the Cannon Road/Avenida Encinas intersection as we determined that the pre-emption frequency is nominal however, when rail pre-emptions are frequent, operations at this intersection are worse than shown here.

5.2 ROADWAY SEGMENT OPERATIONS

Specific Plan traffic traversing the study roadway segments were added to existing peak hour roadway volumes. **Table 11** displays the LOS analysis for the key study roadway segments under Existing Plus Specific Plan Conditions and compares the projected levels of service at each segment with Existing Conditions. As shown in the table, all study roadway segments are projected to operate at LOS D or better during both peak hours.

As indicated in **Table 11**, after applying the aforementioned SANTEC / ITE significant impact criteria, the proposed Specific Plan would not result in any significant impacts to the study roadway segments under Existing Plus Specific Plan Conditions.



TABLE 11 – EXISTING YEAR PLUS SPECIFIC PLAN ROADWAY PEAK HOUR VOLUMES AND LEVEL OF SERVICE

Roadway Segments	Direction	Number of Lanes	Capacity (1,800 vphpl)	No Specific Plan						Plus Specific Plan						Change in V/C		Significant Impact?	
				Peak Hour Volume		V/ C Ratio		LOS		Peak Hour Volume		V/ C Ratio		LOS					
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Cannon Road																			
I-5 SB Ramps to I-5 NB Ramps	EB	2	3,600	1,054	918	0.29	0.26	A	A	1,269	1,282	0.35	0.36	A	A	0.06	0.1	NO	NO
	WB	2	3,600	612	873	0.17	0.24	A	A	718	1,278	0.20	0.36	A	A	0.03	0.12	NO	NO
I-5 NB Ramps to Paseo Del Norte	EB	2	3,600	1,295	949	0.36	0.26	A	A	1,709	1,674	0.47	0.47	A	A	0.11	0.21	NO	NO
	WB	3	5,400	684	1,714	0.13	0.32	A	A	852	2,400	0.16	0.44	A	A	0.03	0.12	NO	NO
Paseo Del Norte to Car Country	EB	2	3,600	1,040	799	0.29	0.22	A	A	1,124	1,239	0.31	0.34	A	A	0.02	0.12	NO	NO
	WB	2	3,600	610	1,292	0.17	0.36	A	A	790	1,537	0.22	0.43	A	A	0.05	0.07	NO	NO
Car Country Dr to Armada Dr	EB	2	3,600	913	829	0.25	0.23	A	A	996	1,096	0.28	0.30	A	A	0.03	0.07	NO	NO
	WB	2	3,600	636	1,211	0.18	0.34	A	A	827	1,495	0.23	0.42	A	A	0.05	0.08	NO	NO
Armada Dr to Grand Pacific Dr	EB	2	3,600	574	990	0.16	0.28	A	A	636	1,189	0.18	0.33	A	A	0.02	0.05	NO	NO
	WB	2	3,600	856	909	0.24	0.25	A	A	998	1,120	0.28	0.31	A	A	0.04	0.06	NO	NO
Grand Pacific Dr to Faraday Ave	EB	2	3,600	542	989	0.15	0.27	A	A	603	1,183	0.17	0.33	A	A	0.02	0.06	NO	NO
	WB	2	3,600	877	903	0.24	0.25	A	A	1,016	1,109	0.28	0.31	A	A	0.04	0.06	NO	NO
Faraday Ave to El Camino Real	EB	2	3,600	195	952	0.05	0.26	A	A	238	1,090	0.07	0.30	A	A	0.02	0.04	NO	NO
	WB	2	3,600	762	318	0.21	0.09	A	A	863	468	0.24	0.13	A	A	0.03	0.04	NO	NO
Tamarack Avenue																			
Carlsbad Blvd to I-5 SB Ramps	EB	1	1,800	712	356	0.40	0.20	A	A	725	699	0.40	0.39	A	A	0.00	0.01	NO	NO
	WB	1	1,800	526	199	0.29	0.11	A	A	532	452	0.30	0.25	A	A	0.01	0.01	NO	NO
I-5 SB Ramps to I-5 NB Ramps	EB	2	3,600	487	643	0.14	0.18	A	A	487	643	0.14	0.18	A	A	0.00	0.00	NO	NO
	WB	2	3,600	784	668	0.22	0.19	A	A	803	705	0.22	0.20	A	A	0.00	0.01	NO	NO
I-5 NB Ramps to El Camino Real	EB	2	3,600	292	870	0.08	0.24	A	A	757	888	0.21	0.25	A	A	0.00	0.01	NO	NO
	WB	2	3,600	211	592	0.06	0.16	A	A	1,017	611	0.28	0.17	A	A	0.00	0.01	NO	NO
Palomar Airport Road																			
Paseo Del Norte to Armada Dr	EB	3	5,400	2,465	1,578	0.46	0.29	A	A	2,499	1,682	0.46	0.31	A	A	0.00	0.02	NO	NO
	WB	3	5,400	1,140	2,655	0.21	0.49	A	A	1,212	2,765	0.22	0.51	A	A	0.01	0.02	NO	NO
Armada Dr to The Crossings Dr	EB	3	5,400	2,283	1,726	0.42	0.32	A	A	2,331	1,882	0.43	0.35	A	A	0.01	0.03	NO	NO
	WB	3	5,400	1,172	2,387	0.22	0.44	A	A	1,300	2,553	0.24	0.47	A	A	0.02	0.03	NO	NO
The Crossings Dr to College Blvd	EB	3	5,400	2,247	1,695	0.42	0.31	A	A	2,287	1,825	0.42	0.34	A	A	0.00	0.03	NO	NO
	WB	3	5,400	1,172	2,377	0.22	0.44	A	A	1,264	2,515	0.23	0.47	A	A	0.01	0.03	NO	NO
College Blvd to El Camino Real	EB	3	5,400	1,120	1,473	0.21	0.27	A	A	1,840	1,906	0.34	0.35	A	A	0.13	0.08	NO	NO
	WB	3	5,400	1,706	1,988	0.32	0.37	A	A	1,744	2,065	0.32	0.38	A	A	0.00	0.01	NO	NO
College Boulevard																			
Palomar Airport Rd to Faraday Ave	EB/NB	2	3,600	1,103	372	0.31	0.10	A	A	1,103	529	0.31	0.15	A	A	0.00	0	NO	NO
	WB/SB	1	1,800	307	1,031	0.17	0.57	A	A	307	1,031	0.17	0.57	A	A	0.00	0	NO	NO
Poinsettia Ln																			



Paseo Del Norte to Aviara Pkwy	EB	2	3,600	865	1,077	0.24	0.30	A	A	1,090	1,097	0.30	0.30	A	A	0.06	0	NO	NO
	WB	2	3,600	674	951	0.19	0.26	A	A	979	1,040	0.27	0.29	A	A	0.08	0.03	NO	NO
Carlsbad Boulevard																			
North of Tamarack Ave	NB	2	3,600	254	918	0.07	0.26	A	A	265	953	0.07	0.26	A	A	0.06	0	NO	NO
	SB	2	3,600	563	536	0.16	0.15	A	A	588	574	0.16	0.16	A	A	0.08	0.03	NO	NO
Tamarack Ave to Cannon Rd	NB	2	3,600	277	1,147	0.08	0.32	A	A	288	1,182	0.08	0.33	A	A	0.06	0	NO	NO
	SB	1	1,800	826	663	0.46	0.37	A	A	851	701	0.47	0.39	A	A	0.08	0.03	NO	NO
South of Cannon Rd	NB	1	1,800	272	926	0.15	0.51	A	A	282	941	0.16	0.52	A	A	0.06	0	NO	NO
	SB	1	1,800	798	628	0.44	0.35	A	A	802	642	0.45	0.36	A	A	0.08	0.03	NO	NO
Paseo del Norte																			
Cannon Rd to Car Country Dr	NB	2	3,600	205	613	0.06	0.17	A	A	301	736	0.08	0.20	A	A	0.02	0.03	NO	NO
	SB	2	3,600	386	341	0.11	0.09	A	A	427	457	0.12	0.13	A	A	0.01	0.04	NO	NO
Outlets North Entrance to Palomar Airport Rd	NB	2	3,600	401	616	0.11	0.17	A	A	497	759	0.14	0.21	A	A	0.03	0.04	NO	NO
	SB	2	3,600	260	577	0.07	0.16	A	A	302	712	0.08	0.20	A	A	0.01	0.04	NO	NO
Faraday Avenue																			
Cannon Rd to College Blvd	NB	1	1,800	484	625	0.27	0.35	A	A	514	681	0.29	0.38	A	A	0.02	0.03	NO	NO
	SB	1	1,800	414	543	0.23	0.30	A	A	431	585	0.24	0.33	A	A	0.01	0.03	NO	NO
Aviara Parkway																			
Palomar Airport Rd to Poinsettia Ln	NB	2	3,600	914	438	0.25	0.12	A	A	955	499	0.27	0.14	A	A	0.02	0.02	NO	NO
	SB	2	3,600	395	930	0.11	0.26	A	A	413	987	0.11	0.27	A	A	0.00	0.01	NO	NO
El Camino Real																			
North of Tamarack Ave	NB	2	3,600	442	1,517	0.12	0.42	A	A	456	1,561	0.13	0.43	A	A	0.01	0.01	NO	NO
	SB	2	3,600	1,247	618	0.35	0.17	A	A	1,279	665	0.36	0.18	A	A	0.01	0.01	NO	NO
Tamarack Ave to Cannon Rd	NB	2	3,600	511	1,885	0.14	0.52	A	A	534	1,956	0.15	0.54	A	A	0.01	0.02	NO	NO
	SB	2	3,600	1,788	723	0.50	0.20	A	A	1,838	798	0.51	0.22	A	A	0.01	0.02	NO	NO
Cannon Rd to College Blvd	NB	3	5,400	692	2,740	0.13	0.51	A	A	700	2,751	0.13	0.51	A	A	0.00	0.00	NO	NO
	SB	3	5,400	2,680	1,212	0.50	0.22	A	A	2,683	1,223	0.50	0.23	A	A	0.00	0.01	NO	NO
College Blvd to Faraday Ave	NB	3	5,400	839	2,123	0.16	0.39	A	A	847	2,134	0.16	0.40	A	A	0.00	0.01	NO	NO
	SB	3	5,400	2,222	1,104	0.41	0.20	A	A	2,225	1,115	0.41	0.21	A	A	0.00	0.01	NO	NO
Faraday Ave to Palomar Airport Rd	NB	3	5,400	1,418	1,395	0.26	0.26	A	A	1,431	1,414	0.27	0.26	A	A	0.01	0.00	NO	NO
	SB	3	5,400	1,796	1,801	0.33	0.33	A	A	1,802	1,819	0.33	0.34	A	A	0.00	0.01	NO	NO
Palomar Airport Rd to Poinsettia Ln	NB	3	5,400	1,596	1,443	0.30	0.27	A	A	1,606	1,443	0.30	0.27	A	A	0.00	0.00	NO	NO
	SB	3	5,400	1,638	2,013	0.30	0.37	A	A	1,638	2,027	0.30	0.38	A	A	0.00	0.01	NO	NO
Poinsettia Ln to Aviara Pkwy	NB	3	5,400	1,614	1,670	0.30	0.31	A	A	1,618	1,676	0.30	0.31	A	A	0.00	0.00	NO	NO
	SB	3	5,400	1,336	2,061	0.25	0.38	A	A	1,338	2,066	0.25	0.38	A	A	0.00	0.00	NO	NO
South of Aviara Pkwy	NB	3	5,400	2,428	1,797	0.45	0.33	A	A	1,803	2,438	0.33	0.45	A	A	0.00	0.00	NO	NO
	SB	3	5,400	2,228	1,862	0.41	0.34	A	A	1,864	2,237	0.35	0.41	A	A	0.01	0.00	NO	NO

Source: Fehr & Peers, 2015



5.3 FREEWAY SEGMENT LEVELS OF SERVICE

Table 12 displays freeway operation for I-5 under Existing Plus Specific Plan Conditions. All freeway segments are expected to operate at LOS E under Existing conditions without and with the Specific Plan, except for the segment between Tamarack Avenue and Carlsbad Village Drive, which operates at LOS D without the Specific Plan and degrades to LOS E with the Specific Plan. The addition of Specific Plan trips at all other locations would further exacerbate operations.

After applying the aforementioned SANTEC / ITE significant impact criteria, it was determined that the proposed Specific Plan would result in a significant impact on all I-5 freeway study segments from north of Tamarack Avenue to south of Poinsettia Lane since the Specific Plan peak hour addition of traffic to the freeway mainline is more than one (1) percent of the per lane capacity on I-5. The Specific Plan trips are approximately three (3) percent of total traffic volume on I-5.

5.4 RAMP METERING ANALYSIS

Table 13 displays the ramp metering analysis conducted at the Tamarack Avenue, Cannon Road, Palomar Airport Road, and Poinsettia Lane southbound and northbound on-ramps on I-5 under Existing Year Plus Specific Plan Conditions. Similar to Existing Conditions, the following ramp meters do not exist or are not active during one or both peak hours:

- I-5 SB on-ramp from Tamarack Avenue – PM peak hour
- I-5 NB on-ramp from Tamarack Avenue – AM and PM peak hours
- I-5 NB on-ramp from Cannon Road – AM peak hour
- I-5 NB on-ramp from Palomar Airport Road – AM peak hour
- I-5 NB on-ramp from Poinsettia Lane – AM Peak hour

As shown in **Table 13** the peak hour capacities of the on-ramps are greater than the peak hour demands and minimal queuing of traffic is experienced under Existing Plus Specific Plan Conditions, except for the I-5 SB on-ramp from Tamarack Avenue in the AM peak hour, which has a 14.8 minute delay and 3,750-foot excess queue without the Specific Plan. With the Specific Plan, delay on this ramp increases to 17.3 minutes and the queue extends to 4,400 feet that would extend further back onto Tamarack Avenue. The Specific Plan adds a total of 26 trips in the AM peak hour to the Tamarack Avenue on-ramp, which equates to three (3) percent of the total ramp volume.



After applying the aforementioned SANTEC / ITE significant impact criteria, it is determined that the proposed Specific Plan would result in a significant impact on the I-5 SB on-ramp at Tamarack Avenue as the Specific Plan results in an increase of delay that is more than 2 seconds for an on-ramp operating with delays greater than 15 minutes. As noted under the Trip Generation section of this report, the AM peak hour trip generation estimate using SANDAG rates may be at least double the number that would realistically be generated. This indicates that the actual amount of added traffic is likely closer to 13 trips and 1.5 percent of the ramp volume, and would not result in a significant impact with the lower (and more appropriate) trip rate.



TABLE 12 – EXISTING YEAR PLUS SPECIFIC PLAN FREEWAY SEGMENT LEVEL OF SERVICE RESULTS

Segment	Number of Lanes	Capacity Per Lane	Peak Hour %	Direction Split	HV%	No Specific Plan				Plus Specific Plan				Change in V/C	Significant Impact?
						ADT	Peak Hour Per Lane	V/C	LOS	ADT	Peak Hour Per Lane	V/C	LOS		
Interstate 5															
La Costa Ave to Poinsettia Ln	8	2,350	7%	60%	4.5%	204,000	2,243	0.95	E	209,301	2,301	0.98	E	0.02	YES
Poinsettia Ln to Palomar Airport Rd	8	2,350	7%	60%	4.5%	201,000	2,210	0.94	E	206,782	2,274	0.97	E	0.03	YES
Palomar Airport Rd to Cannon Rd	8	2,350	7%	60%	4.5%	198,000	2,177	0.93	E	203,782	2,241	0.95	E	0.03	YES
Cannon Rd to Tamarack Ave	8	2,350	7%	60%	4.5%	199,000	2,188	0.93	E	204,301	2,246	0.96	E	0.02	YES
Tamarack Ave to Carlsbad Village Dr	8	2,350	7%	60%	4.5%	196,000	2,155	0.92	D	200,337	2,203	0.94	E	0.02	YES

Source: Fehr & Peers, 2015

Bold LOS indicates LOS E or F operations
Shaded cells indicate significant impact

TABLE 13 – EXISTING YEAR PLUS SPECIFIC PLAN RAMP METERING ANALYSIS

Location	Peak Hour	Total # of Mixed Flow Lanes	No Specific Plan						Plus Specific Plan						Change in Delay	Significant Impact?
			Demand ² (veh/hr)		Meter Rate (veh/hr)	Excess Demand (veh/hr)	Delay (min)	Queue (ft)	Demand 2 (veh/hr)		Meter Rate (veh/hr)	Excess Demand (veh/hr)	Delay (min)	Queue (ft)		
			Mixed Flow & HOV	Mixed Flow only					Mixed Flow & HOV	Mixed Flow only						
I-5 SB - Tamarack Ave On-Ramp	AM	1	771	655	526	129	14.8	3,750	797	677	526	151	17.3	4,400	2.5	YES²
I-5 SB - Cannon Rd On-Ramp	AM	1	368	313	734	0	0.0	0.0	455	387	734	0	0.0	0	0	NO
	PM	2	508	432	734	0	0.0	0.0	851	723	734	0	0.0	0	0	NO
I-5 NB - Cannon Rd On-Ramp	PM	2	1,327	1,128	1,416	0	0.0	0.0	1,608	1,367	1,416	0	0.0	0	0	NO
I-5 SB - EB Palomar Airport Rd On-Ramp	AM	2	67	57	343	0	0.0	0.0	67	57	343	0	0.0	0	0	NO
	PM	1	230	196	246	0	0.0	0.0	230	196	246	0	0.0	0	0	NO
I-5 SB - WB Palomar Airport Rd On-Ramp	AM	1	219	186	492	0	0.0	0.0	219	186	492	0	0.0	0	0	NO
	PM	1	1,005	854	895	0	0.0	0.0	1,005	854	895	0	0.0	0	0	NO
I-5 NB - Palomar Airport Rd On-Ramp	PM	1	1,201	1,021	988	33	2.0	475	1,201	1,021	988	33	2.0	475	0	NO
I-5 SB - Poinsettia Ln On-Ramp	AM	2	578	491	1,094	0	0.0	0.0	578	491	1,094	0	0.0	0	0	NO
	PM	2	932	792	796	0	0.0	0.0	932	792	796	0	0.0	0	0	NO
I-5 NB - Poinsettia Ln On-Ramp	PM	2	377	320	576	0	0.0	0.0	396	337	576	0	0.0	0	0	NO

Source: Fehr & Peers, 2015. Analysis based on Caltrans District 11 Ramp Meter methodology

Shaded cells indicate significant impact

¹Assumed 15% of on-ramp traffic uses the HOV lane. Used the "mixed-flow only" volume for analysis and did not include HOV lane capacity in analysis.

²Impact would not be significant if lower AM peak hour trip generation rate was applied.



6.0 YEAR 2019 BASELINE CONDITIONS

To evaluate the potential impact of traffic generated by the Specific Plan on the surrounding street system, it was necessary to develop estimates of future traffic conditions in the area both with and without the proposed Specific Plan. Near-term traffic conditions without the proposed Specific Plan reflect traffic increases due to regional growth and by other approved projects near the Specific Plan site, as well as traffic shifts caused by roadway improvements in the study area. These conditions are referred to as the Year 2019 Baseline Conditions (i.e., no Specific Plan conditions). Development of these future traffic scenarios is described in this chapter.

6.1 APPROVED PROJECT TRIP GENERATION, DISTRIBUTION, AND ASSIGNMENT

Under Year 2019 Baseline Conditions, traffic forecasts without the proposed Specific Plan were developed by adding traffic from approved projects in the vicinity of the Specific Plan area to the existing traffic volumes. This scenario determined the operating conditions anticipated when the Specific Plan is expected to be fully developed and occupied. This is the baseline scenario against which impacts are assessed.

Information on planned development projects were obtained from the City of Carlsbad staff and available TIAs. Eight (8) cumulative projects were identified in the study area and the traffic from these future developments was subsequently added to the existing traffic volumes. For purposes of this analysis, the following projects are expected to be completed within the next five years.

- *Robertson Ranch* - West Village will consist of 268 single family, 423 multi-family dwelling units, 8 acres of community commercial, and 5 acres of community facilities. East Village is nearly built-out in 2014 and included in existing traffic counts.
- *Cantarini Ranch* - 105 single family and 80 multi-family dwelling units.
- *Holly Springs* -43 single family dwelling units
- *Quarry Creek* -119 single family, 438 multi-family, and 99 apartment dwelling units
- *Dos Colinas* -228 retirement community units, 8 congregate care facility units, and 28 multi-family dwelling units.
- *North 40* - Phase 1 and 2 are expected to be built within the next five years and include 50,000 SF of brewery/restaurant, 6,000 SF of retail, 2 Culinary Institute classroom buildings
- *Bressi Ranch Hotels* -239 business hotel rooms
- *La Costa Town Square* -284,400 SF of community shopping center, 129 condo dwelling units, 64 single family dwelling units, and 55,000 SF of office.



The peak hour trip generation, distribution, and assignment for each of the cumulative projects were obtained directly from their respective TIA. These volumes were superimposed on existing traffic volumes, and assigned through the study area, and applied proportionally, based on existing traffic volumes, to the study facilities. **Figure 10** illustrates the resulting intersection traffic volumes generated by the approved projects.

6.2 BASELINE STREET SYSTEM IMPROVEMENTS

The City of Carlsbad Circulation Elements identifies proposed future roadway improvements within that would affect future traffic patterns in the study area. The Year 2019 roadway system included the following planned roadway improvements:

- College Boulevard Extension – College Boulevard currently extends easterly from Palomar Airport Road to its terminus at El Camino Real. A second section of College Boulevard extends from Cannon Road to River Road in Oceanside. The planned roadway improvement would connect the two existing segments by extending College Boulevard from El Camino Real to Cannon Road, which would provide a continuous roadway from Carlsbad to Oceanside. This planned roadway improvement was assumed in the Year 2019 analysis as it would provide direct access to three cumulative projects previously listed (i.e. Dos Colinas, Holly Springs, and Cantarini Ranch).
- El Camino Real Widening –According to the City’s Traffic Impact Fee (TIF) program, El Camino Real is planned to be widened from four lanes to six lanes from Tamarack Avenue to Chestnut Avenue. This project would improve the southbound approach at the El Camino Real/Tamarack Avenue intersection by providing an additional southbound thru lane on El Camino Real.





1. Tamarack Ave/Carlsbad Blvd 	2. Tamarack Ave/I-5 SB Ramps 	3. Tamarack Ave/I-5 NB Ramps 	4. Tamarack Ave/El Camino Real 	5. Cannon Rd/Carlsbad Blvd
6. Cannon Rd/Avenida Encinas 	7. Cannon Rd/I-5 SB Ramps 	8. Cannon Rd/I-5 NB Ramps 	9. Cannon Rd/Paseo del Norte 	10. Cannon Rd/Car Country Dr
11. Cannon Rd/LEGOLAND Dr 	12. Cannon Rd/Grand Pacific Dr 	13. Cannon Rd/Faraday Ave 	14. Cannon Rd/El Camino Real 	15. Paseo Del Norte/Car Country Dr
16. Paseo Del Norte/Outlet Dwy 	17. Faraday Ave/College Blvd 			

Study Intersection
 New Specific Plan Driveway
 Future Roadway
 Specific Plan Site



Figure 10
 Peak Hour Traffic Volumes and Lane Configurations
 Approved Projects Trips Only

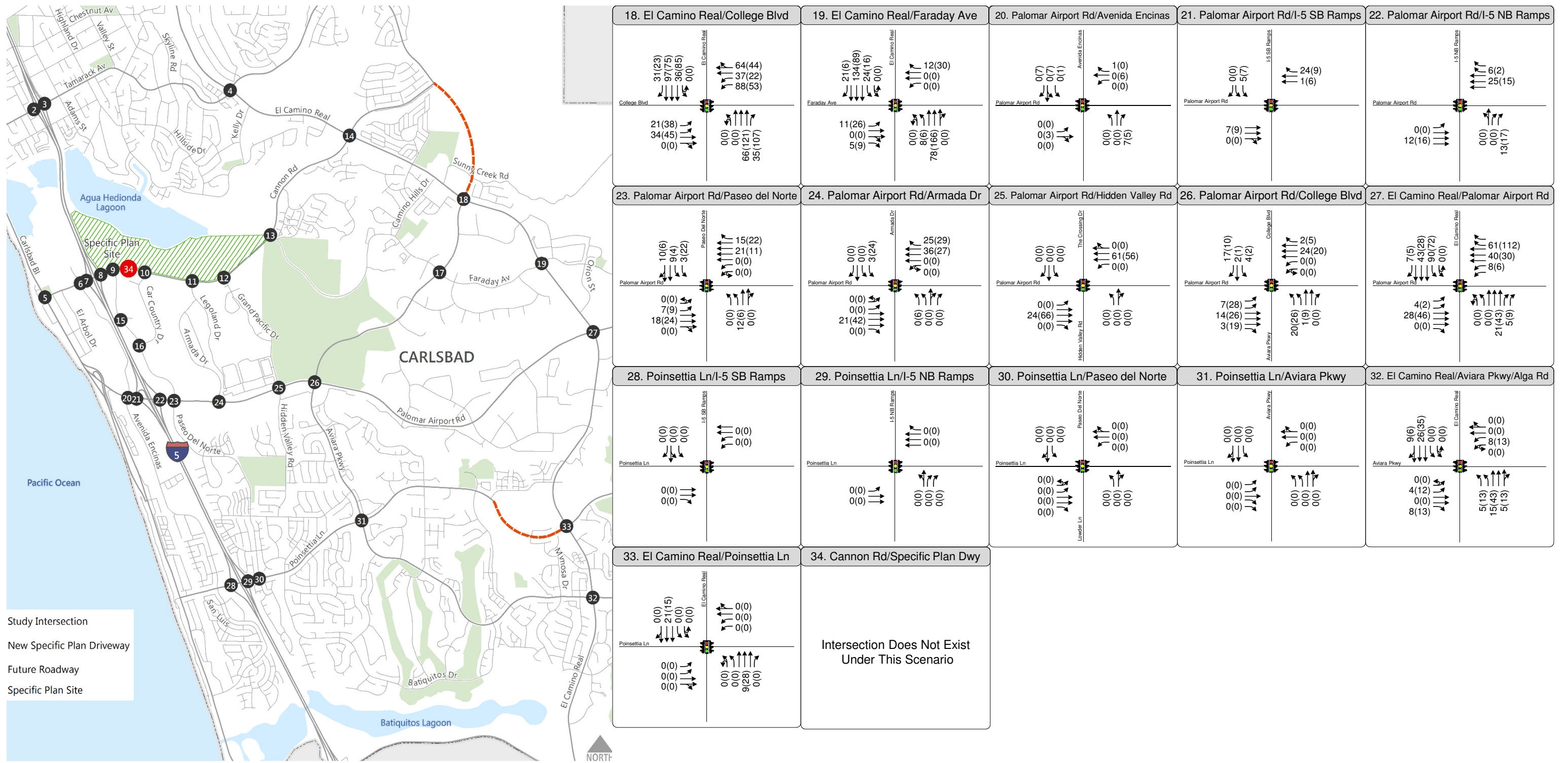


Figure 10
 Peak Hour Traffic Volumes and Lane Configurations
 Approved Projects Trips Only



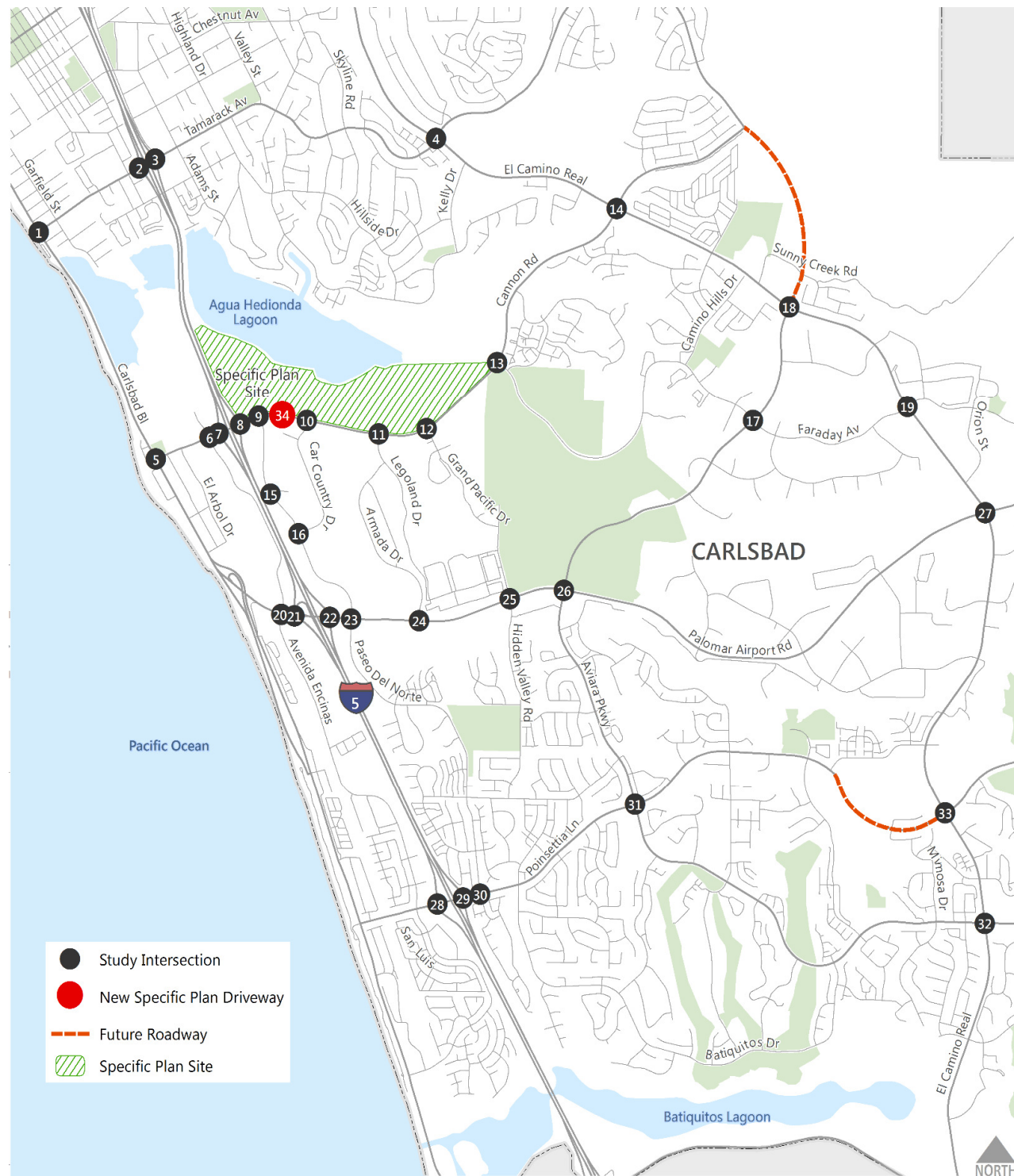
6.3 YEAR 2019 BASELINE INTERSECTION ANALYSIS

Table 14 presents the potential intersection operating conditions and traffic impacts under Year 2019 Baseline Conditions. The corresponding LOS calculation sheets are included in **Appendix C**. The analysis results indicate that with the addition of planned/approved development projects and the rerouting of traffic attributed to the College Boulevard extension, 26 study intersections are forecasted to operate at LOS D or better under Year 2019 Conditions. The remaining seven (7) study intersections are expected to operate unacceptably at LOS E or F for at least one peak hour:

- 14. Cannon Road / El Camino Real – LOS E (PM peak hour)
- 18. College Boulevard / El Camino Real –LOS E (AM peak hour)
- 19. El Camino Real / Faraday Avenue –LOS E (AM and PM peak hours)
- 22. I-5 NB Ramps / Palomar Airport Road –LOS E (AM peak hour)
- 26. Palomar Airport Road / College Boulevard –LOS E (PM peak hour)
- 27. Palomar Airport Road / El Camino Real –LOS E (PM peak hour)
- 32. Alga Rd-Aviara Parkway / El Camino Real – LOS F (AM peak hour) and LOS E (PM peak hour)

Turning movement traffic volumes and intersection lane configurations for the Year 2019 Baseline Conditions are shown in **Figure 11**.





1. Tamarack Ave/Carlsbad Blvd 	2. Tamarack Ave/I-5 SB Ramps 	3. Tamarack Ave/I-5 NB Ramps 	4. Tamarack Ave/El Camino Real 	5. Cannon Rd/Carlsbad Blvd
6. Cannon Rd/Avenida Encinas 	7. Cannon Rd/I-5 SB Ramps 	8. Cannon Rd/I-5 NB Ramps 	9. Cannon Rd/Paseo Del Norte 	10. Cannon Rd/Car Country Dr
11. Cannon Rd/LEGOLAND Dr 	12. Cannon Rd/Grand Pacific Dr 	13. Cannon Rd/Faraday Ave 	14. Cannon Rd/El Camino Real 	15. Paseo Del Norte/Car Country Dr
16. Paseo Del Norte/Outlet Dwy 	17. College Blvd/Faraday Ave 			

Figure 11
Peak Hour Traffic Volumes and Lane Configurations
Year 2019 Baseline Conditions





18. College Blvd/El Camino Real 	19. El Camino Real/Faraday Ave 	20. Palomar Airport Rd/Avenida Encinas 	21. Palomar Airport Rd/I-5 SB Ramps 	22. Palomar Airport Rd/I-5 NB Ramps
23. Palomar Airport Rd/Paseo Del Norte 	24. Palomar Airport Rd/Armada Dr 	25. Palomar Airport Rd/Hidden Valley Rd 	26. Palomar Airport Rd/College Blvd 	27. Palomar Airport Rd/El Camino Real
28. Poinsettia Ln/I-5 SB Ramps 	29. Poinsettia Ln/I-5 NB Ramps 	30. Poinsettia Ln/Paseo Del Norte 	31. Poinsettia Ln/Aviara Pkwy 	32. El Camino Real/Aviara Pkwy/Alga Rd
33. Poinsettia Ln/El Camino Real 	34. Cannon Rd/Specific Plan Dwy <p>Intersection Does Not Exist Under This Scenario</p>			

Figure 11
Peak Hour Traffic Volumes and Lane Configurations
Year 2019 Baseline Conditions



TABLE 14 –YEAR 2019 BASELINE INTERSECTION LEVEL OF SERVICE

Intersection	Peak Hour	Delay	LOS ^{2,3}
		(sec/veh) ¹	
1. Carlsbad Blvd / Tamarack Ave	AM	19.1	B
	PM	24.3	C
2. I-5 SB Ramps / Tamarack Ave	AM	22.4	C
	PM	25.9	C
3. I-5 NB Ramps / Tamarack Ave	AM	22.7	C
	PM	16.3	B
4. Tamarack Ave / El Camino Real	AM	43	D
	PM	35.6	D
5. Cannon Rd / Carlsbad Blvd	AM	13.8	B
	PM	22.6	C
6. Cannon Rd / Avenida Encinas ⁴	AM	19.4	B
	PM	19.5	B
7. I-5 SB Ramps / Cannon Rd	AM	41.3	D
	PM	16.7	B
8. I-5 NB Ramps / Cannon Rd	AM	16	B
	PM	20.6	C
9. Cannon Rd / Paseo Del Norte	AM	13.8	B
	PM	16.1	B
10. Cannon Rd / Car Country Dr	AM	16	B
	PM	22.9	C
11. Cannon Rd / Armada Dr	AM	11.9	B
	PM	14.3	B
12. Cannon Rd / Grand Pacific Dr	AM	7.1	A
	PM	7.5	A
13. Cannon Rd / Faraday Ave	AM	14.8	B
	PM	28.9	C
14. Cannon Rd / El Camino Real	AM	46.8	D
	PM	65.2	E
15. Paseo Del Norte / Car Country Dr	AM	11.5	B
	PM	12	B
16. Paseo Del Norte / Outlets Dwy	AM	25.4	C
	PM	14.1	B
17. College Blvd / Faraday Ave	AM	22.3	C
	PM	24.4	C
18. College Blvd / El Camino Real	AM	77.3	E



	PM	49.4	D
19. El Camino Real / Faraday Ave	AM	55.2	E
	PM	60.3	E
20. Palomar Airport Rd / Avenida Encinas	AM	26.4	C
	PM	34.7	C
21. I-5 SB Ramps / Palomar Airport Rd	AM	12.9	B
	PM	8.6	A
22. I-5 NB Ramps / Palomar Airport Rd	AM	58.9	E
	PM	24.5	C
23. Palomar Airport Rd / Paseo Del Norte	AM	29.2	C
	PM	32.4	C
24. Palomar Airport Rd / Armada Dr	AM	27.1	C
	PM	38.8	D
25. Palomar Airport Rd / Hidden Valley Rd	AM	17.7	B
	PM	30.2	C
26. Palomar Airport Rd / College Blvd	AM	42.1	D
	PM	66.7	E
27. Palomar Airport Rd / El Camino Real	AM	47.3	D
	PM	77.8	E
28. I-5 SB Ramps / Poinsettia Ln	AM	12.4	B
	PM	19.2	B
29. I-5 NB Ramps / Poinsettia Ln	AM	13.3	B
	PM	17	B
30. Poinsettia Ln / Paseo Del Norte	AM	20	B
	PM	23.3	C
31. Poinsettia Ln / Aviara Pkwy	AM	30.8	C
	PM	34	C
32. Alga Rd-Aviara Pkwy / El Camino Real	AM	86.3	F
	PM	73.1	E
33. Poinsettia Ln / El Camino Real	AM	24	C
	PM	33.6	C
34. Cannon Rd / Specific Plan Dwy	AM	Does Not Exist	
	PM		

Source: Fehr & Peers, 2015.

Notes:

¹ Whole intersection weighted average stopped delay expressed in seconds per vehicle for signalized and all-way stop control intersections.

² LOS calculations performed using the 2000 Highway Capacity Manual (HCM) method.

³ LOS E or F operations highlighted in **bold**.



⁴Our analysis does not include the pre-emption at the Cannon Road/Avenida Encinas intersection as we determined that the pre-emption frequency is nominal during peak hours. However, when rail pre-emptions are frequent, operations at this intersection are worse.

6.4 YEAR 2019 BASELINE ROADWAY SEGMENT ANALYSIS

Table 15 displays the LOS analysis for the Specific Plan study roadway segments under Opening Year Baseline Conditions. As shown in the table, all roadway segments currently operate acceptably at LOS D or better.

6.5 YEAR 2019 BASELINE FREEWAY SEGMENT LEVELS OF SERVICE

Table 16 displays the freeway Level of Service analysis for I-5 under Opening Year Conditions. As shown, all freeway segments on I-5 would operate at undesirable levels (LOS E) during peak hours under Opening Year Conditions, except for the segment between Tamarack Avenue and Carlsbad Village Drive, which operates at LOS D.

6.6 YEAR 2019 BASELINE RAMP METERING ANALYSIS

Table 17 displays the ramp metering analysis conducted at the Tamarack Avenue, Cannon Road, Palomar Airport Road, and Poinsettia Lane southbound and northbound on-ramps on I-5 under Year 2019 Baseline Conditions. The following ramp meters are assumed to not be in operation under one or both peak hours consistent with Existing Conditions:

- I-5 SB on-ramp from Tamarack Avenue – PM peak hour
- I-5 NB on-ramp from Tamarack Avenue – AM and PM peak hours
- I-5 NB on-ramp from Cannon Road – AM peak hour
- I-5 NB on-ramp from Palomar Airport Road – AM peak hour
- I-5 NB on-ramp from Poinsettia Lane – AM Peak hour

As shown in **Table 17** the peak hour capacities of the on-ramps are greater than the peak hour demands and minimal queuing of traffic is experienced under Year 2019 Conditions, except for the I-5 SB on-ramp from Tamarack Avenue in the AM peak hour, which is projected to have a 15.4-minute delay and a 3,925-foot excess queue.



TABLE 15 – YEAR 2019 ROADWAY PEAK HOUR VOLUMES AND LEVEL OF SERVICE

Roadway Segments	Direction	Number of Lanes	Capacity (1,800 vphpl)	Peak Hour Volume		V/ C Ratio		LOS	
				AM	PM	AM	PM	AM	PM
Cannon Road									
I-5 SB Ramps to I-5 NB Ramps	EB	2	3,600	1,123	1,028	0.31	0.29	A	A
	WB	2	3,600	667	950	0.19	0.26	A	A
I-5 NB Ramps to Paseo Del Norte	EB	2	3,600	1,411	1,130	0.39	0.31	A	A
	WB	3	5,400	762	1,826	0.14	0.34	A	A
Paseo Del Norte to Car Country	EB	2	3,600	1,179	1,022	0.33	0.28	A	A
	WB	2	3,600	715	1,430	0.20	0.40	A	A
Car Country Dr to Armada Dr	EB	2	3,600	1,026	1,024	0.29	0.28	A	A
	WB	2	3,600	771	1,326	0.21	0.37	A	A
Armada Dr to Grand Pacific Dr	EB	2	3,600	645	1,146	0.18	0.32	A	A
	WB	2	3,600	984	1,003	0.27	0.28	A	A
Grand Pacific Dr to Faraday Ave	EB	2	3,600	613	1,145	0.17	0.32	A	A
	WB	2	3,600	1,005	997	0.28	0.28	A	A
Faraday Ave to El Camino Real	EB	2	3,600	274	1,112	0.08	0.31	A	A
	WB	2	3,600	902	421	0.25	0.12	A	A
Tamarack Avenue									
Carlsbad Blvd to I-5 SB Ramps	EB	1	1,800	712	680	0.40	0.38	A	A
	WB	1	1,800	526	434	0.29	0.24	A	A
I-5 SB Ramps to I-5 NB Ramps	EB	2	3,600	493	657	0.14	0.18	A	A
	WB	2	3,600	791	668	0.22	0.19	A	A
I-5 NB Ramps to El Camino Real	EB	2	3,600	765	903	0.21	0.25	A	A
	WB	2	3,600	1,029	594	0.29	0.17	A	A
Palomar Airport Road									
Paseo Del Norte to Armada Dr	EB	3	5,400	2,486	1,624	0.46	0.30	A	A
	WB	3	5,400	1,176	2,688	0.22	0.50	A	A
Armada Dr to The Crossings Dr	EB	3	5,400	2,307	1,792	0.43	0.33	A	A
	WB	3	5,400	1,250	2,443	0.23	0.45	A	A
The Crossings Dr to College Blvd	EB	3	5,400	2,271	1,768	0.42	0.33	A	A
	WB	3	5,400	1,233	2,433	0.23	0.45	A	A
College Blvd to El Camino Real	EB	3	5,400	1,836	1,901	0.34	0.35	A	A
	WB	3	5,400	1,753	2,013	0.32	0.37	A	A
College Boulevard									
Palomar Airport Rd to Faraday Ave	EB/NB	2	3,600	1,113	566	0.31	0.16	A	A
	WB/SB	1	1,800	330	1,044	0.18	0.58	A	A
Poinsettia Ln									
Paseo Del Norte to Aviara Pkwy	EB	2	3,600	1,077	1,058	0.30	0.29	A	A



Roadway Segments	Direction	Number of Lanes	Capacity (1,800 vphpl)	Peak Hour Volume		V/ C Ratio		LOS	
				AM	PM	AM	PM	AM	PM
	WB	2	3,600	951	1,092	0.26	0.30	A	A
Carlsbad Boulevard									
North of Tamarack Ave	NB	2	3,600	254	918	0.07	0.26	A	A
	SB	2	3,600	563	536	0.16	0.15	A	A
Tamarack Ave to Cannon Rd	NB	2	3,600	279	1,159	0.08	0.32	A	A
	SB	1	1,800	826	681	0.46	0.38	A	A
South of Cannon Rd	NB	1	1,800	289	950	0.16	0.53	A	A
	SB	1	1,800	810	647	0.45	0.36	A	A
Paseo del Norte									
Cannon Rd to Car Country Dr	NB	2	3,600	228	665	0.06	0.18	A	A
	SB	2	3,600	413	367	0.11	0.10	A	A
Outlets North Entrance to Palomar Airport Rd	NB	2	3,600	435	653	0.12	0.18	A	A
	SB	2	3,600	282	609	0.08	0.17	A	A
Faraday Avenue									
Cannon Rd to College Blvd	NB	1	1,800	505	639	0.28	0.36	A	A
	SB	1	1,800	427	567	0.24	0.32	A	A
Aviara Parkway									
Palomar Airport Rd to Poinsettia Ln	NB	2	3,600	935	473	0.26	0.13	A	A
	SB	2	3,600	400	950	0.11	0.26	A	A
El Camino Real									
North of Tamarack Ave	NB	3	5,400	559	1,605	0.10	0.30	A	A
	SB	3	5,400	1,321	767	0.24	0.14	A	A
Tamarack Ave to Cannon Rd	NB	2	3,600	751	2,078	0.21	0.58	A	A
	SB	2	3,600	2,035	1,026	0.57	0.29	A	A
Cannon Rd to College Blvd	NB	3	5,400	731	2,250	0.14	0.42	A	A
	SB	3	5,400	2,064	1,140	0.38	0.21	A	A
College Blvd to Faraday Ave	NB	3	5,400	940	2,351	0.17	0.44	A	A
	SB	3	5,400	2,407	1,232	0.45	0.23	A	A
Faraday Ave to Palomar Airport Rd	NB	3	5,400	1,504	1,567	0.28	0.29	A	A
	SB	3	5,400	1,936	1,899	0.36	0.35	A	A
Palomar Airport Rd to Poinsettia Ln	NB	3	5,400	1,605	1,495	0.30	0.28	A	A
	SB	3	5,400	1,689	2,028	0.31	0.38	A	A
Poinsettia Ln to Aviara Pkwy	NB	3	5,400	1,623	1,725	0.30	0.32	A	A
	SB	3	5,400	1,357	2,076	0.25	0.38	A	A
South of Aviara Pkwy	NB	3	5,400	1,822	2,497	0.34	0.46	A	A
	SB	3	5,400	1,904	2,289	0.35	0.42	A	A

Source: Fehr & Peers, 2015



TABLE 16 –YEAR 2019 FREEWAY SEGMENT LEVEL OF SERVICE RESULTS

Segment	Number of Lanes	Capacity Per Lane	Peak Hour %	Direction Split	HV%	ADT	Peak Hour Per Lane	V/C	LOS
Interstate 5									
La Costa Ave to Poinsettia Ln	8	2,350	7%	60%	4.5%	205,480	2,259	0.96	E
Poinsettia Ln to Palomar Airport Rd	8	2,350	7%	60%	4.5%	202,480	2,226	0.95	E
Palomar Airport Rd to Cannon Rd	8	2,350	7%	60%	4.5%	199,340	2,192	0.93	E
Cannon Rd to Tamarack Ave	8	2,350	7%	60%	4.5%	199,930	2,198	0.94	E
Tamarack Ave to Carlsbad Village Dr	8	2,350	7%	60%	4.5%	196,860	2,164	0.92	D

Source: Fehr & Peers, 2015

Bold LOS indicates LOS E or F operations

TABLE 17 –YEAR 2019 RAMP METERING ANALYSIS

Location	Peak Hour	Total # of Mixed Flow Lanes	Demand ¹ (veh/hr)		Meter Rate (veh/hr)	Excess Demand (veh/hr)	Delay (min)	Queue (ft)
			Mixed Flow & HOV	Mixed Flow only				
I-5 SB - Tamarack Ave On-Ramp	AM		778	661	526	135	15.4	3,925
I-5 SB - Cannon Rd On-Ramp	AM	1	401	341	734	0	0.0	0
	PM	2	547	465	734	0	0.0	0
I-5 NB - Cannon Rd On-Ramp	PM	2	1,362	1,158	1,416	0	0.0	0
I-5 SB - EB Palomar Airport Rd On-Ramp	AM	2	67	57	343	0	0.0	0
	PM	1	230	196	246	0	0.0	0
I-5 SB - WB Palomar Airport Rd On-Ramp	AM	1	243	207	492	0	0.0	0
	PM	1	1,014	862	895	0	0.0	0
I-5 NB - Palomar Airport Rd On-Ramp	PM	1	1,203	1,023	988	35	2.1	500
I-5 SB - Poinsettia Ln On-Ramp	AM	2	578	491	1,094	0	0.0	0
	PM	2	932	792	796	0	0.0	0
I-5 NB - Poinsettia Ln On-Ramp	PM	2	377	320	576	0	0.0	0

Source: Fehr & Peers, 2015. Analysis based on Caltrans District 11 Ramp Meter methodology.

Bold delay indicates LOS E or F operations

¹Assumed 15% of on-ramp traffic uses the HOV lane. Used the "mixed-flow only" volume for analysis and did not include HOV lane capacity in analysis.



7.0 YEAR 2019 PLUS SPECIFIC PLAN CONDITIONS

This chapter summarizes and presents the results of the operations analysis under the Year 2019 scenario, with the proposed Specific Plan. Under this Year 2019 Plus Specific Plan Conditions scenario, Specific Plan traffic estimated and assigned to the study intersections and roadway segments was added to Year 2019 Baseline traffic volumes. The Year 2019 Plus Specific Plan Conditions roadway network is the same network assumed under the baseline scenario, except for the addition of the site driveways that is discussed in Chapter 4. The Specific Plan trip assignment was superimposed on Year 2019 Baseline traffic volumes to yield Year 2019 Plus Specific Plan volumes.

7.1 INTERSECTION ANALYSIS

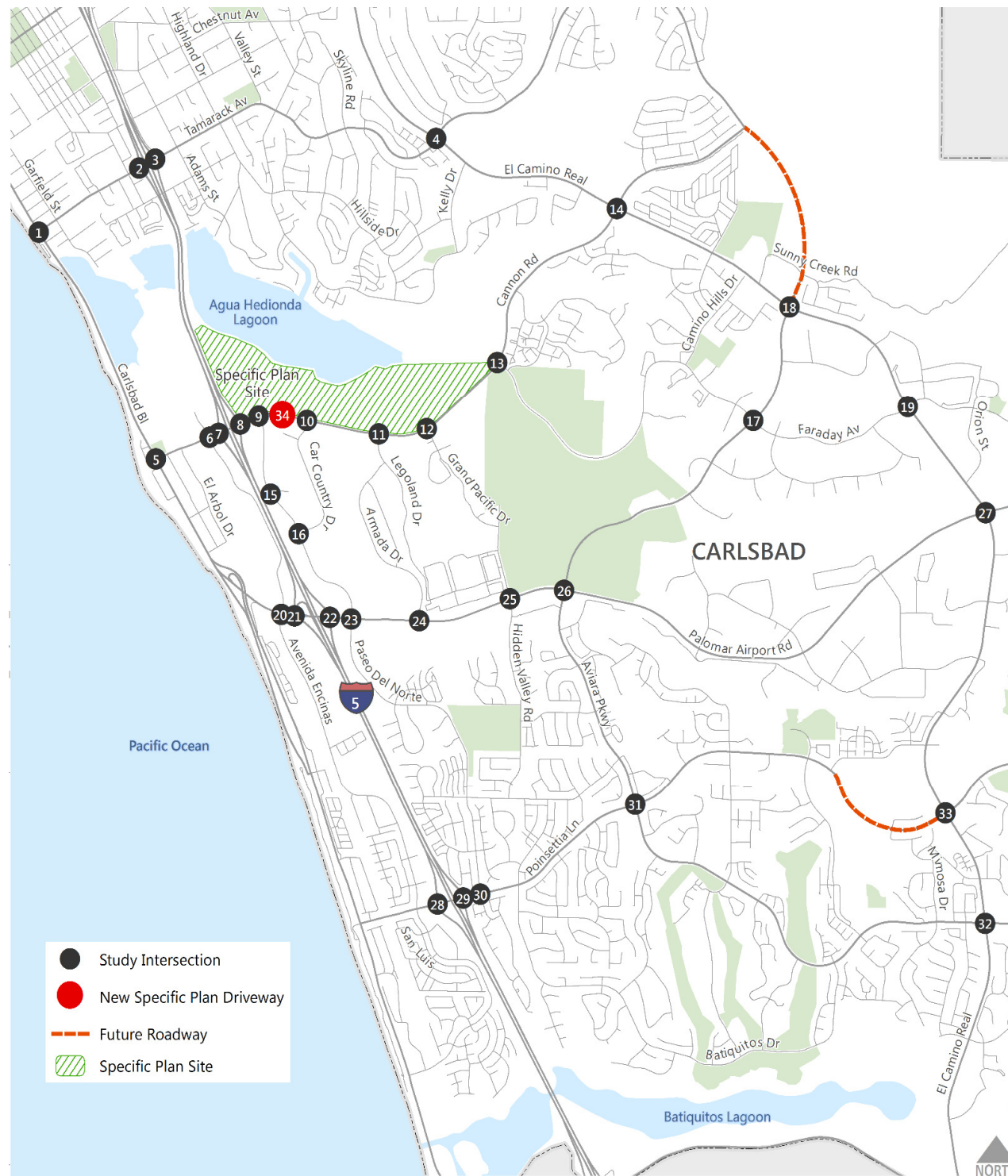
Turning movement traffic volumes and intersection lane configurations for the Year 2019 Plus Specific Plan Conditions are shown on **Figure 12**. This information was used to calculate operations under this scenario.

Table 18 presents the intersection operating conditions and traffic impacts under the Year 2019 Plus Specific Plan Conditions and compares the projected levels of service at each study intersection under Year 2019 Baseline Conditions. The corresponding LOS calculation sheets are included in **Appendix C**.

As indicated in **Table 18**, after applying the aforementioned SANTEC / ITE significant impact criteria, it is determined that the proposed Specific Plan would increase delay by more than two seconds compared to Year 2019 Baseline Conditions and would result in a significant impact at the following two locations:

14. Cannon Road / El Camino Real – operates at LOS E in the PM peak hour without and with the Specific Plan and has a delay increase of 7.1 seconds with the Specific Plan.
32. Alga Rd-Aviara Parkway / El Camino Real – operates at LOS F and E in the AM and PM peak hours, respectively, without and with the Specific Plan. The addition of Specific Plan traffic causes a delay increase of 2.4 and 4 seconds in the AM and PM peak hours, respectively.





1. Carlsbad Blvd/Tamarack Ave 	2. Tamarack Ave/ I-5 SB Ramps 	3. Tamarack Ave/I-5 NB Ramps 	4. Tamarack Ave/El Camino Real 	5. Carlsbad Blvd/Cannon Rd
6. Cannon Road/Avenida Encinas 	7. Cannon Road/I-5 SB Ramps 	8. Cannon Road/I-5 NB Ramps 	9. Cannon Rd/Paseo Del North/Specific Plan Dwy 	10. Cannon Road/Car Country Dr
11. Cannon Rd/LEGOLAND Dr 	12. Cannon Road/Grand Pacific Dr 	13. Cannon Rd/Faraday Ave 	14. Cannon Road/El Camino Real 	15. Paseo Del Norte/Car Country Dr
16. Paseo Del Norte/Outlet Dwy 	17. College Blvd/Faraday Ave 			

Figure 12
 Peak Hour Traffic Volumes and Lane Configurations
 Year 2019 Plus Specific Plan Conditions





18. El Camino Real/College Blvd 	19. El Camino Real/Faraday Ave 	20. Palomar Airport Rd/Avenida Encinas 	21. Palomar Airport Rd/I-5 SB Ramps 	22. Palomar Airport Rd/I-5 NB Ramps
23. Palomar Airport Rd/Paseo Del Norte 	24. Palomar Airport Rd/Armada Dr 	25. Palomar Airport Rd/Hidden Valley Rd 	26. Palomar Airport Rd/College Blvd 	27. Palomar Airport Rd/El Camino Real
28. Poinsettia Ln/I-5 SB Ramps 	29. Poinsettia Ln/I-5 NB Ramps 	30. Poinsettia Ln/Paseo Del Norte 	31. Poinsettia Ln/Aviara Pkwy 	32. El Camino Real/Aviara Pkwy/Alga Rd
33. Poinsettia Ln/El Camino Real 	34. Cannon Rd / Specific Plan Dwy 			

Figure 12
 Peak Hour Traffic Volumes and Lane Configurations
 Year 2019 Plus Specific Plan Conditions



7.2 ROADWAY SEGMENT OPERATIONS

Specific Plan traffic traversing the study roadway segments were added to Year 2019 Baseline Conditions peak hour volumes. **Table 19** displays the LOS analysis for the key study roadway segments under 2019 Year Plus Specific Plan Conditions and compares the projected levels of service at each segment with 2019 Year Baseline Conditions. As shown in the table, all study roadway segments are projected to operate at LOS D or better during both peak hours.

As indicated in **Table 19**, after applying the aforementioned SANTEC / ITE significant impact criteria, it is determined that the proposed Specific Plan would not result in any significant impacts to the study roadway segments under Year 2019 Plus Specific Plan Conditions.



TABLE 18 –YEAR 2019 PLUS SPECIFIC PLAN INTERSECTION LEVEL OF SERVICE

Intersection	Peak Hour	No Specific Plan		Plus Specific Plan		Change in Delay ⁴	Significant Impact?
		Delay	LOS ^{2,3}	Delay	LOS ^{2,3}		
		(sec/veh) ¹		(sec/veh) ¹			
1. Carlsbad Blvd / Tamarack Ave	AM	19.1	B	19.3	B	0.2	NO
	PM	24.3	C	24.4	C	0.1	NO
2. I-5 SB Ramps / Tamarack Ave	AM	22.4	C	22.5	C	0.1	NO
	PM	25.9	C	26.7	C	0.8	NO
3. I-5 NB Ramps / Tamarack Ave	AM	22.7	C	22.9	C	0.2	NO
	PM	16.3	B	17.1	B	0.8	NO
4. Tamarack Ave / El Camino Real	AM	43	D	44.8	D	1.8	NO
	PM	35.6	D	36.7	D	1.1	NO
5. Cannon Rd / Carlsbad Blvd	AM	13.8	B	14.2	B	0.4	NO
	PM	22.6	C	25.4	C	2.8	NO
6. Cannon Rd / Avenida Encinas ⁵	AM	19.4	B	19.2	B	-0.2	NO
	PM	19.5	B	19.4	B	-0.1	NO
7. I-5 SB Ramps / Cannon Rd	AM	41.3	D	41.7	D	0.4	NO
	PM	16.7	B	36.1	D	19.4	NO
8. I-5 NB Ramps / Cannon Rd	AM	16	B	29.8	C	13.8	NO
	PM	20.6	C	38.9	D	18.3	NO
9. Cannon Rd / Paseo Del Norte	AM	13.8	B	32.4	C	18.3	NO
	PM	16.1	B	49.9	D	33.8	NO
10. Cannon Rd / Car Country Dr	AM	16	B	14.9	B	-1.1	NO
	PM	22.9	C	28.5	C	5.6	NO
11. Cannon Rd / Armada Dr	AM	11.9	B	12.5	B	0.6	NO
	PM	14.3	B	15.8	B	1.5	NO
12. Cannon Rd / Grand Pacific Dr	AM	7.1	A	7.1	A	0	NO
	PM	7.5	A	8.1	A	0.6	NO
13. Cannon Rd / Faraday Ave	AM	14.8	B	15.5	B	0.7	NO
	PM	28.9	C	32.0	C	3.1	NO
14. Cannon Rd / El Camino Real	AM	46.8	D	51.8	D	5	NO
	PM	65.2	E	72.3	E	7.1	YES
15. Paseo Del Norte / Car Country Dr	AM	11.5	B	10.9	B	-0.6	NO
	PM	12	B	12.6	B	0.6	NO
16. Paseo Del Norte / Outlets Dwy	AM	25.4	C	25.1	C	-0.3	NO
	PM	14.1	B	15.0	B	0.9	NO
17. College Blvd / Faraday Ave	AM	22.3	C	22.5	C	0.2	NO
	PM	24.4	C	25.1	C	0.7	NO
18. College Blvd / El Camino Real	AM	77.3	E	77.2	E	-0.1	NO
	PM	49.4	D	49.4	D	0	NO
19. El Camino Real / Faraday Ave	AM	55.2	E	55.6	E	0.4	NO
	PM	60.3	E	61.7	E	1.4	NO
20. Palomar Airport Rd / Avenida Encinas	AM	26.4	C	26.5	C	0.1	NO
	PM	34.7	C	35.1	D	0.4	NO
21. I-5 SB Ramps / Palomar Airport Rd	AM	12.9	B	12.9	B	0	NO
	PM	8.6	A	8.6	A	0	NO
22. I-5 NB Ramps / Palomar Airport Rd	AM	58.9	E	58.9	E	0	NO
	PM	24.5	C	24.5	C	0	NO
23. Palomar Airport Rd / Paseo Del Norte	AM	29.2	C	30.1	C	0.9	NO
	PM	32.4	C	35.0	C	2.6	NO
24. Palomar Airport Rd / Armada Dr	AM	27.1	C	28.0	C	0.9	NO
	PM	38.8	D	40.2	D	1.4	NO
25. Palomar Airport Rd / Hidden Valley Rd	AM	17.7	B	18.8	B	1.1	NO
	PM	30.2	C	33.5	C	3.3	NO
26. Palomar Airport Rd / College Blvd	AM	42.1	D	42.6	D	0.5	NO
	PM	66.7	E	67.5	E	0.8	NO
27. Palomar Airport Rd / El Camino Real	AM	47.3	D	47.5	D	0.2	NO
	PM	77.8	E	79.2	E	1.4	NO
28. I-5 SB Ramps / Poinsettia Ln	AM	12.8	B	12.4	B	-0.2	NO
	PM	19.2	B	19.5	B	0.3	NO
29. I-5 NB Ramps / Poinsettia Ln	AM	13.3	B	13.3	B	0	NO
	PM	17	B	17.1	B	0.1	NO
30. Poinsettia Ln / Paseo Del Norte	AM	20	B	20.3	C	0.3	NO
	PM	23.3	C	24.3	C	1	NO
31. Poinsettia Ln / Aviara Pkwy	AM	30.8	C	31.4	C	0.6	NO



TABLE 18 –YEAR 2019 PLUS SPECIFIC PLAN INTERSECTION LEVEL OF SERVICE

	PM	34	C	35.3	D	1.3	NO
32. Alga Rd-Aviara Pkwy / El Camino Real	AM	86.3	F	88.7	F	2.4	YES
	PM	73.1	E	77.1	E	4	YES
33. Poinsettia Ln / El Camino Real	AM	24	C	24.0	C	0	NO
	PM	33.6	C	33.7	C	0.1	NO
34. Cannon Rd / Specific Plan Dwy	AM	Does Not Exist		8.7	A	8.7	NO
	PM	Does Not Exist		18.8	B	18.8	NO

Source: Fehr & Peers, 2015.

Notes:

¹ Whole intersection weighted average stopped delay expressed in seconds per vehicle for signalized intersections.

² LOS calculations performed using the 2000 Highway Capacity Manual (HCM) method.

³ LOS E or F operations highlighted in **bold**.

⁴ Change in delay between the "Plus Specific Plan" Condition and "No Specific Plan" Condition

⁵ Our analysis does not include the pre-emption at the Cannon Road/Avenida Encinas intersection as we determined that the pre-emption frequency is nominal during peak hours.

However, when rail pre-emptions are frequent, operations at this intersection are worse.

Shaded cells identify significant impact.

TABLE 19 –YEAR 2019 PLUS SPECIFIC PLAN ROADWAY PEAK HOUR VOLUMES AND LEVEL OF SERVICE

Roadway Segments	Direction	Number of Lanes	Capacity (1,800 vphpl)	No Specific Plan						Plus Specific Plan						Change in V/C		Significant Impact?	
				Peak Hour Volume		V/ C Ratio		LOS		Peak Hour Volume		V/ C Ratio		LOS					
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Cannon Road																			
I-5 SB Ramps to I-5 NB Ramps	EB	2	3,600	1,123	1,028	0.31	0.29	A	A	1,338	1,392	0.37	0.39	A	A	0.06	0.10	NO	NO
	WB	2	3,600	667	950	0.19	0.26	A	A	773	1,355	0.21	0.38	A	A	0.02	0.12	NO	NO
I-5 NB Ramps to Paseo Del Norte	EB	2	3,600	1,411	1,130	0.39	0.31	A	A	1,825	1,855	0.51	0.52	A	A	0.12	0.21	NO	NO
	WB	3	5,400	762	1,826	0.14	0.34	A	A	943	2,512	0.17	0.47	A	A	0.03	0.13	NO	NO
Paseo Del Norte to Car Country	EB	2	3,600	1,179	1,022	0.33	0.28	A	A	1,263	1,462	0.35	0.41	A	A	0.02	0.13	NO	NO
	WB	2	3,600	715	1,430	0.20	0.40	A	A	895	1,675	0.25	0.47	A	A	0.05	0.07	NO	NO
Car Country Dr to Armada Dr	EB	2	3,600	1,026	1,024	0.29	0.28	A	A	1,109	1,291	0.31	0.36	A	A	0.02	0.08	NO	NO
	WB	2	3,600	771	1,326	0.21	0.37	A	A	962	1,610	0.27	0.45	A	A	0.06	0.08	NO	NO
Armada Dr to Grand Pacific Dr	EB	2	3,600	645	1,146	0.18	0.32	A	A	707	1,345	0.20	0.37	A	A	0.02	0.05	NO	NO
	WB	2	3,600	984	1,003	0.27	0.28	A	A	1,126	1,214	0.31	0.34	A	A	0.04	0.06	NO	NO
Grand Pacific Dr to Faraday Ave	EB	2	3,600	613	1,145	0.17	0.32	A	A	674	1,339	0.19	0.37	A	A	0.02	0.05	NO	NO
	WB	2	3,600	1,005	997	0.28	0.28	A	A	1,144	1,203	0.32	0.33	A	A	0.04	0.05	NO	NO
Faraday Ave to El Camino Real	EB	2	3,600	274	1,112	0.08	0.31	A	A	317	1,250	0.09	0.35	A	A	0.01	0.04	NO	NO
	WB	2	3,600	902	421	0.25	0.12	A	A	1,003	571	0.28	0.16	A	A	0.03	0.04	NO	NO
Tamarack Avenue																			
Carlsbad Blvd to I-5 SB Ramps	EB	1	1,800	712	680	0.40	0.38	A	A	725	699	0.40	0.39	A	A	0.00	0.01	NO	NO
	WB	1	1,800	526	434	0.29	0.24	A	A	532	452	0.30	0.25	A	A	0.01	0.01	NO	NO
I-5 SB Ramps to I-5 NB Ramps	EB	2	3,600	493	657	0.14	0.18	A	A	493	657	0.14	0.18	A	A	0.00	0.00	NO	NO
	WB	2	3,600	791	668	0.22	0.19	A	A	810	705	0.23	0.20	A	A	0.01	0.01	NO	NO
I-5 NB Ramps to El Camino Real	EB	2	3,600	765	903	0.21	0.25	A	A	771	921	0.21	0.26	A	A	0.00	0.01	NO	NO
	WB	2	3,600	1,029	594	0.29	0.17	A	A	1,042	613	0.29	0.17	A	A	0.00	0.00	NO	NO
Palomar Airport Road																			
Paseo Del Norte to Armada Dr	EB	3	5,400	2,486	1,624	0.46	0.30	A	A	2,520	1,728	0.47	0.32	A	A	0.01	0.02	NO	NO
	WB	3	5,400	1,176	2,688	0.22	0.50	A	A	1,248	2,798	0.23	0.52	A	A	0.01	0.02	NO	NO
Armada Dr to The Crossings Dr	EB	3	5,400	2,307	1,792	0.43	0.33	A	A	2,355	1,948	0.44	0.36	A	A	0.01	0.03	NO	NO
	WB	3	5,400	1,250	2,443	0.23	0.45	A	A	1,361	2,609	0.25	0.48	A	A	0.02	0.03	NO	NO
The Crossings Dr to College Blvd	EB	3	5,400	2,271	1,768	0.42	0.33	A	A	2,311	1,897	0.43	0.35	A	A	0.01	0.02	NO	NO
	WB	3	5,400	1,233	2,433	0.23	0.45	A	A	1,325	2,571	0.25	0.48	A	A	0.02	0.03	NO	NO
College Blvd to El Camino Real	EB	3	5,400	1,836	1,901	0.34	0.35	A	A	1,858	1,954	0.34	0.36	A	A	0.00	0.01	NO	NO
	WB	3	5,400	1,753	2,013	0.32	0.37	A	A	1,791	2,090	0.33	0.39	A	A	0.01	0.02	NO	NO
College Boulevard																			
Palomar Airport Rd to Faraday Ave	EB/NB	2	3,600	1,113	566	0.31	0.16	A	A	1,113	566	0.31	0.16	A	A	0.00	0.00	NO	NO
	WB/SB	1	1,800	330	1,044	0.18	0.58	A	A	330	1,044	0.18	0.58	A	A	0.00	0.00	NO	NO
Poinsettia Ln																			



Roadway Segments	Direction	Number of Lanes	Capacity (1,800 vphpl)	No Specific Plan						Plus Specific Plan						Change in V/C		Significant Impact?	
				Peak Hour Volume		V/ C Ratio		LOS		Peak Hour Volume		V/ C Ratio		LOS					
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Paseo Del Norte to Aviara Pkwy	EB	2	3,600	1,077	1,058	0.30	0.29	A	A	1,090	1,097	0.30	0.30	A	A	0.00	0.01	NO	NO
	WB	2	3,600	951	1,092	0.26	0.30	A	A	979	1,133	0.27	0.31	A	A	0.01	0.01	NO	NO
Carlsbad Boulevard																			
North of Tamarack Ave	NB	2	3,600	254	918	0.07	0.26	A	A	265	953	0.07	0.26	A	A	0.00	0.00	NO	NO
	SB	2	3,600	563	536	0.16	0.15	A	A	588	574	0.16	0.16	A	A	0.00	0.01	NO	NO
Tamarack Ave to Cannon Rd	NB	2	3,600	279	1,159	0.08	0.32	A	A	290	1,194	0.08	0.33	A	A	0.00	0.01	NO	NO
	SB	1	1,800	826	681	0.46	0.38	A	A	851	719	0.47	0.40	A	A	0.01	0.02	NO	NO
South of Cannon Rd	NB	1	1,800	289	950	0.16	0.53	A	A	299	965	0.17	0.54	A	A	0.01	0.01	NO	NO
	SB	1	1,800	810	647	0.45	0.36	A	A	814	661	0.45	0.37	A	A	0.00	0.01	NO	NO
Paseo del Norte																			
Cannon Rd to Car Country Dr	NB	2	3,600	228	665	0.06	0.18	A	A	324	778	0.09	0.22	A	A	0.03	0.04	NO	NO
	SB	2	3,600	413	367	0.11	0.10	A	A	454	483	0.13	0.13	A	A	0.02	0.03	NO	NO
Outlets North Entrance to Palomar Airport Rd	NB	2	3,600	435	653	0.12	0.18	A	A	531	796	0.15	0.22	A	A	0.03	0.04	NO	NO
	SB	2	3,600	282	609	0.08	0.17	A	A	324	744	0.09	0.21	A	A	0.01	0.04	NO	NO
Faraday Avenue																			
Cannon Rd to College Blvd	NB	1	1,800	505	639	0.28	0.36	A	A	535	695	0.30	0.39	A	A	0.02	0.03	NO	NO
	SB	1	1,800	427	567	0.24	0.32	A	A	444	609	0.25	0.34	A	A	0.01	0.02	NO	NO
Aviara Parkway																			
Palomar Airport Rd to Poinsettia Ln	NB	2	3,600	935	473	0.26	0.13	A	A	976	534	0.27	0.15	A	A	0.01	0.02	NO	NO
	SB	2	3,600	400	950	0.11	0.26	A	A	418	1,007	0.12	0.28	A	A	0.01	0.02	NO	NO
El Camino Real																			
North of Tamarack Ave	NB	3	5,400	559	1,605	0.10	0.30	A	A	573	1,649	0.11	0.31	A	A	0.01	0.01	NO	NO
	SB	3	5,400	1,321	767	0.24	0.14	A	A	1,353	814	0.25	0.15	A	A	0.01	0.01	NO	NO
Tamarack Ave to Cannon Rd	NB	2	3,600	751	2,078	0.21	0.58	A	A	774	2,149	0.22	0.60	A	A	0.01	0.02	NO	NO
	SB	2	3,600	2,035	1,026	0.57	0.29	A	A	2,085	1,101	0.58	0.31	A	A	0.01	0.02	NO	NO
Cannon Rd to College Blvd	NB	3	5,400	731	2,250	0.14	0.42	A	A	739	2,261	0.14	0.42	A	A	0.00	0.00	NO	NO
	SB	3	5,400	2,064	1,140	0.38	0.21	A	A	2,067	1,151	0.38	0.21	A	A	0.00	0.00	NO	NO
College Blvd to Faraday Ave	NB	3	5,400	940	2,351	0.17	0.44	A	A	948	2,362	0.18	0.44	A	A	0.01	0.00	NO	NO
	SB	3	5,400	2,407	1,232	0.45	0.23	A	A	2,410	1,243	0.45	0.23	A	A	0.00	0.00	NO	NO
Faraday Ave to Palomar Airport Rd	NB	3	5,400	1,504	1,567	0.28	0.29	A	A	1,517	1,586	0.28	0.29	A	A	0.00	0.00	NO	NO
	SB	3	5,400	1,936	1,899	0.36	0.35	A	A	1,942	1,917	0.36	0.36	A	A	0.00	0.01	NO	NO
Palomar Airport Rd to Poinsettia Ln	NB	3	5,400	1,605	1,495	0.30	0.28	A	A	1,615	1,495	0.30	0.28	A	A	0.00	0.00	NO	NO
	SB	3	5,400	1,689	2,028	0.31	0.38	A	A	1,689	2,042	0.31	0.38	A	A	0.00	0.00	NO	NO
Poinsettia Ln to Aviara Pkwy	NB	3	5,400	1,623	1,725	0.30	0.32	A	A	1,627	1,731	0.30	0.32	A	A	0.00	0.00	NO	NO
	SB	3	5,400	1,357	2,076	0.25	0.38	A	A	1,359	2,081	0.25	0.39	A	A	0.00	0.01	NO	NO
South of Aviara Pkwy	NB	3	5,400	1,822	2,497	0.34	0.46	A	A	1,828	2,507	0.34	0.46	A	A	0.00	0.00	NO	NO
	SB	3	5,400	1,904	2,289	0.35	0.42	A	A	1,906	2,298	0.35	0.43	A	A	0.00	0.01	NO	NO

Source: Fehr & Peers, 2015



7.3 FREEWAY SEGMENT LEVELS OF SERVICE

Table 20 displays freeway operation for I-5 under Year 2019 Plus Specific Plan conditions. All freeway segments are expected to operate at LOS E under Year 2019 conditions without and with the Specific Plan, except for the segment between Tamarack Avenue and Carlsbad Village Drive, which degrades from LOS D operations to LOS E with the addition of Specific Plan trips. The addition of Specific Plan trips at all other study locations would further exacerbate Baseline operations.

After applying the aforementioned SANTEC / ITE significant impact criteria, it was determined that the proposed Specific Plan would result in a significant impact on all I-5 freeway study segments from north of Tamarack Avenue to south of Poinsettia Lane since the Specific Plan peak hour addition of traffic to the freeway mainline is more than one (1) percent of the per lane capacity on I-5. The Specific Plan trips are approximately three (3) percent of total traffic volume on I-5.

7.4 RAMP METERING ANALYSIS

Table 21 displays the ramp metering analysis conducted at the Tamarack Avenue, Cannon Road, Palomar Airport Road, and Poinsettia Lane southbound and northbound on-ramps on I-5 under 2019 Year Plus Specific Plan Conditions. Similar to 2019 Year Baseline Conditions, the following ramp meters are assumed to be inactive under one or both peak hours:

- I-5 SB on-ramp from Tamarack Avenue – PM peak hour
- I-5 NB on-ramp from Tamarack Avenue – AM and PM peak hours
- I-5 NB on-ramp from Cannon Road – AM peak hour
- I-5 NB on-ramp from Palomar Airport Road – AM peak hour
- I-5 NB on-ramp from Poinsettia Lane – AM Peak hour

As shown in **Table 21** the peak hour capacities of the on-ramps are greater than the peak hour demands and minimal queuing of traffic is experienced under 2019 Year Conditions, except for the I-5 SB on-ramp from Tamarack Avenue in the AM peak hour, which has a 15.4 minute delay and 3,925-foot excess queue without the Specific Plan. With the Specific Plan, delay on this ramp increases to 18 seconds and the queue extends to 4,575 feet that would extend further back onto Tamarack Avenue. The Specific Plan adds a total of 26 trips in the AM peak hour to the Tamarack Avenue on-ramp, which equates to three (3) percent of the total ramp volume.



After applying the aforementioned SANTEC / ITE significant impact criteria, it is determined that the proposed Specific Plan would result in a significant impact on the I-5 SB on-ramp at Tamarack Avenue as the Specific Plan results in an increase of delay that is more than 2 seconds for an on-ramp operating with delays greater than 15 minutes. As noted under the Trip Generation section of this report, the AM peak hour trip generation estimate using SANDAG rates may be at least double the number that would realistically be generated. This indicates that the actual amount of added traffic is likely closer to 13 trips and 1.5 percent of the ramp volume, and as noted under the Existing Conditions analysis, would not result in a significant impact with the lower (and more appropriate) trip rate.



TABLE 20 –2019 YEAR PLUS SPECIFIC PLAN FREEWAY SEGMENT LEVEL OF SERVICE RESULTS

Segment	Number of Lanes	Capacity Per Lane	Peak Hour %	Direction Split	HV%	No Specific Plan				Plus Specific Plan				Change in V/C	Significant Impact?
						ADT	Peak Hour Per Lane	V/C	LOS	ADT	Peak Hour Per Lane	V/C	LOS		
Interstate 5															
La Costa Ave to Poinsettia Ln	8	2,350	7%	60%	4.5%	205,480	2,259	0.96	E	210,781	2317	0.99	E	0.03	YES
Poinsettia Ln to Palomar Airport Rd	8	2,350	7%	60%	4.5%	202,480	2,226	0.95	E	208,262	2290	0.97	E	0.02	YES
Palomar Airport Rd to Cannon Rd	8	2,350	7%	60%	4.5%	199,340	2,192	0.93	E	205,122	2255	0.96	E	0.03	YES
Cannon Rd to Tamarack Ave	8	2,350	7%	60%	4.5%	199,930	2,198	0.94	E	205,231	2256	0.96	E	0.02	YES
Tamarack Ave to Carlsbad Village Dr	8	2,350	7%	60%	4.5%	196,860	2,164	0.92	D	201,197	2212	0.94	E	0.02	YES

Source: Fehr & Peers, 2015

Bold LOS indicates LOS E or F operations
Shaded cells indicate significant impact

TABLE 21 –YEAR 2019 PLUS SPECIFIC PLAN RAMP METERING ANALYSIS

Location	Peak Hour	Total # of Mixed Flow Lanes	Demand ² (veh/hr)		Meter Rate ² (veh/hr)	Excess Demand ³ (veh/hr)	Delay ⁴ (min)	Queue ⁵ (ft)	Demand ² (veh/hr)		Meter Rate ² (veh/hr)	Excess Demand ³ (veh/hr)	Delay ⁴ (min)	Queue ⁵ (ft)	Change in Delay	Significant Impact?
			Mixed Flow & HOV	Mixed Flow only					Mixed Flow & HOV	Mixed Flow only						
I-5 SB - Tamarack Ave On-Ramp	AM	1	778	661	526	135	15.4	3,925	804	683	526	157	18.0	4,575	2.6	YES
I-5 SB - Cannon Rd On-Ramp	AM	1	401	341	734	0	0.0	0	488	415	734	0	0.0	0	0	NO
	PM	2	547	465	734	0	0.0	0	890	757	734	23	1.8	325	1.8	NO
I-5 NB - Cannon Rd On-Ramp	PM	2	1,362	1,158	1,416	0	0.0	0	1,643	1,397	1,416	0	0.0	0	0	NO
I-5 SB - EB Palomar Airport Rd On-Ramp	AM	2	67	57	343	0	0.0	0	67	57	343	0	0.0	0	0	NO
	PM	1	230	196	246	0	0.0	0	230	196	246	0	0.0	0	0	NO
I-5 SB - WB Palomar Airport Rd On-Ramp	AM	1	243	207	492	0	0.0	0	243	207	492	0	0.0	0	0	NO
	PM	1	1,014	862	895	0	0.0	0	1,014	862	895	0	0.0	0	0	NO
I-5 NB - Palomar Airport Rd On-Ramp	PM	1	1,203	1,023	988	35	2.1	500	1,203	1,023	988	35	2.1	500	0	NO
I-5 SB - Poinsettia Ln On-Ramp	AM	2	578	491	1,094	0	0.0	0	578	491	1,094	0	0.0	0	0	NO
	PM	2	932	792	796	0	0.0	0	932	792	796	0	0.0	0	0	NO
I-5 NB - Poinsettia Ln On-Ramp	PM	2	377	320	576	0	0.0	0	396	337	576	0	0.0	0	0	NO

Source: Fehr & Peers, 2015

Bold delay indicates LOS E or F operations
Shaded cells indicate significant impact

¹Analysis based on Caltrans District 11 Ramp Meter methodology

²Assumed 15% of on-ramp traffic uses the HOV lane. Used the "mixed-flow only" volume for analysis and did not include HOV lane capacity in analysis.



8.0 YEAR 2035 (LONG-TERM) BASELINE CONDITIONS

This chapter summarizes and presents the results of the operations analysis under Year 2035 (long-term) scenario without the Specific Plan's travel demand characteristics.

8.1 YEAR 2035 STREET SYSTEM IMPROVEMENTS

As noted in Chapter 6, the City of Carlsbad Circulation Elements identifies proposed future roadway improvements that are expected to be built by the Year 2019 of the Specific Plan; such as the College Boulevard extension and the El Camino Real widening from Tamarack Avenue to Chestnut Avenue.

Along with these two improvements, the City's planned circulation system also includes the following roadway improvements within the study area that are expected to be constructed by the Year 2035:

- Poinsettia Lane Extension – Poinsettia Lane currently extends easterly from Carlsbad Boulevard to its terminus at Cassia Road. A second section of Poinsettia Lane extends from El Camino Real to Melrose Drive. The planned roadway improvement would connect the two existing segments by extending Poinsettia Lane from Cassia Road to El Camino Real.
- El Camino Real Widening at Cannon Road –According to City staff, El Camino Real is planned to be widened at the Cannon Road intersection to include three northbound-thru lanes and a separate northbound right-turn lane.

In addition to the City's planned roadway improvements, the I-5 North Coast Corridor Program (NCCP) proposes to improve portions on I-5 from La Jolla to Oceanside. The NCCP project plans to construct four express Lanes (two in each direction) from La Jolla Village Drive to Harbor Drive in Oceanside, which will include the improvement of select interchange ramps. In addition to the mainline widening, the improvements within the Specific Plan study area include:

- Completing auxiliary lanes on I-5 from Palomar Airport Road to Cannon Road (northbound and southbound directions)
- Completing auxiliary lanes on I-5 from Cannon Road to Tamarack Avenue (northbound and southbound directions)
- Reconstructing the I-5 off-ramps to provide a second exit lane on both Cannon Road off-ramps

8.2 YEAR 2035 TRAFFIC FORECASTS

Baseline traffic forecasts for Year 2035 were developed using the SANDAG Series 12 traffic demand model, which is the standard long-range planning tool for volume forecasting in the San Diego region. The



SANDAG model reflects the forecasted population and employment from land uses that are consistent with the adopted General Plans of all 18 cities plus the County of San Diego within SANDAG's jurisdiction. The SANDAG model used for this analysis was the same Series 12 baseline model used for the Carlsbad General Plan Update (2012) analysis.

Daily traffic volumes generated from the model were refined and used in this study to develop peak hour turning movement volumes. Post processing of the daily volumes to estimate peak hour volumes was conducted using a Furness process, which takes the daily roadway volume growth between the base year (2011) and future year model and distributes the growth proportionally using existing intersection turning movement counts. Refinements were made to the processed volumes to confirm that volume growth by turning movement was reasonable.

8.3 2035 INTERSECTION ANALYSIS

The 2035 baseline peak hour turning movement volumes were input into Synchro with the corresponding system improvements from Section 8.1 and intersection operations were calculated. **Table 22** presents the potential intersection operating conditions and traffic impacts under 2035 Baseline Conditions. The corresponding LOS calculation sheets are included in **Appendix D**. The analysis results indicate that 23 study intersections are forecasted to operate at LOS D or better under 2035 Baseline Conditions. The remaining 10 study intersections are expected to operate at LOS E or F for at least one peak hour:

4. Tamarack Avenue / El Camino Real – LOS E (AM peak hour) and LOS F (PM peak hour)
- 6.
14. Cannon Road / El Camino Real – LOS E (AM peak hour) and LOS F (PM peak hour)
18. College Boulevard / El Camino Real – LOS F (AM and PM peak hours)
19. El Camino Real / Faraday Avenue –LOS E (AM and PM peak hours)
23. Palomar Airport Road / Paseo del Norte –LOS E (PM peak hour)
24. Palomar Airport Road / Armada Drive – LOS F (PM peak hour)
26. Palomar Airport Road / College Boulevard –LOS E (AM peak hour) and LOS F (PM peak hour)
27. Palomar Airport Road / El Camino Real –LOS F (AM and PM peak hours)
32. Alga Rd-Aviara Parkway / El Camino Real – LOS F (AM peak hour) and LOS E (PM peak hour)
33. Poinsettia Lane / El Camino Real – LOS E (PM peak hour)

Turning movement traffic volumes and intersection lane configurations for 2035 Baseline Conditions are shown in **Figure 13**.





1. Tamarack Ave/Carlsbad Blvd 	2. Tamarack Ave/I-5 SB Ramps 	3. Tamarack Ave/I-5 NB Ramps 	4. Tamarack Ave/El Camino Real 	5. Cannon Rd/Carlsbad Blvd
6. Cannon Rd/Avenida Encinas 	7. Cannon Rd/I-5 SB Ramps 	8. Cannon Rd/I-5 NB Ramps 	9. Cannon Rd/Paseo Del Norte 	10. Cannon Rd/Car Country Dr
11. Cannon Rd/LEGOLAND Dr 	12. Cannon Rd/Grand Pacific Dr 	13. Cannon Rd/Faraday Ave 	14. Cannon Rd/El Camino Real 	15. Paseo Del Norte/Car Country Dr
16. Paseo Del Norte/Outlet Dwy 	17. College Blvd/Faraday Ave 			

Figure 13
 Peak Hour Traffic Volumes and Lane Configurations
 2035 No Specific Plan Conditions



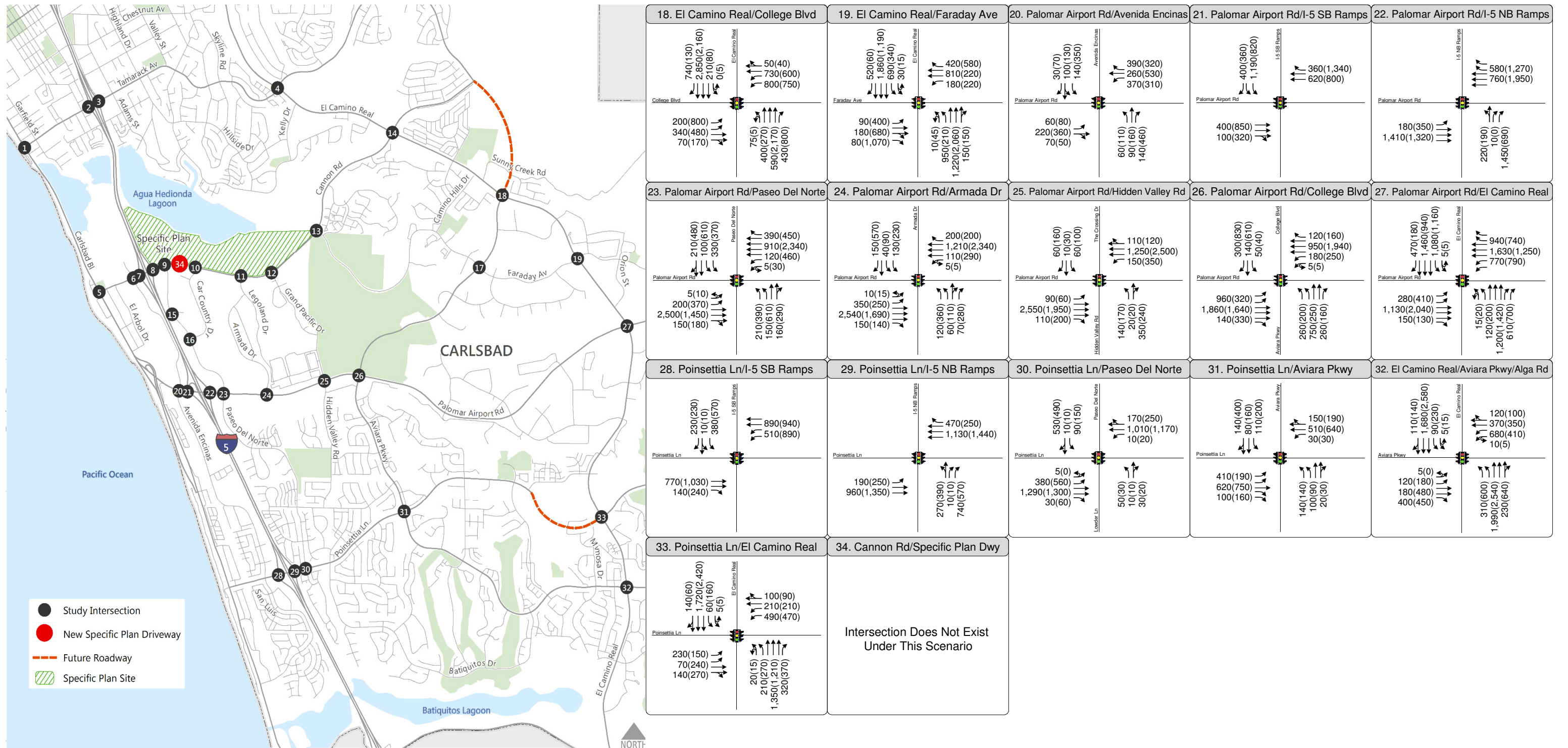


Figure 13
Peak Hour Traffic Volumes and Lane Configurations
2035 No Specific Plan Conditions



TABLE 22 – 2035 INTERSECTION LEVEL OF SERVICE

Intersection	Peak Hour	Delay	LOS ^{2,3}
		(sec/veh) ¹	
1. Carlsbad Blvd / Tamarack Ave	AM	22.7	C
	PM	29.8	C
2. I-5 SB Ramps / Tamarack Ave	AM	24.6	C
	PM	23.7	C
3. I-5 NB Ramps / Tamarack Ave	AM	21.8	C
	PM	16.2	B
4. Tamarack Ave / El Camino Real	AM	78.4	E
	PM	112.3	F
5. Cannon Rd / Carlsbad Blvd	AM	17.5	B
	PM	36.6	D
6. Cannon Rd / Avenida Encinas ⁴	AM	18.2	B
	PM	20	B
7. I-5 SB Ramps / Cannon Rd	AM	39	D
	PM	24.2	C
8. I-5 NB Ramps / Cannon Rd	AM	17.6	B
	PM	30.3	C
9. Cannon Rd / Paseo Del Norte	AM	19.4	B
	PM	28.1	C
10. Cannon Rd / Car Country Dr	AM	13.4	B
	PM	22.2	C
11. Cannon Rd / Armada Dr	AM	12.4	B
	PM	13.9	B
12. Cannon Rd / Grand Pacific Dr	AM	9.4	A
	PM	10.8	B
13. Cannon Rd / Faraday Ave	AM	26.7	C
	PM	32.7	C
14. Cannon Rd / El Camino Real	AM	61.9	E
	PM	73.6	E
15. Paseo Del Norte / Car Country Dr	AM	12.9	B
	PM	16	B
16. Paseo Del Norte / Outlets Dwy	AM	31.8	C
	PM	20	B
17. College Blvd / Faraday Ave	AM	48.9	D
	PM	51.3	D
18. College Blvd / El Camino Real	AM	260.6	F



	PM	158.4	F
19. El Camino Real / Faraday Ave	AM	139.8	F
	PM	148.4	F
20. Palomar Airport Rd / Avenida Encinas	AM	28.8	C
	PM	43.2	D
21. I-5 SB Ramps / Palomar Airport Rd	AM	14.7	B
	PM	11.2	B
22. I-5 NB Ramps / Palomar Airport Rd	AM	29	C
	PM	36.1	D
23. Palomar Airport Rd / Paseo Del Norte	AM	44.5	D
	PM	72.9	E
24. Palomar Airport Rd / Armada Dr	AM	32.4	C
	PM	94.3	F
25. Palomar Airport Rd / Hidden Valley Rd	AM	35.8	D
	PM	35.3	D
26. Palomar Airport Rd / College Blvd	AM	57.5	E
	PM	89.3	F
27. Palomar Airport Rd / El Camino Real	AM	112	F
	PM	176.2	F
28. I-5 SB Ramps / Poinsettia Ln	AM	14.4	B
	PM	31.6	C
29. I-5 NB Ramps / Poinsettia Ln	AM	16.4	B
	PM	21.3	C
30. Poinsettia Ln / Paseo Del Norte	AM	34.4	C
	PM	37.7	D
31. Poinsettia Ln / Aviara Pkwy	AM	28.7	C
	PM	35.4	D
32. Aviara Pkwy / El Camino Real	AM	61.2	E
	PM	149.3	F
33. Poinsettia Ln / El Camino Real	AM	43.4	D
	PM	74.5	E
34. Cannon Rd / Specific Plan Dwy	AM	Does Not Exist	
	PM		

Source: Fehr & Peers, 2015.

Notes:

¹ Whole intersection weighted average stopped delay expressed in seconds per vehicle for signalized and all-way stop control intersections.

² LOS calculations performed using the 2000 Highway Capacity Manual (HCM) method.

³ LOS E or F operations highlighted in **bold**.



⁴ Our analysis does not include the pre-emption at the Cannon Road/Avenida Encinas intersection as we determined that the pre-emption frequency is nominal during peak hours. However, when rail pre-emptions are frequent, operations at this intersection are worse.

8.4 2035 ROADWAY SEGMENT ANALYSIS

Table 23 displays the LOS analysis for the Specific Plan study roadway segments under 2035 Baseline Conditions. As shown in the table, all roadway segments currently operate acceptably at LOS D or better.

8.5 2035 FREEWAY SEGMENT LEVELS OF SERVICE

Table 24 displays the freeway Level of Service analysis for I-5 under 2035 Year Conditions. As shown, all freeway segments on I-5 would operate at undesirable levels (LOS E) during peak hours under 2035 Baseline Conditions, except for the segment between Tamarack Avenue and Carlsbad Village Drive, which is expected to operate at LOS D.

8.6 2035 RAMP METERING ANALYSIS

Table 25 displays the ramp metering analysis conducted at the Tamarack Avenue, Cannon Road, Palomar Airport Road, and Poinsettia Lane southbound and northbound on-ramps on I-5 under 2035 Baseline Conditions. The following ramp meters are assumed to not be in operation under one or both peak hours consistent with Existing Conditions:

- I-5 SB on-ramp from Tamarack Avenue – PM peak hour
- I-5 NB on-ramp from Tamarack Avenue – AM and PM peak hours
- I-5 NB on-ramp from Cannon Road – AM peak hour
- I-5 NB on-ramp from Palomar Airport Road – AM peak hour
- I-5 NB on-ramp from Poinsettia Lane – AM Peak hour

As shown in **Table 25**, the following ramps are expected have insufficient capacity to serve on-ramp volumes during one or both peak hours:

- I-5 SB on-ramp from Tamarack Avenue – AM peak hour
- I-5 SB on-ramp from EB Palomar Airport Road – PM peak hour
- I-5 SB on-ramp from WB Palomar Airport Road – PM peak hour
- I-5 NB on-ramp from Palomar Airport Road – PM peak hour
- I-5 SB on-ramp from Poinsettia Lane – AM peak hour



TABLE 23 – 2035 BASELINE PEAK HOUR VOLUMES AND LEVEL OF SERVICE

Roadway Segments	Direction	Number of Lanes	Capacity (1,800 vphpl)	Peak Hour Volume		V/ C Ratio		LOS	
				AM	PM	AM	PM	AM	PM
Cannon Road									
I-5 SB Ramps to I-5 NB Ramps	EB	2	3,600	1,320	1,120	0.37	0.31	A	A
	WB	2	3,600	810	1,130	0.23	0.31	A	A
I-5 NB Ramps to Paseo Del Norte	EB	2	3,600	1,650	1,240	0.46	0.34	A	A
	WB	3	5,400	900	2,150	0.17	0.40	A	A
Paseo Del Norte to Car Country	EB	2	3,600	1,320	1,020	0.37	0.28	A	A
	WB	2	3,600	800	1,590	0.22	0.44	A	A
Car Country Dr to Armada Dr	EB	2	3,600	1,100	1,040	0.31	0.29	A	A
	WB	2	3,600	800	1,400	0.22	0.39	A	A
Armada Dr to Grand Pacific Dr	EB	2	3,600	720	1,210	0.20	0.34	A	A
	WB	2	3,600	1,110	1,140	0.31	0.32	A	A
Grand Pacific Dr to Faraday Ave	EB	2	3,600	710	1,210	0.20	0.34	A	A
	WB	2	3,600	1,130	1,150	0.31	0.32	A	A
Faraday Ave to El Camino Real	EB	2	3,600	450	1,470	0.13	0.41	A	A
	WB	2	3,600	1,100	690	0.31	0.19	A	A
Tamarack Avenue									
Carlsbad Blvd to I-5 SB Ramps	EB	1	1,800	860	830	0.48	0.46	A	A
	WB	1	1,800	930	870	0.52	0.48	A	A
I-5 SB Ramps to I-5 NB Ramps	EB	2	3,600	630	810	0.18	0.23	A	A
	WB	2	3,600	1,000	860	0.28	0.24	A	A
I-5 NB Ramps to El Camino Real	EB	2	3,600	830	1,070	0.23	0.30	A	A
	WB	2	3,600	1,150	700	0.32	0.19	A	A
Palomar Airport Road									
Paseo Del Norte to Armada Dr	EB	3	5,400	3,050	2,140	0.56	0.40	A	A
	WB	3	5,400	1,490	3,285	0.28	0.61	A	A
Armada Dr to The Crossings Dr	EB	3	5,400	2,750	2,210	0.51	0.41	A	A
	WB	3	5,400	1,525	2,835	0.28	0.53	A	A
The Crossings Dr to College Blvd	EB	3	5,400	2,960	2,290	0.55	0.42	A	A
	WB	3	5,400	1,510	2,970	0.28	0.55	A	A
College Blvd to El Camino Real	EB	3	5,400	2,175	2,580	0.40	0.48	A	A
	WB	3	5,400	2,220	2,355	0.41	0.44	A	A
College Boulevard									
Palomar Airport Rd to Faraday Ave	EB/NB	2	3,600	1,830	1,470	0.51	0.41	A	A
	WB/SB	1	1,800	840	1,480	0.47	0.82	A	A
Poinsettia Ln									
Paseo Del Norte to Aviara Pkwy	EB	2	3,600	1,410	1,470	0.39	0.41	A	A



Roadway Segments	Direction	Number of Lanes	Capacity (1,800 vphpl)	Peak Hour Volume		V/ C Ratio		LOS	
				AM	PM	AM	PM	AM	PM
	WB	2	3,600	1,190	1,440	0.33	0.40	A	A
Carlsbad Boulevard									
North of Tamarack Ave	NB	2	3,600	310	960	0.09	0.27	A	A
	SB	2	3,600	620	660	0.17	0.18	A	A
Tamarack Ave to Cannon Rd	NB	2	3,600	340	1,360	0.09	0.38	A	A
	SB	1	1,800	940	810	0.52	0.45	A	A
South of Cannon Rd	NB	1	1,800	330	1,080	0.18	0.60	A	A
	SB	1	1,800	950	800	0.53	0.44	A	A
Paseo del Norte									
Cannon Rd to Car Country Dr	NB	2	3,600	320	855	0.09	0.24	A	A
	SB	2	3,600	540	515	0.15	0.14	A	A
Outlets North Entrance to Palomar Airport Rd	NB	2	3,600	740	1,430	0.21	0.40	A	A
	SB	2	3,600	640	1,460	0.18	0.41	A	A
Faraday Avenue									
Cannon Rd to College Blvd	NB	1	1,800	955	860	0.53	0.48	A	A
	SB	1	1,800	865	1,210	0.48	0.67	A	A
Aviara Parkway									
Palomar Airport Rd to Poinsettia Ln	NB	2	3,600	1,270	610	0.35	0.17	A	A
	SB	2	3,600	460	1,190	0.13	0.33	A	A
El Camino Real									
North of Tamarack Ave	NB	3	5,400	900	2,935	0.17	0.54	A	A
	SB	3	5,400	2,290	1,105	0.42	0.20	B	B
Tamarack Ave to Cannon Rd	NB	2	3,600	1,010	3,560	0.28	0.99	A	A
	SB	2	3,600	3,275	1,395	0.91	0.39	E	E
Cannon Rd to College Blvd	NB	3	5,400	945	3,455	0.18	0.64	A	A
	SB	3	5,400	4,100	2,375	0.76	0.44	C	C
College Blvd to Faraday Ave	NB	3	5,400	1,845	3,305	0.34	0.61	A	A
	SB	3	5,400	3,995	3,085	0.74	0.57	C	C
Faraday Ave to Palomar Airport Rd	NB	3	5,400	2,425	2,575	0.45	0.48	A	A
	SB	3	5,400	3,015	2,525	0.56	0.47	A	A
Palomar Airport Rd to Poinsettia Ln	NB	3	5,400	1,945	2,340	0.36	0.43	A	A
	SB	3	5,400	2,395	2,645	0.44	0.49	A	A
Poinsettia Ln to Aviara Pkwy	NB	3	5,400	2,235	2,835	0.41	0.53	A	A
	SB	3	5,400	2,370	3,175	0.44	0.59	A	A
South of Aviara Pkwy	NB	3	5,400	2,530	3,780	0.47	0.70	A	A
	SB	3	5,400	2,760	3,440	0.51	0.64	A	A

Source: Fehr & Peers, 2015



TABLE 24 – 2035 YEAR FREEWAY SEGMENT LEVEL OF SERVICE RESULTS

Segment	Number of Lanes	Capacity Per Lane	Peak Hour %	Direction Split	HV%	Total ADT ¹	Mixed Flow Lane Factor	Mixed Flow ADT	Mixed Flow Peak Hour Per Lane	V/C	LOS
Interstate 5											
La Costa Ave to Poinsettia Ln	8+4 Express Lns	2,350	7%	60%	4.5%	292,000	84%	243,851	2,681	1.14	F
Poinsettia Ln to Palomar Airport Rd	8+4 Express Lns	2,350	7%	60%	4.5%	282,000	86%	244,180	2,685	1.14	F
Palomar Airport Rd to Cannon Rd	8+4 Express Lns	2,350	7%	60%	4.5%	252,000	83%	209,494	2,303	0.98	E
Cannon Rd to Tamarack Ave	8+4 Express Lns	2,350	7%	60%	4.5%	245,400	83%	203,804	2,241	0.95	E
Tamarack Ave to Carlsbad Village Dr	8+4 Express Lns	2,350	7%	60%	4.5%	246,900	78%	193,136	2,123	0.90	D

Source: Fehr & Peers, 2015

Bold LOS indicates LOS E or F operations

¹Total ADT is the combination of mixed-flow lanes and express lanes

TABLE 25 – 2035 YEAR RAMP METERING ANALYSIS

Location	Peak Hour	Total # of Mixed Flow Lanes	Demand ¹ (veh/hr)		Meter Rate (veh/hr)	Excess Demand (veh/hr)	Delay (min)	Queue (ft)
			Mixed Flow & HOV	Mixed Flow only				
I-5 SB - Tamarack Ave On-Ramp	AM	1	830	706	526	180	20.5	5,200
I-5 SB - Cannon Rd On-Ramp	AM	1	540	459	734	0	0.0	0
	PM	2	760	646	734	0	0.0	0
I-5 NB - Cannon Rd On-Ramp	PM	2	1,530	1,301	1,416	0	0.0	0
I-5 SB - EB Palomar Airport Rd On-Ramp	AM	2	100	85	343	0	0.0	0
	PM	1	320	272	246	26	6.3	750
I-5 SB - WB Palomar Airport Rd On-Ramp	AM	1	360	306	492	0	0.0	0
	PM	1	1,340	1,139	895	244	16.4	7,075
I-5 NB - Palomar Airport Rd On-Ramp	PM	1	1,620	1,377	988	389	23.6	5,650
I-5 SB - Poinsettia Ln On-Ramp	AM	2	660	561	1,094	0	0.0	0
	PM	2	1,140	969	796	173	13.0	2,500
I-5 NB - Poinsettia Ln On-Ramp	PM	2	510	434	576	0	0.0	0

Source: Fehr & Peers, 2015. Analysis based on Caltrans District 11 Ramp Meter methodology

Bold delay indicates ramp meters operating with delays greater than 15 minutes

¹Assumed 15% of on-ramp traffic uses the HOV lane. Used the "mixed-flow only" volume for analysis and did not include HOV lane capacity in analysis.

9.0 YEAR 2035 PLUS SPECIFIC PLAN CONDITIONS

This chapter summarizes and presents the results of the operations analysis under the Year 2035 scenario, with the proposed Specific Plan. Under this 2035 Plus Specific Plan Conditions scenario, Specific Plan traffic estimated and assigned to the study intersections and roadway segments was added to 2035 Baseline traffic volumes. The 2035 Plus Specific Plan Conditions roadway network is the same network assumed under the baseline scenario, except for the addition of the site driveways that is discussed in Chapter 4. The Specific Plan trip assignment was superimposed on 2035 Baseline traffic volumes to yield 2035 Plus Specific Plan volumes.

9.1 INTERSECTION ANALYSIS

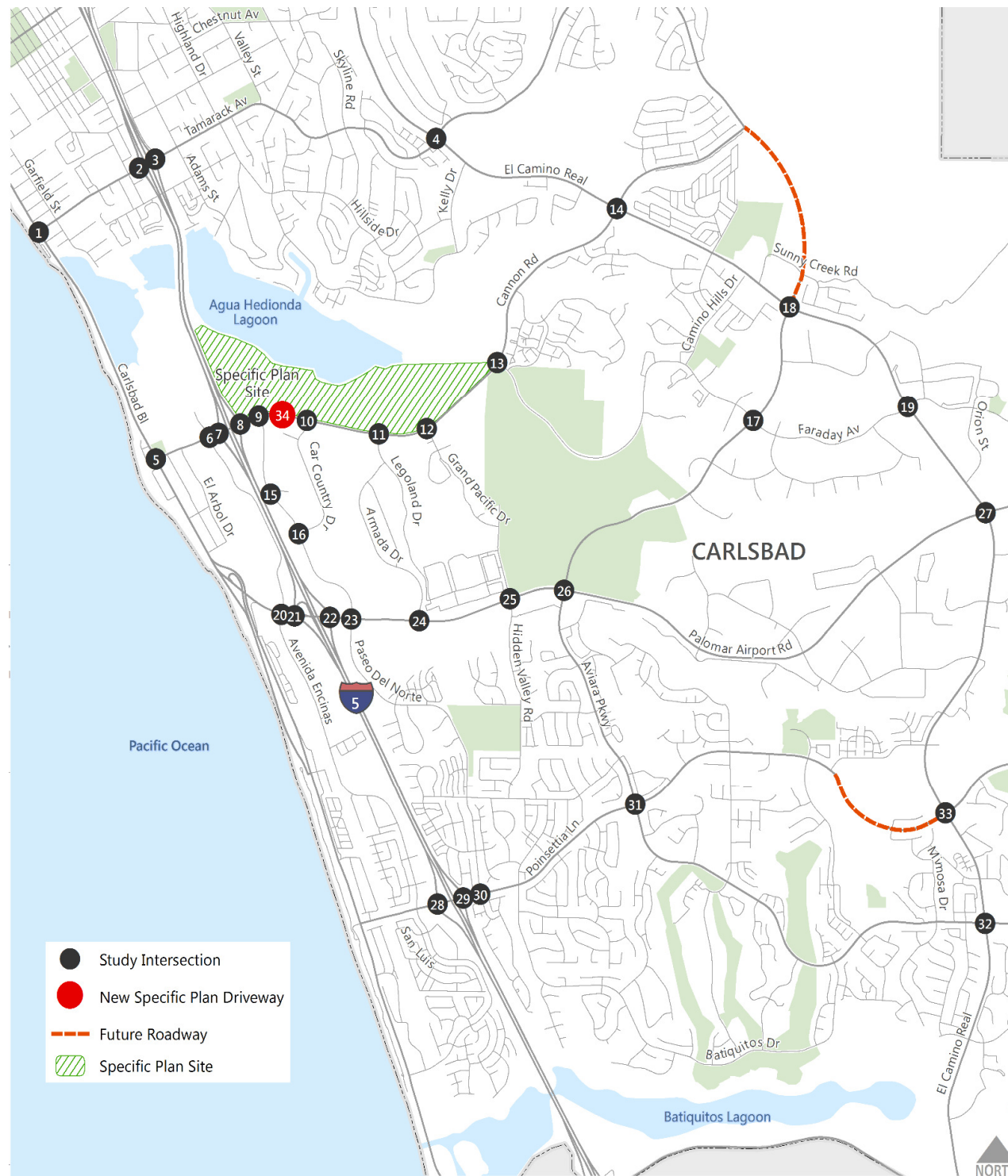
Turning movement traffic volumes and intersection lane configurations for the 2035 Plus Specific Plan Conditions are shown on **Figure 14**. This information was used to calculate operations under this scenario.

Table 26 presents the intersection operating conditions and traffic impacts under the 2035 Plus Specific Plan Conditions and compares the projected levels of service at each study intersection under 2035 Baseline Conditions. The corresponding LOS calculation sheets are included in **Appendix D**.

As indicated in **Table 26**, after applying the aforementioned SANTEC / ITE significant impact criteria, it is determined that the proposed Specific Plan would increase delay by more than two seconds compared to 2035 Baseline Conditions and would result in a significant impact at the following 9 locations:

4. Tamarack Avenue / El Camino Real
9. Cannon Road / Paseo del Norte/Specific Plan Driveway
14. Cannon Road / El Camino Real
19. El Camino Real / Faraday Avenue
23. Palomar Airport Road / Paseo del Norte
24. Palomar Airport Road / Armada Drive
26. Palomar Airport Road / College Boulevard
27. Palomar Airport Road / El Camino Real
32. Alga Rd-Aviara Parkway / El Camino Real





1. Tamarack Ave/Carlsbad Blvd 	2. Tamarack Ave/I-5 SB Ramps 	3. Tamarack Ave/I-5 NB Ramps 	4. Tamarack Ave/El Camino Real 	5. Cannon Rd/Carlsbad Blvd
6. Cannon Rd/Avenida Encinas 	7. Cannon Rd/I-5 SB Ramps 	8. Cannon Rd/I-5 NB Ramps 	9. Cannon Rd/Paseo Del North/Specific Plan Dwy 	10. Cannon Road/Car Country Dr
11. Cannon Rd/LEGOLAND Dr 	12. Cannon Road/Grand Pacific Dr 	13. Cannon Rd/Faraday Ave 	14. Cannon Rd/El Camino Real 	15. Paseo Del Norte/Car Country Dr
16. Paseo Del Norte/Outlet Dwy 	17. College Blvd/Faraday Ave 			

Figure 14
Peak Hour Traffic Volumes and Lane Configurations
2035 Plus Specific Plan Conditions



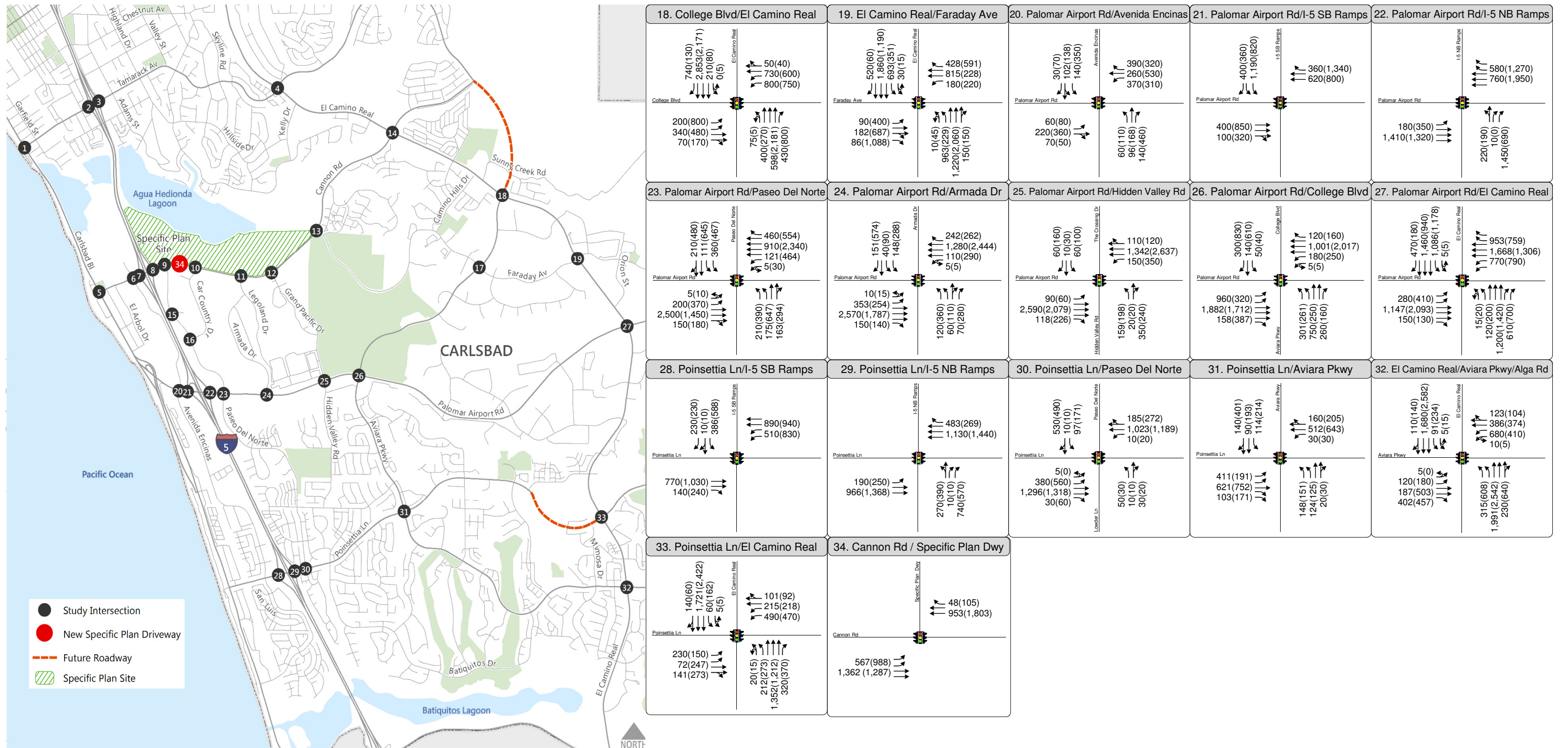


Figure 14
Peak Hour Traffic Volumes and Lane Configurations
2035 Plus Specific Plan Conditions



TABLE 26 – 2035 PLUS SPECIFIC PLAN INTERSECTION LEVEL OF SERVICE

Intersection	Peak Hour	No Specific Plan		Plus Specific Plan		Change in Delay ⁴	Significant Impact?
		Delay	LOS ^{2,3}	Delay	LOS ^{2,3}		
		(sec/veh) ¹		(sec/veh) ¹			
1. Carlsbad Blvd / Tamarack Ave	AM	22.7	C	22.6	C	-0.1	NO
	PM	29.8	C	30.6	C	0.8	NO
2. I-5 SB Ramps / Tamarack Ave	AM	24.6	C	24.8	C	0.2	NO
	PM	23.7	C	24.6	C	0.9	NO
3. I-5 NB Ramps / Tamarack Ave	AM	21.8	C	22.1	C	0.3	NO
	PM	16.2	B	16.9	B	0.7	NO
4. Tamarack Ave / El Camino Real	AM	78.4	E	81.2	F	2.8	YES
	PM	112.3	F	117.9	F	5.6	YES
5. Cannon Rd / Carlsbad Blvd	AM	17.5	B	18.4	B	0.9	NO
	PM	36.6	D	42.8	D	6.2	NO
6. Cannon Rd / Avenida Encinas ⁵	AM	18.2	B	16.8	B	-1.4	NO
	PM	20	B	21	C	1.0	NO
7. I-5 SB Ramps / Cannon Rd	AM	39	D	41.5	D	2.5	NO
	PM	24.2	C	35.5	D	11.3	NO
8. I-5 NB Ramps / Cannon Rd	AM	17.6	B	26.3	C	8.7	NO
	PM	30.3	C	41.1	D	10.8	NO
9. Cannon Rd / Paseo Del Norte	AM	19.4	B	32.8	C	13.4	NO
	PM	28.1	C	66.4	E	38.3	YES
10. Cannon Rd / Car Country Dr	AM	13.4	B	14.3	B	0.9	NO
	PM	22.2	C	25.0	C	2.8	NO
11. Cannon Rd / Armada Dr	AM	12.4	B	12.8	B	0.4	NO
	PM	13.9	B	15.4	B	1.5	NO
12. Cannon Rd / Grand Pacific Dr	AM	9.4	A	9.4	A	0	NO
	PM	10.8	B	11.0	B	0.2	NO
13. Cannon Rd / Faraday Ave	AM	26.7	C	27.3	C	0.6	NO
	PM	32.7	C	42.9	D	10.2	NO
14. Cannon Rd / El Camino Real	AM	62	E	64.4	E	2.4	YES
	PM	105.6	F	129.3	F	23.7	YES
15. Paseo Del Norte / Car Country Dr	AM	12.9	B	12.4	B	-0.5	NO
	PM	16	B	15.4	B	-0.6	NO
16. Paseo Del Norte / Outlets Dwy	AM	31.8	C	21.0	C	-10.8	NO
	PM	20	B	21.8	C	1.8	NO
17. College Blvd / Faraday Ave	AM	48.9	D	50.3	D	1.4	NO
	PM	51.3	D	53.6	D	2.3	NO
18. College Blvd / El Camino Real	AM	260.6	F	260.7	F	0.1	NO
	PM	158.4	F	159.4	F	1.0	NO
19. El Camino Real / Faraday Ave	AM	139.8	F	139.2	F	-0.6	NO
	PM	148.4	F	151.8	F	3.4	YES
20. Palomar Airport Rd / Avenida Encinas	AM	28.8	C	29.0	C	0.2	NO
	PM	43.2	D	43.7	D	0.5	NO
21. I-5 SB Ramps / Palomar Airport Rd	AM	14.7	B	14.7	B	0	NO
	PM	11.2	B	11.2	B	0	NO
22. I-5 NB Ramps / Palomar Airport Rd	AM	29	C	29.0	C	0	NO
	PM	36.1	D	36.1	D	0	NO
23. Palomar Airport Rd / Paseo Del Norte	AM	44.5	D	48.2	D	3.7	NO
	PM	72.9	E	79.8	E	6.9	YES
24. Palomar Airport Rd / Armada Dr	AM	32.4	C	33.5	C	1.1	NO
	PM	94.3	F	106.3	F	12	YES
25. Palomar Airport Rd / Hidden Valley Rd	AM	35.8	D	37.9	D	2.1	NO
	PM	35.3	D	37.7	D	2.4	NO
26. Palomar Airport Rd / College Blvd	AM	57.5	E	60.4	E	2.9	YES
	PM	89.3	F	99.5	F	10.2	YES
27. Palomar Airport Rd / El Camino Real	AM	112	F	112.9	F	0.9	NO
	PM	176.2	F	180.3	F	4.1	YES
28. I-5 SB Ramps / Poinsettia Ln	AM	14.4	B	14.6	B	0.2	NO
	PM	31.6	C	30.4	C	-0.8	NO
29. I-5 NB Ramps / Poinsettia Ln	AM	16.4	B	16.4	B	0	NO
	PM	21.3	C	21.3	C	0	NO
30. Poinsettia Ln / Paseo Del Norte	AM	34.4	C	34.9	C	0.5	NO
	PM	37.7	D	39.9	D	2.2	NO



TABLE 26 – 2035 PLUS SPECIFIC PLAN INTERSECTION LEVEL OF SERVICE

31. Poinsettia Ln / Aviara Pkwy	AM	28.7	C	29.3	C	0.6	NO
	PM	35.4	D	35.6	D	0.2	NO
32. Alga Rd-Aviara Pkwy / El Camino Real	AM	61.2	E	61.8	E	0.6	NO
	PM	149.3	F	153.0	F	3.7	YES
33. Poinsettia Ln / El Camino Real	AM	43.4	D	43.5	D	0.1	NO
	PM	74.5	E	75.5	E	1	NO
34. Cannon Rd / Specific Plan Dwy	AM	Does Not Exist		6.8	A	6.8	NO
	PM	Does Not Exist		17.3	B	17.3	NO

Source: Fehr & Peers, 2015.

Notes:

¹ Whole intersection weighted average stopped delay expressed in seconds per vehicle for signalized intersections.

² LOS calculations performed using the 2000 Highway Capacity Manual (HCM) method.

³ LOS E or F operations highlighted in **bold**.

⁴ Change in delay between the "Plus Specific Plan" Condition and "No Specific Plan" Condition

⁵ Our analysis does not include the pre-emption at the Cannon Road/Avenida Encinas intersection as we determined that the pre-emption frequency is nominal during peak hours.

However, when rail pre-emptions are frequent, operations at this intersection are worse than shown here.

Shaded cells identify significant impact.

9.2 ROADWAY SEGMENT OPERATIONS

Specific Plan traffic traversing the study roadway segments were added to 2035 Baseline Conditions peak hour volumes. **Table 27** displays the LOS analysis for the key study roadway segments under 2035 Plus Specific Plan Conditions and compares the projected levels of service at each segment with 2035 Baseline Conditions. As shown in the table, all study roadway segments are projected to operate at LOS D or better during both peak hours.

As indicated in **Table 27**, after applying the aforementioned SANTEC / ITE significant impact criteria, it is determined that the proposed Specific Plan would not result in any significant impacts to the study roadway segments under 2035 Plus Specific Plan Conditions

9.3 FREEWAY SEGMENT LEVELS OF SERVICE

Table 28 displays freeway operation for I-5 under 2035 Plus Specific Plan conditions. All freeway segments are expected to operate at undesirable levels (LOS E or F) under 2035 Conditions without and with the Specific Plan, except for the segment between Tamarack Avenue and Carlsbad Village Drive, which operates at LOS D without the Specific Plan and degrades to LOS E with the Specific Plan. The addition of Specific Plan trips at all other locations would further exacerbate operations. After applying the aforementioned SANTEC / ITE significant impact criteria, it was determined that the proposed Specific Plan would result in a significant impact on the five I-5 freeway study segments from La Costa Avenue to Carlsbad Village Drive since the Specific Plan peak hour addition of traffic to the freeway mainline is more than one (1) percent of the per lane capacity. The Specific Plan trips are approximately three (3) percent of total traffic volume on I-5.

9.4 RAMP METERING ANALYSIS

Table 29 displays the ramp metering analysis conducted at the Tamarack Avenue, Cannon Road, Palomar Airport Road, and Poinsettia Lane southbound and northbound on-ramps on I-5 under 2035 Plus Specific Plan Conditions. Similar to 2035 Baseline Conditions, the following ramp meters are assumed to be inactive under one or both peak hours:

- I-5 SB on-ramp from Tamarack Avenue – PM peak hour
- I-5 NB on-ramp from Tamarack Avenue – AM and PM peak hours



- I-5 NB on-ramp from Cannon Road – AM peak hour
- I-5 NB on-ramp from Palomar Airport Road – AM peak hour
- I-5 NB on-ramp from Poinsettia Lane – AM Peak hour

As shown in **Table 29**, the following ramps are expected to have insufficient capacity to serve on-ramp volumes during one or both peak hours:

- I-5 SB on-ramp from Tamarack Avenue – AM peak hour without and with the Specific Plan
- I-5 SB on-ramp from Cannon Road – PM peak hour with Specific Plan
- I-5 SB on-ramp from EB Palomar Airport Road – PM peak hour without and with the Specific Plan
- I-5 SB on-ramp from WB Palomar Airport Road – PM peak hour without and with the Specific Plan
- I-5 NB on-ramp from Palomar Airport Road – PM peak hour without and with the Specific Plan

After applying the aforementioned SANTEC / ITE significant impact criteria, it is determined that the proposed Specific Plan would increase delay by more than two minutes compared to 2035 Baseline conditions for on-ramps operating with delays above 15 minutes and would result in a significant impact at the following two ramp locations:

- I-5 SB on-ramp from Tamarack Avenue – operates at 20.5 minutes of delay in the AM peak hour without the Specific Plan. The addition of Specific Plan traffic would further exacerbate operations and increase delay to 23 minutes, which would result in a 2.5 minute increase of delay.
- I-5 SB on-ramp from Cannon Avenue – operates at 0 minutes of delay without the Specific Plan. The addition of Specific Plan traffic would degrade operations and increase delay to 16.6 minutes.

For the Tamarack Avenue on-ramp, the Specific Plan adds a total of 26 trips in the AM peak hour, which equates to three (3) percent of the total ramp volume. As noted under the Trip Generation section of this report, the AM peak hour trip generation estimate using SANDAG rates may be at least double the number that would realistically be generated. This indicates that the actual amount of added traffic is likely closer to 13 trips and 1.5 percent of the ramp volume. As noted under the Existing Conditions and Year 2019 analyses, this would not result in a significant impact with the lower (and more appropriate) trip rate.



TABLE 27 – 2035 PLUS SPECIFIC PLAN ROADWAY PEAK HOUR VOLUMES AND LEVEL OF SERVICE

Roadway Segments	Direction	Number of Lanes	Capacity (1,800 vphpl)	No Specific Plan						Plus Specific Plan						Change in V/C		Significant Impact?	
				Peak Hour Volume		V/ C Ratio		LOS		Peak Hour Volume		V/ C Ratio		LOS					
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Cannon Road																			
I-5 SB Ramps to I-5 NB Ramps	EB	2	3,600	1,320	1,120	0.37	0.31	A	A	1,535	1,484	0.43	0.41	A	A	0.06	0.10	NO	NO
	WB	2	3,600	810	1,130	0.23	0.31	A	A	916	1,535	0.25	0.43	A	A	0.02	0.12	NO	NO
I-5 NB Ramps to Paseo Del Norte	EB	2	3,600	1,650	1,240	0.46	0.34	A	A	2,064	1,965	0.57	0.55	A	A	0.11	0.21	NO	NO
	WB	3	5,400	900	2,150	0.17	0.40	A	A	1,081	2,836	0.20	0.53	A	A	0.03	0.13	NO	NO
Paseo Del Norte to Car Country	EB	2	3,600	1,320	1,020	0.37	0.28	A	A	1,404	1,460	0.39	0.41	A	A	0.02	0.13	NO	NO
	WB	2	3,600	800	1,590	0.22	0.44	A	A	980	1,835	0.27	0.51	A	A	0.05	0.07	NO	NO
Car Country Dr to Armada Dr	EB	2	3,600	1,100	1,040	0.31	0.29	A	A	1,183	1,307	0.33	0.36	A	A	0.02	0.07	NO	NO
	WB	2	3,600	800	1,400	0.22	0.39	A	A	991	1,684	0.28	0.47	A	A	0.06	0.08	NO	NO
Armada Dr to Grand Pacific Dr	EB	2	3,600	720	1,210	0.20	0.34	A	A	782	1,409	0.22	0.39	A	A	0.02	0.05	NO	NO
	WB	2	3,600	1,110	1,140	0.31	0.32	A	A	1,252	1,351	0.35	0.38	A	A	0.04	0.06	NO	NO
Grand Pacific Dr to Faraday Ave	EB	2	3,600	710	1,210	0.20	0.34	A	A	771	1,404	0.21	0.39	A	A	0.01	0.05	NO	NO
	WB	2	3,600	1,130	1,150	0.31	0.32	A	A	1,269	1,356	0.35	0.38	A	A	0.04	0.06	NO	NO
Faraday Ave to El Camino Real	EB	2	3,600	450	1,470	0.13	0.41	A	A	493	1,608	0.14	0.45	A	A	0.01	0.04	NO	NO
	WB	2	3,600	1,100	690	0.31	0.19	A	A	1,201	836	0.33	0.23	A	A	0.02	0.04	NO	NO
Tamarack Avenue																			
Carlsbad Blvd to I-5 SB Ramps	EB	1	1,800	860	830	0.48	0.46	A	A	873	849	0.49	0.47	A	A	0.01	0.01	NO	NO
	WB	1	1,800	930	870	0.52	0.48	A	A	936	888	0.52	0.49	A	A	0.00	0.01	NO	NO
I-5 SB Ramps to I-5 NB Ramps	EB	2	3,600	630	810	0.18	0.23	A	A	630	870	0.18	0.24	A	A	0.00	0.01	NO	NO
	WB	2	3,600	1,000	860	0.28	0.24	A	A	1,019	897	0.28	0.25	A	A	0.00	0.01	NO	NO
I-5 NB Ramps to El Camino Real	EB	2	3,600	830	1,070	0.23	0.30	A	A	836	1,088	0.23	0.30	A	A	0.00	0.00	NO	NO
	WB	2	3,600	1,150	700	0.32	0.19	A	A	1,163	719	0.32	0.20	A	A	0.00	0.01	NO	NO
Palomar Airport Road																			
Paseo Del Norte to Armada Dr	EB	3	5,400	3,050	2,140	0.56	0.40	A	A	3,083	2,241	0.57	0.42	A	A	0.01	0.02	NO	NO
	WB	3	5,400	1,490	3,285	0.28	0.61	A	A	1,561	3,393	0.29	0.63	A	A	0.01	0.02	NO	NO
Armada Dr to The Crossings Dr	EB	3	5,400	2,750	2,210	0.51	0.41	A	A	2,798	2,365	0.52	0.44	A	A	0.01	0.03	NO	NO
	WB	3	5,400	1,525	2,835	0.28	0.53	A	A	1,637	3,001	0.30	0.56	A	A	0.02	0.03	NO	NO
The Crossings Dr to College Blvd	EB	3	5,400	2,960	2,290	0.55	0.42	A	A	3,000	2,419	0.56	0.45	A	A	0.01	0.03	NO	NO
	WB	3	5,400	1,510	2,970	0.28	0.55	A	A	1,602	3,108	0.30	0.58	A	A	0.02	0.03	NO	NO
College Blvd to El Camino Real	EB	3	5,400	2,175	2,580	0.40	0.48	A	A	2,197	2,633	0.41	0.49	A	A	0.01	0.01	NO	NO



Roadway Segments	Direction	Number of Lanes	Capacity (1,800 vphpl)	No Specific Plan						Plus Specific Plan						Change in V/C		Significant Impact?	
				Peak Hour Volume		V/ C Ratio		LOS		Peak Hour Volume		V/ C Ratio		LOS		AM	PM	AM	PM
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM				
	WB	3	5,400	2,220	2,355	0.41	0.44	A	A	2,258	2,432	0.42	0.45	A	A	0.01	0.01	NO	NO
College Boulevard																			
Palomar Airport Rd to Faraday Ave	EB/NB	2	3,600	1,830	1,470	0.51	0.41	A	A	1,830	1,470	0.51	0.41	A	A	0.00	0.00	NO	NO
	WB/SB	1	1,800	840	1,480	0.47	0.82	A	A	840	1,480	0.47	0.82	A	A	0.00	0.00	NO	NO
Poinsettia Lane																			
Paseo Del Norte to Aviara Pkwy	EB	2	3,600	1,410	1,470	0.39	0.41	A	A	1,311	671	0.36	0.19	A	A	0.01	0.01	NO	NO
	WB	2	3,600	1,190	1,440	0.33	0.40	A	A	478	1,247	0.13	0.35	A	A	0.01	0.01	NO	NO
Carlsbad Boulevard																			
North of Tamarack Ave	NB	2	3,600	310	960	0.09	0.27	A	A	321	995	0.09	0.28	A	A	0.00	0.01	NO	NO
	SB	2	3,600	620	660	0.17	0.18	A	A	645	698	0.18	0.19	A	A	0.01	0.01	NO	NO
Tamarack Ave to Cannon Rd	NB	2	3,600	340	1,360	0.09	0.38	A	A	351	1,395	0.10	0.39	A	A	0.01	0.01	NO	NO
	SB	1	1,800	940	810	0.52	0.45	A	A	965	848	0.54	0.47	A	A	0.02	0.02	NO	NO
South of Cannon Rd	NB	1	1,800	330	1,080	0.18	0.60	A	A	340	1,095	0.19	0.61	A	A	0.01	0.01	NO	NO
	SB	1	1,800	950	800	0.53	0.44	A	A	954	814	0.53	0.45	A	A	0.00	0.01	NO	NO
Paseo del Norte,																			
Cannon Rd to Car Country Dr	NB	2	3,600	320	855	0.09	0.24	A	A	406	978	0.11	0.27	A	A	0.02	0.03	NO	NO
	SB	2	3,600	540	515	0.15	0.14	A	A	581	631	0.16	0.18	A	A	0.01	0.04	NO	NO
Outlets North Entrance to Palomar Airport Rd	NB	2	3,600	740	1,430	0.21	0.40	A	A	835	1,571	0.23	0.44	A	A	0.02	0.04	NO	NO
	SB	2	3,600	640	1,460	0.18	0.41	A	A	681	1,592	0.19	0.44	A	A	0.01	0.03	NO	NO
Faraday Avenue																			
Cannon Rd to College Blvd	NB	1	1,800	955	860	0.53	0.48	A	A	985	905	0.55	0.50	A	A	0.02	0.02	NO	NO
	SB	1	1,800	865	1,210	0.48	0.67	A	A	878	1,252	0.49	0.70	A	A	0.01	0.03	NO	NO
Aviara Parkway																			
Palomar Airport Rd to Poinsettia Ln	NB	2	3,600	1,270	610	0.35	0.17	A	A	1,311	671	0.36	0.19	A	A	0.01	0.02	NO	NO
	SB	2	3,600	460	1,190	0.13	0.33	A	A	478	1,247	0.13	0.35	A	A	0.00	0.02	NO	NO
El Camino Real																			
North of Tamarack Ave	NB	3	5,400	900	2,935	0.17	0.54	A	A	914	2,979	0.17	0.55	A	A	0.00	0.01	NO	NO
	SB	3	5,400	2,290	1,105	0.42	0.20	B	B	2,322	1,152	0.43	0.21	B	B	0.01	0.01	NO	NO
Tamarack Ave to Cannon Rd	NB	2	3,600	1,010	3,560	0.28	0.99	A	A	1,033	3,631	0.29	1.01	A	A	0.01	0.02	NO	NO
	SB	2	3,600	3,275	1,395	0.91	0.39	E	E	3,091	1,470	0.86	0.41	D	C	0.01	0.02	NO	NO
Cannon Rd to College Blvd	NB	3	5,400	945	3,455	0.18	0.64	A	A	955	3,466	0.18	0.64	A	A	0.00	0.00	NO	NO
	SB	3	5,400	4,100	2,375	0.76	0.44	C	C	1,403	2,386	0.26	0.44	A	A	0.00	0.00	NO	NO
College Blvd to Faraday Ave	NB	3	5,400	1,845	3,305	0.34	0.61	A	A	1,853	3,316	0.34	0.61	A	A	0.00	0.00	NO	NO



Roadway Segments	Direction	Number of Lanes	Capacity (1,800 vphpl)	No Specific Plan						Plus Specific Plan						Change in V/C		Significant Impact?	
				Peak Hour Volume		V/ C Ratio		LOS		Peak Hour Volume		V/ C Ratio		LOS					
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Faraday Ave to Palomar Airport Rd	SB	3	5,400	3,995	3,085	0.74	0.57	C	C	3,998	3,096	0.74	0.57	C	C	0.00	0.00	NO	NO
	NB	3	5,400	2,425	2,575	0.45	0.48	A	A	2,438	2,594	0.45	0.48	A	A	0.00	0.00	NO	NO
	SB	3	5,400	3,015	2,525	0.56	0.47	A	A	3,021	2,543	0.56	0.47	A	A	0.00	0.00	NO	NO
Palomar Airport Rd to Poinsettia Ln	NB	3	5,400	1,945	2,340	0.36	0.43	A	A	1,945	2,340	0.36	0.43	A	A	0.00	0.00	NO	NO
	SB	3	5,400	2,395	2,645	0.44	0.49	A	A	2,395	2,649	0.44	0.49	A	A	0.00	0.00	NO	NO
Poinsettia Ln to Aviara Pkwy	NB	3	5,400	2,235	2,835	0.41	0.53	A	A	2,239	2,841	0.41	0.53	A	A	0.00	0.00	NO	NO
	SB	3	5,400	2,370	3,175	0.44	0.59	A	A	2,372	3,180	0.44	0.59	A	A	0.00	0.00	NO	NO
South of Aviara Pkwy	NB	3	5,400	2,530	3,780	0.47	0.70	A	A	2,536	3,790	0.47	0.70	A	A	0.00	0.00	NO	NO
	SB	3	5,400	2,760	3,440	0.51	0.64	A	A	2,762	3,449	0.51	0.64	A	A	0.00	0.00	NO	NO

Source: Fehr & Peers, 2015



TABLE 28 – 2035 PLUS SPECIFIC PLAN FREEWAY SEGMENT LEVEL OF SERVICE RESULTS

Segment	Number of Mixed Flow Lanes	Capacity Per Lane	Peak Hour %	Direction Split	HV%	Total ADT	Mixed Flow Lane Factor	No Specific Plan				Plus Specific Plan				Change in V/C	Significant Impact?
								Mixed Flow ADT	Peak Hour Per Mixed Flow Lane	V/C	LOS	Mixed Flow ADT	Peak Hour Per Mixed Flow Lane	V/C	LOS		
Interstate 5																	
La Costa Ave to Poinsettia Ln	8	2,350	7%	60%	4.5%	292,000	84%	243,851	2,681	1.14	F	249,152	2,739	1.17	F	0.03	YES
Poinsettia Ln to Palomar Airport Rd	8	2,350	7%	60%	4.5%	282,800	86%	244,180	2,685	1.14	F	249,962	2,748	1.17	F	0.03	YES
Palomar Airport Rd to Cannon Rd	8	2,350	7%	60%	4.5%	252,000	83%	209,494	2,303	0.98	E	215,276	2,367	1.01	F	0.03	YES
Cannon Rd to Tamarack Ave	8	2,350	7%	60%	4.5%	245,400	83%	203,804	2,241	0.95	E	209,105	2,299	0.98	E	0.03	YES
Tamarack Ave to Carlsbad Village Dr	8	2,350	7%	60%	4.5%	246,900	78%	193,136	2,123	0.90	D	197,473	2,171	0.92	E	0.02	YES

Source: Fehr & Peers, 2015

Bold LOS indicates LOS E or F operations
Shaded cells indicate significant impact

TABLE 29 – 2035 PLUS SPECIFIC PLAN RAMP METERING ANALYSIS

Location	Peak Hour	Total # of Mixed Flow Lanes	No Specific Plan						Plus Specific Plan						Change in Delay	Significant Impact?
			Demand ¹ (veh/hr)		Meter Rate (veh/hr)	Excess Demand (veh/hr)	Delay (min)	Queue (ft)	Demand ¹ (veh/hr)		Meter Rate (veh/hr)	Excess Demand (veh/hr)	Delay (min)	Queue (ft)		
			Mixed Flow & HOV	Mixed Flow only					Mixed Flow & HOV	Mixed Flow only						
I-5 SB - Tamarack Ave On-Ramp	AM	1	830	706	526	180	20.5	5,200	856	728	526	202	23.0	5,850	2.5	YES
I-5 SB - Cannon Rd On-Ramp	AM	1	540	459	734	0	0.0	0	627	533	734	0	0.0	0	0	NO
	PM	2	760	646	734	0	0.0	0	1,103	938	734	204	16.6	2,950	16.6	YES
I-5 NB - Cannon Rd On-Ramp	PM	2	1,530	1,301	1,416	0	0.0	0	1,811	1,539	1,416	123	5.2	1,800	0	NO
I-5 SB - EB Palomar Airport Rd On-Ramp	AM	2	100	85	343	0	0.0	0	100	85	343	0	0.0	0	0	NO
	PM	1	320	272	246	26	6.3	750	320	272	246	26	6.3	750	0	NO
I-5 SB - WB Palomar Airport Rd On-Ramp	AM	1	360	306	492	0	0.0	0	360	306	492	0	0.0	0	0	NO
	PM	1	1,340	1,139	895	244	16.4	7,075	1,340	1,139	895	244	16.4	7,075	0	NO
I-5 NB - Palomar Airport Rd On-Ramp	PM	1	1,620	1,377	988	389	23.6	5,650	1,620	1,377	988	389	23.6	5,650	0	NO
I-5 SB - Poinsettia Ln On-Ramp	AM	2	660	561	1,094	0	0.0	0	660	561	1,094	0	0.0	0	0	NO
	PM	2	1,140	969	796	173	13.0	2,500	1,140	969	796	173	13.0	2,500	0	NO
I-5 NB - Poinsettia Ln On-Ramp	PM	2	510	434	576	0	0.0	0	529	450	576	0	0.0	0	0	NO

Source: Fehr & Peers, 2015. Analysis based on Caltrans District 11 Ramp Meter methodology

Bold delay indicates LOS E or F operations
Shaded cells indicate significant impact

¹Assumed 15% of on-ramp traffic uses the HOV lane. Used the "mixed-flow only" volume for analysis and did not include HOV lane capacity in analysis.



9.5 OFF-RAMP QUEUING ANALYSIS

An off-ramp queue analysis was conducted at the I-5 off-ramps at Cannon Road under 2035 conditions to determine if the Specific Plan would result in a queue spillback from the off-ramp to the freeway mainline. The Synchro 8 software was used to analyze 95th percentile queues. **Table 30** displays vehicular queuing results by movement for the I-5 NB and SB off-ramps at Cannon Road.

TABLE 30 – 2035 YEAR PLUS SPECIFIC PLAN OFF-RAMP QUEUING ANALYSIS

Off-Ramp	Movement	Available Storage	95th Percentile Queue ¹			
			No Specific Plan		Plus Specific Plan	
			AM	PM	AM	PM
I-5 SB Off-Ramp at Cannon Road	SBL	225	475	175	550	350*
	SB L/TH	950	475	175	575	350*
	SBR	225	50	50	75	50
I-5 NB Off-Ramp at Cannon Road	NB L/TH	225	150	225	150	225
	NBR	1,000	250	75	225	375

Source: Fehr & Peers, 2015

Bold represents queue that exceeds available storage.

¹ Results based on 95th percentile queue length reported in Synchro.

² Queue lengths are rounded to 25' increments based on an average car length of 25'

*95th percentile queue volume exceeds capacity, therefore software is not capable of accurately estimating queues under these conditions. The queue for this movement might be longer.

According to the Synchro results, under 2035 Plus Specific Plan Conditions, the queue at the northbound off-ramp would remain within the available ramp storage during AM and PM peak hours. However, in the PM peak hour, the SB off-ramp queue would exceed capacity of the existing turn pockets and would extend into the adjacent lanes, which would potentially compound the queuing problem. Therefore the Synchro software was not capable of accurately estimating queues under these oversaturated conditions.

Due to this finding, a more detailed evaluation was conducted using the SimTraffic microsimulation tool to calculate the 95th percentile queue. The SimTraffic microsimulation software considers lane utilization, turn pocket storage lengths, upstream/downstream queue spillbacks, and coordinated signal timings on intersection queuing. The intersections on Cannon Road between Avenida Encinas and Car Country Drive were modeled, and the 95th percentile results were calculated based on an average of five model runs. Under 2035 Plus Specific Plan Conditions, the SimTraffic 95th percentile queues for the I-5 off-ramps at Cannon Road in the PM peak hour are as follows:

- Southbound left-turn/thru on SB off-ramp = 350 feet



- Northbound right-turn lane on NB off-ramp = 450 feet

The projected queue on the SB off-ramp of 350 feet would remain within the available ramp storage and would not impact mainline operations. Though the NB off-ramp queue using SimTraffic was longer than what Synchro calculated (SimTraffic=450 ft vs. Synchro=375 ft), the “worst-case” queue for the northbound right-turn would still remain within the available ramp storage and is also not expected to impact freeway mainline operations. Accordingly, the current ramp configurations would accommodate the addition of the Specific Plan traffic on the Cannon Road off-ramps under 2035 conditions.



10.0 SIGNIFICANT IMPACTS AND ENVIRONMENTAL PROTECTION FEATURES

This chapter identifies the significant impacts of the proposed Specific Plan on the transportation system based on the significance thresholds identified in the SANTEC/ITE guidelines. Each impact is followed by a recommended Environmental Protection Feature (EPF) to reduce the significance of identified impacts.

10.1 EXISTING PLUS SPECIFIC PLAN CONDITIONS

10.1.1 INTERSECTIONS

Under Existing Plus Specific Plan Conditions, the Specific Plan will not result in any significant impacts to study intersections; therefore, no EPF is required.

10.1.2 ROADWAY SEGMENTS

Under Existing Plus Specific Plan Conditions, the Specific Plan will not result in any significant impacts to study roadway segments; therefore, no EPF is required.

10.1.3 FREEWAY SEGMENTS

According to **Table 12** and the SANTEC/ITE significance criteria, the Specific Plan would cause the following significant impacts to the I-5 freeway facilities during the peak hour under Existing Plus Specific Plan Conditions:

1. Impact:
 - I-5 between La Costa Avenue and Poinsettia Lane (LOS E exacerbated)
 - I-5 between Poinsettia Lane and Palomar Airport Road (LOS E exacerbated)
 - I-5 between Palomar Airport Road and Cannon Road (LOS E exacerbated)
 - I-5 between Cannon Road to Tamarack Avenue (LOS D degraded to LOS E)

1. EPF: The proponent shall pay their fair share towards the I-5 North Coast Corridor Program (NCCP). As discussed in Chapter 6, the I-5 NCCP proposes to improve portions on I-5 from La Jolla to Oceanside. The NCCP plans to construct four express Lanes (two in each direction) from La Jolla Village Drive to Harbor Drive in Oceanside, which will include the improvement of select interchange ramps. The improvements within our study area also include:



- Extending auxiliary lanes on I-5 from Palomar Airport Road to Cannon Road (northbound and southbound directions)
- Extending auxiliary lanes on I-5 from Cannon Road to Tamarack Avenue (northbound and southbound directions)
- Reconstructing the I-5 off-ramps to provide a second exit lane on both Cannon Road off-ramps

The Specific Plan proponent is currently in discussions with Caltrans to determine the amount and timing of an appropriate fair share contribution towards freeway-related improvements. Implementation of this EPF would reduce the above impact to a **less-than-significant** level.

10.1.4 RAMP METERS

According to the results presented in **Table 13** and the SANTEC/ITE significance criteria, the Specific Plan would cause the following significant impact to the study on-ramp:

2. Impact: I-5 SB On-Ramp at Tamarack Avenue – the addition of the Specific Plan traffic would exacerbate undesirable operations by increasing the delay by 2.5 seconds on an on-ramp operating with delays greater than 15 minutes. It should be noted that with use of the lower and more realistic trip rate for the regional shopping center, the Specific Plan would not result in an impact at this location.
2. EPF: On-ramp improvements typically include adding additional capacity by widening the ramp or reducing the metering rate to allow more vehicles to get served during the peak period. The existing ramp currently includes one mixed-flow lane and one high occupancy vehicle (HOV) lane. According to the I-5 NCCP, two improvements are planned at this location that will potentially reduce this impact:
 - Widening of the ramp to include a second mixed-flow lane.
 - Creation of a SB auxiliary lane between the Tamarack Avenue on-ramp and Cannon Road off-ramp.

These improvements, plus the entire NCCP project, will provide additional capacity mainline and ramp enhancements that will allow adjustment of the metering rate and additional storage on the ramp. This will reduce the impact of vehicles queuing back onto Tamarack Avenue.

As noted above under the Freeway Segments impact analysis, the Specific Plan proponent is currently in discussions with Caltrans to determine the amount and timing of an appropriate fair share contribution towards freeway-related improvements. This contribution will address both



mainline and interchange impacts. Implementation of this EPF would reduce the above impact to a **less-than-significant** level.

10.2 YEAR 2019 PLUS SPECIFIC PLAN CONDITIONS

10.2.1 INTERSECTIONS

Under Year 2019 Conditions, the following two intersections are expected to operate at LOS E or F without and with the proposed Specific Plan and it is determined that the proposed Specific Plan would increase delay by more than two seconds compared to Year 2019 Baseline Conditions and would result in a significant impact:

3. Impact: Cannon Road / El Camino Real (Intersection 14) – the addition of Specific Plan traffic at this intersection would exacerbate LOS E operations in the PM peak hour by increasing delay by 7.1 seconds.
3. EPF: Implementation of a third northbound through lane on El Camino Real. This improvement would improve operations to LOS D.

Per discussions with City staff, this proposed improvement is included in the City's TIF and includes the addition of a third NB through lane and widening of the existing bridge structure to provide three through lanes and a separate right-turn lane. This improvement is expected to be in place by the end of 2016. The Specific Plan will contribute towards the design and construction of this improvement. The contribution is considered the Specific Plan's fair share towards significantly reducing the Cannon Road / El Camino Real intersection impacts. Implementation of this EPF would reduce the above impact to a **less-than-significant** level.

4. Impact: Aviara Parkway/Alga Rd / El Camino Real (Intersection 32) – the addition of Specific Plan traffic at this intersection would exacerbate LOS F and E operations in the AM and PM peak hour, respectively, by increasing delay by 2.4 seconds in the AM peak hour and 4 seconds in the PM peak hour.
4. EPF: Implementation of a separate northbound right-turn lane on El Camino Real and optimization of the signal to reallocate green time to account for the new turn lane. This improvement would improve operations to LOS D for both AM and PM peak hours.

The proposed improvement is included in the City's TIF Program, and the Specific Plan will pay the TIF based on the estimated average daily traffic volume. The City will monitor this location as part of the Growth Management Plan and the Specific Plan applicant will implement this EPF once



the intersection operates below City standards. The contribution is considered the Specific Plan's fair share towards significantly reducing this impact. Implementation of this EPF would reduce the above impact to a **less-than-significant** level.

Table 31 summarizes the impacted intersections LOS and the LOS with the proposed EPFs.

TABLE 31 –YEAR 2019 PLUS SPECIFIC PLAN WITH EPFS INTERSECTION LEVEL OF SERVICE

Intersection	Peak Hour	No Specific Plan		Plus Specific Plan		Plus Specific Plan with EPFs		Impact Significantly Reduced?
		Delay	LOS ^{2,3}	Delay	LOS ^{2,3}	Delay	LOS ^{2,3}	
		(sec/veh) ¹		(sec/veh) ¹		(sec/veh) ¹		
14. Cannon Road / El Camino Real	AM	46.8	D	51.8	D	51.5	D	YES
	PM	65.2	E	72.3	E	49.7	D	
32. Alga Rd-Aviara Parkway / El Camino Real	AM	86.3	F	88.7	F	41.8	D	YES
	PM	73.1	E	77.1	E	53.6	D	

Source: Fehr & Peers, 2015

Bold text indicates LOS E or F operations

10.2.2 ROADWAYS

The Specific Plan will not result in any significant impacts to study roadway segments; therefore, no EPF is required.

10.2.3 FREEWAY SEGMENTS

According to **Table 20** and the SANTEC/ITE significance criteria, the Specific Plan would cause the following significant impacts to the I-5 freeway facilities during the peak hour under Year 2019 Plus Specific Plan Conditions:

5. Impact:
 - I-5 between La Costa Avenue and Poinsettia Lane (LOS E exacerbated)
 - I-5 between Poinsettia Lane and Palomar Airport Road (LOS E exacerbated)
 - I-5 between Palomar Airport Road and Cannon Road (LOS E exacerbated)
 - I-5 between Cannon Road to Tamarack Avenue (LOS E exacerbated)
 - I-5 between Tamarack Avenue to Carlsbad Village Drive (LOS D degraded to LOS E)

5. EPF: Implement EPF 1.



The proponent shall pay a fair share towards the I-5 North Coast Corridor Program (NCCP). The Specific Plan proponent is currently in discussions with Caltrans to determine the amount and timing of an appropriate fair share contribution towards freeway-related improvements. Implementation of this EPF would reduce the above impact to a **less-than-significant** level.

10.2.4 RAMP METERS

According to the results presented in **Table 21** and the SANTEC/ITE significance criteria, the Specific Plan would cause the following significant impact to the study on-ramp under Year 2019 Plus Specific Plan Conditions:

6. Impact: I-5 SB On-Ramp at Tamarack Avenue – the addition of the Specific Plan traffic would exacerbate undesirable operations by increasing the delay by 2.6 seconds on an on-ramp operating with delays greater than 15 minutes.
6. EPF: Implement EPF 2.

The Specific Plan proponent is currently in discussions with Caltrans to determine the amount and timing of an appropriate fair share contribution towards freeway-related improvements. This contribution will address both mainline and interchange impacts. Implementation of this EPF would reduce the above impact to a **less-than-significant** level.

10.3 2035 PLUS SPECIFIC PLAN CONDITIONS

10.3.1 INTERSECTIONS

Under 2035 Conditions, the Specific Plan would cause significant impacts to the following 10 intersections:

7. Impact: Tamarack Avenue / El Camino Real (Intersection 4) – the addition of Specific Plan traffic at this intersection would exacerbate LOS E and F operations in the AM and PM peak hours, respectively, and would result in a significant impact by increasing delay by 2.8 seconds and 5.6 seconds.
7. EPF: Construct a second WB left-turn lane to add capacity to this movement and reduce queuing during the AM peak hour. During the AM peak hour, the westbound left-turn movement is expected to be 550 vehicles and 556 vehicles without and with the Specific Plan, respectively. Therefore, adding the second westbound turn lane would improve operations to an LOS D in the AM peak hour and would also improve operations in the PM peak hour to a 100 second delay, which is less than 2035 Baseline Conditions.



Per discussions with City staff, the second left-turn lane could be installed by implementing a “road diet” on the east departure leg of Tamarack Avenue. This would involve eliminating one of the two eastbound travel lanes on Tamarack Avenue immediately east of El Camino Real. This configuration would not impact any other turning movements from El Camino Real and Tamarack Avenue since all of the movements turning onto eastbound Tamarack Avenue are single-lane movements. In addition, the total eastbound volume in 2035 is 303 vehicles in and AM peak hour and 899 vehicles in the PM peak hour and could be accommodated by a single eastbound departure lane. To ensure that lanes are properly aligned across the intersection, the existing WB through and through/right-turn lane can be restriped to a single through/right-turn lane, which would also provide additional room for a wider bike lane.

To be consistent with the new intersection geometrics, the section of Tamarack Avenue west of El Camino Real should be re-striped to include only one through lane in each direction from Skyline Road to El Camino Real where feasible. With the additional width, buffered bike lanes could be installed along this section where adequate width is available. These improvements would collectively improve cyclists’ experience and enhance safety along Tamarack Avenue.

This proposed re-striping improvements are not included in the Carlsbad TIF Program. Therefore, funding for its installation will be the Specific Plan proponent’s responsibility. Specific Plan traffic represents 3% of the total traffic volume at this location in 2035. El Camino Real improvements are expected to be completed by end of 2016, and re-surfacing of Tamarack and road diet anticipated by end of 2019. Implementation of this EPF would reduce the above impact to a **less-than-significant** level and provide bicycle safety enhancements.

8. Impact: Cannon Road / Paseo del Norte/Specific Plan Driveway (Intersection 9) – the addition of Specific Plan traffic at this intersection would exacerbate operations from LOS C in the PM peak hour without the Specific Plan to LOS E with the Specific Plan.

8. EPF: Construction of a second outbound access lane at the mid-block Specific Plan inbound driveway intersection (Intersection 34). This improvement would better distribute outbound traffic through the Cannon Road/Paseo Del Norte intersection, and reduce overall delay; improving intersection operations to LOS D in the PM peak hour.

The City’s TIF does not include any planned improvements at Cannon Road/Paseo del Norte, and since this impact occurs at the Specific Plan driveway intersection, the Specific Plan’s proponent is fully responsible for constructing the additional outbound lane. City will monitor location as part of Growth Management Plan and Specific Plan applicant will implement EPF to maintain City performance standards accordingly or earlier. Implementation of this EPF would reduce the above impact to **less-than-significant** level.



9. Impact: Cannon Road / El Camino Real (Intersection 14) – the addition of Specific Plan traffic at this intersection would exacerbate LOS E and F operations in the AM and PM peak hours, respectively, and would result in a significant impact by increasing delay by 2.4 seconds and 23.7 seconds.

9. EPF: Implement EPF 3. This improvement would decrease delay to 59 seconds and 93 seconds in the AM and PM peak hours, respectively, which would improve operations compared to Baseline Conditions.

Per discussions with City staff, this proposed improvement is a fully funded City project and includes the addition of a third NB through lane and widening of the existing bridge structure consistent with providing three lanes in each direction on El Camino Real. This EPF is expected to be in place by the end of 2016. The Specific Plan will contribute to the Carlsbad TIF fund. The contribution is considered the Specific Plan's fair share towards significantly reducing the Cannon Road / El Camino Real intersection impacts. Implementation of this EPF would reduce the above impact to a **less-than-significant** level.

10. Impact: El Camino Real / Faraday Avenue (Intersection 19) – the addition of Specific Plan traffic at this intersection would exacerbate LOS F operations in the PM peak hour, and would result in a significant impact by increasing delay by 3.4 seconds.

EPF: Install signal overlap phases for the SBR and WBR movements. During the AM peak hour, the southbound right-turn volume is 520 vehicles without and with the Specific Plan, and the westbound right-turn volume is 428 with the Specific Plan. Therefore, providing right-turn overlap phases for these two heavy movements would improve operations to 132 seconds and 129 seconds of delay in the AM and PM peak hours, respectively, which is better compared to 2035 Baseline Conditions (140 and 148 seconds).

This proposed improvement is not included in the Carlsbad TIF Program. Therefore, funding for its installation will be the Specific Plan proponent's responsibility. Specific Plan traffic represents 1% of the total traffic volume at this location in 2035. The City will monitor this location as part of the Growth Management Plan and will implement this EPF to maintain performance standards accordingly or earlier. Implementation of this EPF would reduce the above impact to a **less-than-significant** level.

11. Impact: Palomar Airport Road / Paseo del Norte (Intersection 23) – the addition of Specific Plan traffic at this intersection would exacerbate LOS F operations in the PM peak hour, and would result in a significant impact by increasing delay by 6.9 seconds.



11. EPF: The Carlsbad TIF program currently includes the addition of a separate EB right-turn lane at this intersection and the extension of the EB left-turn pockets. However, these improvements by themselves do not significantly reduce the Specific Plan impact. A development proposal for the northwest corner of the intersection has identified an improvement to re-stripe the southbound shared through/right-turn lane to an exclusive right-turn lane. With the addition of this re-striping and with the installation of an overlap phase for the southbound right-turn movement, the intersection would operate with 74.5 seconds of delay, and the Specific Plan's impact would be significantly reduced.

The proposed eastbound approach improvements are included in the Carlsbad TIF Program, and payment of the TIF by the Specific Plan would satisfy the fair share contribution for these measures. If the re-striping/overlap improvement is not implemented by another developer, funding for its installation will be the Specific Plan proponent's responsibility. Implementation of these EPFs would reduce the above impact to a **less-than-significant** level.

12. Impact: Palomar Airport Road / Armada Drive (Intersection 24) – the addition of Specific Plan traffic at this intersection would exacerbate LOS F operations in the PM peak hour, and would result in a significant impact by increasing delay by 12 seconds.

12. EPF: Restripe the southbound approach to change the southbound thru lane to a thru/right lane and restripe the northbound through/right-turn lane as a through lane and install a northbound right-turn overlap phase. This configuration for the southbound approach would mirror the existing lane configurations of the opposite approach (northbound). During the PM peak hour, the southbound left-turn lane volume is 570 and 574 without and with the Specific Plan, respectively. Therefore, providing an additional southbound right-turn lane would improve operations to 81 seconds of delay in the PM peak hour, which is better compared to 2035 Baseline Conditions (94 seconds).

This proposed improvement is not included in the Carlsbad TIF Program. Therefore, funding for its installation will be the Specific Plan proponent's responsibility. Specific Plan traffic represents 5% of the total traffic volume at this location in 2035. The City will monitor this location as part of the Growth Management Plan and will implement this EPF to maintain performance standards accordingly or earlier. Implementation of this EPF would reduce the above impact to a **less-than-significant** level.

13. Impact: Palomar Airport Road / College Boulevard (Intersection 26) – the addition of Specific Plan traffic at this intersection would exacerbate LOS E and F operations in the AM and PM peak hours, respectively, and would result in a significant impact by increasing delay by 2.9 and 10.2 seconds.



13. EPF: Construct a second southbound thru lane on College Boulevard. There are currently three southbound receiving lanes on the south leg of the intersection on College Boulevard/Aviara Parkway. Therefore, adding a second southbound thru lane would only require widening of College Boulevard. During the PM peak hour, the southbound thru volumes is 610 without and with the Specific Plan. Thus, adding a second southbound thru lane would improve operations to 50 and 69 seconds of delay in the AM and PM peak hours, respectively, which is better compared to 2035 Baseline conditions (58 and 89 seconds).

This proposed improvement is not included in the Carlsbad TIF Program. Therefore, funding for its installation will be the Specific Plan proponent's responsibility. Specific Plan traffic represents 4% of the total traffic volume at this location in 2035. The City will monitor this location as part of the Growth Management Plan and the Specific Plan applicant will implement this EPF to maintain performance standards accordingly or earlier. Implementation of this EPF would reduce the above impact to a **less-than-significant** level.

14. Impact: Palomar Airport Road / El Camino Real (Intersection 27) – the addition of Specific Plan traffic at this intersection would exacerbate LOS F operations in the PM peak hour, and would result in a significant impact by increasing delay by 4.1 seconds.

14. 14. EPF: This location includes the maximum number of travel lanes typically built at an at-grade intersection in the City of Carlsbad. In keeping with the City's more balanced transportation planning approach, the addition of more travel lanes would have unintended consequences on bicycle and pedestrian travel and safety. Consistent with this approach, policies in the City's Draft Mobility Element update exempt this intersection from further physical vehicle capacity improvements to enhance quality of life expectations for the community. To help improve operations at this location, the Specific Plan proposes to contribute to the implementation of traffic systems management (TSM) strategies (e.g., adaptive signal technology) to maximize efficiency of the existing roadway system on several key corridors (El Camino Real, Palomar Airport Road, and Cannon Road).

The City is initiating a pilot program for adaptive signal technology by the end of 2015 and then expects to install the technology at all signalized intersections along the aforementioned corridors, which is anticipated to occur before 2019. Implementation of adaptive signals on corridors across California have resulted in an increase in intersection capacity, increase in vehicle throughput, and reduction in vehicle delays. The Specific Plan will contribute to the complete installation of adaptive signals at all seven (7) of its impacted intersections on these streets, and the TSM improvements and the resulting delay reduction in the corridor is expected to more than offset the anticipated delay caused by Specific Plan implementation. This proposed improvement is not



included in the Carlsbad TIF Program. Therefore, the installation of adaptive signals at seven (7) locations will be the Specific Plan proponent's responsibility. Specific Plan traffic represents 2% of the total traffic volume at this location in 2035. Implementation of this EPF would increase the intersection's vehicle throughput and reduce vehicle delays, which will reduce the above impact to a **less-than-significant** level.

15. Impact: Alga Rd-Aviara Parkway / El Camino Real (Intersection 32) – the addition of Specific Plan traffic at this intersection would exacerbate LOS F operations in the PM peak hour, and would result in a significant impact by increasing delay by 3.7 seconds.

16. EPF: Implement EPF 4

Therefore, adding a separate right-turn lane would improve operations to 115 seconds of delay in the PM peak hour, which is better, compared to 2035 Baseline conditions (149 seconds). The proposed improvement is included in the Carlsbad TIF Program. Accordingly, the Specific Plan will pay the Citywide TIF and this contribution is considered the Specific Plan's fair share towards significantly reducing the Alga Rd-Aviara Parkway / El Camino Real intersection. The City will monitor this location as part of the Growth Management Plan and the Specific Plan applicant will implement this EPF to maintain performance standards accordingly or earlier. Implementation of this EPF would reduce the above impact to a **less-than-significant** level.

Table 32 summarizes the impacted intersections LOS and the LOS with the proposed EPFs.

TABLE 32 – 2035 PLUS SPECIFIC PLAN WITH EPFS INTERSECTION LEVEL OF SERVICE

Intersection	Peak Hour	No Specific Plan		Plus Specific Plan		Plus Specific Plan with EPFs		Less Than Significant Impact?	Additional Measures (Above & Beyond Required) ⁵
		Delay	LOS ^{2,3}	Delay	LOS ^{2,3}	Delay	LOS ^{2,3}		
		(sec/veh) ¹		(sec/veh) ¹		(sec/veh) ¹			
4. Tamarack Ave / El Camino Real	AM	78.4	E	81.2	F	48.9	D	YES	YES
	PM	112.3	F	117.9	F	100	F		
9. Cannon Rd / Paseo del Norte	AM	19.4	B	31.0	C	30.2	C	YES	YES
	PM	28.1	C	66.6	E	52.7	D		
14. Cannon Rd / El Camino Real	AM	62.0	E	64.4	E	59.4	E	YES	YES
	PM	105.6	F	129.3	F	92.8	F		
19. El Camino Real / Faraday Ave	AM	139.8	F	139.2	F	131.7	F	YES	YES
	PM	148.4	F	151.8	F	129.2	F		
23. Palomar Airport Rd / Paseo del Norte	AM	44.5	D	48.2	D	49.4	D	YES	YES
	PM	72.9	E	79.8	E	74.5	E		
24. Palomar Airport Rd / Armada Dr	AM	32.4	C	33.5	C	35.1	C	YES	YES
	PM	94.3	F	106.3	F	81.3	F		
26. Palomar Airport Rd / College Blvd	AM	57.5	E	60.4	E	48.2	D	YES	YES
	PM	89.3	F	99.5	F	69.0	E		
27. Palomar Airport Rd / El Camino Real	AM	112.0	F	112.9	F	<112.0 ⁴	F	YES	YES
	PM	176.2	F	180.3	F	< 178.2 ⁴	F		
32. Aviara Parkway/Alga Rd / El Camino Real	AM	61.2	E	61.8	E	59.5	E	YES	YES
	PM	149.3	F	153.0	F	115.2	F		

Source: Fehr & Peers, 2015

Bold text indicates LOS E or F operations

1. Whole intersection weighted average stopped delay expressed in seconds per vehicle for signalized intersections.
2. LOS calculations performed using the 2000 Highway Capacity Manual (HCM) method.
3. LOS E or F operations highlighted in **bold**.
4. Delay will decrease to a less than significant level with the implementation of adaptive signals at this intersection and other locations on the Palomar Airport Road, El Camino Real, Cannon Road, and Paseo del Norte corridors.
5. Specific Plan will implement additional measures above and beyond those required including:
 - Implementation of a Transportation Demand Management (TDM) program that is projected to reduce single occupant vehicle trips by six (6) percent less than the trip generation estimates shown in Table 9.
 - Fully funding selected intersection improvements in advance above and beyond fair share contribution, subject to reimbursement.

10.3.2 ROADWAYS

The Specific Plan will not result in any significant impacts to study roadway segments, therefore, no EPF is required.



10.3.3 FREEWAY SEGMENTS

According to **Table 28** and the SANTEC/ITE significance criteria, the Specific Plan would cause the following significant impacts to the I-5 freeway facilities during the peak hour under 2035 Plus Specific Plan Conditions:

16. Impact:

- I-5 between La Costa Avenue and Poinsettia Lane (LOS F exacerbated)
- I-5 between Poinsettia Lane and Palomar Airport Road (LOS F exacerbated)
- I-5 between Palomar Airport Road and Cannon Road (LOS E degraded to LOS F)
- I-5 between Cannon Road to Tamarack Avenue (LOS E exacerbated)

16. EPF: Implement EPF 1.

The proponent shall pay a fair share towards the I-5 North Coast Corridor Program (NCCP). The Specific Plan proponent is currently in discussions with Caltrans to determine the amount and timing of an appropriate fair share contribution towards freeway-related improvements. Implementation of this EPF would reduce the above impact to a **less-than-significant** level.

10.3.4 RAMP METERS

According to the results presented in **Table 29** and the SANTEC/ITE significance criteria, the Specific Plan would cause the following significant impact to the study on-ramps under 2035 Plus Specific Plan Conditions:

17. Impact: I-5 SB On-Ramp at Tamarack Avenue – the addition of the Specific Plan traffic would exacerbate undesirable operations by increasing the delay by 2.6 seconds on an on-ramp operating with delays greater than 15 minutes. As noted previously, this would not be an impact if the lower and more appropriate AM peak hour trip rate was used for the proposed shopping center use.

17. EPF: Implement EPF 2.

The addition of a second mixed flow lane would improve operations on this ramp and reduce the projected vehicle queue, and this improvement is included as part of the NCCP project. Also, the addition of mainline capacity and auxiliary lane (extending to Cannon Road) will allow adjustment of ramp metering timing and could also contribute to reduced queues in 2035. Accordingly, the Specific Plan proponent is currently in discussions with Caltrans to determine the amount and timing of an appropriate fair share contribution towards freeway-related improvements. This



contribution will address both mainline and interchange impacts. Implementation of this EPF would reduce the above impact to a **less-than-significant** level.

18. Impact: I-5 SB On-Ramp at Cannon Road – the addition of the Specific Plan traffic would exacerbate undesirable operations by increasing the delay by 2.6 seconds on an on-ramp operating with delays greater than 15 minutes.

18. EPF: Implement EPF 2.

This ramp is currently configured with two mixed-flow lanes and one HOV bypass lane and is essentially built out. The NCCP project includes the addition of mainline capacity and construction of an auxiliary lane extending to Palomar Airport Road, both of which will allow adjustment of ramp metering timing and subsequent reduction of queues in 2035. Accordingly, the Specific Plan proponent is currently in discussions with Caltrans to determine the amount and timing of an appropriate fair share contribution towards freeway-related improvements. This contribution will address both mainline and interchange impacts. Implementation of this EPF would reduce the above impact to a **less-than-significant** level.



11.0 MULTI-MODAL ASSESSMENT

11.1 BACKGROUND

The City of Carlsbad is in the process of updating their General Plan Mobility Element and has established numerous draft policies and implementation strategies designed to provide a more balanced transportation network. This approach strives to avoid past planning oversights that sacrificed pedestrian and bicycle safety, as well as improved transit service and accessibility, in the name of minimizing vehicle delays. The draft Mobility Element and supporting documentation describes new methodologies for measuring LOS for non-auto modes and disclosing impacts caused by proposed changes to the active and transit circulation systems. The potential impacts of the Specific Plan on multi-modal travel, and more specifically multi-modal level of service (MMLOS) are described in this chapter.

11.2 ASSESSMENT METHODOLOGY

Unlike vehicular LOS, the operation of pedestrian, bicycle and transit facilities and services is not based on the volume of each user, but is focused on the environment through which a user traverses. For example, the pedestrian LOS is based on the number of lanes that a pedestrian must cross at an intersection, the presence of automatic and scramble phasing, and the presence of well-marked crosswalks to name a few. Similarly, bicycle LOS is based on the facility type provided, the connected network available and pavement condition. Transit LOS factors include headways, stop amenities, transit preemption and transfer capabilities. Because all of these travel modes would be utilized within a short distance of the Specific Plan site, the multi-modal assessment focused on the section of Cannon Road between the I-5 freeway and Car Country Drive.

11.3 ASSESSMENT RESULTS

Table 33 shows the MMLOS results for Cannon Road under 2035 Baseline and 2035 Plus Specific Plan Conditions. Existing, Year 2019, and 2035 results would be the same in this case since roadway and intersection improvements along the site frontage are identical for the “Plus Specific Plan” scenario because traffic volumes are not part of this methodology.



TABLE 33 – CANNON ROAD MULTI MODAL LEVEL OF SERVICE (MMLOS) FOR YEAR 2019 CONDITIONS

Mode	Baseline (No Specific Plan)		Plus Specific Plan	
	Point Score	LOS	Point Score	LOS
Pedestrian	3.5	F	4.0	F
Bicycle	7.5	C	10	A
Transit	0.0	F	4.5	F

Source: Fehr & Peers, 2015

Under Baseline and Plus Specific Plan conditions, pedestrian and transit facilities on Cannon Road operate at LOS F. The pedestrian LOS calculation decreases to an automatic LOS E or worse if the pedestrian crossing length is greater than five lanes. At the Paseo Del Norte intersection, Cannon Road currently has six lanes for pedestrians to cross on the east leg. This segment on Cannon Road would increase to seven lanes with implementation of the Specific Plan with the addition of a “trap” EB left-turn lane at the downstream inbound driveway intersection.

There are currently no transit facilities on Cannon Road along the Specific Plan frontage, which results in 0 points and LOS F operation. This would change with implementation of the Specific Plan and integration of transit service within the visitor-serving commercial area.

The presence of existing bicycle lanes on Cannon Road and Paseo del Norte results in LOS C for bicycles, although the path of travel is a challenging one for westbound cyclists through the I-5 interchange where riders destined for Carlsbad Boulevard and the beach must travel in the shared through/right-turn lane with vehicles turning onto I-5 northbound.

The multimodal enhancements that are proposed as part of the Specific Plan are listed in the next section and contribute to the Plus Specific LOS values listed in **Table 33**.



11.4 POTENTIAL MULTIMODAL ENHANCEMENTS

11.4.1 PEDESTRIAN FACILITIES

As noted in **Table 33**, the MMLOS for pedestrian facilities is projected to be LOS F, primarily due to the wide roadway crossings on Cannon Road. Even with proposed enhancements such as countdown timers, audible pedestrian signals, and the addition of the new pedestrian facilities on the north side of Cannon Road, the pedestrian environment is determined to be LOS F based on the City's methodology.

Ultimately, it is not possible to reduce the number of lanes crossed by pedestrians without substantially affecting vehicle flow and increasing delays and queuing. As noted in the intersection analysis, the Cannon Road/Paseo del Norte-Specific Plan Driveway intersection is projected to operate at LOS E in 2035. This is a trade-off to avoid adding additional turn lanes at the intersection to facilitate multi-modal travel between the adjacent car dealerships and the visitor-serving commercial uses on the Specific Plan site.

From the Paseo del Norte intersection to within the visitor-serving commercial area, the network of sidewalks should be extensive and well-landscaped to encourage walking. The on-site sidewalks should be separated from vehicle traffic in the exit and entrance driveways and pedestrian crossings of the main driveways should be limited to sections that include only one or two lanes and/or should be signalized.

To facilitate pedestrian travel to and from the site, the Specific Plan should include a continuous pedestrian path or sidewalk along the entire length of the site frontage on Cannon Road from the I-5 Northbound Ramps intersection to the existing sidewalk that terminates approximately 850 feet east of the Car Country Drive intersection. This facility will also be linked to an extensive network of trails within the open space area of the site providing multiple walking opportunities from the Cannon Road/Faraday Avenue intersection to and through the Specific Plan area. The sidewalk extension from east of Car Country Drive should actually be constructed as a shared use path as described in the next section.

11.4.2 BICYCLE FACILITIES

Although two of the three roadways fronting or intersecting the site include bike lanes, additional bicycle infrastructure can be included to enhance bicycle travel. Of greatest potential is the recommendation to include a shared use path along the entire length of the north side of Cannon Road from Car Country Drive to the northeast corner of the I-5 Northbound Ramps intersection. The primary purpose of this facility is to provide a separated bikeway that will serve a broad range of skill levels and those individuals who do not wish to closely interface with vehicles along long stretches of the roadway. It also moves those cyclists who choose to use it out of the roadway and away from the heavy turning movements at the site driveways and



the I-5 Northbound Ramps intersection, where a second exclusive right-turn lane is proposed to improve vehicle flow to and through the interchange area. Providing the path to this point would give westbound cyclists an alternative to riding between the two through and two right-turn lanes at the ramp.

The shared use path could actually serve both bicyclists and pedestrians and would ideally be 12 feet wide and physically separated from the north curb of Cannon Road by a buffer of at least 3 feet in width and include vertical treatments such as a fence and/or dense landscaping. Crossings at the driveways would include wide, ADA-compliant ramp areas, with special pavement treatments, and appropriate signage indicating the presence of bicyclists and pedestrians. The connections at the I-5 Northbound Ramps and Car Country Drive intersections would allow cyclists to access the bike lanes and avoid having to use the sidewalk to ride longer distances. The increase in Point Score and improved LOS results from the presence of providing more than one bike facility and removing cyclists from being trapped by right-turn lanes.

At the I-5 Ramps intersection, a special pedestrian/bicycle signal phase would have to be implemented to allow users to cross the on-ramp. Signal phasing would have to include a no right-turn on red phase to avoid sight distance issues associated with dual right turn lanes. The other benefit to providing this facility is the connection it would provide to the proposed North Coast Trail, which is part of the NCCP project. The North Coast Trail is planned to extend from the northeast corner of the I-5 Cannon Road interchange along the Specific Plan frontage, over the Agua Hedionda Lagoon, and connect to Tamarack Avenue.

Within the visitor serving commercial area and at selected locations in the open space area, bicycle racks and/or bike lockers should be provided for both visitors and employees. Within the commercial area, personal lockers should be provided to encourage employees to ride to and from the site, thus reducing parking and traffic demand and resulting in an environmental benefit.

11.4.3 TRANSIT FACILITIES

With implementation of the Specific Plan, transit service is expected to be expanded to the visitor-serving commercial area of the site. A small, bus transfer and staging facility in close proximity to one of the main pedestrian entrances should be provided within the site. The size and design of the facility should be developed in consultation with North Coast Transit District (NCTD) staff and could become a new focal point for transit in this part of the City of Carlsbad where transit service is non-existent. Ideally, service would be extended to one or both of the City's Coaster train stations to facilitate use of passenger rail to get to the site.

Providing an attractive and amenitized stop within the site would encourage transit use and again reduce the need for parking by supplying a convenient alternative. Amenities should include covered stops with



benches, and these elements were assumed in the transit MMLOS analysis that increased the Point Score by 4.5 over the current level of 0.

11.4.4 TRANSPORTATION DEMAND MANAGEMENT (TDM)

Implementation of a travel demand management (TDM) plan could lead to vehicle trip reduction, increased use of alternative modes, and better traffic management in the vicinity of the Specific Plan area. To provide a conservative traffic analysis, no reductions for TDM were applied to the Specific Plan vehicle trip generation. However, the Specific Plan proponent is planning on implementing selected strategies to minimize vehicle trips to and from the site in addition to the traffic already identified in this report. Beyond the multi-modal improvements identified earlier in this chapter, potential TDM measures being considered by the Specific Plan applicant include:

- A transportation kiosk(s) providing information on access options
- Ride-share matching services for employees
- Accommodating NCTD bus passenger loading zones
- Accommodating tourism buses
- Providing secure on-site bicycle storage facilities for employees
- Participate in SANDAG Ridematcher program for employees
- Enhancing pedestrian and bicycle network with the shared use path along the project frontage

Implementation of the TDM program with the identified multi-modal improvements is expected to reduce the number of single occupant vehicle trips by six (6) percent. A final TDM plan will be developed in coordination with the City of Carlsbad and NCTD.



APPENDIX A: TRAFFIC COUNTS



Carlsbad Boulevard at Tamarack Avenue

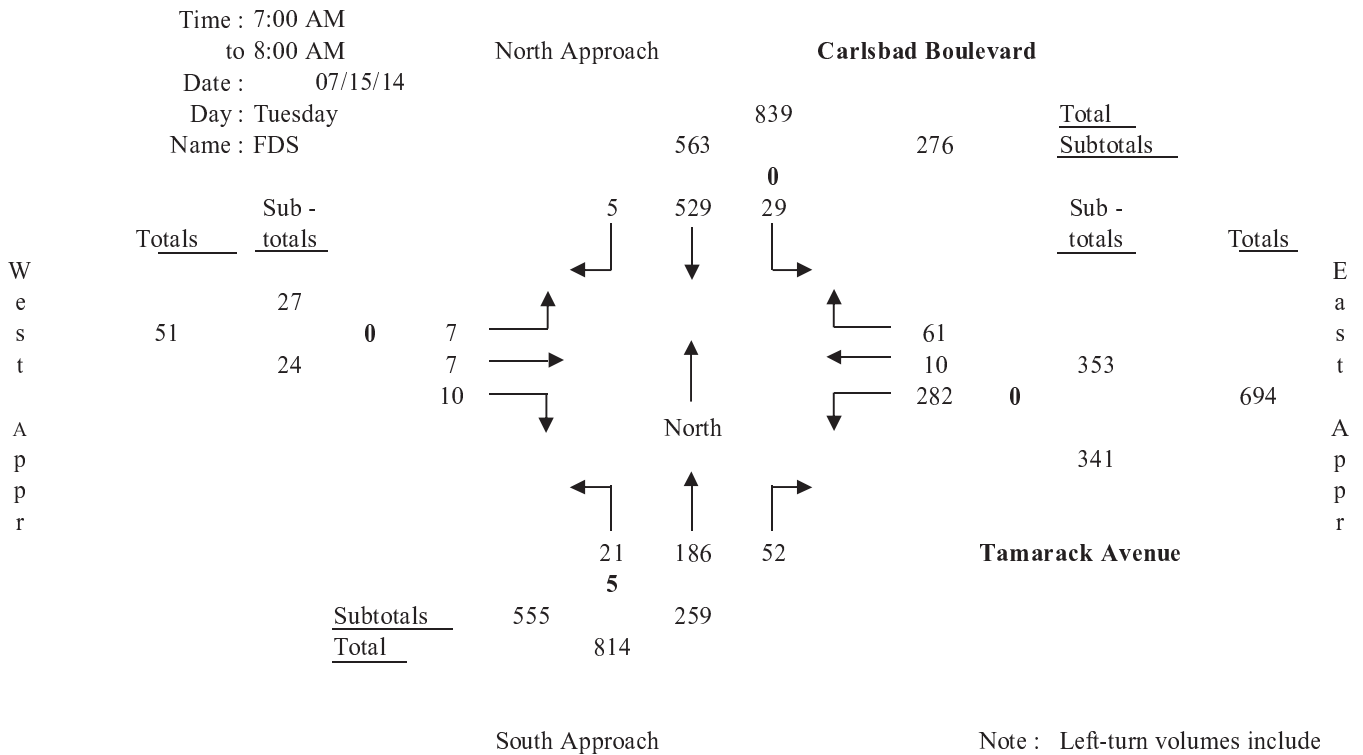
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period : 7:00 AM to 8:00 AM		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Config - urations	Inside (left)	1	1		1			1	1		1		
		2		1		1				1		1	1
		3		1		1							
		4											
		5											
		6											
	Outside Free-flow	7											
Lane Settings		1	2	0	1	2	1	0	1	1	1	0	1
Capacity		1800	4000	0	1800	4000	1800	0	2000	1800	1800	0	1800
Are the North/South phases split (Y/N)?				N									
Are the East/West phases split (Y/N)?				Y									
Efficiency Lost Factor		0.10											
Hourly Volume		21	186	52	29	529	5	7	7	10	282	10	61
Adjusted Hourly Volume		21	238	0	29	529	5	14	0	10	282	0	71
Utilization Factor		0.01	0.06	0.00	0.02	0.13	0.00	0.00	0.00	0.01	0.16	0.00	0.04
Critical Factors		0.01				0.13				0.01	0.16		

ICU Ratio = 0.41 LOS = A

Turning Movements at Intersection of :

Carlsbad Boulevard and Tamarack Avenue



Carlsbad Boulevard at Tamarack Avenue

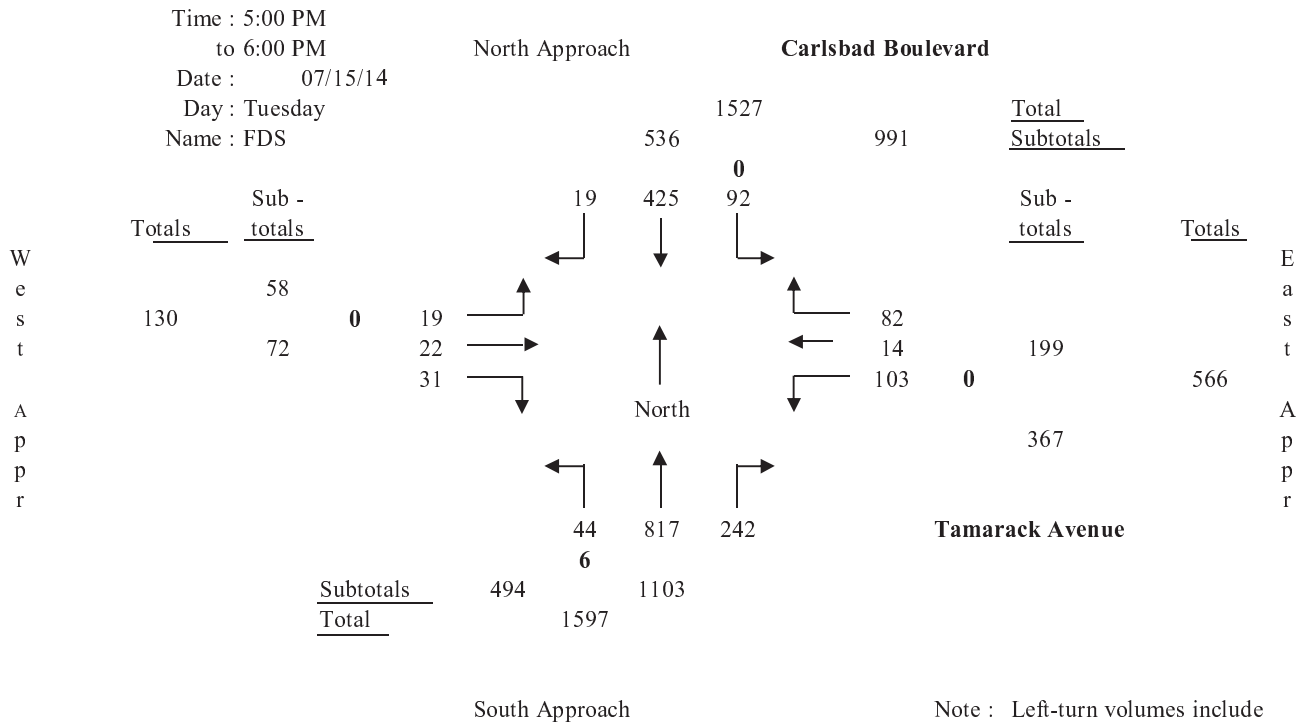
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
5:00 PM to 6:00 PM		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Configurations	Inside (left)	1	1		1			1	1		1		
		2		1		1				1		1	1
		3		1	1								
		4					1						
		5											
		6											
	Outside Free-flow	7											
Lane Settings		1	2	0	1	2	1	1	1	1	0	1	
Capacity		1800	4000	0	1800	4000	1800	1800	2000	1800	1800	0	1800
Are the North/South phases split (Y/N)?					N								
Are the East/West phases split (Y/N)?					Y								
Efficiency Lost Factor		0.10											
Hourly Volume		44	817	242	92	425	19	19	22	31	103	14	82
Adjusted Hourly Volume		44	1059	0	92	425	19	41	0	31	103	0	96
Utilization Factor		0.02	0.26	0.00	0.05	0.11	0.01	0.02	0.00	0.02	0.06	0.00	0.05
Critical Factors		0.26		0.05			0.02			0.06			

ICU Ratio = 0.49 LOS = A

Turning Movements at Intersection of :

Carlsbad Boulevard and Tamarack Avenue





N-S STREET: Carlsbad Blvd.

DATE: 07/15/2014

LOCATION: Carlsbad

E-W STREET: Tamarack Ave.

DAY: TUESDAY

PROJECT# 14-1221-023 -- all move

CONTROL: Signal

AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 1	EL 0	ET 1	ER 1	WL 1	WT 1	WR 0	TOTAL
6:30 AM	0	38	5	5	52	0	1	2	1	31	1	5	141
6:45 AM	3	67	12	7	71	1	1	0	3	48	2	7	222
7:00 AM	5	42	7	7	148	2	1	3	0	71	2	16	304
7:15 AM	4	46	9	10	135	2	1	1	5	56	2	10	281
7:30 AM	6	52	20	6	121	0	1	0	3	75	4	14	302
7:45 AM	6	46	16	6	125	1	4	3	2	80	2	21	312
8:00 AM	6	57	11	8	113	2	3	1	2	47	4	14	268
8:15 AM	4	67	17	10	85	3	2	4	3	64	4	15	278
8:30 AM	11	71	13	5	118	4	1	2	6	58	3	26	318
8:45 AM	8	74	20	11	99	2	1	3	4	56	0	20	298
9:00 AM	11	72	27	14	96	5	0	3	6	43	2	18	297
9:15 AM	3	74	14	8	101	2	7	3	6	33	6	11	268
Volumes	67	706	171	97	1264	24	23	25	41	662	32	177	3289
Approach %	7.10	74.79	18.11	7.00	91.26	1.73	25.84	28.09	46.07	76.00	3.67	20.32	
App/Depart	944	/	906	1385	/	1967	89	/	293	871	/	123	
Peak Volumes	21	186	52	29	529	5	7	7	10	282	10	61	1199
Approach %	8.11	71.81	20.08	5.15	93.96	0.89	29.17	29.17	41.67	79.89	2.83	17.28	
Pk Hr FACTOR:	0.83			0.90			0.67			0.86			0.9607
AM Pk Hr at:	700												
PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
3:30 PM	14	146	34	21	109	3	4	4	6	27	6	19	393
3:45 PM	14	150	41	20	102	5	7	4	6	27	4	20	400
4:00 PM	13	146	47	19	109	4	8	6	6	34	5	14	411
4:15 PM	12	154	35	15	105	2	5	3	6	24	2	23	386
4:30 PM	13	183	41	17	74	3	6	3	9	41	6	20	416
4:45 PM	14	181	40	15	104	5	3	4	4	26	5	23	424
5:00 PM	10	167	73	24	91	2	3	5	5	33	4	20	437
5:15 PM	9	225	49	25	148	8	6	6	6	25	2	22	531
5:30 PM	12	226	56	19	88	5	5	7	14	24	3	21	480
5:45 PM	13	199	64	24	98	4	5	4	6	21	5	19	462
6:00 PM	13	163	47	17	94	4	6	3	7	33	6	27	420
6:15 PM	16	145	38	19	94	1	4	3	4	22	5	33	384
Volumes	153	2085	565	235	1216	46	62	52	79	337	53	261	5144
Approach %	5.46	74.38	20.16	15.70	81.23	3.07	32.12	26.94	40.93	51.77	8.14	40.09	
App/Depart	2803	/	2408	1497	/	1632	193	/	852	651	/	252	
Peak Volumes	44	817	242	92	425	19	19	22	31	103	14	82	1910
Approach %	3.99	74.07	21.94	17.16	79.29	3.54	26.39	30.56	43.06	51.76	7.04	41.21	
Pk Hr FACTOR:	0.94			0.74			0.69			0.87			0.8992
PM Pk Hr at:	500												

El Camino Real at Tamarack Avenue

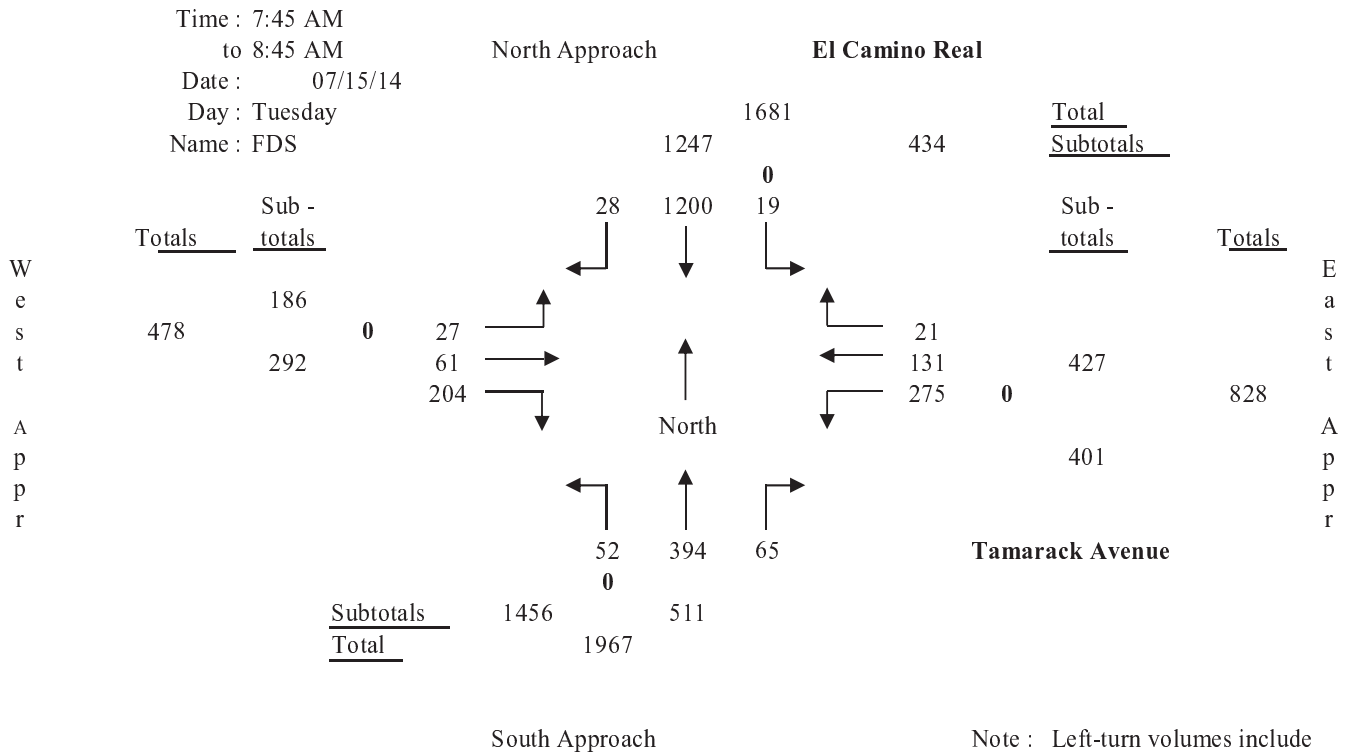
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)			
7:45 AM to 8:45 AM		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Lane Configurations	Inside (left)	1	1		1			1			1			
		2		1		1			1			1		
		3		1		1				1		1	1	
		4					1							
		5												
		6												
	Outside Free-flow	7												
Lane Settings		1	2	1	1	2	1	1	1	1	1	2	0	
Capacity		1800	4000	1800	1800	4000	1800	1800	2000	1800	1800	4000	0	
Are the North/South phases split (Y/N)?					N									
Are the East/West phases split (Y/N)?					N									
Efficiency Lost Factor		0.10												
Hourly Volume		52	394	65	19	1200	28	27	61	204	275	131	21	
Adjusted Hourly Volume		52	394	65	19	1200	28	27	61	204	275	152	0	
Utilization Factor		0.03	0.10	0.04	0.01	0.30	0.02	0.02	0.03	0.11	0.15	0.04	0.00	
Critical Factors		0.03			0.30						0.11		0.15	

ICU Ratio = 0.69 LOS = B

Turning Movements at Intersection of :

El Camino Real and Tamarack Avenue



El Camino Real at Tamarack Avenue

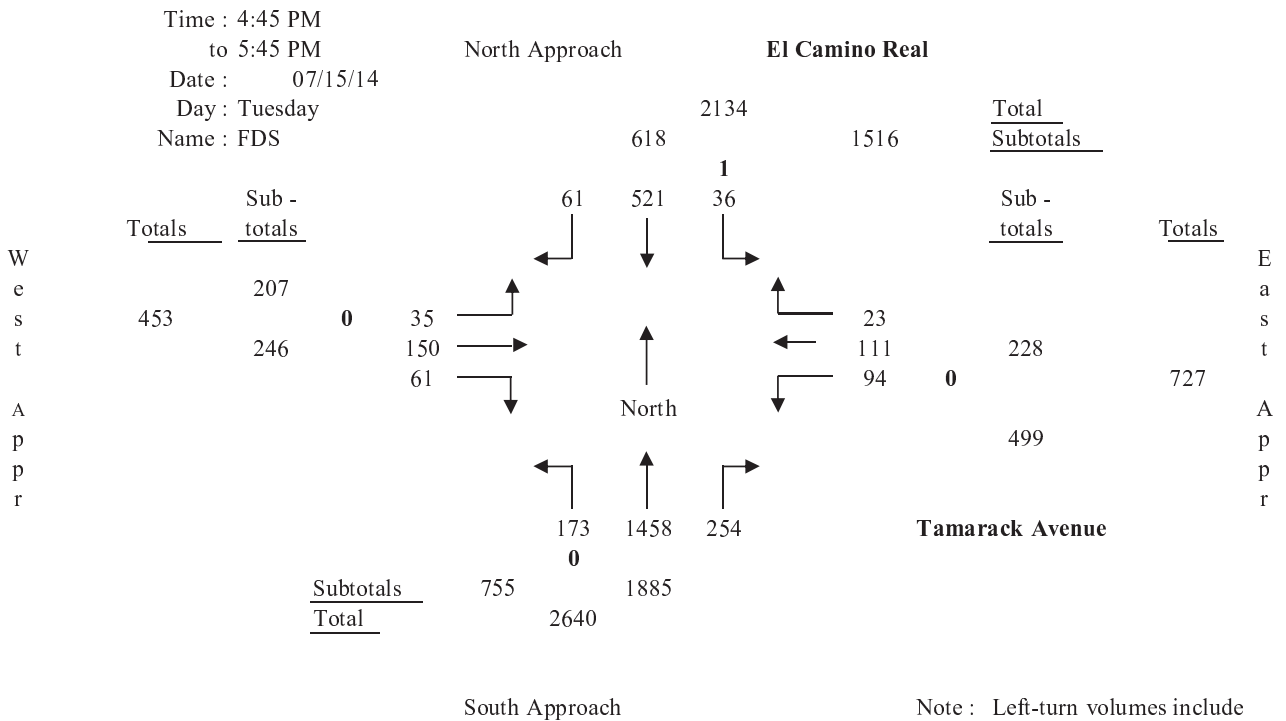
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period : 4:45 PM to 5:45 PM		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Config - urations	Inside (left)	1	1		1			1			1		
		2		1		1			1			1	
		3		1		1				1		1	1
		4					1						
		5											
		6											
	Outside Free-flow	7											
Lane Settings		1	2	1	1	2	1	1	1	1	2	0	
Capacity		1800	4000	1800	1800	4000	1800	1800	2000	1800	1800	4000	0
Are the North/South phases split (Y/N)?					N								
Are the East/West phases split (Y/N)?					N								
Efficiency Lost Factor		0.10											
Hourly Volume		173	1458	254	36	521	61	35	150	61	94	111	23
Adjusted Hourly Volume		173	1458	254	36	521	61	35	150	61	94	134	0
Utilization Factor		0.10	0.36	0.14	0.02	0.13	0.03	0.02	0.08	0.03	0.05	0.03	0.00
Critical Factors		0.36			0.02			0.08			0.05		

ICU Ratio = 0.61 LOS = B

Turning Movements at Intersection of :

El Camino Real and Tamarack Avenue





N-S STREET: El Camino Real

DATE: 07/15/2014

LOCATION: Carlsbad

E-W STREET: Tamarack Ave.

DAY: TUESDAY

PROJECT# 14-1221-004 all move

CONTROL: Signal

AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 3	NR 0	SL 1	ST 2	SR 1	EL 1	ET 1	ER 1	WL 1	WT 2	WR 0	TOTAL
6:30 AM	1	37	5	0	204	3	5	4	16	36	19	2	332
6:45 AM	7	56	8	2	292	1	1	9	29	37	24	3	469
7:00 AM	8	53	3	1	255	1	4	14	24	55	36	3	457
7:15 AM	5	55	9	3	301	6	5	9	29	68	30	1	521
7:30 AM	8	84	13	2	307	6	11	12	35	62	35	5	580
7:45 AM	14	57	15	1	397	6	4	15	77	73	43	6	708
8:00 AM	10	110	18	3	273	7	12	14	32	68	22	6	575
8:15 AM	12	104	13	6	280	5	9	12	56	72	33	2	604
8:30 AM	16	123	19	9	250	10	2	20	39	62	33	7	590
8:45 AM	15	108	14	7	260	10	10	16	28	52	32	8	560
9:00 AM	9	114	17	2	165	9	5	25	18	61	31	3	459
9:15 AM	14	88	22	5	182	10	12	16	25	35	20	4	433
Volumes	119	989	156	41	3166	74	80	166	408	681	358	50	6288
Approach %	9.41	78.24	12.34	1.25	96.49	2.26	12.23	25.38	62.39	62.53	32.87	4.59	
App/Depart	1264	/	1119	3281	/	4255	654	/	363	1089	/	551	
Peak Volumes	52	394	65	19	1200	28	27	61	204	275	131	21	2477
Approach %	10.18	77.10	12.72	1.52	96.23	2.25	9.25	20.89	69.86	64.40	30.68	4.92	
Pk Hr FACTOR:	0.81			0.77			0.76			0.88			0.8746
AM Pk Hr at:	745												
PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
3:30 PM	25	286	30	4	115	15	9	18	20	31	15	10	578
3:45 PM	37	272	40	9	139	13	13	27	16	32	19	2	619
4:00 PM	21	282	50	3	143	9	10	24	9	29	22	2	604
4:15 PM	36	301	48	6	121	10	19	28	18	26	22	8	643
4:30 PM	39	302	49	10	139	12	12	36	16	48	21	11	695
4:45 PM	28	391	58	14	130	16	9	43	14	21	27	4	755
5:00 PM	47	335	52	11	131	13	10	33	14	19	27	7	699
5:15 PM	36	400	63	7	148	19	5	33	20	28	31	6	796
5:30 PM	62	332	81	4	112	13	11	41	13	26	26	6	727
5:45 PM	28	307	71	8	127	12	3	34	10	28	25	8	661
6:00 PM	26	226	51	6	138	13	14	30	9	20	23	9	565
6:15 PM	17	211	37	9	134	12	9	32	15	23	18	6	523
Volumes	402	3645	630	91	1577	157	124	379	174	331	276	79	7865
Approach %	8.60	77.93	13.47	4.99	86.41	8.60	18.32	55.98	25.70	48.25	40.23	11.52	
App/Depart	4677	/	3848	1825	/	2082	677	/	1100	686	/	835	
Peak Volumes	173	1458	254	36	521	61	35	150	61	94	111	23	2977
Approach %	9.18	77.35	13.47	5.83	84.30	9.87	14.23	60.98	24.80	41.23	48.68	10.09	
Pk Hr FACTOR:	0.94			0.89			0.93			0.88			0.935
PM Pk Hr at:	445												

Carlsbad Boulevard at Cannon Road

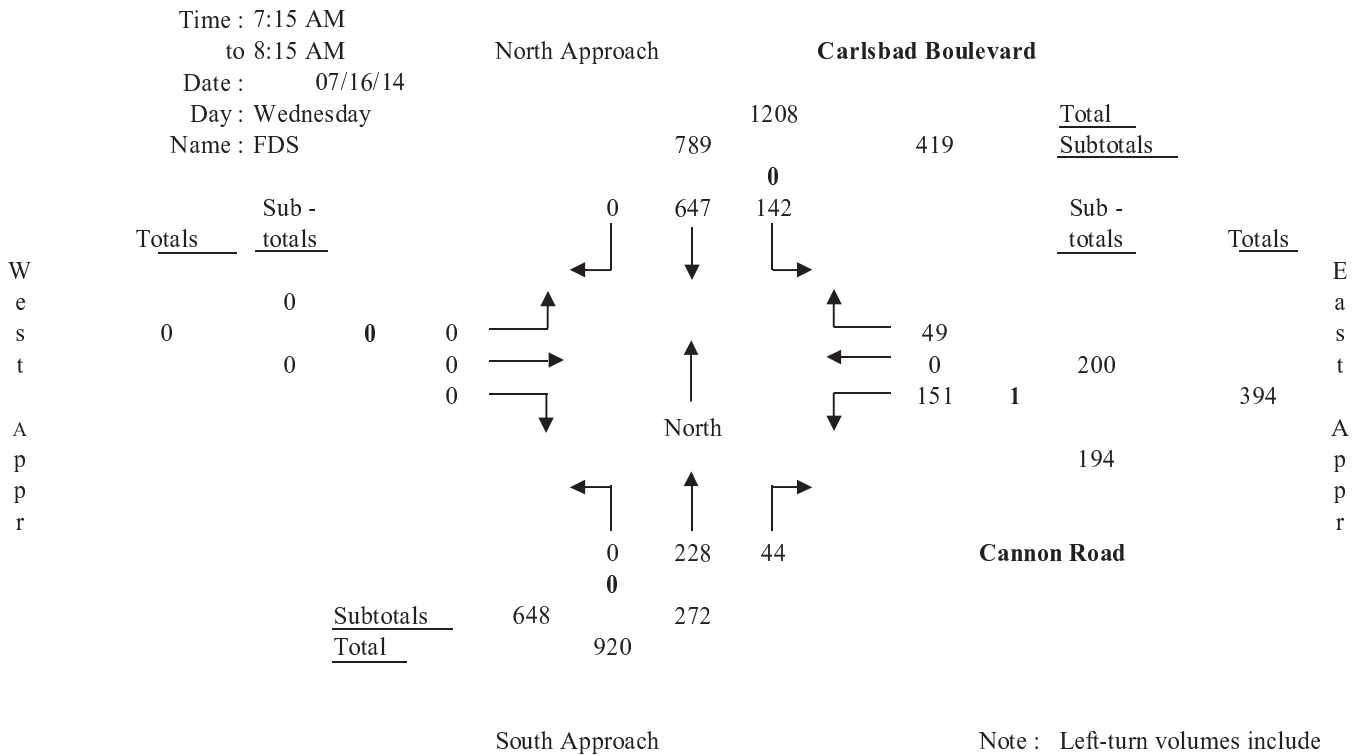
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
7:15 AM to 8:15 AM													
Lane Configurations	Inside (left)	1	1		1	1					1		
		2		1									1
		3											
		4											
		5											
	Outside	6											
	Free-flow	7											
Lane Settings		0	1	1	1	1	0	0	0	0	1	0	1
Capacity		0	2000	1800	1800	2000	0	0	0	0	1800	0	1800
Are the North/South phases split (Y/N)?					N								
Are the East/West phases split (Y/N)?					N								
Efficiency Lost Factor		0.10											
Hourly Volume		0	228	44	142	647	0	0	0	0	151	0	49
Adjusted Hourly Volume		0	228	44	142	647	0	0	0	0	151	0	0
Utilization Factor		0.00	0.11	0.02	0.08	0.32	0.00	0.00	0.00	0.00	0.08	0.00	0.00
Critical Factors		0.00			0.32			0.00			0.08		

ICU Ratio = 0.50 LOS = A

Turning Movements at Intersection of :

Carlsbad Boulevard and Cannon Road



Note : Left-turn volumes include U-turns. U-turns in bold.

Carlsbad Boulevard at Cannon Road

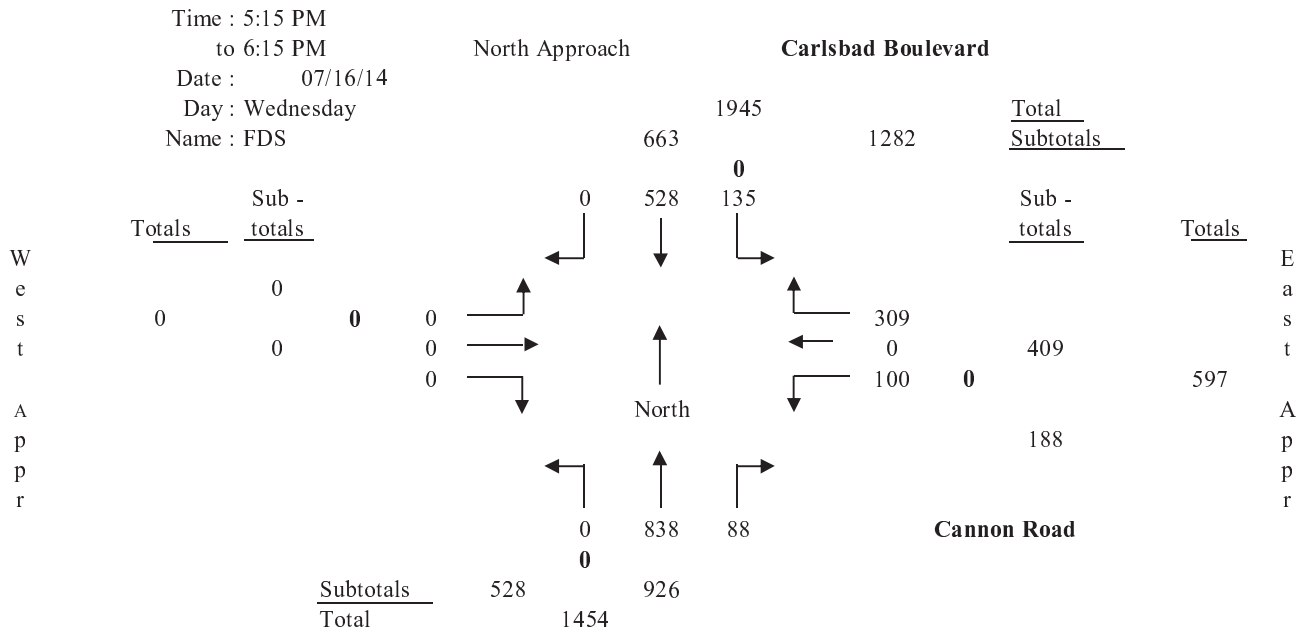
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
5:15 PM to 6:15 PM													
Lane Configurations	Inside (left)	1	1		1						1		
		2		1		1							1
		3											
		4											
		5											
		6											
	Outside Free-flow	7											
Lane Settings		0	1	1	1	1	0	0	0	0	1	0	1
Capacity		0	2000	1800	1800	2000	0	0	0	0	1800	0	1800
Are the North/South phases split (Y/N)?					N								
Are the East/West phases split (Y/N)?					N								
Efficiency Lost Factor		0.10											
Hourly Volume		0	838	88	135	528	0	0	0	0	100	0	309
Adjusted Hourly Volume		0	838	88	135	528	0	0	0	0	100	0	174
Utilization Factor		0.00	0.42	0.05	0.08	0.26	0.00	0.00	0.00	0.00	0.06	0.00	0.10
Critical Factors			0.42		0.08			0.00					0.10

ICU Ratio = 0.70 LOS = B

Turning Movements at Intersection of :

Carlsbad Boulevard and Cannon Road



South Approach

Note : Left-turn volumes include U-turns. U-turns in bold.



N-S STREET: Carlsbad Blvd.

DATE: 07/16/2014

LOCATION: Carlsbad

E-W STREET: Cannon Rd.

DAY: WEDNESDAY

PROJECT# 14-1221-024 -- all move

CONTROL: Signal

AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	1	1	1	1	0	0	0	0	1	0	1	
6:30 AM	0	20	6	15	71	0	0	0	0	6	0	15	133
6:45 AM	0	35	10	32	97	0	0	0	0	16	0	17	207
7:00 AM	0	38	6	21	107	0	0	0	0	28	0	14	214
7:15 AM	0	42	14	27	151	0	0	0	0	44	0	6	284
7:30 AM	0	43	13	32	176	0	0	0	0	51	0	11	326
7:45 AM	0	60	5	45	174	0	0	0	0	32	0	21	337
8:00 AM	0	83	12	38	146	0	0	0	0	24	0	11	314
8:15 AM	0	50	14	31	144	0	0	0	0	27	0	15	281
8:30 AM	0	54	8	33	135	0	0	0	0	23	0	22	275
8:45 AM	0	89	24	21	128	0	0	0	0	17	0	9	288
9:00 AM	0	79	15	33	114	0	0	0	0	26	0	23	290
9:15 AM	0	74	9	21	132	0	0	0	0	13	0	25	274
Volumes	0	667	136	349	1575	0	0	0	0	307	0	189	3223
Approach %	0.00	83.06	16.94	18.14	81.86	0.00	#DIV/0!	#DIV/0!	#DIV/0!	61.90	0.00	38.10	
App/Depart	803	/	856	1924	/	1882	0	/	485	496	/	0	
Peak Volumes	0	228	44	142	647	0	0	0	0	151	0	49	1261
Approach %	0.00	83.82	16.18	18.00	82.00	0.00	#DIV/0!	#DIV/0!	#DIV/0!	75.50	0.00	24.50	
Pk Hr FACTOR:	0.72			0.90			0.00			0.81			0.9355
AM Pk Hr at:	715												
PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
3:30 PM	0	123	19	38	123	0	0	0	0	19	0	40	362
3:45 PM	0	153	19	42	131	0	0	0	0	16	0	43	404
4:00 PM	0	154	25	36	137	0	0	0	0	18	0	76	446
4:15 PM	0	155	14	38	121	0	0	0	0	16	0	75	419
4:30 PM	0	191	17	39	124	0	0	0	0	19	0	72	462
4:45 PM	0	191	18	34	121	0	0	0	0	23	0	78	465
5:00 PM	0	184	14	40	124	0	0	0	0	24	0	92	478
5:15 PM	0	205	21	35	157	0	0	0	0	25	0	83	526
5:30 PM	0	205	27	36	133	0	0	0	0	30	0	96	527
5:45 PM	0	222	16	26	100	0	0	0	0	24	0	61	449
6:00 PM	0	206	24	38	138	0	0	0	0	21	0	69	496
6:15 PM	0	179	26	40	155	0	0	0	0	13	0	44	457
Volumes	0	2168	240	442	1564	0	0	0	0	248	0	829	5491
Approach %	0.00	90.03	9.97	22.03	77.97	0.00	#DIV/0!	#DIV/0!	#DIV/0!	23.03	0.00	76.97	
App/Depart	2408	/	2997	2006	/	1812	0	/	682	1077	/	0	
Peak Volumes	0	838	88	135	528	0	0	0	0	100	0	309	1998
Approach %	0.00	90.50	9.50	20.36	79.64	0.00	#DIV/0!	#DIV/0!	#DIV/0!	24.45	0.00	75.55	
Pk Hr FACTOR:	0.97			0.86			0.00			0.81			0.9478
PM Pk Hr at:	515												

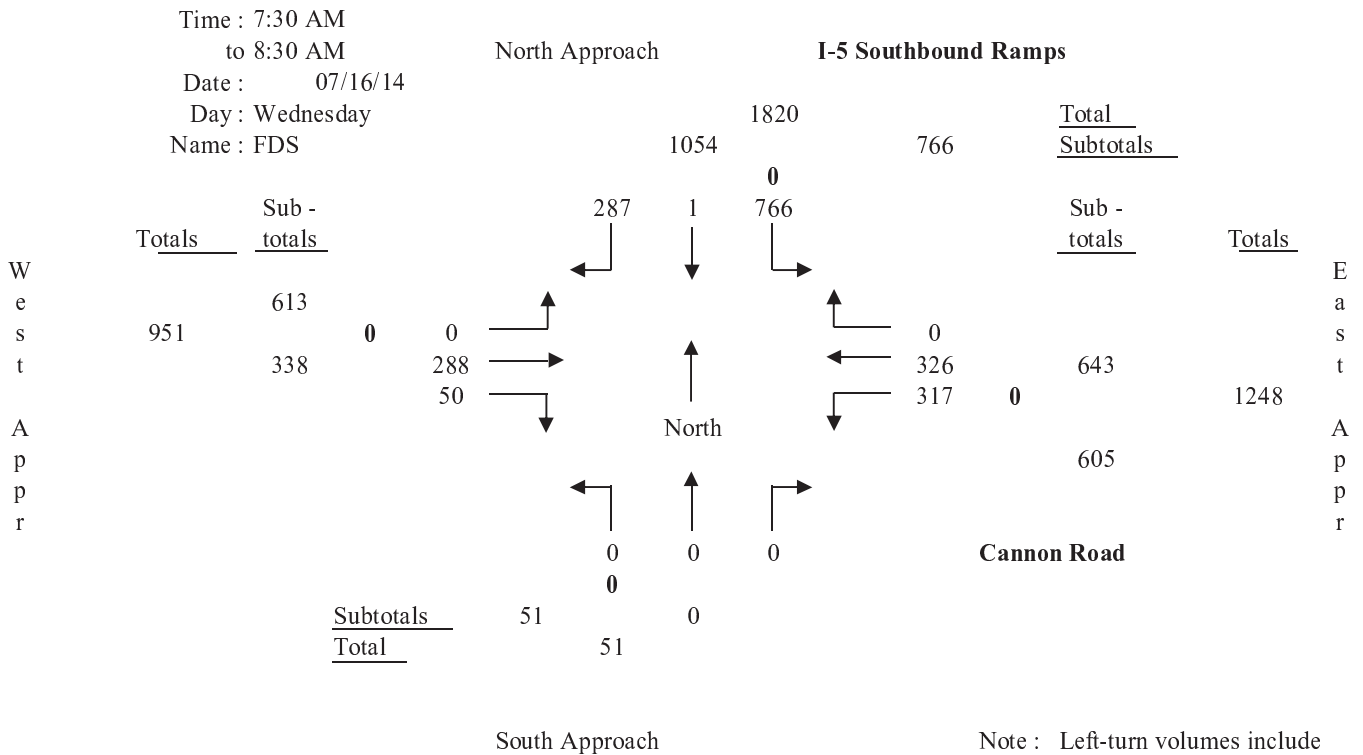
I-5 Southbound Ramps at Cannon Road

Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :			South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
7:30 AM to 8:30 AM			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Configurations	Inside (left)	1				1				1		1		
		2				1	1			1		1		
		3						1			1			1
		4												1
		5												1
	Outside	6												
	Free-flow	7												
Lane Settings			0	0	0	2	0	1	0	2	1	2	2	0
Capacity			0	0	0	3600	0	1800	0	4000	1800	3600	4000	0
Are the North/South phases split (Y/N)?					N									
Are the East/West phases split (Y/N)?					N									
Efficiency Lost Factor			0.10											
Hourly Volume			0	0	0	766	1	287	0	288	50	317	326	0
Adjusted Hourly Volume			0	0	0	766	0	288	0	288	50	317	326	0
Utilization Factor			0.00	0.00	0.00	0.21	0.00	0.16	0.00	0.07	0.03	0.09	0.08	0.00
Critical Factors				0.00	0.00	0.21				0.07		0.09		

ICU Ratio = 0.47 LOS = A

Turning Movements at Intersection of : I-5 Southbound Ramps and Cannon Road



I-5 Southbound Ramps at Cannon Road

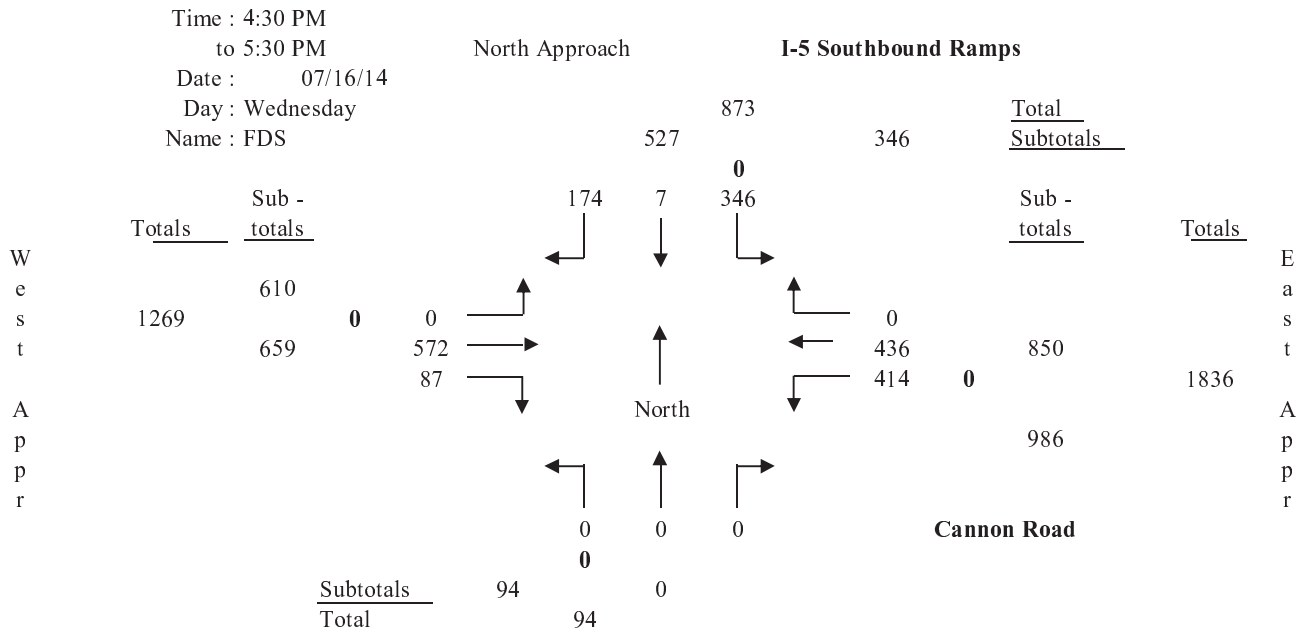
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
4:30 PM	to												
5:30 PM													
Lane Configurations	Inside	1			1				1		1		
	(left)	2			1	1			1		1		
		3					1			1		1	
		4										1	
		5											
		6											
	Outside	7											
Free-flow													
Lane Settings		0	0	0	2	0	1	0	2	1	2	2	0
Capacity		0	0	0	3600	0	1800	0	4000	1800	3600	4000	0
Are the North/South phases split (Y/N)?					N								
Are the East/West phases split (Y/N)?					N								
Efficiency Lost Factor		0.10											
Hourly Volume		0	0	0	346	7	174	0	572	87	414	436	0
Adjusted Hourly Volume		0	0	0	346	0	181	0	572	87	414	436	0
Utilization Factor		0.00	0.00	0.00	0.10	0.00	0.10	0.00	0.14	0.05	0.12	0.11	0.00
Critical Factors		0.00						0.10			0.12		

ICU Ratio = 0.46 LOS = A

Turning Movements at Intersection of :

I-5 Southbound Ramps and Cannon Road





FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745



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N-S STREET: I-5 SB Ramps

DATE: 07/16/2014

LOCATION: Carlsbad

E-W STREET: Cannon Rd.

DAY: WEDNESDAY

PROJECT# 14-1221-044 -- all move

CONTROL: Signal

AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	0	0	1.5	0.5	1	0	2	1	2	2	0	
6:30 AM	0	0	0	103	0	54	0	66	9	58	39	0	329
6:45 AM	0	0	0	116	0	43	0	96	11	63	66	0	395
7:00 AM	0	0	0	129	0	88	0	80	10	99	50	0	456
7:15 AM	0	0	0	141	1	69	0	88	14	69	54	0	436
7:30 AM	0	0	0	160	0	75	0	75	16	75	75	0	476
7:45 AM	0	0	0	252	0	87	0	87	13	87	80	0	606
8:00 AM	0	0	0	180	0	65	0	60	11	80	85	0	481
8:15 AM	0	0	0	174	1	60	0	66	10	75	86	0	472
8:30 AM	0	0	0	180	0	54	0	85	14	74	66	0	473
8:45 AM	0	0	0	186	0	50	0	103	20	66	60	0	485
9:00 AM	0	0	0	171	0	45	0	87	14	54	65	0	436
9:15 AM	0	0	0	133	1	39	0	69	18	58	58	0	376
Volumes	0	0	0	1925	3	729	0	962	160	858	784	0	5421
Approach %	#DIV/0!	#DIV/0!	#DIV/0!	72.45	0.11	27.44	0.00	85.74	14.26	52.25	47.75	0.00	
App/Depart	0	/	0	2657	/	1021	1122	/	2887	1642	/	1513	
Peak Volumes	0	0	0	766	1	287	0	288	50	317	326	0	2035
Approach %	#DIV/0!	#DIV/0!	#DIV/0!	72.68	0.09	27.23	0.00	85.21	14.79	49.30	50.70	0.00	
Pk Hr FACTOR:	0.00			0.78			0.85			0.96			0.8395
AM Pk Hr at:	730												
PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
3:30 PM	0	0	0	83	5	32	0	128	16	101	71	0	436
3:45 PM	0	0	0	89	1	41	0	107	16	81	87	0	422
4:00 PM	0	0	0	107	1	30	0	135	23	106	92	0	494
4:15 PM	0	0	0	118	1	43	0	90	18	85	98	0	453
4:30 PM	0	0	0	75	7	39	0	145	25	102	99	0	492
4:45 PM	0	0	0	103	0	44	0	132	19	87	109	0	494
5:00 PM	0	0	0	72	0	40	0	157	22	110	101	0	502
5:15 PM	0	0	0	96	0	51	0	138	21	115	127	0	548
5:30 PM	0	0	0	102	0	43	0	120	13	78	117	0	473
5:45 PM	0	0	0	84	1	34	0	124	17	88	123	0	471
6:00 PM	0	0	0	60	2	31	0	101	15	89	102	0	400
6:15 PM	0	0	0	62	0	37	0	90	24	82	79	0	374
Volumes	0	0	0	1051	18	465	0	1467	229	1124	1205	0	5559
Approach %	#DIV/0!	#DIV/0!	#DIV/0!	68.51	1.17	30.31	0.00	86.50	13.50	48.26	51.74	0.00	
App/Depart	0	/	0	1534	/	1371	1696	/	2518	2329	/	1670	
Peak Volumes	0	0	0	346	7	174	0	572	87	414	436	0	2036
Approach %	#DIV/0!	#DIV/0!	#DIV/0!	65.65	1.33	33.02	0.00	86.80	13.20	48.71	51.29	0.00	
Pk Hr FACTOR:	0.00			0.90			0.92			0.88			0.9288
PM Pk Hr at:	430												

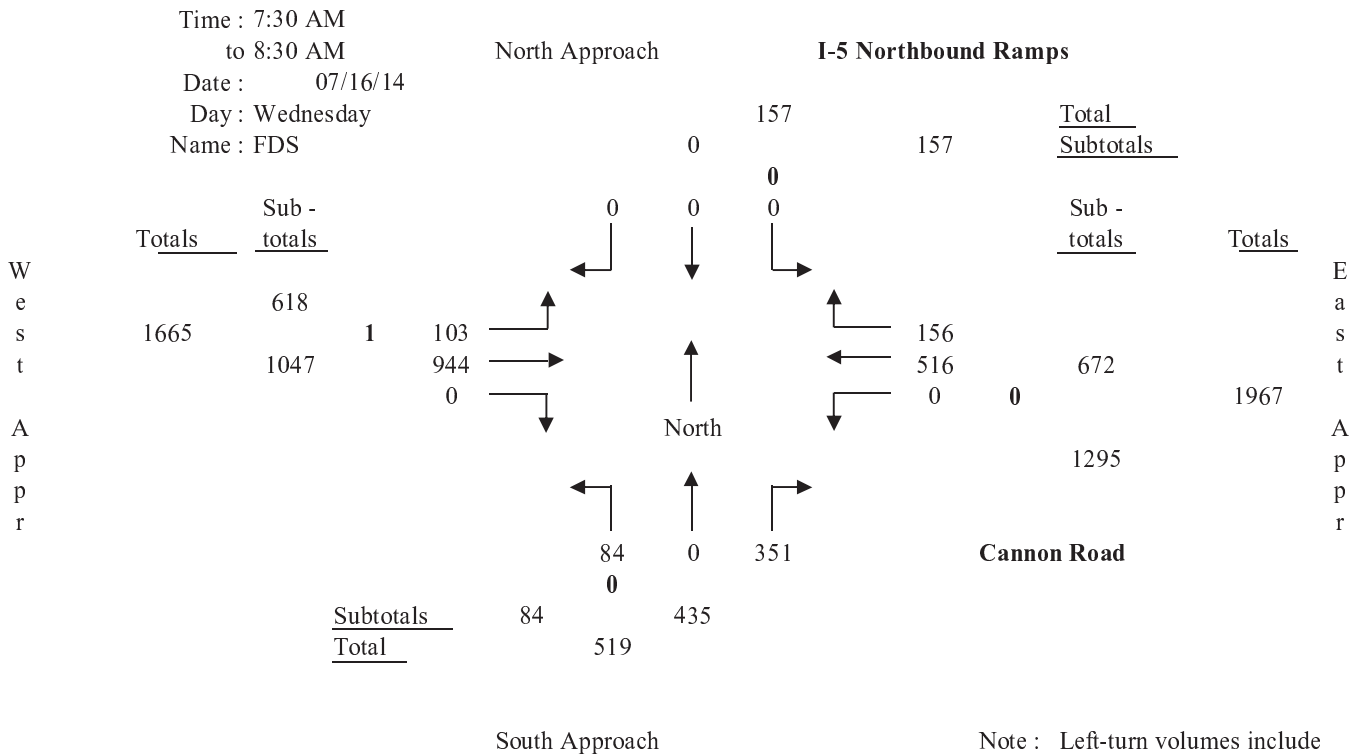
I-5 Northbound Ramps at Cannon Road

Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
7:30 AM to 8:30 AM													
Lane Configurations	Inside	1	1	1				1				1	
	(left)	2						1				1	1
		3							1				1
		4								1			
		5								1			
		6											
	Outside Free-flow	7											
Lane Settings		1	0	2	0	0	0	2	2	0	0	2	1
Capacity		1800	0	3600	0	0	0	3600	4000	0	0	4000	1800
Are the North/South phases split (Y/N)?					N								
Are the East/West phases split (Y/N)?					N								
Efficiency Lost Factor		0.10											
Hourly Volume		84	0	351	0	0	0	103	944	0	0	516	156
Adjusted Hourly Volume		84	0	351	0	0	0	103	944	0	0	516	156
Utilization Factor		0.05	0.00	0.10	0.00	0.00	0.00	0.03	0.24	0.00	0.00	0.13	0.09
Critical Factors		0.10			0.00						0.24		

ICU Ratio = 0.44 LOS = A

Turning Movements at Intersection of: I-5 Northbound Ramps and Cannon Road



Note : Left-turn volumes include U-turns. U-turns in bold.

I-5 Northbound Ramps at Cannon Road

Lane Configuration for Intersection Capacity Utilization

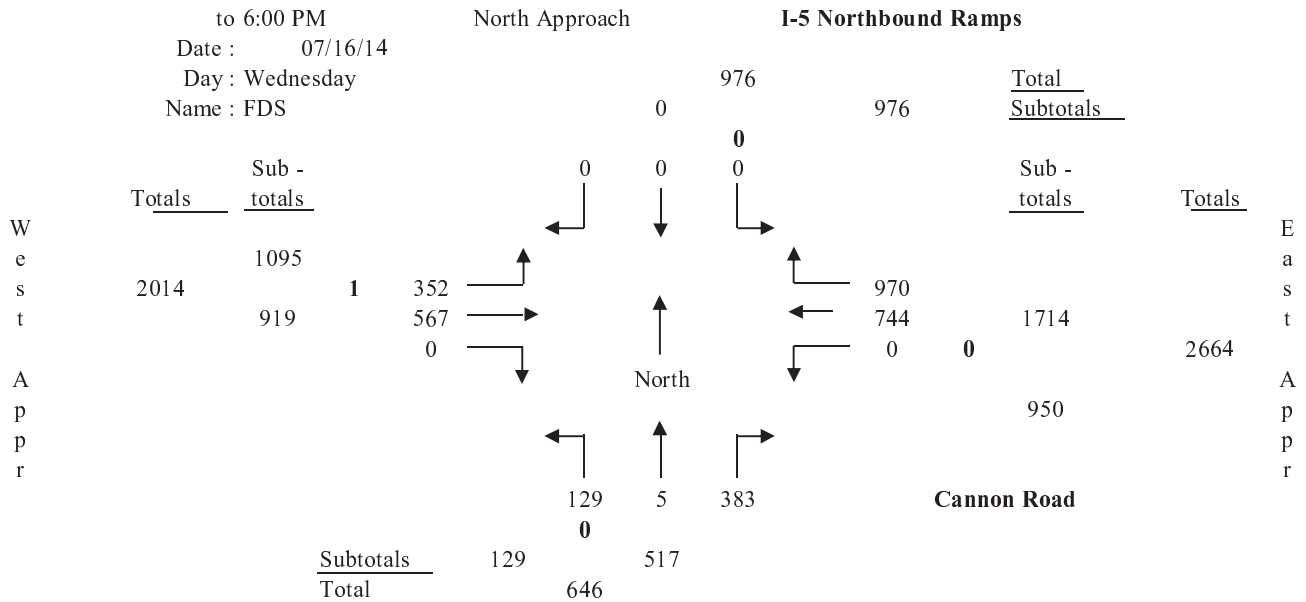
Pk. Hr. Time Period : 5:00 PM to 6:00 PM	South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Configurations	1	1	1				1				1	
2							1				1	1
3								1				1
4								1				
5												
6												
Outside Free-flow	7											
Lane Settings	1	0	2	0	0	0	2	2	0	0	1	2
Capacity	1800	0	3600	0	0	0	3600	4000	0	0	2000	3600
Are the North/South phases split (Y/N)?			N									
Are the East/West phases split (Y/N)?			N									
Efficiency Lost Factor	0.10											
Hourly Volume	129	5	383	0	0	0	352	567	0	0	744	970
Adjusted Hourly Volume	134	0	383	0	0	0	352	567	0	0	571.3	1142.7
Utilization Factor	0.07	0.00	0.11	0.00	0.00	0.00	0.10	0.14	0.00	0.00	0.29	0.32
Critical Factors			0.11	0.00			0.10					0.32

ICU Ratio = 0.63 LOS = B

Turning Movements at Intersection of :

I-5 Northbound Ramps and Cannon Road

Time : 5:00 PM to 6:00 PM
Date : 07/16/14
Day : Wednesday
Name : FDS



Note : Left-turn volumes include U-turns. U-turns in bold.



FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745



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N-S STREET: I-5 NB Ramps

DATE: 07/16/2014

LOCATION: Carlsbad

E-W STREET: Cannon Rd.

DAY: WEDNESDAY

PROJECT# 14-1221-045 -- all move

CONTROL: Signal

AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0.5	0.5	2	0	0	0	2	2	0	0	1.5	1.5	
6:30 AM	20	0	50	0	0	0	14	121	0	0	107	24	336
6:45 AM	21	0	64	0	0	0	19	215	0	0	117	29	465
7:00 AM	16	0	60	0	0	0	19	162	0	0	125	27	409
7:15 AM	10	0	68	0	0	0	22	182	0	0	112	26	420
7:30 AM	16	0	79	0	0	0	21	231	0	0	141	40	528
7:45 AM	30	0	105	0	0	0	22	338	0	0	132	39	666
8:00 AM	22	0	80	0	0	0	23	203	0	0	126	37	491
8:15 AM	16	0	87	0	0	0	37	172	0	0	117	40	469
8:30 AM	15	0	103	0	0	0	24	190	0	0	142	43	517
8:45 AM	18	1	87	0	0	0	38	243	0	0	102	51	540
9:00 AM	13	0	72	0	0	0	28	229	0	0	129	62	533
9:15 AM	17	1	106	0	0	0	24	218	0	0	112	58	536
Volumes	214	2	961	0	0	0	291	2504	0	0	1462	476	5910
Approach %	18.18	0.17	81.65	#DIV/0!	#DIV/0!	#DIV/0!	10.41	89.59	0.00	0.00	75.44	24.56	
App/Depart	1177	/	769	0	/	0	2795	/	3465	1938	/	1676	
Peak Volumes	84	0	351	0	0	0	103	944	0	0	516	156	2154
Approach %	19.31	0.00	80.69	#DIV/0!	#DIV/0!	#DIV/0!	9.84	90.16	0.00	0.00	76.79	23.21	
Pk Hr FACTOR:	0.81			0.00			0.73			0.93			0.8086
AM Pk Hr at:	730												
PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
3:30 PM	9	0	55	0	0	0	78	120	0	0	121	218	601
3:45 PM	18	1	72	0	0	0	56	161	0	0	153	181	642
4:00 PM	33	1	79	0	0	0	70	140	0	0	160	205	688
4:15 PM	31	4	98	0	0	0	47	160	0	0	164	217	721
4:30 PM	27	3	78	0	0	0	86	135	0	0	141	235	705
4:45 PM	30	6	91	0	0	0	55	138	0	0	175	210	705
5:00 PM	20	0	90	0	0	0	119	124	0	0	193	286	832
5:15 PM	38	2	98	0	0	0	96	140	0	0	209	246	829
5:30 PM	32	2	91	0	0	0	67	158	0	0	171	242	763
5:45 PM	39	1	104	0	0	0	70	145	0	0	171	196	726
6:00 PM	27	0	94	0	0	0	54	115	0	0	169	221	680
6:15 PM	27	0	92	0	0	0	60	105	0	0	141	176	601
Volumes	331	20	1042	0	0	0	858	1641	0	0	1968	2633	8493
Approach %	23.76	1.44	74.80	#DIV/0!	#DIV/0!	#DIV/0!	34.33	65.67	0.00	0.00	42.77	57.23	
App/Depart	1393	/	3511	0	/	0	2499	/	2683	4601	/	2299	
Peak Volumes	129	5	383	0	0	0	352	567	0	0	744	970	3150
Approach %	24.95	0.97	74.08	#DIV/0!	#DIV/0!	#DIV/0!	38.30	61.70	0.00	0.00	43.41	56.59	
Pk Hr FACTOR:	0.90			0.00			0.95			0.89			0.9465
PM Pk Hr at:	500												

Cannon Road at Paseo Del Norte

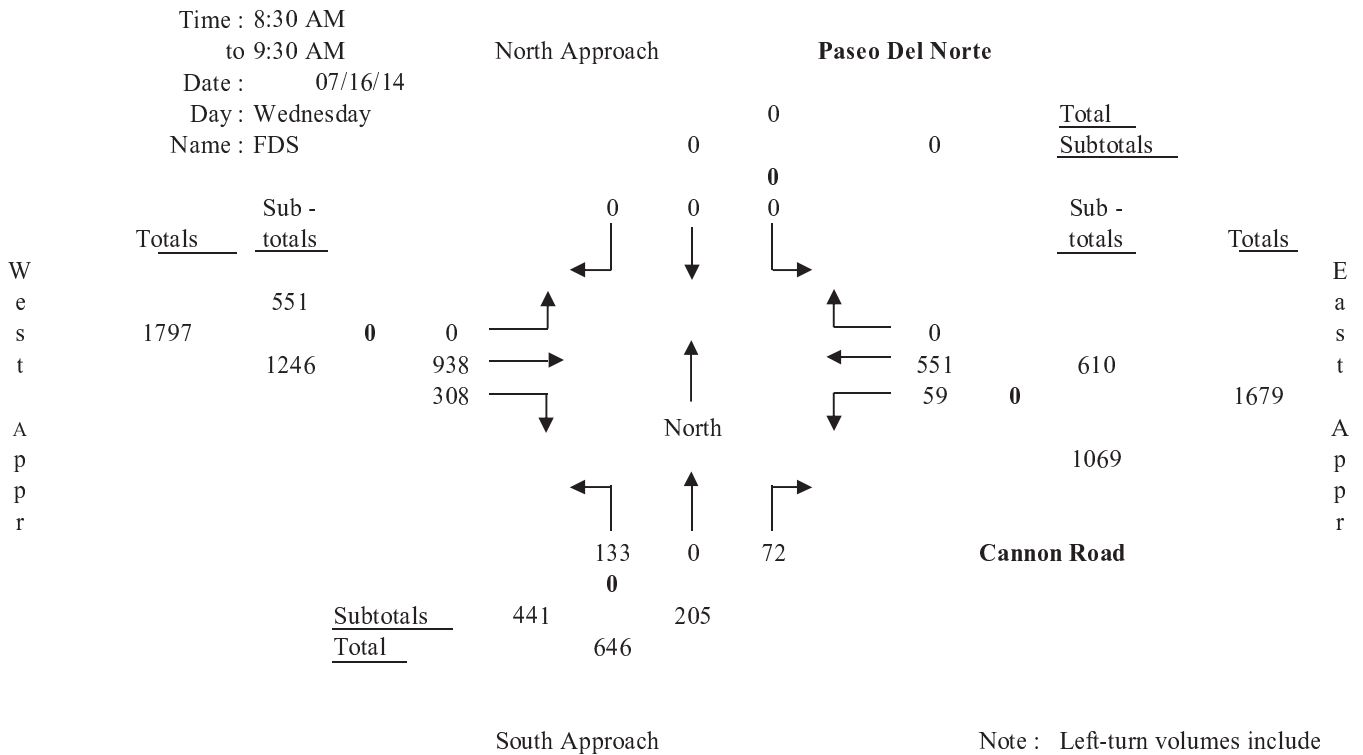
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period : 8:30 AM to 9:30 AM		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Configurations	Inside (left)	1	1					1			1		
		2	1					1	1			1	
		3		1								1	
		4										1	
		5											
		6											
	Outside Free-flow	7											
Lane Settings		2	0	1	0	0	0	0	2	0	1	3	0
Capacity		3600	0	1800	0	0	0	0	4000	0	1800	6000	0
Are the North/South phases split (Y/N)?				N									
Are the East/West phases split (Y/N)?				N									
Efficiency Lost Factor		0.10											
Hourly Volume		133	0	72	0	0	0	0	938	308	59	551	0
Adjusted Hourly Volume		133	0	0	0	0	0	0	1246	0	59	551	0
Utilization Factor		0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.00	0.03	0.09	0.00
Critical Factors		0.04				0.00	0.00		0.31		0.03		

ICU Ratio = 0.48 LOS = A

Turning Movements at Intersection of :

Cannon Road and Paseo Del Norte



Cannon Road at Paseo Del Norte

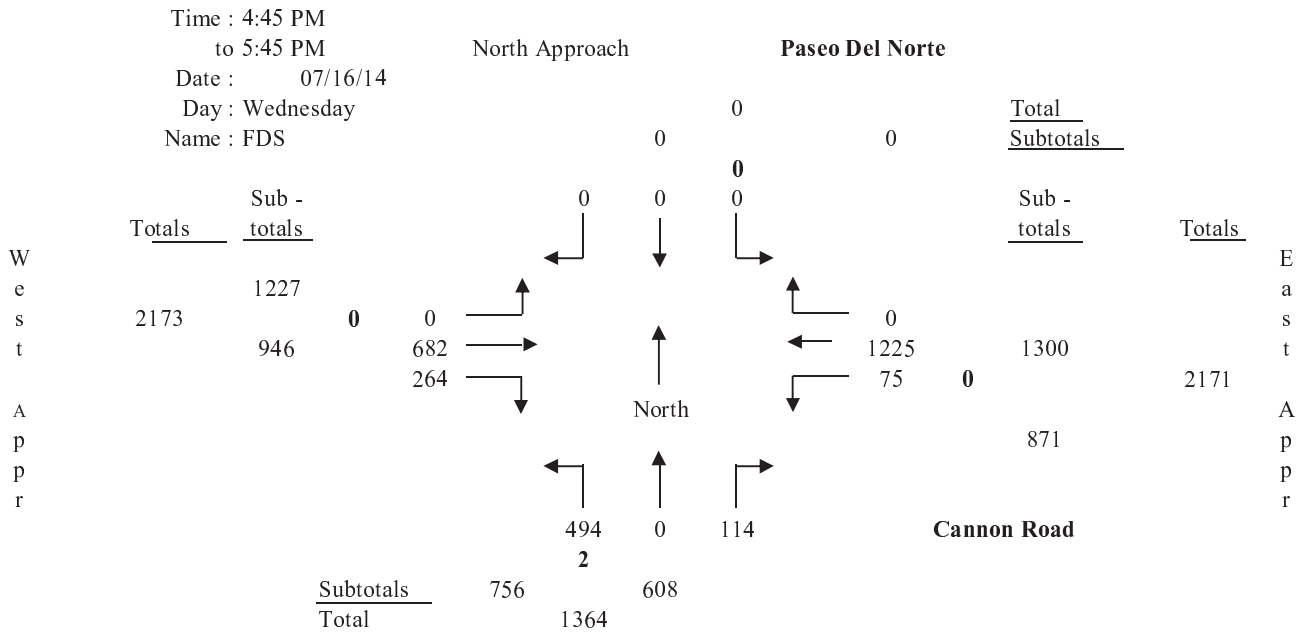
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
4:45 PM to 5:45 PM													
Lane Configurations	Inside	1	1					1			1		
	(left)	2	1					1	1			1	
		3		1								1	
		4										1	
		5											
		6											
	Outside Free-flow	7											
Lane Settings		2	0	1	0	0	0	0	2	0	1	3	0
Capacity		3600	0	1800	0	0	0	0	4000	0	1800	6000	0
Are the North/South phases split (Y/N)?				N									
Are the East/West phases split (Y/N)?				N									
Efficiency Lost Factor		0.10											
Hourly Volume		494	0	114	0	0	0	0	682	264	75	1225	0
Adjusted Hourly Volume		494	0	39	0	0	0	0	946	0	75	1225	0
Utilization Factor		0.14	0.00	0.02	0.00	0.00	0.00	0.00	0.24	0.00	0.04	0.20	0.00
Critical Factors		0.14							0.24		0.04		

ICU Ratio = 0.52 LOS = A

Turning Movements at Intersection of :

Cannon Road and Paseo Del Norte



Note : Left-turn volumes include U-turns. U-turns in bold.



N-S STREET: Paseo Del Norte

DATE: 07/16/2014

LOCATION: Carlsbad

E-W STREET: Cannon Rd.

DAY: WEDNESDAY

PROJECT# 14-1221-038 -- all move

CONTROL: Signal

AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	2	0	1	0	0	0	0	2	1	1	2	0	
6:30 AM	6	0	4	0	0	0	0	129	38	10	124	0	311
6:45 AM	7	0	1	0	0	0	0	214	69	8	117	0	416
7:00 AM	4	0	5	0	0	0	0	175	68	6	132	0	390
7:15 AM	16	0	2	0	0	0	0	168	82	22	120	0	410
7:30 AM	18	0	12	0	0	0	0	213	110	18	148	0	519
7:45 AM	16	0	13	0	0	0	0	288	142	22	131	0	612
8:00 AM	15	0	11	0	0	0	0	193	89	31	140	0	479
8:15 AM	29	0	9	0	0	0	0	209	62	13	128	0	450
8:30 AM	31	0	15	0	0	0	0	215	79	18	147	0	505
8:45 AM	27	0	20	0	0	0	0	238	92	19	119	0	515
9:00 AM	32	0	16	0	0	0	0	230	81	7	158	0	524
9:15 AM	43	0	21	0	0	0	0	255	56	15	127	0	517
Volumes	244	0	129	0	0	0	0	2527	968	189	1591	0	5648
Approach %	65.42	0.00	34.58	#DIV/0!	#DIV/0!	#DIV/0!	0.00	72.30	27.70	10.62	89.38	0.00	
App/Depart	373	/	0	0	/	1157	3495	/	2656	1780	/	1835	
Peak Volumes	133	0	72	0	0	0	0	938	308	59	551	0	2061
Approach %	64.88	0.00	35.12	#DIV/0!	#DIV/0!	#DIV/0!	0.00	75.28	24.72	9.67	90.33	0.00	
Pk Hr FACTOR:	0.80			0.00			0.94			0.92			0.9833
AM Pk Hr at:	830												
PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
3:30 PM	98	0	34	0	0	0	0	116	66	17	294	0	625
3:45 PM	98	0	47	0	0	0	0	152	82	19	209	0	607
4:00 PM	112	0	29	0	0	0	0	157	76	15	269	0	658
4:15 PM	108	0	35	0	0	0	0	160	88	10	244	0	645
4:30 PM	140	0	28	0	0	0	0	146	62	13	253	0	642
4:45 PM	101	0	28	0	0	0	0	169	73	22	292	0	685
5:00 PM	133	0	30	0	0	0	0	169	44	16	340	0	732
5:15 PM	131	0	20	0	0	0	0	162	78	16	313	0	720
5:30 PM	129	0	36	0	0	0	0	182	69	21	280	0	717
5:45 PM	94	0	35	0	0	0	0	157	70	14	257	0	627
6:00 PM	126	0	17	0	0	0	0	171	58	10	248	0	630
6:15 PM	87	0	21	0	0	0	0	146	52	12	208	0	526
Volumes	1357	0	360	0	0	0	0	1887	818	185	3207	0	7814
Approach %	79.03	0.00	20.97	#DIV/0!	#DIV/0!	#DIV/0!	0.00	69.76	30.24	5.45	94.55	0.00	
App/Depart	1717	/	0	0	/	1003	2705	/	2247	3392	/	4564	
Peak Volumes	494	0	114	0	0	0	0	682	264	75	1225	0	2854
Approach %	81.25	0.00	18.75	#DIV/0!	#DIV/0!	#DIV/0!	0.00	72.09	27.91	5.77	94.23	0.00	
Pk Hr FACTOR:	0.92			0.00			0.94			0.91			0.9747
PM Pk Hr at:	445												

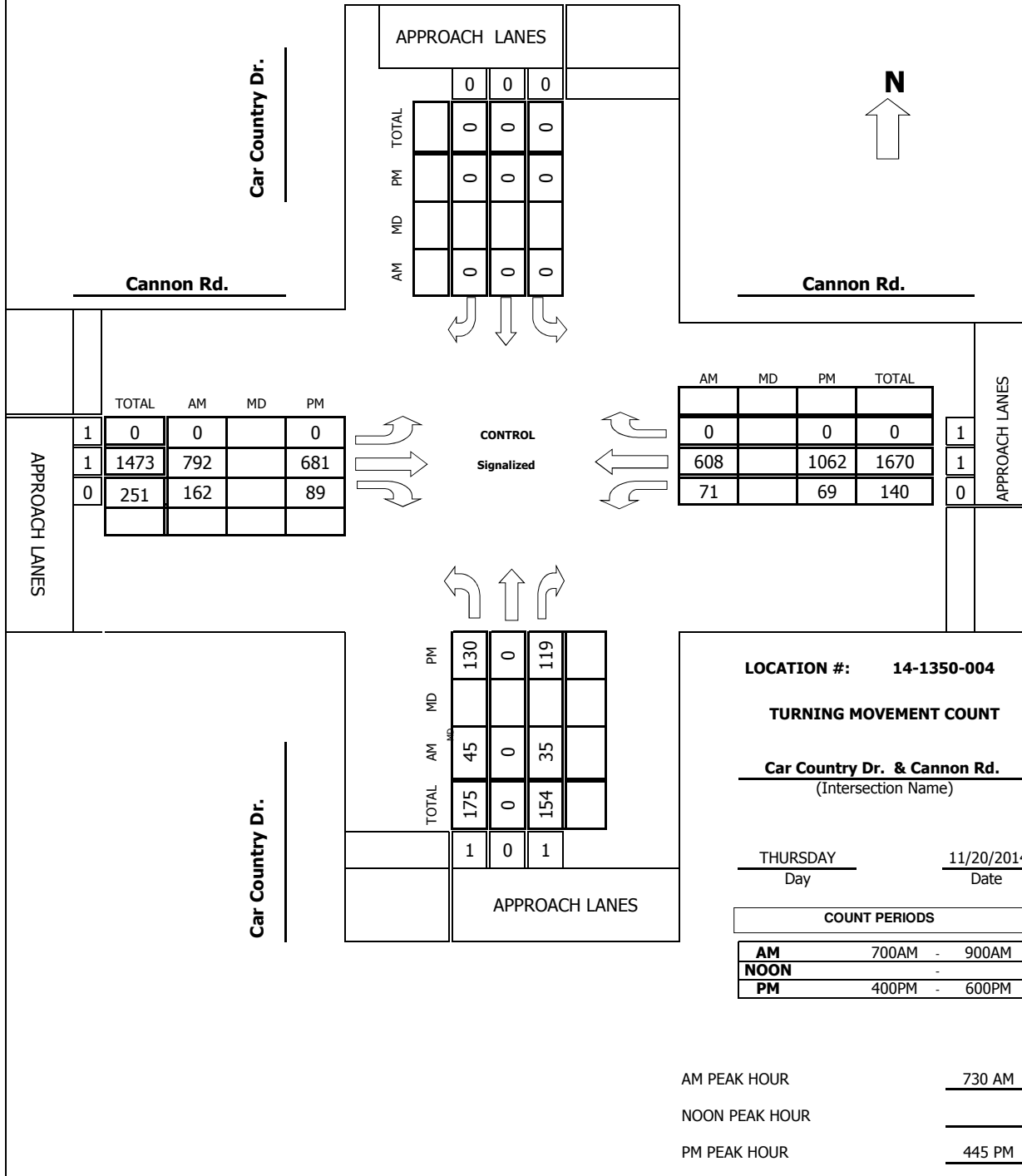
Intersection Turning Movement

Prepared by:



Project #: 14-1350-004

TMC SUMMARY OF Car Country Dr. & Cannon Rd.



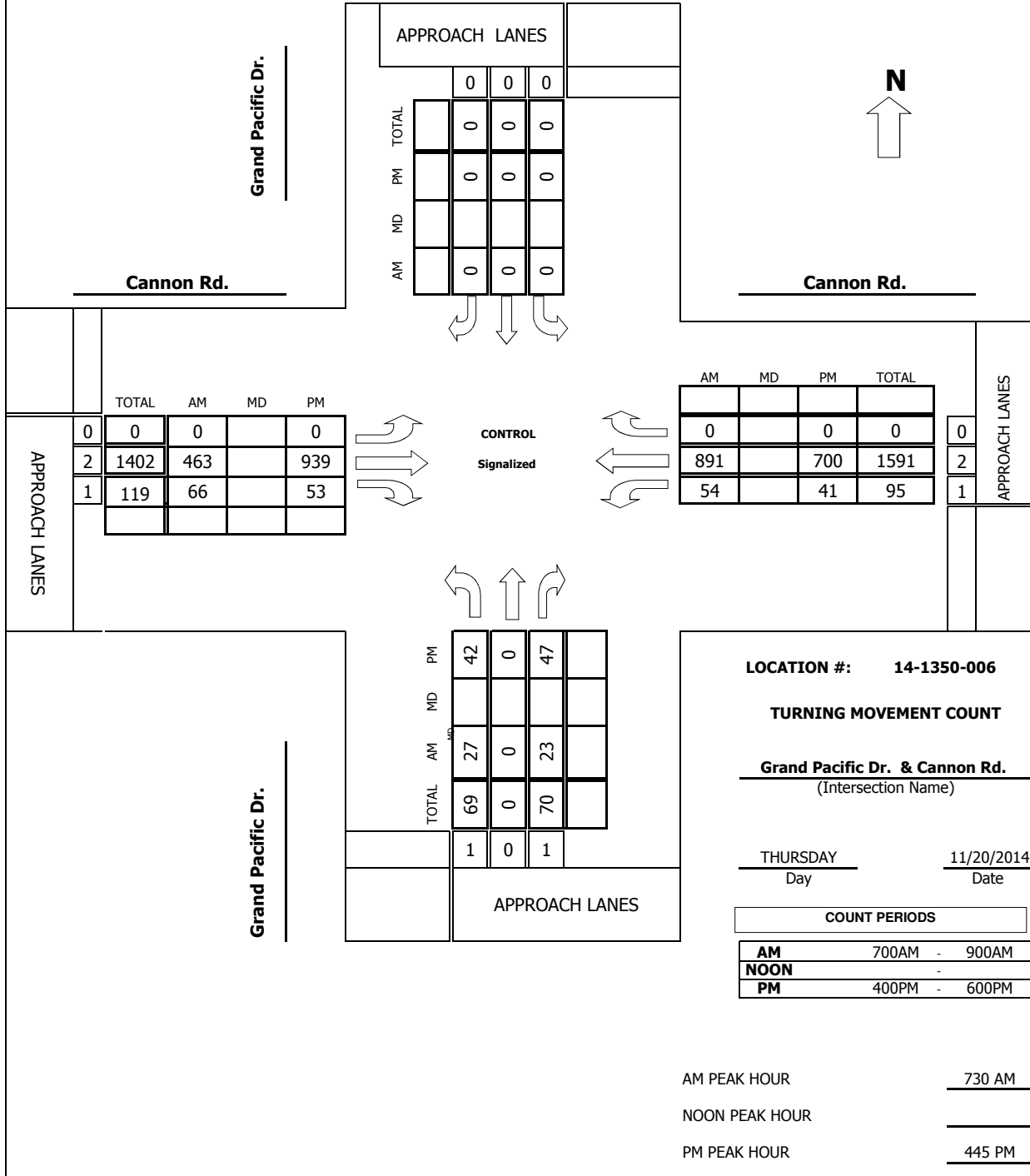
Intersection Turning Movement

Prepared by:



Project #: 14-1350-006

TMC SUMMARY OF Grand Pacific Dr. & Cannon Rd.



Cannon Road at Faraday Avenue

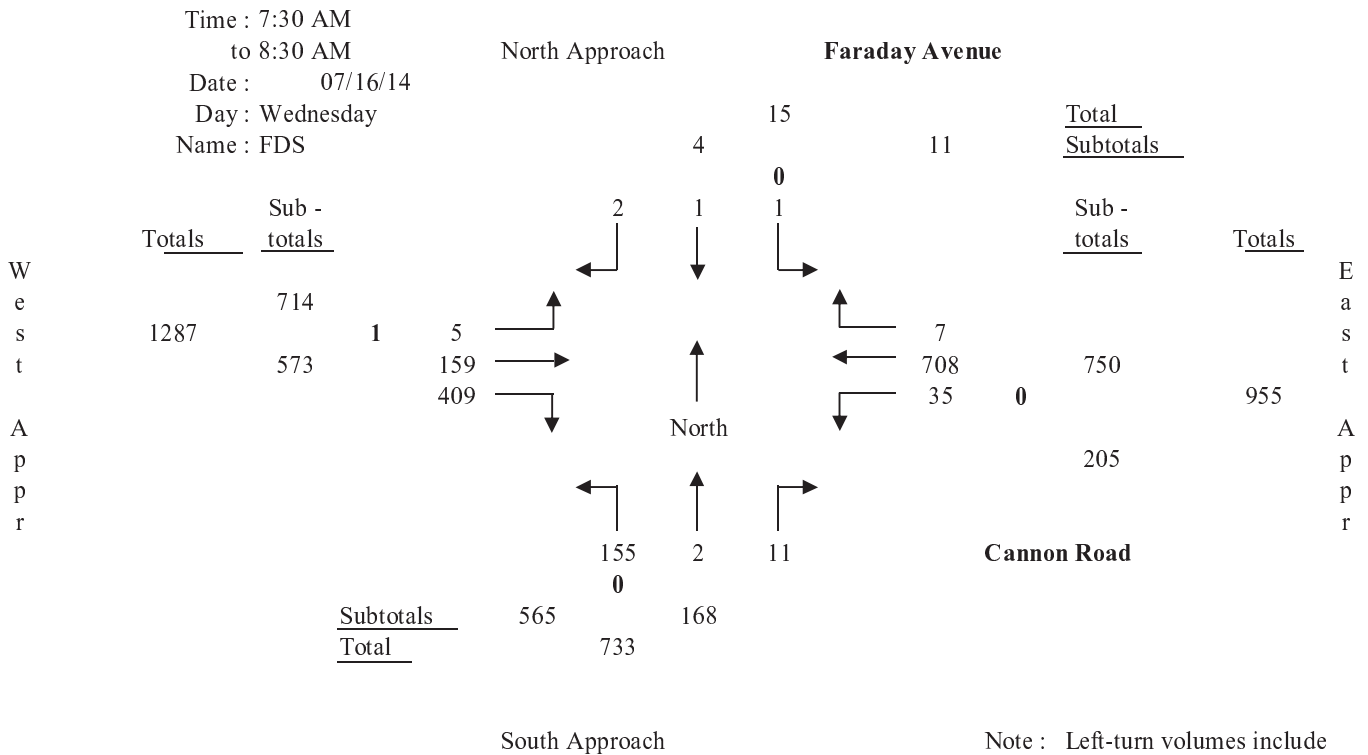
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)				North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
7:30 AM to 8:30 AM														
Lane Config - urations	Inside (left)	1	1	1	1	1	1	1	1			1		
		2								1			1	1
		3									1			
		4												
		5												
		6												
	Outside Free-flow	7												
Lane Settings		1	0	0		0	0	1	1	1	1	1	1	0
Capacity		1800	0	0		0	0	1800	1800	2000	1800	1800	2000	0
Are the North/South phases split (Y/N)?					Y									
Are the East/West phases split (Y/N)?					N									
Efficiency Lost Factor		0.10												
Hourly Volume		155	2	11		1	1	2	5	159	409	35	708	7
Adjusted Hourly Volume		168	0	0		0	0	4	5	159	409	35	715	0
Utilization Factor		0.09	0.00	0.00		0.00	0.00	0.00	0.00	0.08	0.23	0.02	0.36	0.00
Critical Factors		0.09												

ICU Ratio = 0.55 LOS = A

Turning Movements at Intersection of :

Cannon Road and Faraday Avenue



Note: The lane configurations shown reflect temporary construction conditions.

Cannon Road at Faraday Avenue

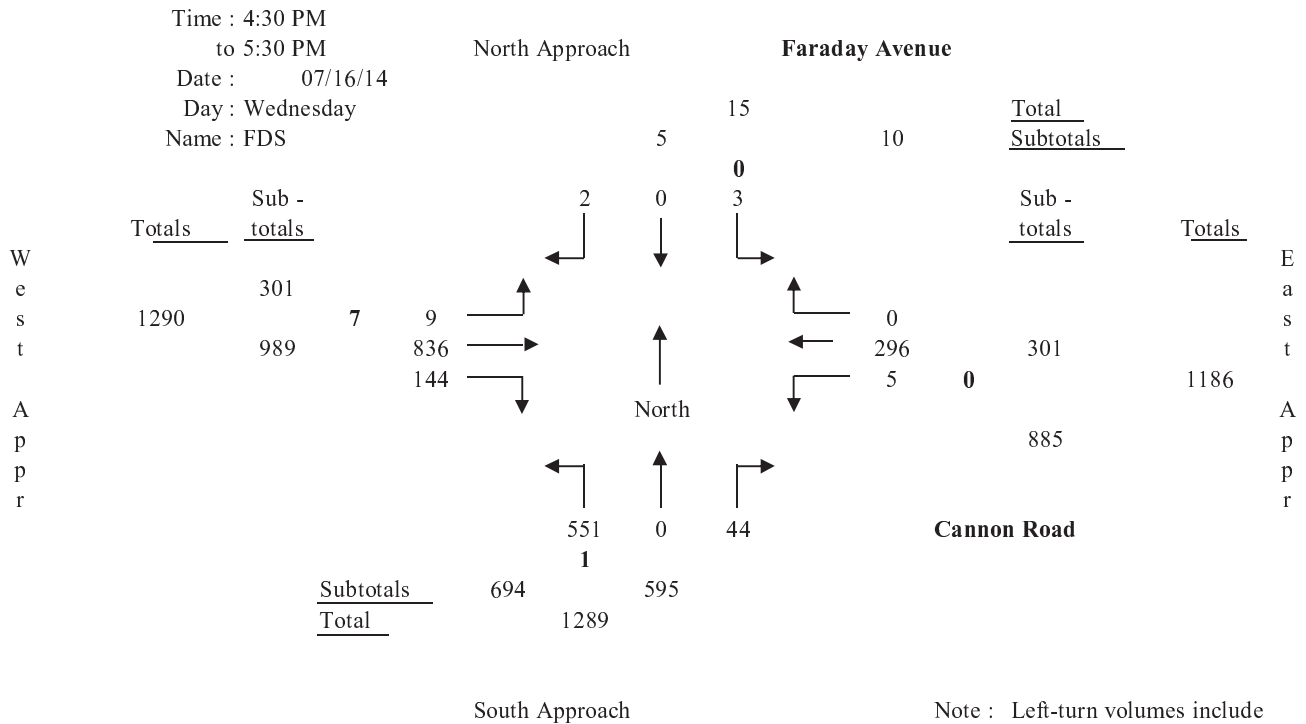
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)				North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
4:30 PM to 5:30 PM														
Lane Configurations	Inside (left)	1	1	1	1	1	1	1	1			1		
		2								1			1	1
		3									1			
		4												
		5												
		6												
	Outside Free-flow	7												
Lane Settings		1	0	0	1	0	0	1	1	1	1	1	0	
Capacity		1800	0	0	1800	0	0	1800	2000	1800	1800	2000	0	
Are the North/South phases split (Y/N)?						Y								
Are the East/West phases split (Y/N)?						N								
Efficiency Lost Factor		0.10												
Hourly Volume		551	0	44	3	0	2	9	836	144	5	296	0	
Adjusted Hourly Volume		595	0	0	5	0	0	9	836	144	5	296	0	
Utilization Factor		0.33	0.00	0.00	0.00	0.00	0.00	0.01	0.42	0.08	0.00	0.15	0.00	
Critical Factors		0.33			0.00				0.42		0.00			

ICU Ratio = 0.85 LOS = D

Turning Movements at Intersection of :

Cannon Road and Faraday Avenue



Note: The lane configurations shown reflect temporary construction conditions.



FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745



veracitytrafficgroup

N-S STREET: Faraday Ave.

DATE: 07/16/2014

LOCATION: Carlsbad

E-W STREET: Cannon Rd.

DAY: WEDNESDAY

PROJECT# 14-1221-039 -- all move

CONTROL: Signal

AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	1.33	0.33	0.33	0	1	0	1	2	1	1	2	0	
6:30 AM	23	0	0	0	0	0	0	23	49	5	154	0	254
6:45 AM	36	1	0	0	0	0	0	30	66	2	213	2	350
7:00 AM	30	0	1	0	0	0	5	25	65	5	134	1	266
7:15 AM	25	1	2	0	0	2	0	29	70	13	161	2	305
7:30 AM	42	0	3	0	0	0	0	26	101	12	179	2	365
7:45 AM	41	0	3	0	0	1	0	38	131	5	236	2	457
8:00 AM	31	2	3	0	1	1	2	54	85	11	153	0	343
8:15 AM	41	0	2	1	0	0	3	41	92	7	140	3	330
8:30 AM	27	0	6	0	0	1	1	63	99	5	135	2	339
8:45 AM	26	1	6	0	0	2	4	47	103	7	119	1	316
9:00 AM	34	1	3	1	0	1	3	52	97	8	103	6	309
9:15 AM	38	2	3	1	0	1	6	36	71	2	102	4	266
Volumes	394	8	32	3	1	9	24	464	1029	82	1829	25	3900
Approach %	90.78	1.84	7.37	23.08	7.69	69.23	1.58	30.59	67.83	4.24	94.47	1.29	
App/Depart	434	/	57	13	/	1112	1517	/	499	1936	/	2232	
Peak Volumes	155	2	11	1	1	2	5	159	409	35	708	7	1495
Approach %	92.26	1.19	6.55	25.00	25.00	50.00	0.87	27.75	71.38	4.67	94.40	0.93	
Pk Hr FACTOR:	0.93			0.50			0.85			0.77			0.8178
AM Pk Hr at:	730												
PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
3:30 PM	72	0	12	1	0	1	5	151	39	2	75	0	358
3:45 PM	62	0	13	0	0	0	6	140	37	2	86	0	346
4:00 PM	65	2	8	0	0	3	3	138	35	1	60	0	315
4:15 PM	81	0	3	1	0	0	2	154	38	7	67	2	355
4:30 PM	129	0	6	0	0	0	3	199	43	0	74	0	454
4:45 PM	147	0	7	1	0	1	2	210	44	3	93	0	508
5:00 PM	137	0	13	2	0	0	2	220	21	1	65	0	461
5:15 PM	138	0	18	0	0	1	2	207	36	1	64	0	467
5:30 PM	109	0	9	1	1	1	0	195	46	2	83	0	447
5:45 PM	103	1	20	1	0	0	1	226	47	1	68	1	469
6:00 PM	66	0	6	1	0	0	0	174	49	3	53	0	352
6:15 PM	65	0	3	0	0	0	0	168	44	2	68	0	350
Volumes	1174	3	118	8	1	7	26	2182	479	25	856	3	4882
Approach %	90.66	0.23	9.11	50.00	6.25	43.75	0.97	81.21	17.83	2.83	96.83	0.34	
App/Depart	1295	/	32	16	/	505	2687	/	2308	884	/	2037	
Peak Volumes	551	0	44	3	0	2	9	836	144	5	296	0	1890
Approach %	92.61	0.00	7.39	60.00	0.00	40.00	0.91	84.53	14.56	1.66	98.34	0.00	
Pk Hr FACTOR:	0.95			0.63			0.97			0.78			0.9301
PM Pk Hr at:	430												

El Camino Real at Cannon Road

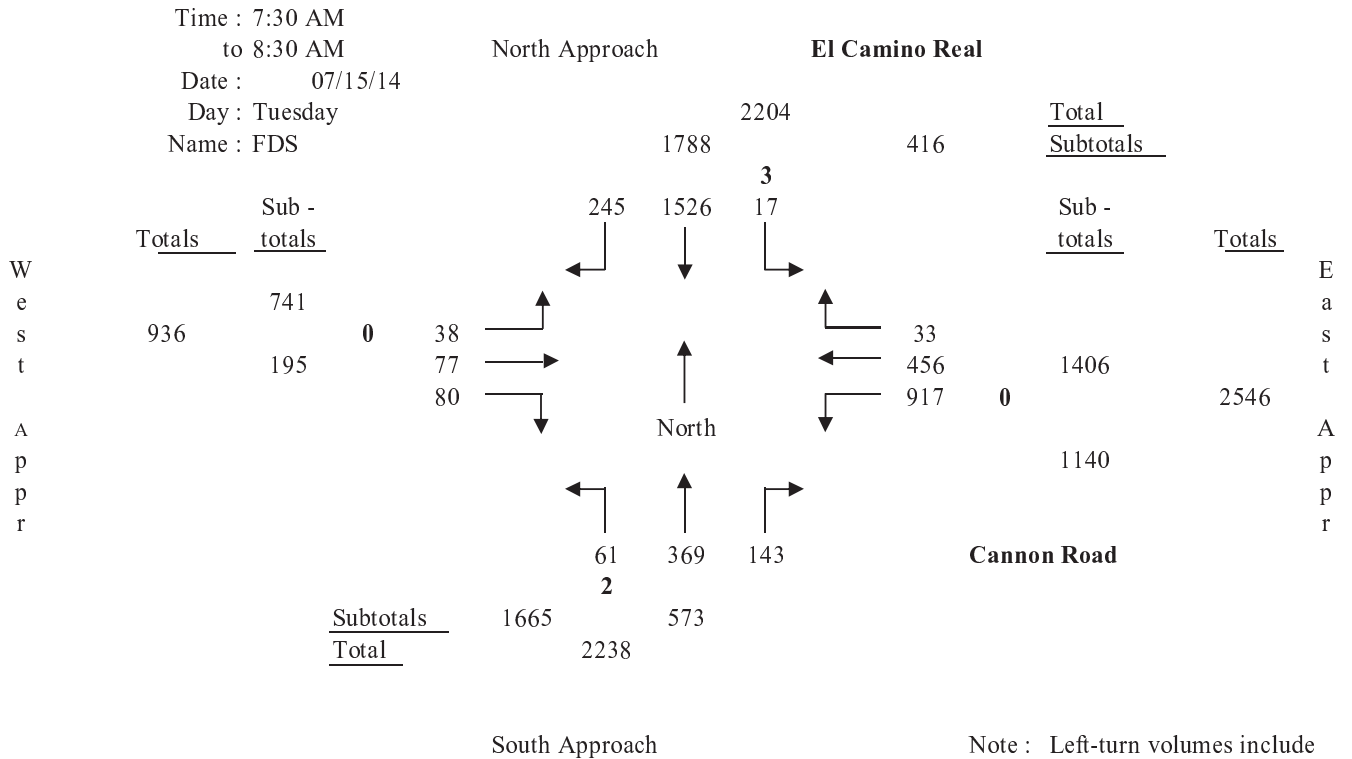
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
7:30 AM	to												
8:30 AM													
Lane Configurations	Inside	1	1		1			1			1		
	(left)	2		1		1		1			1		
		3		1		1			1			1	
		4				1			1	1		1	1
		5					1						
		6											
	Outside Free-flow	7											
Lane Settings		1	2	1	1	3	1	2	1	1	2	2	0
Capacity		1800	4000	1800	1800	6000	1800	3600	2000	1800	3600	4000	0
Are the North/South phases split (Y/N)?					N								
Are the East/West phases split (Y/N)?					N								
Efficiency Lost Factor		0.10											
Hourly Volume		61	369	143	17	1526	245	38	77	80	917	456	33
Adjusted Hourly Volume		61	369	143	17	1526	226	38	77	80	917	489	0
Utilization Factor		0.03	0.09	0.08	0.01	0.25	0.13	0.01	0.04	0.04	0.25	0.12	0.00
Critical Factors		0.03				0.25				0.04	0.25		

ICU Ratio = 0.67 LOS = B

Turning Movements at Intersection of :

El Camino Real and Cannon Road



El Camino Real at Cannon Road

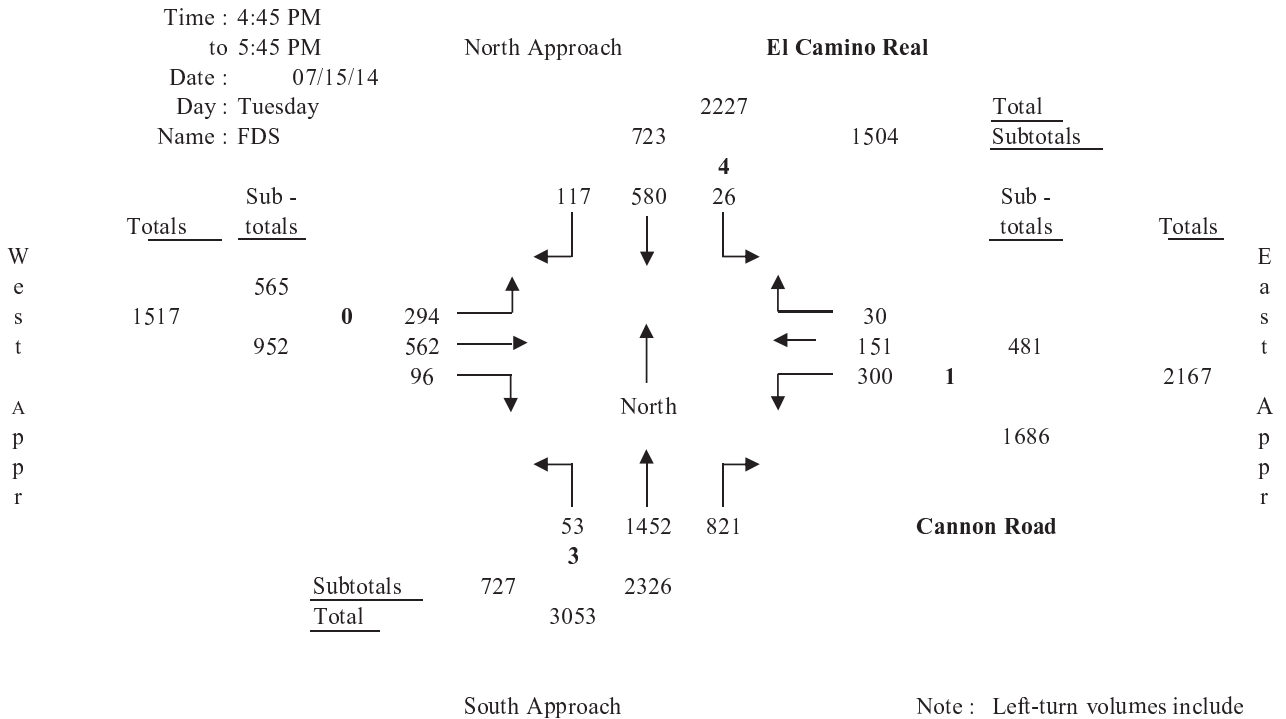
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period : 4:45 PM to 5:45 PM		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Config - urations	Inside (left)	1	1		1			1			1		
		2		1		1		1			1		
		3		1		1			1			1	
		4				1			1	1			1
		5											1
		6											
	Outside Free-flow	7											
Lane Settings		1	2	1	1	3	1	2	2	0	2	2	0
Capacity		1800	4000	1800	1800	6000	1800	3600	4000	0	3600	4000	0
Are the North/South phases split (Y/N)?		N											
Are the East/West phases split (Y/N)?		N											
Efficiency Lost Factor		0.10											
Hourly Volume		53	1452	821	26	580	117	294	562	96	300	151	30
Adjusted Hourly Volume		53	1452	821	26	580	0	294	658	0	300	181	0
Utilization Factor		0.03	0.36	0.46	0.01	0.10	0.00	0.08	0.16	0.00	0.08	0.05	0.00
Critical Factors				0.46	0.01				0.16		0.08		

ICU Ratio = 0.81 LOS = D

Turning Movements at Intersection of :

El Camino Real and Cannon Road





FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745



veracitytrafficgroup

N-S STREET: El Camino Real

DATE: 07/15/2014

LOCATION: Carlsbad

E-W STREET: Cannon Rd.

DAY: TUESDAY

PROJECT# 14-1221-005 -- all move

CONTROL: Signal

AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 3	SR 1	EL 2	ET 2	ER 0	WL 2	WT 2	WR 0	TOTAL
6:30 AM	3	37	24	1	202	52	3	8	3	131	130	2	596
6:45 AM	5	59	14	3	288	63	2	11	5	222	150	5	827
7:00 AM	7	70	25	3	293	46	5	14	7	174	83	0	727
7:15 AM	11	52	23	3	340	54	11	19	11	186	122	4	836
7:30 AM	10	71	32	3	355	64	8	15	15	242	110	9	934
7:45 AM	22	87	35	2	485	82	10	18	24	229	148	4	1146
8:00 AM	13	101	49	6	335	40	9	20	20	200	83	8	884
8:15 AM	16	110	27	6	351	59	11	24	21	246	115	12	998
8:30 AM	15	114	32	9	329	45	18	21	25	206	75	9	898
8:45 AM	24	110	49	8	291	40	15	25	29	189	91	10	881
9:00 AM	19	102	42	7	275	37	14	21	33	147	65	8	770
9:15 AM	18	129	52	6	190	35	18	19	30	124	92	4	717
Volumes	163	1042	404	57	3734	617	124	215	223	2296	1264	75	10214
Approach %	10.13	64.76	25.11	1.29	84.71	14.00	22.06	38.26	39.68	63.16	34.77	2.06	
App/Depart	1609	/	1241	4408	/	6253	562	/	676	3635	/	2044	
Peak Volumes	61	369	143	17	1526	245	38	77	80	917	456	33	3962
Approach %	10.65	64.40	24.96	0.95	85.35	13.70	19.49	39.49	41.03	65.22	32.43	2.35	
Pk Hr FACTOR:	0.88			0.79			0.87			0.92			0.8643
AM Pk Hr at:	730												
PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
3:30 PM	12	258	134	13	123	39	38	74	26	99	58	8	882
3:45 PM	13	287	160	7	195	35	41	86	18	89	47	3	981
4:00 PM	13	303	184	10	161	23	50	95	19	77	39	11	985
4:15 PM	16	330	227	5	156	24	54	101	22	78	39	9	1061
4:30 PM	12	333	201	7	155	40	49	114	24	64	59	3	1061
4:45 PM	13	402	234	6	153	28	78	123	31	80	33	8	1189
5:00 PM	11	256	138	6	139	33	77	163	23	66	45	7	964
5:15 PM	18	407	201	9	139	35	70	122	19	88	40	13	1161
5:30 PM	11	387	248	5	149	21	69	154	23	66	33	2	1168
5:45 PM	13	338	220	9	124	32	65	125	22	62	54	10	1074
6:00 PM	9	248	139	11	107	23	58	104	24	56	29	5	813
6:15 PM	8	232	142	9	107	20	54	123	28	54	36	7	820
Volumes	149	3781	2228	97	1708	353	703	1384	279	879	512	86	12159
Approach %	2.42	61.40	36.18	4.49	79.15	16.36	29.71	58.50	11.79	59.51	34.66	5.82	
App/Depart	6158	/	4570	2158	/	2866	2366	/	3709	1477	/	1014	
Peak Volumes	53	1452	821	26	580	117	294	562	96	300	151	30	4482
Approach %	2.28	62.42	35.30	3.60	80.22	16.18	30.88	59.03	10.08	62.37	31.39	6.24	
Pk Hr FACTOR:	0.90			0.97			0.90			0.85			0.9424
PM Pk Hr at:	445												

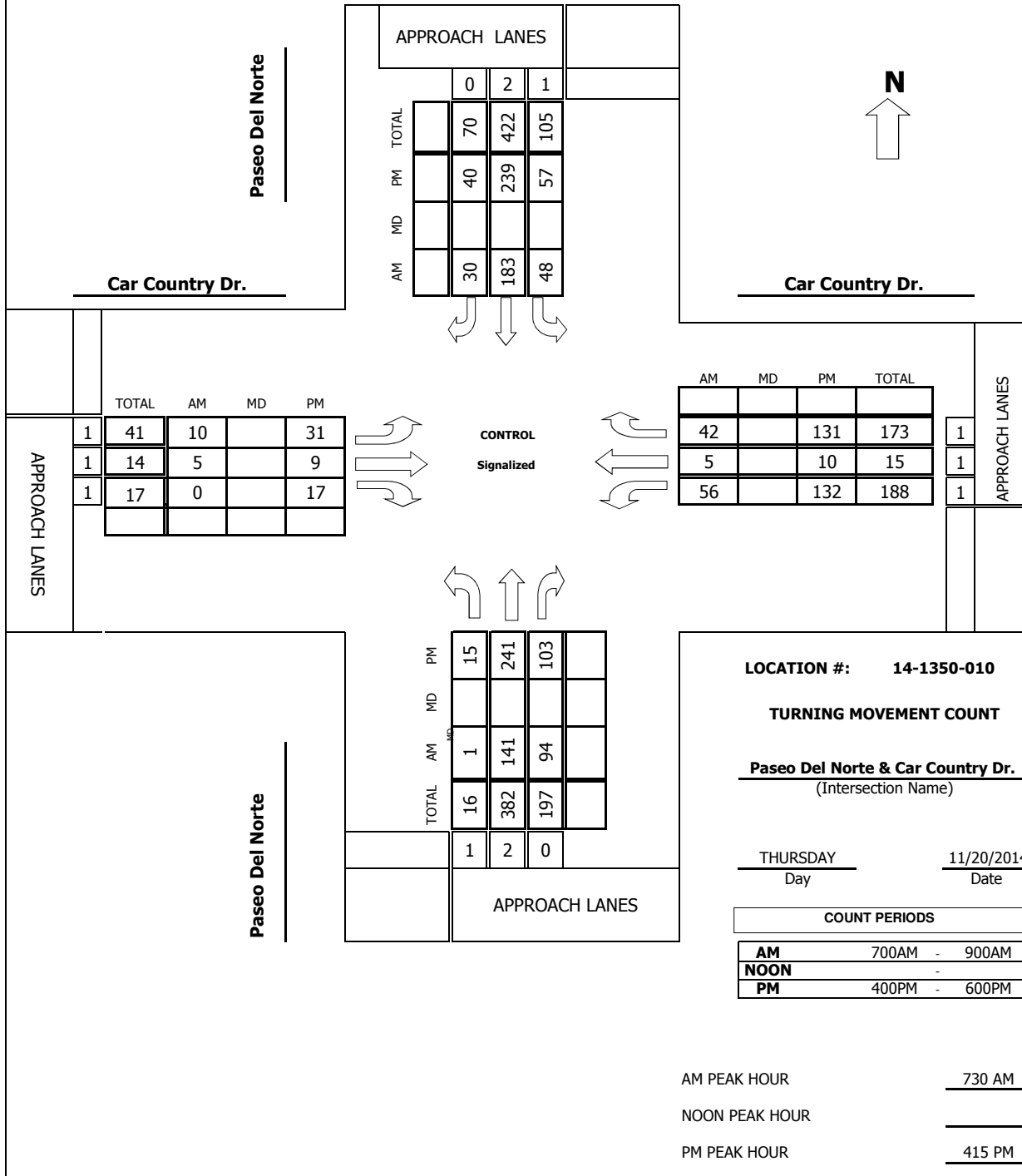
Intersection Turning Movement

Prepared by:



Project #: 14-1350-010

TMC SUMMARY OF Paseo Del Norte & Car Country Dr.

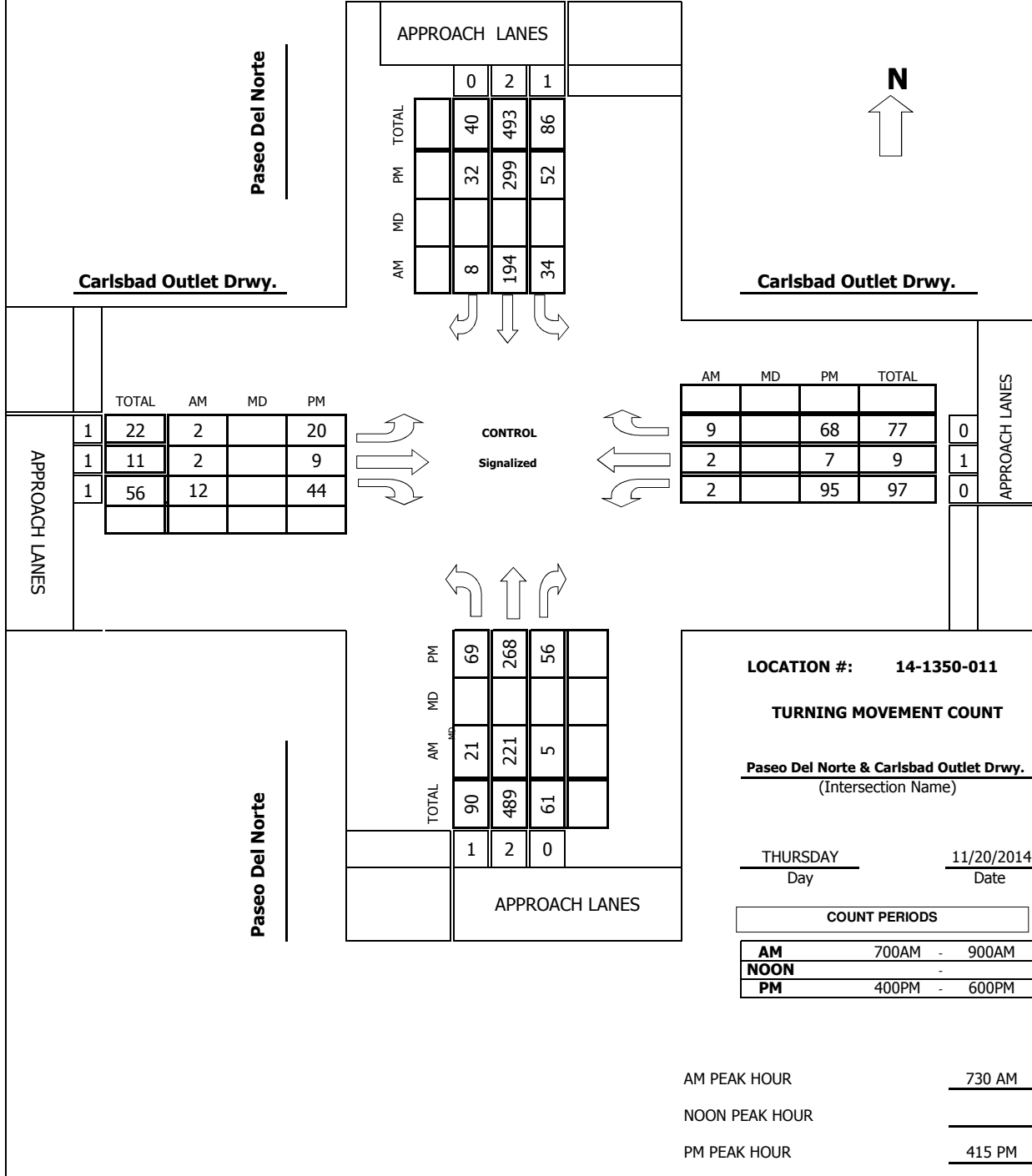


Intersection Turning Movement
Prepared by:



Project #: 14-1350-011

TMC SUMMARY OF Paseo Del Norte & Carlsbad Outlet Drwy.



College Boulevard at Faraday Avenue

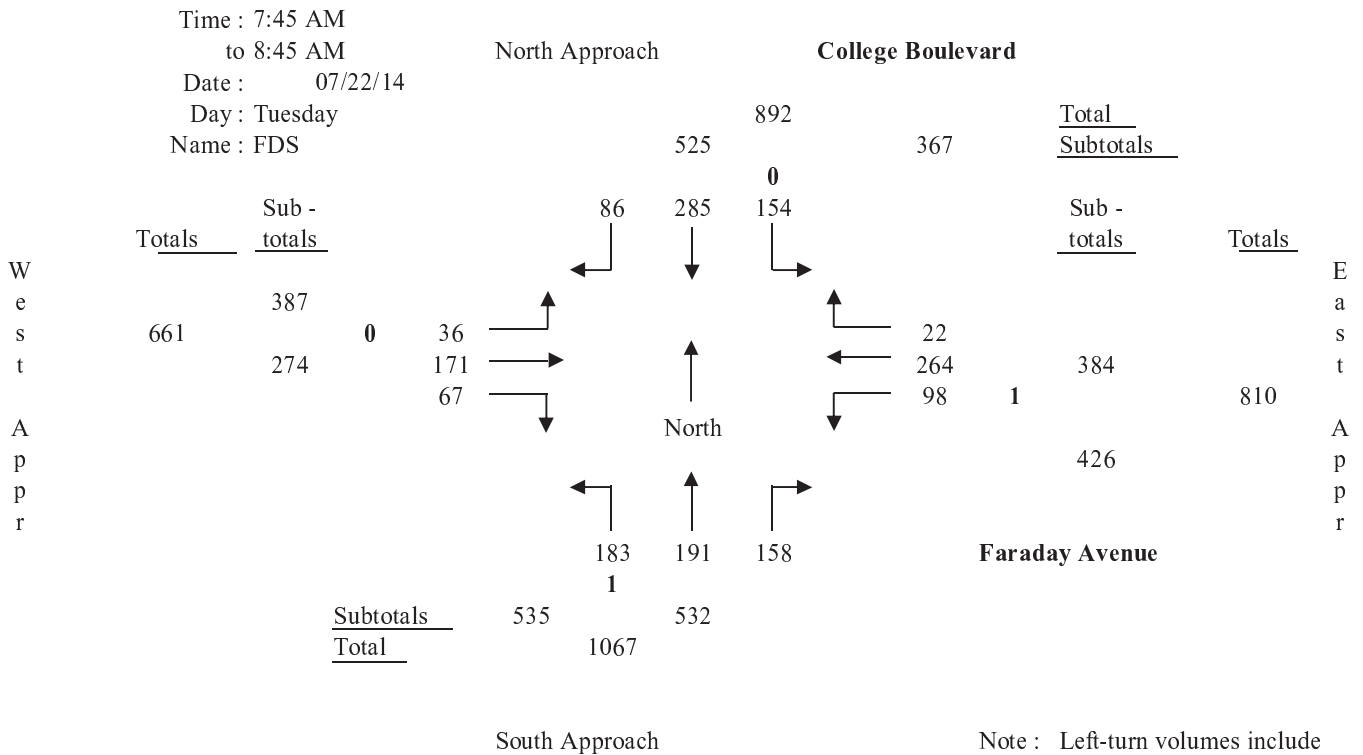
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
7:45 AM to 8:45 AM													
Lane Configurations	Inside (left)	1	1		1			1			1	1	1
		2	1			1			1				
		3		1			1						
		4		1			1						
		5											
		6											
	Outside Free-flow	7											
Lane Settings		2	2	0	1	2	0	1	1	1	0	1	0
Capacity		3600	4000	0	1800	4000	0	1800	2000	1800	0	2000	0
Are the North/South phases split (Y/N)?					N								
Are the East/West phases split (Y/N)?					Y								
Efficiency Lost Factor		0.10											
Hourly Volume		183	191	158	154	285	86	36	171	67	98	264	22
Adjusted Hourly Volume		183	349	0	154	371	0	36	171	67	0	384	0
Utilization Factor		0.05	0.09	0.00	0.09	0.09	0.00	0.02	0.09	0.04	0.00	0.19	0.00
Critical Factors		0.09			0.09			0.09			0.19		

ICU Ratio = 0.56 LOS = A

Turning Movements at Intersection of :

College Boulevard and Faraday Avenue



Note : Left-turn volumes include U-turns. U-turns in bold.

Note: The lane configurations shown reflect temporary construction conditions.

College Boulevard at Faraday Avenue

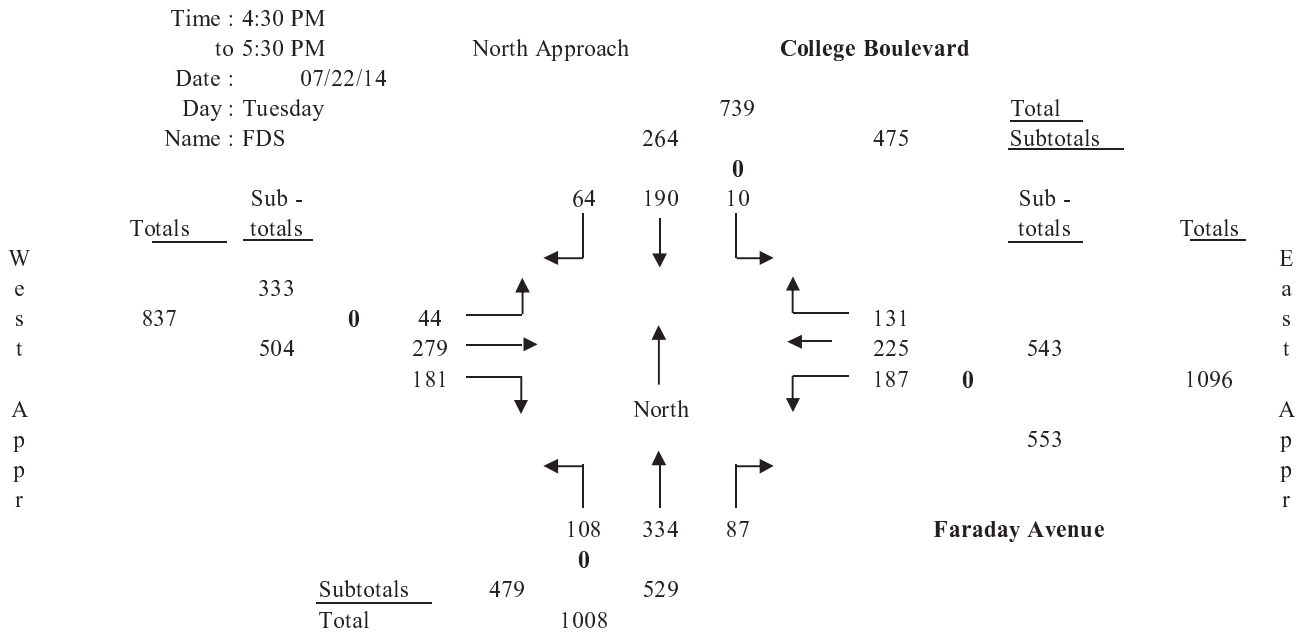
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
4:30 PM to 5:30 PM													
Lane Configurations	Inside (left)	1	1		1			1			1	1	1
		2	1			1			1				
		3		1		1	1						
		4		1	1								
		5											
		6											
	Outside Free-flow	7											
Lane Settings		2	2	0	1	2	0	1	1	1	0	1	0
Capacity		3600	4000	0	1800	4000	0	1800	2000	1800	0	2000	0
Are the North/South phases split (Y/N)?					N								
Are the East/West phases split (Y/N)?					Y								
Efficiency Lost Factor		0.10											
Hourly Volume		108	334	87	10	190	64	44	279	181	187	225	131
Adjusted Hourly Volume		108	421	0	10	254	0	44	279	181	0	543	0
Utilization Factor		0.03	0.11	0.00	0.01	0.06	0.00	0.02	0.14	0.10	0.00	0.27	0.00
Critical Factors			0.11		0.01				0.14			0.27	

ICU Ratio = 0.63 LOS = B

Turning Movements at Intersection of :

College Boulevard and Faraday Avenue



Note : Left-turn volumes include U-turns. U-turns in bold.

Note: The lane configurations shown reflect temporary construction conditions.



FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745



veracitytrafficgroup

N-S STREET: College Blvd.

DATE: 07/22/2014

LOCATION: Carlsbad

E-W STREET: Faraday Ave.

DAY: TUESDAY

PROJECT# 14-1221-041 -- All Move

CONTROL: Signal

AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	2	2	0	2	2	0	1	2	0	1	2	0	
6:30 AM	20	7	16	15	50	11	6	21	5	19	47	5	222
6:45 AM	36	13	32	34	43	21	9	29	13	28	54	8	320
7:00 AM	20	28	42	30	93	9	6	28	6	24	43	7	336
7:15 AM	31	22	28	22	75	20	2	28	13	26	43	9	319
7:30 AM	32	36	32	38	68	16	7	40	15	24	69	3	380
7:45 AM	48	54	40	54	85	14	12	56	16	30	66	6	481
8:00 AM	52	43	38	37	65	25	8	43	17	24	65	3	420
8:15 AM	42	55	47	29	75	24	7	42	12	25	64	4	426
8:30 AM	41	39	33	34	60	23	9	30	22	19	69	9	388
8:45 AM	42	39	54	23	78	19	4	44	26	20	47	9	405
9:00 AM	37	25	43	29	60	18	7	36	22	18	68	5	368
9:15 AM	24	27	35	24	41	9	3	31	19	15	48	5	281
Volumes	425	388	440	369	793	209	80	428	186	272	683	73	4346
Approach %	33.92	30.97	35.12	26.91	57.84	15.24	11.53	61.67	26.80	26.46	66.44	7.10	
App/Depart	1253	/	541	1371	/	1251	694	/	1237	1028	/	1317	
Peak Volumes	183	191	158	154	285	86	36	171	67	98	264	22	1715
Approach %	34.40	35.90	29.70	29.33	54.29	16.38	13.14	62.41	24.45	25.52	68.75	5.73	
Pk Hr FACTOR:	0.92			0.86			0.82			0.94			0.8914
AM Pk Hr at:	745												
PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
3:30 PM	15	65	28	8	28	6	4	63	35	30	41	26	349
3:45 PM	20	59	15	5	38	6	13	51	30	26	47	11	321
4:00 PM	26	84	23	1	36	4	18	61	37	33	50	35	408
4:15 PM	22	56	19	2	31	10	11	63	33	39	46	20	352
4:30 PM	20	92	20	1	42	13	11	66	45	60	46	37	453
4:45 PM	26	76	22	2	45	7	10	58	36	48	49	30	409
5:00 PM	32	83	27	3	55	12	14	89	55	42	69	37	518
5:15 PM	30	83	18	4	48	32	9	66	45	37	61	27	460
5:30 PM	17	63	20	4	47	9	8	55	51	47	62	37	420
5:45 PM	16	58	22	4	39	12	12	54	37	55	35	26	370
6:00 PM	13	74	18	3	34	4	18	52	20	50	39	27	352
6:15 PM	9	35	17	5	24	9	3	34	19	49	31	18	253
Volumes	246	828	249	42	467	124	131	712	443	516	576	331	4665
Approach %	18.59	62.59	18.82	6.64	73.78	19.59	10.19	55.37	34.45	36.26	40.48	23.26	
App/Depart	1323	/	1290	633	/	1426	1286	/	1003	1423	/	946	
Peak Volumes	108	334	87	10	190	64	44	279	181	187	225	131	1840
Approach %	20.42	63.14	16.45	3.79	71.97	24.24	8.73	55.36	35.91	34.44	41.44	24.13	
Pk Hr FACTOR:	0.93			0.79			0.80			0.92			0.888
PM Pk Hr at:	430												

El Camino Real at College Boulevard

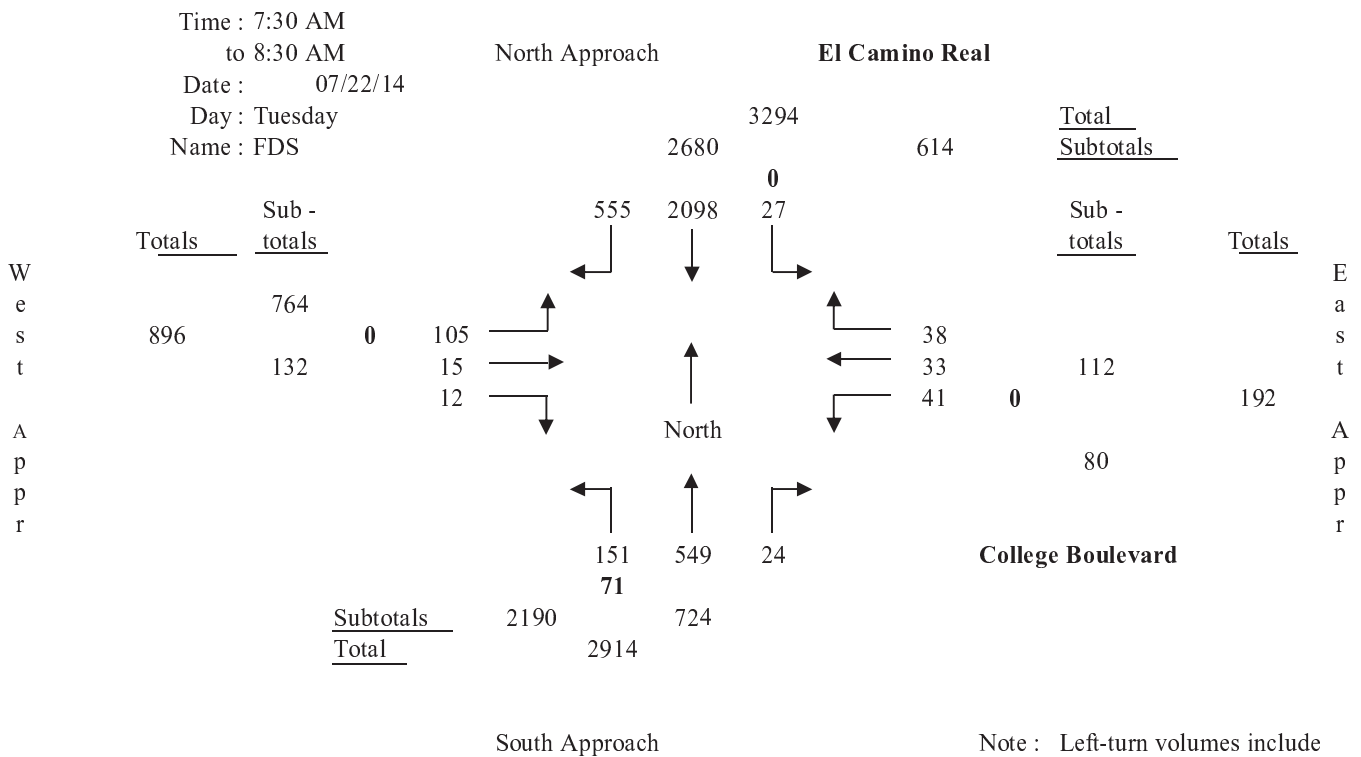
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
7:30 AM to 8:30 AM													
Lane Config - urations	Inside	1	1		1			1			1		
	(left)	2		1		1		1			1		
		3		1		1			1			1	
		4		1		1			1	1		1	1
		5											1
		6											
	Outside Free-flow	7					1						
Lane Settings		1	3	1	1	3	1	2	2	0	2	1	1
Capacity		1800	6000	1800	1800	6000	1800	3600	4000	0	3600	2000	1800
Are the North/South phases split (Y/N)?				N									
Are the East/West phases split (Y/N)?				N									
Efficiency Lost Factor		0.10											
Hourly Volume		151	549	24	27	2098	555	105	15	12	41	33	38
Adjusted Hourly Volume		151	549	24	27	2098	0	105	15	0	41	33	38
Utilization Factor		0.08	0.09	0.01	0.02	0.35	0.00	0.03	0.00	0.00	0.01	0.02	0.02
Critical Factors		0.08				0.35		0.03					0.02

ICU Ratio = 0.58 LOS = A

Turning Movements at Intersection of :

El Camino Real and College Boulevard



Note : Left-turn volumes include U-turns. U-turns in bold.

El Camino Real at College Boulevard

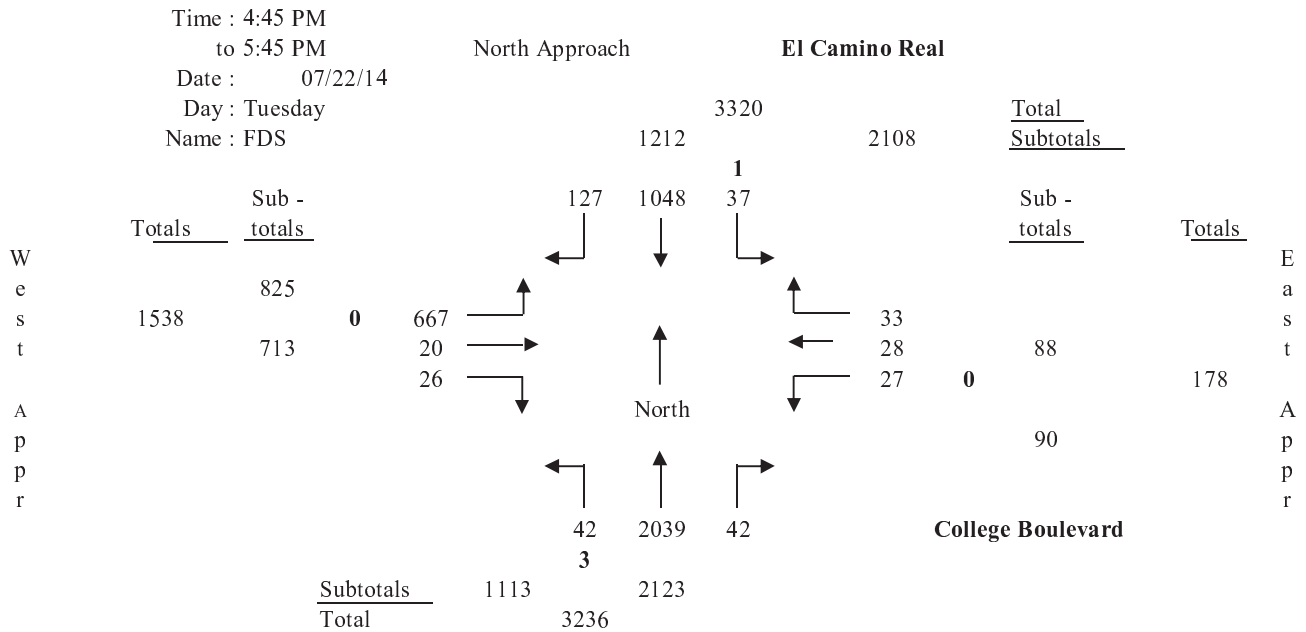
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
4:45 PM to 5:45 PM													
Lane Configurations	Inside (left)	1	1		1			1			1		
		2		1		1		1			1		
		3		1		1			1			1	
		4		1		1			1	1		1	1
		5					1						
		6											
	Outside Free-flow	7						1					
Lane Settings		1	3	1	1	3	1	2	1	1	2	1	1
Capacity		1800	6000	1800	1800	6000	1800	3600	2000	1800	3600	2000	1800
Are the North/South phases split (Y/N)?					N								
Are the East/West phases split (Y/N)?					N								
Efficiency Lost Factor		0.10											
Hourly Volume		42	2039	42	37	1048	127	667	20	26	27	28	33
Adjusted Hourly Volume		42	2039	42	37	1048	0	667	0	26	27	28	33
Utilization Factor		0.02	0.34	0.02	0.02	0.17	0.00	0.19	0.00	0.01	0.01	0.01	0.02
Critical Factors			0.34		0.02			0.19					0.02

ICU Ratio = 0.67 LOS = B

Turning Movements at Intersection of :

El Camino Real and College Boulevard



Note : Left-turn volumes include U-turns. U-turns in bold.



N-S STREET: El Camino Real

DATE: 07/22/2014

LOCATION: Carlsbad

E-W STREET: College Blvd.

DAY: TUESDAY

PROJECT# 14-1221-006 -- All Move

CONTROL: Signal

AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 3	NR 1	SL 1	ST 3	SR 1	EL 2	ET 2	ER 0	WL 2	WT 2	WR 0	TOTAL
6:30 AM	16	52	0	0	283	108	14	2	0	2	10	3	490
6:45 AM	16	82	4	4	383	109	14	0	0	9	4	4	629
7:00 AM	16	68	1	1	280	115	20	2	2	7	12	7	531
7:15 AM	28	70	0	0	475	124	17	0	1	6	5	7	733
7:30 AM	38	124	7	2	509	135	21	3	3	7	10	10	869
7:45 AM	38	124	5	7	628	160	28	5	8	10	6	9	1028
8:00 AM	38	145	6	1	481	134	24	3	1	13	9	6	861
8:15 AM	37	156	6	17	480	126	32	4	0	11	8	13	890
8:30 AM	24	214	11	5	441	93	29	5	3	13	8	7	853
8:45 AM	29	182	6	3	373	74	27	2	2	8	13	12	731
9:00 AM	20	157	11	9	284	66	29	10	6	3	6	8	609
9:15 AM	14	150	8	13	274	55	23	5	4	15	8	14	583
Volumes	314	1524	65	62	4891	1299	278	41	30	104	99	100	8807
Approach %	16.50	80.08	3.42	0.99	78.23	20.78	79.66	11.75	8.60	34.32	32.67	33.00	
App/Depart	1903	/	1902	6252	/	5025	349	/	168	303	/	1712	
Peak Volumes	151	549	24	27	2098	555	105	15	12	41	33	38	3648
Approach %	20.86	75.83	3.31	1.01	78.28	20.71	79.55	11.36	9.09	36.61	29.46	33.93	
Pk Hr FACTOR:	0.91			0.84			0.80			0.88			0.8872
AM Pk Hr at:	730												
PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
3:30 PM	9	311	5	7	266	34	79	9	3	10	2	12	747
3:45 PM	12	272	11	7	242	28	90	6	2	6	3	7	686
4:00 PM	11	348	12	16	257	26	127	7	11	7	2	12	836
4:15 PM	8	358	6	9	204	36	89	10	2	7	3	11	743
4:30 PM	9	529	12	13	255	30	167	7	7	4	4	6	1043
4:45 PM	6	343	8	8	249	40	139	2	7	7	3	3	815
5:00 PM	8	607	12	14	246	20	225	5	3	7	10	11	1168
5:15 PM	13	534	8	7	280	32	164	4	8	2	12	12	1076
5:30 PM	15	555	14	8	273	35	139	9	8	11	3	7	1077
5:45 PM	1	264	3	11	213	33	83	6	5	10	3	10	642
6:00 PM	6	301	7	5	147	26	87	8	2	4	1	8	602
6:15 PM	6	209	8	4	136	21	62	8	4	2	1	8	469
Volumes	104	4631	106	109	2768	361	1451	81	62	77	47	107	9904
Approach %	2.15	95.66	2.19	3.37	85.48	11.15	91.03	5.08	3.89	33.33	20.35	46.32	
App/Depart	4841	/	6189	3238	/	2907	1594	/	296	231	/	512	
Peak Volumes	42	2039	42	37	1048	127	667	20	26	27	28	33	4136
Approach %	1.98	96.04	1.98	3.05	86.47	10.48	93.55	2.81	3.65	30.68	31.82	37.50	
Pk Hr FACTOR:	0.85			0.95			0.77			0.79			0.8853
PM Pk Hr at:	445												

El Camino Real at Faraday Avenue

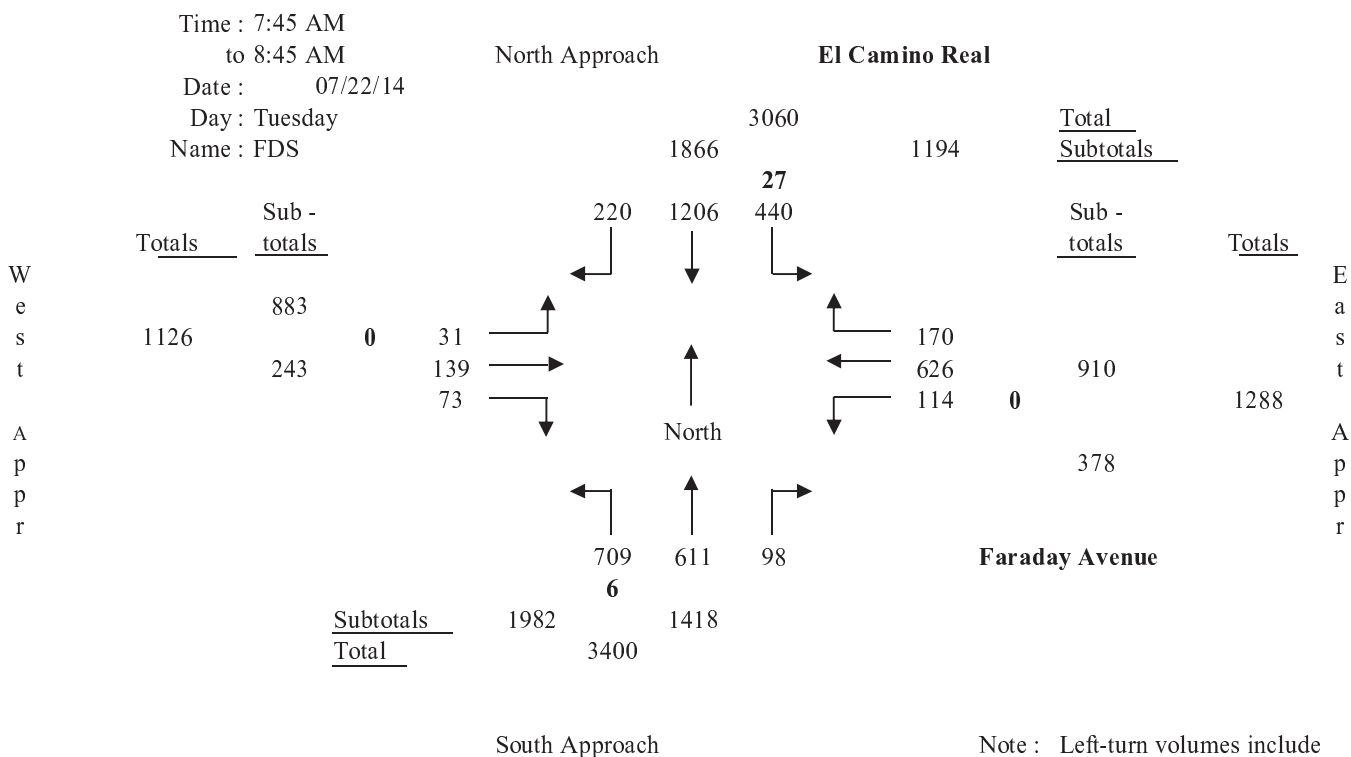
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
7:45 AM to 8:45 AM													
Lane Configurations	Inside (left)	1	1		1			1			1		
		2	1		1				1			1	
		3		1		1			1	1		1	
		4		1		1				1			1
		5		1	1								
		6					1						
	Outside Free-flow	7											
Lane Settings		2	3	0	2	3	1	1	2	1	1	2	1
Capacity		3600	6000	0	3600	6000	1800	1800	4000	1800	1800	4000	1800
Are the North/South phases split (Y/N)?				N									
Are the East/West phases split (Y/N)?				N									
Efficiency Lost Factor		0.10											
Hourly Volume		709	611	98	440	1206	220	31	139	73	114	626	170
Adjusted Hourly Volume		709	709	0	440	1206	220	31	139	73	114	626	170
Utilization Factor		0.20	0.12	0.00	0.12	0.20	0.12	0.02	0.03	0.04	0.06	0.16	0.09
Critical Factors		0.20				0.20		0.02				0.16	

ICU Ratio = 0.68 LOS = B

Turning Movements at Intersection of :

El Camino Real and Faraday Avenue



Note : Left-turn volumes include U-turns. U-turns in bold.

El Camino Real at Faraday Avenue

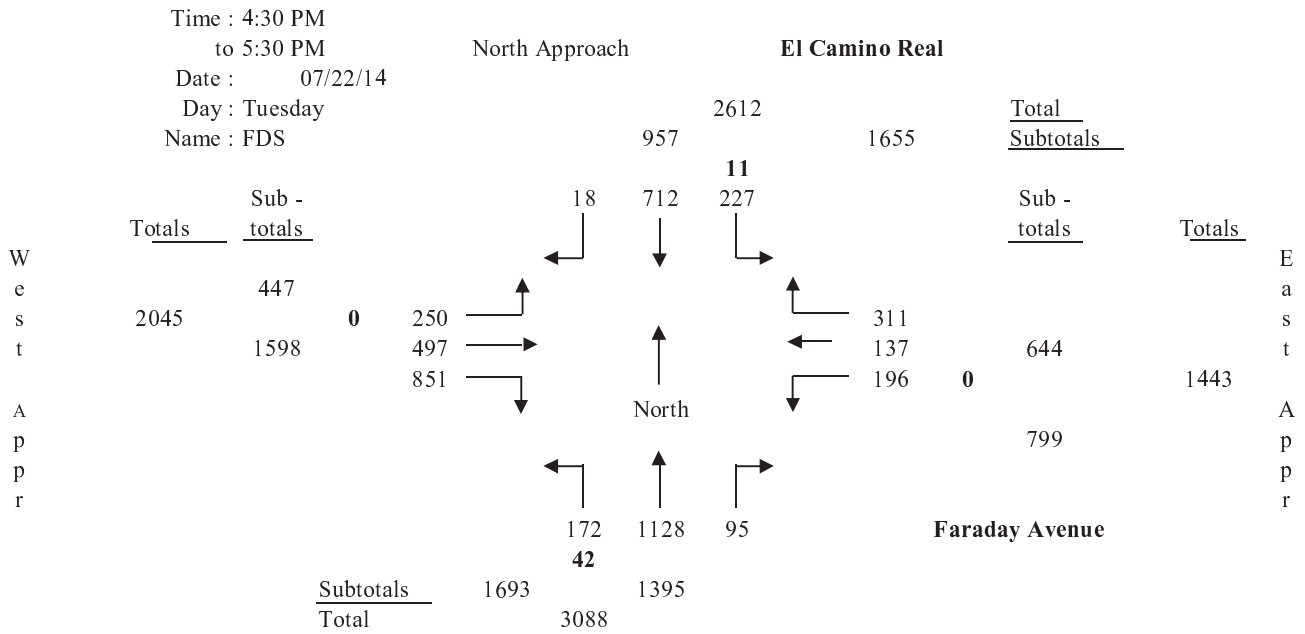
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
4:30 PM to 5:30 PM		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Configurations	Inside (left)	1	1		1			1			1		
		2	1		1				1			1	
		3		1					1	1		1	
		4		1			1						1
		5		1	1		1						
		6											1
	Outside Free-flow	7						1					
Lane Settings		2	3	0	2	3	1	1	1	2	1	2	1
Capacity		3600	6000	0	3600	6000	1800	1800	2000	3600	1800	4000	1800
Are the North/South phases split (Y/N)?					N								
Are the East/West phases split (Y/N)?					N								
Efficiency Lost Factor		0.10											
Hourly Volume		172	1128	95	227	712	18	250	497	851	196	137	311
Adjusted Hourly Volume		172	1223	0	227	712	18	250	249	1100	196	137	311
Utilization Factor		0.05	0.20	0.00	0.06	0.12	0.01	0.14	0.12	0.31	0.11	0.03	0.17
Critical Factors		0.20			0.06						0.31 0.11		

ICU Ratio = 0.78 LOS = C

Turning Movements at Intersection of :

El Camino Real and Faraday Avenue



Note : Left-turn volumes include U-turns. U-turns in bold.



FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745



veracitytrafficgroup

N-S STREET: El Camino Real

DATE: 07/22/2014

LOCATION: Carlsbad

E-W STREET: Faraday Ave.

DAY: TUESDAY

PROJECT# 14-1221-007 -- All Move

CONTROL: Signal

AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	2	3	0	2	3	1	1	1.5	1.5	1	2	1	
6:30 AM	89	58	12	100	173	12	2	12	6	8	72	6	550
6:45 AM	76	76	26	113	220	20	0	31	4	14	122	11	713
7:00 AM	96	89	19	100	216	36	1	28	6	19	117	12	739
7:15 AM	148	108	19	103	234	42	2	17	10	23	169	23	898
7:30 AM	132	147	26	98	346	46	4	22	12	29	138	33	1033
7:45 AM	167	114	26	173	365	69	3	35	8	27	129	34	1150
8:00 AM	165	147	28	112	312	51	5	38	14	33	176	37	1118
8:15 AM	180	159	23	89	262	45	13	43	32	25	176	54	1101
8:30 AM	197	191	21	66	267	55	10	23	19	29	145	45	1068
8:45 AM	161	160	27	80	254	50	1	25	19	52	151	60	1040
9:00 AM	120	156	24	86	237	41	6	40	21	35	107	32	905
9:15 AM	142	160	19	62	244	28	9	24	21	37	79	28	853
Volumes	1673	1565	270	1182	3130	495	56	338	172	331	1581	375	11168
Approach %	47.69	44.61	7.70	24.59	65.11	10.30	9.89	59.72	30.39	14.47	69.13	16.40	
App/Depart	3508	/	1996	4807	/	3633	566	/	1790	2287	/	3749	
Peak Volumes	709	611	98	440	1206	220	31	139	73	114	626	170	4437
Approach %	50.00	43.09	6.91	23.58	64.63	11.79	12.76	57.20	30.04	12.53	68.79	18.68	
Pk Hr FACTOR:	0.87			0.77			0.69			0.89			0.9646
AM Pk Hr at:	745												
PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
3:30 PM	50	275	16	51	207	8	25	106	116	56	55	57	1022
3:45 PM	45	241	14	62	219	5	36	96	100	43	36	45	942
4:00 PM	59	243	27	38	205	9	83	143	199	56	50	58	1170
4:15 PM	29	306	25	56	227	2	35	89	164	39	39	62	1073
4:30 PM	60	286	20	48	192	1	50	104	250	47	26	100	1184
4:45 PM	39	242	29	67	165	5	57	117	202	41	42	67	1073
5:00 PM	30	295	21	62	152	8	86	172	225	68	42	75	1236
5:15 PM	43	305	25	50	203	4	57	104	174	40	27	69	1101
5:30 PM	45	300	18	40	174	5	43	139	130	50	22	77	1043
5:45 PM	24	227	13	22	188	2	28	102	109	30	43	42	830
6:00 PM	28	300	8	25	111	3	36	103	97	34	22	50	817
6:15 PM	13	236	8	30	164	4	13	56	68	20	21	38	671
Volumes	465	3256	224	551	2207	56	549	1331	1834	524	425	740	12162
Approach %	11.79	82.53	5.68	19.58	78.43	1.99	14.78	35.84	49.38	31.02	25.16	43.81	
App/Depart	3945	/	4545	2814	/	4565	3714	/	2106	1689	/	946	
Peak Volumes	172	1128	95	227	712	18	250	497	851	196	137	311	4594
Approach %	12.33	80.86	6.81	23.72	74.40	1.88	15.64	31.10	53.25	30.43	21.27	48.29	
Pk Hr FACTOR:	0.93			0.93			0.83			0.87			0.9292
PM Pk Hr at:	430												

Palomar Airport Road at Avenida Encinas

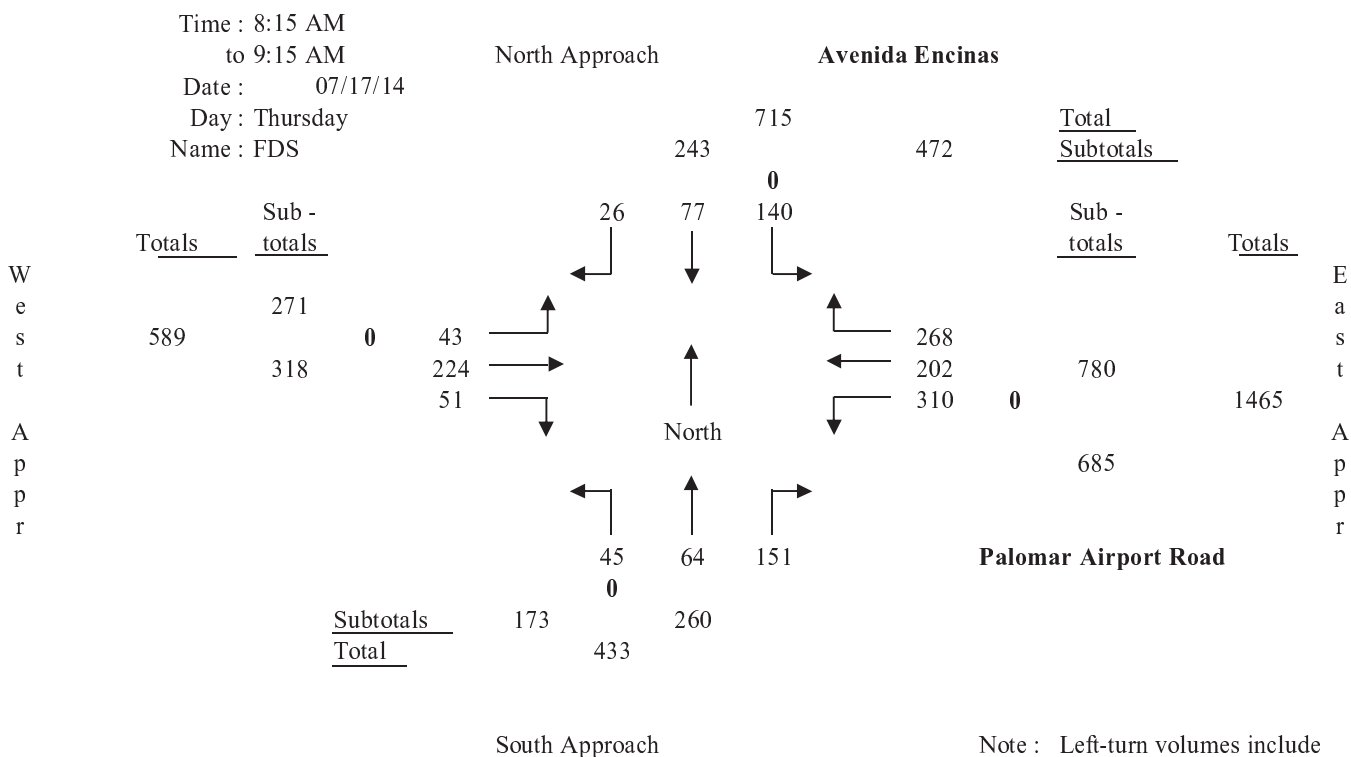
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
8:15 AM to 9:15 AM													
Lane Configurations	Inside (left)	1	1		1			1			1		
		2		1	1	1			1	1		1	
		3					1						1
		4											
		5											
		6											
	Outside Free-flow	7											
Lane Settings		1	1	1	2	0	1	1	1	0	1	1	1
Capacity		1800	2000	1800	3600	0	1800	1800	2000	0	1800	2000	1800
Are the North/South phases split (Y/N)?				Y									
Are the East/West phases split (Y/N)?				N									
Efficiency Lost Factor		0.10											
Hourly Volume		45	64	151	140	77	26	43	224	51	310	202	268
Adjusted Hourly Volume		45	64	151	217	0	26	43	275	0	310	202	268
Utilization Factor		0.03	0.03	0.08	0.06	0.00	0.01	0.02	0.14	0.00	0.17	0.10	0.15
Critical Factors				0.08	0.06				0.14		0.17		

ICU Ratio = 0.55 LOS = A

Turning Movements at Intersection of :

Palomar Airport Road and Avenida Encinas



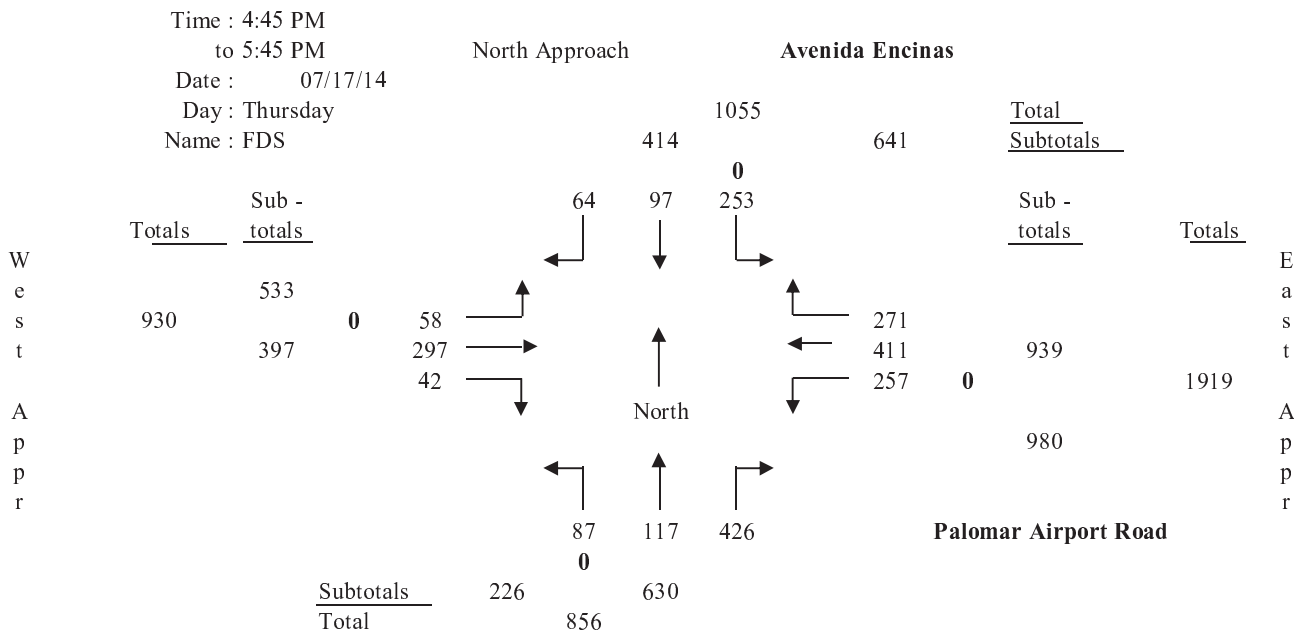
Palomar Airport Road at Avenida Encinas

Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
4:45 PM to 5:45 PM		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Configurations	Inside (left)	1	1		1			1			1		
		2		1	1	1			1	1		1	
		3					1						1
		4											
		5											
		6											
	Outside Free-flow	7											
Lane Settings		1	1	1	2	0	1	1	1	0	1	1	1
Capacity		1800	2000	1800	3600	0	1800	1800	2000	0	1800	2000	1800
Are the North/South phases split (Y/N)?				Y									
Are the East/West phases split (Y/N)?				N									
Efficiency Lost Factor		0.10											
Hourly Volume		87	117	426	253	97	64	58	297	42	257	411	271
Adjusted Hourly Volume		87	117	426	350	0	64	58	339	0	257	411	271
Utilization Factor		0.05	0.06	0.24	0.10	0.00	0.04	0.03	0.17	0.00	0.14	0.21	0.15
Critical Factors				0.24	0.10				0.17		0.14		

ICU Ratio = 0.75 LOS = C

Turning Movements at Intersection of : Palomar Airport Road and Avenida Encinas



Note : Left-turn volumes include U-turns. U-turns in bold.



FIELD DATA SERVICES OF ARIZONA, INC.
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N-S STREET: Avenida Encinas

DATE: 07/17/2014

LOCATION: Carlsbad

E-W STREET: Palomar Airport

DAY: THURSDAY

PROJECT# 14-1221-014 -- all move

CONTROL: Signal

AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	1	1	1	1.5	0.5	1	1	1	0	1	1	1	
6:30 AM	4	4	9	17	14	5	4	28	6	66	15	36	208
6:45 AM	2	10	11	25	11	1	6	39	11	72	37	48	273
7:00 AM	4	5	14	31	14	6	4	43	8	64	58	36	287
7:15 AM	8	9	22	22	23	6	7	59	14	80	53	53	356
7:30 AM	8	10	22	26	21	7	4	60	16	105	58	60	397
7:45 AM	8	11	35	36	27	6	11	45	13	100	40	83	415
8:00 AM	9	11	25	26	11	10	6	51	16	54	51	63	333
8:15 AM	14	14	31	36	21	2	10	58	16	74	53	71	400
8:30 AM	4	17	34	33	12	9	16	52	18	71	49	72	387
8:45 AM	11	16	42	38	27	8	10	59	12	86	48	62	419
9:00 AM	16	17	44	33	17	7	7	55	5	79	52	63	395
9:15 AM	11	12	34	46	10	5	0	54	10	58	52	56	348
Volumes	99	136	323	369	208	72	85	603	145	909	566	703	4218
Approach %	17.74	24.37	57.89	56.86	32.05	11.09	10.20	72.39	17.41	41.74	25.99	32.28	
App/Depart	558	/	924	649	/	1262	833	/	1295	2178	/	737	
Peak Volumes	45	64	151	140	77	26	43	224	51	310	202	268	1601
Approach %	17.31	24.62	58.08	57.61	31.69	10.70	13.52	70.44	16.04	39.74	25.90	34.36	
Pk Hr FACTOR:	0.84			0.83			0.92			0.98			0.9553
AM Pk Hr at:	815												
PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
3:30 PM	11	16	59	56	32	22	7	77	17	80	104	63	544
3:45 PM	12	21	61	51	27	18	4	71	12	72	95	88	532
4:00 PM	17	26	75	77	28	27	8	87	14	62	136	70	627
4:15 PM	11	17	64	64	33	23	6	72	8	81	115	58	552
4:30 PM	16	26	89	54	21	7	11	97	11	55	85	45	517
4:45 PM	21	30	99	65	26	11	11	68	12	57	94	61	555
5:00 PM	28	32	115	74	29	21	13	78	9	72	103	59	633
5:15 PM	14	21	101	68	29	19	22	82	8	70	96	92	622
5:30 PM	24	34	111	46	13	13	12	69	13	58	118	59	570
5:45 PM	14	31	75	50	11	13	14	73	10	51	119	74	535
6:00 PM	9	17	54	65	12	10	12	88	4	36	86	54	447
6:15 PM	8	15	50	38	15	15	8	67	6	43	95	66	426
Volumes	185	286	953	708	276	199	128	929	124	737	1246	789	6560
Approach %	12.99	20.08	66.92	59.85	23.33	16.82	10.84	78.66	10.50	26.59	44.95	28.46	
App/Depart	1424	/	1203	1183	/	1137	1181	/	2590	2772	/	1630	
Peak Volumes	87	117	426	253	97	64	58	297	42	257	411	271	2380
Approach %	13.81	18.57	67.62	61.11	23.43	15.46	14.61	74.81	10.58	27.37	43.77	28.86	
Pk Hr FACTOR:	0.90			0.83			0.89			0.91			0.94
PM Pk Hr at:	445												

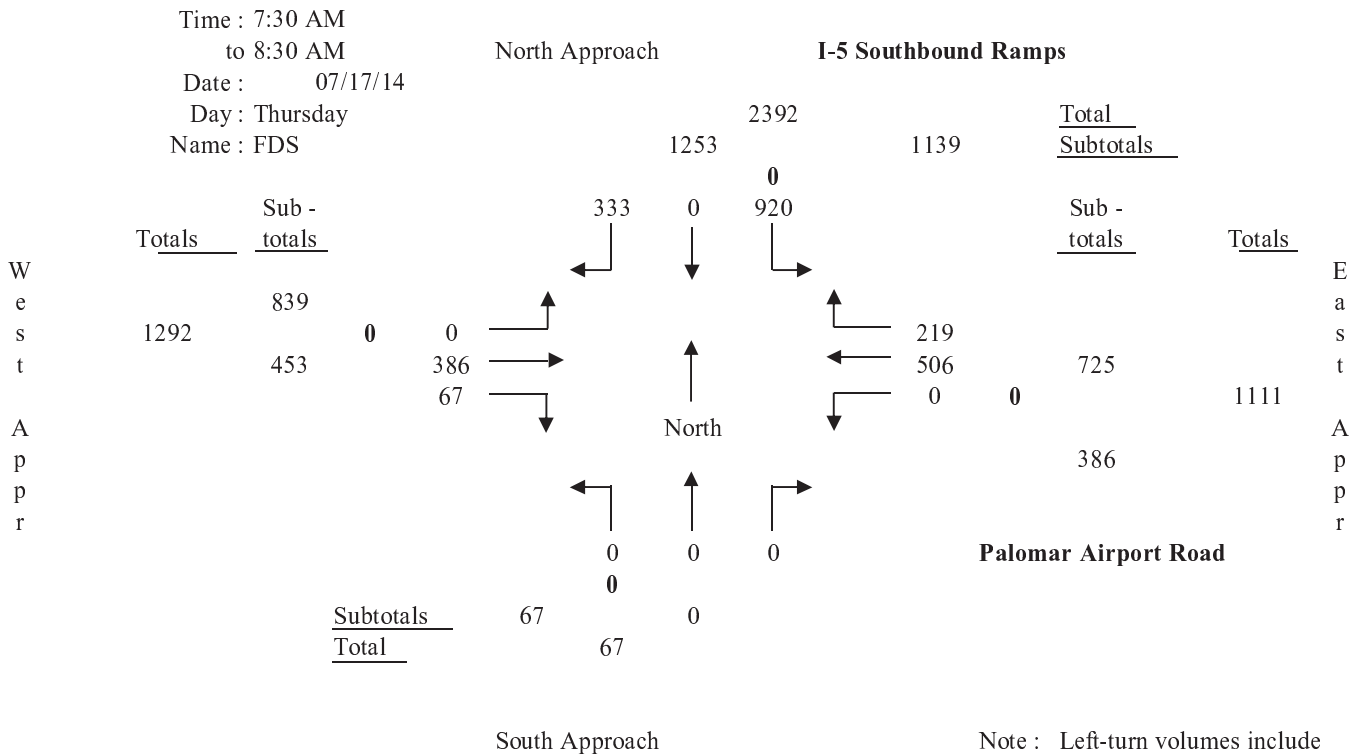
I-5 Southbound Ramps at Palomar Airport Road

Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :			South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
7:30 AM to			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
8:30 AM			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Configurations	Inside (left)	1				1				1				1
		2				1				1				1
		3						1		1	1			
		4												
		5												
		6												
	Outside Free-flow	7												1
Lane Settings			0	0	0	2	0	1	0	3	0	0	2	1
Capacity			0	0	0	3600	0	1800	0	6000	0	0	4000	1800
Are the North/South phases split (Y/N)?					N									
Are the East/West phases split (Y/N)?					N									
Efficiency Lost Factor			0.10											
Hourly Volume			0	0	0	920	0	333	0	386	67	0	506	219
Adjusted Hourly Volume			0	0	0	920	0	333	0	453	0	0	506	0
Utilization Factor			0.00	0.00	0.00	0.26	0.00	0.19	0.00	0.08	0.00	0.00	0.13	0.00
Critical Factors				0.00	0.00	0.26			0.00				0.13	

ICU Ratio = 0.49 LOS = A

Turning Movements at Intersection of : I-5 Southbound Ramps and Palomar Airport Road



Note : Left-turn volumes include U-turns. U-turns in bold.

I-5 Southbound Ramps at Palomar Airport Road

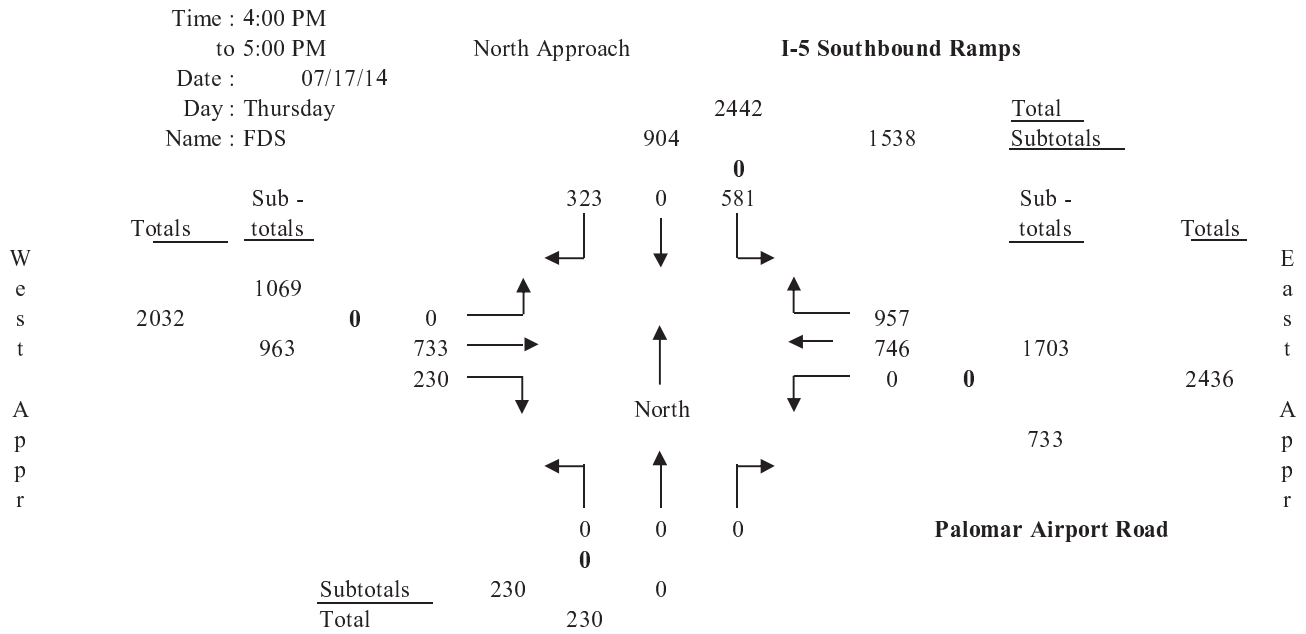
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
4:00 PM to 5:00 PM													
Lane Configurations	Inside	1			1			1			1		
	(left)	2			1			1			1		
		3					1	1	1				
		4											
		5											
		6											
	Outside Free-flow	7											1
Lane Settings		0	0	0	2	0	1	0	3	0	0	2	1
Capacity		0	0	0	3600	0	1800	0	6000	0	0	4000	1800
Are the North/South phases split (Y/N)?					N								
Are the East/West phases split (Y/N)?					N								
Efficiency Lost Factor		0.10											
Hourly Volume		0	0	0	581	0	323	0	733	230	0	746	957
Adjusted Hourly Volume		0	0	0	581	0	323	0	963	0	0	746	0
Utilization Factor		0.00	0.00	0.00	0.16	0.00	0.18	0.00	0.16	0.00	0.00	0.19	0.00
Critical Factors		0.00						0.18			0.00		

ICU Ratio = 0.47 LOS = A

Turning Movements at Intersection of :

I-5 Southbound Ramps and Palomar Airport Road





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N-S STREET: I-5 SB Ramps

DATE: 07/17/2014

LOCATION: Carlsbad

E-W STREET: Palomar Airport Rd.

DAY: THURSDAY

PROJECT# 14-1221-046 -- all move

CONTROL: Signal

AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	0	0	2	0	1	0	3	0	0	2	0	
6:30 AM	0	0	0	120	0	40	0	50	10	0	79	65	364
6:45 AM	0	0	0	137	0	65	0	56	22	0	92	58	430
7:00 AM	0	0	0	124	0	68	0	60	16	0	102	57	427
7:15 AM	0	0	0	159	0	58	0	81	14	0	119	77	508
7:30 AM	0	0	0	255	0	91	0	94	14	0	138	70	662
7:45 AM	0	0	0	234	0	105	0	105	16	0	136	45	641
8:00 AM	0	0	0	232	0	65	0	90	14	0	109	50	560
8:15 AM	0	0	0	199	0	72	0	97	23	0	123	54	568
8:30 AM	0	0	0	199	0	61	0	95	20	0	115	75	565
8:45 AM	0	0	0	221	0	76	0	102	23	0	145	50	617
9:00 AM	0	0	0	196	0	34	0	112	18	0	137	59	556
9:15 AM	0	0	0	193	0	54	0	101	31	0	126	63	568
Volumes	0	0	0	2269	0	789	0	1043	221	0	1421	723	6466
Approach %	#DIV/0!	#DIV/0!	#DIV/0!	74.20	0.00	25.80	0.00	82.52	17.48	0.00	66.28	33.72	
App/Depart	0	/	723	3058	/	221	1264	/	3312	2144	/	2210	
Peak Volumes	0	0	0	920	0	333	0	386	67	0	506	219	2431
Approach %	#DIV/0!	#DIV/0!	#DIV/0!	73.42	0.00	26.58	0.00	85.21	14.79	0.00	69.79	30.21	
Pk Hr FACTOR:	0.00			0.91			0.94			0.87			0.9181
AM Pk Hr at:	730												
PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
3:30 PM	0	0	0	137	0	38	0	152	49	0	209	228	813
3:45 PM	0	0	0	152	0	58	0	147	38	0	218	241	854
4:00 PM	0	0	0	154	0	93	0	158	61	0	194	236	896
4:15 PM	0	0	0	154	0	78	0	173	53	0	194	233	885
4:30 PM	0	0	0	131	0	77	0	220	60	0	181	230	899
4:45 PM	0	0	0	142	0	75	0	182	56	0	177	258	890
5:00 PM	0	0	0	139	0	50	0	182	51	0	193	244	859
5:15 PM	0	0	0	136	0	58	0	138	39	0	220	241	832
5:30 PM	0	0	0	148	0	54	0	185	50	0	236	200	873
5:45 PM	0	0	0	148	0	41	0	150	36	0	156	214	745
6:00 PM	0	0	0	137	0	49	0	144	40	0	153	244	767
6:15 PM	0	0	0	126	0	43	0	141	36	0	139	252	737
Volumes	0	0	0	1704	0	714	0	1972	569	0	2270	2821	10050
Approach %	#DIV/0!	#DIV/0!	#DIV/0!	70.47	0.00	29.53	0.00	77.61	22.39	0.00	44.59	55.41	
App/Depart	0	/	2821	2418	/	569	2541	/	3676	5091	/	2984	
Peak Volumes	0	0	0	581	0	323	0	733	230	0	746	957	3570
Approach %	#DIV/0!	#DIV/0!	#DIV/0!	64.27	0.00	35.73	0.00	76.12	23.88	0.00	43.81	56.19	
Pk Hr FACTOR:	0.00			0.91			0.86			0.98			0.9928
PM Pk Hr at:	400												

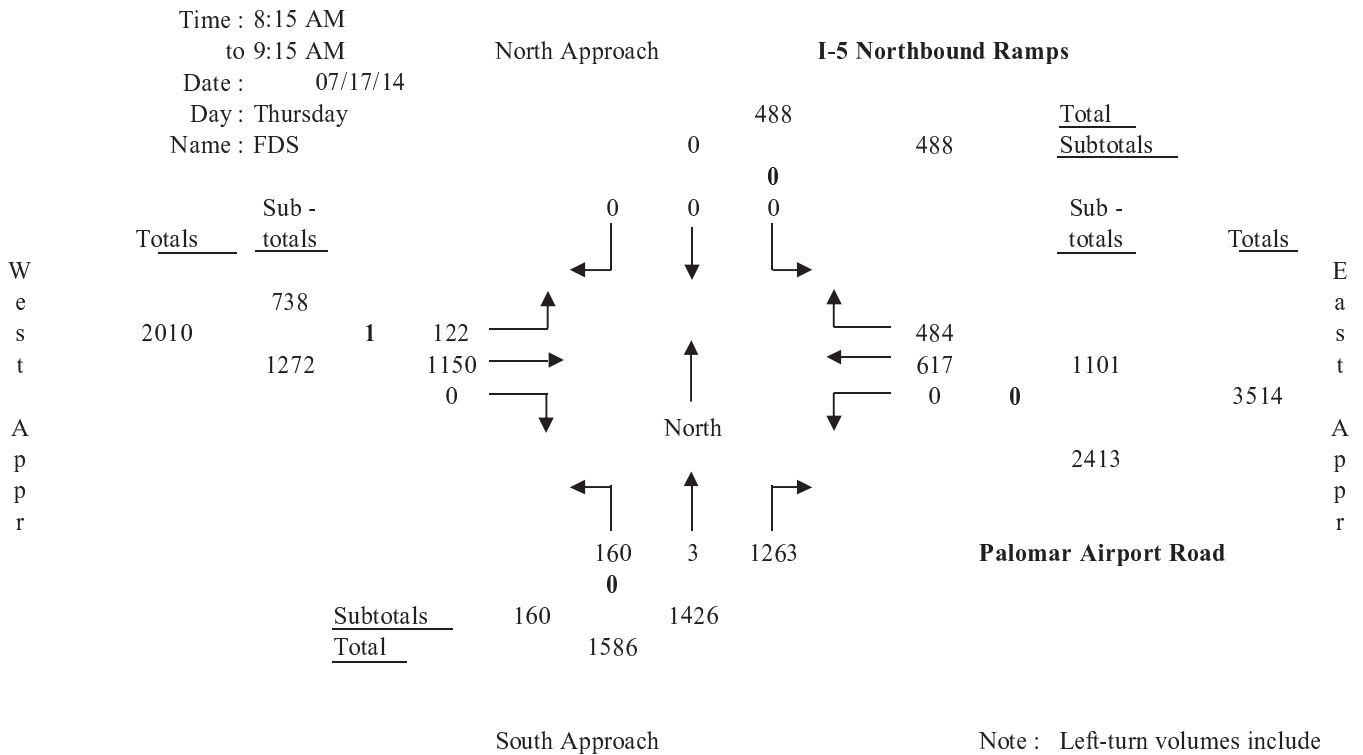
I-5 Northbound Ramps at Palomar Airport Road

Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
8:15 AM to 9:15 AM													
Lane Configurations	Inside	1	1	1				1				1	
	(left)	2							1			1	
		3							1			1	
		4							1				1
		5											1
		6											
	Outside Free-flow	7											
Lane Settings		1	0	2	0	0	0	1	3	0	0	3	2
Capacity		1800	0	3600	0	0	0	1800	6000	0	0	6000	3600
Are the North/South phases split (Y/N)?				N									
Are the East/West phases split (Y/N)?				N									
Efficiency Lost Factor		0.10											
Hourly Volume		160	3	1263	0	0	0	122	1150	0	0	617	484
Adjusted Hourly Volume		163	0	1263	0	0	0	122	1150	0	0	617	484
Utilization Factor		0.09	0.00	0.35	0.00	0.00	0.00	0.07	0.19	0.00	0.00	0.10	0.13
Critical Factors				0.35	0.00			0.07					0.13

ICU Ratio = 0.65 LOS = B

Turning Movements at Intersection of : I-5 Northbound Ramps and Palomar Airport Road



Note : Left-turn volumes include U-turns. U-turns in bold.

I-5 Northbound Ramps at Palomar Airport Road

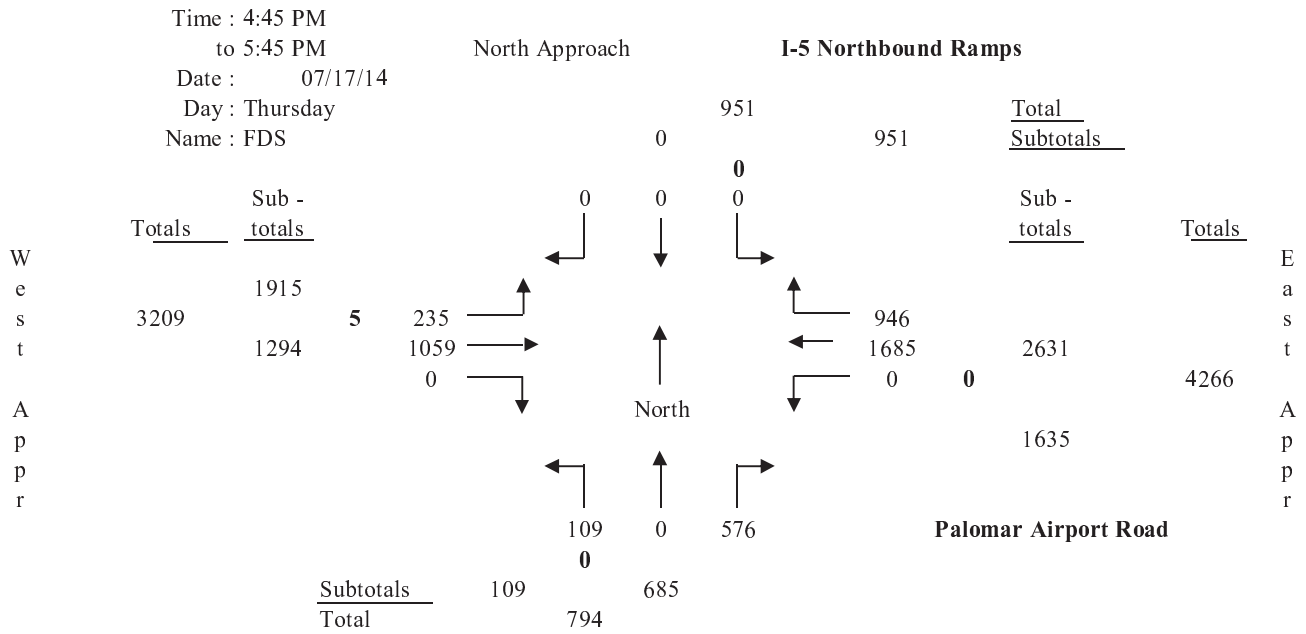
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
4:45 PM to 5:45 PM													
Lane Configurations	Inside (left)	1	1	1				1				1	
		2							1			1	
		3							1			1	
		4							1				1
		5											1
		6											
	Outside Free-flow	7											
Lane Settings		1	0	2	0	0	0	1	3	0	0	3	2
Capacity		1800	0	3600	0	0	0	1800	6000	0	0	6000	3600
Are the North/South phases split (Y/N)?					N								
Are the East/West phases split (Y/N)?					N								
Efficiency Lost Factor		0.10											
Hourly Volume		109	0	576	0	0	0	235	1059	0	0	1685	946
Adjusted Hourly Volume		109	0	576	0	0	0	235	1059	0	0	1685	946
Utilization Factor		0.06	0.00	0.16	0.00	0.00	0.00	0.13	0.18	0.00	0.00	0.28	0.26
Critical Factors		0.16			0.00			0.13			0.28		

ICU Ratio = 0.67 LOS = B

Turning Movements at Intersection of :

I-5 Northbound Ramps and Palomar Airport Road



Note : Left-turn volumes include U-turns. U-turns in bold.



N-S STREET: I-5 NB Ramps

DATE: 07/17/2014

LOCATION: Carlsbad

E-W STREET: Palomar Airport Rd.

DAY: THURSDAY

PROJECT# 14-1221-047 -- all move

CONTROL: Signal

AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0.5	0.5	2	0	0	0	1	3	0	0	3	2	
6:30 AM	21	0	214	0	0	0	8	154	0	0	125	63	585
6:45 AM	31	0	280	0	0	0	10	171	0	0	137	87	716
7:00 AM	14	0	257	0	0	0	30	145	0	0	137	81	664
7:15 AM	35	0	330	0	0	0	16	243	0	0	147	103	874
7:30 AM	35	0	353	0	0	0	27	284	0	0	170	94	963
7:45 AM	29	0	337	0	0	0	21	376	0	0	145	104	1012
8:00 AM	32	0	301	0	0	0	23	277	0	0	153	111	897
8:15 AM	33	0	315	0	0	0	27	298	0	0	133	99	905
8:30 AM	40	0	336	0	0	0	25	268	0	0	149	126	944
8:45 AM	47	0	337	0	0	0	31	312	0	0	165	129	1021
9:00 AM	40	3	275	0	0	0	39	272	0	0	170	130	929
9:15 AM	35	2	230	0	0	0	26	273	0	0	189	130	885
Volumes	392	5	3565	0	0	0	283	3073	0	0	1820	1257	10395
Approach %	9.89	0.13	89.98	#DIV/0!	#DIV/0!	#DIV/0!	8.43	91.57	0.00	0.00	59.15	40.85	
App/Depart	3962	/	1545	0	/	0	3356	/	6638	3077	/	2212	
Peak Volumes	160	3	1263	0	0	0	122	1150	0	0	617	484	3799
Approach %	11.22	0.21	88.57	#DIV/0!	#DIV/0!	#DIV/0!	9.59	90.41	0.00	0.00	56.04	43.96	
Pk Hr FACTOR:	0.93			0.00			0.93			0.92			0.9302
AM Pk Hr at:	815												
PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
3:30 PM	37	0	146	0	0	0	41	224	0	0	359	207	1014
3:45 PM	23	0	147	0	0	0	59	268	0	0	405	210	1112
4:00 PM	20	0	150	0	0	0	61	237	0	0	392	221	1081
4:15 PM	23	0	154	0	0	0	53	260	0	0	360	222	1072
4:30 PM	20	0	140	0	0	0	43	260	0	0	377	218	1058
4:45 PM	25	0	151	0	0	0	50	267	0	0	401	220	1114
5:00 PM	32	0	165	0	0	0	71	262	0	0	393	260	1183
5:15 PM	28	0	146	0	0	0	60	269	0	0	431	250	1184
5:30 PM	24	0	114	0	0	0	54	261	0	0	460	216	1129
5:45 PM	32	0	132	0	0	0	50	250	0	0	433	187	1084
6:00 PM	21	0	131	0	0	0	60	256	0	0	397	200	1065
6:15 PM	26	0	144	0	0	0	41	227	0	0	408	188	1034
Volumes	311	0	1720	0	0	0	643	3041	0	0	4816	2599	13130
Approach %	15.31	0.00	84.69	#DIV/0!	#DIV/0!	#DIV/0!	17.45	82.55	0.00	0.00	64.95	35.05	
App/Depart	2031	/	3242	0	/	0	3684	/	4761	7415	/	5127	
Peak Volumes	109	0	576	0	0	0	235	1059	0	0	1685	946	4610
Approach %	15.91	0.00	84.09	#DIV/0!	#DIV/0!	#DIV/0!	18.16	81.84	0.00	0.00	64.04	35.96	
Pk Hr FACTOR:	0.87			0.00			0.97			0.97			0.9734
PM Pk Hr at:	445												

Palomar Airport Road at Paseo Del Norte

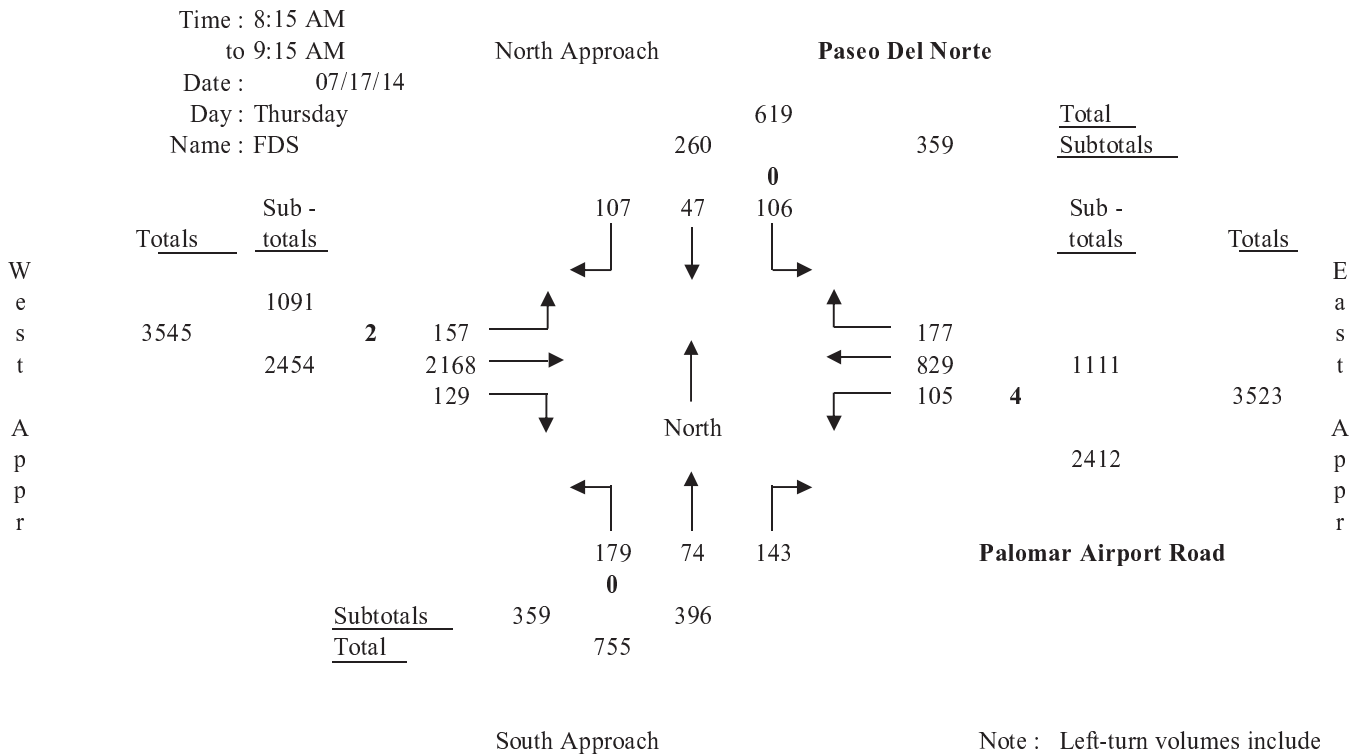
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
8:15 AM to 9:15 AM													
Lane Configurations	Inside (left)	1	1		1			1			1		
		2	1		1			1			1		
		3		1					1			1	
		4		1	1				1			1	
		5				1	1			1	1		
		6										1	
	Outside Free-flow	7											1
Lane Settings		2	1	1	2	1	1	2	3	0	2	4	1
Capacity		3600	2000	1800	3600	2000	1800	3600	6000	0	3600	8000	1800
Are the North/South phases split (Y/N)?					N								
Are the East/West phases split (Y/N)?					N								
Efficiency Lost Factor		0.10											
Hourly Volume		179	74	143	106	47	107	157	2168	129	105	829	177
Adjusted Hourly Volume		179	0	217	106	0	154	157	2297	0	105	829	124
Utilization Factor		0.05	0.00	0.12	0.03	0.00	0.09	0.04	0.38	0.00	0.03	0.10	0.07
Critical Factors					0.12	0.03		0.38		0.03			

ICU Ratio = 0.66 LOS = B

Turning Movements at Intersection of :

Palomar Airport Road and Paseo Del Norte



Note : Left-turn volumes include U-turns. U-turns in bold.

Palomar Airport Road at Paseo Del Norte

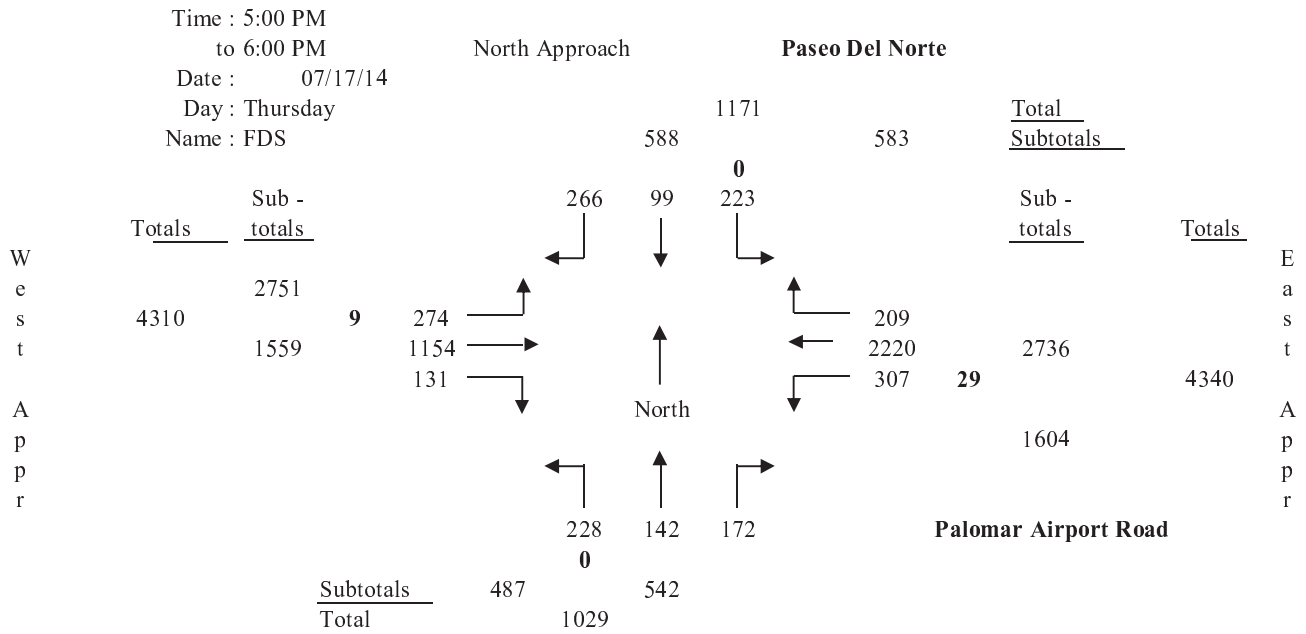
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
5:00 PM to 6:00 PM													
Lane Configurations	Inside (left)	1	1		1			1			1		
		2	1		1			1			1		
		3		1		1			1			1	
		4		1		1	1		1			1	
		5							1	1		1	
		6										1	
	Outside Free-flow	7											1
Lane Settings		2	1	1	2	1	1	2	3	0	2	4	1
Capacity		3600	2000	1800	3600	2000	1800	3600	6000	0	3600	8000	1800
Are the North/South phases split (Y/N)?				N									
Are the East/West phases split (Y/N)?				N									
Efficiency Lost Factor		0.10											
Hourly Volume		228	142	172	223	99	266	274	1154	131	307	2220	209
Adjusted Hourly Volume		228	0	314	223	0	365	274	1285	0	307	2220	97.5
Utilization Factor		0.06	0.00	0.17	0.06	0.00	0.20	0.08	0.21	0.00	0.09	0.28	0.05
Critical Factors		0.06						0.20			0.08		

ICU Ratio = 0.72 LOS = C

Turning Movements at Intersection of :

Palomar Airport Road and Paseo Del Norte



Note : Left-turn volumes include U-turns. U-turns in bold.



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N-S STREET: Paseo Del Norte

DATE: 07/17/2014

LOCATION: Carlsbad

E-W STREET: Palomar Airport Rd.

DAY: THURSDAY

PROJECT# 14-1221-015 -- all move

CONTROL: Signal

AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	2	2	0	2	2	0	2	3	0	2	4	1	
6:30 AM	18	8	18	4	7	13	11	243	7	8	135	19	491
6:45 AM	32	15	14	7	5	8	15	446	28	11	183	36	800
7:00 AM	39	10	18	21	3	14	17	366	16	17	152	24	697
7:15 AM	36	6	25	13	5	13	35	524	25	17	202	32	933
7:30 AM	47	14	38	14	7	22	22	539	31	25	210	35	1004
7:45 AM	44	17	42	28	12	11	34	673	19	18	185	49	1132
8:00 AM	28	13	39	28	5	36	24	551	33	19	193	56	1025
8:15 AM	47	17	38	28	9	32	39	530	29	26	153	44	992
8:30 AM	46	18	27	20	14	18	42	546	31	24	224	42	1052
8:45 AM	52	28	41	36	15	29	33	550	36	31	214	40	1105
9:00 AM	34	11	37	22	9	28	43	542	33	24	238	51	1072
9:15 AM	48	22	34	36	15	37	50	397	39	26	247	36	987
Volumes	471	179	371	257	106	261	365	5907	327	246	2336	464	11290
Approach %	46.13	17.53	36.34	41.19	16.99	41.83	5.53	89.51	4.96	8.08	76.69	15.23	
App/Depart	1021	/	1008	624	/	679	6599	/	6535	3046	/	3068	
Peak Volumes	179	74	143	106	47	107	157	2168	129	105	829	177	4221
Approach %	45.20	18.69	36.11	40.77	18.08	41.15	6.40	88.35	5.26	9.45	74.62	15.93	
Pk Hr FACTOR:	0.82			0.81			0.99			0.89			0.955
AM Pk Hr at:	815												
PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
3:30 PM	52	24	39	53	26	87	62	281	48	60	404	45	1181
3:45 PM	58	22	43	71	33	78	77	295	36	77	453	43	1286
4:00 PM	50	20	45	71	32	67	68	304	28	75	513	35	1308
4:15 PM	49	28	21	76	34	76	61	311	41	72	449	43	1261
4:30 PM	51	18	35	51	35	71	67	324	42	59	479	48	1280
4:45 PM	45	33	36	48	23	65	64	276	32	63	527	39	1251
5:00 PM	70	42	42	49	26	69	63	292	37	72	533	49	1344
5:15 PM	65	23	37	80	21	65	73	290	36	78	562	67	1397
5:30 PM	54	35	52	54	26	63	67	301	32	79	587	54	1404
5:45 PM	39	42	41	40	26	69	71	271	26	78	538	39	1280
6:00 PM	61	24	43	47	33	54	68	291	45	82	455	26	1229
6:15 PM	74	24	48	65	24	87	73	262	36	69	452	37	1251
Volumes	668	335	482	705	339	851	814	3498	439	864	5952	525	15472
Approach %	44.98	22.56	32.46	37.20	17.89	44.91	17.13	73.63	9.24	11.77	81.08	7.15	
App/Depart	1485	/	1674	1895	/	1642	4751	/	4685	7341	/	7471	
Peak Volumes	228	142	172	223	99	266	274	1154	131	307	2220	209	5425
Approach %	42.07	26.20	31.73	37.93	16.84	45.24	17.58	74.02	8.40	11.22	81.14	7.64	
Pk Hr FACTOR:	0.88			0.89			0.97			0.95			0.966
PM Pk Hr at:	500												

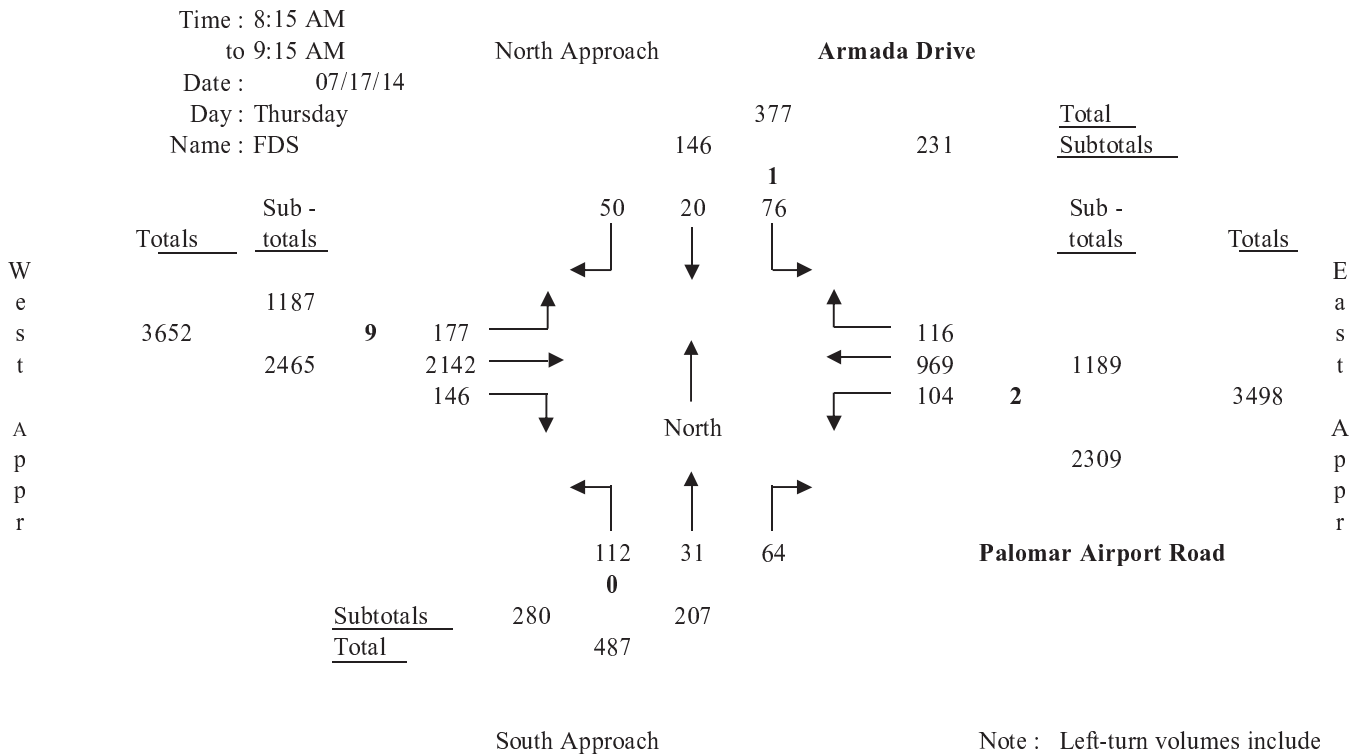
Palomar Airport Road at Armada Drive

Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period : 8:15 AM to 9:15 AM		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Config - urations	Inside	1	1		1			1			1		
	(left)	2	1		1			1				1	
		3		1	1				1				1
		4				1			1				
		5					1			1			
		6									1		
	Outside Free-flow	7											1
Lane Settings		2	0	2	2	1	1	2	3	1	1	3	1
Capacity		3600	0	3600	3600	2000	1800	3600	6000	1800	1800	6000	1800
Are the North/South phases split (Y/N)?					N								
Are the East/West phases split (Y/N)?					N								
Efficiency Lost Factor		0.10											
Hourly Volume		112	31	64	76	20	50	177	2142	146	104	969	116
Adjusted Hourly Volume		112	0	95	76	20	50	177	2142	90	104	969	78
Utilization Factor		0.03	0.00	0.03	0.02	0.01	0.03	0.05	0.36	0.05	0.06	0.16	0.04
Critical Factors		0.03						0.03			0.06		

ICU Ratio = 0.58 LOS = A

Turning Movements at Intersection of : Palomar Airport Road and Armada Drive



Note : Left-turn volumes include U-turns. U-turns in bold.

Palomar Airport Road at Armada Drive

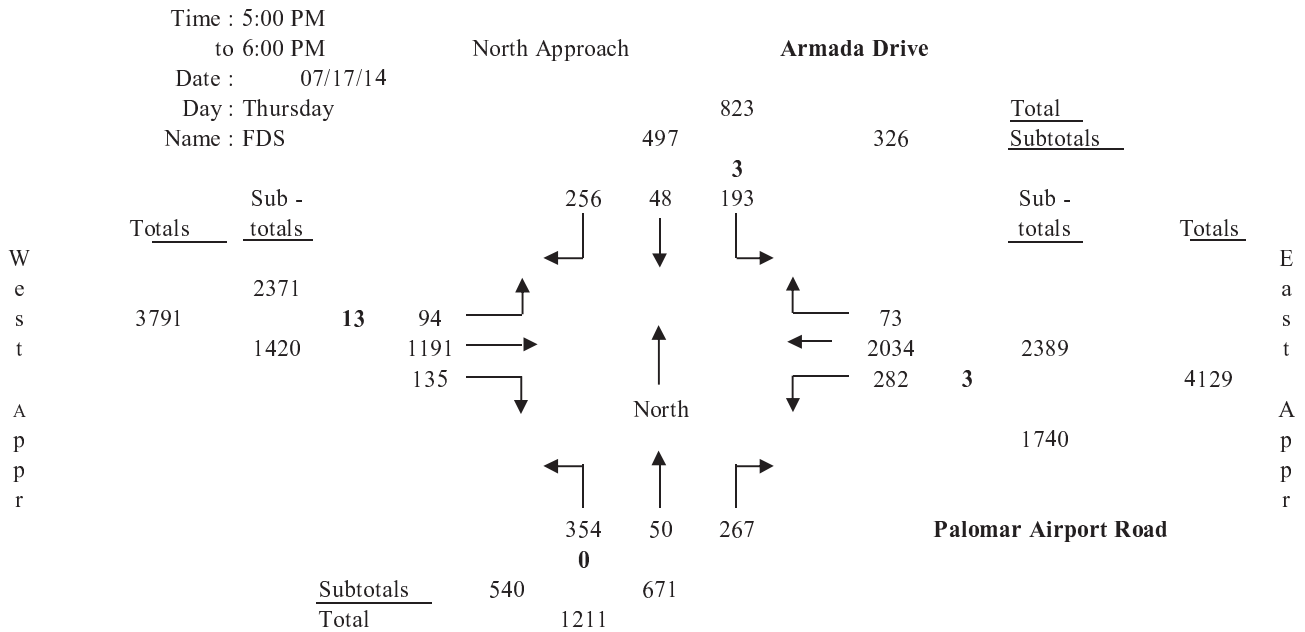
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
5:00 PM to 6:00 PM													
Lane Configurations	Inside (left)	1	1		1			1			1		
		2	1		1			1				1	
		3		1		1			1			1	
		4					1		1			1	
		5							1				1
		6								1			
	Outside Free-flow	7											
Lane Settings		2	0	2	2	1	1	2	3	1	1	3	1
Capacity		3600	0	3600	3600	2000	1800	3600	6000	1800	1800	6000	1800
Are the North/South phases split (Y/N)?				N									
Are the East/West phases split (Y/N)?				N									
Efficiency Lost Factor		0.10											
Hourly Volume		354	50	267	193	48	256	94	1191	135	282	2034	73
Adjusted Hourly Volume		354	0	317	193	48	256	94	1191	0	282	2034	-24
Utilization Factor		0.10	0.00	0.09	0.05	0.02	0.14	0.03	0.20	0.00	0.16	0.34	-0.01
Critical Factors		0.10						0.14	0.03				

ICU Ratio = 0.71 LOS = C

Turning Movements at Intersection of :

Palomar Airport Road and Armada Drive



Note : Left-turn volumes include U-turns. U-turns in bold.



N-S STREET: Amada Dr./ DATE: 07/17/2014 LOCATION: Carlsbad
 E-W STREET: Palomar Airport Rd. DAY: THURSDAY PROJECT# 14-1221-016 -- all move
 CONTROL: Signal

AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	2	0.5	1.5	2	1	1	2	3	1	1	3	1	
6:30 AM	12	4	13	3	5	1	11	332	27	18	172	17	615
6:45 AM	20	10	24	12	1	3	35	418	24	14	185	45	791
7:00 AM	12	2	19	2	4	6	22	260	40	10	163	20	560
7:15 AM	15	4	21	13	3	5	25	490	42	13	197	22	850
7:30 AM	26	7	15	9	6	8	35	358	47	14	136	28	689
7:45 AM	12	2	20	13	8	7	26	509	31	11	168	21	828
8:00 AM	23	13	21	14	4	10	32	551	42	23	194	25	952
8:15 AM	25	10	14	9	4	8	46	562	46	20	196	24	964
8:30 AM	32	3	18	19	8	12	45	481	37	24	214	29	922
8:45 AM	24	6	19	20	5	11	50	564	37	34	286	33	1089
9:00 AM	31	12	13	28	3	19	36	535	26	26	273	30	1032
9:15 AM	42	7	16	18	9	13	66	413	21	33	256	20	914
Volumes	274	80	213	160	60	103	429	5473	420	240	2440	314	10206
Approach %	48.32	14.11	37.57	49.54	18.58	31.89	6.79	86.57	6.64	8.02	81.50	10.49	
App/Depart	567	/	823	323	/	720	6322	/	5846	2994	/	2817	
Peak Volumes	112	31	64	76	20	50	177	2142	146	104	969	116	4007
Approach %	54.11	14.98	30.92	52.05	13.70	34.25	7.18	86.90	5.92	8.75	81.50	9.76	
Pk Hr FACTOR:	0.92			0.73			0.94			0.84			0.9199
AM Pk Hr at:	815												
PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
3:30 PM	84	13	97	60	11	44	42	281	49	60	395	15	1151
3:45 PM	104	14	66	39	9	53	36	279	32	58	408	14	1112
4:00 PM	91	9	51	50	12	40	34	316	33	79	439	8	1161
4:15 PM	97	14	70	55	14	50	36	239	80	53	411	16	1135
4:30 PM	82	10	66	46	15	52	22	286	44	50	456	13	1142
4:45 PM	75	12	52	50	17	71	33	275	39	80	486	18	1208
5:00 PM	82	14	75	63	15	64	28	263	40	60	495	18	1216
5:15 PM	87	11	62	43	12	81	24	329	28	68	547	20	1312
5:30 PM	97	11	58	41	12	65	16	303	38	90	486	21	1238
5:45 PM	88	14	72	46	9	46	26	296	29	64	506	14	1208
6:00 PM	82	13	56	32	18	49	21	269	55	95	388	18	1095
6:15 PM	104	18	82	31	7	56	30	268	36	73	430	16	1151
Volumes	1073	153	807	556	151	671	348	3404	503	830	5447	191	14129
Approach %	52.78	7.53	39.70	40.13	11.00	48.87	8.18	80.00	11.82	12.83	84.21	2.95	
App/Depart	2033	/	692	1373	/	1484	4255	/	4762	6468	/	7191	
Peak Volumes	354	50	267	193	48	256	94	1191	135	282	2034	73	4974
Approach %	52.76	7.45	39.79	38.46	9.72	51.82	6.62	83.87	9.51	11.80	85.14	3.06	
Pk Hr FACTOR:	0.96			0.88			0.93			0.94			0.9478
PM Pk Hr at:	500												

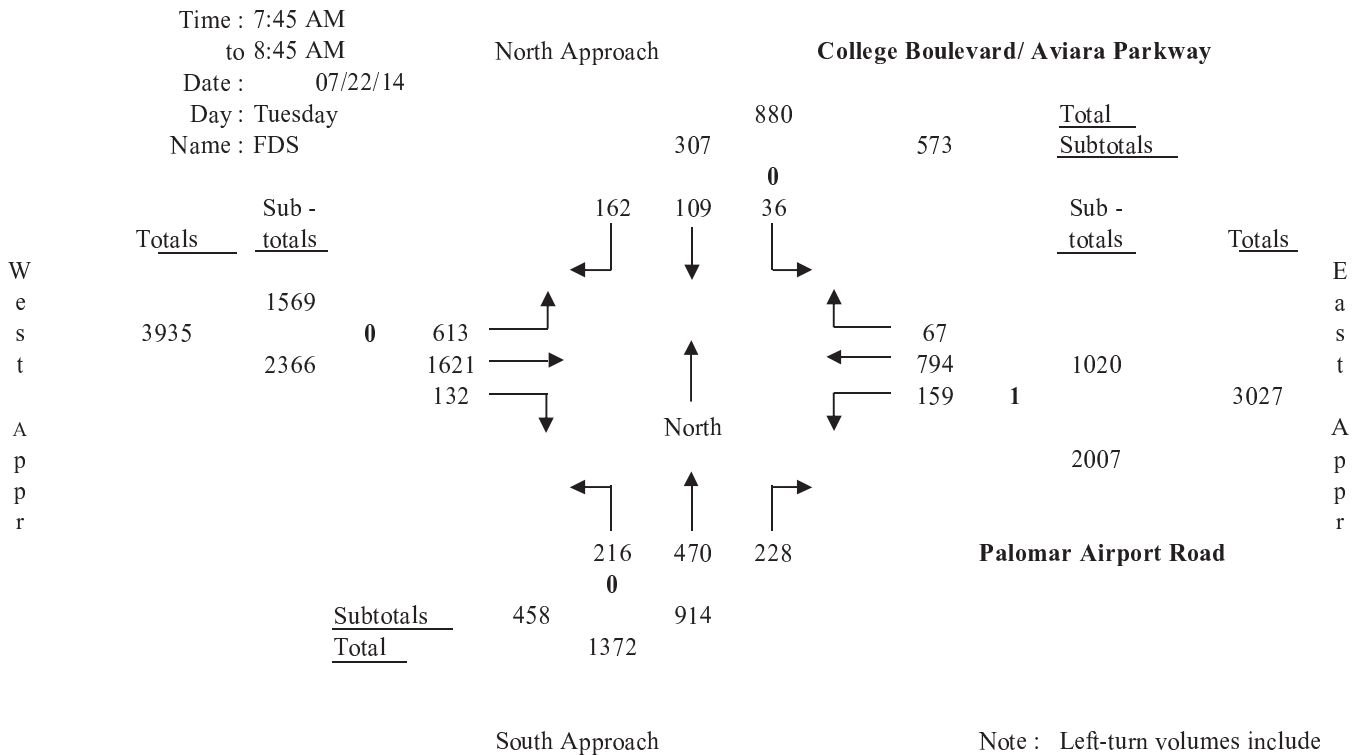
Palomar Airport Road at College Boulevard/ Aviara Parkway

Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period : 7:45 AM to 8:45 AM		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Config - urations	Inside	1	1		1			1			1		
	(left)	2	1			1		1			1		
		3		1			1		1			1	
		4		1					1			1	
		5							1			1	
		6								1			1
	Outside Free-flow	7											
Lane Settings		2	2	1	1	1	1	2	3	1	2	3	1
Capacity		3600	4000	1800	1800	2000	1800	3600	6000	1800	3600	6000	1800
Are the North/South phases split (Y/N)?					N								
Are the East/West phases split (Y/N)?					N								
Efficiency Lost Factor		0.10											
Hourly Volume		216	470	228	36	109	162	613	1621	132	159	794	67
Adjusted Hourly Volume		216	470	228	36	109	0	613	1621	132	159	794	67
Utilization Factor		0.06	0.12	0.13	0.02	0.05	0.00	0.17	0.27	0.07	0.04	0.13	0.04
Critical Factors					0.13	0.02					0.27	0.04	

ICU Ratio = 0.56 LOS = A

Turning Movements at Intersection of: **Palomar Airport Road and College Boulevard/ Aviara Parkway**



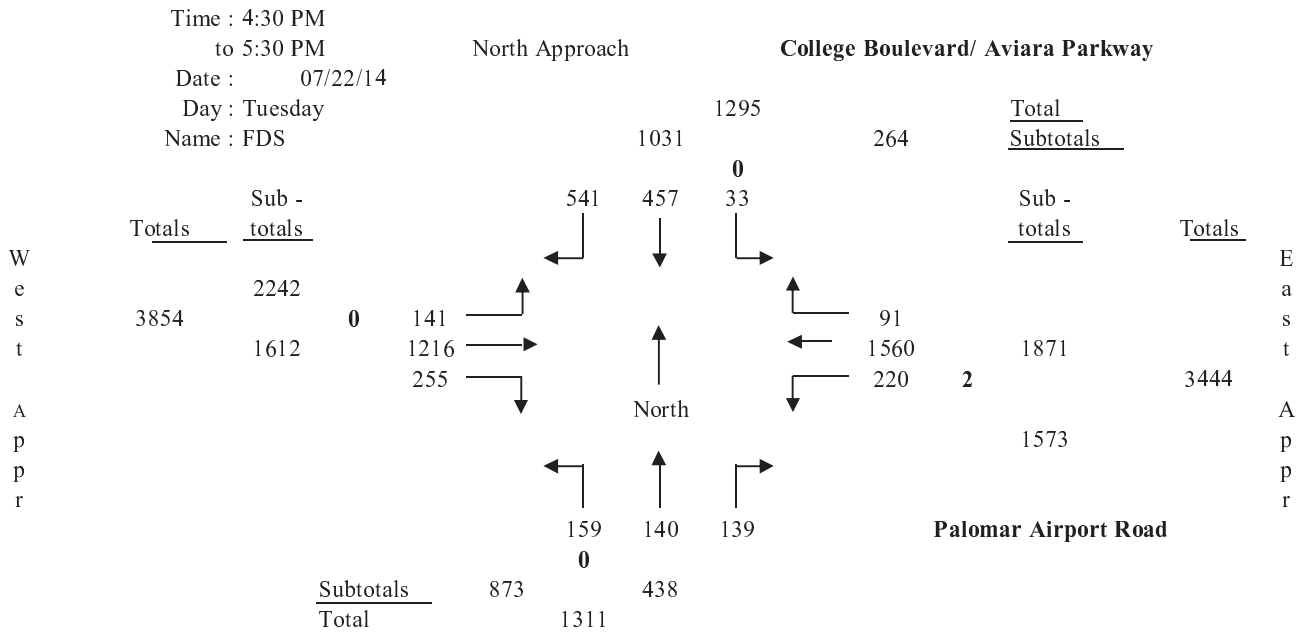
Palomar Airport Road at College Boulevard/ Aviara Parkway

Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)			
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:30 PM to 5:30 PM														
Lane Configurations	Inside (left)	1	1		1			1			1			
		2	1			1		1			1			
		3		1			1		1			1		
		4		1					1			1		
		5							1			1		
		6			1						1			1
	Outside Free-flow	7												
Lane Settings		2	2	1	1	1	1	2	3	1	2	3	1	
Capacity		3600	4000	1800	1800	2000	1800	3600	6000	1800	3600	6000	1800	
Are the North/South phases split (Y/N)?				N										
Are the East/West phases split (Y/N)?				N										
Efficiency Lost Factor		0.10												
Hourly Volume		159	140	139	33	457	541	141	1216	255	220	1560	91	
Adjusted Hourly Volume		159	140	139	33	457	470.5	141	1216	255	220	1560	91	
Utilization Factor		0.04	0.04	0.08	0.02	0.23	0.26	0.04	0.20	0.14	0.06	0.26	0.05	
Critical Factors		0.04						0.04			0.26			

ICU Ratio = 0.70 LOS = B

Turning Movements at Intersection of : **Palomar Airport Road and College Boulevard/ Aviara Parkway**



Note : Left-turn volumes include U-turns. U-turns in bold.



FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745



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N-S STREET: College Blvd./Aviara Pkwy.

DATE: 07/22/2014

LOCATION: Carlsbad

E-W STREET: Palomar Airport Rd.

DAY: TUESDAY

PROJECT# 14-1221-017 -- All Move

CONTROL: Signal

AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	2	2	1	1	1	1	2	3	1	2	3	1	
6:30 AM	27	18	30	5	27	29	44	206	14	20	185	7	612
6:45 AM	28	39	35	10	22	37	75	315	22	29	191	5	808
7:00 AM	20	43	35	6	16	35	98	245	31	21	184	10	744
7:15 AM	41	55	44	9	70	33	105	303	15	25	180	14	894
7:30 AM	38	79	45	9	48	17	177	375	43	28	200	8	1067
7:45 AM	71	125	71	10	35	46	161	390	33	39	227	19	1227
8:00 AM	42	116	53	8	30	31	173	436	35	32	152	18	1126
8:15 AM	48	122	56	14	18	34	154	388	33	46	221	17	1151
8:30 AM	55	107	48	4	26	51	125	407	31	42	194	13	1103
8:45 AM	38	116	58	15	30	55	150	387	26	41	262	20	1198
9:00 AM	39	82	37	13	19	43	125	311	48	23	222	15	977
9:15 AM	50	64	47	9	29	38	63	272	35	25	210	16	858
Volumes	497	966	559	112	370	449	1450	4035	366	371	2428	162	11765
Approach %	24.58	47.77	27.65	12.03	39.74	48.23	24.78	68.96	6.26	12.53	82.00	5.47	
App/Depart	2022	/	2578	931	/	1107	5851	/	4706	2961	/	3374	
Peak Volumes	216	470	228	36	109	162	613	1621	132	159	794	67	4607
Approach %	23.63	51.42	24.95	11.73	35.50	52.77	25.91	68.51	5.58	15.59	77.84	6.57	
Pk Hr FACTOR:	0.86			0.84			0.92			0.89			0.9387
AM Pk Hr at:	745												
PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
3:30 PM	45	30	40	6	49	79	39	312	57	44	362	16	1079
3:45 PM	52	30	32	6	50	91	37	285	54	38	317	17	1009
4:00 PM	45	41	34	9	69	98	44	309	50	43	359	23	1124
4:15 PM	34	34	22	13	59	90	33	305	57	57	314	16	1034
4:30 PM	42	35	31	9	78	119	41	303	76	42	348	21	1145
4:45 PM	45	35	29	11	98	108	35	284	64	39	354	18	1120
5:00 PM	34	30	36	7	139	157	33	319	51	65	406	24	1301
5:15 PM	38	40	43	6	142	157	32	310	64	74	452	28	1386
5:30 PM	44	31	36	8	103	145	27	261	62	58	355	10	1140
5:45 PM	42	24	18	11	85	106	31	294	60	67	351	17	1106
6:00 PM	49	35	23	1	73	125	33	282	62	66	316	16	1081
6:15 PM	38	18	31	2	58	90	29	250	67	52	321	7	963
Volumes	508	383	375	89	1003	1365	414	3514	724	645	4255	213	13488
Approach %	40.13	30.25	29.62	3.62	40.82	55.56	8.90	75.54	15.56	12.61	83.22	4.17	
App/Depart	1266	/	1010	2457	/	2372	4652	/	3978	5113	/	6128	
Peak Volumes	159	140	139	33	457	541	141	1216	255	220	1560	91	4952
Approach %	36.30	31.96	31.74	3.20	44.33	52.47	8.75	75.43	15.82	11.76	83.38	4.86	
Pk Hr FACTOR:	0.90			0.85			0.96			0.84			0.8932
PM Pk Hr at:	430												

El Camino Real at Palomar Airport Road

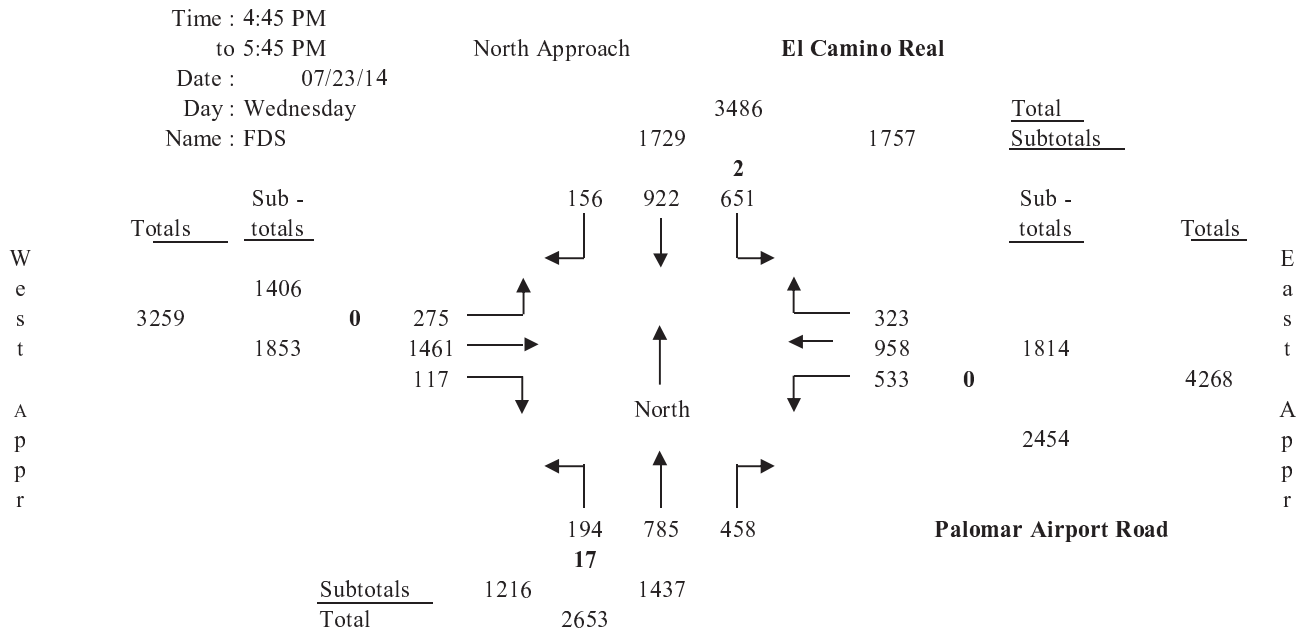
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)			
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:45 PM to 5:45 PM														
Lane Configurations	Inside (left)	1	1		1			1			1			
		2	1		1			1			1			
		3		1		1			1			1		
		4		1		1			1			1		
		5		1		1			1			1		
		6			1			1			1			1
	Outside Free-flow	7			1									1
Lane Settings		2	3	2	2	3	1	2	3	1	2	3	2	
Capacity		3600	6000	3600	3600	6000	1800	3600	6000	1800	3600	6000	3600	
Are the North/South phases split (Y/N)?					N									
Are the East/West phases split (Y/N)?					N									
Efficiency Lost Factor		0.10												
Hourly Volume		194	785	458	651	922	156	275	1461	117	533	958	323	
Adjusted Hourly Volume		194	785	192	651	922	19	275	1461	117	533	958	323	
Utilization Factor		0.05	0.13	0.05	0.18	0.15	0.01	0.08	0.24	0.07	0.15	0.16	0.09	
Critical Factors		0.13			0.18			0.24			0.15			

ICU Ratio = 0.80 LOS = C

Turning Movements at Intersection of :

El Camino Real and Palomar Airport Road





FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745



veracitytrafficgroup

N-S STREET: El Camino Real

DATE: 07/23/2014

LOCATION: Carlsbad

E-W STREET: Palomar Airport Rd.

DAY: WEDNESDAY

PROJECT# 14-1221-008 -- All Move

CONTROL: Signal

AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	2	3	2	2	3	1	2	3	1	2	3	2	
6:30 AM	16	47	57	35	71	36	20	113	14	60	216	75	760
6:45 AM	16	70	71	72	143	63	29	154	14	95	343	87	1157
7:00 AM	29	96	69	48	82	45	26	128	18	91	259	89	980
7:15 AM	15	106	89	90	153	62	24	143	18	109	292	107	1208
7:30 AM	29	102	82	108	197	64	31	176	38	86	273	120	1306
7:45 AM	30	139	116	162	240	123	60	199	31	94	322	109	1625
8:00 AM	27	171	102	97	231	83	32	209	35	154	347	157	1645
8:15 AM	33	175	104	138	272	91	42	198	40	135	254	119	1601
8:30 AM	30	136	101	87	207	65	34	212	28	160	312	107	1479
8:45 AM	30	197	117	94	236	72	39	176	45	114	283	112	1515
9:00 AM	43	130	85	96	178	56	42	197	34	151	244	88	1344
9:15 AM	31	106	75	86	171	77	25	149	38	108	226	102	1194
Volumes	329	1475	1068	1113	2181	837	404	2054	353	1357	3371	1272	15814
Approach %	11.46	51.36	37.19	26.94	52.80	20.26	14.37	73.07	12.56	22.62	56.18	21.20	
App/Depart	2872	/	3151	4131	/	3891	2811	/	4235	6000	/	4537	
Peak Volumes	120	621	423	484	950	362	168	818	134	543	1235	492	6350
Approach %	10.31	53.35	36.34	26.95	52.90	20.16	15.00	73.04	11.96	23.92	54.41	21.67	
Pk Hr FACTOR:	0.93			0.86			0.97			0.86			0.965
AM Pk Hr at:	745												
PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
3:30 PM	49	169	116	145	175	21	63	328	30	97	194	78	1465
3:45 PM	46	166	90	128	149	20	59	298	26	107	238	108	1435
4:00 PM	40	155	100	154	159	44	68	296	22	125	230	82	1475
4:15 PM	45	206	119	120	185	41	59	376	30	110	207	86	1584
4:30 PM	46	162	107	129	188	42	74	353	18	112	231	110	1572
4:45 PM	48	167	102	164	187	35	77	345	32	124	249	60	1590
5:00 PM	50	187	134	165	246	49	73	375	27	133	248	119	1806
5:15 PM	57	212	106	161	264	45	64	376	30	153	252	77	1797
5:30 PM	39	219	116	161	225	27	61	365	28	123	209	67	1640
5:45 PM	47	175	131	110	155	28	43	312	29	127	220	79	1456
6:00 PM	49	209	122	110	159	33	43	319	18	85	221	89	1457
6:15 PM	55	155	107	103	118	27	45	308	29	111	183	68	1309
Volumes	571	2182	1350	1650	2210	412	729	4051	319	1407	2682	1023	18586
Approach %	13.92	53.18	32.90	38.62	51.73	9.64	14.30	79.45	6.26	27.52	52.46	20.01	
App/Depart	4103	/	3934	4272	/	3936	5099	/	7051	5112	/	3665	
Peak Volumes	194	785	458	651	922	156	275	1461	117	533	958	323	6833
Approach %	13.50	54.63	31.87	37.65	53.33	9.02	14.84	78.85	6.31	29.38	52.81	17.81	
Pk Hr FACTOR:	0.96			0.92			0.98			0.91			0.9459
PM Pk Hr at:	445												

Poinsettia Lane at Paseo Del Norte

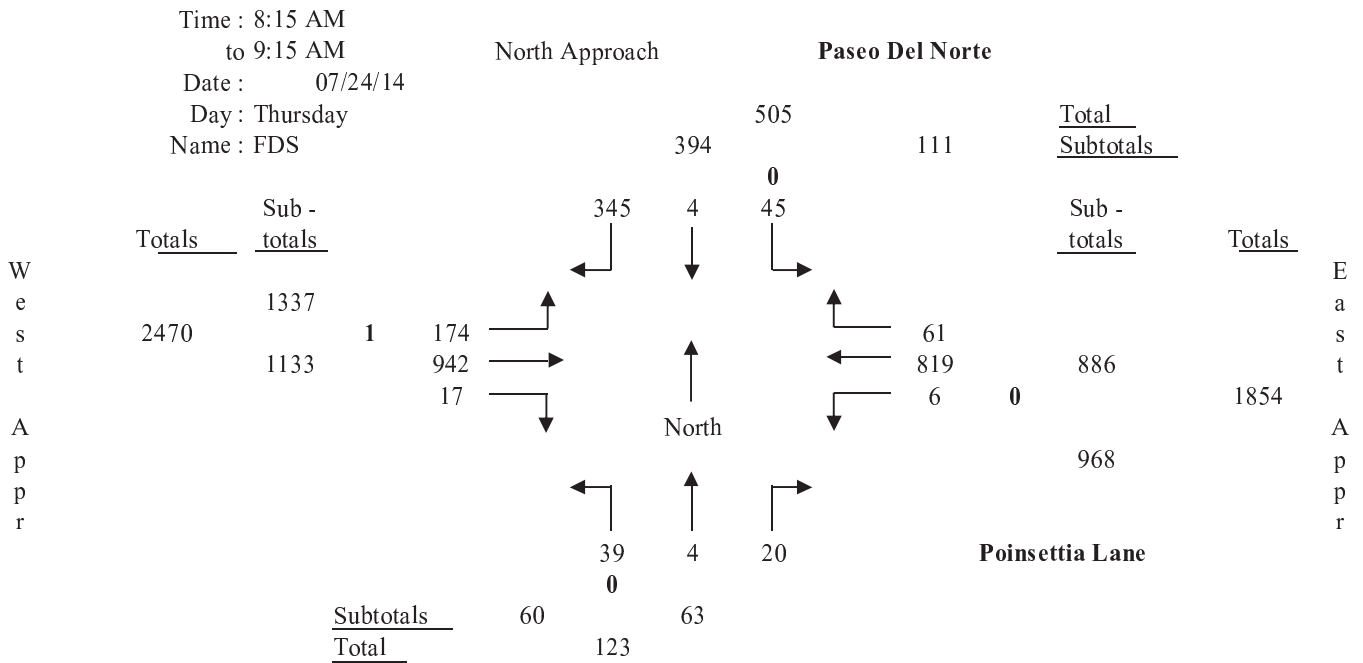
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
8:15 AM to 9:15 AM													
Lane Configurations	Inside (left)	1	1		1			1			1		
		2		1	1		1					1	
		3							1				1
		4							1				
		5									1		
	Outside	6											
	Free-flow	7											
Lane Settings		1	0	1	1	0	1	2	2	1	1	2	0
Capacity		1800	0	1800	1800	0	1800	3600	4000	1800	1800	4000	0
Are the North/South phases split (Y/N)?					Y								
Are the East/West phases split (Y/N)?					N								
Efficiency Lost Factor		0.10											
Hourly Volume		39	4	20	45	4	345	174	942	17	6	819	61
Adjusted Hourly Volume		39	0	24	45	0	349	174	942	17	6	880	0
Utilization Factor		0.02	0.00	0.01	0.03	0.00	0.19	0.05	0.24	0.01	0.00	0.22	0.00
Critical Factors		0.02						0.19			0.05		

ICU Ratio = 0.58 LOS = A

Turning Movements at Intersection of :

Poinsettia Lane and Paseo Del Norte



Note : Left-turn volumes include U-turns. U-turns in bold.

Poinsettia Lane at Paseo Del Norte

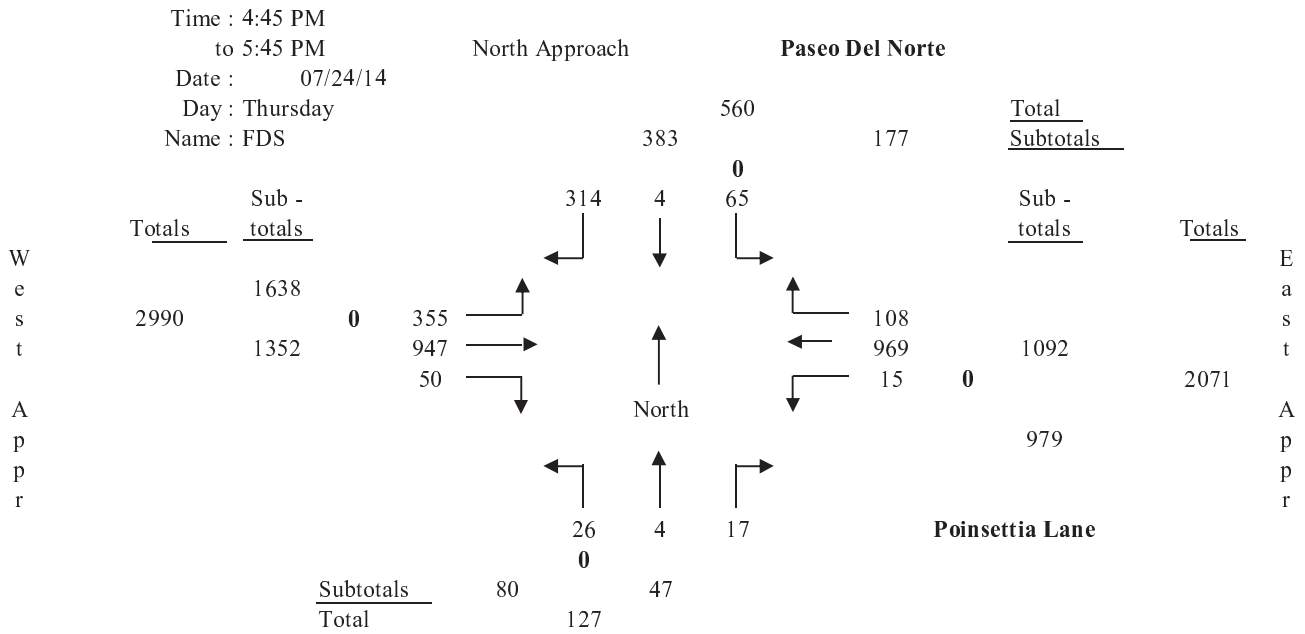
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
4:45 PM to 5:45 PM													
Lane Configurations	Inside (left)	1	1		1			1			1		
		2		1		1	1	1				1	
		3							1			1	1
		4							1				
		5								1			
		6											
	Outside Free-flow	7											
Lane Settings		1	0	1	1	0	1	2	2	1	1	2	0
Capacity		1800	0	1800	1800	0	1800	3600	4000	1800	1800	4000	0
Are the North/South phases split (Y/N)?					Y								
Are the East/West phases split (Y/N)?					N								
Efficiency Lost Factor		0.10											
Hourly Volume		26	4	17	65	4	314	355	947	50	15	969	108
Adjusted Hourly Volume		26	0	21	65	0	318	355	947	50	15	1077	0
Utilization Factor		0.01	0.00	0.01	0.04	0.00	0.18	0.10	0.24	0.03	0.01	0.27	0.00
Critical Factors		0.01						0.18			0.10		

ICU Ratio = 0.66 LOS = B

Turning Movements at Intersection of :

Poinsettia Lane and Paseo Del Norte



Note : Left-turn volumes include U-turns. U-turns in bold.



FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745



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N-S STREET: Paseo Del Norte/

DATE: 07/24/2014

LOCATION: Carlsbad

E-W STREET: Poinsettia Ln.

DAY: THURSDAY

PROJECT# 14-1221-033 -- All Move

CONTROL: Signal

AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	1	1	0	1	1	0	2	2	1	1	2	0	
6:30 AM	8	1	4	3	1	64	13	65	2	0	138	4	303
6:45 AM	4	2	0	4	0	77	16	104	3	1	145	4	360
7:00 AM	8	0	4	7	0	63	29	104	1	0	155	7	378
7:15 AM	11	2	1	5	0	77	24	158	6	0	182	10	476
7:30 AM	12	0	3	10	0	91	33	167	5	1	209	8	539
7:45 AM	9	3	2	9	0	87	38	260	2	0	216	23	649
8:00 AM	8	1	6	9	2	80	40	225	6	0	178	14	569
8:15 AM	11	2	1	15	0	100	36	233	0	0	197	9	604
8:30 AM	7	1	7	9	0	85	40	237	3	1	215	9	614
8:45 AM	10	0	4	7	1	93	44	240	8	1	249	21	678
9:00 AM	11	1	8	14	3	67	54	232	6	4	158	22	580
9:15 AM	10	2	2	7	0	72	49	215	2	3	165	13	540
Volumes	109	15	42	99	7	956	416	2240	44	11	2207	144	6290
Approach %	65.66	9.04	25.30	9.32	0.66	90.02	15.41	82.96	1.63	0.47	93.44	6.10	
App/Depart	166	/	575	1062	/	62	2700	/	2381	2362	/	3272	
Peak Volumes	39	4	20	45	4	345	174	942	17	6	819	61	2476
Approach %	61.90	6.35	31.75	11.42	1.02	87.56	15.36	83.14	1.50	0.68	92.44	6.88	
Pk Hr FACTOR:	0.79			0.86			0.97			0.82			0.913
AM Pk Hr at:	815												
PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
3:30 PM	11	3	5	17	3	62	61	189	14	4	200	21	590
3:45 PM	8	2	7	20	3	74	75	192	13	5	181	14	594
4:00 PM	10	3	3	19	2	74	79	211	10	5	165	20	601
4:15 PM	9	3	4	22	4	93	86	210	7	5	208	25	676
4:30 PM	6	2	5	28	2	106	88	194	9	5	191	13	649
4:45 PM	7	0	1	25	0	74	81	226	15	6	213	19	667
5:00 PM	10	3	3	13	0	75	77	244	11	3	281	24	744
5:15 PM	5	1	5	12	2	85	97	245	16	4	251	33	756
5:30 PM	4	0	8	15	2	80	100	232	8	2	224	32	707
5:45 PM	5	3	6	10	1	74	102	234	6	5	176	21	643
6:00 PM	5	3	2	14	1	70	88	216	8	4	192	22	625
6:15 PM	5	0	1	20	1	56	93	213	11	2	191	20	613
Volumes	85	23	50	215	21	923	1027	2606	128	50	2473	264	7865
Approach %	53.80	14.56	31.65	18.55	1.81	79.64	27.31	69.29	3.40	1.79	88.73	9.47	
App/Depart	158	/	1314	1159	/	199	3761	/	2871	2787	/	3481	
Peak Volumes	26	4	17	65	4	314	355	947	50	15	969	108	2874
Approach %	55.32	8.51	36.17	16.97	1.04	81.98	26.26	70.04	3.70	1.37	88.74	9.89	
Pk Hr FACTOR:	0.73			0.97			0.94			0.89			0.9504
PM Pk Hr at:	445												

Poinsettia Lane at Aviara Parkway

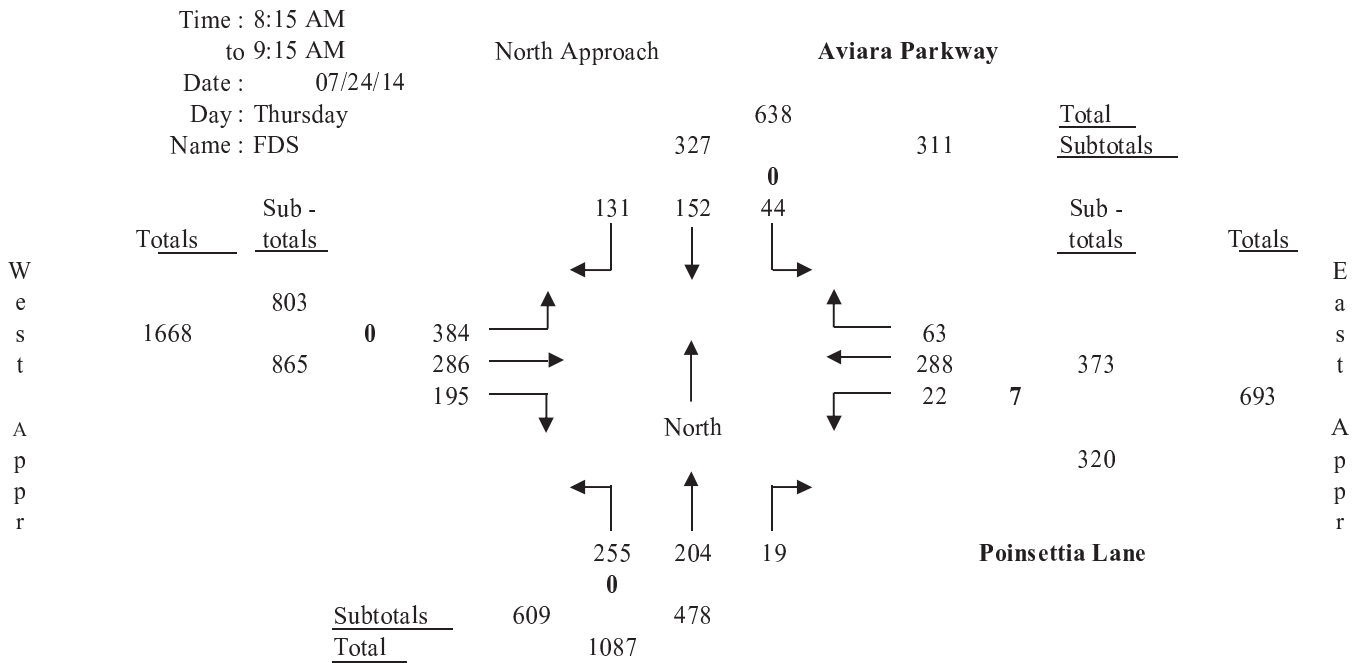
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period : 8:15 AM to 9:15 AM		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Configurations	Inside (left)	1	1		1			1					
		2	1			1		1			1		
		3		1			1		1			1	
		4		1	1							1	1
		5											1
		6											
	Outside Free-flow	7											
Lane Settings		2	2	0	1	2	0	2	1	2	1	2	0
Capacity		3600	4000	0	1800	4000	0	3600	2000	3600	1800	4000	0
Are the North/South phases split (Y/N)?				N									
Are the East/West phases split (Y/N)?				N									
Efficiency Lost Factor		0.10											
Hourly Volume		255	204	19	44	152	131	384	286	195	22	288	63
Adjusted Hourly Volume		255	223	0	44	283	0	384	286	68	22	351	0
Utilization Factor		0.07	0.06	0.00	0.02	0.07	0.00	0.11	0.14	0.02	0.01	0.09	0.00
Critical Factors		0.07				0.07		0.11				0.09	

ICU Ratio = 0.44 LOS = A

Turning Movements at Intersection of :

Poinsettia Lane and Aviara Parkway



South Approach

Note : Left-turn volumes include U-turns. U-turns in bold.

Poinsettia Lane at Aviara Parkway

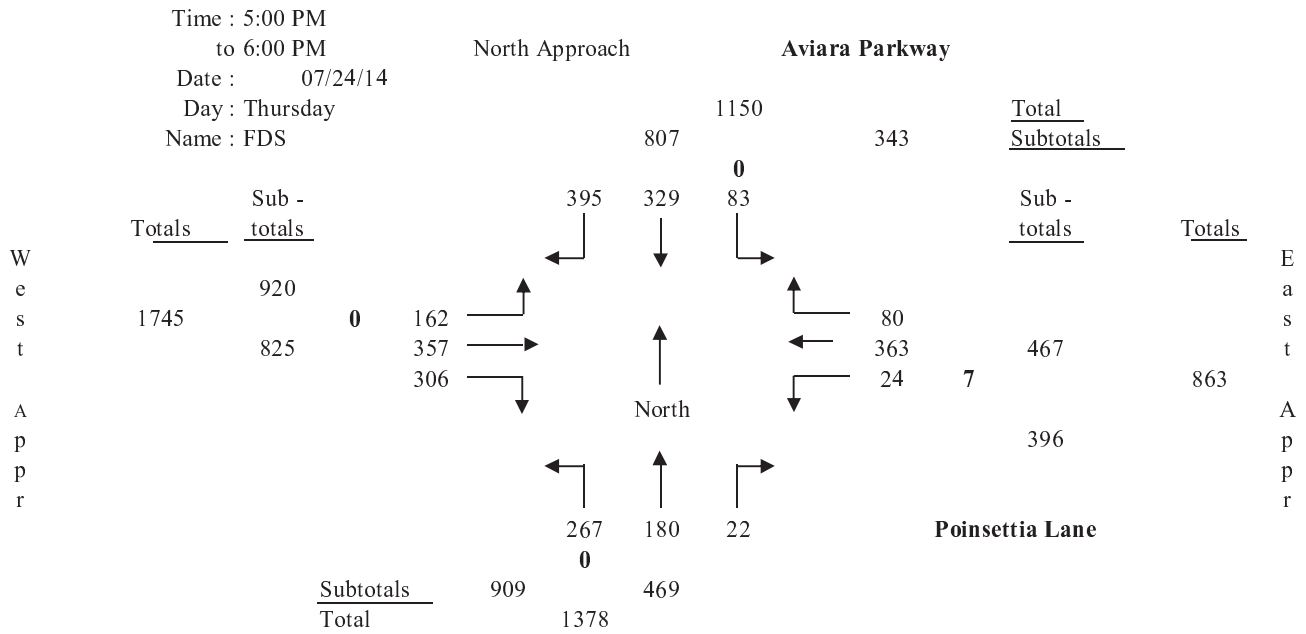
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
5:00 PM to 6:00 PM													
Lane Configurations	Inside (left)	1	1		1			1					
		2	1			1		1			1		
		3		1		1	1		1			1	
		4		1			1			1		1	1
		5								1			
		6											
	Outside Free-flow	7											
Lane Settings		2	2	0	1	1	1	2	1	2	1	2	0
Capacity		3600	4000	0	1800	2000	1800	3600	2000	3600	1800	4000	0
Are the North/South phases split (Y/N)?					N								
Are the East/West phases split (Y/N)?					N								
Efficiency Lost Factor		0.10											
Hourly Volume		267	180	22	83	329	395	162	357	306	24	363	80
Adjusted Hourly Volume		267	202	0	83	329	395	162	357	172.5	24	443	0
Utilization Factor		0.07	0.05	0.00	0.05	0.16	0.22	0.05	0.18	0.05	0.01	0.11	0.00
Critical Factors		0.07						0.22			0.18		

ICU Ratio = 0.58 LOS = A

Turning Movements at Intersection of :

Poinsettia Lane and Aviara Parkway



Note : Left-turn volumes include U-turns. U-turns in bold.



FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745



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N-S STREET: **Aviara Pkwy.**

DATE: **07/24/2014**

LOCATION: **Carlsbad**

E-W STREET: **Poinsettia Ln.**

DAY: **THURSDAY**

PROJECT# **14-1221-032 -- All Move**

CONTROL: **Signal**

AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	0	1	2	0	2	1	2	1	2	0	
6:30 AM	32	13	3	2	6	13	31	26	16	2	53	5	202
6:45 AM	52	18	3	7	11	19	41	40	20	0	56	7	274
7:00 AM	47	25	2	3	20	17	27	41	23	1	61	9	276
7:15 AM	55	37	2	17	31	34	48	55	35	0	61	10	385
7:30 AM	54	36	8	14	29	33	67	57	38	2	69	21	428
7:45 AM	67	72	8	14	33	27	107	82	43	5	71	17	546
8:00 AM	53	49	3	7	27	22	120	78	37	4	58	20	478
8:15 AM	60	50	4	5	29	26	92	69	44	2	66	19	466
8:30 AM	58	58	5	11	45	30	103	61	50	4	78	12	515
8:45 AM	78	48	8	21	39	36	100	76	52	5	87	17	567
9:00 AM	59	48	2	7	39	39	89	80	49	11	57	15	495
9:15 AM	59	35	3	8	44	36	71	72	37	7	57	16	445
Volumes	674	489	51	116	353	332	896	737	444	43	774	168	5077
Approach %	55.52	40.28	4.20	14.48	44.07	41.45	43.14	35.48	21.38	4.37	78.58	17.06	
App/Depart	1214	/	1553	801	/	840	2077	/	904	985	/	1780	
Peak Volumes	255	204	19	44	152	131	384	286	195	22	288	63	2043
Approach %	53.35	42.68	3.97	13.46	46.48	40.06	44.39	33.06	22.54	5.90	77.21	16.89	
Pk Hr FACTOR:	0.89			0.85			0.95			0.86			0.9008
AM Pk Hr at:	815												
PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
3:30 PM	69	26	5	19	63	54	41	79	72	1	77	10	516
3:45 PM	72	44	1	28	66	74	36	74	60	5	52	13	525
4:00 PM	56	43	2	16	84	59	62	77	73	8	63	14	557
4:15 PM	75	69	7	24	81	69	46	92	82	3	85	20	653
4:30 PM	65	45	1	21	60	69	48	94	71	10	73	19	576
4:45 PM	76	51	4	13	64	94	47	70	92	4	71	20	606
5:00 PM	61	36	3	19	83	93	42	87	87	7	109	13	640
5:15 PM	80	44	12	22	97	119	44	64	70	7	102	16	677
5:30 PM	67	53	1	26	71	92	37	94	87	4	89	23	644
5:45 PM	59	47	6	16	78	91	39	112	62	6	63	28	607
6:00 PM	48	40	2	23	51	73	61	70	61	2	77	25	533
6:15 PM	45	53	6	14	49	58	38	86	57	6	109	24	545
Volumes	773	551	50	241	847	945	541	999	874	63	970	225	7079
Approach %	56.26	40.10	3.64	11.85	41.66	46.48	22.41	41.38	36.21	5.01	77.11	17.89	
App/Depart	1374	/	1317	2033	/	1784	2414	/	1290	1258	/	2688	
Peak Volumes	267	180	22	83	329	395	162	357	306	24	363	80	2568
Approach %	56.93	38.38	4.69	10.29	40.77	48.95	19.64	43.27	37.09	5.14	77.73	17.13	
Pk Hr FACTOR:	0.86			0.85			0.95			0.91			0.9483
PM Pk Hr at:	500												

El Camino Real at Alga Road/ Aviara Parkway

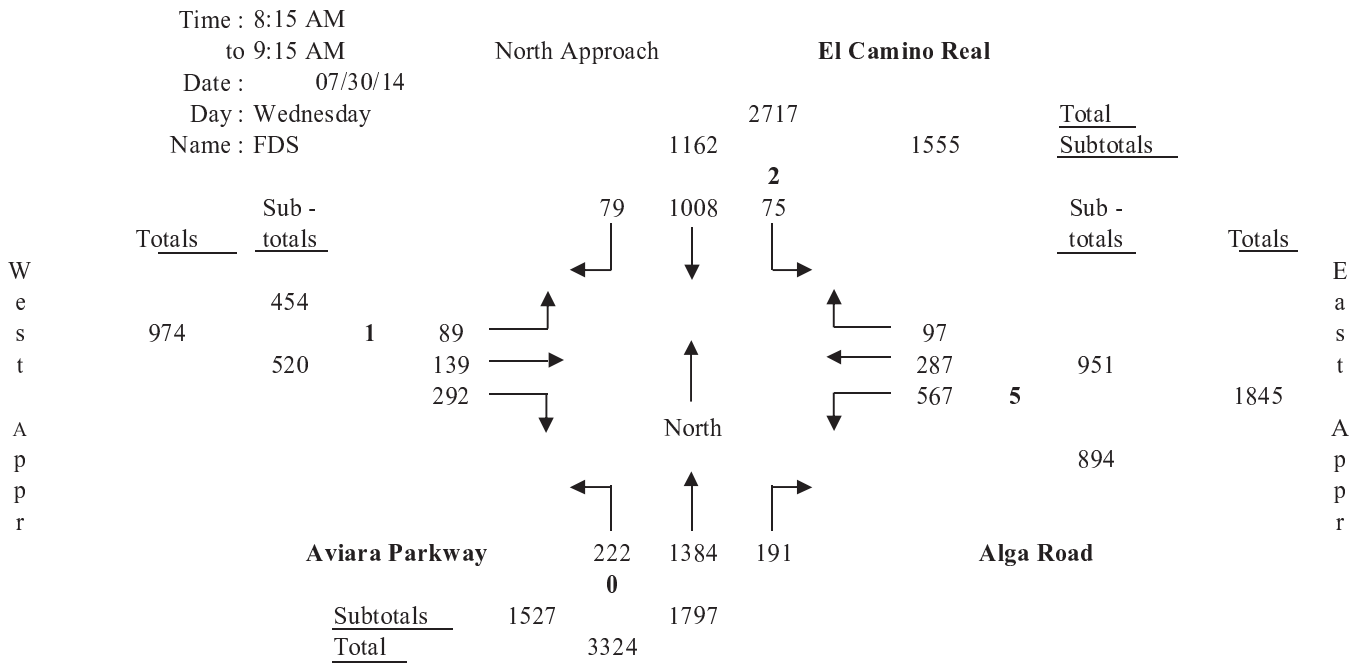
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
8:15 AM to 9:15 AM		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Config - urations	Inside	1	1		1			1			1		
	(left)	2	1		1			1			1		
		3		1					1				1
		4		1					1				1
		5		1			1						1
		6			1								
	Outside Free-flow	7											
Lane Settings		2	3	1	2	3	0	2	2	1	2	2	0
Capacity		3600	6000	1800	3600	6000	0	3600	4000	1800	3600	4000	0
Are the North/South phases split (Y/N)?					N								
Are the East/West phases split (Y/N)?					N								
Efficiency Lost Factor		0.10											
Hourly Volume		222	1384	191	75	1008	79	89	139	292	567	287	97
Adjusted Hourly Volume		222	1384	191	75	1087	0	89	139	181	567	384	0
Utilization Factor		0.06	0.23	0.11	0.02	0.18	0.00	0.02	0.03	0.10	0.16	0.10	0.00
Critical Factors		0.23			0.02						0.10	0.16	

ICU Ratio = 0.61 LOS = B

Turning Movements at Intersection of :

El Camino Real and Alga Road/ Aviara Parkway



South Approach

Note : Left-turn volumes include U-turns. U-turns in bold.

El Camino Real at Alga Road/ Aviara Parkway

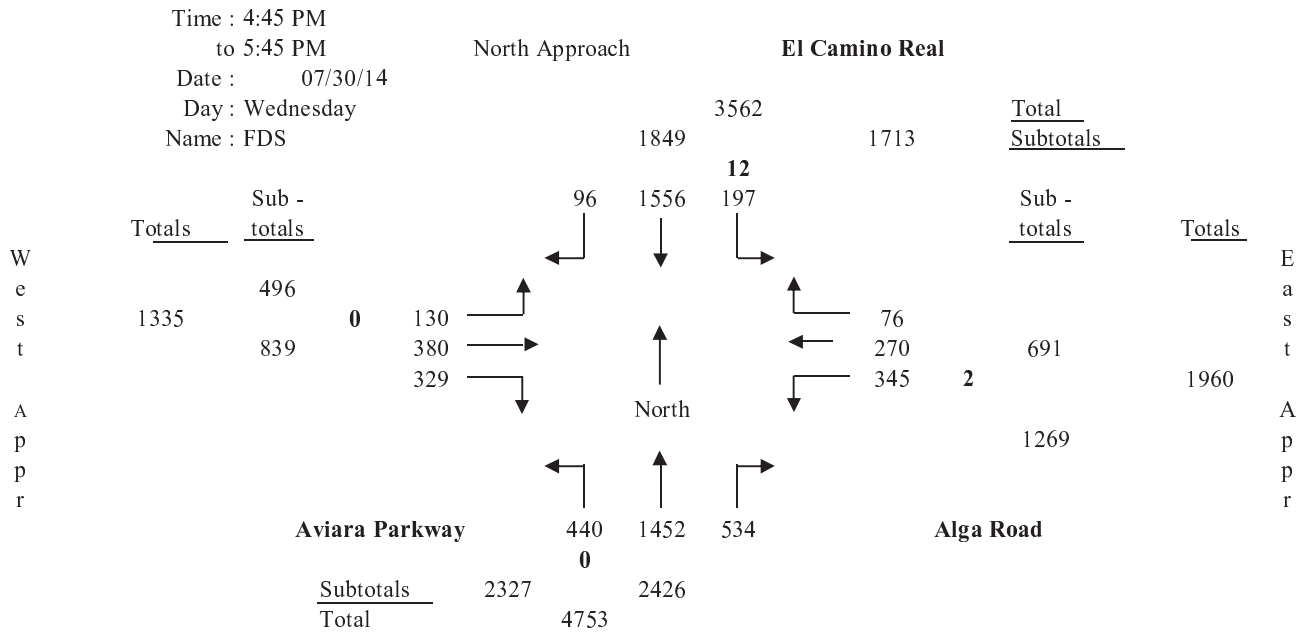
Lane Configuration for Intersection Capacity Utilization

Pk. Hr. Time Period :		South Appr (NB)			North Appr (SB)			West Appr (EB)			East Appr (WB)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
4:45 PM to 5:45 PM													
Lane Configurations	Inside (left)	1	1		1			1			1		
		2	1		1			1			1		
		3		1			1		1			1	
		4		1			1		1			1	1
		5		1			1			1			
		6											
	Outside Free-flow	7					1						
Lane Settings		2	3	1	2	3	0	2	2	1	2	2	0
Capacity		3600	6000	1800	3600	6000	0	3600	4000	1800	3600	4000	0
Are the North/South phases split (Y/N)?					N								
Are the East/West phases split (Y/N)?					N								
Efficiency Lost Factor		0.10											
Hourly Volume		440	1452	534	197	1556	96	130	380	329	345	270	76
Adjusted Hourly Volume		440	1452	534	197	1652	0	130	380	109	345	346	0
Utilization Factor		0.12	0.24	0.30	0.05	0.28	0.00	0.04	0.10	0.06	0.10	0.09	0.00
Critical Factors		0.12					0.28		0.10		0.10		

ICU Ratio = 0.70 LOS = B

Turning Movements at Intersection of :

El Camino Real and Alga Road/ Aviara Parkway



Note : Left-turn volumes include U-turns. U-turns in bold.



N-S STREET: El Camino Real

DATE: 07/30/2014

LOCATION: Carlsbad

E-W STREET: Alga Rd. /
CONTROL: Signal

DAY: WEDNESDAY

PROJECT# 14-1221-011--All Move

AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	2	3	1	2	3	0	2	2	1	2	2	0	
6:30 AM	8	142	13	2	162	5	12	13	24	133	36	10	560
6:45 AM	15	157	19	5	187	7	12	15	33	108	45	18	621
7:00 AM	24	201	16	10	225	15	7	20	26	117	36	14	711
7:15 AM	20	254	21	5	217	10	18	22	28	162	58	24	839
7:30 AM	39	260	39	22	295	5	16	24	42	161	54	23	980
7:45 AM	33	394	37	12	292	20	24	27	44	169	56	30	1138
8:00 AM	29	265	30	17	241	10	23	29	62	154	67	26	953
8:15 AM	48	368	42	17	331	23	26	32	75	161	64	29	1216
8:30 AM	38	338	39	17	258	15	28	36	68	159	89	30	1115
8:45 AM	73	360	43	19	246	29	19	29	73	126	61	21	1099
9:00 AM	63	318	67	22	173	12	16	42	76	121	73	17	1000
9:15 AM	55	270	48	21	255	15	23	53	79	121	63	18	1021
Volumes	445	3327	414	169	2882	166	224	342	630	1692	702	260	11253
Approach %	10.63	79.48	9.89	5.25	89.59	5.16	18.73	28.60	52.68	63.75	26.45	9.80	
App/Depart	4186	/	3811	3217	/	5204	1196	/	925	2654	/	1313	
Peak Volumes	222	1384	191	75	1008	79	89	139	292	567	287	97	4430
Approach %	12.35	77.02	10.63	6.45	86.75	6.80	17.12	26.73	56.15	59.62	30.18	10.20	
Pk Hr FACTOR:	0.94			0.78			0.97			0.86			0.9108
AM Pk Hr at:	815												
PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
3:30 PM	92	292	127	23	340	29	24	61	76	72	41	22	1199
3:45 PM	77	341	102	40	268	31	38	73	77	80	62	24	1213
4:00 PM	79	262	115	49	347	32	28	103	100	62	42	15	1234
4:15 PM	108	346	135	31	291	18	30	75	76	83	63	13	1269
4:30 PM	86	315	132	37	323	35	17	90	92	91	61	15	1294
4:45 PM	106	328	118	40	372	34	22	86	77	89	79	18	1369
5:00 PM	109	357	133	51	332	18	30	94	81	81	65	23	1374
5:15 PM	106	415	152	48	467	29	35	107	102	88	67	15	1631
5:30 PM	119	352	131	58	385	15	43	93	69	87	59	20	1431
5:45 PM	74	294	154	30	359	30	20	115	69	67	53	15	1280
6:00 PM	99	313	161	51	280	26	27	66	57	91	77	18	1266
6:15 PM	99	262	138	40	292	23	22	77	73	61	63	20	1170
Volumes	1154	3877	1598	498	4056	320	336	1040	949	952	732	218	15730
Approach %	17.41	58.49	24.11	10.22	83.22	6.57	14.45	44.73	40.82	50.05	38.49	11.46	
App/Depart	6629	/	4431	4874	/	5957	2325	/	3136	1902	/	2206	
Peak Volumes	440	1452	534	197	1556	96	130	380	329	345	270	76	5805
Approach %	18.14	59.85	22.01	10.65	84.15	5.19	15.49	45.29	39.21	49.93	39.07	11.00	
Pk Hr FACTOR:	0.90			0.85			0.86			0.93			0.8898
PM Pk Hr at:	445												






















APPENDIX B: EXISTING CONDITIONS

Technical Analysis



Intersection Capacity Utilization
1: Carlsbad Blvd & Tamarack Ave

Existing Conditions
AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	7	7	10	282	10	61	5	16	186	52	29	529	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right	No			No			No			No			
Ideal Flow	1800	2040	1840	1840	2040	1800	1800	1840	2040	1800	1840	2040	
Lost Time (s)	5.0	5.0	5.0	5.0	5.0	4.0	4.5	4.5	6.0	4.0	4.5	6.0	
Minimum Green (s)	8.0	8.0	8.0	8.0	8.0	4.0	4.0	4.0	10.0	4.0	4.0	10.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	0	14	10	282	71	0	0	21	238	0	29	529	
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Turning Factor (vph)	0.95	0.97	0.85	0.95	0.87	0.85	0.95	0.95	0.97	0.85	0.95	1.00	
Saturated Flow (vph)	0	1989	1564	1748	1777	0	0	1748	3757	0	1748	3884	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)	0.00			0.00			0.00			0.00			
Protected Option Allowed	No			No			Yes			Yes			
Reference Time (s)	0.8			0.0			0.0	1.4	7.6	0.0	2.0	16.3	
Adj Reference Time (s)	13.0			0.0			0.0	8.5	16.0	0.0	8.5	22.3	
Permitted Option													
Adj Saturation A (vph)	0	227		117	1777		0	117	1878		117	1942	
Reference Time A (s)	0.0	7.4		290.4	4.8		0.0	21.6	7.6		29.9	16.3	
Adj Saturation B (vph)	0	0		0	1777		NA	NA	NA		NA	NA	
Reference Time B (s)	8.5	8.8		27.4	4.8		NA	NA	NA		NA	NA	
Reference Time (s)	7.4			27.4			21.6			29.9			
Adj Reference Time (s)	13.0			32.4			27.6			35.9			
Split Option													
Ref Time Combined (s)	0.0	0.8		19.4	4.8		0.0	1.4	7.6		2.0	16.3	
Ref Time Seperate (s)	0.5	0.4		19.4	0.7		0.4	1.1	5.9		2.0	16.3	
Reference Time (s)	0.8	0.8		19.4	19.4		7.6	7.6	7.6		16.3	16.3	
Adj Reference Time (s)	13.0	13.0		24.4	24.4		16.0	16.0	16.0		22.3	22.3	
Summary	EB WB		NB SB		Combined								
Protected Option (s)	NA		30.8										
Permitted Option (s)	32.4		35.9										
Split Option (s)	37.4		38.3										
Minimum (s)	32.4		30.8		63.2								
Right Turns	EBR		SBR										
Adj Reference Time (s)	13.0		16.0										
Cross Thru Ref Time (s)	30.8		24.4										
Oncoming Left Ref Time (s)	24.4		8.5										
Combined (s)	68.2		48.9										
Intersection Summary													
Intersection Capacity Utilization	56.8%			ICU Level of Service			B						
Reference Times and Phasing Options do not represent an optimized timing plan.													



Movement	SBR
Lane Configurations	T
Volume (vph)	5
Pedestrians	
Ped Button	
Pedestrian Timing (s)	
Free Right	No
Ideal Flow	1840
Lost Time (s)	6.0
Minimum Green (s)	10.0
Refr Cycle Length (s)	120
Volume Combined (vph)	5
Lane Utilization Factor	1.00
Turning Factor (vph)	0.85
Saturated Flow (vph)	1564
Ped Intf Time (s)	0.0
Pedestrian Frequency (%)	
Protected Option Allowed	
Reference Time (s)	0.4
Adj Reference Time (s)	16.0
Permitted Option	
Adj Saturation A (vph)	
Reference Time A (s)	
Adj Saturation B (vph)	
Reference Time B (s)	
Reference Time (s)	
Adj Reference Time (s)	
Split Option	
Ref Time Combined (s)	
Ref Time Seperate (s)	
Reference Time (s)	
Adj Reference Time (s)	
Summary	

Diamond Interchange Capacity Utilization
2: I-5 SB Ramps & Tamarack Ave

Existing Conditions
AM Peak Hour

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	EBL	EBT	WBT	WBR	NBL	
Node	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Configurations	↑↑	↑	↓	↑↑		↓	↑	↓	↑↑	↑↓			
Volume (vph)	348	364	407	377	139	0	149	179	308	700	304	84	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right	No					No			No				
Ideal Flow	2040	1840	1840	2040	1800	2040	1840	1840	2040	2140	1800	1800	
Storage Space			14.4	28.8				14.4	28.8				
Lost Time (s)	4.6	4.6	4.2	4.6	4.6	4.6	4.6	4.6	5.1	5.1	4.0	4.6	
Minimum Green (s)	7.0	7.0	5.0	6.0	5.0	5.0	5.0	4.0	7.0	6.0	4.0	4.0	
Refr Cycle Length (s)													
Travel Time (s)	10.0		120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	348	364	407	377	0	139	149	179	308	1004	0	0	
Lane Utilization Factor	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	
Turning Factor (vph)	1.00	0.85	0.95	1.00	0.95	0.95	0.85	0.95	1.00	0.95	0.85	0.95	
Saturated Flow (vph)	3884	1564	1748	3884	0	1938	1564	1748	3884	3890	0	0	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)	0.00			0.00		0.00			0.00	0.00			
Reference Time (s)	10.8	27.9	27.9	11.6	0.0	8.6	11.4	12.3	9.5	31.0	0.0	0.0	
Adj Reference Time (s)	15.4	32.5	32.1	16.2	0.0	13.2	16.0	16.9	14.6	36.1	0.0	0.0	
Volume per cycle, 90th			18.3	17.1	7.4			9.1	14.4			4.9	
Volume to Storage			1.3	0.6	0.3			0.6	0.5			0.2	
Isolated Timings (s)	77.9							62.8					
Timing Options													
Leading Option (s)		102.2											
Lagging Option (s)	NA												
Lead-Lag Option (s)	OK	77.9											
Interchange Summary													
Intersection Capacity Utilization	64.9%		ICU Level of Service					C					
Reference Times and Phasing Options do not represent an optimized timing plan.													























Diamond Interchange Capacity Utilization
 2: I-5 SB Ramps & Tamarack Ave

Existing Conditions
 AM Peak Hour

	↑	↗		
Movement	NBT	NBR		
Node	0	0		
Lane Configurations	↖	↗		
Volume (vph)	0	443		
Pedestrians				
Ped Button				
Pedestrian Timing (s)				
Free Right		No		
Ideal Flow	2040	2160		
Storage Space				
Lost Time (s)	4.6	4.6		
Minimum Green (s)	4.0	4.0		
Refr Cycle Length (s)				
Travel Time (s)	120	120	120	120
Volume Combined (vph)	84	443		
Lane Utilization Factor	1.00	1.00		
Turning Factor (vph)	0.95	0.85		
Saturated Flow (vph)	1938	1836		
Ped Intf Time (s)	0.0	0.0		
Pedestrian Frequency (%)	0.00			
Reference Time (s)	5.2	29.0		
Adj Reference Time (s)	9.8	33.6		
Volume per cycle, 90th				
Volume to Storage				
Isolated Timings (s)				
Timing Options				

Intersection Capacity Utilization
4: El Camino Real & Tamarck Ave













Existing Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	61	204	275	131	21	52	394	65	19	1200	28
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	4.2	5.0	5.0	4.2	5.0	4.0	4.2	6.0	4.0	4.2	6.0	6.0
Minimum Green (s)	4.0	6.0	6.0	4.0	6.0	4.0	4.0	8.0	4.0	4.0	8.0	8.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	27	61	204	275	152	0	52	459	0	19	1200	28
Lane Utilization Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.98	0.85	0.95	0.98	0.85	0.95	1.00	0.85
Saturated Flow (vph)	2375	2500	2125	2375	4661	0	2375	6665	0	2375	4760	2125
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00			0.00			
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	1.4	2.9	11.5	13.9	3.9	0.0	2.6	8.3	0.0	1.0	30.3	1.6
Adj Reference Time (s)	8.2	11.0	16.5	18.1	11.0	0.0	8.2	14.3	0.0	8.2	36.3	14.0
Permitted Option												
Adj Saturation A (vph)	158	2500		158	2331		158	2222		158	2380	
Reference Time A (s)	20.5	2.9		208.4	3.9		39.4	8.3		14.4	30.3	
Adj Saturation B (vph)	NA	NA		0	4661		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		21.9	3.9		NA	NA		NA	NA	
Reference Time (s)		20.5			21.9			39.4			30.3	
Adj Reference Time (s)		25.5			26.9			45.4			36.3	
Split Option												
Ref Time Combined (s)	1.4	2.9		13.9	3.9		2.6	8.3		1.0	30.3	
Ref Time Seperate (s)	1.4	2.9		13.9	3.4		2.6	7.1		1.0	30.3	
Reference Time (s)	2.9	2.9		13.9	13.9		8.3	8.3		30.3	30.3	
Adj Reference Time (s)	11.0	11.0		18.9	18.9		14.3	14.3		36.3	36.3	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	29.1		44.5									
Permitted Option (s)	26.9		45.4									
Split Option (s)	29.9		50.5									
Minimum (s)	26.9		44.5		71.3							
Right Turns												
	EBR		SBR									
Adj Reference Time (s)	16.5		14.0									
Cross Thru Ref Time (s)	36.3		11.0									
Oncoming Left Ref Time (s)	18.1		8.2									
Combined (s)	70.9		33.2									

Intersection Summary
 Intersection Capacity Utilization 59.5% ICU Level of Service B
 Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
5: Carlsbad Blvd & Cannon Rd






























Existing Conditions
AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	151	49	228	44	142	647
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No		No		
Ideal Flow	1840	1840	2040	1840	1840	2040
Lost Time (s)	5.0	4.5	5.5	5.5	4.5	5.5
Minimum Green (s)	4.0	4.0	10.0	10.0	4.0	10.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	151	49	228	44	142	647
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.85	1.00	0.85	0.95	1.00
Saturated Flow (vph)	1748	1564	2040	1564	1748	2040
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00
Protected Option Allowed	No		Yes			Yes
Reference Time (s)		3.8	13.4	3.4	9.7	38.1
Adj Reference Time (s)		8.5	18.9	15.5	14.2	43.6
Permitted Option						
Adj Saturation A (vph)	117		2040		117	2040
Reference Time A (s)	155.5		13.4		146.2	38.1
Adj Saturation B (vph)	NA		NA		NA	NA
Reference Time B (s)	NA		NA		NA	NA
Reference Time (s)			13.4			146.2
Adj Reference Time (s)			18.9			151.7
Split Option						
Ref Time Combined (s)	10.4		13.4		9.7	38.1
Ref Time Seperate (s)	10.4		13.4		9.7	38.1
Reference Time (s)	10.4		13.4		38.1	38.1
Adj Reference Time (s)	15.4		18.9		43.6	43.6
Summary	WB		NB SB		Combined	
Protected Option (s)	NA		43.6			
Permitted Option (s)	Err		151.7			
Split Option (s)	15.4		62.5			
Minimum (s)	15.4		43.6		58.9	
Right Turns	WBR	NBR				
Adj Reference Time (s)	8.5	15.5				
Cross Thru Ref Time (s)	18.9	0.0				
Oncoming Left Ref Time (s)	0.0	14.2				
Combined (s)	27.4	29.7				

Intersection Summary
 Intersection Capacity Utilization 49.1% ICU Level of Service A
 Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
6: Avenida Encinas & Cannon Rd

Existing Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 		 	 		 		 	 		 
Volume (vph)	13	214	31	283	217	82	20	6	65	59	17	13
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1840	2040	1800	1840	2040	1800	1840	2040	1840	1840	2040	1840
Lost Time (s)	4.5	5.5	4.0	4.5	5.5	4.0	4.5	5.0	4.5	4.5	5.0	5.0
Minimum Green (s)	6.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0	6.0	6.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	13	245	0	283	299	0	20	6	65	59	17	13
Lane Utilization Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Turning Factor (vph)	0.95	0.98	0.85	0.95	0.96	0.85	0.95	1.00	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1748	3810	0	3395	3724	0	1748	2040	1564	3395	2040	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00			0.00			
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	0.9	7.7	0.0	10.0	9.6	0.0	1.4	0.4	5.0	2.1	1.0	1.0
Adj Reference Time (s)	10.5	13.2	0.0	14.5	15.1	0.0	10.5	10.0	10.5	10.5	11.0	11.0
Permitted Option												
Adj Saturation A (vph)	117	1905		113	1862		117	2040		113	2040	
Reference Time A (s)	13.4	7.7		150.1	9.6		20.6	0.4		31.3	1.0	
Adj Saturation B (vph)	NA	NA		NA	NA		0	2040		0	2040	
Reference Time B (s)	NA	NA		NA	NA		9.4	0.4		10.1	1.0	
Reference Time (s)		13.4			150.1			9.4			10.1	
Adj Reference Time (s)		18.9			155.6			14.4			15.1	
Split Option												
Ref Time Combined (s)	0.9	7.7		10.0	9.6		1.4	0.4		2.1	1.0	
Ref Time Separate (s)	0.9	6.7		10.0	7.0		1.4	0.4		2.1	1.0	
Reference Time (s)	7.7	7.7		10.0	10.0		1.4	1.4		2.1	2.1	
Adj Reference Time (s)	13.2	13.2		15.5	15.5		10.0	10.0		11.0	11.0	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	27.7		21.5									
Permitted Option (s)	155.6		15.1									
Split Option (s)	28.7		21.0									
Minimum (s)	27.7		15.1		42.8							
Right Turns												
	NBR		SBR									
Adj Reference Time (s)	10.5		11.0									
Cross Thru Ref Time (s)	13.2		15.1									
Oncoming Left Ref Time (s)	10.5		10.0									
Combined (s)	34.2		36.1									

Intersection Summary

Intersection Capacity Utilization 35.7% ICU Level of Service A
Reference Times and Phasing Options do not represent an optimized timing plan.

Diamond Interchange Capacity Utilization
7: I-5 SB Ramps & Cannon Rd

Existing Conditions
AM Peak Hour

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	EBL	EBT	WBT	WBR	NBL	
Node	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Configurations	↑↑	↑	↑↑	↑↑	↑	↑	↑	↑↑	↑↑	↑↑	↑		
Volume (vph)	288	50	317	295	766	1	287	110	944	528	156	84	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right	No						No			No			
Ideal Flow	2040	1840	1840	2040	1840	2040	1840	1840	2040	2040	1840	1800	
Storage Space			26.2	40.5				26.2	40.5				
Lost Time (s)	4.6	4.6	4.2	4.6	4.6	4.6	4.6	4.2	4.6	4.6	4.6	4.6	
Minimum Green (s)	6.0	6.0	5.0	6.0	5.0	5.0	5.0	4.0	6.0	6.0	6.0	4.0	
Refr Cycle Length (s)													
Travel Time (s)	11.4		120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	288	50	317	295	0	767	287	110	944	580	104	0	
Lane Utilization Factor	0.95	1.00	0.97	0.95	1.00	1.00	1.00	0.97	0.95	0.95	1.00	1.00	
Turning Factor (vph)	1.00	0.85	0.95	1.00	0.95	0.95	0.85	0.95	1.00	0.99	0.85	0.95	
Saturated Flow (vph)	3884	1564	3395	3884	0	3876	1564	3395	3884	3832	1564	0	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)	0.00			0.00		0.00			0.00	0.00			
Reference Time (s)	8.9	3.8	11.2	9.1	0.0	23.7	22.0	3.9	29.2	18.2	8.0	0.0	
Adj Reference Time (s)	13.5	10.6	15.4	13.7	0.0	28.3	26.6	9.2	33.8	22.8	12.6	0.0	
Volume per cycle, 90th			14.7	13.8	32.0			6.1	38.6			4.9	
Volume to Storage			0.6	0.3	0.8			0.2	1.0			0.1	
Isolated Timings (s)	57.2							53.6					
Timing Options													
Leading Option (s)		64.6											
Lagging Option (s)	OK	57.2											
Lead-Lag Option (s)	OK	57.2											
Interchange Summary													
Intersection Capacity Utilization	47.7%		ICU Level of Service					A					
Reference Times and Phasing Options do not represent an optimized timing plan.													

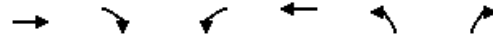
Diamond Interchange Capacity Utilization
7: I-5 SB Ramps & Cannon Rd

Existing Conditions
AM Peak Hour

	↑	↘		
Movement	NBT	NBR		
Node	0	0		
Lane Configurations	↘	↘↘		
Volume (vph)	0	351		
Pedestrians				
Ped Button				
Pedestrian Timing (s)				
Free Right		No		
Ideal Flow	2040	1840		
Storage Space				
Lost Time (s)	4.6	4.6		
Minimum Green (s)	4.0	4.0		
Refr Cycle Length (s)				
Travel Time (s)	120	120	120	120
Volume Combined (vph)	84	351		
Lane Utilization Factor	1.00	0.89		
Turning Factor (vph)	0.95	0.85		
Saturated Flow (vph)	1938	2768		
Ped Intf Time (s)	0.0	0.0		
Pedestrian Frequency (%)	0.00			
Reference Time (s)	5.2	15.2		
Adj Reference Time (s)	9.8	19.8		
Volume per cycle, 90th				
Volume to Storage				
Isolated Timings (s)				
Timing Options				

Intersection Capacity Utilization
9: Paseo Del Norte & Cannon Rd

Existing Conditions
AM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵	↑↑↑	↵↵	↵
Volume (vph)	968	327	59	551	133	72
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No				No
Ideal Flow	2040	1800	1840	2040	1840	1840
Lost Time (s)	5.0	4.0	5.0	5.0	5.0	5.0
Minimum Green (s)	6.0	4.0	4.0	6.0	6.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	1295	0	59	551	133	72
Lane Utilization Factor	0.95	1.00	1.00	0.91	0.97	1.00
Turning Factor (vph)	0.96	0.85	0.95	1.00	0.95	0.85
Saturated Flow (vph)	3737	0	1748	5557	3395	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00	0.00	
Protected Option Allowed	Yes			Yes	No	
Reference Time (s)	41.6	0.0	4.1	11.9		5.5
Adj Reference Time (s)	46.6	0.0	9.1	16.9		10.5
Permitted Option						
Adj Saturation A (vph)	1869		117	1852	113	
Reference Time A (s)	41.6		60.8	11.9	70.5	
Adj Saturation B (vph)	NA		NA	NA	NA	
Reference Time B (s)	NA		NA	NA	NA	
Reference Time (s)	41.6			60.8		
Adj Reference Time (s)	46.6			65.8		
Split Option						
Ref Time Combined (s)	41.6		4.1	11.9	4.7	
Ref Time Seperate (s)	31.1		4.1	11.9	4.7	
Reference Time (s)	41.6		11.9	11.9	4.7	
Adj Reference Time (s)	46.6		16.9	16.9	11.0	
Summary						
	EB WB		NB		Combined	
Protected Option (s)	55.6		NA			
Permitted Option (s)	65.8		Err			
Split Option (s)	63.5		11.0			
Minimum (s)	55.6		11.0		66.6	
Right Turns						
	NBR					
Adj Reference Time (s)	10.5					
Cross Thru Ref Time (s)	46.6					
Oncoming Left Ref Time (s)	0.0					
Combined (s)	57.1					

Intersection Summary

Intersection Capacity Utilization 55.5% ICU Level of Service B
Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
10: Car Country Dr & Cannon Rd

Existing Conditions
AM Peak Hour



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰	↩↰		↰	↩↩	↰	↰
Volume (vph)	0	878	162	71	565	45	35
Pedestrians							
Ped Button							
Pedestrian Timing (s)							
Free Right			No			No	
Ideal Flow	1840	2040	1800	1840	2040	1840	1840
Lost Time (s)	5.5	6.5	4.0	5.5	6.5	6.0	6.0
Minimum Green (s)	6.0	10.0	4.0	4.0	10.0	6.0	6.0
Refr Cycle Length (s)	120	120	120	120	120	120	120
Volume Combined (vph)	0	1040	0	71	565	45	35
Lane Utilization Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Turning Factor (vph)	0.95	0.98	0.85	0.95	1.00	0.95	0.85
Saturated Flow (vph)	1748	3793	0	1748	3884	1748	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00	0.00	
Protected Option Allowed		Yes			Yes	No	
Reference Time (s)	0.0	32.9	0.0	4.9	17.5		2.7
Adj Reference Time (s)	11.5	39.4	0.0	10.4	24.0		12.0
Permitted Option							
Adj Saturation A (vph)	117	1897		117	1942	117	
Reference Time A (s)	0.0	32.9		73.1	17.5	46.3	
Adj Saturation B (vph)	NA	NA		NA	NA	NA	
Reference Time B (s)	NA	NA		NA	NA	NA	
Reference Time (s)		32.9			73.1		
Adj Reference Time (s)		39.4			79.6		
Split Option							
Ref Time Combined (s)	0.0	32.9		4.9	17.5	3.1	
Ref Time Seperate (s)	0.0	27.8		4.9	17.5	3.1	
Reference Time (s)	32.9	32.9		17.5	17.5	3.1	
Adj Reference Time (s)	39.4	39.4		24.0	24.0	12.0	
Summary							
	EB WB		NB		Combined		
Protected Option (s)	49.8		NA				
Permitted Option (s)	79.6		Err				
Split Option (s)	63.4		12.0				
Minimum (s)	49.8		12.0		61.8		
Right Turns							
	NBR						
Adj Reference Time (s)	12.0						
Cross Thru Ref Time (s)	39.4						
Oncoming Left Ref Time (s)	0.0						
Combined (s)	51.4						

Intersection Summary

Intersection Capacity Utilization 51.5% ICU Level of Service A
Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
11: Legoland Dr

Existing Conditions
AM Peak Hour

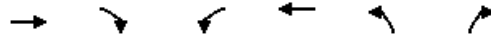
	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↘↗	↑↑	↘↗	↗
Volume (vph)	544	369	254	602	34	30
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right	No			No		
Ideal Flow	2040	1840	1840	2040	1840	1840
Lost Time (s)	6.0	5.0	5.0	6.0	5.0	5.0
Minimum Green (s)	10.0	4.0	4.0	10.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	544	369	254	602	34	30
Lane Utilization Factor	0.95	1.00	0.97	0.95	0.97	1.00
Turning Factor (vph)	1.00	0.85	0.95	1.00	0.95	0.85
Saturated Flow (vph)	3884	1564	3395	3884	3395	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00		
Protected Option Allowed	Yes			Yes	No	
Reference Time (s)	16.8	28.3	9.0	18.6	2.3	
Adj Reference Time (s)	22.8	33.3	14.0	24.6	9.0	
Permitted Option						
Adj Saturation A (vph)	1942		113	1942	113	
Reference Time A (s)	16.8		134.7	18.6	18.0	
Adj Saturation B (vph)	NA		NA	NA	NA	
Reference Time B (s)	NA		NA	NA	NA	
Reference Time (s)	16.8		134.7			
Adj Reference Time (s)	22.8		140.7			
Split Option						
Ref Time Combined (s)	16.8		9.0	18.6	1.2	
Ref Time Seperate (s)	16.8		9.0	18.6	1.2	
Reference Time (s)	16.8		18.6	18.6	1.2	
Adj Reference Time (s)	22.8		24.6	24.6	9.0	
Summary						
	EB WB		NB	Combined		
Protected Option (s)	36.8		NA			
Permitted Option (s)	140.7		Err			
Split Option (s)	47.4		9.0			
Minimum (s)	36.8		9.0	45.8		
Right Turns						
	EBR	NBR				
Adj Reference Time (s)	33.3	9.0				
Cross Thru Ref Time (s)	0.0	22.8				
Oncoming Left Ref Time (s)	14.0	0.0				
Combined (s)	47.3	31.8				

Intersection Summary

Intersection Capacity Utilization 39.4% ICU Level of Service A
 Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
12: Marriott Hotel Dwy & Cannon Rd

Existing Conditions
AM Peak Hour























Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Volume (vph)	499	75	54	823	33	43
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No			No	
Ideal Flow	2040	1840	1840	2040	1840	1840
Lost Time (s)	6.0	5.5	5.0	6.0	5.5	5.5
Minimum Green (s)	10.0	5.0	4.0	10.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	499	75	54	823	33	43
Lane Utilization Factor	0.95	1.00	1.00	0.95	1.00	1.00
Turning Factor (vph)	1.00	0.85	0.95	1.00	0.95	0.85
Saturated Flow (vph)	3884	1564	1748	3884	1748	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00	0.00	
Protected Option Allowed	Yes			Yes	No	
Reference Time (s)	15.4	5.8	3.7	25.4		3.3
Adj Reference Time (s)	21.4	11.3	9.0	31.4		10.5
Permitted Option						
Adj Saturation A (vph)	1942		117	1942	117	
Reference Time A (s)	15.4		55.6	25.4	34.0	
Adj Saturation B (vph)	NA		NA	NA	NA	
Reference Time B (s)	NA		NA	NA	NA	
Reference Time (s)	15.4			55.6		
Adj Reference Time (s)	21.4			61.6		
Split Option						
Ref Time Combined (s)	15.4		3.7	25.4	2.3	
Ref Time Seperate (s)	15.4		3.7	25.4	2.3	
Reference Time (s)	15.4		25.4	25.4	2.3	
Adj Reference Time (s)	21.4		31.4	31.4	10.5	
Summary	EB WB		NB		Combined	
Protected Option (s)	31.4		NA			
Permitted Option (s)	61.6		Err			
Split Option (s)	52.8		10.5			
Minimum (s)	31.4		10.5		41.9	
Right Turns	EBR	NBR				
Adj Reference Time (s)	11.3	10.5				
Cross Thru Ref Time (s)	0.0	21.4				
Oncoming Left Ref Time (s)	9.0	0.0				
Combined (s)	20.3	31.9				

Intersection Summary

Intersection Capacity Utilization 34.9% ICU Level of Service A
Reference Times and Phasing Options do not represent an optimized timing plan.





















Intersection Capacity Utilization
13: Faraday Ave & Cannon Rd

Existing Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	159	378	35	720	7	155	2	11	1	1	2
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1840	2040	1800	1840	2040	1800	1840	2040	1800	1800	2040	1800
Lost Time (s)	6.0	6.0	4.0	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Minimum Green (s)	4.0	6.0	4.0	4.0	10.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	5	537	0	35	727	0	0	168	0	0	4	0
Lane Utilization Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.89	0.85	0.95	1.00	0.85	0.95	0.94	0.85	0.95	0.91	0.85
Saturated Flow (vph)	1748	3474	0	1748	3879	0	0	3854	0	0	1863	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			No			No	
Reference Time (s)	0.3	18.5	0.0	2.4	22.5	0.0			0.0			0.0
Adj Reference Time (s)	10.0	24.5	0.0	10.0	28.5	0.0			0.0			0.0
Permitted Option												
Adj Saturation A (vph)	117	1737		117	1939		0	1300		0	385	
Reference Time A (s)	5.1	18.5		36.0	22.5		0.0	15.5		0.0	1.2	
Adj Saturation B (vph)	NA	NA		NA	NA		0	0		0	0	
Reference Time B (s)	NA	NA		NA	NA		13.3	13.2		8.1	8.3	
Reference Time (s)		18.5			36.0			13.3			1.2	
Adj Reference Time (s)		24.5			42.0			18.3			10.0	
Split Option												
Ref Time Combined (s)	0.3	18.5		2.4	22.5		0.0	5.2		0.0	0.3	
Ref Time Seperate (s)	0.3	5.5		2.4	22.3		5.3	0.1		0.1	0.1	
Reference Time (s)	18.5	18.5		22.5	22.5		5.3	5.3		0.3	0.3	
Adj Reference Time (s)	24.5	24.5		28.5	28.5		10.3	10.3		10.0	10.0	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	38.5		NA									
Permitted Option (s)	42.0		18.3									
Split Option (s)	53.0		20.3									
Minimum (s)	38.5		18.3		56.8							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization			47.3%		ICU Level of Service		A					
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization
14: El Camino Real & Cannon Rd

Existing Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	38	77	80	917	458	33	2	59	369	143	3	14
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No					
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	4.2	6.0	4.0	4.2	6.0	4.0	4.2	4.2	6.0	6.0	4.2	4.2
Minimum Green (s)	4.0	6.0	4.0	4.0	4.0	4.0	4.0	4.0	8.0	8.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	38	157	0	917	491	0	0	61	369	143	0	17
Lane Utilization Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	1.00	0.95	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.92	0.85	0.95	0.99	0.85	0.95	0.95	1.00	0.85	0.95	0.95
Saturated Flow (vph)	4612	4396	0	4612	4712	0	0	2375	4760	2125	0	2375
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00						
Protected Option Allowed	Yes			Yes			Yes					
Reference Time (s)	1.0	4.3	0.0	23.9	12.5	0.0	0.0	3.1	9.3	8.1	0.0	0.9
Adj Reference Time (s)	8.2	12.0	0.0	28.1	18.5	0.0	0.0	8.2	15.3	14.1	0.0	8.2
Permitted Option												
Adj Saturation A (vph)	154	2198		154	2356		0	158	2380		0	158
Reference Time A (s)	14.8	4.3		357.9	12.5		0.0	46.2	9.3		0.0	12.9
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA	NA		NA	NA
Reference Time B (s)	NA	NA		NA	NA		NA	NA	NA		NA	NA
Reference Time (s)		14.8			357.9				46.2			
Adj Reference Time (s)		20.8			363.9				52.2			
Split Option												
Ref Time Combined (s)	1.0	4.3		23.9	12.5		0.0	3.1	9.3		0.0	0.9
Ref Time Separate (s)	1.0	2.1		23.9	11.7		0.1	3.0	9.3		0.2	0.7
Reference Time (s)	4.3	4.3		23.9	23.9		9.3	9.3	9.3		26.9	26.9
Adj Reference Time (s)	12.0	12.0		29.9	29.9		15.3	15.3	15.3		32.9	32.9
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	40.1		41.1									
Permitted Option (s)	363.9		52.2									
Split Option (s)	41.9		48.2									
Minimum (s)	40.1		41.1		81.1							
Right Turns												
	NBR		SBR									
Adj Reference Time (s)	14.1		18.0									
Cross Thru Ref Time (s)	40.1		18.5									
Oncoming Left Ref Time (s)	8.2		8.2									
Combined (s)	62.3		44.7									

Intersection Summary

Intersection Capacity Utilization 67.6% ICU Level of Service C
Reference Times and Phasing Options do not represent an optimized timing plan.






















Intersection Capacity Utilization
 14: El Camino Real & Cannon Rd

Existing Conditions
 AM Peak Hour

Movement	SBT	SBR
Lane Configurations	↑↑↑	↑
Volume (vph)	1526	245
Pedestrians		
Ped Button		
Pedestrian Timing (s)		
Free Right		No
Ideal Flow	2500	2500
Lost Time (s)	6.0	4.2
Minimum Green (s)	8.0	4.0
Refr Cycle Length (s)	120	120
Volume Combined (vph)	1526	245
Lane Utilization Factor	0.91	1.00
Turning Factor (vph)	1.00	0.85
Saturated Flow (vph)	6810	2125
Ped Intf Time (s)	0.0	0.0
Pedestrian Frequency (%)	0.00	
Protected Option Allowed	Yes	
Reference Time (s)	26.9	13.8
Adj Reference Time (s)	32.9	18.0
Permitted Option		
Adj Saturation A (vph)	2270	
Reference Time A (s)	26.9	
Adj Saturation B (vph)	NA	
Reference Time B (s)	NA	
Reference Time (s)	26.9	
Adj Reference Time (s)	32.9	
Split Option		
Ref Time Combined (s)	26.9	
Ref Time Seperate (s)	26.9	
Reference Time (s)	26.9	
Adj Reference Time (s)	32.9	
Summary		





















Intersection Capacity Utilization
15: Paseo Del Norte & Car Country Dr

Existing Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	5	0	56	5	42	1	141	94	48	180	30
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1840	2040	1800	1840	2040	1800	1840	2040	1800	1840	2040	1800
Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.0	6.0	4.0	5.0	6.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	15.0	4.0	4.0	15.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	10	5	0	56	47	0	1	235	0	48	210	0
Lane Utilization 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
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.87	0.85	0.95	0.94	0.85	0.95	0.98	0.85
Saturated Flow (vph)	1748	2040	0	1748	1767	0	1748	3651	0	1748	3801	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00			0.00			
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	0.7	0.3	0.0	3.8	3.2	0.0	0.1	7.7	0.0	3.3	6.6	0.0
Adj Reference Time (s)	9.5	9.5	0.0	9.5	9.5	0.0	9.0	21.0	0.0	9.0	21.0	0.0
Permitted Option												
Adj Saturation A (vph)	117	2040		117	1767		117	1826		117	1900	
Reference Time A (s)	10.3	0.3		57.7	3.2		1.0	7.7		49.4	6.6	
Adj Saturation B (vph)	0	2040		0	1767		NA	NA		NA	NA	
Reference Time B (s)	8.7	0.3		11.8	3.2		NA	NA		NA	NA	
Reference Time (s)	8.7		11.8			7.7			49.4			
Adj Reference Time (s)	14.2		17.3			21.0			55.4			
Split Option												
Ref Time Combined (s)	0.7	0.3		3.8	3.2		0.1	7.7		3.3	6.6	
Ref Time Seperate (s)	0.7	0.3		3.8	0.3		0.1	4.6		3.3	5.7	
Reference Time (s)	0.7	0.7		3.8	3.8		7.7	7.7		6.6	6.6	
Adj Reference Time (s)	9.5	9.5		9.5	9.5		21.0	21.0		21.0	21.0	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	19.0		30.0									
Permitted Option (s)	17.3		55.4									
Split Option (s)	19.0		42.0									
Minimum (s)	17.3		30.0		47.3							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization	39.5%		ICU Level of Service						A			
Reference Times and Phasing Options do not represent an optimized timing plan.												




















Intersection Capacity Utilization
16: Paseo Del Norte & Outlet Dwy

Existing Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	2	12	2	2	9	21	225	5	34	194	8
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1840	2040	1800	1800	2040	1800	1840	2040	1800	1840	2040	1800
Lost Time (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	8.0	4.0	4.0	8.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	2	14	0	0	13	0	21	230	0	34	202	0
Lane Utilization 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
Turning Factor (vph)	0.95	0.87	0.85	0.95	0.89	0.85	0.95	1.00	0.85	0.95	0.99	0.85
Saturated Flow (vph)	1748	1778	0	0	1814	0	1748	3871	0	1748	3861	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00		0.00		0.00		0.00		0.00	
Protected Option Allowed	No			No			Yes			Yes		
Reference Time (s)	0.0			0.0			1.4	7.1	0.0	2.3	6.3	0.0
Adj Reference Time (s)	0.0			0.0			9.0	13.0	0.0	9.0	13.0	0.0
Permitted Option												
Adj Saturation A (vph)	385	1778	0		548	117		1936	117		1931	
Reference Time A (s)	0.6	0.9	0.0		2.8	21.6		7.1	35.0		6.3	
Adj Saturation B (vph)	0	1778	0		0	NA		NA	NA		NA	
Reference Time B (s)	8.1	0.9	8.1		8.9	NA		NA	NA		NA	
Reference Time (s)	0.9		2.8		21.6		35.0					
Adj Reference Time (s)	9.0		9.0		26.6		40.0					
Split Option												
Ref Time Combined (s)	0.1	0.9	0.0		0.9	1.4		7.1	2.3		6.3	
Ref Time Seperate (s)	0.1	0.1	0.1		0.1	1.4		7.0	2.3		6.0	
Reference Time (s)	0.9	0.9	0.9		0.9	7.1		7.1	6.3		6.3	
Adj Reference Time (s)	9.0	9.0	9.0		9.0	13.0		13.0	13.0		13.0	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	NA		22.0									
Permitted Option (s)	9.0		40.0									
Split Option (s)	18.0		26.0									
Minimum (s)	9.0		22.0		31.0							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization	25.8%		ICU Level of Service		A							
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization
17: Faraday Ave & College Blvd

Existing Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	154	285	86	1	182	191	158	36	171	67	1	97
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No				No			No		
Ideal Flow	1840	2040	1800	1800	1840	2040	1800	1840	2040	1800	1800	1840
Lost Time (s)	4.5	6.0	4.0	4.5	4.5	6.0	4.0	4.5	5.0	4.0	4.5	4.5
Minimum Green (s)	4.0	7.0	4.0	4.0	4.0	7.0	4.0	5.0	6.0	4.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	154	371	0	0	183	349	0	36	238	0	0	98
Lane Utilization Factor	0.97	0.95	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.97	0.85	0.95	0.95	0.93	0.85	0.95	0.96	0.85	0.95	0.95
Saturated Flow (vph)	3395	3749	0	0	3395	3620	0	1748	3720	0	0	1748
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00				0.00			0.00			
Protected Option Allowed		Yes				Yes			Yes			
Reference Time (s)	5.4	11.9	0.0	0.0	6.5	11.6	0.0	2.5	7.7	0.0	0.0	6.7
Adj Reference Time (s)	9.9	17.9	0.0	0.0	11.0	17.6	0.0	9.5	12.7	0.0	0.0	11.2
Permitted Option												
Adj Saturation A (vph)	113	1875		0	113	1810		117	1860		0	117
Reference Time A (s)	81.7	11.9		0.0	97.0	11.6		37.1	7.7		0.0	100.9
Adj Saturation B (vph)	NA	NA		NA	NA	NA		NA	NA		NA	NA
Reference Time B (s)	NA	NA		NA	NA	NA		NA	NA		NA	NA
Reference Time (s)		81.7				97.0			37.1			
Adj Reference Time (s)		87.7				103.0			42.1			
Split Option												
Ref Time Combined (s)	5.4	11.9		0.0	6.5	11.6		2.5	7.7		0.0	6.7
Ref Time Separate (s)	5.4	9.1		0.1	6.4	6.3		2.5	5.5		0.1	6.7
Reference Time (s)	11.9	11.9		11.6	11.6	11.6		7.7	7.7		8.9	8.9
Adj Reference Time (s)	17.9	17.9		17.6	17.6	17.6		12.7	12.7		13.9	13.9
Summary	EB WB		NB SB		Combined							
Protected Option (s)	28.8		23.9									
Permitted Option (s)	103.0		105.9									
Split Option (s)	35.4		26.6									
Minimum (s)	28.8		23.9		52.7							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization			44.0%		ICU Level of Service				A			
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization
17: Faraday Ave & College Blvd

Existing Conditions
AM Peak Hour

Movement	SBT	SBR
Land Configurations	↑↓	↔
Volume (vph)	264	22
Pedestrians		
Ped Button		
Pedestrian Timing (s)		
Free Right		No
Ideal Flow	2040	1800
Lost Time (s)	5.0	4.0
Minimum Green (s)	6.0	4.0
Refr Cycle Length (s)	120	120
Volume Combined (vph)	286	0
Lane Utilization Factor	0.95	1.00
Turning Factor (vph)	0.99	0.85
Saturated Flow (vph)	3839	0
Ped Intf Time (s)	0.0	0.0
Pedestrian Frequency (%)	0.00	
Protected Option Allowed	Yes	
Reference Time (s)	8.9	0.0
Adj Reference Time (s)	13.9	0.0
Permitted Option		
Adj Saturation A (vph)	1920	
Reference Time A (s)	8.9	
Adj Saturation B (vph)	NA	
Reference Time B (s)	NA	
Reference Time (s)	100.9	
Adj Reference Time (s)	105.9	
Split Option		
Ref Time Combined (s)	8.9	
Ref Time Seperate (s)	8.3	
Reference Time (s)	8.9	
Adj Reference Time (s)	13.9	
Summary		

Intersection Capacity Utilization
18: El Camino Real & College Blvd

Existing Conditions
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	105	15	12	41	33	38	71	71	549	24	27	2098
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	5.0	6.5	4.0	5.0	6.5	4.0	5.0	5.0	6.0	6.0	5.0	6.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	8.0	8.0	4.0	8.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	105	27	0	41	71	0	0	142	549	24	27	2098
Lane Utilization Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	1.00	0.91	1.00	1.00	0.91
Turning Factor (vph)	0.95	0.93	0.85	0.95	0.92	0.85	0.95	0.95	1.00	0.85	0.95	1.00
Saturated Flow (vph)	4612	4443	0	4612	4378	0	0	2375	6810	2125	2375	6810
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00		0.00		0.00		0.00		0.00	
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	2.7	0.7	0.0	1.1	1.9	0.0	0.0	7.2	9.7	1.4	1.4	37.0
Adj Reference Time (s)	9.0	10.5	0.0	9.0	10.5	0.0	0.0	12.2	15.7	14.0	9.0	43.0
Permitted Option												
Adj Saturation A (vph)	154	2221		154	2189		0	158	2270		158	2270
Reference Time A (s)	41.0	0.7		16.0	1.9		0.0	107.6	9.7		20.5	37.0
Adj Saturation B (vph)	0	4443		0	4378		NA	NA	NA		NA	NA
Reference Time B (s)	10.7	0.7		9.1	1.9		NA	NA	NA		NA	NA
Reference Time (s)		10.7			9.1				107.6			37.0
Adj Reference Time (s)		17.2			15.6				113.6			43.0
Split Option												
Ref Time Combined (s)	2.7	0.7		1.1	1.9		0.0	7.2	9.7		1.4	37.0
Ref Time Separate (s)	2.7	0.4		1.1	0.9		3.6	3.6	9.7		1.4	37.0
Reference Time (s)	2.7	2.7		1.9	1.9		9.7	9.7	9.7		37.0	37.0
Adj Reference Time (s)	10.5	10.5		10.5	10.5		15.7	15.7	15.7		43.0	43.0
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	19.5		55.1									
Permitted Option (s)	17.2		113.6									
Split Option (s)	21.0		58.6									
Minimum (s)	17.2		55.1		72.4							
Right Turns												
	NBR		SBR									
Adj Reference Time (s)	14.0		37.3									
Cross Thru Ref Time (s)	10.5		10.5									
Oncoming Left Ref Time (s)	9.0		12.2									
Combined (s)	33.5		60.0									

Intersection Summary

Intersection Capacity Utilization 60.3% ICU Level of Service B
Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
 18: El Camino Real & College Blvd

Existing Conditions
 AM Peak Hour



Movement	SBR
Lane Configurations	T
Volume (vph)	555
Pedestrians	
Ped Button	
Pedestrian Timing (s)	
Free Right	No
Ideal Flow	2500
Lost Time (s)	6.0
Minimum Green (s)	8.0
Refr Cycle Length (s)	120
Volume Combined (vph)	555
Lane Utilization Factor	1.00
Turning Factor (vph)	0.85
Saturated Flow (vph)	2125
Ped Intf Time (s)	0.0
Pedestrian Frequency (%)	
Protected Option Allowed	
Reference Time (s)	31.3
Adj Reference Time (s)	37.3
Permitted Option	
Adj Saturation A (vph)	
Reference Time A (s)	
Adj Saturation B (vph)	
Reference Time B (s)	
Reference Time (s)	
Adj Reference Time (s)	
Split Option	
Ref Time Combined (s)	
Ref Time Seperate (s)	
Reference Time (s)	
Adj Reference Time (s)	
Summary	

Intersection Capacity Utilization
19: El Camino Real & Faraday Ave

Existing Conditions
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	31	139	73	114	626	170	6	703	611	98	27	413
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No					
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	4.9	4.9	4.9	5.0	5.0	5.0	4.2	4.2	6.0	4.0	4.2	4.2
Minimum Green (s)	4.0	4.0	4.0	6.0	6.0	6.0	4.0	4.0	6.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	31	163	49	114	626	170	0	709	709	0	0	440
Lane Utilization Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.97	0.91	1.00	1.00	0.97
Turning Factor (vph)	0.95	0.98	0.85	0.95	1.00	0.85	0.95	0.95	0.98	0.85	0.95	0.95
Saturated Flow (vph)	2375	4654	2125	2375	4760	2125	0	4612	6669	0	0	4612
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00				0.00				0.00			
Protected Option Allowed	Yes			Yes			Yes					
Reference Time (s)	1.6	4.2	2.7	5.8	15.8	9.6	0.0	18.4	12.8	0.0	0.0	11.4
Adj Reference Time (s)	8.9	9.1	8.9	11.0	20.8	14.6	0.0	22.6	18.8	0.0	0.0	15.6
Permitted Option												
Adj Saturation A (vph)	158	2327		158	2380		0	154	2223		0	154
Reference Time A (s)	23.5	4.2		86.4	15.8		0.0	276.7	12.8		0.0	171.7
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA	NA		NA	NA
Reference Time B (s)	NA	NA		NA	NA		NA	NA	NA		NA	NA
Reference Time (s)		23.5			86.4				276.7			
Adj Reference Time (s)		28.4			91.4				282.7			
Split Option												
Ref Time Combined (s)	1.6	4.2		5.8	15.8		0.0	18.4	12.8		0.0	11.4
Ref Time Seperate (s)	1.6	3.6		5.8	15.8		0.3	18.3	11.0		1.4	10.7
Reference Time (s)	4.2	4.2		15.8	15.8		18.4	18.4	18.4		21.3	21.3
Adj Reference Time (s)	9.1	9.1		20.8	20.8		24.4	24.4	24.4		27.3	27.3
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	29.7		49.9									
Permitted Option (s)	91.4		282.7									
Split Option (s)	29.9		51.7									
Minimum (s)	29.7		49.9		79.6							
Right Turns												
	EBR	WBR	SBR									
Adj Reference Time (s)	8.9	14.6	18.4									
Cross Thru Ref Time (s)	49.9	34.4	20.8									
Oncoming Left Ref Time (s)	11.0	8.9	22.6									
Combined (s)	69.8	57.9	61.9									

Intersection Summary
 Intersection Capacity Utilization 66.3% ICU Level of Service C
 Reference Times and Phasing Options do not represent an optimized timing plan.
























Intersection Capacity Utilization
 19: El Camino Real & Faraday Ave

Existing Conditions
 AM Peak Hour

Movement	SBT	SBR
Label Configurations	↑↑↑	↑
Volume (vph)	1206	220
Pedestrians		
Ped Button		
Pedestrian Timing (s)		
Free Right		No
Ideal Flow	2500	2500
Lost Time (s)	6.0	6.0
Minimum Green (s)	6.0	6.0
Refr Cycle Length (s)	120	120
Volume Combined (vph)	1206	220
Lane Utilization Factor	0.91	1.00
Turning Factor (vph)	1.00	0.85
Saturated Flow (vph)	6810	2125
Ped Intf Time (s)	0.0	0.0
Pedestrian Frequency (%)	0.00	
Protected Option Allowed	Yes	
Reference Time (s)	21.3	12.4
Adj Reference Time (s)	27.3	18.4
Permitted Option		
Adj Saturation A (vph)	2270	
Reference Time A (s)	21.3	
Adj Saturation B (vph)	NA	
Reference Time B (s)	NA	
Reference Time (s)	171.7	
Adj Reference Time (s)	177.7	
Split Option		
Ref Time Combined (s)	21.3	
Ref Time Seperate (s)	21.3	
Reference Time (s)	21.3	
Adj Reference Time (s)	27.3	
Summary		

Intersection Capacity Utilization
20: Avenida Encinas & Palomar Airport Rd

Existing Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	204	51	350	232	309	45	64	131	118	77	26
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1840	2040	1800	1840	2040	1840	1840	2040	1840	1840	2040	1840
Lost Time (s)	4.2	5.0	4.0	4.2	5.0	5.0	4.6	4.6	4.6	4.6	4.6	4.6
Minimum Green (s)	4.0	8.0	4.0	4.0	8.0	8.0	6.0	6.0	6.0	6.0	6.0	6.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	43	255	0	350	232	309	45	64	131	0	195	26
Lane Utilization 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
Turning Factor (vph)	0.95	0.97	0.85	0.95	1.00	0.85	0.95	1.00	0.85	0.95	0.97	0.85
Saturated Flow (vph)	1748	1979	0	1748	2040	1564	1748	2040	1564	0	3957	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00		0.00		0.00		0.00		0.00	
Protected Option Allowed	Yes			Yes			No			No		
Reference Time (s)	3.0	15.5	0.0	24.0	13.6	23.7				10.1	2.0	
Adj Reference Time (s)	8.2	20.5	0.0	28.2	18.6	28.7				14.7	10.6	
Permitted Option												
Adj Saturation A (vph)	117	1979	117		2040	117		2040	0		385	
Reference Time A (s)	44.3	15.5	360.4		13.6	46.3		3.8	0.0		60.8	
Adj Saturation B (vph)	NA	NA	NA		NA	0		2040	0		0	
Reference Time B (s)	NA	NA	NA		NA	11.1		3.8	12.1		13.9	
Reference Time (s)	44.3		360.4		11.1		13.9					
Adj Reference Time (s)	49.3		365.4		15.7		18.5					
Split Option												
Ref Time Combined (s)	3.0	15.5	24.0		13.6	3.1		3.8	0.0		5.9	
Ref Time Separate (s)	3.0	12.4	24.0		13.6	3.1		3.8	4.1		4.5	
Reference Time (s)	15.5	15.5	24.0		24.0	3.8		3.8	5.9		5.9	
Adj Reference Time (s)	20.5	20.5	29.0		29.0	10.6		10.6	10.6		10.6	
Summary	EB WB		NB SB		Combined							
Protected Option (s)	48.7		NA									
Permitted Option (s)	365.4		18.5									
Split Option (s)	49.5		21.2									
Minimum (s)	48.7		18.5		67.2							
Right Turns	WBR	NBR	SBR									
Adj Reference Time (s)	28.7	14.7	10.6									
Cross Thru Ref Time (s)	10.6	20.5	18.6									
Oncoming Left Ref Time (s)	8.2	10.6	10.6									
Combined (s)	47.5	45.7	39.8									

Intersection Summary

Intersection Capacity Utilization 56.0% ICU Level of Service B
Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
21: I-5 SB Ramps & Palomar Airport Rd

























Existing Conditions
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑	↗				↖		↗
Volume (vph)	0	386	67	0	558	219	0	0	0	920	0	333
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			Yes			No			No		
Ideal Flow	1800	2040	1800	1800	2040	1840	1800	2000	1800	1840	2000	1840
Lost Time (s)	4.0	5.0	4.0	4.0	5.0	4.0	4.0	4.0	4.0	4.6	4.0	4.6
Minimum Green (s)	4.0	4.0	4.0	4.0	8.0	4.0	4.0	4.0	4.0	5.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	0	453	0	0	558	219	0	0	0	920	0	333
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Turning Factor (vph)	0.95	0.98	0.85	0.95	1.00	0.85	0.95	1.00	0.85	0.95	1.00	0.85
Saturated Flow (vph)	0	5434	0	0	3884	1564	0	0	0	3395	0	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00				0.00				0.00			
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	0.0	10.0	0.0	0.0	17.2	16.8	0.0	0.0	0.0	32.5	0.0	25.5
Adj Reference Time (s)	0.0	15.0	0.0	0.0	22.2	20.8	0.0	0.0	0.0	37.1	0.0	30.1
Permitted Option												
Adj Saturation A (vph)	0	1811		0	1942		0	0		113	0	
Reference Time A (s)	0.0	10.0		0.0	17.2		0.0	0.0		487.8	0.0	
Adj Saturation B (vph)	NA	NA		NA	NA		0	0		0	0	
Reference Time B (s)	NA	NA		NA	NA		0.0	0.0		40.5	0.0	
Reference Time (s)		10.0			17.2			0.0			40.5	
Adj Reference Time (s)		15.0			22.2			8.0			44.5	
Split Option												
Ref Time Combined (s)	0.0	10.0		0.0	17.2		0.0	0.0		32.5	0.0	
Ref Time Separate (s)	0.0	8.5		0.0	17.2		0.0	0.0		32.5	0.0	
Reference Time (s)	10.0	10.0		17.2	17.2		0.0	0.0		32.5	32.5	
Adj Reference Time (s)	15.0	15.0		22.2	22.2		0.0	0.0		36.5	36.5	
Summary	EB WB		NB SB		Combined							
Protected Option (s)	22.2		37.1									
Permitted Option (s)	22.2		44.5									
Split Option (s)	37.2		36.5									
Minimum (s)	22.2		36.5		58.8							
Right Turns	WBR		SBR									
Adj Reference Time (s)	20.8		30.1									
Cross Thru Ref Time (s)	0.0		22.2									
Oncoming Left Ref Time (s)	0.0		0.0									
Combined (s)	20.8		52.4									

Intersection Summary
 Intersection Capacity Utilization 49.0% ICU Level of Service A
 Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
22: I-5 NB Ramps & Palomar Airport Rd

Existing Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  	 			 			
Volume (vph)	122	1184	0	0	617	484	160	3	1263	0	0	0
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1840	2040	1800	1800	2040	1840	1800	2040	1840	1800	2000	1800
Lost Time (s)	4.2	4.6	4.0	4.0	4.6	4.6	4.6	4.6	4.6	4.0	4.0	4.0
Minimum Green (s)	5.0	8.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	122	1184	0	0	617	484	0	163	1263	0	0	0
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	0.89	1.00	1.00	0.89	1.00	1.00	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	1.00	0.85	0.95	0.95	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1748	5557	0	0	5557	2768	0	1940	2768	0	0	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00			0.00			
Protected Option Allowed	Yes			Yes			No			No		
Reference Time (s)	8.4	25.6	0.0	0.0	13.3	21.0			54.7			0.0
Adj Reference Time (s)	12.6	30.2	0.0	0.0	17.9	25.6			59.3			0.0
Permitted Option												
Adj Saturation A (vph)	117	1852		0	1852		0	131		0	0	
Reference Time A (s)	125.6	25.6		0.0	13.3		0.0	149.5		0.0	0.0	
Adj Saturation B (vph)	NA	NA		NA	NA		0	0		0	0	
Reference Time B (s)	NA	NA		NA	NA		19.2	18.1		0.0	0.0	
Reference Time (s)		125.6			13.3			19.2			0.0	
Adj Reference Time (s)		130.2			17.9			23.8			8.0	
Split Option												
Ref Time Combined (s)	8.4	25.6		0.0	13.3		0.0	10.1		0.0	0.0	
Ref Time Seperate (s)	8.4	25.6		0.0	13.3		11.2	0.2		0.0	0.0	
Reference Time (s)	25.6	25.6		13.3	13.3		11.2	11.2		0.0	0.0	
Adj Reference Time (s)	30.2	30.2		17.9	17.9		15.8	15.8		0.0	0.0	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	30.5		NA									
Permitted Option (s)	130.2		23.8									
Split Option (s)	48.1		15.8									
Minimum (s)	30.5		15.8		46.3							
Right Turns												
	WBR		NBR									
Adj Reference Time (s)	25.6		59.3									
Cross Thru Ref Time (s)	15.8		30.2									
Oncoming Left Ref Time (s)	12.6		0.0									
Combined (s)	54.0		89.5									
Intersection Summary												
Intersection Capacity Utilization			74.6%		ICU Level of Service				D			
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization
23: Paseo Del Norte & Palomar Airport Rd

Existing Conditions
AM Peak Hour

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (vph)	2	150	2166	129	4	101	813	177	179	74	143	106
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right				No				No			No	
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	4.2	4.2	6.0	4.0	4.2	4.2	6.0	4.2	4.2	5.0	4.0	4.2
Minimum Green (s)	4.0	4.0	8.0	4.0	4.0	4.0	8.0	4.0	4.0	6.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	0	152	2295	0	0	105	813	177	179	217	0	106
Lane Utilization Factor	1.00	0.97	0.91	1.00	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97
Turning Factor (vph)	0.95	0.95	0.99	0.85	0.95	0.95	1.00	0.85	0.95	0.90	0.85	0.95
Saturated Flow (vph)	0	4612	6753	0	0	4612	9080	2125	4612	4289	0	4612
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)			0.00				0.00			0.00		
Protected Option Allowed			Yes				Yes			Yes		
Reference Time (s)	0.0	4.0	40.8	0.0	0.0	2.7	10.7	10.0	4.7	6.1	0.0	2.8
Adj Reference Time (s)	0.0	8.2	46.8	0.0	0.0	8.2	16.7	14.2	8.9	11.1	0.0	8.2
Permitted Option												
Adj Saturation A (vph)	0	154	2251		0	154	2270		154	2145		154
Reference Time A (s)	0.0	59.3	40.8		0.0	41.0	10.7		69.9	6.1		41.4
Adj Saturation B (vph)	NA	NA	NA		NA	NA	NA		NA	NA		NA
Reference Time B (s)	NA	NA	NA		NA	NA	NA		NA	NA		NA
Reference Time (s)			59.3				41.0			69.9		
Adj Reference Time (s)			65.3				47.0			74.9		
Split Option												
Ref Time Combined (s)	0.0	4.0	40.8		0.0	2.7	10.7		4.7	6.1		2.8
Ref Time Seperate (s)	0.1	3.9	38.5		0.2	2.6	10.7		4.7	2.1		2.8
Reference Time (s)	40.8	40.8	40.8		10.7	10.7	10.7		6.1	6.1		4.3
Adj Reference Time (s)	46.8	46.8	46.8		16.7	16.7	16.7		11.1	11.1		11.0
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	55.0		19.9									
Permitted Option (s)	65.3		74.9									
Split Option (s)	63.5		22.1									
Minimum (s)	55.0		19.9		74.8							
Right Turns												
	WBR											
Adj Reference Time (s)	14.2											
Cross Thru Ref Time (s)	11.1											
Oncoming Left Ref Time (s)	8.2											
Combined (s)	33.5											

Intersection Summary
 Intersection Capacity Utilization 62.4% ICU Level of Service B
 Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
 23: Paseo Del Norte & Palomar Airport Rd






















Existing Conditions
 AM Peak Hour



Movement	SBT	SBR
Lane Configurations	↑↑	↘
Volume (vph)	47	107
Pedestrians		
Ped Button		
Pedestrian Timing (s)		
Free Right		No
Ideal Flow	2500	2500
Lost Time (s)	5.0	4.0
Minimum Green (s)	6.0	4.0
Refr Cycle Length (s)	120	120
Volume Combined (vph)	154	0
Lane Utilization Factor	0.95	1.00
Turning Factor (vph)	0.90	0.85
Saturated Flow (vph)	4264	0
Ped Intf Time (s)	0.0	0.0
Pedestrian Frequency (%)	0.00	
Protected Option Allowed	Yes	
Reference Time (s)	4.3	0.0
Adj Reference Time (s)	11.0	0.0
Permitted Option		
Adj Saturation A (vph)	2132	
Reference Time A (s)	4.3	
Adj Saturation B (vph)	NA	
Reference Time B (s)	NA	
Reference Time (s)	41.4	
Adj Reference Time (s)	46.4	
Split Option		
Ref Time Combined (s)	4.3	
Ref Time Seperate (s)	1.3	
Reference Time (s)	4.3	
Adj Reference Time (s)	11.0	
Summary		

Intersection Capacity Utilization
24: Armada Dr & Palomar Airport Rd

Existing Conditions
AM Peak Hour

													
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	
Lane Configurations													
Volume (vph)	9	168	2142	146	2	102	969	116	112	31	64	75	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right				No						No			
Ideal Flow	1800	1840	2040	1840	1800	1840	2040	1840	1840	2040	1840	1840	
Lost Time (s)	4.2	4.2	6.0	4.7	4.2	4.2	6.0	5.0	4.7	4.7	4.7	5.0	
Minimum Green (s)	4.0	4.0	8.0	4.0	4.0	4.0	8.0	4.0	4.0	6.0	6.0	4.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	0	177	2142	146	0	104	969	116	112	52	43	75	
Lane Utilization Factor	1.00	0.97	0.91	1.00	1.00	1.00	0.91	1.00	0.97	1.00	1.00	0.97	
Turning Factor (vph)	0.95	0.95	1.00	0.85	0.95	0.95	1.00	0.85	0.95	0.94	0.85	0.95	
Saturated Flow (vph)	0	3395	5557	1564	0	1748	5557	1564	3395	1915	1564	3395	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)	0.00			0.00					0.00				
Protected Option Allowed	Yes			Yes					Yes				
Reference Time (s)	0.0	6.3	46.3	11.2	0.0	7.1	20.9	8.9	4.0	3.3	3.3	2.7	
Adj Reference Time (s)	0.0	10.5	52.3	15.9	0.0	11.3	26.9	13.9	8.7	10.7	10.7	9.0	
Permitted Option													
Adj Saturation A (vph)	0	113	1852		0	117	1852		113	1915		113	
Reference Time A (s)	0.0	93.9	46.3		0.0	107.1	20.9		59.4	3.3		39.8	
Adj Saturation B (vph)	NA	NA	NA		NA	NA	NA		0	1915		0	
Reference Time B (s)	NA	NA	NA		NA	NA	NA		12.0	3.3		10.7	
Reference Time (s)	93.9			107.1					12.0				
Adj Reference Time (s)	99.9			113.1					16.7				
Split Option													
Ref Time Combined (s)	0.0	6.3	46.3		0.0	7.1	20.9		4.0	3.3		2.7	
Ref Time Seperate (s)	0.6	5.9	46.3		0.1	7.0	20.9		4.0	1.9		2.7	
Reference Time (s)	46.3	46.3	46.3		20.9	20.9	20.9		4.0	4.0		2.7	
Adj Reference Time (s)	52.3	52.3	52.3		26.9	26.9	26.9		10.7	10.7		10.7	
Summary	EB WB		NB SB		Combined								
Protected Option (s)	63.6		19.7										
Permitted Option (s)	113.1		16.7										
Split Option (s)	79.2		21.4										
Minimum (s)	63.6		16.7		80.3								
Right Turns	EBR	WBR	NBR	SBR									
Adj Reference Time (s)	15.9	13.9	10.7	10.7									
Cross Thru Ref Time (s)	10.7	10.7	63.6	37.4									
Oncoming Left Ref Time (s)	11.3	10.5	9.0	8.7									
Combined (s)	37.9	35.1	83.3	56.8									
Intersection Summary													
Intersection Capacity Utilization	69.4%			ICU Level of Service					C				
Reference Times and Phasing Options do not represent an optimized timing plan.													

Intersection Capacity Utilization
 24: Armada Dr & Palomar Airport Rd

Existing Conditions
 AM Peak Hour

Movement	SBT	SBR
↓ ↘		
Lane Configurations	↑	↑
Volume (vph)	20	50
Pedestrians		
Ped Button		
Pedestrian Timing (s)		
Free Right		No
Ideal Flow	2040	1840
Lost Time (s)	4.7	4.7
Minimum Green (s)	6.0	6.0
Refr Cycle Length (s)	120	120
Volume Combined (vph)	20	50
Lane Utilization Factor	1.00	1.00
Turning Factor (vph)	1.00	0.85
Saturated Flow (vph)	2040	1564
Ped Intf Time (s)	0.0	0.0
Pedestrian Frequency (%)	0.00	
Protected Option Allowed	Yes	
Reference Time (s)	1.2	3.8
Adj Reference Time (s)	10.7	10.7
Permitted Option		
Adj Saturation A (vph)	2040	
Reference Time A (s)	1.2	
Adj Saturation B (vph)	2040	
Reference Time B (s)	1.2	
Reference Time (s)	10.7	
Adj Reference Time (s)	15.4	
Split Option		
Ref Time Combined (s)	1.2	
Ref Time Seperate (s)	1.2	
Reference Time (s)	2.7	
Adj Reference Time (s)	10.7	
Summary		

Intersection Capacity Utilization
 25: Hidden Valley Rd/The Crossing Dr & Palomar Airport Rd

Existing Conditions
 AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	2115	92	43	1041	88	97	12	91	41	4	34
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1840	2040	1840	1840	2040	1800	1840	2040	1800	1840	2040	1840
Lost Time (s)	5.0	6.0	4.2	4.2	6.0	4.0	4.2	4.7	4.0	5.0	5.7	5.7
Minimum Green (s)	4.0	8.0	4.0	4.0	8.0	4.0	4.0	6.0	4.0	4.0	6.0	6.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	76	2115	92	43	1129	0	97	103	0	41	4	34
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.99	0.85	0.95	0.87	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1748	5557	1564	1748	5492	0	1748	1770	0	1748	2040	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00			0.00			
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	5.2	45.7	7.1	3.0	24.7	0.0	6.7	7.0	0.0	2.8	0.2	2.6
Adj Reference Time (s)	10.2	51.7	11.3	8.2	30.7	0.0	10.9	11.7	0.0	9.0	11.7	11.7
Permitted Option												
Adj Saturation A (vph)	117	1852		117	1831		117	1770		117	2040	
Reference Time A (s)	78.3	45.7		44.3	24.7		99.9	7.0		42.2	0.2	
Adj Saturation B (vph)	NA	NA		NA	NA		0	1770		0	2040	
Reference Time B (s)	NA	NA		NA	NA		14.7	7.0		10.8	0.2	
Reference Time (s)		78.3			44.3			14.7			10.8	
Adj Reference Time (s)		84.3			50.3			19.4			16.5	
Split Option												
Ref Time Combined (s)	5.2	45.7		3.0	24.7		6.7	7.0		2.8	0.2	
Ref Time Separate (s)	5.2	45.7		3.0	22.7		6.7	0.8		2.8	0.2	
Reference Time (s)	45.7	45.7		24.7	24.7		7.0	7.0		2.8	2.8	
Adj Reference Time (s)	51.7	51.7		30.7	30.7		11.7	11.7		11.7	11.7	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	59.9		22.6									
Permitted Option (s)	84.3		19.4									
Split Option (s)	82.3		23.4									
Minimum (s)	59.9		19.4		79.2							
Right Turns												
	EBR		SBR									
Adj Reference Time (s)	11.3		11.7									
Cross Thru Ref Time (s)	11.7		30.7									
Oncoming Left Ref Time (s)	8.2		10.9									
Combined (s)	31.2		53.2									

Intersection Summary
 Intersection Capacity Utilization 66.0% ICU Level of Service C
 Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
26: Aviara Pkwy/College Blvd & Palomar Airport Rd

Existing Conditions
AM Peak Hour























Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	566	1553	128	1	158	794	67	216	470	228	36	109
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No				No			No		
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	4.5	6.3	6.3	4.2	4.2	6.3	6.3	4.2	5.8	5.8	4.2	6.0
Minimum Green (s)	4.0	8.0	8.0	4.0	4.0	8.0	8.0	4.0	6.0	6.0	4.0	6.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	566	1553	128	0	159	794	67	216	470	228	36	109
Lane Utilization Factor	0.97	0.91	1.00	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.95	1.00	0.85	0.95	1.00	0.85	0.95	1.00
Saturated Flow (vph)	4612	6810	2125	0	4612	6810	2125	4612	4760	2125	2375	2500
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00				0.00			0.00			0.00
Protected Option Allowed		Yes				Yes			Yes			Yes
Reference Time (s)	14.7	27.4	7.2	0.0	4.1	14.0	3.8	5.6	11.8	12.9	1.8	5.2
Adj Reference Time (s)	19.2	33.7	14.3	0.0	8.3	20.3	14.3	9.8	17.6	18.7	8.2	12.0
Permitted Option												
Adj Saturation A (vph)	154	2270		0	154	2270		154	2380		158	2500
Reference Time A (s)	220.9	27.4		0.0	62.1	14.0		84.3	11.8		27.3	5.2
Adj Saturation B (vph)	NA	NA		NA	NA	NA		0	4760		NA	NA
Reference Time B (s)	NA	NA		NA	NA	NA		13.6	11.8		NA	NA
Reference Time (s)		220.9				62.1			13.6			27.3
Adj Reference Time (s)		227.2				68.4			19.4			33.3
Split Option												
Ref Time Combined (s)	14.7	27.4		0.0	4.1	14.0		5.6	11.8		1.8	5.2
Ref Time Separate (s)	14.7	27.4		0.1	4.1	14.0		5.6	11.8		1.8	5.2
Reference Time (s)	27.4	27.4		14.0	14.0	14.0		11.8	11.8		5.2	5.2
Adj Reference Time (s)	33.7	33.7		20.3	20.3	20.3		17.6	17.6		12.0	12.0
Summary	EB WB		NB SB		Combined							
Protected Option (s)	42.0		25.8									
Permitted Option (s)	227.2		33.3									
Split Option (s)	54.0		29.6									
Minimum (s)	42.0		25.8		67.9							
Right Turns	EBR	WBR	NBR	SBR								
Adj Reference Time (s)	14.3	14.3	18.7	13.6								
Cross Thru Ref Time (s)	12.0	17.6	42.0	20.3								
Oncoming Left Ref Time (s)	8.3	19.2	8.2	9.8								
Combined (s)	34.6	51.2	68.9	43.8								
Intersection Summary												
Intersection Capacity Utilization			57.4%		ICU Level of Service				B			
Reference Times and Phasing Options do not represent an optimized timing plan.												



Movement	SBR
Lane Configurations	7
Volume (vph)	162
Pedestrians	
Ped Button	
Pedestrian Timing (s)	
Free Right	No
Ideal Flow	2500
Lost Time (s)	4.5
Minimum Green (s)	4.0
Refr Cycle Length (s)	120
Volume Combined (vph)	162
Lane Utilization Factor	1.00
Turning Factor (vph)	0.85
Saturated Flow (vph)	2125
Ped Intf Time (s)	0.0
Pedestrian Frequency (%)	
Protected Option Allowed	
Reference Time (s)	9.1
Adj Reference Time (s)	13.6
Permitted Option	
Adj Saturation A (vph)	
Reference Time A (s)	
Adj Saturation B (vph)	
Reference Time B (s)	
Reference Time (s)	
Adj Reference Time (s)	
Split Option	
Ref Time Combined (s)	
Ref Time Seperate (s)	
Reference Time (s)	
Adj Reference Time (s)	
Summary	

Intersection Capacity Utilization
27: El Camino Real & Palomar Airport Rd

Existing Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	168	818	134	543	1235	492	11	109	621	423	3	481
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	5.0	6.0	4.0	5.0	6.0	6.0	5.0	5.0	6.0	5.0	5.0	5.0
Minimum Green (s)	4.0	10.0	4.0	4.0	10.0	10.0	4.0	4.0	10.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	168	818	134	543	1235	492	0	120	621	423	0	484
Lane Utilization Factor	0.97	0.91	1.00	0.97	0.91	0.89	1.00	0.97	0.91	0.89	1.00	0.97
Turning Factor (vph)	0.95	1.00	0.85	0.95	1.00	0.85	0.95	0.95	1.00	0.85	0.95	0.95
Saturated Flow (vph)	4612	6810	2125	4612	6810	3761	0	4612	6810	3761	0	4612
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00			0.00			0.00		
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	4.4	14.4	7.6	14.1	21.8	15.7	0.0	3.1	10.9	13.5	0.0	12.6
Adj Reference Time (s)	9.4	20.4	11.6	19.1	27.8	21.7	0.0	9.0	16.9	18.5	0.0	17.6
Permitted Option												
Adj Saturation A (vph)	154	2270		154	2270		0	154	2270		0	154
Reference Time A (s)	65.6	14.4		211.9	21.8		0.0	46.8	10.9		0.0	188.9
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA	NA		NA	NA
Reference Time B (s)	NA	NA		NA	NA		NA	NA	NA		NA	NA
Reference Time (s)	65.6			211.9			46.8			65.6		
Adj Reference Time (s)	71.6			217.9			52.8			71.6		
Split Option												
Ref Time Combined (s)	4.4	14.4		14.1	21.8		0.0	3.1	10.9		0.0	12.6
Ref Time Separate (s)	4.4	14.4		14.1	21.8		0.6	2.8	10.9		0.2	12.5
Reference Time (s)	14.4	14.4		21.8	21.8		10.9	10.9	10.9		16.7	16.7
Adj Reference Time (s)	20.4	20.4		27.8	27.8		16.9	16.9	16.9		22.7	22.7
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	39.5		34.5									
Permitted Option (s)	217.9		194.9									
Split Option (s)	48.2		39.7									
Minimum (s)	39.5		34.5		74.1							
Right Turns												
	EBR	WBR	NBR	SBR								
Adj Reference Time (s)	11.6	21.7	18.5	25.4								
Cross Thru Ref Time (s)	31.7	34.5	20.4	27.8								
Oncoming Left Ref Time (s)	19.1	9.4	17.6	9.0								
Combined (s)	62.4	65.6	56.5	62.2								

Intersection Summary

Intersection Capacity Utilization 61.7% ICU Level of Service B
Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
 27: El Camino Real & Palomar Airport Rd

Existing Conditions
 AM Peak Hour

Movement	SBT	SBR
Label Configurations	↑↑↑	↑
Volume (vph)	950	362
Pedestrians		
Ped Button		
Pedestrian Timing (s)		
Free Right		No
Ideal Flow	2500	2500
Lost Time (s)	6.0	5.0
Minimum Green (s)	10.0	4.0
Refr Cycle Length (s)	120	120
Volume Combined (vph)	950	362
Lane Utilization Factor	0.91	1.00
Turning Factor (vph)	1.00	0.85
Saturated Flow (vph)	6810	2125
Ped Intf Time (s)	0.0	0.0
Pedestrian Frequency (%)	0.00	
Protected Option Allowed	Yes	
Reference Time (s)	16.7	20.4
Adj Reference Time (s)	22.7	25.4
Permitted Option		
Adj Saturation A (vph)	2270	
Reference Time A (s)	16.7	
Adj Saturation B (vph)	NA	
Reference Time B (s)	NA	
Reference Time (s)	188.9	
Adj Reference Time (s)	194.9	
Split Option		
Ref Time Combined (s)	16.7	
Ref Time Seperate (s)	16.7	
Reference Time (s)	16.7	
Adj Reference Time (s)	22.7	
Summary		

Diamond Interchange Capacity Utilization
28: I-5 SB Ramps & Poinsettia Ln

Existing Conditions
AM Peak Hour

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	EBL	EBT	WBT	WBR	NBL	
Node	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Configurations	↑↑	↑	↑↑	↑↑	↑	↑	↑	↑	↑↑	↑↑↑	↑		
Volume (vph)	522	134	441	658	202	3	193	124	600	902	367	197	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right	No						No			No			
Ideal Flow	2040	1840	1840	2040	1840	2040	1840	1840	2040	2040	1840	1800	
Storage Space			29.3	42.6				21.3	42.6				
Lost Time (s)	4.6	4.6	4.2	4.6	4.6	4.6	4.6	4.2	4.6	4.6	4.6	4.6	
Minimum Green (s)	7.0	7.0	5.0	8.0	5.0	5.0	5.0	4.0	7.0	8.0	8.0	4.0	
Refr Cycle Length (s)													
Travel Time (s)	11.9		120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	522	134	441	658	202	67	129	124	600	902	367	0	
Lane Utilization Factor	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	0.95	0.91	1.00	1.00	
Turning Factor (vph)	1.00	0.85	0.95	1.00	0.95	0.86	0.85	0.95	1.00	1.00	0.85	0.95	
Saturated Flow (vph)	3884	1564	3395	3884	1748	1748	1564	1748	3884	5557	1564	0	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)	0.00			0.00		0.00			0.00	0.00			
Reference Time (s)	16.1	10.3	15.6	20.3	13.9	4.6	9.9	8.5	18.5	19.5	28.2	0.0	
Adj Reference Time (s)	20.7	14.9	19.8	24.9	18.5	9.6	14.5	12.7	23.1	24.1	32.8	0.0	
Volume per cycle, 90th			19.6	27.9	10.1			6.7	25.7			9.8	
Volume to Storage			0.7	0.7	0.2			0.3	0.6			0.2	
Isolated Timings (s)	59.0							62.4					
Timing Options													
Leading Option (s)		86.0											
Lagging Option (s)	OK	62.4											
Lead-Lag Option (s)	OK	62.4											
Interchange Summary													
Intersection Capacity Utilization			52.0%		ICU Level of Service					A			

Reference Times and Phasing Options do not represent an optimized timing plan.






















Diamond Interchange Capacity Utilization
 28: I-5 SB Ramps & Poinsettia Ln

Existing Conditions
 AM Peak Hour

	↑	↗		
Movement	NBT	NBR		
Node	0	0		
Lane Configurations	↖	↗↗		
Volume (vph)	2	643		
Pedestrians				
Ped Button				
Pedestrian Timing (s)				
Free Right		No		
Ideal Flow	2040	1840		
Storage Space				
Lost Time (s)	4.6	4.6		
Minimum Green (s)	4.0	4.0		
Refr Cycle Length (s)				
Travel Time (s)	120	120	120	120
Volume Combined (vph)	199	643		
Lane Utilization Factor	1.00	0.89		
Turning Factor (vph)	0.95	0.85		
Saturated Flow (vph)	1939	2768		
Ped Intf Time (s)	0.0	0.0		
Pedestrian Frequency (%)	0.00			
Reference Time (s)	12.3	27.9		
Adj Reference Time (s)	16.9	32.5		
Volume per cycle, 90th				
Volume to Storage				
Isolated Timings (s)				
Timing Options				

Intersection Capacity Utilization
30: Lower Ln/Paseo Del Norte & Poinsettia Ln

Existing Conditions
AM Peak Hour























												
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	1	203	1012	27	6	884	61	39	4	20	45	4
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right				No			No			No		
Ideal Flow	1800	1840	2040	1840	1840	2040	1800	1840	2040	1800	1840	2040
Lost Time (s)	4.2	4.2	4.6	4.6	4.2	4.6	4.0	4.6	4.6	4.0	4.6	4.6
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	0	204	1012	27	6	945	0	39	24	0	45	349
Lane Utilization Factor	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.95	1.00	0.85	0.95	0.99	0.85	0.95	0.88	0.85	0.95	0.85
Saturated Flow (vph)	0	3395	3884	1564	1748	3847	0	1748	1785	0	1748	1738
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)			0.00			0.00			0.00			0.00
Protected Option Allowed			Yes			Yes			Yes			Yes
Reference Time (s)	0.0	7.2	31.3	2.1	0.4	29.5	0.0	2.7	1.6	0.0	3.1	24.1
Adj Reference Time (s)	0.0	11.4	35.9	9.6	9.2	34.1	0.0	9.6	9.6	0.0	9.6	28.7
Permitted Option												
Adj Saturation A (vph)	0	113	1942		117	1923		117	1785		117	1738
Reference Time A (s)	0.0	108.2	31.3		6.2	29.5		40.2	1.6		46.3	24.1
Adj Saturation B (vph)	NA	NA	NA		NA	NA		NA	NA		0	1738
Reference Time B (s)	NA	NA	NA		NA	NA		NA	NA		11.1	24.1
Reference Time (s)			108.2			29.5			40.2			24.1
Adj Reference Time (s)			112.8			34.1			44.8			28.7
Split Option												
Ref Time Combined (s)	0.0	7.2	31.3		0.4	29.5		2.7	1.6		3.1	24.1
Ref Time Seperate (s)	0.1	7.2	31.3		0.4	27.6		2.7	0.3		3.1	0.3
Reference Time (s)	31.3	31.3	31.3		29.5	29.5		2.7	2.7		24.1	24.1
Adj Reference Time (s)	35.9	35.9	35.9		34.1	34.1		9.6	9.6		28.7	28.7
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	45.5		38.3									
Permitted Option (s)	112.8		44.8									
Split Option (s)	69.9		38.3									
Minimum (s)	45.5		38.3		83.8							
Right Turns												
	EBR											
Adj Reference Time (s)	9.6											
Cross Thru Ref Time (s)	28.7											
Oncoming Left Ref Time (s)	9.2											
Combined (s)	47.5											
Intersection Summary												
Intersection Capacity Utilization			69.8%		ICU Level of Service				C			
Reference Times and Phasing Options do not represent an optimized timing plan.												



Movement	SBR
Lane Configurations	
Volume (vph)	345
Pedestrians	
Ped Button	
Pedestrian Timing (s)	
Free Right	No
Ideal Flow	1800
Lost Time (s)	4.0
Minimum Green (s)	4.0
Refr Cycle Length (s)	120
Volume Combined (vph)	0
Lane Utilization Factor	1.00
Turning Factor (vph)	0.85
Saturated Flow (vph)	0
Ped Intf Time (s)	0.0
Pedestrian Frequency (%)	
Protected Option Allowed	
Reference Time (s)	0.0
Adj Reference Time (s)	0.0
Permitted Option	
Adj Saturation A (vph)	
Reference Time A (s)	
Adj Saturation B (vph)	
Reference Time B (s)	
Reference Time (s)	
Adj Reference Time (s)	
Split Option	
Ref Time Combined (s)	
Ref Time Seperate (s)	
Reference Time (s)	
Adj Reference Time (s)	
Summary	

Intersection Capacity Utilization
31: Aviara Pkwy & Poinsettia Ln

Existing Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	384	286	195	22	288	63	255	204	19	44	152	131
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1840	2040	1840	1840	2040	1800	1840	2040	1800	1840	2040	1800
Lost Time (s)	5.5	6.0	5.5	5.5	6.0	4.0	5.5	6.0	4.0	5.5	6.0	4.0
Minimum Green (s)	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	384	286	195	22	351	0	255	223	0	44	283	0
Lane Utilization Factor	0.97	1.00	0.89	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.97	0.85	0.95	0.99	0.85	0.95	0.93	0.85
Saturated Flow (vph)	3395	2040	2768	1748	3780	0	3395	3835	0	1748	3614	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00			0.00			0.00		
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	13.6	16.8	8.5	1.5	11.1	0.0	9.0	7.0	0.0	3.0	9.4	0.0
Adj Reference Time (s)	19.1	22.8	14.0	9.5	17.1	0.0	14.5	13.0	0.0	9.5	15.4	0.0
Permitted Option												
Adj Saturation A (vph)	113	2040		117	1890		113	1917		117	1807	
Reference Time A (s)	203.6	16.8		22.7	11.1		135.2	7.0		45.3	9.4	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)	203.6			22.7			135.2			45.3		
Adj Reference Time (s)	209.6			28.7			141.2			51.3		
Split Option												
Ref Time Combined (s)	13.6	16.8		1.5	11.1		9.0	7.0		3.0	9.4	
Ref Time Seperate (s)	13.6	16.8		1.5	9.1		9.0	6.4		3.0	5.0	
Reference Time (s)	16.8	16.8		11.1	11.1		9.0	9.0		9.4	9.4	
Adj Reference Time (s)	22.8	22.8		17.1	17.1		15.0	15.0		15.4	15.4	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	36.2		29.9									
Permitted Option (s)	209.6		141.2									
Split Option (s)	40.0		30.4									
Minimum (s)	36.2		29.9		66.1							
Right Turns												
	EBR											
Adj Reference Time (s)	14.0											
Cross Thru Ref Time (s)	15.4											
Oncoming Left Ref Time (s)	9.5											
Combined (s)	38.8											

Intersection Summary

Intersection Capacity Utilization 55.1% ICU Level of Service B
Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
32: El Camino Real & Aviara Pkwy

Existing Conditions
AM Peak Hour

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Volume (vph)	1	89	139	292	5	562	287	97	222	1384	191	2
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right				No				No			No	
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	4.2	4.2	5.7	4.6	4.2	4.2	5.7	4.0	4.6	6.4	4.0	4.2
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	6.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	0	90	139	292	0	567	384	0	222	1575	0	0
Lane Utilization Factor	1.00	0.97	0.95	1.00	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00
Turning Factor (vph)	0.95	0.95	1.00	0.85	0.95	0.95	0.96	0.85	0.95	0.98	0.85	0.95
Saturated Flow (vph)	0	4612	4760	2125	0	4612	4580	0	4612	6686	0	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)			0.00				0.00			0.00		
Protected Option Allowed			Yes				Yes			Yes		
Reference Time (s)	0.0	2.3	3.5	16.5	0.0	14.8	10.1	0.0	5.8	28.3	0.0	0.0
Adj Reference Time (s)	0.0	8.2	9.7	21.1	0.0	19.0	15.8	0.0	10.4	34.7	0.0	0.0
Permitted Option												
Adj Saturation A (vph)	0	154	2380		0	154	2290		154	2229		0
Reference Time A (s)	0.0	35.1	3.5		0.0	221.3	10.1		86.6	28.3		0.0
Adj Saturation B (vph)	NA	NA	NA		NA	NA	NA		NA	NA		NA
Reference Time B (s)	NA	NA	NA		NA	NA	NA		NA	NA		NA
Reference Time (s)			35.1				221.3			86.6		
Adj Reference Time (s)			40.8				227.0			93.0		
Split Option												
Ref Time Combined (s)	0.0	2.3	3.5		0.0	14.8	10.1		5.8	28.3		0.0
Ref Time Seperate (s)	0.1	2.3	3.5		0.3	14.6	7.5		5.8	24.8		0.1
Reference Time (s)	3.5	3.5	3.5		14.8	14.8	14.8		28.3	28.3		19.4
Adj Reference Time (s)	9.7	9.7	9.7		20.5	20.5	20.5		34.7	34.7		25.8
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	28.7		42.9									
Permitted Option (s)	227.0		93.0									
Split Option (s)	30.2		60.4									
Minimum (s)	28.7		42.9		71.5							
Right Turns												
	EBR											
Adj Reference Time (s)	21.1											
Cross Thru Ref Time (s)	25.8											
Oncoming Left Ref Time (s)	19.0											
Combined (s)	65.8											
Intersection Summary												
Intersection Capacity Utilization			59.6%		ICU Level of Service			B				
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization
32: El Camino Real & Aviara Pkwy























Existing Conditions
AM Peak Hour



Movement	SBL	SBT	SBR
Lane Configurations			
Volume (vph)	73	1008	79
Pedestrians			
Ped Button			
Pedestrian Timing (s)			
Free Right			No
Ideal Flow	2500	2500	2500
Lost Time (s)	4.2	6.4	4.0
Minimum Green (s)	4.0	6.0	4.0
Refr Cycle Length (s)	120	120	120
Volume Combined (vph)	75	1087	0
Lane Utilization Factor	0.97	0.91	1.00
Turning Factor (vph)	0.95	0.99	0.85
Saturated Flow (vph)	4612	6736	0
Ped Intf Time (s)	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00	
Protected Option Allowed		Yes	
Reference Time (s)	2.0	19.4	0.0
Adj Reference Time (s)	8.2	25.8	0.0
Permitted Option			
Adj Saturation A (vph)	154	2245	
Reference Time A (s)	29.3	19.4	
Adj Saturation B (vph)	NA	NA	
Reference Time B (s)	NA	NA	
Reference Time (s)		29.3	
Adj Reference Time (s)		35.7	
Split Option			
Ref Time Combined (s)	2.0	19.4	
Ref Time Seperate (s)	1.9	18.0	
Reference Time (s)	19.4	19.4	
Adj Reference Time (s)	25.8	25.8	
Summary			






















Intersection Capacity Utilization
33: El Camino Real & Poinsettia Ln

Existing Conditions
AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	
Lane Configurations													
Volume (vph)	10	6	4	300	3	176	17	6	1409	182	1	104	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right	No			No			No			No			
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	
Lost Time (s)	4.2	4.7	4.0	4.2	5.0	4.0	4.2	4.2	6.0	6.0	4.2	4.2	
Minimum Green (s)	4.0	6.0	4.0	4.0	6.0	4.0	4.0	4.0	8.0	8.0	4.0	4.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	10	10	0	300	179	0	0	23	1409	182	0	105	
Lane Utilization Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.97	0.91	1.00	1.00	0.97	
Turning Factor (vph)	0.95	0.94	0.85	0.95	0.85	0.85	0.95	0.95	1.00	0.85	0.95	0.95	
Saturated Flow (vph)	4612	4474	0	4612	4058	0	0	4612	6810	2125	0	4612	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)	0.00			0.00			0.00						
Protected Option Allowed	Yes			Yes			Yes						
Reference Time (s)	0.3	0.3	0.0	7.8	5.3	0.0	0.0	0.6	24.8	10.3	0.0	2.7	
Adj Reference Time (s)	8.2	10.7	0.0	12.0	11.0	0.0	0.0	8.2	30.8	16.3	0.0	8.2	
Permitted Option													
Adj Saturation A (vph)	154	2237		154	2029		0	154	2270		0	154	
Reference Time A (s)	3.9	0.3		117.1	5.3		0.0	9.0	24.8		0.0	41.0	
Adj Saturation B (vph)	NA	NA		0	4058		NA	NA	NA		NA	NA	
Reference Time B (s)	NA	NA		15.8	5.3		NA	NA	NA		NA	NA	
Reference Time (s)	3.9			15.8			24.8						
Adj Reference Time (s)	10.7			20.8			30.8						
Split Option													
Ref Time Combined (s)	0.3	0.3		7.8	5.3		0.0	0.6	24.8		0.0	2.7	
Ref Time Separate (s)	0.3	0.2		7.8	0.1		0.9	0.2	24.8		0.1	2.7	
Reference Time (s)	0.3	0.3		7.8	7.8		24.8	24.8	24.8		18.2	18.2	
Adj Reference Time (s)	10.7	10.7		12.8	12.8		30.8	30.8	30.8		24.2	24.2	
Summary													
	EB WB		NB SB		Combined								
Protected Option (s)	22.7		39.0										
Permitted Option (s)	20.8		47.0										
Split Option (s)	23.5		55.0										
Minimum (s)	20.8		39.0		59.8								
Right Turns													
	NBR												
Adj Reference Time (s)	16.3												
Cross Thru Ref Time (s)	10.7												
Oncoming Left Ref Time (s)	8.2												
Combined (s)	35.2												
Intersection Summary													
Intersection Capacity Utilization	49.9%		ICU Level of Service						A				
Reference Times and Phasing Options do not represent an optimized timing plan.													

Intersection Capacity Utilization
1: Carlsbad Blvd & Tamarack Ave

Existing Conditions
PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	19	22	31	103	14	82	6	38	817	242	92	425	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right	No			No			No						
Ideal Flow	1800	2040	1840	1840	2040	1800	1800	1840	2040	1800	1840	2040	
Lost Time (s)	5.0	5.0	5.0	5.0	5.0	4.0	4.5	4.5	6.0	4.0	4.5	6.0	
Minimum Green (s)	8.0	8.0	8.0	8.0	8.0	4.0	4.0	4.0	10.0	4.0	4.0	10.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	0	41	31	103	96	0	0	44	1059	0	92	425	
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Turning Factor (vph)	0.95	0.98	0.85	0.95	0.87	0.85	0.95	0.95	0.97	0.85	0.95	1.00	
Saturated Flow (vph)	0	1993	1564	1748	1779	0	0	1748	3751	0	1748	3884	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)		0.00			0.00				0.00			0.00	
Protected Option Allowed		No			No				Yes			Yes	
Reference Time (s)			2.4			0.0	0.0	3.0	33.9	0.0	6.3	13.1	
Adj Reference Time (s)			13.0			0.0	0.0	8.5	39.9	0.0	10.8	19.1	
Permitted Option													
Adj Saturation A (vph)	0	243		117	1779		0	117	1876		117	1942	
Reference Time A (s)	0.0	20.2		106.1	6.5		0.0	45.3	33.9		94.7	13.1	
Adj Saturation B (vph)	0	0		0	1779		NA	NA	NA		NA	NA	
Reference Time B (s)	9.3	10.5		15.1	6.5		NA	NA	NA		NA	NA	
Reference Time (s)		10.5			15.1				45.3			94.7	
Adj Reference Time (s)		15.5			20.1				51.3			100.7	
Split Option													
Ref Time Combined (s)	0.0	2.5		7.1	6.5		0.0	3.0	33.9		6.3	13.1	
Ref Time Separate (s)	1.3	1.3		7.1	0.9		0.4	2.6	26.1		6.3	13.1	
Reference Time (s)	2.5	2.5		7.1	7.1		33.9	33.9	33.9		13.1	13.1	
Adj Reference Time (s)	13.0	13.0		13.0	13.0		39.9	39.9	39.9		19.1	19.1	
Summary													
	EB WB		NB SB		Combined								
Protected Option (s)	NA		50.7										
Permitted Option (s)	20.1		100.7										
Split Option (s)	26.0		59.0										
Minimum (s)	20.1		50.7		70.8								
Right Turns													
	EBR		SBR										
Adj Reference Time (s)	13.0		16.0										
Cross Thru Ref Time (s)	27.6		13.0										
Oncoming Left Ref Time (s)	13.0		8.5										
Combined (s)	53.6		37.5										
Intersection Summary													
Intersection Capacity Utilization			59.0%		ICU Level of Service		B						
Reference Times and Phasing Options do not represent an optimized timing plan.													

Intersection Capacity Utilization
 1: Carlsbad Blvd & Tamarack Ave

Existing Conditions
 PM Peak Hour



Movement	SBR
Lane Configurations	↗
Volume (vph)	19
Pedestrians	
Ped Button	
Pedestrian Timing (s)	
Free Right	No
Ideal Flow	1840
Lost Time (s)	6.0
Minimum Green (s)	10.0
Refr Cycle Length (s)	120
Volume Combined (vph)	19
Lane Utilization Factor	1.00
Turning Factor (vph)	0.85
Saturated Flow (vph)	1564
Ped Intf Time (s)	0.0
Pedestrian Frequency (%)	
Protected Option Allowed	
Reference Time (s)	1.5
Adj Reference Time (s)	16.0
Permitted Option	
Adj Saturation A (vph)	
Reference Time A (s)	
Adj Saturation B (vph)	
Reference Time B (s)	
Reference Time (s)	
Adj Reference Time (s)	
Split Option	
Ref Time Combined (s)	
Ref Time Seperate (s)	
Reference Time (s)	
Adj Reference Time (s)	
Summary	

Diamond Interchange Capacity Utilization
2: I-5 SB Ramps & Tamarack Ave

Existing Conditions
PM Peak Hour

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	EBL	EBT	WBT	WBR	NBL	
Node	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Configurations	↑↑	↑	↓	↑↑		↓	↑	↓	↑↑	↑↓			
Volume (vph)	439	241	450	218	204	3	216	173	470	414	178	254	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right	No						No			No			
Ideal Flow	2040	1840	1840	2040	1800	2040	1840	1840	2040	2140	1800	1800	
Storage Space			14.4	28.8				14.4	28.8				
Lost Time (s)	4.6	4.6	4.2	4.6	4.6	4.6	4.6	4.6	5.1	5.1	4.0	4.6	
Minimum Green (s)	7.0	7.0	5.0	6.0	5.0	5.0	5.0	4.0	7.0	6.0	4.0	4.0	
Refr Cycle Length (s)													
Travel Time (s)	10.0		120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	439	241	450	218	0	207	216	173	470	592	0	0	
Lane Utilization Factor	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	
Turning Factor (vph)	1.00	0.85	0.95	1.00	0.95	0.95	0.85	0.95	1.00	0.95	0.85	0.95	
Saturated Flow (vph)	3884	1564	1748	3884	0	1939	1564	1748	3884	3891	0	0	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)	0.00			0.00		0.00			0.00	0.00			
Reference Time (s)	13.6	18.5	30.9	6.7	0.0	12.8	16.6	11.9	14.5	18.3	0.0	0.0	
Adj Reference Time (s)	18.2	23.1	35.1	11.3	0.0	17.4	21.2	16.5	19.6	23.4	0.0	0.0	
Volume per cycle, 90th			20.0	10.7	10.1			8.8	20.7			12.2	
Volume to Storage			1.4	0.4	0.4			0.6	0.7			0.4	
Isolated Timings (s)	75.6							60.2					
Timing Options													
Leading Option (s)		78.4											
Lagging Option (s)	NA												
Lead-Lag Option (s)	OK	75.6											
Interchange Summary													
Intersection Capacity Utilization	63.0%		ICU Level of Service						B				
Reference Times and Phasing Options do not represent an optimized timing plan.													






















Diamond Interchange Capacity Utilization
 2: I-5 SB Ramps & Tamarack Ave

Existing Conditions
 PM Peak Hour

	↑	↗		
Movement	NBT	NBR		
Node	0	0		
Lane Configurations	↖	↗		
Volume (vph)	0	400		
Pedestrians				
Ped Button				
Pedestrian Timing (s)				
Free Right		No		
Ideal Flow	2040	2160		
Storage Space				
Lost Time (s)	4.6	4.6		
Minimum Green (s)	4.0	4.0		
Refr Cycle Length (s)				
Travel Time (s)	120	120	120	120
Volume Combined (vph)	254	400		
Lane Utilization Factor	1.00	1.00		
Turning Factor (vph)	0.95	0.85		
Saturated Flow (vph)	1938	1836		
Ped Intf Time (s)	0.0	0.0		
Pedestrian Frequency (%)	0.00			
Reference Time (s)	15.7	26.1		
Adj Reference Time (s)	20.3	30.7		
Volume per cycle, 90th				
Volume to Storage				
Isolated Timings (s)				
Timing Options				

Intersection Capacity Utilization
4: El Camino Real & Tamarck Ave

Existing Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Volume (vph)	35	150	61	94	111	23	173	1458	254	1	35	521
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No					
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	4.2	5.0	5.0	4.2	5.0	4.0	4.2	6.0	4.0	4.2	4.2	6.0
Minimum Green (s)	4.0	6.0	6.0	4.0	6.0	4.0	4.0	8.0	4.0	4.0	4.0	8.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	35	150	61	94	134	0	173	1712	0	0	36	521
Lane Utilization Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	1.00	0.95
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.97	0.85	0.95	0.98	0.85	0.95	0.95	1.00
Saturated Flow (vph)	2375	2500	2125	2375	4637	0	2375	6658	0	0	2375	4760
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00				0.00				0.00			
Protected Option Allowed	Yes			Yes			Yes					
Reference Time (s)	1.8	7.2	3.4	4.7	3.5	0.0	8.7	30.9	0.0	0.0	1.8	13.1
Adj Reference Time (s)	8.2	12.2	11.0	8.9	11.0	0.0	12.9	36.9	0.0	0.0	8.2	19.1
Permitted Option												
Adj Saturation A (vph)	158	2500		158	2319		158	2219		0	158	2380
Reference Time A (s)	26.5	7.2		71.2	3.5		131.1	30.9		0.0	27.3	13.1
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	NA
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	NA
Reference Time (s)		26.5			71.2			131.1				27.3
Adj Reference Time (s)		31.5			76.2			137.1				33.3
Split Option												
Ref Time Combined (s)	1.8	7.2		4.7	3.5		8.7	30.9		0.0	1.8	13.1
Ref Time Seperate (s)	1.8	7.2		4.7	2.9		8.7	26.3		0.1	1.8	13.1
Reference Time (s)	7.2	7.2		4.7	4.7		30.9	30.9		13.1	13.1	13.1
Adj Reference Time (s)	12.2	12.2		11.0	11.0		36.9	36.9		19.1	19.1	19.1
Summary	EB WB		NB SB		Combined							
Protected Option (s)	21.1		45.1									
Permitted Option (s)	76.2		137.1									
Split Option (s)	23.2		56.0									
Minimum (s)	21.1		45.1		66.2							
Right Turns	EBR		SBR									
Adj Reference Time (s)	11.0		14.0									
Cross Thru Ref Time (s)	19.1		11.0									
Oncoming Left Ref Time (s)	8.9		12.9									
Combined (s)	39.1		37.9									

Intersection Summary
 Intersection Capacity Utilization 55.2% ICU Level of Service B
 Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
 4: El Camino Real & Tamarck Ave













Existing Conditions
 PM Peak Hour



Movement	SBR
Lane Configurations	T
Volume (vph)	61
Pedestrians	
Ped Button	
Pedestrian Timing (s)	
Free Right	No
Ideal Flow	2500
Lost Time (s)	6.0
Minimum Green (s)	8.0
Refr Cycle Length (s)	120
Volume Combined (vph)	61
Lane Utilization Factor	1.00
Turning Factor (vph)	0.85
Saturated Flow (vph)	2125
Ped Intf Time (s)	0.0
Pedestrian Frequency (%)	
Protected Option Allowed	
Reference Time (s)	3.4
Adj Reference Time (s)	14.0
Permitted Option	
Adj Saturation A (vph)	
Reference Time A (s)	
Adj Saturation B (vph)	
Reference Time B (s)	
Reference Time (s)	
Adj Reference Time (s)	
Split Option	
Ref Time Combined (s)	
Ref Time Seperate (s)	
Reference Time (s)	
Adj Reference Time (s)	
Summary	

Intersection Capacity Utilization
5: Carlsbad Blvd & Cannon Rd























Existing Conditions
PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	100	309	838	88	135	528
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No		No		
Ideal Flow	1840	1840	2040	1840	1840	2040
Lost Time (s)	5.0	4.5	5.5	5.5	4.5	5.5
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	10.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	100	309	838	88	135	528
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.85	1.00	0.85	0.95	1.00
Saturated Flow (vph)	1748	1564	2040	1564	1748	2040
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00
Protected Option Allowed	No		Yes			Yes
Reference Time (s)		23.7	49.3	6.8	9.3	31.1
Adj Reference Time (s)		28.2	54.8	12.3	13.8	36.6
Permitted Option						
Adj Saturation A (vph)	117		2040		117	2040
Reference Time A (s)	103.0		49.3		139.0	31.1
Adj Saturation B (vph)	NA		NA		NA	NA
Reference Time B (s)	NA		NA		NA	NA
Reference Time (s)			49.3			139.0
Adj Reference Time (s)			54.8			144.5
Split Option						
Ref Time Combined (s)	6.9		49.3		9.3	31.1
Ref Time Seperate (s)	6.9		49.3		9.3	31.1
Reference Time (s)	6.9		49.3		31.1	31.1
Adj Reference Time (s)	11.9		54.8		36.6	36.6
Summary	WB		NB SB		Combined	
Protected Option (s)	NA		68.6			
Permitted Option (s)	Err		144.5			
Split Option (s)	11.9		91.4			
Minimum (s)	11.9		68.6		80.4	
Right Turns	WBR	NBR				
Adj Reference Time (s)	28.2	12.3				
Cross Thru Ref Time (s)	54.8	0.0				
Oncoming Left Ref Time (s)	0.0	13.8				
Combined (s)	83.0	26.0				

Intersection Summary
 Intersection Capacity Utilization 69.2% ICU Level of Service C
 Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
6: Avenida Encinas & Cannon Rd

Existing Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	239	15	128	377	128	149	20	342	78	11	32
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1840	2040	1800	1840	2040	1800	1840	2040	1840	1840	2040	1840
Lost Time (s)	4.5	5.5	4.0	4.5	5.5	4.0	4.5	5.0	4.5	4.5	5.0	5.0
Minimum Green (s)	6.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0	6.0	6.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	32	254	0	128	505	0	149	20	342	78	11	32
Lane Utilization Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Turning Factor (vph)	0.95	0.99	0.85	0.95	0.96	0.85	0.95	1.00	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1748	3850	0	3395	3736	0	1748	2040	1564	3395	2040	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00		0.00		0.00		0.00		0.00	
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	2.2	7.9	0.0	4.5	16.2	0.0	10.2	1.2	26.2	2.8	0.6	2.5
Adj Reference Time (s)	10.5	13.4	0.0	10.5	21.7	0.0	14.7	10.0	30.7	10.5	11.0	11.0
Permitted Option												
Adj Saturation A (vph)	117	1925		113	1868		117	2040		113	2040	
Reference Time A (s)	33.0	7.9		67.9	16.2		153.4	1.2		41.4	0.6	
Adj Saturation B (vph)	NA	NA		NA	NA		0	2040		0	2040	
Reference Time B (s)	NA	NA		NA	NA		18.2	1.2		10.8	0.6	
Reference Time (s)		33.0			67.9			18.2			10.8	
Adj Reference Time (s)		38.5			73.4			23.2			15.8	
Split Option												
Ref Time Combined (s)	2.2	7.9		4.5	16.2		10.2	1.2		2.8	0.6	
Ref Time Seperate (s)	2.2	7.4		4.5	12.1		10.2	1.2		2.8	0.6	
Reference Time (s)	7.9	7.9		16.2	16.2		10.2	10.2		2.8	2.8	
Adj Reference Time (s)	13.4	13.4		21.7	21.7		15.2	15.2		11.0	11.0	
Summary	EB WB		NB SB		Combined							
Protected Option (s)	32.2		25.7									
Permitted Option (s)	73.4		23.2									
Split Option (s)	35.1		26.2									
Minimum (s)	32.2		23.2		55.4							
Right Turns	NBR		SBR									
Adj Reference Time (s)	30.7		11.0									
Cross Thru Ref Time (s)	13.4		21.7									
Oncoming Left Ref Time (s)	10.5		14.7									
Combined (s)	54.7		47.4									

Intersection Summary

Intersection Capacity Utilization 46.2% ICU Level of Service A
Reference Times and Phasing Options do not represent an optimized timing plan.

Diamond Interchange Capacity Utilization
7: I-5 SB Ramps & Cannon Rd

Existing Conditions
PM Peak Hour

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	EBL	EBT	WBT	WBR	NBL	
Node	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Configurations	↑↑	↑	↑↑	↑↑	↑	↑	↑	↑↑	↑↑	↑↑	↑		
Volume (vph)	572	87	414	459	346	7	174	352	566	744	970	129	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right	No						No			No			
Ideal Flow	2040	1840	1840	2040	1840	2040	1840	1840	2040	2040	1840	1800	
Storage Space			26.2	40.5				26.2	40.5				
Lost Time (s)	4.6	4.6	4.2	4.6	4.6	4.6	4.6	4.2	4.6	4.6	4.6	4.6	
Minimum Green (s)	6.0	6.0	5.0	6.0	5.0	5.0	5.0	4.0	6.0	6.0	6.0	4.0	
Refr Cycle Length (s)													
Travel Time (s)	11.4		120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	572	87	414	459	0	353	174	352	566	1067	647	0	
Lane Utilization Factor	0.95	1.00	0.97	0.95	1.00	1.00	1.00	0.97	0.95	0.95	1.00	1.00	
Turning Factor (vph)	1.00	0.85	0.95	1.00	0.95	0.95	0.85	0.95	1.00	0.95	0.85	0.95	
Saturated Flow (vph)	3884	1564	3395	3884	0	3880	1564	3395	3884	3708	1564	0	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)	0.00			0.00		0.00			0.00	0.00			
Reference Time (s)	17.7	6.7	14.6	14.2	0.0	10.9	13.4	12.4	17.5	34.5	49.6	0.0	
Adj Reference Time (s)	22.3	11.3	18.8	18.8	0.0	15.5	18.0	16.6	22.1	39.1	54.2	0.0	
Volume per cycle, 90th			18.6	20.3	15.9			16.1	24.4			7.0	
Volume to Storage			0.7	0.5	0.4			0.6	0.6			0.2	
Isolated Timings (s)	56.6							83.7					
Timing Options													
Leading Option (s)		99.3											
Lagging Option (s)	OK	83.7											
Lead-Lag Option (s)	OK	83.7											
Interchange Summary													
Intersection Capacity Utilization	69.8%		ICU Level of Service					C					
Reference Times and Phasing Options do not represent an optimized timing plan.													








Diamond Interchange Capacity Utilization
7: I-5 SB Ramps & Cannon Rd

Existing Conditions
PM Peak Hour

	↑	↗		
Movement	NBT	NBR		
Node	0	0		
Lane Configurations	↕	↗↗		
Volume (vph)	5	383		
Pedestrians				
Ped Button				
Pedestrian Timing (s)				
Free Right		No		
Ideal Flow	2040	1840		
Storage Space				
Lost Time (s)	4.6	4.6		
Minimum Green (s)	4.0	4.0		
Refr Cycle Length (s)				
Travel Time (s)	120	120	120	120
Volume Combined (vph)	134	383		
Lane Utilization Factor	1.00	0.89		
Turning Factor (vph)	0.95	0.85		
Saturated Flow (vph)	1942	2768		
Ped Intf Time (s)	0.0	0.0		
Pedestrian Frequency (%)	0.00			
Reference Time (s)	8.3	16.6		
Adj Reference Time (s)	12.9	21.2		
Volume per cycle, 90th				
Volume to Storage				
Isolated Timings (s)				
Timing Options				

Intersection Capacity Utilization
9: Paseo Del Norte & Cannon Rd

Existing Conditions
PM Peak Hour

							
Movement	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations	↑↑		↑	↑↑↑		↑↑	↑
Volume (vph)	685	264	75	1217	2	497	114
Pedestrians							
Ped Button							
Pedestrian Timing (s)							
Free Right	No			No			
Ideal Flow	2040	1800	1840	2040	1800	1840	1840
Lost Time (s)	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Green (s)	6.0	4.0	4.0	6.0	4.0	6.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120
Volume Combined (vph)	949	0	75	1217	0	499	114
Lane Utilization Factor	0.95	1.00	1.00	0.91	1.00	0.97	1.00
Turning Factor (vph)	0.96	0.85	0.95	1.00	0.95	0.95	0.85
Saturated Flow (vph)	3722	0	1748	5557	0	3395	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00			
Protected Option Allowed	Yes			Yes		No	
Reference Time (s)	30.6	0.0	5.1	26.3			8.7
Adj Reference Time (s)	35.6	0.0	10.1	31.3			13.7
Permitted Option							
Adj Saturation A (vph)	1861		117	1852	0	113	
Reference Time A (s)	30.6		77.2	26.3	0.0	264.6	
Adj Saturation B (vph)	NA		NA	NA	NA	NA	
Reference Time B (s)	NA		NA	NA	NA	NA	
Reference Time (s)	30.6			77.2			
Adj Reference Time (s)	35.6			82.2			
Split Option							
Ref Time Combined (s)	30.6		5.1	26.3	0.0	17.6	
Ref Time Seperate (s)	22.1		5.1	26.3	0.1	17.6	
Reference Time (s)	30.6		26.3	26.3	17.6	17.6	
Adj Reference Time (s)	35.6		31.3	31.3	22.6	22.6	
Summary							
	EB WB		NB		Combined		
Protected Option (s)	45.7		NA				
Permitted Option (s)	82.2		Err				
Split Option (s)	66.9		22.6				
Minimum (s)	45.7		22.6		68.4		
Right Turns							
	NBR						
Adj Reference Time (s)	13.7						
Cross Thru Ref Time (s)	35.6						
Oncoming Left Ref Time (s)	0.0						
Combined (s)	49.3						
Intersection Summary							
Intersection Capacity Utilization			57.0%		ICU Level of Service		B
Reference Times and Phasing Options do not represent an optimized timing plan.							

Intersection Capacity Utilization
10: Car Country Dr & Cannon Rd

Existing Conditions
PM Peak Hour









Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔↔		↔	↔↔	↔	↔
Volume (vph)	0	710	89	69	1142	150	119
Pedestrians							
Ped Button							
Pedestrian Timing (s)							
Free Right			No			No	
Ideal Flow	1840	2040	1800	1840	2040	1840	1840
Lost Time (s)	5.5	6.5	4.0	5.5	6.5	6.0	6.0
Minimum Green (s)	6.0	10.0	4.0	4.0	10.0	6.0	6.0
Refr Cycle Length (s)	120	120	120	120	120	120	120
Volume Combined (vph)	0	799	0	69	1142	150	119
Lane Utilization Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Turning Factor (vph)	0.95	0.98	0.85	0.95	1.00	0.95	0.85
Saturated Flow (vph)	1748	3819	0	1748	3884	1748	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00	0.00	
Protected Option Allowed		Yes			Yes	No	
Reference Time (s)	0.0	25.1	0.0	4.7	35.3		9.1
Adj Reference Time (s)	11.5	31.6	0.0	10.2	41.8		15.1
Permitted Option							
Adj Saturation A (vph)	117	1910		117	1942	117	
Reference Time A (s)	0.0	25.1		71.1	35.3	154.5	
Adj Saturation B (vph)	NA	NA		NA	NA	NA	
Reference Time B (s)	NA	NA		NA	NA	NA	
Reference Time (s)		25.1			71.1		
Adj Reference Time (s)		31.6			77.6		
Split Option							
Ref Time Combined (s)	0.0	25.1		4.7	35.3	10.3	
Ref Time Seperate (s)	0.0	22.3		4.7	35.3	10.3	
Reference Time (s)	25.1	25.1		35.3	35.3	10.3	
Adj Reference Time (s)	31.6	31.6		41.8	41.8	16.3	
Summary							
	EB WB		NB	Combined			
Protected Option (s)	53.3		NA				
Permitted Option (s)	77.6		Err				
Split Option (s)	73.4		16.3				
Minimum (s)	53.3		16.3	69.6			
Right Turns							
	NBR						
Adj Reference Time (s)	15.1						
Cross Thru Ref Time (s)	31.6						
Oncoming Left Ref Time (s)	0.0						
Combined (s)	46.7						

Intersection Summary

Intersection Capacity Utilization 58.0% ICU Level of Service B
Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
11: Legoland Dr

Existing Conditions
PM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑
Volume (vph)	754	75	39	870	341	236
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right	No			No		
Ideal Flow	2040	1840	1840	2040	1840	1840
Lost Time (s)	6.0	5.0	5.0	6.0	5.0	5.0
Minimum Green (s)	10.0	4.0	4.0	10.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	754	75	39	870	341	236
Lane Utilization Factor	0.95	1.00	0.97	0.95	0.97	1.00
Turning Factor (vph)	1.00	0.85	0.95	1.00	0.95	0.85
Saturated Flow (vph)	3884	1564	3395	3884	3395	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00		
Protected Option Allowed	Yes			Yes	No	
Reference Time (s)	23.3	5.8	1.4	26.9	18.1	
Adj Reference Time (s)	29.3	10.8	9.0	32.9	23.1	
Permitted Option						
Adj Saturation A (vph)	1942		113	1942	113	
Reference Time A (s)	23.3		20.7	26.9	180.8	
Adj Saturation B (vph)	NA		NA	NA	NA	
Reference Time B (s)	NA		NA	NA	NA	
Reference Time (s)	23.3		26.9			
Adj Reference Time (s)	29.3		32.9			
Split Option						
Ref Time Combined (s)	23.3		1.4	26.9	12.1	
Ref Time Seperate (s)	23.3		1.4	26.9	12.1	
Reference Time (s)	23.3		26.9	26.9	12.1	
Adj Reference Time (s)	29.3		32.9	32.9	17.1	
Summary						
	EB WB		NB	Combined		
Protected Option (s)	38.3		NA			
Permitted Option (s)	32.9		Err			
Split Option (s)	62.2		17.1			
Minimum (s)	32.9		17.1	49.9		
Right Turns						
	EBR	NBR				
Adj Reference Time (s)	10.8	23.1				
Cross Thru Ref Time (s)	0.0	29.3				
Oncoming Left Ref Time (s)	9.0	0.0				
Combined (s)	19.8	52.4				

Intersection Summary

Intersection Capacity Utilization 43.7% ICU Level of Service A
Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
12: Marriott Hotel Dwy & Cannon Rd

Existing Conditions
PM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Volume (vph)	941	49	41	862	47	48
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right	No			No		
Ideal Flow	2040	1840	1840	2040	1840	1840
Lost Time (s)	6.0	5.5	5.0	6.0	5.5	5.5
Minimum Green (s)	10.0	5.0	4.0	10.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	941	49	41	862	47	48
Lane Utilization Factor	0.95	1.00	1.00	0.95	1.00	1.00
Turning Factor (vph)	1.00	0.85	0.95	1.00	0.95	0.85
Saturated Flow (vph)	3884	1564	1748	3884	1748	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00		
Protected Option Allowed	Yes			Yes	No	
Reference Time (s)	29.1	3.8	2.8	26.6	3.7	
Adj Reference Time (s)	35.1	10.5	9.0	32.6	10.5	
Permitted Option						
Adj Saturation A (vph)	1942		117	1942	117	
Reference Time A (s)	29.1		42.2	26.6	48.4	
Adj Saturation B (vph)	NA		NA	NA	NA	
Reference Time B (s)	NA		NA	NA	NA	
Reference Time (s)	29.1		42.2			
Adj Reference Time (s)	35.1		48.2			
Split Option						
Ref Time Combined (s)	29.1		2.8	26.6	3.2	
Ref Time Seperate (s)	29.1		2.8	26.6	3.2	
Reference Time (s)	29.1		26.6	26.6	3.2	
Adj Reference Time (s)	35.1		32.6	32.6	10.5	
Summary						
	EB WB		NB	Combined		
Protected Option (s)	44.1		NA			
Permitted Option (s)	48.2		Err			
Split Option (s)	67.7		10.5			
Minimum (s)	44.1		10.5	54.6		
Right Turns						
	EBR	NBR				
Adj Reference Time (s)	10.5	10.5				
Cross Thru Ref Time (s)	0.0	35.1				
Oncoming Left Ref Time (s)	9.0	0.0				
Combined (s)	19.5	45.6				

Intersection Summary

Intersection Capacity Utilization 45.5% ICU Level of Service A
Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
13: Faraday Ave & Cannon Rd

Existing Conditions
PM Peak Hour




















Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	7	2	836	144	5	313	0	581	0	44	3	0
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right				No			No			No		
Ideal Flow	1800	1840	2040	1800	1840	2040	1800	1840	2040	1800	1800	2040
Lost Time (s)	6.0	6.0	6.0	4.0	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Green (s)	4.0	4.0	6.0	4.0	4.0	10.0	4.0	5.0	5.0	4.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	0	9	980	0	5	313	0	0	625	0	0	5
Lane Utilization Factor	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.95	0.98	0.85	0.95	1.00	0.85	0.95	0.94	0.85	0.95	0.91
Saturated Flow (vph)	0	1748	3799	0	1748	3884	0	0	3849	0	0	1860
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00			0.00			0.00		
Protected Option Allowed	Yes			Yes			No			No		
Reference Time (s)	0.0	0.6	31.0	0.0	0.3	9.7	0.0			0.0		
Adj Reference Time (s)	0.0	10.0	37.0	0.0	10.0	16.0	0.0			0.0		
Permitted Option												
Adj Saturation A (vph)	0	117	1899		117	1942		0	2658		0	182
Reference Time A (s)	0.0	9.3	31.0		5.1	9.7		0.0	28.2		0.0	3.3
Adj Saturation B (vph)	NA	NA	NA		NA	NA		0	0		0	0
Reference Time B (s)	NA	NA	NA		NA	NA		27.9	27.5		8.2	8.3
Reference Time (s)			31.0			9.7			27.9			3.3
Adj Reference Time (s)			37.0			16.0			32.9			10.0
Split Option												
Ref Time Combined (s)	0.0	0.6	31.0		0.3	9.7		0.0	19.5		0.0	0.3
Ref Time Seperate (s)	0.5	0.1	26.4		0.3	9.7		19.9	0.0		0.2	0.0
Reference Time (s)	31.0	31.0	31.0		9.7	9.7		19.9	19.9		0.3	0.3
Adj Reference Time (s)	37.0	37.0	37.0		16.0	16.0		24.9	24.9		10.0	10.0
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	47.0		NA									
Permitted Option (s)	37.0		32.9									
Split Option (s)	53.0		34.9									
Minimum (s)	37.0		32.9		69.9							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization			58.3%		ICU Level of Service				B			
Reference Times and Phasing Options do not represent an optimized timing plan.												



Movement	SBR
Lane Configurations	
Volume (vph)	2
Pedestrians	
Ped Button	
Pedestrian Timing (s)	
Free Right	No
Ideal Flow	1800
Lost Time (s)	4.0
Minimum Green (s)	4.0
Refr Cycle Length (s)	120
Volume Combined (vph)	0
Lane Utilization Factor	1.00
Turning Factor (vph)	0.85
Saturated Flow (vph)	0
Ped Intf Time (s)	0.0
Pedestrian Frequency (%)	
Protected Option Allowed	
Reference Time (s)	0.0
Adj Reference Time (s)	0.0
Permitted Option	
Adj Saturation A (vph)	
Reference Time A (s)	
Adj Saturation B (vph)	
Reference Time B (s)	
Reference Time (s)	
Adj Reference Time (s)	
Split Option	
Ref Time Combined (s)	
Ref Time Seperate (s)	
Reference Time (s)	
Adj Reference Time (s)	
Summary	

Intersection Capacity Utilization
14: El Camino Real & Cannon Rd

Existing Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Volume (vph)	294	562	96	1	300	151	30	3	50	1452	821	4
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	4.2	6.0	4.0	4.2	4.2	6.0	4.0	4.2	4.2	6.0	6.0	4.2
Minimum Green (s)	4.0	6.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	8.0	8.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	294	658	0	0	301	181	0	0	53	1452	821	0
Lane Utilization Factor	0.97	0.95	1.00	1.00	0.97	0.95	1.00	1.00	1.00	0.95	1.00	1.00
Turning Factor (vph)	0.95	0.98	0.85	0.95	0.95	0.98	0.85	0.95	0.95	1.00	0.85	0.95
Saturated Flow (vph)	4612	4656	0	0	4612	4642	0	0	2375	4760	2125	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00			0.00			0.00		
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	7.6	17.0	0.0	0.0	7.8	4.7	0.0	0.0	2.7	36.6	46.4	0.0
Adj Reference Time (s)	11.8	23.0	0.0	0.0	12.0	10.7	0.0	0.0	8.2	42.6	52.4	0.0
Permitted Option												
Adj Saturation A (vph)	154	2328		0	154	2321		0	158	2380		0
Reference Time A (s)	114.7	17.0		0.0	117.5	4.7		0.0	40.2	36.6		0.0
Adj Saturation B (vph)	NA	NA		NA	NA	NA		NA	NA	NA		NA
Reference Time B (s)	NA	NA		NA	NA	NA		NA	NA	NA		NA
Reference Time (s)		114.7				117.5				40.2		
Adj Reference Time (s)		120.7				123.5				46.2		
Split Option												
Ref Time Combined (s)	7.6	17.0		0.0	7.8	4.7		0.0	2.7	36.6		0.0
Ref Time Seperate (s)	7.6	14.5		0.1	7.8	3.9		0.2	2.5	36.6		0.2
Reference Time (s)	17.0	17.0		7.8	7.8	7.8		36.6	36.6	36.6		10.2
Adj Reference Time (s)	23.0	23.0		13.8	13.8	13.8		42.6	42.6	42.6		16.2
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	35.0		50.8									
Permitted Option (s)	123.5		46.2									
Split Option (s)	36.8		58.8									
Minimum (s)	35.0		46.2		81.2							
Right Turns												
	NBR		SBR									
Adj Reference Time (s)	52.4		10.8									
Cross Thru Ref Time (s)	35.0		10.7									
Oncoming Left Ref Time (s)	8.2		8.2									
Combined (s)	95.6		29.7									

Intersection Summary

Intersection Capacity Utilization 79.6% ICU Level of Service D
Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
 14: El Camino Real & Cannon Rd






















Existing Conditions
 PM Peak Hour



Movement	SBL	SBT	SBR
Lane Configurations			
Volume (vph)	22	580	117
Pedestrians			
Ped Button			
Pedestrian Timing (s)			
Free Right			No
Ideal Flow	2500	2500	2500
Lost Time (s)	4.2	6.0	4.2
Minimum Green (s)	4.0	8.0	4.0
Refr Cycle Length (s)	120	120	120
Volume Combined (vph)	26	580	117
Lane Utilization Factor	1.00	0.91	1.00
Turning Factor (vph)	0.95	1.00	0.85
Saturated Flow (vph)	2375	6810	2125
Ped Intf Time (s)	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00	
Protected Option Allowed		Yes	
Reference Time (s)	1.3	10.2	6.6
Adj Reference Time (s)	8.2	16.2	10.8
Permitted Option			
Adj Saturation A (vph)	158	2270	
Reference Time A (s)	19.7	10.2	
Adj Saturation B (vph)	NA	NA	
Reference Time B (s)	NA	NA	
Reference Time (s)		19.7	
Adj Reference Time (s)		25.7	
Split Option			
Ref Time Combined (s)	1.3	10.2	
Ref Time Seperate (s)	1.1	10.2	
Reference Time (s)	10.2	10.2	
Adj Reference Time (s)	16.2	16.2	
Summary			





















Intersection Capacity Utilization
15: Paseo Del Norte & Car Country Dr

Existing Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	9	17	132	10	131	15	241	103	5	239	40
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1840	2040	1800	1840	2040	1800	1840	2040	1800	1840	2040	1800
Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.0	6.0	4.0	5.0	6.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	15.0	4.0	4.0	15.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	31	26	0	132	141	0	15	344	0	5	279	0
Lane Utilization 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
Turning Factor (vph)	0.95	0.90	0.85	0.95	0.86	0.85	0.95	0.96	0.85	0.95	0.98	0.85
Saturated Flow (vph)	1748	1840	0	1748	1756	0	1748	3710	0	1748	3801	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00			0.00			
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	2.1	1.7	0.0	9.1	9.6	0.0	1.0	11.1	0.0	0.3	8.8	0.0
Adj Reference Time (s)	9.5	9.5	0.0	14.6	15.1	0.0	9.0	21.0	0.0	9.0	21.0	0.0
Permitted Option												
Adj Saturation A (vph)	117	1840		117	1756		117	1855		117	1900	
Reference Time A (s)	31.9	1.7		135.9	9.6		15.4	11.1		5.1	8.8	
Adj Saturation B (vph)	NA	NA		0	1756		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		17.1	9.6		NA	NA		NA	NA	
Reference Time (s)	31.9		17.1			15.4			8.8			
Adj Reference Time (s)	37.4		22.6			21.4			21.0			
Split Option												
Ref Time Combined (s)	2.1	1.7		9.1	9.6		1.0	11.1		0.3	8.8	
Ref Time Seperate (s)	2.1	0.6		9.1	0.7		1.0	7.8		0.3	7.5	
Reference Time (s)	2.1	2.1		9.6	9.6		11.1	11.1		8.8	8.8	
Adj Reference Time (s)	9.5	9.5		15.1	15.1		21.0	21.0		21.0	21.0	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	24.6		30.0									
Permitted Option (s)	37.4		21.4									
Split Option (s)	24.6		42.0									
Minimum (s)	24.6		21.4		46.1							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization	38.4%		ICU Level of Service						A			
Reference Times and Phasing Options do not represent an optimized timing plan.												






















Intersection Capacity Utilization
16: Paseo Del Norte & Outlet Dwy

Existing Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	9	44	95	7	68	69	271	56	52	304	32
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1840	2040	1800	1800	2040	1800	1840	2040	1800	1840	2040	1800
Lost Time (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	8.0	4.0	4.0	8.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	20	53	0	0	170	0	69	327	0	52	336	0
Lane Utilization 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
Turning Factor (vph)	0.95	0.88	0.85	0.95	0.91	0.85	0.95	0.97	0.85	0.95	0.99	0.85
Saturated Flow (vph)	1748	1786	0	0	1864	0	1748	3784	0	1748	3829	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		No			No			Yes			Yes	
Reference Time (s)			0.0			0.0	4.7	10.4	0.0	3.6	10.5	0.0
Adj Reference Time (s)			0.0			0.0	9.7	15.4	0.0	9.0	15.5	0.0
Permitted Option												
Adj Saturation A (vph)	1093	1786		0	194		117	1892		117	1914	
Reference Time A (s)	2.2	3.6		0.0	105.3		71.1	10.4		53.5	10.5	
Adj Saturation B (vph)	0	1786		0	0		NA	NA		NA	NA	
Reference Time B (s)	9.4	3.6		14.7	18.9		NA	NA		NA	NA	
Reference Time (s)		3.6			18.9			71.1			53.5	
Adj Reference Time (s)		9.0			23.9			76.1			58.5	
Split Option												
Ref Time Combined (s)	1.4	3.6		0.0	10.9		4.7	10.4		3.6	10.5	
Ref Time Seperate (s)	1.4	0.6		6.7	0.5		4.7	8.6		3.6	9.5	
Reference Time (s)	3.6	3.6		10.9	10.9		10.4	10.4		10.5	10.5	
Adj Reference Time (s)	9.0	9.0		15.9	15.9		15.4	15.4		15.5	15.5	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	NA		25.3									
Permitted Option (s)	23.9		76.1									
Split Option (s)	24.9		30.9									
Minimum (s)	23.9		25.3		49.2							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization			41.0%		ICU Level of Service		A					
Reference Times and Phasing Options do not represent an optimized timing plan.												





















Intersection Capacity Utilization
17: Faraday Ave & College Blvd

Existing Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	334	87	10	190	64	44	279	181	187	225	131
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1840	2040	1800	1840	2040	1800	1840	2040	1800	1940	2040	1800
Lost Time (s)	4.5	6.0	4.0	4.5	6.0	4.0	4.5	5.0	4.0	4.5	5.0	4.0
Minimum Green (s)	4.0	7.0	4.0	4.0	7.0	4.0	5.0	6.0	4.0	5.0	6.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	108	421	0	10	254	0	44	460	0	187	356	0
Lane Utilization Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	0.97	0.85	0.95	0.96	0.85	0.95	0.94	0.85	0.95	0.94	0.85
Saturated Flow (vph)	3395	3764	0	3395	3737	0	1748	3655	0	1843	3670	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00		0.00		0.00		0.00		0.00	
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	3.8	13.4	0.0	0.4	8.2	0.0	3.0	15.1	0.0	12.2	11.6	0.0
Adj Reference Time (s)	8.5	19.4	0.0	8.5	14.2	0.0	9.5	20.1	0.0	16.7	16.6	0.0
Permitted Option												
Adj Saturation A (vph)	113	1882		113	1869		117	1827		123	1835	
Reference Time A (s)	57.3	13.4		5.3	8.2		45.3	15.1		182.6	11.6	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		57.3			8.2			45.3			182.6	
Adj Reference Time (s)		63.3			14.2			50.3			187.6	
Split Option												
Ref Time Combined (s)	3.8	13.4		0.4	8.2		3.0	15.1		12.2	11.6	
Ref Time Seperate (s)	3.8	10.6		0.4	6.1		3.0	9.2		12.2	7.4	
Reference Time (s)	13.4	13.4		8.2	8.2		15.1	15.1		12.2	12.2	
Adj Reference Time (s)	19.4	19.4		14.2	14.2		20.1	20.1		17.2	17.2	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	27.9		36.8									
Permitted Option (s)	63.3		187.6									
Split Option (s)	33.6		37.3									
Minimum (s)	27.9		36.8		64.7							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization	53.9%		ICU Level of Service						A			
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization
18: El Camino Real & College Blvd

Existing Conditions
PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	
Lane Configurations													
Volume (vph)	667	20	26	27	28	33	3	39	2039	42	1	36	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right	No			No			No			No			
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	
Lost Time (s)	5.0	6.5	4.0	5.0	6.5	4.0	5.0	5.0	6.0	6.0	5.0	5.0	
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	8.0	8.0	4.0	4.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	667	46	0	27	61	0	0	42	2039	42	0	37	
Lane Utilization Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	1.00	0.91	1.00	1.00	1.00	
Turning Factor (vph)	0.95	0.92	0.85	0.95	0.92	0.85	0.95	0.95	1.00	0.85	0.95	0.95	
Saturated Flow (vph)	4612	4356	0	4612	4374	0	0	2375	6810	2125	0	2375	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)	0.00		0.00		0.00		0.00		0.00		0.00		
Protected Option Allowed	Yes			Yes			Yes			Yes			
Reference Time (s)	17.4	1.3	0.0	0.7	1.7	0.0	0.0	2.1	35.9	2.4	0.0	1.9	
Adj Reference Time (s)	22.4	10.5	0.0	9.0	10.5	0.0	0.0	9.0	41.9	14.0	0.0	9.0	
Permitted Option													
Adj Saturation A (vph)	154	2178		154	2187		0	158	2270		0	158	
Reference Time A (s)	260.3	1.3		10.5	1.7		0.0	31.8	35.9		0.0	28.0	
Adj Saturation B (vph)	0	4356		0	4374		NA	NA	NA		NA	NA	
Reference Time B (s)	25.4	1.3		8.7	1.7		NA	NA	NA		NA	NA	
Reference Time (s)		25.4			8.7				35.9				
Adj Reference Time (s)		31.9			15.2				41.9				
Split Option													
Ref Time Combined (s)	17.4	1.3		0.7	1.7		0.0	2.1	35.9		0.0	1.9	
Ref Time Separate (s)	17.4	0.6		0.7	0.8		0.2	2.0	35.9		0.1	1.8	
Reference Time (s)	17.4	17.4		1.7	1.7		35.9	35.9	35.9		18.5	18.5	
Adj Reference Time (s)	23.9	23.9		10.5	10.5		41.9	41.9	41.9		24.5	24.5	
Summary													
	EB WB		NB SB		Combined								
Protected Option (s)	32.9		50.9										
Permitted Option (s)	31.9		41.9										
Split Option (s)	34.4		66.4										
Minimum (s)	31.9		41.9		73.8								
Right Turns													
	NBR		SBR										
Adj Reference Time (s)	14.0		14.0										
Cross Thru Ref Time (s)	10.5		10.5										
Oncoming Left Ref Time (s)	9.0		9.0										
Combined (s)	33.5		33.5										
Intersection Summary													
Intersection Capacity Utilization			61.5%		ICU Level of Service		B						
Reference Times and Phasing Options do not represent an optimized timing plan.													























Intersection Capacity Utilization
18: El Camino Real & College Blvd

Existing Conditions
PM Peak Hour

Movement	SBT	SBR
Lane Configurations	↑↑↑	↑
Volume (vph)	1048	127
Pedestrians		
Ped Button		
Pedestrian Timing (s)		
Free Right		No
Ideal Flow	2500	2500
Lost Time (s)	6.0	6.0
Minimum Green (s)	8.0	8.0
Refr Cycle Length (s)	120	120
Volume Combined (vph)	1048	127
Lane Utilization Factor	0.91	1.00
Turning Factor (vph)	1.00	0.85
Saturated Flow (vph)	6810	2125
Ped Intf Time (s)	0.0	0.0
Pedestrian Frequency (%)	0.00	
Protected Option Allowed	Yes	
Reference Time (s)	18.5	7.2
Adj Reference Time (s)	24.5	14.0
Permitted Option		
Adj Saturation A (vph)	2270	
Reference Time A (s)	18.5	
Adj Saturation B (vph)	NA	
Reference Time B (s)	NA	
Reference Time (s)	28.0	
Adj Reference Time (s)	34.0	
Split Option		
Ref Time Combined (s)	18.5	
Ref Time Seperate (s)	18.5	
Reference Time (s)	18.5	
Adj Reference Time (s)	24.5	
Summary		

Intersection Capacity Utilization
19: El Camino Real & Faraday Ave

Existing Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	250	497	851	196	137	311	42	130	1128	95	11	216
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No					
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	4.9	4.9	4.9	5.0	5.0	5.0	4.2	4.2	6.0	4.0	4.2	4.2
Minimum Green (s)	4.0	4.0	4.0	6.0	6.0	6.0	4.0	4.0	6.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	250	781	567	196	137	311	0	172	1223	0	0	227
Lane Utilization Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.97	0.91	1.00	1.00	0.97
Turning Factor (vph)	0.95	0.95	0.85	0.95	1.00	0.85	0.95	0.95	0.99	0.85	0.95	0.95
Saturated Flow (vph)	2375	4501	2125	2375	4760	2125	0	4612	6731	0	0	4612
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00				0.00					
Protected Option Allowed	Yes			Yes			Yes					
Reference Time (s)	12.6	20.8	32.0	9.9	3.5	17.6	0.0	4.5	21.8	0.0	0.0	5.9
Adj Reference Time (s)	17.5	25.7	36.9	14.9	11.0	22.6	0.0	8.7	27.8	0.0	0.0	10.1
Permitted Option												
Adj Saturation A (vph)	158	2250		158	2380		0	154	2244		0	154
Reference Time A (s)	189.5	20.8		148.5	3.5		0.0	67.1	21.8		0.0	88.6
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA	NA		NA	NA
Reference Time B (s)	NA	NA		NA	NA		NA	NA	NA		NA	NA
Reference Time (s)		189.5			148.5				67.1			
Adj Reference Time (s)		194.4			153.5				73.1			
Split Option												
Ref Time Combined (s)	12.6	20.8		9.9	3.5		0.0	4.5	21.8		0.0	5.9
Ref Time Seperate (s)	12.6	13.3		9.9	3.5		2.1	3.4	20.1		0.6	5.6
Reference Time (s)	20.8	20.8		9.9	9.9		21.8	21.8	21.8		12.5	12.5
Adj Reference Time (s)	25.7	25.7		14.9	14.9		27.8	27.8	27.8		18.5	18.5
Summary	EB WB		NB SB		Combined							
Protected Option (s)	40.6		37.9									
Permitted Option (s)	194.4		94.6									
Split Option (s)	40.6		46.4									
Minimum (s)	40.6		37.9		78.5							
Right Turns	EBR	WBR	SBR									
Adj Reference Time (s)	36.9	22.6	12.0									
Cross Thru Ref Time (s)	27.2	37.9	11.0									
Oncoming Left Ref Time (s)	14.9	17.5	8.7									
Combined (s)	79.1	78.0	31.7									
Intersection Summary												
Intersection Capacity Utilization	65.9%			ICU Level of Service					C			
Reference Times and Phasing Options do not represent an optimized timing plan.												
























Intersection Capacity Utilization
 19: El Camino Real & Faraday Ave

Existing Conditions
 PM Peak Hour

Movement	SBT	SBR
Label Configurations	↑↑↑	↑
Volume (vph)	712	18
Pedestrians		
Ped Button		
Pedestrian Timing (s)		
Free Right		No
Ideal Flow	2500	2500
Lost Time (s)	6.0	6.0
Minimum Green (s)	6.0	6.0
Refr Cycle Length (s)	120	120
Volume Combined (vph)	712	18
Lane Utilization Factor	0.91	1.00
Turning Factor (vph)	1.00	0.85
Saturated Flow (vph)	6810	2125
Ped Intf Time (s)	0.0	0.0
Pedestrian Frequency (%)	0.00	
Protected Option Allowed	Yes	
Reference Time (s)	12.5	1.0
Adj Reference Time (s)	18.5	12.0
Permitted Option		
Adj Saturation A (vph)	2270	
Reference Time A (s)	12.5	
Adj Saturation B (vph)	NA	
Reference Time B (s)	NA	
Reference Time (s)	88.6	
Adj Reference Time (s)	94.6	
Split Option		
Ref Time Combined (s)	12.5	
Ref Time Seperate (s)	12.5	
Reference Time (s)	12.5	
Adj Reference Time (s)	18.5	
Summary		

Intersection Capacity Utilization
20: Avenida Encinas & Palomar Airport Rd

Existing Conditions
PM Peak Hour













												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	275	42	297	503	312	87	117	400	253	97	64
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1840	2040	1800	1840	2040	1840	1840	2040	1840	1840	2040	1840
Lost Time (s)	4.2	5.0	4.0	4.2	5.0	5.0	4.6	4.6	4.6	4.6	4.6	4.6
Minimum Green (s)	4.0	8.0	4.0	4.0	8.0	8.0	6.0	6.0	6.0	6.0	6.0	6.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	58	317	0	297	503	312	87	117	400	0	350	64
Lane Utilization 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
Turning Factor (vph)	0.95	0.98	0.85	0.95	1.00	0.85	0.95	1.00	0.85	0.95	0.96	0.85
Saturated Flow (vph)	1748	1999	0	1748	2040	1564	1748	2040	1564	0	3933	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00			0.00			
Protected Option Allowed	Yes			Yes			No			No		
Reference Time (s)	4.0	19.0	0.0	20.4	29.6	23.9				30.7		
Adj Reference Time (s)	8.2	24.0	0.0	24.6	34.6	28.9				35.3		
Permitted Option												
Adj Saturation A (vph)	117	1999			117	2040	117	2040			0	331
Reference Time A (s)	59.7	19.0			305.8	29.6	89.6	6.9			0.0	126.8
Adj Saturation B (vph)	NA	NA			NA	NA	0	2040			0	0
Reference Time B (s)	NA	NA			NA	NA	14.0	6.9			16.7	18.7
Reference Time (s)	59.7		305.8			14.0			18.7			
Adj Reference Time (s)	64.7		310.8			18.6			23.3			
Split Option												
Ref Time Combined (s)	4.0	19.0	20.4		29.6	6.0	6.9	0.0		10.7		
Ref Time Seperate (s)	4.0	16.5	20.4		29.6	6.0	6.9	8.7		5.7		
Reference Time (s)	19.0	19.0	29.6		29.6	6.9	6.9	10.7		10.7		
Adj Reference Time (s)	24.0	24.0	34.6		34.6	11.5	11.5	15.3		15.3		
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	48.6		NA									
Permitted Option (s)	310.8		23.3									
Split Option (s)	58.6		26.8									
Minimum (s)	48.6		23.3		71.9							
Right Turns												
	WBR	NBR	SBR									
Adj Reference Time (s)	28.9	35.3	10.6									
Cross Thru Ref Time (s)	11.5	24.0	34.6									
Oncoming Left Ref Time (s)	8.2	15.3	11.5									
Combined (s)	48.6	74.6	56.7									

Intersection Summary

Intersection Capacity Utilization 62.2% ICU Level of Service B
Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
21: I-5 SB Ramps & Palomar Airport Rd

























Existing Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑	↗				↖		↗
Volume (vph)	0	698	230	0	789	1005	0	0	0	581	0	323
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			Yes			No			No		
Ideal Flow	1800	2040	1800	1800	2040	1840	1800	2000	1800	1840	2000	1840
Lost Time (s)	4.0	5.0	4.0	4.0	5.0	4.0	4.0	4.0	4.0	4.6	4.0	4.6
Minimum Green (s)	4.0	4.0	4.0	4.0	8.0	4.0	4.0	4.0	4.0	5.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	0	928	0	0	789	1005	0	0	0	581	0	323
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Turning Factor (vph)	0.95	0.96	0.85	0.95	1.00	0.85	0.95	1.00	0.85	0.95	1.00	0.85
Saturated Flow (vph)	0	5350	0	0	3884	1564	0	0	0	3395	0	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00				0.00				0.00			
Protected Option Allowed	Yes				Yes				Yes			
Reference Time (s)	0.0	20.8	0.0	0.0	24.4	77.1	0.0	0.0	0.0	20.5	0.0	24.8
Adj Reference Time (s)	0.0	25.8	0.0	0.0	29.4	81.1	0.0	0.0	0.0	25.1	0.0	29.4
Permitted Option												
Adj Saturation A (vph)	0	1783		0	1942		0	0		113	0	
Reference Time A (s)	0.0	20.8		0.0	24.4		0.0	0.0		308.1	0.0	
Adj Saturation B (vph)	NA	NA		NA	NA		0	0		0	0	
Reference Time B (s)	NA	NA		NA	NA		0.0	0.0		28.5	0.0	
Reference Time (s)		20.8			24.4			0.0			28.5	
Adj Reference Time (s)		25.8			29.4			8.0			32.5	
Split Option												
Ref Time Combined (s)	0.0	20.8		0.0	24.4		0.0	0.0		20.5	0.0	
Ref Time Separate (s)	0.0	15.7		0.0	24.4		0.0	0.0		20.5	0.0	
Reference Time (s)	20.8	20.8		24.4	24.4		0.0	0.0		20.5	20.5	
Adj Reference Time (s)	25.8	25.8		29.4	29.4		0.0	0.0		24.5	24.5	
Summary	EB WB		NB SB		Combined							
Protected Option (s)	29.4		25.1									
Permitted Option (s)	29.4		32.5									
Split Option (s)	55.2		24.5									
Minimum (s)	29.4		24.5		53.9							
Right Turns	WBR		SBR									
Adj Reference Time (s)	81.1		29.4									
Cross Thru Ref Time (s)	0.0		29.4									
Oncoming Left Ref Time (s)	0.0		0.0									
Combined (s)	81.1		58.8									

Intersection Summary
 Intersection Capacity Utilization 49.0% ICU Level of Service A
 Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
22: I-5 NB Ramps & Palomar Airport Rd

Existing Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  	 			 			
Volume (vph)	255	1024	0	0	1685	946	109	0	576	0	0	0
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1840	2040	1800	1800	2040	1840	1800	2040	1840	1800	2000	1800
Lost Time (s)	4.2	4.6	4.0	4.0	4.6	4.6	4.6	4.6	4.6	4.0	4.0	4.0
Minimum Green (s)	5.0	8.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	255	1024	0	0	1685	946	0	109	576	0	0	0
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	0.89	1.00	1.00	0.89	1.00	1.00	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	1.00	0.85	0.95	0.95	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1748	5557	0	0	5557	2768	0	1938	2768	0	0	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00				0.00				0.00		0.00	
Protected Option Allowed	Yes			Yes			No			No		
Reference Time (s)	17.5	22.1	0.0	0.0	36.4	41.0			25.0			0.0
Adj Reference Time (s)	21.7	26.7	0.0	0.0	41.0	45.6			29.6			0.0
Permitted Option												
Adj Saturation A (vph)	117	1852		0	1852		0	129		0	0	
Reference Time A (s)	262.6	22.1		0.0	36.4		0.0	101.2		0.0	0.0	
Adj Saturation B (vph)	NA	NA		NA	NA		0	0		0	0	
Reference Time B (s)	NA	NA		NA	NA		15.6	14.7		0.0	0.0	
Reference Time (s)		262.6			36.4			15.6			0.0	
Adj Reference Time (s)		267.2			41.0			20.2			8.0	
Split Option												
Ref Time Combined (s)	17.5	22.1		0.0	36.4		0.0	6.7		0.0	0.0	
Ref Time Separate (s)	17.5	22.1		0.0	36.4		7.6	0.0		0.0	0.0	
Reference Time (s)	22.1	22.1		36.4	36.4		7.6	7.6		0.0	0.0	
Adj Reference Time (s)	26.7	26.7		41.0	41.0		12.2	12.2		0.0	0.0	
Summary	EB WB		NB SB		Combined							
Protected Option (s)	62.7		NA									
Permitted Option (s)	267.2		20.2									
Split Option (s)	67.7		12.2									
Minimum (s)	62.7		12.2		74.9							
Right Turns	WBR		NBR									
Adj Reference Time (s)	45.6		29.6									
Cross Thru Ref Time (s)	12.2		26.7									
Oncoming Left Ref Time (s)	21.7		0.0									
Combined (s)	79.6		56.3									

Intersection Summary
 Intersection Capacity Utilization 66.3% ICU Level of Service C
 Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
23: Paseo Del Norte & Palomar Airport Rd

Existing Conditions
PM Peak Hour

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	
Lane Configurations													
Volume (vph)	9	265	1154	172	29	278	2139	209	228	142	172	223	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right				No						No			
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	
Lost Time (s)	4.2	4.2	6.0	4.0	4.2	4.2	6.0	4.2	4.2	5.0	4.0	4.2	
Minimum Green (s)	4.0	4.0	8.0	4.0	4.0	4.0	8.0	4.0	4.0	6.0	4.0	4.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	0	274	1326	0	0	307	2139	209	228	314	0	223	
Lane Utilization Factor	1.00	0.97	0.91	1.00	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	
Turning Factor (vph)	0.95	0.95	0.98	0.85	0.95	0.95	1.00	0.85	0.95	0.92	0.85	0.95	
Saturated Flow (vph)	0	4612	6677	0	0	4612	9080	2125	4612	4369	0	4612	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)	0.00			0.00					0.00				
Protected Option Allowed	Yes			Yes					Yes				
Reference Time (s)	0.0	7.1	23.8	0.0	0.0	8.0	28.3	11.8	5.9	8.6	0.0	5.8	
Adj Reference Time (s)	0.0	11.3	29.8	0.0	0.0	12.2	34.3	16.0	10.1	13.6	0.0	10.0	
Permitted Option													
Adj Saturation A (vph)	0	154	2226	0			154	2270	154	2184	154		
Reference Time A (s)	0.0	106.9	23.8	0.0			119.8	28.3	89.0	8.6	87.0		
Adj Saturation B (vph)	NA	NA	NA	NA			NA	NA	NA	NA	NA		
Reference Time B (s)	NA	NA	NA	NA			NA	NA	NA	NA	NA		
Reference Time (s)	106.9			119.8					89.0				
Adj Reference Time (s)	112.9			125.8					94.0				
Split Option													
Ref Time Combined (s)	0.0	7.1	23.8	0.0			8.0	28.3	5.9	8.6	5.8		
Ref Time Seperate (s)	0.5	6.9	20.7	1.5			7.2	28.3	5.9	3.9	5.8		
Reference Time (s)	23.8	23.8	23.8	28.3			28.3	28.3	8.6	8.6	10.0		
Adj Reference Time (s)	29.8	29.8	29.8	34.3			34.3	34.3	13.6	13.6	15.0		
Summary	EB WB		NB SB		Combined								
Protected Option (s)	45.6		25.1										
Permitted Option (s)	125.8		94.0										
Split Option (s)	64.1		28.6										
Minimum (s)	45.6		25.1		70.7								
Right Turns	WBR												
Adj Reference Time (s)	16.0												
Cross Thru Ref Time (s)	13.6												
Oncoming Left Ref Time (s)	11.3												
Combined (s)	41.0												
Intersection Summary													
Intersection Capacity Utilization	58.9%			ICU Level of Service					B				
Reference Times and Phasing Options do not represent an optimized timing plan.													

Intersection Capacity Utilization
 23: Paseo Del Norte & Palomar Airport Rd























Existing Conditions
 PM Peak Hour



Movement	SBT	SBR
Lane Configurations	↑↑	
Volume (vph)	99	255
Pedestrians		
Ped Button		
Pedestrian Timing (s)		
Free Right		No
Ideal Flow	2500	2500
Lost Time (s)	5.0	4.0
Minimum Green (s)	6.0	4.0
Refr Cycle Length (s)	120	120
Volume Combined (vph)	354	0
Lane Utilization Factor	0.95	1.00
Turning Factor (vph)	0.89	0.85
Saturated Flow (vph)	4246	0
Ped Intf Time (s)	0.0	0.0
Pedestrian Frequency (%)	0.00	
Protected Option Allowed	Yes	
Reference Time (s)	10.0	0.0
Adj Reference Time (s)	15.0	0.0
Permitted Option		
Adj Saturation A (vph)	2123	
Reference Time A (s)	10.0	
Adj Saturation B (vph)	NA	
Reference Time B (s)	NA	
Reference Time (s)	87.0	
Adj Reference Time (s)	92.0	
Split Option		
Ref Time Combined (s)	10.0	
Ref Time Seperate (s)	2.8	
Reference Time (s)	10.0	
Adj Reference Time (s)	15.0	
Summary		

Intersection Capacity Utilization
24: Armada Dr & Palomar Airport Rd

Existing Conditions
PM Peak Hour

													
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	
Lane Configurations													
Volume (vph)	13	81	1266	135	3	279	2032	73	354	50	267	190	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right				No						No			
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	
Lost Time (s)	4.2	4.2	6.0	4.7	4.2	4.2	6.0	5.0	4.7	4.7	4.7	5.0	
Minimum Green (s)	4.0	4.0	8.0	4.0	4.0	4.0	8.0	4.0	4.0	6.0	6.0	4.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	0	94	1266	135	0	282	2032	73	354	139	178	190	
Lane Utilization Factor	1.00	0.97	0.91	1.00	1.00	1.00	0.91	1.00	0.97	1.00	1.00	0.97	
Turning Factor (vph)	0.95	0.95	1.00	0.85	0.95	0.95	1.00	0.85	0.95	0.90	0.85	0.95	
Saturated Flow (vph)	0	4612	6810	2125	0	2375	6810	2125	4612	2260	2125	4612	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)	0.00			0.00					0.00				
Protected Option Allowed	Yes			Yes					Yes				
Reference Time (s)	0.0	2.4	22.3	7.6	0.0	14.2	35.8	4.1	9.2	7.4	10.1	4.9	
Adj Reference Time (s)	0.0	8.2	28.3	12.3	0.0	18.4	41.8	9.1	13.9	12.1	14.8	9.9	
Permitted Option													
Adj Saturation A (vph)	0	154	2270		0	158	2270		154	2260		154	
Reference Time A (s)	0.0	36.7	22.3		0.0	213.7	35.8		138.2	7.4		74.2	
Adj Saturation B (vph)	NA	NA	NA		NA	NA	NA		0	2260		NA	
Reference Time B (s)	NA	NA	NA		NA	NA	NA		17.2	7.4		NA	
Reference Time (s)	36.7			213.7					17.2				
Adj Reference Time (s)	42.7			219.7					21.9				
Split Option													
Ref Time Combined (s)	0.0	2.4	22.3		0.0	14.2	35.8		9.2	7.4		4.9	
Ref Time Separate (s)	0.7	2.1	22.3		0.2	14.1	35.8		9.2	2.7		4.9	
Reference Time (s)	22.3	22.3	22.3		35.8	35.8	35.8		9.2	9.2		4.9	
Adj Reference Time (s)	28.3	28.3	28.3		41.8	41.8	41.8		13.9	13.9		10.7	
Summary	EB WB		NB SB		Combined								
Protected Option (s)	50.0		24.6										
Permitted Option (s)	219.7		78.9										
Split Option (s)	70.1		24.6										
Minimum (s)	50.0		24.6		74.6								
Right Turns	EBR	WBR	NBR	SBR									
Adj Reference Time (s)	12.3	9.1	14.8	19.2									
Cross Thru Ref Time (s)	10.7	12.1	46.8	50.0									
Oncoming Left Ref Time (s)	18.4	8.2	9.9	13.9									
Combined (s)	41.5	29.4	71.5	83.1									
Intersection Summary													
Intersection Capacity Utilization	69.2%			ICU Level of Service					C				
Reference Times and Phasing Options do not represent an optimized timing plan.													

Intersection Capacity Utilization
 24: Armada Dr & Palomar Airport Rd



























Existing Conditions
 PM Peak Hour



Movement	SBT	SBR
Lane Configurations	↑	↑
Volume (vph)	48	256
Pedestrians		
Ped Button		
Pedestrian Timing (s)		
Free Right		No
Ideal Flow	2500	2500
Lost Time (s)	4.7	4.7
Minimum Green (s)	6.0	6.0
Refr Cycle Length (s)	120	120
Volume Combined (vph)	48	256
Lane Utilization Factor	1.00	1.00
Turning Factor (vph)	1.00	0.85
Saturated Flow (vph)	2500	2125
Ped Intf Time (s)	0.0	0.0
Pedestrian Frequency (%)	0.00	
Protected Option Allowed	Yes	
Reference Time (s)	2.3	14.5
Adj Reference Time (s)	10.7	19.2
Permitted Option		
Adj Saturation A (vph)	2500	
Reference Time A (s)	2.3	
Adj Saturation B (vph)	NA	
Reference Time B (s)	NA	
Reference Time (s)	74.2	
Adj Reference Time (s)	78.9	
Split Option		
Ref Time Combined (s)	2.3	
Ref Time Seperate (s)	2.3	
Reference Time (s)	4.9	
Adj Reference Time (s)	10.7	
Summary		
































Intersection Capacity Utilization
25: Hidden Valley Rd/The Crossing Dr & Palomar Airport Rd

Existing Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Volume (vph)	51	1553	122	106	2166	105	101	7	67	75	15	120
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1840	2040	1840	1840	2040	1800	1840	2040	1800	1840	2040	1840
Lost Time (s)	5.0	6.0	4.2	4.2	6.0	4.0	4.2	4.7	4.0	5.0	5.7	5.7
Minimum Green (s)	4.0	8.0	4.0	4.0	8.0	4.0	4.0	6.0	4.0	4.0	6.0	6.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	51	1553	122	106	2271	0	101	74	0	75	15	120
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.99	0.85	0.95	0.86	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1748	5557	1564	1748	5518	0	1748	1763	0	1748	2040	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00			0.00			
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	3.5	33.5	9.4	7.3	49.4	0.0	6.9	5.0	0.0	5.1	0.9	9.2
Adj Reference Time (s)	9.0	39.5	13.6	11.5	55.4	0.0	11.1	10.7	0.0	10.1	11.7	14.9
Permitted Option												
Adj Saturation A (vph)	117	1852		117	1839		117	1763		117	2040	
Reference Time A (s)	52.5	33.5		109.2	49.4		104.0	5.0		77.2	0.9	
Adj Saturation B (vph)	NA	NA		NA	NA		0	1763		0	2040	
Reference Time B (s)	NA	NA		NA	NA		14.9	5.0		13.1	0.9	
Reference Time (s)		52.5			109.2			14.9			13.1	
Adj Reference Time (s)		58.5			115.2			19.6			18.8	
Split Option												
Ref Time Combined (s)	3.5	33.5		7.3	49.4		6.9	5.0		5.1	0.9	
Ref Time Separate (s)	3.5	33.5		7.3	47.1		6.9	0.5		5.1	0.9	
Reference Time (s)	33.5	33.5		49.4	49.4		6.9	6.9		5.1	5.1	
Adj Reference Time (s)	39.5	39.5		55.4	55.4		11.6	11.6		11.7	11.7	
Summary	EB WB		NB SB		Combined							
Protected Option (s)	64.4		22.8									
Permitted Option (s)	115.2		19.6									
Split Option (s)	94.9		23.3									
Minimum (s)	64.4		19.6		84.0							
Right Turns	EBR		SBR									
Adj Reference Time (s)	13.6		14.9									
Cross Thru Ref Time (s)	11.7		55.4									
Oncoming Left Ref Time (s)	11.5		11.1									
Combined (s)	36.7		81.4									
Intersection Summary												
Intersection Capacity Utilization	70.0%				ICU Level of Service				C			
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization
26: Aviara Pkwy/College Blvd & Palomar Airport Rd

Existing Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	 	  			 	  		 	 			
Volume (vph)	141	1299	255	2	218	1677	91	159	140	139	33	457
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No					
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	4.5	6.3	6.3	4.2	4.2	6.3	6.3	4.2	5.8	5.8	4.2	6.0
Minimum Green (s)	4.0	8.0	8.0	4.0	4.0	8.0	8.0	4.0	6.0	6.0	4.0	6.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	141	1299	255	0	220	1677	91	159	140	139	33	457
Lane Utilization Factor	0.97	0.91	1.00	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.95	1.00	0.85	0.95	1.00	0.85	0.95	1.00
Saturated Flow (vph)	4612	6810	2125	0	4612	6810	2125	4612	4760	2125	2375	2500
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00			0.00			0.00		
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	3.7	22.9	14.4	0.0	5.7	29.6	5.1	4.1	3.5	7.8	1.7	21.9
Adj Reference Time (s)	8.5	29.2	20.7	0.0	9.9	35.9	14.3	8.3	11.8	13.6	8.2	27.9
Permitted Option												
Adj Saturation A (vph)	154	2270		0	154	2270		154	2380		158	2500
Reference Time A (s)	55.0	22.9		0.0	85.9	29.6		62.1	3.5		25.0	21.9
Adj Saturation B (vph)	NA	NA		NA	NA	NA		NA	NA		NA	NA
Reference Time B (s)	NA	NA		NA	NA	NA		NA	NA		NA	NA
Reference Time (s)		55.0			85.9			62.1				25.0
Adj Reference Time (s)		61.3			92.2			67.9				31.0
Split Option												
Ref Time Combined (s)	3.7	22.9		0.0	5.7	29.6		4.1	3.5		1.7	21.9
Ref Time Seperate (s)	3.7	22.9		0.1	5.7	29.6		4.1	3.5		1.7	21.9
Reference Time (s)	22.9	22.9		29.6	29.6	29.6		4.1	4.1		21.9	21.9
Adj Reference Time (s)	29.2	29.2		35.9	35.9	35.9		11.8	11.8		27.9	27.9
Summary	EB WB		NB SB		Combined							
Protected Option (s)	44.4		36.3									
Permitted Option (s)	92.2		67.9									
Split Option (s)	65.0		39.7									
Minimum (s)	44.4		36.3		80.6							
Right Turns	EBR	WBR	NBR	SBR								
Adj Reference Time (s)	20.7	14.3	13.6	35.1								
Cross Thru Ref Time (s)	27.9	11.8	39.1	35.9								
Oncoming Left Ref Time (s)	9.9	8.5	8.2	8.3								
Combined (s)	58.6	34.6	61.0	79.2								
Intersection Summary												
Intersection Capacity Utilization	67.2%				ICU Level of Service				C			
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization
 26: Aviara Pkwy/College Blvd & Palomar Airport Rd























Existing Conditions
 PM Peak Hour



Movement	SBR
Lane Configurations	7
Volume (vph)	541
Pedestrians	
Ped Button	
Pedestrian Timing (s)	
Free Right	No
Ideal Flow	2500
Lost Time (s)	4.5
Minimum Green (s)	4.0
Refr Cycle Length (s)	120
Volume Combined (vph)	541
Lane Utilization Factor	1.00
Turning Factor (vph)	0.85
Saturated Flow (vph)	2125
Ped Intf Time (s)	0.0
Pedestrian Frequency (%)	
Protected Option Allowed	
Reference Time (s)	30.6
Adj Reference Time (s)	35.1
Permitted Option	
Adj Saturation A (vph)	
Reference Time A (s)	
Adj Saturation B (vph)	
Reference Time B (s)	
Reference Time (s)	
Adj Reference Time (s)	
Split Option	
Ref Time Combined (s)	
Ref Time Seperate (s)	
Reference Time (s)	
Adj Reference Time (s)	
Summary	

Intersection Capacity Utilization
27: El Camino Real & Palomar Airport Rd

Existing Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	275	1461	117	533	958	323	17	183	785	458	2	649
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No					
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	5.0	6.0	4.0	5.0	6.0	6.0	5.0	5.0	6.0	5.0	5.0	5.0
Minimum Green (s)	4.0	10.0	4.0	4.0	10.0	10.0	4.0	4.0	10.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	275	1461	117	533	958	323	0	200	785	458	0	651
Lane Utilization Factor	0.97	0.91	1.00	0.97	0.91	0.89	1.00	0.97	0.91	0.89	1.00	0.97
Turning Factor (vph)	0.95	1.00	0.85	0.95	1.00	0.85	0.95	0.95	1.00	0.85	0.95	0.95
Saturated Flow (vph)	4612	6810	2125	4612	6810	3761	0	4612	6810	3761	0	4612
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00		0.00		0.00		0.00			
Protected Option Allowed	Yes			Yes			Yes					
Reference Time (s)	7.2	25.7	6.6	13.9	16.9	10.3	0.0	5.2	13.8	14.6	0.0	16.9
Adj Reference Time (s)	12.2	31.7	10.6	18.9	22.9	16.3	0.0	10.2	19.8	19.6	0.0	21.9
Permitted Option												
Adj Saturation A (vph)	154	2270		154	2270		0	154	2270		0	154
Reference Time A (s)	107.3	25.7		208.0	16.9		0.0	78.1	13.8		0.0	254.1
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA	NA		NA	NA
Reference Time B (s)	NA	NA		NA	NA		NA	NA	NA		NA	NA
Reference Time (s)		107.3			208.0				78.1			
Adj Reference Time (s)		113.3			214.0				84.1			
Split Option												
Ref Time Combined (s)	7.2	25.7		13.9	16.9		0.0	5.2	13.8		0.0	16.9
Ref Time Seperate (s)	7.2	25.7		13.9	16.9		0.9	4.8	13.8		0.1	16.9
Reference Time (s)	25.7	25.7		16.9	16.9		13.8	13.8	13.8		16.9	16.9
Adj Reference Time (s)	31.7	31.7		22.9	22.9		19.8	19.8	19.8		22.9	22.9
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	50.6		41.8									
Permitted Option (s)	214.0		260.1									
Split Option (s)	54.6		42.8									
Minimum (s)	50.6		41.8		92.4							
Right Turns												
	EBR	WBR	NBR	SBR								
Adj Reference Time (s)	10.6	16.3	19.6	13.8								
Cross Thru Ref Time (s)	27.2	41.8	31.7	22.9								
Oncoming Left Ref Time (s)	18.9	12.2	21.9	10.2								
Combined (s)	56.6	70.2	73.3	46.9								

Intersection Summary

Intersection Capacity Utilization 77.0% ICU Level of Service D
Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
 27: El Camino Real & Palomar Airport Rd

Existing Conditions
 PM Peak Hour

Movement	SBT	SBR
Label Configurations	↑↑↑	↑
Volume (vph)	622	156
Pedestrians		
Ped Button		
Pedestrian Timing (s)		
Free Right		No
Ideal Flow	2500	2500
Lost Time (s)	6.0	5.0
Minimum Green (s)	10.0	4.0
Refr Cycle Length (s)	120	120
Volume Combined (vph)	622	156
Lane Utilization Factor	0.91	1.00
Turning Factor (vph)	1.00	0.85
Saturated Flow (vph)	6810	2125
Ped Intf Time (s)	0.0	0.0
Pedestrian Frequency (%)	0.00	
Protected Option Allowed	Yes	
Reference Time (s)	11.0	8.8
Adj Reference Time (s)	17.0	13.8
Permitted Option		
Adj Saturation A (vph)	2270	
Reference Time A (s)	11.0	
Adj Saturation B (vph)	NA	
Reference Time B (s)	NA	
Reference Time (s)	254.1	
Adj Reference Time (s)	260.1	
Split Option		
Ref Time Combined (s)	11.0	
Ref Time Seperate (s)	11.0	
Reference Time (s)	16.9	
Adj Reference Time (s)	22.9	
Summary		

Diamond Interchange Capacity Utilization
28: I-5 SB Ramps & Poinsettia Ln

Existing Conditions
PM Peak Hour

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	EBL	EBT	WBT	WBR	NBL	
Node	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Configurations	↑↑	↑	↑↑	↑↑	↑	↑	↑	↑	↑↑	↑↑↑	↑		
Volume (vph)	697	213	718	651	333	1	187	164	866	1102	207	267	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right	No						No			No			
Ideal Flow	2040	1840	1840	2040	1840	2040	1840	1840	2040	2040	1840	1800	
Storage Space			29.3	42.6				21.3	42.6				
Lost Time (s)	4.6	4.6	4.2	4.6	4.6	4.6	4.6	4.2	4.6	4.6	4.6	4.6	
Minimum Green (s)	7.0	7.0	5.0	8.0	7.0	7.0	7.0	4.0	7.0	8.0	8.0	4.0	
Refr Cycle Length (s)													
Travel Time (s)	11.9		120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	697	213	718	651	333	63	125	164	866	1102	207	0	
Lane Utilization Factor	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	0.95	0.91	1.00	1.00	
Turning Factor (vph)	1.00	0.85	0.95	1.00	0.95	0.85	0.85	0.95	1.00	1.00	0.85	0.95	
Saturated Flow (vph)	3884	1564	3395	3884	1748	1739	1564	1748	3884	5557	1564	0	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)	0.00			0.00		0.00			0.00	0.00			
Reference Time (s)	21.5	16.3	25.4	20.1	22.9	4.4	9.6	11.3	26.8	23.8	15.9	0.0	
Adj Reference Time (s)	26.1	20.9	29.6	24.7	27.5	11.6	14.2	15.5	31.4	28.4	20.5	0.0	
Volume per cycle, 90th			30.2	27.7	15.4			8.5	35.7			12.7	
Volume to Storage			1.0	0.6	0.4			0.4	0.8			0.3	
Isolated Timings (s)	83.2							65.3					
Timing Options													
Leading Option (s)		86.0											
Lagging Option (s)	NA												
Lead-Lag Option (s)	OK	83.2											
Interchange Summary													
Intersection Capacity Utilization	69.3%		ICU Level of Service					C					

Reference Times and Phasing Options do not represent an optimized timing plan.























Diamond Interchange Capacity Utilization
 28: I-5 SB Ramps & Poinsettia Ln

Existing Conditions
 PM Peak Hour

	↑	↗		
Movement	NBT	NBR		
Node	0	0		
Lane Configurations	↖	↗↗		
Volume (vph)	6	535		
Pedestrians				
Ped Button				
Pedestrian Timing (s)				
Free Right		No		
Ideal Flow	2040	1840		
Storage Space				
Lost Time (s)	4.6	4.6		
Minimum Green (s)	4.0	4.0		
Refr Cycle Length (s)				
Travel Time (s)	120	120	120	120
Volume Combined (vph)	273	535		
Lane Utilization Factor	1.00	0.89		
Turning Factor (vph)	0.95	0.85		
Saturated Flow (vph)	1940	2768		
Ped Intf Time (s)	0.0	0.0		
Pedestrian Frequency (%)	0.00			
Reference Time (s)	16.9	23.2		
Adj Reference Time (s)	21.5	27.8		
Volume per cycle, 90th				
Volume to Storage				
Isolated Timings (s)				
Timing Options				























Intersection Capacity Utilization
30: Lower Ln/Paseo Del Norte & Poinsettia Ln

Existing Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	375	976	50	15	969	108	26	4	17	65	4	314
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1840	2040	1840	1840	2040	1800	1840	2040	1800	1840	2040	1800
Lost Time (s)	4.2	4.6	4.6	4.2	4.6	4.0	4.6	4.6	4.0	4.6	4.6	4.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	375	976	50	15	1077	0	26	21	0	65	318	0
Lane Utilization Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.98	0.85	0.95	0.88	0.85	0.95	0.85	0.85
Saturated Flow (vph)	3395	3884	1564	1748	3826	0	1748	1792	0	1748	1738	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00			0.00			
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	13.3	30.2	3.8	1.0	33.8	0.0	1.8	1.4	0.0	4.5	22.0	0.0
Adj Reference Time (s)	17.5	34.8	9.6	9.2	38.4	0.0	9.6	9.6	0.0	9.6	26.6	0.0
Permitted Option												
Adj Saturation A (vph)	113	1942		117	1913		117	1792		117	1738	
Reference Time A (s)	198.8	30.2		15.4	33.8		26.8	1.4		66.9	22.0	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		0	1738	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		12.5	22.0	
Reference Time (s)		198.8			33.8			26.8			22.0	
Adj Reference Time (s)		203.4			38.4			31.4			26.6	
Split Option												
Ref Time Combined (s)	13.3	30.2		1.0	33.8		1.8	1.4		4.5	22.0	
Ref Time Seperate (s)	13.3	30.2		1.0	30.4		1.8	0.3		4.5	0.3	
Reference Time (s)	30.2	30.2		33.8	33.8		1.8	1.8		22.0	22.0	
Adj Reference Time (s)	34.8	34.8		38.4	38.4		9.6	9.6		26.6	26.6	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	55.8		36.2									
Permitted Option (s)	203.4		31.4									
Split Option (s)	73.1		36.2									
Minimum (s)	55.8		31.4		87.2							
Right Turns												
	EBR											
Adj Reference Time (s)	9.6											
Cross Thru Ref Time (s)	26.6											
Oncoming Left Ref Time (s)	9.2											
Combined (s)	45.4											
Intersection Summary												
Intersection Capacity Utilization	72.7%				ICU Level of Service				C			
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization
31: Aviara Pkwy & Poinsettia Ln

Existing Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	162	357	306	24	363	80	267	180	22	83	329	395
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1890	2040	1840	1840	2040	1800	1840	2040	1800	1840	2040	1800
Lost Time (s)	5.5	6.0	5.5	5.5	6.0	4.0	5.5	6.0	4.0	5.5	6.0	4.0
Minimum Green (s)	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	162	357	306	24	443	0	267	202	0	83	724	0
Lane Utilization Factor	0.97	1.00	0.89	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.97	0.85	0.95	0.98	0.85	0.95	0.92	0.85
Saturated Flow (vph)	3487	2040	2768	1748	3779	0	3395	3821	0	1748	3566	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00			0.00			
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	5.6	21.0	13.3	1.6	14.1	0.0	9.4	6.3	0.0	5.7	24.4	0.0
Adj Reference Time (s)	11.1	27.0	18.8	9.5	20.1	0.0	14.9	12.3	0.0	11.2	30.4	0.0
Permitted Option												
Adj Saturation A (vph)	116	2040		117	1889		113	1910		117	1783	
Reference Time A (s)	83.6	21.0		24.7	14.1		141.6	6.3		85.5	24.4	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		83.6			24.7			141.6			85.5	
Adj Reference Time (s)		89.6			30.7			147.6			91.5	
Split Option												
Ref Time Combined (s)	5.6	21.0		1.6	14.1		9.4	6.3		5.7	24.4	
Ref Time Seperate (s)	5.6	21.0		1.6	11.5		9.4	5.7		5.7	11.1	
Reference Time (s)	21.0	21.0		14.1	14.1		9.4	9.4		24.4	24.4	
Adj Reference Time (s)	27.0	27.0		20.1	20.1		15.4	15.4		30.4	30.4	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	36.5		45.3									
Permitted Option (s)	89.6		147.6									
Split Option (s)	47.1		45.8									
Minimum (s)	36.5		45.3		81.8							
Right Turns												
	EBR											
Adj Reference Time (s)	18.8											
Cross Thru Ref Time (s)	30.4											
Oncoming Left Ref Time (s)	9.5											
Combined (s)	58.6											
Intersection Summary												
Intersection Capacity Utilization			68.2%		ICU Level of Service				C			
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization
32: El Camino Real & Aviara Pkwy

Existing Conditions
PM Peak Hour

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	130	380	329	2	343	270	76	440	1452	536	12	185
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No					
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	4.2	5.7	4.6	4.2	4.2	5.7	4.0	4.6	6.4	4.0	4.2	4.2
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	6.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	130	380	329	0	345	346	0	440	1988	0	0	197
Lane Utilization Factor	0.97	0.95	1.00	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.97
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.95	0.97	0.85	0.95	0.96	0.85	0.95	0.95
Saturated Flow (vph)	4612	4760	2125	0	4612	4603	0	4612	6535	0	0	4612
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00				0.00				0.00			
Protected Option Allowed	Yes				Yes				Yes			
Reference Time (s)	3.4	9.6	18.6	0.0	9.0	9.0	0.0	11.4	36.5	0.0	0.0	5.1
Adj Reference Time (s)	8.2	15.3	23.2	0.0	13.2	14.7	0.0	16.0	42.9	0.0	0.0	9.3
Permitted Option												
Adj Saturation A (vph)	154	2380		0	154	2302		154	2178		0	154
Reference Time A (s)	50.7	9.6		0.0	134.6	9.0		171.7	36.5		0.0	76.9
Adj Saturation B (vph)	NA	NA		NA	NA	NA		NA	NA		NA	NA
Reference Time B (s)	NA	NA		NA	NA	NA		NA	NA		NA	NA
Reference Time (s)		50.7				134.6			171.7			
Adj Reference Time (s)		56.4				140.3			178.1			
Split Option												
Ref Time Combined (s)	3.4	9.6		0.0	9.0	9.0		11.4	36.5		0.0	5.1
Ref Time Seperate (s)	3.4	9.6		0.1	8.9	7.0		11.4	26.7		0.6	4.8
Reference Time (s)	9.6	9.6		9.0	9.0	9.0		36.5	36.5		29.4	29.4
Adj Reference Time (s)	15.3	15.3		14.7	14.7	14.7		42.9	42.9		35.8	35.8
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	28.5		52.2									
Permitted Option (s)	140.3		178.1									
Split Option (s)	30.0		78.7									
Minimum (s)	28.5		52.2		80.7							
Right Turns												
	EBR											
Adj Reference Time (s)	23.2											
Cross Thru Ref Time (s)	35.8											
Oncoming Left Ref Time (s)	13.2											
Combined (s)	72.1											
Intersection Summary												
Intersection Capacity Utilization			67.2%		ICU Level of Service			C				
Reference Times and Phasing Options do not represent an optimized timing plan.												























Intersection Capacity Utilization
 32: El Camino Real & Aviara Pkwy

Existing Conditions
 PM Peak Hour

Movement	SBT	SBR
Label Configurations	↑↑↑	↘
Volume (vph)	1556	96
Pedestrians		
Ped Button		
Pedestrian Timing (s)		
Free Right		No
Ideal Flow	2500	2500
Lost Time (s)	6.4	4.0
Minimum Green (s)	6.0	4.0
Refr Cycle Length (s)	120	120
Volume Combined (vph)	1652	0
Lane Utilization Factor	0.91	1.00
Turning Factor (vph)	0.99	0.85
Saturated Flow (vph)	6751	0
Ped Intf Time (s)	0.0	0.0
Pedestrian Frequency (%)	0.00	
Protected Option Allowed	Yes	
Reference Time (s)	29.4	0.0
Adj Reference Time (s)	35.8	0.0
Permitted Option		
Adj Saturation A (vph)	2250	
Reference Time A (s)	29.4	
Adj Saturation B (vph)	NA	
Reference Time B (s)	NA	
Reference Time (s)	76.9	
Adj Reference Time (s)	83.3	
Split Option		
Ref Time Combined (s)	29.4	
Ref Time Seperate (s)	27.7	
Reference Time (s)	29.4	
Adj Reference Time (s)	35.8	
Summary		

Intersection Capacity Utilization
33: El Camino Real & Poinsettia Ln

Existing Conditions
PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	15	9	5	292	13	138	12	5	1131	404	241	1752	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right	No			No			No			No			
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	
Lost Time (s)	4.2	4.7	4.0	4.2	5.0	4.0	4.2	4.2	6.0	6.0	4.2	6.0	
Minimum Green (s)	4.0	6.0	4.0	4.0	6.0	4.0	4.0	4.0	8.0	8.0	8.0	8.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	15	14	0	292	151	0	0	17	1131	404	241	1772	
Lane Utilization Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.97	0.91	1.00	0.97	0.91	
Turning Factor (vph)	0.95	0.95	0.85	0.95	0.86	0.85	0.95	0.95	1.00	0.85	0.95	1.00	
Saturated Flow (vph)	4612	4505	0	4612	4107	0	0	4612	6810	2125	4612	6798	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)	0.00			0.00			0.00			0.00			
Protected Option Allowed	Yes			Yes			Yes			Yes			
Reference Time (s)	0.4	0.4	0.0	7.6	4.4	0.0	0.0	0.4	19.9	22.8	6.3	31.3	
Adj Reference Time (s)	8.2	10.7	0.0	11.8	11.0	0.0	0.0	8.2	25.9	28.8	12.2	37.3	
Permitted Option													
Adj Saturation A (vph)	154	2253		154	2054		0	154	2270		154	2266	
Reference Time A (s)	5.9	0.4		114.0	4.4		0.0	6.6	19.9		94.1	31.3	
Adj Saturation B (vph)	NA	NA		0	4107		NA	NA	NA		NA	NA	
Reference Time B (s)	NA	NA		15.6	4.4		NA	NA	NA		NA	NA	
Reference Time (s)		5.9			15.6				19.9			94.1	
Adj Reference Time (s)		10.7			20.6				25.9			100.1	
Split Option													
Ref Time Combined (s)	0.4	0.4		7.6	4.4		0.0	0.4	19.9		6.3	31.3	
Ref Time Separate (s)	0.4	0.2		7.6	0.4		0.6	0.1	19.9		6.3	30.9	
Reference Time (s)	0.4	0.4		7.6	7.6		19.9	19.9	19.9		31.3	31.3	
Adj Reference Time (s)	10.7	10.7		12.6	12.6		25.9	25.9	25.9		37.3	37.3	
Summary													
	EB WB		NB SB		Combined								
Protected Option (s)	22.5		45.5										
Permitted Option (s)	20.6		100.1										
Split Option (s)	23.3		63.2										
Minimum (s)	20.6		45.5		66.1								
Right Turns													
	NBR												
Adj Reference Time (s)	28.8												
Cross Thru Ref Time (s)	10.7												
Oncoming Left Ref Time (s)	12.2												
Combined (s)	51.7												

Intersection Summary

Intersection Capacity Utilization 55.1% ICU Level of Service B
Reference Times and Phasing Options do not represent an optimized timing plan.

Cannon Rd Freeway Analysis

Freeway Segment LOS - Existing Conditions																
Segment	Number of Lanes		Capacity Per Lane	Peak Hour %	Direction Split	HV%	LOS Thresholds						ADT	Peak Hour Per Lane	V/C	LOS
	Mixed Flow	HOV					A	B	C	D	E	F				
Interstate 5																
La Costa Ave to Poinsettia Ln	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	204,000	2243	0.95	E
Poinsettia Ln to Palomar Airport Rd	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	201,000	2210	0.94	E
Palomar Airport Rd to Cannon Rd	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	198,000	2177	0.93	E
Cannon Rd to Tamarack Ave	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	199,000	2188	0.93	E
Tamarack Ave to Carlsbad Village Dr	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	196,000	2155	0.92	E

Freeway Segment LOS - Existing Plus Project Conditions																						
Segment	Number of Lanes		Capacity Per Lane	Peak Hour %	Direction Split	HV%	LOS Thresholds						Existing Conditions				Existing Plus Project				Change in V/C	Significant
	Mixed Flow	HOV					A	B	C	D	E	F	ADT	Peak Hour Per Lane	V/C	LOS	ADT	Peak Hour Per Lane	V/C	LOS		
Interstate 5																						
La Costa Ave to Poinsettia Ln	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	204,000	2243	0.95	E	209,301	2301	0.98	E	0.02	Yes
Poinsettia Ln to Palomar Airport Rd	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	201,000	2210	0.94	E	206,782	2274	0.97	E	0.03	Yes
Palomar Airport Rd to Cannon Rd	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	198,000	2177	0.93	E	203,782	2241	0.95	E	0.03	Yes
Cannon Rd to Tamarack Ave	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	199,000	2188	0.93	E	204,301	2246	0.96	E	0.02	Yes
Tamarack Ave to Carlsbad Village Dr	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	196,000	2155	0.92	E	200,337	2203	0.94	E	0.02	Yes

**Cannon Rd Retail
Ramp Meter Analysis**






















Existing								
Location	Peak Hour	Demand ¹ (veh/hr)		Meter Rate ² (veh/hr)	Excess Demand ³ (veh/hr)	Total # of Mixed Flow Lanes	Delay ⁴ (min)	Queue ⁵ (ft)
		Mixed Flow & HOV	Mixed Flow only					
I-5 SB - Tamarack Ave On-Ramp	AM	771	655	526	129	1	14.8	3,750
	PM	694	590	N/A	N/A	1	N/A	N/A
I-5 SB - Cannon Rd On-Ramp	AM	368	313	734	0	2	0.0	0
	PM	508	432	734	0	2	0.0	0
I-5 NB - Cannon Rd On-Ramp	AM	266	226	N/A	N/A	2	N/A	N/A
	PM	1,327	1,128	1,416	0	2	0.0	0
I-5 SB - EB Palomar Airport Rd On-Ramp	AM	67	57	343	0	1	0.0	0
	PM	230	196	246	0	1	0.0	0
I-5 SB - WB Palomar Airport Rd On-Ramp	AM	219	186	492	0	1	0.0	0
	PM	1,005	854	895	0	1	0.0	0
I-5 NB - Palomar Airport Rd On-Ramp	AM	609	518	N/A	N/A	2	N/A	N/A
	PM	1,201	1,021	988	33	2	2.0	475
I-5 SB - Poinsettia Ln On-Ramp	AM	578	491	1,094	0	2	0.0	0
	PM	932	792	796	0	2	0.0	0
I-5 NB - Poinsettia Ln On-Ramp	AM	493	419	N/A	N/A	1	N/A	N/A
	PM	377	320	576	0	1	0.0	0

Existing + Specific Plan								
Location	Peak Hour	Demand ¹ (veh/hr)		Meter Rate ² (veh/hr)	Excess Demand ³ (veh/hr)	Total # of Mixed Flow Lanes	Delay ⁴ (min)	Queue ⁵ (ft)
		Mixed Flow & HOV	Mixed Flow only					
I-5 SB - Tamarack Ave On-Ramp	AM	797	677	526	151	1	17.3	4,400
	PM	732	622	N/A	N/A	1	N/A	N/A
I-5 SB - Cannon Rd On-Ramp	AM	455	387	734	0	2	0.0	0
	PM	851	723	734	0	2	0.0	0
I-5 NB - Cannon Rd On-Ramp	AM	341	290	N/A	N/A	2	N/A	N/A
	PM	1,608	1,367	1,416	0	2	0.0	0
I-5 SB - EB Palomar Airport Rd On-Ramp	AM	67	57	343	0	1	0.0	0
	PM	230	196	246	0	1	0.0	0
I-5 SB - WB Palomar Airport Rd On-Ramp	AM	219	186	492	0	1	0.0	0
	PM	1,005	854	895	0	1	0.0	0
I-5 NB - Palomar Airport Rd On-Ramp	AM	609	518	N/A	N/A	2	N/A	N/A
	PM	1,201	1,021	988	33	2	2.0	475
I-5 SB - Poinsettia Ln On-Ramp	AM	578	491	1,094	0	2	0.0	0
	PM	932	792	796	0	2	0.0	0
I-5 NB - Poinsettia Ln On-Ramp	AM	506	430	N/A	N/A	1	N/A	N/A
	PM	396	337	576	0	1	0.0	0

Cannon Rd Retail									
Roadway Segment Analysis									
Existing Conditions	Direction	Number of Lanes	Capacity (1,800 vplph)	Peak Hour Volume		V/ C Ratio		LOS	
				AM	PM	AM	PM	AM	PM
Cannon Road (I-5 SB Ramps to El Camino Real)									
I-5 SB Ramps to I-5 NB Ramps	EB	2	3600	1054	918	0.29	0.26	A	A
	WB	2	3600	612	873	0.17	0.24	A	A
I-5 NB Ramps to Paseo Del Norte	EB	2	3600	1295	949	0.36	0.26	A	A
	WB	3	5400	684	1714	0.13	0.32	A	A
Paseo Del Norte to Car Country	EB	2	3600	1040	799	0.29	0.22	A	A
	WB	2	3600	610	1292	0.17	0.36	A	A
Car Country Dr to Armada Dr	EB	2	3600	913	829	0.25	0.23	A	A
	WB	2	3600	636	1211	0.18	0.34	A	A
Armada Dr to Grand Pacific Dr	EB	2	3600	574	990	0.16	0.28	A	A
	WB	2	3600	856	909	0.24	0.25	A	A
Grand Pacific Dr to Faraday Ave	EB	2	3600	542	989	0.15	0.27	A	A
	WB	2	3600	877	903	0.24	0.25	A	A
Faraday Ave to El Camino Real	EB	2	3600	195	952	0.05	0.26	A	A
	WB	2	3600	762	318	0.21	0.09	A	A
Tamarack Avenue (Carlsbad Boulevard to El Camino Real)									
Carlsbad Blvd to I-5 SB Ramps	EB	1	1800	712	680	0.40	0.38	A	A
	WB	1	1800	526	434	0.29	0.24	A	A
I-5 SB Ramps to I-5 NB Ramps	EB	2	3600	487	643	0.14	0.18	A	A
	WB	2	3600	784	668	0.22	0.19	A	A
I-5 NB Ramps to El Camino Real	EB	2	3600	751	870	0.21	0.24	A	A
	WB	2	3600	1004	592	0.28	0.16	A	A
Palomar Airport Road (Paseo Del Norte to El Camino Real)									
Paseo Del Norte to Armada Dr	EB	3	5400	2465	1578	0.46	0.29	A	A
	WB	3	5400	1140	2655	0.21	0.49	A	A
Armada Dr to The Crossings Dr	EB	3	5400	2283	1726	0.42	0.32	A	A
	WB	3	5400	1172	2387	0.22	0.44	A	A
The Crossings Dr to College Blvd	EB	3	5400	2247	1695	0.42	0.31	A	A
	WB	3	5400	1172	2377	0.22	0.44	A	A
College Blvd to El Camino Real	EB	3	5400	1120	1473	0.21	0.27	A	A
	WB	3	5400	1706	1988	0.32	0.37	A	A
College Boulevard									
Palomar Airport Rd to Faraday Ave	EB/NB	2	3600	1103	372	0.31	0.10	A	A
	WB/SB	1	1800	307	1031	0.17	0.57	A	A
Poinsettia Ln									
Paseo Del Norte to Aviara Pkwy	EB	2	3600	865	1077	0.24	0.30	A	A
	WB	2	3600	674	951	0.19	0.26	A	A
Carlsbad Boulevard (North of Tamarack Avenue to South of Cannon Road)									
North of Tamarack Ave	NB	2	3600	254	918	0.07	0.26	A	A
	SB	2	3600	563	536	0.16	0.15	A	A
Tamarack Ave to Cannon Rd	NB	2	3600	277	1147	0.08	0.32	A	A
	SB	1	1800	826	663	0.46	0.37	A	A
South of Cannon Rd	NB	1	1800	272	926	0.15	0.51	A	A
	SB	1	1800	798	628	0.44	0.35	A	A
Paseo del Norte (Cannon Road to Palomar Airport Road)									
Cannon Rd to Car Country Dr	NB	2	3600	205	613	0.06	0.17	A	A
	SB	2	3600	386	341	0.11	0.09	A	A
Outlets North Entrance to Palomar Airport Rd	NB	2	3600	401	616	0.11	0.17	A	A
	SB	2	3600	260	577	0.07	0.16	A	A
Faraday Avenue									
Cannon Rd to College Blvd	NB	1	1800	484	625	0.27	0.35	A	A
	SB	1	1800	414	543	0.23	0.30	A	A
Aviara Parkway									
Palomar Airport Rd to Poinsettia Ln	NB	2	3600	914	438	0.25	0.12	A	A
	SB	2	3600	395	930	0.11	0.26	A	A
El Camino Real (North of Tamarack Ave to South of Aviara Pkwy)									
North of Tamarack Ave	NB	2	3600	442	1517	0.12	0.42	A	A
	SB	2	3600	1247	618	0.35	0.17	A	A
Tamarack Ave to Cannon Rd	NB	2	3600	511	1885	0.14	0.52	A	A
	SB	2	3600	1788	723	0.50	0.20	A	A
Cannon Rd to College Blvd	NB	3	5400	692	2740	0.13	0.51	A	A
	SB	3	5400	2680	1212	0.50	0.22	A	A
College Blvd to Faraday Ave	NB	3	5400	839	2123	0.16	0.39	A	A
	SB	3	5400	2222	1104	0.41	0.20	A	A
Faraday Ave to Palomar Airport Rd	NB	3	5400	1418	1395	0.26	0.26	A	A
	SB	3	5400	1796	1801	0.33	0.33	A	A
Palomar Airport Rd to Poinsettia Ln	NB	3	5400	1596	1443	0.30	0.27	A	A
	SB	3	5400	1638	2013	0.30	0.37	A	A
Poinsettia Ln to Aviara Pkwy	NB	3	5400	1614	1670	0.30	0.31	A	A
	SB	3	5400	1336	2061	0.25	0.38	A	A
South of Aviara Pkwy	NB	3	5400	1797	2428	0.33	0.45	A	A
	SB	3	5400	1862	2228	0.34	0.41	A	A

Intersection Capacity Utilization
1: Carlsbad Blvd & Tamarack Ave

Existing + Specific Plan
AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	7	7	10	282	10	61	5	16	197	52	29	554	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right	No			No			No			No			
Ideal Flow	1800	2040	1840	1840	2040	1800	1800	1840	2040	1800	1840	2040	
Lost Time (s)	5.0	5.0	5.0	5.0	5.0	4.0	4.5	4.5	6.0	4.0	4.5	6.0	
Minimum Green (s)	8.0	8.0	8.0	8.0	8.0	4.0	4.0	4.0	10.0	4.0	4.0	10.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	0	14	10	282	71	0	0	21	249	0	29	554	
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Turning Factor (vph)	0.95	0.97	0.85	0.95	0.87	0.85	0.95	0.95	0.97	0.85	0.95	1.00	
Saturated Flow (vph)	0	1989	1564	1748	1777	0	0	1748	3762	0	1748	3884	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)	0.00			0.00			0.00			0.00			
Protected Option Allowed	No			No			Yes			Yes			
Reference Time (s)	0.8			0.0			0.0	1.4	7.9	0.0	2.0	17.1	
Adj Reference Time (s)	13.0			0.0			0.0	8.5	16.0	0.0	8.5	23.1	
Permitted Option													
Adj Saturation A (vph)	0	227		117	1777		0	117	1881		117	1942	
Reference Time A (s)	0.0	7.4		290.4	4.8		0.0	21.6	7.9		29.9	17.1	
Adj Saturation B (vph)	0	0		0	1777		NA	NA	NA		NA	NA	
Reference Time B (s)	8.5	8.8		27.4	4.8		NA	NA	NA		NA	NA	
Reference Time (s)	7.4			27.4			21.6			29.9			
Adj Reference Time (s)	13.0			32.4			27.6			35.9			
Split Option													
Ref Time Combined (s)	0.0	0.8		19.4	4.8		0.0	1.4	7.9		2.0	17.1	
Ref Time Separate (s)	0.5	0.4		19.4	0.7		0.4	1.1	6.3		2.0	17.1	
Reference Time (s)	0.8	0.8		19.4	19.4		7.9	7.9	7.9		17.1	17.1	
Adj Reference Time (s)	13.0	13.0		24.4	24.4		16.0	16.0	16.0		23.1	23.1	
Summary	EB WB		NB SB		Combined								
Protected Option (s)	NA		31.6										
Permitted Option (s)	32.4		35.9										
Split Option (s)	37.4		39.1										
Minimum (s)	32.4		31.6		64.0								
Right Turns	EBR		SBR										
Adj Reference Time (s)	13.0		16.0										
Cross Thru Ref Time (s)	31.6		24.4										
Oncoming Left Ref Time (s)	24.4		8.5										
Combined (s)	69.0		48.9										

Intersection Summary

Intersection Capacity Utilization 57.5% ICU Level of Service B
Reference Times and Phasing Options do not represent an optimized timing plan.



Movement	SBR
Lane Configurations	7
Volume (vph)	5
Pedestrians	
Ped Button	
Pedestrian Timing (s)	
Free Right	No
Ideal Flow	1840
Lost Time (s)	6.0
Minimum Green (s)	10.0
Refr Cycle Length (s)	120
Volume Combined (vph)	5
Lane Utilization Factor	1.00
Turning Factor (vph)	0.85
Saturated Flow (vph)	1564
Ped Intf Time (s)	0.0
Pedestrian Frequency (%)	
Protected Option Allowed	
Reference Time (s)	0.4
Adj Reference Time (s)	16.0
Permitted Option	
Adj Saturation A (vph)	
Reference Time A (s)	
Adj Saturation B (vph)	
Reference Time B (s)	
Reference Time (s)	
Adj Reference Time (s)	
Split Option	
Ref Time Combined (s)	
Ref Time Seperate (s)	
Reference Time (s)	
Adj Reference Time (s)	
Summary	

Diamond Interchange Capacity Utilization
2: I-5 SB Ramps & Tamarack Ave



Existing + Specific Plan
AM Peak Hour

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	EBL	EBT	WBT	WBR	NBL	
Node	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Configurations	↑↑	↑	↓	↑↑		↓	↑	↓	↑↑	↑↓			
Volume (vph)	348	377	420	383	139	0	149	179	308	713	304	90	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right	No						No			No			
Ideal Flow	2040	1840	1840	2040	1800	2040	1840	1840	2040	2140	1800	1800	
Storage Space			14.4	28.8				14.4	28.8				
Lost Time (s)	4.6	4.6	4.2	4.6	4.6	4.6	4.6	4.6	5.1	5.1	4.0	4.6	
Minimum Green (s)	7.0	7.0	5.0	6.0	5.0	5.0	5.0	4.0	7.0	6.0	4.0	4.0	
Refr Cycle Length (s)													
Travel Time (s)	10.0		120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	348	377	420	383	0	139	149	179	308	1017	0	0	
Lane Utilization Factor	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	
Turning Factor (vph)	1.00	0.85	0.95	1.00	0.95	0.95	0.85	0.95	1.00	0.96	0.85	0.95	
Saturated Flow (vph)	3884	1564	1748	3884	0	1938	1564	1748	3884	3892	0	0	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)	0.00			0.00		0.00			0.00	0.00			
Reference Time (s)	10.8	28.9	28.8	11.8	0.0	8.6	11.4	12.3	9.5	31.4	0.0	0.0	
Adj Reference Time (s)	15.4	33.5	33.0	16.4	0.0	13.2	16.0	16.9	14.6	36.5	0.0	0.0	
Volume per cycle, 90th			18.8	17.3	7.4			9.1	14.4			5.2	
Volume to Storage			1.3	0.6	0.3			0.6	0.5			0.2	
Isolated Timings (s)	79.8							63.5					
Timing Options													
Leading Option (s)		103.9											
Lagging Option (s)	NA												
Lead-Lag Option (s)	OK	79.8											
Interchange Summary													
Intersection Capacity Utilization			66.5%		ICU Level of Service						C		

Reference Times and Phasing Options do not represent an optimized timing plan.























Diamond Interchange Capacity Utilization
 2: I-5 SB Ramps & Tamarack Ave

Existing + Specific Plan
 AM Peak Hour

Movement	NBT	NBR		
Node	0	0		
Lane Configurations				
Volume (vph)	0	449		
Pedestrians				
Ped Button				
Pedestrian Timing (s)				
Free Right		No		
Ideal Flow	2040	2160		
Storage Space				
Lost Time (s)	4.6	4.6		
Minimum Green (s)	4.0	4.0		
Refr Cycle Length (s)				
Travel Time (s)	120	120	120	120
Volume Combined (vph)	90	449		
Lane Utilization Factor	1.00	1.00		
Turning Factor (vph)	0.95	0.85		
Saturated Flow (vph)	1938	1836		
Ped Intf Time (s)	0.0	0.0		
Pedestrian Frequency (%)	0.00			
Reference Time (s)	5.6	29.3		
Adj Reference Time (s)	10.2	33.9		
Volume per cycle, 90th				
Volume to Storage				
Isolated Timings (s)				
Timing Options				













Intersection Capacity Utilization
4: El Camino Real & Tamarck Ave

Existing + Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	61	217	281	131	21	58	408	68	19	1232	28
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	4.2	5.0	5.0	4.2	5.0	4.0	4.2	6.0	4.0	4.2	6.0	6.0
Minimum Green (s)	4.0	6.0	6.0	4.0	6.0	4.0	4.0	8.0	4.0	4.0	8.0	8.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	27	61	217	281	152	0	58	476	0	19	1232	28
Lane Utilization Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.98	0.85	0.95	0.98	0.85	0.95	1.00	0.85
Saturated Flow (vph)	2375	2500	2125	2375	4661	0	2375	6664	0	2375	4760	2125
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00			0.00			
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	1.4	2.9	12.3	14.2	3.9	0.0	2.9	8.6	0.0	1.0	31.1	1.6
Adj Reference Time (s)	8.2	11.0	17.3	18.4	11.0	0.0	8.2	14.6	0.0	8.2	37.1	14.0
Permitted Option												
Adj Saturation A (vph)	158	2500		158	2331		158	2221		158	2380	
Reference Time A (s)	20.5	2.9		213.0	3.9		44.0	8.6		14.4	31.1	
Adj Saturation B (vph)	NA	NA		0	4661		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		22.2	3.9		NA	NA		NA	NA	
Reference Time (s)		20.5			22.2			44.0			31.1	
Adj Reference Time (s)		25.5			27.2			50.0			37.1	
Split Option												
Ref Time Combined (s)	1.4	2.9		14.2	3.9		2.9	8.6		1.0	31.1	
Ref Time Seperate (s)	1.4	2.9		14.2	3.4		2.9	7.3		1.0	31.1	
Reference Time (s)	2.9	2.9		14.2	14.2		8.6	8.6		31.1	31.1	
Adj Reference Time (s)	11.0	11.0		19.2	19.2		14.6	14.6		37.1	37.1	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	29.4		45.3									
Permitted Option (s)	27.2		50.0									
Split Option (s)	30.2		51.6									
Minimum (s)	27.2		45.3		72.5							
Right Turns												
	EBR		SBR									
Adj Reference Time (s)	17.3		14.0									
Cross Thru Ref Time (s)	37.1		11.0									
Oncoming Left Ref Time (s)	18.4		8.2									
Combined (s)	72.7		33.2									
Intersection Summary												
Intersection Capacity Utilization			60.6%		ICU Level of Service				B			
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization
5: Carlsbad Blvd & Cannon Rd

Existing + Specific Plan
AM Peak Hour



























						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	155	60	228	54	167	647
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No		No		
Ideal Flow	1840	1840	2040	1840	1840	2040
Lost Time (s)	5.0	4.5	5.5	5.5	4.5	5.5
Minimum Green (s)	4.0	4.0	10.0	10.0	4.0	10.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	155	60	228	54	167	647
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.85	1.00	0.85	0.95	1.00
Saturated Flow (vph)	1748	1564	2040	1564	1748	2040
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00
Protected Option Allowed	No		Yes			Yes
Reference Time (s)		4.6	13.4	4.1	11.5	38.1
Adj Reference Time (s)		9.1	18.9	15.5	16.0	43.6
Permitted Option						
Adj Saturation A (vph)	117		2040		117	2040
Reference Time A (s)	159.6		13.4		172.0	38.1
Adj Saturation B (vph)	NA		NA		NA	NA
Reference Time B (s)	NA		NA		NA	NA
Reference Time (s)			13.4			172.0
Adj Reference Time (s)			18.9			177.5
Split Option						
Ref Time Combined (s)	10.6		13.4		11.5	38.1
Ref Time Seperate (s)	10.6		13.4		11.5	38.1
Reference Time (s)	10.6		13.4		38.1	38.1
Adj Reference Time (s)	15.6		18.9		43.6	43.6
Summary	WB		NB SB		Combined	
Protected Option (s)	NA		43.6			
Permitted Option (s)	Err		177.5			
Split Option (s)	15.6		62.5			
Minimum (s)	15.6		43.6		59.2	
Right Turns	WBR	NBR				
Adj Reference Time (s)	9.1	15.5				
Cross Thru Ref Time (s)	18.9	0.0				
Oncoming Left Ref Time (s)	0.0	16.0				
Combined (s)	28.0	31.5				

Intersection Summary

Intersection Capacity Utilization 49.3% ICU Level of Service A
Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
6: Avenida Encinas & Cannon Rd

Existing + Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 		 	 					 		
Volume (vph)	13	249	31	287	232	82	20	6	74	59	17	13
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1840	2040	1800	1840	2040	1800	1840	2040	1840	1840	2040	1840
Lost Time (s)	4.5	5.5	4.0	4.5	5.5	4.0	4.5	5.0	4.5	4.5	5.0	5.0
Minimum Green (s)	6.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0	6.0	6.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	13	280	0	287	314	0	20	6	74	59	17	13
Lane Utilization Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Turning Factor (vph)	0.95	0.98	0.85	0.95	0.96	0.85	0.95	1.00	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1748	3820	0	3395	3732	0	1748	2040	1564	3395	2040	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00			0.00			
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	0.9	8.8	0.0	10.1	10.1	0.0	1.4	0.4	5.7	2.1	1.0	1.0
Adj Reference Time (s)	10.5	14.3	0.0	14.6	15.6	0.0	10.5	10.0	10.5	10.5	11.0	11.0
Permitted Option												
Adj Saturation A (vph)	117	1910		113	1866		117	2040		113	2040	
Reference Time A (s)	13.4	8.8		152.2	10.1		20.6	0.4		31.3	1.0	
Adj Saturation B (vph)	NA	NA		NA	NA		0	2040		0	2040	
Reference Time B (s)	NA	NA		NA	NA		9.4	0.4		10.1	1.0	
Reference Time (s)		13.4			152.2			9.4			10.1	
Adj Reference Time (s)		18.9			157.7			14.4			15.1	
Split Option												
Ref Time Combined (s)	0.9	8.8		10.1	10.1		1.4	0.4		2.1	1.0	
Ref Time Separate (s)	0.9	7.8		10.1	7.5		1.4	0.4		2.1	1.0	
Reference Time (s)	8.8	8.8		10.1	10.1		1.4	1.4		2.1	2.1	
Adj Reference Time (s)	14.3	14.3		15.6	15.6		10.0	10.0		11.0	11.0	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	28.9		21.5									
Permitted Option (s)	157.7		15.1									
Split Option (s)	29.9		21.0									
Minimum (s)	28.9		15.1		44.0							
Right Turns												
	NBR		SBR									
Adj Reference Time (s)	10.5		11.0									
Cross Thru Ref Time (s)	14.3		15.6									
Oncoming Left Ref Time (s)	10.5		10.0									
Combined (s)	35.3		36.6									

Intersection Summary

Intersection Capacity Utilization 36.7% ICU Level of Service A
Reference Times and Phasing Options do not represent an optimized timing plan.

Diamond Interchange Capacity Utilization
7: I-5 SB Ramps & Cannon Rd

Existing + Specific Plan
AM Peak Hour

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	EBL	EBT	WBT	WBR	NBL	
Node	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Configurations	↑↑	↑	↑↑	↑↑	↑	↑	↑	↑↑	↑↑	↑↑	↑		
Volume (vph)	332	50	404	314	937	1	287	110	1159	634	231	84	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right	No						No			No			
Ideal Flow	2040	1840	1840	2040	1840	2040	1840	1840	2040	2040	1840	1800	
Storage Space			26.2	40.5				26.2	40.5				
Lost Time (s)	4.6	4.6	4.2	4.6	4.6	4.6	4.6	4.2	4.6	4.6	4.6	4.6	
Minimum Green (s)	6.0	6.0	5.0	6.0	5.0	5.0	5.0	4.0	6.0	6.0	6.0	4.0	
Refr Cycle Length (s)													
Travel Time (s)	11.4		120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	332	50	404	314	0	938	287	110	1159	711	154	0	
Lane Utilization Factor	0.95	1.00	0.97	0.95	1.00	1.00	1.00	0.97	0.95	0.95	1.00	1.00	
Turning Factor (vph)	1.00	0.85	0.95	1.00	0.95	0.95	0.85	0.95	1.00	0.98	0.85	0.95	
Saturated Flow (vph)	3884	1564	3395	3884	0	3876	1564	3395	3884	3821	1564	0	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)	0.00			0.00		0.00			0.00	0.00			
Reference Time (s)	10.3	3.8	14.3	9.7	0.0	29.0	22.0	3.9	35.8	22.3	11.8	0.0	
Adj Reference Time (s)	14.9	10.6	18.5	14.3	0.0	33.6	26.6	9.2	40.4	26.9	16.4	0.0	
Volume per cycle, 90th			18.2	14.6	38.4			6.1	46.6			4.9	
Volume to Storage			0.7	0.4	0.9			0.2	1.2			0.1	
Isolated Timings (s)	67.0							68.8					
Timing Options													
Leading Option (s)		81.1											
Lagging Option (s)	OK	68.8											
Lead-Lag Option (s)	OK	68.8											
Interchange Summary													
Intersection Capacity Utilization			57.4%		ICU Level of Service						B		
Reference Times and Phasing Options do not represent an optimized timing plan.													

Diamond Interchange Capacity Utilization
7: I-5 SB Ramps & Cannon Rd

Existing + Specific Plan
AM Peak Hour

	↑	↗		
Movement	NBT	NBR		
Node	0	0		
Lane Configurations	↖	↗↗		
Volume (vph)	0	550		
Pedestrians				
Ped Button				
Pedestrian Timing (s)				
Free Right		No		
Ideal Flow	2040	1840		
Storage Space				
Lost Time (s)	4.6	4.6		
Minimum Green (s)	4.0	4.0		
Refr Cycle Length (s)				
Travel Time (s)	120	120	120	120
Volume Combined (vph)	84	550		
Lane Utilization Factor	1.00	0.89		
Turning Factor (vph)	0.95	0.85		
Saturated Flow (vph)	1938	2768		
Ped Intf Time (s)	0.0	0.0		
Pedestrian Frequency (%)	0.00			
Reference Time (s)	5.2	23.8		
Adj Reference Time (s)	9.8	28.4		
Volume per cycle, 90th				
Volume to Storage				
Isolated Timings (s)				
Timing Options				

Intersection Capacity Utilization
9: Paseo Del Norte/Project Dwy & Cannon Rd

Existing + Specific Plan
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↑↑↑		↵	↑↑↑	↵	↵↵		↵	↵↵	↑	↵↵	
Volume (vph)	0	1382	327	59	513	191	133	0	168	99	46	206	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right			No			No			No			No	
Ideal Flow	1800	2000	1800	1800	2000	1800	1800	2000	1800	1800	2000	1800	
Lost Time (s)	4.0	5.0	4.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	4.0	
Minimum Green (s)	4.0	4.0	4.0	4.0	6.0	4.0	6.0	4.0	4.0	4.0	4.0	4.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	0	1709	0	59	513	191	133	0	168	99	46	206	
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.97	1.00	1.00	0.97	1.00	0.89	
Turning Factor (vph)	0.95	0.97	0.85	0.95	1.00	0.85	0.95	1.00	0.85	0.95	1.00	0.85	
Saturated Flow (vph)	0	5292	0	1710	5448	1530	3321	0	1530	3321	2000	2708	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00		
Protected Option Allowed		Yes			Yes			Yes			Yes		
Reference Time (s)	0.0	38.8	0.0	4.1	11.3	15.0	4.8	0.0	13.2	3.6	2.8	9.1	
Adj Reference Time (s)	0.0	43.8	0.0	9.1	16.3	20.0	11.0	0.0	18.2	9.0	8.0	13.1	
Permitted Option													
Adj Saturation A (vph)	0	1764		114	1816		111	0		111	2000		
Reference Time A (s)	0.0	38.8		62.1	11.3		72.1	0.0		53.7	2.8		
Adj Saturation B (vph)	NA	NA		NA	NA		0	0		0	2000		
Reference Time B (s)	NA	NA		NA	NA		12.8	0.0		11.6	2.8		
Reference Time (s)		38.8			62.1			12.8			11.6		
Adj Reference Time (s)		43.8			67.1			16.8			15.6		
Split Option													
Ref Time Combined (s)	0.0	38.8		4.1	11.3		4.8	0.0		3.6	2.8		
Ref Time Separate (s)	0.0	31.3		4.1	11.3		4.8	0.0		3.6	2.8		
Reference Time (s)	38.8	38.8		11.3	11.3		4.8	4.8		3.6	3.6		
Adj Reference Time (s)	43.8	43.8		16.3	16.3		8.8	8.8		8.0	8.0		
Summary													
	EB WB		NB SB		Combined								
Protected Option (s)	52.9		19.0										
Permitted Option (s)	67.1		16.8										
Split Option (s)	60.1		16.8										
Minimum (s)	52.9		16.8		69.7								
Right Turns													
	WBR	NBR	SBR										
Adj Reference Time (s)	20.0	18.2	13.1										
Cross Thru Ref Time (s)	0.0	43.8	16.3										
Oncoming Left Ref Time (s)	0.0	8.0	8.8										
Combined (s)	20.0	69.9	38.2										

Intersection Summary

Intersection Capacity Utilization 58.3% ICU Level of Service B
Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
10: Car Country Dr & Cannon Rd

Existing + Specific Plan
AM Peak Hour



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰	↔	↷	↰	↔	↷	↷
Volume (vph)	0	941	162	71	756	55	35
Pedestrians							
Ped Button							
Pedestrian Timing (s)							
Free Right	No			No			
Ideal Flow	1840	2040	1800	1840	2040	1840	1840
Lost Time (s)	5.5	6.5	4.0	5.5	6.5	6.0	6.0
Minimum Green (s)	6.0	10.0	4.0	4.0	10.0	6.0	6.0
Refr Cycle Length (s)	120	120	120	120	120	120	120
Volume Combined (vph)	0	1103	0	71	756	55	35
Lane Utilization Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Turning Factor (vph)	0.95	0.98	0.85	0.95	1.00	0.95	0.85
Saturated Flow (vph)	1748	3799	0	1748	3884	1748	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00		0.00		
Protected Option Allowed	Yes		Yes		No		
Reference Time (s)	0.0	34.8	0.0	4.9	23.4		2.7
Adj Reference Time (s)	11.5	41.3	0.0	10.4	29.9		12.0
Permitted Option							
Adj Saturation A (vph)	117	1899		117	1942	117	
Reference Time A (s)	0.0	34.8		73.1	23.4	56.6	
Adj Saturation B (vph)	NA	NA		NA	NA	NA	
Reference Time B (s)	NA	NA		NA	NA	NA	
Reference Time (s)		34.8			73.1		
Adj Reference Time (s)		41.3			79.6		
Split Option							
Ref Time Combined (s)	0.0	34.8		4.9	23.4	3.8	
Ref Time Seperate (s)	0.0	29.7		4.9	23.4	3.8	
Reference Time (s)	34.8	34.8		23.4	23.4	3.8	
Adj Reference Time (s)	41.3	41.3		29.9	29.9	12.0	
Summary							
	EB WB		NB		Combined		
Protected Option (s)	51.7		NA				
Permitted Option (s)	79.6		Err				
Split Option (s)	71.2		12.0				
Minimum (s)	51.7		12.0		63.7		
Right Turns							
	NBR						
Adj Reference Time (s)	12.0						
Cross Thru Ref Time (s)	41.3						
Oncoming Left Ref Time (s)	0.0						
Combined (s)	53.3						

Intersection Summary

Intersection Capacity Utilization 53.1% ICU Level of Service A
Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
11: Legoland Dr

Existing + Specific Plan
AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↘↗	↑↑	↘↗	↗
Volume (vph)	606	390	254	744	83	30
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No				No
Ideal Flow	2040	1840	1840	2040	1840	1840
Lost Time (s)	6.0	5.0	5.0	6.0	5.0	5.0
Minimum Green (s)	10.0	4.0	4.0	10.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	606	390	254	744	83	30
Lane Utilization Factor	0.95	1.00	0.97	0.95	0.97	1.00
Turning Factor (vph)	1.00	0.85	0.95	1.00	0.95	0.85
Saturated Flow (vph)	3884	1564	3395	3884	3395	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00	0.00	
Protected Option Allowed	Yes			Yes	No	
Reference Time (s)	18.7	29.9	9.0	23.0		2.3
Adj Reference Time (s)	24.7	34.9	14.0	29.0		9.0
Permitted Option						
Adj Saturation A (vph)	1942		113	1942	113	
Reference Time A (s)	18.7		134.7	23.0	44.0	
Adj Saturation B (vph)	NA		NA	NA	NA	
Reference Time B (s)	NA		NA	NA	NA	
Reference Time (s)	18.7			134.7		
Adj Reference Time (s)	24.7			140.7		
Split Option						
Ref Time Combined (s)	18.7		9.0	23.0	2.9	
Ref Time Seperate (s)	18.7		9.0	23.0	2.9	
Reference Time (s)	18.7		23.0	23.0	2.9	
Adj Reference Time (s)	24.7		29.0	29.0	9.0	
Summary	EB WB		NB		Combined	
Protected Option (s)	38.7		NA			
Permitted Option (s)	140.7		Err			
Split Option (s)	53.7		9.0			
Minimum (s)	38.7		9.0		47.7	
Right Turns	EBR	NBR				
Adj Reference Time (s)	34.9	9.0				
Cross Thru Ref Time (s)	0.0	24.7				
Oncoming Left Ref Time (s)	14.0	0.0				
Combined (s)	48.9	33.7				

Intersection Summary

Intersection Capacity Utilization 40.8% ICU Level of Service A
Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
12: Marriott Hotel Dwy & Cannon Rd

Existing + Specific Plan
AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Volume (vph)	560	76	54	962	36	43
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No				No
Ideal Flow	2040	1840	1840	2040	1840	1840
Lost Time (s)	6.0	5.5	5.0	6.0	5.5	5.5
Minimum Green (s)	10.0	5.0	4.0	10.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	560	76	54	962	36	43
Lane Utilization Factor	0.95	1.00	1.00	0.95	1.00	1.00
Turning Factor (vph)	1.00	0.85	0.95	1.00	0.95	0.85
Saturated Flow (vph)	3884	1564	1748	3884	1748	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00	0.00	
Protected Option Allowed	Yes			Yes	No	
Reference Time (s)	17.3	5.8	3.7	29.7		3.3
Adj Reference Time (s)	23.3	11.3	9.0	35.7		10.5
Permitted Option						
Adj Saturation A (vph)	1942		117	1942	117	
Reference Time A (s)	17.3		55.6	29.7	37.1	
Adj Saturation B (vph)	NA		NA	NA	NA	
Reference Time B (s)	NA		NA	NA	NA	
Reference Time (s)	17.3			55.6		
Adj Reference Time (s)	23.3			61.6		
Split Option						
Ref Time Combined (s)	17.3		3.7	29.7	2.5	
Ref Time Seperate (s)	17.3		3.7	29.7	2.5	
Reference Time (s)	17.3		29.7	29.7	2.5	
Adj Reference Time (s)	23.3		35.7	35.7	10.5	
Summary	EB WB		NB		Combined	
Protected Option (s)	35.7		NA			
Permitted Option (s)	61.6		Err			
Split Option (s)	59.0		10.5			
Minimum (s)	35.7		10.5		46.2	
Right Turns	EBR	NBR				
Adj Reference Time (s)	11.3	10.5				
Cross Thru Ref Time (s)	0.0	23.3				
Oncoming Left Ref Time (s)	9.0	0.0				
Combined (s)	20.3	33.8				

Intersection Summary

Intersection Capacity Utilization 38.5% ICU Level of Service A
Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
13: Faraday Ave & Cannon Rd

Existing + Specific Plan
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	203	395	35	821	7	193	2	11	1	1	2
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1840	2040	1800	1840	2040	1800	1840	2040	1800	1800	2040	1800
Lost Time (s)	6.0	6.0	4.0	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Minimum Green (s)	4.0	6.0	4.0	4.0	10.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	5	598	0	35	828	0	0	206	0	0	4	0
Lane Utilization Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.90	0.85	0.95	1.00	0.85	0.95	0.95	0.85	0.95	0.91	0.85
Saturated Flow (vph)	1748	3499	0	1748	3879	0	0	3858	0	0	1863	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			No			No	
Reference Time (s)	0.3	20.5	0.0	2.4	25.6	0.0			0.0			0.0
Adj Reference Time (s)	10.0	26.5	0.0	10.0	31.6	0.0			0.0			0.0
Permitted Option												
Adj Saturation A (vph)	117	1750		117	1940		0	1286		0	385	
Reference Time A (s)	5.1	20.5		36.0	25.6		0.0	19.2		0.0	1.2	
Adj Saturation B (vph)	NA	NA		NA	NA		0	0		0	0	
Reference Time B (s)	NA	NA		NA	NA		14.6	14.4		8.1	8.3	
Reference Time (s)		20.5			36.0			14.6			1.2	
Adj Reference Time (s)		26.5			42.0			19.6			10.0	
Split Option												
Ref Time Combined (s)	0.3	20.5		2.4	25.6		0.0	6.4		0.0	0.3	
Ref Time Seperate (s)	0.3	7.0		2.4	25.4		6.6	0.1		0.1	0.1	
Reference Time (s)	20.5	20.5		25.6	25.6		6.6	6.6		0.3	0.3	
Adj Reference Time (s)	26.5	26.5		31.6	31.6		11.6	11.6		10.0	10.0	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	41.6		NA									
Permitted Option (s)	42.0		19.6									
Split Option (s)	58.1		21.6									
Minimum (s)	41.6		19.6		61.2							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization			51.0%		ICU Level of Service		A					
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization
14: El Camino Real & Cannon Rd

Existing + Specific Plan
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	60	94	84	917	496	33	2	69	369	143	3	14
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	4.2	6.0	4.0	4.2	6.0	4.0	4.2	4.2	6.0	6.0	4.2	4.2
Minimum Green (s)	4.0	6.0	4.0	4.0	4.0	4.0	4.0	4.0	8.0	8.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	60	178	0	917	529	0	0	71	369	143	0	17
Lane Utilization Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	1.00	0.95	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.93	0.85	0.95	0.99	0.85	0.95	0.95	1.00	0.85	0.95	0.95
Saturated Flow (vph)	4612	4423	0	4612	4715	0	0	2375	4760	2125	0	2375
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00		0.00		0.00		0.00		0.00	
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	1.6	4.8	0.0	23.9	13.5	0.0	0.0	3.6	9.3	8.1	0.0	0.9
Adj Reference Time (s)	8.2	12.0	0.0	28.1	19.5	0.0	0.0	8.2	15.3	14.1	0.0	8.2
Permitted Option												
Adj Saturation A (vph)	154	2212		154	2358		0	158	2380		0	158
Reference Time A (s)	23.4	4.8		357.9	13.5		0.0	53.8	9.3		0.0	12.9
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA	NA		NA	NA
Reference Time B (s)	NA	NA		NA	NA		NA	NA	NA		NA	NA
Reference Time (s)		23.4			357.9				53.8			
Adj Reference Time (s)		29.4			363.9				59.8			
Split Option												
Ref Time Combined (s)	1.6	4.8		23.9	13.5		0.0	3.6	9.3		0.0	0.9
Ref Time Separate (s)	1.6	2.6		23.9	12.6		0.1	3.5	9.3		0.2	0.7
Reference Time (s)	4.8	4.8		23.9	23.9		9.3	9.3	9.3		26.9	26.9
Adj Reference Time (s)	12.0	12.0		29.9	29.9		15.3	15.3	15.3		32.9	32.9
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	40.1		41.1									
Permitted Option (s)	363.9		59.8									
Split Option (s)	41.9		48.2									
Minimum (s)	40.1		41.1		81.1							
Right Turns												
	NBR		SBR									
Adj Reference Time (s)	14.1		20.9									
Cross Thru Ref Time (s)	40.1		19.5									
Oncoming Left Ref Time (s)	8.2		8.2									
Combined (s)	62.3		48.5									

Intersection Summary
 Intersection Capacity Utilization 67.6% ICU Level of Service C
 Reference Times and Phasing Options do not represent an optimized timing plan.






















Intersection Capacity Utilization
 14: El Camino Real & Cannon Rd

Existing + Specific Plan
 AM Peak Hour

Movement	SBT	SBR
Lane Configurations	↑↑↑	↑
Volume (vph)	1526	295
Pedestrians		
Ped Button		
Pedestrian Timing (s)		
Free Right		No
Ideal Flow	2500	2500
Lost Time (s)	6.0	4.2
Minimum Green (s)	8.0	4.0
Refr Cycle Length (s)	120	120
Volume Combined (vph)	1526	295
Lane Utilization Factor	0.91	1.00
Turning Factor (vph)	1.00	0.85
Saturated Flow (vph)	6810	2125
Ped Intf Time (s)	0.0	0.0
Pedestrian Frequency (%)	0.00	
Protected Option Allowed	Yes	
Reference Time (s)	26.9	16.7
Adj Reference Time (s)	32.9	20.9
Permitted Option		
Adj Saturation A (vph)	2270	
Reference Time A (s)	26.9	
Adj Saturation B (vph)	NA	
Reference Time B (s)	NA	
Reference Time (s)	26.9	
Adj Reference Time (s)	32.9	
Split Option		
Ref Time Combined (s)	26.9	
Ref Time Seperate (s)	26.9	
Reference Time (s)	26.9	
Adj Reference Time (s)	32.9	
Summary		





















Intersection Capacity Utilization
15: Paseo Del Norte & Car Country Dr

Existing + Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	5	0	56	5	42	1	241	94	48	224	30
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1840	2040	1800	1840	2040	1800	1840	2040	1800	1840	2040	1800
Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.0	6.0	4.0	5.0	6.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	15.0	4.0	4.0	15.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	10	5	0	56	47	0	1	335	0	48	254	0
Lane Utilization 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
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.87	0.85	0.95	0.96	0.85	0.95	0.98	0.85
Saturated Flow (vph)	1748	2040	0	1748	1767	0	1748	3721	0	1748	3815	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00			0.00			
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	0.7	0.3	0.0	3.8	3.2	0.0	0.1	10.8	0.0	3.3	8.0	0.0
Adj Reference Time (s)	9.5	9.5	0.0	9.5	9.5	0.0	9.0	21.0	0.0	9.0	21.0	0.0
Permitted Option												
Adj Saturation A (vph)	117	2040		117	1767		117	1860		117	1908	
Reference Time A (s)	10.3	0.3		57.7	3.2		1.0	10.8		49.4	8.0	
Adj Saturation B (vph)	0	2040		0	1767		NA	NA		NA	NA	
Reference Time B (s)	8.7	0.3		11.8	3.2		NA	NA		NA	NA	
Reference Time (s)	8.7		11.8			10.8			49.4			
Adj Reference Time (s)	14.2		17.3			21.0			55.4			
Split Option												
Ref Time Combined (s)	0.7	0.3		3.8	3.2		0.1	10.8		3.3	8.0	
Ref Time Seperate (s)	0.7	0.3		3.8	0.3		0.1	7.8		3.3	7.0	
Reference Time (s)	0.7	0.7		3.8	3.8		10.8	10.8		8.0	8.0	
Adj Reference Time (s)	9.5	9.5		9.5	9.5		21.0	21.0		21.0	21.0	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	19.0		30.0									
Permitted Option (s)	17.3		55.4									
Split Option (s)	19.0		42.0									
Minimum (s)	17.3		30.0		47.3							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization	39.5%		ICU Level of Service						A			
Reference Times and Phasing Options do not represent an optimized timing plan.												




















Intersection Capacity Utilization
16: Paseo Del Norte & Outlet Dwy

Existing + Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	2	12	2	2	13	21	321	5	36	236	8
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1840	2040	1800	1800	2040	1800	1840	2040	1800	1840	2040	1800
Lost Time (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	8.0	4.0	4.0	8.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	2	14	0	0	17	0	21	326	0	36	244	0
Lane Utilization 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
Turning Factor (vph)	0.95	0.87	0.85	0.95	0.88	0.85	0.95	1.00	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1748	1778	0	0	1795	0	1748	3875	0	1748	3865	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00		0.00		0.00		0.00		0.00	
Protected Option Allowed	No			No			Yes			Yes		
Reference Time (s)	0.0			0.0			1.4	10.1	0.0	2.5	7.6	0.0
Adj Reference Time (s)	0.0			0.0			9.0	15.1	0.0	9.0	13.0	0.0
Permitted Option												
Adj Saturation A (vph)	322	1778	0		654	117		1938	117		1933	
Reference Time A (s)	0.7	0.9	0.0		3.1	21.6		10.1	37.1		7.6	
Adj Saturation B (vph)	0	1778	0		0	NA		NA	NA		NA	
Reference Time B (s)	8.1	0.9	8.1		9.1	NA		NA	NA		NA	
Reference Time (s)	0.9		3.1		21.6		37.1					
Adj Reference Time (s)	9.0		9.0		26.6		42.1					
Split Option												
Ref Time Combined (s)	0.1	0.9	0.0		1.1	1.4		10.1	2.5		7.6	
Ref Time Separate (s)	0.1	0.1	0.1		0.1	1.4		9.9	2.5		7.3	
Reference Time (s)	0.9	0.9	1.1		1.1	10.1		10.1	7.6		7.6	
Adj Reference Time (s)	9.0	9.0	9.0		9.0	15.1		15.1	13.0		13.0	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	NA		24.1									
Permitted Option (s)	9.0		42.1									
Split Option (s)	18.0		28.1									
Minimum (s)	9.0		24.1		33.1							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization	27.6%		ICU Level of Service		A							
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization
17: Faraday Ave & College Blvd

Existing + Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	154	285	86	1	182	191	158	36	201	67	1	97
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No					
Ideal Flow	1840	2040	1800	1800	1840	2040	1800	1840	2040	1800	1800	1840
Lost Time (s)	4.5	6.0	4.0	4.5	4.5	6.0	4.0	4.5	5.0	4.0	4.5	4.5
Minimum Green (s)	4.0	7.0	4.0	4.0	4.0	7.0	4.0	5.0	6.0	4.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	154	371	0	0	183	349	0	36	268	0	0	98
Lane Utilization Factor	0.97	0.95	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.97	0.85	0.95	0.95	0.93	0.85	0.95	0.96	0.85	0.95	0.95
Saturated Flow (vph)	3395	3749	0	0	3395	3620	0	1748	3739	0	0	1748
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00			0.00					
Protected Option Allowed	Yes			Yes			Yes					
Reference Time (s)	5.4	11.9	0.0	0.0	6.5	11.6	0.0	2.5	8.6	0.0	0.0	6.7
Adj Reference Time (s)	9.9	17.9	0.0	0.0	11.0	17.6	0.0	9.5	13.6	0.0	0.0	11.2
Permitted Option												
Adj Saturation A (vph)	113	1875		0	113	1810		117	1869		0	117
Reference Time A (s)	81.7	11.9		0.0	97.0	11.6		37.1	8.6		0.0	100.9
Adj Saturation B (vph)	NA	NA		NA	NA	NA		NA	NA		NA	NA
Reference Time B (s)	NA	NA		NA	NA	NA		NA	NA		NA	NA
Reference Time (s)		81.7			97.0			37.1				
Adj Reference Time (s)		87.7			103.0			42.1				
Split Option												
Ref Time Combined (s)	5.4	11.9		0.0	6.5	11.6		2.5	8.6		0.0	6.7
Ref Time Separate (s)	5.4	9.1		0.1	6.4	6.3		2.5	6.5		0.1	6.7
Reference Time (s)	11.9	11.9		11.6	11.6	11.6		8.6	8.6		9.3	9.3
Adj Reference Time (s)	17.9	17.9		17.6	17.6	17.6		13.6	13.6		14.3	14.3
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	28.8		24.8									
Permitted Option (s)	103.0		105.9									
Split Option (s)	35.4		27.9									
Minimum (s)	28.8		24.8		53.7							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization	44.7%		ICU Level of Service		A							
Reference Times and Phasing Options do not represent an optimized timing plan.												





















Intersection Capacity Utilization
17: Faraday Ave & College Blvd

Existing + Specific Plan
AM Peak Hour

Movement	SBT	SBR
Land Configurations	↑↑	
Volume (vph)	277	22
Pedestrians		
Ped Button		
Pedestrian Timing (s)		
Free Right		No
Ideal Flow	2040	1800
Lost Time (s)	5.0	4.0
Minimum Green (s)	6.0	4.0
Refr Cycle Length (s)	120	120
Volume Combined (vph)	299	0
Lane Utilization Factor	0.95	1.00
Turning Factor (vph)	0.99	0.85
Saturated Flow (vph)	3841	0
Ped Intf Time (s)	0.0	0.0
Pedestrian Frequency (%)	0.00	
Protected Option Allowed	Yes	
Reference Time (s)	9.3	0.0
Adj Reference Time (s)	14.3	0.0
Permitted Option		
Adj Saturation A (vph)	1921	
Reference Time A (s)	9.3	
Adj Saturation B (vph)	NA	
Reference Time B (s)	NA	
Reference Time (s)	100.9	
Adj Reference Time (s)	105.9	
Split Option		
Ref Time Combined (s)	9.3	
Ref Time Seperate (s)	8.7	
Reference Time (s)	9.3	
Adj Reference Time (s)	14.3	
Summary		

Intersection Capacity Utilization
18: El Camino Real & College Blvd

Existing + Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	105	15	12	41	33	38	71	71	557	24	27	2101
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	5.0	6.5	4.0	5.0	6.5	4.0	5.0	5.0	6.0	6.0	5.0	6.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	8.0	8.0	4.0	8.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	105	27	0	41	71	0	0	142	557	24	27	2101
Lane Utilization Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	1.00	0.91	1.00	1.00	0.91
Turning Factor (vph)	0.95	0.93	0.85	0.95	0.92	0.85	0.95	0.95	1.00	0.85	0.95	1.00
Saturated Flow (vph)	4612	4443	0	4612	4378	0	0	2375	6810	2125	2375	6810
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00			0.00			0.00		
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	2.7	0.7	0.0	1.1	1.9	0.0	0.0	7.2	9.8	1.4	1.4	37.0
Adj Reference Time (s)	9.0	10.5	0.0	9.0	10.5	0.0	0.0	12.2	15.8	14.0	9.0	43.0
Permitted Option												
Adj Saturation A (vph)	154	2221		154	2189		0	158	2270		158	2270
Reference Time A (s)	41.0	0.7		16.0	1.9		0.0	107.6	9.8		20.5	37.0
Adj Saturation B (vph)	0	4443		0	4378		NA	NA	NA		NA	NA
Reference Time B (s)	10.7	0.7		9.1	1.9		NA	NA	NA		NA	NA
Reference Time (s)		10.7			9.1				107.6			37.0
Adj Reference Time (s)		17.2			15.6				113.6			43.0
Split Option												
Ref Time Combined (s)	2.7	0.7		1.1	1.9		0.0	7.2	9.8		1.4	37.0
Ref Time Separate (s)	2.7	0.4		1.1	0.9		3.6	3.6	9.8		1.4	37.0
Reference Time (s)	2.7	2.7		1.9	1.9		9.8	9.8	9.8		37.0	37.0
Adj Reference Time (s)	10.5	10.5		10.5	10.5		15.8	15.8	15.8		43.0	43.0
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	19.5		55.2									
Permitted Option (s)	17.2		113.6									
Split Option (s)	21.0		58.8									
Minimum (s)	17.2		55.2		72.4							
Right Turns												
	NBR		SBR									
Adj Reference Time (s)	14.0		37.3									
Cross Thru Ref Time (s)	10.5		10.5									
Oncoming Left Ref Time (s)	9.0		12.2									
Combined (s)	33.5		60.0									

Intersection Summary

Intersection Capacity Utilization 60.4% ICU Level of Service B
Reference Times and Phasing Options do not represent an optimized timing plan.

Movement	SBR
Lane Configurations	T
Volume (vph)	555
Pedestrians	
Ped Button	
Pedestrian Timing (s)	
Free Right	No
Ideal Flow	2500
Lost Time (s)	6.0
Minimum Green (s)	8.0
Refr Cycle Length (s)	120
Volume Combined (vph)	555
Lane Utilization Factor	1.00
Turning Factor (vph)	0.85
Saturated Flow (vph)	2125
Ped Intf Time (s)	0.0
Pedestrian Frequency (%)	
Protected Option Allowed	
Reference Time (s)	31.3
Adj Reference Time (s)	37.3
Permitted Option	
Adj Saturation A (vph)	
Reference Time A (s)	
Adj Saturation B (vph)	
Reference Time B (s)	
Reference Time (s)	
Adj Reference Time (s)	
Split Option	
Ref Time Combined (s)	
Ref Time Seperate (s)	
Reference Time (s)	
Adj Reference Time (s)	
Summary	

Intersection Capacity Utilization
19: El Camino Real & Faraday Ave

Existing + Specific Plan
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	31	141	79	114	631	178	6	716	611	98	27	416
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No					
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	4.9	4.9	4.9	5.0	5.0	5.0	4.2	4.2	6.0	4.0	4.2	4.2
Minimum Green (s)	4.0	4.0	4.0	6.0	6.0	6.0	4.0	4.0	6.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	31	167	53	114	631	178	0	722	709	0	0	443
Lane Utilization Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.97	0.91	1.00	1.00	0.97
Turning Factor (vph)	0.95	0.98	0.85	0.95	1.00	0.85	0.95	0.95	0.98	0.85	0.95	0.95
Saturated Flow (vph)	2375	4648	2125	2375	4760	2125	0	4612	6669	0	0	4612
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00		0.00		0.00		0.00		0.00	
Protected Option Allowed	Yes			Yes			Yes					
Reference Time (s)	1.6	4.3	3.0	5.8	15.9	10.1	0.0	18.8	12.8	0.0	0.0	11.5
Adj Reference Time (s)	8.9	9.2	8.9	11.0	20.9	15.1	0.0	23.0	18.8	0.0	0.0	15.7
Permitted Option												
Adj Saturation A (vph)	158	2324		158	2380		0	154	2223		0	154
Reference Time A (s)	23.5	4.3		86.4	15.9		0.0	281.8	12.8		0.0	172.9
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA	NA		NA	NA
Reference Time B (s)	NA	NA		NA	NA		NA	NA	NA		NA	NA
Reference Time (s)		23.5			86.4				281.8			
Adj Reference Time (s)		28.4			91.4				287.8			
Split Option												
Ref Time Combined (s)	1.6	4.3		5.8	15.9		0.0	18.8	12.8		0.0	11.5
Ref Time Seperate (s)	1.6	3.6		5.8	15.9		0.3	18.6	11.0		1.4	10.8
Reference Time (s)	4.3	4.3		15.9	15.9		18.8	18.8	18.8		21.3	21.3
Adj Reference Time (s)	9.2	9.2		20.9	20.9		24.8	24.8	24.8		27.3	27.3
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	29.8		50.2									
Permitted Option (s)	91.4		287.8									
Split Option (s)	30.1		52.0									
Minimum (s)	29.8		50.2		80.0							
Right Turns												
	EBR	WBR	SBR									
Adj Reference Time (s)	8.9	15.1	18.4									
Cross Thru Ref Time (s)	50.2	34.5	20.9									
Oncoming Left Ref Time (s)	11.0	8.9	23.0									
Combined (s)	70.1	58.4	62.3									
Intersection Summary												
Intersection Capacity Utilization	66.7%		ICU Level of Service		C							
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization
 19: El Camino Real & Faraday Ave

Existing + Specific Plan
 AM Peak Hour

Movement	SBT	SBR
Label Configurations	↑↑↑	↑
Volume (vph)	1206	220
Pedestrians		
Ped Button		
Pedestrian Timing (s)		
Free Right		No
Ideal Flow	2500	2500
Lost Time (s)	6.0	6.0
Minimum Green (s)	6.0	6.0
Refr Cycle Length (s)	120	120
Volume Combined (vph)	1206	220
Lane Utilization Factor	0.91	1.00
Turning Factor (vph)	1.00	0.85
Saturated Flow (vph)	6810	2125
Ped Intf Time (s)	0.0	0.0
Pedestrian Frequency (%)	0.00	
Protected Option Allowed	Yes	
Reference Time (s)	21.3	12.4
Adj Reference Time (s)	27.3	18.4
Permitted Option		
Adj Saturation A (vph)	2270	
Reference Time A (s)	21.3	
Adj Saturation B (vph)	NA	
Reference Time B (s)	NA	
Reference Time (s)	172.9	
Adj Reference Time (s)	178.9	
Split Option		
Ref Time Combined (s)	21.3	
Ref Time Seperate (s)	21.3	
Reference Time (s)	21.3	
Adj Reference Time (s)	27.3	
Summary		

Intersection Capacity Utilization
20: Avenida Encinas & Palomar Airport Rd

Existing + Specific Plan
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	204	51	350	232	309	45	70	131	118	79	26
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1840	2040	1800	1840	2040	1840	1840	2040	1840	1840	2040	1840
Lost Time (s)	4.2	5.0	4.0	4.2	5.0	5.0	4.6	4.6	4.6	4.6	4.6	4.6
Minimum Green (s)	4.0	8.0	4.0	4.0	8.0	8.0	6.0	6.0	6.0	6.0	6.0	6.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	43	255	0	350	232	309	45	70	131	0	197	26
Lane Utilization 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
Turning Factor (vph)	0.95	0.97	0.85	0.95	1.00	0.85	0.95	1.00	0.85	0.95	0.97	0.85
Saturated Flow (vph)	1748	1979	0	1748	2040	1564	1748	2040	1564	0	3958	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00		0.00		0.00		0.00		0.00	
Protected Option Allowed	Yes			Yes			No			No		
Reference Time (s)	3.0	15.5	0.0	24.0	13.6	23.7				10.1	2.0	
Adj Reference Time (s)	8.2	20.5	0.0	28.2	18.6	28.7				14.7	10.6	
Permitted Option												
Adj Saturation A (vph)	117	1979	117		2040	117		2040	0		388	
Reference Time A (s)	44.3	15.5	360.4		13.6	46.3		4.1	0.0		60.9	
Adj Saturation B (vph)	NA	NA	NA		NA	0		2040	0		0	
Reference Time B (s)	NA	NA	NA		NA	11.1		4.1	12.1		14.0	
Reference Time (s)	44.3		360.4		11.1		14.0					
Adj Reference Time (s)	49.3		365.4		15.7		18.6					
Split Option												
Ref Time Combined (s)	3.0	15.5	24.0		13.6	3.1		4.1	0.0		6.0	
Ref Time Seperate (s)	3.0	12.4	24.0		13.6	3.1		4.1	4.1		4.6	
Reference Time (s)	15.5	15.5	24.0		24.0	4.1		4.1	6.0		6.0	
Adj Reference Time (s)	20.5	20.5	29.0		29.0	10.6		10.6	10.6		10.6	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	48.7		NA									
Permitted Option (s)	365.4		18.6									
Split Option (s)	49.5		21.2									
Minimum (s)	48.7		18.6		67.3							
Right Turns												
	WBR	NBR	SBR									
Adj Reference Time (s)	28.7	14.7	10.6									
Cross Thru Ref Time (s)	10.6	20.5	18.6									
Oncoming Left Ref Time (s)	8.2	10.6	10.6									
Combined (s)	47.5	45.7	39.8									

Intersection Summary
 Intersection Capacity Utilization 56.1% ICU Level of Service B
 Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
21: I-5 SB Ramps & Palomar Airport Rd

























Existing + Specific Plan
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑	↗				↖		↗
Volume (vph)	0	386	67	0	558	219	0	0	0	920	0	333
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			Yes			No			No		
Ideal Flow	1800	2040	1800	1800	2040	1840	1800	2000	1800	1840	2000	1840
Lost Time (s)	4.0	5.0	4.0	4.0	5.0	4.0	4.0	4.0	4.0	4.6	4.0	4.6
Minimum Green (s)	4.0	4.0	4.0	4.0	8.0	4.0	4.0	4.0	4.0	5.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	0	453	0	0	558	219	0	0	0	920	0	333
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Turning Factor (vph)	0.95	0.98	0.85	0.95	1.00	0.85	0.95	1.00	0.85	0.95	1.00	0.85
Saturated Flow (vph)	0	5434	0	0	3884	1564	0	0	0	3395	0	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00				0.00				0.00			
Protected Option Allowed	Yes				Yes				Yes			
Reference Time (s)	0.0	10.0	0.0	0.0	17.2	16.8	0.0	0.0	0.0	32.5	0.0	25.5
Adj Reference Time (s)	0.0	15.0	0.0	0.0	22.2	20.8	0.0	0.0	0.0	37.1	0.0	30.1
Permitted Option												
Adj Saturation A (vph)	0	1811		0	1942		0	0		113	0	
Reference Time A (s)	0.0	10.0		0.0	17.2		0.0	0.0		487.8	0.0	
Adj Saturation B (vph)	NA	NA		NA	NA		0	0		0	0	
Reference Time B (s)	NA	NA		NA	NA		0.0	0.0		40.5	0.0	
Reference Time (s)		10.0			17.2			0.0			40.5	
Adj Reference Time (s)		15.0			22.2			8.0			44.5	
Split Option												
Ref Time Combined (s)	0.0	10.0		0.0	17.2		0.0	0.0		32.5	0.0	
Ref Time Separate (s)	0.0	8.5		0.0	17.2		0.0	0.0		32.5	0.0	
Reference Time (s)	10.0	10.0		17.2	17.2		0.0	0.0		32.5	32.5	
Adj Reference Time (s)	15.0	15.0		22.2	22.2		0.0	0.0		36.5	36.5	
Summary	EB WB		NB SB		Combined							
Protected Option (s)	22.2		37.1									
Permitted Option (s)	22.2		44.5									
Split Option (s)	37.2		36.5									
Minimum (s)	22.2		36.5		58.8							
Right Turns	WBR		SBR									
Adj Reference Time (s)	20.8		30.1									
Cross Thru Ref Time (s)	0.0		22.2									
Oncoming Left Ref Time (s)	0.0		0.0									
Combined (s)	20.8		52.4									

Intersection Summary
 Intersection Capacity Utilization 49.0% ICU Level of Service A
 Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
22: I-5 NB Ramps & Palomar Airport Rd

Existing + Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  	 			 			
Volume (vph)	122	1184	0	0	617	484	160	3	1263	0	0	0
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1840	2040	1800	1800	2040	1840	1800	2040	1840	1800	2000	1800
Lost Time (s)	4.2	4.6	4.0	4.0	4.6	4.6	4.6	4.6	4.6	4.0	4.0	4.0
Minimum Green (s)	5.0	8.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	122	1184	0	0	617	484	0	163	1263	0	0	0
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	0.89	1.00	1.00	0.89	1.00	1.00	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	1.00	0.85	0.95	0.95	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1748	5557	0	0	5557	2768	0	1940	2768	0	0	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00				0.00				0.00			
Protected Option Allowed	Yes			Yes			No			No		
Reference Time (s)	8.4	25.6	0.0	0.0	13.3	21.0			54.7			0.0
Adj Reference Time (s)	12.6	30.2	0.0	0.0	17.9	25.6			59.3			0.0
Permitted Option												
Adj Saturation A (vph)	117	1852		0	1852		0	131		0	0	
Reference Time A (s)	125.6	25.6		0.0	13.3		0.0	149.5		0.0	0.0	
Adj Saturation B (vph)	NA	NA		NA	NA		0	0		0	0	
Reference Time B (s)	NA	NA		NA	NA		19.2	18.1		0.0	0.0	
Reference Time (s)		125.6			13.3			19.2			0.0	
Adj Reference Time (s)		130.2			17.9			23.8			8.0	
Split Option												
Ref Time Combined (s)	8.4	25.6		0.0	13.3		0.0	10.1		0.0	0.0	
Ref Time Separate (s)	8.4	25.6		0.0	13.3		11.2	0.2		0.0	0.0	
Reference Time (s)	25.6	25.6		13.3	13.3		11.2	11.2		0.0	0.0	
Adj Reference Time (s)	30.2	30.2		17.9	17.9		15.8	15.8		0.0	0.0	
Summary	EB WB		NB SB		Combined							
Protected Option (s)	30.5		NA									
Permitted Option (s)	130.2		23.8									
Split Option (s)	48.1		15.8									
Minimum (s)	30.5		15.8		46.3							
Right Turns	WBR		NBR									
Adj Reference Time (s)	25.6		59.3									
Cross Thru Ref Time (s)	15.8		30.2									
Oncoming Left Ref Time (s)	12.6		0.0									
Combined (s)	54.0		89.5									

Intersection Summary
 Intersection Capacity Utilization 74.6% ICU Level of Service D
 Reference Times and Phasing Options do not represent an optimized timing plan.

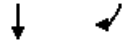
Intersection Capacity Utilization
23: Paseo Del Norte & Palomar Airport Rd

Existing + Specific Plan
AM Peak Hour

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (vph)	2	150	2166	129	4	102	813	248	179	99	146	137
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right				No				No			No	
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	4.2	4.2	6.0	4.0	4.2	4.2	6.0	4.2	4.2	5.0	4.0	4.2
Minimum Green (s)	4.0	4.0	8.0	4.0	4.0	4.0	8.0	4.0	4.0	6.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	0	152	2295	0	0	106	813	248	179	245	0	137
Lane Utilization Factor	1.00	0.97	0.91	1.00	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97
Turning Factor (vph)	0.95	0.95	0.99	0.85	0.95	0.95	1.00	0.85	0.95	0.91	0.85	0.95
Saturated Flow (vph)	0	4612	6753	0	0	4612	9080	2125	4612	4335	0	4612
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)			0.00				0.00			0.00		
Protected Option Allowed			Yes				Yes			Yes		
Reference Time (s)	0.0	4.0	40.8	0.0	0.0	2.8	10.7	14.0	4.7	6.8	0.0	3.6
Adj Reference Time (s)	0.0	8.2	46.8	0.0	0.0	8.2	16.7	18.2	8.9	11.8	0.0	8.2
Permitted Option												
Adj Saturation A (vph)	0	154	2251		0	154	2270		154	2167		154
Reference Time A (s)	0.0	59.3	40.8		0.0	41.4	10.7		69.9	6.8		53.5
Adj Saturation B (vph)	NA	NA	NA		NA	NA	NA		NA	NA		NA
Reference Time B (s)	NA	NA	NA		NA	NA	NA		NA	NA		NA
Reference Time (s)			59.3				41.4			69.9		
Adj Reference Time (s)			65.3				47.4			74.9		
Split Option												
Ref Time Combined (s)	0.0	4.0	40.8		0.0	2.8	10.7		4.7	6.8		3.6
Ref Time Seperate (s)	0.1	3.9	38.5		0.2	2.7	10.7		4.7	2.7		3.6
Reference Time (s)	40.8	40.8	40.8		10.7	10.7	10.7		6.8	6.8		4.6
Adj Reference Time (s)	46.8	46.8	46.8		16.7	16.7	16.7		11.8	11.8		11.0
Summary	EB WB		NB SB		Combined							
Protected Option (s)	55.0		20.0									
Permitted Option (s)	65.3		74.9									
Split Option (s)	63.5		22.8									
Minimum (s)	55.0		20.0		75.0							
Right Turns	WBR											
Adj Reference Time (s)	18.2											
Cross Thru Ref Time (s)	11.8											
Oncoming Left Ref Time (s)	8.2											
Combined (s)	38.2											
Intersection Summary												
Intersection Capacity Utilization			62.5%		ICU Level of Service					B		
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization
 23: Paseo Del Norte & Palomar Airport Rd






















Existing + Specific Plan
 AM Peak Hour



Movement	SBT	SBR
Lane Configurations	↑↑	
Volume (vph)	58	107
Pedestrians		
Ped Button		
Pedestrian Timing (s)		
Free Right		No
Ideal Flow	2500	2500
Lost Time (s)	5.0	4.0
Minimum Green (s)	6.0	4.0
Refr Cycle Length (s)	120	120
Volume Combined (vph)	165	0
Lane Utilization Factor	0.95	1.00
Turning Factor (vph)	0.90	0.85
Saturated Flow (vph)	4297	0
Ped Intf Time (s)	0.0	0.0
Pedestrian Frequency (%)	0.00	
Protected Option Allowed	Yes	
Reference Time (s)	4.6	0.0
Adj Reference Time (s)	11.0	0.0
Permitted Option		
Adj Saturation A (vph)	2148	
Reference Time A (s)	4.6	
Adj Saturation B (vph)	NA	
Reference Time B (s)	NA	
Reference Time (s)	53.5	
Adj Reference Time (s)	58.5	
Split Option		
Ref Time Combined (s)	4.6	
Ref Time Seperate (s)	1.6	
Reference Time (s)	4.6	
Adj Reference Time (s)	11.0	
Summary		

Intersection Capacity Utilization
24: Armada Dr & Palomar Airport Rd

Existing + Specific Plan
AM Peak Hour

													
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	
Lane Configurations													
Volume (vph)	9	171	2173	146	2	102	1040	156	112	31	64	92	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right				No						No			
Ideal Flow	1800	1840	2040	1840	1800	1840	2040	1840	1840	2040	1840	1840	
Lost Time (s)	4.2	4.2	6.0	4.7	4.2	4.2	6.0	5.0	4.7	4.7	4.7	5.0	
Minimum Green (s)	4.0	4.0	8.0	4.0	4.0	4.0	8.0	4.0	4.0	6.0	6.0	4.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	0	180	2173	146	0	104	1040	156	112	52	43	92	
Lane Utilization Factor	1.00	0.97	0.91	1.00	1.00	1.00	0.91	1.00	0.97	1.00	1.00	0.97	
Turning Factor (vph)	0.95	0.95	1.00	0.85	0.95	0.95	1.00	0.85	0.95	0.94	0.85	0.95	
Saturated Flow (vph)	0	3395	5557	1564	0	1748	5557	1564	3395	1915	1564	3395	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)	0.00			0.00					0.00				
Protected Option Allowed	Yes			Yes					Yes				
Reference Time (s)	0.0	6.4	46.9	11.2	0.0	7.1	22.5	12.0	4.0	3.3	3.3	3.3	
Adj Reference Time (s)	0.0	10.6	52.9	15.9	0.0	11.3	28.5	17.0	8.7	10.7	10.7	9.0	
Permitted Option													
Adj Saturation A (vph)	0	113	1852	0			117	1852	113	1915	113		
Reference Time A (s)	0.0	95.4	46.9	0.0			107.1	22.5	59.4	3.3	48.8		
Adj Saturation B (vph)	NA	NA	NA	NA			NA	NA	0	1915	0		
Reference Time B (s)	NA	NA	NA	NA			NA	NA	12.0	3.3	11.3		
Reference Time (s)	95.4			107.1					12.0				
Adj Reference Time (s)	101.4			113.1					16.7				
Split Option													
Ref Time Combined (s)	0.0	6.4	46.9	0.0			7.1	22.5	4.0	3.3	3.3		
Ref Time Seperate (s)	0.6	6.0	46.9	0.1			7.0	22.5	4.0	1.9	3.3		
Reference Time (s)	46.9	46.9	46.9	22.5			22.5	22.5	4.0	4.0	3.3		
Adj Reference Time (s)	52.9	52.9	52.9	28.5			28.5	28.5	10.7	10.7	10.7		
Summary	EB WB		NB SB		Combined								
Protected Option (s)	64.3		19.7										
Permitted Option (s)	113.1		16.7										
Split Option (s)	81.4		21.4										
Minimum (s)	64.3		16.7		80.9								
Right Turns	EBR	WBR	NBR	SBR									
Adj Reference Time (s)	15.9	17.0	10.7	10.7									
Cross Thru Ref Time (s)	10.7	10.7	64.3	39.0									
Oncoming Left Ref Time (s)	11.3	10.6	9.0	8.7									
Combined (s)	37.9	38.2	84.0	58.4									
Intersection Summary													
Intersection Capacity Utilization	70.0%			ICU Level of Service					C				
Reference Times and Phasing Options do not represent an optimized timing plan.													




























Intersection Capacity Utilization
 24: Armada Dr & Palomar Airport Rd

Existing + Specific Plan
 AM Peak Hour

Movement	SBT	SBR
↓ ↘		
Lane Configurations	↑	↑
Volume (vph)	20	51
Pedestrians		
Ped Button		
Pedestrian Timing (s)		
Free Right		No
Ideal Flow	2040	1840
Lost Time (s)	4.7	4.7
Minimum Green (s)	6.0	6.0
Refr Cycle Length (s)	120	120
Volume Combined (vph)	20	51
Lane Utilization Factor	1.00	1.00
Turning Factor (vph)	1.00	0.85
Saturated Flow (vph)	2040	1564
Ped Intf Time (s)	0.0	0.0
Pedestrian Frequency (%)	0.00	
Protected Option Allowed	Yes	
Reference Time (s)	1.2	3.9
Adj Reference Time (s)	10.7	10.7
Permitted Option		
Adj Saturation A (vph)	2040	
Reference Time A (s)	1.2	
Adj Saturation B (vph)	2040	
Reference Time B (s)	1.2	
Reference Time (s)	11.3	
Adj Reference Time (s)	16.0	
Split Option		
Ref Time Combined (s)	1.2	
Ref Time Seperate (s)	1.2	
Reference Time (s)	3.3	
Adj Reference Time (s)	10.7	
Summary		
























Intersection Capacity Utilization
 25: Hidden Valley Rd/The Crossing Dr & Palomar Airport Rd

Existing + Specific Plan
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						 	
Volume (vph)	76	2155	100	43	1133	88	116	12	91	41	4	34
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1840	2040	1840	1840	2040	1800	1840	2040	1800	1840	2040	1840
Lost Time (s)	5.0	6.0	4.2	4.2	6.0	4.0	4.2	4.7	4.0	5.0	5.7	5.7
Minimum Green (s)	4.0	8.0	4.0	4.0	8.0	4.0	4.0	6.0	4.0	4.0	6.0	6.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	76	2155	100	43	1221	0	116	103	0	41	4	34
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.99	0.85	0.95	0.87	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1748	5557	1564	1748	5497	0	1748	1770	0	1748	2040	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00				0.00				0.00		0.00	
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	5.2	46.5	7.7	3.0	26.7	0.0	8.0	7.0	0.0	2.8	0.2	2.6
Adj Reference Time (s)	10.2	52.5	11.9	8.2	32.7	0.0	12.2	11.7	0.0	9.0	11.7	11.7
Permitted Option												
Adj Saturation A (vph)	117	1852		117	1832		117	1770		117	2040	
Reference Time A (s)	78.3	46.5		44.3	26.7		119.5	7.0		42.2	0.2	
Adj Saturation B (vph)	NA	NA		NA	NA		0	1770		0	2040	
Reference Time B (s)	NA	NA		NA	NA		16.0	7.0		10.8	0.2	
Reference Time (s)		78.3			44.3			16.0			10.8	
Adj Reference Time (s)		84.3			50.3			20.7			16.5	
Split Option												
Ref Time Combined (s)	5.2	46.5		3.0	26.7		8.0	7.0		2.8	0.2	
Ref Time Separate (s)	5.2	46.5		3.0	24.7		8.0	0.8		2.8	0.2	
Reference Time (s)	46.5	46.5		26.7	26.7		8.0	8.0		2.8	2.8	
Adj Reference Time (s)	52.5	52.5		32.7	32.7		12.7	12.7		11.7	11.7	
Summary	EB WB		NB SB		Combined							
Protected Option (s)	60.7		23.9									
Permitted Option (s)	84.3		20.7									
Split Option (s)	85.2		24.4									
Minimum (s)	60.7		20.7		81.4							
Right Turns	EBR		SBR									
Adj Reference Time (s)	11.9		11.7									
Cross Thru Ref Time (s)	11.7		32.7									
Oncoming Left Ref Time (s)	8.2		12.2									
Combined (s)	31.8		56.5									
Intersection Summary												
Intersection Capacity Utilization	67.8%				ICU Level of Service				C			
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization
26: Aviara Pkwy/College Blvd & Palomar Airport Rd

Existing + Specific Plan
AM Peak Hour























												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	566	1575	146	1	158	845	67	257	470	228	36	109
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No					
Ideal Flow	1840	2040	1840	1800	1840	2040	1840	1840	2040	1840	1840	2040
Lost Time (s)	4.5	6.3	6.3	4.2	4.2	6.3	6.3	4.2	5.8	5.8	4.2	6.0
Minimum Green (s)	4.0	8.0	8.0	4.0	4.0	8.0	8.0	4.0	6.0	6.0	4.0	6.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	566	1575	146	0	159	845	67	257	470	228	36	109
Lane Utilization Factor	0.97	0.91	1.00	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.95	1.00	0.85	0.95	1.00	0.85	0.95	1.00
Saturated Flow (vph)	3395	5557	1564	0	3395	5557	1564	3395	3884	1564	1748	2040
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00			0.00			0.00		
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	20.0	34.0	11.2	0.0	5.6	18.2	5.1	9.1	14.5	17.5	2.5	6.4
Adj Reference Time (s)	24.5	40.3	17.5	0.0	9.8	24.5	14.3	13.3	20.3	23.3	8.2	12.4
Permitted Option												
Adj Saturation A (vph)	113	1852		0	113	1852		113	1942		117	2040
Reference Time A (s)	300.1	34.0		0.0	84.3	18.2		136.3	14.5		37.1	6.4
Adj Saturation B (vph)	NA	NA		NA	NA	NA		0	3884		NA	NA
Reference Time B (s)	NA	NA		NA	NA	NA		17.1	14.5		NA	NA
Reference Time (s)		300.1				84.3			17.1			37.1
Adj Reference Time (s)		306.4				90.6			22.9			43.1
Split Option												
Ref Time Combined (s)	20.0	34.0		0.0	5.6	18.2		9.1	14.5		2.5	6.4
Ref Time Seperate (s)	20.0	34.0		0.1	5.6	18.2		9.1	14.5		2.5	6.4
Reference Time (s)	34.0	34.0		18.2	18.2	18.2		14.5	14.5		6.4	6.4
Adj Reference Time (s)	40.3	40.3		24.5	24.5	24.5		20.3	20.3		12.4	12.4
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	50.1		28.5									
Permitted Option (s)	306.4		43.1									
Split Option (s)	64.9		32.7									
Minimum (s)	50.1		28.5		78.7							
Right Turns												
	EBR	WBR	NBR	SBR								
Adj Reference Time (s)	17.5	14.3	23.3	16.9								
Cross Thru Ref Time (s)	12.4	20.3	50.1	24.5								
Oncoming Left Ref Time (s)	9.8	24.5	8.2	13.3								
Combined (s)	39.7	59.1	81.6	54.8								
Intersection Summary												
Intersection Capacity Utilization			68.0%		ICU Level of Service				C			
Reference Times and Phasing Options do not represent an optimized timing plan.												



Movement	SBR
Lane Configurations	7
Volume (vph)	162
Pedestrians	
Ped Button	
Pedestrian Timing (s)	
Free Right	No
Ideal Flow	1840
Lost Time (s)	4.5
Minimum Green (s)	4.0
Refr Cycle Length (s)	120
Volume Combined (vph)	162
Lane Utilization Factor	1.00
Turning Factor (vph)	0.85
Saturated Flow (vph)	1564
Ped Intf Time (s)	0.0
Pedestrian Frequency (%)	
Protected Option Allowed	
Reference Time (s)	12.4
Adj Reference Time (s)	16.9
Permitted Option	
Adj Saturation A (vph)	
Reference Time A (s)	
Adj Saturation B (vph)	
Reference Time B (s)	
Reference Time (s)	
Adj Reference Time (s)	
Split Option	
Ref Time Combined (s)	
Ref Time Seperate (s)	
Reference Time (s)	
Adj Reference Time (s)	
Summary	

Intersection Capacity Utilization
27: El Camino Real & Palomar Airport Rd

Existing + Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	168	835	134	543	1273	505	11	109	621	423	3	487
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No					
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	5.0	6.0	4.0	5.0	6.0	6.0	5.0	5.0	6.0	5.0	5.0	5.0
Minimum Green (s)	4.0	10.0	4.0	4.0	10.0	10.0	4.0	4.0	10.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	168	835	134	543	1273	505	0	120	621	423	0	490
Lane Utilization Factor	0.97	0.91	1.00	0.97	0.91	0.89	1.00	0.97	0.91	0.89	1.00	0.97
Turning Factor (vph)	0.95	1.00	0.85	0.95	1.00	0.85	0.95	0.95	1.00	0.85	0.95	0.95
Saturated Flow (vph)	4612	6810	2125	4612	6810	3761	0	4612	6810	3761	0	4612
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00				0.00					
Protected Option Allowed	Yes			Yes			Yes					
Reference Time (s)	4.4	14.7	7.6	14.1	22.4	16.1	0.0	3.1	10.9	13.5	0.0	12.7
Adj Reference Time (s)	9.4	20.7	11.6	19.1	28.4	22.1	0.0	9.0	16.9	18.5	0.0	17.7
Permitted Option												
Adj Saturation A (vph)	154	2270		154	2270		0	154	2270		0	154
Reference Time A (s)	65.6	14.7		211.9	22.4		0.0	46.8	10.9		0.0	191.2
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA	NA		NA	NA
Reference Time B (s)	NA	NA		NA	NA		NA	NA	NA		NA	NA
Reference Time (s)		65.6			211.9				46.8			
Adj Reference Time (s)		71.6			217.9				52.8			
Split Option												
Ref Time Combined (s)	4.4	14.7		14.1	22.4		0.0	3.1	10.9		0.0	12.7
Ref Time Separate (s)	4.4	14.7		14.1	22.4		0.6	2.8	10.9		0.2	12.7
Reference Time (s)	14.7	14.7		22.4	22.4		10.9	10.9	10.9		16.7	16.7
Adj Reference Time (s)	20.7	20.7		28.4	28.4		16.9	16.9	16.9		22.7	22.7
Summary	EB WB		NB SB		Combined							
Protected Option (s)	39.8		34.7									
Permitted Option (s)	217.9		197.2									
Split Option (s)	49.1		39.7									
Minimum (s)	39.8		34.7		74.5							
Right Turns	EBR	WBR	NBR	SBR								
Adj Reference Time (s)	11.6	22.1	18.5	25.4								
Cross Thru Ref Time (s)	31.7	34.7	20.7	28.4								
Oncoming Left Ref Time (s)	19.1	9.4	17.7	9.0								
Combined (s)	62.4	66.2	57.0	62.9								

Intersection Summary
 Intersection Capacity Utilization 62.1% ICU Level of Service B
 Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
 27: El Camino Real & Palomar Airport Rd

Existing + Specific Plan
 AM Peak Hour

Movement	SBT	SBR
Label Configurations	↑↑↑	↑
Volume (vph)	950	362
Pedestrians		
Ped Button		
Pedestrian Timing (s)		
Free Right		No
Ideal Flow	2500	2500
Lost Time (s)	6.0	5.0
Minimum Green (s)	10.0	4.0
Refr Cycle Length (s)	120	120
Volume Combined (vph)	950	362
Lane Utilization Factor	0.91	1.00
Turning Factor (vph)	1.00	0.85
Saturated Flow (vph)	6810	2125
Ped Intf Time (s)	0.0	0.0
Pedestrian Frequency (%)	0.00	
Protected Option Allowed	Yes	
Reference Time (s)	16.7	20.4
Adj Reference Time (s)	22.7	25.4
Permitted Option		
Adj Saturation A (vph)	2270	
Reference Time A (s)	16.7	
Adj Saturation B (vph)	NA	
Reference Time B (s)	NA	
Reference Time (s)	191.2	
Adj Reference Time (s)	197.2	
Split Option		
Ref Time Combined (s)	16.7	
Ref Time Seperate (s)	16.7	
Reference Time (s)	16.7	
Adj Reference Time (s)	22.7	
Summary		

Diamond Interchange Capacity Utilization
28: I-5 SB Ramps & Poinsettia Ln

Existing + Specific Plan
AM Peak Hour

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	EBL	EBT	WBT	WBR	NBL	
Node	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Configurations	↑↑	↑	↑↑	↑↑	↑	↑	↑	↑	↑↑	↑↑↑	↑		
Volume (vph)	522	134	441	658	208	3	193	124	606	902	380	197	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right	No						No			No			
Ideal Flow	2040	1840	1840	2040	1840	2040	1840	1840	2040	2040	1840	1800	
Storage Space			29.3	42.6				21.3	42.6				
Lost Time (s)	4.6	4.6	4.2	4.6	4.6	4.6	4.6	4.2	4.6	4.6	4.6	4.6	
Minimum Green (s)	7.0	7.0	5.0	8.0	5.0	5.0	5.0	4.0	7.0	8.0	8.0	4.0	
Refr Cycle Length (s)													
Travel Time (s)	11.9		120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	522	134	441	658	208	67	129	124	606	902	380	0	
Lane Utilization Factor	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	0.95	0.91	1.00	1.00	
Turning Factor (vph)	1.00	0.85	0.95	1.00	0.95	0.86	0.85	0.95	1.00	1.00	0.85	0.95	
Saturated Flow (vph)	3884	1564	3395	3884	1748	1748	1564	1748	3884	5557	1564	0	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)	0.00			0.00		0.00			0.00	0.00			
Reference Time (s)	16.1	10.3	15.6	20.3	14.3	4.6	9.9	8.5	18.7	19.5	29.2	0.0	
Adj Reference Time (s)	20.7	14.9	19.8	24.9	18.9	9.6	14.5	12.7	23.3	24.1	33.8	0.0	
Volume per cycle, 90th			19.6	27.9	10.3			6.7	26.0			9.8	
Volume to Storage			0.7	0.7	0.2			0.3	0.6			0.2	
Isolated Timings (s)	59.4							63.4					
Timing Options													
Leading Option (s)		87.0											
Lagging Option (s)	OK	63.4											
Lead-Lag Option (s)	OK	63.4											
Interchange Summary													
Intersection Capacity Utilization			52.8%		ICU Level of Service					A			

Reference Times and Phasing Options do not represent an optimized timing plan.

Diamond Interchange Capacity Utilization
 28: I-5 SB Ramps & Poinsettia Ln

Existing + Specific Plan
 AM Peak Hour

	↑	↗		
Movement	NBT	NBR		
Node	0	0		
Lane Configurations	↖	↗↗		
Volume (vph)	2	643		
Pedestrians				
Ped Button				
Pedestrian Timing (s)				
Free Right		No		
Ideal Flow	2040	1840		
Storage Space				
Lost Time (s)	4.6	4.6		
Minimum Green (s)	4.0	4.0		
Refr Cycle Length (s)				
Travel Time (s)	120	120	120	120
Volume Combined (vph)	199	643		
Lane Utilization Factor	1.00	0.89		
Turning Factor (vph)	0.95	0.85		
Saturated Flow (vph)	1939	2768		
Ped Intf Time (s)	0.0	0.0		
Pedestrian Frequency (%)	0.00			
Reference Time (s)	12.3	27.9		
Adj Reference Time (s)	16.9	32.5		
Volume per cycle, 90th				
Volume to Storage				
Isolated Timings (s)				
Timing Options				

Intersection Capacity Utilization
30: Lower Ln/Paseo Del Norte & Poinsettia Ln

Existing + Specific Plan
AM Peak Hour























Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	1	203	1018	27	6	897	76	39	4	20	52	4	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right				No				No				No	
Ideal Flow	1800	1840	2040	1840	1840	2040	1800	1840	2040	1800	1840	2040	
Lost Time (s)	4.2	4.2	4.6	4.6	4.2	4.6	4.0	4.6	4.6	4.0	4.6	4.6	
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	0	204	1018	27	6	973	0	39	24	0	52	349	
Lane Utilization Factor	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Factor (vph)	0.95	0.95	1.00	0.85	0.95	0.99	0.85	0.95	0.88	0.85	0.95	0.85	
Saturated Flow (vph)	0	3395	3884	1564	1748	3839	0	1748	1785	0	1748	1738	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)	0.00			0.00			0.00			0.00			
Protected Option Allowed	Yes			Yes			Yes			Yes			
Reference Time (s)	0.0	7.2	31.5	2.1	0.4	30.4	0.0	2.7	1.6	0.0	3.6	24.1	
Adj Reference Time (s)	0.0	11.4	36.1	9.6	9.2	35.0	0.0	9.6	9.6	0.0	9.6	28.7	
Permitted Option													
Adj Saturation A (vph)	0	113	1942		117	1919		117	1785		117	1738	
Reference Time A (s)	0.0	108.2	31.5		6.2	30.4		40.2	1.6		53.5	24.1	
Adj Saturation B (vph)	NA	NA	NA		NA	NA		NA	NA		0	1738	
Reference Time B (s)	NA	NA	NA		NA	NA		NA	NA		11.6	24.1	
Reference Time (s)			108.2			30.4			40.2			24.1	
Adj Reference Time (s)			112.8			35.0			44.8			28.7	
Split Option													
Ref Time Combined (s)	0.0	7.2	31.5		0.4	30.4		2.7	1.6		3.6	24.1	
Ref Time Seperate (s)	0.1	7.2	31.5		0.4	28.0		2.7	0.3		3.6	0.3	
Reference Time (s)	31.5	31.5	31.5		30.4	30.4		2.7	2.7		24.1	24.1	
Adj Reference Time (s)	36.1	36.1	36.1		35.0	35.0		9.6	9.6		28.7	28.7	
Summary													
	EB WB		NB SB		Combined								
Protected Option (s)	46.4		38.3										
Permitted Option (s)	112.8		44.8										
Split Option (s)	71.1		38.3										
Minimum (s)	46.4		38.3		84.7								
Right Turns													
	EBR												
Adj Reference Time (s)	9.6												
Cross Thru Ref Time (s)	28.7												
Oncoming Left Ref Time (s)	9.2												
Combined (s)	47.5												
Intersection Summary													
Intersection Capacity Utilization	70.6%			ICU Level of Service					C				
Reference Times and Phasing Options do not represent an optimized timing plan.													



Movement	SBR
Lane Configurations	
Volume (vph)	345
Pedestrians	
Ped Button	
Pedestrian Timing (s)	
Free Right	No
Ideal Flow	1800
Lost Time (s)	4.0
Minimum Green (s)	4.0
Refr Cycle Length (s)	120
Volume Combined (vph)	0
Lane Utilization Factor	1.00
Turning Factor (vph)	0.85
Saturated Flow (vph)	0
Ped Intf Time (s)	0.0
Pedestrian Frequency (%)	
Protected Option Allowed	
Reference Time (s)	0.0
Adj Reference Time (s)	0.0
Permitted Option	
Adj Saturation A (vph)	
Reference Time A (s)	
Adj Saturation B (vph)	
Reference Time B (s)	
Reference Time (s)	
Adj Reference Time (s)	
Split Option	
Ref Time Combined (s)	
Ref Time Seperate (s)	
Reference Time (s)	
Adj Reference Time (s)	
Summary	

Intersection Capacity Utilization
31: Aviara Pkwy & Poinsettia Ln

Existing + Specific Plan
AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	385	287	198	22	290	73	263	228	19	48	162	131	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right			No			No			No			No	
Ideal Flow	1840	2040	1840	1840	2040	1800	1840	2040	1800	1840	2040	1800	
Lost Time (s)	5.5	6.0	5.5	5.5	6.0	4.0	5.5	6.0	4.0	5.5	6.0	4.0	
Minimum Green (s)	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	385	287	198	22	363	0	263	247	0	48	293	0	
Lane Utilization Factor	0.97	1.00	0.89	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.97	0.85	0.95	0.99	0.85	0.95	0.93	0.85	
Saturated Flow (vph)	3395	2040	2768	1748	3767	0	3395	3839	0	1748	3624	0	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00		
Protected Option Allowed		Yes			Yes			Yes			Yes		
Reference Time (s)	13.6	16.9	8.6	1.5	11.6	0.0	9.3	7.7	0.0	3.3	9.7	0.0	
Adj Reference Time (s)	19.1	22.9	14.1	9.5	17.6	0.0	14.8	13.7	0.0	9.5	15.7	0.0	
Permitted Option													
Adj Saturation A (vph)	113	2040		117	1883		113	1920		117	1812		
Reference Time A (s)	204.1	16.9		22.7	11.6		139.5	7.7		49.4	9.7		
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA		
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA		
Reference Time (s)		204.1			22.7			139.5			49.4		
Adj Reference Time (s)		210.1			28.7			145.5			55.4		
Split Option													
Ref Time Combined (s)	13.6	16.9		1.5	11.6		9.3	7.7		3.3	9.7		
Ref Time Seperate (s)	13.6	16.9		1.5	9.2		9.3	7.1		3.3	5.4		
Reference Time (s)	16.9	16.9		11.6	11.6		9.3	9.3		9.7	9.7		
Adj Reference Time (s)	22.9	22.9		17.6	17.6		15.3	15.3		15.7	15.7		
Summary													
	EB WB		NB SB		Combined								
Protected Option (s)	36.7		30.5										
Permitted Option (s)	210.1		145.5										
Split Option (s)	40.4		31.0										
Minimum (s)	36.7		30.5		67.2								
Right Turns													
	EBR												
Adj Reference Time (s)	14.1												
Cross Thru Ref Time (s)	15.7												
Oncoming Left Ref Time (s)	9.5												
Combined (s)	39.3												
Intersection Summary													
Intersection Capacity Utilization			56.0%		ICU Level of Service				B				
Reference Times and Phasing Options do not represent an optimized timing plan.													

Intersection Capacity Utilization
32: El Camino Real & Aviara Pkwy

Existing + Specific Plan
AM Peak Hour

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Volume (vph)	1	89	146	294	5	562	303	100	227	1385	191	2
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right				No				No			No	
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	4.2	4.2	5.7	4.6	4.2	4.2	5.7	4.0	4.6	6.4	4.0	4.2
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	6.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	0	90	146	294	0	567	403	0	227	1576	0	0
Lane Utilization Factor	1.00	0.97	0.95	1.00	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00
Turning Factor (vph)	0.95	0.95	1.00	0.85	0.95	0.95	0.96	0.85	0.95	0.98	0.85	0.95
Saturated Flow (vph)	0	4612	4760	2125	0	4612	4583	0	4612	6686	0	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)			0.00				0.00			0.00		
Protected Option Allowed			Yes				Yes			Yes		
Reference Time (s)	0.0	2.3	3.7	16.6	0.0	14.8	10.6	0.0	5.9	28.3	0.0	0.0
Adj Reference Time (s)	0.0	8.2	9.7	21.2	0.0	19.0	16.3	0.0	10.5	34.7	0.0	0.0
Permitted Option												
Adj Saturation A (vph)	0	154	2380		0	154	2291		154	2229		0
Reference Time A (s)	0.0	35.1	3.7		0.0	221.3	10.6		88.6	28.3		0.0
Adj Saturation B (vph)	NA	NA	NA		NA	NA	NA		NA	NA		NA
Reference Time B (s)	NA	NA	NA		NA	NA	NA		NA	NA		NA
Reference Time (s)			35.1				221.3			88.6		
Adj Reference Time (s)			40.8				227.0			95.0		
Split Option												
Ref Time Combined (s)	0.0	2.3	3.7		0.0	14.8	10.6		5.9	28.3		0.0
Ref Time Seperate (s)	0.1	2.3	3.7		0.3	14.6	7.9		5.9	24.9		0.1
Reference Time (s)	3.7	3.7	3.7		14.8	14.8	14.8		28.3	28.3		19.4
Adj Reference Time (s)	9.7	9.7	9.7		20.5	20.5	20.5		34.7	34.7		25.8
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	28.7		42.9									
Permitted Option (s)	227.0		95.0									
Split Option (s)	30.2		60.5									
Minimum (s)	28.7		42.9		71.5							
Right Turns												
	EBR											
Adj Reference Time (s)	21.2											
Cross Thru Ref Time (s)	25.8											
Oncoming Left Ref Time (s)	19.0											
Combined (s)	65.9											
Intersection Summary												
Intersection Capacity Utilization			59.6%		ICU Level of Service				B			
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization
32: El Camino Real & Aviara Pkwy

Existing + Specific Plan
AM Peak Hour



Movement	SBL	SBT	SBR
Lane Configurations			
Volume (vph)	74	1008	79
Pedestrians			
Ped Button			
Pedestrian Timing (s)			
Free Right			No
Ideal Flow	2500	2500	2500
Lost Time (s)	4.2	6.4	4.0
Minimum Green (s)	4.0	6.0	4.0
Refr Cycle Length (s)	120	120	120
Volume Combined (vph)	76	1087	0
Lane Utilization Factor	0.97	0.91	1.00
Turning Factor (vph)	0.95	0.99	0.85
Saturated Flow (vph)	4612	6736	0
Ped Intf Time (s)	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00	
Protected Option Allowed		Yes	
Reference Time (s)	2.0	19.4	0.0
Adj Reference Time (s)	8.2	25.8	0.0
Permitted Option			
Adj Saturation A (vph)	154	2245	
Reference Time A (s)	29.7	19.4	
Adj Saturation B (vph)	NA	NA	
Reference Time B (s)	NA	NA	
Reference Time (s)		29.7	
Adj Reference Time (s)		36.1	
Split Option			
Ref Time Combined (s)	2.0	19.4	
Ref Time Seperate (s)	1.9	18.0	
Reference Time (s)	19.4	19.4	
Adj Reference Time (s)	25.8	25.8	
Summary			

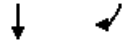
Intersection Capacity Utilization
33: El Camino Real & Poinsettia Ln

Existing + Specific Plan
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	10	6	4	300	3	182	17	6	1413	182	1	107
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	4.2	4.7	4.0	4.2	5.0	4.0	4.2	4.2	6.0	6.0	4.2	4.2
Minimum Green (s)	4.0	6.0	4.0	4.0	6.0	4.0	4.0	4.0	8.0	8.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	10	10	0	300	185	0	0	23	1413	182	0	108
Lane Utilization Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.97	0.91	1.00	1.00	0.97
Turning Factor (vph)	0.95	0.94	0.85	0.95	0.85	0.85	0.95	0.95	1.00	0.85	0.95	0.95
Saturated Flow (vph)	4612	4474	0	4612	4058	0	0	4612	6810	2125	0	4612
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00			0.00			0.00		
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	0.3	0.3	0.0	7.8	5.5	0.0	0.0	0.6	24.9	10.3	0.0	2.8
Adj Reference Time (s)	8.2	10.7	0.0	12.0	11.0	0.0	0.0	8.2	30.9	16.3	0.0	8.2
Permitted Option												
Adj Saturation A (vph)	154	2237		154	2029		0	154	2270		0	154
Reference Time A (s)	3.9	0.3		117.1	5.5		0.0	9.0	24.9		0.0	42.1
Adj Saturation B (vph)	NA	NA		0	4058		NA	NA	NA		NA	NA
Reference Time B (s)	NA	NA		15.8	5.5		NA	NA	NA		NA	NA
Reference Time (s)	3.9			15.8			24.9		24.9			24.9
Adj Reference Time (s)	10.7			20.8			30.9		30.9			30.9
Split Option												
Ref Time Combined (s)	0.3	0.3		7.8	5.5		0.0	0.6	24.9		0.0	2.8
Ref Time Seperate (s)	0.3	0.2		7.8	0.1		0.9	0.2	24.9		0.1	2.8
Reference Time (s)	0.3	0.3		7.8	7.8		24.9	24.9	24.9		18.2	18.2
Adj Reference Time (s)	10.7	10.7		12.8	12.8		30.9	30.9	30.9		24.2	24.2
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	22.7		39.1									
Permitted Option (s)	20.8		48.1									
Split Option (s)	23.5		55.1									
Minimum (s)	20.8		39.1		59.9							
Right Turns												
	NBR											
Adj Reference Time (s)	16.3											
Cross Thru Ref Time (s)	10.7											
Oncoming Left Ref Time (s)	8.2											
Combined (s)	35.2											
Intersection Summary												
Intersection Capacity Utilization	49.9%		ICU Level of Service		A							
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization
33: El Camino Real & Poinsettia Ln

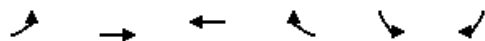
Existing + Specific Plan
AM Peak Hour



Movement	SBT	SBR
Label Configurations	↑↑↑	↘
Volume (vph)	1017	14
Pedestrians		
Ped Button		
Pedestrian Timing (s)		
Free Right		No
Ideal Flow	2500	2500
Lost Time (s)	6.0	4.0
Minimum Green (s)	8.0	4.0
Refr Cycle Length (s)	120	120
Volume Combined (vph)	1031	0
Lane Utilization Factor	0.91	1.00
Turning Factor (vph)	1.00	0.85
Saturated Flow (vph)	6796	0
Ped Intf Time (s)	0.0	0.0
Pedestrian Frequency (%)	0.00	
Protected Option Allowed	Yes	
Reference Time (s)	18.2	0.0
Adj Reference Time (s)	24.2	0.0
Permitted Option		
Adj Saturation A (vph)	2265	
Reference Time A (s)	18.2	
Adj Saturation B (vph)	NA	
Reference Time B (s)	NA	
Reference Time (s)	42.1	
Adj Reference Time (s)	48.1	
Split Option		
Ref Time Combined (s)	18.2	
Ref Time Seperate (s)	18.0	
Reference Time (s)	18.2	
Adj Reference Time (s)	24.2	
Summary		

Intersection Capacity Utilization
34: Cannon Rd & Project Dwy

Existing + Specific Plan
AM Peak Hour
























Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔↔	↔↔	↔↔	↔		
Volume (vph)	567	1082	763	48	0	0
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right				No		No
Ideal Flow	1800	2000	1800	2000	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	567	1082	763	48	0	0
Lane Utilization Factor	0.97	0.95	0.95	1.00	1.00	1.00
Turning Factor (vph)	0.95	1.00	1.00	0.85	0.95	0.85
Saturated Flow (vph)	3321	3808	3427	1700	0	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00	0.00		0.00	
Protected Option Allowed		Yes	Yes		No	
Reference Time (s)	20.5	34.1	26.7	3.4		0.0
Adj Reference Time (s)	24.5	38.1	30.7	8.0		0.0
Permitted Option						
Adj Saturation A (vph)	111	1904	1714		0	
Reference Time A (s)	307.3	34.1	26.7		0.0	
Adj Saturation B (vph)	NA	NA	NA		NA	
Reference Time B (s)	NA	NA	NA		NA	
Reference Time (s)		307.3	26.7			
Adj Reference Time (s)		311.3	30.7			
Split Option						
Ref Time Combined (s)	20.5	34.1	26.7		0.0	
Ref Time Seperate (s)	20.5	34.1	26.7		0.0	
Reference Time (s)	34.1	34.1	26.7		0.0	
Adj Reference Time (s)	38.1	38.1	30.7		0.0	
Summary	EB WB		SB		Combined	
Protected Option (s)	55.2		NA			
Permitted Option (s)	311.3		Err			
Split Option (s)	68.8		0.0			
Minimum (s)	55.2		0.0		55.2	
Right Turns	WBR					
Adj Reference Time (s)	8.0					
Cross Thru Ref Time (s)	0.0					
Oncoming Left Ref Time (s)	24.5					
Combined (s)	32.5					

Intersection Summary

Intersection Capacity Utilization 46.0% ICU Level of Service A
Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
1: Carlsbad Blvd & Tamarack Ave

Existing+Specific Plan
PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	19	22	31	103	14	82	6	38	852	242	92	463	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right	No			No			No						
Ideal Flow	1800	2040	1840	1840	2040	1800	1800	1840	2040	1800	1840	2040	
Lost Time (s)	5.0	5.0	5.0	5.0	5.0	4.0	4.5	4.5	6.0	4.0	4.5	6.0	
Minimum Green (s)	8.0	8.0	8.0	8.0	8.0	4.0	4.0	4.0	10.0	4.0	4.0	10.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	0	41	31	103	96	0	0	44	1094	0	92	463	
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Turning Factor (vph)	0.95	0.98	0.85	0.95	0.87	0.85	0.95	0.95	0.97	0.85	0.95	1.00	
Saturated Flow (vph)	0	1993	1564	1748	1779	0	0	1748	3755	0	1748	3884	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)	0.00		0.00			0.00			0.00			0.00	
Protected Option Allowed	No			No			Yes			Yes			
Reference Time (s)	2.4			0.0			0.0	3.0	35.0	0.0	6.3	14.3	
Adj Reference Time (s)	13.0			0.0			0.0	8.5	41.0	0.0	10.8	20.3	
Permitted Option													
Adj Saturation A (vph)	0	243	117		1779	0		117	1878	117		1942	
Reference Time A (s)	0.0	20.2	106.1		6.5	0.0		45.3	35.0	94.7		14.3	
Adj Saturation B (vph)	0	0	0		1779	NA		NA	NA	NA		NA	
Reference Time B (s)	9.3	10.5	15.1		6.5	NA		NA	NA	NA		NA	
Reference Time (s)	10.5		15.1			45.3			94.7				
Adj Reference Time (s)	15.5		20.1			51.3			100.7				
Split Option													
Ref Time Combined (s)	0.0	2.5	7.1		6.5	0.0		3.0	35.0	6.3		14.3	
Ref Time Separate (s)	1.3	1.3	7.1		0.9	0.4		2.6	27.2	6.3		14.3	
Reference Time (s)	2.5	2.5	7.1		7.1	35.0		35.0	35.0	14.3		14.3	
Adj Reference Time (s)	13.0	13.0	13.0		13.0	41.0		41.0	41.0	20.3		20.3	
Summary													
	EB WB		NB SB		Combined								
Protected Option (s)	NA		51.8										
Permitted Option (s)	20.1		100.7										
Split Option (s)	26.0		61.3										
Minimum (s)	20.1		51.8		71.8								
Right Turns													
	EBR		SBR										
Adj Reference Time (s)	13.0		16.0										
Cross Thru Ref Time (s)	28.8		13.0										
Oncoming Left Ref Time (s)	13.0		8.5										
Combined (s)	54.8		37.5										
Intersection Summary													
Intersection Capacity Utilization	59.9%		ICU Level of Service				B						
Reference Times and Phasing Options do not represent an optimized timing plan.													



Movement	SBR
Lane Configurations	↗
Volume (vph)	19
Pedestrians	
Ped Button	
Pedestrian Timing (s)	
Free Right	No
Ideal Flow	1840
Lost Time (s)	6.0
Minimum Green (s)	10.0
Refr Cycle Length (s)	120
Volume Combined (vph)	19
Lane Utilization Factor	1.00
Turning Factor (vph)	0.85
Saturated Flow (vph)	1564
Ped Intf Time (s)	0.0
Pedestrian Frequency (%)	
Protected Option Allowed	
Reference Time (s)	1.5
Adj Reference Time (s)	16.0
Permitted Option	
Adj Saturation A (vph)	
Reference Time A (s)	
Adj Saturation B (vph)	
Reference Time B (s)	
Reference Time (s)	
Adj Reference Time (s)	
Split Option	
Ref Time Combined (s)	
Ref Time Seperate (s)	
Reference Time (s)	
Adj Reference Time (s)	
Summary	

Diamond Interchange Capacity Utilization
2: I-5 SB Ramps & Tamarack Ave

Existing+Specific Plan
PM Peak Hour

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	EBL	EBT	WBT	WBR	NBL	
Node	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Configurations	↑↑	↑	↓	↑↑		↓	↑	↓	↑↑	↑↓			
Volume (vph)	439	260	469	236	204	3	216	173	470	433	178	272	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right	No						No			No			
Ideal Flow	2040	1840	1840	2040	1800	2040	1840	1840	2040	2140	1800	1800	
Storage Space			14.4	28.8				14.4	28.8				
Lost Time (s)	4.6	4.6	4.2	4.6	4.6	4.6	4.6	4.6	5.1	5.1	4.0	4.6	
Minimum Green (s)	7.0	7.0	5.0	6.0	5.0	5.0	5.0	4.0	7.0	6.0	4.0	4.0	
Refr Cycle Length (s)													
Travel Time (s)	10.0		120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	439	260	469	236	0	207	216	173	470	611	0	0	
Lane Utilization Factor	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	
Turning Factor (vph)	1.00	0.85	0.95	1.00	0.95	0.95	0.85	0.95	1.00	0.96	0.85	0.95	
Saturated Flow (vph)	3884	1564	1748	3884	0	1939	1564	1748	3884	3897	0	0	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)	0.00			0.00		0.00			0.00	0.00			
Reference Time (s)	13.6	19.9	32.2	7.3	0.0	12.8	16.6	11.9	14.5	18.8	0.0	0.0	
Adj Reference Time (s)	18.2	24.5	36.4	11.9	0.0	17.4	21.2	16.5	19.6	23.9	0.0	0.0	
Volume per cycle, 90th			20.7	11.5	10.1			8.8	20.7			12.9	
Volume to Storage			1.4	0.4	0.4			0.6	0.7			0.4	
Isolated Timings (s)	78.4							61.8					
Timing Options													
Leading Option (s)		81.6											
Lagging Option (s)	NA												
Lead-Lag Option (s)	OK	78.4											
Interchange Summary													
Intersection Capacity Utilization			65.3%		ICU Level of Service					C			

Reference Times and Phasing Options do not represent an optimized timing plan.






















Diamond Interchange Capacity Utilization
 2: I-5 SB Ramps & Tamarack Ave

Existing+Specific Plan
 PM Peak Hour

	↑	↗		
Movement	NBT	NBR		
Node	0	0		
Lane Configurations	↖	↗		
Volume (vph)	0	418		
Pedestrians				
Ped Button				
Pedestrian Timing (s)				
Free Right		No		
Ideal Flow	2040	2160		
Storage Space				
Lost Time (s)	4.6	4.6		
Minimum Green (s)	4.0	4.0		
Refr Cycle Length (s)				
Travel Time (s)	120	120	120	120
Volume Combined (vph)	272	418		
Lane Utilization Factor	1.00	1.00		
Turning Factor (vph)	0.95	0.85		
Saturated Flow (vph)	1938	1836		
Ped Intf Time (s)	0.0	0.0		
Pedestrian Frequency (%)	0.00			
Reference Time (s)	16.8	27.3		
Adj Reference Time (s)	21.4	31.9		
Volume per cycle, 90th				
Volume to Storage				
Isolated Timings (s)				
Timing Options				

Intersection Capacity Utilization
4: El Camino Real & Tamarck Ave

Existing+Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Volume (vph)	35	150	80	103	111	23	191	1502	263	1	35	568
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No					
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	4.2	5.0	5.0	4.2	5.0	4.0	4.2	6.0	4.0	4.2	4.2	6.0
Minimum Green (s)	4.0	6.0	6.0	4.0	6.0	4.0	4.0	8.0	4.0	4.0	4.0	8.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	35	150	80	103	134	0	191	1765	0	0	36	568
Lane Utilization Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	1.00	0.95
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.97	0.85	0.95	0.98	0.85	0.95	0.95	1.00
Saturated Flow (vph)	2375	2500	2125	2375	4637	0	2375	6658	0	0	2375	4760
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00				0.00				0.00			
Protected Option Allowed	Yes			Yes			Yes					
Reference Time (s)	1.8	7.2	4.5	5.2	3.5	0.0	9.7	31.8	0.0	0.0	1.8	14.3
Adj Reference Time (s)	8.2	12.2	11.0	9.4	11.0	0.0	13.9	37.8	0.0	0.0	8.2	20.3
Permitted Option												
Adj Saturation A (vph)	158	2500		158	2319		158	2219		0	158	2380
Reference Time A (s)	26.5	7.2		78.1	3.5		144.8	31.8		0.0	27.3	14.3
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	NA
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	NA
Reference Time (s)		26.5			78.1			144.8				27.3
Adj Reference Time (s)		31.5			83.1			150.8				33.3
Split Option												
Ref Time Combined (s)	1.8	7.2		5.2	3.5		9.7	31.8		0.0	1.8	14.3
Ref Time Seperate (s)	1.8	7.2		5.2	2.9		9.7	27.1		0.1	1.8	14.3
Reference Time (s)	7.2	7.2		5.2	5.2		31.8	31.8		14.3	14.3	14.3
Adj Reference Time (s)	12.2	12.2		11.0	11.0		37.8	37.8		20.3	20.3	20.3
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	21.6		46.0									
Permitted Option (s)	83.1		150.8									
Split Option (s)	23.2		58.1									
Minimum (s)	21.6		46.0		67.6							
Right Turns												
	EBR		SBR									
Adj Reference Time (s)	11.0		14.0									
Cross Thru Ref Time (s)	20.3		11.0									
Oncoming Left Ref Time (s)	9.4		13.9									
Combined (s)	40.7		38.9									

Intersection Summary













Intersection Capacity Utilization 56.3% ICU Level of Service B
Reference Times and Phasing Options do not represent an optimized timing plan.



Movement	SBR
Lane Configurations	T
Volume (vph)	61
Pedestrians	
Ped Button	
Pedestrian Timing (s)	
Free Right	No
Ideal Flow	2500
Lost Time (s)	6.0
Minimum Green (s)	8.0
Refr Cycle Length (s)	120
Volume Combined (vph)	61
Lane Utilization Factor	1.00
Turning Factor (vph)	0.85
Saturated Flow (vph)	2125
Ped Intf Time (s)	0.0
Pedestrian Frequency (%)	
Protected Option Allowed	
Reference Time (s)	3.4
Adj Reference Time (s)	14.0
Permitted Option	
Adj Saturation A (vph)	
Reference Time A (s)	
Adj Saturation B (vph)	
Reference Time B (s)	
Reference Time (s)	
Adj Reference Time (s)	
Split Option	
Ref Time Combined (s)	
Ref Time Seperate (s)	
Reference Time (s)	
Adj Reference Time (s)	
Summary	

Intersection Capacity Utilization
5: Carlsbad Blvd & Cannon Rd






























Existing+Specific Plan
PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	114	344	838	103	173	528
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No		No		
Ideal Flow	1840	1840	2040	1840	1840	2040
Lost Time (s)	5.0	4.5	5.5	5.5	4.5	5.5
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	10.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	114	344	838	103	173	528
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.85	1.00	0.85	0.95	1.00
Saturated Flow (vph)	1748	1564	2040	1564	1748	2040
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00
Protected Option Allowed	No		Yes			Yes
Reference Time (s)		26.4	49.3	7.9	11.9	31.1
Adj Reference Time (s)		30.9	54.8	13.4	16.4	36.6
Permitted Option						
Adj Saturation A (vph)	117		2040		117	2040
Reference Time A (s)	117.4		49.3		178.1	31.1
Adj Saturation B (vph)	NA		NA		NA	NA
Reference Time B (s)	NA		NA		NA	NA
Reference Time (s)			49.3			178.1
Adj Reference Time (s)			54.8			183.6
Split Option						
Ref Time Combined (s)	7.8		49.3		11.9	31.1
Ref Time Seperate (s)	7.8		49.3		11.9	31.1
Reference Time (s)	7.8		49.3		31.1	31.1
Adj Reference Time (s)	12.8		54.8		36.6	36.6
Summary	WB		NB SB		Combined	
Protected Option (s)	NA		71.2			
Permitted Option (s)	Err		183.6			
Split Option (s)	12.8		91.4			
Minimum (s)	12.8		71.2		84.0	
Right Turns	WBR	NBR				
Adj Reference Time (s)	30.9	13.4				
Cross Thru Ref Time (s)	54.8	0.0				
Oncoming Left Ref Time (s)	0.0	16.4				
Combined (s)	85.7	29.8				

Intersection Summary
 Intersection Capacity Utilization 71.4% ICU Level of Service C
 Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
6: Avenida Encinas & Cannon Rd

Existing+Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 		 	 		 		 	 		 
Volume (vph)	32	292	15	140	427	128	149	20	355	78	11	32
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1840	2040	1800	1840	2040	1800	1840	2040	1840	1840	2040	1840
Lost Time (s)	4.5	5.5	4.0	4.5	5.5	4.0	4.5	5.0	4.5	4.5	5.0	5.0
Minimum Green (s)	6.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0	6.0	6.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	32	307	0	140	555	0	149	20	355	78	11	32
Lane Utilization Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Turning Factor (vph)	0.95	0.99	0.85	0.95	0.97	0.85	0.95	1.00	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1748	3856	0	3395	3750	0	1748	2040	1564	3395	2040	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00		0.00		0.00		0.00		0.00	
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	2.2	9.6	0.0	4.9	17.8	0.0	10.2	1.2	27.2	2.8	0.6	2.5
Adj Reference Time (s)	10.5	15.1	0.0	10.5	23.3	0.0	14.7	10.0	31.7	10.5	11.0	11.0
Permitted Option												
Adj Saturation A (vph)	117	1928		113	1875		117	2040		113	2040	
Reference Time A (s)	33.0	9.6		74.2	17.8		153.4	1.2		41.4	0.6	
Adj Saturation B (vph)	NA	NA		NA	NA		0	2040		0	2040	
Reference Time B (s)	NA	NA		NA	NA		18.2	1.2		10.8	0.6	
Reference Time (s)		33.0			74.2			18.2			10.8	
Adj Reference Time (s)		38.5			79.7			23.2			15.8	
Split Option												
Ref Time Combined (s)	2.2	9.6		4.9	17.8		10.2	1.2		2.8	0.6	
Ref Time Seperate (s)	2.2	9.1		4.9	13.7		10.2	1.2		2.8	0.6	
Reference Time (s)	9.6	9.6		17.8	17.8		10.2	10.2		2.8	2.8	
Adj Reference Time (s)	15.1	15.1		23.3	23.3		15.2	15.2		11.0	11.0	
Summary	EB WB		NB SB		Combined							
Protected Option (s)	33.8		25.7									
Permitted Option (s)	79.7		23.2									
Split Option (s)	38.3		26.2									
Minimum (s)	33.8		23.2		57.0							
Right Turns	NBR		SBR									
Adj Reference Time (s)	31.7		11.0									
Cross Thru Ref Time (s)	15.1		23.3									
Oncoming Left Ref Time (s)	10.5		14.7									
Combined (s)	57.3		49.0									

Intersection Summary

Intersection Capacity Utilization 47.7% ICU Level of Service A
Reference Times and Phasing Options do not represent an optimized timing plan.

Diamond Interchange Capacity Utilization
7: I-5 SB Ramps & Cannon Rd

Existing+Specific Plan
PM Peak Hour

Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	EBL	EBT	WBT	WBR	NBL	
Node	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Configurations	↑↑	↑	↑↑	↑↑	↑	↑	↑	↑↑	↑↑	↑↑	↑		
Volume (vph)	638	87	757	521	644	7	174	352	930	1149	1251	129	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right	No						No			No			
Ideal Flow	2040	1840	1840	2040	1840	2040	1840	1840	2040	2040	1840	1800	
Storage Space			26.2	40.5				26.2	40.5				
Lost Time (s)	4.6	4.6	4.2	4.6	4.6	4.6	4.6	4.2	4.6	4.6	4.6	4.6	
Minimum Green (s)	6.0	6.0	5.0	6.0	5.0	5.0	5.0	4.0	6.0	6.0	6.0	4.0	
Refr Cycle Length (s)													
Travel Time (s)	11.4		120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	638	87	757	521	0	651	174	352	930	1566	834	0	
Lane Utilization Factor	0.95	1.00	0.97	0.95	1.00	1.00	1.00	0.97	0.95	0.95	1.00	1.00	
Turning Factor (vph)	1.00	0.85	0.95	1.00	0.95	0.95	0.85	0.95	1.00	0.96	0.85	0.95	
Saturated Flow (vph)	3884	1564	3395	3884	0	3878	1564	3395	3884	3729	1564	0	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)	0.00			0.00		0.00			0.00	0.00			
Reference Time (s)	19.7	6.7	26.8	16.1	0.0	20.1	13.4	12.4	28.7	50.4	64.0	0.0	
Adj Reference Time (s)	24.3	11.3	31.0	20.7	0.0	24.7	18.0	16.6	33.3	55.0	68.6	0.0	
Volume per cycle, 90th			31.7	22.7	27.4			16.1	38.1			7.0	
Volume to Storage			1.2	0.6	0.7			0.6	0.9			0.2	
Isolated Timings (s)	80.0							98.1					
Timing Options													
Leading Option (s)		131.7											
Lagging Option (s)	NA												
Lead-Lag Option (s)	OK	98.1											
Interchange Summary													
Intersection Capacity Utilization			81.8%		ICU Level of Service						D		
Reference Times and Phasing Options do not represent an optimized timing plan.													

Diamond Interchange Capacity Utilization
7: I-5 SB Ramps & Cannon Rd

Existing+Specific Plan
PM Peak Hour

	↑	↘		
Movement	NBT	NBR		
Node	0	0		
Lane Configurations	↘	↘↘		
Volume (vph)	5	744		
Pedestrians				
Ped Button				
Pedestrian Timing (s)				
Free Right		No		
Ideal Flow	2040	1840		
Storage Space				
Lost Time (s)	4.6	4.6		
Minimum Green (s)	4.0	4.0		
Refr Cycle Length (s)				
Travel Time (s)	120	120	120	120
Volume Combined (vph)	134	744		
Lane Utilization Factor	1.00	0.89		
Turning Factor (vph)	0.95	0.85		
Saturated Flow (vph)	1942	2768		
Ped Intf Time (s)	0.0	0.0		
Pedestrian Frequency (%)	0.00			
Reference Time (s)	8.3	32.3		
Adj Reference Time (s)	12.9	36.9		
Volume per cycle, 90th				
Volume to Storage				
Isolated Timings (s)				
Timing Options				

Intersection Capacity Utilization
9: Paseo Del Norte/Project Dwy & Cannon Rd

Existing+Specific Plan
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↑↑↑		↵	↑↑↑	↵		↵		↵	↵↵	↑
Volume (vph)	0	1410	264	75	1008	422	2	497	0	237	407	148
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1800	2000	1800	1800	2000	1800	1800	1800	2000	1800	1800	2000
Lost Time (s)	4.0	5.0	4.0	5.0	5.0	4.0	4.0	4.0	4.0	5.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	6.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	0	1674	0	75	1008	422	0	499	0	237	407	148
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.97	1.00	1.00	0.97	1.00
Turning Factor (vph)	0.95	0.98	0.85	0.95	1.00	0.85	0.95	0.95	1.00	0.85	0.95	1.00
Saturated Flow (vph)	0	5319	0	1710	5448	1530	0	3321	0	1530	3321	2000
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00		0.00		0.00		0.00		0.00	
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	0.0	37.8	0.0	5.3	22.2	33.1	0.0	18.0	0.0	18.6	14.7	8.9
Adj Reference Time (s)	0.0	42.8	0.0	10.3	27.2	37.1	0.0	22.0	0.0	23.6	18.7	12.9
Permitted Option												
Adj Saturation A (vph)	0	1773		114	1816		0	111	0		111	2000
Reference Time A (s)	0.0	37.8		78.9	22.2		0.0	270.5	0.0		220.6	8.9
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA	NA		0	2000
Reference Time B (s)	NA	NA		NA	NA		NA	NA	NA		22.7	8.9
Reference Time (s)		37.8			78.9				270.5			22.7
Adj Reference Time (s)		42.8			83.9				274.5			26.7
Split Option												
Ref Time Combined (s)	0.0	37.8		5.3	22.2		0.0	18.0	0.0		14.7	8.9
Ref Time Seperate (s)	0.0	31.8		5.3	22.2		0.1	18.0	0.0		14.7	8.9
Reference Time (s)	37.8	37.8		22.2	22.2		18.0	18.0	18.0		14.7	14.7
Adj Reference Time (s)	42.8	42.8		27.2	27.2		22.0	22.0	22.0		18.7	18.7
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	53.0		34.9									
Permitted Option (s)	83.9		274.5									
Split Option (s)	70.0		40.7									
Minimum (s)	53.0		34.9		87.9							
Right Turns												
	WBR	NBR	SBR									
Adj Reference Time (s)	37.1	23.6	43.7									
Cross Thru Ref Time (s)	0.0	42.8	27.2									
Oncoming Left Ref Time (s)	0.0	18.7	22.0									
Combined (s)	37.1	85.1	92.9									

Intersection Summary

Intersection Capacity Utilization 77.4% ICU Level of Service D
Reference Times and Phasing Options do not represent an optimized timing plan.



Movement	SBR
Lane Configurations	TT
Volume (vph)	895
Pedestrians	
Ped Button	
Pedestrian Timing (s)	
Free Right	No
Ideal Flow	1800
Lost Time (s)	4.0
Minimum Green (s)	4.0
Refr Cycle Length (s)	120
Volume Combined (vph)	895
Lane Utilization Factor	0.89
Turning Factor (vph)	0.85
Saturated Flow (vph)	2708
Ped Intf Time (s)	0.0
Pedestrian Frequency (%)	
Protected Option Allowed	
Reference Time (s)	39.7
Adj Reference Time (s)	43.7
Permitted Option	
Adj Saturation A (vph)	
Reference Time A (s)	
Adj Saturation B (vph)	
Reference Time B (s)	
Reference Time (s)	
Adj Reference Time (s)	
Split Option	
Ref Time Combined (s)	
Ref Time Seperate (s)	
Reference Time (s)	
Adj Reference Time (s)	
Summary	

Intersection Capacity Utilization
10: Car Country Dr & Cannon Rd

Existing+Specific Plan
PM Peak Hour



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔↔		↔	↔↔	↔	↔
Volume (vph)	0	977	89	69	1426	184	119
Pedestrians							
Ped Button							
Pedestrian Timing (s)							
Free Right			No			No	
Ideal Flow	1840	2040	1800	1840	2040	1840	1840
Lost Time (s)	5.5	6.5	4.0	5.5	6.5	6.0	6.0
Minimum Green (s)	6.0	10.0	4.0	4.0	10.0	6.0	6.0
Refr Cycle Length (s)	120	120	120	120	120	120	120
Volume Combined (vph)	0	1066	0	69	1426	184	119
Lane Utilization Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Turning Factor (vph)	0.95	0.99	0.85	0.95	1.00	0.95	0.85
Saturated Flow (vph)	1748	3836	0	1748	3884	1748	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00	0.00	
Protected Option Allowed		Yes			Yes	No	
Reference Time (s)	0.0	33.4	0.0	4.7	44.1		9.1
Adj Reference Time (s)	11.5	39.9	0.0	10.2	50.6		15.1
Permitted Option							
Adj Saturation A (vph)	117	1918		117	1942	117	
Reference Time A (s)	0.0	33.4		71.1	44.1	189.5	
Adj Saturation B (vph)	NA	NA		NA	NA	NA	
Reference Time B (s)	NA	NA		NA	NA	NA	
Reference Time (s)		33.4			71.1		
Adj Reference Time (s)		39.9			77.6		
Split Option							
Ref Time Combined (s)	0.0	33.4		4.7	44.1	12.6	
Ref Time Seperate (s)	0.0	30.6		4.7	44.1	12.6	
Reference Time (s)	33.4	33.4		44.1	44.1	12.6	
Adj Reference Time (s)	39.9	39.9		50.6	50.6	18.6	
Summary							
	EB WB		NB	Combined			
Protected Option (s)	62.1		NA				
Permitted Option (s)	77.6		Err				
Split Option (s)	90.4		18.6				
Minimum (s)	62.1		18.6	80.7			
Right Turns							
	NBR						
Adj Reference Time (s)	15.1						
Cross Thru Ref Time (s)	39.9						
Oncoming Left Ref Time (s)	0.0						
Combined (s)	55.0						

Intersection Summary

Intersection Capacity Utilization 67.2% ICU Level of Service C
Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
11: Legoland Dr

Existing+Specific Plan
PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↘↗	↑↑	↘↗	↗
Volume (vph)	953	143	39	1081	414	236
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No				No
Ideal Flow	2040	1840	1840	2040	1840	1840
Lost Time (s)	6.0	5.0	5.0	6.0	5.0	5.0
Minimum Green (s)	10.0	4.0	4.0	10.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	953	143	39	1081	414	236
Lane Utilization Factor	0.95	1.00	0.97	0.95	0.97	1.00
Turning Factor (vph)	1.00	0.85	0.95	1.00	0.95	0.85
Saturated Flow (vph)	3884	1564	3395	3884	3395	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00	0.00	
Protected Option Allowed	Yes			Yes	No	
Reference Time (s)	29.4	11.0	1.4	33.4		18.1
Adj Reference Time (s)	35.4	16.0	9.0	39.4		23.1
Permitted Option						
Adj Saturation A (vph)	1942		113	1942	113	
Reference Time A (s)	29.4		20.7	33.4	219.5	
Adj Saturation B (vph)	NA		NA	NA	NA	
Reference Time B (s)	NA		NA	NA	NA	
Reference Time (s)	29.4			33.4		
Adj Reference Time (s)	35.4			39.4		
Split Option						
Ref Time Combined (s)	29.4		1.4	33.4	14.6	
Ref Time Seperate (s)	29.4		1.4	33.4	14.6	
Reference Time (s)	29.4		33.4	33.4	14.6	
Adj Reference Time (s)	35.4		39.4	39.4	19.6	
Summary	EB WB		NB		Combined	
Protected Option (s)	44.4		NA			
Permitted Option (s)	39.4		Err			
Split Option (s)	74.8		19.6			
Minimum (s)	39.4		19.6		59.0	
Right Turns	EBR	NBR				
Adj Reference Time (s)	16.0	23.1				
Cross Thru Ref Time (s)	0.0	35.4				
Oncoming Left Ref Time (s)	9.0	0.0				
Combined (s)	25.0	58.6				

Intersection Summary

Intersection Capacity Utilization 49.2% ICU Level of Service A
Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
12: Marriott Hotel Dwy & Cannon Rd

Existing+Specific Plan
PM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Volume (vph)	1135	54	41	1068	52	48
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right	No			No		
Ideal Flow	2040	1840	1840	2040	1840	1840
Lost Time (s)	6.0	5.5	5.0	6.0	5.5	5.5
Minimum Green (s)	10.0	5.0	4.0	10.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	1135	54	41	1068	52	48
Lane Utilization Factor	0.95	1.00	1.00	0.95	1.00	1.00
Turning Factor (vph)	1.00	0.85	0.95	1.00	0.95	0.85
Saturated Flow (vph)	3884	1564	1748	3884	1748	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00		
Protected Option Allowed	Yes			Yes	No	
Reference Time (s)	35.1	4.1	2.8	33.0	3.7	
Adj Reference Time (s)	41.1	10.5	9.0	39.0	10.5	
Permitted Option						
Adj Saturation A (vph)	1942		117	1942	117	
Reference Time A (s)	35.1		42.2	33.0	53.5	
Adj Saturation B (vph)	NA		NA	NA	NA	
Reference Time B (s)	NA		NA	NA	NA	
Reference Time (s)	35.1		42.2			
Adj Reference Time (s)	41.1		48.2			
Split Option						
Ref Time Combined (s)	35.1		2.8	33.0	3.6	
Ref Time Seperate (s)	35.1		2.8	33.0	3.6	
Reference Time (s)	35.1		33.0	33.0	3.6	
Adj Reference Time (s)	41.1		39.0	39.0	10.5	
Summary						
	EB WB		NB	Combined		
Protected Option (s)	50.1		NA			
Permitted Option (s)	48.2		Err			
Split Option (s)	80.1		10.5			
Minimum (s)	48.2		10.5	58.7		
Right Turns						
	EBR	NBR				
Adj Reference Time (s)	10.5	10.5				
Cross Thru Ref Time (s)	0.0	41.1				
Oncoming Left Ref Time (s)	9.0	0.0				
Combined (s)	19.5	51.6				

Intersection Summary

Intersection Capacity Utilization 48.9% ICU Level of Service A
Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
13: Faraday Ave & Cannon Rd

Existing+Specific Plan
PM Peak Hour

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	7	2	977	197	5	463	0	637	0	44	3	0
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right				No			No			No		
Ideal Flow	1800	1840	2040	1800	1840	2040	1800	1840	2040	1800	1800	2040
Lost Time (s)	6.0	6.0	6.0	4.0	6.0	6.0	4.0	5.0	5.0	4.0	5.0	5.0
Minimum Green (s)	4.0	4.0	6.0	4.0	4.0	10.0	4.0	5.0	5.0	4.0	5.0	5.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	0	9	1174	0	5	463	0	0	681	0	0	5
Lane Utilization Factor	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	0.95	0.97	0.85	0.95	1.00	0.85	0.95	0.94	0.85	0.95	0.91
Saturated Flow (vph)	0	1748	3786	0	1748	3884	0	0	3851	0	0	1860
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)			0.00			0.00			0.00			0.00
Protected Option Allowed			Yes			Yes			No			No
Reference Time (s)	0.0	0.6	37.2	0.0	0.3	14.3	0.0			0.0		
Adj Reference Time (s)	0.0	10.0	43.2	0.0	10.0	20.3	0.0			0.0		
Permitted Option												
Adj Saturation A (vph)	0	117	1893		117	1942		0	2652		0	182
Reference Time A (s)	0.0	9.3	37.2		5.1	14.3		0.0	30.8		0.0	3.3
Adj Saturation B (vph)	NA	NA	NA		NA	NA		0	0		0	0
Reference Time B (s)	NA	NA	NA		NA	NA		29.9	29.2		8.2	8.3
Reference Time (s)			37.2			14.3			29.9			3.3
Adj Reference Time (s)			43.2			20.3			34.9			10.0
Split Option												
Ref Time Combined (s)	0.0	0.6	37.2		0.3	14.3		0.0	21.2		0.0	0.3
Ref Time Seperate (s)	0.5	0.1	31.0		0.3	14.3		21.9	0.0		0.2	0.0
Reference Time (s)	37.2	37.2	37.2		14.3	14.3		21.9	21.9		0.3	0.3
Adj Reference Time (s)	43.2	43.2	43.2		20.3	20.3		26.9	26.9		10.0	10.0
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	53.2		NA									
Permitted Option (s)	43.2		34.9									
Split Option (s)	63.5		36.9									
Minimum (s)	43.2		34.9		78.1							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization			65.1%		ICU Level of Service		C					
Reference Times and Phasing Options do not represent an optimized timing plan.												



Movement	SBR
Lane Configurations	
Volume (vph)	2
Pedestrians	
Ped Button	
Pedestrian Timing (s)	
Free Right	No
Ideal Flow	1800
Lost Time (s)	4.0
Minimum Green (s)	4.0
Refr Cycle Length (s)	120
Volume Combined (vph)	0
Lane Utilization Factor	1.00
Turning Factor (vph)	0.85
Saturated Flow (vph)	0
Ped Intf Time (s)	0.0
Pedestrian Frequency (%)	
Protected Option Allowed	
Reference Time (s)	0.0
Adj Reference Time (s)	0.0
Permitted Option	
Adj Saturation A (vph)	
Reference Time A (s)	
Adj Saturation B (vph)	
Reference Time B (s)	
Reference Time (s)	
Adj Reference Time (s)	
Split Option	
Ref Time Combined (s)	
Ref Time Seperate (s)	
Reference Time (s)	
Adj Reference Time (s)	
Summary	

Intersection Capacity Utilization
14: El Camino Real & Cannon Rd

Existing+Specific Plan
PM Peak Hour

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Volume (vph)	365	615	110	1	300	207	30	3	65	1452	821	4
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No				No				No	
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	4.2	6.0	4.0	4.2	4.2	6.0	4.0	4.2	4.2	6.0	6.0	4.2
Minimum Green (s)	4.0	6.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	8.0	8.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	365	725	0	0	301	237	0	0	68	1452	821	0
Lane Utilization Factor	0.97	0.95	1.00	1.00	0.97	0.95	1.00	1.00	1.00	0.95	1.00	1.00
Turning Factor (vph)	0.95	0.98	0.85	0.95	0.95	0.98	0.85	0.95	0.95	1.00	0.85	0.95
Saturated Flow (vph)	4612	4652	0	0	4612	4670	0	0	2375	4760	2125	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00				0.00				0.00		
Protected Option Allowed		Yes				Yes				Yes		
Reference Time (s)	9.5	18.7	0.0	0.0	7.8	6.1	0.0	0.0	3.4	36.6	46.4	0.0
Adj Reference Time (s)	13.7	24.7	0.0	0.0	12.0	12.1	0.0	0.0	8.2	42.6	52.4	0.0
Permitted Option												
Adj Saturation A (vph)	154	2326		0	154	2335		0	158	2380		0
Reference Time A (s)	142.4	18.7		0.0	117.5	6.1		0.0	51.5	36.6		0.0
Adj Saturation B (vph)	NA	NA		NA	NA	NA		NA	NA	NA		NA
Reference Time B (s)	NA	NA		NA	NA	NA		NA	NA	NA		NA
Reference Time (s)		142.4				117.5				51.5		
Adj Reference Time (s)		148.4				123.5				57.5		
Split Option												
Ref Time Combined (s)	9.5	18.7		0.0	7.8	6.1		0.0	3.4	36.6		0.0
Ref Time Seperate (s)	9.5	15.9		0.1	7.8	5.3		0.2	3.3	36.6		0.2
Reference Time (s)	18.7	18.7		7.8	7.8	7.8		36.6	36.6	36.6		10.2
Adj Reference Time (s)	24.7	24.7		13.8	13.8	13.8		42.6	42.6	42.6		16.2
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	36.7		50.8									
Permitted Option (s)	148.4		57.5									
Split Option (s)	38.5		58.8									
Minimum (s)	36.7		50.8		87.5							
Right Turns												
	NBR		SBR									
Adj Reference Time (s)	52.4		15.0									
Cross Thru Ref Time (s)	36.7		12.1									
Oncoming Left Ref Time (s)	8.2		8.2									
Combined (s)	97.3		35.3									

Intersection Summary
 Intersection Capacity Utilization 81.1% ICU Level of Service D
 Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
 14: El Camino Real & Cannon Rd






















Existing+Specific Plan
 PM Peak Hour



Movement	SBL	SBT	SBR
Lane Configurations	↔	↑↑↑	↗
Volume (vph)	22	580	192
Pedestrians			
Ped Button			
Pedestrian Timing (s)			
Free Right			No
Ideal Flow	2500	2500	2500
Lost Time (s)	4.2	6.0	4.2
Minimum Green (s)	4.0	8.0	4.0
Refr Cycle Length (s)	120	120	120
Volume Combined (vph)	26	580	192
Lane Utilization Factor	1.00	0.91	1.00
Turning Factor (vph)	0.95	1.00	0.85
Saturated Flow (vph)	2375	6810	2125
Ped Intf Time (s)	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00	
Protected Option Allowed		Yes	
Reference Time (s)	1.3	10.2	10.8
Adj Reference Time (s)	8.2	16.2	15.0
Permitted Option			
Adj Saturation A (vph)	158	2270	
Reference Time A (s)	19.7	10.2	
Adj Saturation B (vph)	NA	NA	
Reference Time B (s)	NA	NA	
Reference Time (s)		19.7	
Adj Reference Time (s)		25.7	
Split Option			
Ref Time Combined (s)	1.3	10.2	
Ref Time Seperate (s)	1.1	10.2	
Reference Time (s)	10.2	10.2	
Adj Reference Time (s)	16.2	16.2	
Summary			





















Intersection Capacity Utilization
15: Paseo Del Norte & Car Country Dr

Existing+Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	9	17	132	10	131	15	391	103	5	379	40
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1840	2040	1800	1840	2040	1800	1840	2040	1800	1840	2040	1800
Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.0	6.0	4.0	5.0	6.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	15.0	4.0	4.0	15.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	31	26	0	132	141	0	15	494	0	5	419	0
Lane Utilization 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
Turning Factor (vph)	0.95	0.90	0.85	0.95	0.86	0.85	0.95	0.97	0.85	0.95	0.99	0.85
Saturated Flow (vph)	1748	1840	0	1748	1756	0	1748	3763	0	1748	3829	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00			0.00			
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	2.1	1.7	0.0	9.1	9.6	0.0	1.0	15.8	0.0	0.3	13.1	0.0
Adj Reference Time (s)	9.5	9.5	0.0	14.6	15.1	0.0	9.0	21.8	0.0	9.0	21.0	0.0
Permitted Option												
Adj Saturation A (vph)	117	1840		117	1756		117	1881		117	1914	
Reference Time A (s)	31.9	1.7		135.9	9.6		15.4	15.8		5.1	13.1	
Adj Saturation B (vph)	NA	NA		0	1756		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		17.1	9.6		NA	NA		NA	NA	
Reference Time (s)	31.9		17.1			15.8			13.1			
Adj Reference Time (s)	37.4		22.6			21.8			21.0			
Split Option												
Ref Time Combined (s)	2.1	1.7		9.1	9.6		1.0	15.8		0.3	13.1	
Ref Time Seperate (s)	2.1	0.6		9.1	0.7		1.0	12.5		0.3	11.9	
Reference Time (s)	2.1	2.1		9.6	9.6		15.8	15.8		13.1	13.1	
Adj Reference Time (s)	9.5	9.5		15.1	15.1		21.8	21.8		21.0	21.0	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	24.6		30.8									
Permitted Option (s)	37.4		21.8									
Split Option (s)	24.6		42.8									
Minimum (s)	24.6		21.8		46.4							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization			38.7%		ICU Level of Service				A			
Reference Times and Phasing Options do not represent an optimized timing plan.												






















Intersection Capacity Utilization
16: Paseo Del Norte & Outlet Dwy

Existing+Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	9	44	95	7	75	69	414	56	58	439	32
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1840	2040	1800	1800	2040	1800	1840	2040	1800	1840	2040	1800
Lost Time (s)	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	8.0	4.0	4.0	8.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	20	53	0	0	177	0	69	470	0	58	471	0
Lane Utilization 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
Turning Factor (vph)	0.95	0.88	0.85	0.95	0.91	0.85	0.95	0.98	0.85	0.95	0.99	0.85
Saturated Flow (vph)	1748	1786	0	0	1859	0	1748	3815	0	1748	3845	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00			0.00			
Protected Option Allowed	No			No			Yes			Yes		
Reference Time (s)	0.0			0.0			4.7	14.8	0.0	4.0	14.7	0.0
Adj Reference Time (s)	0.0			0.0			9.7	19.8	0.0	9.0	19.7	0.0
Permitted Option												
Adj Saturation A (vph)	1055	1786	0		200	117		1907	117		1922	
Reference Time A (s)	2.3	3.6	0.0		106.2	71.1		14.8	59.7		14.7	
Adj Saturation B (vph)	0	1786	0		0	NA		NA	NA		NA	
Reference Time B (s)	9.4	3.6	14.7		19.4	NA		NA	NA		NA	
Reference Time (s)	3.6		19.4			71.1			59.7			
Adj Reference Time (s)	9.0		24.4			76.1			64.7			
Split Option												
Ref Time Combined (s)	1.4	3.6	0.0		11.4	4.7		14.8	4.0		14.7	
Ref Time Seperate (s)	1.4	0.6	6.7		0.5	4.7		13.0	4.0		13.7	
Reference Time (s)	3.6	3.6	11.4		11.4	14.8		14.8	14.7		14.7	
Adj Reference Time (s)	9.0	9.0	16.4		16.4	19.8		19.8	19.7		19.7	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	NA		29.4									
Permitted Option (s)	24.4		76.1									
Split Option (s)	25.4		39.5									
Minimum (s)	24.4		29.4		53.9							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization	44.9%		ICU Level of Service						A			
Reference Times and Phasing Options do not represent an optimized timing plan.												





















Intersection Capacity Utilization
17: Faraday Ave & College Blvd

Existing+Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	334	87	10	190	64	44	324	181	187	267	131
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1840	2040	1800	1840	2040	1800	1840	2040	1800	1940	2040	1800
Lost Time (s)	4.5	6.0	4.0	4.5	6.0	4.0	4.5	5.0	4.0	4.5	5.0	4.0
Minimum Green (s)	4.0	7.0	4.0	4.0	7.0	4.0	5.0	6.0	4.0	5.0	6.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	108	421	0	10	254	0	44	505	0	187	398	0
Lane Utilization Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Turning Factor (vph)	0.95	0.97	0.85	0.95	0.96	0.85	0.95	0.95	0.85	0.95	0.95	0.85
Saturated Flow (vph)	3395	3764	0	3395	3737	0	1748	3675	0	1843	3692	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00			0.00			0.00			
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	3.8	13.4	0.0	0.4	8.2	0.0	3.0	16.5	0.0	12.2	12.9	0.0
Adj Reference Time (s)	8.5	19.4	0.0	8.5	14.2	0.0	9.5	21.5	0.0	16.7	17.9	0.0
Permitted Option												
Adj Saturation A (vph)	113	1882		113	1869		117	1838		123	1846	
Reference Time A (s)	57.3	13.4		5.3	8.2		45.3	16.5		182.6	12.9	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA	
Reference Time (s)		57.3			8.2			45.3			182.6	
Adj Reference Time (s)		63.3			14.2			50.3			187.6	
Split Option												
Ref Time Combined (s)	3.8	13.4		0.4	8.2		3.0	16.5		12.2	12.9	
Ref Time Seperate (s)	3.8	10.6		0.4	6.1		3.0	10.6		12.2	8.7	
Reference Time (s)	13.4	13.4		8.2	8.2		16.5	16.5		12.9	12.9	
Adj Reference Time (s)	19.4	19.4		14.2	14.2		21.5	21.5		17.9	17.9	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	27.9		38.2									
Permitted Option (s)	63.3		187.6									
Split Option (s)	33.6		39.4									
Minimum (s)	27.9		38.2		66.1							
Right Turns												
Adj Reference Time (s)												
Cross Thru Ref Time (s)												
Oncoming Left Ref Time (s)												
Combined (s)												
Intersection Summary												
Intersection Capacity Utilization	55.1%		ICU Level of Service						B			
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization
18: El Camino Real & College Blvd

Existing+Specific Plan
PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	
Lane Configurations													
Volume (vph)	667	20	26	27	28	33	3	39	2050	42	1	36	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right	No			No			No						
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	
Lost Time (s)	5.0	6.5	4.0	5.0	6.5	4.0	5.0	5.0	6.0	6.0	5.0	5.0	
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	8.0	8.0	4.0	4.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	667	46	0	27	61	0	0	42	2050	42	0	37	
Lane Utilization Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	1.00	0.91	1.00	1.00	1.00	
Turning Factor (vph)	0.95	0.92	0.85	0.95	0.92	0.85	0.95	0.95	1.00	0.85	0.95	0.95	
Saturated Flow (vph)	4612	4356	0	4612	4374	0	0	2375	6810	2125	0	2375	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)	0.00		0.00		0.00		0.00		0.00				
Protected Option Allowed	Yes			Yes			Yes						
Reference Time (s)	17.4	1.3	0.0	0.7	1.7	0.0	0.0	2.1	36.1	2.4	0.0	1.9	
Adj Reference Time (s)	22.4	10.5	0.0	9.0	10.5	0.0	0.0	9.0	42.1	14.0	0.0	9.0	
Permitted Option													
Adj Saturation A (vph)	154	2178		154	2187		0	158	2270		0	158	
Reference Time A (s)	260.3	1.3		10.5	1.7		0.0	31.8	36.1		0.0	28.0	
Adj Saturation B (vph)	0	4356		0	4374		NA	NA	NA		NA	NA	
Reference Time B (s)	25.4	1.3		8.7	1.7		NA	NA	NA		NA	NA	
Reference Time (s)		25.4			8.7				36.1				
Adj Reference Time (s)		31.9			15.2				42.1				
Split Option													
Ref Time Combined (s)	17.4	1.3		0.7	1.7		0.0	2.1	36.1		0.0	1.9	
Ref Time Seperate (s)	17.4	0.6		0.7	0.8		0.2	2.0	36.1		0.1	1.8	
Reference Time (s)	17.4	17.4		1.7	1.7		36.1	36.1	36.1		18.7	18.7	
Adj Reference Time (s)	23.9	23.9		10.5	10.5		42.1	42.1	42.1		24.7	24.7	
Summary													
	EB WB		NB SB		Combined								
Protected Option (s)	32.9		51.1										
Permitted Option (s)	31.9		42.1										
Split Option (s)	34.4		66.8										
Minimum (s)	31.9		42.1		74.0								
Right Turns													
	NBR		SBR										
Adj Reference Time (s)	14.0		14.0										
Cross Thru Ref Time (s)	10.5		10.5										
Oncoming Left Ref Time (s)	9.0		9.0										
Combined (s)	33.5		33.5										
Intersection Summary													
Intersection Capacity Utilization	61.6%		ICU Level of Service		B								
Reference Times and Phasing Options do not represent an optimized timing plan.													





























Intersection Capacity Utilization
18: El Camino Real & College Blvd

Existing+Specific Plan
PM Peak Hour

Movement	SBT	SBR
Lane Configurations	↑↑↑	↑
Volume (vph)	1059	127
Pedestrians		
Ped Button		
Pedestrian Timing (s)		
Free Right		No
Ideal Flow	2500	2500
Lost Time (s)	6.0	6.0
Minimum Green (s)	8.0	8.0
Refr Cycle Length (s)	120	120
Volume Combined (vph)	1059	127
Lane Utilization Factor	0.91	1.00
Turning Factor (vph)	1.00	0.85
Saturated Flow (vph)	6810	2125
Ped Intf Time (s)	0.0	0.0
Pedestrian Frequency (%)	0.00	
Protected Option Allowed	Yes	
Reference Time (s)	18.7	7.2
Adj Reference Time (s)	24.7	14.0
Permitted Option		
Adj Saturation A (vph)	2270	
Reference Time A (s)	18.7	
Adj Saturation B (vph)	NA	
Reference Time B (s)	NA	
Reference Time (s)	28.0	
Adj Reference Time (s)	34.0	
Split Option		
Ref Time Combined (s)	18.7	
Ref Time Seperate (s)	18.7	
Reference Time (s)	18.7	
Adj Reference Time (s)	24.7	
Summary		

Intersection Capacity Utilization
19: El Camino Real & Faraday Ave

Existing+Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations		 			 			 	 			 
Volume (vph)	250	504	869	196	145	322	42	149	1128	95	11	227
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No					
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	4.9	4.9	4.9	5.0	5.0	5.0	4.2	4.2	6.0	4.0	4.2	4.2
Minimum Green (s)	4.0	4.0	4.0	6.0	6.0	6.0	4.0	4.0	6.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	250	794	579	196	145	322	0	191	1223	0	0	238
Lane Utilization Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.97	0.91	1.00	1.00	0.97
Turning Factor (vph)	0.95	0.95	0.85	0.95	1.00	0.85	0.95	0.95	0.99	0.85	0.95	0.95
Saturated Flow (vph)	2375	4499	2125	2375	4760	2125	0	4612	6731	0	0	4612
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00		0.00		0.00		0.00			
Protected Option Allowed	Yes			Yes			Yes					
Reference Time (s)	12.6	21.2	32.7	9.9	3.7	18.2	0.0	5.0	21.8	0.0	0.0	6.2
Adj Reference Time (s)	17.5	26.1	37.6	14.9	11.0	23.2	0.0	9.2	27.8	0.0	0.0	10.4
Permitted Option												
Adj Saturation A (vph)	158	2250		158	2380		0	154	2244		0	154
Reference Time A (s)	189.5	21.2		148.5	3.7		0.0	74.5	21.8		0.0	92.9
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA	NA		NA	NA
Reference Time B (s)	NA	NA		NA	NA		NA	NA	NA		NA	NA
Reference Time (s)		189.5			148.5				74.5			
Adj Reference Time (s)		194.4			153.5				80.5			
Split Option												
Ref Time Combined (s)	12.6	21.2		9.9	3.7		0.0	5.0	21.8		0.0	6.2
Ref Time Seperate (s)	12.6	13.4		9.9	3.7		2.1	3.9	20.1		0.6	5.9
Reference Time (s)	21.2	21.2		9.9	9.9		21.8	21.8	21.8		12.5	12.5
Adj Reference Time (s)	26.1	26.1		14.9	14.9		27.8	27.8	27.8		18.5	18.5
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	41.0		38.2									
Permitted Option (s)	194.4		98.9									
Split Option (s)	41.0		46.4									
Minimum (s)	41.0		38.2		79.2							
Right Turns												
	EBR	WBR	SBR									
Adj Reference Time (s)	37.6	23.2	12.0									
Cross Thru Ref Time (s)	27.7	38.2	11.0									
Oncoming Left Ref Time (s)	14.9	17.5	9.2									
Combined (s)	80.2	78.9	32.2									
Intersection Summary												
Intersection Capacity Utilization	66.9%		ICU Level of Service		C							
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization
 19: El Camino Real & Faraday Ave

Existing+Specific Plan
 PM Peak Hour

Movement	SBT	SBR
Label Configurations	↑↑↑	↑
Volume (vph)	712	18
Pedestrians		
Ped Button		
Pedestrian Timing (s)		
Free Right		No
Ideal Flow	2500	2500
Lost Time (s)	6.0	6.0
Minimum Green (s)	6.0	6.0
Refr Cycle Length (s)	120	120
Volume Combined (vph)	712	18
Lane Utilization Factor	0.91	1.00
Turning Factor (vph)	1.00	0.85
Saturated Flow (vph)	6810	2125
Ped Intf Time (s)	0.0	0.0
Pedestrian Frequency (%)	0.00	
Protected Option Allowed	Yes	
Reference Time (s)	12.5	1.0
Adj Reference Time (s)	18.5	12.0
Permitted Option		
Adj Saturation A (vph)	2270	
Reference Time A (s)	12.5	
Adj Saturation B (vph)	NA	
Reference Time B (s)	NA	
Reference Time (s)	92.9	
Adj Reference Time (s)	98.9	
Split Option		
Ref Time Combined (s)	12.5	
Ref Time Seperate (s)	12.5	
Reference Time (s)	12.5	
Adj Reference Time (s)	18.5	
Summary		

Intersection Capacity Utilization
20: Avenida Encinas & Palomar Airport Rd













Existing+Specific Plan
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	275	42	297	503	312	87	125	400	253	105	64
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1840	2040	1800	1840	2040	1840	1840	2040	1840	1840	2040	1840
Lost Time (s)	4.2	5.0	4.0	4.2	5.0	5.0	4.6	4.6	4.6	4.6	4.6	4.6
Minimum Green (s)	4.0	8.0	4.0	4.0	8.0	8.0	6.0	6.0	6.0	6.0	6.0	6.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	58	317	0	297	503	312	87	125	400	0	358	64
Lane Utilization 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
Turning Factor (vph)	0.95	0.98	0.85	0.95	1.00	0.85	0.95	1.00	0.85	0.95	0.96	0.85
Saturated Flow (vph)	1748	1999	0	1748	2040	1564	1748	2040	1564	0	3936	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00		0.00		0.00		0.00		0.00		0.00	
Protected Option Allowed	Yes			Yes			No			No		
Reference Time (s)	4.0	19.0	0.0	20.4	29.6	23.9			30.7			4.9
Adj Reference Time (s)	8.2	24.0	0.0	24.6	34.6	28.9			35.3			10.6
Permitted Option												
Adj Saturation A (vph)	117	1999		117	2040		117	2040		0	337	
Reference Time A (s)	59.7	19.0		305.8	29.6		89.6	7.4		0.0	127.3	
Adj Saturation B (vph)	NA	NA		NA	NA		0	2040		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		14.0	7.4		NA	NA	
Reference Time (s)		59.7			305.8			14.0			127.3	
Adj Reference Time (s)		64.7			310.8			18.6			131.9	
Split Option												
Ref Time Combined (s)	4.0	19.0		20.4	29.6		6.0	7.4		0.0	10.9	
Ref Time Seperate (s)	4.0	16.5		20.4	29.6		6.0	7.4		8.7	6.2	
Reference Time (s)	19.0	19.0		29.6	29.6		7.4	7.4		10.9	10.9	
Adj Reference Time (s)	24.0	24.0		34.6	34.6		12.0	12.0		15.5	15.5	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	48.6		NA									
Permitted Option (s)	310.8		131.9									
Split Option (s)	58.6		27.5									
Minimum (s)	48.6		27.5		76.1							
Right Turns												
	WBR	NBR	SBR									
Adj Reference Time (s)	28.9	35.3	10.6									
Cross Thru Ref Time (s)	12.0	24.0	34.6									
Oncoming Left Ref Time (s)	8.2	15.5	12.0									
Combined (s)	49.1	74.8	57.1									

Intersection Summary
 Intersection Capacity Utilization 63.4% ICU Level of Service B
 Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
21: I-5 SB Ramps & Palomar Airport Rd

Existing+Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑	↑				↑↑		↑
Volume (vph)	0	698	230	0	789	1005	0	0	0	581	0	323
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			Yes			No			No		
Ideal Flow	1800	2040	1800	1800	2040	1840	1800	2000	1800	1840	2000	1840
Lost Time (s)	4.0	5.0	4.0	4.0	5.0	4.0	4.0	4.0	4.0	4.6	4.0	4.6
Minimum Green (s)	4.0	4.0	4.0	4.0	8.0	4.0	4.0	4.0	4.0	5.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	0	928	0	0	789	1005	0	0	0	581	0	323
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Turning Factor (vph)	0.95	0.96	0.85	0.95	1.00	0.85	0.95	1.00	0.85	0.95	1.00	0.85
Saturated Flow (vph)	0	5350	0	0	3884	1564	0	0	0	3395	0	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			Yes			Yes	
Reference Time (s)	0.0	20.8	0.0	0.0	24.4	77.1	0.0	0.0	0.0	20.5	0.0	24.8
Adj Reference Time (s)	0.0	25.8	0.0	0.0	29.4	81.1	0.0	0.0	0.0	25.1	0.0	29.4
Permitted Option												
Adj Saturation A (vph)	0	1783		0	1942		0	0		113	0	
Reference Time A (s)	0.0	20.8		0.0	24.4		0.0	0.0		308.1	0.0	
Adj Saturation B (vph)	NA	NA		NA	NA		0	0		0	0	
Reference Time B (s)	NA	NA		NA	NA		0.0	0.0		28.5	0.0	
Reference Time (s)		20.8			24.4			0.0			28.5	
Adj Reference Time (s)		25.8			29.4			8.0			32.5	
Split Option												
Ref Time Combined (s)	0.0	20.8		0.0	24.4		0.0	0.0		20.5	0.0	
Ref Time Separate (s)	0.0	15.7		0.0	24.4		0.0	0.0		20.5	0.0	
Reference Time (s)	20.8	20.8		24.4	24.4		0.0	0.0		20.5	20.5	
Adj Reference Time (s)	25.8	25.8		29.4	29.4		0.0	0.0		24.5	24.5	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	29.4		25.1									
Permitted Option (s)	29.4		32.5									
Split Option (s)	55.2		24.5									
Minimum (s)	29.4		24.5		53.9							
Right Turns												
	WBR		SBR									
Adj Reference Time (s)	81.1		29.4									
Cross Thru Ref Time (s)	0.0		29.4									
Oncoming Left Ref Time (s)	0.0		0.0									
Combined (s)	81.1		58.8									
Intersection Summary												
Intersection Capacity Utilization			49.0%		ICU Level of Service				A			
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization
22: I-5 NB Ramps & Palomar Airport Rd

Existing+Specific Plan
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	255	1024	0	0	1685	946	109	0	576	0	0	0
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No			No			No			No
Ideal Flow	1840	2040	1800	1800	2040	1840	1800	2040	1840	1800	2000	1800
Lost Time (s)	4.2	4.6	4.0	4.0	4.6	4.6	4.6	4.6	4.6	4.0	4.0	4.0
Minimum Green (s)	5.0	8.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	255	1024	0	0	1685	946	0	109	576	0	0	0
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	0.89	1.00	1.00	0.89	1.00	1.00	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	1.00	0.85	0.95	0.95	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1748	5557	0	0	5557	2768	0	1938	2768	0	0	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00			0.00			0.00			0.00	
Protected Option Allowed		Yes			Yes			No			No	
Reference Time (s)	17.5	22.1	0.0	0.0	36.4	41.0			25.0			0.0
Adj Reference Time (s)	21.7	26.7	0.0	0.0	41.0	45.6			29.6			0.0
Permitted Option												
Adj Saturation A (vph)	117	1852		0	1852		0	129		0	0	
Reference Time A (s)	262.6	22.1		0.0	36.4		0.0	101.2		0.0	0.0	
Adj Saturation B (vph)	NA	NA		NA	NA		0	0		0	0	
Reference Time B (s)	NA	NA		NA	NA		15.6	14.7		0.0	0.0	
Reference Time (s)		262.6			36.4			15.6			0.0	
Adj Reference Time (s)		267.2			41.0			20.2			8.0	
Split Option												
Ref Time Combined (s)	17.5	22.1		0.0	36.4		0.0	6.7		0.0	0.0	
Ref Time Separate (s)	17.5	22.1		0.0	36.4		7.6	0.0		0.0	0.0	
Reference Time (s)	22.1	22.1		36.4	36.4		7.6	7.6		0.0	0.0	
Adj Reference Time (s)	26.7	26.7		41.0	41.0		12.2	12.2		0.0	0.0	
Summary	EB WB		NB SB		Combined							
Protected Option (s)	62.7		NA									
Permitted Option (s)	267.2		20.2									
Split Option (s)	67.7		12.2									
Minimum (s)	62.7		12.2		74.9							
Right Turns	WBR	NBR										
Adj Reference Time (s)	45.6	29.6										
Cross Thru Ref Time (s)	12.2	26.7										
Oncoming Left Ref Time (s)	21.7	0.0										
Combined (s)	79.6	56.3										

Intersection Summary
 Intersection Capacity Utilization 66.3% ICU Level of Service C
 Reference Times and Phasing Options do not represent an optimized timing plan.

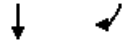
Intersection Capacity Utilization
23: Paseo Del Norte & Palomar Airport Rd

Existing+Specific Plan
PM Peak Hour

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	
Lane Configurations													
Volume (vph)	9	265	1154	172	29	282	2139	315	228	179	176	323	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right				No						No			
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	
Lost Time (s)	4.2	4.2	6.0	4.0	4.2	4.2	6.0	4.2	4.2	5.0	4.0	4.2	
Minimum Green (s)	4.0	4.0	8.0	4.0	4.0	4.0	8.0	4.0	4.0	6.0	4.0	4.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	0	274	1326	0	0	311	2139	315	228	355	0	323	
Lane Utilization Factor	1.00	0.97	0.91	1.00	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	
Turning Factor (vph)	0.95	0.95	0.98	0.85	0.95	0.95	1.00	0.85	0.95	0.93	0.85	0.95	
Saturated Flow (vph)	0	4612	6677	0	0	4612	9080	2125	4612	4406	0	4612	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)	0.00			0.00					0.00				
Protected Option Allowed	Yes			Yes					Yes				
Reference Time (s)	0.0	7.1	23.8	0.0	0.0	8.1	28.3	17.8	5.9	9.7	0.0	8.4	
Adj Reference Time (s)	0.0	11.3	29.8	0.0	0.0	12.3	34.3	22.0	10.1	14.7	0.0	12.6	
Permitted Option													
Adj Saturation A (vph)	0	154	2226	0			154	2270	154	2203	154		
Reference Time A (s)	0.0	106.9	23.8	0.0			121.4	28.3	89.0	9.7	126.1		
Adj Saturation B (vph)	NA	NA	NA	NA			NA	NA	NA	NA	NA		
Reference Time B (s)	NA	NA	NA	NA			NA	NA	NA	NA	NA		
Reference Time (s)	106.9			121.4					89.0				
Adj Reference Time (s)	112.9			127.4					94.0				
Split Option													
Ref Time Combined (s)	0.0	7.1	23.8	0.0			8.1	28.3	5.9	9.7	8.4		
Ref Time Seperate (s)	0.5	6.9	20.7	1.5			7.3	28.3	5.9	4.9	8.4		
Reference Time (s)	23.8	23.8	23.8	28.3			28.3	28.3	9.7	9.7	10.9		
Adj Reference Time (s)	29.8	29.8	29.8	34.3			34.3	34.3	14.7	14.7	15.9		
Summary	EB WB		NB SB		Combined								
Protected Option (s)	45.6		27.3										
Permitted Option (s)	127.4		131.1										
Split Option (s)	64.1		30.5										
Minimum (s)	45.6		27.3		72.9								
Right Turns	WBR												
Adj Reference Time (s)	22.0												
Cross Thru Ref Time (s)	14.7												
Oncoming Left Ref Time (s)	11.3												
Combined (s)	48.0												
Intersection Summary													
Intersection Capacity Utilization	60.7%			ICU Level of Service					B				
Reference Times and Phasing Options do not represent an optimized timing plan.													

Intersection Capacity Utilization
 23: Paseo Del Norte & Palomar Airport Rd

Existing+Specific Plan
 PM Peak Hour



Movement	SBT	SBR
Lane Configurations	↑↑	
Volume (vph)	134	255
Pedestrians		
Ped Button		
Pedestrian Timing (s)		
Free Right		No
Ideal Flow	2500	2500
Lost Time (s)	5.0	4.0
Minimum Green (s)	6.0	4.0
Refr Cycle Length (s)	120	120
Volume Combined (vph)	389	0
Lane Utilization Factor	0.95	1.00
Turning Factor (vph)	0.90	0.85
Saturated Flow (vph)	4292	0
Ped Intf Time (s)	0.0	0.0
Pedestrian Frequency (%)	0.00	
Protected Option Allowed	Yes	
Reference Time (s)	10.9	0.0
Adj Reference Time (s)	15.9	0.0
Permitted Option		
Adj Saturation A (vph)	2146	
Reference Time A (s)	10.9	
Adj Saturation B (vph)	NA	
Reference Time B (s)	NA	
Reference Time (s)	126.1	
Adj Reference Time (s)	131.1	
Split Option		
Ref Time Combined (s)	10.9	
Ref Time Seperate (s)	3.7	
Reference Time (s)	10.9	
Adj Reference Time (s)	15.9	
Summary		

Intersection Capacity Utilization
24: Armada Dr & Palomar Airport Rd

Existing+Specific Plan
PM Peak Hour

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (vph)	13	85	1366	135	3	279	2138	133	354	50	267	246
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right				No				No				No
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	4.2	4.2	6.0	4.7	4.2	4.2	6.0	5.0	4.7	4.7	4.7	5.0
Minimum Green (s)	4.0	4.0	8.0	4.0	4.0	4.0	8.0	4.0	4.0	6.0	6.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	0	98	1366	135	0	282	2138	133	354	139	178	246
Lane Utilization Factor	1.00	0.97	0.91	1.00	1.00	1.00	0.91	1.00	0.97	1.00	1.00	0.97
Turning Factor (vph)	0.95	0.95	1.00	0.85	0.95	0.95	1.00	0.85	0.95	0.90	0.85	0.95
Saturated Flow (vph)	0	4612	6810	2125	0	2375	6810	2125	4612	2260	2125	4612
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00			0.00					
Protected Option Allowed	Yes			Yes			Yes					
Reference Time (s)	0.0	2.5	24.1	7.6	0.0	14.2	37.7	7.5	9.2	7.4	10.1	6.4
Adj Reference Time (s)	0.0	8.2	30.1	12.3	0.0	18.4	43.7	12.5	13.9	12.1	14.8	11.4
Permitted Option												
Adj Saturation A (vph)	0	154	2270		0	158	2270		154	2260		154
Reference Time A (s)	0.0	38.2	24.1		0.0	213.7	37.7		138.2	7.4		96.0
Adj Saturation B (vph)	NA	NA	NA		NA	NA	NA		0	2260		NA
Reference Time B (s)	NA	NA	NA		NA	NA	NA		17.2	7.4		NA
Reference Time (s)	38.2			213.7			17.2					
Adj Reference Time (s)	44.2			219.7			21.9					
Split Option												
Ref Time Combined (s)	0.0	2.5	24.1		0.0	14.2	37.7		9.2	7.4		6.4
Ref Time Seperate (s)	0.7	2.2	24.1		0.2	14.1	37.7		9.2	2.7		6.4
Reference Time (s)	24.1	24.1	24.1		37.7	37.7	37.7		9.2	9.2		6.4
Adj Reference Time (s)	30.1	30.1	30.1		43.7	43.7	43.7		13.9	13.9		11.1
Summary	EB WB		NB SB		Combined							
Protected Option (s)	51.9		24.6									
Permitted Option (s)	219.7		100.7									
Split Option (s)	73.7		25.0									
Minimum (s)	51.9		24.6		76.5							
Right Turns	EBR	WBR	NBR	SBR								
Adj Reference Time (s)	12.3	12.5	14.8	19.4								
Cross Thru Ref Time (s)	10.7	12.1	48.5	51.9								
Oncoming Left Ref Time (s)	18.4	8.2	11.1	13.9								
Combined (s)	41.5	32.8	74.4	85.2								
Intersection Summary												
Intersection Capacity Utilization	71.0%			ICU Level of Service			C					
Reference Times and Phasing Options do not represent an optimized timing plan.												

Intersection Capacity Utilization
 24: Armada Dr & Palomar Airport Rd



























Existing+Specific Plan
 PM Peak Hour



Movement	SBT	SBR
Lane Configurations	↑	↗
Volume (vph)	48	260
Pedestrians		
Ped Button		
Pedestrian Timing (s)		
Free Right		No
Ideal Flow	2500	2500
Lost Time (s)	4.7	4.7
Minimum Green (s)	6.0	6.0
Refr Cycle Length (s)	120	120
Volume Combined (vph)	48	260
Lane Utilization Factor	1.00	1.00
Turning Factor (vph)	1.00	0.85
Saturated Flow (vph)	2500	2125
Ped Intf Time (s)	0.0	0.0
Pedestrian Frequency (%)	0.00	
Protected Option Allowed	Yes	
Reference Time (s)	2.3	14.7
Adj Reference Time (s)	10.7	19.4
Permitted Option		
Adj Saturation A (vph)	2500	
Reference Time A (s)	2.3	
Adj Saturation B (vph)	NA	
Reference Time B (s)	NA	
Reference Time (s)	96.0	
Adj Reference Time (s)	100.7	
Split Option		
Ref Time Combined (s)	2.3	
Ref Time Seperate (s)	2.3	
Reference Time (s)	6.4	
Adj Reference Time (s)	11.1	
Summary		

Intersection Capacity Utilization
 25: Hidden Valley Rd/The Crossing Dr & Palomar Airport Rd
























Existing+Specific Plan
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Volume (vph)	51	1683	148	106	2304	105	129	7	67	75	15	120
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1840	2040	1840	1840	2040	1800	1840	2040	1800	1840	2040	1840
Lost Time (s)	5.0	6.0	4.2	4.2	6.0	4.0	4.2	4.7	4.0	5.0	5.7	5.7
Minimum Green (s)	4.0	8.0	4.0	4.0	8.0	4.0	4.0	6.0	4.0	4.0	6.0	6.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	51	1683	148	106	2409	0	129	74	0	75	15	120
Lane Utilization Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.99	0.85	0.95	0.86	0.85	0.95	1.00	0.85
Saturated Flow (vph)	1748	5557	1564	1748	5521	0	1748	1763	0	1748	2040	1564
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00				0.00				0.00		0.00	
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	3.5	36.3	11.4	7.3	52.4	0.0	8.9	5.0	0.0	5.1	0.9	9.2
Adj Reference Time (s)	9.0	42.3	15.6	11.5	58.4	0.0	13.1	10.7	0.0	10.1	11.7	14.9
Permitted Option												
Adj Saturation A (vph)	117	1852		117	1840		117	1763		117	2040	
Reference Time A (s)	52.5	36.3		109.2	52.4		132.8	5.0		77.2	0.9	
Adj Saturation B (vph)	NA	NA		NA	NA		0	1763		0	2040	
Reference Time B (s)	NA	NA		NA	NA		16.9	5.0		13.1	0.9	
Reference Time (s)		52.5			109.2			16.9			13.1	
Adj Reference Time (s)		58.5			115.2			21.6			18.8	
Split Option												
Ref Time Combined (s)	3.5	36.3		7.3	52.4		8.9	5.0		5.1	0.9	
Ref Time Separate (s)	3.5	36.3		7.3	50.1		8.9	0.5		5.1	0.9	
Reference Time (s)	36.3	36.3		52.4	52.4		8.9	8.9		5.1	5.1	
Adj Reference Time (s)	42.3	42.3		58.4	58.4		13.6	13.6		11.7	11.7	
Summary	EB WB		NB SB		Combined							
Protected Option (s)	67.4		24.8									
Permitted Option (s)	115.2		21.6									
Split Option (s)	100.7		25.3									
Minimum (s)	67.4		21.6		88.9							
Right Turns	EBR		SBR									
Adj Reference Time (s)	15.6		14.9									
Cross Thru Ref Time (s)	11.7		58.4									
Oncoming Left Ref Time (s)	11.5		13.1									
Combined (s)	38.7		86.3									

Intersection Summary
 Intersection Capacity Utilization 74.1% ICU Level of Service D
 Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
26: Aviara Pkwy/College Blvd & Palomar Airport Rd

Existing+Specific Plan
PM Peak Hour

























												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	141	1371	312	2	218	1754	91	220	140	139	33	457
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No					
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	4.5	6.3	6.3	4.2	4.2	6.3	6.3	4.2	5.8	5.8	4.2	6.0
Minimum Green (s)	4.0	8.0	8.0	4.0	4.0	8.0	8.0	4.0	6.0	6.0	4.0	6.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	141	1371	312	0	220	1754	91	220	140	139	33	457
Lane Utilization Factor	0.97	0.91	1.00	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.95	1.00	0.85	0.95	1.00	0.85	0.95	1.00
Saturated Flow (vph)	4612	6810	2125	0	4612	6810	2125	4612	4760	2125	2375	2500
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00			0.00			0.00		
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	3.7	24.2	17.6	0.0	5.7	30.9	5.1	5.7	3.5	7.8	1.7	21.9
Adj Reference Time (s)	8.5	30.5	23.9	0.0	9.9	37.2	14.3	9.9	11.8	13.6	8.2	27.9
Permitted Option												
Adj Saturation A (vph)	154	2270		0	154	2270		154	2380		158	2500
Reference Time A (s)	55.0	24.2		0.0	85.9	30.9		85.9	3.5		25.0	21.9
Adj Saturation B (vph)	NA	NA		NA	NA	NA		NA	NA		NA	NA
Reference Time B (s)	NA	NA		NA	NA	NA		NA	NA		NA	NA
Reference Time (s)		55.0			85.9			85.9				25.0
Adj Reference Time (s)		61.3			92.2			91.7				31.0
Split Option												
Ref Time Combined (s)	3.7	24.2		0.0	5.7	30.9		5.7	3.5		1.7	21.9
Ref Time Seperate (s)	3.7	24.2		0.1	5.7	30.9		5.7	3.5		1.7	21.9
Reference Time (s)	24.2	24.2		30.9	30.9	30.9		5.7	5.7		21.9	21.9
Adj Reference Time (s)	30.5	30.5		37.2	37.2	37.2		11.8	11.8		27.9	27.9
Summary	EB WB		NB SB		Combined							
Protected Option (s)	45.7		37.9									
Permitted Option (s)	92.2		91.7									
Split Option (s)	67.7		39.7									
Minimum (s)	45.7		37.9		83.6							
Right Turns	EBR	WBR	NBR	SBR								
Adj Reference Time (s)	23.9	14.3	13.6	35.1								
Cross Thru Ref Time (s)	27.9	11.8	40.4	37.2								
Oncoming Left Ref Time (s)	9.9	8.5	8.2	9.9								
Combined (s)	61.8	34.6	62.2	82.2								
Intersection Summary												
Intersection Capacity Utilization	69.6%			ICU Level of Service			C					
Reference Times and Phasing Options do not represent an optimized timing plan.												



Movement	SBR
Lane Configurations	T
Volume (vph)	541
Pedestrians	
Ped Button	
Pedestrian Timing (s)	
Free Right	No
Ideal Flow	2500
Lost Time (s)	4.5
Minimum Green (s)	4.0
Refr Cycle Length (s)	120
Volume Combined (vph)	541
Lane Utilization Factor	1.00
Turning Factor (vph)	0.85
Saturated Flow (vph)	2125
Ped Intf Time (s)	0.0
Pedestrian Frequency (%)	
Protected Option Allowed	
Reference Time (s)	30.6
Adj Reference Time (s)	35.1
Permitted Option	
Adj Saturation A (vph)	
Reference Time A (s)	
Adj Saturation B (vph)	
Reference Time B (s)	
Reference Time (s)	
Adj Reference Time (s)	
Split Option	
Ref Time Combined (s)	
Ref Time Seperate (s)	
Reference Time (s)	
Adj Reference Time (s)	
Summary	

Intersection Capacity Utilization
27: El Camino Real & Palomar Airport Rd

Existing+Specific Plan
PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	
Lane Configurations													
Volume (vph)	275	1514	117	533	1014	342	17	183	785	458	2	667	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right	No			No			No						
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	
Lost Time (s)	5.0	6.0	4.0	5.0	6.0	6.0	5.0	5.0	6.0	5.0	5.0	5.0	
Minimum Green (s)	4.0	10.0	4.0	4.0	10.0	10.0	4.0	4.0	10.0	4.0	4.0	4.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	275	1514	117	533	1014	342	0	200	785	458	0	669	
Lane Utilization Factor	0.97	0.91	1.00	0.97	0.91	0.89	1.00	0.97	0.91	0.89	1.00	0.97	
Turning Factor (vph)	0.95	1.00	0.85	0.95	1.00	0.85	0.95	0.95	1.00	0.85	0.95	0.95	
Saturated Flow (vph)	4612	6810	2125	4612	6810	3761	0	4612	6810	3761	0	4612	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)	0.00		0.00		0.00		0.00		0.00				
Protected Option Allowed	Yes			Yes			Yes						
Reference Time (s)	7.2	26.7	6.6	13.9	17.9	10.9	0.0	5.2	13.8	14.6	0.0	17.4	
Adj Reference Time (s)	12.2	32.7	10.6	18.9	23.9	16.9	0.0	10.2	19.8	19.6	0.0	22.4	
Permitted Option													
Adj Saturation A (vph)	154	2270		154	2270		0	154	2270		0	154	
Reference Time A (s)	107.3	26.7		208.0	17.9		0.0	78.1	13.8		0.0	261.1	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA	NA		NA	NA	
Reference Time B (s)	NA	NA		NA	NA		NA	NA	NA		NA	NA	
Reference Time (s)		107.3			208.0				78.1				
Adj Reference Time (s)		113.3			214.0				84.1				
Split Option													
Ref Time Combined (s)	7.2	26.7		13.9	17.9		0.0	5.2	13.8		0.0	17.4	
Ref Time Seperate (s)	7.2	26.7		13.9	17.9		0.9	4.8	13.8		0.1	17.4	
Reference Time (s)	26.7	26.7		17.9	17.9		13.8	13.8	13.8		17.4	17.4	
Adj Reference Time (s)	32.7	32.7		23.9	23.9		19.8	19.8	19.8		23.4	23.4	
Summary													
	EB WB		NB SB		Combined								
Protected Option (s)	51.5		42.2										
Permitted Option (s)	214.0		267.1										
Split Option (s)	56.5		43.2										
Minimum (s)	51.5		42.2		93.8								
Right Turns													
	EBR	WBR	NBR	SBR									
Adj Reference Time (s)	10.6	16.9	19.6	13.8									
Cross Thru Ref Time (s)	27.2	42.2	32.7	23.9									
Oncoming Left Ref Time (s)	18.9	12.2	22.4	10.2									
Combined (s)	56.6	71.3	74.7	47.9									

Intersection Summary
 Intersection Capacity Utilization 78.2% ICU Level of Service D
 Reference Times and Phasing Options do not represent an optimized timing plan.

Intersection Capacity Utilization
 27: El Camino Real & Palomar Airport Rd

Existing+Specific Plan
 PM Peak Hour

Movement	SBT	SBR
Label Configurations	↑↑↑	↑
Volume (vph)	622	156
Pedestrians		
Ped Button		
Pedestrian Timing (s)		
Free Right		No
Ideal Flow	2500	2500
Lost Time (s)	6.0	5.0
Minimum Green (s)	10.0	4.0
Refr Cycle Length (s)	120	120
Volume Combined (vph)	622	156
Lane Utilization Factor	0.91	1.00
Turning Factor (vph)	1.00	0.85
Saturated Flow (vph)	6810	2125
Ped Intf Time (s)	0.0	0.0
Pedestrian Frequency (%)	0.00	
Protected Option Allowed	Yes	
Reference Time (s)	11.0	8.8
Adj Reference Time (s)	17.0	13.8
Permitted Option		
Adj Saturation A (vph)	2270	
Reference Time A (s)	11.0	
Adj Saturation B (vph)	NA	
Reference Time B (s)	NA	
Reference Time (s)	261.1	
Adj Reference Time (s)	267.1	
Split Option		
Ref Time Combined (s)	11.0	
Ref Time Seperate (s)	11.0	
Reference Time (s)	17.4	
Adj Reference Time (s)	23.4	
Summary		

Diamond Interchange Capacity Utilization
28: I-5 SB Ramps & Poinsettia Ln

Existing+Specific Plan
PM Peak Hour























Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR	EBL	EBT	WBT	WBR	NBL	
Node	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Configurations	↑↑	↑	↑↑	↑↑	↑	↑	↑	↑	↑↑	↑↑↑	↑		
Volume (vph)	697	213	718	651	351	1	187	164	884	1102	226	267	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right	No						No			No			
Ideal Flow	2040	1840	1840	2040	1840	2040	1840	1840	2040	2040	1840	1800	
Storage Space			29.3	42.6				21.3	42.6				
Lost Time (s)	4.6	4.6	4.2	4.6	4.6	4.6	4.6	4.2	4.6	4.6	4.6	4.6	
Minimum Green (s)	7.0	7.0	5.0	8.0	7.0	7.0	7.0	4.0	7.0	8.0	8.0	4.0	
Refr Cycle Length (s)													
Travel Time (s)	11.9		120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	697	213	718	651	351	63	125	164	884	1102	226	0	
Lane Utilization Factor	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	0.95	0.91	1.00	1.00	
Turning Factor (vph)	1.00	0.85	0.95	1.00	0.95	0.85	0.85	0.95	1.00	1.00	0.85	0.95	
Saturated Flow (vph)	3884	1564	3395	3884	1748	1739	1564	1748	3884	5557	1564	0	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)	0.00			0.00		0.00			0.00	0.00			
Reference Time (s)	21.5	16.3	25.4	20.1	24.1	4.4	9.6	11.3	27.3	23.8	17.3	0.0	
Adj Reference Time (s)	26.1	20.9	29.6	24.7	28.7	11.6	14.2	15.5	31.9	28.4	21.9	0.0	
Volume per cycle, 90th			30.2	27.7	16.1			8.5	36.4			12.7	
Volume to Storage			1.0	0.6	0.4			0.4	0.9			0.3	
Isolated Timings (s)	84.4							65.3					
Timing Options													
Leading Option (s)		87.2											
Lagging Option (s)	NA												
Lead-Lag Option (s)	OK	84.4											
Interchange Summary													
Intersection Capacity Utilization			70.3%		ICU Level of Service							C	

Reference Times and Phasing Options do not represent an optimized timing plan.

	↑	↗		
Movement	NBT	NBR		
Node	0	0		
Lane Configurations	↖	↗↗		
Volume (vph)	6	535		
Pedestrians				
Ped Button				
Pedestrian Timing (s)				
Free Right		No		
Ideal Flow	2040	1840		
Storage Space				
Lost Time (s)	4.6	4.6		
Minimum Green (s)	4.0	4.0		
Refr Cycle Length (s)				
Travel Time (s)	120	120	120	120
Volume Combined (vph)	273	535		
Lane Utilization Factor	1.00	0.89		
Turning Factor (vph)	0.95	0.85		
Saturated Flow (vph)	1940	2768		
Ped Intf Time (s)	0.0	0.0		
Pedestrian Frequency (%)	0.00			
Reference Time (s)	16.9	23.2		
Adj Reference Time (s)	21.5	27.8		
Volume per cycle, 90th				
Volume to Storage				
Isolated Timings (s)				
Timing Options				























Intersection Capacity Utilization
30: Lower Ln/Paseo Del Norte & Poinsettia Ln

Existing+Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	375	994	50	15	988	130	26	4	17	86	4	314
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	1840	2040	1840	1840	2040	1800	1840	2040	1800	1840	2040	1800
Lost Time (s)	4.2	4.6	4.6	4.2	4.6	4.0	4.6	4.6	4.0	4.6	4.6	4.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	375	994	50	15	1118	0	26	21	0	86	318	0
Lane Utilization Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.98	0.85	0.95	0.88	0.85	0.95	0.85	0.85
Saturated Flow (vph)	3395	3884	1564	1748	3816	0	1748	1792	0	1748	1738	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00			0.00			0.00		
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	13.3	30.7	3.8	1.0	35.2	0.0	1.8	1.4	0.0	5.9	22.0	0.0
Adj Reference Time (s)	17.5	35.3	9.6	9.2	39.8	0.0	9.6	9.6	0.0	10.5	26.6	0.0
Permitted Option												
Adj Saturation A (vph)	113	1942		117	1908		117	1792		117	1738	
Reference Time A (s)	198.8	30.7		15.4	35.2		26.8	1.4		88.6	22.0	
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		0	1738	
Reference Time B (s)	NA	NA		NA	NA		NA	NA		13.9	22.0	
Reference Time (s)		198.8			35.2			26.8			22.0	
Adj Reference Time (s)		203.4			39.8			31.4			26.6	
Split Option												
Ref Time Combined (s)	13.3	30.7		1.0	35.2		1.8	1.4		5.9	22.0	
Ref Time Separate (s)	13.3	30.7		1.0	31.1		1.8	0.3		5.9	0.3	
Reference Time (s)	30.7	30.7		35.2	35.2		1.8	1.8		22.0	22.0	
Adj Reference Time (s)	35.3	35.3		39.8	39.8		9.6	9.6		26.6	26.6	
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	57.2		36.2									
Permitted Option (s)	203.4		31.4									
Split Option (s)	75.1		36.2									
Minimum (s)	57.2		31.4		88.6							
Right Turns												
	EBR											
Adj Reference Time (s)	9.6											
Cross Thru Ref Time (s)	26.6											
Oncoming Left Ref Time (s)	9.2											
Combined (s)	45.4											
Intersection Summary												
Intersection Capacity Utilization			73.8%		ICU Level of Service				D			
Reference Times and Phasing Options do not represent an optimized timing plan.												





















Intersection Capacity Utilization
31: Aviara Pkwy & Poinsettia Ln

Existing+Specific Plan
PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	163	359	317	24	366	95	278	215	22	97	362	396	
Pedestrians													
Ped Button													
Pedestrian Timing (s)													
Free Right	No			No			No			No			
Ideal Flow	1890	2040	1840	1840	2040	1800	1840	2040	1800	1840	2040	1800	
Lost Time (s)	5.5	6.0	5.5	5.5	6.0	4.0	5.5	6.0	4.0	5.5	6.0	4.0	
Minimum Green (s)	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120	
Volume Combined (vph)	163	359	317	24	461	0	278	237	0	97	758	0	
Lane Utilization Factor	0.97	1.00	0.89	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.97	0.85	0.95	0.99	0.85	0.95	0.92	0.85	
Saturated Flow (vph)	3487	2040	2768	1748	3764	0	3395	3830	0	1748	3580	0	
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pedestrian Frequency (%)	0.00			0.00			0.00			0.00			
Protected Option Allowed	Yes			Yes			Yes			Yes			
Reference Time (s)	5.6	21.1	13.7	1.6	14.7	0.0	9.8	7.4	0.0	6.7	25.4	0.0	
Adj Reference Time (s)	11.1	27.1	19.2	9.5	20.7	0.0	15.3	13.4	0.0	12.2	31.4	0.0	
Permitted Option													
Adj Saturation A (vph)	116	2040		117	1882		113	1915		117	1790		
Reference Time A (s)	84.1	21.1		24.7	14.7		147.4	7.4		99.9	25.4		
Adj Saturation B (vph)	NA	NA		NA	NA		NA	NA		NA	NA		
Reference Time B (s)	NA	NA		NA	NA		NA	NA		NA	NA		
Reference Time (s)		84.1			24.7			147.4			99.9		
Adj Reference Time (s)		90.1			30.7			153.4			105.9		
Split Option													
Ref Time Combined (s)	5.6	21.1		1.6	14.7		9.8	7.4		6.7	25.4		
Ref Time Seperate (s)	5.6	21.1		1.6	11.7		9.8	6.7		6.7	12.1		
Reference Time (s)	21.1	21.1		14.7	14.7		9.8	9.8		25.4	25.4		
Adj Reference Time (s)	27.1	27.1		20.7	20.7		15.8	15.8		31.4	31.4		
Summary													
	EB WB		NB SB		Combined								
Protected Option (s)	36.6		46.7										
Permitted Option (s)	90.1		153.4										
Split Option (s)	47.8		47.2										
Minimum (s)	36.6		46.7		83.4								
Right Turns													
	EBR												
Adj Reference Time (s)	19.2												
Cross Thru Ref Time (s)	31.4												
Oncoming Left Ref Time (s)	9.5												
Combined (s)	60.2												
Intersection Summary													
Intersection Capacity Utilization			69.5%		ICU Level of Service				C				
Reference Times and Phasing Options do not represent an optimized timing plan.													

Intersection Capacity Utilization
32: El Camino Real & Aviara Pkwy

Existing+Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	130	403	336	2	343	294	80	448	1454	536	12	189
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right			No				No			No		
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	4.2	5.7	4.6	4.2	4.2	5.7	4.0	4.6	6.4	4.0	4.2	4.2
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	6.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	130	403	336	0	345	374	0	448	1990	0	0	201
Lane Utilization Factor	0.97	0.95	1.00	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.97
Turning Factor (vph)	0.95	1.00	0.85	0.95	0.95	0.97	0.85	0.95	0.96	0.85	0.95	0.95
Saturated Flow (vph)	4612	4760	2125	0	4612	4607	0	4612	6535	0	0	4612
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00				0.00			0.00			
Protected Option Allowed		Yes				Yes			Yes			
Reference Time (s)	3.4	10.2	19.0	0.0	9.0	9.7	0.0	11.7	36.5	0.0	0.0	5.2
Adj Reference Time (s)	8.2	15.9	23.6	0.0	13.2	15.4	0.0	16.3	42.9	0.0	0.0	9.4
Permitted Option												
Adj Saturation A (vph)	154	2380		0	154	2304		154	2178		0	154
Reference Time A (s)	50.7	10.2		0.0	134.6	9.7		174.8	36.5		0.0	78.4
Adj Saturation B (vph)	NA	NA		NA	NA	NA		NA	NA		NA	NA
Reference Time B (s)	NA	NA		NA	NA	NA		NA	NA		NA	NA
Reference Time (s)		50.7				134.6			174.8			
Adj Reference Time (s)		56.4				140.3			181.2			
Split Option												
Ref Time Combined (s)	3.4	10.2		0.0	9.0	9.7		11.7	36.5		0.0	5.2
Ref Time Seperate (s)	3.4	10.2		0.1	8.9	7.7		11.7	26.7		0.6	4.9
Reference Time (s)	10.2	10.2		9.7	9.7	9.7		36.5	36.5		29.4	29.4
Adj Reference Time (s)	15.9	15.9		15.4	15.4	15.4		42.9	42.9		35.8	35.8
Summary	EB WB		NB SB		Combined							
Protected Option (s)	29.0		52.4									
Permitted Option (s)	140.3		181.2									
Split Option (s)	31.3		78.7									
Minimum (s)	29.0		52.4		81.4							
Right Turns	EBR											
Adj Reference Time (s)	23.6											
Cross Thru Ref Time (s)	35.8											
Oncoming Left Ref Time (s)	13.2											
Combined (s)	72.6											
Intersection Summary												
Intersection Capacity Utilization			67.8%	ICU Level of Service				C				
Reference Times and Phasing Options do not represent an optimized timing plan.												






















Intersection Capacity Utilization
32: El Camino Real & Aviara Pkwy

Existing+Specific Plan
PM Peak Hour

Movement	SBT	SBR
Label Configurations	↑↑↑	↘
Volume (vph)	1558	96
Pedestrians		
Ped Button		
Pedestrian Timing (s)		
Free Right		No
Ideal Flow	2500	2500
Lost Time (s)	6.4	4.0
Minimum Green (s)	6.0	4.0
Refr Cycle Length (s)	120	120
Volume Combined (vph)	1654	0
Lane Utilization Factor	0.91	1.00
Turning Factor (vph)	0.99	0.85
Saturated Flow (vph)	6751	0
Ped Intf Time (s)	0.0	0.0
Pedestrian Frequency (%)	0.00	
Protected Option Allowed	Yes	
Reference Time (s)	29.4	0.0
Adj Reference Time (s)	35.8	0.0
Permitted Option		
Adj Saturation A (vph)	2250	
Reference Time A (s)	29.4	
Adj Saturation B (vph)	NA	
Reference Time B (s)	NA	
Reference Time (s)	78.4	
Adj Reference Time (s)	84.8	
Split Option		
Ref Time Combined (s)	29.4	
Ref Time Seperate (s)	27.7	
Reference Time (s)	29.4	
Adj Reference Time (s)	35.8	
Summary		

Intersection Capacity Utilization
33: El Camino Real & Poinsettia Ln

Existing+Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	15	9	5	292	13	147	12	5	1137	404	250	1757
Pedestrians												
Ped Button												
Pedestrian Timing (s)												
Free Right	No			No			No			No		
Ideal Flow	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Lost Time (s)	4.2	4.7	4.0	4.2	5.0	4.0	4.2	4.2	6.0	6.0	4.2	6.0
Minimum Green (s)	4.0	6.0	4.0	4.0	6.0	4.0	4.0	4.0	8.0	8.0	8.0	8.0
Refr Cycle Length (s)	120	120	120	120	120	120	120	120	120	120	120	120
Volume Combined (vph)	15	14	0	292	160	0	0	17	1137	404	250	1777
Lane Utilization Factor	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.97	0.91	1.00	0.97	0.91
Turning Factor (vph)	0.95	0.95	0.85	0.95	0.86	0.85	0.95	0.95	1.00	0.85	0.95	1.00
Saturated Flow (vph)	4612	4505	0	4612	4104	0	0	4612	6810	2125	4612	6799
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00			0.00			0.00		
Protected Option Allowed	Yes			Yes			Yes			Yes		
Reference Time (s)	0.4	0.4	0.0	7.6	4.7	0.0	0.0	0.4	20.0	22.8	6.5	31.4
Adj Reference Time (s)	8.2	10.7	0.0	11.8	11.0	0.0	0.0	8.2	26.0	28.8	12.2	37.4
Permitted Option												
Adj Saturation A (vph)	154	2253		154	2052		0	154	2270		154	2266
Reference Time A (s)	5.9	0.4		114.0	4.7		0.0	6.6	20.0		97.6	31.4
Adj Saturation B (vph)	NA	NA		0	4104		NA	NA	NA		NA	NA
Reference Time B (s)	NA	NA		15.6	4.7		NA	NA	NA		NA	NA
Reference Time (s)	5.9			15.6			20.0			97.6		
Adj Reference Time (s)	10.7			20.6			26.0			103.6		
Split Option												
Ref Time Combined (s)	0.4	0.4		7.6	4.7		0.0	0.4	20.0		6.5	31.4
Ref Time Separate (s)	0.4	0.2		7.6	0.4		0.6	0.1	20.0		6.5	31.0
Reference Time (s)	0.4	0.4		7.6	7.6		20.0	20.0	20.0		31.4	31.4
Adj Reference Time (s)	10.7	10.7		12.6	12.6		26.0	26.0	26.0		37.4	37.4
Summary												
	EB WB		NB SB		Combined							
Protected Option (s)	22.5		45.6									
Permitted Option (s)	20.6		103.6									
Split Option (s)	23.3		63.4									
Minimum (s)	20.6		45.6		66.2							
Right Turns												
	NBR											
Adj Reference Time (s)	28.8											
Cross Thru Ref Time (s)	10.7											
Oncoming Left Ref Time (s)	12.2											
Combined (s)	51.7											

Intersection Summary

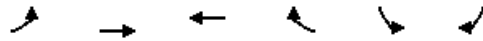
Intersection Capacity Utilization 55.1% ICU Level of Service B
Reference Times and Phasing Options do not represent an optimized timing plan.



Movement	SBR
Lane Configurations	
Volume (vph)	20
Pedestrians	
Ped Button	
Pedestrian Timing (s)	
Free Right	No
Ideal Flow	2500
Lost Time (s)	4.0
Minimum Green (s)	4.0
Refr Cycle Length (s)	120
Volume Combined (vph)	0
Lane Utilization Factor	1.00
Turning Factor (vph)	0.85
Saturated Flow (vph)	0
Ped Intf Time (s)	0.0
Pedestrian Frequency (%)	
Protected Option Allowed	
Reference Time (s)	0.0
Adj Reference Time (s)	0.0
Permitted Option	
Adj Saturation A (vph)	
Reference Time A (s)	
Adj Saturation B (vph)	
Reference Time B (s)	
Reference Time (s)	
Adj Reference Time (s)	
Split Option	
Ref Time Combined (s)	
Ref Time Seperate (s)	
Reference Time (s)	
Adj Reference Time (s)	
Summary	

Intersection Capacity Utilization
34: Cannon Rd & Project Dwy

Existing+Specific Plan
PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔↔	↕↕	↕↕	↗		
Volume (vph)	988	1066	1505	105	0	0
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right				No		No
Ideal Flow	1800	2000	2000	1800	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	988	1066	1505	105	0	0
Lane Utilization Factor	0.97	0.95	0.95	1.00	1.00	1.00
Turning Factor (vph)	0.95	1.00	1.00	0.85	0.95	0.85
Saturated Flow (vph)	3321	3808	3808	1530	0	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)		0.00	0.00		0.00	
Protected Option Allowed		Yes	Yes		No	
Reference Time (s)	35.7	33.6	47.4	8.2		0.0
Adj Reference Time (s)	39.7	37.6	51.4	12.2		0.0
Permitted Option						
Adj Saturation A (vph)	111	1904	1904		0	
Reference Time A (s)	535.5	33.6	47.4		0.0	
Adj Saturation B (vph)	NA	NA	NA		NA	
Reference Time B (s)	NA	NA	NA		NA	
Reference Time (s)		535.5	47.4			
Adj Reference Time (s)		539.5	51.4			
Split Option						
Ref Time Combined (s)	35.7	33.6	47.4		0.0	
Ref Time Seperate (s)	35.7	33.6	47.4		0.0	
Reference Time (s)	35.7	35.7	47.4		0.0	
Adj Reference Time (s)	39.7	39.7	51.4		0.0	
Summary	EB WB		SB		Combined	
Protected Option (s)	91.1		NA			
Permitted Option (s)	539.5		Err			
Split Option (s)	91.1		0.0			
Minimum (s)	91.1		0.0		91.1	
Right Turns	WBR					
Adj Reference Time (s)	12.2					
Cross Thru Ref Time (s)	0.0					
Oncoming Left Ref Time (s)	39.7					
Combined (s)	51.9					

Intersection Summary
 Intersection Capacity Utilization 75.9% ICU Level of Service D
 Reference Times and Phasing Options do not represent an optimized timing plan.

Cannon Rd Retail													
Roadway Segment Analysis													
Existing Plus Project Conditions	Direction	Number of Lanes	Capacity (1,800 vplph)	Peak Hour Volume		V/ C Ratio		LOS		Change in V/C		Significant Impact?	
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Cannon Road (I-5 SB Ramps to El Camino Real)													
I-5 SB Ramps to I-5 NB Ramps	EB	2	3600	1269	1282	0.35	0.36	A	A	0.06	0.1	NO	NO
	WB	2	3600	718	1278	0.20	0.36	A	A	0.03	0.12	NO	NO
I-5 NB Ramps to Paseo Del Norte	EB	2	3600	1709	1674	0.47	0.47	A	A	0.11	0.21	NO	NO
	WB	3	5400	852	2400	0.16	0.44	A	A	0.03	0.12	NO	NO
Paseo Del Norte to Car Country	EB	2	3600	1124	1239	0.31	0.34	A	A	0.02	0.12	NO	NO
	WB	2	3600	790	1537	0.22	0.43	A	A	0.05	0.07	NO	NO
Car Country Dr to Armada Dr	EB	2	3600	996	1096	0.28	0.30	A	A	0.03	0.07	NO	NO
	WB	2	3600	827	1495	0.23	0.42	A	A	0.05	0.08	NO	NO
Armada Dr to Grand Pacific Dr	EB	2	3600	636	1189	0.18	0.33	A	A	0.02	0.05	NO	NO
	WB	2	3600	998	1120	0.28	0.31	A	A	0.04	0.06	NO	NO
Grand Pacific Dr to Faraday Ave	EB	2	3600	603	1183	0.17	0.33	A	A	0.02	0.06	NO	NO
	WB	2	3600	1016	1109	0.28	0.31	A	A	0.04	0.06	NO	NO
Faraday Ave to El Camino Real	EB	2	3600	238	1090	0.07	0.30	A	A	0.02	0.04	NO	NO
	WB	2	3600	863	468	0.24	0.13	A	A	0.03	0.04	NO	NO
Tamarack Avenue (Carlsbad Boulevard to El Camino Real)													
Carlsbad Blvd to I-5 SB Ramps	EB	1	1800	725	699	0.40	0.39	A	A	0.00	0.01	NO	NO
	WB	1	1800	532	452	0.30	0.25	A	A	0.01	0.01	NO	NO
I-5 SB Ramps to I-5 NB Ramps	EB	2	3600	487	643	0.14	0.18	A	A	0.00	0	NO	NO
	WB	2	3600	803	705	0.22	0.20	A	A	0.00	0.01	NO	NO
I-5 NB Ramps to El Camino Real	EB	2	3600	757	888	0.21	0.25	A	A	0.00	0.01	NO	NO
	WB	2	3600	1017	611	0.28	0.17	A	A	0.00	0.01	NO	NO
Palomar Airport Road (Paseo Del Norte to El Camino Real)													
Paseo Del Norte to Armada Dr	EB	3	5400	2499	1682	0.46	0.31	A	A	0.00	0.02	NO	NO
	WB	3	5400	1212	2765	0.22	0.51	A	A	0.01	0.02	NO	NO
Armada Dr to The Crossings Dr	EB	3	5400	2331	1882	0.43	0.35	A	A	0.01	0.03	NO	NO
	WB	3	5400	1300	2553	0.24	0.47	A	A	0.02	0.03	NO	NO
The Crossings Dr to College Blvd	EB	3	5400	2287	1825	0.42	0.34	A	A	0.00	0.03	NO	NO
	WB	3	5400	1264	2515	0.23	0.47	A	A	0.01	0.03	NO	NO
College Blvd to El Camino Real	EB	3	5400	1840	1906	0.34	0.35	A	A	0.13	0.08	NO	NO
	WB	3	5400	1744	2065	0.32	0.38	A	A	0.00	0.01	NO	NO
College Boulevard													
Palomar Airport Rd to Faraday Ave	EB/NB	2	3600	1103	372	0.31	0.10	A	A	0.00	0	NO	NO
	WB/SB	1	1800	307	1031	0.17	0.57	A	A	0.00	0	NO	NO
Poinsettia Ln													
Paseo Del Norte to Aviara Pkwy	EB	2	3600	1090	1097	0.30	0.30	A	A	0.06	0	NO	NO
	WB	2	3600	979	1040	0.27	0.29	A	A	0.08	0.03	NO	NO
Carlsbad Boulevard (North of Tamarack Avenue to South of Cannon Road)													
North of Tamarack Ave	NB	2	3600	265	953	0.07	0.26	A	A	0.00	0	NO	NO
	SB	2	3600	588	574	0.16	0.16	A	A	0.00	0.01	NO	NO
Tamarack Ave to Cannon Rd	NB	2	3600	288	1182	0.08	0.33	A	A	0.00	0.01	NO	NO
	SB	1	1800	851	701	0.47	0.39	A	A	0.01	0.02	NO	NO
South of Cannon Rd	NB	1	1800	282	941	0.16	0.52	A	A	0.01	0.01	NO	NO
	SB	1	1800	802	642	0.45	0.36	A	A	0.01	0.01	NO	NO
Paseo del Norte (Cannon Road to Palomar Airport Road)													
Cannon Rd to Car Country Dr	NB	2	3600	301	736	0.08	0.20	A	A	0.02	0.03	NO	NO
	SB	2	3600	427	457	0.12	0.13	A	A	0.01	0.04	NO	NO
Outlets North Entrance to Palomar Airport Rd	NB	2	3600	497	759	0.14	0.21	A	A	0.03	0.04	NO	NO
	SB	2	3600	302	712	0.08	0.20	A	A	0.01	0.04	NO	NO
Faraday Avenue													
Cannon Rd to College Blvd	NB	1	1800	514	681	0.29	0.38	A	A	0.02	0.03	NO	NO
	SB	1	1800	431	585	0.24	0.33	A	A	0.01	0.03	NO	NO
Aviara Parkway													
Palomar Airport Rd to Poinsettia Ln	NB	2	3600	955	499	0.27	0.14	A	A	0.02	0.02	NO	NO
	SB	2	3600	413	987	0.11	0.27	A	A	0.00	0.01	NO	NO
El Camino Real (North of Tamarack Ave to South of Aviara Pkwy)													
North of Tamarack Ave	NB	2	3600	456	1561	0.13	0.43	A	A	0.01	0.01	NO	NO
	SB	2	3600	1279	665	0.36	0.18	A	A	0.01	0.01	NO	NO
Tamarack Ave to Cannon Rd	NB	2	3600	534	1956	0.15	0.54	A	A	0.01	0.02	NO	NO
	SB	2	3600	1838	798	0.51	0.22	A	A	0.01	0.02	NO	NO
Cannon Rd to College Blvd	NB	3	5400	700	2751	0.13	0.51	A	A	0.00	0	NO	NO
	SB	3	5400	2683	1223	0.50	0.23	A	A	0.00	0.01	NO	NO
College Blvd to Faraday Ave	NB	3	5400	847	2134	0.16	0.40	A	A	0.00	0.01	NO	NO
	SB	3	5400	2225	1115	0.41	0.21	A	A	0.00	0.01	NO	NO
Faraday Ave to Palomar Airport Rd	NB	3	5400	1431	1414	0.27	0.26	A	A	0.01	0	NO	NO
	SB	3	5400	1802	1819	0.33	0.34	A	A	0.00	0.01	NO	NO
Palomar Airport Rd to Poinsettia Ln	NB	3	5400	1606	1443	0.30	0.27	A	A	0.00	0	NO	NO
	SB	3	5400	1638	2027	0.30	0.38	A	A	0.00	0.01	NO	NO
Poinsettia Ln to Aviara Pkwy	NB	3	5400	1618	1676	0.30	0.31	A	A	0.00	0	NO	NO
	SB	3	5400	1338	2066	0.25	0.38	A	A	0.00	0	NO	NO
Sourh of Aviara Pkwy	NB	3	5400	1803	2438	0.33	0.45	A	A	0.00	0	NO	NO
	SB	3	5400	1864	2237	0.35	0.41	A	A	0.01	0	NO	NO

Cannon Rd Freeway Analysis

Freeway Segment LOS - Existing Conditions																
Segment	Number of Lanes		Capacity Per Lane	Peak Hour %	Direction Split	HV%	LOS Thresholds						ADT	Peak Hour Per Lane	V/C	LOS
	Mixed Flow	HOV					A	B	C	D	E	F				
Interstate 5																
La Costa Ave to Poinsettia Ln	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	204,000	2243	0.95	E
Poinsettia Ln to Palomar Airport Rd	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	201,000	2210	0.94	E
Palomar Airport Rd to Cannon Rd	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	198,000	2177	0.93	E
Cannon Rd to Tamarack Ave	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	199,000	2188	0.93	E
Tamarack Ave to Carlsbad Village Dr	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	196,000	2155	0.92	E

Freeway Segment LOS - Existing Plus Project Conditions																						
Segment	Number of Lanes		Capacity Per Lane	Peak Hour %	Direction Split	HV%	LOS Thresholds						Existing Conditions				Existing Plus Project				Change in V/C	Significant
	Mixed Flow	HOV					A	B	C	D	E	F	ADT	Peak Hour Per Lane	V/C	LOS	ADT	Peak Hour Per Lane	V/C	LOS		
Interstate 5																						
La Costa Ave to Poinsettia Ln	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	204,000	2243	0.95	E	209,301	2301	0.98	E	0.02	Yes
Poinsettia Ln to Palomar Airport Rd	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	201,000	2210	0.94	E	206,782	2274	0.97	E	0.03	Yes
Palomar Airport Rd to Cannon Rd	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	198,000	2177	0.93	E	203,782	2241	0.95	E	0.03	Yes
Cannon Rd to Tamarack Ave	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	199,000	2188	0.93	E	204,301	2246	0.96	E	0.02	Yes
Tamarack Ave to Carlsbad Village Dr	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	196,000	2155	0.92	E	200,337	2203	0.94	E	0.02	Yes

**Cannon Rd Retail
Ramp Meter Analysis**

Existing								
Location	Peak Hour	Demand ¹ (veh/hr)		Meter Rate ² (veh/hr)	Excess Demand ³ (veh/hr)	Total # of Mixed Flow Lanes	Delay ⁴ (min)	Queue ⁵ (ft)
		Mixed Flow & HOV	Mixed Flow only					
I-5 SB - Tamarack Ave On-Ramp	AM	771	655	526	129	1	14.8	3,750
	PM	694	590	N/A	N/A	1	N/A	N/A
I-5 SB - Cannon Rd On-Ramp	AM	368	313	734	0	2	0.0	0
	PM	508	432	734	0	2	0.0	0
I-5 NB - Cannon Rd On-Ramp	AM	266	226	N/A	N/A	2	N/A	N/A
	PM	1,327	1,128	1,416	0	2	0.0	0
I-5 SB - EB Palomar Airport Rd On-Ramp	AM	67	57	343	0	1	0.0	0
	PM	230	196	246	0	1	0.0	0
I-5 SB - WB Palomar Airport Rd On-Ramp	AM	219	186	492	0	1	0.0	0
	PM	1,005	854	895	0	1	0.0	0
I-5 NB - Palomar Airport Rd On-Ramp	AM	609	518	N/A	N/A	2	N/A	N/A
	PM	1,201	1,021	988	33	2	2.0	475
I-5 SB - Poinsettia Ln On-Ramp	AM	578	491	1,094	0	2	0.0	0
	PM	932	792	796	0	2	0.0	0
I-5 NB - Poinsettia Ln On-Ramp	AM	493	419	N/A	N/A	1	N/A	N/A
	PM	377	320	576	0	1	0.0	0

Existing + Specific Plan								
Location	Peak Hour	Demand ¹ (veh/hr)		Meter Rate ² (veh/hr)	Excess Demand ³ (veh/hr)	Total # of Mixed Flow Lanes	Delay ⁴ (min)	Queue ⁵ (ft)
		Mixed Flow & HOV	Mixed Flow only					
I-5 SB - Tamarack Ave On-Ramp	AM	797	677	526	151	1	17.3	4,400
	PM	732	622	N/A	N/A	1	N/A	N/A
I-5 SB - Cannon Rd On-Ramp	AM	455	387	734	0	2	0.0	0
	PM	851	723	734	0	2	0.0	0
I-5 NB - Cannon Rd On-Ramp	AM	341	290	N/A	N/A	2	N/A	N/A
	PM	1,608	1,367	1,416	0	2	0.0	0
I-5 SB - EB Palomar Airport Rd On-Ramp	AM	67	57	343	0	1	0.0	0
	PM	230	196	246	0	1	0.0	0
I-5 SB - WB Palomar Airport Rd On-Ramp	AM	219	186	492	0	1	0.0	0
	PM	1,005	854	895	0	1	0.0	0
I-5 NB - Palomar Airport Rd On-Ramp	AM	609	518	N/A	N/A	2	N/A	N/A
	PM	1,201	1,021	988	33	2	2.0	475
I-5 SB - Poinsettia Ln On-Ramp	AM	578	491	1,094	0	2	0.0	0
	PM	932	792	796	0	2	0.0	0
I-5 NB - Poinsettia Ln On-Ramp	AM	506	430	N/A	N/A	1	N/A	N/A
	PM	396	337	576	0	1	0.0	0






















APPENDIX C: OPENING YEAR CONDITIONS

Technical Analysis



HCM Signalized Intersection Capacity Analysis
 1: Carlsbad Blvd & Tamarack Ave

Opening Year No Specific Plan
 AM Peak Hour













													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	7	7	10	282	10	61	5	16	186	52	29	529	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.0	5.0	5.0	5.0			4.5	6.0		4.5	6.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	0.95		1.00	0.95	
Fr _t		1.00	0.85	1.00	0.87			1.00	0.97		1.00	1.00	
Fl _t Protected		0.98	1.00	0.95	1.00			0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1817	1583	1770	1621			1770	3424		1770	3539	
Fl _t Permitted		0.98	1.00	0.95	1.00			0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1817	1583	1770	1621			1770	3424		1770	3539	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Adj. Flow (vph)	7	7	10	294	10	64	5	17	194	54	30	551	
RTOR Reduction (vph)	0	0	10	0	44	0	0	0	15	0	0	0	
Lane Group Flow (vph)	0	14	0	294	30	0	0	22	233	0	30	551	
Turn Type	Split	NA	Perm	Split	NA		Prot	Prot	NA		Prot	NA	
Protected Phases	4	4		3	3		5	5	2		1	6	
Permitted Phases			4										
Actuated Green, G (s)		2.2	2.2	19.7	19.7			1.8	18.0		3.4	19.6	
Effective Green, g (s)		2.2	2.2	19.7	19.7			1.8	18.0		3.4	19.6	
Actuated g/C Ratio		0.03	0.03	0.31	0.31			0.03	0.28		0.05	0.31	
Clearance Time (s)		5.0	5.0	5.0	5.0			4.5	6.0		4.5	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0			2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)		62	54	546	500			49	966		94	1087	
v/s Ratio Prot		c0.01		c0.17	0.02			0.01	0.07		c0.02	c0.16	
v/s Ratio Perm			0.00										
v/c Ratio		0.23	0.01	0.54	0.06			0.45	0.24		0.32	0.51	
Uniform Delay, d ₁		30.0	29.7	18.3	15.5			30.5	17.6		29.1	18.1	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d ₂		1.9	0.0	1.0	0.1			2.4	0.1		0.7	0.4	
Delay (s)		31.8	29.8	19.3	15.6			32.9	17.8		29.8	18.5	
Level of Service		C	C	B	B			C	B		C	B	
Approach Delay (s)		31.0			18.6				19.0			19.1	
Approach LOS		C			B				B			B	
Intersection Summary													
HCM 2000 Control Delay			19.1			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio			0.51										
Actuated Cycle Length (s)			63.8			Sum of lost time (s)		20.5					
Intersection Capacity Utilization			57.3%			ICU Level of Service		B					
Analysis Period (min)			15										
c Critical Lane Group													

Movement	SBR
Lane Configurations	7
Volume (vph)	5
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.96
Adj. Flow (vph)	5
RTOR Reduction (vph)	3
Lane Group Flow (vph)	2
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	19.6
Effective Green, g (s)	19.6
Actuated g/C Ratio	0.31
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	486
v/s Ratio Prot	
v/s Ratio Perm	0.00
v/c Ratio	0.00
Uniform Delay, d1	15.3
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	15.3
Level of Service	B
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis

2: I-5 SB Ramps & Tamarack Ave




















Opening Year No Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖	↑↑						↖	↗
Volume (vph)	0	348	364	414	377	0	0	0	0	145	0	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.2	4.6						4.6	4.6
Lane Util. Factor		0.95	1.00	1.00	0.95						1.00	1.00
Fr _t		1.00	0.85	1.00	1.00						1.00	0.85
Fl _t Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		3539	1583	1770	3539						1770	1583
Fl _t Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		3539	1583	1770	3539						1770	1583
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	0	405	423	481	438	0	0	0	0	169	0	173
RTOR Reduction (vph)	0	0	285	0	0	0	0	0	0	0	0	150
Lane Group Flow (vph)	0	405	138	481	438	0	0	0	0	0	169	23
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		29.4	29.4	35.0	68.6						12.2	12.2
Effective Green, g (s)		29.4	29.4	35.0	68.6						12.2	12.2
Actuated g/C Ratio		0.33	0.33	0.39	0.76						0.14	0.14
Clearance Time (s)		4.6	4.6	4.2	4.6						4.6	4.6
Vehicle Extension (s)		5.0	5.0	2.0	7.0						2.0	2.0
Lane Grp Cap (vph)		1156	517	688	2697						239	214
v/s Ratio Prot		c0.11		c0.27	0.12							
v/s Ratio Perm			0.09								0.10	0.01
v/c Ratio		0.35	0.27	0.70	0.16						0.71	0.11
Uniform Delay, d ₁		23.0	22.4	23.1	2.9						37.2	34.1
Progression Factor		1.00	1.00	1.12	0.10						1.00	1.00
Incremental Delay, d ₂		0.8	1.3	1.9	0.1						7.6	0.1
Delay (s)		23.9	23.6	27.8	0.4						44.8	34.2
Level of Service		C	C	C	A						D	C
Approach Delay (s)		23.7			14.7			0.0			39.4	
Approach LOS		C			B			A			D	
Intersection Summary												
HCM 2000 Control Delay			22.4			HCM 2000 Level of Service					C	
HCM 2000 Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			90.0			Sum of lost time (s)					13.4	
Intersection Capacity Utilization			64.7%			ICU Level of Service					C	
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: I-5 NB Ramps & Tamarack Ave























Opening Year No Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Volume (vph)	179	314	0	0	707	322	84	0	451	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.1			5.1			4.6	4.6			
Lane Util. Factor	1.00	0.95			0.95			1.00	1.00			
Flt	1.00	1.00			0.95			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (prot)	1770	3539			3373			1770	1583			
Flt Permitted	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (perm)	1770	3539			3373			1770	1583			
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	221	388	0	0	873	398	104	0	557	0	0	0
RTOR Reduction (vph)	0	0	0	0	51	0	0	0	485	0	0	0
Lane Group Flow (vph)	221	388	0	0	1220	0	0	104	72	0	0	0
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	13.7	69.8			51.5			10.5	10.5			
Effective Green, g (s)	13.7	69.8			51.5			10.5	10.5			
Actuated g/C Ratio	0.15	0.78			0.57			0.12	0.12			
Clearance Time (s)	4.6	5.1			5.1			4.6	4.6			
Vehicle Extension (s)	2.0	3.0			2.0			2.0	2.0			
Lane Grp Cap (vph)	269	2744			1930			206	184			
v/s Ratio Prot	c0.12	0.11			c0.36							
v/s Ratio Perm								0.06	0.05			
v/c Ratio	0.82	0.14			0.63			0.50	0.39			
Uniform Delay, d1	37.0	2.5			12.9			37.3	36.8			
Progression Factor	1.30	0.04			1.00			1.00	1.00			
Incremental Delay, d2	16.7	0.1			1.6			0.7	0.5			
Delay (s)	64.9	0.2			14.5			38.0	37.3			
Level of Service	E	A			B			D	D			
Approach Delay (s)		23.7			14.5			37.4			0.0	
Approach LOS		C			B			D			A	
Intersection Summary												
HCM 2000 Control Delay			22.7				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)		14.3			
Intersection Capacity Utilization			64.7%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: El Camino Real & Tamarck Ave













Opening Year No Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	62	238	328	132	23	104	509	138	20	1273	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.0	5.0	4.2	5.0		4.2	6.0		4.2	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.91		1.00	0.91	1.00
Fr _t	1.00	1.00	0.85	1.00	0.98		1.00	0.97		1.00	1.00	0.85
Fl _t Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3462		1770	4922		1770	5085	1583
Fl _t Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3462		1770	4922		1770	5085	1583
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	31	71	274	377	152	26	120	585	159	23	1463	32
RTOR Reduction (vph)	0	0	144	0	12	0	0	26	0	0	0	18
Lane Group Flow (vph)	31	71	130	377	166	0	120	718	0	23	1463	14
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	4.0	18.5	18.5	31.1	45.6		11.9	67.3		3.7	59.1	59.1
Effective Green, g (s)	4.0	18.5	18.5	31.1	45.6		11.9	67.3		3.7	59.1	59.1
Actuated g/C Ratio	0.03	0.13	0.13	0.22	0.33		0.09	0.48		0.03	0.42	0.42
Clearance Time (s)	4.2	5.0	5.0	4.2	5.0		4.2	6.0		4.2	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	3.0		2.0	3.0	3.0
Lane Grp Cap (vph)	50	246	209	393	1127		150	2366		46	2146	668
v/s Ratio Prot	0.02	0.04		c0.21	0.05		c0.07	0.15		0.01	c0.29	
v/s Ratio Perm			c0.08									0.01
v/c Ratio	0.62	0.29	0.62	0.96	0.15		0.80	0.30		0.50	0.68	0.02
Uniform Delay, d ₁	67.2	54.8	57.4	53.8	33.4		62.9	22.1		67.2	32.8	23.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d ₂	15.0	0.2	4.1	34.2	0.0		24.2	0.3		3.1	1.8	0.1
Delay (s)	82.3	55.1	61.5	88.1	33.5		87.1	22.4		70.3	34.6	23.6
Level of Service	F	E	E	F	C		F	C		E	C	C
Approach Delay (s)		62.0			70.5			31.4			34.9	
Approach LOS		E			E			C			C	
Intersection Summary												
HCM 2000 Control Delay			43.0			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				19.4		
Intersection Capacity Utilization			70.2%			ICU Level of Service				C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

5: Carlsbad Blvd & Cannon Rd





























Opening Year No Specific Plan
AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	163	51	228	61	156	647
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.5	5.5	5.5	4.5	5.5
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)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	173	54	243	65	166	688
RTOR Reduction (vph)	0	30	0	31	0	0
Lane Group Flow (vph)	173	24	243	34	166	688
Turn Type	NA	pm+ov	NA	Perm	Prot	NA
Protected Phases	4	5	6		5	2
Permitted Phases		4		6		
Actuated Green, G (s)	14.3	26.2	17.1	17.1	11.9	33.5
Effective Green, g (s)	14.3	26.2	17.1	17.1	11.9	33.5
Actuated g/C Ratio	0.25	0.45	0.29	0.29	0.20	0.57
Clearance Time (s)	5.0	4.5	5.5	5.5	4.5	5.5
Vehicle Extension (s)	3.0	2.0	4.0	4.0	2.0	4.0
Lane Grp Cap (vph)	434	711	546	464	361	1070
v/s Ratio Prot	c0.10	0.01	0.13		0.09	c0.37
v/s Ratio Perm		0.01		0.02		
v/c Ratio	0.40	0.03	0.45	0.07	0.46	0.64
Uniform Delay, d1	18.4	9.0	16.7	14.9	20.4	8.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.0	0.8	0.1	0.3	1.5
Delay (s)	19.0	9.0	17.5	15.0	20.7	9.9
Level of Service	B	A	B	B	C	A
Approach Delay (s)	16.6		17.0			12.0
Approach LOS	B		B			B
Intersection Summary						
HCM 2000 Control Delay			13.8		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.63			
Actuated Cycle Length (s)			58.3		Sum of lost time (s)	15.0
Intersection Capacity Utilization			51.8%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

6: Avenida Encinas & Cannon Rd













Opening Year No Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 		 	 				 	 		 
Volume (vph)	13	245	31	291	231	82	20	6	71	59	17	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.5		4.5	5.5		4.5	5.0	4.5	4.5	5.0	5.0
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	1.00	1.00	0.97	1.00	1.00
Fr _t	1.00	0.98		1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Fl _t Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3479		3433	3400		1770	1863	1583	3433	1863	1583
Fl _t Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3479		3433	3400		1770	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	266	34	316	251	89	22	7	77	64	18	14
RTOR Reduction (vph)	0	5	0	0	16	0	0	0	38	0	0	8
Lane Group Flow (vph)	14	295	0	316	324	0	22	7	39	64	18	6
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8 9	1	7	4 9	
Permitted Phases									8 9			4 9
Actuated Green, G (s)	2.1	26.5		17.5	41.9		3.5	44.4	61.9	6.3	47.2	47.2
Effective Green, g (s)	2.1	26.5		17.5	41.9		3.5	44.4	56.9	6.3	47.2	47.2
Actuated g/C Ratio	0.02	0.23		0.15	0.37		0.03	0.39	0.50	0.06	0.42	0.42
Clearance Time (s)	4.5	5.5		4.5	5.5		4.5		4.5	4.5		
Vehicle Extension (s)	2.5	3.0		2.5	3.0		2.5		2.5	2.5		
Lane Grp Cap (vph)	32	814		530	1258		54	730	795	191	776	660
v/s Ratio Prot	0.01	c0.08		c0.09	0.10		0.01	0.00	c0.01	c0.02	c0.01	
v/s Ratio Perm									0.02			0.00
v/c Ratio	0.44	0.36		0.60	0.26		0.41	0.01	0.05	0.34	0.02	0.01
Uniform Delay, d ₁	55.0	36.3		44.6	24.8		53.8	21.0	14.4	51.4	19.4	19.3
Progression Factor	1.65	0.66		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d ₂	6.8	0.3		1.5	0.1		3.6	0.0	0.0	0.8	0.0	0.0
Delay (s)	97.6	24.1		46.1	24.9		57.4	21.0	14.4	52.2	19.4	19.3
Level of Service	F	C		D	C		E	C	B	D	B	B
Approach Delay (s)		27.4			35.1			23.7			41.3	
Approach LOS		C			D			C			D	
Intersection Summary												
HCM 2000 Control Delay			32.5				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.27									
Actuated Cycle Length (s)			113.2				Sum of lost time (s)			23.5		
Intersection Capacity Utilization			36.9%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: I-5 SB Ramps & Cannon Rd



















Opening Year No Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑↑	↑↑					↑	↑	↑
Volume (vph)	0	325	50	350	317	0	0	0	0	798	1	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Fr _t		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Fl _t Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1681	1686	1583
Fl _t Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1681	1686	1583
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	0	387	60	417	377	0	0	0	0	950	1	342
RTOR Reduction (vph)	0	0	36	0	0	0	0	0	0	0	0	227
Lane Group Flow (vph)	0	387	24	417	377	0	0	0	0	475	476	115
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		36.3	36.3	10.0	50.5					30.3	30.3	30.3
Effective Green, g (s)		36.3	36.3	10.0	50.5					30.3	30.3	30.3
Actuated g/C Ratio		0.40	0.40	0.11	0.56					0.34	0.34	0.34
Clearance Time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6
Vehicle Extension (s)		2.0	2.0	2.0	2.0					2.0	2.0	2.0
Lane Grp Cap (vph)		1427	638	381	1985					565	567	532
v/s Ratio Prot		c0.11		c0.12	0.11					c0.28	0.28	
v/s Ratio Perm			0.02									0.07
v/c Ratio		0.27	0.04	1.09	0.19					0.84	0.84	0.22
Uniform Delay, d ₁		18.0	16.3	40.0	9.7					27.6	27.6	21.4
Progression Factor		1.00	1.00	1.12	1.19					1.00	1.00	1.00
Incremental Delay, d ₂		0.5	0.1	71.8	0.2					10.4	10.1	0.1
Delay (s)		18.5	16.4	116.7	11.8					38.1	37.7	21.4
Level of Service		B	B	F	B					D	D	C
Approach Delay (s)		18.2			66.9			0.0			33.5	
Approach LOS		B			E			A			C	
Intersection Summary												
HCM 2000 Control Delay			41.3			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			90.0			Sum of lost time (s)			13.4			
Intersection Capacity Utilization			52.3%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

8: I-5 NB Ramps & Cannon Rd

Opening Year No Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	1013	0	0	583	179	84	0	398	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.6			4.6	4.6		4.6	4.6			
Lane Util. Factor	0.97	0.95			0.91	0.91		1.00	0.88			
Flt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	3433	3539			3375	1441		1770	2787			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	3433	3539			3375	1441		1770	2787			
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	136	1251	0	0	720	221	104	0	491	0	0	0
RTOR Reduction (vph)	0	0	0	0	2	103	0	0	68	0	0	0
Lane Group Flow (vph)	136	1251	0	0	740	96	0	104	423	0	0	0
Turn Type	Prot	NA			NA	Perm	Split	NA	custom			
Protected Phases	5	2			6	1	8	8	8			
Permitted Phases						6	1		1			
Actuated Green, G (s)	14.9	57.4			43.3	43.3		14.2	19.2			
Effective Green, g (s)	14.9	57.4			43.3	43.3		14.2	19.2			
Actuated g/C Ratio	0.17	0.64			0.48	0.48		0.16	0.21			
Clearance Time (s)	4.2	4.6						4.6	4.6			
Vehicle Extension (s)	2.0	2.0						2.0	2.0			
Lane Grp Cap (vph)	568	2257			1623	693		279	594			
v/s Ratio Prot	0.04	c0.35			0.22			0.06	c0.11			
v/s Ratio Perm						0.07			0.04			
v/c Ratio	0.24	0.55			0.46	0.14		0.37	0.71			
Uniform Delay, d1	32.6	9.1			15.5	13.0		33.9	32.8			
Progression Factor	0.47	0.73			1.00	1.00		1.00	1.00			
Incremental Delay, d2	0.1	0.8			0.1	0.0		0.3	3.4			
Delay (s)	15.4	7.4			15.6	13.0		34.2	36.2			
Level of Service	B	A			B	B		C	D			
Approach Delay (s)		8.2			15.0			35.9			0.0	
Approach LOS		A			B			D			A	
Intersection Summary												
HCM 2000 Control Delay			16.0		HCM 2000 Level of Service				B			
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			90.0		Sum of lost time (s)				17.6			
Intersection Capacity Utilization			52.3%		ICU Level of Service				A			
Analysis Period (min)			15									
c Critical Lane Group												
















HCM Signalized Intersection Capacity Analysis
9: Paseo Del Norte & Cannon Rd

Opening Year No Specific Plan
AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑↑	↘↘	↗
Volume (vph)	1084	327	86	629	133	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	0.95		1.00	0.91	0.97	1.00
Flt	0.97		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3416		1770	5085	3433	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3416		1770	5085	3433	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	1106	334	88	642	136	97
RTOR Reduction (vph)	28	0	0	0	0	34
Lane Group Flow (vph)	1412	0	88	642	136	63
Turn Type	NA		Prot	NA	NA	pm+ov
Protected Phases	2		1	6	8	1
Permitted Phases						8
Actuated Green, G (s)	41.9		7.0	53.9	12.2	19.2
Effective Green, g (s)	41.9		7.0	53.9	12.2	19.2
Actuated g/C Ratio	0.55		0.09	0.71	0.16	0.25
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	4.5		2.0	4.5	3.5	2.0
Lane Grp Cap (vph)	1880		162	3601	550	503
v/s Ratio Prot	c0.41		c0.05	0.13	c0.04	0.01
v/s Ratio Perm						0.03
v/c Ratio	0.75		0.54	0.18	0.25	0.12
Uniform Delay, d1	13.1		33.0	3.7	27.9	22.0
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0		2.0	0.0	0.3	0.0
Delay (s)	15.1		35.0	3.7	28.2	22.0
Level of Service	B		D	A	C	C
Approach Delay (s)	15.1			7.5	25.6	
Approach LOS	B			A	C	
Intersection Summary						
HCM 2000 Control Delay			13.8		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.63			
Actuated Cycle Length (s)			76.1		Sum of lost time (s)	15.0
Intersection Capacity Utilization			62.7%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis
 10: Car Country Dr & Cannon Rd

Opening Year No Specific Plan
 AM Peak Hour

							
Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations		 			 		
Volume (vph)	0	990	189	112	659	56	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5		5.5	6.5	6.0	6.0
Lane Util. Factor		0.95		1.00	0.95	1.00	1.00
Fr _t		0.98		1.00	1.00	1.00	0.85
Fl _t Protected		1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)		3454		1770	3539	1770	1583
Fl _t Permitted		1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)		3454		1770	3539	1770	1583
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	0	1193	228	135	794	67	43
RTOR Reduction (vph)	0	6	0	0	0	0	39
Lane Group Flow (vph)	0	1415	0	135	794	67	4
Turn Type	Prot	NA		Prot	NA	NA	Perm
Protected Phases	5	2		1	6	8	
Permitted Phases							8
Actuated Green, G (s)		92.7		15.9	114.1	13.4	13.4
Effective Green, g (s)		92.7		15.9	114.1	13.4	13.4
Actuated g/C Ratio		0.66		0.11	0.81	0.10	0.10
Clearance Time (s)		6.5		5.5	6.5	6.0	6.0
Vehicle Extension (s)		3.0		3.0	3.0	4.0	4.0
Lane Grp Cap (vph)		2287		201	2884	169	151
v/s Ratio Prot		c0.41		c0.08	0.22	c0.04	
v/s Ratio Perm							0.00
v/c Ratio		0.62		0.67	0.28	0.40	0.03
Uniform Delay, d ₁		13.5		59.5	3.1	59.5	57.4
Progression Factor		1.00		1.00	1.00	1.00	1.00
Incremental Delay, d ₂		1.3		8.5	0.2	2.1	0.1
Delay (s)		14.8		68.1	3.3	61.6	57.5
Level of Service		B		E	A	E	E
Approach Delay (s)		14.8			12.7	60.0	
Approach LOS		B			B	E	
Intersection Summary							
HCM 2000 Control Delay			16.0		HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio			0.60				
Actuated Cycle Length (s)			140.0		Sum of lost time (s)		18.0
Intersection Capacity Utilization			59.6%		ICU Level of Service		B
Analysis Period (min)			15				
c Critical Lane Group							

HCM Signalized Intersection Capacity Analysis

11: Legoland Dr

Opening Year No Specific Plan
AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↘↗	↑↑	↘↗	↗
Volume (vph)	603	373	274	710	61	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.0	5.0	6.0	5.0	5.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Fr _t	1.00	0.85	1.00	1.00	1.00	0.85
Fl _t Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	3433	3539	3433	1583
Fl _t Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	3433	3539	3433	1583
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	709	439	322	835	72	49
RTOR Reduction (vph)	0	38	0	0	0	40
Lane Group Flow (vph)	709	401	322	835	72	9
Turn Type	NA	pm+ov	Prot	NA	NA	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	21.0	31.5	11.6	37.6	10.5	10.5
Effective Green, g (s)	21.0	31.5	11.6	37.6	10.5	10.5
Actuated g/C Ratio	0.36	0.53	0.20	0.64	0.18	0.18
Clearance Time (s)	6.0	5.0	5.0	6.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1257	843	673	2251	609	281
v/s Ratio Prot	c0.20	c0.08	c0.09	0.24	0.02	
v/s Ratio Perm		0.17				0.01
v/c Ratio	0.56	0.48	0.48	0.37	0.12	0.03
Uniform Delay, d ₁	15.4	8.6	21.1	5.1	20.4	20.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d ₂	0.6	0.4	0.2	0.1	0.1	0.0
Delay (s)	15.9	9.1	21.3	5.2	20.5	20.1
Level of Service	B	A	C	A	C	C
Approach Delay (s)	13.3			9.7	20.4	
Approach LOS	B			A	C	
Intersection Summary						
HCM 2000 Control Delay			11.9		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.52			
Actuated Cycle Length (s)			59.1		Sum of lost time (s)	16.0
Intersection Capacity Utilization			41.2%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						




















HCM Signalized Intersection Capacity Analysis
 12: Marriott Hotel Dwy & Cannon Rd

Opening Year No Specific Plan
 AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↓
Volume (vph)	570	75	54	951	33	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.5	5.0	6.0	5.5	5.5
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	633	83	60	1057	37	48
RTOR Reduction (vph)	0	21	0	0	0	44
Lane Group Flow (vph)	633	62	60	1057	37	4
Turn Type	NA	pm+ov	Prot	NA	NA	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	58.9	66.9	6.6	70.5	8.0	8.0
Effective Green, g (s)	58.9	66.9	6.6	70.5	8.0	8.0
Actuated g/C Ratio	0.65	0.74	0.07	0.78	0.09	0.09
Clearance Time (s)	6.0	5.5	5.0	6.0	5.5	5.5
Vehicle Extension (s)	3.0	2.0	2.0	3.0	2.0	2.0
Lane Grp Cap (vph)	2316	1176	129	2772	157	140
v/s Ratio Prot	0.18	0.00	0.03	c0.30	c0.02	
v/s Ratio Perm		0.03				0.00
v/c Ratio	0.27	0.05	0.47	0.38	0.24	0.03
Uniform Delay, d1	6.5	3.1	40.0	3.0	38.2	37.5
Progression Factor	1.00	1.00	1.08	0.85	1.00	1.00
Incremental Delay, d2	0.3	0.0	0.9	0.4	0.3	0.0
Delay (s)	6.8	3.1	44.2	2.9	38.4	37.5
Level of Service	A	A	D	A	D	D
Approach Delay (s)	6.4			5.1	37.9	
Approach LOS	A			A	D	
Intersection Summary						
HCM 2000 Control Delay			7.1		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.39			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	16.5
Intersection Capacity Utilization			40.0%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						





















HCM Signalized Intersection Capacity Analysis
 13: Faraday Ave & Cannon Rd

Opening Year No Specific Plan
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	229	379	47	848	7	155	2	18	1	1	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		5.0	5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		0.95	0.95			1.00	
Fr _t	1.00	0.91		1.00	1.00		1.00	0.97			0.93	
Fl _t Protected	0.95	1.00		0.95	1.00		0.95	0.96			0.99	
Satd. Flow (prot)	1770	3208		1770	3535		1681	1650			1716	
Fl _t Permitted	0.95	1.00		0.95	1.00		0.95	0.96			0.99	
Satd. Flow (perm)	1770	3208		1770	3535		1681	1650			1716	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	6	279	462	57	1034	9	189	2	22	1	1	2
RTOR Reduction (vph)	0	204	0	0	0	0	0	12	0	0	2	0
Lane Group Flow (vph)	6	537	0	57	1043	0	108	93	0	0	2	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases												
Actuated Green, G (s)	1.1	48.8		6.5	54.2		11.6	11.6			1.1	
Effective Green, g (s)	1.1	48.8		6.5	54.2		11.6	11.6			1.1	
Actuated g/C Ratio	0.01	0.54		0.07	0.60		0.13	0.13			0.01	
Clearance Time (s)	6.0	6.0		6.0	6.0		5.0	5.0			5.0	
Vehicle Extension (s)	2.0	3.5		2.0	3.5		2.0	2.0			2.0	
Lane Grp Cap (vph)	21	1739		127	2128		216	212			20	
v/s Ratio Prot	0.00	0.17		c0.03	c0.29		c0.06	0.06			c0.00	
v/s Ratio Perm												
v/c Ratio	0.29	0.31		0.45	0.49		0.50	0.44			0.10	
Uniform Delay, d ₁	44.1	11.3		40.0	10.1		36.5	36.2			44.0	
Progression Factor	1.31	0.96		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d ₂	2.7	0.5		0.9	0.8		0.7	0.5			0.8	
Delay (s)	60.4	11.3		41.0	10.9		37.2	36.7			44.8	
Level of Service	E	B		D	B		D	D			D	
Approach Delay (s)		11.7			12.5			36.9			44.8	
Approach LOS		B			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			14.8				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.51									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)			22.0		
Intersection Capacity Utilization			52.7%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 14: El Camino Real & Cannon Rd

Opening Year No Specific Plan
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	69	117	88	206	518	157	2	84	447	73	3	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	6.0		4.2	6.0			4.2	6.0	6.0		4.2
Lane Util. Factor	0.97	0.95		0.97	0.95			1.00	0.95	1.00		1.00
Fr _t	1.00	0.94		1.00	0.97			1.00	1.00	0.85		1.00
Fl _t Protected	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95
Satd. Flow (prot)	3433	3312		3433	3415			1770	3539	1583		1770
Fl _t Permitted	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95
Satd. Flow (perm)	3433	3312		3433	3415			1770	3539	1583		1770
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	80	136	102	240	602	183	2	98	520	85	3	140
RTOR Reduction (vph)	0	74	0	0	22	0	0	0	0	53	0	0
Lane Group Flow (vph)	80	164	0	240	763	0	0	100	520	32	0	143
Turn Type	Prot	NA		Prot	NA		Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases										2		
Actuated Green, G (s)	16.2	38.1		14.2	36.1			9.6	53.0	53.0		14.3
Effective Green, g (s)	16.2	38.1		14.2	36.1			9.6	53.0	53.0		14.3
Actuated g/C Ratio	0.12	0.27		0.10	0.26			0.07	0.38	0.38		0.10
Clearance Time (s)	4.2	6.0		4.2	6.0			4.2	6.0	6.0		4.2
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0	3.0	3.0		2.0
Lane Grp Cap (vph)	397	901		348	880			121	1339	599		180
v/s Ratio Prot	0.02	0.05		0.07	c0.22			c0.06	0.15			0.08
v/s Ratio Perm										0.02		
v/c Ratio	0.20	0.18		0.69	0.87			0.83	0.39	0.05		0.79
Uniform Delay, d ₁	56.0	39.0		60.8	49.7			64.4	31.7	27.6		61.4
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00		1.00
Incremental Delay, d ₂	0.1	0.0		4.5	8.7			33.5	0.9	0.2		19.7
Delay (s)	56.1	39.0		65.3	58.3			97.9	32.5	27.8		81.2
Level of Service	E	D		E	E			F	C	C		F
Approach Delay (s)		43.3			60.0				41.2			
Approach LOS		D			E				D			
Intersection Summary												
HCM 2000 Control Delay			46.8	HCM 2000 Level of Service				D				
HCM 2000 Volume to Capacity ratio			0.81									
Actuated Cycle Length (s)			140.0	Sum of lost time (s)				20.4				
Intersection Capacity Utilization			75.6%	ICU Level of Service				D				
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
Lane Configurations	↑↑↑	↑
Volume (vph)	1612	300
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	4.2
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.86	0.86
Adj. Flow (vph)	1874	349
RTOR Reduction (vph)	0	49
Lane Group Flow (vph)	1874	300
Turn Type	NA	pm+ov
Protected Phases	6	7
Permitted Phases		6
Actuated Green, G (s)	57.7	73.9
Effective Green, g (s)	57.7	73.9
Actuated g/C Ratio	0.41	0.53
Clearance Time (s)	6.0	4.2
Vehicle Extension (s)	3.0	2.0
Lane Grp Cap (vph)	2095	883
v/s Ratio Prot	c0.37	c0.04
v/s Ratio Perm		0.15
v/c Ratio	0.89	0.34
Uniform Delay, d1	38.3	19.0
Progression Factor	1.00	1.00
Incremental Delay, d2	6.4	0.1
Delay (s)	44.7	19.1
Level of Service	D	B
Approach Delay (s)	43.2	
Approach LOS	D	
Intersection Summary		




















HCM Signalized Intersection Capacity Analysis
 15: Paseo Del Norte & Car Country Dr

Opening Year No Specific Plan
 AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	5	0	56	5	42	1	155	94	48	200	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5		5.5	5.5		5.0	6.0		5.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Fr _t	1.00	1.00		1.00	0.86		1.00	0.94		1.00	0.98	
Fl _t Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863		1770	1611		1770	3339		1770	3469	
Fl _t Permitted	0.72	1.00		0.75	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1348	1863		1405	1611		1770	3339		1770	3469	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	5	0	61	5	46	1	168	102	52	217	33
RTOR Reduction (vph)	0	0	0	0	40	0	0	51	0	0	9	0
Lane Group Flow (vph)	11	5	0	61	11	0	1	219	0	52	241	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	6.8	6.8		6.8	6.8		0.5	26.0		2.3	27.8	
Effective Green, g (s)	6.8	6.8		6.8	6.8		0.5	26.0		2.3	27.8	
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.01	0.50		0.04	0.54	
Clearance Time (s)	5.5	5.5		5.5	5.5		5.0	6.0		5.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	177	245		185	212		17	1682		78	1868	
v/s Ratio Prot		0.00			0.01		0.00	0.07		c0.03	c0.07	
v/s Ratio Perm	0.01			c0.04								
v/c Ratio	0.06	0.02		0.33	0.05		0.06	0.13		0.67	0.13	
Uniform Delay, d ₁	19.6	19.5		20.3	19.6		25.3	6.8		24.3	5.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d ₂	0.1	0.0		1.0	0.1		0.5	0.0		15.4	0.0	
Delay (s)	19.8	19.5		21.4	19.7		25.8	6.8		39.7	5.9	
Level of Service	B	B		C	B		C	A		D	A	
Approach Delay (s)		19.7			20.6			6.9			11.7	
Approach LOS		B			C			A			B	
Intersection Summary												
HCM 2000 Control Delay			11.5				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.21									
Actuated Cycle Length (s)			51.6				Sum of lost time (s)			16.5		
Intersection Capacity Utilization			39.4%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												




















HCM Signalized Intersection Capacity Analysis
 16: Paseo Del Norte & Outlet Dwy

Opening Year No Specific Plan
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	2	12	4	2	11	21	237	11	36	212	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Flt	1.00	0.87			0.91		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1621			1676		1770	3515		1770	3519	
Flt Permitted	1.00	1.00			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1863	1621			1657		1770	3515		1770	3519	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	2	2	13	4	2	12	23	255	12	39	228	9
RTOR Reduction (vph)	0	12	0	0	11	0	0	3	0	0	2	0
Lane Group Flow (vph)	2	3	0	0	7	0	23	264	0	39	235	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	2.5	2.5			2.5		0.7	25.3		0.8	25.4	
Effective Green, g (s)	2.5	2.5			2.5		0.7	25.3		0.8	25.4	
Actuated g/C Ratio	0.06	0.06			0.06		0.02	0.58		0.02	0.58	
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.5	2.5			2.5		2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	106	92			95		28	2039		32	2050	
v/s Ratio Prot		0.00					0.01	c0.08		c0.02	0.07	
v/s Ratio Perm	0.00				c0.00							
v/c Ratio	0.02	0.03			0.07		0.82	0.13		1.22	0.11	
Uniform Delay, d1	19.4	19.4			19.5		21.4	4.2		21.4	4.1	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1			0.2		92.8	0.0		231.6	0.0	
Delay (s)	19.4	19.5			19.7		114.2	4.2		253.0	4.1	
Level of Service	B	B			B		F	A		F	A	
Approach Delay (s)		19.5			19.7			12.9			39.3	
Approach LOS		B			B			B			D	
Intersection Summary												
HCM 2000 Control Delay			25.4				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.15									
Actuated Cycle Length (s)			43.6				Sum of lost time (s)			15.0		
Intersection Capacity Utilization			27.3%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 17: Faraday Ave & College Blvd
























Opening Year No Specific Plan
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	154	297	86	1	187	221	158	36	192	68	1	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.0			4.5	6.0		4.5	5.0			4.5
Lane Util. Factor	0.97	0.95			0.97	0.95		1.00	0.95			1.00
Fr _t	1.00	0.97			1.00	0.94		1.00	0.96			1.00
Fl _t Protected	0.95	1.00			0.95	1.00		0.95	1.00			0.95
Satd. Flow (prot)	3433	3420			3433	3317		1770	3401			1770
Fl _t Permitted	0.95	1.00			0.95	1.00		0.95	1.00			0.95
Satd. Flow (perm)	3433	3420			3433	3317		1770	3401			1770
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	173	334	97	1	210	248	178	40	216	76	1	109
RTOR Reduction (vph)	0	17	0	0	0	75	0	0	23	0	0	0
Lane Group Flow (vph)	173	414	0	0	211	351	0	40	269	0	0	110
Turn Type	Prot	NA		Prot	Prot	NA		Prot	NA		Prot	Prot
Protected Phases	5	2		1	1	6		3	8		7	7
Permitted Phases												
Actuated Green, G (s)	7.0	13.1			7.9	14.0		3.2	13.6			8.2
Effective Green, g (s)	7.0	13.1			7.9	14.0		3.2	13.6			8.2
Actuated g/C Ratio	0.11	0.21			0.13	0.22		0.05	0.22			0.13
Clearance Time (s)	4.5	6.0			4.5	6.0		4.5	5.0			4.5
Vehicle Extension (s)	0.2	0.2			0.2	0.2		0.2	0.2			0.2
Lane Grp Cap (vph)	382	713			431	739		90	736			231
v/s Ratio Prot	0.05	c0.12			c0.06	0.11		0.02	0.08			c0.06
v/s Ratio Perm												
v/c Ratio	0.45	0.58			0.49	0.47		0.44	0.37			0.48
Uniform Delay, d ₁	26.1	22.4			25.6	21.2		28.9	20.9			25.3
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			1.00
Incremental Delay, d ₂	0.3	0.8			0.3	0.2		1.3	0.1			0.6
Delay (s)	26.4	23.2			25.9	21.4		30.2	21.0			25.9
Level of Service	C	C			C	C		C	C			C
Approach Delay (s)		24.1				22.9			22.1			
Approach LOS		C				C			C			
Intersection Summary												
HCM 2000 Control Delay			22.3			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.49									
Actuated Cycle Length (s)			62.8			Sum of lost time (s)		20.0				
Intersection Capacity Utilization			46.0%			ICU Level of Service		A				
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
Lane Configurations	↑↑	
Volume (vph)	295	22
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.0	
Lane Util. Factor	0.95	
Flt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	3502	
Flt Permitted	1.00	
Satd. Flow (perm)	3502	
Peak-hour factor, PHF	0.89	0.89
Adj. Flow (vph)	331	25
RTOR Reduction (vph)	3	0
Lane Group Flow (vph)	353	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	18.6	
Effective Green, g (s)	18.6	
Actuated g/C Ratio	0.30	
Clearance Time (s)	5.0	
Vehicle Extension (s)	0.2	
Lane Grp Cap (vph)	1037	
v/s Ratio Prot	c0.10	
v/s Ratio Perm		
v/c Ratio	0.34	
Uniform Delay, d1	17.3	
Progression Factor	1.00	
Incremental Delay, d2	0.1	
Delay (s)	17.4	
Level of Service	B	
Approach Delay (s)	19.4	
Approach LOS	B	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
 18: El Camino Real & College Blvd






















Opening Year No Specific Plan
 AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	108	67	12	753	226	112	71	71	511	163	63	1571	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	5.0	6.5		5.0	6.5			5.0	6.0	6.0	5.0	6.0	
Lane Util. Factor	0.97	0.95		0.97	0.95			1.00	0.91	1.00	1.00	0.91	
Fr _t	1.00	0.98		1.00	0.95			1.00	1.00	0.85	1.00	1.00	
Fl _t Protected	0.95	1.00		0.95	1.00			0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3461		3433	3363			1770	5085	1583	1770	5085	
Fl _t Permitted	0.95	1.00		0.95	1.00			0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3461		3433	3363			1770	5085	1583	1770	5085	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	
Adj. Flow (vph)	121	75	13	846	254	126	80	80	574	183	71	1765	
RTOR Reduction (vph)	0	11	0	0	54	0	0	0	0	99	0	0	
Lane Group Flow (vph)	121	77	0	846	326	0	0	160	574	84	71	1765	
Turn Type	Prot	NA		Prot	NA		Prot	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	5	2		1	6	
Permitted Phases										2			
Actuated Green, G (s)	8.3	19.8		25.0	36.5			11.0	64.3	64.3	8.4	61.7	
Effective Green, g (s)	8.3	19.8		25.0	36.5			11.0	64.3	64.3	8.4	61.7	
Actuated g/C Ratio	0.06	0.14		0.18	0.26			0.08	0.46	0.46	0.06	0.44	
Clearance Time (s)	5.0	6.5		5.0	6.5			5.0	6.0	6.0	5.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0	4.0	4.0	2.0	4.0	
Lane Grp Cap (vph)	203	489		613	876			139	2335	727	106	2241	
v/s Ratio Prot	0.04	0.02		c0.25	c0.10			c0.09	0.11		0.04	c0.35	
v/s Ratio Perm										0.05			
v/c Ratio	0.60	0.16		1.38	0.37			1.15	0.25	0.12	0.67	0.79	
Uniform Delay, d ₁	64.2	52.8		57.5	42.4			64.5	23.1	21.6	64.4	33.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d ₂	3.1	0.1		181.1	0.1			122.7	0.3	0.3	11.7	2.9	
Delay (s)	67.3	52.8		238.6	42.5			187.2	23.3	21.9	76.2	36.4	
Level of Service	E	D		F	D			F	C	C	E	D	
Approach Delay (s)		61.2			177.8				51.6			35.8	
Approach LOS		E			F				D			D	
Intersection Summary													
HCM 2000 Control Delay			77.3	HCM 2000 Level of Service				E					
HCM 2000 Volume to Capacity ratio			0.89										
Actuated Cycle Length (s)			140.0	Sum of lost time (s)				22.5					
Intersection Capacity Utilization			81.8%	ICU Level of Service				D					
Analysis Period (min)			15										
c Critical Lane Group													

Movement	SBR
▲▲▲ Lane Configurations	7
Volume (vph)	430
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.89
Adj. Flow (vph)	483
RTOR Reduction (vph)	231
Lane Group Flow (vph)	252
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	61.7
Effective Green, g (s)	61.7
Actuated g/C Ratio	0.44
Clearance Time (s)	6.0
Vehicle Extension (s)	4.0
Lane Grp Cap (vph)	697
v/s Ratio Prot	
v/s Ratio Perm	0.16
v/c Ratio	0.36
Uniform Delay, d1	26.0
Progression Factor	1.00
Incremental Delay, d2	1.5
Delay (s)	27.5
Level of Service	C
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
 19: El Camino Real & Faraday Ave
























Opening Year No Specific Plan
 AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	
Lane Configurations													
Volume (vph)	42	139	78	114	626	182	6	711	689	98	27	437	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.9	4.9	4.9	5.0	5.0	5.0		4.2	6.0			4.2	
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00		0.97	0.91			0.97	
Flt	1.00	0.99	0.85	1.00	1.00	0.85		1.00	0.98			1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00			0.95	
Satd. Flow (prot)	1770	3348	1441	1770	3539	1583		3433	4990			3433	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00			0.95	
Satd. Flow (perm)	1770	3348	1441	1770	3539	1583		3433	4990			3433	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Adj. Flow (vph)	44	145	81	119	652	190	6	741	718	102	28	455	
RTOR Reduction (vph)	0	3	60	0	0	116	0	0	10	0	0	0	
Lane Group Flow (vph)	44	155	8	119	652	74	0	747	810	0	0	483	
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	Prot	NA		Prot	Prot	
Protected Phases	3	3		4	4		1	1	6		5	5	
Permitted Phases			3			4							
Actuated Green, G (s)	21.5	21.5	21.5	40.9	40.9	40.9		46.0	37.1			65.0	
Effective Green, g (s)	21.5	21.5	21.5	40.9	40.9	40.9		46.0	37.1			65.0	
Actuated g/C Ratio	0.12	0.12	0.12	0.22	0.22	0.22		0.25	0.20			0.35	
Clearance Time (s)	4.9	4.9	4.9	5.0	5.0	5.0		4.2	6.0			4.2	
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0	3.0		2.0	2.0			2.0	
Lane Grp Cap (vph)	206	389	167	392	784	350		855	1002			1208	
v/s Ratio Prot	0.02	c0.05		0.07	c0.18			c0.22	0.16			0.14	
v/s Ratio Perm			0.01			0.05							
v/c Ratio	0.21	0.40	0.05	0.30	0.83	0.21		0.87	0.81			0.40	
Uniform Delay, d1	73.9	75.6	72.5	60.0	68.6	58.7		66.5	70.4			45.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.2	0.2	0.0	0.4	7.5	0.3		9.5	4.6			0.1	
Delay (s)	74.1	75.8	72.5	60.4	76.1	59.0		76.1	75.0			45.2	
Level of Service	E	E	E	E	E	E		E	E			D	
Approach Delay (s)		74.7			70.8				75.5				
Approach LOS		E			E				E				
Intersection Summary													
HCM 2000 Control Delay			68.5									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			0.81										
Actuated Cycle Length (s)			184.6									Sum of lost time (s)	20.1
Intersection Capacity Utilization			83.7%									ICU Level of Service	E
Analysis Period (min)			15										
c Critical Lane Group													

Movement	SBT	SBR
Label Configurations	↑↑↑	↑
Volume (vph)	1340	241
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	6.0
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.96	0.96
Adj. Flow (vph)	1396	251
RTOR Reduction (vph)	0	74
Lane Group Flow (vph)	1396	177
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Actuated Green, G (s)	56.1	56.1
Effective Green, g (s)	56.1	56.1
Actuated g/C Ratio	0.30	0.30
Clearance Time (s)	6.0	6.0
Vehicle Extension (s)	2.0	2.0
Lane Grp Cap (vph)	1545	481
v/s Ratio Prot	c0.27	
v/s Ratio Perm		0.11
v/c Ratio	0.90	0.37
Uniform Delay, d1	61.7	50.4
Progression Factor	1.00	1.00
Incremental Delay, d2	7.6	0.2
Delay (s)	69.3	50.5
Level of Service	E	D
Approach Delay (s)	61.6	
Approach LOS	E	
Intersection Summary		













HCM Signalized Intersection Capacity Analysis
20: Avenida Encinas & Palomar Airport Rd

Opening Year No Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	204	51	350	232	310	45	64	138	118	77	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.0		4.2	5.0	5.0	4.6	4.6	4.6	4.6	4.6	4.6
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Fr _t	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fl _t Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (prot)	1770	1807		1770	1863	1583	1770	1863	1583	1681	1750	1583
Fl _t Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (perm)	1770	1807		1770	1863	1583	1770	1863	1583	1681	1750	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	45	212	53	365	242	323	47	67	144	123	80	27
RTOR Reduction (vph)	0	6	0	0	0	166	0	0	126	0	0	24
Lane Group Flow (vph)	45	259	0	365	242	157	47	67	18	100	103	3
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases						6			8			7
Actuated Green, G (s)	4.6	20.7		26.2	42.3	42.3	10.8	10.8	10.8	10.9	10.9	10.9
Effective Green, g (s)	4.6	20.7		26.2	42.3	42.3	10.8	10.8	10.8	10.9	10.9	10.9
Actuated g/C Ratio	0.05	0.24		0.30	0.49	0.49	0.12	0.12	0.12	0.13	0.13	0.13
Clearance Time (s)	4.2	5.0		4.2	5.0	5.0	4.6	4.6	4.6	4.6	4.6	4.6
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	93	429		533	905	769	219	231	196	210	219	198
v/s Ratio Prot	0.03	c0.14		c0.21	0.13		0.03	c0.04		c0.06	0.06	
v/s Ratio Perm						0.10			0.01			0.00
v/c Ratio	0.48	0.60		0.68	0.27	0.20	0.21	0.29	0.09	0.48	0.47	0.02
Uniform Delay, d ₁	40.0	29.5		26.8	13.2	12.7	34.3	34.6	33.8	35.4	35.4	33.4
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, d ₂	1.4	2.4		2.9	0.2	0.1	0.2	0.3	0.1	0.6	0.6	0.0
Delay (s)	41.5	31.9		29.7	13.4	12.9	34.5	34.9	33.8	36.0	35.9	33.4
Level of Service	D	C		C	B	B	C	C	C	D	D	C
Approach Delay (s)		33.3			19.6			34.2			35.7	
Approach LOS		C			B			C			D	
Intersection Summary												
HCM 2000 Control Delay			26.4				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.56									
Actuated Cycle Length (s)			87.0				Sum of lost time (s)			18.4		
Intersection Capacity Utilization			56.7%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

























HCM Signalized Intersection Capacity Analysis
 21: I-5 SB Ramps & Palomar Airport Rd

Opening Year No Specific Plan
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑	↗				↖		↗
Volume (vph)	0	393	67	0	559	243	0	0	0	925	0	333
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0	4.0				4.6		4.6
Lane Util. Factor		0.91			0.95	1.00				0.97		1.00
Fr _t		0.98			1.00	0.85				1.00		0.85
Fl _t Protected		1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)		4974			3539	1583				3433		1583
Fl _t Permitted		1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)		4974			3539	1583				3433		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	427	73	0	608	264	0	0	0	1005	0	362
RTOR Reduction (vph)	0	26	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	474	0	0	608	264	0	0	0	1005	0	362
Turn Type		NA			NA	Free				Prot		custom
Protected Phases		2 3			6					4		4 3
Permitted Phases						Free						2
Actuated Green, G (s)		26.8			16.6	58.8				22.4		48.8
Effective Green, g (s)		26.8			16.6	58.8				22.4		48.8
Actuated g/C Ratio		0.46			0.28	1.00				0.38		0.83
Clearance Time (s)					5.0					4.6		
Vehicle Extension (s)					2.0					2.0		
Lane Grp Cap (vph)		2267			999	1583				1307		1313
v/s Ratio Prot		0.10			c0.17					c0.29		c0.15
v/s Ratio Perm						0.17						0.08
v/c Ratio		0.21			0.61	0.17				0.77		0.28
Uniform Delay, d ₁		9.6			18.3	0.0				15.9		1.1
Progression Factor		1.00			1.00	1.00				1.00		1.00
Incremental Delay, d ₂		0.0			0.7	0.2				2.5		0.0
Delay (s)		9.6			19.0	0.2				18.4		1.1
Level of Service		A			B	A				B		A
Approach Delay (s)		9.6			13.3			0.0			13.9	
Approach LOS		A			B			A			B	
Intersection Summary												
HCM 2000 Control Delay			12.9				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			58.8				Sum of lost time (s)		14.6			
Intersection Capacity Utilization			49.3%				ICU Level of Service		A			
Analysis Period (min)			15									
c Critical Lane Group												






















HCM Signalized Intersection Capacity Analysis
 22: I-5 NB Ramps & Palomar Airport Rd

Opening Year No Specific Plan
 AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  			  	 			 				
Volume (vph)	122	1196	0	0	642	490	160	3	1276	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.2	4.6			4.6	4.6		4.6	4.6				
Lane Util. Factor	1.00	0.91			0.91	0.88		1.00	0.88				
Flt	1.00	1.00			1.00	0.85		1.00	0.85				
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00				
Satd. Flow (prot)	1770	5085			5085	2787		1775	2787				
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00				
Satd. Flow (perm)	1770	5085			5085	2787		1775	2787				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Adj. Flow (vph)	131	1286	0	0	690	527	172	3	1372	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	311	0	0	92	0	0	0	
Lane Group Flow (vph)	131	1286	0	0	690	216	0	175	1280	0	0	0	
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom				
Protected Phases	5	2			6 7			8	7				
Permitted Phases						6 7	8		8				
Actuated Green, G (s)	9.8	28.4			24.1	24.1		11.4	16.5				
Effective Green, g (s)	9.8	28.4			24.1	24.1		11.4	16.5				
Actuated g/C Ratio	0.17	0.48			0.41	0.41		0.19	0.28				
Clearance Time (s)	4.2	4.6						4.6	4.6				
Vehicle Extension (s)	2.0	3.0						2.0	2.0				
Lane Grp Cap (vph)	295	2460			2087	1144		344	1001				
v/s Ratio Prot	0.07	c0.25			0.14				c0.11				
v/s Ratio Perm						0.08		0.10	0.35				
v/c Ratio	0.44	0.52			0.33	0.19		0.51	1.28				
Uniform Delay, d1	22.0	10.5			11.8	11.1		21.1	21.1				
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00				
Incremental Delay, d2	0.4	0.2			0.0	0.0		0.4	133.2				
Delay (s)	22.4	10.7			11.8	11.1		21.6	154.3				
Level of Service	C	B			B	B		C	F				
Approach Delay (s)		11.8			11.5			139.3			0.0		
Approach LOS		B			B			F			A		
Intersection Summary													
HCM 2000 Control Delay			58.9		HCM 2000 Level of Service				E				
HCM 2000 Volume to Capacity ratio			1.03										
Actuated Cycle Length (s)			58.7		Sum of lost time (s)				18.0				
Intersection Capacity Utilization			75.4%		ICU Level of Service				D				
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis
23: Paseo Del Norte & Palomar Airport Rd

Opening Year No Specific Plan
AM Peak Hour































												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (vph)	2	157	2184	129	4	101	834	192	179	86	143	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	6.0			4.2	6.0	4.2	4.2	5.0		4.2
Lane Util. Factor		0.97	0.91			0.97	0.86	1.00	0.97	0.95		0.97
Fr _t		1.00	0.99			1.00	1.00	0.85	1.00	0.91		1.00
Fl _t Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		3433	5043			3433	6408	1583	3433	3208		3433
Fl _t Permitted		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (perm)		3433	5043			3433	6408	1583	3433	3208		3433
Peak-hour factor, PHF	0.92	0.96	0.96	0.96	0.92	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	2	164	2275	134	4	105	869	200	186	90	149	114
RTOR Reduction (vph)	0	0	3	0	0	0	0	73	0	122	0	0
Lane Group Flow (vph)	0	166	2406	0	0	109	869	127	186	117	0	114
Turn Type	Prot	Prot	NA		Prot	Prot	NA	pm+ov	Prot	NA		Prot
Protected Phases	5	5	2		1	1	6	7	3	8		7
Permitted Phases								6				
Actuated Green, G (s)		10.8	83.3			8.5	81.0	89.2	9.0	20.6		8.2
Effective Green, g (s)		10.8	83.3			8.5	81.0	89.2	9.0	20.6		8.2
Actuated g/C Ratio		0.08	0.59			0.06	0.58	0.64	0.06	0.15		0.06
Clearance Time (s)		4.2	6.0			4.2	6.0	4.2	4.2	5.0		4.2
Vehicle Extension (s)		2.0	2.0			2.0	2.0	2.0	2.0	2.0		2.0
Lane Grp Cap (vph)		264	3000			208	3707	1008	220	472		201
v/s Ratio Prot		c0.05	c0.48			0.03	0.14	0.01	c0.05	c0.04		0.03
v/s Ratio Perm								0.07				
v/c Ratio		0.63	0.80			0.52	0.23	0.13	0.85	0.25		0.57
Uniform Delay, d ₁		62.7	22.0			63.8	14.4	10.0	64.8	52.8		64.2
Progression Factor		1.00	1.00			1.12	0.45	0.55	1.00	1.00		1.00
Incremental Delay, d ₂		3.4	2.4			1.1	0.1	0.0	23.8	0.1		2.2
Delay (s)		66.0	24.3			72.6	6.6	5.6	88.6	52.9		66.4
Level of Service		E	C			E	A	A	F	D		E
Approach Delay (s)			27.0				12.5			68.5		
Approach LOS			C				B			E		
Intersection Summary												
HCM 2000 Control Delay			29.2			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				19.4		
Intersection Capacity Utilization			75.0%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												



Movement	SBT	SBR
Lane Configurations	↑↑	
Volume (vph)	56	117
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.0	
Lane Util. Factor	0.95	
Frt	0.90	
Flt Protected	1.00	
Satd. Flow (prot)	3179	
Flt Permitted	1.00	
Satd. Flow (perm)	3179	
Peak-hour factor, PHF	0.96	0.96
Adj. Flow (vph)	58	122
RTOR Reduction (vph)	105	0
Lane Group Flow (vph)	75	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	19.8	
Effective Green, g (s)	19.8	
Actuated g/C Ratio	0.14	
Clearance Time (s)	5.0	
Vehicle Extension (s)	2.0	
Lane Grp Cap (vph)	449	
v/s Ratio Prot	0.02	
v/s Ratio Perm		
v/c Ratio	0.17	
Uniform Delay, d1	52.9	
Progression Factor	1.00	
Incremental Delay, d2	0.1	
Delay (s)	52.9	
Level of Service	D	
Approach Delay (s)	58.1	
Approach LOS	E	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
24: Armada Dr & Palomar Airport Rd



























Opening Year No Specific Plan
AM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations		 	  				  		 	 	 	 
Volume (vph)	9	168	2163	146	2	102	1005	141	112	31	64	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	6.0	4.7		4.2	6.0	5.0	4.7	4.7	4.7	5.0
Lane Util. Factor		0.97	0.91	1.00		1.00	0.91	1.00	0.97	0.95	0.95	0.97
Flt		1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.94	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95
Satd. Flow (prot)		3433	5085	1583		1770	5085	1583	3433	1671	1504	3433
Flt Permitted		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95
Satd. Flow (perm)		3433	5085	1583		1770	5085	1583	3433	1671	1504	3433
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	183	2351	159	2	111	1092	153	122	34	70	85
RTOR Reduction (vph)	0	0	0	48	0	0	0	49	0	16	46	0
Lane Group Flow (vph)	0	193	2351	111	0	113	1092	104	122	38	4	85
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	NA	Perm	Prot
Protected Phases	5	5	2	3	1	1	6	7	3	8		7
Permitted Phases				2				6			8	
Actuated Green, G (s)		12.2	89.2	98.0		10.6	87.6	95.4	8.8	12.5	12.5	7.8
Effective Green, g (s)		12.2	89.2	98.0		10.6	87.6	95.4	8.8	12.5	12.5	7.8
Actuated g/C Ratio		0.09	0.64	0.70		0.08	0.63	0.68	0.06	0.09	0.09	0.06
Clearance Time (s)		4.2	6.0	4.7		4.2	6.0	5.0	4.7	4.7	4.7	5.0
Vehicle Extension (s)		2.0	3.0	2.0		2.0	3.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)		299	3239	1108		134	3181	1078	215	149	134	191
v/s Ratio Prot		0.06	c0.46	0.01		c0.06	0.21	0.01	c0.04	c0.02		0.02
v/s Ratio Perm				0.06				0.06			0.00	
v/c Ratio		0.65	0.73	0.10		0.84	0.34	0.10	0.57	0.25	0.03	0.45
Uniform Delay, d1		61.8	17.1	6.8		63.9	12.5	7.6	63.8	59.4	58.2	64.0
Progression Factor		0.95	0.90	1.09		0.63	1.84	9.54	1.00	1.00	1.00	1.00
Incremental Delay, d2		2.5	1.0	0.0		32.5	0.3	0.0	2.0	0.3	0.0	0.6
Delay (s)		61.3	16.4	7.4		72.4	23.2	72.6	65.8	59.7	58.3	64.6
Level of Service		E	B	A		E	C	E	E	E	E	E
Approach Delay (s)			19.1				32.9			62.7		
Approach LOS			B				C			E		
Intersection Summary												
HCM 2000 Control Delay			27.1				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)		19.9			
Intersection Capacity Utilization			72.5%				ICU Level of Service		C			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
↓	↘	
Lane Configurations	↑	↗
Volume (vph)	20	50
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.7	4.7
Lane Util. Factor	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	1863	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	1863	1583
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	22	54
RTOR Reduction (vph)	0	49
Lane Group Flow (vph)	22	5
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Actuated Green, G (s)	11.8	11.8
Effective Green, g (s)	11.8	11.8
Actuated g/C Ratio	0.08	0.08
Clearance Time (s)	4.7	4.7
Vehicle Extension (s)	2.0	2.0
Lane Grp Cap (vph)	157	133
v/s Ratio Prot	0.01	
v/s Ratio Perm		0.00
v/c Ratio	0.14	0.03
Uniform Delay, d1	59.4	58.9
Progression Factor	1.00	1.00
Incremental Delay, d2	0.1	0.0
Delay (s)	59.5	58.9
Level of Service	E	E
Approach Delay (s)	62.0	
Approach LOS	E	
Intersection Summary		

























HCM Signalized Intersection Capacity Analysis
 25: Hidden Valley Rd/The Crossing Dr & Palomar Airport Rd

Opening Year No Specific Plan
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Volume (vph)	76	2139	92	43	1102	88	97	12	91	41	4	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	4.2	4.2	6.0		4.2	4.7		5.0	5.7	5.7
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00		1.00	1.00	1.00
Flt	1.00	1.00	0.85	1.00	0.99		1.00	0.87		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	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5029		1770	1616		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5029		1770	1616		1770	1863	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	81	2276	98	46	1172	94	103	13	97	44	4	36
RTOR Reduction (vph)	0	0	17	0	5	0	0	82	0	0	0	32
Lane Group Flow (vph)	81	2276	81	46	1261	0	103	28	0	44	4	5
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2									4
Actuated Green, G (s)	10.0	85.1	95.9	6.5	80.8		10.8	21.8		6.7	17.5	17.5
Effective Green, g (s)	10.0	85.1	95.9	6.5	80.8		10.8	21.8		6.7	17.5	17.5
Actuated g/C Ratio	0.07	0.61	0.69	0.05	0.58		0.08	0.16		0.05	0.12	0.12
Clearance Time (s)	5.0	6.0	4.2	4.2	6.0		4.2	4.7		5.0	5.7	5.7
Vehicle Extension (s)	2.0	3.0	2.0	2.0	3.0		2.0	3.0		2.0	3.0	3.0
Lane Grp Cap (vph)	126	3090	1084	82	2902		136	251		84	232	197
v/s Ratio Prot	c0.05	c0.45	0.01	0.03	0.25		c0.06	c0.02		0.02	0.00	
v/s Ratio Perm			0.05									0.00
v/c Ratio	0.64	0.74	0.07	0.56	0.43		0.76	0.11		0.52	0.02	0.02
Uniform Delay, d1	63.3	19.5	7.3	65.4	16.7		63.3	50.8		65.1	53.7	53.7
Progression Factor	1.11	0.51	0.69	1.23	0.78		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.9	1.2	0.0	4.7	0.4		19.0	0.2		2.7	0.0	0.0
Delay (s)	75.9	11.0	5.0	84.8	13.5		82.3	51.0		67.8	53.7	53.8
Level of Service	E	B	A	F	B		F	D		E	D	D
Approach Delay (s)		12.9			16.0			66.1			61.1	
Approach LOS		B			B			E			E	
Intersection Summary												
HCM 2000 Control Delay			17.7			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			20.9			
Intersection Capacity Utilization			69.1%			ICU Level of Service				C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 26: Aviara Pkwy/College Blvd & Palomar Airport Rd

Opening Year No Specific Plan
 AM Peak Hour

													
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	573	1567	131	1	158	818	69	236	471	228	40	111	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.5	6.3	6.3		4.2	6.3	6.3	4.2	5.8	5.8	4.2	6.0	
Lane Util. Factor	0.97	0.91	1.00		0.97	0.91	1.00	0.97	0.95	1.00	1.00	1.00	
Flt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	5085	1583		3433	5085	1583	3433	3539	1583	1770	1863	
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	5085	1583		3433	5085	1583	3433	3539	1583	1770	1863	
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Adj. Flow (vph)	610	1667	139	1	168	870	73	251	501	243	43	118	
RTOR Reduction (vph)	0	0	53	0	0	0	43	0	0	156	0	0	
Lane Group Flow (vph)	610	1667	86	0	169	870	30	251	501	87	43	118	
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	1	6		3	8		7	4	
Permitted Phases			2				6			8			
Actuated Green, G (s)	29.3	76.3	76.3		10.4	57.1	57.1	13.4	25.9	25.9	6.9	19.2	
Effective Green, g (s)	29.3	76.3	76.3		10.4	57.1	57.1	13.4	25.9	25.9	6.9	19.2	
Actuated g/C Ratio	0.21	0.54	0.54		0.07	0.41	0.41	0.10	0.18	0.18	0.05	0.14	
Clearance Time (s)	4.5	6.3	6.3		4.2	6.3	6.3	4.2	5.8	5.8	4.2	6.0	
Vehicle Extension (s)	2.0	3.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	
Lane Grp Cap (vph)	718	2771	862		255	2073	645	328	654	292	87	255	
v/s Ratio Prot	c0.18	c0.33			0.05	0.17		c0.07	c0.14		0.02	0.06	
v/s Ratio Perm			0.05				0.02			0.06			
v/c Ratio	0.85	0.60	0.10		0.66	0.42	0.05	0.77	0.77	0.30	0.49	0.46	
Uniform Delay, d1	53.2	21.6	15.3		63.1	29.6	25.0	61.8	54.2	49.2	64.8	55.6	
Progression Factor	1.34	1.01	2.43		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.5	0.7	0.2		4.9	0.6	0.1	9.2	5.4	0.6	1.6	1.3	
Delay (s)	77.7	22.4	37.4		68.0	30.2	25.2	71.0	59.5	49.8	66.5	57.0	
Level of Service	E	C	D		E	C	C	E	E	D	E	E	
Approach Delay (s)		37.2				35.6			60.0			45.3	
Approach LOS		D				D			E			D	

Intersection Summary
























HCM 2000 Control Delay	42.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SBR
Lane Configurations	7
Volume (vph)	179
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Fr _t	0.85
Fl _t Protected	1.00
Satd. Flow (prot)	1583
Fl _t Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.94
Adj. Flow (vph)	190
RTOR Reduction (vph)	38
Lane Group Flow (vph)	152
Turn Type	pm+ov
Protected Phases	5
Permitted Phases	4
Actuated Green, G (s)	48.5
Effective Green, g (s)	48.5
Actuated g/C Ratio	0.35
Clearance Time (s)	4.5
Vehicle Extension (s)	2.0
Lane Grp Cap (vph)	548
v/s Ratio Prot	0.06
v/s Ratio Perm	0.04
v/c Ratio	0.28
Uniform Delay, d ₁	33.1
Progression Factor	1.00
Incremental Delay, d ₂	0.1
Delay (s)	33.2
Level of Service	C
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
 27: El Camino Real & Palomar Airport Rd













Opening Year No Specific Plan
 AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	
Lane Configurations													
Volume (vph)	172	846	134	551	1275	553	11	109	642	428	3	571	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	5.0	6.0	4.0	5.0	6.0	6.0		5.0	6.0	5.0		5.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	0.88		0.97	0.91	0.88		0.97	
Flt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85		1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95	
Satd. Flow (prot)	3433	5085	1583	3433	5085	2787		3433	5085	2787		3433	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95	
Satd. Flow (perm)	3433	5085	1583	3433	5085	2787		3433	5085	2787		3433	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
Adj. Flow (vph)	177	872	138	568	1314	570	11	112	662	441	3	589	
RTOR Reduction (vph)	0	0	138	0	0	240	0	0	0	65	0	0	
Lane Group Flow (vph)	177	872	0	568	1314	330	0	123	662	376	0	592	
Turn Type	Prot	NA	NA	Prot	NA	Perm	Prot	Prot	NA	pm+ov	Prot	Prot	
Protected Phases	3	8		7	4		1	1	6	7	5	5	
Permitted Phases						4				6			
Actuated Green, G (s)	11.6	41.8	0.0	26.9	57.1	57.1		9.4	22.7	49.6		26.6	
Effective Green, g (s)	11.6	41.8	0.0	26.9	57.1	57.1		9.4	22.7	49.6		26.6	
Actuated g/C Ratio	0.08	0.30	0.00	0.19	0.41	0.41		0.07	0.16	0.35		0.19	
Clearance Time (s)	5.0	6.0		5.0	6.0	6.0		5.0	6.0	5.0		5.0	
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0		2.0	3.0	2.0		2.0	
Lane Grp Cap (vph)	284	1518	0	659	2073	1136		230	824	987		652	
v/s Ratio Prot	0.05	0.17		c0.17	c0.26			0.04	c0.13	0.07		c0.17	
v/s Ratio Perm						0.12				0.06			
v/c Ratio	0.62	0.57	0.00	0.86	0.63	0.29		0.53	0.80	0.38		0.91	
Uniform Delay, d1	62.1	41.6	70.0	54.8	33.1	27.8		63.2	56.5	33.7		55.5	
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	3.0	1.6	0.0	10.9	1.5	0.6		1.2	5.7	0.1		16.1	
Delay (s)	65.1	43.2	70.0	65.6	34.6	28.5		64.4	62.2	33.8		71.6	
Level of Service	E	D	E	E	C	C		E	E	C		E	
Approach Delay (s)		49.6			40.4				52.2				
Approach LOS		D			D				D				
Intersection Summary													
HCM 2000 Control Delay			47.3				HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.79										
Actuated Cycle Length (s)			140.0				Sum of lost time (s)		22.0				
Intersection Capacity Utilization			79.2%				ICU Level of Service		D				
Analysis Period (min)			15										
c Critical Lane Group													

Movement	SBT	SBR
Label Configurations	↑↑↑	↑
Volume (vph)	993	369
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	5.0
Lane Util. Factor	0.91	1.00
Fr _t	1.00	0.85
Fl _t Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Fl _t Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	1024	380
RTOR Reduction (vph)	0	91
Lane Group Flow (vph)	1024	289
Turn Type	NA	pm+ov
Protected Phases	2	3
Permitted Phases		2
Actuated Green, G (s)	39.9	51.5
Effective Green, g (s)	39.9	51.5
Actuated g/C Ratio	0.28	0.37
Clearance Time (s)	6.0	5.0
Vehicle Extension (s)	3.0	2.0
Lane Grp Cap (vph)	1449	582
v/s Ratio Prot	0.20	0.04
v/s Ratio Perm		0.14
v/c Ratio	0.71	0.50
Uniform Delay, d ₁	44.8	34.2
Progression Factor	1.00	1.00
Incremental Delay, d ₂	1.6	0.2
Delay (s)	46.4	34.5
Level of Service	D	C
Approach Delay (s)	51.6	
Approach LOS	D	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
 28: I-5 SB Ramps & Poinsettia Ln























Opening Year No Specific Plan
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑↑	↑↑					↑	↑	↑
Volume (vph)	0	522	134	441	658	0	0	0	0	202	3	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6
Lane Util. Factor		0.95	1.00	0.97	0.95					1.00	0.95	0.95
Fr _t		1.00	0.85	1.00	1.00					1.00	0.85	0.85
Fl _t Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1770	1512	1504
Fl _t Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1770	1512	1504
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	561	144	474	708	0	0	0	0	217	3	208
RTOR Reduction (vph)	0	0	103	0	0	0	0	0	0	0	79	82
Lane Group Flow (vph)	0	561	41	474	708	0	0	0	0	217	26	24
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		16.4	16.4	14.2	34.8					13.0	13.0	13.0
Effective Green, g (s)		16.4	16.4	14.2	34.8					13.0	13.0	13.0
Actuated g/C Ratio		0.29	0.29	0.25	0.61					0.23	0.23	0.23
Clearance Time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6
Vehicle Extension (s)		2.0	2.0	2.0	5.0					2.0	2.0	2.0
Lane Grp Cap (vph)		1018	455	855	2160					403	344	343
v/s Ratio Prot		c0.16		c0.14	0.20						0.02	
v/s Ratio Perm			0.03							c0.12		0.02
v/c Ratio		0.55	0.09	0.55	0.33					0.54	0.08	0.07
Uniform Delay, d ₁		17.2	14.8	18.6	5.4					19.4	17.3	17.3
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d ₂		0.4	0.0	0.4	0.2					0.7	0.0	0.0
Delay (s)		17.6	14.9	19.1	5.6					20.1	17.3	17.3
Level of Service		B	B	B	A					C	B	B
Approach Delay (s)		17.0			11.0			0.0			18.7	
Approach LOS		B			B			A			B	
Intersection Summary												
HCM 2000 Control Delay			14.3			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.55									
Actuated Cycle Length (s)			57.0			Sum of lost time (s)				13.4		
Intersection Capacity Utilization			51.8%			ICU Level of Service				A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis






















29: I-5 NB Ramps & Poinsettia Ln

Opening Year No Specific Plan
AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			  				 				
Volume (vph)	124	600	0	0	902	367	197	2	643	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.2	4.6			4.6	4.6		4.6	4.6				
Lane Util. Factor	1.00	0.95			0.91	1.00		1.00	0.88				
Fr _t	1.00	1.00			1.00	0.85		1.00	0.85				
Fl _t Protected	0.95	1.00			1.00	1.00		0.95	1.00				
Satd. Flow (prot)	1770	3539			5085	1583		1775	2787				
Fl _t Permitted	0.95	1.00			1.00	1.00		0.95	1.00				
Satd. Flow (perm)	1770	3539			5085	1583		1775	2787				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
Adj. Flow (vph)	128	619	0	0	930	378	203	2	663	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	215	0	0	441	0	0	0	
Lane Group Flow (vph)	128	619	0	0	930	163	0	205	222	0	0	0	
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm				
Protected Phases	5	2			6			8					
Permitted Phases						6	8		8				
Actuated Green, G (s)	7.5	31.6			19.9	19.9		14.1	14.1				
Effective Green, g (s)	7.5	31.6			19.9	19.9		14.1	14.1				
Actuated g/C Ratio	0.14	0.58			0.36	0.36		0.26	0.26				
Clearance Time (s)	4.2	4.6			4.6	4.6		4.6	4.6				
Vehicle Extension (s)	2.0	5.0			2.0	2.0		2.0	2.0				
Lane Grp Cap (vph)	241	2037			1843	573		455	715				
v/s Ratio Prot	c0.07	0.17			c0.18								
v/s Ratio Perm						0.10		0.12	0.08				
v/c Ratio	0.53	0.30			0.50	0.28		0.45	0.31				
Uniform Delay, d ₁	22.1	6.0			13.7	12.4		17.1	16.5				
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00				
Incremental Delay, d ₂	1.1	0.2			0.1	0.1		0.3	0.1				
Delay (s)	23.2	6.2			13.7	12.5		17.4	16.6				
Level of Service	C	A			B	B		B	B				
Approach Delay (s)		9.1			13.4			16.8			0.0		
Approach LOS		A			B			B			A		
Intersection Summary													
HCM 2000 Control Delay			13.3		HCM 2000 Level of Service				B				
HCM 2000 Volume to Capacity ratio			0.49										
Actuated Cycle Length (s)			54.9		Sum of lost time (s)				13.4				
Intersection Capacity Utilization			51.8%		ICU Level of Service				A				
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis
 30: Lower Ln/Paseo Del Norte & Poinsettia Ln

Opening Year No Specific Plan
 AM Peak Hour























													
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	1	203	1012	27	6	884	61	39	4	20	45	4	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.2	4.6	4.6	4.2	4.6		4.6	4.6		4.6	4.6	
Lane Util. Factor		0.97	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Fr _t		1.00	1.00	0.85	1.00	0.99		1.00	0.87		1.00	0.85	
Fl _t Protected		0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3433	3539	1583	1770	3505		1770	1626		1770	1586	
Fl _t Permitted		0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3433	3539	1583	1770	3505		1770	1626		1770	1586	
Peak-hour factor, PHF	0.92	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	
Adj. Flow (vph)	1	223	1112	30	7	971	67	43	4	22	49	4	
RTOR Reduction (vph)	0	0	0	12	0	3	0	0	20	0	0	341	
Lane Group Flow (vph)	0	224	1112	18	7	1035	0	43	6	0	49	42	
Turn Type	Prot	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	
Protected Phases	5	5	2		1	6		3	3		4	4	
Permitted Phases				2									
Actuated Green, G (s)		11.7	55.5	55.5	0.8	44.6		7.6	7.6		9.1	9.1	
Effective Green, g (s)		11.7	55.5	55.5	0.8	44.6		7.6	7.6		9.1	9.1	
Actuated g/C Ratio		0.13	0.61	0.61	0.01	0.49		0.08	0.08		0.10	0.10	
Clearance Time (s)		4.2	4.6	4.6	4.2	4.6		4.6	4.6		4.6	4.6	
Vehicle Extension (s)		2.0	5.0	5.0	2.0	5.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		441	2158	965	15	1717		147	135		177	158	
v/s Ratio Prot		c0.07	0.31		0.00	c0.30		c0.02	0.00		c0.03	0.03	
v/s Ratio Perm				0.01									
v/c Ratio		0.51	0.52	0.02	0.47	0.60		0.29	0.04		0.28	0.27	
Uniform Delay, d ₁		37.0	10.1	7.0	44.9	16.8		39.2	38.4		37.9	37.9	
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d ₂		0.3	0.4	0.0	8.1	0.9		0.4	0.0		0.3	0.3	
Delay (s)		37.3	10.5	7.0	53.0	17.7		39.6	38.4		38.2	38.2	
Level of Service		D	B	A	D	B		D	D		D	D	
Approach Delay (s)			14.8			17.9			39.1			38.2	
Approach LOS			B			B			D			D	
Intersection Summary													
HCM 2000 Control Delay			20.0									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.51										
Actuated Cycle Length (s)			91.0									Sum of lost time (s)	18.0
Intersection Capacity Utilization			72.9%									ICU Level of Service	C
Analysis Period (min)			15										
c Critical Lane Group													



Movement	SBR
Lane Configurations	
Volume (vph)	345
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frts	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.91
Adj. Flow (vph)	379
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
31: Aviara Pkwy & Poinsettia Ln

Opening Year No Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	384	286	195	22	288	63	255	204	19	44	152	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.0	5.5	5.5	6.0		5.5	6.0		5.5	6.0	
Lane Util. Factor	0.97	1.00	0.88	1.00	0.95		0.97	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.99		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1863	2787	1770	3444		3433	3494		1770	3293	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	1863	2787	1770	3444		3433	3494		1770	3293	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	427	318	217	24	320	70	283	227	21	49	169	146
RTOR Reduction (vph)	0	0	95	0	13	0	0	3	0	0	96	0
Lane Group Flow (vph)	427	318	122	24	377	0	283	245	0	49	219	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	20.6	39.9	54.0	2.7	22.0		14.1	18.9		11.2	16.0	
Effective Green, g (s)	20.6	39.9	54.0	2.7	22.0		14.1	18.9		11.2	16.0	
Actuated g/C Ratio	0.22	0.42	0.56	0.03	0.23		0.15	0.20		0.12	0.17	
Clearance Time (s)	5.5	6.0	5.5	5.5	6.0		5.5	6.0		5.5	6.0	
Vehicle Extension (s)	2.5	3.5	3.0	2.5	3.5		3.0	4.0		2.5	4.0	
Lane Grp Cap (vph)	738	776	1572	49	791		505	690		207	550	
v/s Ratio Prot	c0.12	0.17	0.01	0.01	c0.11		c0.08	0.07		0.03	c0.07	
v/s Ratio Perm			0.03									
v/c Ratio	0.58	0.41	0.08	0.49	0.48		0.56	0.35		0.24	0.40	
Uniform Delay, d1	33.7	19.6	9.5	45.8	31.9		37.9	33.1		38.4	35.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	0.4	0.0	5.5	0.5		1.4	0.4		0.4	0.6	
Delay (s)	34.6	20.0	9.5	51.3	32.4		39.3	33.6		38.8	36.2	
Level of Service	C	C	A	D	C		D	C		D	D	
Approach Delay (s)		24.1			33.5			36.6			36.6	
Approach LOS		C			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			30.8				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.50									
Actuated Cycle Length (s)			95.7				Sum of lost time (s)		23.0			
Intersection Capacity Utilization			55.8%				ICU Level of Service		B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

32: El Camino Real & Aviara Pkwy

Opening Year No Specific Plan
AM Peak Hour

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Volume (vph)	1	93	139	300	5	570	287	97	227	1399	196	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	5.7	4.6		4.2	5.7		4.6	6.4		
Lane Util. Factor		0.97	0.95	1.00		0.97	0.95		0.97	0.91		
Flt		1.00	1.00	0.85		1.00	0.96		1.00	0.98		
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	1.00		
Satd. Flow (prot)		3433	3539	1583		3433	3405		3433	4992		
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.95	1.00		
Satd. Flow (perm)		3433	3539	1583		3433	3405		3433	4992		
Peak-hour factor, PHF	0.92	0.91	0.91	0.91	0.92	0.91	0.91	0.91	0.91	0.91	0.91	0.92
Adj. Flow (vph)	1	102	153	330	5	626	315	107	249	1537	215	2
RTOR Reduction (vph)	0	0	0	76	0	0	28	0	0	10	0	0
Lane Group Flow (vph)	0	103	153	254	0	631	394	0	249	1742	0	0
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		Prot	NA		Prot
Protected Phases	7	7	4	5	3	3	8		5	2		1
Permitted Phases				4								
Actuated Green, G (s)		8.6	20.5	24.1		31.2	43.1		3.6	60.8		
Effective Green, g (s)		8.6	20.5	24.1		31.2	43.1		3.6	60.8		
Actuated g/C Ratio		0.06	0.15	0.17		0.22	0.31		0.03	0.43		
Clearance Time (s)		4.2	5.7	4.6		4.2	5.7		4.6	6.4		
Vehicle Extension (s)		2.0	2.0	2.0		3.0	2.0		2.0	3.0		
Lane Grp Cap (vph)		210	518	272		765	1048		88	2167		
v/s Ratio Prot		0.03	0.04	c0.02		c0.18	0.12		c0.07	c0.35		
v/s Ratio Perm				0.14								
v/c Ratio		0.49	0.30	0.93		0.82	0.38		2.83	0.80		
Uniform Delay, d1		63.6	53.3	57.2		51.8	37.9		68.2	34.4		
Progression Factor		1.00	1.00	1.00		1.00	1.00		1.00	1.00		
Incremental Delay, d2		0.7	0.1	36.5		7.2	0.1		853.8	3.3		
Delay (s)		64.2	53.4	93.7		59.0	38.0		922.0	37.7		
Level of Service		E	D	F		E	D		F	D		
Approach Delay (s)			78.0			50.6				147.7		
Approach LOS			E			D				F		
Intersection Summary												
HCM 2000 Control Delay			86.3			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			0.87									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				20.9		
Intersection Capacity Utilization			72.1%			ICU Level of Service				C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 32: El Camino Real & Aviara Pkwy

Opening Year No Specific Plan
 AM Peak Hour























Movement	SBL	SBT	SBR
Lane Configurations			
Volume (vph)	73	1034	88
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.2	6.4	
Lane Util. Factor	0.97	0.91	
Frt	1.00	0.99	
Flt Protected	0.95	1.00	
Satd. Flow (prot)	3433	5025	
Flt Permitted	0.95	1.00	
Satd. Flow (perm)	3433	5025	
Peak-hour factor, PHF	0.91	0.91	0.91
Adj. Flow (vph)	80	1136	97
RTOR Reduction (vph)	0	5	0
Lane Group Flow (vph)	82	1228	0
Turn Type	Prot	NA	
Protected Phases	1	6	
Permitted Phases			
Actuated Green, G (s)	7.0	63.8	
Effective Green, g (s)	7.0	63.8	
Actuated g/C Ratio	0.05	0.46	
Clearance Time (s)	4.2	6.4	
Vehicle Extension (s)	2.0	3.0	
Lane Grp Cap (vph)	171	2289	
v/s Ratio Prot	0.02	c0.24	
v/s Ratio Perm			
v/c Ratio	0.48	0.54	
Uniform Delay, d1	64.7	27.4	
Progression Factor	0.85	0.81	
Incremental Delay, d2	0.7	0.8	
Delay (s)	55.7	23.0	
Level of Service	E	C	
Approach Delay (s)		25.0	
Approach LOS		C	
Intersection Summary			

HCM Signalized Intersection Capacity Analysis

33: El Camino Real & Poinsettia Ln






















Opening Year No Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	10	6	4	300	3	176	17	6	1418	182	1	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.7		4.2	5.0			4.2	6.0	6.0		4.2
Lane Util. Factor	0.97	0.95		0.97	0.95			0.97	0.91	1.00		0.97
Fr _t	1.00	0.94		1.00	0.85			1.00	1.00	0.85		1.00
Fl _t Protected	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95
Satd. Flow (prot)	3433	3327		3433	3017			3433	5085	1583		3433
Fl _t Permitted	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95
Satd. Flow (perm)	3433	3327		3433	3017			3433	5085	1583		3433
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	11	6	4	319	3	187	18	6	1509	194	1	111
RTOR Reduction (vph)	0	4	0	0	147	0	0	0	0	70	0	0
Lane Group Flow (vph)	11	6	0	319	43	0	0	24	1509	124	0	112
Turn Type	Prot	NA		Prot	NA		Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		1	1	6		5	5
Permitted Phases										6		
Actuated Green, G (s)	2.2	17.0		16.9	31.4			3.6	78.8	78.8		8.2
Effective Green, g (s)	2.2	17.0		16.9	31.4			3.6	78.8	78.8		8.2
Actuated g/C Ratio	0.02	0.12		0.12	0.22			0.03	0.56	0.56		0.06
Clearance Time (s)	4.2	4.7		4.2	5.0			4.2	6.0	6.0		4.2
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0	3.0	3.0		2.0
Lane Grp Cap (vph)	53	403		414	676			88	2862	891		201
v/s Ratio Prot	0.00	0.00		c0.09	c0.01			0.01	c0.30			c0.03
v/s Ratio Perm										0.08		
v/c Ratio	0.21	0.02		0.77	0.06			0.27	0.53	0.14		0.56
Uniform Delay, d ₁	68.0	54.1		59.7	42.7			66.9	19.0	14.5		64.1
Progression Factor	1.00	1.00		1.00	1.00			1.13	0.78	1.18		1.00
Incremental Delay, d ₂	0.7	0.0		7.9	0.0			0.4	0.5	0.2		1.9
Delay (s)	68.7	54.1		67.5	42.7			76.1	15.4	17.3		66.0
Level of Service	E	D		E	D			E	B	B		E
Approach Delay (s)		61.8			58.3				16.4			
Approach LOS		E			E				B			
Intersection Summary												
HCM 2000 Control Delay			24.0	HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.50									
Actuated Cycle Length (s)			140.0	Sum of lost time (s)				19.4				
Intersection Capacity Utilization			58.6%	ICU Level of Service				B				
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
Label Configurations	↑↑↑	
Volume (vph)	1036	14
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	
Lane Util. Factor	0.91	
Fr _t	1.00	
Fl _t Protected	1.00	
Satd. Flow (prot)	5075	
Fl _t Permitted	1.00	
Satd. Flow (perm)	5075	
Peak-hour factor, PHF	0.94	0.92
Adj. Flow (vph)	1102	15
RTOR Reduction (vph)	1	0
Lane Group Flow (vph)	1116	0
Turn Type	NA	
Protected Phases	2	
Permitted Phases		
Actuated Green, G (s)	83.4	
Effective Green, g (s)	83.4	
Actuated g/C Ratio	0.60	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	3023	
v/s Ratio Prot	0.22	
v/s Ratio Perm		
v/c Ratio	0.37	
Uniform Delay, d ₁	14.7	
Progression Factor	1.00	
Incremental Delay, d ₂	0.3	
Delay (s)	15.0	
Level of Service	B	
Approach Delay (s)	19.7	
Approach LOS	B	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
 1: Carlsbad Blvd & Tamarack Ave

Opening Year No Specific Plan
 PM Peak Hour













													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	19	22	31	103	14	82	6	38	817	242	92	425	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.0	5.0	5.0	5.0			4.5	6.0		4.5	6.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	0.95		1.00	0.95	
Fr _t		1.00	0.85	1.00	0.87			1.00	0.97		1.00	1.00	
Fl _t Protected		0.98	1.00	0.95	1.00			0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1820	1583	1770	1625			1770	3418		1770	3539	
Fl _t Permitted		0.98	1.00	0.95	1.00			0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1820	1583	1770	1625			1770	3418		1770	3539	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Adj. Flow (vph)	21	24	34	114	16	91	7	42	908	269	102	472	
RTOR Reduction (vph)	0	0	32	0	78	0	0	0	12	0	0	0	
Lane Group Flow (vph)	0	45	2	114	29	0	0	49	1165	0	102	472	
Turn Type	Split	NA	Perm	Split	NA		Prot	Prot	NA		Prot	NA	
Protected Phases	4	4		3	3		5	5	2		1	6	
Permitted Phases			4										
Actuated Green, G (s)		6.9	6.9	14.2	14.2			6.2	47.5		10.4	51.7	
Effective Green, g (s)		6.9	6.9	14.2	14.2			6.2	47.5		10.4	51.7	
Actuated g/C Ratio		0.07	0.07	0.14	0.14			0.06	0.48		0.10	0.52	
Clearance Time (s)		5.0	5.0	5.0	5.0			4.5	6.0		4.5	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0			2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)		126	109	252	231			110	1631		185	1838	
v/s Ratio Prot		c0.02		c0.06	0.02			0.03	c0.34		c0.06	c0.13	
v/s Ratio Perm			0.00										
v/c Ratio		0.36	0.02	0.45	0.13			0.45	0.71		0.55	0.26	
Uniform Delay, d ₁		44.2	43.2	39.1	37.2			45.0	20.6		42.3	13.2	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d ₂		1.7	0.1	1.3	0.2			1.0	1.5		2.0	0.1	
Delay (s)		45.9	43.2	40.4	37.5			46.0	22.1		44.3	13.3	
Level of Service		D	D	D	D			D	C		D	B	
Approach Delay (s)		44.8			39.0			23.1				18.6	
Approach LOS		D			D			C				B	
Intersection Summary													
HCM 2000 Control Delay			24.3									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.60										
Actuated Cycle Length (s)			99.5									Sum of lost time (s)	20.5
Intersection Capacity Utilization			60.7%									ICU Level of Service	B
Analysis Period (min)			15										
c Critical Lane Group													

Movement	SBR
Lane Configurations	7
Volume (vph)	19
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.90
Adj. Flow (vph)	21
RTOR Reduction (vph)	10
Lane Group Flow (vph)	11
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	51.7
Effective Green, g (s)	51.7
Actuated g/C Ratio	0.52
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	822
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.01
Uniform Delay, d1	11.6
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	11.6
Level of Service	B
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis

2: I-5 SB Ramps & Tamarack Ave




















Opening Year No Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖	↑↑						↖	↗
Volume (vph)	0	439	241	450	218	0	0	0	0	218	3	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.2	4.6						4.6	4.6
Lane Util. Factor		0.95	1.00	1.00	0.95						1.00	1.00
Fr _t		1.00	0.85	1.00	1.00						1.00	0.85
Fl _t Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		3539	1583	1770	3539						1775	1583
Fl _t Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		3539	1583	1770	3539						1775	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	472	259	484	234	0	0	0	0	234	3	232
RTOR Reduction (vph)	0	0	100	0	0	0	0	0	0	0	0	185
Lane Group Flow (vph)	0	472	159	484	234	0	0	0	0	0	237	47
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		24.7	24.7	31.6	60.5						17.9	17.9
Effective Green, g (s)		24.7	24.7	31.6	60.5						17.9	17.9
Actuated g/C Ratio		0.28	0.28	0.36	0.69						0.20	0.20
Clearance Time (s)		4.6	4.6	4.2	4.6						4.6	4.6
Vehicle Extension (s)		5.0	5.0	2.0	7.0						2.0	2.0
Lane Grp Cap (vph)		997	446	638	2444						362	323
v/s Ratio Prot		c0.13		c0.27	0.07							
v/s Ratio Perm			0.10								0.13	0.03
v/c Ratio		0.47	0.36	0.76	0.10						0.65	0.15
Uniform Delay, d ₁		26.1	25.1	24.6	4.5						32.0	28.6
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d ₂		0.7	1.0	4.6	0.1						3.2	0.1
Delay (s)		26.8	26.1	29.2	4.5						35.2	28.7
Level of Service		C	C	C	A						D	C
Approach Delay (s)		26.6			21.2			0.0			32.0	
Approach LOS		C			C			A			C	
Intersection Summary												
HCM 2000 Control Delay			25.9			HCM 2000 Level of Service					C	
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			87.6			Sum of lost time (s)				13.4		
Intersection Capacity Utilization			63.3%			ICU Level of Service				B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: I-5 NB Ramps & Tamarack Ave























Opening Year No Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Volume (vph)	173	484	0	0	414	180	254	0	419	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.1			5.1			4.6	4.6			
Lane Util. Factor	1.00	0.95			0.95			1.00	1.00			
Flt	1.00	1.00			0.95			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (prot)	1770	3539			3378			1770	1583			
Flt Permitted	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (perm)	1770	3539			3378			1770	1583			
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	190	532	0	0	455	198	279	0	460	0	0	0
RTOR Reduction (vph)	0	0	0	0	45	0	0	0	289	0	0	0
Lane Group Flow (vph)	190	532	0	0	608	0	0	279	171	0	0	0
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	12.3	34.8			17.9			15.8	15.8			
Effective Green, g (s)	12.3	34.8			17.9			15.8	15.8			
Actuated g/C Ratio	0.20	0.58			0.30			0.26	0.26			
Clearance Time (s)	4.6	5.1			5.1			4.6	4.6			
Vehicle Extension (s)	2.0	3.0			2.0			2.0	2.0			
Lane Grp Cap (vph)	361	2042			1002			463	414			
v/s Ratio Prot	c0.11	0.15			c0.18							
v/s Ratio Perm								0.16	0.11			
v/c Ratio	0.53	0.26			0.61			0.60	0.41			
Uniform Delay, d1	21.4	6.3			18.2			19.5	18.4			
Progression Factor	1.00	1.00			1.00			1.00	1.00			
Incremental Delay, d2	0.6	0.1			0.7			1.5	0.2			
Delay (s)	22.0	6.4			18.9			21.0	18.7			
Level of Service	C	A			B			C	B			
Approach Delay (s)		10.5			18.9			19.6			0.0	
Approach LOS		B			B			B			A	
Intersection Summary												
HCM 2000 Control Delay			16.3				HCM 2000 Level of Service		B			
HCM 2000 Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			60.3				Sum of lost time (s)		14.3			
Intersection Capacity Utilization			63.3%				ICU Level of Service		B			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: El Camino Real & Tamarck Ave

Opening Year No Specific Plan
PM Peak Hour













												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Volume (vph)	35	151	128	186	112	24	213	1545	310	1	37	668
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.0	5.0	4.2	5.0		4.2	6.0			4.2	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.91			1.00	0.91
Fr _t	1.00	1.00	0.85	1.00	0.97		1.00	0.97			1.00	1.00
Fl _t Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3444		1770	4958			1770	5085
Fl _t Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3444		1770	4958			1770	5085
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	37	161	136	198	119	26	227	1644	330	1	39	711
RTOR Reduction (vph)	0	0	116	0	16	0	0	16	0	0	0	0
Lane Group Flow (vph)	37	161	20	198	129	0	227	1958	0	0	40	711
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	Prot	NA
Protected Phases	7	4		3	8		5	2		1	1	6
Permitted Phases			4									
Actuated Green, G (s)	5.5	20.2	20.2	18.0	32.7		25.2	78.8			3.6	57.2
Effective Green, g (s)	5.5	20.2	20.2	18.0	32.7		25.2	78.8			3.6	57.2
Actuated g/C Ratio	0.04	0.14	0.14	0.13	0.23		0.18	0.56			0.03	0.41
Clearance Time (s)	4.2	5.0	5.0	4.2	5.0		4.2	6.0			4.2	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	3.0			2.0	3.0
Lane Grp Cap (vph)	69	268	228	227	804		318	2790			45	2077
v/s Ratio Prot	0.02	c0.09		c0.11	0.04		0.13	c0.39			c0.02	0.14
v/s Ratio Perm			0.01									
v/c Ratio	0.54	0.60	0.09	0.87	0.16		0.71	0.70			0.89	0.34
Uniform Delay, d ₁	66.0	56.1	51.9	59.9	42.7		54.0	22.1			68.0	28.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d ₂	4.0	2.6	0.1	27.9	0.0		6.2	1.5			89.8	0.5
Delay (s)	70.0	58.7	52.0	87.8	42.8		60.2	23.6			157.8	28.9
Level of Service	E	E	D	F	D		E	C			F	C
Approach Delay (s)		57.2			68.7			27.4				34.9
Approach LOS		E			E			C				C
Intersection Summary												
HCM 2000 Control Delay			35.6			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				19.4		
Intersection Capacity Utilization			74.5%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												



Movement	SBR
Lane Configurations	7
Volume (vph)	61
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Flt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.94
Adj. Flow (vph)	65
RTOR Reduction (vph)	38
Lane Group Flow (vph)	27
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	57.2
Effective Green, g (s)	57.2
Actuated g/C Ratio	0.41
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	646
v/s Ratio Prot	
v/s Ratio Perm	0.02
v/c Ratio	0.04
Uniform Delay, d1	24.9
Progression Factor	1.00
Incremental Delay, d2	0.1
Delay (s)	25.0
Level of Service	C
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
5: Carlsbad Blvd & Cannon Rd






























Opening Year No Specific Plan
PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	119	321	838	112	153	528
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.5	5.5	5.5	4.5	5.5
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
Fl _t Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Fl _t Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	125	338	882	118	161	556
RTOR Reduction (vph)	0	81	0	10	0	0
Lane Group Flow (vph)	125	257	882	108	161	556
Turn Type	NA	pm+ov	NA	Perm	Prot	NA
Protected Phases	4	5	6		5	2
Permitted Phases		4		6		
Actuated Green, G (s)	15.0	30.0	56.9	56.9	15.0	76.4
Effective Green, g (s)	15.0	30.0	56.9	56.9	15.0	76.4
Actuated g/C Ratio	0.15	0.29	0.56	0.56	0.15	0.75
Clearance Time (s)	5.0	4.5	5.5	5.5	4.5	5.5
Vehicle Extension (s)	3.0	2.0	4.0	4.0	2.0	4.0
Lane Grp Cap (vph)	260	466	1040	883	260	1396
v/s Ratio Prot	0.07	c0.08	c0.47		c0.09	0.30
v/s Ratio Perm		0.08		0.07		
v/c Ratio	0.48	0.55	0.85	0.12	0.62	0.40
Uniform Delay, d ₁	39.9	30.3	18.9	10.7	40.8	4.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d ₂	1.4	0.8	6.8	0.1	3.1	0.3
Delay (s)	41.3	31.1	25.7	10.8	43.8	4.8
Level of Service	D	C	C	B	D	A
Approach Delay (s)	33.8		23.9			13.6
Approach LOS	C		C			B
Intersection Summary						
HCM 2000 Control Delay			22.6		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.76			
Actuated Cycle Length (s)			101.9		Sum of lost time (s)	15.0
Intersection Capacity Utilization			72.3%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

6: Avenida Encinas & Cannon Rd













Opening Year No Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 		 	 		 		 	 		 
Volume (vph)	32	278	15	135	408	128	149	20	361	78	11	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.5		4.5	5.5		4.5	5.0	4.5	4.5	5.0	5.0
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	1.00	1.00	0.97	1.00	1.00
Fr _t	1.00	0.99		1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Fl _t Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3513		3433	3412		1770	1863	1583	3433	1863	1583
Fl _t Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3513		3433	3412		1770	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	302	16	147	443	139	162	22	392	85	12	35
RTOR Reduction (vph)	0	2	0	0	15	0	0	0	110	0	0	20
Lane Group Flow (vph)	35	316	0	147	567	0	162	22	282	85	12	15
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8 9	1	7	4 9	
Permitted Phases									8 9			4 9
Actuated Green, G (s)	6.3	34.0		12.2	39.9		18.5	74.7	86.9	6.8	63.0	63.0
Effective Green, g (s)	6.3	34.0		12.2	39.9		18.5	74.7	81.9	6.8	63.0	63.0
Actuated g/C Ratio	0.04	0.23		0.08	0.27		0.13	0.51	0.56	0.05	0.43	0.43
Clearance Time (s)	4.5	5.5		4.5	5.5		4.5		4.5	4.5		
Vehicle Extension (s)	2.5	3.0		2.5	3.0		2.5		2.5	2.5		
Lane Grp Cap (vph)	76	816		286	931		223	951	886	159	802	682
v/s Ratio Prot	0.02	0.09		c0.04	c0.17		c0.09	0.01	c0.03	0.02	0.01	
v/s Ratio Perm									0.15			0.01
v/c Ratio	0.46	0.39		0.51	0.61		0.73	0.02	0.32	0.53	0.01	0.02
Uniform Delay, d ₁	68.3	47.3		64.2	46.3		61.4	17.7	17.2	68.2	23.8	23.9
Progression Factor	1.64	0.61		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d ₂	3.2	0.3		1.2	1.1		10.5	0.0	0.2	2.7	0.0	0.0
Delay (s)	115.3	29.3		65.3	47.5		71.9	17.7	17.4	70.8	23.8	23.9
Level of Service	F	C		E	D		E	B	B	E	C	C
Approach Delay (s)		37.8			51.1			32.7			54.1	
Approach LOS		D			D			C			D	
Intersection Summary												
HCM 2000 Control Delay			42.8	HCM 2000 Level of Service				D				
HCM 2000 Volume to Capacity ratio			0.50									
Actuated Cycle Length (s)			146.2	Sum of lost time (s)				23.5				
Intersection Capacity Utilization			47.8%	ICU Level of Service				A				
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: I-5 SB Ramps & Cannon Rd
























Opening Year No Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑↑	↑↑					↑	↑	↑
Volume (vph)	0	630	87	453	497	0	0	0	0	398	7	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Fr _t		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Fl _t Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1681	1688	1583
Fl _t Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1681	1688	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	677	94	487	534	0	0	0	0	428	8	187
RTOR Reduction (vph)	0	0	65	0	0	0	0	0	0	0	0	143
Lane Group Flow (vph)	0	677	29	487	534	0	0	0	0	218	218	44
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		18.7	18.7	14.6	37.5					14.5	14.5	14.5
Effective Green, g (s)		18.7	18.7	14.6	37.5					14.5	14.5	14.5
Actuated g/C Ratio		0.31	0.31	0.24	0.61					0.24	0.24	0.24
Clearance Time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6
Vehicle Extension (s)		2.0	2.0	2.0	2.0					2.0	2.0	2.0
Lane Grp Cap (vph)		1081	483	818	2168					398	399	375
v/s Ratio Prot		c0.19		c0.14	0.15					c0.13	0.13	
v/s Ratio Perm			0.02									0.03
v/c Ratio		0.63	0.06	0.60	0.25					0.55	0.55	0.12
Uniform Delay, d ₁		18.2	15.0	20.7	5.4					20.5	20.5	18.3
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d ₂		0.8	0.0	0.8	0.0					0.8	0.8	0.1
Delay (s)		19.1	15.0	21.5	5.4					21.3	21.3	18.4
Level of Service		B	B	C	A					C	C	B
Approach Delay (s)		18.6			13.1			0.0			20.4	
Approach LOS		B			B			A			C	
Intersection Summary												
HCM 2000 Control Delay			16.7			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			61.2			Sum of lost time (s)				13.4		
Intersection Capacity Utilization			70.1%			ICU Level of Service				C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

8: I-5 NB Ramps & Cannon Rd

Opening Year No Specific Plan
PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	 	 			 			 	 				
Volume (vph)	352	676	0	0	821	1005	129	5	454	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.2	4.6			4.6	4.6		4.6	4.6				
Lane Util. Factor	0.97	0.95			0.91	0.91		1.00	0.88				
Fr _t	1.00	1.00			0.95	0.85		1.00	0.85				
Fl _t Protected	0.95	1.00			1.00	1.00		0.95	1.00				
Satd. Flow (prot)	3433	3539			3212	1441		1777	2787				
Fl _t Permitted	0.95	1.00			1.00	1.00		0.95	1.00				
Satd. Flow (perm)	3433	3539			3212	1441		1777	2787				
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)	371	712	0	0	864	1058	136	5	478	0	0	0	
RTOR Reduction (vph)	0	0	0	0	37	250	0	0	190	0	0	0	
Lane Group Flow (vph)	371	712	0	0	1293	342	0	141	288	0	0	0	
Turn Type	Prot	NA			NA	Perm	Split	NA	custom				
Protected Phases	5	2			6	1	8	8	8				
Permitted Phases						6	1		1				
Actuated Green, G (s)	16.9	56.0			59.0	59.0		14.7	34.2				
Effective Green, g (s)	16.9	56.0			59.0	59.0		14.7	34.2				
Actuated g/C Ratio	0.16	0.54			0.57	0.57		0.14	0.33				
Clearance Time (s)	4.2	4.6						4.6	4.6				
Vehicle Extension (s)	2.0	2.0						2.0	2.0				
Lane Grp Cap (vph)	560	1912			1829	820		252	920				
v/s Ratio Prot	c0.11	0.20			c0.40			c0.08	0.04				
v/s Ratio Perm						0.24			0.06				
v/c Ratio	0.66	0.37			0.71	0.42		0.56	0.31				
Uniform Delay, d ₁	40.7	13.7			16.1	12.6		41.4	25.9				
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00				
Incremental Delay, d ₂	2.3	0.0			1.0	0.1		1.5	0.1				
Delay (s)	43.0	13.7			17.1	12.7		43.0	26.0				
Level of Service	D	B			B	B		D	C				
Approach Delay (s)		23.7			15.8			29.9			0.0		
Approach LOS		C			B			C			A		
Intersection Summary													
HCM 2000 Control Delay			20.6		HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.71										
Actuated Cycle Length (s)			103.6		Sum of lost time (s)				17.6				
Intersection Capacity Utilization			70.1%		ICU Level of Service				C				
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis
















9: Paseo Del Norte & Cannon Rd

Opening Year No Specific Plan
PM Peak Hour

	→	↘	↙	←	↖	↗	↘
Movement	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations	↑↑		↘	↑↑↑		↘	↘
Volume (vph)	866	264	101	1329	2	497	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		5.0	5.0
Lane Util. Factor	0.95		1.00	0.91		0.97	1.00
Flt	0.96		1.00	1.00		1.00	0.85
Flt Protected	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	3415		1770	5085		3433	1583
Flt Permitted	1.00		0.95	1.00		0.95	1.00
Satd. Flow (perm)	3415		1770	5085		3433	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	893	272	104	1370	2	512	161
RTOR Reduction (vph)	35	0	0	0	0	0	57
Lane Group Flow (vph)	1130	0	104	1370	0	514	104
Turn Type	NA		Prot	NA		NA	pm+ov
Protected Phases	2		1	6		8	1
Permitted Phases							8
Actuated Green, G (s)	35.1		9.1	49.2		18.4	27.5
Effective Green, g (s)	35.1		9.1	49.2		18.4	27.5
Actuated g/C Ratio	0.45		0.12	0.63		0.24	0.35
Clearance Time (s)	5.0		5.0	5.0		5.0	5.0
Vehicle Extension (s)	4.5		2.0	4.5		3.5	2.0
Lane Grp Cap (vph)	1544		207	3223		814	662
v/s Ratio Prot	c0.33		0.06	c0.27			0.02
v/s Ratio Perm						0.15	0.05
v/c Ratio	0.73		0.50	0.43		0.63	0.16
Uniform Delay, d1	17.4		32.1	7.1		26.6	17.1
Progression Factor	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	2.1		0.7	0.2		1.7	0.0
Delay (s)	19.5		32.8	7.3		28.2	17.2
Level of Service	B		C	A		C	B
Approach Delay (s)	19.5			9.1		25.6	
Approach LOS	B			A		C	
Intersection Summary							
HCM 2000 Control Delay			16.1		HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio			0.67				
Actuated Cycle Length (s)			77.6		Sum of lost time (s)		15.0
Intersection Capacity Utilization			64.7%		ICU Level of Service		C
Analysis Period (min)			15				
c Critical Lane Group							

HCM Signalized Intersection Capacity Analysis
 10: Car Country Dr & Cannon Rd

Opening Year No Specific Plan
 PM Peak Hour

							
Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations		 			 		
Volume (vph)	0	899	123	121	1205	225	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5		5.5	6.5	6.0	6.0
Lane Util. Factor		0.95		1.00	0.95	1.00	1.00
Fr _t		0.98		1.00	1.00	1.00	0.85
Fl _t Protected		1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)		3475		1770	3539	1770	1583
Fl _t Permitted		1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)		3475		1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	977	134	132	1310	245	136
RTOR Reduction (vph)	0	5	0	0	0	0	111
Lane Group Flow (vph)	0	1106	0	132	1310	245	25
Turn Type	Prot	NA		Prot	NA	NA	Perm
Protected Phases	5	2		1	6	8	
Permitted Phases							8
Actuated Green, G (s)		88.4		16.5	110.4	27.1	27.1
Effective Green, g (s)		88.4		16.5	110.4	27.1	27.1
Actuated g/C Ratio		0.59		0.11	0.74	0.18	0.18
Clearance Time (s)		6.5		5.5	6.5	6.0	6.0
Vehicle Extension (s)		3.0		3.0	3.0	4.0	4.0
Lane Grp Cap (vph)		2047		194	2604	319	285
v/s Ratio Prot		c0.32		c0.07	0.37	c0.14	
v/s Ratio Perm							0.02
v/c Ratio		0.54		0.68	0.50	0.77	0.09
Uniform Delay, d ₁		18.6		64.2	8.3	58.5	51.1
Progression Factor		1.00		1.00	1.00	1.00	1.00
Incremental Delay, d ₂		1.0		9.4	0.7	11.2	0.2
Delay (s)		19.6		73.6	9.0	69.7	51.3
Level of Service		B		E	A	E	D
Approach Delay (s)		19.6			14.9	63.1	
Approach LOS		B			B	E	
Intersection Summary							
HCM 2000 Control Delay			22.9		HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio			0.60				
Actuated Cycle Length (s)			150.0		Sum of lost time (s)		18.0
Intersection Capacity Utilization			65.8%		ICU Level of Service		C
Analysis Period (min)			15				
c Critical Lane Group							

HCM Signalized Intersection Capacity Analysis
11: Legoland Dr

Opening Year No Specific Plan
PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↘↘	↑↑	↘↘	↗
Volume (vph)	885	100	53	950	376	261
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.0	5.0	6.0	5.0	5.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Fr _t	1.00	0.85	1.00	1.00	1.00	0.85
Fl _t Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	3433	3539	3433	1583
Fl _t Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	3433	3539	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	962	109	58	1033	409	284
RTOR Reduction (vph)	0	35	0	0	0	207
Lane Group Flow (vph)	962	74	58	1033	409	77
Turn Type	NA	pm+ov	Prot	NA	NA	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	26.2	43.7	4.6	35.8	17.5	17.5
Effective Green, g (s)	26.2	43.7	4.6	35.8	17.5	17.5
Actuated g/C Ratio	0.41	0.68	0.07	0.56	0.27	0.27
Clearance Time (s)	6.0	5.0	5.0	6.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1442	1075	245	1970	934	430
v/s Ratio Prot	c0.27	0.02	0.02	c0.29	c0.12	
v/s Ratio Perm		0.03				0.05
v/c Ratio	0.67	0.07	0.24	0.52	0.44	0.18
Uniform Delay, d ₁	15.5	3.5	28.2	8.9	19.3	17.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d ₂	1.2	0.0	0.2	0.3	0.3	0.2
Delay (s)	16.7	3.5	28.4	9.2	19.7	18.1
Level of Service	B	A	C	A	B	B
Approach Delay (s)	15.3			10.2	19.0	
Approach LOS	B			B	B	
Intersection Summary						
HCM 2000 Control Delay			14.3		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.60			
Actuated Cycle Length (s)			64.3		Sum of lost time (s)	16.0
Intersection Capacity Utilization			49.8%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						




















HCM Signalized Intersection Capacity Analysis
 12: Marriot Hotel Dwy & Cannon Rd

Opening Year No Specific Plan
 PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↓
Volume (vph)	1097	49	41	956	47	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.5	5.0	6.0	5.5	5.5
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1131	51	42	986	48	49
RTOR Reduction (vph)	0	12	0	0	0	44
Lane Group Flow (vph)	1131	39	42	986	48	5
Turn Type	NA	pm+ov	Prot	NA	NA	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	60.5	68.8	4.7	70.2	8.3	8.3
Effective Green, g (s)	60.5	68.8	4.7	70.2	8.3	8.3
Actuated g/C Ratio	0.67	0.76	0.05	0.78	0.09	0.09
Clearance Time (s)	6.0	5.5	5.0	6.0	5.5	5.5
Vehicle Extension (s)	3.0	2.0	2.0	3.0	2.0	2.0
Lane Grp Cap (vph)	2378	1210	92	2760	163	145
v/s Ratio Prot	c0.32	0.00	0.02	c0.28	c0.03	
v/s Ratio Perm		0.02				0.00
v/c Ratio	0.48	0.03	0.46	0.36	0.29	0.03
Uniform Delay, d1	7.1	2.6	41.4	3.0	38.1	37.2
Progression Factor	1.00	1.00	0.91	0.89	1.00	1.00
Incremental Delay, d2	0.7	0.0	1.1	0.3	0.4	0.0
Delay (s)	7.8	2.6	38.8	3.0	38.5	37.2
Level of Service	A	A	D	A	D	D
Approach Delay (s)	7.6			4.5	37.8	
Approach LOS	A			A	D	
Intersection Summary						
HCM 2000 Control Delay			7.5		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.46			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	16.5
Intersection Capacity Utilization			47.8%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis
 13: Faraday Ave & Cannon Rd

Opening Year No Specific Plan
 PM Peak Hour




















													
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	7	2	986	150	14	407	0	581	0	58	3	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.0	6.0		6.0	6.0		5.0	5.0			5.0	
Lane Util. Factor		1.00	0.95		1.00	0.95		0.95	0.95			1.00	
Fr _t		1.00	0.98		1.00	1.00		1.00	0.97			0.95	
Fl _t Protected		0.95	1.00		0.95	1.00		0.95	0.96			0.97	
Satd. Flow (prot)		1770	3469		1770	3539		1681	1653			1711	
Fl _t Permitted		0.95	1.00		0.95	1.00		0.95	0.96			0.97	
Satd. Flow (perm)		1770	3469		1770	3539		1681	1653			1711	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Adj. Flow (vph)	8	2	1060	161	15	438	0	625	0	62	3	0	
RTOR Reduction (vph)	0	0	9	0	0	0	0	0	186	0	0	5	
Lane Group Flow (vph)	0	10	1212	0	15	438	0	350	151	0	0	0	
Turn Type	Prot	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	5	2		1	6		8	8		7	7	
Permitted Phases													
Actuated Green, G (s)		1.2	44.9		1.3	45.0		20.8	20.8			1.0	
Effective Green, g (s)		1.2	44.9		1.3	45.0		20.8	20.8			1.0	
Actuated g/C Ratio		0.01	0.50		0.01	0.50		0.23	0.23			0.01	
Clearance Time (s)		6.0	6.0		6.0	6.0		5.0	5.0			5.0	
Vehicle Extension (s)		2.0	3.5		2.0	3.5		2.0	2.0			2.0	
Lane Grp Cap (vph)		23	1730		25	1769		388	382			19	
v/s Ratio Prot		0.01	c0.35		c0.01	0.12		c0.21	0.09			c0.00	
v/s Ratio Perm													
v/c Ratio		0.43	0.70		0.60	0.25		0.90	0.40			0.00	
Uniform Delay, d ₁		44.1	17.4		44.1	12.8		33.6	29.3			44.0	
Progression Factor		0.78	1.36		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d ₂		4.4	2.2		23.2	0.3		23.0	0.2			0.0	
Delay (s)		38.5	25.9		67.2	13.2		56.6	29.5			44.0	
Level of Service		D	C		E	B		E	C			D	
Approach Delay (s)			26.0			15.0			43.3			44.0	
Approach LOS			C			B			D			D	
Intersection Summary													
HCM 2000 Control Delay			28.9									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.75										
Actuated Cycle Length (s)			90.0									Sum of lost time (s)	22.0
Intersection Capacity Utilization			65.7%									ICU Level of Service	C
Analysis Period (min)			15										
c Critical Lane Group													



Movement	SBR
Lane Configurations	
Volume (vph)	2
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frts	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.93
Adj. Flow (vph)	2
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
 14: El Camino Real & Cannon Rd

Opening Year No Specific Plan
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Volume (vph)	372	619	121	1	80	184	120	3	63	1582	192	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	6.0			4.2	6.0			4.2	6.0	6.0	
Lane Util. Factor	0.97	0.95			0.97	0.95			1.00	0.95	1.00	
Flt	1.00	0.98			1.00	0.94			1.00	1.00	0.85	
Flt Protected	0.95	1.00			0.95	1.00			0.95	1.00	1.00	
Satd. Flow (prot)	3433	3452			3433	3329			1770	3539	1583	
Flt Permitted	0.95	1.00			0.95	1.00			0.95	1.00	1.00	
Satd. Flow (perm)	3433	3452			3433	3329			1770	3539	1583	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	396	659	129	1	85	196	128	3	67	1683	204	4
RTOR Reduction (vph)	0	12	0	0	0	83	0	0	0	0	76	0
Lane Group Flow (vph)	396	776	0	0	86	241	0	0	70	1683	128	0
Turn Type	Prot	NA		Prot	Prot	NA		Prot	Prot	NA	Perm	Prot
Protected Phases	7	4		3	3	8		5	5	2		1
Permitted Phases												2
Actuated Green, G (s)	18.3	32.0			9.6	23.3			9.6	61.8	61.8	
Effective Green, g (s)	18.3	32.0			9.6	23.3			9.6	61.8	61.8	
Actuated g/C Ratio	0.13	0.23			0.07	0.17			0.07	0.44	0.44	
Clearance Time (s)	4.2	6.0			4.2	6.0			4.2	6.0	6.0	
Vehicle Extension (s)	2.0	2.0			2.0	2.0			2.0	3.0	3.0	
Lane Grp Cap (vph)	448	789			235	554			121	1562	698	
v/s Ratio Prot	0.12	c0.22			0.03	c0.07			0.04	c0.48		
v/s Ratio Perm												0.08
v/c Ratio	0.88	0.98			0.37	0.44			0.58	1.08	0.18	
Uniform Delay, d1	59.8	53.7			62.3	52.4			63.2	39.1	23.8	
Progression Factor	1.00	1.00			1.00	1.00			1.00	1.00	1.00	
Incremental Delay, d2	17.9	27.8			0.4	0.2			4.1	46.8	0.6	
Delay (s)	77.7	81.6			62.6	52.6			67.4	85.9	24.3	
Level of Service	E	F			E	D			E	F	C	
Approach Delay (s)		80.3				54.7				78.8		
Approach LOS		F				D				E		
Intersection Summary												
HCM 2000 Control Delay			65.2			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			0.97									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			20.4			
Intersection Capacity Utilization			93.5%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												



Movement	SBL	SBT	SBR
Lane Configurations	↵	↑↑↑	↱
Volume (vph)	149	699	174
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.2	6.0	4.2
Lane Util. Factor	1.00	0.91	1.00
Flt	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583
Flt Permitted	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583
Peak-hour factor, PHF	0.94	0.94	0.94
Adj. Flow (vph)	159	744	185
RTOR Reduction (vph)	0	0	70
Lane Group Flow (vph)	163	744	115
Turn Type	Prot	NA	pm+ov
Protected Phases	1	6	7
Permitted Phases			6
Actuated Green, G (s)	16.2	68.4	86.7
Effective Green, g (s)	16.2	68.4	86.7
Actuated g/C Ratio	0.12	0.49	0.62
Clearance Time (s)	4.2	6.0	4.2
Vehicle Extension (s)	2.0	3.0	2.0
Lane Grp Cap (vph)	204	2484	980
v/s Ratio Prot	c0.09	0.15	0.02
v/s Ratio Perm			0.06
v/c Ratio	0.80	0.30	0.12
Uniform Delay, d1	60.3	21.4	10.9
Progression Factor	1.00	1.00	1.00
Incremental Delay, d2	18.1	0.3	0.0
Delay (s)	78.4	21.8	11.0
Level of Service	E	C	B
Approach Delay (s)		28.4	
Approach LOS		C	
Intersection Summary			





















HCM Signalized Intersection Capacity Analysis
 15: Paseo Del Norte & Car Country Dr

Opening Year No Specific Plan
 PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	9	17	132	10	131	15	267	103	5	255	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5		5.5	5.5		5.0	6.0		5.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Fr _t	1.00	0.90		1.00	0.86		1.00	0.96		1.00	0.98	
Fl _t Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1683		1770	1604		1770	3391		1770	3467	
Fl _t Permitted	0.66	1.00		0.74	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1230	1683		1377	1604		1770	3391		1770	3467	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	33	10	18	142	11	141	16	287	111	5	274	43
RTOR Reduction (vph)	0	14	0	0	107	0	0	40	0	0	12	0
Lane Group Flow (vph)	33	14	0	142	46	0	16	358	0	5	305	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	11.5	11.5		11.5	11.5		0.7	18.4		0.6	18.3	
Effective Green, g (s)	11.5	11.5		11.5	11.5		0.7	18.4		0.6	18.3	
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.01	0.39		0.01	0.39	
Clearance Time (s)	5.5	5.5		5.5	5.5		5.0	6.0		5.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	300	411		336	392		26	1327		22	1349	
v/s Ratio Prot		0.01			0.03		c0.01	c0.11		0.00	0.09	
v/s Ratio Perm	0.03			c0.10								
v/c Ratio	0.11	0.04		0.42	0.12		0.62	0.27		0.23	0.23	
Uniform Delay, d ₁	13.8	13.5		15.0	13.8		23.0	9.7		23.0	9.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d ₂	0.2	0.0		0.9	0.1		26.7	0.2		1.9	0.1	
Delay (s)	13.9	13.6		15.8	13.9		49.7	9.9		24.9	9.7	
Level of Service	B	B		B	B		D	A		C	A	
Approach Delay (s)		13.8			14.8			11.4			10.0	
Approach LOS		B			B			B			A	
Intersection Summary												
HCM 2000 Control Delay			12.0				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.34									
Actuated Cycle Length (s)			47.0				Sum of lost time (s)			16.5		
Intersection Capacity Utilization			38.6%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												






















HCM Signalized Intersection Capacity Analysis
 16: Paseo Del Norte & Outlet Dwy

Opening Year No Specific Plan
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	9	44	102	7	82	69	283	59	60	312	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Fr _t	1.00	0.87			0.94		1.00	0.97		1.00	0.99	
Fl _t Protected	0.95	1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1629			1709		1770	3447		1770	3490	
Fl _t Permitted	0.66	1.00			0.80		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1229	1629			1404		1770	3447		1770	3490	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	23	10	51	117	8	94	79	325	68	69	359	37
RTOR Reduction (vph)	0	37	0	0	23	0	0	19	0	0	9	0
Lane Group Flow (vph)	23	24	0	0	196	0	79	374	0	69	387	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	12.9	12.9			12.9		4.1	15.8		3.9	15.6	
Effective Green, g (s)	12.9	12.9			12.9		4.1	15.8		3.9	15.6	
Actuated g/C Ratio	0.27	0.27			0.27		0.09	0.33		0.08	0.33	
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.5	2.5			2.5		2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	333	441			380		152	1144		145	1143	
v/s Ratio Prot		0.01					c0.04	0.11		0.04	c0.11	
v/s Ratio Perm	0.02				c0.14							
v/c Ratio	0.07	0.05			0.51		0.52	0.33		0.48	0.34	
Uniform Delay, d ₁	12.9	12.8			14.7		20.8	11.9		20.9	12.1	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d ₂	0.1	0.0			0.9		1.2	0.3		0.9	0.3	
Delay (s)	13.0	12.9			15.6		22.1	12.2		21.8	12.4	
Level of Service	B	B			B		C	B		C	B	
Approach Delay (s)		12.9			15.6			13.9			13.8	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			14.1				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.43									
Actuated Cycle Length (s)			47.6				Sum of lost time (s)			15.0		
Intersection Capacity Utilization			43.7%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												





















HCM Signalized Intersection Capacity Analysis
17: Faraday Ave & College Blvd

Opening Year No Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	371	87	13	208	65	44	317	187	188	248	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.0		4.5	6.0		4.5	5.0		4.5	5.0	
Lane Util. Factor	0.97	0.95		0.97	0.95		1.00	0.95		1.00	0.95	
Fr _t	1.00	0.97		1.00	0.96		1.00	0.94		1.00	0.95	
Fl _t Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	3438		3433	3412		1770	3342		1770	3356	
Fl _t Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	3438		3433	3412		1770	3342		1770	3356	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	123	422	99	15	236	74	50	360	212	214	282	149
RTOR Reduction (vph)	0	11	0	0	17	0	0	54	0	0	35	0
Lane Group Flow (vph)	123	510	0	15	293	0	50	518	0	214	396	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	6.2	21.0		1.2	16.0		4.8	17.7		13.4	26.3	
Effective Green, g (s)	6.2	21.0		1.2	16.0		4.8	17.7		13.4	26.3	
Actuated g/C Ratio	0.08	0.29		0.02	0.22		0.07	0.24		0.18	0.36	
Clearance Time (s)	4.5	6.0		4.5	6.0		4.5	5.0		4.5	5.0	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	290	984		56	744		115	807		323	1204	
v/s Ratio Prot	c0.04	c0.15		0.00	0.09		0.03	c0.16		c0.12	0.12	
v/s Ratio Perm												
v/c Ratio	0.42	0.52		0.27	0.39		0.43	0.64		0.66	0.33	
Uniform Delay, d ₁	31.9	21.9		35.6	24.5		32.9	25.0		27.8	17.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d ₂	0.4	0.2		0.9	0.1		1.0	1.3		3.9	0.1	
Delay (s)	32.2	22.1		36.6	24.6		33.9	26.3		31.8	17.1	
Level of Service	C	C		D	C		C	C		C	B	
Approach Delay (s)		24.0			25.2			26.9			22.0	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			24.4				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			73.3				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			58.2%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 18: El Camino Real & College Blvd



























Opening Year No Specific Plan
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	496	274	26	310	75	82	3	39	1671	638	1	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5		5.0	6.5			5.0	6.0	6.0		5.0
Lane Util. Factor	0.97	0.95		0.97	0.95			1.00	0.91	1.00		1.00
Fr _t	1.00	0.99		1.00	0.92			1.00	1.00	0.85		1.00
Fl _t Protected	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95
Satd. Flow (prot)	3433	3494		3433	3262			1770	5085	1583		1770
Fl _t Permitted	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95
Satd. Flow (perm)	3433	3494		3433	3262			1770	5085	1583		1770
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	557	308	29	348	84	92	3	44	1878	717	1	136
RTOR Reduction (vph)	0	6	0	0	78	0	0	0	0	250	0	0
Lane Group Flow (vph)	557	331	0	348	98	0	0	47	1878	467	0	137
Turn Type	Prot	NA		Prot	NA		Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases										2		
Actuated Green, G (s)	21.0	26.1		16.4	21.5			6.6	65.0	65.0		10.0
Effective Green, g (s)	21.0	26.1		16.4	21.5			6.6	65.0	65.0		10.0
Actuated g/C Ratio	0.15	0.19		0.12	0.15			0.05	0.46	0.46		0.07
Clearance Time (s)	5.0	6.5		5.0	6.5			5.0	6.0	6.0		5.0
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0	4.0	4.0		2.0
Lane Grp Cap (vph)	514	651		402	500			83	2360	734		126
v/s Ratio Prot	c0.16	c0.09		0.10	0.03			0.03	c0.37			c0.08
v/s Ratio Perm										0.29		
v/c Ratio	1.08	0.51		0.87	0.20			0.57	0.80	0.64		1.09
Uniform Delay, d ₁	59.5	51.2		60.7	51.7			65.3	31.9	28.5		65.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00		1.00
Incremental Delay, d ₂	64.2	0.2		16.9	0.1			5.2	2.9	4.2		105.5
Delay (s)	123.7	51.4		77.6	51.8			70.5	34.7	32.7		170.5
Level of Service	F	D		E	D			E	C	C		F
Approach Delay (s)		96.5			68.9				34.8			
Approach LOS		F			E				C			
Intersection Summary												
HCM 2000 Control Delay			49.4			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.81									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			22.5			
Intersection Capacity Utilization			76.7%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
Lane Configurations	↑↑↑	↑
Volume (vph)	893	125
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	6.0
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.89	0.89
Adj. Flow (vph)	1003	140
RTOR Reduction (vph)	0	72
Lane Group Flow (vph)	1003	68
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Actuated Green, G (s)	68.4	68.4
Effective Green, g (s)	68.4	68.4
Actuated g/C Ratio	0.49	0.49
Clearance Time (s)	6.0	6.0
Vehicle Extension (s)	4.0	4.0
Lane Grp Cap (vph)	2484	773
v/s Ratio Prot	c0.20	
v/s Ratio Perm		0.04
v/c Ratio	0.40	0.09
Uniform Delay, d1	22.8	19.1
Progression Factor	1.00	1.00
Incremental Delay, d2	0.5	0.2
Delay (s)	23.3	19.4
Level of Service	C	B
Approach Delay (s)	38.6	
Approach LOS	D	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
 19: El Camino Real & Faraday Ave
























Opening Year No Specific Plan
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations		 			 			 	 			 
Volume (vph)	276	497	860	196	137	341	42	136	1294	95	11	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9	5.0	5.0	5.0		4.2	6.0			4.2
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00		0.97	0.91			0.97
Flt	1.00	0.93	0.85	1.00	1.00	0.85		1.00	0.99			1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (prot)	1770	3154	1441	1770	3539	1583		3433	5033			3433
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (perm)	1770	3154	1441	1770	3539	1583		3433	5033			3433
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	297	534	925	211	147	367	45	146	1391	102	12	249
RTOR Reduction (vph)	0	65	230	0	0	303	0	0	4	0	0	0
Lane Group Flow (vph)	297	932	232	211	147	64	0	191	1489	0	0	261
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases	3	3		4	4		1	1	6		5	5
Permitted Phases			3			4						
Actuated Green, G (s)	60.5	60.5	60.5	31.5	31.5	31.5		14.5	50.4			18.2
Effective Green, g (s)	60.5	60.5	60.5	31.5	31.5	31.5		14.5	50.4			18.2
Actuated g/C Ratio	0.33	0.33	0.33	0.17	0.17	0.17		0.08	0.28			0.10
Clearance Time (s)	4.9	4.9	4.9	5.0	5.0	5.0		4.2	6.0			4.2
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0	3.0		2.0	2.0			2.0
Lane Grp Cap (vph)	592	1055	482	308	616	275		275	1403			345
v/s Ratio Prot	0.17	c0.30		c0.12	0.04			0.06	c0.30			c0.08
v/s Ratio Perm			0.16			0.04						
v/c Ratio	0.50	0.88	0.48	0.69	0.24	0.23		0.69	1.06			0.76
Uniform Delay, d1	48.0	56.8	47.7	69.9	64.3	64.2		80.9	65.1			79.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2	0.2	8.7	0.3	6.2	0.2	0.4		6.0	42.2			8.1
Delay (s)	48.3	65.4	47.9	76.1	64.5	64.6		87.0	107.4			87.2
Level of Service	D	E	D	E	E	E		F	F			F
Approach Delay (s)		57.9			67.9				105.1			
Approach LOS		E			E				F			
Intersection Summary												
HCM 2000 Control Delay			74.9			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			180.7			Sum of lost time (s)			20.1			
Intersection Capacity Utilization			87.2%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
Label Configurations	↑↑↑	↑
Volume (vph)	801	24
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	6.0
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.93	0.93
Adj. Flow (vph)	861	26
RTOR Reduction (vph)	0	18
Lane Group Flow (vph)	861	8
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Actuated Green, G (s)	54.1	54.1
Effective Green, g (s)	54.1	54.1
Actuated g/C Ratio	0.30	0.30
Clearance Time (s)	6.0	6.0
Vehicle Extension (s)	2.0	2.0
Lane Grp Cap (vph)	1522	473
v/s Ratio Prot	c0.17	
v/s Ratio Perm		0.00
v/c Ratio	0.57	0.02
Uniform Delay, d1	53.4	44.6
Progression Factor	1.00	1.00
Incremental Delay, d2	0.3	0.0
Delay (s)	53.7	44.6
Level of Service	D	D
Approach Delay (s)	61.1	
Approach LOS	E	
Intersection Summary		













HCM Signalized Intersection Capacity Analysis
20: Avenida Encinas & Palomar Airport Rd

Opening Year No Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	278	42	297	509	312	87	117	405	254	104	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.0		4.2	5.0	5.0	4.6	4.6	4.6	4.6	4.6	4.6
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Fr _t	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fl _t Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00
Satd. Flow (prot)	1770	1826		1770	1863	1583	1770	1863	1583	1681	1733	1583
Fl _t Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00
Satd. Flow (perm)	1770	1826		1770	1863	1583	1770	1863	1583	1681	1733	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	62	296	45	316	541	332	93	124	431	270	111	76
RTOR Reduction (vph)	0	4	0	0	0	114	0	0	372	0	0	63
Lane Group Flow (vph)	62	337	0	316	541	218	93	124	59	189	192	13
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases						6			8			7
Actuated Green, G (s)	7.2	26.5		26.3	45.6	45.6	14.0	14.0	14.0	17.4	17.4	17.4
Effective Green, g (s)	7.2	26.5		26.3	45.6	45.6	14.0	14.0	14.0	17.4	17.4	17.4
Actuated g/C Ratio	0.07	0.26		0.26	0.44	0.44	0.14	0.14	0.14	0.17	0.17	0.17
Clearance Time (s)	4.2	5.0		4.2	5.0	5.0	4.6	4.6	4.6	4.6	4.6	4.6
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	124	471		453	828	703	241	254	216	285	293	268
v/s Ratio Prot	0.04	c0.18		c0.18	0.29		0.05	c0.07		c0.11	0.11	
v/s Ratio Perm						0.14			0.04			0.01
v/c Ratio	0.50	0.72		0.70	0.65	0.31	0.39	0.49	0.27	0.66	0.66	0.05
Uniform Delay, d ₁	46.0	34.6		34.5	22.3	18.4	40.4	41.0	39.7	39.9	39.8	35.7
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, d ₂	1.2	5.1		3.8	1.9	0.3	0.4	0.5	0.2	4.4	4.0	0.0
Delay (s)	47.1	39.8		38.3	24.2	18.6	40.8	41.5	40.0	44.3	43.8	35.7
Level of Service	D	D		D	C	B	D	D	D	D	D	D
Approach Delay (s)		40.9			26.4			40.4			42.7	
Approach LOS		D			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			34.7				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			102.6				Sum of lost time (s)			18.4		
Intersection Capacity Utilization			63.9%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

























HCM Signalized Intersection Capacity Analysis
 21: I-5 SB Ramps & Palomar Airport Rd

Opening Year No Specific Plan
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑	↗				↖↖		↗
Volume (vph)	0	707	230	0	795	1014	0	0	0	588	0	323
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0	4.0				4.6		4.6
Lane Util. Factor		0.91			0.95	1.00				0.97		1.00
Flt		0.96			1.00	0.85				1.00		0.85
Flt Protected		1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)		4898			3539	1583				3433		1583
Flt Permitted		1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)		4898			3539	1583				3433		1583
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	0	714	232	0	803	1024	0	0	0	594	0	326
RTOR Reduction (vph)	0	55	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	891	0	0	803	1024	0	0	0	594	0	326
Turn Type		NA			NA	Free				Prot		custom
Protected Phases		2 3			6					4		4 3
Permitted Phases						Free						2
Actuated Green, G (s)		28.1			18.0	52.3				14.6		42.3
Effective Green, g (s)		28.1			18.0	52.3				14.6		42.3
Actuated g/C Ratio		0.54			0.34	1.00				0.28		0.81
Clearance Time (s)					5.0					4.6		
Vehicle Extension (s)					2.0					2.0		
Lane Grp Cap (vph)		2631			1218	1583				958		1280
v/s Ratio Prot		0.18			0.23					0.17		0.12
v/s Ratio Perm						c0.65						0.09
v/c Ratio		0.34			0.66	0.65				0.62		0.25
Uniform Delay, d1		6.8			14.5	0.0				16.4		1.2
Progression Factor		1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2		0.0			1.0	2.1				0.9		0.0
Delay (s)		6.9			15.5	2.1				17.3		1.2
Level of Service		A			B	A				B		A
Approach Delay (s)		6.9			8.0			0.0			11.6	
Approach LOS		A			A			A			B	
Intersection Summary												
HCM 2000 Control Delay			8.6				HCM 2000 Level of Service			A		
HCM 2000 Volume to Capacity ratio			0.90									
Actuated Cycle Length (s)			52.3				Sum of lost time (s)			14.6		
Intersection Capacity Utilization			50.0%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												






















HCM Signalized Intersection Capacity Analysis
 22: I-5 NB Ramps & Palomar Airport Rd

Opening Year No Specific Plan
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  	 			 			
Volume (vph)	255	1040	0	0	1700	948	109	0	593	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.6			4.6	4.6		4.6	4.6			
Lane Util. Factor	1.00	0.91			*0.61	0.88		1.00	0.88			
Fr _t	1.00	1.00			1.00	0.85		1.00	0.85			
Fl _t Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	5085			3409	2787		1770	2787			
Fl _t Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	5085			3409	2787		1770	2787			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	263	1072	0	0	1753	977	112	0	611	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	240	0	0	172	0	0	0
Lane Group Flow (vph)	263	1072	0	0	1753	737	0	112	439	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	5	2			6 7			8	7			
Permitted Phases						6 7	8		8			
Actuated Green, G (s)	20.9	75.5			60.0	60.0		12.2	17.2			
Effective Green, g (s)	20.9	75.5			60.0	60.0		12.2	17.2			
Actuated g/C Ratio	0.20	0.71			0.56	0.56		0.11	0.16			
Clearance Time (s)	4.2	4.6						4.6	4.6			
Vehicle Extension (s)	3.0	3.0						3.0	3.0			
Lane Grp Cap (vph)	347	3604			1920	1570		202	570			
v/s Ratio Prot	c0.15	0.21			c0.51				c0.04			
v/s Ratio Perm						0.26		0.06	0.12			
v/c Ratio	0.76	0.30			0.91	0.47		0.55	0.77			
Uniform Delay, d ₁	40.4	5.7			20.9	13.8		44.6	42.8			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d ₂	9.1	0.0			7.1	0.2		3.3	6.4			
Delay (s)	49.6	5.8			28.0	14.0		47.9	49.1			
Level of Service	D	A			C	B		D	D			
Approach Delay (s)		14.4			23.0			48.9			0.0	
Approach LOS		B			C			D			A	
Intersection Summary												
HCM 2000 Control Delay			24.5				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			106.5				Sum of lost time (s)		18.0			
Intersection Capacity Utilization			64.5%				ICU Level of Service		C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 23: Paseo Del Norte & Palomar Airport Rd

Opening Year No Specific Plan
 PM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (vph)	9	274	1178	172	29	278	2150	231	228	148	172	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	6.0			4.2	6.0	4.2	4.2	5.0		4.2
Lane Util. Factor		0.97	0.91			0.97	0.86	1.00	0.97	0.95		0.97
Fr _t		1.00	0.98			1.00	1.00	0.85	1.00	0.92		1.00
Fl _t Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		3433	4988			3433	6408	1583	3433	3254		3433
Fl _t Permitted		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (perm)		3433	4988			3433	6408	1583	3433	3254		3433
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	9	282	1214	177	30	287	2216	238	235	153	177	253
RTOR Reduction (vph)	0	0	11	0	0	0	0	79	0	159	0	0
Lane Group Flow (vph)	0	291	1380	0	0	317	2216	159	235	171	0	253
Turn Type	Prot	Prot	NA		Prot	Prot	NA	pm+ov	Prot	NA		Prot
Protected Phases	5	5	2		1	1	6	7	3	8		7
Permitted Phases								6				
Actuated Green, G (s)		16.2	74.7			16.8	75.3	89.9	13.9	14.5		14.6
Effective Green, g (s)		16.2	74.7			16.8	75.3	89.9	13.9	14.5		14.6
Actuated g/C Ratio		0.12	0.53			0.12	0.54	0.64	0.10	0.10		0.10
Clearance Time (s)		4.2	6.0			4.2	6.0	4.2	4.2	5.0		4.2
Vehicle Extension (s)		2.0	2.0			2.0	2.0	2.0	2.0	2.0		2.0
Lane Grp Cap (vph)		397	2661			411	3446	1016	340	337		358
v/s Ratio Prot		0.08	0.28			c0.09	c0.35	0.02	0.07	0.05		c0.07
v/s Ratio Perm								0.08				
v/c Ratio		0.73	0.52			0.77	0.64	0.16	0.69	0.51		0.71
Uniform Delay, d ₁		59.8	21.1			59.7	22.9	10.0	61.0	59.4		60.6
Progression Factor		1.00	1.00			1.16	0.66	0.27	1.00	1.00		1.00
Incremental Delay, d ₂		5.9	0.7			5.4	0.6	0.0	4.8	0.4		5.1
Delay (s)		65.7	21.8			75.0	15.8	2.7	65.8	59.8		65.8
Level of Service		E	C			E	B	A	E	E		E
Approach Delay (s)			29.4				21.4			62.3		
Approach LOS			C				C			E		
Intersection Summary												
HCM 2000 Control Delay			32.4			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				19.4		
Intersection Capacity Utilization			73.2%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												






























HCM Signalized Intersection Capacity Analysis
 23: Paseo Del Norte & Palomar Airport Rd

Opening Year No Specific Plan
 PM Peak Hour

Movement	SBT	SBR
↓ ↘	↑ ↗	
Lane Configurations	↑ ↗	
Volume (vph)	103	261
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.0	
Lane Util. Factor	0.95	
Frt	0.89	
Flt Protected	1.00	
Satd. Flow (prot)	3158	
Flt Permitted	1.00	
Satd. Flow (perm)	3158	
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	106	269
RTOR Reduction (vph)	209	0
Lane Group Flow (vph)	166	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	15.2	
Effective Green, g (s)	15.2	
Actuated g/C Ratio	0.11	
Clearance Time (s)	5.0	
Vehicle Extension (s)	2.0	
Lane Grp Cap (vph)	342	
v/s Ratio Prot	c0.05	
v/s Ratio Perm		
v/c Ratio	0.49	
Uniform Delay, d1	58.7	
Progression Factor	1.00	
Incremental Delay, d2	0.4	
Delay (s)	59.1	
Level of Service	E	
Approach Delay (s)	61.8	
Approach LOS	E	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
 24: Armada Dr & Palomar Airport Rd

Opening Year No Specific Plan
 PM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations		 	  				  		 		 	 
Volume (vph)	13	81	1308	135	3	279	2059	102	360	50	267	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	6.0	4.7		4.2	6.0	5.0	4.7	4.7	4.7	5.0
Lane Util. Factor		0.97	0.91	1.00		1.00	0.91	1.00	0.97	0.95	0.95	0.97
Fr _t		1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.90	0.85	1.00
Fl _t Protected		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95
Satd. Flow (prot)		3433	5085	1583		1770	5085	1583	3433	1586	1504	3433
Fl _t Permitted		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95
Satd. Flow (perm)		3433	5085	1583		1770	5085	1583	3433	1586	1504	3433
Peak-hour factor, PHF	0.92	0.95	0.95	0.95	0.92	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	14	85	1377	142	3	294	2167	107	379	53	281	225
RTOR Reduction (vph)	0	0	0	59	0	0	0	35	0	57	143	0
Lane Group Flow (vph)	0	99	1377	83	0	297	2167	72	379	114	20	225
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	NA	Perm	Prot
Protected Phases	5	5	2	3	1	1	6	7	3	8		7
Permitted Phases				2				6				8
Actuated Green, G (s)		8.4	61.9	81.7		27.8	81.3	94.8	19.8	16.9	16.9	13.5
Effective Green, g (s)		8.4	61.9	81.7		27.8	81.3	94.8	19.8	16.9	16.9	13.5
Actuated g/C Ratio		0.06	0.44	0.58		0.20	0.58	0.68	0.14	0.12	0.12	0.10
Clearance Time (s)		4.2	6.0	4.7		4.2	6.0	5.0	4.7	4.7	4.7	5.0
Vehicle Extension (s)		2.0	3.0	2.0		2.0	3.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)		205	2248	923		351	2952	1071	485	191	181	331
v/s Ratio Prot		0.03	0.27	0.01		c0.17	c0.43	0.01	c0.11	0.07		0.07
v/s Ratio Perm				0.04				0.04				0.01
v/c Ratio		0.48	0.61	0.09		0.85	0.73	0.07	0.78	0.60	0.11	0.68
Uniform Delay, d ₁		63.7	29.9	12.8		54.0	21.4	7.6	58.0	58.3	54.8	61.2
Progression Factor		0.90	1.08	0.69		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d ₂		0.6	1.1	0.0		16.3	1.7	0.0	7.4	3.3	0.1	4.3
Delay (s)		57.9	33.5	8.9		70.3	23.1	7.7	65.4	61.6	54.9	65.5
Level of Service		E	C	A		E	C	A	E	E	D	E
Approach Delay (s)			32.8				27.9			62.1		
Approach LOS			C				C			E		
Intersection Summary												
HCM 2000 Control Delay			38.8			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				19.9		
Intersection Capacity Utilization			85.6%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
↓	↙	
Lane Configurations	↑	↗
Volume (vph)	48	256
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.7	4.7
Lane Util. Factor	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	1863	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	1863	1583
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	51	269
RTOR Reduction (vph)	0	172
Lane Group Flow (vph)	51	97
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Actuated Green, G (s)	10.9	10.9
Effective Green, g (s)	10.9	10.9
Actuated g/C Ratio	0.08	0.08
Clearance Time (s)	4.7	4.7
Vehicle Extension (s)	2.0	2.0
Lane Grp Cap (vph)	145	123
v/s Ratio Prot	0.03	
v/s Ratio Perm		c0.06
v/c Ratio	0.35	0.79
Uniform Delay, d1	61.2	63.4
Progression Factor	1.00	1.00
Incremental Delay, d2	0.5	26.9
Delay (s)	61.7	90.3
Level of Service	E	F
Approach Delay (s)	77.4	
Approach LOS	E	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
























25: Hidden Valley Rd/The Crossing Dr & Palomar Airport Rd

Opening Year No Specific Plan
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	1619	122	106	2222	105	101	7	67	75	15	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	4.2	4.2	6.0		4.2	4.7		5.0	5.7	5.7
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00		1.00	1.00	1.00
Fr _t	1.00	1.00	0.85	1.00	0.99		1.00	0.86		1.00	1.00	0.85
Fl _t Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5051		1770	1611		1770	1863	1583
Fl _t Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5051		1770	1611		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	1760	133	115	2415	114	110	8	73	82	16	130
RTOR Reduction (vph)	0	0	31	0	2	0	0	63	0	0	0	114
Lane Group Flow (vph)	55	1760	102	115	2527	0	110	18	0	82	16	16
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2									4
Actuated Green, G (s)	8.1	84.7	97.1	13.9	89.7		12.4	20.2		11.3	18.9	18.9
Effective Green, g (s)	8.1	84.7	97.1	13.9	89.7		12.4	20.2		11.3	18.9	18.9
Actuated g/C Ratio	0.05	0.56	0.65	0.09	0.60		0.08	0.13		0.08	0.13	0.13
Clearance Time (s)	5.0	6.0	4.2	4.2	6.0		4.2	4.7		5.0	5.7	5.7
Vehicle Extension (s)	2.0	3.0	2.0	2.0	3.0		2.0	3.0		2.0	3.0	3.0
Lane Grp Cap (vph)	95	2871	1024	164	3020		146	216		133	234	199
v/s Ratio Prot	0.03	0.35	0.01	c0.06	c0.50		c0.06	c0.01		0.05	0.01	
v/s Ratio Perm			0.06									0.01
v/c Ratio	0.58	0.61	0.10	0.70	0.84		0.75	0.08		0.62	0.07	0.08
Uniform Delay, d ₁	69.3	21.7	10.0	66.0	24.3		67.3	56.8		67.2	57.8	57.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d ₂	5.2	1.0	0.0	10.5	2.9		17.6	0.2		5.9	0.1	0.2
Delay (s)	74.5	22.7	10.0	76.5	27.2		84.9	57.0		73.1	57.9	58.1
Level of Service	E	C	A	E	C		F	E		E	E	E
Approach Delay (s)		23.3			29.3			73.0			63.5	
Approach LOS		C			C			E			E	
Intersection Summary												
HCM 2000 Control Delay			30.2	HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			150.0	Sum of lost time (s)				20.9				
Intersection Capacity Utilization			73.9%	ICU Level of Service				D				
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 26: Aviara Pkwy/College Blvd & Palomar Airport Rd

Opening Year No Specific Plan
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	169	1325	274	2	218	1697	96	185	149	139	35	458
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.3	6.3		4.2	6.3	6.3	4.2	5.8	5.8	4.2	6.0
Lane Util. Factor	0.97	0.91	1.00		0.97	0.91	1.00	0.97	0.95	1.00	1.00	1.00
Flt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	5085	1583		3433	5085	1583	3433	3539	1583	1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	5085	1583		3433	5085	1583	3433	3539	1583	1770	1863
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	190	1489	308	2	245	1907	108	208	167	156	39	515
RTOR Reduction (vph)	0	0	139	0	0	0	57	0	0	116	0	0
Lane Group Flow (vph)	190	1489	169	0	247	1907	51	208	167	40	39	515
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases			2				6			8		
Actuated Green, G (s)	10.7	64.0	64.0		13.4	66.4	66.4	12.6	35.7	35.7	6.4	29.3
Effective Green, g (s)	10.7	64.0	64.0		13.4	66.4	66.4	12.6	35.7	35.7	6.4	29.3
Actuated g/C Ratio	0.08	0.46	0.46		0.10	0.47	0.47	0.09	0.26	0.26	0.05	0.21
Clearance Time (s)	4.5	6.3	6.3		4.2	6.3	6.3	4.2	5.8	5.8	4.2	6.0
Vehicle Extension (s)	2.0	3.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0
Lane Grp Cap (vph)	262	2324	723		328	2411	750	308	902	403	80	389
v/s Ratio Prot	0.06	0.29			0.07	c0.38		c0.06	0.05		0.02	c0.28
v/s Ratio Perm			0.11				0.03			0.03		
v/c Ratio	0.73	0.64	0.23		0.75	0.79	0.07	0.68	0.19	0.10	0.49	1.32
Uniform Delay, d1	63.2	29.2	23.1		61.7	31.0	20.0	61.7	40.8	39.9	65.2	55.4
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	8.2	1.4	0.8		8.4	2.7	0.2	4.6	0.1	0.1	1.7	162.7
Delay (s)	71.4	30.5	23.9		70.1	33.7	20.2	66.3	40.9	40.0	66.9	218.1
Level of Service	E	C	C		E	C	C	E	D	D	E	F
Approach Delay (s)		33.4				37.0			50.6			187.6
Approach LOS		C				D			D			F

Intersection Summary
























HCM 2000 Control Delay	66.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SBR
Lane Configurations	7
Volume (vph)	551
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Fr _t	0.85
Fl _t Protected	1.00
Satd. Flow (prot)	1583
Fl _t Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.89
Adj. Flow (vph)	619
RTOR Reduction (vph)	65
Lane Group Flow (vph)	554
Turn Type	pm+ov
Protected Phases	5
Permitted Phases	4
Actuated Green, G (s)	40.0
Effective Green, g (s)	40.0
Actuated g/C Ratio	0.29
Clearance Time (s)	4.5
Vehicle Extension (s)	2.0
Lane Grp Cap (vph)	452
v/s Ratio Prot	c0.09
v/s Ratio Perm	0.26
v/c Ratio	1.23
Uniform Delay, d ₁	50.0
Progression Factor	1.00
Incremental Delay, d ₂	119.9
Delay (s)	169.9
Level of Service	F
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
27: El Camino Real & Palomar Airport Rd













Opening Year No Specific Plan
PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	
Lane Configurations													
Volume (vph)	277	1507	117	539	988	435	17	183	828	467	2	721	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	5.0	6.0	4.0	5.0	6.0	6.0		5.0	6.0	5.0		5.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	0.88		0.97	0.91	0.88		0.97	
Flt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85		1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95	
Satd. Flow (prot)	3433	5085	1583	3433	5085	2787		3433	5085	2787		3433	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95	
Satd. Flow (perm)	3433	5085	1583	3433	5085	2787		3433	5085	2787		3433	
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)	292	1586	123	567	1040	458	18	193	872	492	2	759	
RTOR Reduction (vph)	0	0	123	0	0	241	0	0	0	92	0	0	
Lane Group Flow (vph)	292	1586	0	567	1040	217	0	211	872	400	0	761	
Turn Type	Prot	NA	NA	Prot	NA	Perm	Prot	Prot	NA	pm+ov	Prot	Prot	
Protected Phases	3	8		7	4		1	1	6	7	5	5	
Permitted Phases						4				6			
Actuated Green, G (s)	17.2	56.0	0.0	20.0	58.8	58.8		13.6	25.0	45.0		27.0	
Effective Green, g (s)	17.2	56.0	0.0	20.0	58.8	58.8		13.6	25.0	45.0		27.0	
Actuated g/C Ratio	0.11	0.37	0.00	0.13	0.39	0.39		0.09	0.17	0.30		0.18	
Clearance Time (s)	5.0	6.0		5.0	6.0	6.0		5.0	6.0	5.0		5.0	
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0		2.0	3.0	2.0		2.0	
Lane Grp Cap (vph)	393	1898	0	457	1993	1092		311	847	836		617	
v/s Ratio Prot	0.09	c0.31		c0.17	c0.20			0.06	c0.17	0.06		c0.22	
v/s Ratio Perm						0.08				0.08			
v/c Ratio	0.74	0.84	0.00	1.24	0.52	0.20		0.68	1.03	0.48		1.23	
Uniform Delay, d1	64.3	42.8	75.0	65.0	34.9	30.1		66.1	62.5	42.9		61.5	
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	6.5	4.5	0.0	125.8	1.0	0.4		4.6	38.7	0.2		118.7	
Delay (s)	70.8	47.3	75.0	190.8	35.8	30.5		70.7	101.2	43.1		180.2	
Level of Service	E	D	E	F	D	C		E	F	D		F	
Approach Delay (s)		52.5			77.2				79.0				
Approach LOS		D			E				E				
Intersection Summary													
HCM 2000 Control Delay			77.8				HCM 2000 Level of Service		E				
HCM 2000 Volume to Capacity ratio			1.02										
Actuated Cycle Length (s)			150.0				Sum of lost time (s)		22.0				
Intersection Capacity Utilization			99.5%				ICU Level of Service		F				
Analysis Period (min)			15										
c Critical Lane Group													

Movement	SBT	SBR
Label Configurations	↑↑↑	↑
Volume (vph)	650	161
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	5.0
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	684	169
RTOR Reduction (vph)	0	37
Lane Group Flow (vph)	684	132
Turn Type	NA	pm+ov
Protected Phases	2	3
Permitted Phases		2
Actuated Green, G (s)	38.4	55.6
Effective Green, g (s)	38.4	55.6
Actuated g/C Ratio	0.26	0.37
Clearance Time (s)	6.0	5.0
Vehicle Extension (s)	3.0	2.0
Lane Grp Cap (vph)	1301	586
v/s Ratio Prot	0.13	0.03
v/s Ratio Perm		0.06
v/c Ratio	0.53	0.23
Uniform Delay, d1	48.0	32.4
Progression Factor	1.00	1.00
Incremental Delay, d2	0.4	0.1
Delay (s)	48.4	32.5
Level of Service	D	C
Approach Delay (s)	108.8	
Approach LOS	F	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
28: I-5 SB Ramps & Poinsettia Ln























Opening Year No Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↗↗	↑↑					↘	↖	↗
Volume (vph)	0	697	213	718	651	0	0	0	0	333	1	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6
Lane Util. Factor		0.95	1.00	0.97	0.95					1.00	0.95	0.95
Fr _t		1.00	0.85	1.00	1.00					1.00	0.85	0.85
Fl _t Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1770	1507	1504
Fl _t Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1770	1507	1504
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	719	220	740	671	0	0	0	0	343	1	193
RTOR Reduction (vph)	0	0	156	0	0	0	0	0	0	0	70	70
Lane Group Flow (vph)	0	719	64	740	671	0	0	0	0	343	28	26
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		26.2	26.2	25.2	55.6					24.7	24.7	24.7
Effective Green, g (s)		26.2	26.2	25.2	55.6					24.7	24.7	24.7
Actuated g/C Ratio		0.29	0.29	0.28	0.62					0.28	0.28	0.28
Clearance Time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6
Vehicle Extension (s)		2.0	2.0	2.0	5.0					2.0	2.0	2.0
Lane Grp Cap (vph)		1035	463	966	2198					488	415	415
v/s Ratio Prot		c0.20		c0.22	0.19						0.02	
v/s Ratio Perm			0.04							c0.19		0.02
v/c Ratio		0.69	0.14	0.77	0.31					0.70	0.07	0.06
Uniform Delay, d ₁		28.1	23.3	29.4	7.9					29.1	23.9	23.9
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d ₂		1.7	0.1	3.3	0.2					3.7	0.0	0.0
Delay (s)		29.7	23.4	32.8	8.1					32.8	23.9	23.9
Level of Service		C	C	C	A					C	C	C
Approach Delay (s)		28.3			21.0			0.0			29.6	
Approach LOS		C			C			A			C	
Intersection Summary												
HCM 2000 Control Delay			25.0			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			89.5			Sum of lost time (s)			13.4			
Intersection Capacity Utilization			69.4%			ICU Level of Service				C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

29: I-5 NB Ramps & Poinsettia Ln























Opening Year No Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			  				 			
Volume (vph)	164	866	0	0	1102	207	267	6	535	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.6			4.6	4.6		4.6	4.6			
Lane Util. Factor	1.00	0.95			0.91	1.00		1.00	0.88			
Fr _t	1.00	1.00			1.00	0.85		1.00	0.85			
Fl _t Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	3539			5085	1583		1776	2787			
Fl _t Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	3539			5085	1583		1776	2787			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	174	921	0	0	1172	220	284	6	569	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	98	0	0	241	0	0	0
Lane Group Flow (vph)	174	921	0	0	1172	122	0	290	328	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases						6	8		8			
Actuated Green, G (s)	12.6	43.1			26.3	26.3		18.7	18.7			
Effective Green, g (s)	12.6	43.1			26.3	26.3		18.7	18.7			
Actuated g/C Ratio	0.18	0.61			0.37	0.37		0.26	0.26			
Clearance Time (s)	4.2	4.6			4.6	4.6		4.6	4.6			
Vehicle Extension (s)	2.0	5.0			2.0	2.0		2.0	2.0			
Lane Grp Cap (vph)	314	2148			1883	586		467	734			
v/s Ratio Prot	c0.10	0.26			c0.23							
v/s Ratio Perm						0.08		0.16	0.12			
v/c Ratio	0.55	0.43			0.62	0.21		0.62	0.45			
Uniform Delay, d ₁	26.6	7.4			18.3	15.2		23.0	21.8			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d ₂	1.2	0.3			0.5	0.1		1.8	0.2			
Delay (s)	27.8	7.7			18.8	15.3		24.9	22.0			
Level of Service	C	A			B	B		C	C			
Approach Delay (s)		10.9			18.2			23.0			0.0	
Approach LOS		B			B			C			A	
Intersection Summary												
HCM 2000 Control Delay			17.0				HCM 2000 Level of Service		B			
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			71.0				Sum of lost time (s)		13.4			
Intersection Capacity Utilization			69.4%				ICU Level of Service		C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis























30: Lower Ln/Paseo Del Norte & Poinsettia Ln

Opening Year No Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	375	976	50	15	969	108	26	4	17	65	4	314
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.6	4.6	4.2	4.6		4.6	4.6		4.6	4.6	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Flt	1.00	1.00	0.85	1.00	0.98		1.00	0.88		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	3539	1583	1770	3486		1770	1634		1770	1587	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	3539	1583	1770	3486		1770	1634		1770	1587	
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)	395	1027	53	16	1020	114	27	4	18	68	4	331
RTOR Reduction (vph)	0	0	19	0	5	0	0	17	0	0	300	0
Lane Group Flow (vph)	395	1027	34	16	1129	0	27	5	0	68	35	0
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2									
Actuated Green, G (s)	17.6	65.0	65.0	2.2	49.6		7.4	7.4		9.5	9.5	
Effective Green, g (s)	17.6	65.0	65.0	2.2	49.6		7.4	7.4		9.5	9.5	
Actuated g/C Ratio	0.17	0.64	0.64	0.02	0.49		0.07	0.07		0.09	0.09	
Clearance Time (s)	4.2	4.6	4.6	4.2	4.6		4.6	4.6		4.6	4.6	
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	591	2253	1007	38	1693		128	118		164	147	
v/s Ratio Prot	c0.12	0.29		0.01	c0.32		c0.02	0.00		c0.04	0.02	
v/s Ratio Perm			0.02									
v/c Ratio	0.67	0.46	0.03	0.42	0.67		0.21	0.04		0.41	0.24	
Uniform Delay, d1	39.5	9.5	6.9	49.3	20.0		44.6	44.1		43.7	42.9	
Progression Factor	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	2.7	1.3		0.3	0.1		0.6	0.3	
Delay (s)	41.7	9.8	6.9	52.0	21.3		44.9	44.1		44.3	43.2	
Level of Service	D	A	A	D	C		D	D		D	D	
Approach Delay (s)		18.3			21.7			44.5			43.4	
Approach LOS		B			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			23.3			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			102.1			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			73.7%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
31: Aviara Pkwy & Poinsettia Ln

Opening Year No Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	162	357	306	24	363	80	267	180	22	83	329	395
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.0	5.5	5.5	6.0		5.5	6.0		5.5	6.0	
Lane Util. Factor	0.97	1.00	0.88	1.00	0.95		0.97	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.98		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1863	2787	1770	3444		3433	3482		1770	3249	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	1863	2787	1770	3444		3433	3482		1770	3249	
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)	171	376	322	25	382	84	281	189	23	87	346	416
RTOR Reduction (vph)	0	0	158	0	13	0	0	5	0	0	113	0
Lane Group Flow (vph)	171	376	164	25	453	0	281	207	0	87	649	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	10.6	31.5	46.3	4.1	25.0		14.8	19.9		23.5	28.6	
Effective Green, g (s)	10.6	31.5	46.3	4.1	25.0		14.8	19.9		23.5	28.6	
Actuated g/C Ratio	0.10	0.31	0.45	0.04	0.25		0.15	0.20		0.23	0.28	
Clearance Time (s)	5.5	6.0	5.5	5.5	6.0		5.5	6.0		5.5	6.0	
Vehicle Extension (s)	2.5	3.5	3.0	2.5	3.5		3.0	4.0		2.5	4.0	
Lane Grp Cap (vph)	356	575	1265	71	844		498	679		407	910	
v/s Ratio Prot	c0.05	c0.20	0.02	0.01	0.13		c0.08	0.06		0.05	c0.20	
v/s Ratio Perm			0.04									
v/c Ratio	0.48	0.65	0.13	0.35	0.54		0.56	0.31		0.21	0.71	
Uniform Delay, d1	43.1	30.5	16.2	47.7	33.5		40.6	35.1		31.8	33.0	
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	2.8	0.0	2.2	0.7		1.5	0.3		0.2	2.9	
Delay (s)	43.8	33.3	16.2	49.8	34.2		42.1	35.5		32.0	35.9	
Level of Service	D	C	B	D	C		D	D		C	D	
Approach Delay (s)		29.0			35.0			39.2			35.5	
Approach LOS		C			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			34.0			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			102.0			Sum of lost time (s)			23.0			
Intersection Capacity Utilization			70.7%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
32: El Camino Real & Aviara Pkwy

Opening Year No Specific Plan
PM Peak Hour

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	
Lane Configurations													
Volume (vph)	142	380	342	2	356	270	76	453	1495	549	12	185	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.2	5.7	4.6		4.2	5.7		4.6	6.4			4.2	
Lane Util. Factor	0.97	0.95	1.00		0.97	0.95		0.97	0.91			0.97	
Flt	1.00	1.00	0.85		1.00	0.97		1.00	0.96			1.00	
Flt Protected	0.95	1.00	1.00		0.95	1.00		0.95	1.00			0.95	
Satd. Flow (prot)	3433	3539	1583		3433	3423		3433	4880			3433	
Flt Permitted	0.95	1.00	1.00		0.95	1.00		0.95	1.00			0.95	
Satd. Flow (perm)	3433	3539	1583		3433	3423		3433	4880			3433	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	
Adj. Flow (vph)	160	427	384	2	400	303	85	509	1680	617	13	208	
RTOR Reduction (vph)	0	0	60	0	0	19	0	0	40	0	0	0	
Lane Group Flow (vph)	160	427	324	0	402	369	0	509	2257	0	0	221	
Turn Type	Prot	NA	pm+ov	Prot	Prot	NA		Prot	NA		Prot	Prot	
Protected Phases	7	4	5	3	3	8		5	2		1	1	
Permitted Phases			4										
Actuated Green, G (s)	10.9	26.4	49.2		20.9	36.4		22.8	60.4			11.8	
Effective Green, g (s)	10.9	26.4	49.2		20.9	36.4		22.8	60.4			11.8	
Actuated g/C Ratio	0.08	0.19	0.35		0.15	0.26		0.16	0.43			0.08	
Clearance Time (s)	4.2	5.7	4.6		4.2	5.7		4.6	6.4			4.2	
Vehicle Extension (s)	2.0	2.0	2.0		3.0	2.0		2.0	3.0			2.0	
Lane Grp Cap (vph)	267	667	556		512	889		559	2105			289	
v/s Ratio Prot	0.05	c0.12	0.09		c0.12	0.11		c0.15	c0.46			0.06	
v/s Ratio Perm			0.11										
v/c Ratio	0.60	0.64	0.58		0.79	0.41		0.91	1.07			0.76	
Uniform Delay, d1	62.4	52.4	37.0		57.4	43.0		57.6	39.8			62.7	
Progression Factor	1.00	1.00	1.00		1.00	1.00		1.00	1.00			1.03	
Incremental Delay, d2	2.4	1.6	1.0		7.8	0.1		18.7	42.3			8.0	
Delay (s)	64.8	54.0	38.0		65.1	43.1		76.3	82.1			72.3	
Level of Service	E	D	D		E	D		E	F			E	
Approach Delay (s)		49.5				54.3			81.0				
Approach LOS		D				D			F				
Intersection Summary													
HCM 2000 Control Delay			73.1									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			0.93										
Actuated Cycle Length (s)			140.0									Sum of lost time (s)	20.9
Intersection Capacity Utilization			84.6%									ICU Level of Service	E
Analysis Period (min)			15										
c Critical Lane Group													

Movement	SBT	SBR
Label Configurations	↑↑↑	
Volume (vph)	1591	102
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.4	
Lane Util. Factor	0.91	
Flt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	5039	
Flt Permitted	1.00	
Satd. Flow (perm)	5039	
Peak-hour factor, PHF	0.89	0.89
Adj. Flow (vph)	1788	115
RTOR Reduction (vph)	5	0
Lane Group Flow (vph)	1898	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	49.0	
Effective Green, g (s)	49.0	
Actuated g/C Ratio	0.35	
Clearance Time (s)	6.4	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	1763	
v/s Ratio Prot	0.38	
v/s Ratio Perm		
v/c Ratio	1.08	
Uniform Delay, d1	45.5	
Progression Factor	0.84	
Incremental Delay, d2	43.3	
Delay (s)	81.5	
Level of Service	F	
Approach Delay (s)	80.5	
Approach LOS	F	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis

33: El Camino Real & Poinsettia Ln

Opening Year No Specific Plan
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	15	9	5	292	13	138	12	5	1159	404	241	1767
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.7		4.2	5.0			4.2	6.0	6.0	4.2	6.0
Lane Util. Factor	0.97	0.95		0.97	0.95			0.97	0.91	1.00	0.97	0.91
Fr _t	1.00	0.94		1.00	0.86			1.00	1.00	0.85	1.00	1.00
Fl _t Protected	0.95	1.00		0.95	1.00			0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3340		3433	3054			3433	5085	1583	3433	5077
Fl _t Permitted	0.95	1.00		0.95	1.00			0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3340		3433	3054			3433	5085	1583	3433	5077
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	17	10	6	340	15	160	14	6	1348	470	280	2055
RTOR Reduction (vph)	0	5	0	0	123	0	0	0	0	175	0	0
Lane Group Flow (vph)	17	11	0	340	52	0	0	20	1348	295	280	2078
Turn Type	Prot	NA		Prot	NA		Prot	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	8		1	1	6		5	2
Permitted Phases										6		
Actuated Green, G (s)	2.4	17.1		18.2	32.6			3.5	68.9	68.9	16.7	82.1
Effective Green, g (s)	2.4	17.1		18.2	32.6			3.5	68.9	68.9	16.7	82.1
Actuated g/C Ratio	0.02	0.12		0.13	0.23			0.02	0.49	0.49	0.12	0.59
Clearance Time (s)	4.2	4.7		4.2	5.0			4.2	6.0	6.0	4.2	6.0
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	58	407		446	711			85	2502	779	409	2977
v/s Ratio Prot	0.00	0.00		c0.10	c0.02			0.01	0.27		c0.08	c0.41
v/s Ratio Perm										0.19		
v/c Ratio	0.29	0.03		0.76	0.07			0.24	0.54	0.38	0.68	0.70
Uniform Delay, d ₁	68.0	54.1		58.8	41.9			66.9	24.6	22.2	59.1	20.3
Progression Factor	1.00	1.00		1.00	1.00			0.73	1.16	2.38	1.00	1.00
Incremental Delay, d ₂	1.0	0.0		6.8	0.0			0.1	0.2	0.4	4.7	1.4
Delay (s)	69.0	54.1		65.6	41.9			49.3	28.7	53.1	63.8	21.7
Level of Service	E	D		E	D			D	C	D	E	C
Approach Delay (s)		61.8			57.6				35.2			26.7
Approach LOS		E			E				D			C
Intersection Summary												
HCM 2000 Control Delay			33.6	HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			140.0	Sum of lost time (s)				19.4				
Intersection Capacity Utilization			65.6%	ICU Level of Service				C				
Analysis Period (min)			15									
c Critical Lane Group												



Movement	SBR
Lane Configurations	
Volume (vph)	20
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Fr	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.86
Adj. Flow (vph)	23
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Cannon Rd Retail									
Roadway Segment Analysis									
Near Term Conditions	Direction	Number of Lanes	Capacity (1,800 vplph)	Peak Hour Volume		V/ C Ratio		LOS	
				AM	PM	AM	PM	AM	PM
Cannon Road (I-5 SB Ramps to El Camino Real)									
I-5 SB Ramps to I-5 NB Ramps	EB	2	3600	1123	1028	0.31	0.29	A	A
	WB	2	3600	667	950	0.19	0.26	A	A
I-5 NB Ramps to Paseo Del Norte	EB	2	3600	1411	1130	0.39	0.31	A	A
	WB	3	5400	762	1826	0.14	0.34	A	A
Paseo Del Norte to Car Country	EB	2	3600	1179	1022	0.33	0.28	A	A
	WB	2	3600	715	1430	0.20	0.40	A	A
Car Country Dr to Armada Dr	EB	2	3600	1026	1024	0.29	0.28	A	A
	WB	2	3600	771	1326	0.21	0.37	A	A
Armada Dr to Grand Pacific Dr	EB	2	3600	645	1146	0.18	0.32	A	A
	WB	2	3600	984	1003	0.27	0.28	A	A
Grand Pacific Dr to Faraday Ave	EB	2	3600	613	1145	0.17	0.32	A	A
	WB	2	3600	1005	997	0.28	0.28	A	A
Faraday Ave to El Camino Real	EB	2	3600	274	1112	0.08	0.31	A	A
	WB	2	3600	902	421	0.25	0.12	A	A
Tamarack Avenue (Carlsbad Boulevard to El Camino Real)									
Carlsbad Blvd to I-5 SB Ramps	EB	1	1800	712	680	0.40	0.38	A	A
	WB	1	1800	526	434	0.29	0.24	A	A
I-5 SB Ramps to I-5 NB Ramps	EB	2	3600	493	657	0.14	0.18	A	A
	WB	2	3600	791	668	0.22	0.19	A	A
I-5 NB Ramps to El Camino Real	EB	2	3600	765	903	0.21	0.25	A	A
	WB	2	3600	1029	594	0.29	0.17	A	A
Palomar Airport Road (Paseo Del Norte to El Camino Real)									
Paseo Del Norte to Armada Dr	EB	3	5400	2486	1624	0.46	0.30	A	A
	WB	3	5400	1176	2688	0.22	0.50	A	A
Armada Dr to The Crossings Dr	EB	3	5400	2307	1792	0.43	0.33	A	A
	WB	3	5400	1250	2443	0.23	0.45	A	A
The Crossings Dr to College Blvd	EB	3	5400	2271	1768	0.42	0.33	A	A
	WB	3	5400	1233	2433	0.23	0.45	A	A
College Blvd to El Camino Real	EB	3	5400	1836	1901	0.34	0.35	A	A
	WB	3	5400	1753	2013	0.32	0.37	A	A
College Boulevard									
Palomar Airport Rd to Faraday Ave	EB/NB	2	3600	1113	566	0.31	0.16	A	A
	WB/SB	1	1800	330	1044	0.18	0.58	A	A
Poinsettia Ln									
Paseo Del Norte to Aviara Pkwy	EB	2	3600	1077	1058	0.30	0.29	A	A
	WB	2	3600	951	1092	0.26	0.30	A	A
Carlsbad Boulevard (North of Tamarack Avenue to South of Cannon Road)									
North of Tamarack Ave	NB	2	3600	254	918	0.07	0.26	A	A
	SB	2	3600	563	536	0.16	0.15	A	A
Tamarack Ave to Cannon Rd	NB	2	3600	279	1159	0.08	0.32	A	A
	SB	1	1800	826	681	0.46	0.38	A	A
South of Cannon Rd	NB	1	1800	289	950	0.16	0.53	A	A
	SB	1	1800	810	647	0.45	0.36	A	A
Paseo del Norte (Cannon Road to Palomar Airport Road)									
Cannon Rd to Car Country Dr	NB	2	3600	228	665	0.06	0.18	A	A
	SB	2	3600	413	367	0.11	0.10	A	A
Outlets North Entrance to Palomar Airport Rd	NB	2	3600	435	653	0.12	0.18	A	A
	SB	2	3600	282	609	0.08	0.17	A	A
Faraday Avenue									
Cannon Rd to College Blvd	NB	1	1800	505	639	0.28	0.36	A	A
	SB	1	1800	427	567	0.24	0.32	A	A
Aviara Parkway									
Palomar Airport Rd to Poinsettia Ln	NB	2	3600	935	473	0.26	0.13	A	A
	SB	2	3600	400	950	0.11	0.26	A	A
El Camino Real (North of Tamarack Ave to South of Aviara Pkwy)									
North of Tamarack Ave	NB	3	5400	559	1605	0.10	0.30	A	A
	SB	3	5400	1321	767	0.24	0.14	A	A
Tamarack Ave to Cannon Rd	NB	2	3600	751	2078	0.21	0.58	A	A
	SB	2	3600	2035	1026	0.57	0.29	A	A
Cannon Rd to College Blvd	NB	3	5400	731	2250	0.14	0.42	A	A
	SB	3	5400	2064	1140	0.38	0.21	A	A
College Blvd to Faraday Ave	NB	3	5400	940	2351	0.17	0.44	A	A
	SB	3	5400	2407	1232	0.45	0.23	A	A
Faraday Ave to Palomar Airport Rd	NB	3	5400	1504	1567	0.28	0.29	A	A
	SB	3	5400	1936	1899	0.36	0.35	A	A
Palomar Airport Rd to Poinsettia Ln	NB	3	5400	1605	1495	0.30	0.28	A	A
	SB	3	5400	1689	2028	0.31	0.38	A	A
Poinsettia Ln to Aviara Pkwy	NB	3	5400	1623	1725	0.30	0.32	A	A
	SB	3	5400	1357	2076	0.25	0.38	A	A
South of Aviara Pkwy	NB	3	5400	1822	2497	0.34	0.46	A	A
	SB	3	5400	1904	2289	0.35	0.42	A	A

Freeway Segment LOS - Near Term Conditions																						
Segment	Number of Lanes		Capacity Per Lane	Peak Hour %	Direction Split	HV%	LOS Thresholds						Near Term Conditions				Near Term Plus Project				Change in V/C	Significant
	Mixed Flow	HOV					A	B	C	D	E	F	ADT	Peak Hour Per Lane	V/C	LOS	ADT	Peak Hour Per	V/C	LOS		
Interstate 5																						
La Costa Ave to Poinsettia Ln	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	205,480	2259	0.96	E	210,781	2317	0.99	E	0.02	Yes
Poinsettia Ln to Palomar Airport Rd	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	202,480	2226	0.95	E	208,262	2290	0.97	E	0.03	Yes
Palomar Airport Rd to Cannon Rd	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	199,340	2192	0.93	E	205,122	2255	0.96	E	0.03	Yes
Cannon Rd to Tamarack Ave	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	199,930	2198	0.94	E	205,231	2256	0.96	E	0.02	Yes
Tamarack Ave to Carlsbad Village Dr	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	196,860	2164	0.92	E	201,197	2212	0.94	E	0.02	Yes





















**Cannon Rd Retail
Ramp Meter Analysis**

Opening Year								
Location	Peak Hour	Demand ¹ (veh/hr)		Meter Rate ² (veh/hr)	Excess Demand ³ (veh/hr)	Total # of Mixed Flow Lanes	Delay ⁴ (min)	Queue ⁵ (ft)
		Mixed Flow & HOV	Mixed Flow only					
I-5 SB - Tamarack Ave On-Ramp	AM	778	661	526	135	1	15.4	3,925
	PM	694	590	N/A	N/A	1	N/A	N/A
I-5 SB - Cannon Rd On-Ramp	AM	401	341	734	0	2	0.0	0
	PM	547	465	734	0	2	0.0	0
I-5 NB - Cannon Rd On-Ramp	AM	289	246	N/A	N/A	2	N/A	N/A
	PM	1,362	1,158	1,416	0	2	0.0	0
I-5 SB - EB Palomar Airport Rd On-Ramp	AM	67	57	343	0	1	0.0	0
	PM	230	196	246	0	1	0.0	0
I-5 SB - WB Palomar Airport Rd On-Ramp	AM	243	207	492	0	1	0.0	0
	PM	1,014	862	895	0	1	0.0	0
I-5 NB - Palomar Airport Rd On-Ramp	AM	615	523	N/A	N/A	2	N/A	N/A
	PM	1,203	1,023	988	35	2	2.1	500
I-5 SB - Poinsettia Ln On-Ramp	AM	578	491	1,094	0	2	0.0	0
	PM	932	792	796	0	2	0.0	0
I-5 NB - Poinsettia Ln On-Ramp	AM	493	419	N/A	N/A	1	N/A	N/A
	PM	377	320	576	0	1	0.0	0

Opening Year + Specific Plan								
Location	Peak Hour	Demand ¹ (veh/hr)		Meter Rate ² (veh/hr)	Excess Demand ³ (veh/hr)	Total # of Mixed Flow Lanes	Delay ⁴ (min)	Queue ⁵ (ft)
		Mixed Flow & HOV	Mixed Flow only					
I-5 SB - Tamarack Ave On-Ramp	AM	804	683	526	157	1	18.0	4,575
	PM	732	622	N/A	N/A	1	N/A	N/A
I-5 SB - Cannon Rd On-Ramp	AM	488	415	734	0	2	0.0	0
	PM	890	757	734	23	2	1.8	325
I-5 NB - Cannon Rd On-Ramp	AM	364	309	N/A	N/A	2	N/A	N/A
	PM	1,643	1,397	1,416	0	2	0.0	0
I-5 SB - EB Palomar Airport Rd On-Ramp	AM	67	57	343	0	1	0.0	0
	PM	230	196	246	0	1	0.0	0
I-5 SB - WB Palomar Airport Rd On-Ramp	AM	243	207	492	0	1	0.0	0
	PM	1,014	862	895	0	1	0.0	0
I-5 NB - Palomar Airport Rd On-Ramp	AM	615	523	N/A	N/A	2	N/A	N/A
	PM	1,203	1,023	988	35	2	2.1	500
I-5 SB - Poinsettia Ln On-Ramp	AM	578	491	1,094	0	2	0.0	0
	PM	932	792	796	0	2	0.0	0
I-5 NB - Poinsettia Ln On-Ramp	AM	506	430	N/A	N/A	1	N/A	N/A
	PM	396	337	576	0	1	0.0	0

HCM Signalized Intersection Capacity Analysis
 1: Carlsbad Blvd & Tamarack Ave

Opening Year + Specific Plan
 AM PEAK HOUR

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	7	7	10	282	10	61	5	16	197	52	29	554	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.0	5.0	5.0	5.0			4.5	6.0		4.5	6.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	0.95		1.00	0.95	
Fr _t		1.00	0.85	1.00	0.87			1.00	0.97		1.00	1.00	
Fl _t Protected		0.98	1.00	0.95	1.00			0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1817	1583	1770	1621			1770	3429		1770	3539	
Fl _t Permitted		0.98	1.00	0.95	1.00			0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1817	1583	1770	1621			1770	3429		1770	3539	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Adj. Flow (vph)	7	7	10	294	10	64	5	17	205	54	30	577	
RTOR Reduction (vph)	0	0	10	0	44	0	0	0	14	0	0	0	
Lane Group Flow (vph)	0	14	0	294	30	0	0	22	245	0	30	577	
Turn Type	Split	NA	Perm	Split	NA		Prot	Prot	NA		Prot	NA	
Protected Phases	4	4		3	3		5	5	2		1	6	
Permitted Phases			4										
Actuated Green, G (s)		2.2	2.2	19.9	19.9			1.9	18.7		3.5	20.3	
Effective Green, g (s)		2.2	2.2	19.9	19.9			1.9	18.7		3.5	20.3	
Actuated g/C Ratio		0.03	0.03	0.31	0.31			0.03	0.29		0.05	0.31	
Clearance Time (s)		5.0	5.0	5.0	5.0			4.5	6.0		4.5	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0			2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)		61	53	543	497			51	989		95	1108	
v/s Ratio Prot		c0.01		c0.17	0.02			0.01	0.07		c0.02	c0.16	
v/s Ratio Perm			0.00										
v/c Ratio		0.23	0.01	0.54	0.06			0.43	0.25		0.32	0.52	
Uniform Delay, d ₁		30.5	30.2	18.7	15.8			30.9	17.7		29.5	18.3	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d ₂		1.9	0.0	1.1	0.1			2.1	0.1		0.7	0.4	
Delay (s)		32.4	30.3	19.8	15.9			33.0	17.8		30.2	18.7	
Level of Service		C	C	B	B			C	B		C	B	
Approach Delay (s)		31.5			19.0				19.0			19.2	
Approach LOS		C			B				B			B	
Intersection Summary													
HCM 2000 Control Delay			19.3									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.52										
Actuated Cycle Length (s)			64.8									Sum of lost time (s)	20.5
Intersection Capacity Utilization			58.0%									ICU Level of Service	B
Analysis Period (min)			15										
c Critical Lane Group													















Movement	SBR
Lane Configurations	7
Volume (vph)	5
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.96
Adj. Flow (vph)	5
RTOR Reduction (vph)	3
Lane Group Flow (vph)	2
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	20.3
Effective Green, g (s)	20.3
Actuated g/C Ratio	0.31
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	495
v/s Ratio Prot	
v/s Ratio Perm	0.00
v/c Ratio	0.00
Uniform Delay, d1	15.3
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	15.3
Level of Service	B
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis




















2: I-5 SB Ramps & Tamarack Ave

Opening Year + Specific Plan
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖	↑↑						↖	↗
Volume (vph)	0	348	377	427	383	0	0	0	0	145	0	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.2	4.6						4.6	4.6
Lane Util. Factor		0.95	1.00	1.00	0.95						1.00	1.00
Fr _t		1.00	0.85	1.00	1.00						1.00	0.85
Fl _t Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		3539	1583	1770	3539						1770	1583
Fl _t Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		3539	1583	1770	3539						1770	1583
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	0	405	438	497	445	0	0	0	0	169	0	173
RTOR Reduction (vph)	0	0	295	0	0	0	0	0	0	0	0	150
Lane Group Flow (vph)	0	405	143	497	445	0	0	0	0	0	169	23
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		29.4	29.4	35.0	68.6						12.2	12.2
Effective Green, g (s)		29.4	29.4	35.0	68.6						12.2	12.2
Actuated g/C Ratio		0.33	0.33	0.39	0.76						0.14	0.14
Clearance Time (s)		4.6	4.6	4.2	4.6						4.6	4.6
Vehicle Extension (s)		5.0	5.0	2.0	7.0						2.0	2.0
Lane Grp Cap (vph)		1156	517	688	2697						239	214
v/s Ratio Prot		c0.11		c0.28	0.13							
v/s Ratio Perm			0.09								0.10	0.01
v/c Ratio		0.35	0.28	0.72	0.16						0.71	0.11
Uniform Delay, d ₁		23.0	22.4	23.4	2.9						37.2	34.1
Progression Factor		1.00	1.00	1.11	0.09						1.00	1.00
Incremental Delay, d ₂		0.8	1.3	2.4	0.1						7.6	0.1
Delay (s)		23.9	23.8	28.4	0.4						44.8	34.2
Level of Service		C	C	C	A						D	C
Approach Delay (s)		23.8			15.1			0.0			39.4	
Approach LOS		C			B			A			D	
Intersection Summary												
HCM 2000 Control Delay			22.5			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			90.0			Sum of lost time (s)			13.4			
Intersection Capacity Utilization			66.2%			ICU Level of Service				C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 3: I-5 NB Ramps & Tamarack Ave























Opening Year + Specific Plan
 AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Volume (vph)	179	314	0	0	720	322	90	0	457	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.1			5.1			4.6	4.6			
Lane Util. Factor	1.00	0.95			0.95			1.00	1.00			
Flt	1.00	1.00			0.95			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (prot)	1770	3539			3375			1770	1583			
Flt Permitted	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (perm)	1770	3539			3375			1770	1583			
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	221	388	0	0	889	398	111	0	564	0	0	0
RTOR Reduction (vph)	0	0	0	0	50	0	0	0	483	0	0	0
Lane Group Flow (vph)	221	388	0	0	1237	0	0	111	81	0	0	0
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	13.7	69.5			51.2			10.8	10.8			
Effective Green, g (s)	13.7	69.5			51.2			10.8	10.8			
Actuated g/C Ratio	0.15	0.77			0.57			0.12	0.12			
Clearance Time (s)	4.6	5.1			5.1			4.6	4.6			
Vehicle Extension (s)	2.0	3.0			2.0			2.0	2.0			
Lane Grp Cap (vph)	269	2732			1920			212	189			
v/s Ratio Prot	c0.12	0.11			c0.37							
v/s Ratio Perm								0.06	0.05			
v/c Ratio	0.82	0.14			0.64			0.52	0.43			
Uniform Delay, d1	37.0	2.6			13.2			37.2	36.7			
Progression Factor	1.31	0.04			1.00			1.00	1.00			
Incremental Delay, d2	16.7	0.1			1.7			1.1	0.6			
Delay (s)	65.3	0.2			14.9			38.3	37.3			
Level of Service	E	A			B			D	D			
Approach Delay (s)		23.8			14.9			37.5			0.0	
Approach LOS		C			B			D			A	
Intersection Summary												
HCM 2000 Control Delay			22.9				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)		14.3			
Intersection Capacity Utilization			66.2%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis













4: El Camino Real & Tamarck Ave

Opening Year + Specific Plan
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	62	251	334	132	23	110	523	141	20	1305	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.0	5.0	4.2	5.0		4.2	6.0		4.2	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.91		1.00	0.91	1.00
Flt	1.00	1.00	0.85	1.00	0.98		1.00	0.97		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	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3462		1770	4923		1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3462		1770	4923		1770	5085	1583
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	31	71	289	384	152	26	126	601	162	23	1500	32
RTOR Reduction (vph)	0	0	141	0	12	0	0	27	0	0	0	19
Lane Group Flow (vph)	31	71	148	384	166	0	126	736	0	23	1500	13
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	4.0	19.5	19.5	31.1	46.6		11.9	66.3		3.7	58.1	58.1
Effective Green, g (s)	4.0	19.5	19.5	31.1	46.6		11.9	66.3		3.7	58.1	58.1
Actuated g/C Ratio	0.03	0.14	0.14	0.22	0.33		0.09	0.47		0.03	0.42	0.42
Clearance Time (s)	4.2	5.0	5.0	4.2	5.0		4.2	6.0		4.2	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	3.0		2.0	3.0	3.0
Lane Grp Cap (vph)	50	259	220	393	1152		150	2331		46	2110	656
v/s Ratio Prot	0.02	0.04		c0.22	0.05		c0.07	0.15		0.01	c0.29	
v/s Ratio Perm			c0.09									0.01
v/c Ratio	0.62	0.27	0.67	0.98	0.14		0.84	0.32		0.50	0.71	0.02
Uniform Delay, d1	67.2	53.9	57.2	54.1	32.7		63.1	22.8		67.2	34.0	24.2
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	15.0	0.2	6.2	38.8	0.0		30.7	0.4		3.1	2.1	0.1
Delay (s)	82.3	54.1	63.4	92.9	32.7		93.8	23.2		70.3	36.0	24.2
Level of Service	F	D	E	F	C		F	C		E	D	C
Approach Delay (s)		63.2			73.8			33.2			36.3	
Approach LOS		E			E			C			D	
Intersection Summary												
HCM 2000 Control Delay			44.8			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				19.4		
Intersection Capacity Utilization			71.9%			ICU Level of Service				C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
5: Carlsbad Blvd & Cannon Rd






























Opening Year + Specific Plan
AM PEAK HOUR

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	167	62	228	71	181	647
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.5	5.5	5.5	4.5	5.5
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
Fl _t Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Fl _t Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	178	66	243	76	193	688
RTOR Reduction (vph)	0	36	0	37	0	0
Lane Group Flow (vph)	178	30	243	39	193	688
Turn Type	NA	pm+ov	NA	Perm	Prot	NA
Protected Phases	4	5	6		5	2
Permitted Phases		4		6		
Actuated Green, G (s)	14.6	27.5	17.4	17.4	12.9	34.8
Effective Green, g (s)	14.6	27.5	17.4	17.4	12.9	34.8
Actuated g/C Ratio	0.24	0.46	0.29	0.29	0.22	0.58
Clearance Time (s)	5.0	4.5	5.5	5.5	4.5	5.5
Vehicle Extension (s)	3.0	2.0	4.0	4.0	2.0	4.0
Lane Grp Cap (vph)	431	726	541	459	381	1082
v/s Ratio Prot	c0.10	0.01	0.13		0.11	c0.37
v/s Ratio Perm		0.01		0.02		
v/c Ratio	0.41	0.04	0.45	0.09	0.51	0.64
Uniform Delay, d ₁	19.0	8.9	17.3	15.5	20.7	8.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d ₂	0.6	0.0	0.8	0.1	0.4	1.4
Delay (s)	19.7	8.9	18.2	15.6	21.1	9.7
Level of Service	B	A	B	B	C	A
Approach Delay (s)	16.8		17.5			12.2
Approach LOS	B		B			B
Intersection Summary						
HCM 2000 Control Delay			14.2		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.63			
Actuated Cycle Length (s)			59.9		Sum of lost time (s)	15.0
Intersection Capacity Utilization			52.1%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

6: Avenida Encinas & Cannon Rd













Opening Year + Specific Plan
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 		 	 		 		 	 		 
Volume (vph)	13	280	31	295	246	82	20	6	80	59	17	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.5		4.5	5.5		4.5	5.0	4.5	4.5	5.0	4.5
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	1.00	1.00	0.97	1.00	1.00
Fr _t	1.00	0.98		1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Fl _t Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3486		3433	3406		1770	1863	1583	3433	1863	1583
Fl _t Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3486		3433	3406		1770	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	304	34	321	267	89	22	7	87	64	18	14
RTOR Reduction (vph)	0	7	0	0	20	0	0	0	64	0	0	12
Lane Group Flow (vph)	14	331	0	321	337	0	22	7	23	64	18	2
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8	1	7	4	5
Permitted Phases									8			4
Actuated Green, G (s)	2.0	18.5		12.2	28.7		0.7	3.3	15.5	3.9	6.5	8.5
Effective Green, g (s)	2.0	18.5		12.2	28.7		0.7	3.3	15.5	3.9	6.5	8.5
Actuated g/C Ratio	0.03	0.32		0.21	0.50		0.01	0.06	0.27	0.07	0.11	0.15
Clearance Time (s)	4.5	5.5		4.5	5.5		4.5	5.0	4.5	4.5	5.0	4.5
Vehicle Extension (s)	2.5	3.0		2.5	3.0		2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	61	1123		729	1703		21	107	427	233	210	234
v/s Ratio Prot	0.01	c0.10		c0.09	0.10		0.01	0.00	0.01	c0.02	c0.01	0.00
v/s Ratio Perm									0.00			0.00
v/c Ratio	0.23	0.29		0.44	0.20		1.05	0.07	0.06	0.27	0.09	0.01
Uniform Delay, d ₁	27.0	14.6		19.6	8.0		28.3	25.6	15.5	25.4	22.8	20.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d ₂	1.4	0.1		0.3	0.1		212.0	0.2	0.0	0.5	0.1	0.0
Delay (s)	28.4	14.7		19.9	8.0		240.4	25.8	15.6	25.9	22.9	20.9
Level of Service	C	B		B	A		F	C	B	C	C	C
Approach Delay (s)		15.3			13.7			58.8			24.6	
Approach LOS		B			B			E			C	
Intersection Summary												
HCM 2000 Control Delay			19.2				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.32									
Actuated Cycle Length (s)			57.4				Sum of lost time (s)			19.5		
Intersection Capacity Utilization			38.0%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: I-5 SB Ramps & Cannon Rd



















Opening Year + Specific Plan
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑↑	↑↑					↑	↑	↑
Volume (vph)	0	369	50	437	336	0	0	0	0	969	1	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Fr _t		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Fl _t Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1681	1685	1583
Fl _t Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1681	1685	1583
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	0	439	60	520	400	0	0	0	0	1154	1	342
RTOR Reduction (vph)	0	0	41	0	0	0	0	0	0	0	0	193
Lane Group Flow (vph)	0	439	19	520	400	0	0	0	0	577	578	149
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		43.8	43.8	25.4	73.4					57.4	57.4	57.4
Effective Green, g (s)		43.8	43.8	25.4	73.4					57.4	57.4	57.4
Actuated g/C Ratio		0.31	0.31	0.18	0.52					0.41	0.41	0.41
Clearance Time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6
Vehicle Extension (s)		2.0	2.0	2.0	2.0					2.0	2.0	2.0
Lane Grp Cap (vph)		1107	495	622	1855					689	690	649
v/s Ratio Prot		c0.12		c0.15	0.11					c0.34	0.34	
v/s Ratio Perm			0.01									0.09
v/c Ratio		0.40	0.04	0.84	0.22					0.84	0.84	0.23
Uniform Delay, d ₁		37.7	33.4	55.3	17.9					37.1	37.1	26.9
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d ₂		1.1	0.1	9.1	0.3					8.4	8.4	0.1
Delay (s)		38.8	33.6	64.4	18.1					45.5	45.5	27.0
Level of Service		D	C	E	B					D	D	C
Approach Delay (s)		38.2			44.3			0.0			41.3	
Approach LOS		D			D			A			D	
Intersection Summary												
HCM 2000 Control Delay			41.7			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				13.4		
Intersection Capacity Utilization			62.5%			ICU Level of Service				B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis













8: I-5 NB Ramps & Cannon Rd

Opening Year + Specific Plan
AM PEAK HOUR

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	110	1228	0	0	689	254	84	0	597	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.2	4.6			4.6	4.6		4.6	4.6				
Lane Util. Factor	0.97	0.95			0.95	0.88		1.00	0.88				
Fr _t	1.00	1.00			1.00	0.85		1.00	0.85				
Fl _t Protected	0.95	1.00			1.00	1.00		0.95	1.00				
Satd. Flow (prot)	3433	3539			3539	2787		1770	2787				
Fl _t Permitted	0.95	1.00			1.00	1.00		0.95	1.00				
Satd. Flow (perm)	3433	3539			3539	2787		1770	2787				
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	
Adj. Flow (vph)	136	1516	0	0	851	314	104	0	737	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	109	0	0	297	0	0	0	
Lane Group Flow (vph)	136	1516	0	0	851	205	0	104	440	0	0	0	
Turn Type	Prot	NA			NA	Perm	Split	NA	custom				
Protected Phases	5	2			6	1	8	8	8				
Permitted Phases						6	1		1				
Actuated Green, G (s)	10.1	109.2			104.5	104.5		25.0	30.0				
Effective Green, g (s)	10.1	109.2			104.5	104.5		25.0	30.0				
Actuated g/C Ratio	0.06	0.68			0.65	0.65		0.16	0.19				
Clearance Time (s)	4.2	4.6						4.6	4.6				
Vehicle Extension (s)	2.0	2.0						2.0	2.0				
Lane Grp Cap (vph)	216	2415			2311	1820		276	522				
v/s Ratio Prot	0.04	c0.43			0.24			0.06	c0.13				
v/s Ratio Perm						0.07			0.03				
v/c Ratio	0.63	0.63			0.37	0.11		0.38	0.84				
Uniform Delay, d ₁	73.1	14.1			12.7	10.4		60.5	62.7				
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00				
Incremental Delay, d ₂	4.1	1.2			0.0	0.0		0.3	11.4				
Delay (s)	77.2	15.4			12.7	10.4		60.8	74.1				
Level of Service	E	B			B	B		E	E				
Approach Delay (s)		20.4			12.1			72.5			0.0		
Approach LOS		C			B			E			A		
Intersection Summary													
HCM 2000 Control Delay			29.8		HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.68										
Actuated Cycle Length (s)			160.0		Sum of lost time (s)				21.6				
Intersection Capacity Utilization			62.5%		ICU Level of Service				B				
Analysis Period (min)			15										
c Critical Lane Group													








HCM Signalized Intersection Capacity Analysis
9: Paseo Del Norte/Project Dwy & Cannon Rd

Opening Year + Specific Plan
AM PEAK HOUR

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↑↑↑		↵	↑↑↑	↵	↵↵		↵	↵↵	↑	↵↵	
Volume (vph)	0	1498	327	86	591	191	133	0	191	99	46	206	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.0		5.0	5.0	5.0	5.0		5.0	5.0	4.0	4.0	
Lane Util. Factor		0.91		1.00	0.91	1.00	0.97		1.00	0.97	1.00	0.88	
Fr _t		0.97		1.00	1.00	0.85	1.00		0.85	1.00	1.00	0.85	
Fl _t Protected		1.00		0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	
Satd. Flow (prot)		4949		1770	5085	1583	3433		1583	3433	1863	2787	
Fl _t Permitted		1.00		0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	
Satd. Flow (perm)		4949		1770	5085	1583	3433		1583	3433	1863	2787	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	0	1529	334	88	603	195	136	0	195	101	47	210	
RTOR Reduction (vph)	0	19	0	0	0	0	0	0	175	0	0	0	
Lane Group Flow (vph)	0	1844	0	88	603	195	136	0	20	101	47	210	
Turn Type		NA		Prot	NA	Over	Prot		custom	Prot	NA	custom	
Protected Phases		2 9		1	6	7	3		1	7	4	9	
Permitted Phases									3			4 9	
Actuated Green, G (s)		94.5		5.0	66.6	25.5	9.3		14.3	25.5	12.2	46.1	
Effective Green, g (s)		90.5		5.0	66.6	25.5	9.3		14.3	25.5	12.2	46.1	
Actuated g/C Ratio		0.65		0.04	0.48	0.18	0.07		0.10	0.18	0.09	0.33	
Clearance Time (s)				5.0	5.0	5.0	5.0		5.0	5.0	4.0	4.0	
Vehicle Extension (s)				2.0	4.5	2.0	3.5		2.0	2.0	3.0	3.0	
Lane Grp Cap (vph)		3199		63	2419	288	228		161	625	162	917	
v/s Ratio Prot		c0.37		c0.05	0.12	c0.12	0.04		0.00	0.03	0.03	0.06	
v/s Ratio Perm									0.01			0.02	
v/c Ratio		0.58		1.40	0.25	0.68	0.60		0.12	0.16	0.29	0.23	
Uniform Delay, d ₁		13.9		67.5	21.8	53.4	63.5		57.2	48.2	59.8	34.1	
Progression Factor		1.00		0.90	0.79	1.09	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d ₂		0.3		246.1	0.2	4.5	4.4		0.1	0.0	1.0	0.1	
Delay (s)		14.2		306.9	17.4	63.0	67.9		57.3	48.3	60.8	34.2	
Level of Service		B		F	B	E	E		E	D	E	C	
Approach Delay (s)		14.2			56.2			61.7			41.7		
Approach LOS		B			E			E			D		
Intersection Summary													
HCM 2000 Control Delay			32.4		HCM 2000 Level of Service					C			
HCM 2000 Volume to Capacity ratio			0.65										
Actuated Cycle Length (s)			140.0		Sum of lost time (s)					23.0			
Intersection Capacity Utilization			63.1%		ICU Level of Service					B			
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis
 10: Car Country Dr & Cannon Rd

Opening Year + Specific Plan
 AM PEAK HOUR

							
Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↕↔		↕	↕↕	↕	↕
Volume (vph)	0	1053	189	112	850	66	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5		5.5	6.5	5.5	4.0
Lane Util. Factor		0.95		1.00	0.95	1.00	1.00
Fr _t		0.98		1.00	1.00	1.00	0.85
Fl _t Protected		1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)		3458		1770	3539	1770	1583
Fl _t Permitted		1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)		3458		1770	3539	1770	1583
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	0	1269	228	135	1024	80	43
RTOR Reduction (vph)	0	8	0	0	0	0	43
Lane Group Flow (vph)	0	1489	0	135	1024	80	0
Turn Type	Prot	NA		Prot	NA	NA	NA
Protected Phases	5	2		1	6	3	
Permitted Phases							
Actuated Green, G (s)		95.2		15.6	116.3	11.7	0.0
Effective Green, g (s)		95.2		15.6	116.3	11.7	0.0
Actuated g/C Ratio		0.68		0.11	0.83	0.08	0.00
Clearance Time (s)		6.5		5.5	6.5	5.5	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		2351		197	2939	147	0
v/s Ratio Prot		c0.43		c0.08	0.29	c0.05	
v/s Ratio Perm							
v/c Ratio		0.63		0.69	0.35	0.54	0.00
Uniform Delay, d ₁		12.6		59.8	2.8	61.6	70.0
Progression Factor		0.99		1.00	1.00	1.00	1.00
Incremental Delay, d ₂		1.3		9.5	0.3	4.1	0.0
Delay (s)		13.7		69.3	3.2	65.7	70.0
Level of Service		B		E	A	E	E
Approach Delay (s)		13.7			10.9	67.2	
Approach LOS		B			B	E	
Intersection Summary							
HCM 2000 Control Delay			14.9		HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio			0.63				
Actuated Cycle Length (s)			140.0		Sum of lost time (s)		17.5
Intersection Capacity Utilization			60.9%		ICU Level of Service		B
Analysis Period (min)			15				
c Critical Lane Group							

HCM Signalized Intersection Capacity Analysis
11: Legoland Dr

Opening Year + Specific Plan
AM PEAK HOUR

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↘↗	↑↑	↘↗	↗
Volume (vph)	665	394	274	852	110	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.0	5.0	6.0	5.0	5.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	3433	3539	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	3433	3539	3433	1583
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	782	464	322	1002	129	49
RTOR Reduction (vph)	0	37	0	0	0	40
Lane Group Flow (vph)	782	427	322	1002	129	9
Turn Type	NA	pm+ov	Prot	NA	NA	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	22.9	34.5	12.1	40.0	11.6	11.6
Effective Green, g (s)	22.9	34.5	12.1	40.0	11.6	11.6
Actuated g/C Ratio	0.37	0.55	0.19	0.64	0.19	0.19
Clearance Time (s)	6.0	5.0	5.0	6.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1294	872	663	2261	636	293
v/s Ratio Prot	c0.22	c0.09	0.09	c0.28	0.04	
v/s Ratio Perm		0.18				0.01
v/c Ratio	0.60	0.49	0.49	0.44	0.20	0.03
Uniform Delay, d1	16.2	8.6	22.5	5.7	21.6	20.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.4	0.2	0.1	0.2	0.0
Delay (s)	17.0	9.1	22.7	5.8	21.7	20.9
Level of Service	B	A	C	A	C	C
Approach Delay (s)	14.0			9.9	21.5	
Approach LOS	B			A	C	
Intersection Summary						
HCM 2000 Control Delay			12.5		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.56			
Actuated Cycle Length (s)			62.6		Sum of lost time (s)	16.0
Intersection Capacity Utilization			42.9%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						




















HCM Signalized Intersection Capacity Analysis
 12: Marriott Hotel Dwy & Cannon Rd

Opening Year + Specific Plan
 AM PEAK HOUR

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↓
Volume (vph)	631	76	54	1090	36	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.5	5.0	6.0	5.5	5.5
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	701	84	60	1211	40	48
RTOR Reduction (vph)	0	22	0	0	0	44
Lane Group Flow (vph)	701	62	60	1211	40	4
Turn Type	NA	pm+ov	Prot	NA	NA	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	58.8	66.9	6.6	70.4	8.1	8.1
Effective Green, g (s)	58.8	66.9	6.6	70.4	8.1	8.1
Actuated g/C Ratio	0.65	0.74	0.07	0.78	0.09	0.09
Clearance Time (s)	6.0	5.5	5.0	6.0	5.5	5.5
Vehicle Extension (s)	3.0	2.0	2.0	3.0	2.0	2.0
Lane Grp Cap (vph)	2312	1176	129	2768	159	142
v/s Ratio Prot	0.20	0.00	0.03	c0.34	c0.02	
v/s Ratio Perm		0.03				0.00
v/c Ratio	0.30	0.05	0.47	0.44	0.25	0.03
Uniform Delay, d1	6.7	3.1	40.0	3.2	38.1	37.4
Progression Factor	1.00	1.00	1.05	0.88	1.00	1.00
Incremental Delay, d2	0.3	0.0	0.9	0.5	0.3	0.0
Delay (s)	7.1	3.1	42.9	3.3	38.4	37.4
Level of Service	A	A	D	A	D	D
Approach Delay (s)	6.7			5.2	37.9	
Approach LOS	A			A	D	
Intersection Summary						
HCM 2000 Control Delay			7.1		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.45			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	16.5
Intersection Capacity Utilization			43.9%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis
13: Faraday Ave & Cannon Rd





















Opening Year + Specific Plan
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	273	396	47	949	7	193	2	18	1	1	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		5.0	5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		0.95	0.95			1.00	
Fr _t	1.00	0.91		1.00	1.00		1.00	0.97			0.93	
Fl _t Protected	0.95	1.00		0.95	1.00		0.95	0.96			0.99	
Satd. Flow (prot)	1770	3225		1770	3535		1681	1656			1716	
Fl _t Permitted	0.95	1.00		0.95	1.00		0.95	0.96			0.99	
Satd. Flow (perm)	1770	3225		1770	3535		1681	1656			1716	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	6	333	483	57	1157	9	235	2	22	1	1	2
RTOR Reduction (vph)	0	181	0	0	0	0	0	9	0	0	2	0
Lane Group Flow (vph)	6	635	0	57	1166	0	132	118	0	0	2	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases												
Actuated Green, G (s)	1.1	47.8		6.5	53.2		12.6	12.6			1.1	
Effective Green, g (s)	1.1	47.8		6.5	53.2		12.6	12.6			1.1	
Actuated g/C Ratio	0.01	0.53		0.07	0.59		0.14	0.14			0.01	
Clearance Time (s)	6.0	6.0		6.0	6.0		5.0	5.0			5.0	
Vehicle Extension (s)	2.0	3.5		2.0	3.5		2.0	2.0			2.0	
Lane Grp Cap (vph)	21	1712		127	2089		235	231			20	
v/s Ratio Prot	0.00	0.20		c0.03	c0.33		c0.08	0.07			c0.00	
v/s Ratio Perm												
v/c Ratio	0.29	0.37		0.45	0.56		0.56	0.51			0.10	
Uniform Delay, d ₁	44.1	12.3		40.0	11.2		36.1	35.8			44.0	
Progression Factor	1.33	0.83		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d ₂	2.7	0.6		0.9	1.1		1.8	0.6			0.8	
Delay (s)	61.2	10.8		41.0	12.3		38.0	36.5			44.8	
Level of Service	E	B		D	B		D	D			D	
Approach Delay (s)		11.2			13.6			37.2			44.8	
Approach LOS		B			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			15.5				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)			22.0		
Intersection Capacity Utilization			56.6%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

14: El Camino Real & Cannon Rd

Opening Year + Specific Plan
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	91	134	92	206	556	157	2	94	447	73	3	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	6.0		4.2	6.0			4.2	6.0	6.0		4.2
Lane Util. Factor	0.97	0.95		0.97	0.95			1.00	0.95	1.00		1.00
Flt	1.00	0.94		1.00	0.97			1.00	1.00	0.85		1.00
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95
Satd. Flow (prot)	3433	3323		3433	3422			1770	3539	1583		1770
Flt Permitted	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95
Satd. Flow (perm)	3433	3323		3433	3422			1770	3539	1583		1770
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	106	156	107	240	647	183	2	109	520	85	3	140
RTOR Reduction (vph)	0	75	0	0	20	0	0	0	0	55	0	0
Lane Group Flow (vph)	106	188	0	240	810	0	0	111	520	30	0	143
Turn Type	Prot	NA		Prot	NA		Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases										2		
Actuated Green, G (s)	18.6	42.0		14.2	37.6			9.6	49.1	49.1		14.3
Effective Green, g (s)	18.6	42.0		14.2	37.6			9.6	49.1	49.1		14.3
Actuated g/C Ratio	0.13	0.30		0.10	0.27			0.07	0.35	0.35		0.10
Clearance Time (s)	4.2	6.0		4.2	6.0			4.2	6.0	6.0		4.2
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0	3.0	3.0		2.0
Lane Grp Cap (vph)	456	996		348	919			121	1241	555		180
v/s Ratio Prot	0.03	0.06		0.07	c0.24			c0.06	0.15			0.08
v/s Ratio Perm										0.02		
v/c Ratio	0.23	0.19		0.69	0.88			0.92	0.42	0.05		0.79
Uniform Delay, d1	54.3	36.4		60.8	49.1			64.8	34.6	30.1		61.4
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00		1.00
Incremental Delay, d2	0.1	0.0		4.5	9.7			55.5	1.0	0.2		19.7
Delay (s)	54.4	36.4		65.3	58.7			120.3	35.6	30.3		81.2
Level of Service	D	D		E	E			F	D	C		F
Approach Delay (s)		41.6			60.2				48.1			
Approach LOS		D			E				D			
Intersection Summary												
HCM 2000 Control Delay			51.8	HCM 2000 Level of Service				D				
HCM 2000 Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			140.0	Sum of lost time (s)				20.4				
Intersection Capacity Utilization			77.2%	ICU Level of Service				D				
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
Lane Configurations	↑↑↑	↑
Volume (vph)	1612	350
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	4.2
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.86	0.86
Adj. Flow (vph)	1874	407
RTOR Reduction (vph)	0	50
Lane Group Flow (vph)	1874	357
Turn Type	NA	pm+ov
Protected Phases	6	7
Permitted Phases		6
Actuated Green, G (s)	53.8	72.4
Effective Green, g (s)	53.8	72.4
Actuated g/C Ratio	0.38	0.52
Clearance Time (s)	6.0	4.2
Vehicle Extension (s)	3.0	2.0
Lane Grp Cap (vph)	1954	866
v/s Ratio Prot	c0.37	c0.05
v/s Ratio Perm		0.17
v/c Ratio	0.96	0.41
Uniform Delay, d1	42.0	20.7
Progression Factor	1.00	1.00
Incremental Delay, d2	12.8	0.1
Delay (s)	54.8	20.9
Level of Service	D	C
Approach Delay (s)	50.6	
Approach LOS	D	
Intersection Summary		





















HCM Signalized Intersection Capacity Analysis
 15: Paseo Del Norte & Car Country Dr

Opening Year + Specific Plan
 AM PEAK HOUR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	5	0	56	5	42	1	255	94	48	244	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5		5.5	5.5		5.0	6.0		5.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Fr _t	1.00	1.00		1.00	0.86		1.00	0.96		1.00	0.98	
Fl _t Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863		1770	1611		1770	3396		1770	3480	
Fl _t Permitted	0.72	1.00		0.75	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1348	1863		1405	1611		1770	3396		1770	3480	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	5	0	61	5	46	1	277	102	52	265	33
RTOR Reduction (vph)	0	0	0	0	40	0	0	31	0	0	7	0
Lane Group Flow (vph)	11	5	0	61	11	0	1	348	0	52	291	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	6.8	6.8		6.8	6.8		0.5	26.0		2.3	27.8	
Effective Green, g (s)	6.8	6.8		6.8	6.8		0.5	26.0		2.3	27.8	
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.01	0.50		0.04	0.54	
Clearance Time (s)	5.5	5.5		5.5	5.5		5.0	6.0		5.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	177	245		185	212		17	1711		78	1874	
v/s Ratio Prot		0.00			0.01		0.00	c0.10		c0.03	0.08	
v/s Ratio Perm	0.01			c0.04								
v/c Ratio	0.06	0.02		0.33	0.05		0.06	0.20		0.67	0.16	
Uniform Delay, d ₁	19.6	19.5		20.3	19.6		25.3	7.1		24.3	6.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d ₂	0.1	0.0		1.0	0.1		0.5	0.1		15.4	0.1	
Delay (s)	19.8	19.5		21.4	19.7		25.8	7.2		39.7	6.0	
Level of Service	B	B		C	B		C	A		D	A	
Approach Delay (s)		19.7			20.6			7.2			11.0	
Approach LOS		B			C			A			B	
Intersection Summary												
HCM 2000 Control Delay			10.8				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.26									
Actuated Cycle Length (s)			51.6				Sum of lost time (s)			16.5		
Intersection Capacity Utilization			39.4%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												




















HCM Signalized Intersection Capacity Analysis
 16: Paseo Del Norte & Outlet Dwy

Opening Year + Specific Plan
 AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	2	12	4	2	15	21	333	11	38	254	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Fr _t	1.00	0.87			0.90		1.00	1.00		1.00	1.00	
Fl _t Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1621			1665		1770	3522		1770	3522	
Fl _t Permitted	1.00	1.00			0.93		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1863	1621			1567		1770	3522		1770	3522	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	2	2	13	4	2	16	23	358	12	41	273	9
RTOR Reduction (vph)	0	12	0	0	15	0	0	2	0	0	2	0
Lane Group Flow (vph)	2	3	0	0	7	0	23	368	0	41	280	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	4.0	4.0			4.0		0.7	25.0		0.8	25.1	
Effective Green, g (s)	4.0	4.0			4.0		0.7	25.0		0.8	25.1	
Actuated g/C Ratio	0.09	0.09			0.09		0.02	0.56		0.02	0.56	
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.5	2.5			2.5		2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	166	144			139		27	1965		31	1973	
v/s Ratio Prot		0.00					0.01	c0.10		c0.02	0.08	
v/s Ratio Perm	0.00				c0.00							
v/c Ratio	0.01	0.02			0.05		0.85	0.19		1.32	0.14	
Uniform Delay, d ₁	18.6	18.6			18.7		22.0	4.9		22.0	4.7	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d ₂	0.0	0.0			0.1		107.3	0.1		272.1	0.1	
Delay (s)	18.6	18.7			18.8		129.3	5.0		294.1	4.8	
Level of Service	B	B			B		F	A		F	A	
Approach Delay (s)		18.7			18.8			12.2			41.5	
Approach LOS		B			B			B			D	
Intersection Summary												
HCM 2000 Control Delay			25.1				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.20									
Actuated Cycle Length (s)			44.8				Sum of lost time (s)			15.0		
Intersection Capacity Utilization			30.2%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 17: Faraday Ave & College Blvd






















Opening Year + Specific Plan
 AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	154	297	86	1	187	221	158	36	222	68	1	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.0			4.5	6.0		4.5	5.0			4.5
Lane Util. Factor	0.97	0.95			0.97	0.95		1.00	0.95			1.00
Fr _t	1.00	0.97			1.00	0.94		1.00	0.96			1.00
Fl _t Protected	0.95	1.00			0.95	1.00		0.95	1.00			0.95
Satd. Flow (prot)	3433	3420			3433	3317		1770	3415			1770
Fl _t Permitted	0.95	1.00			0.95	1.00		0.95	1.00			0.95
Satd. Flow (perm)	3433	3420			3433	3317		1770	3415			1770
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	173	334	97	1	210	248	178	40	249	76	1	109
RTOR Reduction (vph)	0	17	0	0	0	75	0	0	19	0	0	0
Lane Group Flow (vph)	173	414	0	0	211	351	0	40	306	0	0	110
Turn Type	Prot	NA		Prot	Prot	NA		Prot	NA		Prot	Prot
Protected Phases	5	2		1	1	6		3	8		7	7
Permitted Phases												
Actuated Green, G (s)	7.1	13.3			7.9	14.1		3.2	14.1			8.3
Effective Green, g (s)	7.1	13.3			7.9	14.1		3.2	14.1			8.3
Actuated g/C Ratio	0.11	0.21			0.12	0.22		0.05	0.22			0.13
Clearance Time (s)	4.5	6.0			4.5	6.0		4.5	5.0			4.5
Vehicle Extension (s)	0.2	0.2			0.2	0.2		0.2	0.2			0.2
Lane Grp Cap (vph)	383	715			426	735		89	757			230
v/s Ratio Prot	0.05	c0.12			c0.06	0.11		0.02	0.09			c0.06
v/s Ratio Perm												
v/c Ratio	0.45	0.58			0.50	0.48		0.45	0.40			0.48
Uniform Delay, d ₁	26.4	22.6			26.0	21.5		29.3	21.2			25.6
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			1.00
Incremental Delay, d ₂	0.3	0.7			0.3	0.2		1.3	0.1			0.6
Delay (s)	26.7	23.3			26.3	21.7		30.7	21.3			26.2
Level of Service	C	C			C	C		C	C			C
Approach Delay (s)		24.3				23.2			22.3			
Approach LOS		C				C			C			
Intersection Summary												
HCM 2000 Control Delay			22.5			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.49									
Actuated Cycle Length (s)			63.6			Sum of lost time (s)		20.0				
Intersection Capacity Utilization			46.7%			ICU Level of Service		A				
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
Lane Configurations	↑↑	
Volume (vph)	308	22
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.0	
Lane Util. Factor	0.95	
Flt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	3503	
Flt Permitted	1.00	
Satd. Flow (perm)	3503	
Peak-hour factor, PHF	0.89	0.89
Adj. Flow (vph)	346	25
RTOR Reduction (vph)	3	0
Lane Group Flow (vph)	368	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	19.2	
Effective Green, g (s)	19.2	
Actuated g/C Ratio	0.30	
Clearance Time (s)	5.0	
Vehicle Extension (s)	0.2	
Lane Grp Cap (vph)	1057	
v/s Ratio Prot	c0.11	
v/s Ratio Perm		
v/c Ratio	0.35	
Uniform Delay, d1	17.3	
Progression Factor	1.00	
Incremental Delay, d2	0.1	
Delay (s)	17.4	
Level of Service	B	
Approach Delay (s)	19.4	
Approach LOS	B	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
 18: El Camino Real & College Blvd

Opening Year + Specific Plan
 AM PEAK HOUR

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	108	67	12	753	226	112	71	71	519	163	63	1574	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	5.0	6.5		5.0	6.5			5.0	6.0	6.0	5.0	6.0	
Lane Util. Factor	0.97	0.95		0.97	0.95			1.00	0.91	1.00	1.00	0.91	
Fr _t	1.00	0.98		1.00	0.95			1.00	1.00	0.85	1.00	1.00	
Fl _t Protected	0.95	1.00		0.95	1.00			0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3461		3433	3363			1770	5085	1583	1770	5085	
Fl _t Permitted	0.95	1.00		0.95	1.00			0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3461		3433	3363			1770	5085	1583	1770	5085	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	
Adj. Flow (vph)	121	75	13	846	254	126	80	80	583	183	71	1769	
RTOR Reduction (vph)	0	11	0	0	54	0	0	0	0	99	0	0	
Lane Group Flow (vph)	121	77	0	846	326	0	0	160	583	84	71	1769	
Turn Type	Prot	NA		Prot	NA		Prot	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		5	5	2		1	6	
Permitted Phases										2			
Actuated Green, G (s)	8.3	19.8		25.0	36.5			11.0	64.3	64.3	8.4	61.7	
Effective Green, g (s)	8.3	19.8		25.0	36.5			11.0	64.3	64.3	8.4	61.7	
Actuated g/C Ratio	0.06	0.14		0.18	0.26			0.08	0.46	0.46	0.06	0.44	
Clearance Time (s)	5.0	6.5		5.0	6.5			5.0	6.0	6.0	5.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0	4.0	4.0	2.0	4.0	
Lane Grp Cap (vph)	203	489		613	876			139	2335	727	106	2241	
v/s Ratio Prot	0.04	0.02		c0.25	c0.10			c0.09	0.11		0.04	c0.35	
v/s Ratio Perm										0.05			
v/c Ratio	0.60	0.16		1.38	0.37			1.15	0.25	0.12	0.67	0.79	
Uniform Delay, d ₁	64.2	52.8		57.5	42.4			64.5	23.1	21.6	64.4	33.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d ₂	3.1	0.1		181.1	0.1			122.7	0.3	0.3	11.7	2.9	
Delay (s)	67.3	52.8		238.6	42.5			187.2	23.4	21.9	76.2	36.5	
Level of Service	E	D		F	D			F	C	C	E	D	
Approach Delay (s)		61.2			177.8				51.4			35.8	
Approach LOS		E			F				D			D	
Intersection Summary													
HCM 2000 Control Delay			77.2									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			0.89										
Actuated Cycle Length (s)			140.0									Sum of lost time (s)	22.5
Intersection Capacity Utilization			81.8%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													



Movement	SBR
Lane Configurations	7
Volume (vph)	430
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Fr _t	0.85
Fl _t Protected	1.00
Satd. Flow (prot)	1583
Fl _t Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.89
Adj. Flow (vph)	483
RTOR Reduction (vph)	231
Lane Group Flow (vph)	252
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	61.7
Effective Green, g (s)	61.7
Actuated g/C Ratio	0.44
Clearance Time (s)	6.0
Vehicle Extension (s)	4.0
Lane Grp Cap (vph)	697
v/s Ratio Prot	
v/s Ratio Perm	0.16
v/c Ratio	0.36
Uniform Delay, d ₁	26.0
Progression Factor	1.00
Incremental Delay, d ₂	1.5
Delay (s)	27.5
Level of Service	C
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
 19: El Camino Real & Faraday Ave
























Opening Year + Specific Plan
 AM PEAK HOUR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	42	141	84	114	631	190	6	724	689	98	27	440
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9	5.0	5.0	5.0		4.2	6.0			4.2
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00		0.97	0.91			0.97
Flt	1.00	0.98	0.85	1.00	1.00	0.85		1.00	0.98			1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (prot)	1770	3337	1441	1770	3539	1583		3433	4990			3433
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (perm)	1770	3337	1441	1770	3539	1583		3433	4990			3433
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	44	147	88	119	657	198	6	754	718	102	28	458
RTOR Reduction (vph)	0	4	58	0	0	126	0	0	10	0	0	0
Lane Group Flow (vph)	44	160	13	119	657	72	0	760	810	0	0	486
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases	3	8		7	4		1	1	6		5	5
Permitted Phases			8			4						
Actuated Green, G (s)	5.9	30.1	30.1	15.0	39.2	39.2		41.7	32.9			60.3
Effective Green, g (s)	5.9	30.1	30.1	15.0	39.2	39.2		41.7	32.9			60.3
Actuated g/C Ratio	0.04	0.19	0.19	0.09	0.25	0.25		0.26	0.21			0.38
Clearance Time (s)	4.9	4.9	4.9	5.0	5.0	5.0		4.2	6.0			4.2
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0	3.0		2.0	2.0			2.0
Lane Grp Cap (vph)	65	634	273	167	875	391		903	1036			1306
v/s Ratio Prot	0.02	0.05		c0.07	c0.19			c0.22	0.16			0.14
v/s Ratio Perm			0.01			0.05						
v/c Ratio	0.68	0.25	0.05	0.71	0.75	0.18		0.84	0.78			0.37
Uniform Delay, d1	75.3	54.6	52.5	69.6	55.1	47.0		55.2	59.4			35.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2	19.7	0.1	0.0	13.4	3.7	0.2		6.9	3.6			0.1
Delay (s)	95.0	54.7	52.5	83.0	58.7	47.2		62.1	62.9			35.5
Level of Service	F	D	D	F	E	D		E	E			D
Approach Delay (s)		60.5			59.4				62.5			
Approach LOS		E			E				E			
Intersection Summary												
HCM 2000 Control Delay			55.6				HCM 2000 Level of Service		E			
HCM 2000 Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			158.4				Sum of lost time (s)		20.1			
Intersection Capacity Utilization			84.2%				ICU Level of Service		E			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
Label Configurations	↑↑↑	↑
Volume (vph)	1340	241
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	6.0
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.96	0.96
Adj. Flow (vph)	1396	251
RTOR Reduction (vph)	0	75
Lane Group Flow (vph)	1396	176
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Actuated Green, G (s)	51.5	51.5
Effective Green, g (s)	51.5	51.5
Actuated g/C Ratio	0.33	0.33
Clearance Time (s)	6.0	6.0
Vehicle Extension (s)	2.0	2.0
Lane Grp Cap (vph)	1653	514
v/s Ratio Prot	c0.27	
v/s Ratio Perm		0.11
v/c Ratio	0.84	0.34
Uniform Delay, d1	49.7	40.6
Progression Factor	1.00	1.00
Incremental Delay, d2	4.0	0.1
Delay (s)	53.7	40.7
Level of Service	D	D
Approach Delay (s)	48.0	
Approach LOS	D	
Intersection Summary		













HCM Signalized Intersection Capacity Analysis
20: Avenida Encinas & Palomar Airport Rd

Opening Year + Specific Plan
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	204	51	350	232	310	45	70	138	118	79	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.0		4.2	5.0	5.0	4.6	4.6	4.6	4.6	4.6	4.6
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Fr _t	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fl _t Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (prot)	1770	1807		1770	1863	1583	1770	1863	1583	1681	1751	1583
Fl _t Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (perm)	1770	1807		1770	1863	1583	1770	1863	1583	1681	1751	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	45	212	53	365	242	323	47	73	144	123	82	27
RTOR Reduction (vph)	0	6	0	0	0	166	0	0	126	0	0	24
Lane Group Flow (vph)	45	259	0	365	242	157	47	73	18	101	104	3
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases						6			8			7
Actuated Green, G (s)	4.6	20.7		26.2	42.3	42.3	11.0	11.0	11.0	11.0	11.0	11.0
Effective Green, g (s)	4.6	20.7		26.2	42.3	42.3	11.0	11.0	11.0	11.0	11.0	11.0
Actuated g/C Ratio	0.05	0.24		0.30	0.48	0.48	0.13	0.13	0.13	0.13	0.13	0.13
Clearance Time (s)	4.2	5.0		4.2	5.0	5.0	4.6	4.6	4.6	4.6	4.6	4.6
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	93	428		531	902	767	223	234	199	211	220	199
v/s Ratio Prot	0.03	c0.14		c0.21	0.13		0.03	c0.04		c0.06	0.06	
v/s Ratio Perm						0.10			0.01			0.00
v/c Ratio	0.48	0.60		0.69	0.27	0.20	0.21	0.31	0.09	0.48	0.47	0.02
Uniform Delay, d ₁	40.2	29.7		26.9	13.3	12.9	34.3	34.7	33.7	35.5	35.5	33.4
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, d ₂	1.4	2.4		2.9	0.2	0.1	0.2	0.3	0.1	0.6	0.6	0.0
Delay (s)	41.6	32.1		29.9	13.5	13.0	34.4	35.0	33.8	36.1	36.0	33.4
Level of Service	D	C		C	B	B	C	C	C	D	D	C
Approach Delay (s)		33.5			19.8			34.2			35.8	
Approach LOS		C			B			C			D	
Intersection Summary												
HCM 2000 Control Delay			26.5				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			87.3				Sum of lost time (s)			18.4		
Intersection Capacity Utilization			56.7%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

























HCM Signalized Intersection Capacity Analysis
 21: I-5 SB Ramps & Palomar Airport Rd

Opening Year + Specific Plan
 AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑	↗				↖↖		↗
Volume (vph)	0	393	67	0	559	243	0	0	0	925	0	333
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0	4.0				4.6		4.6
Lane Util. Factor		0.91			0.95	1.00				0.97		1.00
Fr _t		0.98			1.00	0.85				1.00		0.85
Fl _t Protected		1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)		4974			3539	1583				3433		1583
Fl _t Permitted		1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)		4974			3539	1583				3433		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	427	73	0	608	264	0	0	0	1005	0	362
RTOR Reduction (vph)	0	26	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	474	0	0	608	264	0	0	0	1005	0	362
Turn Type		NA			NA	Free				Prot		custom
Protected Phases		2 3			6					4		4 3
Permitted Phases						Free						2
Actuated Green, G (s)		26.8			16.6	58.8				22.4		48.8
Effective Green, g (s)		26.8			16.6	58.8				22.4		48.8
Actuated g/C Ratio		0.46			0.28	1.00				0.38		0.83
Clearance Time (s)					5.0					4.6		
Vehicle Extension (s)					2.0					2.0		
Lane Grp Cap (vph)		2267			999	1583				1307		1313
v/s Ratio Prot		0.10			c0.17					c0.29		c0.15
v/s Ratio Perm						0.17						0.08
v/c Ratio		0.21			0.61	0.17				0.77		0.28
Uniform Delay, d ₁		9.6			18.3	0.0				15.9		1.1
Progression Factor		1.00			1.00	1.00				1.00		1.00
Incremental Delay, d ₂		0.0			0.7	0.2				2.5		0.0
Delay (s)		9.6			19.0	0.2				18.4		1.1
Level of Service		A			B	A				B		A
Approach Delay (s)		9.6			13.3			0.0			13.9	
Approach LOS		A			B			A			B	
Intersection Summary												
HCM 2000 Control Delay			12.9				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			58.8				Sum of lost time (s)			14.6		
Intersection Capacity Utilization			49.3%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												






















HCM Signalized Intersection Capacity Analysis
 22: I-5 NB Ramps & Palomar Airport Rd

Opening Year + Specific Plan
 AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  	 			 			
Volume (vph)	122	1196	0	0	642	490	160	3	1276	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.6			4.6	4.6		4.6	4.6			
Lane Util. Factor	1.00	0.91			0.91	0.88		1.00	0.88			
Fr _t	1.00	1.00			1.00	0.85		1.00	0.85			
Fl _t Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	5085			5085	2787		1775	2787			
Fl _t Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	5085			5085	2787		1775	2787			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	131	1286	0	0	690	527	172	3	1372	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	311	0	0	92	0	0	0
Lane Group Flow (vph)	131	1286	0	0	690	216	0	175	1280	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	5	2			6 7			8	7			
Permitted Phases						6 7	8		8			
Actuated Green, G (s)	9.8	28.4			24.1	24.1		11.4	16.5			
Effective Green, g (s)	9.8	28.4			24.1	24.1		11.4	16.5			
Actuated g/C Ratio	0.17	0.48			0.41	0.41		0.19	0.28			
Clearance Time (s)	4.2	4.6						4.6	4.6			
Vehicle Extension (s)	2.0	3.0						2.0	2.0			
Lane Grp Cap (vph)	295	2460			2087	1144		344	1001			
v/s Ratio Prot	0.07	c0.25			0.14				c0.11			
v/s Ratio Perm						0.08		0.10	0.35			
v/c Ratio	0.44	0.52			0.33	0.19		0.51	1.28			
Uniform Delay, d ₁	22.0	10.5			11.8	11.1		21.1	21.1			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d ₂	0.4	0.2			0.0	0.0		0.4	133.2			
Delay (s)	22.4	10.7			11.8	11.1		21.6	154.3			
Level of Service	C	B			B	B		C	F			
Approach Delay (s)		11.8			11.5			139.3			0.0	
Approach LOS		B			B			F			A	
Intersection Summary												
HCM 2000 Control Delay			58.9				HCM 2000 Level of Service		E			
HCM 2000 Volume to Capacity ratio			1.03									
Actuated Cycle Length (s)			58.7				Sum of lost time (s)		18.0			
Intersection Capacity Utilization			75.4%				ICU Level of Service		D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 23: Paseo Del Norte & Palomar Airport Rd

Opening Year + Specific Plan
 AM PEAK HOUR

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (vph)	2	157	2184	129	4	102	834	263	179	111	146	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	6.0			4.2	6.0	4.2	4.2	5.0		4.2
Lane Util. Factor		0.97	0.91			0.97	0.86	1.00	0.97	0.95		0.97
Fr _t		1.00	0.99			1.00	1.00	0.85	1.00	0.91		1.00
Fl _t Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		3433	5043			3433	6408	1583	3433	3238		3433
Fl _t Permitted		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (perm)		3433	5043			3433	6408	1583	3433	3238		3433
Peak-hour factor, PHF	0.92	0.96	0.96	0.96	0.92	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	2	164	2275	134	4	106	869	274	186	116	152	146
RTOR Reduction (vph)	0	0	3	0	0	0	0	100	0	117	0	0
Lane Group Flow (vph)	0	166	2406	0	0	110	869	174	186	151	0	146
Turn Type	Prot	Prot	NA		Prot	Prot	NA	pm+ov	Prot	NA		Prot
Protected Phases	5	5	2		1	1	6	7	3	8		7
Permitted Phases								6				
Actuated Green, G (s)		10.8	82.6			8.5	80.3	88.9	9.0	20.9		8.6
Effective Green, g (s)		10.8	82.6			8.5	80.3	88.9	9.0	20.9		8.6
Actuated g/C Ratio		0.08	0.59			0.06	0.57	0.64	0.06	0.15		0.06
Clearance Time (s)		4.2	6.0			4.2	6.0	4.2	4.2	5.0		4.2
Vehicle Extension (s)		2.0	2.0			2.0	2.0	2.0	2.0	2.0		2.0
Lane Grp Cap (vph)		264	2975			208	3675	1005	220	483		210
v/s Ratio Prot		c0.05	c0.48			0.03	0.14	0.01	c0.05	c0.05		0.04
v/s Ratio Perm								0.10				
v/c Ratio		0.63	0.81			0.53	0.24	0.17	0.85	0.31		0.70
Uniform Delay, d ₁		62.7	22.5			63.8	14.7	10.5	64.8	53.1		64.4
Progression Factor		1.00	1.00			1.12	0.50	0.66	1.00	1.00		1.00
Incremental Delay, d ₂		3.4	2.5			1.1	0.1	0.0	23.8	0.1		7.8
Delay (s)		66.0	25.0			72.5	7.5	6.9	88.6	53.3		72.2
Level of Service		E	C			E	A	A	F	D		E
Approach Delay (s)			27.6				13.1			67.7		
Approach LOS			C				B			E		
Intersection Summary												
HCM 2000 Control Delay			30.1			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				19.4		
Intersection Capacity Utilization			76.3%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 23: Paseo Del Norte & Palomar Airport Rd






















Opening Year + Specific Plan
 AM PEAK HOUR



Movement	SBT	SBR
Lane Configurations	↑↑	
Volume (vph)	67	117
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.0	
Lane Util. Factor	0.95	
Frt	0.90	
Flt Protected	1.00	
Satd. Flow (prot)	3202	
Flt Permitted	1.00	
Satd. Flow (perm)	3202	
Peak-hour factor, PHF	0.96	0.96
Adj. Flow (vph)	70	122
RTOR Reduction (vph)	104	0
Lane Group Flow (vph)	88	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	20.5	
Effective Green, g (s)	20.5	
Actuated g/C Ratio	0.15	
Clearance Time (s)	5.0	
Vehicle Extension (s)	2.0	
Lane Grp Cap (vph)	468	
v/s Ratio Prot	0.03	
v/s Ratio Perm		
v/c Ratio	0.19	
Uniform Delay, d1	52.4	
Progression Factor	1.00	
Incremental Delay, d2	0.1	
Delay (s)	52.5	
Level of Service	D	
Approach Delay (s)	61.0	
Approach LOS	E	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
 24: Armada Dr & Palomar Airport Rd



























Opening Year + Specific Plan
 AM PEAK HOUR

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (vph)	9	171	2194	146	2	102	1076	181	112	31	64	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	6.0	4.7		4.2	6.0	5.0	4.7	4.7	4.7	5.0
Lane Util. Factor		0.97	0.91	1.00		1.00	0.91	1.00	0.97	0.95	0.95	0.97
Fr _t		1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.94	0.85	1.00
Fl _t Protected		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95
Satd. Flow (prot)		3433	5085	1583		1770	5085	1583	3433	1671	1504	3433
Fl _t Permitted		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95
Satd. Flow (perm)		3433	5085	1583		1770	5085	1583	3433	1671	1504	3433
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	186	2385	159	2	111	1170	197	122	34	70	103
RTOR Reduction (vph)	0	0	0	48	0	0	0	63	0	16	46	0
Lane Group Flow (vph)	0	196	2385	111	0	113	1170	134	122	38	4	103
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	NA	Perm	Prot
Protected Phases	5	5	2	3	1	1	6	7	3	8		7
Permitted Phases				2				6			8	
Actuated Green, G (s)		12.3	89.0	97.8		10.6	87.3	95.4	8.8	12.4	12.4	8.1
Effective Green, g (s)		12.3	89.0	97.8		10.6	87.3	95.4	8.8	12.4	12.4	8.1
Actuated g/C Ratio		0.09	0.64	0.70		0.08	0.62	0.68	0.06	0.09	0.09	0.06
Clearance Time (s)		4.2	6.0	4.7		4.2	6.0	5.0	4.7	4.7	4.7	5.0
Vehicle Extension (s)		2.0	3.0	2.0		2.0	3.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)		301	3232	1105		134	3170	1078	215	148	133	198
v/s Ratio Prot		0.06	c0.47	0.01		c0.06	0.23	0.01	c0.04	c0.02		0.03
v/s Ratio Perm				0.06				0.08			0.00	
v/c Ratio		0.65	0.74	0.10		0.84	0.37	0.12	0.57	0.25	0.03	0.52
Uniform Delay, d ₁		61.8	17.5	6.8		63.9	12.9	7.8	63.8	59.5	58.3	64.1
Progression Factor		0.95	0.90	1.16		0.62	1.80	10.09	1.00	1.00	1.00	1.00
Incremental Delay, d ₂		2.6	1.1	0.0		31.8	0.3	0.0	2.0	0.3	0.0	1.1
Delay (s)		61.1	16.8	7.9		71.2	23.5	78.4	65.8	59.8	58.4	65.2
Level of Service		E	B	A		E	C	E	E	E	E	E
Approach Delay (s)			19.4				34.5			62.7		
Approach LOS			B				C			E		
Intersection Summary												
HCM 2000 Control Delay			28.0				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)		19.9			
Intersection Capacity Utilization			73.1%				ICU Level of Service		D			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
↓	↖	
Lane Configurations	↑	↗
Volume (vph)	20	51
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.7	4.7
Lane Util. Factor	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	1863	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	1863	1583
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	22	55
RTOR Reduction (vph)	0	50
Lane Group Flow (vph)	22	5
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Actuated Green, G (s)	12.0	12.0
Effective Green, g (s)	12.0	12.0
Actuated g/C Ratio	0.09	0.09
Clearance Time (s)	4.7	4.7
Vehicle Extension (s)	2.0	2.0
Lane Grp Cap (vph)	159	135
v/s Ratio Prot	0.01	
v/s Ratio Perm		0.00
v/c Ratio	0.14	0.03
Uniform Delay, d1	59.2	58.7
Progression Factor	1.00	1.00
Incremental Delay, d2	0.1	0.0
Delay (s)	59.4	58.7
Level of Service	E	E
Approach Delay (s)	62.5	
Approach LOS	E	
Intersection Summary		
























HCM Signalized Intersection Capacity Analysis
 25: Hidden Valley Rd/The Crossing Dr & Palomar Airport Rd

Opening Year + Specific Plan
 AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Volume (vph)	76	2179	100	43	1194	88	116	12	91	41	4	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	4.2	4.2	6.0		4.2	4.7		5.0	5.7	5.7
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00		1.00	1.00	1.00
Fr _t	1.00	1.00	0.85	1.00	0.99		1.00	0.87		1.00	1.00	0.85
Fl _t Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5033		1770	1616		1770	1863	1583
Fl _t Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5033		1770	1616		1770	1863	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	81	2318	106	46	1270	94	123	13	97	44	4	36
RTOR Reduction (vph)	0	0	17	0	4	0	0	81	0	0	0	32
Lane Group Flow (vph)	81	2318	89	46	1360	0	123	29	0	44	4	5
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2									4
Actuated Green, G (s)	10.0	84.4	95.9	6.5	80.1		11.5	22.5		6.7	17.5	17.5
Effective Green, g (s)	10.0	84.4	95.9	6.5	80.1		11.5	22.5		6.7	17.5	17.5
Actuated g/C Ratio	0.07	0.60	0.69	0.05	0.57		0.08	0.16		0.05	0.12	0.12
Clearance Time (s)	5.0	6.0	4.2	4.2	6.0		4.2	4.7		5.0	5.7	5.7
Vehicle Extension (s)	2.0	3.0	2.0	2.0	3.0		2.0	3.0		2.0	3.0	3.0
Lane Grp Cap (vph)	126	3065	1084	82	2879		145	259		84	232	197
v/s Ratio Prot	c0.05	c0.46	0.01	0.03	0.27		c0.07	c0.02		0.02	0.00	
v/s Ratio Perm			0.05									0.00
v/c Ratio	0.64	0.76	0.08	0.56	0.47		0.85	0.11		0.52	0.02	0.02
Uniform Delay, d ₁	63.3	20.3	7.4	65.4	17.6		63.4	50.2		65.1	53.7	53.7
Progression Factor	1.11	0.50	0.66	1.22	0.81		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d ₂	5.8	1.3	0.0	4.5	0.5		33.2	0.2		2.7	0.0	0.0
Delay (s)	76.2	11.4	4.9	84.6	14.7		96.6	50.4		67.8	53.7	53.8
Level of Service	E	B	A	F	B		F	D		E	D	D
Approach Delay (s)		13.2			17.0			74.8			61.1	
Approach LOS		B			B			E			E	
Intersection Summary												
HCM 2000 Control Delay			18.8			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			20.9			
Intersection Capacity Utilization			70.9%			ICU Level of Service				C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 26: Aviara Pkwy/College Blvd & Palomar Airport Rd

Opening Year + Specific Plan
 AM PEAK HOUR

























												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	573	1589	149	1	158	869	69	277	471	228	40	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.3	6.3		4.2	6.3	6.3	4.2	5.8	5.8	4.2	6.0
Lane Util. Factor	0.97	0.91	1.00		0.97	0.91	1.00	0.97	0.95	1.00	1.00	1.00
Flt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	5085	1583		3433	5085	1583	3433	3539	1583	1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	5085	1583		3433	5085	1583	3433	3539	1583	1770	1863
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	610	1690	159	1	168	924	73	295	501	243	43	118
RTOR Reduction (vph)	0	0	60	0	0	0	43	0	0	155	0	0
Lane Group Flow (vph)	610	1690	99	0	169	924	30	295	501	88	43	118
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases			2				6			8		
Actuated Green, G (s)	29.3	76.0	76.0		10.4	56.8	56.8	14.2	26.2	26.2	6.9	18.7
Effective Green, g (s)	29.3	76.0	76.0		10.4	56.8	56.8	14.2	26.2	26.2	6.9	18.7
Actuated g/C Ratio	0.21	0.54	0.54		0.07	0.41	0.41	0.10	0.19	0.19	0.05	0.13
Clearance Time (s)	4.5	6.3	6.3		4.2	6.3	6.3	4.2	5.8	5.8	4.2	6.0
Vehicle Extension (s)	2.0	3.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0
Lane Grp Cap (vph)	718	2760	859		255	2063	642	348	662	296	87	248
v/s Ratio Prot	c0.18	c0.33			0.05	0.18		c0.09	c0.14		0.02	0.06
v/s Ratio Perm			0.06				0.02			0.06		
v/c Ratio	0.85	0.61	0.12		0.66	0.45	0.05	0.85	0.76	0.30	0.49	0.48
Uniform Delay, d1	53.2	21.9	15.6		63.1	30.2	25.2	61.8	53.9	49.0	64.8	56.1
Progression Factor	1.33	1.00	2.41		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.3	0.7	0.2		4.9	0.7	0.1	16.5	4.9	0.6	1.6	1.4
Delay (s)	77.4	22.6	37.8		68.0	30.9	25.3	78.4	58.8	49.5	66.5	57.6
Level of Service	E	C	D		E	C	C	E	E	D	E	E
Approach Delay (s)		37.1				35.9			62.2			45.6
Approach LOS		D				D			E			D
Intersection Summary												
HCM 2000 Control Delay			42.6	HCM 2000 Level of Service				D				
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			140.0	Sum of lost time (s)				21.0				
Intersection Capacity Utilization			69.8%	ICU Level of Service				C				
Analysis Period (min)			15									
c Critical Lane Group												



Movement	SBR
Lane Configurations	7
Volume (vph)	179
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Fr _t	0.85
Fl _t Protected	1.00
Satd. Flow (prot)	1583
Fl _t Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.94
Adj. Flow (vph)	190
RTOR Reduction (vph)	38
Lane Group Flow (vph)	152
Turn Type	pm+ov
Protected Phases	5
Permitted Phases	4
Actuated Green, G (s)	48.0
Effective Green, g (s)	48.0
Actuated g/C Ratio	0.34
Clearance Time (s)	4.5
Vehicle Extension (s)	2.0
Lane Grp Cap (vph)	542
v/s Ratio Prot	0.06
v/s Ratio Perm	0.04
v/c Ratio	0.28
Uniform Delay, d ₁	33.4
Progression Factor	1.00
Incremental Delay, d ₂	0.1
Delay (s)	33.5
Level of Service	C
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
 27: El Camino Real & Palomar Airport Rd













Opening Year + Specific Plan
 AM PEAK HOUR

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	
Lane Configurations													
Volume (vph)	172	863	134	551	1313	566	11	109	642	428	3	577	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	5.0	6.0	4.0	5.0	6.0	6.0		5.0	6.0	5.0		5.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	0.88		0.97	0.91	0.88		0.97	
Flt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85		1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95	
Satd. Flow (prot)	3433	5085	1583	3433	5085	2787		3433	5085	2787		3433	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95	
Satd. Flow (perm)	3433	5085	1583	3433	5085	2787		3433	5085	2787		3433	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
Adj. Flow (vph)	177	890	138	568	1354	584	11	112	662	441	3	595	
RTOR Reduction (vph)	0	0	138	0	0	240	0	0	0	65	0	0	
Lane Group Flow (vph)	177	890	0	568	1354	344	0	123	662	376	0	598	
Turn Type	Prot	NA	NA	Prot	NA	Perm	Prot	Prot	NA	pm+ov	Prot	Prot	
Protected Phases	3	8		7	4		1	1	6	7	5	5	
Permitted Phases						4				6			
Actuated Green, G (s)	11.6	41.7	0.0	26.9	57.0	57.0		9.4	22.7	49.6		26.7	
Effective Green, g (s)	11.6	41.7	0.0	26.9	57.0	57.0		9.4	22.7	49.6		26.7	
Actuated g/C Ratio	0.08	0.30	0.00	0.19	0.41	0.41		0.07	0.16	0.35		0.19	
Clearance Time (s)	5.0	6.0		5.0	6.0	6.0		5.0	6.0	5.0		5.0	
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0		2.0	3.0	2.0		2.0	
Lane Grp Cap (vph)	284	1514	0	659	2070	1134		230	824	987		654	
v/s Ratio Prot	0.05	0.18		c0.17	c0.27			0.04	c0.13	0.07		c0.17	
v/s Ratio Perm						0.12				0.06			
v/c Ratio	0.62	0.59	0.00	0.86	0.65	0.30		0.53	0.80	0.38		0.91	
Uniform Delay, d1	62.1	41.8	70.0	54.8	33.5	28.1		63.2	56.5	33.7		55.5	
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	3.0	1.7	0.0	10.9	1.6	0.7		1.2	5.7	0.1		17.1	
Delay (s)	65.1	43.5	70.0	65.6	35.2	28.8		64.4	62.2	33.8		72.6	
Level of Service	E	D	E	E	D	C		E	E	C		E	
Approach Delay (s)		49.7			40.6				52.2				
Approach LOS		D			D				D				
Intersection Summary													
HCM 2000 Control Delay			47.5				HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.80										
Actuated Cycle Length (s)			140.0				Sum of lost time (s)		22.0				
Intersection Capacity Utilization			79.7%				ICU Level of Service		D				
Analysis Period (min)			15										
c Critical Lane Group													

Movement	SBT	SBR
Label Configurations	↑↑↑	↑
Volume (vph)	993	369
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	5.0
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	1024	380
RTOR Reduction (vph)	0	91
Lane Group Flow (vph)	1024	289
Turn Type	NA	pm+ov
Protected Phases	2	3
Permitted Phases		2
Actuated Green, G (s)	40.0	51.6
Effective Green, g (s)	40.0	51.6
Actuated g/C Ratio	0.29	0.37
Clearance Time (s)	6.0	5.0
Vehicle Extension (s)	3.0	2.0
Lane Grp Cap (vph)	1452	583
v/s Ratio Prot	0.20	0.04
v/s Ratio Perm		0.14
v/c Ratio	0.71	0.50
Uniform Delay, d1	44.7	34.2
Progression Factor	1.00	1.00
Incremental Delay, d2	1.6	0.2
Delay (s)	46.3	34.4
Level of Service	D	C
Approach Delay (s)	51.9	
Approach LOS	D	
Intersection Summary		























HCM Signalized Intersection Capacity Analysis
 28: I-5 SB Ramps & Poinsettia Ln

Opening Year + Specific Plan
 AM PEAK HOUR

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↑↑	↑	↑↑	↑↑					↑	↑	↑	
Volume (vph)	0	522	134	441	658	0	0	0	0	208	3	193	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6	
Lane Util. Factor		0.95	1.00	0.97	0.95					1.00	0.95	0.95	
Fr _t		1.00	0.85	1.00	1.00					1.00	0.85	0.85	
Fl _t Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00	
Satd. Flow (prot)		3539	1583	3433	3539					1770	1512	1504	
Fl _t Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00	
Satd. Flow (perm)		3539	1583	3433	3539					1770	1512	1504	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Adj. Flow (vph)	0	561	144	474	708	0	0	0	0	224	3	208	
RTOR Reduction (vph)	0	0	103	0	0	0	0	0	0	0	78	81	
Lane Group Flow (vph)	0	561	41	474	708	0	0	0	0	224	27	25	
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm	
Protected Phases		2		1	6						4		
Permitted Phases			2							4		4	
Actuated Green, G (s)		16.5	16.5	14.3	35.0					13.4	13.4	13.4	
Effective Green, g (s)		16.5	16.5	14.3	35.0					13.4	13.4	13.4	
Actuated g/C Ratio		0.29	0.29	0.25	0.61					0.23	0.23	0.23	
Clearance Time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6	
Vehicle Extension (s)		2.0	2.0	2.0	5.0					2.0	2.0	2.0	
Lane Grp Cap (vph)		1013	453	852	2150					411	351	349	
v/s Ratio Prot		c0.16		c0.14	0.20						0.02		
v/s Ratio Perm			0.03							c0.13		0.02	
v/c Ratio		0.55	0.09	0.56	0.33					0.55	0.08	0.07	
Uniform Delay, d ₁		17.4	15.1	18.9	5.5					19.4	17.3	17.2	
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00	
Incremental Delay, d ₂		0.4	0.0	0.4	0.2					0.8	0.0	0.0	
Delay (s)		17.8	15.1	19.3	5.7					20.2	17.3	17.3	
Level of Service		B	B	B	A					C	B	B	
Approach Delay (s)		17.2			11.2			0.0			18.8		
Approach LOS		B			B			A			B		
Intersection Summary													
HCM 2000 Control Delay			14.5									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.55										
Actuated Cycle Length (s)			57.6									Sum of lost time (s)	13.4
Intersection Capacity Utilization			52.6%									ICU Level of Service	A
Analysis Period (min)			15										
c Critical Lane Group													































HCM Signalized Intersection Capacity Analysis
 29: I-5 NB Ramps & Poinsettia Ln

Opening Year + Specific Plan
 AM PEAK HOUR

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			  				 				
Volume (vph)	124	606	0	0	902	380	197	2	643	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.2	4.6			4.6	4.6		4.6	4.6				
Lane Util. Factor	1.00	0.95			0.91	1.00		1.00	0.88				
Fr _t	1.00	1.00			1.00	0.85		1.00	0.85				
Fl _t Protected	0.95	1.00			1.00	1.00		0.95	1.00				
Satd. Flow (prot)	1770	3539			5085	1583		1775	2787				
Fl _t Permitted	0.95	1.00			1.00	1.00		0.95	1.00				
Satd. Flow (perm)	1770	3539			5085	1583		1775	2787				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
Adj. Flow (vph)	128	625	0	0	930	392	203	2	663	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	223	0	0	435	0	0	0	
Lane Group Flow (vph)	128	625	0	0	930	169	0	205	228	0	0	0	
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm				
Protected Phases	5	2			6			8					
Permitted Phases						6	8		8				
Actuated Green, G (s)	7.5	31.6			19.9	19.9		14.1	14.1				
Effective Green, g (s)	7.5	31.6			19.9	19.9		14.1	14.1				
Actuated g/C Ratio	0.14	0.58			0.36	0.36		0.26	0.26				
Clearance Time (s)	4.2	4.6			4.6	4.6		4.6	4.6				
Vehicle Extension (s)	2.0	5.0			2.0	2.0		2.0	2.0				
Lane Grp Cap (vph)	241	2037			1843	573		455	715				
v/s Ratio Prot	c0.07	0.18			c0.18								
v/s Ratio Perm						0.11		0.12	0.08				
v/c Ratio	0.53	0.31			0.50	0.29		0.45	0.32				
Uniform Delay, d ₁	22.1	6.0			13.7	12.5		17.1	16.5				
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00				
Incremental Delay, d ₂	1.1	0.2			0.1	0.1		0.3	0.1				
Delay (s)	23.2	6.2			13.7	12.6		17.4	16.6				
Level of Service	C	A			B	B		B	B				
Approach Delay (s)		9.1			13.4			16.8			0.0		
Approach LOS		A			B			B			A		
Intersection Summary													
HCM 2000 Control Delay			13.3		HCM 2000 Level of Service				B				
HCM 2000 Volume to Capacity ratio			0.49										
Actuated Cycle Length (s)			54.9		Sum of lost time (s)				13.4				
Intersection Capacity Utilization			52.6%		ICU Level of Service				A				
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis
30: Lower Ln/Paseo Del Norte & Poinsettia Ln

Opening Year + Specific Plan
AM PEAK HOUR























												
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		 	 	 	 	 		 	 		 	 
Volume (vph)	1	203	1018	27	6	897	76	39	4	20	52	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	4.6	4.6	4.2	4.6		4.6	4.6		4.6	4.6
Lane Util. Factor		0.97	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00
Flt		1.00	1.00	0.85	1.00	0.99		1.00	0.87		1.00	0.85
Flt Protected		0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)		3433	3539	1583	1770	3498		1770	1626		1770	1586
Flt Permitted		0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00
Satd. Flow (perm)		3433	3539	1583	1770	3498		1770	1626		1770	1586
Peak-hour factor, PHF	0.92	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	1	223	1119	30	7	986	84	43	4	22	57	4
RTOR Reduction (vph)	0	0	0	12	0	4	0	0	20	0	0	341
Lane Group Flow (vph)	0	224	1119	18	7	1066	0	43	6	0	57	42
Turn Type	Prot	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA
Protected Phases	5	5	2		1	6		3	3		4	4
Permitted Phases				2								
Actuated Green, G (s)		11.7	56.5	56.5	0.8	45.6		7.7	7.7		9.3	9.3
Effective Green, g (s)		11.7	56.5	56.5	0.8	45.6		7.7	7.7		9.3	9.3
Actuated g/C Ratio		0.13	0.61	0.61	0.01	0.49		0.08	0.08		0.10	0.10
Clearance Time (s)		4.2	4.6	4.6	4.2	4.6		4.6	4.6		4.6	4.6
Vehicle Extension (s)		2.0	5.0	5.0	2.0	5.0		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)		435	2166	969	15	1728		147	135		178	159
v/s Ratio Prot		c0.07	0.32		0.00	c0.30		c0.02	0.00		c0.03	0.03
v/s Ratio Perm				0.01								
v/c Ratio		0.51	0.52	0.02	0.47	0.62		0.29	0.04		0.32	0.27
Uniform Delay, d1		37.6	10.2	7.0	45.5	17.0		39.7	38.9		38.6	38.3
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.4	0.4	0.0	8.1	1.0		0.4	0.0		0.4	0.3
Delay (s)		38.1	10.6	7.0	53.7	18.0		40.1	39.0		38.9	38.7
Level of Service		D	B	A	D	B		D	D		D	D
Approach Delay (s)			15.0			18.2			39.7			38.7
Approach LOS			B			B			D			D
Intersection Summary												
HCM 2000 Control Delay			20.3			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			92.3			Sum of lost time (s)		18.0				
Intersection Capacity Utilization			73.8%			ICU Level of Service		D				
Analysis Period (min)			15									
c Critical Lane Group												



Movement	SBR
Lane Configurations	
Volume (vph)	345
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Fr	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.91
Adj. Flow (vph)	379
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
31: Aviara Pkwy & Poinsettia Ln

Opening Year + Specific Plan
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	385	287	198	22	290	73	263	228	19	48	162	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.0	5.5	5.5	6.0		5.5	6.0		5.5	6.0	
Lane Util. Factor	0.97	1.00	0.88	1.00	0.95		0.97	0.95		1.00	0.95	
Flt	1.00	1.00	0.85	1.00	0.97		1.00	0.99		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1863	2787	1770	3433		3433	3499		1770	3301	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	1863	2787	1770	3433		3433	3499		1770	3301	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	428	319	220	24	322	81	292	253	21	53	180	146
RTOR Reduction (vph)	0	0	96	0	15	0	0	3	0	0	88	0
Lane Group Flow (vph)	428	319	124	24	388	0	292	271	0	53	238	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	20.6	40.2	54.8	2.7	22.3		14.6	19.6		11.6	16.6	
Effective Green, g (s)	20.6	40.2	54.8	2.7	22.3		14.6	19.6		11.6	16.6	
Actuated g/C Ratio	0.21	0.41	0.56	0.03	0.23		0.15	0.20		0.12	0.17	
Clearance Time (s)	5.5	6.0	5.5	5.5	6.0		5.5	6.0		5.5	6.0	
Vehicle Extension (s)	2.5	3.5	3.0	2.5	3.5		3.0	4.0		2.5	4.0	
Lane Grp Cap (vph)	728	771	1572	49	788		516	706		211	564	
v/s Ratio Prot	c0.12	0.17	0.01	0.01	c0.11		c0.09	0.08		0.03	c0.07	
v/s Ratio Perm			0.03									
v/c Ratio	0.59	0.41	0.08	0.49	0.49		0.57	0.38		0.25	0.42	
Uniform Delay, d1	34.4	20.1	9.6	46.5	32.5		38.3	33.5		38.8	36.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	0.4	0.0	5.5	0.6		1.4	0.5		0.5	0.7	
Delay (s)	35.4	20.5	9.7	52.0	33.1		39.7	34.0		39.3	36.7	
Level of Service	D	C	A	D	C		D	C		D	D	
Approach Delay (s)		24.7			34.1			37.0			37.0	
Approach LOS		C			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			31.4				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.52									
Actuated Cycle Length (s)			97.1				Sum of lost time (s)			23.0		
Intersection Capacity Utilization			56.7%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

32: El Camino Real & Aviara Pkwy

Opening Year + Specific Plan
AM PEAK HOUR

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Volume (vph)	1	93	146	302	5	570	303	100	232	1400	196	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	5.7	4.6		4.2	5.7		4.6	6.4		
Lane Util. Factor		0.97	0.95	1.00		0.97	0.95		0.97	0.91		
Flt		1.00	1.00	0.85		1.00	0.96		1.00	0.98		
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	1.00		
Satd. Flow (prot)		3433	3539	1583		3433	3407		3433	4992		
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.95	1.00		
Satd. Flow (perm)		3433	3539	1583		3433	3407		3433	4992		
Peak-hour factor, PHF	0.92	0.91	0.91	0.91	0.92	0.91	0.91	0.91	0.91	0.91	0.91	0.92
Adj. Flow (vph)	1	102	160	332	5	626	333	110	255	1538	215	2
RTOR Reduction (vph)	0	0	0	76	0	0	28	0	0	10	0	0
Lane Group Flow (vph)	0	103	160	256	0	631	415	0	255	1743	0	0
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		Prot	NA		Prot
Protected Phases	7	7	4	5	3	3	8		5	2		1
Permitted Phases				4								
Actuated Green, G (s)		8.6	20.6	24.2		31.2	43.2		3.6	60.7		
Effective Green, g (s)		8.6	20.6	24.2		31.2	43.2		3.6	60.7		
Actuated g/C Ratio		0.06	0.15	0.17		0.22	0.31		0.03	0.43		
Clearance Time (s)		4.2	5.7	4.6		4.2	5.7		4.6	6.4		
Vehicle Extension (s)		2.0	2.0	2.0		3.0	2.0		2.0	3.0		
Lane Grp Cap (vph)		210	520	273		765	1051		88	2164		
v/s Ratio Prot		0.03	0.05	c0.02		c0.18	0.12		c0.07	c0.35		
v/s Ratio Perm				0.14								
v/c Ratio		0.49	0.31	0.94		0.82	0.40		2.90	0.81		
Uniform Delay, d1		63.6	53.3	57.2		51.8	38.1		68.2	34.5		
Progression Factor		1.00	1.00	1.00		1.00	1.00		1.00	1.00		
Incremental Delay, d2		0.7	0.1	37.2		7.2	0.1		884.1	3.3		
Delay (s)		64.2	53.5	94.3		59.0	38.2		952.3	37.8		
Level of Service		E	D	F		E	D		F	D		
Approach Delay (s)			78.1			50.4				154.0		
Approach LOS			E			D				F		
Intersection Summary												
HCM 2000 Control Delay			88.7			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			20.9			
Intersection Capacity Utilization			72.3%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 32: El Camino Real & Aviara Pkwy





















Opening Year + Specific Plan
 AM PEAK HOUR



Movement	SBL	SBT	SBR
Lane Configurations			
Volume (vph)	74	1034	88
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.2	6.4	
Lane Util. Factor	0.97	0.91	
Frt	1.00	0.99	
Flt Protected	0.95	1.00	
Satd. Flow (prot)	3433	5025	
Flt Permitted	0.95	1.00	
Satd. Flow (perm)	3433	5025	
Peak-hour factor, PHF	0.91	0.91	0.91
Adj. Flow (vph)	81	1136	97
RTOR Reduction (vph)	0	5	0
Lane Group Flow (vph)	83	1228	0
Turn Type	Prot	NA	
Protected Phases	1	6	
Permitted Phases			
Actuated Green, G (s)	7.0	63.7	
Effective Green, g (s)	7.0	63.7	
Actuated g/C Ratio	0.05	0.46	
Clearance Time (s)	4.2	6.4	
Vehicle Extension (s)	2.0	3.0	
Lane Grp Cap (vph)	171	2286	
v/s Ratio Prot	0.02	c0.24	
v/s Ratio Perm			
v/c Ratio	0.49	0.54	
Uniform Delay, d1	64.7	27.5	
Progression Factor	0.85	0.81	
Incremental Delay, d2	0.7	0.8	
Delay (s)	55.7	23.0	
Level of Service	E	C	
Approach Delay (s)		25.1	
Approach LOS		C	
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
33: El Camino Real & Poinsettia Ln

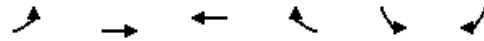
Opening Year + Specific Plan
AM PEAK HOUR

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	
Lane Configurations													
Volume (vph)	10	6	4	300	3	182	17	6	1422	182	1	107	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.2	4.7		4.2	5.0			4.2	6.0	6.0		4.2	
Lane Util. Factor	0.97	0.95		0.97	0.95			0.97	0.91	1.00		0.97	
Fr _t	1.00	0.94		1.00	0.85			1.00	1.00	0.85		1.00	
Fl _t Protected	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95	
Satd. Flow (prot)	3433	3327		3433	3016			3433	5085	1583		3433	
Fl _t Permitted	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95	
Satd. Flow (perm)	3433	3327		3433	3016			3433	5085	1583		3433	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Adj. Flow (vph)	11	6	4	319	3	194	18	6	1513	194	1	114	
RTOR Reduction (vph)	0	4	0	0	153	0	0	0	0	70	0	0	
Lane Group Flow (vph)	11	6	0	319	44	0	0	24	1513	124	0	115	
Turn Type	Prot	NA		Prot	NA		Prot	Prot	NA	Perm	Prot	Prot	
Protected Phases	7	4		3	8		1	1	6		5	5	
Permitted Phases										6			
Actuated Green, G (s)	2.2	17.0		16.9	31.4			3.6	78.8	78.8		8.2	
Effective Green, g (s)	2.2	17.0		16.9	31.4			3.6	78.8	78.8		8.2	
Actuated g/C Ratio	0.02	0.12		0.12	0.22			0.03	0.56	0.56		0.06	
Clearance Time (s)	4.2	4.7		4.2	5.0			4.2	6.0	6.0		4.2	
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0	3.0	3.0		2.0	
Lane Grp Cap (vph)	53	403		414	676			88	2862	891		201	
v/s Ratio Prot	0.00	0.00		c0.09	c0.01			0.01	c0.30			c0.03	
v/s Ratio Perm										0.08			
v/c Ratio	0.21	0.02		0.77	0.07			0.27	0.53	0.14		0.57	
Uniform Delay, d ₁	68.0	54.1		59.7	42.7			66.9	19.0	14.5		64.2	
Progression Factor	1.00	1.00		1.00	1.00			1.13	0.78	1.16		1.00	
Incremental Delay, d ₂	0.7	0.0		7.9	0.0			0.4	0.5	0.2		2.4	
Delay (s)	68.7	54.1		67.5	42.8			76.3	15.3	17.0		66.6	
Level of Service	E	D		E	D			E	B	B		E	
Approach Delay (s)		61.8			58.1				16.4				
Approach LOS		E			E				B				
Intersection Summary													
HCM 2000 Control Delay			24.0									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.50										
Actuated Cycle Length (s)			140.0									Sum of lost time (s)	19.4
Intersection Capacity Utilization			58.7%									ICU Level of Service	B
Analysis Period (min)			15										
c Critical Lane Group													

Movement	SBT	SBR
Label Configurations	↑↑↑	
Volume (vph)	1038	14
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	
Lane Util. Factor	0.91	
Flt	1.00	
Flt Protected	1.00	
Satd. Flow (prot)	5075	
Flt Permitted	1.00	
Satd. Flow (perm)	5075	
Peak-hour factor, PHF	0.94	0.92
Adj. Flow (vph)	1104	15
RTOR Reduction (vph)	1	0
Lane Group Flow (vph)	1118	0
Turn Type	NA	
Protected Phases	2	
Permitted Phases		
Actuated Green, G (s)	83.4	
Effective Green, g (s)	83.4	
Actuated g/C Ratio	0.60	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	3023	
v/s Ratio Prot	0.22	
v/s Ratio Perm		
v/c Ratio	0.37	
Uniform Delay, d1	14.7	
Progression Factor	1.00	
Incremental Delay, d2	0.3	
Delay (s)	15.0	
Level of Service	B	
Approach Delay (s)	19.8	
Approach LOS	B	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
 34: Cannon Rd & Project Dwy

Opening Year + Specific Plan
 AM PEAK HOUR



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔↔	↕↕	↕↕	↗		
Volume (vph)	567	1221	868	48	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	0.97	0.95	0.95	1.00		
Flt	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	3433	3539	3539	1583		
Flt Permitted	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	3433	3539	3539	1583		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	616	1327	943	52	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	616	1327	943	52	0	0
Turn Type	Prot	NA	NA	custom		
Protected Phases	5!	2 10	6 10	5 6!		
Permitted Phases						
Actuated Green, G (s)	18.0	70.0	44.0	40.6		
Effective Green, g (s)	18.0	70.0	44.0	40.6		
Actuated g/C Ratio	0.26	1.00	0.63	0.58		
Clearance Time (s)	4.0					
Vehicle Extension (s)	3.0					
Lane Grp Cap (vph)	882	3539	2224	918		
v/s Ratio Prot	c0.18	0.37	c0.27	0.03		
v/s Ratio Perm						
v/c Ratio	0.70	0.37	0.42	0.06		
Uniform Delay, d1	23.5	0.0	6.6	6.4		
Progression Factor	1.10	1.00	1.28	0.82		
Incremental Delay, d2	2.1	0.1	0.1	0.0		
Delay (s)	28.0	0.1	8.5	5.3		
Level of Service	C	A	A	A		
Approach Delay (s)		8.9	8.3		0.0	
Approach LOS		A	A		A	

Intersection Summary





















HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 1: Carlsbad Blvd & Tamarack Ave

Opening Year + Specific Plan
 PM Peak Hour













													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	19	22	31	103	14	82	6	38	852	242	92	463	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.0	5.0	5.0	5.0			4.5	6.0		4.5	6.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	0.95		1.00	0.95	
Fr _t		1.00	0.85	1.00	0.87			1.00	0.97		1.00	1.00	
Fl _t Protected		0.98	1.00	0.95	1.00			0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1820	1583	1770	1625			1770	3422		1770	3539	
Fl _t Permitted		0.98	1.00	0.95	1.00			0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1820	1583	1770	1625			1770	3422		1770	3539	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Adj. Flow (vph)	21	24	34	114	16	91	7	42	947	269	102	514	
RTOR Reduction (vph)	0	0	32	0	78	0	0	0	11	0	0	0	
Lane Group Flow (vph)	0	45	2	114	29	0	0	49	1205	0	102	514	
Turn Type	Split	NA	Perm	Split	NA		Prot	Prot	NA		Prot	NA	
Protected Phases	4	4		3	3		5	5	2		1	6	
Permitted Phases			4										
Actuated Green, G (s)		6.9	6.9	14.2	14.2			6.2	47.5		10.4	51.7	
Effective Green, g (s)		6.9	6.9	14.2	14.2			6.2	47.5		10.4	51.7	
Actuated g/C Ratio		0.07	0.07	0.14	0.14			0.06	0.48		0.10	0.52	
Clearance Time (s)		5.0	5.0	5.0	5.0			4.5	6.0		4.5	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0			2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)		126	109	252	231			110	1633		185	1838	
v/s Ratio Prot		c0.02		c0.06	0.02			0.03	c0.35		c0.06	c0.15	
v/s Ratio Perm			0.00										
v/c Ratio		0.36	0.02	0.45	0.13			0.45	0.74		0.55	0.28	
Uniform Delay, d ₁		44.2	43.2	39.1	37.2			45.0	21.0		42.3	13.4	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d ₂		1.7	0.1	1.3	0.2			1.0	1.8		2.0	0.1	
Delay (s)		45.9	43.2	40.4	37.5			46.0	22.7		44.3	13.5	
Level of Service		D	D	D	D			D	C		D	B	
Approach Delay (s)		44.8			39.0				23.7			18.4	
Approach LOS		D			D				C			B	
Intersection Summary													
HCM 2000 Control Delay			24.4									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.62										
Actuated Cycle Length (s)			99.5									Sum of lost time (s)	20.5
Intersection Capacity Utilization			61.7%									ICU Level of Service	B
Analysis Period (min)			15										
c Critical Lane Group													

Movement	SBR
Lane Configurations	7
Volume (vph)	19
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.90
Adj. Flow (vph)	21
RTOR Reduction (vph)	10
Lane Group Flow (vph)	11
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	51.7
Effective Green, g (s)	51.7
Actuated g/C Ratio	0.52
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	822
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.01
Uniform Delay, d1	11.6
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	11.6
Level of Service	B
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis

2: I-5 SB Ramps & Tamarack Ave


















Opening Year + Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑						↑	↑
Volume (vph)	0	439	260	469	236	0	0	0	0	218	3	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.2	4.6						4.6	4.6
Lane Util. Factor		0.95	1.00	1.00	0.95						1.00	1.00
Fr _t		1.00	0.85	1.00	1.00						1.00	0.85
Fl _t Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		3539	1583	1770	3539						1775	1583
Fl _t Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		3539	1583	1770	3539						1775	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	472	280	504	254	0	0	0	0	234	3	232
RTOR Reduction (vph)	0	0	108	0	0	0	0	0	0	0	0	185
Lane Group Flow (vph)	0	472	172	504	254	0	0	0	0	0	237	47
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		25.6	25.6	33.3	63.1						18.2	18.2
Effective Green, g (s)		25.6	25.6	33.3	63.1						18.2	18.2
Actuated g/C Ratio		0.28	0.28	0.37	0.70						0.20	0.20
Clearance Time (s)		4.6	4.6	4.2	4.6						4.6	4.6
Vehicle Extension (s)		5.0	5.0	2.0	7.0						2.0	2.0
Lane Grp Cap (vph)		1001	447	651	2467						356	318
v/s Ratio Prot		c0.13		c0.28	0.07							
v/s Ratio Perm			0.11								0.13	0.03
v/c Ratio		0.47	0.39	0.77	0.10						0.67	0.15
Uniform Delay, d ₁		26.9	26.1	25.3	4.5						33.3	29.8
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d ₂		0.7	1.2	5.2	0.1						3.6	0.1
Delay (s)		27.6	27.3	30.5	4.5						37.0	29.8
Level of Service		C	C	C	A						D	C
Approach Delay (s)		27.5			21.8			0.0			33.4	
Approach LOS		C			C			A			C	
Intersection Summary												
HCM 2000 Control Delay			26.7			HCM 2000 Level of Service					C	
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			90.5			Sum of lost time (s)				13.4		
Intersection Capacity Utilization			65.5%			ICU Level of Service				C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: I-5 NB Ramps & Tamarack Ave























Opening Year + Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	173	484	0	0	433	180	272	0	437	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.1			5.1			4.6	4.6			
Lane Util. Factor	1.00	0.95			0.95			1.00	1.00			
Flt	1.00	1.00			0.96			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (prot)	1770	3539			3383			1770	1583			
Flt Permitted	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (perm)	1770	3539			3383			1770	1583			
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	190	532	0	0	476	198	299	0	480	0	0	0
RTOR Reduction (vph)	0	0	0	0	42	0	0	0	283	0	0	0
Lane Group Flow (vph)	190	532	0	0	632	0	0	299	197	0	0	0
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	12.5	36.0			18.9			17.4	17.4			
Effective Green, g (s)	12.5	36.0			18.9			17.4	17.4			
Actuated g/C Ratio	0.20	0.57			0.30			0.28	0.28			
Clearance Time (s)	4.6	5.1			5.1			4.6	4.6			
Vehicle Extension (s)	2.0	3.0			2.0			2.0	2.0			
Lane Grp Cap (vph)	350	2019			1013			488	436			
v/s Ratio Prot	c0.11	0.15			c0.19							
v/s Ratio Perm								0.17	0.12			
v/c Ratio	0.54	0.26			0.62			0.61	0.45			
Uniform Delay, d1	22.7	6.8			19.0			19.9	18.9			
Progression Factor	1.00	1.00			1.00			1.00	1.00			
Incremental Delay, d2	0.9	0.1			0.9			1.6	0.3			
Delay (s)	23.7	6.9			19.9			21.5	19.2			
Level of Service	C	A			B			C	B			
Approach Delay (s)		11.3			19.9			20.1			0.0	
Approach LOS		B			B			C			A	
Intersection Summary												
HCM 2000 Control Delay			17.1				HCM 2000 Level of Service		B			
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			63.1				Sum of lost time (s)		14.3			
Intersection Capacity Utilization			65.5%				ICU Level of Service		C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: El Camino Real & Tamarck Ave

Opening Year + Specific Plan
PM Peak Hour













												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Volume (vph)	35	151	147	195	112	24	231	1589	319	1	37	715
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.0	5.0	4.2	5.0		4.2	6.0			4.2	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.91			1.00	0.91
Flt	1.00	1.00	0.85	1.00	0.97		1.00	0.97			1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3444		1770	4958			1770	5085
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3444		1770	4958			1770	5085
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	37	161	156	207	119	26	246	1690	339	1	39	761
RTOR Reduction (vph)	0	0	133	0	16	0	0	16	0	0	0	0
Lane Group Flow (vph)	37	161	23	207	129	0	246	2013	0	0	40	761
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	Prot	NA
Protected Phases	7	4		3	8		5	2		1	1	6
Permitted Phases			4									
Actuated Green, G (s)	5.5	20.2	20.2	18.4	33.1		25.3	78.4			3.6	56.7
Effective Green, g (s)	5.5	20.2	20.2	18.4	33.1		25.3	78.4			3.6	56.7
Actuated g/C Ratio	0.04	0.14	0.14	0.13	0.24		0.18	0.56			0.03	0.41
Clearance Time (s)	4.2	5.0	5.0	4.2	5.0		4.2	6.0			4.2	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	3.0			2.0	3.0
Lane Grp Cap (vph)	69	268	228	232	814		319	2776			45	2059
v/s Ratio Prot	0.02	c0.09		c0.12	0.04		c0.14	c0.41			c0.02	0.15
v/s Ratio Perm			0.01									
v/c Ratio	0.54	0.60	0.10	0.89	0.16		0.77	0.73			0.89	0.37
Uniform Delay, d1	66.0	56.1	52.0	59.8	42.4		54.6	22.8			68.0	29.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	4.0	2.6	0.1	31.3	0.0		10.0	1.7			89.8	0.5
Delay (s)	70.0	58.7	52.1	91.1	42.4		64.6	24.5			157.8	29.7
Level of Service	E	E	D	F	D		E	C			F	C
Approach Delay (s)		57.0			71.1			28.8				35.2
Approach LOS		E			E			C				D
Intersection Summary												
HCM 2000 Control Delay			36.7				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)			19.4		
Intersection Capacity Utilization			76.1%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												



Movement	SBR
Lane Configurations	7
Volume (vph)	61
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Flt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.94
Adj. Flow (vph)	65
RTOR Reduction (vph)	39
Lane Group Flow (vph)	26
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	56.7
Effective Green, g (s)	56.7
Actuated g/C Ratio	0.41
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	641
v/s Ratio Prot	
v/s Ratio Perm	0.02
v/c Ratio	0.04
Uniform Delay, d1	25.2
Progression Factor	1.00
Incremental Delay, d2	0.1
Delay (s)	25.3
Level of Service	C
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
5: Carlsbad Blvd & Cannon Rd

Opening Year + Specific Plan
PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	133	356	838	127	191	528
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.5	5.5	5.5	4.5	5.5
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
Fl _t Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Fl _t Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	140	375	882	134	201	556
RTOR Reduction (vph)	0	79	0	11	0	0
Lane Group Flow (vph)	140	296	882	123	201	556
Turn Type	NA	pm+ov	NA	Perm	Prot	NA
Protected Phases	4	5	6		5	2
Permitted Phases		4		6		
Actuated Green, G (s)	15.9	33.9	58.6	58.6	18.0	81.1
Effective Green, g (s)	15.9	33.9	58.6	58.6	18.0	81.1
Actuated g/C Ratio	0.15	0.32	0.55	0.55	0.17	0.75
Clearance Time (s)	5.0	4.5	5.5	5.5	4.5	5.5
Vehicle Extension (s)	3.0	2.0	4.0	4.0	2.0	4.0
Lane Grp Cap (vph)	261	499	1015	862	296	1405
v/s Ratio Prot	0.08	c0.10	c0.47		c0.11	0.30
v/s Ratio Perm		0.09		0.08		
v/c Ratio	0.54	0.59	0.87	0.14	0.68	0.40
Uniform Delay, d ₁	42.4	31.0	21.1	12.1	42.0	4.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d ₂	2.1	1.3	8.3	0.1	4.8	0.3
Delay (s)	44.5	32.3	29.4	12.2	46.8	4.9
Level of Service	D	C	C	B	D	A
Approach Delay (s)	35.6		27.1			16.0
Approach LOS	D		C			B
Intersection Summary						
HCM 2000 Control Delay			25.4		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.78			
Actuated Cycle Length (s)			107.5		Sum of lost time (s)	15.0
Intersection Capacity Utilization			74.6%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

6: Avenida Encinas & Cannon Rd













Opening Year + Specific Plan
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	331	15	147	458	128	149	20	374	78	11	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.5		4.5	5.5		4.5	5.0	4.5	4.5	5.0	4.5
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	1.00	1.00	0.97	1.00	1.00
Fr _t	1.00	0.99		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Fl _t Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3517		3433	3423		1770	1863	1583	3433	1863	1583
Fl _t Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3517		3433	3423		1770	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	360	16	160	498	139	162	22	407	85	12	35
RTOR Reduction (vph)	0	3	0	0	19	0	0	0	251	0	0	30
Lane Group Flow (vph)	35	373	0	160	618	0	162	22	156	85	12	5
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8	1	7	4	5
Permitted Phases									8			4
Actuated Green, G (s)	4.0	19.1		9.5	24.6		12.1	9.4	18.9	7.7	5.0	9.0
Effective Green, g (s)	4.0	19.1		9.5	24.6		12.1	9.4	18.9	7.7	5.0	9.0
Actuated g/C Ratio	0.06	0.29		0.15	0.38		0.19	0.14	0.29	0.12	0.08	0.14
Clearance Time (s)	4.5	5.5		4.5	5.5		4.5	5.0	4.5	4.5	5.0	4.5
Vehicle Extension (s)	2.5	3.0		2.5	3.0		2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	108	1030		500	1291		328	268	458	405	142	218
v/s Ratio Prot	0.02	0.11		0.05	c0.18		c0.09	0.01	c0.05	0.02	0.01	0.00
v/s Ratio Perm									0.05			0.00
v/c Ratio	0.32	0.36		0.32	0.48		0.49	0.08	0.34	0.21	0.08	0.02
Uniform Delay, d ₁	29.3	18.2		25.0	15.4		23.8	24.2	18.2	26.0	28.0	24.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d ₂	1.3	0.2		0.3	0.3		0.9	0.1	0.3	0.2	0.2	0.0
Delay (s)	30.6	18.5		25.2	15.7		24.7	24.3	18.6	26.2	28.2	24.3
Level of Service	C	B		C	B		C	C	B	C	C	C
Approach Delay (s)		19.5			17.6			20.5			25.9	
Approach LOS		B			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			19.4				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.48									
Actuated Cycle Length (s)			65.2				Sum of lost time (s)			19.5		
Intersection Capacity Utilization			49.9%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

7: I-5 SB Ramps & Cannon Rd



















Opening Year + Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑↑	↑↑					↑	↑	↑
Volume (vph)	0	696	87	796	559	0	0	0	0	696	7	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Fr _t		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Fl _t Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1681	1687	1583
Fl _t Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1681	1687	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	748	94	856	601	0	0	0	0	748	8	187
RTOR Reduction (vph)	0	0	66	0	0	0	0	0	0	0	0	140
Lane Group Flow (vph)	0	748	28	856	601	0	0	0	0	381	375	47
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		23.8	23.8	22.5	50.5					20.3	20.3	20.3
Effective Green, g (s)		23.8	23.8	22.5	50.5					20.3	20.3	20.3
Actuated g/C Ratio		0.30	0.30	0.28	0.63					0.25	0.25	0.25
Clearance Time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6
Vehicle Extension (s)		2.0	2.0	2.0	2.0					2.0	2.0	2.0
Lane Grp Cap (vph)		1052	470	965	2233					426	428	401
v/s Ratio Prot		c0.21		c0.25	0.17					c0.23	0.22	
v/s Ratio Perm			0.02									0.03
v/c Ratio		0.71	0.06	0.89	0.27					0.89	0.88	0.12
Uniform Delay, d ₁		25.0	20.1	27.5	6.6					28.8	28.6	23.0
Progression Factor		1.00	1.00	1.70	1.51					1.00	1.00	1.00
Incremental Delay, d ₂		4.1	0.2	8.0	0.3					20.1	17.4	0.0
Delay (s)		29.1	20.3	54.9	10.2					49.0	46.0	23.0
Level of Service		C	C	D	B					D	D	C
Approach Delay (s)		28.1			36.4			0.0			42.6	
Approach LOS		C			D			A			D	
Intersection Summary												
HCM 2000 Control Delay			36.1			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.83									
Actuated Cycle Length (s)			80.0			Sum of lost time (s)			13.4			
Intersection Capacity Utilization			73.6%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

8: I-5 NB Ramps & Cannon Rd














Opening Year + Specific Plan
PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	352	1040	0	0	1226	1286	129	5	815	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.2	4.6			4.6	4.6		4.6	4.6				
Lane Util. Factor	0.97	0.95			0.95	0.88		1.00	0.88				
Fr _t	1.00	1.00			1.00	0.85		1.00	0.85				
Fl _t Protected	0.95	1.00			1.00	1.00		0.95	1.00				
Satd. Flow (prot)	3433	3539			3539	2787		1777	2787				
Fl _t Permitted	0.95	1.00			1.00	1.00		0.95	1.00				
Satd. Flow (perm)	3433	3539			3539	2787		1777	2787				
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)	371	1095	0	0	1291	1354	136	5	858	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	370	0	0	343	0	0	0	
Lane Group Flow (vph)	371	1095	0	0	1291	984	0	141	515	0	0	0	
Turn Type	Prot	NA			NA	Perm	Split	NA	custom				
Protected Phases	5	2			6	1	8	8	8				
Permitted Phases						6	1		1				
Actuated Green, G (s)	20.3	105.5			90.6	90.6		28.7	33.7				
Effective Green, g (s)	20.3	105.5			90.6	90.6		28.7	33.7				
Actuated g/C Ratio	0.13	0.66			0.57	0.57		0.18	0.21				
Clearance Time (s)	4.2	4.6						4.6	4.6				
Vehicle Extension (s)	2.0	2.0						2.0	2.0				
Lane Grp Cap (vph)	435	2333			2003	1578		318	587				
v/s Ratio Prot	c0.11	0.31			c0.36			0.08	c0.16				
v/s Ratio Perm						0.35			0.03				
v/c Ratio	0.85	0.47			0.64	0.62		0.44	0.88				
Uniform Delay, d ₁	68.4	13.4			23.7	23.3		58.5	61.1				
Progression Factor	1.14	1.12			1.13	1.31		1.00	1.00				
Incremental Delay, d ₂	10.4	0.4			0.3	0.4		0.4	13.4				
Delay (s)	88.7	15.5			27.0	30.8		58.9	74.6				
Level of Service	F	B			C	C		E	E				
Approach Delay (s)		34.0			29.0			72.4			0.0		
Approach LOS		C			C			E			A		
Intersection Summary													
HCM 2000 Control Delay			38.9		HCM 2000 Level of Service				D				
HCM 2000 Volume to Capacity ratio			0.73										
Actuated Cycle Length (s)			160.0		Sum of lost time (s)				21.6				
Intersection Capacity Utilization			73.6%		ICU Level of Service				D				
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis

9: Paseo Del Norte/Project Dwy & Cannon Rd

Opening Year + Specific Plan
PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	
Lane Configurations		↑↑↑		↵	↑↑↑	↵		↵↵		↵	↵↵	↑	
Volume (vph)	0	1591	264	101	1120	422	2	497	0	279	407	148	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.0		5.0	5.0	4.0		4.0		5.0	4.0	4.0	
Lane Util. Factor		0.91		1.00	0.91	1.00		0.97		1.00	0.97	1.00	
Flt		0.98		1.00	1.00	0.85		1.00		0.85	1.00	1.00	
Flt Protected		1.00		0.95	1.00	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		4977		1770	5085	1583		3433		1583	3433	1863	
Flt Permitted		1.00		0.95	1.00	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (perm)		4977		1770	5085	1583		3433		1583	3433	1863	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
Adj. Flow (vph)	0	1640	272	104	1155	435	2	512	0	288	420	153	
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	0	77	0	0	
Lane Group Flow (vph)	0	1899	0	104	1155	435	0	514	0	211	420	153	
Turn Type		NA		Prot	NA	Over	Prot	Prot		custom	Prot	NA	
Protected Phases		2 9		1	6	7	3	3		1	7	4	
Permitted Phases										3			
Actuated Green, G (s)		79.7		13.0	68.7	53.3		26.3		39.3	53.3	23.0	
Effective Green, g (s)		75.7		13.0	68.7	53.3		26.3		39.3	53.3	23.0	
Actuated g/C Ratio		0.47		0.08	0.43	0.33		0.16		0.25	0.33	0.14	
Clearance Time (s)				5.0	5.0	4.0		4.0		5.0	4.0	4.0	
Vehicle Extension (s)				2.0	4.5	3.0		3.0		2.0	3.0	3.0	
Lane Grp Cap (vph)		2354		143	2183	527		564		438	1143	267	
v/s Ratio Prot		c0.38		c0.06	0.23	0.27		c0.15		0.04	0.12	0.08	
v/s Ratio Perm										0.09			
v/c Ratio		0.81		0.73	0.53	0.83		0.91		0.48	0.37	0.57	
Uniform Delay, d1		35.9		71.8	33.7	49.1		65.7		51.6	40.5	63.9	
Progression Factor		1.00		0.75	0.63	0.94		1.00		1.00	1.00	1.00	
Incremental Delay, d2		1.7		6.1	0.4	4.3		19.0		0.3	0.2	3.0	
Delay (s)		37.6		59.8	21.5	50.3		84.7		51.9	40.7	66.9	
Level of Service		D		E	C	D		F		D	D	E	
Approach Delay (s)		37.6			31.2				73.0			74.4	
Approach LOS		D			C				E			E	
Intersection Summary													
HCM 2000 Control Delay			49.9		HCM 2000 Level of Service					D			
HCM 2000 Volume to Capacity ratio			0.92										
Actuated Cycle Length (s)			160.0		Sum of lost time (s)					22.0			
Intersection Capacity Utilization			79.2%		ICU Level of Service					D			
Analysis Period (min)			15										
c Critical Lane Group													



Movement	SBR
Lane Configurations	TT
Volume (vph)	895
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	0.88
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	2787
Flt Permitted	1.00
Satd. Flow (perm)	2787
Peak-hour factor, PHF	0.97
Adj. Flow (vph)	923
RTOR Reduction (vph)	0
Lane Group Flow (vph)	923
Turn Type	custom
Protected Phases	9
Permitted Phases	4 9
Actuated Green, G (s)	48.0
Effective Green, g (s)	48.0
Actuated g/C Ratio	0.30
Clearance Time (s)	4.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	905
v/s Ratio Prot	c0.16
v/s Ratio Perm	0.17
v/c Ratio	1.02
Uniform Delay, d1	56.0
Progression Factor	1.00
Incremental Delay, d2	35.0
Delay (s)	91.0
Level of Service	F
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
 10: Car Country Dr & Cannon Rd

Opening Year + Specific Plan
 PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕↕		↘	↕↕	↘	↗
Volume (vph)	1166	123	121	1489	259	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5		5.5	6.5	5.5	5.5
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Flt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3488		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3488		1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1267	134	132	1618	282	136
RTOR Reduction (vph)	4	0	0	0	0	110
Lane Group Flow (vph)	1397	0	132	1618	282	26
Turn Type	NA		Prot	NA	NA	Perm
Protected Phases	2		1	6	3	
Permitted Phases						3
Actuated Green, G (s)	95.0		16.8	117.3	30.7	30.7
Effective Green, g (s)	95.0		16.8	117.3	30.7	30.7
Actuated g/C Ratio	0.59		0.11	0.73	0.19	0.19
Clearance Time (s)	6.5		5.5	6.5	5.5	5.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2071		185	2594	339	303
v/s Ratio Prot	c0.40		0.07	c0.46	c0.16	
v/s Ratio Perm						0.02
v/c Ratio	0.67		0.71	0.62	0.83	0.09
Uniform Delay, d1	22.0		69.3	10.5	62.2	53.1
Progression Factor	1.31		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7		12.3	1.1	15.8	0.1
Delay (s)	30.6		81.5	11.6	78.0	53.2
Level of Service	C		F	B	E	D
Approach Delay (s)	30.6			16.9	69.9	
Approach LOS	C			B	E	
Intersection Summary						
HCM 2000 Control Delay			28.5		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.72			
Actuated Cycle Length (s)			160.0		Sum of lost time (s)	17.5
Intersection Capacity Utilization			107.1%		ICU Level of Service	G
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

11: Legoland Dr

Opening Year + Specific Plan
PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↘↗	↑↑	↘↗	↗
Volume (vph)	1084	168	53	1161	449	261
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.0	5.0	6.0	5.0	5.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	3433	3539	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	3433	3539	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1178	183	58	1262	488	284
RTOR Reduction (vph)	0	46	0	0	0	215
Lane Group Flow (vph)	1178	137	58	1262	488	69
Turn Type	NA	pm+ov	Prot	NA	NA	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	42.2	62.3	4.8	52.0	20.1	20.1
Effective Green, g (s)	42.2	62.3	4.8	52.0	20.1	20.1
Actuated g/C Ratio	0.51	0.75	0.06	0.63	0.24	0.24
Clearance Time (s)	6.0	5.0	5.0	6.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1797	1186	198	2214	830	382
v/s Ratio Prot	c0.33	0.03	0.02	c0.36	c0.14	
v/s Ratio Perm		0.06				0.04
v/c Ratio	0.66	0.12	0.29	0.57	0.59	0.18
Uniform Delay, d1	15.1	2.9	37.5	9.0	27.8	25.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.0	0.3	0.4	1.1	0.2
Delay (s)	16.0	2.9	37.8	9.4	28.9	25.2
Level of Service	B	A	D	A	C	C
Approach Delay (s)	14.2			10.7	27.5	
Approach LOS	B			B	C	
Intersection Summary						
HCM 2000 Control Delay			15.8		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.65			
Actuated Cycle Length (s)			83.1		Sum of lost time (s)	16.0
Intersection Capacity Utilization			55.3%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						




















HCM Signalized Intersection Capacity Analysis
 12: Marriott Hotel Dwy & Cannon Rd

Opening Year + Specific Plan
 PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↓
Volume (vph)	1291	54	41	1162	52	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.5	5.0	6.0	5.5	5.5
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Fr _t	1.00	0.85	1.00	1.00	1.00	0.85
Fl _t Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Fl _t Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1331	56	42	1198	54	49
RTOR Reduction (vph)	0	13	0	0	0	44
Lane Group Flow (vph)	1331	43	42	1198	54	5
Turn Type	NA	pm+ov	Prot	NA	NA	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	60.3	68.8	4.7	70.0	8.5	8.5
Effective Green, g (s)	60.3	68.8	4.7	70.0	8.5	8.5
Actuated g/C Ratio	0.67	0.76	0.05	0.78	0.09	0.09
Clearance Time (s)	6.0	5.5	5.0	6.0	5.5	5.5
Vehicle Extension (s)	3.0	2.0	2.0	3.0	2.0	2.0
Lane Grp Cap (vph)	2371	1210	92	2752	167	149
v/s Ratio Prot	c0.38	0.00	0.02	c0.34	c0.03	
v/s Ratio Perm		0.02				0.00
v/c Ratio	0.56	0.04	0.46	0.44	0.32	0.03
Uniform Delay, d ₁	7.9	2.6	41.4	3.4	38.1	37.0
Progression Factor	1.00	1.00	0.88	1.04	1.00	1.00
Incremental Delay, d ₂	1.0	0.0	1.1	0.4	0.4	0.0
Delay (s)	8.8	2.6	37.7	3.9	38.5	37.0
Level of Service	A	A	D	A	D	D
Approach Delay (s)	8.6			5.1	37.8	
Approach LOS	A			A	D	
Intersection Summary						
HCM 2000 Control Delay			8.1		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.54			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	16.5
Intersection Capacity Utilization			49.4%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis
 13: Faraday Ave & Cannon Rd

Opening Year + Specific Plan
 PM Peak Hour

													
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	7	2	1127	203	14	557	0	637	0	58	3	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.0	6.0		6.0	6.0		5.0	5.0			5.0	
Lane Util. Factor		1.00	0.95		1.00	0.95		0.95	0.95			1.00	
Fr _t		1.00	0.98		1.00	1.00		1.00	0.97			0.95	
Fl _t Protected		0.95	1.00		0.95	1.00		0.95	0.96			0.97	
Satd. Flow (prot)		1770	3458		1770	3539		1681	1656			1711	
Fl _t Permitted		0.95	1.00		0.95	1.00		0.95	0.96			0.97	
Satd. Flow (perm)		1770	3458		1770	3539		1681	1656			1711	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Adj. Flow (vph)	8	2	1212	218	15	599	0	685	0	62	3	0	
RTOR Reduction (vph)	0	0	11	0	0	0	0	0	184	0	0	5	
Lane Group Flow (vph)	0	10	1419	0	15	599	0	377	186	0	0	0	
Turn Type	Prot	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	5	2		1	6		8	8		7	7	
Permitted Phases													
Actuated Green, G (s)		1.2	44.2		1.3	44.3		21.5	21.5			1.0	
Effective Green, g (s)		1.2	44.2		1.3	44.3		21.5	21.5			1.0	
Actuated g/C Ratio		0.01	0.49		0.01	0.49		0.24	0.24			0.01	
Clearance Time (s)		6.0	6.0		6.0	6.0		5.0	5.0			5.0	
Vehicle Extension (s)		2.0	3.5		2.0	3.5		2.0	2.0			2.0	
Lane Grp Cap (vph)		23	1698		25	1741		401	395			19	
v/s Ratio Prot		0.01	c0.41		c0.01	0.17		c0.22	0.11			c0.00	
v/s Ratio Perm													
v/c Ratio		0.43	0.84		0.60	0.34		0.94	0.47			0.00	
Uniform Delay, d ₁		44.1	19.8		44.1	14.0		33.6	29.4			44.0	
Progression Factor		0.74	1.35		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d ₂		4.2	4.5		23.2	0.5		29.8	0.3			0.0	
Delay (s)		36.9	31.3		67.2	14.5		63.5	29.7			44.0	
Level of Service		D	C		E	B		E	C			D	
Approach Delay (s)			31.3			15.8			46.7			44.0	
Approach LOS			C			B			D			D	
Intersection Summary													
HCM 2000 Control Delay			32.0									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.85										
Actuated Cycle Length (s)			90.0									Sum of lost time (s)	22.0
Intersection Capacity Utilization			72.9%									ICU Level of Service	C
Analysis Period (min)			15										
c Critical Lane Group													



Movement	SBR
Lane Configurations	
Volume (vph)	2
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.93
Adj. Flow (vph)	2
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
 14: El Camino Real & Cannon Rd

Opening Year + Specific Plan
 PM Peak Hour

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Volume (vph)	443	672	135	1	80	240	120	3	78	1582	192	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	6.0			4.2	6.0			4.2	6.0	6.0	
Lane Util. Factor	0.97	0.95			0.97	0.95			1.00	0.95	1.00	
Fr _t	1.00	0.97			1.00	0.95			1.00	1.00	0.85	
Fl _t Protected	0.95	1.00			0.95	1.00			0.95	1.00	1.00	
Satd. Flow (prot)	3433	3450			3433	3362			1770	3539	1583	
Fl _t Permitted	0.95	1.00			0.95	1.00			0.95	1.00	1.00	
Satd. Flow (perm)	3433	3450			3433	3362			1770	3539	1583	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	471	715	144	1	85	255	128	3	83	1683	204	4
RTOR Reduction (vph)	0	12	0	0	0	49	0	0	0	0	76	0
Lane Group Flow (vph)	471	847	0	0	86	334	0	0	86	1683	128	0
Turn Type	Prot	NA		Prot	Prot	NA		Prot	Prot	NA	Perm	Prot
Protected Phases	7	4		3	3	8		5	5	2		1
Permitted Phases												2
Actuated Green, G (s)	19.0	32.0			9.6	22.6			12.0	61.8	61.8	
Effective Green, g (s)	19.0	32.0			9.6	22.6			12.0	61.8	61.8	
Actuated g/C Ratio	0.14	0.23			0.07	0.16			0.09	0.44	0.44	
Clearance Time (s)	4.2	6.0			4.2	6.0			4.2	6.0	6.0	
Vehicle Extension (s)	2.0	2.0			2.0	2.0			2.0	3.0	3.0	
Lane Grp Cap (vph)	465	788			235	542			151	1562	698	
v/s Ratio Prot	0.14	c0.25			0.03	c0.10			0.05	c0.48		
v/s Ratio Perm												0.08
v/c Ratio	1.01	1.07			0.37	0.62			0.57	1.08	0.18	
Uniform Delay, d ₁	60.5	54.0			62.3	54.7			61.5	39.1	23.8	
Progression Factor	1.00	1.00			1.00	1.00			1.00	1.00	1.00	
Incremental Delay, d ₂	45.0	54.0			0.4	1.5			2.9	46.8	0.6	
Delay (s)	105.5	108.0			62.6	56.1			64.4	85.9	24.3	
Level of Service	F	F			E	E			E	F	C	
Approach Delay (s)		107.1				57.3				78.6		
Approach LOS		F				E				E		
Intersection Summary												
HCM 2000 Control Delay			72.3			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			1.00									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			20.4			
Intersection Capacity Utilization			95.4%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 14: El Camino Real & Cannon Rd

Opening Year + Specific Plan
 PM Peak Hour

Movement	SBL	SBT	SBR
Lane Configurations			
Volume (vph)	149	699	249
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.2	6.0	4.2
Lane Util. Factor	1.00	0.91	1.00
Flt	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583
Flt Permitted	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583
Peak-hour factor, PHF	0.94	0.94	0.94
Adj. Flow (vph)	159	744	265
RTOR Reduction (vph)	0	0	104
Lane Group Flow (vph)	163	744	161
Turn Type	Prot	NA	pm+ov
Protected Phases	1	6	7
Permitted Phases			6
Actuated Green, G (s)	16.2	66.0	85.0
Effective Green, g (s)	16.2	66.0	85.0
Actuated g/C Ratio	0.12	0.47	0.61
Clearance Time (s)	4.2	6.0	4.2
Vehicle Extension (s)	2.0	3.0	2.0
Lane Grp Cap (vph)	204	2397	961
v/s Ratio Prot	c0.09	0.15	0.02
v/s Ratio Perm			0.08
v/c Ratio	0.80	0.31	0.17
Uniform Delay, d1	60.3	22.9	12.0
Progression Factor	1.00	1.00	1.00
Incremental Delay, d2	18.1	0.3	0.0
Delay (s)	78.4	23.2	12.1
Level of Service	E	C	B
Approach Delay (s)		28.4	
Approach LOS		C	
Intersection Summary			





















HCM Signalized Intersection Capacity Analysis
 15: Paseo Del Norte & Car Country Dr

Opening Year + Specific Plan
 PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	9	17	132	10	131	15	417	103	5	396	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5		5.5	5.5		5.0	6.0		5.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Fr _t	1.00	0.90		1.00	0.86		1.00	0.97		1.00	0.99	
Fl _t Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1683		1770	1604		1770	3434		1770	3491	
Fl _t Permitted	0.66	1.00		0.74	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1230	1683		1377	1604		1770	3434		1770	3491	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	33	10	18	142	11	141	16	448	111	5	426	43
RTOR Reduction (vph)	0	13	0	0	106	0	0	22	0	0	7	0
Lane Group Flow (vph)	33	15	0	142	46	0	16	537	0	5	462	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	11.9	11.9		11.9	11.9		0.7	18.4		0.6	18.3	
Effective Green, g (s)	11.9	11.9		11.9	11.9		0.7	18.4		0.6	18.3	
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.01	0.39		0.01	0.39	
Clearance Time (s)	5.5	5.5		5.5	5.5		5.0	6.0		5.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	308	422		345	402		26	1333		22	1347	
v/s Ratio Prot		0.01			0.03		c0.01	c0.16		0.00	0.13	
v/s Ratio Perm	0.03			c0.10								
v/c Ratio	0.11	0.03		0.41	0.12		0.62	0.40		0.23	0.34	
Uniform Delay, d ₁	13.7	13.4		14.8	13.7		23.2	10.5		23.2	10.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d ₂	0.2	0.0		0.8	0.1		26.7	0.3		1.9	0.2	
Delay (s)	13.8	13.4		15.6	13.8		49.9	10.8		25.1	10.5	
Level of Service	B	B		B	B		D	B		C	B	
Approach Delay (s)		13.6			14.7			11.9			10.7	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			12.1				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.41									
Actuated Cycle Length (s)			47.4				Sum of lost time (s)			16.5		
Intersection Capacity Utilization			40.9%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 16: Paseo Del Norte & Outlet Dwy

Opening Year + Specific Plan
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	9	44	102	7	89	69	426	59	66	447	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Fr _t	1.00	0.87			0.94		1.00	0.98		1.00	0.99	
Fl _t Protected	0.95	1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1629			1706		1770	3475		1770	3504	
Fl _t Permitted	0.63	1.00			0.81		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1175	1629			1410		1770	3475		1770	3504	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	23	10	51	117	8	102	79	490	68	76	514	37
RTOR Reduction (vph)	0	38	0	0	26	0	0	11	0	0	6	0
Lane Group Flow (vph)	23	23	0	0	201	0	79	547	0	76	545	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	13.4	13.4			13.4		5.8	20.6		4.3	19.1	
Effective Green, g (s)	13.4	13.4			13.4		5.8	20.6		4.3	19.1	
Actuated g/C Ratio	0.25	0.25			0.25		0.11	0.39		0.08	0.36	
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.5	2.5			2.5		2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	295	409			354		192	1343		142	1255	
v/s Ratio Prot		0.01					c0.04	c0.16		0.04	0.16	
v/s Ratio Perm	0.02				c0.14							
v/c Ratio	0.08	0.06			0.57		0.41	0.41		0.54	0.43	
Uniform Delay, d ₁	15.2	15.1			17.4		22.2	11.9		23.5	13.0	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d ₂	0.1	0.0			1.7		0.5	0.3		1.9	0.4	
Delay (s)	15.3	15.2			19.1		22.7	12.3		25.5	13.4	
Level of Service	B	B			B		C	B		C	B	
Approach Delay (s)		15.2			19.1			13.5			14.9	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			15.0				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.48									
Actuated Cycle Length (s)			53.3				Sum of lost time (s)			15.0		
Intersection Capacity Utilization			47.9%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												





















HCM Signalized Intersection Capacity Analysis
 17: Faraday Ave & College Blvd

Opening Year + Specific Plan
 PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	371	87	13	208	65	44	362	187	188	290	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.0		4.5	6.0		4.5	5.0		4.5	5.0	
Lane Util. Factor	0.97	0.95		0.97	0.95		1.00	0.95		1.00	0.95	
Fr _t	1.00	0.97		1.00	0.96		1.00	0.95		1.00	0.95	
Fl _t Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	3438		3433	3412		1770	3359		1770	3374	
Fl _t Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	3438		3433	3412		1770	3359		1770	3374	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	123	422	99	15	236	74	50	411	212	214	330	149
RTOR Reduction (vph)	0	11	0	0	17	0	0	41	0	0	26	0
Lane Group Flow (vph)	123	510	0	15	293	0	50	582	0	214	453	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	6.3	21.3		1.2	16.2		4.9	19.3		13.8	28.2	
Effective Green, g (s)	6.3	21.3		1.2	16.2		4.9	19.3		13.8	28.2	
Actuated g/C Ratio	0.08	0.28		0.02	0.21		0.06	0.26		0.18	0.37	
Clearance Time (s)	4.5	6.0		4.5	6.0		4.5	5.0		4.5	5.0	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	286	968		54	731		114	857		323	1258	
v/s Ratio Prot	c0.04	c0.15		0.00	0.09		0.03	c0.17		c0.12	0.13	
v/s Ratio Perm												
v/c Ratio	0.43	0.53		0.28	0.40		0.44	0.68		0.66	0.36	
Uniform Delay, d ₁	32.9	22.9		36.8	25.5		34.0	25.4		28.7	17.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d ₂	0.4	0.2		1.0	0.1		1.0	1.7		3.9	0.1	
Delay (s)	33.3	23.1		37.8	25.7		35.0	27.1		32.7	17.2	
Level of Service	C	C		D	C		D	C		C	B	
Approach Delay (s)		25.1			26.2			27.6			22.0	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			25.1				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			75.6				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			59.4%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 18: El Camino Real & College Blvd

Opening Year + Specific Plan
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	496	274	26	310	75	82	3	39	1682	638	1	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5		5.0	6.5			5.0	6.0	6.0		5.0
Lane Util. Factor	0.97	0.95		0.97	0.95			1.00	0.91	1.00		1.00
Fr _t	1.00	0.99		1.00	0.92			1.00	1.00	0.85		1.00
Fl _t Protected	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95
Satd. Flow (prot)	3433	3494		3433	3262			1770	5085	1583		1770
Fl _t Permitted	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95
Satd. Flow (perm)	3433	3494		3433	3262			1770	5085	1583		1770
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	557	308	29	348	84	92	3	44	1890	717	1	136
RTOR Reduction (vph)	0	6	0	0	78	0	0	0	0	249	0	0
Lane Group Flow (vph)	557	331	0	348	98	0	0	47	1890	468	0	137
Turn Type	Prot	NA		Prot	NA		Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases										2		
Actuated Green, G (s)	21.0	26.1		16.4	21.5			6.6	65.0	65.0		10.0
Effective Green, g (s)	21.0	26.1		16.4	21.5			6.6	65.0	65.0		10.0
Actuated g/C Ratio	0.15	0.19		0.12	0.15			0.05	0.46	0.46		0.07
Clearance Time (s)	5.0	6.5		5.0	6.5			5.0	6.0	6.0		5.0
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0	4.0	4.0		2.0
Lane Grp Cap (vph)	514	651		402	500			83	2360	734		126
v/s Ratio Prot	c0.16	c0.09		0.10	0.03			0.03	c0.37			c0.08
v/s Ratio Perm										0.30		
v/c Ratio	1.08	0.51		0.87	0.20			0.57	0.80	0.64		1.09
Uniform Delay, d ₁	59.5	51.2		60.7	51.7			65.3	32.0	28.5		65.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00		1.00
Incremental Delay, d ₂	64.2	0.2		16.9	0.1			5.2	3.0	4.2		105.5
Delay (s)	123.7	51.4		77.6	51.8			70.5	34.9	32.7		170.5
Level of Service	F	D		E	D			E	C	C		F
Approach Delay (s)		96.5			68.9				35.0			
Approach LOS		F			E				C			
Intersection Summary												
HCM 2000 Control Delay			49.4			HCM 2000 Level of Service						D
HCM 2000 Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)						22.5
Intersection Capacity Utilization			76.9%			ICU Level of Service						D
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
Lane Configurations	↑↑↑	↑
Volume (vph)	904	125
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	6.0
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.89	0.89
Adj. Flow (vph)	1016	140
RTOR Reduction (vph)	0	72
Lane Group Flow (vph)	1016	68
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Actuated Green, G (s)	68.4	68.4
Effective Green, g (s)	68.4	68.4
Actuated g/C Ratio	0.49	0.49
Clearance Time (s)	6.0	6.0
Vehicle Extension (s)	4.0	4.0
Lane Grp Cap (vph)	2484	773
v/s Ratio Prot	c0.20	
v/s Ratio Perm		0.04
v/c Ratio	0.41	0.09
Uniform Delay, d1	22.9	19.1
Progression Factor	1.00	1.00
Incremental Delay, d2	0.5	0.2
Delay (s)	23.4	19.4
Level of Service	C	B
Approach Delay (s)	38.5	
Approach LOS	D	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
 19: El Camino Real & Faraday Ave

Opening Year + Specific Plan
 PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	276	504	878	196	145	352	42	155	1294	95	11	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9	5.0	5.0	5.0		4.2	6.0			4.2
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00		0.97	0.91			0.97
Flt	1.00	0.93	0.85	1.00	1.00	0.85		1.00	0.99			1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (prot)	1770	3153	1441	1770	3539	1583		3433	5033			3433
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (perm)	1770	3153	1441	1770	3539	1583		3433	5033			3433
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	297	542	944	211	156	378	45	167	1391	102	12	261
RTOR Reduction (vph)	0	86	352	0	0	306	0	0	4	0	0	0
Lane Group Flow (vph)	297	928	120	211	156	72	0	212	1489	0	0	273
Turn Type	Prot	NA	custom	Prot	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases	3	8		7	4		1	1	6		5	5
Permitted Phases			3			4						
Actuated Green, G (s)	37.9	49.5	37.9	12.1	23.7	23.7		14.0	50.5			16.6
Effective Green, g (s)	37.9	49.5	37.9	12.1	23.7	23.7		14.0	50.5			16.6
Actuated g/C Ratio	0.25	0.33	0.25	0.08	0.16	0.16		0.09	0.34			0.11
Clearance Time (s)	4.9	4.9	4.9	5.0	5.0	5.0		4.2	6.0			4.2
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0	3.0		2.0	2.0			2.0
Lane Grp Cap (vph)	450	1048	367	143	563	252		322	1708			382
v/s Ratio Prot	0.17	c0.29		c0.12	0.04			0.06	c0.30			c0.08
v/s Ratio Perm			0.08			0.05						
v/c Ratio	0.66	0.89	0.33	1.48	0.28	0.29		0.66	0.87			0.71
Uniform Delay, d1	49.7	47.0	45.1	68.4	55.0	55.1		65.1	46.1			63.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2	2.8	8.9	0.2	247.7	0.3	0.6		3.7	5.0			5.2
Delay (s)	52.5	55.8	45.3	316.1	55.3	55.7		68.8	51.2			69.0
Level of Service	D	E	D	F	E	E		E	D			E
Approach Delay (s)		52.5			129.4				53.4			
Approach LOS		D			F				D			
Intersection Summary												
HCM 2000 Control Delay			61.7				HCM 2000 Level of Service		E			
HCM 2000 Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			148.8				Sum of lost time (s)		20.1			
Intersection Capacity Utilization			88.2%				ICU Level of Service		E			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
Label Configurations	↑↑↑	↑
Volume (vph)	801	24
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	6.0
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.93	0.93
Adj. Flow (vph)	861	26
RTOR Reduction (vph)	0	17
Lane Group Flow (vph)	861	9
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Actuated Green, G (s)	53.1	53.1
Effective Green, g (s)	53.1	53.1
Actuated g/C Ratio	0.36	0.36
Clearance Time (s)	6.0	6.0
Vehicle Extension (s)	2.0	2.0
Lane Grp Cap (vph)	1814	564
v/s Ratio Prot	c0.17	
v/s Ratio Perm		0.01
v/c Ratio	0.47	0.02
Uniform Delay, d1	37.0	31.0
Progression Factor	1.00	1.00
Incremental Delay, d2	0.1	0.0
Delay (s)	37.1	31.0
Level of Service	D	C
Approach Delay (s)	44.5	
Approach LOS	D	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
20: Avenida Encinas & Palomar Airport Rd













Opening Year + Specific Plan
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	278	42	297	509	312	87	125	405	254	112	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.0		4.2	5.0	5.0	4.6	4.6	4.6	4.6	4.6	4.6
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Fr _t	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fl _t Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00
Satd. Flow (prot)	1770	1826		1770	1863	1583	1770	1863	1583	1681	1735	1583
Fl _t Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00
Satd. Flow (perm)	1770	1826		1770	1863	1583	1770	1863	1583	1681	1735	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	62	296	45	316	541	332	93	133	431	270	119	76
RTOR Reduction (vph)	0	4	0	0	0	114	0	0	371	0	0	63
Lane Group Flow (vph)	62	337	0	316	541	218	93	133	60	192	197	13
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases						6			8			7
Actuated Green, G (s)	7.2	26.6		26.3	45.7	45.7	14.4	14.4	14.4	17.7	17.7	17.7
Effective Green, g (s)	7.2	26.6		26.3	45.7	45.7	14.4	14.4	14.4	17.7	17.7	17.7
Actuated g/C Ratio	0.07	0.26		0.25	0.44	0.44	0.14	0.14	0.14	0.17	0.17	0.17
Clearance Time (s)	4.2	5.0		4.2	5.0	5.0	4.6	4.6	4.6	4.6	4.6	4.6
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	123	469		450	823	699	246	259	220	287	296	270
v/s Ratio Prot	0.04	0.18		c0.18	c0.29		0.05	c0.07		c0.11	0.11	
v/s Ratio Perm						0.14			0.04			0.01
v/c Ratio	0.50	0.72		0.70	0.66	0.31	0.38	0.51	0.27	0.67	0.67	0.05
Uniform Delay, d ₁	46.4	35.0		35.0	22.7	18.7	40.4	41.3	39.8	40.1	40.1	35.8
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, d ₂	1.2	5.2		4.0	1.9	0.3	0.4	0.7	0.2	4.5	4.3	0.0
Delay (s)	47.6	40.2		39.0	24.6	18.9	40.8	42.0	40.1	44.6	44.4	35.8
Level of Service	D	D		D	C	B	D	D	D	D	D	D
Approach Delay (s)		41.4			26.8			40.6			43.1	
Approach LOS		D			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			35.1				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			103.4				Sum of lost time (s)			18.4		
Intersection Capacity Utilization			65.5%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis


























21: I-5 SB Ramps & Palomar Airport Rd

Opening Year + Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑	↗				↖↖		↗
Volume (vph)	0	707	230	0	795	1014	0	0	0	588	0	323
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0	4.0				4.6		4.6
Lane Util. Factor		0.91			0.95	1.00				0.97		1.00
Flt		0.96			1.00	0.85				1.00		0.85
Flt Protected		1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)		4898			3539	1583				3433		1583
Flt Permitted		1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)		4898			3539	1583				3433		1583
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	0	714	232	0	803	1024	0	0	0	594	0	326
RTOR Reduction (vph)	0	55	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	891	0	0	803	1024	0	0	0	594	0	326
Turn Type		NA			NA	Free				Prot		custom
Protected Phases		2 3			6					4		4 3
Permitted Phases						Free						2
Actuated Green, G (s)		28.1			18.0	52.3				14.6		42.3
Effective Green, g (s)		28.1			18.0	52.3				14.6		42.3
Actuated g/C Ratio		0.54			0.34	1.00				0.28		0.81
Clearance Time (s)					5.0					4.6		
Vehicle Extension (s)					2.0					2.0		
Lane Grp Cap (vph)		2631			1218	1583				958		1280
v/s Ratio Prot		0.18			0.23					0.17		0.12
v/s Ratio Perm						c0.65						0.09
v/c Ratio		0.34			0.66	0.65				0.62		0.25
Uniform Delay, d1		6.8			14.5	0.0				16.4		1.2
Progression Factor		1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2		0.0			1.0	2.1				0.9		0.0
Delay (s)		6.9			15.5	2.1				17.3		1.2
Level of Service		A			B	A				B		A
Approach Delay (s)		6.9			8.0			0.0			11.6	
Approach LOS		A			A			A			B	
Intersection Summary												
HCM 2000 Control Delay			8.6				HCM 2000 Level of Service			A		
HCM 2000 Volume to Capacity ratio			0.90									
Actuated Cycle Length (s)			52.3				Sum of lost time (s)			14.6		
Intersection Capacity Utilization			50.0%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 22: I-5 NB Ramps & Palomar Airport Rd

Opening Year + Specific Plan
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  	 			 	 		
Volume (vph)	255	1040	0	0	1700	948	109	0	593	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.6			4.6	4.6		4.6	4.6			
Lane Util. Factor	1.00	0.91			*0.61	0.88		1.00	0.88			
Fr _t	1.00	1.00			1.00	0.85		1.00	0.85			
Fl _t Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	5085			3409	2787		1770	2787			
Fl _t Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	5085			3409	2787		1770	2787			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	263	1072	0	0	1753	977	112	0	611	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	240	0	0	172	0	0	0
Lane Group Flow (vph)	263	1072	0	0	1753	737	0	112	439	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	5	2			6 7			8	7			
Permitted Phases						6 7	8		8			
Actuated Green, G (s)	20.9	75.5			60.0	60.0		12.2	17.2			
Effective Green, g (s)	20.9	75.5			60.0	60.0		12.2	17.2			
Actuated g/C Ratio	0.20	0.71			0.56	0.56		0.11	0.16			
Clearance Time (s)	4.2	4.6						4.6	4.6			
Vehicle Extension (s)	3.0	3.0						3.0	3.0			
Lane Grp Cap (vph)	347	3604			1920	1570		202	570			
v/s Ratio Prot	c0.15	0.21			c0.51				c0.04			
v/s Ratio Perm						0.26		0.06	0.12			
v/c Ratio	0.76	0.30			0.91	0.47		0.55	0.77			
Uniform Delay, d ₁	40.4	5.7			20.9	13.8		44.6	42.8			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d ₂	9.1	0.0			7.1	0.2		3.3	6.4			
Delay (s)	49.6	5.8			28.0	14.0		47.9	49.1			
Level of Service	D	A			C	B		D	D			
Approach Delay (s)		14.4			23.0			48.9			0.0	
Approach LOS		B			C			D			A	
Intersection Summary												
HCM 2000 Control Delay			24.5				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			106.5				Sum of lost time (s)		18.0			
Intersection Capacity Utilization			64.5%				ICU Level of Service		C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
23: Paseo Del Norte & Palomar Airport Rd

Opening Year + Specific Plan
PM Peak Hour

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (vph)	9	274	1178	172	29	282	2150	337	228	185	176	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	6.0			4.2	6.0	4.2	4.2	5.0		4.2
Lane Util. Factor		0.97	0.91			0.97	0.86	1.00	0.97	0.95		0.97
Fr _t		1.00	0.98			1.00	1.00	0.85	1.00	0.93		1.00
Fl _t Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		3433	4988			3433	6408	1583	3433	3281		3433
Fl _t Permitted		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (perm)		3433	4988			3433	6408	1583	3433	3281		3433
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	9	282	1214	177	30	291	2216	347	235	191	181	356
RTOR Reduction (vph)	0	0	12	0	0	0	0	65	0	130	0	0
Lane Group Flow (vph)	0	291	1379	0	0	321	2216	282	235	242	0	356
Turn Type	Prot	Prot	NA		Prot	Prot	NA	pm+ov	Prot	NA		Prot
Protected Phases	5	5	2		1	1	6	7	3	8		7
Permitted Phases								6				
Actuated Green, G (s)		16.2	69.7			17.0	70.5	88.1	13.9	16.3		17.6
Effective Green, g (s)		16.2	69.7			17.0	70.5	88.1	13.9	16.3		17.6
Actuated g/C Ratio		0.12	0.50			0.12	0.50	0.63	0.10	0.12		0.13
Clearance Time (s)		4.2	6.0			4.2	6.0	4.2	4.2	5.0		4.2
Vehicle Extension (s)		2.0	2.0			2.0	2.0	2.0	2.0	2.0		2.0
Lane Grp Cap (vph)		397	2483			416	3226	996	340	382		431
v/s Ratio Prot		0.08	0.28			c0.09	c0.35	0.04	0.07	c0.07		c0.10
v/s Ratio Perm								0.14				
v/c Ratio		0.73	0.56			0.77	0.69	0.28	0.69	0.63		0.83
Uniform Delay, d ₁		59.8	24.4			59.6	26.4	11.7	61.0	59.0		59.7
Progression Factor		1.00	1.00			1.22	0.66	0.42	1.00	1.00		1.00
Incremental Delay, d ₂		5.9	0.9			5.0	0.8	0.0	4.8	2.5		11.7
Delay (s)		65.7	25.3			77.7	18.2	5.0	65.8	61.5		71.4
Level of Service		E	C			E	B	A	E	E		E
Approach Delay (s)			32.3				23.2			63.2		
Approach LOS			C				C			E		
Intersection Summary												
HCM 2000 Control Delay			35.0			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				19.4		
Intersection Capacity Utilization			76.0%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												



Movement	SBT	SBR
Lane Configurations	↑↑	
Volume (vph)	138	261
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.0	
Lane Util. Factor	0.95	
Flt	0.90	
Flt Protected	1.00	
Satd. Flow (prot)	3192	
Flt Permitted	1.00	
Satd. Flow (perm)	3192	
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	142	269
RTOR Reduction (vph)	201	0
Lane Group Flow (vph)	210	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	20.0	
Effective Green, g (s)	20.0	
Actuated g/C Ratio	0.14	
Clearance Time (s)	5.0	
Vehicle Extension (s)	2.0	
Lane Grp Cap (vph)	456	
v/s Ratio Prot	c0.07	
v/s Ratio Perm		
v/c Ratio	0.46	
Uniform Delay, d1	55.1	
Progression Factor	1.00	
Incremental Delay, d2	0.3	
Delay (s)	55.3	
Level of Service	E	
Approach Delay (s)	62.8	
Approach LOS	E	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
24: Armada Dr & Palomar Airport Rd

Opening Year + Specific Plan
PM Peak Hour



























Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (vph)	13	85	1408	135	3	279	2165	162	360	50	267	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	6.0	4.7		4.2	6.0	5.0	4.7	4.7	4.7	5.0
Lane Util. Factor		0.97	0.91	1.00		1.00	0.91	1.00	0.97	0.95	0.95	0.97
Fr _t		1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.90	0.85	1.00
Fl _t Protected		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95
Satd. Flow (prot)		3433	5085	1583		1770	5085	1583	3433	1586	1504	3433
Fl _t Permitted		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95
Satd. Flow (perm)		3433	5085	1583		1770	5085	1583	3433	1586	1504	3433
Peak-hour factor, PHF	0.92	0.95	0.95	0.95	0.92	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	14	89	1482	142	3	294	2279	171	379	53	281	284
RTOR Reduction (vph)	0	0	0	59	0	0	0	53	0	58	146	0
Lane Group Flow (vph)	0	103	1482	83	0	297	2279	118	379	113	17	284
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	NA	Perm	Prot
Protected Phases	5	5	2	3	1	1	6	7	3	8		7
Permitted Phases				2				6			8	
Actuated Green, G (s)		8.6	61.6	81.4		27.8	80.8	96.7	19.8	14.8	14.8	15.9
Effective Green, g (s)		8.6	61.6	81.4		27.8	80.8	96.7	19.8	14.8	14.8	15.9
Actuated g/C Ratio		0.06	0.44	0.58		0.20	0.58	0.69	0.14	0.11	0.11	0.11
Clearance Time (s)		4.2	6.0	4.7		4.2	6.0	5.0	4.7	4.7	4.7	5.0
Vehicle Extension (s)		2.0	3.0	2.0		2.0	3.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)		210	2237	920		351	2934	1093	485	167	158	389
v/s Ratio Prot		0.03	0.29	0.01		c0.17	c0.45	0.01	c0.11	c0.07		0.08
v/s Ratio Perm				0.04				0.06			0.01	
v/c Ratio		0.49	0.66	0.09		0.85	0.78	0.11	0.78	0.68	0.11	0.73
Uniform Delay, d ₁		63.6	31.0	12.9		54.0	22.7	7.2	58.0	60.3	56.6	60.0
Progression Factor		0.94	1.11	0.99		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d ₂		0.5	1.3	0.0		16.3	2.1	0.0	7.4	8.2	0.1	6.0
Delay (s)		60.3	35.6	12.8		70.3	24.8	7.3	65.4	68.5	56.7	65.9
Level of Service		E	D	B		E	C	A	E	E	E	E
Approach Delay (s)			35.2				28.6			64.2		
Approach LOS			D				C			E		
Intersection Summary												
HCM 2000 Control Delay			40.2			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.81									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				19.9		
Intersection Capacity Utilization			87.9%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
↓	↙	
Lane Configurations	↑	↗
Volume (vph)	48	260
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.7	4.7
Lane Util. Factor	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	1863	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	1863	1583
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	51	274
RTOR Reduction (vph)	0	170
Lane Group Flow (vph)	51	104
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Actuated Green, G (s)	11.2	11.2
Effective Green, g (s)	11.2	11.2
Actuated g/C Ratio	0.08	0.08
Clearance Time (s)	4.7	4.7
Vehicle Extension (s)	2.0	2.0
Lane Grp Cap (vph)	149	126
v/s Ratio Prot	0.03	
v/s Ratio Perm		0.07
v/c Ratio	0.34	0.82
Uniform Delay, d1	60.9	63.4
Progression Factor	1.00	1.00
Incremental Delay, d2	0.5	32.1
Delay (s)	61.4	95.6
Level of Service	E	F
Approach Delay (s)	78.9	
Approach LOS	E	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis

25: Hidden Valley Rd/The Crossing Dr & Palomar Airport Rd

Opening Year + Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Volume (vph)	51	1749	148	106	2360	105	129	7	67	75	15	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	4.2	4.2	6.0		4.2	4.7		5.0	5.7	5.7
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00		1.00	1.00	1.00
Flt	1.00	1.00	0.85	1.00	0.99		1.00	0.86		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	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5053		1770	1611		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5053		1770	1611		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	1901	161	115	2565	114	140	8	73	82	16	130
RTOR Reduction (vph)	0	0	31	0	2	0	0	63	0	0	0	114
Lane Group Flow (vph)	55	1901	130	115	2677	0	140	18	0	82	16	16
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2									4
Actuated Green, G (s)	8.1	83.6	97.1	13.9	88.6		13.5	21.3		11.3	18.9	18.9
Effective Green, g (s)	8.1	83.6	97.1	13.9	88.6		13.5	21.3		11.3	18.9	18.9
Actuated g/C Ratio	0.05	0.56	0.65	0.09	0.59		0.09	0.14		0.08	0.13	0.13
Clearance Time (s)	5.0	6.0	4.2	4.2	6.0		4.2	4.7		5.0	5.7	5.7
Vehicle Extension (s)	2.0	3.0	2.0	2.0	3.0		2.0	3.0		2.0	3.0	3.0
Lane Grp Cap (vph)	95	2834	1024	164	2984		159	228		133	234	199
v/s Ratio Prot	0.03	0.37	0.01	c0.06	c0.53		c0.08	c0.01		0.05	0.01	
v/s Ratio Perm			0.07									0.01
v/c Ratio	0.58	0.67	0.13	0.70	0.90		0.88	0.08		0.62	0.07	0.08
Uniform Delay, d1	69.3	23.5	10.2	66.0	26.7		67.5	55.9		67.2	57.8	57.9
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	5.2	1.3	0.0	10.5	4.8		38.2	0.2		5.9	0.1	0.2
Delay (s)	74.5	24.8	10.2	76.5	31.5		105.7	56.0		73.1	57.9	58.1
Level of Service	E	C	B	E	C		F	E		E	E	E
Approach Delay (s)		24.9			33.4			87.5			63.5	
Approach LOS		C			C			F			E	
Intersection Summary												
HCM 2000 Control Delay			33.5	HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			150.0	Sum of lost time (s)				20.9				
Intersection Capacity Utilization			78.2%	ICU Level of Service				D				
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 26: Aviara Pkwy/College Blvd & Palomar Airport Rd

Opening Year + Specific Plan
 PM Peak Hour

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	169	1397	331	2	218	1774	96	246	149	139	35	458
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.3	6.3		4.2	6.3	6.3	4.2	5.8	5.8	4.2	6.0
Lane Util. Factor	0.97	0.91	1.00		0.97	0.91	1.00	0.97	0.95	1.00	1.00	1.00
Flt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	5085	1583		3433	5085	1583	3433	3539	1583	1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	5085	1583		3433	5085	1583	3433	3539	1583	1770	1863
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	190	1570	372	2	245	1993	108	276	167	156	39	515
RTOR Reduction (vph)	0	0	154	0	0	0	58	0	0	114	0	0
Lane Group Flow (vph)	190	1570	218	0	247	1993	50	276	167	42	39	515
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases			2				6			8		
Actuated Green, G (s)	10.7	62.2	62.2		13.4	64.6	64.6	14.4	37.5	37.5	6.4	29.3
Effective Green, g (s)	10.7	62.2	62.2		13.4	64.6	64.6	14.4	37.5	37.5	6.4	29.3
Actuated g/C Ratio	0.08	0.44	0.44		0.10	0.46	0.46	0.10	0.27	0.27	0.05	0.21
Clearance Time (s)	4.5	6.3	6.3		4.2	6.3	6.3	4.2	5.8	5.8	4.2	6.0
Vehicle Extension (s)	2.0	3.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0
Lane Grp Cap (vph)	262	2259	703		328	2346	730	353	947	424	80	389
v/s Ratio Prot	0.06	0.31			0.07	c0.39		c0.08	0.05		0.02	c0.28
v/s Ratio Perm			0.14				0.03			0.03		
v/c Ratio	0.73	0.69	0.31		0.75	0.85	0.07	0.78	0.18	0.10	0.49	1.32
Uniform Delay, d1	63.2	31.3	25.1		61.7	33.4	21.0	61.3	39.4	38.5	65.2	55.4
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	8.2	1.8	1.1		8.4	4.1	0.2	10.0	0.1	0.1	1.7	162.7
Delay (s)	71.4	33.1	26.2		70.1	37.5	21.1	71.2	39.5	38.6	66.9	218.1
Level of Service	E	C	C		E	D	C	E	D	D	E	F
Approach Delay (s)		35.3				40.2			53.9			187.6
Approach LOS		D				D			D			F

Intersection Summary























HCM 2000 Control Delay	67.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	87.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SBR
Lane Configurations	7
Volume (vph)	551
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Fr _t	0.85
Fl _t Protected	1.00
Satd. Flow (prot)	1583
Fl _t Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.89
Adj. Flow (vph)	619
RTOR Reduction (vph)	65
Lane Group Flow (vph)	554
Turn Type	pm+ov
Protected Phases	5
Permitted Phases	4
Actuated Green, G (s)	40.0
Effective Green, g (s)	40.0
Actuated g/C Ratio	0.29
Clearance Time (s)	4.5
Vehicle Extension (s)	2.0
Lane Grp Cap (vph)	452
v/s Ratio Prot	c0.09
v/s Ratio Perm	0.26
v/c Ratio	1.23
Uniform Delay, d ₁	50.0
Progression Factor	1.00
Incremental Delay, d ₂	119.9
Delay (s)	169.9
Level of Service	F
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
 27: El Camino Real & Palomar Airport Rd

Opening Year + Specific Plan
 PM Peak Hour













												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	277	1560	117	539	1044	454	17	183	828	467	2	739
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	4.0	5.0	6.0	6.0		5.0	6.0	5.0		5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	0.88		0.97	0.91	0.88		0.97
Flt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (prot)	3433	5085	1583	3433	5085	2787		3433	5085	2787		3433
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (perm)	3433	5085	1583	3433	5085	2787		3433	5085	2787		3433
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)	292	1642	123	567	1099	478	18	193	872	492	2	778
RTOR Reduction (vph)	0	0	123	0	0	238	0	0	0	92	0	0
Lane Group Flow (vph)	292	1642	0	567	1099	240	0	211	872	400	0	780
Turn Type	Prot	NA	NA	Prot	NA	Perm	Prot	Prot	NA	pm+ov	Prot	Prot
Protected Phases	3	8		7	4		1	1	6	7	5	5
Permitted Phases						4				6		
Actuated Green, G (s)	17.2	56.0	0.0	20.0	58.8	58.8		13.6	25.0	45.0		27.0
Effective Green, g (s)	17.2	56.0	0.0	20.0	58.8	58.8		13.6	25.0	45.0		27.0
Actuated g/C Ratio	0.11	0.37	0.00	0.13	0.39	0.39		0.09	0.17	0.30		0.18
Clearance Time (s)	5.0	6.0		5.0	6.0	6.0		5.0	6.0	5.0		5.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0		2.0	3.0	2.0		2.0
Lane Grp Cap (vph)	393	1898	0	457	1993	1092		311	847	836		617
v/s Ratio Prot	0.09	c0.32		c0.17	c0.22			0.06	c0.17	0.06		c0.23
v/s Ratio Perm						0.09				0.08		
v/c Ratio	0.74	0.87	0.00	1.24	0.55	0.22		0.68	1.03	0.48		1.26
Uniform Delay, d1	64.3	43.5	75.0	65.0	35.4	30.3		66.1	62.5	42.9		61.5
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	6.5	5.6	0.0	125.8	1.1	0.5		4.6	38.7	0.2		131.5
Delay (s)	70.8	49.1	75.0	190.8	36.5	30.8		70.7	101.2	43.1		193.0
Level of Service	E	D	E	F	D	C		E	F	D		F
Approach Delay (s)		53.7			76.0				79.0			
Approach LOS		D			E				E			
Intersection Summary												
HCM 2000 Control Delay			79.2				HCM 2000 Level of Service		E			
HCM 2000 Volume to Capacity ratio			1.04									
Actuated Cycle Length (s)			150.0				Sum of lost time (s)		22.0			
Intersection Capacity Utilization			101.0%				ICU Level of Service		G			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
Label Configurations	↑↑↑	↑
Volume (vph)	650	161
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	5.0
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	684	169
RTOR Reduction (vph)	0	37
Lane Group Flow (vph)	684	132
Turn Type	NA	pm+ov
Protected Phases	2	3
Permitted Phases		2
Actuated Green, G (s)	38.4	55.6
Effective Green, g (s)	38.4	55.6
Actuated g/C Ratio	0.26	0.37
Clearance Time (s)	6.0	5.0
Vehicle Extension (s)	3.0	2.0
Lane Grp Cap (vph)	1301	586
v/s Ratio Prot	0.13	0.03
v/s Ratio Perm		0.06
v/c Ratio	0.53	0.23
Uniform Delay, d1	48.0	32.4
Progression Factor	1.00	1.00
Incremental Delay, d2	0.4	0.1
Delay (s)	48.4	32.5
Level of Service	D	C
Approach Delay (s)	115.8	
Approach LOS	F	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis

28: I-5 SB Ramps & Poinsettia Ln























Opening Year + Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑↑	↑↑					↑	↑	↑
Volume (vph)	0	697	213	718	651	0	0	0	0	351	1	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6
Lane Util. Factor		0.95	1.00	0.97	0.95					1.00	0.95	0.95
Fr _t		1.00	0.85	1.00	1.00					1.00	0.85	0.85
Fl _t Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1770	1507	1504
Fl _t Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1770	1507	1504
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	719	220	740	671	0	0	0	0	362	1	193
RTOR Reduction (vph)	0	0	157	0	0	0	0	0	0	0	69	68
Lane Group Flow (vph)	0	719	63	740	671	0	0	0	0	362	29	28
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		26.2	26.2	25.4	55.8					27.0	27.0	27.0
Effective Green, g (s)		26.2	26.2	25.4	55.8					27.0	27.0	27.0
Actuated g/C Ratio		0.28	0.28	0.28	0.61					0.29	0.29	0.29
Clearance Time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6
Vehicle Extension (s)		2.0	2.0	2.0	5.0					2.0	2.0	2.0
Lane Grp Cap (vph)		1007	450	947	2146					519	442	441
v/s Ratio Prot		c0.20		c0.22	0.19						0.02	
v/s Ratio Perm			0.04							c0.20		0.02
v/c Ratio		0.71	0.14	0.78	0.31					0.70	0.07	0.06
Uniform Delay, d ₁		29.5	24.5	30.7	8.8					28.9	23.4	23.4
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d ₂		2.0	0.1	3.9	0.2					3.3	0.0	0.0
Delay (s)		31.6	24.6	34.7	9.0					32.2	23.4	23.4
Level of Service		C	C	C	A					C	C	C
Approach Delay (s)		29.9			22.4			0.0			29.1	
Approach LOS		C			C			A			C	
Intersection Summary												
HCM 2000 Control Delay			26.1			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			92.0			Sum of lost time (s)			13.4			
Intersection Capacity Utilization			70.4%			ICU Level of Service				C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

29: I-5 NB Ramps & Poinsettia Ln























Opening Year + Specific Plan
PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			  				 				
Volume (vph)	164	884	0	0	1102	226	267	6	535	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.2	4.6			4.6	4.6		4.6	4.6				
Lane Util. Factor	1.00	0.95			0.91	1.00		1.00	0.88				
Fr _t	1.00	1.00			1.00	0.85		1.00	0.85				
Fl _t Protected	0.95	1.00			1.00	1.00		0.95	1.00				
Satd. Flow (prot)	1770	3539			5085	1583		1776	2787				
Fl _t Permitted	0.95	1.00			1.00	1.00		0.95	1.00				
Satd. Flow (perm)	1770	3539			5085	1583		1776	2787				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Adj. Flow (vph)	174	940	0	0	1172	240	284	6	569	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	107	0	0	232	0	0	0	
Lane Group Flow (vph)	174	940	0	0	1172	133	0	290	337	0	0	0	
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm				
Protected Phases	5	2			6			8					
Permitted Phases						6	8		8				
Actuated Green, G (s)	12.7	43.5			26.6	26.6		18.8	18.8				
Effective Green, g (s)	12.7	43.5			26.6	26.6		18.8	18.8				
Actuated g/C Ratio	0.18	0.61			0.37	0.37		0.26	0.26				
Clearance Time (s)	4.2	4.6			4.6	4.6		4.6	4.6				
Vehicle Extension (s)	2.0	5.0			2.0	2.0		2.0	2.0				
Lane Grp Cap (vph)	314	2153			1891	588		466	732				
v/s Ratio Prot	c0.10	0.27			c0.23								
v/s Ratio Perm						0.08		0.16	0.12				
v/c Ratio	0.55	0.44			0.62	0.23		0.62	0.46				
Uniform Delay, d ₁	26.8	7.5			18.3	15.4		23.2	22.1				
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00				
Incremental Delay, d ₂	1.2	0.3			0.4	0.1		1.9	0.2				
Delay (s)	28.0	7.8			18.8	15.5		25.1	22.3				
Level of Service	C	A			B	B		C	C				
Approach Delay (s)		10.9			18.2			23.2			0.0		
Approach LOS		B			B			C			A		
Intersection Summary													
HCM 2000 Control Delay			17.1		HCM 2000 Level of Service				B				
HCM 2000 Volume to Capacity ratio			0.61										
Actuated Cycle Length (s)			71.5		Sum of lost time (s)				13.4				
Intersection Capacity Utilization			70.4%		ICU Level of Service				C				
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis

30: Lower Ln/Paseo Del Norte & Poinsettia Ln























Opening Year + Specific Plan
PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	375	994	50	15	988	130	26	4	17	86	4	314	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.2	4.6	4.6	4.2	4.6		4.6	4.6		4.6	4.6		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00		
Flt	1.00	1.00	0.85	1.00	0.98		1.00	0.88		1.00	0.85		
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00		
Satd. Flow (prot)	3433	3539	1583	1770	3477		1770	1634		1770	1587		
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00		
Satd. Flow (perm)	3433	3539	1583	1770	3477		1770	1634		1770	1587		
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)	395	1046	53	16	1040	137	27	4	18	91	4	331	
RTOR Reduction (vph)	0	0	19	0	6	0	0	17	0	0	297	0	
Lane Group Flow (vph)	395	1046	34	16	1171	0	27	5	0	91	38	0	
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA		
Protected Phases	5	2		1	6		3	3		4	4		
Permitted Phases			2										
Actuated Green, G (s)	17.7	67.9	67.9	2.2	52.4		7.5	7.5		10.8	10.8		
Effective Green, g (s)	17.7	67.9	67.9	2.2	52.4		7.5	7.5		10.8	10.8		
Actuated g/C Ratio	0.17	0.64	0.64	0.02	0.49		0.07	0.07		0.10	0.10		
Clearance Time (s)	4.2	4.6	4.6	4.2	4.6		4.6	4.6		4.6	4.6		
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0		2.0	2.0		2.0	2.0		
Lane Grp Cap (vph)	571	2258	1010	36	1712		124	115		179	161		
v/s Ratio Prot	c0.12	0.30		0.01	c0.34		c0.02	0.00		c0.05	0.02		
v/s Ratio Perm			0.02										
v/c Ratio	0.69	0.46	0.03	0.44	0.68		0.22	0.05		0.51	0.23		
Uniform Delay, d1	41.8	9.9	7.1	51.5	20.7		46.7	46.1		45.3	44.0		
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00		
Incremental Delay, d2	2.9	0.3	0.0	3.2	1.5		0.3	0.1		0.8	0.3		
Delay (s)	44.7	10.2	7.1	54.7	22.1		47.0	46.2		46.1	44.3		
Level of Service	D	B	A	D	C		D	D		D	D		
Approach Delay (s)		19.2			22.6			46.6			44.7		
Approach LOS		B			C			D			D		
Intersection Summary													
HCM 2000 Control Delay			24.3	HCM 2000 Level of Service						C			
HCM 2000 Volume to Capacity ratio			0.62										
Actuated Cycle Length (s)			106.4	Sum of lost time (s)						18.0			
Intersection Capacity Utilization			74.9%	ICU Level of Service						D			
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis

31: Aviara Pkwy & Poinsettia Ln





















Opening Year + Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	163	359	317	24	366	95	278	215	22	97	362	396
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.0	5.5	5.5	6.0		5.5	6.0		5.5	6.0	
Lane Util. Factor	0.97	1.00	0.88	1.00	0.95		0.97	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.99		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1863	2787	1770	3430		3433	3490		1770	3262	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	1863	2787	1770	3430		3433	3490		1770	3262	
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)	172	378	334	25	385	100	293	226	23	102	381	417
RTOR Reduction (vph)	0	0	161	0	16	0	0	4	0	0	104	0
Lane Group Flow (vph)	172	378	173	25	469	0	293	245	0	102	694	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	10.6	31.8	47.2	4.2	25.4		15.4	14.2		29.4	28.2	
Effective Green, g (s)	10.6	31.8	47.2	4.2	25.4		15.4	14.2		29.4	28.2	
Actuated g/C Ratio	0.10	0.31	0.46	0.04	0.25		0.15	0.14		0.29	0.27	
Clearance Time (s)	5.5	6.0	5.5	5.5	6.0		5.5	6.0		5.5	6.0	
Vehicle Extension (s)	2.5	3.5	3.0	2.5	3.5		3.0	4.0		2.5	4.0	
Lane Grp Cap (vph)	354	577	1282	72	849		515	483		507	896	
v/s Ratio Prot	c0.05	c0.20	0.02	0.01	0.14		c0.09	0.07		0.06	c0.21	
v/s Ratio Perm			0.04									
v/c Ratio	0.49	0.66	0.13	0.35	0.55		0.57	0.51		0.20	0.77	
Uniform Delay, d1	43.4	30.7	15.9	47.9	33.6		40.5	41.0		27.7	34.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	2.8	0.0	2.1	0.9		1.4	1.1		0.1	4.5	
Delay (s)	44.2	33.4	16.0	50.0	34.5		42.0	42.1		27.9	38.8	
Level of Service	D	C	B	D	C		D	D		C	D	
Approach Delay (s)		28.9			35.3			42.0			37.5	
Approach LOS		C			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			35.3	HCM 2000 Level of Service				D				
HCM 2000 Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			102.6	Sum of lost time (s)				23.0				
Intersection Capacity Utilization			72.1%	ICU Level of Service				C				
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

32: El Camino Real & Aviara Pkwy

Opening Year + Specific Plan
PM Peak Hour






















													
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	
Lane Configurations													
Volume (vph)	142	403	349	2	356	294	80	461	1497	549	12	189	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.2	5.7	4.6		4.2	5.7		4.6	6.4			4.2	
Lane Util. Factor	0.97	0.95	1.00		0.97	0.95		0.97	0.91			0.97	
Flt	1.00	1.00	0.85		1.00	0.97		1.00	0.96			1.00	
Flt Protected	0.95	1.00	1.00		0.95	1.00		0.95	1.00			0.95	
Satd. Flow (prot)	3433	3539	1583		3433	3425		3433	4881			3433	
Flt Permitted	0.95	1.00	1.00		0.95	1.00		0.95	1.00			0.95	
Satd. Flow (perm)	3433	3539	1583		3433	3425		3433	4881			3433	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	
Adj. Flow (vph)	160	453	392	2	400	330	90	518	1682	617	13	212	
RTOR Reduction (vph)	0	0	59	0	0	18	0	0	40	0	0	0	
Lane Group Flow (vph)	160	453	333	0	402	402	0	518	2259	0	0	225	
Turn Type	Prot	NA	pm+ov	Prot	Prot	NA		Prot	NA		Prot	Prot	
Protected Phases	7	4	5	3	3	8		5	2		1	1	
Permitted Phases			4										
Actuated Green, G (s)	10.9	27.0	50.0		20.9	37.0		23.0	59.7			11.9	
Effective Green, g (s)	10.9	27.0	50.0		20.9	37.0		23.0	59.7			11.9	
Actuated g/C Ratio	0.08	0.19	0.36		0.15	0.26		0.16	0.43			0.09	
Clearance Time (s)	4.2	5.7	4.6		4.2	5.7		4.6	6.4			4.2	
Vehicle Extension (s)	2.0	2.0	2.0		3.0	2.0		2.0	3.0			2.0	
Lane Grp Cap (vph)	267	682	565		512	905		563	2081			291	
v/s Ratio Prot	0.05	c0.13	0.10		c0.12	0.12		c0.15	c0.46			0.07	
v/s Ratio Perm			0.11										
v/c Ratio	0.60	0.66	0.59		0.79	0.44		0.92	1.09			0.77	
Uniform Delay, d1	62.4	52.3	36.6		57.4	42.9		57.6	40.1			62.7	
Progression Factor	1.00	1.00	1.00		1.00	1.00		1.00	1.00			1.03	
Incremental Delay, d2	2.4	1.9	1.0		7.8	0.1		20.2	47.4			8.6	
Delay (s)	64.8	54.2	37.7		65.1	43.1		77.8	87.5			73.0	
Level of Service	E	D	D		E	D		E	F			E	
Approach Delay (s)		49.4				53.9			85.7				
Approach LOS		D				D			F				
Intersection Summary													
HCM 2000 Control Delay			77.1									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			0.94										
Actuated Cycle Length (s)			140.0									Sum of lost time (s)	20.9
Intersection Capacity Utilization			85.4%									ICU Level of Service	E
Analysis Period (min)			15										
c Critical Lane Group													

Movement	SBT	SBR
Label Configurations	↑↑↑	
Volume (vph)	1593	102
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.4	
Lane Util. Factor	0.91	
Flt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	5039	
Flt Permitted	1.00	
Satd. Flow (perm)	5039	
Peak-hour factor, PHF	0.89	0.89
Adj. Flow (vph)	1790	115
RTOR Reduction (vph)	5	0
Lane Group Flow (vph)	1900	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	48.2	
Effective Green, g (s)	48.2	
Actuated g/C Ratio	0.34	
Clearance Time (s)	6.4	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	1734	
v/s Ratio Prot	0.38	
v/s Ratio Perm		
v/c Ratio	1.10	
Uniform Delay, d1	45.9	
Progression Factor	0.84	
Incremental Delay, d2	50.8	
Delay (s)	89.5	
Level of Service	F	
Approach Delay (s)	87.7	
Approach LOS	F	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis

33: El Camino Real & Poinsettia Ln

Opening Year + Specific Plan
PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	15	9	5	292	13	147	12	5	1165	404	250	1772	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.2	4.7		4.2	5.0			4.2	6.0	6.0	4.2	6.0	
Lane Util. Factor	0.97	0.95		0.97	0.95			0.97	0.91	1.00	0.97	0.91	
Fr _t	1.00	0.94		1.00	0.86			1.00	1.00	0.85	1.00	1.00	
Fl _t Protected	0.95	1.00		0.95	1.00			0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3340		3433	3051			3433	5085	1583	3433	5077	
Fl _t Permitted	0.95	1.00		0.95	1.00			0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3340		3433	3051			3433	5085	1583	3433	5077	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	
Adj. Flow (vph)	17	10	6	340	15	171	14	6	1355	470	291	2060	
RTOR Reduction (vph)	0	5	0	0	131	0	0	0	0	176	0	0	
Lane Group Flow (vph)	17	11	0	340	55	0	0	20	1355	294	291	2083	
Turn Type	Prot	NA		Prot	NA		Prot	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		1	1	6		5	2	
Permitted Phases										6			
Actuated Green, G (s)	2.4	17.1		18.2	32.6			3.5	68.4	68.4	17.2	82.1	
Effective Green, g (s)	2.4	17.1		18.2	32.6			3.5	68.4	68.4	17.2	82.1	
Actuated g/C Ratio	0.02	0.12		0.13	0.23			0.02	0.49	0.49	0.12	0.59	
Clearance Time (s)	4.2	4.7		4.2	5.0			4.2	6.0	6.0	4.2	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	58	407		446	710			85	2484	773	421	2977	
v/s Ratio Prot	0.00	0.00		c0.10	c0.02			0.01	0.27		c0.08	c0.41	
v/s Ratio Perm										0.19			
v/c Ratio	0.29	0.03		0.76	0.08			0.24	0.55	0.38	0.69	0.70	
Uniform Delay, d ₁	68.0	54.1		58.8	41.9			66.9	25.0	22.5	58.9	20.3	
Progression Factor	1.00	1.00		1.00	1.00			0.74	1.15	2.34	1.00	1.00	
Incremental Delay, d ₂	1.0	0.0		6.8	0.0			0.1	0.2	0.4	4.8	1.4	
Delay (s)	69.0	54.1		65.6	42.0			49.7	28.8	53.0	63.7	21.7	
Level of Service	E	D		E	D			D	C	D	E	C	
Approach Delay (s)		61.8			57.3				35.2			26.8	
Approach LOS		E			E				D			C	
Intersection Summary													
HCM 2000 Control Delay			33.7									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.64										
Actuated Cycle Length (s)			140.0									Sum of lost time (s)	19.4
Intersection Capacity Utilization			65.7%									ICU Level of Service	C
Analysis Period (min)			15										
c Critical Lane Group													

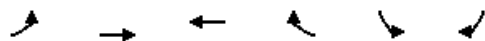


Movement	SBR
Lane Configurations	
Volume (vph)	20
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Fr	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.86
Adj. Flow (vph)	23
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis

34: Cannon Rd & Project Dwy

Opening Year + Specific Plan
PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔↔	↕↕	↕↕	↗		
Volume (vph)	988	1289	1643	105	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	0.97	0.95	0.95	1.00		
Frt	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	3433	3539	3539	1583		
Flt Permitted	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	3433	3539	3539	1583		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.92	0.92
Adj. Flow (vph)	1040	1357	1729	111	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1040	1357	1729	111	0	0
Turn Type	Prot	NA	NA	custom		
Protected Phases	5!	2 10	6 10	5 6!		
Permitted Phases						
Actuated Green, G (s)	29.0	80.0	43.0	50.0		
Effective Green, g (s)	29.0	80.0	43.0	50.0		
Actuated g/C Ratio	0.36	1.00	0.54	0.62		
Clearance Time (s)	4.0					
Vehicle Extension (s)	3.0					
Lane Grp Cap (vph)	1244	3539	1902	989		
v/s Ratio Prot	c0.30	0.38	c0.49	0.07		
v/s Ratio Perm						
v/c Ratio	0.84	0.38	0.91	0.11		
Uniform Delay, d1	23.3	0.0	16.7	6.0		
Progression Factor	1.37	1.00	1.12	0.83		
Incremental Delay, d2	3.9	0.1	5.5	0.0		
Delay (s)	35.8	0.1	24.1	5.0		
Level of Service	D	A	C	A		
Approach Delay (s)		15.6	23.0		0.0	
Approach LOS		B	C		A	

Intersection Summary

HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group

Cannon Rd Retail													
Roadway Segment Analysis													
Near Term plus Project Conditions													
	Direction	Number of Lanes	Capacity (1,800 vplph)	Peak Hour Volume		V/ C Ratio		LOS		Change in V/C		Significant Impact?	
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Cannon Road (I-5 SB Ramps to El Camino Real)													
I-5 SB Ramps to I-5 NB Ramps	EB	2	3600	1338	1392	0.37	0.39	A	A	0.06	0.10	NO	NO
	WB	2	3600	773	1355	0.21	0.38	A	A	0.02	0.12	NO	NO
I-5 NB Ramps to Paseo Del Norte	EB	2	3600	1825	1855	0.51	0.52	A	A	0.12	0.21	NO	NO
	WB	3	5400	943	2512	0.17	0.47	A	A	0.03	0.13	NO	NO
Paseo Del Norte to Car Country	EB	2	3600	1263	1462	0.35	0.41	A	A	0.02	0.13	NO	NO
	WB	2	3600	895	1675	0.25	0.47	A	A	0.05	0.07	NO	NO
Car Country Dr to Armada Dr	EB	2	3600	1109	1291	0.31	0.36	A	A	0.02	0.08	NO	NO
	WB	2	3600	962	1610	0.27	0.45	A	A	0.06	0.08	NO	NO
Armada Dr to Grand Pacific Dr	EB	2	3600	707	1345	0.20	0.37	A	A	0.02	0.05	NO	NO
	WB	2	3600	1126	1214	0.31	0.34	A	A	0.04	0.06	NO	NO
Grand Pacific Dr to Faraday Ave	EB	2	3600	674	1339	0.19	0.37	A	A	0.02	0.05	NO	NO
	WB	2	3600	1144	1203	0.32	0.33	A	A	0.04	0.05	NO	NO
Faraday Ave to El Camino Real	EB	2	3600	317	1250	0.09	0.35	A	A	0.01	0.04	NO	NO
	WB	2	3600	1003	571	0.28	0.16	A	A	0.03	0.04	NO	NO
Tamarack Avenue (Carlsbad Boulevard to El Camino Real)													
Carlsbad Blvd to I-5 SB Ramps	EB	1	1800	725	699	0.40	0.39	A	A	0.00	0.01	NO	NO
	WB	1	1800	532	452	0.30	0.25	A	A	0.01	0.01	NO	NO
I-5 SB Ramps to I-5 NB Ramps	EB	2	3600	493	657	0.14	0.18	A	A	0.00	0.00	NO	NO
	WB	2	3600	810	705	0.23	0.20	A	A	0.01	0.01	NO	NO
I-5 NB Ramps to El Camino Real	EB	2	3600	771	921	0.21	0.26	A	A	0.00	0.01	NO	NO
	WB	2	3600	1042	613	0.29	0.17	A	A	0.00	0.00	NO	NO
Palomar Airport Road (Paseo Del Norte to El Camino Real)													
Paseo Del Norte to Armada Dr	EB	3	5400	2520	1728	0.47	0.32	A	A	0.01	0.02	NO	NO
	WB	3	5400	1248	2798	0.23	0.52	A	A	0.01	0.02	NO	NO
Armada Dr to The Crossings Dr	EB	3	5400	2355	1948	0.44	0.36	A	A	0.01	0.03	NO	NO
	WB	3	5400	1361	2609	0.25	0.48	A	A	0.02	0.03	NO	NO
The Crossings Dr to College Blvd	EB	3	5400	2311	1897	0.43	0.35	A	A	0.01	0.02	NO	NO
	WB	3	5400	1325	2571	0.25	0.48	A	A	0.02	0.03	NO	NO
College Blvd to El Camino Real	EB	3	5400	1858	1954	0.34	0.36	A	A	0.00	0.01	NO	NO
	WB	3	5400	1791	2090	0.33	0.39	A	A	0.01	0.02	NO	NO
College Boulevard													
Palomar Airport Rd to Faraday Ave	EB/NB	2	3600	1113	566	0.31	0.16	A	A	0.00	0.00	NO	NO
	WB/SB	1	1800	330	1044	0.18	0.58	A	A	0.00	0.00	NO	NO
Poinsettia Ln													
Paseo Del Norte to Aviara Pkwy	EB	2	3600	1090	1097	0.30	0.30	A	A	0.00	0.01	NO	NO
	WB	2	3600	979	1133	0.27	0.31	A	A	0.01	0.01	NO	NO
Carlsbad Boulevard (North of Tamarack Avenue to South of Cannon Road)													
North of Tamarack Ave	NB	2	3600	265	953	0.07	0.26	A	A	0.00	0.00	NO	NO
	SB	2	3600	588	574	0.16	0.16	A	A	0.00	0.01	NO	NO
Tamarack Ave to Cannon Rd	NB	2	3600	290	1194	0.08	0.33	A	A	0.00	0.01	NO	NO
	SB	1	1800	851	719	0.47	0.40	A	A	0.01	0.02	NO	NO
South of Cannon Rd	NB	1	1800	299	965	0.17	0.54	A	A	0.01	0.01	NO	NO
	SB	1	1800	814	661	0.45	0.37	A	A	0.00	0.01	NO	NO
Paseo del Norte (Cannon Road to Palomar Airport Road)													
Cannon Rd to Car Country Dr	NB	2	3600	324	778	0.09	0.22	A	A	0.03	0.04	NO	NO
	SB	2	3600	454	483	0.13	0.13	A	A	0.02	0.03	NO	NO
Outlets North Entrance to Palomar Airport Rd	NB	2	3600	531	796	0.15	0.22	A	A	0.03	0.04	NO	NO
	SB	2	3600	324	744	0.09	0.21	A	A	0.01	0.04	NO	NO
Faraday Avenue													
Cannon Rd to College Blvd	NB	1	1800	535	695	0.30	0.39	A	A	0.02	0.03	NO	NO
	SB	1	1800	444	609	0.25	0.34	A	A	0.01	0.02	NO	NO
Aviara Parkway													
Palomar Airport Rd to Poinsettia Ln	NB	2	3600	976	534	0.27	0.15	A	A	0.01	0.02	NO	NO
	SB	2	3600	418	1007	0.12	0.28	A	A	0.01	0.02	NO	NO
El Camino Real (North of Tamarack Ave to South of Aviara Pkwy)													
North of Tamarack Ave	NB	3	5400	573	1649	0.11	0.31	A	A	0.01	0.01	NO	NO
	SB	3	5400	1353	814	0.25	0.15	A	A	0.01	0.01	NO	NO
Tamarack Ave to Cannon Rd	NB	2	3600	774	2149	0.22	0.60	A	A	0.01	0.02	NO	NO
	SB	2	3600	2085	1101	0.58	0.31	A	A	0.01	0.02	NO	NO
Cannon Rd to College Blvd	NB	3	5400	739	2261	0.14	0.42	A	A	0.00	0.00	NO	NO
	SB	3	5400	2067	1151	0.38	0.21	A	A	0.00	0.00	NO	NO
College Blvd to Faraday Ave	NB	3	5400	948	2362	0.18	0.44	A	A	0.01	0.00	NO	NO
	SB	3	5400	2410	1243	0.45	0.23	A	A	0.00	0.00	NO	NO
Faraday Ave to Palomar Airport Rd	NB	3	5400	1517	1586	0.28	0.29	A	A	0.00	0.00	NO	NO
	SB	3	5400	1942	1917	0.36	0.36	A	A	0.00	0.01	NO	NO
Palomar Airport Rd to Poinsettia Ln	NB	3	5400	1615	1495	0.30	0.28	A	A	0.00	0.00	NO	NO
	SB	3	5400	1689	2042	0.31	0.38	A	A	0.00	0.00	NO	NO
Poinsettia Ln to Aviara Pkwy	NB	3	5400	1627	1731	0.30	0.32	A	A	0.00	0.00	NO	NO
	SB	3	5400	1359	2081	0.25	0.39	A	A	0.00	0.01	NO	NO
Sourh of Aviara Pkwy	NB	3	5400	1828	2507	0.34	0.46	A	A	0.00	0.00	NO	NO
	SB	3	5400	1906	2298	0.35	0.43	A	A	0.00	0.01	NO	NO

Freeway Segment LOS - Near Term Conditions																						
Segment	Number of Lanes		Capacity Per Lane	Peak Hour %	Direction Split	HV%	LOS Thresholds						Near Term Conditions				Near Term Plus Project				Change in V/C	Significant
	Mixed Flow	HOV					A	B	C	D	E	F	ADT	Peak Hour Per Lane	V/C	LOS	ADT	Peak Hour Per	V/C	LOS		
Interstate 5																						
La Costa Ave to Poinsettia Ln	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	205,480	2259	0.96	E	210,781	2317	0.99	E	0.02	Yes
Poinsettia Ln to Palomar Airport Rd	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	202,480	2226	0.95	E	208,262	2290	0.97	E	0.03	Yes
Palomar Airport Rd to Cannon Rd	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	199,340	2192	0.93	E	205,122	2255	0.96	E	0.03	Yes
Cannon Rd to Tamarack Ave	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	199,930	2198	0.94	E	205,231	2256	0.96	E	0.02	Yes
Tamarack Ave to Carlsbad Village Dr	8	0	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	196,860	2164	0.92	E	201,197	2212	0.94	E	0.02	Yes





















**Cannon Rd Retail
Ramp Meter Analysis**

Opening Year								
Location	Peak Hour	Demand ¹ (veh/hr)		Meter Rate ² (veh/hr)	Excess Demand ³ (veh/hr)	Total # of Mixed Flow Lanes	Delay ⁴ (min)	Queue ⁵ (ft)
		Mixed Flow & HOV	Mixed Flow only					
I-5 SB - Tamarack Ave On-Ramp	AM	778	661	526	135	1	15.4	3,925
	PM	694	590	N/A	N/A	1	N/A	N/A
I-5 SB - Cannon Rd On-Ramp	AM	401	341	734	0	2	0.0	0
	PM	547	465	734	0	2	0.0	0
I-5 NB - Cannon Rd On-Ramp	AM	289	246	N/A	N/A	2	N/A	N/A
	PM	1,362	1,158	1,416	0	2	0.0	0
I-5 SB - EB Palomar Airport Rd On-Ramp	AM	67	57	343	0	1	0.0	0
	PM	230	196	246	0	1	0.0	0
I-5 SB - WB Palomar Airport Rd On-Ramp	AM	243	207	492	0	1	0.0	0
	PM	1,014	862	895	0	1	0.0	0
I-5 NB - Palomar Airport Rd On-Ramp	AM	615	523	N/A	N/A	2	N/A	N/A
	PM	1,203	1,023	988	35	2	2.1	500
I-5 SB - Poinsettia Ln On-Ramp	AM	578	491	1,094	0	2	0.0	0
	PM	932	792	796	0	2	0.0	0
I-5 NB - Poinsettia Ln On-Ramp	AM	493	419	N/A	N/A	1	N/A	N/A
	PM	377	320	576	0	1	0.0	0

Opening Year + Specific Plan								
Location	Peak Hour	Demand ¹ (veh/hr)		Meter Rate ² (veh/hr)	Excess Demand ³ (veh/hr)	Total # of Mixed Flow Lanes	Delay ⁴ (min)	Queue ⁵ (ft)
		Mixed Flow & HOV	Mixed Flow only					
I-5 SB - Tamarack Ave On-Ramp	AM	804	683	526	157	1	18.0	4,575
	PM	732	622	N/A	N/A	1	N/A	N/A
I-5 SB - Cannon Rd On-Ramp	AM	488	415	734	0	2	0.0	0
	PM	890	757	734	23	2	1.8	325
I-5 NB - Cannon Rd On-Ramp	AM	364	309	N/A	N/A	2	N/A	N/A
	PM	1,643	1,397	1,416	0	2	0.0	0
I-5 SB - EB Palomar Airport Rd On-Ramp	AM	67	57	343	0	1	0.0	0
	PM	230	196	246	0	1	0.0	0
I-5 SB - WB Palomar Airport Rd On-Ramp	AM	243	207	492	0	1	0.0	0
	PM	1,014	862	895	0	1	0.0	0
I-5 NB - Palomar Airport Rd On-Ramp	AM	615	523	N/A	N/A	2	N/A	N/A
	PM	1,203	1,023	988	35	2	2.1	500
I-5 SB - Poinsettia Ln On-Ramp	AM	578	491	1,094	0	2	0.0	0
	PM	932	792	796	0	2	0.0	0
I-5 NB - Poinsettia Ln On-Ramp	AM	506	430	N/A	N/A	1	N/A	N/A
	PM	396	337	576	0	1	0.0	0

HCM Signalized Intersection Capacity Analysis
 14: El Camino Real & Cannon Rd




























Opening Year + Specific Plan EPFs
 AM PEAK HOUR

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	
Lane Configurations													
Volume (vph)	91	134	92	206	556	157	2	94	447	73	3	120	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.2	6.0		4.2	6.0			4.2	6.0	6.0		4.2	
Lane Util. Factor	0.97	0.95		0.97	0.95			1.00	0.91	1.00		1.00	
Flt	1.00	0.94		1.00	0.97			1.00	1.00	0.85		1.00	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95	
Satd. Flow (prot)	3433	3323		3433	3422			1770	5085	1583		1770	
Flt Permitted	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95	
Satd. Flow (perm)	3433	3323		3433	3422			1770	5085	1583		1770	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	
Adj. Flow (vph)	106	156	107	240	647	183	2	109	520	85	3	140	
RTOR Reduction (vph)	0	78	0	0	20	0	0	0	0	52	0	0	
Lane Group Flow (vph)	106	185	0	240	810	0	0	111	520	33	0	143	
Turn Type	Prot	NA		Prot	NA		Prot	Prot	NA	Perm	Prot	Prot	
Protected Phases	7	4		3	8		5	5	2		1	1	
Permitted Phases										2			
Actuated Green, G (s)	11.0	38.5		10.9	38.4			9.8	54.9	54.9		15.3	
Effective Green, g (s)	11.0	38.5		10.9	38.4			9.8	54.9	54.9		15.3	
Actuated g/C Ratio	0.08	0.28		0.08	0.27			0.07	0.39	0.39		0.11	
Clearance Time (s)	4.2	6.0		4.2	6.0			4.2	6.0	6.0		4.2	
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0	3.0	3.0		2.0	
Lane Grp Cap (vph)	269	913		267	938			123	1994	620		193	
v/s Ratio Prot	0.03	0.06		0.07	c0.24			c0.06	0.10			0.08	
v/s Ratio Perm										0.02			
v/c Ratio	0.39	0.20		0.90	0.86			0.90	0.26	0.05		0.74	
Uniform Delay, d1	61.3	39.0		64.0	48.3			64.6	28.8	26.4		60.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00		1.00	
Incremental Delay, d2	0.3	0.0		29.3	8.0			51.2	0.3	0.2		12.5	
Delay (s)	61.7	39.0		93.3	56.3			115.9	29.1	26.6		73.0	
Level of Service	E	D		F	E			F	C	C		E	
Approach Delay (s)		45.5			64.6				42.3				
Approach LOS		D			E				D				
Intersection Summary													
HCM 2000 Control Delay			46.1									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.83										
Actuated Cycle Length (s)			140.0									Sum of lost time (s)	20.4
Intersection Capacity Utilization			77.2%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													

Movement	SBT	SBR
Lane Configurations	↑↑↑	↑
Volume (vph)	1612	350
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	4.2
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.86	0.86
Adj. Flow (vph)	1874	407
RTOR Reduction (vph)	0	50
Lane Group Flow (vph)	1874	357
Turn Type	NA	pm+ov
Protected Phases	6	7
Permitted Phases		6
Actuated Green, G (s)	60.4	71.4
Effective Green, g (s)	60.4	71.4
Actuated g/C Ratio	0.43	0.51
Clearance Time (s)	6.0	4.2
Vehicle Extension (s)	3.0	2.0
Lane Grp Cap (vph)	2193	854
v/s Ratio Prot	c0.37	c0.03
v/s Ratio Perm		0.19
v/c Ratio	0.85	0.42
Uniform Delay, d1	35.8	21.4
Progression Factor	1.00	1.00
Incremental Delay, d2	4.5	0.1
Delay (s)	40.4	21.5
Level of Service	D	C
Approach Delay (s)	39.1	
Approach LOS	D	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
32: El Camino Real & Aviara Pkwy

Opening Year + Specific Plan EPFs
AM PEAK HOUR

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations		 	 			 	 		 	  		
Volume (vph)	1	93	146	302	5	570	303	100	232	1400	196	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	5.7	4.6		4.2	5.7		4.6	6.4	6.4	
Lane Util. Factor		0.97	0.95	1.00		0.97	0.95		0.97	0.91	1.00	
Fr _t		1.00	1.00	0.85		1.00	0.96		1.00	1.00	0.85	
Fl _t Protected		0.95	1.00	1.00		0.95	1.00		0.95	1.00	1.00	
Satd. Flow (prot)		3433	3539	1583		3433	3407		3433	5085	1583	
Fl _t Permitted		0.95	1.00	1.00		0.95	1.00		0.95	1.00	1.00	
Satd. Flow (perm)		3433	3539	1583		3433	3407		3433	5085	1583	
Peak-hour factor, PHF	0.92	0.91	0.91	0.91	0.92	0.91	0.91	0.91	0.91	0.91	0.91	0.92
Adj. Flow (vph)	1	102	160	332	5	626	333	110	255	1538	215	2
RTOR Reduction (vph)	0	0	0	70	0	0	28	0	0	0	63	0
Lane Group Flow (vph)	0	103	160	262	0	631	415	0	255	1538	152	0
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		Prot	NA	Perm	Prot
Protected Phases	7	7	4	5	3	3	8		5	2		1
Permitted Phases				4								2
Actuated Green, G (s)		7.8	21.2	33.4		27.4	40.8		12.2	66.1	66.1	
Effective Green, g (s)		7.8	21.2	33.4		27.4	40.8		12.2	66.1	66.1	
Actuated g/C Ratio		0.06	0.15	0.24		0.20	0.29		0.09	0.47	0.47	
Clearance Time (s)		4.2	5.7	4.6		4.2	5.7		4.6	6.4	6.4	
Vehicle Extension (s)		2.0	2.0	2.0		3.0	2.0		2.0	3.0	3.0	
Lane Grp Cap (vph)		191	535	377		671	992		299	2400	747	
v/s Ratio Prot		0.03	0.05	c0.06		c0.18	0.12		c0.07	c0.30		
v/s Ratio Perm				0.11								0.10
v/c Ratio		0.54	0.30	0.69		0.94	0.42		0.85	0.64	0.20	
Uniform Delay, d ₁		64.4	52.8	48.6		55.5	40.0		63.0	28.0	21.6	
Progression Factor		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d ₂		1.5	0.1	4.4		21.3	0.1		19.6	1.3	0.6	
Delay (s)		65.8	52.9	53.1		76.8	40.1		82.7	29.3	22.2	
Level of Service		E	D	D		E	D		F	C	C	
Approach Delay (s)			55.2				61.7			35.3		
Approach LOS			E				E			D		
Intersection Summary												
HCM 2000 Control Delay			44.6			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				20.9		
Intersection Capacity Utilization			69.7%			ICU Level of Service				C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 32: El Camino Real & Aviara Pkwy

Opening Year + Specific Plan EPFs
 AM PEAK HOUR



Movement	SBL	SBT	SBR
Lane Configurations			
Volume (vph)	74	1034	88
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.2	6.4	
Lane Util. Factor	0.97	0.91	
Frt	1.00	0.99	
Flt Protected	0.95	1.00	
Satd. Flow (prot)	3433	5025	
Flt Permitted	0.95	1.00	
Satd. Flow (perm)	3433	5025	
Peak-hour factor, PHF	0.91	0.91	0.91
Adj. Flow (vph)	81	1136	97
RTOR Reduction (vph)	0	6	0
Lane Group Flow (vph)	83	1227	0
Turn Type	Prot	NA	
Protected Phases	1	6	
Permitted Phases			
Actuated Green, G (s)	4.8	58.3	
Effective Green, g (s)	4.8	58.3	
Actuated g/C Ratio	0.03	0.42	
Clearance Time (s)	4.2	6.4	
Vehicle Extension (s)	2.0	3.0	
Lane Grp Cap (vph)	117	2092	
v/s Ratio Prot	0.02	0.24	
v/s Ratio Perm			
v/c Ratio	0.71	0.59	
Uniform Delay, d1	66.9	31.5	
Progression Factor	1.01	1.14	
Incremental Delay, d2	13.8	1.1	
Delay (s)	81.7	37.1	
Level of Service	F	D	
Approach Delay (s)		39.9	
Approach LOS		D	
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
 14: El Camino Real & Cannon Rd

Opening Year + Specific Plan EPFs
 PM Peak Hour

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Volume (vph)	443	672	135	1	80	240	120	3	78	1582	192	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	6.0			4.2	6.0			4.2	6.0	6.0	
Lane Util. Factor	0.97	0.95			0.97	0.95			1.00	0.91	1.00	
Flt	1.00	0.97			1.00	0.95			1.00	1.00	0.85	
Flt Protected	0.95	1.00			0.95	1.00			0.95	1.00	1.00	
Satd. Flow (prot)	3433	3450			3433	3362			1770	5085	1583	
Flt Permitted	0.95	1.00			0.95	1.00			0.95	1.00	1.00	
Satd. Flow (perm)	3433	3450			3433	3362			1770	5085	1583	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	471	715	144	1	85	255	128	3	83	1683	204	4
RTOR Reduction (vph)	0	14	0	0	0	50	0	0	0	0	81	0
Lane Group Flow (vph)	471	845	0	0	86	333	0	0	86	1683	123	0
Turn Type	Prot	NA		Prot	Prot	NA		Prot	Prot	NA	Perm	Prot
Protected Phases	7	4		3	3	8		5	5	2		1
Permitted Phases												2
Actuated Green, G (s)	18.8	40.2			8.3	29.7			13.3	58.3	58.3	
Effective Green, g (s)	18.8	40.2			8.3	29.7			13.3	58.3	58.3	
Actuated g/C Ratio	0.13	0.29			0.06	0.21			0.10	0.42	0.42	
Clearance Time (s)	4.2	6.0			4.2	6.0			4.2	6.0	6.0	
Vehicle Extension (s)	2.0	2.0			2.0	2.0			2.0	3.0	3.0	
Lane Grp Cap (vph)	461	990			203	713			168	2117	659	
v/s Ratio Prot	c0.14	c0.24			0.03	c0.10			0.05	c0.33		
v/s Ratio Perm												0.08
v/c Ratio	1.02	0.85			0.42	0.47			0.51	0.79	0.19	
Uniform Delay, d1	60.6	47.1			63.5	48.2			60.3	35.6	25.9	
Progression Factor	1.00	1.00			1.00	1.00			1.00	1.00	1.00	
Incremental Delay, d2	47.5	7.0			0.5	0.2			1.1	3.2	0.6	
Delay (s)	108.1	54.1			64.1	48.4			61.4	38.8	26.5	
Level of Service	F	D			E	D			E	D	C	
Approach Delay (s)		73.2				51.3				38.5		
Approach LOS		E				D				D		
Intersection Summary												
HCM 2000 Control Delay			49.7	HCM 2000 Level of Service				D				
HCM 2000 Volume to Capacity ratio			0.83									
Actuated Cycle Length (s)			140.0	Sum of lost time (s)				20.4				
Intersection Capacity Utilization			82.3%	ICU Level of Service				E				
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 14: El Camino Real & Cannon Rd

Opening Year + Specific Plan EPFs
 PM Peak Hour



Movement	SBL	SBT	SBR
Lane Configurations			
Volume (vph)	149	699	249
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.2	6.0	4.2
Lane Util. Factor	1.00	0.91	1.00
Flt	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583
Flt Permitted	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583
Peak-hour factor, PHF	0.94	0.94	0.94
Adj. Flow (vph)	159	744	265
RTOR Reduction (vph)	0	0	120
Lane Group Flow (vph)	163	744	145
Turn Type	Prot	NA	pm+ov
Protected Phases	1	6	7
Permitted Phases			6
Actuated Green, G (s)	12.8	57.8	76.6
Effective Green, g (s)	12.8	57.8	76.6
Actuated g/C Ratio	0.09	0.41	0.55
Clearance Time (s)	4.2	6.0	4.2
Vehicle Extension (s)	2.0	3.0	2.0
Lane Grp Cap (vph)	161	2099	866
v/s Ratio Prot	c0.09	0.15	0.02
v/s Ratio Perm			0.07
v/c Ratio	1.01	0.35	0.17
Uniform Delay, d1	63.6	28.3	15.8
Progression Factor	1.00	1.00	1.00
Incremental Delay, d2	74.2	0.5	0.0
Delay (s)	137.8	28.7	15.8
Level of Service	F	C	B
Approach Delay (s)		41.0	
Approach LOS		D	
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
32: El Camino Real & Aviara Pkwy

Opening Year + Specific Plan EPFs

PM Peak Hour

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	
Lane Configurations													
Volume (vph)	142	403	349	2	356	294	80	461	1497	549	12	189	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.2	5.7	4.6		4.2	5.7		4.6	6.4	6.4		4.2	
Lane Util. Factor	0.97	0.95	1.00		0.97	0.95		0.97	0.91	1.00		0.97	
Flt	1.00	1.00	0.85		1.00	0.97		1.00	1.00	0.85		1.00	
Flt Protected	0.95	1.00	1.00		0.95	1.00		0.95	1.00	1.00		0.95	
Satd. Flow (prot)	3433	3539	1583		3433	3425		3433	5085	1583		3433	
Flt Permitted	0.95	1.00	1.00		0.95	1.00		0.95	1.00	1.00		0.95	
Satd. Flow (perm)	3433	3539	1583		3433	3425		3433	5085	1583		3433	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	
Adj. Flow (vph)	160	453	392	2	400	330	90	518	1682	617	13	212	
RTOR Reduction (vph)	0	0	47	0	0	19	0	0	0	67	0	0	
Lane Group Flow (vph)	160	453	345	0	402	401	0	518	1682	550	0	225	
Turn Type	Prot	NA	pm+ov	Prot	Prot	NA		Prot	NA	Perm	Prot	Prot	
Protected Phases	7	4	5	3	3	8		5	2		1	1	
Permitted Phases			4							2			
Actuated Green, G (s)	10.2	27.5	47.9		13.8	31.1		20.4	68.0	68.0		10.2	
Effective Green, g (s)	10.2	27.5	47.9		13.8	31.1		20.4	68.0	68.0		10.2	
Actuated g/C Ratio	0.07	0.20	0.34		0.10	0.22		0.15	0.49	0.49		0.07	
Clearance Time (s)	4.2	5.7	4.6		4.2	5.7		4.6	6.4	6.4		4.2	
Vehicle Extension (s)	2.0	2.0	2.0		3.0	2.0		2.0	3.0	3.0		2.0	
Lane Grp Cap (vph)	250	695	541		338	760		500	2469	768		250	
v/s Ratio Prot	0.05	c0.13	0.09		c0.12	0.12		c0.15	0.33			0.07	
v/s Ratio Perm			0.13							0.35			
v/c Ratio	0.64	0.65	0.64		1.19	0.53		1.04	0.68	0.72		0.90	
Uniform Delay, d1	63.1	51.8	38.8		63.1	48.0		59.8	27.7	28.4		64.4	
Progression Factor	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.11	
Incremental Delay, d2	4.1	1.7	1.8		110.9	0.3		49.9	1.5	5.6		25.7	
Delay (s)	67.3	53.5	40.6		174.0	48.3		109.7	29.2	34.0		97.2	
Level of Service	E	D	D		F	D		F	C	C		F	
Approach Delay (s)		50.7				109.8			45.1				
Approach LOS		D				F			D				
Intersection Summary													
HCM 2000 Control Delay			53.2									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.91										
Actuated Cycle Length (s)			140.0									Sum of lost time (s)	20.9
Intersection Capacity Utilization			85.0%									ICU Level of Service	E
Analysis Period (min)			15										
c Critical Lane Group													

Movement	SBT	SBR
Label Configurations	↑↑↑	↘
Volume (vph)	1593	102
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.4	
Lane Util. Factor	0.91	
Flt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	5039	
Flt Permitted	1.00	
Satd. Flow (perm)	5039	
Peak-hour factor, PHF	0.89	0.89
Adj. Flow (vph)	1790	115
RTOR Reduction (vph)	5	0
Lane Group Flow (vph)	1900	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	57.4	
Effective Green, g (s)	57.4	
Actuated g/C Ratio	0.41	
Clearance Time (s)	6.4	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	2065	
v/s Ratio Prot	c0.38	
v/s Ratio Perm		
v/c Ratio	0.92	
Uniform Delay, d1	39.1	
Progression Factor	0.78	
Incremental Delay, d2	6.5	
Delay (s)	36.9	
Level of Service	D	
Approach Delay (s)	43.2	
Approach LOS	D	
Intersection Summary		





















APPENDIX D: 2035 CONDITIONS

Technical Analysis



HCM Signalized Intersection Capacity Analysis
 1: Carlsbad Blvd & Tamarack Ave

2035 No Specific Plan
 AM Peak Hour













												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	10	20	10	350	20	110	10	20	190	110	80	530
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0			4.5	6.0		4.5	6.0
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	0.95		1.00	0.95
Fr _t		1.00	0.85	1.00	0.87			1.00	0.95		1.00	1.00
Fl _t Protected		0.98	1.00	0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)		1832	1583	1770	1626			1770	3345		1770	3539
Fl _t Permitted		0.98	1.00	0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (perm)		1832	1583	1770	1626			1770	3345		1770	3539
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	10	20	10	357	20	112	10	20	194	112	82	541
RTOR Reduction (vph)	0	0	9	0	80	0	0	0	80	0	0	0
Lane Group Flow (vph)	0	30	1	357	52	0	0	30	226	0	82	541
Turn Type	Split	NA	Perm	Split	NA		Prot	Prot	NA		Prot	NA
Protected Phases	4	4		3	3		5	5	2		1	6
Permitted Phases			4									
Actuated Green, G (s)		4.0	4.0	19.2	19.2			1.7	19.4		5.0	22.7
Effective Green, g (s)		4.0	4.0	19.2	19.2			1.7	19.4		5.0	22.7
Actuated g/C Ratio		0.06	0.06	0.28	0.28			0.02	0.28		0.07	0.33
Clearance Time (s)		5.0	5.0	5.0	5.0			4.5	6.0		4.5	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0			2.0	3.0		2.0	3.0
Lane Grp Cap (vph)		107	92	499	458			44	952		129	1179
v/s Ratio Prot		c0.02		c0.20	0.03			0.02	0.07		c0.05	c0.15
v/s Ratio Perm			0.00									
v/c Ratio		0.28	0.01	0.72	0.11			0.68	0.24		0.64	0.46
Uniform Delay, d ₁		30.7	30.2	22.0	18.1			32.9	18.7		30.7	17.9
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d ₂		1.4	0.0	4.8	0.1			29.4	0.1		7.3	0.3
Delay (s)		32.1	30.2	26.8	18.2			62.3	18.8		38.0	18.2
Level of Service		C	C	C	B			E	B		D	B
Approach Delay (s)		31.6			24.5				22.7			20.7
Approach LOS		C			C				C			C
Intersection Summary												
HCM 2000 Control Delay			22.7			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			68.1			Sum of lost time (s)		20.5				
Intersection Capacity Utilization			61.1%			ICU Level of Service		B				
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBR
Lane Configurations	7
Volume (vph)	10
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.98
Adj. Flow (vph)	10
RTOR Reduction (vph)	7
Lane Group Flow (vph)	3
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	22.7
Effective Green, g (s)	22.7
Actuated g/C Ratio	0.33
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	527
v/s Ratio Prot	
v/s Ratio Perm	0.00
v/c Ratio	0.01
Uniform Delay, d1	15.2
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	15.2
Level of Service	B
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis




















2: I-5 SB Ramps & Tamarack Ave

2035 No Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖	↑↑						↖	↗
Volume (vph)	0	480	380	440	560	0	0	0	0	150	10	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.2	4.6						4.6	4.6
Lane Util. Factor		0.95	1.00	1.00	0.95						1.00	1.00
Fr _t		1.00	0.85	1.00	1.00						1.00	0.85
Fl _t Protected		1.00	1.00	0.95	1.00						0.96	1.00
Satd. Flow (prot)		3539	1583	1770	3539						1779	1583
Fl _t Permitted		1.00	1.00	0.95	1.00						0.96	1.00
Satd. Flow (perm)		3539	1583	1770	3539						1779	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	490	388	449	571	0	0	0	0	153	10	378
RTOR Reduction (vph)	0	0	220	0	0	0	0	0	0	0	0	322
Lane Group Flow (vph)	0	490	168	449	571	0	0	0	0	0	163	56
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		29.9	29.9	33.8	67.9						12.9	12.9
Effective Green, g (s)		29.9	29.9	33.8	67.9						12.9	12.9
Actuated g/C Ratio		0.33	0.33	0.38	0.75						0.14	0.14
Clearance Time (s)		4.6	4.6	4.2	4.6						4.6	4.6
Vehicle Extension (s)		5.0	5.0	2.0	7.0						2.0	2.0
Lane Grp Cap (vph)		1175	525	664	2669						254	226
v/s Ratio Prot		c0.14		c0.25	0.16							
v/s Ratio Perm			0.11								0.09	0.04
v/c Ratio		0.42	0.32	0.68	0.21						0.64	0.25
Uniform Delay, d ₁		23.3	22.4	23.5	3.2						36.4	34.2
Progression Factor		1.00	1.00	1.41	1.77						1.00	1.00
Incremental Delay, d ₂		1.1	1.6	1.6	0.1						4.1	0.2
Delay (s)		24.4	24.0	34.8	5.9						40.5	34.4
Level of Service		C	C	C	A						D	C
Approach Delay (s)		24.2			18.6			0.0			36.3	
Approach LOS		C			B			A			D	
Intersection Summary												
HCM 2000 Control Delay			24.6			HCM 2000 Level of Service					C	
HCM 2000 Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			90.0			Sum of lost time (s)					13.4	
Intersection Capacity Utilization			67.9%			ICU Level of Service					C	
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
3: I-5 NB Ramps & Tamarack Ave























2035 No Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Volume (vph)	250	380	0	0	840	310	160	0	450	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.1			5.1			4.6	4.6			
Lane Util. Factor	1.00	0.95			0.95			1.00	1.00			
Fr _t	1.00	1.00			0.96			1.00	0.85			
Fl _t Protected	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (prot)	1770	3539			3396			1770	1583			
Fl _t Permitted	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (perm)	1770	3539			3396			1770	1583			
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	255	388	0	0	857	316	163	0	459	0	0	0
RTOR Reduction (vph)	0	0	0	0	36	0	0	0	393	0	0	0
Lane Group Flow (vph)	255	388	0	0	1137	0	0	163	66	0	0	0
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	15.7	67.4			47.1			12.9	12.9			
Effective Green, g (s)	15.7	67.4			47.1			12.9	12.9			
Actuated g/C Ratio	0.17	0.75			0.52			0.14	0.14			
Clearance Time (s)	4.6	5.1			5.1			4.6	4.6			
Vehicle Extension (s)	2.0	3.0			2.0			2.0	2.0			
Lane Grp Cap (vph)	308	2650			1777			253	226			
v/s Ratio Prot	c0.14	0.11			c0.33							
v/s Ratio Perm								0.09	0.04			
v/c Ratio	0.83	0.15			0.64			0.64	0.29			
Uniform Delay, d ₁	35.8	3.2			15.4			36.4	34.5			
Progression Factor	0.45	2.15			1.00			1.00	1.00			
Incremental Delay, d ₂	14.8	0.1			1.8			4.2	0.3			
Delay (s)	30.8	7.0			17.2			40.6	34.7			
Level of Service	C	A			B			D	C			
Approach Delay (s)		16.4			17.2			36.3			0.0	
Approach LOS		B			B			D			A	
Intersection Summary												
HCM 2000 Control Delay			21.8				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)		14.3			
Intersection Capacity Utilization			67.9%				ICU Level of Service		C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis













4: El Camino Real & Tamarck Ave

2035 No Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	110	300	550	220	60	80	790	140	50	2190	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.0	5.0	4.2	5.0		4.2	6.0		4.2	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		0.97	0.91		1.00	0.91	1.00
Flt	1.00	1.00	0.85	1.00	0.97		1.00	0.98		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	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3426		3433	4970		1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3426		3433	4970		1770	5085	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	51	112	306	561	224	61	82	806	143	51	2235	51
RTOR Reduction (vph)	0	0	119	0	21	0	0	14	0	0	0	27
Lane Group Flow (vph)	51	112	187	561	264	0	82	935	0	51	2235	24
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	6.9	22.4	22.4	27.6	43.1		4.9	63.7		6.9	65.7	65.7
Effective Green, g (s)	6.9	22.4	22.4	27.6	43.1		4.9	63.7		6.9	65.7	65.7
Actuated g/C Ratio	0.05	0.16	0.16	0.20	0.31		0.04	0.46		0.05	0.47	0.47
Clearance Time (s)	4.2	5.0	5.0	4.2	5.0		4.2	6.0		4.2	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	3.0		2.0	3.0	3.0
Lane Grp Cap (vph)	87	298	253	348	1054		120	2261		87	2386	742
v/s Ratio Prot	0.03	0.06		c0.32	0.08		c0.02	0.19		0.03	c0.44	
v/s Ratio Perm			c0.12									0.02
v/c Ratio	0.59	0.38	0.74	1.61	0.25		0.68	0.41		0.59	0.94	0.03
Uniform Delay, d1	65.2	52.6	56.0	56.2	36.3		66.8	25.6		65.2	35.2	20.0
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	6.3	0.3	9.3	288.4	0.0		12.1	0.6		6.3	8.6	0.1
Delay (s)	71.5	52.8	65.3	344.6	36.4		78.8	26.2		71.5	43.8	20.1
Level of Service	E	D	E	F	D		E	C		E	D	C
Approach Delay (s)		63.0			240.8			30.4			43.9	
Approach LOS		E			F			C			D	
Intersection Summary												
HCM 2000 Control Delay			78.4				HCM 2000 Level of Service				E	
HCM 2000 Volume to Capacity ratio			1.04									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)				19.4	
Intersection Capacity Utilization			104.0%				ICU Level of Service				G	
Analysis Period (min)			15									
c Critical Lane Group												






























HCM Signalized Intersection Capacity Analysis
5: Carlsbad Blvd & Cannon Rd

2035 No Specific Plan
AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	300	100	240	90	290	650
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.5	5.5	5.5	4.5	5.5
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
Fl _t Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Fl _t Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	306	102	245	92	296	663
RTOR Reduction (vph)	0	51	0	49	0	0
Lane Group Flow (vph)	306	51	245	43	296	663
Turn Type	NA	pm+ov	NA	Perm	Prot	NA
Protected Phases	4	5	6		5	2
Permitted Phases		4		6		
Actuated Green, G (s)	17.0	32.2	16.8	16.8	15.2	36.5
Effective Green, g (s)	17.0	32.2	16.8	16.8	15.2	36.5
Actuated g/C Ratio	0.27	0.50	0.26	0.26	0.24	0.57
Clearance Time (s)	5.0	4.5	5.5	5.5	4.5	5.5
Vehicle Extension (s)	3.0	2.0	4.0	4.0	2.0	4.0
Lane Grp Cap (vph)	470	796	489	415	420	1062
v/s Ratio Prot	c0.17	0.02	0.13		0.17	c0.36
v/s Ratio Perm		0.02		0.03		
v/c Ratio	0.65	0.06	0.50	0.10	0.70	0.62
Uniform Delay, d ₁	20.9	8.2	20.0	17.9	22.3	9.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d ₂	3.2	0.0	1.1	0.1	4.4	1.3
Delay (s)	24.1	8.2	21.1	18.0	26.7	10.5
Level of Service	C	A	C	B	C	B
Approach Delay (s)	20.1		20.3			15.5
Approach LOS	C		C			B
Intersection Summary						
HCM 2000 Control Delay			17.5		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.69			
Actuated Cycle Length (s)			64.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			59.6%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						













HCM Signalized Intersection Capacity Analysis
6: Avenida Encinas & Cannon Rd

2035 No Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 		 	 		 		 	 		 
Volume (vph)	20	330	50	330	310	100	30	10	100	80	20	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.5		4.5	5.5		4.5	5.0	4.5	4.5	5.0	4.5
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	1.00	1.00	0.97	1.00	1.00
Fr _t	1.00	0.98		1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Fl _t Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3469		3433	3410		1770	1863	1583	3433	1863	1583
Fl _t Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3469		3433	3410		1770	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	20	337	51	337	316	102	31	10	102	82	20	20
RTOR Reduction (vph)	0	11	0	0	23	0	0	0	75	0	0	17
Lane Group Flow (vph)	20	377	0	337	395	0	31	10	27	82	20	3
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8	1	7	4	5
Permitted Phases									8			4
Actuated Green, G (s)	1.7	18.3		12.0	28.6		1.7	3.7	15.7	5.3	7.3	9.0
Effective Green, g (s)	1.7	18.3		12.0	28.6		1.7	3.7	15.7	5.3	7.3	9.0
Actuated g/C Ratio	0.03	0.31		0.20	0.49		0.03	0.06	0.27	0.09	0.12	0.15
Clearance Time (s)	4.5	5.5		4.5	5.5		4.5	5.0	4.5	4.5	5.0	4.5
Vehicle Extension (s)	2.5	3.0		2.5	3.0		2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	51	1079		700	1658		51	117	422	309	231	242
v/s Ratio Prot	0.01	c0.11		c0.10	0.12		c0.02	0.01	0.01	0.02	c0.01	0.00
v/s Ratio Perm									0.00			0.00
v/c Ratio	0.39	0.35		0.48	0.24		0.61	0.09	0.06	0.27	0.09	0.01
Uniform Delay, d ₁	28.0	15.6		20.7	8.8		28.2	26.0	16.1	24.9	22.8	21.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d ₂	3.6	0.2		0.4	0.1		16.0	0.2	0.0	0.3	0.1	0.0
Delay (s)	31.6	15.8		21.0	8.8		44.3	26.2	16.1	25.3	22.9	21.1
Level of Service	C	B		C	A		D	C	B	C	C	C
Approach Delay (s)		16.6			14.3			22.9			24.2	
Approach LOS		B			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			16.7			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.35									
Actuated Cycle Length (s)			58.8			Sum of lost time (s)			19.5			
Intersection Capacity Utilization			41.6%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												



















HCM Signalized Intersection Capacity Analysis
7: I-5 SB Ramps & Cannon Rd

2035 No Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑↑	↑↑					↑	↑	↑
Volume (vph)	0	420	90	440	370	0	0	0	0	900	10	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Fr _t		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Fl _t Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1681	1687	1583
Fl _t Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1681	1687	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	429	92	449	378	0	0	0	0	918	10	378
RTOR Reduction (vph)	0	0	61	0	0	0	0	0	0	0	0	248
Lane Group Flow (vph)	0	429	31	449	378	0	0	0	0	468	460	130
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		46.9	46.9	31.8	82.9					47.9	47.9	47.9
Effective Green, g (s)		46.9	46.9	31.8	82.9					47.9	47.9	47.9
Actuated g/C Ratio		0.33	0.33	0.23	0.59					0.34	0.34	0.34
Clearance Time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6
Vehicle Extension (s)		2.0	2.0	2.0	2.0					2.0	2.0	2.0
Lane Grp Cap (vph)		1185	530	779	2095					575	577	541
v/s Ratio Prot		c0.12		c0.13	0.11					c0.28	0.27	
v/s Ratio Perm			0.02									0.08
v/c Ratio		0.36	0.06	0.58	0.18					0.81	0.80	0.24
Uniform Delay, d ₁		35.2	31.6	48.1	13.0					42.0	41.7	33.0
Progression Factor		1.00	1.00	1.03	0.81					1.00	1.00	1.00
Incremental Delay, d ₂		0.9	0.2	0.6	0.2					8.2	7.1	0.1
Delay (s)		36.1	31.8	50.2	10.7					50.2	48.7	33.1
Level of Service		D	C	D	B					D	D	C
Approach Delay (s)		35.3			32.2			0.0			44.7	
Approach LOS		D			C			A			D	
Intersection Summary												
HCM 2000 Control Delay			39.0			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				13.4		
Intersection Capacity Utilization			60.5%			ICU Level of Service				B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
8: I-5 NB Ramps & Cannon Rd

2035 No Specific Plan
AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	130	1190	0	0	700	200	110	10	460	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.2	4.6			4.6	4.6		4.6	4.6				
Lane Util. Factor	0.97	0.95			0.91	0.91		1.00	0.88				
Fr _t	1.00	1.00			1.00	0.85		1.00	0.85				
Fl _t Protected	0.95	1.00			1.00	1.00		0.96	1.00				
Satd. Flow (prot)	3433	3539			3376	1441		1781	2787				
Fl _t Permitted	0.95	1.00			1.00	1.00		0.96	1.00				
Satd. Flow (perm)	3433	3539			3376	1441		1781	2787				
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	133	1214	0	0	714	204	112	10	469	0	0	0	
RTOR Reduction (vph)	0	0	0	0	1	55	0	0	48	0	0	0	
Lane Group Flow (vph)	133	1214	0	0	733	129	0	122	421	0	0	0	
Turn Type	Prot	NA			NA	Perm	Split	NA	custom				
Protected Phases	5	2			6	1	8	8	8				
Permitted Phases						6	1		1				
Actuated Green, G (s)	9.6	99.5			97.8	97.8		19.6	27.1				
Effective Green, g (s)	9.6	99.5			97.8	97.8		19.6	27.1				
Actuated g/C Ratio	0.07	0.71			0.70	0.70		0.14	0.19				
Clearance Time (s)	4.2	4.6						4.6	4.6				
Vehicle Extension (s)	2.0	2.0						2.0	2.0				
Lane Grp Cap (vph)	235	2515			2358	1006		249	539				
v/s Ratio Prot	0.04	c0.34			0.22			0.07	c0.11				
v/s Ratio Perm						0.09			0.04				
v/c Ratio	0.57	0.48			0.31	0.13		0.49	0.78				
Uniform Delay, d ₁	63.2	8.9			8.1	7.0		55.6	53.6				
Progression Factor	1.03	0.09			0.65	0.59		1.00	1.00				
Incremental Delay, d ₂	1.8	0.6			0.0	0.0		0.6	6.7				
Delay (s)	66.9	1.4			5.3	4.1		56.1	60.3				
Level of Service	E	A			A	A		E	E				
Approach Delay (s)		7.9			5.1			59.4			0.0		
Approach LOS		A			A			E			A		
Intersection Summary													
HCM 2000 Control Delay			17.6		HCM 2000 Level of Service				B				
HCM 2000 Volume to Capacity ratio			0.56										
Actuated Cycle Length (s)			140.0		Sum of lost time (s)				17.6				
Intersection Capacity Utilization			60.5%		ICU Level of Service				B				
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis
 9: Paseo Del Norte & Cannon Rd

2035 No Specific Plan
 AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑↑	↘↘	↗
Volume (vph)	1200	450	90	710	190	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	0.95		1.00	*0.80	0.97	1.00
Flt	0.96		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3394		1770	4471	3433	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3394		1770	4471	3433	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	1224	459	92	724	194	122
RTOR Reduction (vph)	19	0	0	0	0	48
Lane Group Flow (vph)	1664	0	92	724	194	74
Turn Type	NA		Prot	NA	NA	pm+ov
Protected Phases	2		1	6	8	1
Permitted Phases						8
Actuated Green, G (s)	97.5		10.5	113.0	17.0	27.5
Effective Green, g (s)	97.5		10.5	113.0	17.0	27.5
Actuated g/C Ratio	0.70		0.08	0.81	0.12	0.20
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	4.5		2.0	4.5	3.5	2.0
Lane Grp Cap (vph)	2363		132	3608	416	367
v/s Ratio Prot	c0.49		c0.05	0.16	c0.06	0.02
v/s Ratio Perm						0.03
v/c Ratio	0.70		0.70	0.20	0.47	0.20
Uniform Delay, d1	12.7		63.2	3.1	57.3	47.1
Progression Factor	1.22		0.99	0.87	1.00	1.00
Incremental Delay, d2	1.6		11.9	0.1	1.0	0.1
Delay (s)	17.0		74.8	2.8	58.3	47.2
Level of Service	B		E	A	E	D
Approach Delay (s)	17.0			10.9	54.0	
Approach LOS	B			B	D	
Intersection Summary						
HCM 2000 Control Delay			19.4		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.67			
Actuated Cycle Length (s)			140.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			70.5%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis
 10: Car Country Dr & Cannon Rd

2035 No Specific Plan
 AM Peak Hour



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↕↔		↕	↕↕	↕	↕
Volume (vph)	0	1040	280	90	710	90	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5		5.5	6.5	6.0	6.0
Lane Util. Factor		0.95		1.00	0.95	1.00	1.00
Frbp, ped/bikes		1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00
Frt		0.97		1.00	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)		3426		1770	3539	1770	1583
Flt Permitted		1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)		3426		1770	3539	1770	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1061	286	92	724	92	61
RTOR Reduction (vph)	0	13	0	0	0	0	54
Lane Group Flow (vph)	0	1334	0	92	724	92	7
Confl. Peds. (#/hr)						60	
Turn Type	Prot	NA		Prot	NA	NA	Perm
Protected Phases	5	2		1	6	8	
Permitted Phases							8
Actuated Green, G (s)		93.7		12.0	111.2	16.3	16.3
Effective Green, g (s)		93.7		12.0	111.2	16.3	16.3
Actuated g/C Ratio		0.67		0.09	0.79	0.12	0.12
Clearance Time (s)		6.5		5.5	6.5	6.0	6.0
Vehicle Extension (s)		3.0		3.0	3.0	4.0	4.0
Lane Grp Cap (vph)		2292		151	2810	206	184
v/s Ratio Prot		c0.39		c0.05	0.20	c0.05	
v/s Ratio Perm							0.00
v/c Ratio		0.58		0.61	0.26	0.45	0.04
Uniform Delay, d1		12.5		61.7	3.7	57.6	54.9
Progression Factor		0.71		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.8		6.8	0.2	2.1	0.1
Delay (s)		9.7		68.5	3.9	59.7	55.0
Level of Service		A		E	A	E	E
Approach Delay (s)		9.7			11.2	57.9	
Approach LOS		A			B	E	

Intersection Summary			
HCM 2000 Control Delay	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 11: Legoland Dr

2035 No Specific Plan
 AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↘↗	↑↑	↘↗	↗
Volume (vph)	660	440	370	740	60	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.0	5.0	6.0	5.0	5.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	3433	3539	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	3433	3539	3433	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	673	449	378	755	61	61
RTOR Reduction (vph)	0	55	0	0	0	50
Lane Group Flow (vph)	673	394	378	755	61	11
Turn Type	NA	pm+ov	Prot	NA	NA	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	20.4	30.7	12.5	37.9	10.3	10.3
Effective Green, g (s)	20.4	30.7	12.5	37.9	10.3	10.3
Actuated g/C Ratio	0.34	0.52	0.21	0.64	0.17	0.17
Clearance Time (s)	6.0	5.0	5.0	6.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1219	820	724	2265	597	275
v/s Ratio Prot	c0.19	c0.08	c0.11	0.21	0.02	
v/s Ratio Perm		0.17				0.01
v/c Ratio	0.55	0.48	0.52	0.33	0.10	0.04
Uniform Delay, d1	15.7	9.1	20.7	4.9	20.6	20.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.4	0.3	0.1	0.1	0.1
Delay (s)	16.2	9.6	21.0	5.0	20.6	20.4
Level of Service	B	A	C	A	C	C
Approach Delay (s)	13.6			10.3	20.5	
Approach LOS	B			B	C	
Intersection Summary						
HCM 2000 Control Delay			12.4		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.53			
Actuated Cycle Length (s)			59.2		Sum of lost time (s)	16.0
Intersection Capacity Utilization			46.1%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						




















HCM Signalized Intersection Capacity Analysis
 12: Marriott Hotel Dwy & Cannon Rd

2035 No Specific Plan
 AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Volume (vph)	640	80	60	1070	40	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.5	5.0	6.0	5.5	5.5
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	653	82	61	1092	41	71
RTOR Reduction (vph)	0	14	0	0	0	65
Lane Group Flow (vph)	653	68	61	1092	41	6
Turn Type	NA	pm+ov	Prot	NA	NA	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	103.3	115.3	8.2	116.5	12.0	12.0
Effective Green, g (s)	103.3	115.3	8.2	116.5	12.0	12.0
Actuated g/C Ratio	0.74	0.82	0.06	0.83	0.09	0.09
Clearance Time (s)	6.0	5.5	5.0	6.0	5.5	5.5
Vehicle Extension (s)	3.0	2.0	2.0	3.0	2.0	2.0
Lane Grp Cap (vph)	2611	1303	103	2944	151	135
v/s Ratio Prot	0.18	0.00	c0.03	c0.31	c0.02	
v/s Ratio Perm		0.04				0.00
v/c Ratio	0.25	0.05	0.59	0.37	0.27	0.05
Uniform Delay, d1	5.9	2.3	64.3	2.9	59.9	58.7
Progression Factor	1.00	1.00	0.78	1.35	1.00	1.00
Incremental Delay, d2	0.2	0.0	5.7	0.3	0.4	0.1
Delay (s)	6.1	2.3	55.6	4.2	60.3	58.8
Level of Service	A	A	E	A	E	E
Approach Delay (s)	5.7			6.9	59.3	
Approach LOS	A			A	E	
Intersection Summary						
HCM 2000 Control Delay			9.4		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.38			
Actuated Cycle Length (s)			140.0		Sum of lost time (s)	16.5
Intersection Capacity Utilization			43.3%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						





















HCM Signalized Intersection Capacity Analysis
13: Faraday Ave & Cannon Rd

2035 No Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	290	410	130	960	10	160	10	50	10	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		5.0	5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		0.95	0.95			1.00	
Fr _t	1.00	0.91		1.00	1.00		1.00	0.93			0.95	
Fl _t Protected	0.95	1.00		0.95	1.00		0.95	0.98			0.98	
Satd. Flow (prot)	1770	3228		1770	3534		1681	1611			1750	
Fl _t Permitted	0.95	1.00		0.95	1.00		0.95	0.98			0.98	
Satd. Flow (perm)	1770	3228		1770	3534		1681	1611			1750	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	10	296	418	133	980	10	163	10	51	10	10	10
RTOR Reduction (vph)	0	118	0	0	0	0	0	26	0	0	10	0
Lane Group Flow (vph)	10	596	0	133	990	0	114	84	0	0	20	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases												
Actuated Green, G (s)	0.8	82.5		14.9	96.6		16.6	16.6			4.0	
Effective Green, g (s)	0.8	82.5		14.9	96.6		16.6	16.6			4.0	
Actuated g/C Ratio	0.01	0.59		0.11	0.69		0.12	0.12			0.03	
Clearance Time (s)	6.0	6.0		6.0	6.0		5.0	5.0			5.0	
Vehicle Extension (s)	2.0	3.5		2.0	3.5		2.0	2.0			2.0	
Lane Grp Cap (vph)	10	1902		188	2438		199	191			50	
v/s Ratio Prot	0.01	0.18		c0.08	c0.28		c0.07	0.05			c0.01	
v/s Ratio Perm												
v/c Ratio	1.00	0.31		0.71	0.41		0.57	0.44			0.41	
Uniform Delay, d ₁	69.6	14.5		60.4	9.3		58.3	57.4			66.8	
Progression Factor	1.06	1.26		0.88	1.72		1.00	1.00			1.00	
Incremental Delay, d ₂	282.2	0.4		4.3	0.2		2.5	0.6			2.0	
Delay (s)	355.9	18.6		57.3	16.3		60.8	57.9			68.8	
Level of Service	F	B		E	B		E	E			E	
Approach Delay (s)		23.3			21.2			59.4			68.8	
Approach LOS		C			C			E			E	
Intersection Summary												
HCM 2000 Control Delay			26.7	HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.48									
Actuated Cycle Length (s)			140.0	Sum of lost time (s)				22.0				
Intersection Capacity Utilization			56.7%	ICU Level of Service				B				
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 14: El Camino Real & Cannon Rd

2035 No Specific Plan
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	100	30	320	200	130	10	5	320	580	40	5	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	6.0		4.2	6.0			4.2	6.0	6.0		4.2
Lane Util. Factor	0.97	0.95		0.97	0.95			1.00	0.95	1.00		1.00
Fr _t	1.00	0.86		1.00	0.99			1.00	1.00	0.85		1.00
Fl _t Protected	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95
Satd. Flow (prot)	3433	3054		3433	3502			1770	3539	1583		1770
Fl _t Permitted	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95
Satd. Flow (perm)	3433	3054		3433	3502			1770	3539	1583		1770
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	102	31	327	204	133	10	5	327	592	41	5	10
RTOR Reduction (vph)	0	158	0	0	5	0	0	0	0	14	0	0
Lane Group Flow (vph)	102	200	0	204	138	0	0	332	592	27	0	15
Turn Type	Prot	NA		Prot	NA		Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases										2		
Actuated Green, G (s)	8.3	18.4		5.8	15.9			16.3	93.2	93.2		2.2
Effective Green, g (s)	8.3	18.4		5.8	15.9			16.3	93.2	93.2		2.2
Actuated g/C Ratio	0.06	0.13		0.04	0.11			0.12	0.67	0.67		0.02
Clearance Time (s)	4.2	6.0		4.2	6.0			4.2	6.0	6.0		4.2
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0	3.0	3.0		2.0
Lane Grp Cap (vph)	203	401		142	397			206	2355	1053		27
v/s Ratio Prot	0.03	c0.07		c0.06	0.04			c0.19	0.17			0.01
v/s Ratio Perm										0.02		
v/c Ratio	0.50	0.89dr		1.44	0.35			1.61	0.25	0.03		0.56
Uniform Delay, d ₁	63.8	56.5		67.1	57.3			61.9	9.4	8.0		68.4
Progression Factor	0.89	0.72		1.00	1.00			1.00	1.00	1.00		1.00
Incremental Delay, d ₂	0.7	0.3		231.8	0.2			296.6	0.3	0.0		13.3
Delay (s)	57.4	41.1		298.9	57.5			358.5	9.7	8.0		81.7
Level of Service	E	D		F	E			F	A	A		F
Approach Delay (s)		44.7			199.4				129.6			
Approach LOS		D			F				F			

Intersection Summary

HCM 2000 Control Delay	62.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	102.4%	ICU Level of Service	G
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

Movement	SBT	SBR
Lane Configurations	↑↑↑	↑
Volume (vph)	2610	650
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	4.2
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	2663	663
RTOR Reduction (vph)	0	187
Lane Group Flow (vph)	2663	476
Turn Type	NA	pm+ov
Protected Phases	6	7
Permitted Phases		6
Actuated Green, G (s)	79.1	87.4
Effective Green, g (s)	79.1	87.4
Actuated g/C Ratio	0.56	0.62
Clearance Time (s)	6.0	4.2
Vehicle Extension (s)	3.0	2.0
Lane Grp Cap (vph)	2873	1035
v/s Ratio Prot	c0.52	c0.03
v/s Ratio Perm		0.27
v/c Ratio	0.93	0.46
Uniform Delay, d1	27.8	13.9
Progression Factor	1.00	1.00
Incremental Delay, d2	6.6	0.1
Delay (s)	34.4	14.0
Level of Service	C	B
Approach Delay (s)	30.6	
Approach LOS	C	
Intersection Summary		




















HCM Signalized Intersection Capacity Analysis
 15: Paseo Del Norte & Car Country Dr

2035 No Specific Plan
 AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	10	10	60	10	100	10	200	100	70	230	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5		5.5	5.5		5.0	6.0		5.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Fr _t	1.00	0.93		1.00	0.86		1.00	0.95		1.00	0.98	
Fl _t Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1723		1770	1608		1770	3362		1770	3460	
Fl _t Permitted	0.68	1.00		0.74	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1276	1723		1386	1608		1770	3362		1770	3460	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	20	10	10	61	10	102	10	204	102	71	235	41
RTOR Reduction (vph)	0	8	0	0	85	0	0	56	0	0	14	0
Lane Group Flow (vph)	20	12	0	61	27	0	10	250	0	71	262	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	8.6	8.6		8.6	8.6		0.5	24.0		3.6	27.1	
Effective Green, g (s)	8.6	8.6		8.6	8.6		0.5	24.0		3.6	27.1	
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.01	0.46		0.07	0.51	
Clearance Time (s)	5.5	5.5		5.5	5.5		5.0	6.0		5.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	208	281		226	262		16	1531		120	1779	
v/s Ratio Prot		0.01			0.02		0.01	c0.07		c0.04	c0.08	
v/s Ratio Perm	0.02			c0.04								
v/c Ratio	0.10	0.04		0.27	0.10		0.62	0.16		0.59	0.15	
Uniform Delay, d ₁	18.7	18.6		19.3	18.8		26.0	8.4		23.8	6.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d ₂	0.2	0.1		0.6	0.2		44.0	0.1		5.1	0.1	
Delay (s)	18.9	18.6		19.9	18.9		70.0	8.5		29.0	6.8	
Level of Service	B	B		B	B		E	A		C	A	
Approach Delay (s)		18.8			19.3			10.5			11.3	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			12.9				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.22									
Actuated Cycle Length (s)			52.7				Sum of lost time (s)			16.5		
Intersection Capacity Utilization			40.1%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												




















HCM Signalized Intersection Capacity Analysis
 16: Paseo Del Norte & Outlet Dwy

2035 No Specific Plan
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	20	20	10	20	30	280	20	70	220	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Flt	1.00	0.90			0.95		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1676			1728		1770	3505		1770	3517	
Flt Permitted	1.00	1.00			0.86		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1863	1676			1509		1770	3505		1770	3517	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	10	10	20	20	10	20	31	286	20	71	224	10
RTOR Reduction (vph)	0	18	0	0	18	0	0	5	0	0	3	0
Lane Group Flow (vph)	10	12	0	0	32	0	31	301	0	71	231	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	3.8	3.8			3.8		0.5	22.7		2.0	24.2	
Effective Green, g (s)	3.8	3.8			3.8		0.5	22.7		2.0	24.2	
Actuated g/C Ratio	0.09	0.09			0.09		0.01	0.52		0.05	0.56	
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.5	2.5			2.5		2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	162	146			131		20	1829		81	1956	
v/s Ratio Prot		0.01					0.02	c0.09		c0.04	0.07	
v/s Ratio Perm	0.01				c0.02							
v/c Ratio	0.06	0.08			0.24		1.55	0.16		0.88	0.12	
Uniform Delay, d1	18.2	18.2			18.5		21.5	5.4		20.6	4.6	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.2			0.7		403.2	0.1		58.7	0.0	
Delay (s)	18.3	18.4			19.2		424.7	5.5		79.4	4.6	
Level of Service	B	B			B		F	A		E	A	
Approach Delay (s)		18.4			19.2			44.1			22.0	
Approach LOS		B			B			D			C	
Intersection Summary												
HCM 2000 Control Delay			31.8				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.22									
Actuated Cycle Length (s)			43.5				Sum of lost time (s)			15.0		
Intersection Capacity Utilization			34.3%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 17: Faraday Ave & College Blvd

2035 No Specific Plan
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	230	800	140	5	370	490	400	60	320	260	5	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.0			4.5	6.0		4.5	5.0			4.5
Lane Util. Factor	0.97	0.95			0.97	0.95		1.00	0.95			1.00
Flt	1.00	0.98			1.00	0.93		1.00	0.93			1.00
Flt Protected	0.95	1.00			0.95	1.00		0.95	1.00			0.95
Satd. Flow (prot)	3433	3460			3433	3301		1770	3302			1770
Flt Permitted	0.95	1.00			0.95	1.00		0.95	1.00			0.95
Satd. Flow (perm)	3433	3460			3433	3301		1770	3302			1770
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	235	816	143	5	378	500	408	61	327	265	5	327
RTOR Reduction (vph)	0	10	0	0	0	106	0	0	104	0	0	0
Lane Group Flow (vph)	235	949	0	0	383	802	0	61	488	0	0	332
Turn Type	Prot	NA		Prot	Prot	NA		Prot	NA		Prot	Prot
Protected Phases	5	2		1	1	6		3	8		7	7
Permitted Phases												
Actuated Green, G (s)	10.7	36.8			16.2	42.3		6.1	22.0			26.5
Effective Green, g (s)	10.7	36.8			16.2	42.3		6.1	22.0			26.5
Actuated g/C Ratio	0.09	0.30			0.13	0.35		0.05	0.18			0.22
Clearance Time (s)	4.5	6.0			4.5	6.0		4.5	5.0			4.5
Vehicle Extension (s)	0.2	0.2			0.2	0.2		0.2	0.2			0.2
Lane Grp Cap (vph)	302	1047			457	1149		88	597			386
v/s Ratio Prot	0.07	c0.27			c0.11	0.24		0.03	c0.15			c0.19
v/s Ratio Perm												
v/c Ratio	0.78	0.91			0.84	0.70		0.69	0.82			0.86
Uniform Delay, d1	54.2	40.7			51.4	34.1		56.8	47.8			45.7
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2	10.9	10.8			12.1	1.5		17.3	8.1			16.9
Delay (s)	65.2	51.5			63.5	35.6		74.1	55.9			62.6
Level of Service	E	D			E	D		E	E			E
Approach Delay (s)		54.2				43.9			57.6			
Approach LOS		D				D			E			
Intersection Summary												
HCM 2000 Control Delay			48.9	HCM 2000 Level of Service				D				
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			121.5	Sum of lost time (s)				20.0				
Intersection Capacity Utilization			89.1%	ICU Level of Service				E				
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
Lane Configurations	↑↑	
Volume (vph)	500	40
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.0	
Lane Util. Factor	0.95	
Flt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	3500	
Flt Permitted	1.00	
Satd. Flow (perm)	3500	
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	510	41
RTOR Reduction (vph)	4	0
Lane Group Flow (vph)	547	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	42.4	
Effective Green, g (s)	42.4	
Actuated g/C Ratio	0.35	
Clearance Time (s)	5.0	
Vehicle Extension (s)	0.2	
Lane Grp Cap (vph)	1221	
v/s Ratio Prot	0.16	
v/s Ratio Perm		
v/c Ratio	0.45	
Uniform Delay, d1	30.5	
Progression Factor	1.00	
Incremental Delay, d2	0.1	
Delay (s)	30.6	
Level of Service	C	
Approach Delay (s)	42.6	
Approach LOS	D	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
 18: El Camino Real & College Blvd






















2035 No Specific Plan
 AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	200	340	70	800	730	50	75	400	590	430	210	2850
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5		5.0	6.5			5.0	6.0	6.0	5.0	6.0
Lane Util. Factor	0.97	0.95		0.97	0.95			1.00	0.91	1.00	1.00	0.91
Fr _t	1.00	0.97		1.00	0.99			1.00	1.00	0.85	1.00	1.00
Fl _t Protected	0.95	1.00		0.95	1.00			0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3449		3433	3505			1770	5085	1583	1770	5085
Fl _t Permitted	0.95	1.00		0.95	1.00			0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3449		3433	3505			1770	5085	1583	1770	5085
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	204	347	71	816	745	51	77	408	602	439	214	2908
RTOR Reduction (vph)	0	13	0	0	4	0	0	0	0	217	0	0
Lane Group Flow (vph)	204	405	0	816	792	0	0	485	602	222	214	2908
Turn Type	Prot	NA		Prot	NA		Prot	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	8		5	5	2		1	6
Permitted Phases										2		
Actuated Green, G (s)	10.6	33.7		14.0	37.1			21.0	50.5	50.5	19.3	48.8
Effective Green, g (s)	10.6	33.7		14.0	37.1			21.0	50.5	50.5	19.3	48.8
Actuated g/C Ratio	0.08	0.24		0.10	0.27			0.15	0.36	0.36	0.14	0.35
Clearance Time (s)	5.0	6.5		5.0	6.5			5.0	6.0	6.0	5.0	6.0
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0	4.0	4.0	2.0	4.0
Lane Grp Cap (vph)	259	830		343	928			265	1834	571	244	1772
v/s Ratio Prot	0.06	0.12		c0.24	c0.23			c0.27	0.12		0.12	c0.57
v/s Ratio Perm										0.14		
v/c Ratio	0.79	0.49		2.38	0.85			1.83	0.33	0.39	0.88	1.64
Uniform Delay, d ₁	63.6	45.7		63.0	48.9			59.5	32.5	33.3	59.2	45.6
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d ₂	13.5	0.2		629.5	7.4			388.0	0.5	2.0	27.1	291.1
Delay (s)	77.1	45.9		692.5	56.3			447.5	32.9	35.3	86.3	336.7
Level of Service	E	D		F	E			F	C	D	F	F
Approach Delay (s)		56.1			378.3				165.4			281.9
Approach LOS		E			F				F			F
Intersection Summary												
HCM 2000 Control Delay			260.6	HCM 2000 Level of Service				F				
HCM 2000 Volume to Capacity ratio			1.54									
Actuated Cycle Length (s)			140.0	Sum of lost time (s)				22.5				
Intersection Capacity Utilization			134.6%	ICU Level of Service				H				
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBR
▲▲▲ Lane Configurations	↗
Volume (vph)	740
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.98
Adj. Flow (vph)	755
RTOR Reduction (vph)	130
Lane Group Flow (vph)	625
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	48.8
Effective Green, g (s)	48.8
Actuated g/C Ratio	0.35
Clearance Time (s)	6.0
Vehicle Extension (s)	4.0
Lane Grp Cap (vph)	551
v/s Ratio Prot	
v/s Ratio Perm	0.39
v/c Ratio	1.13
Uniform Delay, d1	45.6
Progression Factor	1.00
Incremental Delay, d2	80.8
Delay (s)	126.4
Level of Service	F
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
 19: El Camino Real & Faraday Ave
























2035 No Specific Plan
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	90	180	80	180	810	420	10	950	1220	150	30	690
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9	5.0	5.0	5.0		4.2	6.0			4.2
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00		0.97	0.91			0.97
Flt	1.00	0.99	0.85	1.00	1.00	0.85		1.00	0.98			1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (prot)	1770	3369	1441	1770	3539	1583		3433	5002			3433
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (perm)	1770	3369	1441	1770	3539	1583		3433	5002			3433
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	92	184	82	184	827	429	10	969	1245	153	31	704
RTOR Reduction (vph)	0	2	55	0	0	163	0	0	11	0	0	0
Lane Group Flow (vph)	92	190	19	184	827	266	0	979	1387	0	0	735
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases	3	8		7	4		1	1	6		5	5
Permitted Phases			8			4						
Actuated Green, G (s)	5.1	36.7	36.7	10.0	41.6	41.6		21.8	53.4			19.8
Effective Green, g (s)	5.1	36.7	36.7	10.0	41.6	41.6		21.8	53.4			19.8
Actuated g/C Ratio	0.04	0.26	0.26	0.07	0.30	0.30		0.16	0.38			0.14
Clearance Time (s)	4.9	4.9	4.9	5.0	5.0	5.0		4.2	6.0			4.2
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0	3.0		2.0	2.0			2.0
Lane Grp Cap (vph)	64	883	377	126	1051	470		534	1907			485
v/s Ratio Prot	0.05	0.06		c0.10	c0.23			c0.29	0.28			c0.21
v/s Ratio Perm			0.01			0.17						
v/c Ratio	1.44	0.21	0.05	1.46	0.79	0.57		1.83	0.73			1.52
Uniform Delay, d1	67.5	40.4	38.6	65.0	45.1	41.6		59.1	37.1			60.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2	265.4	0.0	0.0	245.4	4.0	1.6		382.3	2.5			242.4
Delay (s)	332.9	40.4	38.7	310.4	49.1	43.1		441.4	39.5			302.5
Level of Service	F	D	D	F	D	D		F	D			F
Approach Delay (s)		115.2			80.7				205.0			
Approach LOS		F			F				F			
Intersection Summary												
HCM 2000 Control Delay			139.8				HCM 2000 Level of Service		F			
HCM 2000 Volume to Capacity ratio			1.21									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)		20.1			
Intersection Capacity Utilization			107.5%				ICU Level of Service		G			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
Label Configurations	↑↑↑	↑
Volume (vph)	1860	520
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	6.0
Lane Util. Factor	0.91	1.00
Flt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	1898	531
RTOR Reduction (vph)	0	67
Lane Group Flow (vph)	1898	464
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Actuated Green, G (s)	51.4	51.4
Effective Green, g (s)	51.4	51.4
Actuated g/C Ratio	0.37	0.37
Clearance Time (s)	6.0	6.0
Vehicle Extension (s)	2.0	2.0
Lane Grp Cap (vph)	1866	581
v/s Ratio Prot	c0.37	
v/s Ratio Perm		0.29
v/c Ratio	1.02	0.80
Uniform Delay, d1	44.3	39.7
Progression Factor	1.00	1.00
Incremental Delay, d2	25.2	11.0
Delay (s)	69.5	50.6
Level of Service	E	D
Approach Delay (s)	120.5	
Approach LOS	F	
Intersection Summary		













HCM Signalized Intersection Capacity Analysis
20: Avenida Encinas & Palomar Airport Rd

2035 No Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	220	70	370	260	390	60	90	140	140	100	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.0		4.2	5.0	5.0	4.6	4.6	4.6	4.6	4.6	4.6
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Flt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (prot)	1770	1795		1770	1863	1583	1770	1863	1583	1681	1753	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (perm)	1770	1795		1770	1863	1583	1770	1863	1583	1681	1753	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	61	224	71	378	265	398	61	92	143	143	102	31
RTOR Reduction (vph)	0	10	0	0	0	237	0	0	123	0	0	27
Lane Group Flow (vph)	61	285	0	378	265	161	61	92	20	120	125	4
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases						6			8			7
Actuated Green, G (s)	5.9	18.5		18.8	31.4	31.4	11.1	11.1	11.1	10.7	10.7	10.7
Effective Green, g (s)	5.9	18.5		18.8	31.4	31.4	11.1	11.1	11.1	10.7	10.7	10.7
Actuated g/C Ratio	0.08	0.24		0.24	0.41	0.41	0.14	0.14	0.14	0.14	0.14	0.14
Clearance Time (s)	4.2	5.0		4.2	5.0	5.0	4.6	4.6	4.6	4.6	4.6	4.6
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	134	428		429	754	641	253	266	226	232	242	218
v/s Ratio Prot	0.03	c0.16		c0.21	0.14		0.03	c0.05		c0.07	0.07	
v/s Ratio Perm						0.10			0.01			0.00
v/c Ratio	0.46	0.67		0.88	0.35	0.25	0.24	0.35	0.09	0.52	0.52	0.02
Uniform Delay, d1	34.3	26.7		28.3	16.0	15.3	29.5	29.9	28.8	31.0	31.0	28.9
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	0.9	3.9		18.2	0.3	0.2	0.2	0.3	0.1	0.8	0.8	0.0
Delay (s)	35.2	30.6		46.5	16.3	15.5	29.6	30.2	28.9	31.8	31.8	28.9
Level of Service	D	C		D	B	B	C	C	C	C	C	C
Approach Delay (s)		31.4			26.9			29.5			31.5	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			28.8	HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			77.5	Sum of lost time (s)				18.4				
Intersection Capacity Utilization			61.0%	ICU Level of Service				B				
Analysis Period (min)			15									
c Critical Lane Group												


























HCM Signalized Intersection Capacity Analysis
 21: I-5 SB Ramps & Palomar Airport Rd

2035 No Specific Plan
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑	↗				↖↖		↗
Volume (vph)	0	400	100	0	620	360	0	0	0	1190	0	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0	4.0				4.6		4.6
Lane Util. Factor		0.91			0.95	1.00				0.97		1.00
Fr _t		0.97			1.00	0.85				1.00		0.85
Fl _t Protected		1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)		4933			3539	1583				3433		1583
Fl _t Permitted		1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)		4933			3539	1583				3433		1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	408	102	0	633	367	0	0	0	1214	0	408
RTOR Reduction (vph)	0	58	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	452	0	0	633	367	0	0	0	1214	0	408
Turn Type		NA			NA	Free				Prot		custom
Protected Phases		2 3			6					4		4 3
Permitted Phases						Free						2
Actuated Green, G (s)		24.9			14.8	58.3				23.8		48.3
Effective Green, g (s)		24.9			14.8	58.3				23.8		48.3
Actuated g/C Ratio		0.43			0.25	1.00				0.41		0.83
Clearance Time (s)					5.0					4.6		
Vehicle Extension (s)					2.0					2.0		
Lane Grp Cap (vph)		2106			898	1583				1401		1311
v/s Ratio Prot		0.09			c0.18					c0.35		c0.18
v/s Ratio Perm						0.23						0.08
v/c Ratio		0.21			0.70	0.23				0.87		0.31
Uniform Delay, d ₁		10.5			19.8	0.0				15.8		1.2
Progression Factor		1.00			1.00	1.00				1.00		1.00
Incremental Delay, d ₂		0.0			2.1	0.3				5.7		0.0
Delay (s)		10.6			21.8	0.3				21.5		1.2
Level of Service		B			C	A				C		A
Approach Delay (s)		10.6			14.0			0.0			16.4	
Approach LOS		B			B			A			B	
Intersection Summary												
HCM 2000 Control Delay			14.7				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			58.3				Sum of lost time (s)			14.6		
Intersection Capacity Utilization			58.6%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 22: I-5 NB Ramps & Palomar Airport Rd

2035 No Specific Plan
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  	 			 	 		
Volume (vph)	180	1410	0	0	760	580	220	10	1450	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.6			4.6	4.6		4.6	4.6			
Lane Util. Factor	1.00	0.91			0.91	0.88		1.00	0.88			
Fr _t	1.00	1.00			1.00	0.85		1.00	0.85			
Fl _t Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	5085			5085	2787		1778	2787			
Fl _t Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	5085			5085	2787		1778	2787			
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	184	1439	0	0	776	592	224	10	1480	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	248	0	0	36	0	0	0
Lane Group Flow (vph)	184	1439	0	0	776	344	0	234	1444	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	5	2			6 7			8	7			
Permitted Phases						6 7	8		8			
Actuated Green, G (s)	10.6	31.9			51.4	51.4		13.0	42.7			
Effective Green, g (s)	10.6	31.9			51.4	51.4		13.0	42.7			
Actuated g/C Ratio	0.12	0.36			0.58	0.58		0.15	0.48			
Clearance Time (s)	4.2	4.6						4.6	4.6			
Vehicle Extension (s)	2.0	3.0						2.0	2.0			
Lane Grp Cap (vph)	212	1834			2956	1620		261	1491			
v/s Ratio Prot	0.10	c0.28			0.15				c0.33			
v/s Ratio Perm						0.12		0.13	0.19			
v/c Ratio	0.87	0.78			0.26	0.21		0.90	0.97			
Uniform Delay, d ₁	38.2	25.2			9.1	8.8		37.0	22.2			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d ₂	28.3	2.3			0.0	0.0		29.4	16.1			
Delay (s)	66.5	27.5			9.2	8.9		66.4	38.3			
Level of Service	E	C			A	A		E	D			
Approach Delay (s)		31.9			9.0			42.1			0.0	
Approach LOS		C			A			D			A	
Intersection Summary												
HCM 2000 Control Delay			29.0				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			1.01									
Actuated Cycle Length (s)			88.4				Sum of lost time (s)		18.0			
Intersection Capacity Utilization			85.6%				ICU Level of Service		E			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
23: Paseo Del Norte & Palomar Airport Rd





























2035 No Specific Plan
AM Peak Hour

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (vph)	5	200	2500	150	5	120	910	390	210	150	160	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	6.0			4.2	6.0	4.2	4.2	5.0		4.2
Lane Util. Factor		0.97	0.91			0.97	0.86	1.00	0.97	0.95		0.97
Fr _t		1.00	0.99			1.00	1.00	0.85	1.00	0.92		1.00
Fl _t Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		3433	5042			3433	6408	1583	3433	3265		3433
Fl _t Permitted		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (perm)		3433	5042			3433	6408	1583	3433	3265		3433
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	5	204	2551	153	5	122	929	398	214	153	163	337
RTOR Reduction (vph)	0	0	4	0	0	0	0	157	0	47	0	0
Lane Group Flow (vph)	0	209	2700	0	0	127	929	241	214	269	0	337
Turn Type	Prot	Prot	NA		Prot	Prot	NA	pm+ov	Prot	NA		Prot
Protected Phases	5	5	2		1	1	6	7	3	8		7
Permitted Phases								6				
Actuated Green, G (s)		12.3	80.3			4.8	72.8	84.6	11.2	23.7		11.8
Effective Green, g (s)		12.3	80.3			4.8	72.8	84.6	11.2	23.7		11.8
Actuated g/C Ratio		0.09	0.57			0.03	0.52	0.60	0.08	0.17		0.08
Clearance Time (s)		4.2	6.0			4.2	6.0	4.2	4.2	5.0		4.2
Vehicle Extension (s)		2.0	2.0			2.0	2.0	2.0	2.0	2.0		2.0
Lane Grp Cap (vph)		301	2891			117	3332	956	274	552		289
v/s Ratio Prot		0.06	c0.54			c0.04	0.14	0.02	0.06	c0.08		c0.10
v/s Ratio Perm								0.13				
v/c Ratio		0.69	0.93			1.09	0.28	0.25	0.78	0.49		1.17
Uniform Delay, d ₁		62.0	27.4			67.6	18.9	12.9	63.2	52.6		64.1
Progression Factor		1.00	1.00			1.07	0.53	0.32	1.00	1.00		1.00
Incremental Delay, d ₂		5.5	7.1			104.8	0.2	0.0	12.5	0.2		105.7
Delay (s)		67.5	34.5			177.0	10.2	4.2	75.7	52.9		169.8
Level of Service		E	C			F	B	A	E	D		F
Approach Delay (s)			36.9				23.1			62.1		
Approach LOS			D				C			E		
Intersection Summary												
HCM 2000 Control Delay			44.5				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.87									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)			19.4		
Intersection Capacity Utilization			90.1%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
↓ ↘		
↙ ↓		
Lane Configurations	↑↑	
Volume (vph)	100	210
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.0	
Lane Util. Factor	0.95	
Frt	0.90	
Flt Protected	1.00	
Satd. Flow (prot)	3180	
Flt Permitted	1.00	
Satd. Flow (perm)	3180	
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	102	214
RTOR Reduction (vph)	142	0
Lane Group Flow (vph)	174	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	24.3	
Effective Green, g (s)	24.3	
Actuated g/C Ratio	0.17	
Clearance Time (s)	5.0	
Vehicle Extension (s)	2.0	
Lane Grp Cap (vph)	551	
v/s Ratio Prot	0.05	
v/s Ratio Perm		
v/c Ratio	0.32	
Uniform Delay, d1	50.6	
Progression Factor	1.00	
Incremental Delay, d2	0.1	
Delay (s)	50.7	
Level of Service	D	
Approach Delay (s)	112.1	
Approach LOS	F	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
24: Armada Dr & Palomar Airport Rd



























2035 No Specific Plan
AM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations		 	 				 		 	 	 	 
Volume (vph)	10	350	2540	150	5	110	1210	200	120	60	70	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	6.0	4.7		4.2	6.0	5.0	4.7	4.7	4.7	5.0
Lane Util. Factor		0.97	0.91	1.00		1.00	0.91	1.00	0.97	0.95	0.95	0.97
Fr _t		1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.98	0.85	1.00
Fl _t Protected		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95
Satd. Flow (prot)		3433	5085	1583		1770	5085	1583	3433	1735	1504	3433
Fl _t Permitted		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95
Satd. Flow (perm)		3433	5085	1583		1770	5085	1583	3433	1735	1504	3433
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	10	357	2592	153	5	112	1235	204	122	61	71	133
RTOR Reduction (vph)	0	0	0	49	0	0	0	73	0	4	56	0
Lane Group Flow (vph)	0	367	2592	104	0	117	1235	131	122	66	6	133
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	NA	Perm	Prot
Protected Phases	5	5	2	3	1	1	6	7	3	8		7
Permitted Phases				2				6			8	
Actuated Green, G (s)		16.0	86.6	95.4		10.7	81.3	89.8	8.8	14.3	14.3	8.5
Effective Green, g (s)		16.0	86.6	95.4		10.7	81.3	89.8	8.8	14.3	14.3	8.5
Actuated g/C Ratio		0.11	0.62	0.68		0.08	0.58	0.64	0.06	0.10	0.10	0.06
Clearance Time (s)		4.2	6.0	4.7		4.2	6.0	5.0	4.7	4.7	4.7	5.0
Vehicle Extension (s)		2.0	3.0	2.0		2.0	3.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)		392	3145	1078		135	2952	1015	215	177	153	208
v/s Ratio Prot		c0.11	c0.51	0.01		0.07	0.24	0.01	0.04	c0.04		c0.04
v/s Ratio Perm				0.06				0.07			0.00	
v/c Ratio		0.94	0.82	0.10		0.87	0.42	0.13	0.57	0.37	0.04	0.64
Uniform Delay, d ₁		61.5	20.8	7.6		63.9	16.3	9.8	63.8	58.6	56.7	64.3
Progression Factor		0.94	0.83	1.40		0.90	1.61	7.28	1.00	1.00	1.00	1.00
Incremental Delay, d ₂		15.4	1.1	0.0		35.2	0.4	0.0	2.0	0.5	0.0	4.7
Delay (s)		73.2	18.3	10.6		92.6	26.5	71.4	65.8	59.1	56.7	68.9
Level of Service		E	B	B		F	C	E	E	E	E	E
Approach Delay (s)			24.4				37.4			61.7		
Approach LOS			C				D			E		
Intersection Summary												
HCM 2000 Control Delay			32.4				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)			19.9		
Intersection Capacity Utilization			80.7%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
↓	↖	
Lane Configurations	↑	↗
Volume (vph)	40	150
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.7	4.7
Lane Util. Factor	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	1863	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	1863	1583
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	41	153
RTOR Reduction (vph)	0	137
Lane Group Flow (vph)	41	16
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Actuated Green, G (s)	14.3	14.3
Effective Green, g (s)	14.3	14.3
Actuated g/C Ratio	0.10	0.10
Clearance Time (s)	4.7	4.7
Vehicle Extension (s)	2.0	2.0
Lane Grp Cap (vph)	190	161
v/s Ratio Prot	0.02	
v/s Ratio Perm		0.01
v/c Ratio	0.22	0.10
Uniform Delay, d1	57.7	57.0
Progression Factor	1.00	1.00
Incremental Delay, d2	0.2	0.1
Delay (s)	57.9	57.1
Level of Service	E	E
Approach Delay (s)	62.0	
Approach LOS	E	
Intersection Summary		
























HCM Signalized Intersection Capacity Analysis
 25: Hidden Valley Rd/The Crossing Dr & Palomar Airport Rd

2035 No Specific Plan
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Volume (vph)	90	2550	110	150	1250	110	140	20	350	60	10	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	4.2	4.2	6.0		4.2	4.7		5.0	5.7	5.7
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00		1.00	1.00	1.00
Fr _t	1.00	1.00	0.85	1.00	0.99		1.00	0.86		1.00	1.00	0.85
Fl _t Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5024		1770	1598		1770	1863	1583
Fl _t Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5024		1770	1598		1770	1863	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	92	2602	112	153	1276	112	143	20	357	61	10	61
RTOR Reduction (vph)	0	0	21	0	6	0	0	132	0	0	0	51
Lane Group Flow (vph)	92	2602	91	153	1382	0	143	245	0	61	10	10
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2									4
Actuated Green, G (s)	11.3	75.6	86.3	9.8	73.3		10.7	29.1		5.6	23.8	23.8
Effective Green, g (s)	11.3	75.6	86.3	9.8	73.3		10.7	29.1		5.6	23.8	23.8
Actuated g/C Ratio	0.08	0.54	0.62	0.07	0.52		0.08	0.21		0.04	0.17	0.17
Clearance Time (s)	5.0	6.0	4.2	4.2	6.0		4.2	4.7		5.0	5.7	5.7
Vehicle Extension (s)	2.0	3.0	2.0	2.0	3.0		2.0	3.0		2.0	3.0	3.0
Lane Grp Cap (vph)	142	2745	975	123	2630		135	332		70	316	269
v/s Ratio Prot	0.05	c0.51	0.01	c0.09	0.28		c0.08	c0.15		0.03	0.01	
v/s Ratio Perm			0.05									0.01
v/c Ratio	0.65	0.95	0.09	1.24	0.53		1.06	0.74		0.87	0.03	0.04
Uniform Delay, d ₁	62.4	30.3	10.9	65.1	21.9		64.7	51.9		66.8	48.5	48.5
Progression Factor	1.12	0.56	0.62	1.07	0.70		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d ₂	4.4	5.6	0.0	149.7	0.6		94.2	8.3		63.6	0.0	0.1
Delay (s)	74.1	22.7	6.8	219.3	15.9		158.8	60.1		130.4	48.5	48.6
Level of Service	E	C	A	F	B		F	E		F	D	D
Approach Delay (s)		23.7			36.1			87.3			86.4	
Approach LOS		C			D			F			F	
Intersection Summary												
HCM 2000 Control Delay			35.8			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.97									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			20.9			
Intersection Capacity Utilization			100.2%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 26: Aviara Pkwy/College Blvd & Palomar Airport Rd























2035 No Specific Plan
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	960	1860	140	5	180	950	120	260	750	260	50	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.3	6.3		4.2	6.3	6.3	4.2	5.8	5.8	4.2	6.0
Lane Util. Factor	0.97	0.91	1.00		0.97	0.91	1.00	0.97	0.95	1.00	1.00	1.00
Flt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	5085	1583		3433	5085	1583	3433	3539	1583	1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	5085	1583		3433	5085	1583	3433	3539	1583	1770	1863
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	980	1898	143	5	184	969	122	265	765	265	51	143
RTOR Reduction (vph)	0	0	48	0	0	0	89	0	0	118	0	0
Lane Group Flow (vph)	980	1898	95	0	189	969	33	265	765	147	51	143
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases			2				6			8		
Actuated Green, G (s)	37.5	66.9	66.9		8.7	37.8	37.8	10.8	37.0	37.0	6.9	32.9
Effective Green, g (s)	37.5	66.9	66.9		8.7	37.8	37.8	10.8	37.0	37.0	6.9	32.9
Actuated g/C Ratio	0.27	0.48	0.48		0.06	0.27	0.27	0.08	0.26	0.26	0.05	0.23
Clearance Time (s)	4.5	6.3	6.3		4.2	6.3	6.3	4.2	5.8	5.8	4.2	6.0
Vehicle Extension (s)	2.0	3.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0
Lane Grp Cap (vph)	919	2429	756		213	1372	427	264	935	418	87	437
v/s Ratio Prot	c0.29	c0.37			0.06	0.19		c0.08	c0.22		0.03	0.08
v/s Ratio Perm			0.06				0.02			0.09		
v/c Ratio	1.07	0.78	0.13		0.89	0.71	0.08	1.00	0.82	0.35	0.59	0.33
Uniform Delay, d1	51.2	30.5	20.3		65.2	46.1	38.1	64.6	48.3	41.8	65.2	44.4
Progression Factor	1.47	1.01	1.75		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	39.9	1.1	0.1		32.0	3.1	0.4	56.4	5.6	0.5	6.3	0.4
Delay (s)	115.4	32.0	35.7		97.2	49.2	38.4	121.0	54.0	42.3	71.5	44.8
Level of Service	F	C	D		F	D	D	F	D	D	E	D
Approach Delay (s)		59.2				55.2			65.3			33.0
Approach LOS		E				E			E			C
Intersection Summary												
HCM 2000 Control Delay			57.5			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			21.0			
Intersection Capacity Utilization			87.1%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBR
Lane Configurations	7
Volume (vph)	300
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Fr _t	0.85
Fl _t Protected	1.00
Satd. Flow (prot)	1583
Fl _t Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.98
Adj. Flow (vph)	306
RTOR Reduction (vph)	29
Lane Group Flow (vph)	277
Turn Type	pm+ov
Protected Phases	5
Permitted Phases	4
Actuated Green, G (s)	70.4
Effective Green, g (s)	70.4
Actuated g/C Ratio	0.50
Clearance Time (s)	4.5
Vehicle Extension (s)	2.0
Lane Grp Cap (vph)	796
v/s Ratio Prot	0.09
v/s Ratio Perm	0.08
v/c Ratio	0.35
Uniform Delay, d ₁	21.0
Progression Factor	1.00
Incremental Delay, d ₂	0.1
Delay (s)	21.1
Level of Service	C
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
 27: El Camino Real & Palomar Airport Rd













2035 No Specific Plan
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	280	1130	150	770	1630	940	15	120	1200	610	5	1080
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	6.0	6.0		5.0	6.0	5.0		5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	0.88		0.97	0.91	0.88		0.97
Flt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (prot)	3433	5085	1583	3433	5085	2787		3433	5085	2787		3433
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (perm)	3433	5085	1583	3433	5085	2787		3433	5085	2787		3433
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	286	1153	153	786	1663	959	15	122	1224	622	5	1102
RTOR Reduction (vph)	0	0	109	0	0	402	0	0	0	66	0	0
Lane Group Flow (vph)	286	1153	44	786	1663	557	0	137	1224	556	0	1107
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	pm+ov	Prot	Prot
Protected Phases	3	8		7	4		1	1	6	7	5	5
Permitted Phases			8			4				6		
Actuated Green, G (s)	14.2	40.0	40.0	22.0	47.8	47.8		10.0	26.0	48.0		30.0
Effective Green, g (s)	14.2	40.0	40.0	22.0	47.8	47.8		10.0	26.0	48.0		30.0
Actuated g/C Ratio	0.10	0.29	0.29	0.16	0.34	0.34		0.07	0.19	0.34		0.21
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0		5.0	6.0	5.0		5.0
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0	3.0		2.0	3.0	2.0		2.0
Lane Grp Cap (vph)	348	1452	452	539	1736	951		245	944	955		735
v/s Ratio Prot	0.08	0.23		c0.23	c0.33			0.04	c0.24	0.09		c0.32
v/s Ratio Perm			0.03			0.20				0.11		
v/c Ratio	0.82	0.79	0.10	1.46	0.96	0.59		0.56	1.30	0.58		1.51
Uniform Delay, d1	61.7	46.2	36.7	59.0	45.1	38.0		62.9	57.0	37.8		55.0
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	13.8	4.6	0.4	216.3	13.7	2.6		1.6	141.3	0.6		234.8
Delay (s)	75.4	50.8	37.2	275.3	58.8	40.6		64.4	198.3	38.3		289.8
Level of Service	E	D	D	F	E	D		E	F	D		F
Approach Delay (s)		53.9			103.6				138.9			
Approach LOS		D			F				F			
Intersection Summary												
HCM 2000 Control Delay			112.0				HCM 2000 Level of Service		F			
HCM 2000 Volume to Capacity ratio			1.28									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)		22.0			
Intersection Capacity Utilization			116.3%				ICU Level of Service		H			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
Label Configurations	↑↑↑	↑
Volume (vph)	1460	470
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	5.0
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	1490	480
RTOR Reduction (vph)	0	58
Lane Group Flow (vph)	1490	422
Turn Type	NA	pm+ov
Protected Phases	2	3
Permitted Phases		2
Actuated Green, G (s)	46.0	60.2
Effective Green, g (s)	46.0	60.2
Actuated g/C Ratio	0.33	0.43
Clearance Time (s)	6.0	5.0
Vehicle Extension (s)	3.0	2.0
Lane Grp Cap (vph)	1670	680
v/s Ratio Prot	0.29	0.06
v/s Ratio Perm		0.20
v/c Ratio	0.89	0.62
Uniform Delay, d1	44.6	31.0
Progression Factor	1.00	1.00
Incremental Delay, d2	6.5	1.3
Delay (s)	51.1	32.3
Level of Service	D	C
Approach Delay (s)	134.1	
Approach LOS	F	
Intersection Summary		























HCM Signalized Intersection Capacity Analysis
 28: I-5 SB Ramps & Poinsettia Ln

2035 No Specific Plan
 AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↑↑	↑	↑↑	↑↑					↑	↑	↑	
Volume (vph)	0	770	140	510	890	0	0	0	0	380	10	230	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6	
Lane Util. Factor		0.95	1.00	0.97	0.95					1.00	0.95	0.95	
Fr _t		1.00	0.85	1.00	1.00					1.00	0.86	0.85	
Fl _t Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00	
Satd. Flow (prot)		3539	1583	3433	3539					1770	1526	1504	
Fl _t Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00	
Satd. Flow (perm)		3539	1583	3433	3539					1770	1526	1504	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	0	786	143	520	908	0	0	0	0	388	10	235	
RTOR Reduction (vph)	0	0	99	0	0	0	0	0	0	0	84	90	
Lane Group Flow (vph)	0	786	44	520	908	0	0	0	0	388	39	32	
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm	
Protected Phases		2		1	6						4		
Permitted Phases			2							4		4	
Actuated Green, G (s)		16.9	16.9	10.5	31.6					14.4	14.4	14.4	
Effective Green, g (s)		16.9	16.9	10.5	31.6					14.4	14.4	14.4	
Actuated g/C Ratio		0.31	0.31	0.19	0.57					0.26	0.26	0.26	
Clearance Time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6	
Vehicle Extension (s)		2.0	2.0	2.0	5.0					2.0	2.0	2.0	
Lane Grp Cap (vph)		1083	484	653	2025					461	398	392	
v/s Ratio Prot		c0.22		c0.15	0.26						0.03		
v/s Ratio Perm			0.03							c0.22		0.02	
v/c Ratio		0.73	0.09	0.80	0.45					0.84	0.10	0.08	
Uniform Delay, d ₁		17.1	13.7	21.3	6.8					19.3	15.5	15.4	
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00	
Incremental Delay, d ₂		2.1	0.0	6.3	0.3					12.6	0.0	0.0	
Delay (s)		19.2	13.7	27.6	7.1					31.9	15.5	15.4	
Level of Service		B	B	C	A					C	B	B	
Approach Delay (s)		18.3			14.6			0.0			25.5		
Approach LOS		B			B			A			C		
Intersection Summary													
HCM 2000 Control Delay			18.1									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.78										
Actuated Cycle Length (s)			55.2									Sum of lost time (s)	13.4
Intersection Capacity Utilization			68.1%									ICU Level of Service	C
Analysis Period (min)			15										
c Critical Lane Group													






























HCM Signalized Intersection Capacity Analysis
 29: I-5 NB Ramps & Poinsettia Ln

2035 No Specific Plan
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			  				 			
Volume (vph)	190	960	0	0	1130	470	270	10	740	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.6			4.6	4.6		4.6	4.6			
Lane Util. Factor	1.00	0.95			0.91	1.00		1.00	0.88			
Fr _t	1.00	1.00			1.00	0.85		1.00	0.85			
Fl _t Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	3539			5085	1583		1777	2787			
Fl _t Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	3539			5085	1583		1777	2787			
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	194	980	0	0	1153	480	276	10	755	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	332	0	0	133	0	0	0
Lane Group Flow (vph)	194	980	0	0	1153	148	0	286	622	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases						6	8		8			
Actuated Green, G (s)	8.4	28.8			16.2	16.2		14.4	14.4			
Effective Green, g (s)	8.4	28.8			16.2	16.2		14.4	14.4			
Actuated g/C Ratio	0.16	0.55			0.31	0.31		0.27	0.27			
Clearance Time (s)	4.2	4.6			4.6	4.6		4.6	4.6			
Vehicle Extension (s)	2.0	5.0			2.0	2.0		2.0	2.0			
Lane Grp Cap (vph)	283	1945			1572	489		488	765			
v/s Ratio Prot	c0.11	0.28			c0.23							
v/s Ratio Perm						0.09		0.16	c0.22			
v/c Ratio	0.69	0.50			0.73	0.30		0.59	0.81			
Uniform Delay, d ₁	20.8	7.3			16.2	13.8		16.4	17.7			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d ₂	5.4	0.4			1.6	0.1		1.2	6.3			
Delay (s)	26.1	7.8			17.7	13.9		17.6	24.0			
Level of Service	C	A			B	B		B	C			
Approach Delay (s)		10.8			16.6			22.3			0.0	
Approach LOS		B			B			C			A	
Intersection Summary												
HCM 2000 Control Delay			16.4				HCM 2000 Level of Service		B			
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			52.4				Sum of lost time (s)		13.4			
Intersection Capacity Utilization			68.1%				ICU Level of Service		C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
30: Lower Ln/Paseo Del Norte & Poinsettia Ln

2035 No Specific Plan
AM Peak Hour






















													
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	
Lane Configurations		 	 		 	 		 	 		 	 	
Volume (vph)	5	380	1290	30	10	1010	170	50	10	30	90	10	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.2	4.6	4.6	4.2	4.6		4.6	4.6		4.6	4.6	
Lane Util. Factor		0.97	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Fr _t		1.00	1.00	0.85	1.00	0.98		1.00	0.89		1.00	0.85	
Fl _t Protected		0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3433	3539	1583	1770	3463		1770	1651		1770	1588	
Fl _t Permitted		0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3433	3539	1583	1770	3463		1770	1651		1770	1588	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	5	388	1316	31	10	1031	173	51	10	31	92	10	
RTOR Reduction (vph)	0	0	0	13	0	8	0	0	29	0	0	318	
Lane Group Flow (vph)	0	393	1316	18	10	1196	0	51	12	0	92	233	
Turn Type	Prot	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	
Protected Phases	5	5	2		1	6		3	3		4	4	
Permitted Phases				2									
Actuated Green, G (s)		16.9	69.3	69.3	0.8	53.2		8.7	8.7		20.4	20.4	
Effective Green, g (s)		16.9	69.3	69.3	0.8	53.2		8.7	8.7		20.4	20.4	
Actuated g/C Ratio		0.14	0.59	0.59	0.01	0.45		0.07	0.07		0.17	0.17	
Clearance Time (s)		4.2	4.6	4.6	4.2	4.6		4.6	4.6		4.6	4.6	
Vehicle Extension (s)		2.0	5.0	5.0	2.0	5.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		495	2092	936	12	1571		131	122		308	276	
v/s Ratio Prot		c0.11	0.37		0.01	c0.35		c0.03	0.01		0.05	c0.15	
v/s Ratio Perm				0.01									
v/c Ratio		0.79	0.63	0.02	0.83	0.76		0.39	0.10		0.30	0.84	
Uniform Delay, d ₁		48.5	15.6	9.9	58.1	26.7		51.7	50.6		42.2	46.9	
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d ₂		8.0	0.8	0.0	163.6	2.6		0.7	0.1		0.2	19.7	
Delay (s)		56.5	16.4	9.9	221.7	29.3		52.4	50.7		42.4	66.5	
Level of Service		E	B	A	F	C		D	D		D	E	
Approach Delay (s)			25.4			30.9			51.7			63.1	
Approach LOS			C			C			D			E	
Intersection Summary													
HCM 2000 Control Delay			34.4									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.75										
Actuated Cycle Length (s)			117.2									Sum of lost time (s)	18.0
Intersection Capacity Utilization			96.8%									ICU Level of Service	F
Analysis Period (min)			15										
c Critical Lane Group													



Movement	SBR
Lane Configurations	
Volume (vph)	530
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Flt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.98
Adj. Flow (vph)	541
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
31: Aviara Pkwy & Poinsettia Ln

2035 No Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	410	620	100	30	510	150	140	100	20	110	80	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.0	5.5	5.5	6.0		5.5	6.0		5.5	6.0	
Lane Util. Factor	0.97	1.00	0.88	1.00	0.95		0.97	0.95		1.00	0.95	
Flt	1.00	1.00	0.85	1.00	0.97		1.00	0.98		1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1863	2787	1770	3419		3433	3452		1770	3202	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	1863	2787	1770	3419		3433	3452		1770	3202	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	418	633	102	31	520	153	143	102	20	112	82	143
RTOR Reduction (vph)	0	0	48	0	26	0	0	18	0	0	120	0
Lane Group Flow (vph)	418	633	54	31	647	0	143	104	0	112	105	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	12.9	36.3	43.0	2.2	25.6		6.7	10.0		9.9	13.2	
Effective Green, g (s)	12.9	36.3	43.0	2.2	25.6		6.7	10.0		9.9	13.2	
Actuated g/C Ratio	0.16	0.45	0.53	0.03	0.31		0.08	0.12		0.12	0.16	
Clearance Time (s)	5.5	6.0	5.5	5.5	6.0		5.5	6.0		5.5	6.0	
Vehicle Extension (s)	2.5	3.5	3.0	2.5	3.5		3.0	4.0		2.5	4.0	
Lane Grp Cap (vph)	544	830	1472	47	1075		282	424		215	519	
v/s Ratio Prot	c0.12	c0.34	0.00	0.02	0.19		c0.04	0.03		c0.06	c0.03	
v/s Ratio Perm			0.02									
v/c Ratio	0.77	0.76	0.04	0.66	0.60		0.51	0.25		0.52	0.20	
Uniform Delay, d1	32.8	18.9	9.2	39.2	23.6		35.8	32.3		33.5	29.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.2	4.3	0.0	26.0	1.0		1.4	0.4		1.7	0.3	
Delay (s)	39.0	23.2	9.2	65.2	24.6		37.2	32.7		35.3	29.8	
Level of Service	D	C	A	E	C		D	C		D	C	
Approach Delay (s)		27.7			26.4			35.1			31.6	
Approach LOS		C			C			D			C	
Intersection Summary												
HCM 2000 Control Delay			28.7			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			81.4			Sum of lost time (s)				23.0		
Intersection Capacity Utilization			65.8%			ICU Level of Service				C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 32: El Camino Real & Aviara Pkwy

2035 No Specific Plan
 AM Peak Hour

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Volume (vph)	5	120	180	400	10	680	370	120	310	1990	230	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	5.7	4.6		4.2	5.7		4.6	6.4		
Lane Util. Factor		0.97	0.95	1.00		0.97	0.95		0.97	0.91		
Flt		1.00	1.00	0.85		1.00	0.96		1.00	0.98		
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	1.00		
Satd. Flow (prot)		3433	3539	1583		3433	3410		3433	5006		
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.95	1.00		
Satd. Flow (perm)		3433	3539	1583		3433	3410		3433	5006		
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	5	122	184	408	10	694	378	122	316	2031	235	5
RTOR Reduction (vph)	0	0	0	70	0	0	26	0	0	8	0	0
Lane Group Flow (vph)	0	127	184	338	0	704	474	0	316	2258	0	0
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		Prot	NA		Prot
Protected Phases	7	7	4	5	3	3	8		5	2		1
Permitted Phases				4								
Actuated Green, G (s)		8.9	21.7	33.1		22.8	35.6		11.4	71.0		
Effective Green, g (s)		8.9	21.7	33.1		22.8	35.6		11.4	71.0		
Actuated g/C Ratio		0.06	0.15	0.24		0.16	0.25		0.08	0.51		
Clearance Time (s)		4.2	5.7	4.6		4.2	5.7		4.6	6.4		
Vehicle Extension (s)		2.0	2.0	2.0		3.0	2.0		2.0	3.0		
Lane Grp Cap (vph)		218	548	374		559	867		279	2538		
v/s Ratio Prot		0.04	0.05	c0.07		c0.21	0.14		c0.09	c0.45		
v/s Ratio Perm				0.14								
v/c Ratio		0.58	0.34	0.90		1.26	0.55		1.13	0.89		
Uniform Delay, d1		63.7	52.7	51.9		58.6	45.2		64.3	31.0		
Progression Factor		1.00	1.00	1.00		1.00	1.00		1.00	1.00		
Incremental Delay, d2		2.5	0.1	23.8		130.7	0.4		94.5	5.2		
Delay (s)		66.3	52.9	75.7		189.3	45.6		158.8	36.2		
Level of Service		E	D	E		F	D		F	D		
Approach Delay (s)			68.2				129.6			51.2		
Approach LOS			E				F			D		
Intersection Summary												
HCM 2000 Control Delay			61.2				HCM 2000 Level of Service			E		
HCM 2000 Volume to Capacity ratio			1.00									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)		20.9			
Intersection Capacity Utilization			92.0%				ICU Level of Service		F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 32: El Camino Real & Aviara Pkwy

2035 No Specific Plan
 AM Peak Hour























Movement	SBL	SBT	SBR
Lane Configurations			
Volume (vph)	90	1680	110
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.2	6.4	
Lane Util. Factor	0.97	0.91	
Frt	1.00	0.99	
Flt Protected	0.95	1.00	
Satd. Flow (prot)	3433	5039	
Flt Permitted	0.95	1.00	
Satd. Flow (perm)	3433	5039	
Peak-hour factor, PHF	0.98	0.98	0.98
Adj. Flow (vph)	92	1714	112
RTOR Reduction (vph)	0	4	0
Lane Group Flow (vph)	97	1822	0
Turn Type	Prot	NA	
Protected Phases	1	6	
Permitted Phases			
Actuated Green, G (s)	4.0	63.2	
Effective Green, g (s)	4.0	63.2	
Actuated g/C Ratio	0.03	0.45	
Clearance Time (s)	4.2	6.4	
Vehicle Extension (s)	2.0	3.0	
Lane Grp Cap (vph)	98	2274	
v/s Ratio Prot	0.03	0.36	
v/s Ratio Perm			
v/c Ratio	0.99	0.80	
Uniform Delay, d1	68.0	33.0	
Progression Factor	1.10	0.65	
Incremental Delay, d2	67.2	1.9	
Delay (s)	141.7	23.4	
Level of Service	F	C	
Approach Delay (s)		29.3	
Approach LOS		C	
Intersection Summary			

HCM Signalized Intersection Capacity Analysis

33: El Camino Real & Poinsettia Ln





















2035 No Specific Plan
AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	
Lane Configurations													
Volume (vph)	230	70	140	490	210	100	20	210	1350	320	5	60	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.2	4.7		4.2	5.0			4.2	6.0	6.0		4.2	
Lane Util. Factor	0.97	0.95		0.97	0.95			0.97	0.91	1.00		0.97	
Fr _t	1.00	0.90		1.00	0.95			1.00	1.00	0.85		1.00	
Fl _t Protected	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95	
Satd. Flow (prot)	3433	3184		3433	3368			3433	5085	1583		3433	
Fl _t Permitted	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95	
Satd. Flow (perm)	3433	3184		3433	3368			3433	5085	1583		3433	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	235	71	143	500	214	102	20	214	1378	327	5	61	
RTOR Reduction (vph)	0	60	0	0	48	0	0	0	0	142	0	0	
Lane Group Flow (vph)	235	155	0	500	268	0	0	234	1378	185	0	66	
Turn Type	Prot	NA		Prot	NA		Prot	Prot	NA	Perm	Prot	Prot	
Protected Phases	7	4		3	8		1	1	6		5	5	
Permitted Phases										6			
Actuated Green, G (s)	13.5	21.0		20.8	28.0			10.4	74.0	74.0		5.1	
Effective Green, g (s)	13.5	21.0		20.8	28.0			10.4	74.0	74.0		5.1	
Actuated g/C Ratio	0.10	0.15		0.15	0.20			0.07	0.53	0.53		0.04	
Clearance Time (s)	4.2	4.7		4.2	5.0			4.2	6.0	6.0		4.2	
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0	3.0	3.0		2.0	
Lane Grp Cap (vph)	331	477		510	673			255	2687	836		125	
v/s Ratio Prot	0.07	0.05		c0.15	c0.08			c0.07	0.27			0.02	
v/s Ratio Perm										0.12			
v/c Ratio	0.71	0.32		0.98	0.40			0.92	0.51	0.22		0.53	
Uniform Delay, d ₁	61.4	53.2		59.4	48.7			64.4	21.3	17.6		66.3	
Progression Factor	1.00	1.00		1.00	1.00			0.71	1.18	3.40		1.00	
Incremental Delay, d ₂	5.6	0.1		34.6	0.1			21.4	0.4	0.3		1.9	
Delay (s)	67.0	53.3		94.0	48.8			67.2	25.6	60.3		68.1	
Level of Service	E	D		F	D			E	C	E		E	
Approach Delay (s)		60.5			76.5				36.5				
Approach LOS		E			E				D				
Intersection Summary													
HCM 2000 Control Delay			43.4									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.76										
Actuated Cycle Length (s)			140.0									Sum of lost time (s)	19.4
Intersection Capacity Utilization			79.3%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													

Movement	SBT	SBR
Label Configurations	↑↑↑	
Volume (vph)	1720	140
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	
Lane Util. Factor	0.91	
Flt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	5028	
Flt Permitted	1.00	
Satd. Flow (perm)	5028	
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	1755	143
RTOR Reduction (vph)	5	0
Lane Group Flow (vph)	1893	0
Turn Type	NA	
Protected Phases	2	
Permitted Phases		
Actuated Green, G (s)	68.7	
Effective Green, g (s)	68.7	
Actuated g/C Ratio	0.49	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	2467	
v/s Ratio Prot	c0.38	
v/s Ratio Perm		
v/c Ratio	0.77	
Uniform Delay, d1	29.1	
Progression Factor	1.00	
Incremental Delay, d2	2.4	
Delay (s)	31.5	
Level of Service	C	
Approach Delay (s)	32.7	
Approach LOS	C	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
 1: Carlsbad Blvd & Tamarack Ave

2035 No Specific Plan
 PM Peak Hour













												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	20	50	40	110	30	120	10	40	820	380	190	450
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0			4.5	6.0		4.5	6.0
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	0.95		1.00	0.95
Fr _t		1.00	0.85	1.00	0.88			1.00	0.95		1.00	1.00
Fl _t Protected		0.99	1.00	0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)		1837	1583	1770	1640			1770	3371		1770	3539
Fl _t Permitted		0.99	1.00	0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (perm)		1837	1583	1770	1640			1770	3371		1770	3539
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	20	51	41	112	31	122	10	41	837	388	194	459
RTOR Reduction (vph)	0	0	38	0	103	0	0	0	44	0	0	0
Lane Group Flow (vph)	0	71	3	112	50	0	0	51	1181	0	194	459
Turn Type	Split	NA	Perm	Split	NA		Prot	Prot	NA		Prot	NA
Protected Phases	4	4		3	3		5	5	2		1	6
Permitted Phases			4									
Actuated Green, G (s)		6.2	6.2	13.6	13.6			4.0	35.7		11.7	43.4
Effective Green, g (s)		6.2	6.2	13.6	13.6			4.0	35.7		11.7	43.4
Actuated g/C Ratio		0.07	0.07	0.16	0.16			0.05	0.41		0.13	0.49
Clearance Time (s)		5.0	5.0	5.0	5.0			4.5	6.0		4.5	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0			2.0	3.0		2.0	3.0
Lane Grp Cap (vph)		129	111	274	254			80	1372		236	1751
v/s Ratio Prot		c0.04		c0.06	0.03			0.03	c0.35		c0.11	0.13
v/s Ratio Perm			0.00									
v/c Ratio		0.55	0.03	0.41	0.20			0.64	0.86		0.82	0.26
Uniform Delay, d ₁		39.4	37.9	33.4	32.3			41.1	23.7		37.0	12.9
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d ₂		5.0	0.1	1.0	0.4			11.6	5.8		19.2	0.1
Delay (s)		44.4	38.0	34.4	32.7			52.7	29.5		56.2	12.9
Level of Service		D	D	C	C			D	C		E	B
Approach Delay (s)		42.1			33.4			30.4				25.4
Approach LOS		D			C			C				C
Intersection Summary												
HCM 2000 Control Delay			29.8			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			87.7			Sum of lost time (s)		20.5				
Intersection Capacity Utilization			78.1%			ICU Level of Service		D				
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBR
Lane Configurations	7
Volume (vph)	20
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.98
Adj. Flow (vph)	20
RTOR Reduction (vph)	10
Lane Group Flow (vph)	10
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	43.4
Effective Green, g (s)	43.4
Actuated g/C Ratio	0.49
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	783
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.01
Uniform Delay, d1	11.3
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	11.3
Level of Service	B
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis

2: I-5 SB Ramps & Tamarack Ave




















2035 No Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖	↑↑						↖	↗
Volume (vph)	0	580	250	460	400	0	0	0	0	290	10	470
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.2	4.6						4.6	4.6
Lane Util. Factor		0.95	1.00	1.00	0.95						1.00	1.00
Fr _t		1.00	0.85	1.00	1.00						1.00	0.85
Fl _t Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		3539	1583	1770	3539						1777	1583
Fl _t Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		3539	1583	1770	3539						1777	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	592	255	469	408	0	0	0	0	296	10	480
RTOR Reduction (vph)	0	0	169	0	0	0	0	0	0	0	0	378
Lane Group Flow (vph)	0	592	86	469	408	0	0	0	0	0	306	102
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		19.1	19.1	19.6	42.9						14.1	14.1
Effective Green, g (s)		19.1	19.1	19.6	42.9						14.1	14.1
Actuated g/C Ratio		0.29	0.29	0.30	0.65						0.21	0.21
Clearance Time (s)		4.6	4.6	4.2	4.6						4.6	4.6
Vehicle Extension (s)		5.0	5.0	2.0	7.0						2.0	2.0
Lane Grp Cap (vph)		1021	456	524	2293						378	337
v/s Ratio Prot		c0.17		c0.27	0.12							
v/s Ratio Perm			0.05								0.17	0.06
v/c Ratio		0.58	0.19	0.90	0.18						0.81	0.30
Uniform Delay, d ₁		20.1	17.7	22.3	4.6						24.8	21.9
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d ₂		1.3	0.4	17.2	0.1						11.4	0.2
Delay (s)		21.4	18.1	39.5	4.8						36.2	22.1
Level of Service		C	B	D	A						D	C
Approach Delay (s)		20.4			23.4			0.0			27.6	
Approach LOS		C			C			A			C	
Intersection Summary												
HCM 2000 Control Delay			23.7			HCM 2000 Level of Service					C	
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			66.2			Sum of lost time (s)					13.4	
Intersection Capacity Utilization			69.3%			ICU Level of Service					C	
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: I-5 NB Ramps & Tamarack Ave






















2035 No Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Volume (vph)	210	660	0	0	520	180	340	0	410	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.1			5.1			4.6	4.6			
Lane Util. Factor	1.00	0.95			0.95			1.00	1.00			
Fr _t	1.00	1.00			0.96			1.00	0.85			
Fl _t Protected	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (prot)	1770	3539			3403			1770	1583			
Fl _t Permitted	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (perm)	1770	3539			3403			1770	1583			
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	214	673	0	0	531	184	347	0	418	0	0	0
RTOR Reduction (vph)	0	0	0	0	62	0	0	0	194	0	0	0
Lane Group Flow (vph)	214	673	0	0	653	0	0	347	224	0	0	0
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	8.9	29.4			15.9			13.8	13.8			
Effective Green, g (s)	8.9	29.4			15.9			13.8	13.8			
Actuated g/C Ratio	0.17	0.56			0.30			0.26	0.26			
Clearance Time (s)	4.6	5.1			5.1			4.6	4.6			
Vehicle Extension (s)	2.0	3.0			2.0			2.0	2.0			
Lane Grp Cap (vph)	297	1966			1022			461	412			
v/s Ratio Prot	c0.12	0.19			c0.19							
v/s Ratio Perm								0.20	0.14			
v/c Ratio	0.72	0.34			0.64			0.75	0.54			
Uniform Delay, d ₁	20.8	6.4			16.0			18.0	16.8			
Progression Factor	1.00	1.00			1.00			1.00	1.00			
Incremental Delay, d ₂	7.1	0.1			1.0			6.1	0.8			
Delay (s)	27.9	6.6			17.0			24.1	17.6			
Level of Service	C	A			B			C	B			
Approach Delay (s)		11.7			17.0			20.6			0.0	
Approach LOS		B			B			C			A	
Intersection Summary												
HCM 2000 Control Delay			16.2				HCM 2000 Level of Service		B			
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			52.9				Sum of lost time (s)		14.3			
Intersection Capacity Utilization			69.3%				ICU Level of Service		C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: El Camino Real & Tamarck Ave

2035 No Specific Plan
PM Peak Hour













												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Volume (vph)	60	270	90	180	190	70	240	2800	520	5	100	900
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.0	5.0	4.2	5.0		4.2	6.0			4.2	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		0.97	0.91			1.00	0.91
Fr _t	1.00	1.00	0.85	1.00	0.96		1.00	0.98			1.00	1.00
Fl _t Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3397		3433	4966			1770	5085
Fl _t Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3397		3433	4966			1770	5085
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	61	276	92	184	194	71	245	2857	531	5	102	918
RTOR Reduction (vph)	0	0	74	0	30	0	0	16	0	0	0	0
Lane Group Flow (vph)	61	276	18	184	235	0	245	3372	0	0	107	918
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	Prot	NA
Protected Phases	7	4		3	8		5	2		1	1	6
Permitted Phases			4									
Actuated Green, G (s)	6.1	26.8	26.8	10.7	31.4		17.1	77.3			5.8	66.0
Effective Green, g (s)	6.1	26.8	26.8	10.7	31.4		17.1	77.3			5.8	66.0
Actuated g/C Ratio	0.04	0.19	0.19	0.08	0.22		0.12	0.55			0.04	0.47
Clearance Time (s)	4.2	5.0	5.0	4.2	5.0		4.2	6.0			4.2	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	3.0			2.0	3.0
Lane Grp Cap (vph)	77	356	303	135	761		419	2741			73	2397
v/s Ratio Prot	0.03	c0.15		c0.10	0.07		0.07	c0.68			c0.06	0.18
v/s Ratio Perm			0.01									
v/c Ratio	0.79	0.78	0.06	1.36	0.31		0.58	1.23			1.47	0.38
Uniform Delay, d ₁	66.3	53.7	46.3	64.7	45.3		58.1	31.4			67.1	23.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d ₂	39.0	9.3	0.0	203.5	0.1		1.3	107.0			269.9	0.5
Delay (s)	105.3	63.0	46.3	268.2	45.3		59.4	138.4			337.0	24.3
Level of Service	F	E	D	F	D		E	F			F	C
Approach Delay (s)		65.4			136.7			133.1				53.7
Approach LOS		E			F			F				D
Intersection Summary												
HCM 2000 Control Delay			112.3			HCM 2000 Level of Service		F				
HCM 2000 Volume to Capacity ratio			1.15									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)		19.4				
Intersection Capacity Utilization			111.9%			ICU Level of Service		H				
Analysis Period (min)			15									
c Critical Lane Group												



Movement	SBR
▲▲▲ Lane Configurations	↗
Volume (vph)	100
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.98
Adj. Flow (vph)	102
RTOR Reduction (vph)	54
Lane Group Flow (vph)	48
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	66.0
Effective Green, g (s)	66.0
Actuated g/C Ratio	0.47
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	746
v/s Ratio Prot	
v/s Ratio Perm	0.03
v/c Ratio	0.06
Uniform Delay, d1	20.2
Progression Factor	1.00
Incremental Delay, d2	0.2
Delay (s)	20.3
Level of Service	C
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
5: Carlsbad Blvd & Cannon Rd

2035 No Specific Plan
PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	260	510	850	230	270	540
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.5	5.5	5.5	4.5	5.5
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
Fl _t Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Fl _t Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	265	520	867	235	276	551
RTOR Reduction (vph)	0	62	0	22	0	0
Lane Group Flow (vph)	265	458	867	213	276	551
Turn Type	NA	pm+ov	NA	Perm	Prot	NA
Protected Phases	4	5	6		5	2
Permitted Phases		4		6		
Actuated Green, G (s)	22.3	41.9	58.0	58.0	19.6	82.1
Effective Green, g (s)	22.3	41.9	58.0	58.0	19.6	82.1
Actuated g/C Ratio	0.19	0.36	0.50	0.50	0.17	0.71
Clearance Time (s)	5.0	4.5	5.5	5.5	4.5	5.5
Vehicle Extension (s)	3.0	2.0	4.0	4.0	2.0	4.0
Lane Grp Cap (vph)	343	577	940	799	301	1331
v/s Ratio Prot	0.15	c0.14	c0.47		c0.16	0.30
v/s Ratio Perm		0.15		0.13		
v/c Ratio	0.77	0.79	0.92	0.27	0.92	0.41
Uniform Delay, d ₁	43.9	32.6	26.4	16.3	46.8	6.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d ₂	10.3	7.0	14.3	0.2	30.5	0.3
Delay (s)	54.2	39.6	40.7	16.5	77.3	6.9
Level of Service	D	D	D	B	E	A
Approach Delay (s)	44.5		35.5			30.4
Approach LOS	D		D			C
Intersection Summary						
HCM 2000 Control Delay			36.6		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.89			
Actuated Cycle Length (s)			114.9		Sum of lost time (s)	15.0
Intersection Capacity Utilization			86.6%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis
6: Avenida Encinas & Cannon Rd

2035 No Specific Plan
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	330	20	150	500	140	190	30	420	90	20	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.5		4.5	5.5		4.5	5.0	4.5	4.5	5.0	4.5
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	1.00	1.00	0.97	1.00	1.00
Fr _t	1.00	0.99		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Fl _t Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3509		3433	3423		1770	1863	1583	3433	1863	1583
Fl _t Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3509		3433	3423		1770	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	41	337	20	153	510	143	194	31	429	92	20	102
RTOR Reduction (vph)	0	4	0	0	24	0	0	0	182	0	0	84
Lane Group Flow (vph)	41	353	0	153	629	0	194	31	247	92	20	18
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8	1	7	4	5
Permitted Phases									8			4
Actuated Green, G (s)	5.1	16.7		8.0	19.6		8.7	7.8	15.8	6.1	5.2	10.3
Effective Green, g (s)	5.1	16.7		8.0	19.6		8.7	7.8	15.8	6.1	5.2	10.3
Actuated g/C Ratio	0.09	0.29		0.14	0.34		0.15	0.13	0.27	0.10	0.09	0.18
Clearance Time (s)	4.5	5.5		4.5	5.5		4.5	5.0	4.5	4.5	5.0	4.5
Vehicle Extension (s)	2.5	3.0		2.5	3.0		2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	155	1008		472	1154		265	250	430	360	166	280
v/s Ratio Prot	0.02	0.10		0.04	c0.18		c0.11	0.02	c0.08	0.03	0.01	0.01
v/s Ratio Perm									0.08			0.01
v/c Ratio	0.26	0.35		0.32	0.55		0.73	0.12	0.57	0.26	0.12	0.06
Uniform Delay, d ₁	24.7	16.4		22.6	15.6		23.6	22.1	18.2	23.9	24.3	19.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d ₂	0.7	0.2		0.3	0.5		9.4	0.2	1.5	0.3	0.2	0.1
Delay (s)	25.4	16.6		22.9	16.2		33.0	22.3	19.8	24.2	24.6	20.0
Level of Service	C	B		C	B		C	C	B	C	C	B
Approach Delay (s)		17.5			17.4			23.8			22.2	
Approach LOS		B			B			C			C	













Intersection Summary

HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	58.1	Sum of lost time (s)	19.5
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

7: I-5 SB Ramps & Cannon Rd



















2035 No Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑↑	↑↑					↑	↑	↑
Volume (vph)	0	670	170	580	550	0	0	0	0	450	10	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Fr _t		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Fl _t Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1681	1689	1583
Fl _t Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1681	1689	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	684	173	592	561	0	0	0	0	459	10	245
RTOR Reduction (vph)	0	0	102	0	0	0	0	0	0	0	0	197
Lane Group Flow (vph)	0	684	71	592	561	0	0	0	0	234	235	48
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		32.8	32.8	18.1	55.1					15.7	15.7	15.7
Effective Green, g (s)		32.8	32.8	18.1	55.1					15.7	15.7	15.7
Actuated g/C Ratio		0.41	0.41	0.23	0.69					0.20	0.20	0.20
Clearance Time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6
Vehicle Extension (s)		2.0	2.0	2.0	2.0					2.0	2.0	2.0
Lane Grp Cap (vph)		1450	649	776	2437					329	331	310
v/s Ratio Prot		c0.19		c0.17	0.16					c0.14	0.14	
v/s Ratio Perm			0.04									0.03
v/c Ratio		0.47	0.11	0.76	0.23					0.71	0.71	0.16
Uniform Delay, d ₁		17.3	14.6	28.9	4.6					30.0	30.0	26.7
Progression Factor		1.00	1.00	1.40	0.64					1.00	1.00	1.00
Incremental Delay, d ₂		1.1	0.3	2.9	0.2					5.9	5.6	0.1
Delay (s)		18.4	14.9	43.4	3.1					36.0	35.6	26.7
Level of Service		B	B	D	A					D	D	C
Approach Delay (s)		17.7			23.8			0.0			32.7	
Approach LOS		B			C			A			C	
Intersection Summary												
HCM 2000 Control Delay			24.2			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			80.0			Sum of lost time (s)				13.4		
Intersection Capacity Utilization			77.6%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

8: I-5 NB Ramps & Cannon Rd

2035 No Specific Plan
PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	360	760	0	0	990	1160	140	10	480	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.2	4.6			4.6	4.6		4.6	4.6				
Lane Util. Factor	0.97	0.95			0.91	0.91		1.00	0.88				
Fr _t	1.00	1.00			0.95	0.85		1.00	0.85				
Fl _t Protected	0.95	1.00			1.00	1.00		0.96	1.00				
Satd. Flow (prot)	3433	3539			3222	1441		1780	2787				
Fl _t Permitted	0.95	1.00			1.00	1.00		0.96	1.00				
Satd. Flow (perm)	3433	3539			3222	1441		1780	2787				
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	367	776	0	0	1010	1184	143	10	490	0	0	0	
RTOR Reduction (vph)	0	0	0	0	24	189	0	0	371	0	0	0	
Lane Group Flow (vph)	367	776	0	0	1483	498	0	153	119	0	0	0	
Turn Type	Prot	NA			NA	Perm	Split	NA	custom				
Protected Phases	5	2			6	1	8	8	8				
Permitted Phases						6	1		1				
Actuated Green, G (s)	21.5	122.8			106.7	106.7		18.8	23.8				
Effective Green, g (s)	21.5	122.8			106.7	106.7		18.8	23.8				
Actuated g/C Ratio	0.13	0.77			0.67	0.67		0.12	0.15				
Clearance Time (s)	4.2	4.6						4.6	4.6				
Vehicle Extension (s)	2.0	2.0						2.0	2.0				
Lane Grp Cap (vph)	461	2716			2148	960		209	414				
v/s Ratio Prot	c0.11	0.22			c0.46			c0.09	0.03				
v/s Ratio Perm						0.35			0.01				
v/c Ratio	0.80	0.29			0.69	0.52		0.73	0.29				
Uniform Delay, d ₁	67.1	5.5			16.5	13.6		68.2	60.6				
Progression Factor	0.82	0.33			1.30	2.24		1.00	1.00				
Incremental Delay, d ₂	7.8	0.2			0.7	0.2		10.8	0.1				
Delay (s)	62.5	2.1			22.1	30.6		79.0	60.7				
Level of Service	E	A			C	C		E	E				
Approach Delay (s)		21.5			24.7			65.0			0.0		
Approach LOS		C			C			E			A		
Intersection Summary													
HCM 2000 Control Delay			30.3		HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.73										
Actuated Cycle Length (s)			160.0		Sum of lost time (s)				17.6				
Intersection Capacity Utilization			77.6%		ICU Level of Service				D				
Analysis Period (min)			15										
c Critical Lane Group													








HCM Signalized Intersection Capacity Analysis
9: Paseo Del Norte & Cannon Rd

2035 No Specific Plan
PM Peak Hour

	→	↘	↙	←	↖	↗	↘
Movement	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations	↑↑		↘	↑↑↑		↘	↘
Volume (vph)	850	390	120	1470	5	680	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0		5.0	5.0
Lane Util. Factor	0.95		1.00	0.91		0.97	1.00
Flt	0.95		1.00	1.00		1.00	0.85
Flt Protected	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	3372		1770	5085		3433	1583
Flt Permitted	1.00		0.95	1.00		0.95	1.00
Satd. Flow (perm)	3372		1770	5085		3433	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	867	398	122	1500	5	694	173
RTOR Reduction (vph)	28	0	0	0	0	0	71
Lane Group Flow (vph)	1237	0	122	1500	0	699	102
Turn Type	NA		Prot	NA	Perm	NA	pm+ov
Protected Phases	2		1	6		8	1
Permitted Phases					8		8
Actuated Green, G (s)	91.2		15.1	111.3		38.7	53.8
Effective Green, g (s)	91.2		15.1	111.3		38.7	53.8
Actuated g/C Ratio	0.57		0.09	0.70		0.24	0.34
Clearance Time (s)	5.0		5.0	5.0		5.0	5.0
Vehicle Extension (s)	4.5		2.0	4.5		3.5	2.0
Lane Grp Cap (vph)	1922		167	3537		830	581
v/s Ratio Prot	c0.37		c0.07	0.29			0.02
v/s Ratio Perm						0.20	0.05
v/c Ratio	0.64		0.73	0.42		0.84	0.18
Uniform Delay, d1	23.4		70.5	10.5		57.7	37.5
Progression Factor	0.89		0.98	0.93		1.00	1.00
Incremental Delay, d2	1.6		11.5	0.3		8.0	0.1
Delay (s)	22.4		80.7	10.1		65.7	37.5
Level of Service	C		F	B		E	D
Approach Delay (s)	22.4			15.4		60.1	
Approach LOS	C			B		E	
Intersection Summary							
HCM 2000 Control Delay			28.1		HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio			0.71				
Actuated Cycle Length (s)			160.0		Sum of lost time (s)		15.0
Intersection Capacity Utilization			74.7%		ICU Level of Service		D
Analysis Period (min)			15				
c Critical Lane Group							

HCM Signalized Intersection Capacity Analysis
 10: Car Country Dr & Cannon Rd

2035 No Specific Plan
 PM Peak Hour

							
Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↕↔		↕	↕↕	↕	↕
Volume (vph)	0	890	130	80	1320	270	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5		5.5	6.5	6.0	6.0
Lane Util. Factor		0.95		1.00	0.95	1.00	1.00
Fr _t		0.98		1.00	1.00	1.00	0.85
Fl _t Protected		1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)		3471		1770	3539	1770	1583
Fl _t Permitted		1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)		3471		1770	3539	1770	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	908	133	82	1347	276	153
RTOR Reduction (vph)	0	5	0	0	0	0	123
Lane Group Flow (vph)	0	1036	0	82	1347	276	30
Turn Type	Prot	NA		Prot	NA	NA	Perm
Protected Phases	5	2		1	6	8	
Permitted Phases							8
Actuated Green, G (s)		97.9		12.7	116.1	31.4	31.4
Effective Green, g (s)		97.9		12.7	116.1	31.4	31.4
Actuated g/C Ratio		0.61		0.08	0.73	0.20	0.20
Clearance Time (s)		6.5		5.5	6.5	6.0	6.0
Vehicle Extension (s)		3.0		3.0	3.0	4.0	4.0
Lane Grp Cap (vph)		2123		140	2567	347	310
v/s Ratio Prot		0.30		0.05	c0.38	c0.16	
v/s Ratio Perm							0.02
v/c Ratio		0.49		0.59	0.52	0.80	0.10
Uniform Delay, d ₁		17.2		71.1	9.7	61.2	52.7
Progression Factor		0.83		1.00	1.00	1.00	1.00
Incremental Delay, d ₂		0.7		6.1	0.8	12.5	0.2
Delay (s)		14.9		77.2	10.5	73.8	52.9
Level of Service		B		E	B	E	D
Approach Delay (s)		14.9			14.3	66.3	
Approach LOS		B			B	E	
Intersection Summary							
HCM 2000 Control Delay			22.2		HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio			0.60				
Actuated Cycle Length (s)			160.0		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
11: Legoland Dr

2035 No Specific Plan
PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↘↗	↑↑	↘↗	↗
Volume (vph)	910	130	120	1020	380	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.0	5.0	6.0	5.0	5.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	3433	3539	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	3433	3539	3433	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	929	133	122	1041	388	306
RTOR Reduction (vph)	0	33	0	0	0	146
Lane Group Flow (vph)	929	100	122	1041	388	160
Turn Type	NA	pm+ov	Prot	NA	NA	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	23.6	39.0	4.5	33.1	15.4	15.4
Effective Green, g (s)	23.6	39.0	4.5	33.1	15.4	15.4
Actuated g/C Ratio	0.40	0.66	0.08	0.56	0.26	0.26
Clearance Time (s)	6.0	5.0	5.0	6.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1403	1037	259	1968	888	409
v/s Ratio Prot	c0.26	0.03	0.04	c0.29	c0.11	
v/s Ratio Perm		0.04				0.10
v/c Ratio	0.66	0.10	0.47	0.53	0.44	0.39
Uniform Delay, d1	14.7	3.8	26.4	8.3	18.4	18.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.0	0.5	0.3	0.3	0.6
Delay (s)	15.9	3.8	26.9	8.6	18.8	18.8
Level of Service	B	A	C	A	B	B
Approach Delay (s)	14.4			10.5	18.8	
Approach LOS	B			B	B	
Intersection Summary						
HCM 2000 Control Delay			13.9		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.60			
Actuated Cycle Length (s)			59.5		Sum of lost time (s)	16.0
Intersection Capacity Utilization			52.9%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis
 12: Marriott Hotel Dwy & Cannon Rd

2035 No Specific Plan
 PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Volume (vph)	1150	60	60	1090	50	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.5	5.0	6.0	5.5	5.5
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	1173	61	61	1112	51	61
RTOR Reduction (vph)	0	13	0	0	0	54
Lane Group Flow (vph)	1173	48	61	1112	51	7
Turn Type	NA	pm+ov	Prot	NA	NA	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	59.7	70.3	3.2	67.9	10.6	10.6
Effective Green, g (s)	59.7	70.3	3.2	67.9	10.6	10.6
Actuated g/C Ratio	0.66	0.78	0.04	0.75	0.12	0.12
Clearance Time (s)	6.0	5.5	5.0	6.0	5.5	5.5
Vehicle Extension (s)	3.0	2.0	2.0	3.0	2.0	2.0
Lane Grp Cap (vph)	2347	1236	62	2669	208	186
v/s Ratio Prot	c0.33	0.00	c0.03	0.31	c0.03	
v/s Ratio Perm		0.03				0.00
v/c Ratio	0.50	0.04	0.98	0.42	0.25	0.04
Uniform Delay, d1	7.6	2.2	43.4	4.0	36.1	35.2
Progression Factor	1.00	1.00	0.93	0.91	1.00	1.00
Incremental Delay, d2	0.8	0.0	101.7	0.4	0.2	0.0
Delay (s)	8.4	2.2	142.0	4.0	36.3	35.2
Level of Service	A	A	F	A	D	D
Approach Delay (s)	8.1			11.2	35.7	
Approach LOS	A			B	D	
Intersection Summary						
HCM 2000 Control Delay			10.8		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.48			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	16.5
Intersection Capacity Utilization			53.0%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis
 13: Faraday Ave & Cannon Rd

2035 No Specific Plan
 PM Peak Hour

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	10	10	1040	150	50	540	10	590	10	140	10	10	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.0	6.0		6.0	6.0		5.0	5.0			5.0	
Lane Util. Factor		1.00	0.95		1.00	0.95		0.95	0.95			1.00	
Flt		1.00	0.98		1.00	1.00		1.00	0.94			0.95	
Flt Protected		0.95	1.00		0.95	1.00		0.95	0.97			0.98	
Satd. Flow (prot)		1770	3472		1770	3530		1681	1620			1750	
Flt Permitted		0.95	1.00		0.95	1.00		0.95	0.97			0.98	
Satd. Flow (perm)		1770	3472		1770	3530		1681	1620			1750	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	10	10	1061	153	51	551	10	602	10	143	10	10	
RTOR Reduction (vph)	0	0	11	0	0	1	0	0	28	0	0	10	
Lane Group Flow (vph)	0	20	1203	0	51	560	0	385	342	0	0	20	
Turn Type	Prot	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	5	2		1	6		8	8		7	7	
Permitted Phases													
Actuated Green, G (s)		1.2	37.3		3.0	39.1		25.3	25.3			2.4	
Effective Green, g (s)		1.2	37.3		3.0	39.1		25.3	25.3			2.4	
Actuated g/C Ratio		0.01	0.41		0.03	0.43		0.28	0.28			0.03	
Clearance Time (s)		6.0	6.0		6.0	6.0		5.0	5.0			5.0	
Vehicle Extension (s)		2.0	3.5		2.0	3.5		2.0	2.0			2.0	
Lane Grp Cap (vph)		23	1438		59	1533		472	455			46	
v/s Ratio Prot		0.01	c0.35		c0.03	0.16		c0.23	0.21			c0.01	
v/s Ratio Perm													
v/c Ratio		0.87	0.84		0.86	0.37		0.82	0.75			0.44	
Uniform Delay, d1		44.3	23.6		43.3	17.1		30.2	29.5			43.1	
Progression Factor		0.94	1.07		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		117.7	5.4		68.5	0.7		9.9	6.1			2.4	
Delay (s)		159.1	30.6		111.8	17.8		40.1	35.6			45.6	
Level of Service		F	C		F	B		D	D			D	
Approach Delay (s)			32.6			25.6			37.9			45.6	
Approach LOS			C			C			D			D	
Intersection Summary													
HCM 2000 Control Delay			32.7									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.82										
Actuated Cycle Length (s)			90.0									Sum of lost time (s)	22.0
Intersection Capacity Utilization			78.3%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													



Movement	SBR
Lane Configurations	
Volume (vph)	10
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.98
Adj. Flow (vph)	10
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
 14: El Camino Real & Cannon Rd

2035 No Specific Plan
 PM Peak Hour

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Volume (vph)	760	150	560	5	70	40	10	5	310	2270	180	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	6.0			4.2	6.0			4.2	6.0	6.0	
Lane Util. Factor	0.97	0.95			0.97	0.95			1.00	0.95	1.00	
Fr _t	1.00	0.88			1.00	0.97			1.00	1.00	0.85	
Fl _t Protected	0.95	1.00			0.95	1.00			0.95	1.00	1.00	
Satd. Flow (prot)	3433	3121			3433	3435			1770	3539	1583	
Fl _t Permitted	0.95	1.00			0.95	1.00			0.95	1.00	1.00	
Satd. Flow (perm)	3433	3121			3433	3435			1770	3539	1583	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	776	153	571	5	71	41	10	5	316	2316	184	5
RTOR Reduction (vph)	0	224	0	0	0	9	0	0	0	0	59	0
Lane Group Flow (vph)	776	500	0	0	76	42	0	0	321	2316	125	0
Turn Type	Prot	NA		Prot	Prot	NA		Prot	Prot	NA	Perm	Prot
Protected Phases	7	4		3	3	8		5	5	2		1
Permitted Phases												2
Actuated Green, G (s)	22.4	29.1			9.8	16.5			18.3	79.1	79.1	
Effective Green, g (s)	22.4	29.1			9.8	16.5			18.3	79.1	79.1	
Actuated g/C Ratio	0.16	0.21			0.07	0.12			0.13	0.56	0.56	
Clearance Time (s)	4.2	6.0			4.2	6.0			4.2	6.0	6.0	
Vehicle Extension (s)	2.0	2.0			2.0	2.0			2.0	3.0	3.0	
Lane Grp Cap (vph)	549	648			240	404			231	1999	894	
v/s Ratio Prot	c0.23	c0.16			c0.02	0.01			c0.18	c0.65		
v/s Ratio Perm												0.08
v/c Ratio	1.41	1.03dr			0.32	0.10			1.39	1.16	0.14	
Uniform Delay, d ₁	58.8	52.3			61.9	55.2			60.9	30.5	14.4	
Progression Factor	1.00	1.00			1.00	1.00			1.00	1.00	1.00	
Incremental Delay, d ₂	196.7	5.2			0.3	0.0			199.7	77.4	0.3	
Delay (s)	255.5	57.5			62.2	55.2			260.6	107.9	14.7	
Level of Service	F	E			E	E			F	F	B	
Approach Delay (s)		159.9				59.4				119.2		
Approach LOS		F				E				F		

Intersection Summary

HCM 2000 Control Delay	105.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	108.7%	ICU Level of Service	G
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 14: El Camino Real & Cannon Rd

2035 No Specific Plan
 PM Peak Hour



Movement	SBL	SBT	SBR
Lane Configurations	↔	↑↑↑	↗
Volume (vph)	10	1040	340
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.2	6.0	4.2
Lane Util. Factor	1.00	0.91	1.00
Flt	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583
Flt Permitted	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583
Peak-hour factor, PHF	0.98	0.98	0.98
Adj. Flow (vph)	10	1061	347
RTOR Reduction (vph)	0	0	137
Lane Group Flow (vph)	15	1061	210
Turn Type	Prot	NA	pm+ov
Protected Phases	1	6	7
Permitted Phases			6
Actuated Green, G (s)	1.6	62.4	84.8
Effective Green, g (s)	1.6	62.4	84.8
Actuated g/C Ratio	0.01	0.45	0.61
Clearance Time (s)	4.2	6.0	4.2
Vehicle Extension (s)	2.0	3.0	2.0
Lane Grp Cap (vph)	20	2266	958
v/s Ratio Prot	0.01	c0.21	0.04
v/s Ratio Perm			0.10
v/c Ratio	0.75	0.47	0.22
Uniform Delay, d1	69.0	27.2	12.6
Progression Factor	1.00	1.00	1.00
Incremental Delay, d2	83.6	0.7	0.0
Delay (s)	152.6	27.9	12.6
Level of Service	F	C	B
Approach Delay (s)		25.5	
Approach LOS		C	
Intersection Summary			




















HCM Signalized Intersection Capacity Analysis
15: Paseo Del Norte & Car Country Dr

2035 No Specific Plan
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	10	20	140	10	230	20	330	110	10	280	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5		5.5	5.5		5.0	6.0		5.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Fr _t	1.00	0.90		1.00	0.86		1.00	0.96		1.00	0.98	
Fl _t Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1676		1770	1595		1770	3407		1770	3459	
Fl _t Permitted	0.61	1.00		0.74	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1130	1676		1374	1595		1770	3407		1770	3459	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	51	10	20	143	10	235	20	337	112	10	286	51
RTOR Reduction (vph)	0	15	0	0	176	0	0	40	0	0	18	0
Lane Group Flow (vph)	51	15	0	143	69	0	20	409	0	10	319	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	11.7	11.7		11.7	11.7		0.5	17.9		0.5	17.9	
Effective Green, g (s)	11.7	11.7		11.7	11.7		0.5	17.9		0.5	17.9	
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.01	0.38		0.01	0.38	
Clearance Time (s)	5.5	5.5		5.5	5.5		5.0	6.0		5.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	283	420		344	400		18	1308		18	1328	
v/s Ratio Prot		0.01			0.04		c0.01	c0.12		0.01	0.09	
v/s Ratio Perm	0.05			c0.10								
v/c Ratio	0.18	0.04		0.42	0.17		1.11	0.31		0.56	0.24	
Uniform Delay, d ₁	13.7	13.2		14.6	13.7		23.1	10.0		22.9	9.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d ₂	0.3	0.0		0.8	0.2		250.0	0.2		19.4	0.1	
Delay (s)	14.0	13.2		15.4	13.9		273.1	10.2		42.3	9.9	
Level of Service	B	B		B	B		F	B		D	A	
Approach Delay (s)		13.7			14.4			21.4			10.8	
Approach LOS		B			B			C			B	
Intersection Summary												
HCM 2000 Control Delay			16.0				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.36									
Actuated Cycle Length (s)			46.6				Sum of lost time (s)			16.5		
Intersection Capacity Utilization			48.9%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												






















HCM Signalized Intersection Capacity Analysis
 16: Paseo Del Norte & Outlet Dwy

2035 No Specific Plan
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	20	50	240	10	110	70	330	150	90	310	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Fr _t	1.00	0.89			0.96		1.00	0.95		1.00	0.98	
Fl _t Protected	0.95	1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1662			1728		1770	3373		1770	3478	
Fl _t Permitted	0.60	1.00			0.76		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1110	1662			1350		1770	3373		1770	3478	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	20	20	51	245	10	112	71	337	153	92	316	41
RTOR Reduction (vph)	0	34	0	0	23	0	0	80	0	0	15	0
Lane Group Flow (vph)	20	37	0	0	344	0	71	410	0	92	342	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	17.7	17.7			17.7		2.6	15.9		4.4	17.7	
Effective Green, g (s)	17.7	17.7			17.7		2.6	15.9		4.4	17.7	
Actuated g/C Ratio	0.33	0.33			0.33		0.05	0.30		0.08	0.33	
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.5	2.5			2.5		2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	370	555			450		86	1011		146	1161	
v/s Ratio Prot		0.02					0.04	c0.12		c0.05	0.10	
v/s Ratio Perm	0.02				c0.25							
v/c Ratio	0.05	0.07			0.76		0.83	0.41		0.63	0.29	
Uniform Delay, d ₁	12.0	12.0			15.8		25.0	14.8		23.5	13.0	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d ₂	0.0	0.0			7.2		43.2	0.5		6.4	0.2	
Delay (s)	12.0	12.1			23.0		68.2	15.2		29.9	13.3	
Level of Service	B	B			C		E	B		C	B	
Approach Delay (s)		12.1			23.0			21.9			16.7	
Approach LOS		B			C			C			B	
Intersection Summary												
HCM 2000 Control Delay			20.0				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			53.0				Sum of lost time (s)			15.0		
Intersection Capacity Utilization			58.6%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												





















HCM Signalized Intersection Capacity Analysis
 17: Faraday Ave & College Blvd

2035 No Specific Plan
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	830	170	40	510	150	90	540	400	340	450	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.0		4.5	6.0		4.5	5.0		4.5	5.0	
Lane Util. Factor	0.97	0.95		0.97	0.95		1.00	0.95		1.00	0.95	
Fr _t	1.00	0.97		1.00	0.97		1.00	0.94		1.00	0.95	
Fl _t Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	3449		3433	3419		1770	3313		1770	3376	
Fl _t Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	3449		3433	3419		1770	3313		1770	3376	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	173	847	173	41	520	153	92	551	408	347	459	204
RTOR Reduction (vph)	0	12	0	0	19	0	0	92	0	0	34	0
Lane Group Flow (vph)	173	1008	0	41	654	0	92	867	0	347	629	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	8.8	40.4		3.0	34.6		9.7	36.4		28.1	54.8	
Effective Green, g (s)	8.8	40.4		3.0	34.6		9.7	36.4		28.1	54.8	
Actuated g/C Ratio	0.07	0.32		0.02	0.27		0.08	0.28		0.22	0.43	
Clearance Time (s)	4.5	6.0		4.5	6.0		4.5	5.0		4.5	5.0	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	236	1089		80	924		134	942		388	1446	
v/s Ratio Prot	c0.05	c0.29		0.01	0.19		0.05	c0.26		c0.20	0.19	
v/s Ratio Perm												
v/c Ratio	0.73	0.93		0.51	0.71		0.69	0.92		0.89	0.43	
Uniform Delay, d ₁	58.4	42.3		61.7	42.1		57.6	44.4		48.5	25.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d ₂	9.7	12.8		2.3	2.0		11.0	13.7		21.6	0.1	
Delay (s)	68.1	55.1		64.0	44.1		68.6	58.1		70.1	25.7	
Level of Service	E	E		E	D		E	E		E	C	
Approach Delay (s)		57.0			45.3			59.0			41.0	
Approach LOS		E			D			E			D	
Intersection Summary												
HCM 2000 Control Delay			51.3				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.92									
Actuated Cycle Length (s)			127.9				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			95.0%				ICU Level of Service			F		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 18: El Camino Real & College Blvd



























2035 No Specific Plan
 PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	
Lane Configurations													
Volume (vph)	800	480	170	750	600	40	5	270	2170	800	5	80	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	5.0	6.5		5.0	6.5			5.0	6.0	6.0		5.0	
Lane Util. Factor	0.97	0.95		0.97	0.95			1.00	0.91	1.00		1.00	
Fr _t	1.00	0.96		1.00	0.99			1.00	1.00	0.85		1.00	
Fl _t Protected	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95	
Satd. Flow (prot)	3433	3401		3433	3506			1770	5085	1583		1770	
Fl _t Permitted	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95	
Satd. Flow (perm)	3433	3401		3433	3506			1770	5085	1583		1770	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	816	490	173	765	612	41	5	276	2214	816	5	82	
RTOR Reduction (vph)	0	26	0	0	4	0	0	0	0	224	0	0	
Lane Group Flow (vph)	816	637	0	765	649	0	0	281	2214	592	0	87	
Turn Type	Prot	NA		Prot	NA		Prot	Prot	NA	Perm	Prot	Prot	
Protected Phases	7	4		3	8		5	5	2		1	1	
Permitted Phases										2			
Actuated Green, G (s)	26.0	41.9		16.0	31.9			12.0	59.6	59.6		5.0	
Effective Green, g (s)	26.0	41.9		16.0	31.9			12.0	59.6	59.6		5.0	
Actuated g/C Ratio	0.18	0.29		0.11	0.22			0.08	0.41	0.41		0.03	
Clearance Time (s)	5.0	6.5		5.0	6.5			5.0	6.0	6.0		5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0	4.0	4.0		2.0	
Lane Grp Cap (vph)	615	982		378	771			146	2090	650		61	
v/s Ratio Prot	c0.24	0.19		c0.22	c0.19			c0.16	0.44			0.05	
v/s Ratio Perm										0.37			
v/c Ratio	1.33	0.65		2.02	0.84			1.92	1.06	0.91		1.43	
Uniform Delay, d ₁	59.5	45.1		64.5	54.1			66.5	42.7	40.2		70.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00		1.00	
Incremental Delay, d ₂	158.1	1.1		469.9	8.0			440.3	37.6	19.1		263.6	
Delay (s)	217.6	46.2		534.4	62.1			506.8	80.3	59.2		333.6	
Level of Service	F	D		F	E			F	F	E		F	
Approach Delay (s)		140.8			316.9				111.3				
Approach LOS		F			F				F				
Intersection Summary													
HCM 2000 Control Delay			158.4									HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.27										
Actuated Cycle Length (s)			145.0									Sum of lost time (s)	22.5
Intersection Capacity Utilization			116.4%									ICU Level of Service	H
Analysis Period (min)			15										
c Critical Lane Group													

Movement	SBT	SBR
Lane Configurations	↑↑↑	↑
Volume (vph)	2160	130
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	6.0
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	2204	133
RTOR Reduction (vph)	0	85
Lane Group Flow (vph)	2204	48
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Actuated Green, G (s)	52.6	52.6
Effective Green, g (s)	52.6	52.6
Actuated g/C Ratio	0.36	0.36
Clearance Time (s)	6.0	6.0
Vehicle Extension (s)	4.0	4.0
Lane Grp Cap (vph)	1844	574
v/s Ratio Prot	c0.43	
v/s Ratio Perm		0.03
v/c Ratio	1.20	0.08
Uniform Delay, d1	46.2	30.4
Progression Factor	1.00	1.00
Incremental Delay, d2	93.5	0.3
Delay (s)	139.7	30.7
Level of Service	F	C
Approach Delay (s)	140.6	
Approach LOS	F	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
 19: El Camino Real & Faraday Ave
























2035 No Specific Plan
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations		 			 			 	 			 
Volume (vph)	400	680	1070	220	220	580	45	210	2060	150	15	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9	5.0	5.0	5.0		4.2	6.0			4.2
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00		0.97	0.91			0.97
Flt	1.00	0.93	0.85	1.00	1.00	0.85		1.00	0.99			1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (prot)	1770	3169	1441	1770	3539	1583		3433	5034			3433
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (perm)	1770	3169	1441	1770	3539	1583		3433	5034			3433
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	408	694	1092	224	224	592	46	214	2102	153	15	347
RTOR Reduction (vph)	0	60	80	0	0	85	0	0	6	0	0	0
Lane Group Flow (vph)	408	1169	477	224	224	507	0	260	2249	0	0	362
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases	3	8		7	4		1	1	6		5	5
Permitted Phases			8			4						
Actuated Green, G (s)	18.1	52.1	52.1	12.4	46.4	46.4		12.9	46.6			8.8
Effective Green, g (s)	18.1	52.1	52.1	12.4	46.4	46.4		12.9	46.6			8.8
Actuated g/C Ratio	0.13	0.37	0.37	0.09	0.33	0.33		0.09	0.33			0.06
Clearance Time (s)	4.9	4.9	4.9	5.0	5.0	5.0		4.2	6.0			4.2
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0	3.0		2.0	2.0			2.0
Lane Grp Cap (vph)	228	1179	536	156	1172	524		316	1675			215
v/s Ratio Prot	c0.23	c0.37		c0.13	0.06			0.08	c0.45			c0.11
v/s Ratio Perm			0.33			0.32						
v/c Ratio	1.79	0.99	0.89	1.44	0.19	0.97		0.82	1.34			1.68
Uniform Delay, d1	61.0	43.7	41.2	63.8	33.4	46.1		62.4	46.7			65.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2	372.3	24.1	16.0	228.7	0.1	30.9		15.0	158.3			327.1
Delay (s)	433.3	67.8	57.2	292.5	33.5	76.9		77.5	205.0			392.7
Level of Service	F	E	E	F	C	E		E	F			F
Approach Delay (s)		133.1			114.0				191.8			
Approach LOS		F			F				F			
Intersection Summary												
HCM 2000 Control Delay			148.4				HCM 2000 Level of Service		F			
HCM 2000 Volume to Capacity ratio			1.32									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)		20.1			
Intersection Capacity Utilization			128.1%				ICU Level of Service		H			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
Label Configurations	↑↑↑	↑
Volume (vph)	1190	60
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	6.0
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	1214	61
RTOR Reduction (vph)	0	42
Lane Group Flow (vph)	1214	19
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Actuated Green, G (s)	42.5	42.5
Effective Green, g (s)	42.5	42.5
Actuated g/C Ratio	0.30	0.30
Clearance Time (s)	6.0	6.0
Vehicle Extension (s)	2.0	2.0
Lane Grp Cap (vph)	1543	480
v/s Ratio Prot	0.24	
v/s Ratio Perm		0.01
v/c Ratio	0.79	0.04
Uniform Delay, d1	44.6	34.4
Progression Factor	1.00	1.00
Incremental Delay, d2	4.1	0.2
Delay (s)	48.7	34.5
Level of Service	D	C
Approach Delay (s)	124.3	
Approach LOS	F	
Intersection Summary		













HCM Signalized Intersection Capacity Analysis
20: Avenida Encinas & Palomar Airport Rd

2035 No Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	360	50	310	530	320	110	160	460	350	130	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.0		4.2	5.0	5.0	4.6	4.6	4.6	4.6	4.6	4.6
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Fr _t	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fl _t Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00
Satd. Flow (prot)	1770	1829		1770	1863	1583	1770	1863	1583	1681	1730	1583
Fl _t Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00
Satd. Flow (perm)	1770	1829		1770	1863	1583	1770	1863	1583	1681	1730	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	82	367	51	316	541	327	112	163	469	357	133	71
RTOR Reduction (vph)	0	4	0	0	0	193	0	0	273	0	0	58
Lane Group Flow (vph)	82	414	0	316	541	134	112	163	196	243	247	13
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases						6			8			7
Actuated Green, G (s)	6.4	26.2		18.2	38.0	38.0	17.1	17.1	17.1	17.6	17.6	17.6
Effective Green, g (s)	6.4	26.2		18.2	38.0	38.0	17.1	17.1	17.1	17.6	17.6	17.6
Actuated g/C Ratio	0.07	0.27		0.19	0.39	0.39	0.18	0.18	0.18	0.18	0.18	0.18
Clearance Time (s)	4.2	5.0		4.2	5.0	5.0	4.6	4.6	4.6	4.6	4.6	4.6
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	116	491		330	726	616	310	326	277	303	312	285
v/s Ratio Prot	0.05	c0.23		c0.18	0.29		0.06	0.09		c0.14	0.14	
v/s Ratio Perm						0.08			c0.12			0.01
v/c Ratio	0.71	0.84		0.96	0.75	0.22	0.36	0.50	0.71	0.80	0.79	0.04
Uniform Delay, d ₁	44.6	33.7		39.3	25.6	19.8	35.4	36.3	37.8	38.3	38.2	33.0
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, d ₂	14.8	12.4		37.7	4.2	0.2	0.3	0.4	6.6	13.4	12.0	0.0
Delay (s)	59.4	46.1		76.9	29.8	20.0	35.7	36.8	44.4	51.7	50.2	33.0
Level of Service	E	D		E	C	C	D	D	D	D	D	C
Approach Delay (s)		48.3			39.7			41.4			48.7	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			43.2				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.83									
Actuated Cycle Length (s)			97.5				Sum of lost time (s)			18.4		
Intersection Capacity Utilization			76.0%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

























HCM Signalized Intersection Capacity Analysis
 21: I-5 SB Ramps & Palomar Airport Rd

2035 No Specific Plan
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑	↗				↖↗		↗
Volume (vph)	0	850	320	0	800	1340	0	0	0	820	0	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0	4.0				4.6		4.6
Lane Util. Factor		0.91			0.95	1.00				0.97		1.00
Fr _t		0.96			1.00	0.85				1.00		0.85
Fl _t Protected		1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)		4876			3539	1583				3433		1583
Fl _t Permitted		1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)		4876			3539	1583				3433		1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	867	327	0	816	1367	0	0	0	837	0	367
RTOR Reduction (vph)	0	128	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1066	0	0	816	1367	0	0	0	837	0	367
Turn Type		NA			NA	Free				Prot		custom
Protected Phases		2 3			6					4		4 3
Permitted Phases						Free						2
Actuated Green, G (s)		26.0			15.9	50.7				15.1		40.7
Effective Green, g (s)		26.0			15.9	50.7				15.1		40.7
Actuated g/C Ratio		0.51			0.31	1.00				0.30		0.80
Clearance Time (s)					5.0					4.6		
Vehicle Extension (s)					2.0					2.0		
Lane Grp Cap (vph)		2500			1109	1583				1022		1270
v/s Ratio Prot		0.22			0.23					0.24		0.14
v/s Ratio Perm						c0.86						0.09
v/c Ratio		0.43			0.74	0.86				0.82		0.29
Uniform Delay, d ₁		7.7			15.5	0.0				16.5		1.3
Progression Factor		1.00			1.00	1.00				1.00		1.00
Incremental Delay, d ₂		0.0			2.2	6.5				4.9		0.0
Delay (s)		7.7			17.7	6.5				21.5		1.3
Level of Service		A			B	A				C		A
Approach Delay (s)		7.7			10.7			0.0			15.3	
Approach LOS		A			B			A			B	
Intersection Summary												
HCM 2000 Control Delay			11.2				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			1.21									
Actuated Cycle Length (s)			50.7				Sum of lost time (s)			14.6		
Intersection Capacity Utilization			54.5%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 22: I-5 NB Ramps & Palomar Airport Rd

2035 No Specific Plan
 PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		  			  	 			 				
Volume (vph)	350	1320	0	0	1950	1270	190	0	690	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.2	4.6			4.6	4.6		4.6	4.6				
Lane Util. Factor	1.00	0.91			*0.66	0.88		1.00	0.88				
Fr _t	1.00	1.00			1.00	0.85		1.00	0.85				
Fl _t Protected	0.95	1.00			1.00	1.00		0.95	1.00				
Satd. Flow (prot)	1770	5085			3688	2787		1770	2787				
Fl _t Permitted	0.95	1.00			1.00	1.00		0.95	1.00				
Satd. Flow (perm)	1770	5085			3688	2787		1770	2787				
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	357	1347	0	0	1990	1296	194	0	704	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	397	0	0	76	0	0	0	
Lane Group Flow (vph)	357	1347	0	0	1990	899	0	194	628	0	0	0	
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom				
Protected Phases	5	2			6 7			8	7				
Permitted Phases						6 7	8		8				
Actuated Green, G (s)	14.8	45.3			38.3	38.3		8.5	15.9				
Effective Green, g (s)	14.8	45.3			38.3	38.3		8.5	15.9				
Actuated g/C Ratio	0.20	0.60			0.51	0.51		0.11	0.21				
Clearance Time (s)	4.2	4.6						4.6	4.6				
Vehicle Extension (s)	3.0	3.0						3.0	3.0				
Lane Grp Cap (vph)	349	3071			1883	1423		200	761				
v/s Ratio Prot	c0.20	0.26			c0.54				c0.08				
v/s Ratio Perm						0.32		0.11	0.14				
v/c Ratio	1.02	0.44			1.06	0.63		0.97	0.82				
Uniform Delay, d ₁	30.1	8.0			18.4	13.3		33.1	28.2				
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00				
Incremental Delay, d ₂	54.2	0.1			37.6	0.9		54.3	7.3				
Delay (s)	84.3	8.1			56.0	14.2		87.4	35.5				
Level of Service	F	A			E	B		F	D				
Approach Delay (s)		24.1			39.5			46.7			0.0		
Approach LOS		C			D			D			A		
Intersection Summary													
HCM 2000 Control Delay			36.1		HCM 2000 Level of Service				D				
HCM 2000 Volume to Capacity ratio			1.13										
Actuated Cycle Length (s)			75.0		Sum of lost time (s)				18.0				
Intersection Capacity Utilization			85.5%		ICU Level of Service				E				
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis
23: Paseo Del Norte & Palomar Airport Rd























2035 No Specific Plan
PM Peak Hour

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	
Lane Configurations													
Volume (vph)	10	370	1450	180	30	460	2340	450	390	610	290	370	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.2	6.0			4.2	6.0	4.2	4.2	5.0		4.2	
Lane Util. Factor		0.97	0.91			0.97	0.86	1.00	0.97	0.95		0.97	
Fr _t		1.00	0.98			1.00	1.00	0.85	1.00	0.95		1.00	
Fl _t Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95	
Satd. Flow (prot)		3433	5001			3433	6408	1583	3433	3368		3433	
Fl _t Permitted		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95	
Satd. Flow (perm)		3433	5001			3433	6408	1583	3433	3368		3433	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	10	378	1480	184	31	469	2388	459	398	622	296	378	
RTOR Reduction (vph)	0	0	11	0	0	0	0	23	0	38	0	0	
Lane Group Flow (vph)	0	388	1653	0	0	500	2388	436	398	880	0	378	
Turn Type	Prot	Prot	NA		Prot	Prot	NA	pm+ov	Prot	NA		Prot	
Protected Phases	5	5	2		1	1	6	7	3	8		7	
Permitted Phases								6					
Actuated Green, G (s)		16.8	49.8			21.8	54.8	72.5	17.0	41.3		17.7	
Effective Green, g (s)		16.8	49.8			21.8	54.8	72.5	17.0	41.3		17.7	
Actuated g/C Ratio		0.11	0.33			0.15	0.37	0.48	0.11	0.28		0.12	
Clearance Time (s)		4.2	6.0			4.2	6.0	4.2	4.2	5.0		4.2	
Vehicle Extension (s)		2.0	2.0			2.0	2.0	2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)		384	1660			498	2341	765	389	927		405	
v/s Ratio Prot		0.11	0.33			c0.15	c0.37	0.07	c0.12	0.26		0.11	
v/s Ratio Perm								0.21					
v/c Ratio		1.01	1.00			1.00	1.02	0.57	1.02	0.95		0.93	
Uniform Delay, d ₁		66.6	50.0			64.1	47.6	27.6	66.5	53.3		65.6	
Progression Factor		1.00	1.00			1.20	0.71	0.51	1.00	1.00		1.00	
Incremental Delay, d ₂		48.6	21.2			13.1	11.7	0.1	51.7	18.1		28.1	
Delay (s)		115.2	71.2			90.1	45.3	14.1	118.2	71.5		93.7	
Level of Service		F	E			F	D	B	F	E		F	
Approach Delay (s)			79.5				47.7			85.6			
Approach LOS			E				D			F			
Intersection Summary													
HCM 2000 Control Delay			72.9									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			1.06										
Actuated Cycle Length (s)			150.0									Sum of lost time (s)	19.4
Intersection Capacity Utilization			105.6%									ICU Level of Service	G
Analysis Period (min)			15										
c Critical Lane Group													

Movement	SBT	SBR
↓ ↘	↑ ↗	
Lane Configurations	↑ ↗	
Volume (vph)	610	480
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.0	
Lane Util. Factor	0.95	
Flt	0.93	
Flt Protected	1.00	
Satd. Flow (prot)	3305	
Flt Permitted	1.00	
Satd. Flow (perm)	3305	
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	622	490
RTOR Reduction (vph)	95	0
Lane Group Flow (vph)	1017	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	42.0	
Effective Green, g (s)	42.0	
Actuated g/C Ratio	0.28	
Clearance Time (s)	5.0	
Vehicle Extension (s)	2.0	
Lane Grp Cap (vph)	925	
v/s Ratio Prot	c0.31	
v/s Ratio Perm		
v/c Ratio	1.10	
Uniform Delay, d1	54.0	
Progression Factor	1.00	
Incremental Delay, d2	60.6	
Delay (s)	114.6	
Level of Service	F	
Approach Delay (s)	109.3	
Approach LOS	F	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
 24: Armada Dr & Palomar Airport Rd



























2035 No Specific Plan
 PM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (vph)	15	250	1690	140	5	290	2340	200	360	110	280	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	6.0	4.7		4.2	6.0	5.0	4.7	4.7	4.7	5.0
Lane Util. Factor		0.97	0.91	1.00		1.00	0.91	1.00	0.97	0.95	0.95	0.97
Fr _t		1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.93	0.85	1.00
Fl _t Protected		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95
Satd. Flow (prot)		3433	5085	1583		1770	5085	1583	3433	1648	1504	3433
Fl _t Permitted		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95
Satd. Flow (perm)		3433	5085	1583		1770	5085	1583	3433	1648	1504	3433
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	15	255	1724	143	5	296	2388	204	367	112	286	235
RTOR Reduction (vph)	0	0	0	80	0	0	0	80	0	20	139	0
Lane Group Flow (vph)	0	270	1724	63	0	301	2388	124	367	186	53	235
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	NA	Perm	Prot
Protected Phases	5	5	2	3	1	1	6	7	3	8		7
Permitted Phases				2				6			8	
Actuated Green, G (s)		10.8	51.8	66.1		24.0	65.0	77.6	14.3	41.7	41.7	12.6
Effective Green, g (s)		10.8	51.8	66.1		24.0	65.0	77.6	14.3	41.7	41.7	12.6
Actuated g/C Ratio		0.07	0.35	0.44		0.16	0.43	0.52	0.10	0.28	0.28	0.08
Clearance Time (s)		4.2	6.0	4.7		4.2	6.0	5.0	4.7	4.7	4.7	5.0
Vehicle Extension (s)		2.0	3.0	2.0		2.0	3.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)		247	1756	697		283	2203	818	327	458	418	288
v/s Ratio Prot		0.08	0.34	0.01		c0.17	c0.47	0.01	c0.11	0.11		0.07
v/s Ratio Perm				0.03				0.07			0.04	
v/c Ratio		1.09	0.98	0.09		1.06	1.08	0.15	1.12	0.41	0.13	0.82
Uniform Delay, d ₁		69.6	48.6	24.4		63.0	42.5	19.0	67.8	44.1	40.5	67.6
Progression Factor		0.79	1.25	6.19		0.96	1.38	2.99	1.00	1.00	1.00	1.00
Incremental Delay, d ₂		58.3	7.6	0.0		56.0	42.5	0.0	87.0	0.2	0.1	15.4
Delay (s)		113.5	68.2	151.2		116.5	101.0	56.7	154.9	44.3	40.6	82.9
Level of Service		F	E	F		F	F	E	F	D	D	F
Approach Delay (s)			79.5				99.5			96.4		
Approach LOS			E				F			F		
Intersection Summary												
HCM 2000 Control Delay			95.9				HCM 2000 Level of Service			F		
HCM 2000 Volume to Capacity ratio			1.13									
Actuated Cycle Length (s)			150.0				Sum of lost time (s)		19.9			
Intersection Capacity Utilization			114.7%				ICU Level of Service		H			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
↓	↖	
Lane Configurations	↑	↗
Volume (vph)	90	570
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.7	4.7
Lane Util. Factor	1.00	1.00
Flt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	1863	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	1863	1583
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	92	582
RTOR Reduction (vph)	0	87
Lane Group Flow (vph)	92	495
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Actuated Green, G (s)	40.3	40.3
Effective Green, g (s)	40.3	40.3
Actuated g/C Ratio	0.27	0.27
Clearance Time (s)	4.7	4.7
Vehicle Extension (s)	2.0	2.0
Lane Grp Cap (vph)	500	425
v/s Ratio Prot	0.05	
v/s Ratio Perm		c0.31
v/c Ratio	0.18	1.16
Uniform Delay, d1	42.2	54.9
Progression Factor	1.00	1.00
Incremental Delay, d2	0.1	97.0
Delay (s)	42.3	151.8
Level of Service	D	F
Approach Delay (s)	122.9	
Approach LOS	F	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
 25: Hidden Valley Rd/The Crossing Dr & Palomar Airport Rd

2035 No Specific Plan
 PM Peak Hour































												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Volume (vph)	60	1950	200	350	2500	120	170	20	240	100	30	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	4.2	4.2	6.0		4.2	4.7		5.0	5.7	5.7
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.86		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	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5050		1770	1604		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5050		1770	1604		1770	1863	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	61	1990	204	357	2551	122	173	20	245	102	31	163
RTOR Reduction (vph)	0	0	39	0	3	0	0	211	0	0	0	103
Lane Group Flow (vph)	61	1990	165	357	2670	0	173	54	0	102	31	60
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2									4
Actuated Green, G (s)	4.0	71.2	84.0	25.8	92.2		12.8	20.6		12.5	20.1	20.1
Effective Green, g (s)	4.0	71.2	84.0	25.8	92.2		12.8	20.6		12.5	20.1	20.1
Actuated g/C Ratio	0.03	0.47	0.56	0.17	0.61		0.09	0.14		0.08	0.13	0.13
Clearance Time (s)	5.0	6.0	4.2	4.2	6.0		4.2	4.7		5.0	5.7	5.7
Vehicle Extension (s)	2.0	3.0	2.0	2.0	3.0		2.0	3.0		2.0	3.0	3.0
Lane Grp Cap (vph)	47	2413	886	304	3104		151	220		147	249	212
v/s Ratio Prot	0.03	0.39	0.02	c0.20	c0.53		c0.10	0.03		0.06	0.02	
v/s Ratio Perm			0.09									c0.04
v/c Ratio	1.30	0.82	0.19	1.17	0.86		1.15	0.24		0.69	0.12	0.28
Uniform Delay, d1	73.0	34.0	16.2	62.1	23.6		68.6	57.7		66.9	57.2	58.5
Progression Factor	1.10	0.48	0.03	1.19	0.58		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	187.5	1.5	0.0	81.9	0.3		117.8	0.6		10.9	0.2	0.7
Delay (s)	268.1	18.0	0.6	155.9	14.0		186.4	58.3		77.7	57.4	59.2
Level of Service	F	B	A	F	B		F	E		E	E	E
Approach Delay (s)		23.2			30.7			108.9			65.4	
Approach LOS		C			C			F			E	

Intersection Summary

HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.9
Intersection Capacity Utilization	95.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 26: Aviara Pkwy/College Blvd & Palomar Airport Rd























2035 No Specific Plan
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	 	 			 	 		 	 			 
Volume (vph)	320	1640	330	5	250	1940	160	200	250	160	40	610
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.3	6.3		4.2	6.3	6.3	4.2	5.8	5.8	4.2	6.0
Lane Util. Factor	0.97	0.91	1.00		0.97	0.91	1.00	0.97	0.95	1.00	1.00	1.00
Flt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	5085	1583		3433	5085	1583	3433	3539	1583	1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	5085	1583		3433	5085	1583	3433	3539	1583	1770	1863
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	327	1673	337	5	255	1980	163	204	255	163	41	622
RTOR Reduction (vph)	0	0	105	0	0	0	74	0	0	113	0	0
Lane Group Flow (vph)	327	1673	232	0	260	1980	89	204	255	50	41	622
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases			2				6			8		
Actuated Green, G (s)	21.5	62.7	62.7		13.9	54.8	54.8	7.8	46.3	46.3	6.6	44.9
Effective Green, g (s)	21.5	62.7	62.7		13.9	54.8	54.8	7.8	46.3	46.3	6.6	44.9
Actuated g/C Ratio	0.14	0.42	0.42		0.09	0.37	0.37	0.05	0.31	0.31	0.04	0.30
Clearance Time (s)	4.5	6.3	6.3		4.2	6.3	6.3	4.2	5.8	5.8	4.2	6.0
Vehicle Extension (s)	2.0	3.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0
Lane Grp Cap (vph)	492	2125	661		318	1857	578	178	1092	488	77	557
v/s Ratio Prot	0.10	0.33			0.08	c0.39		c0.06	0.07		0.02	0.33
v/s Ratio Perm			0.15				0.06			0.03		
v/c Ratio	0.66	0.79	0.35		0.82	1.07	0.15	1.15	0.23	0.10	0.53	1.12
Uniform Delay, d1	60.8	37.9	29.8		66.8	47.6	32.0	71.1	38.6	37.0	70.2	52.5
Progression Factor	0.90	1.78	3.05		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	1.9	0.9		14.2	41.1	0.6	112.2	0.1	0.1	3.5	74.4
Delay (s)	56.2	69.2	91.6		81.0	88.7	32.6	183.3	38.7	37.1	73.7	126.9
Level of Service	E	E	F		F	F	C	F	D	D	E	F
Approach Delay (s)		70.6				84.1			85.7			128.1
Approach LOS		E				F			F			F
Intersection Summary												
HCM 2000 Control Delay			89.3	HCM 2000 Level of Service				F				
HCM 2000 Volume to Capacity ratio			1.12									
Actuated Cycle Length (s)			150.0	Sum of lost time (s)				21.0				
Intersection Capacity Utilization			107.1%	ICU Level of Service				G				
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBR
Lane Configurations	7
Volume (vph)	830
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.98
Adj. Flow (vph)	847
RTOR Reduction (vph)	31
Lane Group Flow (vph)	816
Turn Type	pm+ov
Protected Phases	5
Permitted Phases	4
Actuated Green, G (s)	66.4
Effective Green, g (s)	66.4
Actuated g/C Ratio	0.44
Clearance Time (s)	4.5
Vehicle Extension (s)	2.0
Lane Grp Cap (vph)	700
v/s Ratio Prot	c0.17
v/s Ratio Perm	0.35
v/c Ratio	1.17
Uniform Delay, d1	41.8
Progression Factor	1.00
Incremental Delay, d2	89.8
Delay (s)	131.6
Level of Service	F
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
 27: El Camino Real & Palomar Airport Rd













2035 No Specific Plan
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	410	2040	130	790	1250	740	20	200	1420	700	5	1160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	6.0	6.0		5.0	6.0	5.0		5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	0.88		0.97	0.91	0.88		0.97
Flt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (prot)	3433	5085	1583	3433	5085	2787		3433	5085	2787		3433
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (perm)	3433	5085	1583	3433	5085	2787		3433	5085	2787		3433
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	418	2082	133	806	1276	755	20	204	1449	714	5	1184
RTOR Reduction (vph)	0	0	89	0	0	374	0	0	0	63	0	0
Lane Group Flow (vph)	418	2082	44	806	1276	381	0	224	1449	651	0	1189
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	pm+ov	Prot	Prot
Protected Phases	3	8		7	4		1	1	6	7	5	5
Permitted Phases			8			4				6		
Actuated Green, G (s)	22.1	48.0	48.0	22.0	47.9	47.9		13.3	28.0	50.0		30.0
Effective Green, g (s)	22.1	48.0	48.0	22.0	47.9	47.9		13.3	28.0	50.0		30.0
Actuated g/C Ratio	0.15	0.32	0.32	0.15	0.32	0.32		0.09	0.19	0.33		0.20
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0		5.0	6.0	5.0		5.0
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0	3.0		2.0	3.0	2.0		2.0
Lane Grp Cap (vph)	505	1627	506	503	1623	889		304	949	929		686
v/s Ratio Prot	0.12	c0.41		c0.23	0.25			0.07	c0.28	0.10		c0.35
v/s Ratio Perm			0.03			0.14				0.13		
v/c Ratio	0.83	1.28	0.09	1.60	0.79	0.43		0.74	1.53	0.70		1.73
Uniform Delay, d1	62.1	51.0	35.7	64.0	46.4	40.3		66.6	61.0	43.5		60.0
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	10.2	130.7	0.3	280.3	3.9	1.5		7.8	242.5	2.0		336.0
Delay (s)	72.3	181.7	36.0	344.3	50.3	41.8		74.4	303.5	45.5		396.0
Level of Service	E	F	D	F	D	D		E	F	D		F
Approach Delay (s)		157.0			131.6				204.8			
Approach LOS		F			F				F			
Intersection Summary												
HCM 2000 Control Delay			176.2			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.49									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)			22.0			
Intersection Capacity Utilization			141.0%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
Label Configurations	↑↑↑	↑
Volume (vph)	940	180
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	5.0
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	959	184
RTOR Reduction (vph)	0	32
Lane Group Flow (vph)	959	152
Turn Type	NA	pm+ov
Protected Phases	2	3
Permitted Phases		2
Actuated Green, G (s)	44.7	66.8
Effective Green, g (s)	44.7	66.8
Actuated g/C Ratio	0.30	0.45
Clearance Time (s)	6.0	5.0
Vehicle Extension (s)	3.0	2.0
Lane Grp Cap (vph)	1515	704
v/s Ratio Prot	0.19	0.03
v/s Ratio Perm		0.06
v/c Ratio	0.63	0.22
Uniform Delay, d1	45.6	25.5
Progression Factor	1.00	1.00
Incremental Delay, d2	0.9	0.1
Delay (s)	46.4	25.6
Level of Service	D	C
Approach Delay (s)	223.0	
Approach LOS	F	
Intersection Summary		























HCM Signalized Intersection Capacity Analysis
 28: I-5 SB Ramps & Poinsettia Ln

2035 No Specific Plan
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑↑	↑↑					↑	↑	↑
Volume (vph)	0	1030	240	890	940	0	0	0	0	570	10	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6
Lane Util. Factor		0.95	1.00	0.97	0.95					1.00	0.95	0.95
Flt		1.00	0.85	1.00	1.00					1.00	0.86	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1770	1526	1504
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1770	1526	1504
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1051	245	908	959	0	0	0	0	582	10	235
RTOR Reduction (vph)	0	0	159	0	0	0	0	0	0	0	77	83
Lane Group Flow (vph)	0	1051	86	908	959	0	0	0	0	582	46	39
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		33.4	33.4	27.8	65.4					35.4	35.4	35.4
Effective Green, g (s)		33.4	33.4	27.8	65.4					35.4	35.4	35.4
Actuated g/C Ratio		0.30	0.30	0.25	0.59					0.32	0.32	0.32
Clearance Time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6
Vehicle Extension (s)		2.0	2.0	2.0	5.0					2.0	2.0	2.0
Lane Grp Cap (vph)		1074	480	867	2104					569	491	484
v/s Ratio Prot		c0.30		c0.26	0.27						0.03	
v/s Ratio Perm			0.05							c0.33		0.03
v/c Ratio		0.98	0.18	1.05	0.46					1.02	0.09	0.08
Uniform Delay, d1		37.9	28.2	41.1	12.4					37.3	26.1	26.0
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		22.0	0.1	43.7	0.3					43.6	0.0	0.0
Delay (s)		60.0	28.3	84.8	12.7					80.9	26.1	26.0
Level of Service		E	C	F	B					F	C	C
Approach Delay (s)		54.0			47.8			0.0			64.7	
Approach LOS		D			D			A			E	
Intersection Summary												
HCM 2000 Control Delay			53.3			HCM 2000 Level of Service					D	
HCM 2000 Volume to Capacity ratio			1.01									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)				13.4		
Intersection Capacity Utilization			96.6%			ICU Level of Service				F		
Analysis Period (min)			15									
c Critical Lane Group												























HCM Signalized Intersection Capacity Analysis
 29: I-5 NB Ramps & Poinsettia Ln

2035 No Specific Plan
 PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			  				 				
Volume (vph)	250	1350	0	0	1440	250	390	10	570	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.2	4.6			4.6	4.6		4.6	4.6				
Lane Util. Factor	1.00	0.95			0.91	1.00		1.00	0.88				
Fr _t	1.00	1.00			1.00	0.85		1.00	0.85				
Fl _t Protected	0.95	1.00			1.00	1.00		0.95	1.00				
Satd. Flow (prot)	1770	3539			5085	1583		1776	2787				
Fl _t Permitted	0.95	1.00			1.00	1.00		0.95	1.00				
Satd. Flow (perm)	1770	3539			5085	1583		1776	2787				
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	255	1378	0	0	1469	255	398	10	582	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	144	0	0	72	0	0	0	
Lane Group Flow (vph)	255	1378	0	0	1469	111	0	408	510	0	0	0	
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm				
Protected Phases	5	2			6			8					
Permitted Phases						6	8		8				
Actuated Green, G (s)	12.2	43.4			27.0	27.0		18.5	18.5				
Effective Green, g (s)	12.2	43.4			27.0	27.0		18.5	18.5				
Actuated g/C Ratio	0.17	0.61			0.38	0.38		0.26	0.26				
Clearance Time (s)	4.2	4.6			4.6	4.6		4.6	4.6				
Vehicle Extension (s)	2.0	5.0			2.0	2.0		2.0	2.0				
Lane Grp Cap (vph)	303	2160			1931	601		462	725				
v/s Ratio Prot	c0.14	0.39			c0.29								
v/s Ratio Perm						0.07		0.23	0.18				
v/c Ratio	0.84	0.64			0.76	0.18		0.88	0.70				
Uniform Delay, d ₁	28.5	8.8			19.2	14.7		25.3	23.8				
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00				
Incremental Delay, d ₂	18.0	0.9			1.6	0.1		17.4	2.5				
Delay (s)	46.5	9.7			20.9	14.8		42.6	26.4				
Level of Service	D	A			C	B		D	C				
Approach Delay (s)		15.4			20.0			33.1			0.0		
Approach LOS		B			B			C			A		
Intersection Summary													
HCM 2000 Control Delay			21.3		HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.82										
Actuated Cycle Length (s)			71.1		Sum of lost time (s)				13.4				
Intersection Capacity Utilization			96.6%		ICU Level of Service				F				
Analysis Period (min)			15										
c Critical Lane Group													























HCM Signalized Intersection Capacity Analysis
 30: Lower Ln/Paseo Del Norte & Poinsettia Ln

2035 No Specific Plan
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	560	1300	60	20	1170	250	30	10	20	150	10	490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.6	4.6	4.2	4.6		4.6	4.6		4.6	4.6	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Flt	1.00	1.00	0.85	1.00	0.97		1.00	0.90		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	3539	1583	1770	3446		1770	1676		1770	1589	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	3539	1583	1770	3446		1770	1676		1770	1589	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	571	1327	61	20	1194	255	31	10	20	153	10	500
RTOR Reduction (vph)	0	0	22	0	10	0	0	18	0	0	408	0
Lane Group Flow (vph)	571	1327	39	20	1439	0	31	12	0	153	102	0
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2									
Actuated Green, G (s)	24.6	84.1	84.1	3.2	62.7		11.5	11.5		14.8	14.8	
Effective Green, g (s)	24.6	84.1	84.1	3.2	62.7		11.5	11.5		14.8	14.8	
Actuated g/C Ratio	0.19	0.64	0.64	0.02	0.48		0.09	0.09		0.11	0.11	
Clearance Time (s)	4.2	4.6	4.6	4.2	4.6		4.6	4.6		4.6	4.6	
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	641	2261	1011	43	1641		154	146		199	178	
v/s Ratio Prot	c0.17	0.37		0.01	c0.42		c0.02	0.01		c0.09	0.06	
v/s Ratio Perm			0.02									
v/c Ratio	0.89	0.59	0.04	0.47	0.88		0.20	0.08		0.77	0.57	
Uniform Delay, d1	52.2	13.7	8.8	63.4	31.0		55.8	55.2		56.7	55.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	14.2	0.6	0.0	2.9	6.1		0.2	0.1		14.8	2.7	
Delay (s)	66.4	14.3	8.8	66.2	37.0		56.0	55.3		71.5	58.1	
Level of Service	E	B	A	E	D		E	E		E	E	
Approach Delay (s)		29.3			37.4			55.7			61.2	
Approach LOS		C			D			E			E	
Intersection Summary												
HCM 2000 Control Delay			37.7			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			131.6			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			98.3%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
31: Aviara Pkwy & Poinsettia Ln

2035 No Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	190	750	160	30	640	190	140	90	30	200	160	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.0	5.5	5.5	6.0		5.5	6.0		5.5	6.0	
Lane Util. Factor	0.97	1.00	0.88	1.00	0.95		0.97	0.95		1.00	0.95	
Flt	1.00	1.00	0.85	1.00	0.97		1.00	0.96		1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1863	2787	1770	3418		3433	3405		1770	3160	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	1863	2787	1770	3418		3433	3405		1770	3160	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	194	765	163	31	653	194	143	92	31	204	163	408
RTOR Reduction (vph)	0	0	82	0	30	0	0	28	0	0	147	0
Lane Group Flow (vph)	194	765	81	31	817	0	143	95	0	204	424	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	8.8	36.5	42.7	2.2	29.9		6.2	7.2		17.3	18.3	
Effective Green, g (s)	8.8	36.5	42.7	2.2	29.9		6.2	7.2		17.3	18.3	
Actuated g/C Ratio	0.10	0.42	0.50	0.03	0.35		0.07	0.08		0.20	0.21	
Clearance Time (s)	5.5	6.0	5.5	5.5	6.0		5.5	6.0		5.5	6.0	
Vehicle Extension (s)	2.5	3.5	3.0	2.5	3.5		3.0	4.0		2.5	4.0	
Lane Grp Cap (vph)	350	788	1380	45	1185		246	284		355	670	
v/s Ratio Prot	c0.06	c0.41	0.00	0.02	0.24		c0.04	0.03		0.12	c0.13	
v/s Ratio Perm			0.02									
v/c Ratio	0.55	0.97	0.06	0.69	0.69		0.58	0.33		0.57	0.87dr	
Uniform Delay, d1	36.8	24.3	11.3	41.7	24.2		38.7	37.2		31.1	30.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.5	25.0	0.0	33.2	1.8		3.5	0.9		1.8	2.2	
Delay (s)	38.4	49.4	11.3	74.9	25.9		42.2	38.2		33.0	33.1	
Level of Service	D	D	B	E	C		D	D		C	C	
Approach Delay (s)		41.9			27.7			40.4			33.1	
Approach LOS		D			C			D			C	

Intersection Summary

HCM 2000 Control Delay	35.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	86.2	Sum of lost time (s)	23.0
Intersection Capacity Utilization	83.3%	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 Signalized Intersection Capacity Analysis
 32: El Camino Real & Aviara Pkwy





















2035 No Specific Plan
 PM Peak Hour

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	
Lane Configurations													
Volume (vph)	180	480	450	5	410	350	100	600	2540	640	15	230	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.2	5.7	4.6		4.2	5.7		4.6	6.4			4.2	
Lane Util. Factor	0.97	0.95	1.00		0.97	0.95		0.97	0.91			0.97	
Flt	1.00	1.00	0.85		1.00	0.97		1.00	0.97			1.00	
Flt Protected	0.95	1.00	1.00		0.95	1.00		0.95	1.00			0.95	
Satd. Flow (prot)	3433	3539	1583		3433	3421		3433	4932			3433	
Flt Permitted	0.95	1.00	1.00		0.95	1.00		0.95	1.00			0.95	
Satd. Flow (perm)	3433	3539	1583		3433	3421		3433	4932			3433	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	184	490	459	5	418	357	102	612	2592	653	15	235	
RTOR Reduction (vph)	0	0	41	0	0	21	0	0	27	0	0	0	
Lane Group Flow (vph)	184	490	418	0	423	438	0	612	3218	0	0	250	
Turn Type	Prot	NA	pm+ov	Prot	Prot	NA		Prot	NA		Prot	Prot	
Protected Phases	7	4	5	3	3	8		5	2		1	1	
Permitted Phases			4										
Actuated Green, G (s)	8.6	28.4	42.8		10.8	30.6		14.4	73.5			6.8	
Effective Green, g (s)	8.6	28.4	42.8		10.8	30.6		14.4	73.5			6.8	
Actuated g/C Ratio	0.06	0.20	0.31		0.08	0.22		0.10	0.52			0.05	
Clearance Time (s)	4.2	5.7	4.6		4.2	5.7		4.6	6.4			4.2	
Vehicle Extension (s)	2.0	2.0	2.0		3.0	2.0		2.0	3.0			2.0	
Lane Grp Cap (vph)	210	717	483		264	747		353	2589			166	
v/s Ratio Prot	0.05	0.14	c0.09		c0.12	0.13		c0.18	c0.65			0.07	
v/s Ratio Perm			0.18										
v/c Ratio	0.88	0.68	0.87		1.60	0.59		1.73	1.24			1.51	
Uniform Delay, d1	65.2	51.6	45.9		64.6	49.0		62.8	33.2			66.6	
Progression Factor	1.00	1.00	1.00		1.00	1.00		1.00	1.00			1.28	
Incremental Delay, d2	30.1	2.2	14.5		288.1	0.8		341.8	112.8			230.6	
Delay (s)	95.3	53.8	60.4		352.7	49.8		404.6	146.0			315.8	
Level of Service	F	D	E		F	D		F	F			F	
Approach Delay (s)		63.2				195.1			187.0				
Approach LOS		E				F			F				
Intersection Summary													
HCM 2000 Control Delay			149.3									HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.26										
Actuated Cycle Length (s)			140.0									Sum of lost time (s)	20.9
Intersection Capacity Utilization			112.6%									ICU Level of Service	H
Analysis Period (min)			15										
c Critical Lane Group													

Movement	SBT	SBR
Label Configurations	↑↑↑	
Volume (vph)	2580	140
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.4	
Lane Util. Factor	0.91	
Flt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	5046	
Flt Permitted	1.00	
Satd. Flow (perm)	5046	
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	2633	143
RTOR Reduction (vph)	4	0
Lane Group Flow (vph)	2772	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	65.5	
Effective Green, g (s)	65.5	
Actuated g/C Ratio	0.47	
Clearance Time (s)	6.4	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	2360	
v/s Ratio Prot	0.55	
v/s Ratio Perm		
v/c Ratio	1.17	
Uniform Delay, d1	37.2	
Progression Factor	0.63	
Incremental Delay, d2	79.1	
Delay (s)	102.5	
Level of Service	F	
Approach Delay (s)	120.2	
Approach LOS	F	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
33: El Camino Real & Poinsettia Ln

2035 No Specific Plan
PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	
Lane Configurations													
Volume (vph)	150	240	270	470	210	90	15	270	1210	370	5	160	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.2	4.7		4.2	5.0			4.2	6.0	6.0		4.2	
Lane Util. Factor	0.97	0.95		0.97	0.95			0.97	0.91	1.00		0.97	
Fr _t	1.00	0.92		1.00	0.95			1.00	1.00	0.85		1.00	
Fl _t Protected	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95	
Satd. Flow (prot)	3433	3258		3433	3380			3433	5085	1583		3433	
Fl _t Permitted	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95	
Satd. Flow (perm)	3433	3258		3433	3380			3433	5085	1583		3433	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	153	245	276	480	214	92	15	276	1235	378	5	163	
RTOR Reduction (vph)	0	86	0	0	38	0	0	0	0	196	0	0	
Lane Group Flow (vph)	153	435	0	480	268	0	0	291	1235	182	0	168	
Turn Type	Prot	NA		Prot	NA		Prot	Prot	NA	Perm	Prot	Prot	
Protected Phases	7	4		3	8		1	1	6		5	5	
Permitted Phases										6			
Actuated Green, G (s)	10.0	27.5		14.8	32.0			9.8	67.4	67.4		11.2	
Effective Green, g (s)	10.0	27.5		14.8	32.0			9.8	67.4	67.4		11.2	
Actuated g/C Ratio	0.07	0.20		0.11	0.23			0.07	0.48	0.48		0.08	
Clearance Time (s)	4.2	4.7		4.2	5.0			4.2	6.0	6.0		4.2	
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	245	639		362	772			240	2448	762		274	
v/s Ratio Prot	0.04	c0.13		c0.14	0.08			c0.08	0.24			0.05	
v/s Ratio Perm										0.11			
v/c Ratio	0.62	0.68		1.33	0.35			1.21	0.50	0.24		0.61	
Uniform Delay, d ₁	63.2	52.2		62.6	45.3			65.1	24.9	21.3		62.3	
Progression Factor	1.00	1.00		1.00	1.00			0.78	1.45	5.61		1.00	
Incremental Delay, d ₂	3.5	2.4		164.7	0.1			99.3	0.1	0.1		4.0	
Delay (s)	66.7	54.6		227.3	45.3			150.0	36.0	119.4		66.3	
Level of Service	E	D		F	D			F	D	F		E	
Approach Delay (s)		57.3			156.5				70.0				
Approach LOS		E			F				E				
Intersection Summary													
HCM 2000 Control Delay			74.5									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			0.99										
Actuated Cycle Length (s)			140.0									Sum of lost time (s)	19.4
Intersection Capacity Utilization			100.9%									ICU Level of Service	G
Analysis Period (min)			15										
c Critical Lane Group													

Movement	SBT	SBR
Label Configurations	↑↑↑	↘
Volume (vph)	2420	60
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	
Lane Util. Factor	0.91	
Flt	1.00	
Flt Protected	1.00	
Satd. Flow (prot)	5067	
Flt Permitted	1.00	
Satd. Flow (perm)	5067	
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	2469	61
RTOR Reduction (vph)	2	0
Lane Group Flow (vph)	2528	0
Turn Type	NA	
Protected Phases	2	
Permitted Phases		
Actuated Green, G (s)	68.8	
Effective Green, g (s)	68.8	
Actuated g/C Ratio	0.49	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	2490	
v/s Ratio Prot	c0.50	
v/s Ratio Perm		
v/c Ratio	1.02	
Uniform Delay, d1	35.6	
Progression Factor	1.00	
Incremental Delay, d2	22.0	
Delay (s)	57.6	
Level of Service	E	
Approach Delay (s)	58.1	
Approach LOS	E	
Intersection Summary		

Cannon Rd Retail									
Roadway Segment Analysis									
2035 Conditions									
	Direction	Number of Lanes	Capacity (1,800 vplph)	Peak Hour Volume		V/ C Ratio		LOS	
				AM	PM	AM	PM	AM	PM
Cannon Road (I-5 SB Ramps to El Camino Real)									
I-5 SB Ramps to I-5 NB Ramps	EB	2	3600	1320	1120	0.37	0.31	A	A
	WB	2	3600	810	1130	0.23	0.31	A	A
I-5 NB Ramps to Paseo Del Norte	EB	2	3600	1650	1240	0.46	0.34	A	A
	WB	3	5400	900	2150	0.17	0.40	A	A
Paseo Del Norte to Car Country	EB	2	3600	1320	1020	0.37	0.28	A	A
	WB	2	3600	800	1590	0.22	0.44	A	A
Car Country Dr to Armada Dr	EB	2	3600	1100	1040	0.31	0.29	A	A
	WB	2	3600	800	1400	0.22	0.39	A	A
Armada Dr to Grand Pacific Dr	EB	2	3600	720	1210	0.20	0.34	A	A
	WB	2	3600	1110	1140	0.31	0.32	A	A
Grand Pacific Dr to Faraday Ave	EB	2	3600	710	1210	0.20	0.34	A	A
	WB	2	3600	1130	1150	0.31	0.32	A	A
Faraday Ave to El Camino Real	EB	2	3600	450	1470	0.13	0.41	A	A
	WB	2	3600	1100	690	0.31	0.19	A	A
Tamarack Avenue (Carlsbad Boulevard to El Camino Real)									
Carlsbad Blvd to I-5 SB Ramps	EB	1	1800	860	830	0.48	0.46	A	A
	WB	1	1800	930	870	0.52	0.48	A	A
I-5 SB Ramps to I-5 NB Ramps	EB	2	3600	630	810	0.18	0.23	A	A
	WB	2	3600	1000	860	0.28	0.24	A	A
I-5 NB Ramps to El Camino Real	EB	2	3600	830	1070	0.23	0.30	A	A
	WB	2	3600	1150	700	0.32	0.19	A	A
Palomar Airport Road (Paseo Del Norte to El Camino Real)									
Paseo Del Norte to Armada Dr	EB	3	5400	3050	2140	0.56	0.40	A	A
	WB	3	5400	1490	3285	0.28	0.61	A	A
Armada Dr to The Crossings Dr	EB	3	5400	2750	2210	0.51	0.41	A	A
	WB	3	5400	1525	2835	0.28	0.53	A	A
The Crossings Dr to College Blvd	EB	3	5400	2960	2290	0.55	0.42	A	A
	WB	3	5400	1510	2970	0.28	0.55	A	A
College Blvd to El Camino Real	EB	3	5400	2175	2580	0.40	0.48	A	A
	WB	3	5400	2220	2355	0.41	0.44	A	A
College Boulevard									
Palomar Airport Rd to Faraday Ave	EB/NB	2	3600	1830	1470	0.51	0.41	A	A
	WB/SB	1	1800	840	1480	0.47	0.82	A	A
Poinsettia Ln									
Paseo Del Norte to Aviara Pkwy	EB	2	3600	1410	1470	0.39	0.41	A	A
	WB	2	3600	1190	1440	0.33	0.40	A	A
Carlsbad Boulevard (North of Tamarack Avenue to South of Cannon Road)									
North of Tamarack Ave	NB	2	3600	310	960	0.09	0.27	A	A
	SB	2	3600	620	660	0.17	0.18	A	A
Tamarack Ave to Cannon Rd	NB	2	3600	340	1360	0.09	0.38	A	A
	SB	1	1800	940	810	0.52	0.45	A	A
South of Cannon Rd	NB	1	1800	330	1080	0.18	0.60	A	A
	SB	1	1800	950	800	0.53	0.44	A	A
Paseo del Norte (Cannon Road to Palomar Airport Road)									
Cannon Rd to Car Country Dr	NB	2	3600	320	855	0.09	0.24	A	A
	SB	2	3600	540	515	0.15	0.14	A	A
Outlets North Entrance to Palomar Airport Rd	NB	2	3600	740	1430	0.21	0.40	A	A
	SB	2	3600	640	1460	0.18	0.41	A	A
Faraday Avenue									
Cannon Rd to College Blvd	NB	1	1800	955	860	0.53	0.48	A	A
	SB	1	1800	865	1210	0.48	0.67	A	A
Aviara Parkway									
Palomar Airport Rd to Poinsettia Ln	NB	2	3600	1270	610	0.35	0.17	A	A
	SB	2	3600	460	1190	0.13	0.33	A	A
El Camino Real (North of Tamarack Ave to South of Aviara Pkwy)									
North of Tamarack Ave	NB	3	5400	900	2935	0.17	0.54	A	A
	SB	3	5400	2290	1105	0.42	0.20	A	A
Tamarack Ave to Cannon Rd	NB	2	3600	1010	3560	0.28	0.99	A	A
	SB	2	3600	3070	1170	0.85	0.33	D	C
Cannon Rd to College Blvd	NB	3	5400	945	2765	0.18	0.51	A	A
	SB	3	5400	3135	1675	0.58	0.31	A	A
College Blvd to Faraday Ave	NB	3	5400	1845	3305	0.34	0.61	A	A
	SB	3	5400	3995	3085	0.74	0.57	C	C
Faraday Ave to Palomar Airport Rd	NB	3	5400	2425	2575	0.45	0.48	A	A
	SB	3	5400	3015	2525	0.56	0.47	A	A
Palomar Airport Rd to Poinsettia Ln	NB	3	5400	1945	2340	0.36	0.43	A	A
	SB	3	5400	2395	2645	0.44	0.49	A	A
Poinsettia Ln to Aviara Pkwy	NB	3	5400	2235	2835	0.41	0.53	A	A
	SB	3	5400	2370	3175	0.44	0.59	A	A
South of Aviara Pkwy	NB	3	5400	2530	3780	0.47	0.70	A	A
	SB	3	5400	2760	3440	0.51	0.64	A	A

Freeway Segment LOS - Cumulative Conditions																								
Segment	Number of Lanes		Capacity Per Lane	Peak Hour %	Direction Split	HV%	LOS Thresholds						Cumulative No Project Conditions					Cumulative Plus Plus Project				Change in V/C	Significant	
	Mixed Flow	Express					A	B	C	D	E	F	Total ADT	Mixed Flow Lane Factor	Mixed Flow ADT	Peak Hour Per	V/C	LOS	ADT	Peak Hour Per	V/C			LOS
Interstate 5																								
La Costa Ave to Poinsettia Ln	8	4	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	292,000	84%	243,851	2681	1.14	F	249,152	2739	1.17	F	0.02	Yes
Poinsettia Ln to Palomar Airport Rd	8	4	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	282,800	86%	244,180	2685	1.14	F	249,962	2748	1.17	F	0.03	Yes
Palomar Airport Rd to Cannon Rd	8	4	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	252,000	83%	209,494	2303	0.98	E	215,276	2367	1.01	F	0.03	Yes
Cannon Rd to Tamarack Ave	8	4	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	245,400	83%	203,804	2241	0.95	E	209,105	2299	0.98	E	0.02	Yes
Tamarack Ave to Carlsbad Village Dr	8	4	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	246,900	78%	193,136	2123	0.90	D	197,473	2171	0.92	E	0.02	Yes





















**Cannon Rd Retail
Ramp Meter Analysis**

2035								
Location	Peak Hour	Demand ¹ (veh/hr)		Meter Rate ² (veh/hr)	Excess Demand ³ (veh/hr)	Total # of Mixed Flow Lanes	Delay ⁴ (min)	Queue ⁵ (ft)
		Mixed Flow & HOV	Mixed Flow only					
I-5 SB - Tamarack Ave On-Ramp	AM	830	706	526	180	1	20.5	5,200
	PM	720	612	N/A	N/A	1	N/A	N/A
I-5 SB - Cannon Rd On-Ramp	AM	540	459	734	0	2	0.0	0
	PM	760	646	734	0	2	0.0	0
I-5 NB - Cannon Rd On-Ramp	AM	340	289	N/A	N/A	2	N/A	N/A
	PM	1,530	1,301	1,416	0	2	0.0	0
I-5 SB - EB Palomar Airport Rd On-Ramp	AM	100	85	343	0	1	0.0	0
	PM	320	272	246	26	1	6.3	750
I-5 SB - WB Palomar Airport Rd On-Ramp	AM	360	306	492	0	1	0.0	0
	PM	1,340	1,139	895	244	1	16.4	7,075
I-5 NB - Palomar Airport Rd On-Ramp	AM	770	655	N/A	N/A	2	N/A	N/A
	PM	1,620	1,377	988	389	2	23.6	5,650
I-5 SB - Poinsettia Ln On-Ramp	AM	660	561	1,094	0	2	0.0	0
	PM	1,140	969	796	173	2	13.0	2,500
I-5 NB - Poinsettia Ln On-Ramp	AM	670	570	N/A	N/A	1	N/A	N/A
	PM	510	434	576	0	1	0.0	0

2035 + Specific Plan								
Location	Peak Hour	Demand ¹ (veh/hr)		Meter Rate ² (veh/hr)	Excess Demand ³ (veh/hr)	Total # of Mixed Flow Lanes	Delay ⁴ (min)	Queue ⁵ (ft)
		Mixed Flow & HOV	Mixed Flow only					
I-5 SB - Tamarack Ave On-Ramp	AM	856	728	526	202	1	23.0	5,850
	PM	758	644	N/A	N/A	1	N/A	N/A
I-5 SB - Cannon Rd On-Ramp	AM	627	533	734	0	2	0.0	0
	PM	1,103	938	734	204	2	16.6	2,950
I-5 NB - Cannon Rd On-Ramp	AM	415	353	N/A	N/A	2	N/A	N/A
	PM	1,811	1,539	1,416	123	2	5.2	1,800
I-5 SB - EB Palomar Airport Rd On-Ramp	AM	100	85	343	0	1	0.0	0
	PM	320	272	246	26	1	6.3	750
I-5 SB - WB Palomar Airport Rd On-Ramp	AM	360	306	492	0	1	0.0	0
	PM	1,340	1,139	895	244	1	16.4	7,075
I-5 NB - Palomar Airport Rd On-Ramp	AM	770	655	N/A	N/A	2	N/A	N/A
	PM	1,620	1,377	988	389	2	23.6	5,650
I-5 SB - Poinsettia Ln On-Ramp	AM	660	561	1,094	0	2	0.0	0
	PM	1,140	969	796	173	2	13.0	2,500
I-5 NB - Poinsettia Ln On-Ramp	AM	683	581	N/A	N/A	1	N/A	N/A
	PM	529	450	576	0	1	0.0	0

HCM Signalized Intersection Capacity Analysis
1: Carlsbad Blvd & Tamarack Ave

2035 + Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	10	20	10	350	20	110	10	20	201	110	80	555
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0			4.5	6.0		4.5	6.0
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	0.95		1.00	0.95
Fr _t		1.00	0.85	1.00	0.87			1.00	0.95		1.00	1.00
Fl _t Protected		0.98	1.00	0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)		1832	1583	1770	1626			1770	3352		1770	3539
Fl _t Permitted		0.98	1.00	0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (perm)		1832	1583	1770	1626			1770	3352		1770	3539
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	10	20	10	357	20	112	10	20	205	112	82	566
RTOR Reduction (vph)	0	0	9	0	81	0	0	0	80	0	0	0
Lane Group Flow (vph)	0	30	1	357	51	0	0	30	237	0	82	566
Turn Type	Split	NA	Perm	Split	NA		Prot	Prot	NA		Prot	NA
Protected Phases	4	4		3	3		5	5	2		1	6
Permitted Phases			4									
Actuated Green, G (s)		4.0	4.0	19.2	19.2			1.7	19.5		5.1	22.9
Effective Green, g (s)		4.0	4.0	19.2	19.2			1.7	19.5		5.1	22.9
Actuated g/C Ratio		0.06	0.06	0.28	0.28			0.02	0.29		0.07	0.34
Clearance Time (s)		5.0	5.0	5.0	5.0			4.5	6.0		4.5	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0			2.0	3.0		2.0	3.0
Lane Grp Cap (vph)		107	92	497	457			44	957		132	1186
v/s Ratio Prot		c0.02		c0.20	0.03			0.02	0.07		c0.05	c0.16
v/s Ratio Perm			0.00									
v/c Ratio		0.28	0.01	0.72	0.11			0.68	0.25		0.62	0.48
Uniform Delay, d ₁		30.8	30.3	22.1	18.2			33.0	18.8		30.7	18.0
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d ₂		1.4	0.0	4.9	0.1			29.4	0.1		6.4	0.3
Delay (s)		32.2	30.3	27.0	18.3			62.4	18.9		37.0	18.3
Level of Service		C	C	C	B			E	B		D	B
Approach Delay (s)		31.7			24.7				22.7			20.6
Approach LOS		C			C				C			C
Intersection Summary												
HCM 2000 Control Delay			22.6			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			68.3			Sum of lost time (s)		20.5				
Intersection Capacity Utilization			61.8%			ICU Level of Service		B				
Analysis Period (min)			15									
c Critical Lane Group												















Movement	SBR
Lane Configurations	7
Volume (vph)	10
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.98
Adj. Flow (vph)	10
RTOR Reduction (vph)	7
Lane Group Flow (vph)	3
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	22.9
Effective Green, g (s)	22.9
Actuated g/C Ratio	0.34
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	530
v/s Ratio Prot	
v/s Ratio Perm	0.00
v/c Ratio	0.01
Uniform Delay, d1	15.1
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	15.1
Level of Service	B
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis




















2: I-5 SB Ramps & Tamarack Ave

2035 + Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖	↑↑						↖	↗
Volume (vph)	0	480	393	453	566	0	0	0	0	150	10	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.2	4.6						4.6	4.6
Lane Util. Factor		0.95	1.00	1.00	0.95						1.00	1.00
Fr _t		1.00	0.85	1.00	1.00						1.00	0.85
Fl _t Protected		1.00	1.00	0.95	1.00						0.96	1.00
Satd. Flow (prot)		3539	1583	1770	3539						1779	1583
Fl _t Permitted		1.00	1.00	0.95	1.00						0.96	1.00
Satd. Flow (perm)		3539	1583	1770	3539						1779	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	490	401	462	578	0	0	0	0	153	10	378
RTOR Reduction (vph)	0	0	228	0	0	0	0	0	0	0	0	318
Lane Group Flow (vph)	0	490	173	462	578	0	0	0	0	0	163	60
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		29.9	29.9	33.8	67.9						12.9	12.9
Effective Green, g (s)		29.9	29.9	33.8	67.9						12.9	12.9
Actuated g/C Ratio		0.33	0.33	0.38	0.75						0.14	0.14
Clearance Time (s)		4.6	4.6	4.2	4.6						4.6	4.6
Vehicle Extension (s)		5.0	5.0	2.0	7.0						2.0	2.0
Lane Grp Cap (vph)		1175	525	664	2669						254	226
v/s Ratio Prot		c0.14		c0.26	0.16							
v/s Ratio Perm			0.11								0.09	0.04
v/c Ratio		0.42	0.33	0.70	0.22						0.64	0.27
Uniform Delay, d ₁		23.3	22.5	23.8	3.2						36.4	34.3
Progression Factor		1.00	1.00	1.42	1.76						1.00	1.00
Incremental Delay, d ₂		1.1	1.7	1.9	0.1						4.1	0.2
Delay (s)		24.4	24.2	35.7	5.8						40.5	34.6
Level of Service		C	C	D	A						D	C
Approach Delay (s)		24.3			19.1			0.0			36.3	
Approach LOS		C			B			A			D	
Intersection Summary												
HCM 2000 Control Delay			24.8			HCM 2000 Level of Service					C	
HCM 2000 Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			90.0			Sum of lost time (s)					13.4	
Intersection Capacity Utilization			69.4%			ICU Level of Service					C	
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 3: I-5 NB Ramps & Tamarack Ave























2035 + Specific Plan
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Volume (vph)	250	380	0	0	853	310	166	0	456	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.1			5.1			4.6	4.6			
Lane Util. Factor	1.00	0.95			0.95			1.00	1.00			
Flt	1.00	1.00			0.96			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (prot)	1770	3539			3398			1770	1583			
Flt Permitted	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (perm)	1770	3539			3398			1770	1583			
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	255	388	0	0	870	316	169	0	465	0	0	0
RTOR Reduction (vph)	0	0	0	0	35	0	0	0	397	0	0	0
Lane Group Flow (vph)	255	388	0	0	1151	0	0	169	68	0	0	0
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	15.7	67.2			46.9			13.1	13.1			
Effective Green, g (s)	15.7	67.2			46.9			13.1	13.1			
Actuated g/C Ratio	0.17	0.75			0.52			0.15	0.15			
Clearance Time (s)	4.6	5.1			5.1			4.6	4.6			
Vehicle Extension (s)	2.0	3.0			2.0			2.0	2.0			
Lane Grp Cap (vph)	308	2642			1770			257	230			
v/s Ratio Prot	c0.14	0.11			c0.34							
v/s Ratio Perm								0.10	0.04			
v/c Ratio	0.83	0.15			0.65			0.66	0.29			
Uniform Delay, d1	35.8	3.2			15.6			36.3	34.3			
Progression Factor	0.45	2.15			1.00			1.00	1.00			
Incremental Delay, d2	14.8	0.1			1.9			4.6	0.3			
Delay (s)	31.0	7.1			17.5			40.9	34.6			
Level of Service	C	A			B			D	C			
Approach Delay (s)		16.6			17.5			36.3			0.0	
Approach LOS		B			B			D			A	
Intersection Summary												
HCM 2000 Control Delay			22.1				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)		14.3			
Intersection Capacity Utilization			69.4%				ICU Level of Service		C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis













4: El Camino Real & Tamarck Ave

2035 + Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	110	313	556	220	60	86	804	143	50	2222	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.0	5.0	4.2	5.0		4.2	6.0		4.2	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		0.97	0.91		1.00	0.91	1.00
Flt	1.00	1.00	0.85	1.00	0.97		1.00	0.98		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	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3426		3433	4970		1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3426		3433	4970		1770	5085	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	51	112	319	567	224	61	88	820	146	51	2267	51
RTOR Reduction (vph)	0	0	118	0	21	0	0	14	0	0	0	27
Lane Group Flow (vph)	51	112	201	567	264	0	88	952	0	51	2267	24
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	6.9	23.3	23.3	27.7	44.1		4.8	62.7		6.9	64.8	64.8
Effective Green, g (s)	6.9	23.3	23.3	27.7	44.1		4.8	62.7		6.9	64.8	64.8
Actuated g/C Ratio	0.05	0.17	0.17	0.20	0.32		0.03	0.45		0.05	0.46	0.46
Clearance Time (s)	4.2	5.0	5.0	4.2	5.0		4.2	6.0		4.2	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	3.0		2.0	3.0	3.0
Lane Grp Cap (vph)	87	310	263	350	1079		117	2225		87	2353	732
v/s Ratio Prot	0.03	0.06		c0.32	0.08		c0.03	0.19		0.03	c0.45	
v/s Ratio Perm			c0.13									0.01
v/c Ratio	0.59	0.36	0.76	1.62	0.25		0.75	0.43		0.59	0.96	0.03
Uniform Delay, d1	65.2	51.8	55.7	56.1	35.6		67.0	26.4		65.2	36.5	20.5
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	6.3	0.3	11.2	291.8	0.0		21.2	0.6		6.3	11.8	0.1
Delay (s)	71.5	52.0	66.9	348.0	35.6		88.2	27.0		71.5	48.2	20.6
Level of Service	E	D	E	F	D		F	C		E	D	C
Approach Delay (s)		63.9			243.5			32.1			48.1	
Approach LOS		E			F			C			D	
Intersection Summary												
HCM 2000 Control Delay			81.2				HCM 2000 Level of Service				F	
HCM 2000 Volume to Capacity ratio			1.07									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)			19.4		
Intersection Capacity Utilization			105.8%				ICU Level of Service			G		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
5: Carlsbad Blvd & Cannon Rd






























2035 + Specific Plan
AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	304	111	240	100	315	650
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.5	5.5	5.5	4.5	5.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Flt	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)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	310	113	245	102	321	663
RTOR Reduction (vph)	0	56	0	54	0	0
Lane Group Flow (vph)	310	57	245	48	321	663
Turn Type	NA	pm+ov	NA	Perm	Prot	NA
Protected Phases	4	5	6		5	2
Permitted Phases		4		6		
Actuated Green, G (s)	17.1	32.3	17.0	17.0	15.2	36.7
Effective Green, g (s)	17.1	32.3	17.0	17.0	15.2	36.7
Actuated g/C Ratio	0.27	0.50	0.26	0.26	0.24	0.57
Clearance Time (s)	5.0	4.5	5.5	5.5	4.5	5.5
Vehicle Extension (s)	3.0	2.0	4.0	4.0	2.0	4.0
Lane Grp Cap (vph)	470	795	492	418	418	1063
v/s Ratio Prot	c0.18	0.02	0.13		c0.18	c0.36
v/s Ratio Perm		0.02		0.03		
v/c Ratio	0.66	0.07	0.50	0.11	0.77	0.62
Uniform Delay, d1	21.0	8.3	20.0	17.9	22.9	9.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.3	0.0	1.1	0.2	7.4	1.3
Delay (s)	24.3	8.3	21.1	18.1	30.4	10.5
Level of Service	C	A	C	B	C	B
Approach Delay (s)	20.1		20.2			17.0
Approach LOS	C		C			B
Intersection Summary						
HCM 2000 Control Delay			18.4		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.71			
Actuated Cycle Length (s)			64.3		Sum of lost time (s)	15.0
Intersection Capacity Utilization			59.8%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis













6: Avenida Encinas & Cannon Rd

2035 + Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 		 	 		 		 	 		 
Volume (vph)	20	365	50	334	325	100	30	10	109	80	20	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.5		4.5	5.5		4.5	5.0	4.5	4.5	5.0	4.5
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	1.00	1.00	0.97	1.00	1.00
Fr _t	1.00	0.98		1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Fl _t Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3475		3433	3414		1770	1863	1583	3433	1863	1583
Fl _t Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3475		3433	3414		1770	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	20	372	51	341	332	102	31	10	111	82	20	20
RTOR Reduction (vph)	0	10	0	0	21	0	0	0	81	0	0	17
Lane Group Flow (vph)	20	413	0	341	413	0	31	10	30	82	20	3
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8	1	7	4	5
Permitted Phases									8			4
Actuated Green, G (s)	1.7	18.8		12.1	29.2		1.7	3.7	15.8	5.3	7.3	9.0
Effective Green, g (s)	1.7	18.8		12.1	29.2		1.7	3.7	15.8	5.3	7.3	9.0
Actuated g/C Ratio	0.03	0.32		0.20	0.49		0.03	0.06	0.27	0.09	0.12	0.15
Clearance Time (s)	4.5	5.5		4.5	5.5		4.5	5.0	4.5	4.5	5.0	4.5
Vehicle Extension (s)	2.5	3.0		2.5	3.0		2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	50	1099		699	1678		50	116	421	306	228	239
v/s Ratio Prot	0.01	c0.12		c0.10	0.12		c0.02	0.01	0.01	0.02	c0.01	0.00
v/s Ratio Perm									0.00			0.00
v/c Ratio	0.40	0.38		0.49	0.25		0.62	0.09	0.07	0.27	0.09	0.01
Uniform Delay, d ₁	28.3	15.8		20.9	8.7		28.5	26.3	16.3	25.2	23.1	21.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d ₂	3.8	0.2		0.4	0.1		18.0	0.2	0.1	0.3	0.1	0.0
Delay (s)	32.1	16.0		21.3	8.8		46.5	26.5	16.4	25.6	23.2	21.4
Level of Service	C	B		C	A		D	C	B	C	C	C
Approach Delay (s)		16.7			14.3			23.2			24.5	
Approach LOS		B			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			16.8				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.37									
Actuated Cycle Length (s)			59.4				Sum of lost time (s)			19.5		
Intersection Capacity Utilization			42.7%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
7: I-5 SB Ramps & Cannon Rd

2035 + Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑↑	↑↑					↑	↑	↑
Volume (vph)	0	464	90	527	389	0	0	0	0	1071	10	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Fr _t		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Fl _t Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1681	1687	1583
Fl _t Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1681	1687	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	473	92	538	397	0	0	0	0	1093	10	378
RTOR Reduction (vph)	0	0	66	0	0	0	0	0	0	0	0	216
Lane Group Flow (vph)	0	473	26	538	397	0	0	0	0	546	557	162
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		39.5	39.5	31.8	75.5					55.3	55.3	55.3
Effective Green, g (s)		39.5	39.5	31.8	75.5					55.3	55.3	55.3
Actuated g/C Ratio		0.28	0.28	0.23	0.54					0.39	0.39	0.39
Clearance Time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6
Vehicle Extension (s)		2.0	2.0	2.0	2.0					2.0	2.0	2.0
Lane Grp Cap (vph)		998	446	779	1908					663	666	625
v/s Ratio Prot		c0.13		c0.16	0.11					0.32	c0.33	
v/s Ratio Perm			0.02									0.10
v/c Ratio		0.47	0.06	0.69	0.21					0.82	0.84	0.26
Uniform Delay, d ₁		41.6	36.7	49.6	16.7					38.0	38.3	28.5
Progression Factor		1.00	1.00	1.13	1.01					1.00	1.00	1.00
Incremental Delay, d ₂		1.6	0.2	2.0	0.2					7.8	8.6	0.1
Delay (s)		43.3	36.9	58.0	17.2					45.8	46.8	28.6
Level of Service		D	D	E	B					D	D	C
Approach Delay (s)		42.2			40.7			0.0			41.8	
Approach LOS		D			D			A			D	
Intersection Summary												
HCM 2000 Control Delay			41.5			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				13.4		
Intersection Capacity Utilization			84.4%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												













HCM Signalized Intersection Capacity Analysis
8: I-5 NB Ramps & Cannon Rd

2035 + Specific Plan
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	1405	0	0	806	275	110	10	659	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.6			4.6	4.6		4.6	4.6			
Lane Util. Factor	0.97	0.95			0.95	0.88		1.00	0.88			
Fr _t	1.00	1.00			1.00	0.85		1.00	0.85			
Fl _t Protected	0.95	1.00			1.00	1.00		0.96	1.00			
Satd. Flow (prot)	3433	3539			3539	2787		1781	2787			
Fl _t Permitted	0.95	1.00			1.00	1.00		0.96	1.00			
Satd. Flow (perm)	3433	3539			3539	2787		1781	2787			
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	133	1434	0	0	822	281	112	10	672	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	106	0	0	319	0	0	0
Lane Group Flow (vph)	133	1434	0	0	822	175	0	122	353	0	0	0
Turn Type	Prot	NA			NA	Perm	Split	NA	custom			
Protected Phases	5	2			6	1	8	8	8			
Permitted Phases						6	1		1			
Actuated Green, G (s)	10.2	96.8			87.4	87.4		17.8	22.8			
Effective Green, g (s)	10.2	96.8			87.4	87.4		17.8	22.8			
Actuated g/C Ratio	0.07	0.69			0.62	0.62		0.13	0.16			
Clearance Time (s)	4.2	4.6						4.6	4.6			
Vehicle Extension (s)	2.0	2.0						2.0	2.0			
Lane Grp Cap (vph)	250	2446			2209	1739		226	453			
v/s Ratio Prot	0.04	c0.41			0.23			0.07	c0.10			
v/s Ratio Perm						0.06			0.03			
v/c Ratio	0.53	0.59			0.37	0.10		0.54	0.78			
Uniform Delay, d ₁	62.6	11.2			12.9	10.5		57.3	56.2			
Progression Factor	1.67	0.77			1.00	1.00		1.00	1.00			
Incremental Delay, d ₂	1.0	0.8			0.0	0.0		1.2	7.6			
Delay (s)	105.5	9.4			12.9	10.6		58.5	63.8			
Level of Service	F	A			B	B		E	E			
Approach Delay (s)		17.5			12.3			62.9			0.0	
Approach LOS		B			B			E			A	
Intersection Summary												
HCM 2000 Control Delay			26.3				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)		21.6			
Intersection Capacity Utilization			84.4%				ICU Level of Service		E			
Analysis Period (min)			15									
c Critical Lane Group												

















HCM Signalized Intersection Capacity Analysis
9: Paseo Del Norte/Project Dwy & Cannon Rd

2035 + Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑		↵	↑↑↑	↵	↵↵		↵	↵↵	↑	↵↵
Volume (vph)	0	1614	450	90	672	191	190	0	216	99	46	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0	5.0	5.0		5.0	5.0	4.0	4.0
Lane Util. Factor		0.91		1.00	*0.80	1.00	0.97		1.00	0.97	1.00	0.88
Fr _t		0.97		1.00	1.00	0.85	1.00		0.85	1.00	1.00	0.85
Fl _t Protected		1.00		0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00
Satd. Flow (prot)		4919		1770	4471	1583	3433		1583	3433	1863	2787
Fl _t Permitted		1.00		0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00
Satd. Flow (perm)		4919		1770	4471	1583	3433		1583	3433	1863	2787
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1647	459	92	686	195	194	0	220	101	47	210
RTOR Reduction (vph)	0	25	0	0	0	0	0	0	179	0	0	0
Lane Group Flow (vph)	0	2081	0	92	686	195	194	0	41	101	47	210
Turn Type		NA		Prot	NA	Over	Prot		custom	Prot	NA	custom
Protected Phases		2 9		1	6	7	3		1	7	4	9
Permitted Phases									3			4 9
Actuated Green, G (s)		98.8		15.0	109.8	31.2	14.7		29.7	31.2	12.5	17.5
Effective Green, g (s)		94.8		15.0	109.8	31.2	14.7		29.7	31.2	12.5	17.5
Actuated g/C Ratio		0.59		0.09	0.69	0.19	0.09		0.19	0.19	0.08	0.11
Clearance Time (s)				5.0	5.0	5.0	5.0		5.0	5.0	4.0	4.0
Vehicle Extension (s)				2.0	4.5	2.0	3.5		2.0	2.0	3.0	3.0
Lane Grp Cap (vph)		2914		165	3068	308	315		293	669	145	304
v/s Ratio Prot		c0.42		c0.05	0.15	c0.12	0.06		0.01	0.03	0.03	0.02
v/s Ratio Perm									0.01			0.05
v/c Ratio		0.71		0.56	0.22	0.63	0.62		0.14	0.15	0.32	0.69
Uniform Delay, d ₁		23.0		69.3	9.3	59.1	69.9		54.5	53.4	69.8	68.6
Progression Factor		1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d ₂		0.8		2.3	0.2	3.1	3.7		0.1	0.0	1.3	6.6
Delay (s)		23.9		71.6	9.5	62.3	73.7		54.5	53.5	71.1	75.3
Level of Service		C		E	A	E	E		D	D	E	E
Approach Delay (s)		23.9			25.9			63.5			68.6	
Approach LOS		C			C			E			E	
Intersection Summary												
HCM 2000 Control Delay			32.8		HCM 2000 Level of Service				C			
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			160.0		Sum of lost time (s)				23.0			
Intersection Capacity Utilization			70.0%		ICU Level of Service				C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 10: Car Country Dr & Cannon Rd

2035 + Specific Plan
 AM Peak Hour

							
Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations		 			 		 
Volume (vph)	0	1103	280	90	901	100	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5		5.5	6.5	5.5	5.5
Lane Util. Factor		0.95		1.00	0.95	1.00	1.00
Fr _t		0.97		1.00	1.00	1.00	0.85
Fl _t Protected		1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)		3432		1770	3539	1770	1583
Fl _t Permitted		1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)		3432		1770	3539	1770	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1126	286	92	919	102	61
RTOR Reduction (vph)	0	12	0	0	0	0	55
Lane Group Flow (vph)	0	1400	0	92	919	102	6
Turn Type		NA		Prot	NA	NA	Perm
Protected Phases		2		1	6	3	
Permitted Phases							3
Actuated Green, G (s)		96.9		12.2	114.6	13.4	13.4
Effective Green, g (s)		96.9		12.2	114.6	13.4	13.4
Actuated g/C Ratio		0.69		0.09	0.82	0.10	0.10
Clearance Time (s)		6.5		5.5	6.5	5.5	5.5
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		2375		154	2896	169	151
v/s Ratio Prot		c0.41		c0.05	0.26	c0.06	
v/s Ratio Perm							0.00
v/c Ratio		0.59		0.60	0.32	0.60	0.04
Uniform Delay, d ₁		11.2		61.5	3.1	60.8	57.5
Progression Factor		1.00		1.00	1.00	1.00	1.00
Incremental Delay, d ₂		1.0		6.1	0.3	6.0	0.1
Delay (s)		12.2		67.6	3.4	66.7	57.6
Level of Service		B		E	A	E	E
Approach Delay (s)		12.2			9.2	63.3	
Approach LOS		B			A	E	
Intersection Summary							
HCM 2000 Control Delay			14.3		HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio			0.59				
Actuated Cycle Length (s)			140.0		Sum of lost time (s)		17.5
Intersection Capacity Utilization			64.5%		ICU Level of Service		C
Analysis Period (min)			15				
c Critical Lane Group							

HCM Signalized Intersection Capacity Analysis
11: Legoland Dr

2035 + Specific Plan
AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↘↘	↑↑	↘↘	↗
Volume (vph)	722	461	370	882	109	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.0	5.0	6.0	5.0	5.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	3433	3539	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	3433	3539	3433	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	737	470	378	900	111	61
RTOR Reduction (vph)	0	53	0	0	0	50
Lane Group Flow (vph)	737	417	378	900	111	11
Turn Type	NA	pm+ov	Prot	NA	NA	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	21.9	33.0	12.8	39.7	11.1	11.1
Effective Green, g (s)	21.9	33.0	12.8	39.7	11.1	11.1
Actuated g/C Ratio	0.35	0.53	0.21	0.64	0.18	0.18
Clearance Time (s)	6.0	5.0	5.0	6.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1254	845	711	2273	616	284
v/s Ratio Prot	c0.21	c0.09	c0.11	0.25	0.03	
v/s Ratio Perm		0.17				0.01
v/c Ratio	0.59	0.49	0.53	0.40	0.18	0.04
Uniform Delay, d1	16.3	9.1	21.8	5.3	21.5	20.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.5	0.4	0.1	0.1	0.1
Delay (s)	17.0	9.6	22.2	5.4	21.6	21.0
Level of Service	B	A	C	A	C	C
Approach Delay (s)	14.1			10.4	21.4	
Approach LOS	B			B	C	
Intersection Summary						
HCM 2000 Control Delay			12.8		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.55			
Actuated Cycle Length (s)			61.8		Sum of lost time (s)	16.0
Intersection Capacity Utilization			47.4%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						




















HCM Signalized Intersection Capacity Analysis
 12: Marriott Hotel Dwy & Cannon Rd

2035 + Specific Plan
 AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↓
Volume (vph)	701	81	60	1209	43	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.5	5.0	6.0	5.5	5.5
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Fr _t	1.00	0.85	1.00	1.00	1.00	0.85
Fl _t Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Fl _t Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	715	83	61	1234	44	71
RTOR Reduction (vph)	0	15	0	0	0	65
Lane Group Flow (vph)	715	68	61	1234	44	6
Turn Type	NA	pm+ov	Prot	NA	NA	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	103.2	115.3	8.2	116.4	12.1	12.1
Effective Green, g (s)	103.2	115.3	8.2	116.4	12.1	12.1
Actuated g/C Ratio	0.74	0.82	0.06	0.83	0.09	0.09
Clearance Time (s)	6.0	5.5	5.0	6.0	5.5	5.5
Vehicle Extension (s)	3.0	2.0	2.0	3.0	2.0	2.0
Lane Grp Cap (vph)	2608	1303	103	2942	152	136
v/s Ratio Prot	0.20	0.00	c0.03	c0.35	c0.02	
v/s Ratio Perm		0.04				0.00
v/c Ratio	0.27	0.05	0.59	0.42	0.29	0.05
Uniform Delay, d ₁	6.1	2.3	64.3	3.1	59.9	58.7
Progression Factor	1.00	1.00	0.82	1.36	1.00	1.00
Incremental Delay, d ₂	0.3	0.0	5.6	0.4	0.4	0.1
Delay (s)	6.3	2.3	58.6	4.6	60.3	58.7
Level of Service	A	A	E	A	E	E
Approach Delay (s)	5.9			7.1	59.3	
Approach LOS	A			A	E	
Intersection Summary						
HCM 2000 Control Delay			9.4		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.43			
Actuated Cycle Length (s)			140.0		Sum of lost time (s)	16.5
Intersection Capacity Utilization			47.2%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						





















HCM Signalized Intersection Capacity Analysis
13: Faraday Ave & Cannon Rd

2035 + Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	334	427	130	1061	10	198	10	50	10	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		5.0	5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		0.95	0.95			1.00	
Fr _t	1.00	0.92		1.00	1.00		1.00	0.94			0.95	
Fl _t Protected	0.95	1.00		0.95	1.00		0.95	0.97			0.98	
Satd. Flow (prot)	1770	3241		1770	3534		1681	1621			1750	
Fl _t Permitted	0.95	1.00		0.95	1.00		0.95	0.97			0.98	
Satd. Flow (perm)	1770	3241		1770	3534		1681	1621			1750	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	10	341	436	133	1083	10	202	10	51	10	10	10
RTOR Reduction (vph)	0	109	0	0	0	0	0	20	0	0	10	0
Lane Group Flow (vph)	10	668	0	133	1093	0	135	108	0	0	20	0
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases												
Actuated Green, G (s)	0.8	81.2		14.9	95.3		17.9	17.9			4.0	
Effective Green, g (s)	0.8	81.2		14.9	95.3		17.9	17.9			4.0	
Actuated g/C Ratio	0.01	0.58		0.11	0.68		0.13	0.13			0.03	
Clearance Time (s)	6.0	6.0		6.0	6.0		5.0	5.0			5.0	
Vehicle Extension (s)	2.0	3.5		2.0	3.5		2.0	2.0			2.0	
Lane Grp Cap (vph)	10	1879		188	2405		214	207			50	
v/s Ratio Prot	0.01	0.21		c0.08	c0.31		c0.08	0.07			c0.01	
v/s Ratio Perm												
v/c Ratio	1.00	0.36		0.71	0.45		0.63	0.52			0.41	
Uniform Delay, d ₁	69.6	15.6		60.4	10.3		57.9	57.0			66.8	
Progression Factor	1.06	1.19		0.88	1.66		1.00	1.00			1.00	
Incremental Delay, d ₂	281.6	0.5		4.0	0.3		4.4	1.1			2.0	
Delay (s)	355.5	19.0		57.3	17.4		62.3	58.1			68.8	
Level of Service	F	B		E	B		E	E			E	
Approach Delay (s)		23.3			21.8			60.3			68.8	
Approach LOS		C			C			E			E	
Intersection Summary												
HCM 2000 Control Delay			27.3	HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.52									
Actuated Cycle Length (s)			140.0	Sum of lost time (s)				22.0				
Intersection Capacity Utilization			61.1%	ICU Level of Service				B				
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 14: El Camino Real & Cannon Rd

2035 + Specific Plan
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	122	47	324	200	168	10	5	330	580	40	5	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	6.0		4.2	6.0			4.2	6.0	6.0		4.2
Lane Util. Factor	0.97	0.95		0.97	0.95			1.00	0.95	1.00		1.00
Fr _t	1.00	0.87		1.00	0.99			1.00	1.00	0.85		1.00
Fl _t Protected	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95
Satd. Flow (prot)	3433	3076		3433	3510			1770	3539	1583		1770
Fl _t Permitted	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95
Satd. Flow (perm)	3433	3076		3433	3510			1770	3539	1583		1770
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	124	48	331	204	171	10	5	337	592	41	5	10
RTOR Reduction (vph)	0	157	0	0	4	0	0	0	0	14	0	0
Lane Group Flow (vph)	124	222	0	204	177	0	0	342	592	27	0	15
Turn Type	Prot	NA		Prot	NA		Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases										2		
Actuated Green, G (s)	8.2	19.5		5.8	17.1			16.4	92.1	92.1		2.2
Effective Green, g (s)	8.2	19.5		5.8	17.1			16.4	92.1	92.1		2.2
Actuated g/C Ratio	0.06	0.14		0.04	0.12			0.12	0.66	0.66		0.02
Clearance Time (s)	4.2	6.0		4.2	6.0			4.2	6.0	6.0		4.2
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0	3.0	3.0		2.0
Lane Grp Cap (vph)	201	428		142	428			207	2328	1041		27
v/s Ratio Prot	0.04	c0.07		c0.06	0.05			c0.19	0.17			0.01
v/s Ratio Perm										0.02		
v/c Ratio	0.62	0.88dr		1.44	0.41			1.65	0.25	0.03		0.56
Uniform Delay, d ₁	64.4	55.9		67.1	56.8			61.8	9.8	8.3		68.4
Progression Factor	0.87	0.68		1.00	1.00			1.00	1.00	1.00		1.00
Incremental Delay, d ₂	3.8	0.4		231.8	0.2			314.1	0.3	0.0		13.3
Delay (s)	59.5	38.5		298.9	57.1			375.9	10.1	8.4		81.7
Level of Service	E	D		F	E			F	B	A		F
Approach Delay (s)		43.7			185.2				138.3			
Approach LOS		D			F				F			

Intersection Summary

HCM 2000 Control Delay	64.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	103.5%	ICU Level of Service	G
Analysis Period (min)	15		























dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

Movement	SBT	SBR
Lane Configurations	↑↑↑	↑
Volume (vph)	2610	700
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	4.2
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	2663	714
RTOR Reduction (vph)	0	164
Lane Group Flow (vph)	2663	550
Turn Type	NA	pm+ov
Protected Phases	6	7
Permitted Phases		6
Actuated Green, G (s)	77.9	86.1
Effective Green, g (s)	77.9	86.1
Actuated g/C Ratio	0.56	0.61
Clearance Time (s)	6.0	4.2
Vehicle Extension (s)	3.0	2.0
Lane Grp Cap (vph)	2829	1021
v/s Ratio Prot	c0.52	c0.03
v/s Ratio Perm		0.32
v/c Ratio	0.94	0.54
Uniform Delay, d1	28.9	15.5
Progression Factor	1.00	1.00
Incremental Delay, d2	7.9	0.3
Delay (s)	36.8	15.8
Level of Service	D	B
Approach Delay (s)	32.6	
Approach LOS	C	
Intersection Summary		




















HCM Signalized Intersection Capacity Analysis
15: Paseo Del Norte & Car Country Dr

2035 + Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 			 	
Volume (vph)	20	10	10	60	10	100	10	300	100	70	274	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5		5.5	5.5		5.0	6.0		5.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Fr _t	1.00	0.93		1.00	0.86		1.00	0.96		1.00	0.98	
Fl _t Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1723		1770	1608		1770	3406		1770	3471	
Fl _t Permitted	0.68	1.00		0.74	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1276	1723		1386	1608		1770	3406		1770	3471	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	20	10	10	61	10	102	10	306	102	71	280	41
RTOR Reduction (vph)	0	8	0	0	85	0	0	34	0	0	11	0
Lane Group Flow (vph)	20	12	0	61	27	0	10	374	0	71	310	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	8.6	8.6		8.6	8.6		0.5	24.0		3.6	27.1	
Effective Green, g (s)	8.6	8.6		8.6	8.6		0.5	24.0		3.6	27.1	
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.01	0.46		0.07	0.51	
Clearance Time (s)	5.5	5.5		5.5	5.5		5.0	6.0		5.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	208	281		226	262		16	1551		120	1784	
v/s Ratio Prot		0.01			0.02		0.01	c0.11		c0.04	c0.09	
v/s Ratio Perm	0.02			c0.04								
v/c Ratio	0.10	0.04		0.27	0.10		0.62	0.24		0.59	0.17	
Uniform Delay, d ₁	18.7	18.6		19.3	18.8		26.0	8.8		23.8	6.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d ₂	0.2	0.1		0.6	0.2		44.0	0.1		5.1	0.1	
Delay (s)	18.9	18.6		19.9	18.9		70.0	8.9		29.0	6.9	
Level of Service	B	B		B	B		E	A		C	A	
Approach Delay (s)		18.8			19.3			10.4			10.9	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			12.4				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.28									
Actuated Cycle Length (s)			52.7				Sum of lost time (s)			16.5		
Intersection Capacity Utilization			40.1%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												




















HCM Signalized Intersection Capacity Analysis
 16: Paseo Del Norte & Outlet Dwy

2035 + Specific Plan
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	20	20	10	24	30	376	20	72	262	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Flt	1.00	0.90			0.94		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1676			1719		1770	3513		1770	3520	
Flt Permitted	1.00	1.00			0.87		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1863	1676			1515		1770	3513		1770	3520	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	10	10	20	20	10	24	31	384	20	73	267	10
RTOR Reduction (vph)	0	18	0	0	22	0	0	4	0	0	3	0
Lane Group Flow (vph)	10	12	0	0	32	0	31	400	0	73	274	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	4.0	4.0			4.0		0.6	23.7		3.8	26.9	
Effective Green, g (s)	4.0	4.0			4.0		0.6	23.7		3.8	26.9	
Actuated g/C Ratio	0.09	0.09			0.09		0.01	0.51		0.08	0.58	
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.5	2.5			2.5		2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	160	144			130		22	1790		144	2036	
v/s Ratio Prot		0.01					0.02	c0.11		c0.04	c0.08	
v/s Ratio Perm	0.01				c0.02							
v/c Ratio	0.06	0.08			0.25		1.41	0.22		0.51	0.13	
Uniform Delay, d1	19.5	19.6			19.8		22.9	6.3		20.5	4.5	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.2			0.7		337.7	0.1		1.0	0.1	
Delay (s)	19.6	19.7			20.6		360.7	6.4		21.5	4.5	
Level of Service	B	B			C		F	A		C	A	
Approach Delay (s)		19.7			20.6			31.7			8.1	
Approach LOS		B			C			C			A	
Intersection Summary												
HCM 2000 Control Delay			21.0				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.25									
Actuated Cycle Length (s)			46.5				Sum of lost time (s)			15.0		
Intersection Capacity Utilization			37.3%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 17: Faraday Ave & College Blvd

2035 + Specific Plan
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	230	800	140	5	370	490	400	60	350	260	5	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.0			4.5	6.0		4.5	5.0			4.5
Lane Util. Factor	0.97	0.95			0.97	0.95		1.00	0.95			1.00
Flt	1.00	0.98			1.00	0.93		1.00	0.94			1.00
Flt Protected	0.95	1.00			0.95	1.00		0.95	1.00			0.95
Satd. Flow (prot)	3433	3460			3433	3301		1770	3313			1770
Flt Permitted	0.95	1.00			0.95	1.00		0.95	1.00			0.95
Satd. Flow (perm)	3433	3460			3433	3301		1770	3313			1770
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	235	816	143	5	378	500	408	61	357	265	5	327
RTOR Reduction (vph)	0	10	0	0	0	106	0	0	94	0	0	0
Lane Group Flow (vph)	235	949	0	0	383	802	0	61	528	0	0	332
Turn Type	Prot	NA		Prot	Prot	NA		Prot	NA		Prot	Prot
Protected Phases	5	2		1	1	6		3	8		7	7
Permitted Phases												
Actuated Green, G (s)	10.7	37.4			16.3	43.0		6.1	23.5			26.6
Effective Green, g (s)	10.7	37.4			16.3	43.0		6.1	23.5			26.6
Actuated g/C Ratio	0.09	0.30			0.13	0.35		0.05	0.19			0.21
Clearance Time (s)	4.5	6.0			4.5	6.0		4.5	5.0			4.5
Vehicle Extension (s)	0.2	0.2			0.2	0.2		0.2	0.2			0.2
Lane Grp Cap (vph)	296	1045			452	1146		87	628			380
v/s Ratio Prot	0.07	c0.27			c0.11	0.24		0.03	c0.16			c0.19
v/s Ratio Perm												
v/c Ratio	0.79	0.91			0.85	0.70		0.70	0.84			0.87
Uniform Delay, d1	55.5	41.5			52.5	34.8		58.0	48.3			47.0
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2	12.8	11.0			13.2	1.5		18.7	9.5			18.8
Delay (s)	68.2	52.5			65.7	36.4		76.7	57.9			65.8
Level of Service	E	D			E	D		E	E			E
Approach Delay (s)		55.6				45.1			59.5			
Approach LOS		E				D			E			
Intersection Summary												
HCM 2000 Control Delay			50.3			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.87									
Actuated Cycle Length (s)			123.8			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			90.0%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
Lane Configurations	↑↑	
Volume (vph)	513	40
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.0	
Lane Util. Factor	0.95	
Flt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	3501	
Flt Permitted	1.00	
Satd. Flow (perm)	3501	
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	523	41
RTOR Reduction (vph)	4	0
Lane Group Flow (vph)	560	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	44.0	
Effective Green, g (s)	44.0	
Actuated g/C Ratio	0.36	
Clearance Time (s)	5.0	
Vehicle Extension (s)	0.2	
Lane Grp Cap (vph)	1244	
v/s Ratio Prot	0.16	
v/s Ratio Perm		
v/c Ratio	0.45	
Uniform Delay, d1	30.6	
Progression Factor	1.00	
Incremental Delay, d2	0.1	
Delay (s)	30.7	
Level of Service	C	
Approach Delay (s)	43.7	
Approach LOS	D	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
 18: El Camino Real & College Blvd

2035 + Specific Plan
 AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	200	340	70	800	730	50	75	400	598	430	210	2853
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5		5.0	6.5			5.0	6.0	6.0	5.0	6.0
Lane Util. Factor	0.97	0.95		0.97	0.95			1.00	0.91	1.00	1.00	0.91
Fr _t	1.00	0.97		1.00	0.99			1.00	1.00	0.85	1.00	1.00
Fl _t Protected	0.95	1.00		0.95	1.00			0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3449		3433	3505			1770	5085	1583	1770	5085
Fl _t Permitted	0.95	1.00		0.95	1.00			0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3449		3433	3505			1770	5085	1583	1770	5085
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	204	347	71	816	745	51	77	408	610	439	214	2911
RTOR Reduction (vph)	0	13	0	0	4	0	0	0	0	217	0	0
Lane Group Flow (vph)	204	405	0	816	792	0	0	485	610	222	214	2911
Turn Type	Prot	NA		Prot	NA		Prot	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	8		5	5	2		1	6
Permitted Phases										2		
Actuated Green, G (s)	10.6	33.7		14.0	37.1			21.0	50.5	50.5	19.3	48.8
Effective Green, g (s)	10.6	33.7		14.0	37.1			21.0	50.5	50.5	19.3	48.8
Actuated g/C Ratio	0.08	0.24		0.10	0.27			0.15	0.36	0.36	0.14	0.35
Clearance Time (s)	5.0	6.5		5.0	6.5			5.0	6.0	6.0	5.0	6.0
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0	4.0	4.0	2.0	4.0
Lane Grp Cap (vph)	259	830		343	928			265	1834	571	244	1772
v/s Ratio Prot	0.06	0.12		c0.24	c0.23			c0.27	0.12		0.12	c0.57
v/s Ratio Perm										0.14		
v/c Ratio	0.79	0.49		2.38	0.85			1.83	0.33	0.39	0.88	1.64
Uniform Delay, d ₁	63.6	45.7		63.0	48.9			59.5	32.5	33.3	59.2	45.6
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d ₂	13.5	0.2		629.5	7.4			388.0	0.5	2.0	27.1	291.8
Delay (s)	77.1	45.9		692.5	56.3			447.5	33.0	35.3	86.3	337.4
Level of Service	E	D		F	E			F	C	D	F	F
Approach Delay (s)		56.1			378.3				164.7			282.5
Approach LOS		E			F				F			F
Intersection Summary												
HCM 2000 Control Delay			260.7			HCM 2000 Level of Service		F				
HCM 2000 Volume to Capacity ratio			1.54									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)		22.5				
Intersection Capacity Utilization			134.6%			ICU Level of Service		H				
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBR
▲▲▲ Lane Configurations	↗
Volume (vph)	740
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Fr _t	0.85
Fl _t Protected	1.00
Satd. Flow (prot)	1583
Fl _t Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.98
Adj. Flow (vph)	755
RTOR Reduction (vph)	130
Lane Group Flow (vph)	625
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	48.8
Effective Green, g (s)	48.8
Actuated g/C Ratio	0.35
Clearance Time (s)	6.0
Vehicle Extension (s)	4.0
Lane Grp Cap (vph)	551
v/s Ratio Prot	
v/s Ratio Perm	0.39
v/c Ratio	1.13
Uniform Delay, d ₁	45.6
Progression Factor	1.00
Incremental Delay, d ₂	80.8
Delay (s)	126.4
Level of Service	F
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
 19: El Camino Real & Faraday Ave

2035 + Specific Plan
 AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	90	182	86	180	815	428	10	963	1220	150	30	693
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9	5.0	5.0	5.0		4.2	6.0			4.2
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00		0.97	0.91			0.97
Flt	1.00	0.99	0.85	1.00	1.00	0.85		1.00	0.98			1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (prot)	1770	3367	1441	1770	3539	1583		3433	5002			3433
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (perm)	1770	3367	1441	1770	3539	1583		3433	5002			3433
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	92	186	88	184	832	437	10	983	1245	153	31	707
RTOR Reduction (vph)	0	2	58	0	0	173	0	0	10	0	0	0
Lane Group Flow (vph)	92	193	21	184	832	264	0	993	1388	0	0	738
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases	3	8		7	4		1	1	6		5	5
Permitted Phases			8			4						
Actuated Green, G (s)	5.1	36.9	36.9	10.0	41.8	41.8		21.8	52.2			20.8
Effective Green, g (s)	5.1	36.9	36.9	10.0	41.8	41.8		21.8	52.2			20.8
Actuated g/C Ratio	0.04	0.26	0.26	0.07	0.30	0.30		0.16	0.37			0.15
Clearance Time (s)	4.9	4.9	4.9	5.0	5.0	5.0		4.2	6.0			4.2
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0	3.0		2.0	2.0			2.0
Lane Grp Cap (vph)	64	887	379	126	1056	472		534	1865			510
v/s Ratio Prot	0.05	0.06		c0.10	c0.24			c0.29	0.28			c0.21
v/s Ratio Perm			0.01			0.17						
v/c Ratio	1.44	0.22	0.05	1.46	0.79	0.56		1.86	0.74			1.45
Uniform Delay, d1	67.5	40.3	38.5	65.0	45.0	41.3		59.1	38.1			59.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2	265.4	0.0	0.0	245.4	4.0	1.4		394.0	2.7			212.0
Delay (s)	332.9	40.3	38.5	310.4	49.0	42.8		453.1	40.8			271.6
Level of Service	F	D	D	F	D	D		F	D			F
Approach Delay (s)		113.5			80.2				212.0			
Approach LOS		F			F				F			
Intersection Summary												
HCM 2000 Control Delay			139.2				HCM 2000 Level of Service		F			
HCM 2000 Volume to Capacity ratio			1.21									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)		20.1			
Intersection Capacity Utilization			108.0%				ICU Level of Service		G			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
Label Configurations	↑↑↑	↑
Volume (vph)	1860	520
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	6.0
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	1898	531
RTOR Reduction (vph)	0	67
Lane Group Flow (vph)	1898	464
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Actuated Green, G (s)	51.2	51.2
Effective Green, g (s)	51.2	51.2
Actuated g/C Ratio	0.37	0.37
Clearance Time (s)	6.0	6.0
Vehicle Extension (s)	2.0	2.0
Lane Grp Cap (vph)	1859	578
v/s Ratio Prot	c0.37	
v/s Ratio Perm		0.29
v/c Ratio	1.02	0.80
Uniform Delay, d1	44.4	39.9
Progression Factor	1.00	1.00
Incremental Delay, d2	26.3	11.3
Delay (s)	70.7	51.2
Level of Service	E	D
Approach Delay (s)	114.3	
Approach LOS	F	
Intersection Summary		













HCM Signalized Intersection Capacity Analysis
20: Avenida Encinas & Palomar Airport Rd

2035 + Specific Plan
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	220	70	370	260	390	60	96	140	140	102	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.0		4.2	5.0	5.0	4.6	4.6	4.6	4.6	4.6	4.6
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Fr _t	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fl _t Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (prot)	1770	1795		1770	1863	1583	1770	1863	1583	1681	1755	1583
Fl _t Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.99	1.00
Satd. Flow (perm)	1770	1795		1770	1863	1583	1770	1863	1583	1681	1755	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	61	224	71	378	265	398	61	98	143	143	104	31
RTOR Reduction (vph)	0	10	0	0	0	237	0	0	122	0	0	27
Lane Group Flow (vph)	61	285	0	378	265	161	61	98	21	122	125	4
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases						6			8			7
Actuated Green, G (s)	5.9	18.5		18.8	31.4	31.4	11.3	11.3	11.3	10.8	10.8	10.8
Effective Green, g (s)	5.9	18.5		18.8	31.4	31.4	11.3	11.3	11.3	10.8	10.8	10.8
Actuated g/C Ratio	0.08	0.24		0.24	0.40	0.40	0.15	0.15	0.15	0.14	0.14	0.14
Clearance Time (s)	4.2	5.0		4.2	5.0	5.0	4.6	4.6	4.6	4.6	4.6	4.6
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	134	426		427	751	638	257	270	229	233	243	219
v/s Ratio Prot	0.03	c0.16		c0.21	0.14		0.03	c0.05		c0.07	0.07	
v/s Ratio Perm						0.10			0.01			0.00
v/c Ratio	0.46	0.67		0.89	0.35	0.25	0.24	0.36	0.09	0.52	0.51	0.02
Uniform Delay, d ₁	34.4	26.9		28.5	16.1	15.4	29.4	30.0	28.8	31.1	31.1	28.9
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, d ₂	0.9	4.0		18.7	0.3	0.2	0.2	0.3	0.1	1.0	0.8	0.0
Delay (s)	35.3	30.8		47.2	16.4	15.6	29.6	30.3	28.9	32.1	31.8	28.9
Level of Service	D	C		D	B	B	C	C	C	C	C	C
Approach Delay (s)		31.6			27.3			29.5			31.6	
Approach LOS		C			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			29.0	HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			77.8	Sum of lost time (s)				18.4				
Intersection Capacity Utilization			61.1%	ICU Level of Service				B				
Analysis Period (min)			15									
c Critical Lane Group												


























HCM Signalized Intersection Capacity Analysis
 21: I-5 SB Ramps & Palomar Airport Rd

2035 + Specific Plan
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑	↗				↖↖		↗
Volume (vph)	0	400	100	0	620	360	0	0	0	1190	0	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0	4.0				4.6		4.6
Lane Util. Factor		0.91			0.95	1.00				0.97		1.00
Fr _t		0.97			1.00	0.85				1.00		0.85
Fl _t Protected		1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)		4933			3539	1583				3433		1583
Fl _t Permitted		1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)		4933			3539	1583				3433		1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	408	102	0	633	367	0	0	0	1214	0	408
RTOR Reduction (vph)	0	58	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	452	0	0	633	367	0	0	0	1214	0	408
Turn Type		NA			NA	Free				Prot		custom
Protected Phases		2 3			6					4		4 3
Permitted Phases						Free						2
Actuated Green, G (s)		24.9			14.8	58.3				23.8		48.3
Effective Green, g (s)		24.9			14.8	58.3				23.8		48.3
Actuated g/C Ratio		0.43			0.25	1.00				0.41		0.83
Clearance Time (s)					5.0					4.6		
Vehicle Extension (s)					2.0					2.0		
Lane Grp Cap (vph)		2106			898	1583				1401		1311
v/s Ratio Prot		0.09			c0.18					c0.35		c0.18
v/s Ratio Perm						0.23						0.08
v/c Ratio		0.21			0.70	0.23				0.87		0.31
Uniform Delay, d ₁		10.5			19.8	0.0				15.8		1.2
Progression Factor		1.00			1.00	1.00				1.00		1.00
Incremental Delay, d ₂		0.0			2.1	0.3				5.7		0.0
Delay (s)		10.6			21.8	0.3				21.5		1.2
Level of Service		B			C	A				C		A
Approach Delay (s)		10.6			14.0			0.0			16.4	
Approach LOS		B			B			A			B	
Intersection Summary												
HCM 2000 Control Delay			14.7				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			58.3				Sum of lost time (s)			14.6		
Intersection Capacity Utilization			58.6%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 22: I-5 NB Ramps & Palomar Airport Rd

2035 + Specific Plan
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  	 			 	 		
Volume (vph)	180	1410	0	0	760	580	220	10	1450	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.6			4.6	4.6		4.6	4.6			
Lane Util. Factor	1.00	0.91			0.91	0.88		1.00	0.88			
Fr _t	1.00	1.00			1.00	0.85		1.00	0.85			
Fl _t Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	5085			5085	2787		1778	2787			
Fl _t Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	5085			5085	2787		1778	2787			
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	184	1439	0	0	776	592	224	10	1480	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	248	0	0	36	0	0	0
Lane Group Flow (vph)	184	1439	0	0	776	344	0	234	1444	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	5	2			6 7			8	7			
Permitted Phases						6 7	8		8			
Actuated Green, G (s)	10.6	31.9			51.4	51.4		13.0	42.7			
Effective Green, g (s)	10.6	31.9			51.4	51.4		13.0	42.7			
Actuated g/C Ratio	0.12	0.36			0.58	0.58		0.15	0.48			
Clearance Time (s)	4.2	4.6						4.6	4.6			
Vehicle Extension (s)	2.0	3.0						2.0	2.0			
Lane Grp Cap (vph)	212	1834			2956	1620		261	1491			
v/s Ratio Prot	0.10	c0.28			0.15				c0.33			
v/s Ratio Perm						0.12		0.13	0.19			
v/c Ratio	0.87	0.78			0.26	0.21		0.90	0.97			
Uniform Delay, d ₁	38.2	25.2			9.1	8.8		37.0	22.2			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d ₂	28.3	2.3			0.0	0.0		29.4	16.1			
Delay (s)	66.5	27.5			9.2	8.9		66.4	38.3			
Level of Service	E	C			A	A		E	D			
Approach Delay (s)		31.9			9.0			42.1			0.0	
Approach LOS		C			A			D			A	
Intersection Summary												
HCM 2000 Control Delay			29.0				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			1.01									
Actuated Cycle Length (s)			88.4				Sum of lost time (s)		18.0			
Intersection Capacity Utilization			85.6%				ICU Level of Service		E			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 23: Paseo Del Norte & Palomar Airport Rd

2035 + Specific Plan
 AM Peak Hour

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (vph)	5	200	2500	150	5	121	910	460	210	175	163	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	6.0			4.2	6.0	4.2	4.2	5.0		4.2
Lane Util. Factor		0.97	0.91			0.97	0.86	1.00	0.97	0.95		0.97
Fr _t		1.00	0.99			1.00	1.00	0.85	1.00	0.93		1.00
Fl _t Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		3433	5042			3433	6408	1583	3433	3284		3433
Fl _t Permitted		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (perm)		3433	5042			3433	6408	1583	3433	3284		3433
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	5	204	2551	153	5	123	929	469	214	179	166	367
RTOR Reduction (vph)	0	0	4	0	0	0	0	158	0	47	0	0
Lane Group Flow (vph)	0	209	2700	0	0	128	929	311	214	298	0	367
Turn Type	Prot	Prot	NA		Prot	Prot	NA	pm+ov	Prot	NA		Prot
Protected Phases	5	5	2		1	1	6	7	3	8		7
Permitted Phases								6				
Actuated Green, G (s)		12.3	79.7			4.8	72.2	84.0	11.2	24.3		11.8
Effective Green, g (s)		12.3	79.7			4.8	72.2	84.0	11.2	24.3		11.8
Actuated g/C Ratio		0.09	0.57			0.03	0.52	0.60	0.08	0.17		0.08
Clearance Time (s)		4.2	6.0			4.2	6.0	4.2	4.2	5.0		4.2
Vehicle Extension (s)		2.0	2.0			2.0	2.0	2.0	2.0	2.0		2.0
Lane Grp Cap (vph)		301	2870			117	3304	949	274	570		289
v/s Ratio Prot		0.06	c0.54			c0.04	0.14	0.03	0.06	c0.09		c0.11
v/s Ratio Perm								0.17				
v/c Ratio		0.69	0.94			1.09	0.28	0.33	0.78	0.52		1.27
Uniform Delay, d ₁		62.0	28.0			67.6	19.2	13.9	63.2	52.6		64.1
Progression Factor		1.00	1.00			1.05	0.59	0.34	1.00	1.00		1.00
Incremental Delay, d ₂		5.5	7.7			107.0	0.2	0.1	12.5	0.4		145.9
Delay (s)		67.5	35.7			178.0	11.5	4.8	75.7	53.0		210.0
Level of Service		E	D			F	B	A	E	D		F
Approach Delay (s)			38.0				23.4			61.7		
Approach LOS			D				C			E		
Intersection Summary												
HCM 2000 Control Delay			48.2				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)			19.4		
Intersection Capacity Utilization			91.7%				ICU Level of Service			F		
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
↓ ↘	↑ ↗	
Lane Configurations	↑ ↗	
Volume (vph)	111	210
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.0	
Lane Util. Factor	0.95	
Frt	0.90	
Flt Protected	1.00	
Satd. Flow (prot)	3192	
Flt Permitted	1.00	
Satd. Flow (perm)	3192	
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	113	214
RTOR Reduction (vph)	141	0
Lane Group Flow (vph)	186	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	24.9	
Effective Green, g (s)	24.9	
Actuated g/C Ratio	0.18	
Clearance Time (s)	5.0	
Vehicle Extension (s)	2.0	
Lane Grp Cap (vph)	567	
v/s Ratio Prot	0.06	
v/s Ratio Perm		
v/c Ratio	0.33	
Uniform Delay, d1	50.2	
Progression Factor	1.00	
Incremental Delay, d2	0.1	
Delay (s)	50.4	
Level of Service	D	
Approach Delay (s)	134.8	
Approach LOS	F	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
24: Armada Dr & Palomar Airport Rd

2035 + Specific Plan
AM Peak Hour

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (vph)	10	353	2570	150	5	110	1280	242	120	60	70	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	6.0	4.7		4.2	6.0	5.0	4.7	4.7	4.7	5.0
Lane Util. Factor		0.97	0.91	1.00		1.00	0.91	1.00	0.97	0.95	0.95	0.97
Fr _t		1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.98	0.85	1.00
Fl _t Protected		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95
Satd. Flow (prot)		3433	5085	1583		1770	5085	1583	3433	1735	1504	3433
Fl _t Permitted		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95
Satd. Flow (perm)		3433	5085	1583		1770	5085	1583	3433	1735	1504	3433
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	10	360	2622	153	5	112	1306	247	122	61	71	151
RTOR Reduction (vph)	0	0	0	49	0	0	0	89	0	4	56	0
Lane Group Flow (vph)	0	370	2622	104	0	117	1306	158	122	66	6	151
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	NA	Perm	Prot
Protected Phases	5	5	2	3	1	1	6	7	3	8		7
Permitted Phases				2				6			8	
Actuated Green, G (s)		16.0	86.4	95.2		10.7	81.1	89.8	8.8	14.3	14.3	8.7
Effective Green, g (s)		16.0	86.4	95.2		10.7	81.1	89.8	8.8	14.3	14.3	8.7
Actuated g/C Ratio		0.11	0.62	0.68		0.08	0.58	0.64	0.06	0.10	0.10	0.06
Clearance Time (s)		4.2	6.0	4.7		4.2	6.0	5.0	4.7	4.7	4.7	5.0
Vehicle Extension (s)		2.0	3.0	2.0		2.0	3.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)		392	3138	1076		135	2945	1015	215	177	153	213
v/s Ratio Prot		c0.11	c0.52	0.01		0.07	0.26	0.01	0.04	c0.04		c0.04
v/s Ratio Perm				0.06				0.09			0.00	
v/c Ratio		0.94	0.84	0.10		0.87	0.44	0.16	0.57	0.37	0.04	0.71
Uniform Delay, d ₁		61.6	21.2	7.7		63.9	16.7	10.0	63.8	58.6	56.7	64.4
Progression Factor		0.93	0.84	1.47		0.91	1.61	7.95	1.00	1.00	1.00	1.00
Incremental Delay, d ₂		15.4	1.0	0.0		34.1	0.4	0.0	2.0	0.5	0.0	8.5
Delay (s)		72.7	18.7	11.3		92.3	27.2	79.5	65.8	59.1	56.7	72.9
Level of Service		E	B	B		F	C	E	E	E	E	E
Approach Delay (s)			24.7				39.5			61.7		
Approach LOS			C				D			E		
Intersection Summary												
HCM 2000 Control Delay			33.5				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)			19.9		
Intersection Capacity Utilization			81.8%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
↓	↙	
Lane Configurations	↑	↗
Volume (vph)	40	151
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.7	4.7
Lane Util. Factor	1.00	1.00
Flt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	1863	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	1863	1583
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	41	154
RTOR Reduction (vph)	0	138
Lane Group Flow (vph)	41	16
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Actuated Green, G (s)	14.5	14.5
Effective Green, g (s)	14.5	14.5
Actuated g/C Ratio	0.10	0.10
Clearance Time (s)	4.7	4.7
Vehicle Extension (s)	2.0	2.0
Lane Grp Cap (vph)	192	163
v/s Ratio Prot	0.02	
v/s Ratio Perm		0.01
v/c Ratio	0.21	0.10
Uniform Delay, d1	57.5	56.8
Progression Factor	1.00	1.00
Incremental Delay, d2	0.2	0.1
Delay (s)	57.7	56.9
Level of Service	E	E
Approach Delay (s)	64.0	
Approach LOS	E	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
 25: Hidden Valley Rd/The Crossing Dr & Palomar Airport Rd

2035 + Specific Plan
 AM Peak Hour
























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	2590	118	150	1342	110	159	20	350	60	10	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	4.2	4.2	6.0		4.2	4.7		5.0	5.7	5.7
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00		1.00	1.00	1.00
Flt	1.00	1.00	0.85	1.00	0.99		1.00	0.86		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	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5028		1770	1598		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5028		1770	1598		1770	1863	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	92	2643	120	153	1369	112	162	20	357	61	10	61
RTOR Reduction (vph)	0	0	21	0	5	0	0	132	0	0	0	51
Lane Group Flow (vph)	92	2643	99	153	1476	0	162	245	0	61	10	10
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2									4
Actuated Green, G (s)	11.3	75.6	86.3	9.8	73.3		10.7	29.1		5.6	23.8	23.8
Effective Green, g (s)	11.3	75.6	86.3	9.8	73.3		10.7	29.1		5.6	23.8	23.8
Actuated g/C Ratio	0.08	0.54	0.62	0.07	0.52		0.08	0.21		0.04	0.17	0.17
Clearance Time (s)	5.0	6.0	4.2	4.2	6.0		4.2	4.7		5.0	5.7	5.7
Vehicle Extension (s)	2.0	3.0	2.0	2.0	3.0		2.0	3.0		2.0	3.0	3.0
Lane Grp Cap (vph)	142	2745	975	123	2632		135	332		70	316	269
v/s Ratio Prot	0.05	c0.52	0.01	c0.09	0.29		c0.09	c0.15		0.03	0.01	
v/s Ratio Perm			0.05									0.01
v/c Ratio	0.65	0.96	0.10	1.24	0.56		1.20	0.74		0.87	0.03	0.04
Uniform Delay, d1	62.4	30.9	11.0	65.1	22.5		64.7	51.9		66.8	48.5	48.5
Progression Factor	1.11	0.55	0.61	1.06	0.72		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.2	6.8	0.0	146.5	0.6		141.0	8.3		63.6	0.0	0.1
Delay (s)	73.7	23.7	6.7	215.3	16.7		205.7	60.1		130.4	48.5	48.6
Level of Service	E	C	A	F	B		F	E		F	D	D
Approach Delay (s)		24.6			35.3			103.9			86.4	
Approach LOS		C			D			F			F	

Intersection Summary

HCM 2000 Control Delay	37.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.9
Intersection Capacity Utilization	101.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 26: Aviara Pkwy/College Blvd & Palomar Airport Rd

2035 + Specific Plan
 AM Peak Hour























												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	960	1882	158	5	180	1001	120	301	750	260	50	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.3	6.3		4.2	6.3	6.3	4.2	5.8	5.8	4.2	6.0
Lane Util. Factor	0.97	0.91	1.00		0.97	0.91	1.00	0.97	0.95	1.00	1.00	1.00
Flt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	5085	1583		3433	5085	1583	3433	3539	1583	1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	5085	1583		3433	5085	1583	3433	3539	1583	1770	1863
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	980	1920	161	5	184	1021	122	307	765	265	51	143
RTOR Reduction (vph)	0	0	53	0	0	0	89	0	0	118	0	0
Lane Group Flow (vph)	980	1920	108	0	189	1021	33	307	765	147	51	143
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases			2				6			8		
Actuated Green, G (s)	37.5	66.9	66.9		8.7	37.8	37.8	10.8	37.0	37.0	6.9	32.9
Effective Green, g (s)	37.5	66.9	66.9		8.7	37.8	37.8	10.8	37.0	37.0	6.9	32.9
Actuated g/C Ratio	0.27	0.48	0.48		0.06	0.27	0.27	0.08	0.26	0.26	0.05	0.23
Clearance Time (s)	4.5	6.3	6.3		4.2	6.3	6.3	4.2	5.8	5.8	4.2	6.0
Vehicle Extension (s)	2.0	3.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0
Lane Grp Cap (vph)	919	2429	756		213	1372	427	264	935	418	87	437
v/s Ratio Prot	c0.29	c0.38			0.06	0.20		c0.09	c0.22		0.03	0.08
v/s Ratio Perm			0.07				0.02			0.09		
v/c Ratio	1.07	0.79	0.14		0.89	0.74	0.08	1.16	0.82	0.35	0.59	0.33
Uniform Delay, d1	51.2	30.7	20.5		65.2	46.7	38.1	64.6	48.3	41.8	65.2	44.4
Progression Factor	1.47	1.02	1.76		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	39.5	1.1	0.2		32.0	3.7	0.4	106.7	5.6	0.5	6.3	0.4
Delay (s)	114.7	32.3	36.2		97.2	50.4	38.4	171.3	54.0	42.3	71.5	44.8
Level of Service	F	C	D		F	D	D	F	D	D	E	D
Approach Delay (s)		58.9				55.9			78.6			33.0
Approach LOS		E				E			E			C
Intersection Summary												
HCM 2000 Control Delay			60.4			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			0.94									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			21.0			
Intersection Capacity Utilization			88.1%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												



Movement	SBR
Lane Configurations	7
Volume (vph)	300
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Fr _t	0.85
Fl _t Protected	1.00
Satd. Flow (prot)	1583
Fl _t Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.98
Adj. Flow (vph)	306
RTOR Reduction (vph)	29
Lane Group Flow (vph)	277
Turn Type	pm+ov
Protected Phases	5
Permitted Phases	4
Actuated Green, G (s)	70.4
Effective Green, g (s)	70.4
Actuated g/C Ratio	0.50
Clearance Time (s)	4.5
Vehicle Extension (s)	2.0
Lane Grp Cap (vph)	796
v/s Ratio Prot	0.09
v/s Ratio Perm	0.08
v/c Ratio	0.35
Uniform Delay, d ₁	21.0
Progression Factor	1.00
Incremental Delay, d ₂	0.1
Delay (s)	21.1
Level of Service	C
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
 27: El Camino Real & Palomar Airport Rd













2035 + Specific Plan
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	280	1147	150	770	1668	953	15	120	1200	610	5	1086
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	6.0	6.0		5.0	6.0	5.0		5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	0.88		0.97	0.91	0.88		0.97
Flt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (prot)	3433	5085	1583	3433	5085	2787		3433	5085	2787		3433
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (perm)	3433	5085	1583	3433	5085	2787		3433	5085	2787		3433
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	286	1170	153	786	1702	972	15	122	1224	622	5	1108
RTOR Reduction (vph)	0	0	109	0	0	398	0	0	0	66	0	0
Lane Group Flow (vph)	286	1170	44	786	1702	574	0	137	1224	556	0	1113
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	pm+ov	Prot	Prot
Protected Phases	3	8		7	4		1	1	6	7	5	5
Permitted Phases			8			4				6		
Actuated Green, G (s)	14.2	40.0	40.0	22.0	47.8	47.8		10.0	26.0	48.0		30.0
Effective Green, g (s)	14.2	40.0	40.0	22.0	47.8	47.8		10.0	26.0	48.0		30.0
Actuated g/C Ratio	0.10	0.29	0.29	0.16	0.34	0.34		0.07	0.19	0.34		0.21
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0		5.0	6.0	5.0		5.0
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0	3.0		2.0	3.0	2.0		2.0
Lane Grp Cap (vph)	348	1452	452	539	1736	951		245	944	955		735
v/s Ratio Prot	0.08	0.23		c0.23	c0.33			0.04	c0.24	0.09		c0.32
v/s Ratio Perm			0.03			0.21				0.11		
v/c Ratio	0.82	0.81	0.10	1.46	0.98	0.60		0.56	1.30	0.58		1.51
Uniform Delay, d1	61.7	46.4	36.7	59.0	45.6	38.2		62.9	57.0	37.8		55.0
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	13.8	4.9	0.4	216.3	17.4	2.8		1.6	141.3	0.6		238.4
Delay (s)	75.4	51.3	37.2	275.3	63.1	41.1		64.4	198.3	38.3		293.4
Level of Service	E	D	D	F	E	D		E	F	D		F
Approach Delay (s)		54.2			105.1				138.9			
Approach LOS		D			F				F			
Intersection Summary												
HCM 2000 Control Delay			112.9				HCM 2000 Level of Service		F			
HCM 2000 Volume to Capacity ratio			1.29									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)		22.0			
Intersection Capacity Utilization			116.8%				ICU Level of Service		H			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
Label Configurations	↑↑↑	↑
Volume (vph)	1460	470
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	5.0
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	1490	480
RTOR Reduction (vph)	0	58
Lane Group Flow (vph)	1490	422
Turn Type	NA	pm+ov
Protected Phases	2	3
Permitted Phases		2
Actuated Green, G (s)	46.0	60.2
Effective Green, g (s)	46.0	60.2
Actuated g/C Ratio	0.33	0.43
Clearance Time (s)	6.0	5.0
Vehicle Extension (s)	3.0	2.0
Lane Grp Cap (vph)	1670	680
v/s Ratio Prot	0.29	0.06
v/s Ratio Perm		0.20
v/c Ratio	0.89	0.62
Uniform Delay, d1	44.6	31.0
Progression Factor	1.00	1.00
Incremental Delay, d2	6.5	1.3
Delay (s)	51.1	32.3
Level of Service	D	C
Approach Delay (s)	135.7	
Approach LOS	F	
Intersection Summary		























HCM Signalized Intersection Capacity Analysis
 28: I-5 SB Ramps & Poinsettia Ln

2035 + Specific Plan
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑↑	↑↑					↑	↑	↑
Volume (vph)	0	770	140	510	890	0	0	0	0	386	10	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6
Lane Util. Factor		0.95	1.00	0.97	0.95					1.00	0.95	0.95
Fr _t		1.00	0.85	1.00	1.00					1.00	0.86	0.85
Fl _t Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1770	1526	1504
Fl _t Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1770	1526	1504
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	786	143	520	908	0	0	0	0	394	10	235
RTOR Reduction (vph)	0	0	99	0	0	0	0	0	0	0	83	90
Lane Group Flow (vph)	0	786	44	520	908	0	0	0	0	394	40	32
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		16.9	16.9	10.5	31.6					14.5	14.5	14.5
Effective Green, g (s)		16.9	16.9	10.5	31.6					14.5	14.5	14.5
Actuated g/C Ratio		0.31	0.31	0.19	0.57					0.26	0.26	0.26
Clearance Time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6
Vehicle Extension (s)		2.0	2.0	2.0	5.0					2.0	2.0	2.0
Lane Grp Cap (vph)		1081	483	651	2022					464	400	394
v/s Ratio Prot		c0.22		c0.15	0.26						0.03	
v/s Ratio Perm			0.03							c0.22		0.02
v/c Ratio		0.73	0.09	0.80	0.45					0.85	0.10	0.08
Uniform Delay, d ₁		17.1	13.7	21.4	6.8					19.4	15.5	15.4
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d ₂		2.1	0.0	6.4	0.3					13.0	0.0	0.0
Delay (s)		19.2	13.7	27.7	7.2					32.4	15.5	15.4
Level of Service		B	B	C	A					C	B	B
Approach Delay (s)		18.4			14.7			0.0			25.9	
Approach LOS		B			B			A			C	
Intersection Summary												
HCM 2000 Control Delay			18.2			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			55.3			Sum of lost time (s)				13.4		
Intersection Capacity Utilization			68.4%			ICU Level of Service				C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 29: I-5 NB Ramps & Poinsettia Ln

2035 + Specific Plan
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			  				 			
Volume (vph)	190	966	0	0	1130	483	270	10	740	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.6			4.6	4.6		4.6	4.6			
Lane Util. Factor	1.00	0.95			0.91	1.00		1.00	0.88			
Fr _t	1.00	1.00			1.00	0.85		1.00	0.85			
Fl _t Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	3539			5085	1583		1777	2787			
Fl _t Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	3539			5085	1583		1777	2787			
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	194	986	0	0	1153	493	276	10	755	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	341	0	0	131	0	0	0
Lane Group Flow (vph)	194	986	0	0	1153	152	0	286	624	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases						6	8		8			
Actuated Green, G (s)	8.4	28.8			16.2	16.2		14.4	14.4			
Effective Green, g (s)	8.4	28.8			16.2	16.2		14.4	14.4			
Actuated g/C Ratio	0.16	0.55			0.31	0.31		0.27	0.27			
Clearance Time (s)	4.2	4.6			4.6	4.6		4.6	4.6			
Vehicle Extension (s)	2.0	5.0			2.0	2.0		2.0	2.0			
Lane Grp Cap (vph)	283	1945			1572	489		488	765			
v/s Ratio Prot	c0.11	0.28			c0.23							
v/s Ratio Perm						0.10		0.16	c0.22			
v/c Ratio	0.69	0.51			0.73	0.31		0.59	0.82			
Uniform Delay, d ₁	20.8	7.4			16.2	13.8		16.4	17.8			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d ₂	5.4	0.4			1.6	0.1		1.2	6.4			
Delay (s)	26.1	7.8			17.7	14.0		17.6	24.1			
Level of Service	C	A			B	B		B	C			
Approach Delay (s)		10.8			16.6			22.3			0.0	
Approach LOS		B			B			C			A	
Intersection Summary												
HCM 2000 Control Delay			16.4				HCM 2000 Level of Service		B			
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			52.4				Sum of lost time (s)		13.4			
Intersection Capacity Utilization			68.4%				ICU Level of Service		C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 30: Lower Ln/Paseo Del Norte & Poinsettia Ln

2035 + Specific Plan
 AM Peak Hour























Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	5	380	1296	30	10	1023	185	50	10	30	97	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	4.6	4.6	4.2	4.6		4.6	4.6		4.6	4.6
Lane Util. Factor		0.97	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00
Fr _t		1.00	1.00	0.85	1.00	0.98		1.00	0.89		1.00	0.85
Fl _t Protected		0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)		3433	3539	1583	1770	3458		1770	1651		1770	1588
Fl _t Permitted		0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00
Satd. Flow (perm)		3433	3539	1583	1770	3458		1770	1651		1770	1588
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	5	388	1322	31	10	1044	189	51	10	31	99	10
RTOR Reduction (vph)	0	0	0	13	0	9	0	0	29	0	0	318
Lane Group Flow (vph)	0	393	1322	18	10	1224	0	51	12	0	99	233
Turn Type	Prot	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA
Protected Phases	5	5	2		1	6		3	3		4	4
Permitted Phases				2								
Actuated Green, G (s)		16.9	70.2	70.2	0.8	54.1		8.7	8.7		20.4	20.4
Effective Green, g (s)		16.9	70.2	70.2	0.8	54.1		8.7	8.7		20.4	20.4
Actuated g/C Ratio		0.14	0.59	0.59	0.01	0.46		0.07	0.07		0.17	0.17
Clearance Time (s)		4.2	4.6	4.6	4.2	4.6		4.6	4.6		4.6	4.6
Vehicle Extension (s)		2.0	5.0	5.0	2.0	5.0		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)		491	2103	940	11	1584		130	121		305	274
v/s Ratio Prot		c0.11	0.37		0.01	c0.35		c0.03	0.01		0.06	c0.15
v/s Ratio Perm				0.01								
v/c Ratio		0.80	0.63	0.02	0.91	0.77		0.39	0.10		0.32	0.85
Uniform Delay, d ₁		49.0	15.5	9.8	58.6	26.8		52.2	51.1		42.8	47.4
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d ₂		8.6	0.8	0.0	214.7	2.8		0.7	0.1		0.2	20.2
Delay (s)		57.6	16.4	9.8	273.3	29.7		52.9	51.2		43.0	67.6
Level of Service		E	B	A	F	C		D	D		D	E
Approach Delay (s)			25.5			31.6			52.1			63.8
Approach LOS			C			C			D			E
Intersection Summary												
HCM 2000 Control Delay			34.9				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			118.1				Sum of lost time (s)		18.0			
Intersection Capacity Utilization			97.7%				ICU Level of Service		F			
Analysis Period (min)			15									
c Critical Lane Group												



Movement	SBR
Lane Configurations	
Volume (vph)	530
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frts	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.98
Adj. Flow (vph)	541
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	





















HCM Signalized Intersection Capacity Analysis
31: Aviara Pkwy & Poinsettia Ln

2035 + Specific Plan
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	411	621	103	30	512	160	148	124	20	114	90	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.0	5.5	5.5	6.0		5.5	6.0		5.5	6.0	
Lane Util. Factor	0.97	1.00	0.88	1.00	0.95		0.97	0.95		1.00	0.95	
Flt	1.00	1.00	0.85	1.00	0.96		1.00	0.98		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1863	2787	1770	3413		3433	3467		1770	3216	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	1863	2787	1770	3413		3433	3467		1770	3216	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	419	634	105	31	522	163	151	127	20	116	92	143
RTOR Reduction (vph)	0	0	49	0	28	0	0	14	0	0	121	0
Lane Group Flow (vph)	419	634	56	31	657	0	151	133	0	116	114	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	12.9	36.6	43.3	2.2	25.9		6.7	12.2		6.7	12.2	
Effective Green, g (s)	12.9	36.6	43.3	2.2	25.9		6.7	12.2		6.7	12.2	
Actuated g/C Ratio	0.16	0.45	0.54	0.03	0.32		0.08	0.15		0.08	0.15	
Clearance Time (s)	5.5	6.0	5.5	5.5	6.0		5.5	6.0		5.5	6.0	
Vehicle Extension (s)	2.5	3.5	3.0	2.5	3.5		3.0	4.0		2.5	4.0	
Lane Grp Cap (vph)	548	844	1495	48	1095		285	524		146	486	
v/s Ratio Prot	c0.12	c0.34	0.00	0.02	0.19		c0.04	0.04		c0.07	c0.04	
v/s Ratio Perm			0.02									
v/c Ratio	0.76	0.75	0.04	0.65	0.60		0.53	0.25		0.79	0.23	
Uniform Delay, d1	32.4	18.3	8.8	38.9	23.0		35.5	30.2		36.3	30.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.0	3.9	0.0	23.4	1.0		1.8	0.3		24.3	0.3	
Delay (s)	38.5	22.2	8.9	62.2	24.0		37.3	30.6		60.6	30.5	
Level of Service	D	C	A	E	C		D	C		E	C	
Approach Delay (s)		26.9			25.7			34.0			40.4	
Approach LOS		C			C			C			D	
Intersection Summary												
HCM 2000 Control Delay			29.3			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			80.7			Sum of lost time (s)			23.0			
Intersection Capacity Utilization			66.4%			ICU Level of Service				C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 32: El Camino Real & Aviara Pkwy

2035 + Specific Plan
 AM Peak Hour





















												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Volume (vph)	5	120	187	402	10	680	386	123	315	1991	230	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	5.7	4.6		4.2	5.7		4.6	6.4		
Lane Util. Factor		0.97	0.95	1.00		0.97	0.95		0.97	0.91		
Fr _t		1.00	1.00	0.85		1.00	0.96		1.00	0.98		
Fl _t Protected		0.95	1.00	1.00		0.95	1.00		0.95	1.00		
Satd. Flow (prot)		3433	3539	1583		3433	3411		3433	5006		
Fl _t Permitted		0.95	1.00	1.00		0.95	1.00		0.95	1.00		
Satd. Flow (perm)		3433	3539	1583		3433	3411		3433	5006		
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	5	122	191	410	10	694	394	126	321	2032	235	5
RTOR Reduction (vph)	0	0	0	70	0	0	26	0	0	8	0	0
Lane Group Flow (vph)	0	127	191	340	0	704	494	0	321	2259	0	0
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		Prot	NA		Prot
Protected Phases	7	7	4	5	3	3	8		5	2		1
Permitted Phases				4								
Actuated Green, G (s)		8.9	21.8	33.2		22.8	35.7		11.4	70.9		
Effective Green, g (s)		8.9	21.8	33.2		22.8	35.7		11.4	70.9		
Actuated g/C Ratio		0.06	0.16	0.24		0.16	0.26		0.08	0.51		
Clearance Time (s)		4.2	5.7	4.6		4.2	5.7		4.6	6.4		
Vehicle Extension (s)		2.0	2.0	2.0		3.0	2.0		2.0	3.0		
Lane Grp Cap (vph)		218	551	375		559	869		279	2535		
v/s Ratio Prot		0.04	0.05	c0.07		c0.21	0.14		c0.09	c0.45		
v/s Ratio Perm				0.14								
v/c Ratio		0.58	0.35	0.91		1.26	0.57		1.15	0.89		
Uniform Delay, d ₁		63.7	52.7	51.9		58.6	45.4		64.3	31.1		
Progression Factor		1.00	1.00	1.00		1.00	1.00		1.00	1.00		
Incremental Delay, d ₂		2.5	0.1	24.2		130.7	0.5		100.9	5.3		
Delay (s)		66.3	52.9	76.1		189.3	45.9		165.2	36.3		
Level of Service		E	D	E		F	D		F	D		
Approach Delay (s)			68.3				128.4			52.3		
Approach LOS			E				F			D		
Intersection Summary												
HCM 2000 Control Delay			61.8				HCM 2000 Level of Service			E		
HCM 2000 Volume to Capacity ratio			1.01									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)			20.9		
Intersection Capacity Utilization			92.1%				ICU Level of Service			F		
Analysis Period (min)			15									
c Critical Lane Group												



Movement	SBL	SBT	SBR
Lane Configurations			
Volume (vph)	91	1680	110
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.2	6.4	
Lane Util. Factor	0.97	0.91	
Frt	1.00	0.99	
Flt Protected	0.95	1.00	
Satd. Flow (prot)	3433	5039	
Flt Permitted	0.95	1.00	
Satd. Flow (perm)	3433	5039	
Peak-hour factor, PHF	0.98	0.98	0.98
Adj. Flow (vph)	93	1714	112
RTOR Reduction (vph)	0	4	0
Lane Group Flow (vph)	98	1822	0
Turn Type	Prot	NA	
Protected Phases	1	6	
Permitted Phases			
Actuated Green, G (s)	4.0	63.1	
Effective Green, g (s)	4.0	63.1	
Actuated g/C Ratio	0.03	0.45	
Clearance Time (s)	4.2	6.4	
Vehicle Extension (s)	2.0	3.0	
Lane Grp Cap (vph)	98	2271	
v/s Ratio Prot	0.03	0.36	
v/s Ratio Perm			
v/c Ratio	1.00	0.80	
Uniform Delay, d1	68.0	33.1	
Progression Factor	1.09	0.65	
Incremental Delay, d2	71.0	1.9	
Delay (s)	145.4	23.5	
Level of Service	F	C	
Approach Delay (s)		29.7	
Approach LOS		C	
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
33: El Camino Real & Poinsettia Ln

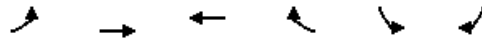
2035 + Specific Plan
AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	
Lane Configurations													
Volume (vph)	230	72	141	490	215	101	20	212	1352	320	5	60	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.2	4.7		4.2	5.0			4.2	6.0	6.0		4.2	
Lane Util. Factor	0.97	0.95		0.97	0.95			0.97	0.91	1.00		0.97	
Flt	1.00	0.90		1.00	0.95			1.00	1.00	0.85		1.00	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95	
Satd. Flow (prot)	3433	3187		3433	3369			3433	5085	1583		3433	
Flt Permitted	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95	
Satd. Flow (perm)	3433	3187		3433	3369			3433	5085	1583		3433	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	235	73	144	500	219	103	20	216	1380	327	5	61	
RTOR Reduction (vph)	0	60	0	0	46	0	0	0	0	142	0	0	
Lane Group Flow (vph)	235	158	0	500	276	0	0	236	1380	185	0	66	
Turn Type	Prot	NA		Prot	NA		Prot	Prot	NA	Perm	Prot	Prot	
Protected Phases	7	4		3	8		1	1	6		5	5	
Permitted Phases										6			
Actuated Green, G (s)	13.5	21.0		20.8	28.0			10.4	74.0	74.0		5.1	
Effective Green, g (s)	13.5	21.0		20.8	28.0			10.4	74.0	74.0		5.1	
Actuated g/C Ratio	0.10	0.15		0.15	0.20			0.07	0.53	0.53		0.04	
Clearance Time (s)	4.2	4.7		4.2	5.0			4.2	6.0	6.0		4.2	
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0	3.0	3.0		2.0	
Lane Grp Cap (vph)	331	478		510	673			255	2687	836		125	
v/s Ratio Prot	0.07	0.05		c0.15	c0.08			c0.07	0.27			0.02	
v/s Ratio Perm										0.12			
v/c Ratio	0.71	0.33		0.98	0.41			0.93	0.51	0.22		0.53	
Uniform Delay, d1	61.4	53.2		59.4	48.8			64.4	21.4	17.6		66.3	
Progression Factor	1.00	1.00		1.00	1.00			0.71	1.18	3.39		1.00	
Incremental Delay, d2	5.6	0.1		34.6	0.1			22.7	0.4	0.3		1.9	
Delay (s)	67.0	53.4		94.0	48.9			68.6	25.5	60.0		68.1	
Level of Service	E	D		F	D			E	C	E		E	
Approach Delay (s)		60.4			76.3				36.5				
Approach LOS		E			E				D				
Intersection Summary													
HCM 2000 Control Delay			43.5									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.76										
Actuated Cycle Length (s)			140.0									Sum of lost time (s)	19.4
Intersection Capacity Utilization			79.4%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													

Movement	SBT	SBR
Label Configurations	↑↑↑	
Volume (vph)	1721	140
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	
Lane Util. Factor	0.91	
Flt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	5028	
Flt Permitted	1.00	
Satd. Flow (perm)	5028	
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	1756	143
RTOR Reduction (vph)	5	0
Lane Group Flow (vph)	1894	0
Turn Type	NA	
Protected Phases	2	
Permitted Phases		
Actuated Green, G (s)	68.7	
Effective Green, g (s)	68.7	
Actuated g/C Ratio	0.49	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	2467	
v/s Ratio Prot	c0.38	
v/s Ratio Perm		
v/c Ratio	0.77	
Uniform Delay, d1	29.1	
Progression Factor	1.00	
Incremental Delay, d2	2.4	
Delay (s)	31.5	
Level of Service	C	
Approach Delay (s)	32.7	
Approach LOS	C	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
34: Cannon Rd

2035 + Specific Plan
AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔↔	↕↕	↕↕	↗		
Volume (vph)	567	1362	953	48	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	0.97	0.95	0.95	1.00		
Frt	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	3433	3539	3539	1583		
Flt Permitted	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	3433	3539	3539	1583		
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	579	1390	972	49	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	579	1390	972	49	0	0
Turn Type	Prot	NA	NA	custom		
Protected Phases	5!	2 10	6 10	5 6!		
Permitted Phases						
Actuated Green, G (s)	17.2	70.0	44.8	40.2		
Effective Green, g (s)	17.2	70.0	44.8	40.2		
Actuated g/C Ratio	0.25	1.00	0.64	0.57		
Clearance Time (s)	4.0					
Vehicle Extension (s)	3.0					
Lane Grp Cap (vph)	843	3539	2264	909		
v/s Ratio Prot	c0.17	c0.39	c0.27	0.03		
v/s Ratio Perm						
v/c Ratio	0.69	0.39	0.43	0.05		
Uniform Delay, d1	24.0	0.0	6.3	6.5		
Progression Factor	1.00	1.00	0.75	1.06		
Incremental Delay, d2	2.3	0.1	0.1	0.0		
Delay (s)	26.3	0.1	4.8	6.9		
Level of Service	C	A	A	A		
Approach Delay (s)		7.8	4.9		0.0	
Approach LOS		A	A		A	

Intersection Summary

HCM 2000 Control Delay	6.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 1: Carlsbad Blvd & Tamarack Ave

2035 + Specific Plan
 PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	20	50	40	110	30	120	10	40	855	380	190	488
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0			4.5	6.0		4.5	6.0
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00	0.95		1.00	0.95
Fr _t		1.00	0.85	1.00	0.88			1.00	0.95		1.00	1.00
Fl _t Protected		0.99	1.00	0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)		1837	1583	1770	1640			1770	3376		1770	3539
Fl _t Permitted		0.99	1.00	0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (perm)		1837	1583	1770	1640			1770	3376		1770	3539
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	20	51	41	112	31	122	10	41	872	388	194	498
RTOR Reduction (vph)	0	0	38	0	103	0	0	0	42	0	0	0
Lane Group Flow (vph)	0	71	3	112	50	0	0	51	1218	0	194	498
Turn Type	Split	NA	Perm	Split	NA		Prot	Prot	NA		Prot	NA
Protected Phases	4	4		3	3		5	5	2		1	6
Permitted Phases			4									
Actuated Green, G (s)		6.2	6.2	13.6	13.6			4.0	35.7		11.7	43.4
Effective Green, g (s)		6.2	6.2	13.6	13.6			4.0	35.7		11.7	43.4
Actuated g/C Ratio		0.07	0.07	0.16	0.16			0.05	0.41		0.13	0.49
Clearance Time (s)		5.0	5.0	5.0	5.0			4.5	6.0		4.5	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0			2.0	3.0		2.0	3.0
Lane Grp Cap (vph)		129	111	274	254			80	1374		236	1751
v/s Ratio Prot		c0.04		c0.06	0.03			0.03	c0.36		c0.11	0.14
v/s Ratio Perm			0.00									
v/c Ratio		0.55	0.03	0.41	0.20			0.64	0.89		0.82	0.28
Uniform Delay, d ₁		39.4	37.9	33.4	32.3			41.1	24.1		37.0	13.0
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d ₂		5.0	0.1	1.0	0.4			11.6	7.2		19.2	0.1
Delay (s)		44.4	38.0	34.4	32.7			52.7	31.4		56.2	13.1
Level of Service		D	D	C	C			D	C		E	B
Approach Delay (s)		42.1			33.4				32.2			24.8
Approach LOS		D			C				C			C
Intersection Summary												
HCM 2000 Control Delay			30.6			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			87.7			Sum of lost time (s)		20.5				
Intersection Capacity Utilization			79.0%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												















Movement	SBR
Lane Configurations	7
Volume (vph)	20
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.98
Adj. Flow (vph)	20
RTOR Reduction (vph)	10
Lane Group Flow (vph)	10
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	43.4
Effective Green, g (s)	43.4
Actuated g/C Ratio	0.49
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	783
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.01
Uniform Delay, d1	11.3
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	11.3
Level of Service	B
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis

2: I-5 SB Ramps & Tamarack Ave




















2035 + Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖	↑↑						↖	↗
Volume (vph)	0	580	269	479	418	0	0	0	0	290	10	470
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.2	4.6						4.6	4.6
Lane Util. Factor		0.95	1.00	1.00	0.95						1.00	1.00
Fr _t		1.00	0.85	1.00	1.00						1.00	0.85
Fl _t Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		3539	1583	1770	3539						1777	1583
Fl _t Permitted		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (perm)		3539	1583	1770	3539						1777	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	592	274	489	427	0	0	0	0	296	10	480
RTOR Reduction (vph)	0	0	182	0	0	0	0	0	0	0	0	369
Lane Group Flow (vph)	0	592	92	489	427	0	0	0	0	0	306	111
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		19.2	19.2	20.1	43.5						14.1	14.1
Effective Green, g (s)		19.2	19.2	20.1	43.5						14.1	14.1
Actuated g/C Ratio		0.29	0.29	0.30	0.65						0.21	0.21
Clearance Time (s)		4.6	4.6	4.2	4.6						4.6	4.6
Vehicle Extension (s)		5.0	5.0	2.0	7.0						2.0	2.0
Lane Grp Cap (vph)		1017	454	532	2304						375	334
v/s Ratio Prot		c0.17		c0.28	0.12							
v/s Ratio Perm			0.06								0.17	0.07
v/c Ratio		0.58	0.20	0.92	0.19						0.82	0.33
Uniform Delay, d ₁		20.4	18.0	22.6	4.6						25.1	22.4
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d ₂		1.3	0.5	20.6	0.1						12.2	0.2
Delay (s)		21.7	18.5	43.2	4.8						37.3	22.6
Level of Service		C	B	D	A						D	C
Approach Delay (s)		20.7			25.3			0.0			28.3	
Approach LOS		C			C			A			C	
Intersection Summary												
HCM 2000 Control Delay			24.6			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			66.8			Sum of lost time (s)			13.4			
Intersection Capacity Utilization			71.0%			ICU Level of Service				C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

3: I-5 NB Ramps & Tamarack Ave

2035 + Specific Plan
PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 								
Volume (vph)	210	660	0	0	539	180	358	0	428	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.6	5.1			5.1			4.6	4.6				
Lane Util. Factor	1.00	0.95			0.95			1.00	1.00				
Fr _t	1.00	1.00			0.96			1.00	0.85				
Fl _t Protected	0.95	1.00			1.00			0.95	1.00				
Satd. Flow (prot)	1770	3539			3406			1770	1583				
Fl _t Permitted	0.95	1.00			1.00			0.95	1.00				
Satd. Flow (perm)	1770	3539			3406			1770	1583				
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	214	673	0	0	550	184	365	0	437	0	0	0	
RTOR Reduction (vph)	0	0	0	0	59	0	0	0	192	0	0	0	
Lane Group Flow (vph)	214	673	0	0	675	0	0	365	245	0	0	0	
Turn Type	Prot	NA			NA		Perm	NA	Perm				
Protected Phases	5	2			6			8					
Permitted Phases							8		8				
Actuated Green, G (s)	8.9	29.8			16.3			14.4	14.4				
Effective Green, g (s)	8.9	29.8			16.3			14.4	14.4				
Actuated g/C Ratio	0.17	0.55			0.30			0.27	0.27				
Clearance Time (s)	4.6	5.1			5.1			4.6	4.6				
Vehicle Extension (s)	2.0	3.0			2.0			2.0	2.0				
Lane Grp Cap (vph)	292	1956			1030			472	422				
v/s Ratio Prot	c0.12	0.19			c0.20								
v/s Ratio Perm								0.21	0.15				
v/c Ratio	0.73	0.34			0.66			0.77	0.58				
Uniform Delay, d ₁	21.4	6.7			16.4			18.2	17.1				
Progression Factor	1.00	1.00			1.00			1.00	1.00				
Incremental Delay, d ₂	7.9	0.1			1.2			7.1	1.3				
Delay (s)	29.3	6.8			17.5			25.3	18.4				
Level of Service	C	A			B			C	B				
Approach Delay (s)		12.2			17.5			21.6			0.0		
Approach LOS		B			B			C			A		
Intersection Summary													
HCM 2000 Control Delay			16.9									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.71										
Actuated Cycle Length (s)			53.9									Sum of lost time (s)	14.3
Intersection Capacity Utilization			71.0%									ICU Level of Service	C
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis

4: El Camino Real & Tamarck Ave













2035 + Specific Plan
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Volume (vph)	60	270	109	189	190	70	258	2844	529	5	100	947
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.0	5.0	4.2	5.0		4.2	6.0			4.2	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		0.97	0.91			1.00	0.91
Fr _t	1.00	1.00	0.85	1.00	0.96		1.00	0.98			1.00	1.00
Fl _t Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3397		3433	4966			1770	5085
Fl _t Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3397		3433	4966			1770	5085
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	61	276	111	193	194	71	263	2902	540	5	102	966
RTOR Reduction (vph)	0	0	90	0	30	0	0	16	0	0	0	0
Lane Group Flow (vph)	61	276	21	193	235	0	263	3426	0	0	107	966
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	Prot	NA
Protected Phases	7	4		3	8		5	2		1	1	6
Permitted Phases			4									
Actuated Green, G (s)	6.1	26.8	26.8	10.7	31.4		17.1	77.3			5.8	66.0
Effective Green, g (s)	6.1	26.8	26.8	10.7	31.4		17.1	77.3			5.8	66.0
Actuated g/C Ratio	0.04	0.19	0.19	0.08	0.22		0.12	0.55			0.04	0.47
Clearance Time (s)	4.2	5.0	5.0	4.2	5.0		4.2	6.0			4.2	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	3.0			2.0	3.0
Lane Grp Cap (vph)	77	356	303	135	761		419	2741			73	2397
v/s Ratio Prot	0.03	c0.15		c0.11	0.07		0.08	c0.69			c0.06	0.19
v/s Ratio Perm			0.01									
v/c Ratio	0.79	0.78	0.07	1.43	0.31		0.63	1.25			1.47	0.40
Uniform Delay, d ₁	66.3	53.7	46.4	64.7	45.3		58.4	31.4			67.1	24.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d ₂	39.0	9.3	0.0	230.5	0.1		2.1	115.7			269.9	0.5
Delay (s)	105.3	63.0	46.4	295.2	45.3		60.5	147.1			337.0	24.7
Level of Service	F	E	D	F	D		E	F			F	C
Approach Delay (s)		64.7			150.6			140.9				52.7
Approach LOS		E			F			F				D
Intersection Summary												
HCM 2000 Control Delay			117.9			HCM 2000 Level of Service		F				
HCM 2000 Volume to Capacity ratio			1.17									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)		19.4				
Intersection Capacity Utilization			113.4%			ICU Level of Service		H				
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBR
▲▲▲ Lane Configurations	↗
Volume (vph)	100
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.98
Adj. Flow (vph)	102
RTOR Reduction (vph)	54
Lane Group Flow (vph)	48
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	66.0
Effective Green, g (s)	66.0
Actuated g/C Ratio	0.47
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	746
v/s Ratio Prot	
v/s Ratio Perm	0.03
v/c Ratio	0.06
Uniform Delay, d1	20.2
Progression Factor	1.00
Incremental Delay, d2	0.2
Delay (s)	20.3
Level of Service	C
Approach Delay (s)	
Approach LOS	
Intersection Summary	






























HCM Signalized Intersection Capacity Analysis
5: Carlsbad Blvd & Cannon Rd

2035 + Specific Plan
PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	274	545	850	245	308	540
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.5	5.5	5.5	4.5	5.5
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
Fl _t Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Fl _t Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	280	556	867	250	314	551
RTOR Reduction (vph)	0	61	0	24	0	0
Lane Group Flow (vph)	280	495	867	226	314	551
Turn Type	NA	pm+ov	NA	Perm	Prot	NA
Protected Phases	4	5	6		5	2
Permitted Phases		4		6		
Actuated Green, G (s)	23.2	42.8	58.2	58.2	19.6	82.3
Effective Green, g (s)	23.2	42.8	58.2	58.2	19.6	82.3
Actuated g/C Ratio	0.20	0.37	0.50	0.50	0.17	0.71
Clearance Time (s)	5.0	4.5	5.5	5.5	4.5	5.5
Vehicle Extension (s)	3.0	2.0	4.0	4.0	2.0	4.0
Lane Grp Cap (vph)	354	584	934	794	299	1321
v/s Ratio Prot	0.16	c0.14	c0.47		c0.18	0.30
v/s Ratio Perm		0.17		0.14		
v/c Ratio	0.79	0.85	0.93	0.28	1.05	0.42
Uniform Delay, d ₁	44.1	33.6	27.0	16.8	48.2	7.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d ₂	11.4	10.6	15.1	0.3	65.8	0.3
Delay (s)	55.5	44.2	42.0	17.1	114.0	7.2
Level of Service	E	D	D	B	F	A
Approach Delay (s)	48.0		36.5			46.0
Approach LOS	D		D			D
Intersection Summary						
HCM 2000 Control Delay			42.8		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.93			
Actuated Cycle Length (s)			116.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			89.5%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						













HCM Signalized Intersection Capacity Analysis
6: Avenida Encinas & Cannon Rd

2035 + Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 		 	 		 		 	 		 
Volume (vph)	40	383	20	162	550	140	190	30	433	90	20	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.5		4.5	5.5		4.5	5.0	4.5	4.5	5.0	4.5
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	1.00	1.00	0.97	1.00	1.00
Fr _t	1.00	0.99		1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Fl _t Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3513		3433	3431		1770	1863	1583	3433	1863	1583
Fl _t Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3513		3433	3431		1770	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	41	391	20	165	561	143	194	31	442	92	20	102
RTOR Reduction (vph)	0	4	0	0	21	0	0	0	146	0	0	79
Lane Group Flow (vph)	41	407	0	165	683	0	194	31	296	92	20	23
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2		1	6		3	8	1	7	4	5
Permitted Phases									8			4
Actuated Green, G (s)	5.1	17.6		8.2	20.7		8.7	7.9	16.1	6.1	5.3	10.4
Effective Green, g (s)	5.1	17.6		8.2	20.7		8.7	7.9	16.1	6.1	5.3	10.4
Actuated g/C Ratio	0.09	0.30		0.14	0.35		0.15	0.13	0.27	0.10	0.09	0.18
Clearance Time (s)	4.5	5.5		4.5	5.5		4.5	5.0	4.5	4.5	5.0	4.5
Vehicle Extension (s)	2.5	3.0		2.5	3.0		2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	152	1042		474	1197		259	248	429	353	166	277
v/s Ratio Prot	0.02	0.12		0.05	c0.20		c0.11	0.02	c0.10	0.03	0.01	0.01
v/s Ratio Perm									0.09			0.01
v/c Ratio	0.27	0.39		0.35	0.57		0.75	0.12	0.69	0.26	0.12	0.08
Uniform Delay, d ₁	25.4	16.6		23.1	15.7		24.3	22.7	19.4	24.5	24.9	20.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d ₂	0.7	0.2		0.3	0.7		10.7	0.2	4.2	0.3	0.2	0.1
Delay (s)	26.1	16.8		23.5	16.4		34.9	22.8	23.5	24.8	25.1	20.6
Level of Service	C	B		C	B		C	C	C	C	C	C
Approach Delay (s)		17.7			17.7			26.8			22.8	
Approach LOS		B			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			21.0	HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			59.3	Sum of lost time (s)				19.5				
Intersection Capacity Utilization			55.1%	ICU Level of Service				B				
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
7: I-5 SB Ramps & Cannon Rd

2035 + Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑↑	↑↑					↑	↑	↑
Volume (vph)	0	736	170	923	612	0	0	0	0	748	10	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Fr _t		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Fl _t Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1681	1687	1583
Fl _t Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1681	1687	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	751	173	942	624	0	0	0	0	763	10	245
RTOR Reduction (vph)	0	0	124	0	0	0	0	0	0	0	0	183
Lane Group Flow (vph)	0	751	49	942	624	0	0	0	0	389	384	62
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		22.8	22.8	23.4	50.4					20.4	20.4	20.4
Effective Green, g (s)		22.8	22.8	23.4	50.4					20.4	20.4	20.4
Actuated g/C Ratio		0.29	0.29	0.29	0.63					0.25	0.25	0.25
Clearance Time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6
Vehicle Extension (s)		2.0	2.0	2.0	2.0					2.0	2.0	2.0
Lane Grp Cap (vph)		1008	451	1004	2229					428	430	403
v/s Ratio Prot		c0.21		c0.27	0.18					c0.23	0.23	
v/s Ratio Perm			0.03									0.04
v/c Ratio		0.75	0.11	0.94	0.28					0.91	0.89	0.16
Uniform Delay, d ₁		26.0	21.1	27.6	6.6					28.9	28.7	23.1
Progression Factor		1.00	1.00	1.48	0.99					1.00	1.00	1.00
Incremental Delay, d ₂		5.0	0.5	11.4	0.2					22.3	19.8	0.1
Delay (s)		31.0	21.6	52.2	6.8					51.2	48.6	23.2
Level of Service		C	C	D	A					D	D	C
Approach Delay (s)		29.2			34.1			0.0			43.5	
Approach LOS		C			C			A			D	
Intersection Summary												
HCM 2000 Control Delay			35.5			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			80.0			Sum of lost time (s)				13.4		
Intersection Capacity Utilization			80.1%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												












HCM Signalized Intersection Capacity Analysis
8: I-5 NB Ramps & Cannon Rd

2035 + Specific Plan
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	360	1124	0	0	1395	1441	140	10	841	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.6			4.6	4.6		4.6	4.6			
Lane Util. Factor	0.97	0.95			0.95	0.88		1.00	0.88			
Flt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.96	1.00			
Satd. Flow (prot)	3433	3539			3539	2787		1780	2787			
Flt Permitted	0.95	1.00			1.00	1.00		0.96	1.00			
Satd. Flow (perm)	3433	3539			3539	2787		1780	2787			
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	367	1147	0	0	1423	1470	143	10	858	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	389	0	0	338	0	0	0
Lane Group Flow (vph)	367	1147	0	0	1423	1081	0	153	520	0	0	0
Turn Type	Prot	NA			NA	Perm	Split	NA	custom			
Protected Phases	5	2			6	1	8	8	8			
Permitted Phases						6	1		1			
Actuated Green, G (s)	20.9	106.7			86.6	86.6		27.5	32.5			
Effective Green, g (s)	20.9	106.7			86.6	86.6		27.5	32.5			
Actuated g/C Ratio	0.13	0.67			0.54	0.54		0.17	0.20			
Clearance Time (s)	4.2	4.6						4.6	4.6			
Vehicle Extension (s)	2.0	2.0						2.0	2.0			
Lane Grp Cap (vph)	448	2360			1915	1508		305	566			
v/s Ratio Prot	c0.11	0.32			c0.40			0.09	c0.16			
v/s Ratio Perm						0.39			0.03			
v/c Ratio	0.82	0.49			0.74	0.72		0.50	0.92			
Uniform Delay, d1	67.7	13.1			28.2	27.5		60.0	62.5			
Progression Factor	0.67	1.54			1.15	1.28		1.00	1.00			
Incremental Delay, d2	7.2	0.4			0.7	0.7		0.5	19.6			
Delay (s)	52.9	20.7			33.2	35.9		60.5	82.1			
Level of Service	D	C			C	D		E	F			
Approach Delay (s)		28.5			34.5			78.8			0.0	
Approach LOS		C			C			E			A	
Intersection Summary												
HCM 2000 Control Delay			41.1				HCM 2000 Level of Service		D			
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			160.0				Sum of lost time (s)		21.6			
Intersection Capacity Utilization			80.1%				ICU Level of Service		D			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
9: Paseo Del Norte/Project Dwy & Cannon Rd

2035 + Specific Plan
PM Peak Hour
















													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	
Lane Configurations		↑↑↑		↔	↑↑↑	↔		↔		↔	↔	↑	
Volume (vph)	0	1575	390	120	1261	422	5	680	0	293	407	148	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.0		5.0	5.0	4.0		4.0		5.0	4.0	4.0	
Lane Util. Factor		*0.88		1.00	0.91	1.00		0.97		1.00	0.97	1.00	
Flt		0.97		1.00	1.00	0.85		1.00		0.85	1.00	1.00	
Flt Protected		1.00		0.95	1.00	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		4771		1770	5085	1583		3433		1583	3433	1863	
Flt Permitted		1.00		0.95	1.00	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (perm)		4771		1770	5085	1583		3433		1583	3433	1863	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	0	1607	398	122	1287	431	5	694	0	299	415	151	
RTOR Reduction (vph)	0	23	0	0	0	0	0	0	0	88	0	0	
Lane Group Flow (vph)	0	1982	0	122	1287	431	0	699	0	211	415	151	
Turn Type		NA		Prot	NA	Over	Prot	Prot		custom	Prot	NA	
Protected Phases		2 9		1	6	7	3	3		1	7	4	
Permitted Phases										3			
Actuated Green, G (s)		73.3		12.0	68.3	60.7		33.9		45.9	60.7	22.8	
Effective Green, g (s)		69.3		12.0	68.3	60.7		33.9		45.9	60.7	22.8	
Actuated g/C Ratio		0.43		0.08	0.43	0.38		0.21		0.29	0.38	0.14	
Clearance Time (s)				5.0	5.0	4.0		4.0		5.0	4.0	4.0	
Vehicle Extension (s)				2.0	4.5	3.0		3.0		2.0	3.0	3.0	
Lane Grp Cap (vph)		2066		132	2170	600		727		503	1302	265	
v/s Ratio Prot		c0.42		c0.07	0.25	0.27		c0.20		0.03	0.12	0.08	
v/s Ratio Perm										0.10			
v/c Ratio		0.96		0.92	0.59	0.72		0.96		0.42	0.32	0.57	
Uniform Delay, d1		44.0		73.5	35.2	42.4		62.4		46.2	35.1	64.0	
Progression Factor		0.87		1.06	1.10	1.32		1.00		1.00	1.00	1.00	
Incremental Delay, d2		9.7		26.5	0.4	1.4		24.2		0.2	0.1	2.8	
Delay (s)		48.0		104.3	39.0	57.2		86.6		46.4	35.2	66.8	
Level of Service		D		F	D	E		F		D	D	E	
Approach Delay (s)		48.0			47.6				74.5			109.2	
Approach LOS		D			D				E			F	
Intersection Summary													
HCM 2000 Control Delay			66.4		HCM 2000 Level of Service				E				
HCM 2000 Volume to Capacity ratio			1.05										
Actuated Cycle Length (s)			160.0		Sum of lost time (s)				22.0				
Intersection Capacity Utilization			88.1%		ICU Level of Service				E				
Analysis Period (min)			15										
c Critical Lane Group													



Movement	SBR
Lane Configurations	TT
Volume (vph)	895
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	0.88
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	2787
Flt Permitted	1.00
Satd. Flow (perm)	2787
Peak-hour factor, PHF	0.98
Adj. Flow (vph)	913
RTOR Reduction (vph)	0
Lane Group Flow (vph)	913
Turn Type	custom
Protected Phases	9
Permitted Phases	4 9
Actuated Green, G (s)	40.8
Effective Green, g (s)	40.8
Actuated g/C Ratio	0.25
Clearance Time (s)	4.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	780
v/s Ratio Prot	c0.13
v/s Ratio Perm	0.20
v/c Ratio	1.17
Uniform Delay, d1	59.6
Progression Factor	1.00
Incremental Delay, d2	90.2
Delay (s)	149.8
Level of Service	F
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
 10: Car Country Dr & Cannon Rd

2035 + Specific Plan
 PM Peak Hour

							
Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations		 			 		
Volume (vph)	0	1157	130	80	1604	304	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5		5.5	6.5	5.5	5.5
Lane Util. Factor		0.95		1.00	0.95	1.00	1.00
Fr _t		0.98		1.00	1.00	1.00	0.85
Fl _t Protected		1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)		3485		1770	3539	1770	1583
Fl _t Permitted		1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)		3485		1770	3539	1770	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1181	133	82	1637	310	153
RTOR Reduction (vph)	0	5	0	0	0	0	121
Lane Group Flow (vph)	0	1309	0	82	1637	310	32
Turn Type	Prot	NA		Prot	NA	NA	Perm
Protected Phases	5	2		1	6	3	
Permitted Phases							3
Actuated Green, G (s)		93.8		15.4	114.7	33.3	33.3
Effective Green, g (s)		93.8		15.4	114.7	33.3	33.3
Actuated g/C Ratio		0.59		0.10	0.72	0.21	0.21
Clearance Time (s)		6.5		5.5	6.5	5.5	5.5
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		2043		170	2537	368	329
v/s Ratio Prot		0.38		0.05	c0.46	c0.18	
v/s Ratio Perm							0.02
v/c Ratio		0.64		0.48	0.65	0.84	0.10
Uniform Delay, d ₁		21.9		68.5	11.9	60.8	51.2
Progression Factor		0.92		1.00	1.00	1.00	1.00
Incremental Delay, d ₂		1.5		2.2	1.3	15.9	0.1
Delay (s)		21.6		70.7	13.2	76.7	51.3
Level of Service		C		E	B	E	D
Approach Delay (s)		21.6			16.0	68.3	
Approach LOS		C			B	E	
Intersection Summary							
HCM 2000 Control Delay			25.0		HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio			0.72				
Actuated Cycle Length (s)			160.0		Sum of lost time (s)		17.5
Intersection Capacity Utilization			80.8%		ICU Level of Service		D
Analysis Period (min)			15				
c Critical Lane Group							

HCM Signalized Intersection Capacity Analysis
11: Legoland Dr

2035 + Specific Plan
PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↘↗	↑↑	↘↗	↗
Volume (vph)	1109	198	120	1231	453	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.0	5.0	6.0	5.0	5.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	3433	3539	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	3433	3539	3433	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	1132	202	122	1256	462	306
RTOR Reduction (vph)	0	29	0	0	0	130
Lane Group Flow (vph)	1132	173	122	1256	462	176
Turn Type	NA	pm+ov	Prot	NA	NA	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	29.3	46.9	4.5	38.8	17.6	17.6
Effective Green, g (s)	29.3	46.9	4.5	38.8	17.6	17.6
Actuated g/C Ratio	0.43	0.70	0.07	0.58	0.26	0.26
Clearance Time (s)	6.0	5.0	5.0	6.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1538	1101	229	2037	896	413
v/s Ratio Prot	c0.32	0.04	0.04	c0.35	c0.13	
v/s Ratio Perm		0.07				0.11
v/c Ratio	0.74	0.16	0.53	0.62	0.52	0.43
Uniform Delay, d1	15.8	3.5	30.4	9.4	21.3	20.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	0.1	1.2	0.6	0.5	0.7
Delay (s)	17.7	3.6	31.6	10.0	21.8	21.4
Level of Service	B	A	C	A	C	C
Approach Delay (s)	15.6			11.9	21.6	
Approach LOS	B			B	C	
Intersection Summary						
HCM 2000 Control Delay			15.4		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.68			
Actuated Cycle Length (s)			67.4		Sum of lost time (s)	16.0
Intersection Capacity Utilization			60.3%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						




















HCM Signalized Intersection Capacity Analysis
 12: Marriott Hotel Dwy & Cannon Rd

2035 + Specific Plan
 PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↓
Volume (vph)	1344	65	60	1296	55	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.5	5.0	6.0	5.5	5.5
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	1371	66	61	1322	56	61
RTOR Reduction (vph)	0	14	0	0	0	54
Lane Group Flow (vph)	1371	52	61	1322	56	7
Turn Type	NA	pm+ov	Prot	NA	NA	Perm
Protected Phases	2	8	1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	59.5	70.3	3.2	67.7	10.8	10.8
Effective Green, g (s)	59.5	70.3	3.2	67.7	10.8	10.8
Actuated g/C Ratio	0.66	0.78	0.04	0.75	0.12	0.12
Clearance Time (s)	6.0	5.5	5.0	6.0	5.5	5.5
Vehicle Extension (s)	3.0	2.0	2.0	3.0	2.0	2.0
Lane Grp Cap (vph)	2339	1236	62	2662	212	189
v/s Ratio Prot	c0.39	0.01	c0.03	0.37	c0.03	
v/s Ratio Perm		0.03				0.00
v/c Ratio	0.59	0.04	0.98	0.50	0.26	0.04
Uniform Delay, d1	8.4	2.2	43.4	4.4	36.0	35.0
Progression Factor	1.00	1.00	0.93	0.98	1.00	1.00
Incremental Delay, d2	1.1	0.0	99.2	0.6	0.2	0.0
Delay (s)	9.5	2.2	139.5	4.9	36.2	35.0
Level of Service	A	A	F	A	D	D
Approach Delay (s)	9.2			10.8	35.6	
Approach LOS	A			B	D	
Intersection Summary						
HCM 2000 Control Delay			11.0		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.56			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	16.5
Intersection Capacity Utilization			58.4%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis
 13: Faraday Ave & Cannon Rd

2035 + Specific Plan
 PM Peak Hour

													
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	10	10	1181	203	50	690	10	646	10	140	10	10	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		6.0	6.0		6.0	6.0		5.0	5.0			5.0	
Lane Util. Factor		1.00	0.95		1.00	0.95		0.95	0.95			1.00	
Fr _t		1.00	0.98		1.00	1.00		1.00	0.95			0.95	
Fl _t Protected		0.95	1.00		0.95	1.00		0.95	0.97			0.98	
Satd. Flow (prot)		1770	3461		1770	3532		1681	1624			1750	
Fl _t Permitted		0.95	1.00		0.95	1.00		0.95	0.97			0.98	
Satd. Flow (perm)		1770	3461		1770	3532		1681	1624			1750	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	10	10	1205	207	51	704	10	659	10	143	10	10	
RTOR Reduction (vph)	0	0	14	0	0	1	0	0	25	0	0	10	
Lane Group Flow (vph)	0	20	1398	0	51	713	0	415	372	0	0	20	
Turn Type	Prot	Prot	NA		Prot	NA		Split	NA		Split	NA	
Protected Phases	5	5	2		1	6		8	8		7	7	
Permitted Phases													
Actuated Green, G (s)		1.2	36.0		3.0	37.8		26.6	26.6			2.4	
Effective Green, g (s)		1.2	36.0		3.0	37.8		26.6	26.6			2.4	
Actuated g/C Ratio		0.01	0.40		0.03	0.42		0.30	0.30			0.03	
Clearance Time (s)		6.0	6.0		6.0	6.0		5.0	5.0			5.0	
Vehicle Extension (s)		2.0	3.5		2.0	3.5		2.0	2.0			2.0	
Lane Grp Cap (vph)		23	1384		59	1483		496	479			46	
v/s Ratio Prot		0.01	c0.40		c0.03	0.20		c0.25	0.23			c0.01	
v/s Ratio Perm													
v/c Ratio		0.87	1.01		0.86	0.48		0.84	0.78			0.44	
Uniform Delay, d ₁		44.3	27.0		43.3	19.0		29.7	29.0			43.1	
Progression Factor		0.93	1.03		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d ₂		113.6	24.9		68.5	1.1		11.2	7.1			2.4	
Delay (s)		154.9	52.8		111.8	20.1		40.9	36.1			45.6	
Level of Service		F	D		F	C		D	D			D	
Approach Delay (s)			54.3			26.2			38.5			45.6	
Approach LOS			D			C			D			D	
Intersection Summary													
HCM 2000 Control Delay			42.9									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.91										
Actuated Cycle Length (s)			90.0									Sum of lost time (s)	22.0
Intersection Capacity Utilization			79.8%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													



Movement	SBR
Lane Configurations	
Volume (vph)	10
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.98
Adj. Flow (vph)	10
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
 14: El Camino Real & Cannon Rd

2035 + Specific Plan
 PM Peak Hour

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Volume (vph)	831	203	574	5	70	96	10	5	325	2270	180	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	6.0			4.2	6.0			4.2	6.0	6.0	
Lane Util. Factor	0.97	0.95			0.97	0.95			1.00	0.95	1.00	
Fr _t	1.00	0.89			1.00	0.99			1.00	1.00	0.85	
Fl _t Protected	0.95	1.00			0.95	1.00			0.95	1.00	1.00	
Satd. Flow (prot)	3433	3147			3433	3490			1770	3539	1583	
Fl _t Permitted	0.95	1.00			0.95	1.00			0.95	1.00	1.00	
Satd. Flow (perm)	3433	3147			3433	3490			1770	3539	1583	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	848	207	586	5	71	98	10	5	332	2316	184	5
RTOR Reduction (vph)	0	215	0	0	0	7	0	0	0	0	62	0
Lane Group Flow (vph)	848	578	0	0	76	101	0	0	337	2316	122	0
Turn Type	Prot	NA		Prot	Prot	NA		Prot	Prot	NA	Perm	Prot
Protected Phases	7	4		3	3	8		5	5	2		1
Permitted Phases												2
Actuated Green, G (s)	20.8	33.8			7.7	20.7			18.3	76.5	76.5	
Effective Green, g (s)	20.8	33.8			7.7	20.7			18.3	76.5	76.5	
Actuated g/C Ratio	0.15	0.24			0.06	0.15			0.13	0.55	0.55	
Clearance Time (s)	4.2	6.0			4.2	6.0			4.2	6.0	6.0	
Vehicle Extension (s)	2.0	2.0			2.0	2.0			2.0	3.0	3.0	
Lane Grp Cap (vph)	510	759			188	516			231	1933	864	
v/s Ratio Prot	c0.25	c0.18			c0.02	0.03			c0.19	c0.65		
v/s Ratio Perm												0.08
v/c Ratio	1.66	0.98dr			0.40	0.20			1.46	1.20	0.14	
Uniform Delay, d ₁	59.6	49.4			63.9	52.3			60.9	31.8	15.6	
Progression Factor	1.00	1.00			1.00	1.00			1.00	1.00	1.00	
Incremental Delay, d ₂	306.8	4.1			0.5	0.1			228.8	94.5	0.3	
Delay (s)	366.4	53.5			64.5	52.4			289.7	126.2	16.0	
Level of Service	F	D			E	D			F	F	B	
Approach Delay (s)		215.2				57.4				138.5		
Approach LOS		F				E				F		

Intersection Summary

HCM 2000 Control Delay	129.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	110.6%	ICU Level of Service	H
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 14: El Camino Real & Cannon Rd






















2035 + Specific Plan
 PM Peak Hour



Movement	SBL	SBT	SBR
Lane Configurations	↔	↑↑↑	↗
Volume (vph)	10	1040	415
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.2	6.0	4.2
Lane Util. Factor	1.00	0.91	1.00
Flt	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583
Flt Permitted	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583
Peak-hour factor, PHF	0.98	0.98	0.98
Adj. Flow (vph)	10	1061	423
RTOR Reduction (vph)	0	0	179
Lane Group Flow (vph)	15	1061	244
Turn Type	Prot	NA	pm+ov
Protected Phases	1	6	7
Permitted Phases			6
Actuated Green, G (s)	1.6	59.8	80.6
Effective Green, g (s)	1.6	59.8	80.6
Actuated g/C Ratio	0.01	0.43	0.58
Clearance Time (s)	4.2	6.0	4.2
Vehicle Extension (s)	2.0	3.0	2.0
Lane Grp Cap (vph)	20	2172	911
v/s Ratio Prot	0.01	c0.21	0.04
v/s Ratio Perm			0.11
v/c Ratio	0.75	0.49	0.27
Uniform Delay, d1	69.0	29.0	14.9
Progression Factor	1.00	1.00	1.00
Incremental Delay, d2	83.6	0.8	0.1
Delay (s)	152.6	29.8	15.0
Level of Service	F	C	B
Approach Delay (s)		26.9	
Approach LOS		C	
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
 15: Paseo Del Norte & Car Country Dr

2035 + Specific Plan
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	10	20	140	10	230	20	478	110	10	419	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5		5.5	5.5		5.0	6.0		5.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Fr _t	1.00	0.90		1.00	0.86		1.00	0.97		1.00	0.98	
Fl _t Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1676		1770	1595		1770	3440		1770	3483	
Fl _t Permitted	0.61	1.00		0.74	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1127	1676		1374	1595		1770	3440		1770	3483	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	51	10	20	143	10	235	20	488	112	10	428	51
RTOR Reduction (vph)	0	15	0	0	176	0	0	25	0	0	11	0
Lane Group Flow (vph)	51	15	0	143	70	0	20	575	0	10	468	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	11.9	11.9		11.9	11.9		0.5	18.1		0.5	18.1	
Effective Green, g (s)	11.9	11.9		11.9	11.9		0.5	18.1		0.5	18.1	
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.01	0.39		0.01	0.39	
Clearance Time (s)	5.5	5.5		5.5	5.5		5.0	6.0		5.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	285	424		347	403		18	1324		18	1341	
v/s Ratio Prot		0.01			0.04		c0.01	c0.17		0.01	0.13	
v/s Ratio Perm	0.05			c0.10								
v/c Ratio	0.18	0.04		0.41	0.17		1.11	0.43		0.56	0.35	
Uniform Delay, d ₁	13.7	13.2		14.6	13.7		23.2	10.7		23.1	10.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d ₂	0.3	0.0		0.8	0.2		250.0	0.3		19.4	0.2	
Delay (s)	14.0	13.3		15.4	13.9		273.2	11.0		42.5	10.5	
Level of Service	B	B		B	B		F	B		D	B	
Approach Delay (s)		13.7			14.5			19.4			11.1	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			15.4				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.44									
Actuated Cycle Length (s)			47.0				Sum of lost time (s)			16.5		
Intersection Capacity Utilization			49.0%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												






















HCM Signalized Intersection Capacity Analysis
 16: Paseo Del Norte & Outlet Dwy

2035 + Specific Plan
 PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	20	50	240	10	117	70	471	150	96	443	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	
Flt	1.00	0.89			0.96		1.00	0.96		1.00	0.99	
Flt Protected	0.95	1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1662			1726		1770	3411		1770	3495	
Flt Permitted	0.59	1.00			0.76		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1102	1662			1354		1770	3411		1770	3495	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	20	20	51	245	10	119	71	481	153	98	452	41
RTOR Reduction (vph)	0	34	0	0	25	0	0	44	0	0	9	0
Lane Group Flow (vph)	20	37	0	0	349	0	71	590	0	98	484	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)	18.7	18.7			18.7		2.6	19.3		4.4	21.1	
Effective Green, g (s)	18.7	18.7			18.7		2.6	19.3		4.4	21.1	
Actuated g/C Ratio	0.33	0.33			0.33		0.05	0.34		0.08	0.37	
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.5	2.5			2.5		2.0	4.5		2.0	4.5	
Lane Grp Cap (vph)	359	541			441		80	1146		135	1284	
v/s Ratio Prot		0.02					0.04	c0.17		c0.06	0.14	
v/s Ratio Perm	0.02				c0.26							
v/c Ratio	0.06	0.07			0.79		0.89	0.52		0.73	0.38	
Uniform Delay, d1	13.3	13.3			17.6		27.3	15.3		25.9	13.3	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.0			9.1		62.4	0.7		15.1	0.3	
Delay (s)	13.3	13.4			26.7		89.6	15.9		41.0	13.6	
Level of Service	B	B			C		F	B		D	B	
Approach Delay (s)		13.4			26.7			23.4			18.2	
Approach LOS		B			C			C			B	
Intersection Summary												
HCM 2000 Control Delay			21.8				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			57.4				Sum of lost time (s)			15.0		
Intersection Capacity Utilization			63.3%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												





















HCM Signalized Intersection Capacity Analysis
17: Faraday Ave & College Blvd

2035 + Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	830	170	40	510	150	90	585	400	340	492	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.0		4.5	6.0		4.5	5.0		4.5	5.0	
Lane Util. Factor	0.97	0.95		0.97	0.95		1.00	0.95		1.00	0.95	
Fr _t	1.00	0.97		1.00	0.97		1.00	0.94		1.00	0.96	
Fl _t Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	3449		3433	3419		1770	3324		1770	3386	
Fl _t Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	3449		3433	3419		1770	3324		1770	3386	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	173	847	173	41	520	153	92	597	408	347	502	204
RTOR Reduction (vph)	0	12	0	0	19	0	0	82	0	0	29	0
Lane Group Flow (vph)	173	1008	0	41	654	0	92	923	0	347	677	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	8.9	40.9		3.0	35.0		9.7	39.3		28.4	58.0	
Effective Green, g (s)	8.9	40.9		3.0	35.0		9.7	39.3		28.4	58.0	
Actuated g/C Ratio	0.07	0.31		0.02	0.27		0.07	0.30		0.22	0.44	
Clearance Time (s)	4.5	6.0		4.5	6.0		4.5	5.0		4.5	5.0	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		0.2	0.2		0.2	0.2	
Lane Grp Cap (vph)	232	1071		78	909		130	992		381	1492	
v/s Ratio Prot	c0.05	c0.29		0.01	0.19		0.05	c0.28		c0.20	0.20	
v/s Ratio Perm												
v/c Ratio	0.75	0.94		0.53	0.72		0.71	0.93		0.91	0.45	
Uniform Delay, d ₁	60.2	44.2		63.6	43.8		59.6	44.8		50.4	25.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d ₂	10.8	15.3		2.9	2.3		13.4	14.5		24.9	0.1	
Delay (s)	71.0	59.4		66.5	46.1		73.0	59.3		75.3	25.8	
Level of Service	E	E		E	D		E	E		E	C	
Approach Delay (s)		61.1			47.3			60.5			42.1	
Approach LOS		E			D			E			D	
Intersection Summary												
HCM 2000 Control Delay			53.6			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.94									
Actuated Cycle Length (s)			131.6			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			96.2%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 18: El Camino Real & College Blvd



























2035 + Specific Plan
 PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	
Lane Configurations													
Volume (vph)	800	480	170	750	600	40	5	270	2181	800	5	80	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	5.0	6.5		5.0	6.5			5.0	6.0	6.0		5.0	
Lane Util. Factor	0.97	0.95		0.97	0.95			1.00	0.91	1.00		1.00	
Fr _t	1.00	0.96		1.00	0.99			1.00	1.00	0.85		1.00	
Fl _t Protected	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95	
Satd. Flow (prot)	3433	3401		3433	3506			1770	5085	1583		1770	
Fl _t Permitted	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95	
Satd. Flow (perm)	3433	3401		3433	3506			1770	5085	1583		1770	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	816	490	173	765	612	41	5	276	2226	816	5	82	
RTOR Reduction (vph)	0	26	0	0	4	0	0	0	0	224	0	0	
Lane Group Flow (vph)	816	637	0	765	649	0	0	281	2226	592	0	87	
Turn Type	Prot	NA		Prot	NA		Prot	Prot	NA	Perm	Prot	Prot	
Protected Phases	7	4		3	8		5	5	2		1	1	
Permitted Phases										2			
Actuated Green, G (s)	26.0	41.9		16.0	31.9			12.0	59.6	59.6		5.0	
Effective Green, g (s)	26.0	41.9		16.0	31.9			12.0	59.6	59.6		5.0	
Actuated g/C Ratio	0.18	0.29		0.11	0.22			0.08	0.41	0.41		0.03	
Clearance Time (s)	5.0	6.5		5.0	6.5			5.0	6.0	6.0		5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0	4.0	4.0		2.0	
Lane Grp Cap (vph)	615	982		378	771			146	2090	650		61	
v/s Ratio Prot	c0.24	0.19		c0.22	c0.19			c0.16	0.44			0.05	
v/s Ratio Perm										0.37			
v/c Ratio	1.33	0.65		2.02	0.84			1.92	1.07	0.91		1.43	
Uniform Delay, d ₁	59.5	45.1		64.5	54.1			66.5	42.7	40.2		70.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00		1.00	
Incremental Delay, d ₂	158.1	1.1		469.9	8.0			440.3	39.7	19.1		263.6	
Delay (s)	217.6	46.2		534.4	62.1			506.8	82.4	59.2		333.6	
Level of Service	F	D		F	E			F	F	E		F	
Approach Delay (s)		140.8			316.9				112.6				
Approach LOS		F			F				F				
Intersection Summary													
HCM 2000 Control Delay			159.4									HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.27										
Actuated Cycle Length (s)			145.0									Sum of lost time (s)	22.5
Intersection Capacity Utilization			116.6%									ICU Level of Service	H
Analysis Period (min)			15										
c Critical Lane Group													

Movement	SBT	SBR
Lane Configurations	↑↑↑	↑
Volume (vph)	2171	130
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	6.0
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	2215	133
RTOR Reduction (vph)	0	85
Lane Group Flow (vph)	2215	48
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Actuated Green, G (s)	52.6	52.6
Effective Green, g (s)	52.6	52.6
Actuated g/C Ratio	0.36	0.36
Clearance Time (s)	6.0	6.0
Vehicle Extension (s)	4.0	4.0
Lane Grp Cap (vph)	1844	574
v/s Ratio Prot	c0.44	
v/s Ratio Perm		0.03
v/c Ratio	1.20	0.08
Uniform Delay, d1	46.2	30.4
Progression Factor	1.00	1.00
Incremental Delay, d2	96.0	0.3
Delay (s)	142.2	30.7
Level of Service	F	C
Approach Delay (s)	143.0	
Approach LOS	F	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
 19: El Camino Real & Faraday Ave

2035 + Specific Plan
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations		 			 			 	 			 
Volume (vph)	400	687	1088	220	228	591	45	229	2060	150	15	351
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9	5.0	5.0	5.0		3.0	6.0			4.2
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00		0.97	0.91			0.97
Flt	1.00	0.93	0.85	1.00	1.00	0.85		1.00	0.99			1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (prot)	1770	3168	1441	1770	3539	1583		3433	5034			3433
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (perm)	1770	3168	1441	1770	3539	1583		3433	5034			3433
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	408	701	1110	224	233	603	46	234	2102	153	15	358
RTOR Reduction (vph)	0	69	74	0	0	78	0	0	6	0	0	0
Lane Group Flow (vph)	408	1176	492	224	233	525	0	280	2249	0	0	373
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases	3	8		7	4		1	1	6		5	5
Permitted Phases			8			4						
Actuated Green, G (s)	17.1	52.1	52.1	12.4	47.4	47.4		13.9	46.6			8.8
Effective Green, g (s)	17.1	52.1	52.1	12.4	47.4	47.4		13.9	46.6			8.8
Actuated g/C Ratio	0.12	0.37	0.37	0.09	0.34	0.34		0.10	0.33			0.06
Clearance Time (s)	4.9	4.9	4.9	5.0	5.0	5.0		3.0	6.0			4.2
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0	3.0		2.0	2.0			2.0
Lane Grp Cap (vph)	216	1178	536	156	1198	535		340	1675			215
v/s Ratio Prot	c0.23	c0.37		c0.13	0.07			c0.08	c0.45			c0.11
v/s Ratio Perm			0.34			0.33						
v/c Ratio	1.89	1.00	0.92	1.44	0.19	0.98		0.82	1.34			1.73
Uniform Delay, d1	61.4	43.9	41.9	63.8	32.8	45.9		61.8	46.7			65.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2	417.0	25.6	20.3	228.7	0.1	33.9		14.2	158.3			349.4
Delay (s)	478.4	69.5	62.2	292.5	32.9	79.8		76.0	205.0			415.0
Level of Service	F	E	E	F	C	E		E	F			F
Approach Delay (s)		142.8			114.4				190.8			
Approach LOS		F			F				F			
Intersection Summary												
HCM 2000 Control Delay			151.8				HCM 2000 Level of Service		F			
HCM 2000 Volume to Capacity ratio			1.34									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)		20.1			
Intersection Capacity Utilization			129.1%				ICU Level of Service		H			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
Label Configurations	↑↑↑	↑
Volume (vph)	1190	60
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	3.0	3.0
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	1214	61
RTOR Reduction (vph)	0	41
Lane Group Flow (vph)	1214	20
Turn Type	NA	Perm
Protected Phases	2	
Permitted Phases		2
Actuated Green, G (s)	45.7	45.7
Effective Green, g (s)	45.7	45.7
Actuated g/C Ratio	0.33	0.33
Clearance Time (s)	3.0	3.0
Vehicle Extension (s)	2.0	2.0
Lane Grp Cap (vph)	1659	516
v/s Ratio Prot	0.24	
v/s Ratio Perm		0.01
v/c Ratio	0.73	0.04
Uniform Delay, d1	41.7	32.2
Progression Factor	1.00	1.00
Incremental Delay, d2	2.9	0.1
Delay (s)	44.6	32.3
Level of Service	D	C
Approach Delay (s)	128.0	
Approach LOS	F	
Intersection Summary		













HCM Signalized Intersection Capacity Analysis
20: Avenida Encinas & Palomar Airport Rd

2035 + Specific Plan
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	360	50	310	530	320	110	168	460	350	138	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.0		4.2	5.0	5.0	4.6	4.6	4.6	4.6	4.6	4.6
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Fr _t	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fl _t Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00
Satd. Flow (prot)	1770	1829		1770	1863	1583	1770	1863	1583	1681	1731	1583
Fl _t Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.98	1.00
Satd. Flow (perm)	1770	1829		1770	1863	1583	1770	1863	1583	1681	1731	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	82	367	51	316	541	327	112	171	469	357	141	71
RTOR Reduction (vph)	0	4	0	0	0	193	0	0	273	0	0	58
Lane Group Flow (vph)	82	414	0	316	541	134	112	171	196	246	252	13
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases						6			8			7
Actuated Green, G (s)	6.4	26.3		18.2	38.1	38.1	17.3	17.3	17.3	17.7	17.7	17.7
Effective Green, g (s)	6.4	26.3		18.2	38.1	38.1	17.3	17.3	17.3	17.7	17.7	17.7
Actuated g/C Ratio	0.07	0.27		0.19	0.39	0.39	0.18	0.18	0.18	0.18	0.18	0.18
Clearance Time (s)	4.2	5.0		4.2	5.0	5.0	4.6	4.6	4.6	4.6	4.6	4.6
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	115	491		329	725	616	312	329	279	303	312	286
v/s Ratio Prot	0.05	c0.23		c0.18	0.29		0.06	0.09		c0.15	0.15	
v/s Ratio Perm						0.08			c0.12			0.01
v/c Ratio	0.71	0.84		0.96	0.75	0.22	0.36	0.52	0.70	0.81	0.81	0.04
Uniform Delay, d ₁	44.8	33.8		39.5	25.7	20.0	35.4	36.5	37.9	38.5	38.5	33.1
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, d ₂	15.9	12.4		38.8	4.2	0.2	0.3	0.6	6.4	14.4	13.4	0.0
Delay (s)	60.8	46.2		78.3	29.9	20.1	35.7	37.1	44.3	52.9	51.9	33.1
Level of Service	E	D		E	C	C	D	D	D	D	D	C
Approach Delay (s)		48.6			40.1			41.4			50.0	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			43.7	HCM 2000 Level of Service				D				
HCM 2000 Volume to Capacity ratio			0.83									
Actuated Cycle Length (s)			97.9	Sum of lost time (s)				18.4				
Intersection Capacity Utilization			76.7%	ICU Level of Service				D				
Analysis Period (min)			15									
c Critical Lane Group												


























HCM Signalized Intersection Capacity Analysis
 21: I-5 SB Ramps & Palomar Airport Rd

2035 + Specific Plan
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑	↗				↖		↗
Volume (vph)	0	850	320	0	800	1340	0	0	0	820	0	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0	4.0				4.6		4.6
Lane Util. Factor		0.91			0.95	1.00				0.97		1.00
Flt		0.96			1.00	0.85				1.00		0.85
Flt Protected		1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)		4876			3539	1583				3433		1583
Flt Permitted		1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)		4876			3539	1583				3433		1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	867	327	0	816	1367	0	0	0	837	0	367
RTOR Reduction (vph)	0	128	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1066	0	0	816	1367	0	0	0	837	0	367
Turn Type		NA			NA	Free				Prot		custom
Protected Phases		2 3			6					4		4 3
Permitted Phases						Free						2
Actuated Green, G (s)		26.0			15.9	50.7				15.1		40.7
Effective Green, g (s)		26.0			15.9	50.7				15.1		40.7
Actuated g/C Ratio		0.51			0.31	1.00				0.30		0.80
Clearance Time (s)					5.0					4.6		
Vehicle Extension (s)					2.0					2.0		
Lane Grp Cap (vph)		2500			1109	1583				1022		1270
v/s Ratio Prot		0.22			0.23					0.24		0.14
v/s Ratio Perm						c0.86						0.09
v/c Ratio		0.43			0.74	0.86				0.82		0.29
Uniform Delay, d1		7.7			15.5	0.0				16.5		1.3
Progression Factor		1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2		0.0			2.2	6.5				4.9		0.0
Delay (s)		7.7			17.7	6.5				21.5		1.3
Level of Service		A			B	A				C		A
Approach Delay (s)		7.7			10.7			0.0			15.3	
Approach LOS		A			B			A			B	
Intersection Summary												
HCM 2000 Control Delay			11.2				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			1.21									
Actuated Cycle Length (s)			50.7				Sum of lost time (s)			14.6		
Intersection Capacity Utilization			54.5%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												






















HCM Signalized Intersection Capacity Analysis
 22: I-5 NB Ramps & Palomar Airport Rd

2035 + Specific Plan
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  	 			 	 		
Volume (vph)	350	1320	0	0	1950	1270	190	0	690	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.6			4.6	4.6		4.6	4.6			
Lane Util. Factor	1.00	0.91			*0.66	0.88		1.00	0.88			
Fr _t	1.00	1.00			1.00	0.85		1.00	0.85			
Fl _t Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	5085			3688	2787		1770	2787			
Fl _t Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	5085			3688	2787		1770	2787			
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	357	1347	0	0	1990	1296	194	0	704	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	397	0	0	76	0	0	0
Lane Group Flow (vph)	357	1347	0	0	1990	899	0	194	628	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	custom			
Protected Phases	5	2			6 7			8	7			
Permitted Phases						6 7	8		8			
Actuated Green, G (s)	14.8	45.3			38.3	38.3		8.5	15.9			
Effective Green, g (s)	14.8	45.3			38.3	38.3		8.5	15.9			
Actuated g/C Ratio	0.20	0.60			0.51	0.51		0.11	0.21			
Clearance Time (s)	4.2	4.6						4.6	4.6			
Vehicle Extension (s)	3.0	3.0						3.0	3.0			
Lane Grp Cap (vph)	349	3071			1883	1423		200	761			
v/s Ratio Prot	c0.20	0.26			c0.54				c0.08			
v/s Ratio Perm						0.32		0.11	0.14			
v/c Ratio	1.02	0.44			1.06	0.63		0.97	0.82			
Uniform Delay, d ₁	30.1	8.0			18.4	13.3		33.1	28.2			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d ₂	54.2	0.1			37.6	0.9		54.3	7.3			
Delay (s)	84.3	8.1			56.0	14.2		87.4	35.5			
Level of Service	F	A			E	B		F	D			
Approach Delay (s)		24.1			39.5			46.7			0.0	
Approach LOS		C			D			D			A	
Intersection Summary												
HCM 2000 Control Delay			36.1				HCM 2000 Level of Service		D			
HCM 2000 Volume to Capacity ratio			1.13									
Actuated Cycle Length (s)			75.0				Sum of lost time (s)		18.0			
Intersection Capacity Utilization			85.5%				ICU Level of Service		E			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
23: Paseo Del Norte & Palomar Airport Rd

2035 + Specific Plan
PM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (vph)	10	370	1450	180	30	464	2340	554	390	647	294	467
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	6.0			4.2	6.0	4.2	4.2	5.0		4.2
Lane Util. Factor		0.97	0.91			0.97	0.86	1.00	0.97	0.95		0.97
Fr _t		1.00	0.98			1.00	1.00	0.85	1.00	0.95		1.00
Fl _t Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		3433	5001			3433	6408	1583	3433	3373		3433
Fl _t Permitted		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (perm)		3433	5001			3433	6408	1583	3433	3373		3433
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	10	378	1480	184	31	473	2388	565	398	660	300	477
RTOR Reduction (vph)	0	0	10	0	0	0	0	22	0	35	0	0
Lane Group Flow (vph)	0	388	1654	0	0	504	2388	543	398	925	0	477
Turn Type	Prot	Prot	NA		Prot	Prot	NA	pm+ov	Prot	NA		Prot
Protected Phases	5	5	2		1	1	6	7	3	8		7
Permitted Phases								6				
Actuated Green, G (s)		16.2	49.2			21.4	54.4	75.3	17.0	39.1		20.9
Effective Green, g (s)		16.2	49.2			21.4	54.4	75.3	17.0	39.1		20.9
Actuated g/C Ratio		0.11	0.33			0.14	0.36	0.50	0.11	0.26		0.14
Clearance Time (s)		4.2	6.0			4.2	6.0	4.2	4.2	5.0		4.2
Vehicle Extension (s)		2.0	2.0			2.0	2.0	2.0	2.0	2.0		2.0
Lane Grp Cap (vph)		370	1640			489	2323	794	389	879		478
v/s Ratio Prot		0.11	0.33			c0.15	c0.37	0.10	0.12	0.27		c0.14
v/s Ratio Perm								0.25				
v/c Ratio		1.05	1.01			1.03	1.03	0.68	1.02	1.05		1.00
Uniform Delay, d ₁		66.9	50.4			64.3	47.8	28.3	66.5	55.4		64.5
Progression Factor		1.00	1.00			1.20	0.69	0.57	1.00	1.00		1.00
Incremental Delay, d ₂		60.1	24.3			21.1	14.8	0.2	51.7	44.9		40.3
Delay (s)		127.0	74.7			98.2	47.8	16.5	118.2	100.3		104.8
Level of Service		F	E			F	D	B	F	F		F
Approach Delay (s)			84.6				50.0			105.6		
Approach LOS			F				D			F		
Intersection Summary												
HCM 2000 Control Delay			79.8			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			1.09									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)				19.4		
Intersection Capacity Utilization			106.6%			ICU Level of Service				G		
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
↓ ↘	↑ ↗	
Lane Configurations	↑ ↗	
Volume (vph)	645	480
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.0	
Lane Util. Factor	0.95	
Frt	0.94	
Flt Protected	1.00	
Satd. Flow (prot)	3313	
Flt Permitted	1.00	
Satd. Flow (perm)	3313	
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	658	490
RTOR Reduction (vph)	90	0
Lane Group Flow (vph)	1058	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	43.0	
Effective Green, g (s)	43.0	
Actuated g/C Ratio	0.29	
Clearance Time (s)	5.0	
Vehicle Extension (s)	2.0	
Lane Grp Cap (vph)	949	
v/s Ratio Prot	c0.32	
v/s Ratio Perm		
v/c Ratio	1.11	
Uniform Delay, d1	53.5	
Progression Factor	1.00	
Incremental Delay, d2	66.1	
Delay (s)	119.6	
Level of Service	F	
Approach Delay (s)	115.3	
Approach LOS	F	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
24: Armada Dr & Palomar Airport Rd



























2035 + Specific Plan
PM Peak Hour

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (vph)	15	254	1787	140	5	290	2444	262	360	110	280	288
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	6.0	4.7		4.2	6.0	5.0	4.7	4.7	4.7	5.0
Lane Util. Factor		0.97	0.91	1.00		1.00	0.91	1.00	0.97	0.95	0.95	0.97
Fr _t		1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.93	0.85	1.00
Fl _t Protected		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95
Satd. Flow (prot)		3433	5085	1583		1770	5085	1583	3433	1648	1504	3433
Fl _t Permitted		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95
Satd. Flow (perm)		3433	5085	1583		1770	5085	1583	3433	1648	1504	3433
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	15	259	1823	143	5	296	2494	267	367	112	286	294
RTOR Reduction (vph)	0	0	0	80	0	0	0	99	0	20	139	0
Lane Group Flow (vph)	0	274	1823	63	0	301	2494	168	367	186	53	294
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	NA	Perm	Prot
Protected Phases	5	5	2	3	1	1	6	7	3	8		7
Permitted Phases				2				6			8	
Actuated Green, G (s)		10.8	51.8	66.1		24.0	65.0	78.0	14.3	41.3	41.3	13.0
Effective Green, g (s)		10.8	51.8	66.1		24.0	65.0	78.0	14.3	41.3	41.3	13.0
Actuated g/C Ratio		0.07	0.35	0.44		0.16	0.43	0.52	0.10	0.28	0.28	0.09
Clearance Time (s)		4.2	6.0	4.7		4.2	6.0	5.0	4.7	4.7	4.7	5.0
Vehicle Extension (s)		2.0	3.0	2.0		2.0	3.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)		247	1756	697		283	2203	823	327	453	414	297
v/s Ratio Prot		0.08	0.36	0.01		c0.17	c0.49	0.02	c0.11	0.11		0.09
v/s Ratio Perm				0.03				0.09			0.04	
v/c Ratio		1.11	1.04	0.09		1.06	1.13	0.20	1.12	0.41	0.13	0.99
Uniform Delay, d ₁		69.6	49.1	24.4		63.0	42.5	19.3	67.8	44.4	40.8	68.4
Progression Factor		0.83	1.20	5.73		0.94	1.38	2.88	1.00	1.00	1.00	1.00
Incremental Delay, d ₂		55.1	19.4	0.0		52.4	62.2	0.0	87.0	0.2	0.1	48.8
Delay (s)		113.0	78.4	140.0		111.8	120.7	55.6	154.9	44.6	40.9	117.2
Level of Service		F	E	F		F	F	E	F	D	D	F
Approach Delay (s)			86.5				114.2			96.6		
Approach LOS			F				F			F		
Intersection Summary												
HCM 2000 Control Delay			106.1				HCM 2000 Level of Service			F		
HCM 2000 Volume to Capacity ratio			1.16									
Actuated Cycle Length (s)			150.0				Sum of lost time (s)		19.9			
Intersection Capacity Utilization			117.0%				ICU Level of Service		H			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
↓	↓	↘
Lane Configurations	↑	↑
Volume (vph)	90	574
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.7	4.7
Lane Util. Factor	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	1863	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	1863	1583
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	92	586
RTOR Reduction (vph)	0	87
Lane Group Flow (vph)	92	499
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Actuated Green, G (s)	40.3	40.3
Effective Green, g (s)	40.3	40.3
Actuated g/C Ratio	0.27	0.27
Clearance Time (s)	4.7	4.7
Vehicle Extension (s)	2.0	2.0
Lane Grp Cap (vph)	500	425
v/s Ratio Prot	0.05	
v/s Ratio Perm		c0.32
v/c Ratio	0.18	1.17
Uniform Delay, d1	42.2	54.9
Progression Factor	1.00	1.00
Incremental Delay, d2	0.1	100.6
Delay (s)	42.3	155.4
Level of Service	D	F
Approach Delay (s)	133.2	
Approach LOS	F	
Intersection Summary		
























HCM Signalized Intersection Capacity Analysis
 25: Hidden Valley Rd/The Crossing Dr & Palomar Airport Rd

2035 + Specific Plan
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Volume (vph)	60	2079	226	350	2638	120	198	20	240	100	30	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	4.2	4.2	6.0		4.2	4.7		5.0	5.7	5.7
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00		1.00	1.00	1.00
Fr _t	1.00	1.00	0.85	1.00	0.99		1.00	0.86		1.00	1.00	0.85
Fl _t Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5052		1770	1604		1770	1863	1583
Fl _t Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5052		1770	1604		1770	1863	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	61	2121	231	357	2692	122	202	20	245	102	31	163
RTOR Reduction (vph)	0	0	42	0	2	0	0	211	0	0	0	103
Lane Group Flow (vph)	61	2121	189	357	2812	0	202	54	0	102	31	60
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2									4
Actuated Green, G (s)	4.0	71.2	84.0	25.8	92.2		12.8	20.6		12.5	20.1	20.1
Effective Green, g (s)	4.0	71.2	84.0	25.8	92.2		12.8	20.6		12.5	20.1	20.1
Actuated g/C Ratio	0.03	0.47	0.56	0.17	0.61		0.09	0.14		0.08	0.13	0.13
Clearance Time (s)	5.0	6.0	4.2	4.2	6.0		4.2	4.7		5.0	5.7	5.7
Vehicle Extension (s)	2.0	3.0	2.0	2.0	3.0		2.0	3.0		2.0	3.0	3.0
Lane Grp Cap (vph)	47	2413	886	304	3105		151	220		147	249	212
v/s Ratio Prot	0.03	0.42	0.02	c0.20	c0.56		c0.11	0.03		0.06	0.02	
v/s Ratio Perm			0.10									c0.04
v/c Ratio	1.30	0.88	0.21	1.17	0.91		1.34	0.24		0.69	0.12	0.28
Uniform Delay, d ₁	73.0	35.5	16.5	62.1	25.1		68.6	57.7		66.9	57.2	58.5
Progression Factor	1.09	0.51	0.03	1.19	0.53		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d ₂	175.5	1.7	0.0	81.9	0.5		189.8	0.6		10.9	0.2	0.7
Delay (s)	255.2	19.7	0.5	156.1	13.9		258.4	58.3		77.7	57.4	59.2
Level of Service	F	B	A	F	B		F	E		E	E	E
Approach Delay (s)		23.8			29.9			144.9			65.4	
Approach LOS		C			C			F			E	
Intersection Summary												
HCM 2000 Control Delay			37.7			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)				20.9		
Intersection Capacity Utilization			97.6%			ICU Level of Service				F		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 26: Aviara Pkwy/College Blvd & Palomar Airport Rd

2035 + Specific Plan
 PM Peak Hour























												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	320	1712	387	5	250	2017	160	261	250	160	40	610
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.3	6.3		4.2	6.3	6.3	4.2	5.8	5.8	4.2	6.0
Lane Util. Factor	0.97	0.91	1.00		0.97	0.91	1.00	0.97	0.95	1.00	1.00	1.00
Flt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	5085	1583		3433	5085	1583	3433	3539	1583	1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	5085	1583		3433	5085	1583	3433	3539	1583	1770	1863
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	327	1747	395	5	255	2058	163	266	255	163	41	622
RTOR Reduction (vph)	0	0	105	0	0	0	74	0	0	113	0	0
Lane Group Flow (vph)	327	1747	290	0	260	2058	89	266	255	50	41	622
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases			2				6			8		
Actuated Green, G (s)	21.5	62.7	62.7		13.9	54.8	54.8	7.8	46.3	46.3	6.6	44.9
Effective Green, g (s)	21.5	62.7	62.7		13.9	54.8	54.8	7.8	46.3	46.3	6.6	44.9
Actuated g/C Ratio	0.14	0.42	0.42		0.09	0.37	0.37	0.05	0.31	0.31	0.04	0.30
Clearance Time (s)	4.5	6.3	6.3		4.2	6.3	6.3	4.2	5.8	5.8	4.2	6.0
Vehicle Extension (s)	2.0	3.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0
Lane Grp Cap (vph)	492	2125	661		318	1857	578	178	1092	488	77	557
v/s Ratio Prot	0.10	0.34			0.08	c0.40		c0.08	0.07		0.02	0.33
v/s Ratio Perm			0.18				0.06			0.03		
v/c Ratio	0.66	0.82	0.44		0.82	1.11	0.15	1.49	0.23	0.10	0.53	1.12
Uniform Delay, d1	60.8	38.7	31.1		66.8	47.6	32.0	71.1	38.6	37.0	70.2	52.5
Progression Factor	0.90	1.75	2.70		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	2.1	1.1		14.2	57.2	0.6	249.7	0.1	0.1	3.5	74.4
Delay (s)	56.0	69.8	85.3		81.0	104.8	32.6	320.8	38.7	37.1	73.7	126.9
Level of Service	E	E	F		F	F	C	F	D	D	E	F
Approach Delay (s)		70.4				97.5			148.0			128.1
Approach LOS		E				F			F			F
Intersection Summary												
HCM 2000 Control Delay			99.5	HCM 2000 Level of Service				F				
HCM 2000 Volume to Capacity ratio			1.16									
Actuated Cycle Length (s)			150.0	Sum of lost time (s)				21.0				
Intersection Capacity Utilization			110.3%	ICU Level of Service				H				
Analysis Period (min)			15									
c Critical Lane Group												



Movement	SBR
Lane Configurations	7
Volume (vph)	830
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Fr _t	0.85
Fl _t Protected	1.00
Satd. Flow (prot)	1583
Fl _t Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.98
Adj. Flow (vph)	847
RTOR Reduction (vph)	31
Lane Group Flow (vph)	816
Turn Type	pm+ov
Protected Phases	5
Permitted Phases	4
Actuated Green, G (s)	66.4
Effective Green, g (s)	66.4
Actuated g/C Ratio	0.44
Clearance Time (s)	4.5
Vehicle Extension (s)	2.0
Lane Grp Cap (vph)	700
v/s Ratio Prot	c0.17
v/s Ratio Perm	0.35
v/c Ratio	1.17
Uniform Delay, d ₁	41.8
Progression Factor	1.00
Incremental Delay, d ₂	89.8
Delay (s)	131.6
Level of Service	F
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
27: El Camino Real & Palomar Airport Rd

2035 + Specific Plan
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	410	2093	130	790	1306	759	20	200	1420	700	5	1178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	6.0	6.0		5.0	6.0	5.0		5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	0.88		0.97	0.91	0.88		0.97
Flt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (prot)	3433	5085	1583	3433	5085	2787		3433	5085	2787		3433
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (perm)	3433	5085	1583	3433	5085	2787		3433	5085	2787		3433
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	418	2136	133	806	1333	774	20	204	1449	714	5	1202
RTOR Reduction (vph)	0	0	89	0	0	367	0	0	0	63	0	0
Lane Group Flow (vph)	418	2136	44	806	1333	407	0	224	1449	651	0	1207
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	pm+ov	Prot	Prot
Protected Phases	3	8		7	4		1	1	6	7	5	5
Permitted Phases			8			4				6		
Actuated Green, G (s)	22.1	48.0	48.0	22.0	47.9	47.9		13.3	28.0	50.0		30.0
Effective Green, g (s)	22.1	48.0	48.0	22.0	47.9	47.9		13.3	28.0	50.0		30.0
Actuated g/C Ratio	0.15	0.32	0.32	0.15	0.32	0.32		0.09	0.19	0.33		0.20
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0		5.0	6.0	5.0		5.0
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0	3.0		2.0	3.0	2.0		2.0
Lane Grp Cap (vph)	505	1627	506	503	1623	889		304	949	929		686
v/s Ratio Prot	0.12	c0.42		c0.23	0.26			0.07	c0.28	0.10		c0.35
v/s Ratio Perm			0.03			0.15				0.13		
v/c Ratio	0.83	1.31	0.09	1.60	0.82	0.46		0.74	1.53	0.70		1.76
Uniform Delay, d1	62.1	51.0	35.7	64.0	47.1	40.7		66.6	61.0	43.5		60.0
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	10.2	145.3	0.3	280.3	4.8	1.7		7.8	242.5	2.0		347.7
Delay (s)	72.3	196.3	36.0	344.3	51.9	42.4		74.4	303.5	45.5		407.7
Level of Service	E	F	D	F	D	D		E	F	D		F
Approach Delay (s)		169.1			130.3				204.8			
Approach LOS		F			F				F			













Intersection Summary

HCM 2000 Control Delay	180.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.51		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	142.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Label Configurations	↑↑↑	↑
Volume (vph)	940	180
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	5.0
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	959	184
RTOR Reduction (vph)	0	32
Lane Group Flow (vph)	959	152
Turn Type	NA	pm+ov
Protected Phases	2	3
Permitted Phases		2
Actuated Green, G (s)	44.7	66.8
Effective Green, g (s)	44.7	66.8
Actuated g/C Ratio	0.30	0.45
Clearance Time (s)	6.0	5.0
Vehicle Extension (s)	3.0	2.0
Lane Grp Cap (vph)	1515	704
v/s Ratio Prot	0.19	0.03
v/s Ratio Perm		0.06
v/c Ratio	0.63	0.22
Uniform Delay, d1	45.6	25.5
Progression Factor	1.00	1.00
Incremental Delay, d2	0.9	0.1
Delay (s)	46.4	25.6
Level of Service	D	C
Approach Delay (s)	230.4	
Approach LOS	F	
Intersection Summary		























HCM Signalized Intersection Capacity Analysis
 28: I-5 SB Ramps & Poinsettia Ln

2035 + Specific Plan
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑↑	↑↑					↑	↑	↑
Volume (vph)	0	1030	240	830	940	0	0	0	0	588	10	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6
Lane Util. Factor		0.95	1.00	0.97	0.95					1.00	0.95	0.95
Fr _t		1.00	0.85	1.00	1.00					1.00	0.86	0.85
Fl _t Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1770	1526	1504
Fl _t Permitted		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1770	1526	1504
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1051	245	847	959	0	0	0	0	600	10	235
RTOR Reduction (vph)	0	0	160	0	0	0	0	0	0	0	77	83
Lane Group Flow (vph)	0	1051	85	847	959	0	0	0	0	600	46	39
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		34.2	34.2	26.8	65.2					35.4	35.4	35.4
Effective Green, g (s)		34.2	34.2	26.8	65.2					35.4	35.4	35.4
Actuated g/C Ratio		0.31	0.31	0.24	0.59					0.32	0.32	0.32
Clearance Time (s)		4.6	4.6	4.2	4.6					4.6	4.6	4.6
Vehicle Extension (s)		2.0	2.0	2.0	5.0					2.0	2.0	2.0
Lane Grp Cap (vph)		1102	493	837	2101					570	491	484
v/s Ratio Prot		c0.30		c0.25	0.27						0.03	
v/s Ratio Perm			0.05							c0.34		0.03
v/c Ratio		0.95	0.17	1.01	0.46					1.05	0.09	0.08
Uniform Delay, d ₁		37.0	27.5	41.5	12.4					37.2	26.0	25.9
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d ₂		16.9	0.1	34.1	0.3					52.3	0.0	0.0
Delay (s)		53.9	27.6	75.6	12.8					89.5	26.0	25.9
Level of Service		D	C	E	B					F	C	C
Approach Delay (s)		48.9			42.2			0.0			71.1	
Approach LOS		D			D			A			E	
Intersection Summary												
HCM 2000 Control Delay			50.6									HCM 2000 Level of Service D
HCM 2000 Volume to Capacity ratio			1.01									
Actuated Cycle Length (s)			109.8							13.4		Sum of lost time (s)
Intersection Capacity Utilization			95.9%									ICU Level of Service F
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 29: I-5 NB Ramps & Poinsettia Ln

2035 + Specific Plan
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			  				 			
Volume (vph)	250	1368	0	0	1440	269	390	10	570	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.6			4.6	4.6		4.6	4.6			
Lane Util. Factor	1.00	0.95			0.91	1.00		1.00	0.88			
Fr _t	1.00	1.00			1.00	0.85		1.00	0.85			
Fl _t Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	3539			5085	1583		1776	2787			
Fl _t Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	3539			5085	1583		1776	2787			
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	255	1396	0	0	1469	274	398	10	582	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	154	0	0	69	0	0	0
Lane Group Flow (vph)	255	1396	0	0	1469	120	0	408	513	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases						6	8		8			
Actuated Green, G (s)	12.2	43.6			27.2	27.2		18.5	18.5			
Effective Green, g (s)	12.2	43.6			27.2	27.2		18.5	18.5			
Actuated g/C Ratio	0.17	0.61			0.38	0.38		0.26	0.26			
Clearance Time (s)	4.2	4.6			4.6	4.6		4.6	4.6			
Vehicle Extension (s)	2.0	5.0			2.0	2.0		2.0	2.0			
Lane Grp Cap (vph)	302	2164			1939	603		460	723			
v/s Ratio Prot	c0.14	0.39			c0.29							
v/s Ratio Perm						0.08		0.23	0.18			
v/c Ratio	0.84	0.65			0.76	0.20		0.89	0.71			
Uniform Delay, d ₁	28.6	8.9			19.2	14.8		25.4	24.0			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d ₂	18.3	0.9			1.5	0.1		17.8	2.6			
Delay (s)	46.9	9.8			20.7	14.8		43.2	26.6			
Level of Service	D	A			C	B		D	C			
Approach Delay (s)		15.5			19.8			33.4			0.0	
Approach LOS		B			B			C			A	
Intersection Summary												
HCM 2000 Control Delay			21.3				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			71.3				Sum of lost time (s)		13.4			
Intersection Capacity Utilization			95.9%				ICU Level of Service		F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 30: Lower Ln/Paseo Del Norte & Poinsettia Ln

2035 + Specific Plan
 PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	560	1318	60	20	1189	272	30	10	20	171	10	490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.6	4.6	4.2	4.6		4.6	4.6		4.6	4.6	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.90		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	3539	1583	1770	3440		1770	1676		1770	1589	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	3539	1583	1770	3440		1770	1676		1770	1589	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	571	1345	61	20	1213	278	31	10	20	174	10	500
RTOR Reduction (vph)	0	0	22	0	12	0	0	18	0	0	403	0
Lane Group Flow (vph)	571	1345	39	20	1479	0	31	12	0	174	107	0
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2									
Actuated Green, G (s)	24.8	84.1	84.1	3.2	62.5		11.6	11.6		16.2	16.2	
Effective Green, g (s)	24.8	84.1	84.1	3.2	62.5		11.6	11.6		16.2	16.2	
Actuated g/C Ratio	0.19	0.63	0.63	0.02	0.47		0.09	0.09		0.12	0.12	
Clearance Time (s)	4.2	4.6	4.6	4.2	4.6		4.6	4.6		4.6	4.6	
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	639	2236	1000	42	1615		154	146		215	193	
v/s Ratio Prot	c0.17	0.38		0.01	c0.43		c0.02	0.01		c0.10	0.07	
v/s Ratio Perm			0.02									
v/c Ratio	0.89	0.60	0.04	0.48	0.92		0.20	0.08		0.81	0.55	
Uniform Delay, d1	52.9	14.5	9.2	64.1	32.9		56.4	55.8		56.9	55.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	14.5	0.7	0.0	3.1	8.9		0.2	0.1		18.7	1.9	
Delay (s)	67.4	15.2	9.3	67.2	41.8		56.7	55.9		75.6	57.0	
Level of Service	E	B	A	E	D		E	E		E	E	
Approach Delay (s)		30.1			42.1			56.3			61.7	
Approach LOS		C			D			E			E	
Intersection Summary												
HCM 2000 Control Delay			39.9			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			133.1			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			99.5%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
31: Aviara Pkwy & Poinsettia Ln

2035 + Specific Plan
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	191	752	171	30	643	205	151	125	30	214	193	401
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.0	5.5	5.5	6.0		5.5	6.0		5.5	6.0	
Lane Util. Factor	0.97	1.00	0.88	1.00	0.95		0.97	0.95		1.00	0.95	
Fr _t	1.00	1.00	0.85	1.00	0.96		1.00	0.97		1.00	0.90	
Fl _t Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1863	2787	1770	3411		3433	3436		1770	3181	
Fl _t Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	1863	2787	1770	3411		3433	3436		1770	3181	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	195	767	174	31	656	209	154	128	31	218	197	409
RTOR Reduction (vph)	0	0	87	0	33	0	0	25	0	0	146	0
Lane Group Flow (vph)	195	767	87	31	832	0	154	134	0	218	460	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2	7	1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	8.8	36.7	42.9	2.2	30.1		6.2	9.6		14.1	17.5	
Effective Green, g (s)	8.8	36.7	42.9	2.2	30.1		6.2	9.6		14.1	17.5	
Actuated g/C Ratio	0.10	0.43	0.50	0.03	0.35		0.07	0.11		0.16	0.20	
Clearance Time (s)	5.5	6.0	5.5	5.5	6.0		5.5	6.0		5.5	6.0	
Vehicle Extension (s)	2.5	3.5	3.0	2.5	3.5		3.0	4.0		2.5	4.0	
Lane Grp Cap (vph)	352	798	1396	45	1199		248	385		291	650	
v/s Ratio Prot	c0.06	c0.41	0.00	0.02	0.24		c0.04	0.04		0.12	c0.14	
v/s Ratio Perm			0.03									
v/c Ratio	0.55	0.96	0.06	0.69	0.69		0.62	0.35		0.75	0.86dr	
Uniform Delay, d ₁	36.5	23.8	11.0	41.4	23.8		38.6	35.1		34.1	31.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d ₂	1.5	22.8	0.0	33.2	1.8		4.8	0.7		9.6	3.8	
Delay (s)	38.0	46.6	11.0	74.6	25.6		43.3	35.9		43.7	35.4	
Level of Service	D	D	B	E	C		D	D		D	D	
Approach Delay (s)		39.7			27.3			39.5			37.6	
Approach LOS		D			C			D			D	

Intersection Summary





















HCM 2000 Control Delay	35.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	85.6	Sum of lost time (s)	23.0
Intersection Capacity Utilization	84.7%	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 Signalized Intersection Capacity Analysis
 32: El Camino Real & Aviara Pkwy





















2035 + Specific Plan
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	180	503	457	5	410	374	104	608	2542	640	15	234
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.7	4.6		4.2	5.7		4.6	6.4			4.2
Lane Util. Factor	0.97	0.95	1.00		0.97	0.95		0.97	0.91			0.97
Flt	1.00	1.00	0.85		1.00	0.97		1.00	0.97			1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00		0.95	1.00			0.95
Satd. Flow (prot)	3433	3539	1583		3433	3424		3433	4932			3433
Flt Permitted	0.95	1.00	1.00		0.95	1.00		0.95	1.00			0.95
Satd. Flow (perm)	3433	3539	1583		3433	3424		3433	4932			3433
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	184	513	466	5	418	382	106	620	2594	653	15	239
RTOR Reduction (vph)	0	0	41	0	0	20	0	0	27	0	0	0
Lane Group Flow (vph)	184	513	425	0	423	468	0	620	3220	0	0	254
Turn Type	Prot	NA	pm+ov	Prot	Prot	NA		Prot	NA		Prot	Prot
Protected Phases	7	4	5	3	3	8		5	2		1	1
Permitted Phases			4									
Actuated Green, G (s)	8.6	28.9	43.3		10.8	31.1		14.4	73.0			6.8
Effective Green, g (s)	8.6	28.9	43.3		10.8	31.1		14.4	73.0			6.8
Actuated g/C Ratio	0.06	0.21	0.31		0.08	0.22		0.10	0.52			0.05
Clearance Time (s)	4.2	5.7	4.6		4.2	5.7		4.6	6.4			4.2
Vehicle Extension (s)	2.0	2.0	2.0		3.0	2.0		2.0	3.0			2.0
Lane Grp Cap (vph)	210	730	489		264	760		353	2571			166
v/s Ratio Prot	0.05	0.14	c0.09		c0.12	0.14		c0.18	c0.65			0.07
v/s Ratio Perm			0.18									
v/c Ratio	0.88	0.70	0.87		1.60	0.62		1.76	1.25			1.53
Uniform Delay, d1	65.2	51.6	45.7		64.6	49.1		62.8	33.5			66.6
Progression Factor	1.00	1.00	1.00		1.00	1.00		1.00	1.00			1.28
Incremental Delay, d2	30.1	2.5	14.7		288.1	1.0		351.8	116.9			241.3
Delay (s)	95.3	54.1	60.4		352.7	50.1		414.6	150.4			326.4
Level of Service	F	D	E		F	D		F	F			F
Approach Delay (s)		63.1				190.6			192.8			
Approach LOS		E				F			F			
Intersection Summary												
HCM 2000 Control Delay			153.0			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.27									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			20.9			
Intersection Capacity Utilization			113.5%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
Label Configurations	↑↑↑	
Volume (vph)	2582	140
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.4	
Lane Util. Factor	0.91	
Flt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	5046	
Flt Permitted	1.00	
Satd. Flow (perm)	5046	
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	2635	143
RTOR Reduction (vph)	4	0
Lane Group Flow (vph)	2774	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	65.0	
Effective Green, g (s)	65.0	
Actuated g/C Ratio	0.46	
Clearance Time (s)	6.4	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	2342	
v/s Ratio Prot	0.55	
v/s Ratio Perm		
v/c Ratio	1.18	
Uniform Delay, d1	37.5	
Progression Factor	0.63	
Incremental Delay, d2	83.5	
Delay (s)	107.1	
Level of Service	F	
Approach Delay (s)	125.5	
Approach LOS	F	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
33: El Camino Real & Poinsettia Ln

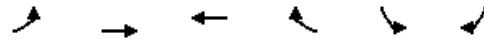
2035 + Specific Plan
PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	
Lane Configurations													
Volume (vph)	150	247	273	470	218	92	15	273	1212	370	5	162	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.2	4.7		4.2	5.0			4.2	6.0	6.0		4.2	
Lane Util. Factor	0.97	0.95		0.97	0.95			0.97	0.91	1.00		0.97	
Fr _t	1.00	0.92		1.00	0.96			1.00	1.00	0.85		1.00	
Fl _t Protected	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95	
Satd. Flow (prot)	3433	3260		3433	3381			3433	5085	1583		3433	
Fl _t Permitted	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95	
Satd. Flow (perm)	3433	3260		3433	3381			3433	5085	1583		3433	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	153	252	279	480	222	94	15	279	1237	378	5	165	
RTOR Reduction (vph)	0	86	0	0	37	0	0	0	0	197	0	0	
Lane Group Flow (vph)	153	445	0	480	279	0	0	294	1237	181	0	170	
Turn Type	Prot	NA		Prot	NA		Prot	Prot	NA	Perm	Prot	Prot	
Protected Phases	7	4		3	8		1	1	6		5	5	
Permitted Phases										6			
Actuated Green, G (s)	10.0	27.8		14.8	32.3			9.8	67.1	67.1		11.2	
Effective Green, g (s)	10.0	27.8		14.8	32.3			9.8	67.1	67.1		11.2	
Actuated g/C Ratio	0.07	0.20		0.11	0.23			0.07	0.48	0.48		0.08	
Clearance Time (s)	4.2	4.7		4.2	5.0			4.2	6.0	6.0		4.2	
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	245	647		362	780			240	2437	758		274	
v/s Ratio Prot	0.04	c0.14		c0.14	0.08			c0.09	0.24			0.05	
v/s Ratio Perm										0.11			
v/c Ratio	0.62	0.69		1.33	0.36			1.23	0.51	0.24		0.62	
Uniform Delay, d ₁	63.2	52.1		62.6	45.2			65.1	25.1	21.4		62.3	
Progression Factor	1.00	1.00		1.00	1.00			0.78	1.43	5.62		1.00	
Incremental Delay, d ₂	3.5	2.4		164.7	0.1			104.8	0.1	0.1		4.3	
Delay (s)	66.7	54.5		227.3	45.3			155.5	36.1	120.5		66.7	
Level of Service	E	D		F	D			F	D	F		E	
Approach Delay (s)		57.2			155.0				71.2				
Approach LOS		E			F				E				
Intersection Summary													
HCM 2000 Control Delay			75.5									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			1.00										
Actuated Cycle Length (s)			140.0									Sum of lost time (s)	19.4
Intersection Capacity Utilization			101.3%									ICU Level of Service	G
Analysis Period (min)			15										
c Critical Lane Group													

Movement	SBT	SBR
Label Configurations	↑↑↑	↙
Volume (vph)	2422	60
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	
Lane Util. Factor	0.91	
Fr _t	1.00	
Fl _t Protected	1.00	
Satd. Flow (prot)	5067	
Fl _t Permitted	1.00	
Satd. Flow (perm)	5067	
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	2471	61
RTOR Reduction (vph)	2	0
Lane Group Flow (vph)	2530	0
Turn Type	NA	
Protected Phases	2	
Permitted Phases		
Actuated Green, G (s)	68.5	
Effective Green, g (s)	68.5	
Actuated g/C Ratio	0.49	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	2479	
v/s Ratio Prot	c0.50	
v/s Ratio Perm		
v/c Ratio	1.02	
Uniform Delay, d ₁	35.8	
Progression Factor	1.00	
Incremental Delay, d ₂	23.5	
Delay (s)	59.3	
Level of Service	E	
Approach Delay (s)	59.7	
Approach LOS	E	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
34: Cannon Rd

2035 + Specific Plan
PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔↔	↕↕	↕↕	↗		
Volume (vph)	988	1287	1803	105	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	0.97	0.95	0.95	1.00		
Frt	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	3433	3539	3539	1583		
Flt Permitted	0.95	1.00	1.00	1.00		
Satd. Flow (perm)	3433	3539	3539	1583		
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	1008	1313	1840	107	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1008	1313	1840	107	0	0
Turn Type	Prot	NA	NA	custom		
Protected Phases	5!	2 10	6 10	5 6!		
Permitted Phases						
Actuated Green, G (s)	28.0	80.0	44.0	50.0		
Effective Green, g (s)	28.0	80.0	44.0	50.0		
Actuated g/C Ratio	0.35	1.00	0.55	0.62		
Clearance Time (s)	4.0					
Vehicle Extension (s)	3.0					
Lane Grp Cap (vph)	1201	3539	1946	989		
v/s Ratio Prot	c0.29	0.37	c0.52	0.07		
v/s Ratio Perm						
v/c Ratio	0.84	0.37	0.95	0.11		
Uniform Delay, d1	23.9	0.0	16.9	6.0		
Progression Factor	0.89	1.00	1.07	0.86		
Incremental Delay, d2	3.5	0.0	8.2	0.0		
Delay (s)	24.8	0.0	26.3	5.2		
Level of Service	C	A	C	A		
Approach Delay (s)		10.8	25.1		0.0	
Approach LOS		B	C		A	

Intersection Summary			
HCM 2000 Control Delay	17.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group

Cannon Rd Retail													
Roadway Segment Analysis													
2035 plus Project Conditions													
	Direction	Number of Lanes	Capacity (1,800 vplph)	Peak Hour Volume		V/ C Ratio		LOS		Change in V/C		Significant Impact?	
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Cannon Road (I-5 SB Ramps to El Camino Real)													
I-5 SB Ramps to I-5 NB Ramps	EB	2	3600	1535	1484	0.43	0.41	A	A	0.06	0.10	NO	NO
	WB	2	3600	916	1535	0.25	0.43	A	A	0.02	0.12	NO	NO
I-5 NB Ramps to Paseo Del Norte	EB	2	3600	2064	1965	0.57	0.55	A	A	0.11	0.21	NO	NO
	WB	3	5400	1081	2836	0.20	0.53	A	A	0.03	0.13	NO	NO
Paseo Del Norte to Car Country	EB	2	3600	1404	1460	0.39	0.41	A	A	0.02	0.13	NO	NO
	WB	2	3600	980	1835	0.27	0.51	A	A	0.05	0.07	NO	NO
Car Country Dr to Armada Dr	EB	2	3600	1183	1307	0.33	0.36	A	A	0.02	0.07	NO	NO
	WB	2	3600	991	1684	0.28	0.47	A	A	0.06	0.08	NO	NO
Armada Dr to Grand Pacific Dr	EB	2	3600	782	1409	0.22	0.39	A	A	0.02	0.05	NO	NO
	WB	2	3600	1252	1351	0.35	0.38	A	A	0.04	0.06	NO	NO
Grand Pacific Dr to Faraday Ave	EB	2	3600	771	1404	0.21	0.39	A	A	0.01	0.05	NO	NO
	WB	2	3600	1269	1356	0.35	0.38	A	A	0.04	0.06	NO	NO
Faraday Ave to El Camino Real	EB	2	3600	493	1608	0.14	0.45	A	A	0.01	0.04	NO	NO
	WB	2	3600	1201	836	0.33	0.23	A	A	0.02	0.04	NO	NO
Tamarack Avenue (Carlsbad Boulevard to El Camino Real)													
Carlsbad Blvd to I-5 SB Ramps	EB	1	1800	873	849	0.49	0.47	A	A	0.01	0.01	NO	NO
	WB	1	1800	936	888	0.52	0.49	A	A	0.00	0.01	NO	NO
I-5 SB Ramps to I-5 NB Ramps	EB	2	3600	630	870	0.18	0.24	A	A	0.00	0.01	NO	NO
	WB	2	3600	1019	897	0.28	0.25	A	A	0.00	0.01	NO	NO
I-5 NB Ramps to El Camino Real	EB	2	3600	836	1088	0.23	0.30	A	A	0.00	0.00	NO	NO
	WB	2	3600	1163	719	0.32	0.20	A	A	0.00	0.01	NO	NO
Palomar Airport Road (Paseo Del Norte to El Camino Real)													
Paseo Del Norte to Armada Dr	EB	3	5400	3083	2241	0.57	0.42	A	A	0.01	0.02	NO	NO
	WB	3	5400	1561	3393	0.29	0.63	A	A	0.01	0.02	NO	NO
Armada Dr to The Crossings Dr	EB	3	5400	2798	2365	0.52	0.44	A	A	0.01	0.03	NO	NO
	WB	3	5400	1637	3001	0.30	0.56	A	A	0.02	0.03	NO	NO
The Crossings Dr to College Blvd	EB	3	5400	3000	2419	0.56	0.45	A	A	0.01	0.03	NO	NO
	WB	3	5400	1602	3108	0.30	0.58	A	A	0.02	0.03	NO	NO
College Blvd to El Camino Real	EB	3	5400	2197	2633	0.41	0.49	A	A	0.01	0.01	NO	NO
	WB	3	5400	2258	2432	0.42	0.45	A	A	0.01	0.01	NO	NO
College Boulevard													
Palomar Airport Rd to Faraday Ave	EB/NB	2	3600	1830	1470	0.51	0.41	A	A	0.00	0.00	NO	NO
	WB/SB	1	1800	840	1480	0.47	0.82	A	A	0.00	0.00	NO	NO
Poinsettia Ln													
Paseo Del Norte to Aviara Pkwy	EB	2	3600	1426	1509	0.40	0.42	A	A	0.01	0.01	NO	NO
	WB	2	3600	1218	1481	0.34	0.41	A	A	0.01	0.01	NO	NO
Carlsbad Boulevard (North of Tamarack Avenue to South of Cannon Road)													
North of Tamarack Ave	NB	2	3600	321	995	0.09	0.28	A	A	0.00	0.01	NO	NO
	SB	2	3600	645	698	0.18	0.19	A	A	0.01	0.01	NO	NO
Tamarack Ave to Cannon Rd	NB	2	3600	351	1395	0.10	0.39	A	A	0.01	0.01	NO	NO
	SB	1	1800	965	848	0.54	0.47	A	A	0.02	0.02	NO	NO
South of Cannon Rd	NB	1	1800	340	1095	0.19	0.61	A	A	0.01	0.01	NO	NO
	SB	1	1800	954	814	0.53	0.45	A	A	0.00	0.01	NO	NO
Paseo del Norte (Cannon Road to Palomar Airport Road)													
Cannon Rd to Car Country Dr	NB	2	3600	406	978	0.11	0.27	A	A	0.02	0.03	NO	NO
	SB	2	3600	581	631	0.16	0.18	A	A	0.01	0.04	NO	NO
Outlets North Entrance to Palomar Airport Rd	NB	2	3600	835	1571	0.23	0.44	A	A	0.02	0.04	NO	NO
	SB	2	3600	681	1592	0.19	0.44	A	A	0.01	0.03	NO	NO
Faraday Avenue													
Cannon Rd to College Blvd	NB	1	1800	985	905	0.55	0.50	A	A	0.02	0.02	NO	NO
	SB	1	1800	878	1252	0.49	0.70	A	A	0.01	0.03	NO	NO
Aviara Parkway													
Palomar Airport Rd to Poinsettia Ln	NB	2	3600	1311	671	0.36	0.19	A	A	0.01	0.02	NO	NO
	SB	2	3600	478	1247	0.13	0.35	A	A	0.00	0.02	NO	NO
El Camino Real (North of Tamarack Ave to South of Aviara Pkwy)													
North of Tamarack Ave	NB	3	5400	914	2979	0.17	0.55	A	A	0.00	0.01	NO	NO
	SB	3	5400	2322	1152	0.43	0.21	A	A	0.01	0.01	NO	NO
Tamarack Ave to Cannon Rd	NB	2	3600	1033	3631	0.29	1.01	A	A	0.01	0.02	NO	NO
	SB	2	3600	3091	1245	0.86	0.35	D	C	0.01	0.02	NO	NO
Cannon Rd to College Blvd	NB	3	5400	955	2780	0.18	0.51	A	A	0.00	0.00	NO	NO
	SB	3	5400	3139	1689	0.58	0.31	A	A	0.00	0.00	NO	NO
College Blvd to Faraday Ave	NB	3	5400	1853	3316	0.34	0.61	A	A	0.00	0.00	NO	NO
	SB	3	5400	3998	3096	0.74	0.57	C	C	0.00	0.00	NO	NO
Faraday Ave to Palomar Airport Rd	NB	3	5400	2438	2594	0.45	0.48	A	A	0.00	0.00	NO	NO
	SB	3	5400	3021	2543	0.56	0.47	A	A	0.00	0.00	NO	NO
Palomar Airport Rd to Poinsettia Ln	NB	3	5400	1945	2340	0.36	0.43	A	A	0.00	0.00	NO	NO
	SB	3	5400	2395	2649	0.44	0.49	A	A	0.00	0.00	NO	NO
Poinsettia Ln to Aviara Pkwy	NB	3	5400	2239	2841	0.41	0.53	A	A	0.00	0.00	NO	NO
	SB	3	5400	2372	3180	0.44	0.59	A	A	0.00	0.00	NO	NO
Sourth of Aviara Pkwy	NB	3	5400	2536	3790	0.47	0.70	A	A	0.00	0.00	NO	NO
	SB	3	5400	2762	3449	0.51	0.64	A	A	0.00	0.00	NO	NO

Freeway Segment LOS - Cumulative Conditions																								
Segment	Number of Lanes		Capacity Per Lane	Peak Hour %	Direction Split	HV%	LOS Thresholds						Cumulative No Project Conditions					Cumulative Plus Plus Project				Change in V/C	Significant	
	Mixed Flow	Express					A	B	C	D	E	F	Total ADT	Mixed Flow Lane Factor	Mixed Flow ADT	Peak Hour Per	V/C	LOS	ADT	Peak Hour Per	V/C			LOS
Interstate 5																								
La Costa Ave to Poinsettia Ln	8	4	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	292,000	84%	243,851	2681	1.14	F	249,152	2739	1.17	F	0.02	Yes
Poinsettia Ln to Palomar Airport Rd	8	4	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	282,800	86%	244,180	2685	1.14	F	249,962	2748	1.17	F	0.03	Yes
Palomar Airport Rd to Cannon Rd	8	4	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	252,000	83%	209,494	2303	0.98	E	215,276	2367	1.01	F	0.03	Yes
Cannon Rd to Tamarack Ave	8	4	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	245,400	83%	203,804	2241	0.95	E	209,105	2299	0.98	E	0.02	Yes
Tamarack Ave to Carlsbad Village Dr	8	4	2,350	7%	60%	4.5%	0.41	0.62	0.8	0.92	1	1	246,900	78%	193,136	2123	0.90	D	197,473	2171	0.92	E	0.02	Yes

**Cannon Rd Retail
Ramp Meter Analysis**

2035								
Location	Peak Hour	Demand ¹ (veh/hr)		Meter Rate ² (veh/hr)	Excess Demand ³ (veh/hr)	Total # of Mixed Flow Lanes	Delay ⁴ (min)	Queue ⁵ (ft)
		Mixed Flow & HOV	Mixed Flow only					
I-5 SB - Tamarack Ave On-Ramp	AM	830	706	526	180	1	20.5	5,200
	PM	720	612	N/A	N/A	1	N/A	N/A
I-5 SB - Cannon Rd On-Ramp	AM	540	459	734	0	2	0.0	0
	PM	760	646	734	0	2	0.0	0
I-5 NB - Cannon Rd On-Ramp	AM	340	289	N/A	N/A	2	N/A	N/A
	PM	1,530	1,301	1,416	0	2	0.0	0
I-5 SB - EB Palomar Airport Rd On-Ramp	AM	100	85	343	0	1	0.0	0
	PM	320	272	246	26	1	6.3	750
I-5 SB - WB Palomar Airport Rd On-Ramp	AM	360	306	492	0	1	0.0	0
	PM	1,340	1,139	895	244	1	16.4	7,075
I-5 NB - Palomar Airport Rd On-Ramp	AM	770	655	N/A	N/A	2	N/A	N/A
	PM	1,620	1,377	988	389	2	23.6	5,650
I-5 SB - Poinsettia Ln On-Ramp	AM	660	561	1,094	0	2	0.0	0
	PM	1,140	969	796	173	2	13.0	2,500
I-5 NB - Poinsettia Ln On-Ramp	AM	670	570	N/A	N/A	1	N/A	N/A
	PM	510	434	576	0	1	0.0	0

2035 + Specific Plan								
Location	Peak Hour	Demand ¹ (veh/hr)		Meter Rate ² (veh/hr)	Excess Demand ³ (veh/hr)	Total # of Mixed Flow Lanes	Delay ⁴ (min)	Queue ⁵ (ft)
		Mixed Flow & HOV	Mixed Flow only					
I-5 SB - Tamarack Ave On-Ramp	AM	856	728	526	202	1	23.0	5,850
	PM	758	644	N/A	N/A	1	N/A	N/A
I-5 SB - Cannon Rd On-Ramp	AM	627	533	734	0	2	0.0	0
	PM	1,103	938	734	204	2	16.6	2,950
I-5 NB - Cannon Rd On-Ramp	AM	415	353	N/A	N/A	2	N/A	N/A
	PM	1,811	1,539	1,416	123	2	5.2	1,800
I-5 SB - EB Palomar Airport Rd On-Ramp	AM	100	85	343	0	1	0.0	0
	PM	320	272	246	26	1	6.3	750
I-5 SB - WB Palomar Airport Rd On-Ramp	AM	360	306	492	0	1	0.0	0
	PM	1,340	1,139	895	244	1	16.4	7,075
I-5 NB - Palomar Airport Rd On-Ramp	AM	770	655	N/A	N/A	2	N/A	N/A
	PM	1,620	1,377	988	389	2	23.6	5,650
I-5 SB - Poinsettia Ln On-Ramp	AM	660	561	1,094	0	2	0.0	0
	PM	1,140	969	796	173	2	13.0	2,500
I-5 NB - Poinsettia Ln On-Ramp	AM	683	581	N/A	N/A	1	N/A	N/A
	PM	529	450	576	0	1	0.0	0

Intersection: 6: Avenida Encinas & Cannon Rd

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	L	T	TR	UL	T	R	L	L
Maximum Queue (ft)	117	269	228	60	109	216	209	184	359	542	89	92
Average Queue (ft)	42	155	118	26	64	118	139	141	241	412	46	42
95th Queue (ft)	122	313	269	64	116	224	232	224	796	955	96	96
Link Distance (ft)		501	501			212	212		872	872		
Upstream Blk Time (%)					0	1	2		13	16		
Queuing Penalty (veh)					0	4	10		0	0		
Storage Bay Dist (ft)	75			160	160			150			100	100
Storage Blk Time (%)	1	40					4	19			5	2
Queuing Penalty (veh)	2	16					6	6			1	0

Intersection: 6: Avenida Encinas & Cannon Rd

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	55	64
Average Queue (ft)	18	34
95th Queue (ft)	59	66
Link Distance (ft)	537	537
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: I-5 SB Ramps & Cannon Rd

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	L	LT	R
Maximum Queue (ft)	233	216	120	187	224	533	139	265	311	108
Average Queue (ft)	217	181	69	182	221	428	68	184	210	58
95th Queue (ft)	237	239	124	204	244	607	143	290	347	108
Link Distance (ft)	212	212	212			533	533		680	680
Upstream Blk Time (%)	25	3				2				
Queuing Penalty (veh)	76	8				18				
Storage Bay Dist (ft)				150	150			225		
Storage Blk Time (%)				11	28	0		4	7	
Queuing Penalty (veh)				35	86	1		17	27	

Intersection: 8: I-5 NB Ramps & Cannon Rd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	T	T	R	R	LT	R	R
Maximum Queue (ft)	235	266	368	375	459	387	254	258	274	411	297
Average Queue (ft)	170	188	234	245	414	186	152	150	180	274	226
95th Queue (ft)	254	278	369	388	503	407	267	263	313	457	341
Link Distance (ft)			533	533	421	421	421	421		911	
Upstream Blk Time (%)					10	2					
Queuing Penalty (veh)					71	17					
Storage Bay Dist (ft)	200	200							225		225
Storage Blk Time (%)	3	12	13						0	18	6
Queuing Penalty (veh)	17	68	49						0	106	35

Intersection: 9: Paseo Del Norte/Project Dwy & Cannon Rd

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	T	T	TR	L	T	T	T	UL	L	R	L	L
Maximum Queue (ft)	396	430	413	259	371	508	375	249	1128	1122	188	196
Average Queue (ft)	302	315	325	136	240	261	326	237	1041	885	94	119
95th Queue (ft)	403	434	434	275	414	587	436	293	1301	1564	203	217
Link Distance (ft)		421	421		624	624			1090	1090		
Upstream Blk Time (%)	0	0	0			0			60	44		
Queuing Penalty (veh)	0	3	4			1			0	0		
Storage Bay Dist (ft)	350			200			300	175			300	300
Storage Blk Time (%)	2	1		2	19	0	19	24	68		0	
Queuing Penalty (veh)	11	7		9	23	1	82	83	239		0	

Intersection: 9: Paseo Del Norte/Project Dwy & Cannon Rd

Movement	SB	SB	SB
Directions Served	T	R	R
Maximum Queue (ft)	554	575	400
Average Queue (ft)	255	563	400
95th Queue (ft)	631	577	400
Link Distance (ft)	544	544	
Upstream Blk Time (%)	3	75	
Queuing Penalty (veh)	0	0	
Storage Bay Dist (ft)			300
Storage Blk Time (%)		80	19
Queuing Penalty (veh)		363	86

Intersection: 10: Car Country Dr & Cannon Rd

Movement	EB	EB	WB	WB	WB	B3	B3	NB	NB
Directions Served	T	TR	L	T	T	T	T	L	R
Maximum Queue (ft)	269	294	216	743	800	58	95	411	184
Average Queue (ft)	180	203	93	454	585	14	23	285	68
95th Queue (ft)	283	305	210	947	1019	98	106	437	184
Link Distance (ft)	450	450		889	889	1598	1598	1074	
Upstream Blk Time (%)				1	6				
Queuing Penalty (veh)				0	0				
Storage Bay Dist (ft)			250						325
Storage Blk Time (%)	4			4				7	
Queuing Penalty (veh)	0			3				10	

Intersection: 34: Cannon Rd

Movement	EB	EB	EB	WB	WB	WB
Directions Served	L	L	T	T	T	R
Maximum Queue (ft)	385	442	79	376	457	275
Average Queue (ft)	258	289	11	231	321	248
95th Queue (ft)	411	488	121	395	501	322
Link Distance (ft)		624	624	450	450	
Upstream Blk Time (%)				0	1	
Queuing Penalty (veh)				1	11	
Storage Bay Dist (ft)	300					250
Storage Blk Time (%)	5	6			9	3
Queuing Penalty (veh)	25	32			48	23

Intersection: 62: I-5 NB Ramps

Movement	NB	NB
Directions Served	T	T
Maximum Queue (ft)	374	382
Average Queue (ft)	248	265
95th Queue (ft)	403	411
Link Distance (ft)	551	551
Upstream Blk Time (%)	0	0
Queuing Penalty (veh)	1	2
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 83: I-5 SB Ramps

Movement	SB	SB
Directions Served	T	T
Maximum Queue (ft)	203	208
Average Queue (ft)	143	154
95th Queue (ft)	202	211
Link Distance (ft)	693	693
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary























Network wide Queuing Penalty: 1745

HCM Signalized Intersection Capacity Analysis

4: El Camino Real & Tamarck Ave

2035 + Specific Plan EPFs













AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	110	313	556	220	60	86	804	143	50	2222	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.0	5.0	4.2	5.0		4.2	6.0		4.2	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00		0.97	0.91		1.00	0.91	1.00
Flt	1.00	1.00	0.85	1.00	0.97		1.00	0.98		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	1.00
Satd. Flow (prot)	1770	1863	1583	3433	1803		3433	4970		1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	3433	1803		3433	4970		1770	5085	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	51	112	319	567	224	61	88	820	146	51	2267	51
RTOR Reduction (vph)	0	0	118	0	8	0	0	14	0	0	0	25
Lane Group Flow (vph)	51	112	201	567	277	0	88	952	0	51	2267	26
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)	6.9	23.3	23.3	20.7	37.1		4.8	69.7		6.9	71.8	71.8
Effective Green, g (s)	6.9	23.3	23.3	20.7	37.1		4.8	69.7		6.9	71.8	71.8
Actuated g/C Ratio	0.05	0.17	0.17	0.15	0.27		0.03	0.50		0.05	0.51	0.51
Clearance Time (s)	4.2	5.0	5.0	4.2	5.0		4.2	6.0		4.2	6.0	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	3.0		2.0	3.0	3.0
Lane Grp Cap (vph)	87	310	263	507	477		117	2474		87	2607	811
v/s Ratio Prot	0.03	0.06		c0.17	0.15		c0.03	0.19		0.03	c0.45	
v/s Ratio Perm			c0.13									0.02
v/c Ratio	0.59	0.36	0.76	1.12	0.58		0.75	0.38		0.59	0.87	0.03
Uniform Delay, d1	65.2	51.8	55.7	59.6	44.7		67.0	21.8		65.2	30.0	16.9
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	6.3	0.3	11.2	76.6	1.2		21.2	0.5		6.3	4.3	0.1
Delay (s)	71.5	52.0	66.9	136.2	45.9		88.2	22.3		71.5	34.3	17.0
Level of Service	E	D	E	F	D		F	C		E	C	B
Approach Delay (s)		63.9			106.0			27.8			34.7	
Approach LOS		E			F			C			C	
Intersection Summary												
HCM 2000 Control Delay			48.9			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				19.4		
Intersection Capacity Utilization			90.8%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 9: Paseo Del Norte/Project Dwy & Cannon Rd

2035 + Specific Plan EPFs





















AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↑↑↑		↵	↑↑↑	↵	↵↵		↵	↵↵	↑	↵↵	
Volume (vph)	0	1614	450	90	672	191	190	0	216	99	46	206	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.0		5.0	5.0	5.0	5.0		5.0	5.0	4.0	4.0	
Lane Util. Factor		0.91		1.00	*0.80	1.00	0.97		1.00	0.97	1.00	0.88	
Fr _t		0.97		1.00	1.00	0.85	1.00		0.85	1.00	1.00	0.85	
Fl _t Protected		1.00		0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	
Satd. Flow (prot)		4919		1770	4471	1583	3433		1583	3433	1863	2787	
Fl _t Permitted		1.00		0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	
Satd. Flow (perm)		4919		1770	4471	1583	3433		1583	3433	1863	2787	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	0	1647	459	92	686	195	194	0	220	101	47	210	
RTOR Reduction (vph)	0	25	0	0	0	0	0	0	181	0	0	0	
Lane Group Flow (vph)	0	2081	0	92	686	195	194	0	39	101	47	210	
Turn Type		NA		Prot	NA	Over	Prot		custom	Prot	NA	custom	
Protected Phases		2 9		1	6	7	3		1	7	4	9	
Permitted Phases									3			4 9	
Actuated Green, G (s)		100.3		14.0	111.3	30.7	14.2		28.2	30.7	12.5	16.5	
Effective Green, g (s)		96.3		14.0	111.3	30.7	14.2		28.2	30.7	12.5	16.5	
Actuated g/C Ratio		0.60		0.09	0.70	0.19	0.09		0.18	0.19	0.08	0.10	
Clearance Time (s)				5.0	5.0	5.0	5.0		5.0	5.0	4.0	4.0	
Vehicle Extension (s)				2.0	4.5	2.0	3.5		2.0	2.0	3.0	3.0	
Lane Grp Cap (vph)		2960		154	3110	303	304		279	658	145	287	
v/s Ratio Prot		c0.42		c0.05	0.15	c0.12	0.06		0.01	0.03	0.03	c0.02	
v/s Ratio Perm									0.01			0.06	
v/c Ratio		0.70		0.60	0.22	0.64	0.64		0.14	0.15	0.32	0.73	
Uniform Delay, d ₁		22.0		70.3	8.8	59.6	70.4		55.6	53.8	69.8	69.6	
Progression Factor		1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d ₂		0.8		4.1	0.2	3.5	4.6		0.1	0.0	1.3	9.2	
Delay (s)		22.8		74.4	8.9	63.1	75.0		55.7	53.9	71.1	78.8	
Level of Service		C		E	A	E	E		E	D	E	E	
Approach Delay (s)		22.8			26.0			64.7			70.8		
Approach LOS		C			C			E			E		
Intersection Summary													
HCM 2000 Control Delay			32.5		HCM 2000 Level of Service					C			
HCM 2000 Volume to Capacity ratio			0.70										
Actuated Cycle Length (s)			160.0		Sum of lost time (s)					23.0			
Intersection Capacity Utilization			70.0%		ICU Level of Service					C			
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis
 14: El Camino Real & Cannon Rd

2035 + Specific Plan EPFs

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	122	47	324	200	168	10	5	330	580	40	5	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	6.0		4.2	6.0			4.2	6.0	6.0		4.2
Lane Util. Factor	0.97	0.95		0.97	0.95			1.00	0.91	1.00		0.97
Fr _t	1.00	0.87		1.00	0.99			1.00	1.00	0.85		1.00
Fl _t Protected	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95
Satd. Flow (prot)	3433	3076		3433	3510			1770	5085	1583		3433
Fl _t Permitted	0.95	1.00		0.95	1.00			0.95	1.00	1.00		0.95
Satd. Flow (perm)	3433	3076		3433	3510			1770	5085	1583		3433
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	124	48	331	204	171	10	5	337	592	41	5	10
RTOR Reduction (vph)	0	181	0	0	4	0	0	0	0	14	0	0
Lane Group Flow (vph)	124	198	0	204	177	0	0	342	592	27	0	15
Turn Type	Prot	NA		Prot	NA		Prot	Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases										2		
Actuated Green, G (s)	8.7	18.0		7.8	17.1			18.4	91.6	91.6		2.2
Effective Green, g (s)	8.7	18.0		7.8	17.1			18.4	91.6	91.6		2.2
Actuated g/C Ratio	0.06	0.13		0.06	0.12			0.13	0.65	0.65		0.02
Clearance Time (s)	4.2	6.0		4.2	6.0			4.2	6.0	6.0		4.2
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0	3.0	3.0		2.0
Lane Grp Cap (vph)	213	395		191	428			232	3327	1035		53
v/s Ratio Prot	0.04	c0.06		c0.06	0.05			c0.19	0.12			0.00
v/s Ratio Perm										0.02		
v/c Ratio	0.58	0.86dr		1.07	0.41			1.47	0.18	0.03		0.28
Uniform Delay, d ₁	63.9	56.8		66.1	56.8			60.8	9.5	8.5		68.1
Progression Factor	1.09	1.24		1.00	1.00			1.00	1.00	1.00		1.00
Incremental Delay, d ₂	2.5	0.4		84.3	0.2			235.2	0.1	0.0		1.1
Delay (s)	71.9	70.6		150.4	57.1			296.0	9.6	8.6		69.2
Level of Service	E	E		F	E			F	A	A		E
Approach Delay (s)		70.9			106.5				110.0			
Approach LOS		E			F				F			

Intersection Summary

HCM 2000 Control Delay	59.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	103.5%	ICU Level of Service	G
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

Movement	SBT	SBR
Label Configurations	↑↑↑	↑
Volume (vph)	2610	700
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	4.2
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	2663	714
RTOR Reduction (vph)	0	165
Lane Group Flow (vph)	2663	549
Turn Type	NA	pm+ov
Protected Phases	6	7
Permitted Phases		6
Actuated Green, G (s)	75.4	84.1
Effective Green, g (s)	75.4	84.1
Actuated g/C Ratio	0.54	0.60
Clearance Time (s)	6.0	4.2
Vehicle Extension (s)	3.0	2.0
Lane Grp Cap (vph)	2738	998
v/s Ratio Prot	c0.52	c0.03
v/s Ratio Perm		0.31
v/c Ratio	0.97	0.55
Uniform Delay, d1	31.3	16.7
Progression Factor	1.00	1.00
Incremental Delay, d2	11.9	0.4
Delay (s)	43.2	17.1
Level of Service	D	B
Approach Delay (s)	37.8	
Approach LOS	D	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
 19: El Camino Real & Faraday Ave

2035 + Specific Plan EPFs

AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	90	182	86	180	815	428	10	963	1220	150	30	693
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9	5.0	5.0	4.2		4.2	6.0			4.2
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00		0.97	0.91			0.97
Flt	1.00	0.99	0.85	1.00	1.00	0.85		1.00	0.98			1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (prot)	1770	3367	1441	1770	3539	1583		3433	5002			3433
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00			0.95
Satd. Flow (perm)	1770	3367	1441	1770	3539	1583		3433	5002			3433
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	92	186	88	184	832	437	10	983	1245	153	31	707
RTOR Reduction (vph)	0	2	59	0	0	52	0	0	10	0	0	0
Lane Group Flow (vph)	92	193	20	184	832	385	0	993	1388	0	0	738
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	Prot	NA		Prot	Prot
Protected Phases	3	8		7	4	5!	1	1	6		5!	5
Permitted Phases			8			4						
Actuated Green, G (s)	6.0	35.9	35.9	10.0	39.9	62.8		21.8	51.1			22.9
Effective Green, g (s)	6.0	35.9	35.9	10.0	39.9	62.8		21.8	51.1			22.9
Actuated g/C Ratio	0.04	0.26	0.26	0.07	0.28	0.45		0.16	0.37			0.16
Clearance Time (s)	4.9	4.9	4.9	5.0	5.0	4.2		4.2	6.0			4.2
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0	2.0		2.0	2.0			2.0
Lane Grp Cap (vph)	75	863	369	126	1008	710		534	1825			561
v/s Ratio Prot	0.05	0.06		c0.10	c0.24	0.09		c0.29	0.28			c0.21
v/s Ratio Perm			0.01			0.15						
v/c Ratio	1.23	0.22	0.05	1.46	0.83	0.54		1.86	0.76			1.32
Uniform Delay, d1	67.0	41.1	39.3	65.0	46.8	28.1		59.1	39.1			58.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2	176.9	0.0	0.0	245.4	5.6	0.5		394.0	3.0			154.3
Delay (s)	243.9	41.1	39.3	310.4	52.4	28.6		453.1	42.1			212.8
Level of Service	F	D	D	F	D	C		F	D			F
Approach Delay (s)		91.7			77.9				212.8			
Approach LOS		F			E				F			

Intersection Summary

HCM 2000 Control Delay	129.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.1
Intersection Capacity Utilization	108.0%	ICU Level of Service	G
Analysis Period (min)	15		

! Phase conflict between lane groups.























c Critical Lane Group

Movement	SBT	SBR
Label Configurations	↑↑↑	↑
Volume (vph)	1860	520
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	4.9
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	1898	531
RTOR Reduction (vph)	0	28
Lane Group Flow (vph)	1898	503
Turn Type	NA	pm+ov
Protected Phases	2	3
Permitted Phases		2
Actuated Green, G (s)	52.2	58.2
Effective Green, g (s)	52.2	58.2
Actuated g/C Ratio	0.37	0.42
Clearance Time (s)	6.0	4.9
Vehicle Extension (s)	2.0	2.0
Lane Grp Cap (vph)	1895	658
v/s Ratio Prot	c0.37	0.03
v/s Ratio Perm		0.28
v/c Ratio	1.00	0.76
Uniform Delay, d1	43.9	35.0
Progression Factor	1.00	1.00
Incremental Delay, d2	21.1	4.8
Delay (s)	65.0	39.8
Level of Service	E	D
Approach Delay (s)	95.2	
Approach LOS	F	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
23: Paseo Del Norte & Palomar Airport Rd

2035 + Specific Plan EPFs

AM Peak Hour

													
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	200	2500	150	5	121	910	460	210	175	163	360	111	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.2	6.0	6.0		4.2	6.0	4.2	4.2	5.0		4.2	5.0	
Lane Util. Factor	0.97	0.91	1.00		0.97	0.86	1.00	0.97	0.95		0.97	1.00	
Fr _t	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.93		1.00	1.00	
Fl _t Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	5085	1583		3433	6408	1583	3433	3284		3433	1863	
Fl _t Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	5085	1583		3433	6408	1583	3433	3284		3433	1863	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	204	2551	153	5	123	929	469	214	179	166	367	113	
RTOR Reduction (vph)	0	0	37	0	0	0	158	0	48	0	0	0	
Lane Group Flow (vph)	204	2551	116	0	128	929	311	214	297	0	367	113	
Turn Type	Prot	NA	Perm	Prot	Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	5	2		1	1	6	7	3	8		7	4	
Permitted Phases			2				6						
Actuated Green, G (s)	12.2	78.7	78.7		4.8	71.3	84.1	11.2	24.3		12.8	25.9	
Effective Green, g (s)	12.2	78.7	78.7		4.8	71.3	84.1	11.2	24.3		12.8	25.9	
Actuated g/C Ratio	0.09	0.56	0.56		0.03	0.51	0.60	0.08	0.17		0.09	0.18	
Clearance Time (s)	4.2	6.0	6.0		4.2	6.0	4.2	4.2	5.0		4.2	5.0	
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	299	2858	889		117	3263	950	274	570		313	344	
v/s Ratio Prot	0.06	c0.50			c0.04	0.14	0.03	0.06	c0.09		c0.11	0.06	
v/s Ratio Perm			0.07				0.17						
v/c Ratio	0.68	0.89	0.13		1.09	0.28	0.33	0.78	0.52		1.17	0.33	
Uniform Delay, d ₁	62.0	26.9	14.5		67.6	19.7	13.9	63.2	52.6		63.6	49.5	
Progression Factor	1.00	1.00	1.00		0.78	1.58	3.54	1.00	1.00		1.00	1.00	
Incremental Delay, d ₂	5.0	4.8	0.3		105.6	0.2	0.1	12.5	0.4		106.2	0.2	
Delay (s)	67.1	31.7	14.8		158.5	31.4	49.3	75.7	53.0		169.8	49.7	
Level of Service	E	C	B		F	C	D	E	D		F	D	
Approach Delay (s)		33.3				47.5			61.7			110.8	
Approach LOS		C				D			E			F	
Intersection Summary													
HCM 2000 Control Delay			49.4									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.85										
Actuated Cycle Length (s)			140.0									Sum of lost time (s)	19.4
Intersection Capacity Utilization			88.4%									ICU Level of Service	E
Analysis Period (min)			15										
c Critical Lane Group													

























Movement	SBR
Lane Configurations	7
Volume (vph)	210
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.2
Lane Util. Factor	1.00
Fr _t	0.85
Fl _t Protected	1.00
Satd. Flow (prot)	1583
Fl _t Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.98
Adj. Flow (vph)	214
RTOR Reduction (vph)	41
Lane Group Flow (vph)	173
Turn Type	pm+ov
Protected Phases	5
Permitted Phases	4
Actuated Green, G (s)	38.1
Effective Green, g (s)	38.1
Actuated g/C Ratio	0.27
Clearance Time (s)	4.2
Vehicle Extension (s)	2.0
Lane Grp Cap (vph)	430
v/s Ratio Prot	0.04
v/s Ratio Perm	0.07
v/c Ratio	0.40
Uniform Delay, d ₁	41.7
Progression Factor	1.00
Incremental Delay, d ₂	0.2
Delay (s)	41.9
Level of Service	D
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
24: Armada Dr & Palomar Airport Rd

2035 + Specific Plan EPFs

AM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (vph)	10	353	2570	150	5	110	1280	242	120	60	70	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	6.0	4.7		4.2	6.0	5.0	4.7	4.7	4.7	5.0
Lane Util. Factor		0.97	0.91	1.00		1.00	0.91	1.00	0.97	0.95	0.95	0.97
Fr _t		1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.98	0.85	1.00
Fl _t Protected		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95
Satd. Flow (prot)		3433	5085	1583		1770	5085	1583	3433	1735	1504	3433
Fl _t Permitted		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95
Satd. Flow (perm)		3433	5085	1583		1770	5085	1583	3433	1735	1504	3433
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	10	360	2622	153	5	112	1306	247	122	61	71	151
RTOR Reduction (vph)	0	0	0	53	0	0	0	111	0	4	53	0
Lane Group Flow (vph)	0	370	2622	100	0	117	1306	136	122	66	9	151
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	NA	Perm	Prot
Protected Phases	5	5	2	3	1	1	6	7	3	8		7
Permitted Phases				2				6			8	
Actuated Green, G (s)		22.3	86.0	91.4		8.8	72.5	77.1	5.4	20.7	20.7	4.6
Effective Green, g (s)		22.3	86.0	91.4		8.8	72.5	77.1	5.4	20.7	20.7	4.6
Actuated g/C Ratio		0.16	0.61	0.65		0.06	0.52	0.55	0.04	0.15	0.15	0.03
Clearance Time (s)		4.2	6.0	4.7		4.2	6.0	5.0	4.7	4.7	4.7	5.0
Vehicle Extension (s)		2.0	3.0	2.0		2.0	3.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)		546	3123	1033		111	2633	928	132	256	222	112
v/s Ratio Prot		0.11	c0.52	0.00		c0.07	0.26	0.00	0.04	c0.04		c0.04
v/s Ratio Perm				0.06				0.08			0.01	
v/c Ratio		0.68	0.84	0.10		1.05	0.50	0.15	0.92	0.26	0.04	1.35
Uniform Delay, d ₁		55.5	21.5	9.0		65.6	21.9	15.4	67.1	52.8	51.1	67.7
Progression Factor		0.82	0.51	0.54		1.17	1.17	3.43	1.00	1.00	1.00	1.00
Incremental Delay, d ₂		1.2	1.3	0.0		92.7	0.6	0.0	54.7	0.2	0.0	204.4
Delay (s)		46.9	12.2	4.8		169.5	26.1	52.7	121.8	53.0	51.2	272.1
Level of Service		D	B	A		F	C	D	F	D	D	F
Approach Delay (s)			16.0				40.1			85.6		
Approach LOS			B				D			F		
Intersection Summary												
HCM 2000 Control Delay			35.1			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				19.9		
Intersection Capacity Utilization			81.8%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												


























Movement	SBT	SBR
Lane Configurations	↶	↷
Volume (vph)	40	151
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.7	4.7
Lane Util. Factor	0.95	0.95
Flt	0.91	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	1612	1504
Flt Permitted	1.00	1.00
Satd. Flow (perm)	1612	1504
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	41	154
RTOR Reduction (vph)	45	80
Lane Group Flow (vph)	56	14
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Actuated Green, G (s)	20.2	20.2
Effective Green, g (s)	20.2	20.2
Actuated g/C Ratio	0.14	0.14
Clearance Time (s)	4.7	4.7
Vehicle Extension (s)	2.0	2.0
Lane Grp Cap (vph)	232	217
v/s Ratio Prot	0.03	
v/s Ratio Perm		0.01
v/c Ratio	0.24	0.06
Uniform Delay, d1	53.1	51.7
Progression Factor	1.00	1.00
Incremental Delay, d2	0.2	0.0
Delay (s)	53.3	51.8
Level of Service	D	D
Approach Delay (s)	148.4	
Approach LOS	F	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
 26: Aviara Pkwy/College Blvd & Palomar Airport Rd

2035 + Specific Plan EPFs

AM Peak Hour























												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	960	1882	158	5	180	1001	120	301	750	260	50	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.3	6.3		4.2	6.3	6.3	4.2	5.8	5.8	4.2	6.0
Lane Util. Factor	0.97	0.91	1.00		0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.95
Flt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	5085	1583		3433	5085	1583	3433	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	5085	1583		3433	5085	1583	3433	3539	1583	1770	3539
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	980	1920	161	5	184	1021	122	307	765	265	51	143
RTOR Reduction (vph)	0	0	71	0	0	0	89	0	0	118	0	0
Lane Group Flow (vph)	980	1920	90	0	189	1021	33	307	765	147	51	143
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases			2				6			8		
Actuated Green, G (s)	36.5	66.2	66.2		8.7	38.1	38.1	22.2	37.7	37.7	6.9	22.2
Effective Green, g (s)	36.5	66.2	66.2		8.7	38.1	38.1	22.2	37.7	37.7	6.9	22.2
Actuated g/C Ratio	0.26	0.47	0.47		0.06	0.27	0.27	0.16	0.27	0.27	0.05	0.16
Clearance Time (s)	4.5	6.3	6.3		4.2	6.3	6.3	4.2	5.8	5.8	4.2	6.0
Vehicle Extension (s)	2.0	3.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0
Lane Grp Cap (vph)	895	2404	748		213	1383	430	544	953	426	87	561
v/s Ratio Prot	c0.29	c0.38			c0.06	0.20		0.09	c0.22		c0.03	0.04
v/s Ratio Perm			0.06				0.02			0.09		
v/c Ratio	1.09	0.80	0.12		0.89	0.74	0.08	0.56	0.80	0.34	0.59	0.25
Uniform Delay, d1	51.8	31.3	20.6		65.2	46.4	37.9	54.4	47.7	41.2	65.2	51.6
Progression Factor	0.84	0.70	0.56		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	50.6	1.2	0.1		32.0	3.6	0.3	0.8	5.0	0.5	6.3	0.2
Delay (s)	94.3	23.1	11.6		97.2	50.0	38.2	55.2	52.6	41.7	71.5	51.9
Level of Service	F	C	B		F	D	D	E	D	D	E	D
Approach Delay (s)		45.3				55.6			51.1			39.1
Approach LOS		D				E			D			D
Intersection Summary												
HCM 2000 Control Delay			48.2			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			21.0			
Intersection Capacity Utilization			88.1%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBR
Lane Configurations	7
Volume (vph)	300
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Fr _t	0.85
Fl _t Protected	1.00
Satd. Flow (prot)	1583
Fl _t Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.98
Adj. Flow (vph)	306
RTOR Reduction (vph)	60
Lane Group Flow (vph)	246
Turn Type	pm+ov
Protected Phases	5
Permitted Phases	4
Actuated Green, G (s)	58.7
Effective Green, g (s)	58.7
Actuated g/C Ratio	0.42
Clearance Time (s)	4.5
Vehicle Extension (s)	2.0
Lane Grp Cap (vph)	714
v/s Ratio Prot	0.09
v/s Ratio Perm	0.07
v/c Ratio	0.34
Uniform Delay, d ₁	27.6
Progression Factor	1.00
Incremental Delay, d ₂	0.1
Delay (s)	27.7
Level of Service	C
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
27: El Camino Real & Palomar Airport Rd

2035 + Specific Plan EPFs

AM Peak Hour






















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	280	1147	150	770	1668	953	15	120	1200	610	5	1086
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	6.0	6.0		5.0	6.0	5.0		5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	0.88		0.97	0.91	0.88		0.94
Flt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (prot)	3433	5085	1583	3433	5085	2787		3433	5085	2787		4990
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (perm)	3433	5085	1583	3433	5085	2787		3433	5085	2787		4990
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	286	1170	153	786	1702	972	15	122	1224	622	5	1108
RTOR Reduction (vph)	0	0	109	0	0	384	0	0	0	63	0	0
Lane Group Flow (vph)	286	1170	44	786	1702	588	0	137	1224	559	0	1113
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	pm+ov	Prot	Prot
Protected Phases	3	8		7	4		1	1	6	7	5	5
Permitted Phases			8			4				6		
Actuated Green, G (s)	13.6	40.0	40.0	25.0	51.4	51.4		7.8	28.0	53.0		25.0
Effective Green, g (s)	13.6	40.0	40.0	25.0	51.4	51.4		7.8	28.0	53.0		25.0
Actuated g/C Ratio	0.10	0.29	0.29	0.18	0.37	0.37		0.06	0.20	0.38		0.18
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0		5.0	6.0	5.0		5.0
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0	3.0		2.0	3.0	2.0		2.0
Lane Grp Cap (vph)	333	1452	452	613	1866	1023		191	1017	1055		891
v/s Ratio Prot	0.08	0.23		c0.23	c0.33			0.04	c0.24	0.09		c0.22
v/s Ratio Perm			0.03			0.21				0.11		
v/c Ratio	0.86	0.81	0.10	1.28	0.91	0.57		0.72	1.20	0.53		1.25
Uniform Delay, d1	62.3	46.4	36.7	57.5	42.2	35.5		65.0	56.0	33.8		57.5
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	18.6	4.9	0.4	139.2	8.3	2.3		10.2	101.1	0.3		121.5
Delay (s)	80.8	51.3	37.2	196.7	50.4	37.9		75.2	157.1	34.1		179.0
Level of Service	F	D	D	F	D	D		E	F	C		F
Approach Delay (s)		55.2			80.1				112.8			
Approach LOS		E			F				F			
Intersection Summary												
HCM 2000 Control Delay			87.2				HCM 2000 Level of Service		F			
HCM 2000 Volume to Capacity ratio			1.15									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)		22.0			
Intersection Capacity Utilization			106.4%				ICU Level of Service		G			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
↓	↙	
Lane Configurations	↑↑↑	↗
Volume (vph)	1460	470
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	5.0
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	1490	480
RTOR Reduction (vph)	0	59
Lane Group Flow (vph)	1490	421
Turn Type	NA	pm+ov
Protected Phases	2	3
Permitted Phases		2
Actuated Green, G (s)	45.2	58.8
Effective Green, g (s)	45.2	58.8
Actuated g/C Ratio	0.32	0.42
Clearance Time (s)	6.0	5.0
Vehicle Extension (s)	3.0	2.0
Lane Grp Cap (vph)	1641	664
v/s Ratio Prot	0.29	0.06
v/s Ratio Perm		0.20
v/c Ratio	0.91	0.63
Uniform Delay, d1	45.4	32.1
Progression Factor	1.00	1.00
Incremental Delay, d2	7.7	1.5
Delay (s)	53.1	33.6
Level of Service	D	C
Approach Delay (s)	95.5	
Approach LOS	F	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
 32: El Camino Real & Aviara Pkwy

2035 + Specific Plan EPFs

AM Peak Hour

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Volume (vph)	5	120	187	402	10	680	386	123	315	1991	230	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	5.7	4.6		4.2	5.7		4.6	6.4	6.4	
Lane Util. Factor		0.97	0.95	1.00		0.97	0.95		0.97	0.91	1.00	
Fr _t		1.00	1.00	0.85		1.00	0.96		1.00	1.00	0.85	
Fl _t Protected		0.95	1.00	1.00		0.95	1.00		0.95	1.00	1.00	
Satd. Flow (prot)		3433	3539	1583		3433	3411		3433	5085	1583	
Fl _t Permitted		0.95	1.00	1.00		0.95	1.00		0.95	1.00	1.00	
Satd. Flow (perm)		3433	3539	1583		3433	3411		3433	5085	1583	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	5	122	191	410	10	694	394	126	321	2032	235	5
RTOR Reduction (vph)	0	0	0	70	0	0	26	0	0	0	59	0
Lane Group Flow (vph)	0	127	191	340	0	704	494	0	321	2032	176	0
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		Prot	NA	Perm	Prot
Protected Phases	7	7	4	5	3	3	8		5	2		1
Permitted Phases				4								2
Actuated Green, G (s)		8.9	21.8	33.2		22.8	35.7		11.4	70.9	70.9	
Effective Green, g (s)		8.9	21.8	33.2		22.8	35.7		11.4	70.9	70.9	
Actuated g/C Ratio		0.06	0.16	0.24		0.16	0.26		0.08	0.51	0.51	
Clearance Time (s)		4.2	5.7	4.6		4.2	5.7		4.6	6.4	6.4	
Vehicle Extension (s)		2.0	2.0	2.0		3.0	2.0		2.0	3.0	3.0	
Lane Grp Cap (vph)		218	551	375		559	869		279	2575	801	
v/s Ratio Prot		0.04	0.05	c0.07		c0.21	0.14		c0.09	c0.40		
v/s Ratio Perm				0.14								0.11
v/c Ratio		0.58	0.35	0.91		1.26	0.57		1.15	0.79	0.22	
Uniform Delay, d ₁		63.7	52.7	51.9		58.6	45.4		64.3	28.4	19.2	
Progression Factor		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d ₂		2.5	0.1	24.2		130.7	0.5		100.9	2.5	0.6	
Delay (s)		66.3	52.9	76.1		189.3	45.9		165.2	31.0	19.8	
Level of Service		E	D	E		F	D		F	C	B	
Approach Delay (s)			68.3				128.4			46.6		
Approach LOS			E				F			D		
Intersection Summary												
HCM 2000 Control Delay			59.5				HCM 2000 Level of Service			E		
HCM 2000 Volume to Capacity ratio			0.95									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)		20.9			
Intersection Capacity Utilization			92.1%				ICU Level of Service		F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
 32: El Camino Real & Aviara Pkwy

2035 + Specific Plan EPFs
 AM Peak Hour

























Movement	SBL	SBT	SBR
Lane Configurations			
Volume (vph)	91	1680	110
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.2	6.4	
Lane Util. Factor	0.97	0.91	
Frt	1.00	0.99	
Flt Protected	0.95	1.00	
Satd. Flow (prot)	3433	5039	
Flt Permitted	0.95	1.00	
Satd. Flow (perm)	3433	5039	
Peak-hour factor, PHF	0.98	0.98	0.98
Adj. Flow (vph)	93	1714	112
RTOR Reduction (vph)	0	4	0
Lane Group Flow (vph)	98	1822	0
Turn Type	Prot	NA	
Protected Phases	1	6	
Permitted Phases			
Actuated Green, G (s)	4.0	63.1	
Effective Green, g (s)	4.0	63.1	
Actuated g/C Ratio	0.03	0.45	
Clearance Time (s)	4.2	6.4	
Vehicle Extension (s)	2.0	3.0	
Lane Grp Cap (vph)	98	2271	
v/s Ratio Prot	0.03	0.36	
v/s Ratio Perm			
v/c Ratio	1.00	0.80	
Uniform Delay, d1	68.0	33.1	
Progression Factor	1.09	0.65	
Incremental Delay, d2	71.0	1.9	
Delay (s)	145.4	23.5	
Level of Service	F	C	
Approach Delay (s)		29.7	
Approach LOS		C	
Intersection Summary			

HCM Signalized Intersection Capacity Analysis

4: El Camino Real & Tamarck Ave

2035 + Specific Plan EPFs

PM Peak Hour













												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Volume (vph)	60	270	109	189	190	70	258	2844	529	5	100	947
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.0	5.0	4.2	5.0		4.2	6.0			4.2	6.0
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00		0.97	0.91			1.00	0.91
Fr _t	1.00	1.00	0.85	1.00	0.96		1.00	0.98			1.00	1.00
Fl _t Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (prot)	1770	1863	1583	3433	1788		3433	4966			1770	5085
Fl _t Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.95	1.00
Satd. Flow (perm)	1770	1863	1583	3433	1788		3433	4966			1770	5085
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	61	276	111	193	194	71	263	2902	540	5	102	966
RTOR Reduction (vph)	0	0	90	0	11	0	0	16	0	0	0	0
Lane Group Flow (vph)	61	276	21	193	254	0	263	3426	0	0	107	966
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	Prot	NA
Protected Phases	7	4		3	8		5	2		1	1	6
Permitted Phases			4									
Actuated Green, G (s)	4.0	26.8	26.8	5.8	28.6		17.1	81.2			6.8	70.9
Effective Green, g (s)	4.0	26.8	26.8	5.8	28.6		17.1	81.2			6.8	70.9
Actuated g/C Ratio	0.03	0.19	0.19	0.04	0.20		0.12	0.58			0.05	0.51
Clearance Time (s)	4.2	5.0	5.0	4.2	5.0		4.2	6.0			4.2	6.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	3.0			2.0	3.0
Lane Grp Cap (vph)	50	356	303	142	365		419	2880			85	2575
v/s Ratio Prot	c0.03	c0.15		c0.06	0.14		0.08	c0.69			c0.06	0.19
v/s Ratio Perm			0.01									
v/c Ratio	1.22	0.78	0.07	1.36	0.70		0.63	1.19			1.26	0.38
Uniform Delay, d ₁	68.0	53.7	46.4	67.1	51.7		58.4	29.4			66.6	21.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	1.00
Incremental Delay, d ₂	198.5	9.3	0.0	200.3	4.6		2.1	89.1			182.3	0.4
Delay (s)	266.5	63.0	46.4	267.4	56.3		60.5	118.5			248.9	21.5
Level of Service	F	E	D	F	E		E	F			F	C
Approach Delay (s)		86.6			145.2			114.4				41.9
Approach LOS		F			F			F				D
Intersection Summary												
HCM 2000 Control Delay			100.0				HCM 2000 Level of Service				F	
HCM 2000 Volume to Capacity ratio			1.11									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)			19.4		
Intersection Capacity Utilization			108.3%				ICU Level of Service			G		
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBR
▲▲▲ Lane Configurations	7
Volume (vph)	100
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.98
Adj. Flow (vph)	102
RTOR Reduction (vph)	50
Lane Group Flow (vph)	52
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	70.9
Effective Green, g (s)	70.9
Actuated g/C Ratio	0.51
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	801
v/s Ratio Prot	
v/s Ratio Perm	0.03
v/c Ratio	0.06
Uniform Delay, d1	17.6
Progression Factor	1.00
Incremental Delay, d2	0.2
Delay (s)	17.8
Level of Service	B
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
 9: Paseo Del Norte/Project Dwy & Cannon Rd

2035 + Specific Plan EPFs

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↑↑↑		↵	↑↑↑	↶		↵↶		↶	↵↶	↑
Volume (vph)	0	1575	390	120	1461	422	5	680	0	293	407	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0	4.0		4.0		5.0	4.0	4.0
Lane Util. Factor		*0.88		1.00	0.91	1.00		0.97		1.00	0.97	1.00
Flt		0.97		1.00	1.00	0.85		1.00		0.85	1.00	1.00
Flt Protected		1.00		0.95	1.00	1.00		0.95		1.00	0.95	1.00
Satd. Flow (prot)		4771		1770	5085	1583		3433		1583	3433	1863
Flt Permitted		1.00		0.95	1.00	1.00		0.95		1.00	0.95	1.00
Satd. Flow (perm)		4771		1770	5085	1583		3433		1583	3433	1863
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1607	398	122	1491	431	5	694	0	299	415	151
RTOR Reduction (vph)	0	23	0	0	0	0	0	0	0	88	0	0
Lane Group Flow (vph)	0	1982	0	122	1491	431	0	699	0	211	415	151
Turn Type		NA		Prot	NA	Over	Prot	Prot		custom	Prot	NA
Protected Phases		2 9		1	6	7	3	3		1	7	4
Permitted Phases										3		
Actuated Green, G (s)		73.3		12.0	68.3	60.7		33.9		45.9	60.7	22.8
Effective Green, g (s)		69.3		12.0	68.3	60.7		33.9		45.9	60.7	22.8
Actuated g/C Ratio		0.43		0.08	0.43	0.38		0.21		0.29	0.38	0.14
Clearance Time (s)				5.0	5.0	4.0		4.0		5.0	4.0	4.0
Vehicle Extension (s)				2.0	4.5	3.0		3.0		2.0	3.0	3.0
Lane Grp Cap (vph)		2066		132	2170	600		727		503	1302	265
v/s Ratio Prot		c0.42		c0.07	0.29	0.27		c0.20		0.03	0.12	0.08
v/s Ratio Perm										0.10		
v/c Ratio		0.96		0.92	0.69	0.72		0.96		0.42	0.32	0.57
Uniform Delay, d1		44.0		73.5	37.2	42.4		62.4		46.2	35.1	64.0
Progression Factor		0.87		0.93	0.91	1.23		1.00		1.00	1.00	1.00
Incremental Delay, d2		9.7		25.4	0.6	1.3		24.2		0.2	0.1	2.8
Delay (s)		48.0		94.2	34.3	53.5		86.6		46.4	35.2	66.8
Level of Service		D		F	C	D		F		D	D	E
Approach Delay (s)		48.0			42.0				74.5			59.5
Approach LOS		D			D				E			E
Intersection Summary												
HCM 2000 Control Delay			52.6		HCM 2000 Level of Service					D		
HCM 2000 Volume to Capacity ratio			0.97									
Actuated Cycle Length (s)			160.0		Sum of lost time (s)					22.0		
Intersection Capacity Utilization			88.1%		ICU Level of Service					E		
Analysis Period (min)			15									
c Critical Lane Group												



Movement	SBR
Lane Configurations	TT
Volume (vph)	695
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	0.88
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	2787
Flt Permitted	1.00
Satd. Flow (perm)	2787
Peak-hour factor, PHF	0.98
Adj. Flow (vph)	709
RTOR Reduction (vph)	0
Lane Group Flow (vph)	709
Turn Type	custom
Protected Phases	9
Permitted Phases	4 9
Actuated Green, G (s)	40.8
Effective Green, g (s)	40.8
Actuated g/C Ratio	0.25
Clearance Time (s)	4.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	780
v/s Ratio Prot	c0.10
v/s Ratio Perm	0.15
v/c Ratio	0.91
Uniform Delay, d1	57.8
Progression Factor	1.00
Incremental Delay, d2	14.3
Delay (s)	72.1
Level of Service	E
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
 14: El Camino Real & Cannon Rd

2035 + Specific Plan EPFs

PM Peak Hour

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Volume (vph)	831	203	574	5	70	96	10	5	325	2270	180	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	6.0			4.2	6.0			4.2	6.0	6.0	
Lane Util. Factor	0.97	0.95			0.97	0.95			1.00	0.91	1.00	
Fr _t	1.00	0.89			1.00	0.99			1.00	1.00	0.85	
Fl _t Protected	0.95	1.00			0.95	1.00			0.95	1.00	1.00	
Satd. Flow (prot)	3433	3147			3433	3490			1770	5085	1583	
Fl _t Permitted	0.95	1.00			0.95	1.00			0.95	1.00	1.00	
Satd. Flow (perm)	3433	3147			3433	3490			1770	5085	1583	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	848	207	586	5	71	98	10	5	332	2316	184	5
RTOR Reduction (vph)	0	215	0	0	0	7	0	0	0	0	68	0
Lane Group Flow (vph)	848	578	0	0	76	101	0	0	337	2316	116	0
Turn Type	Prot	NA		Prot	Prot	NA		Prot	Prot	NA	Perm	Prot
Protected Phases	7	4		3	3	8		5	5	2		1
Permitted Phases												2
Actuated Green, G (s)	20.8	33.8			7.7	20.7			18.3	76.5	76.5	
Effective Green, g (s)	20.8	33.8			7.7	20.7			18.3	76.5	76.5	
Actuated g/C Ratio	0.15	0.24			0.06	0.15			0.13	0.55	0.55	
Clearance Time (s)	4.2	6.0			4.2	6.0			4.2	6.0	6.0	
Vehicle Extension (s)	2.0	2.0			2.0	2.0			2.0	3.0	3.0	
Lane Grp Cap (vph)	510	759			188	516			231	2778	864	
v/s Ratio Prot	c0.25	c0.18			c0.02	0.03			c0.19	c0.46		
v/s Ratio Perm												0.07
v/c Ratio	1.66	0.98dr			0.40	0.20			1.46	0.83	0.13	
Uniform Delay, d ₁	59.6	49.4			63.9	52.3			60.9	26.5	15.5	
Progression Factor	1.00	1.00			1.00	1.00			1.00	1.00	1.00	
Incremental Delay, d ₂	306.8	4.1			0.5	0.1			228.8	3.1	0.3	
Delay (s)	366.4	53.5			64.5	52.4			289.7	29.6	15.9	
Level of Service	F	D			E	D			F	C	B	
Approach Delay (s)		215.2				57.4				59.6		
Approach LOS		F				E				E		

Intersection Summary

HCM 2000 Control Delay	92.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	91.7%	ICU Level of Service	F
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group



Movement	SBL	SBT	SBR
Lane Configurations	↔↔	↕↕↕	↔↔
Volume (vph)	10	1040	415
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.2	6.0	4.2
Lane Util. Factor	0.97	0.91	1.00
Flt	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583
Flt Permitted	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583
Peak-hour factor, PHF	0.98	0.98	0.98
Adj. Flow (vph)	10	1061	423
RTOR Reduction (vph)	0	0	179
Lane Group Flow (vph)	15	1061	244
Turn Type	Prot	NA	pm+ov
Protected Phases	1	6	7
Permitted Phases			6
Actuated Green, G (s)	1.6	59.8	80.6
Effective Green, g (s)	1.6	59.8	80.6
Actuated g/C Ratio	0.01	0.43	0.58
Clearance Time (s)	4.2	6.0	4.2
Vehicle Extension (s)	2.0	3.0	2.0
Lane Grp Cap (vph)	39	2172	911
v/s Ratio Prot	0.00	0.21	0.04
v/s Ratio Perm			0.11
v/c Ratio	0.38	0.49	0.27
Uniform Delay, d1	68.7	29.0	14.9
Progression Factor	1.00	1.00	1.00
Incremental Delay, d2	2.3	0.8	0.1
Delay (s)	71.0	29.8	15.0
Level of Service	E	C	B
Approach Delay (s)		26.0	
Approach LOS		C	
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
 19: El Camino Real & Faraday Ave

2035 + Specific Plan EPFs

PM Peak Hour























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	400	687	1088	220	228	591	45	229	2060	150	351	1190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9	5.0	5.0	4.2		4.2	6.0		4.2	6.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00		0.97	0.91		0.97	0.91
Flt	1.00	0.93	0.85	1.00	1.00	0.85		1.00	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3168	1441	1770	3539	1583		3433	5034		3433	5085
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (perm)	1770	3168	1441	1770	3539	1583		3433	5034		3433	5085
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	408	701	1110	224	233	603	46	234	2102	153	358	1214
RTOR Reduction (vph)	0	72	72	0	0	46	0	0	6	0	0	0
Lane Group Flow (vph)	408	1173	494	224	233	557	0	280	2249	0	358	1214
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	Prot	NA		Prot	NA
Protected Phases	3	8		7	4	5	1	1	6		5	2
Permitted Phases			8			4						
Actuated Green, G (s)	31.0	45.1	45.1	12.0	26.1	36.9		14.0	52.0		10.8	48.8
Effective Green, g (s)	31.0	45.1	45.1	12.0	26.1	36.9		14.0	52.0		10.8	48.8
Actuated g/C Ratio	0.22	0.32	0.32	0.09	0.19	0.26		0.10	0.37		0.08	0.35
Clearance Time (s)	4.9	4.9	4.9	5.0	5.0	4.2		4.2	6.0		4.2	6.0
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0	2.0		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	391	1020	464	151	659	417		343	1869		264	1772
v/s Ratio Prot	0.23	c0.37		0.13	0.07	c0.10		0.08	c0.45		c0.10	0.24
v/s Ratio Perm			0.34			0.25						
v/c Ratio	1.04	1.15	1.06	1.48	0.35	1.34		0.82	1.20		1.36	0.69
Uniform Delay, d1	54.5	47.5	47.5	64.0	49.6	51.5		61.7	44.0		64.6	39.0
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	57.3	79.1	60.1	249.5	0.3	167.0		13.2	97.0		183.0	2.2
Delay (s)	111.8	126.6	107.6	313.5	49.9	218.5		75.0	141.0		247.6	41.2
Level of Service	F	F	F	F	D	F		E	F		F	D
Approach Delay (s)		119.0			201.5				133.7			85.4
Approach LOS		F			F				F			F
Intersection Summary												
HCM 2000 Control Delay			128.4			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.26									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			20.1			
Intersection Capacity Utilization			114.5%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBR
▲▲▲ Lane Configurations	↗
Volume (vph)	60
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.9
Lane Util. Factor	1.00
Flt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.98
Adj. Flow (vph)	61
RTOR Reduction (vph)	26
Lane Group Flow (vph)	35
Turn Type	pm+ov
Protected Phases	3
Permitted Phases	2
Actuated Green, G (s)	79.8
Effective Green, g (s)	79.8
Actuated g/C Ratio	0.57
Clearance Time (s)	4.9
Vehicle Extension (s)	2.0
Lane Grp Cap (vph)	902
v/s Ratio Prot	0.01
v/s Ratio Perm	0.01
v/c Ratio	0.04
Uniform Delay, d1	13.2
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	13.2
Level of Service	B
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
23: Paseo Del Norte & Palomar Airport Rd

2035 + Specific Plan EPFs

PM Peak Hour

													
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	
Lane Configurations													
Volume (vph)	370	1450	180	30	464	2340	554	390	647	294	467	645	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.2	6.0	6.0		4.2	6.0	4.2	4.2	5.0		4.2	5.0	
Lane Util. Factor	0.97	0.91	1.00		0.97	0.86	1.00	0.97	0.95		0.97	1.00	
Fr _t	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.95		1.00	1.00	
Fl _t Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	5085	1583		3433	6408	1583	3433	3373		3433	1863	
Fl _t Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	5085	1583		3433	6408	1583	3433	3373		3433	1863	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	378	1480	184	31	473	2388	565	398	660	300	477	658	
RTOR Reduction (vph)	0	0	90	0	0	0	29	0	35	0	0	0	
Lane Group Flow (vph)	378	1480	94	0	504	2388	536	398	925	0	477	658	
Turn Type	Prot	NA	Perm	Prot	Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	5	2		1	1	6	7	3	8		7	4	
Permitted Phases			2				6						
Actuated Green, G (s)	13.8	48.0	48.0		21.8	56.0	75.2	13.8	41.6		19.2	47.0	
Effective Green, g (s)	13.8	48.0	48.0		21.8	56.0	75.2	13.8	41.6		19.2	47.0	
Actuated g/C Ratio	0.09	0.32	0.32		0.15	0.37	0.50	0.09	0.28		0.13	0.31	
Clearance Time (s)	4.2	6.0	6.0		4.2	6.0	4.2	4.2	5.0		4.2	5.0	
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	315	1627	506		498	2392	793	315	935		439	583	
v/s Ratio Prot	c0.11	0.29			0.15	c0.37	0.09	c0.12	0.27		c0.14	c0.35	
v/s Ratio Perm			0.06				0.25						
v/c Ratio	1.20	0.91	0.19		1.01	1.00	0.68	1.26	0.99		1.09	1.13	
Uniform Delay, d ₁	68.1	48.9	36.9		64.1	47.0	28.2	68.1	54.0		65.4	51.5	
Progression Factor	1.00	1.00	1.00		0.76	0.69	1.16	1.00	1.00		1.00	1.00	
Incremental Delay, d ₂	116.5	9.1	0.8		15.2	5.2	0.2	141.5	26.3		68.3	78.0	
Delay (s)	184.6	58.0	37.7		64.0	37.8	32.9	209.6	80.3		133.7	129.5	
Level of Service	F	E	D		E	D	C	F	F		F	F	
Approach Delay (s)		79.6				40.8			118.2			103.5	
Approach LOS		E				D			F			F	
Intersection Summary													
HCM 2000 Control Delay			74.5									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			1.10										
Actuated Cycle Length (s)			150.0									Sum of lost time (s)	19.4
Intersection Capacity Utilization			105.7%									ICU Level of Service	G
Analysis Period (min)			15										
c Critical Lane Group													



Movement	SBR
Lane Configurations	7
Volume (vph)	480
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.2
Lane Util. Factor	1.00
Fr _t	0.85
Fl _t Protected	1.00
Satd. Flow (prot)	1583
Fl _t Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.98
Adj. Flow (vph)	490
RTOR Reduction (vph)	49
Lane Group Flow (vph)	441
Turn Type	pm+ov
Protected Phases	5
Permitted Phases	4
Actuated Green, G (s)	60.8
Effective Green, g (s)	60.8
Actuated g/C Ratio	0.41
Clearance Time (s)	4.2
Vehicle Extension (s)	2.0
Lane Grp Cap (vph)	641
v/s Ratio Prot	0.06
v/s Ratio Perm	0.22
v/c Ratio	0.69
Uniform Delay, d ₁	36.8
Progression Factor	1.00
Incremental Delay, d ₂	2.5
Delay (s)	39.2
Level of Service	D
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
24: Armada Dr & Palomar Airport Rd

2035 + Specific Plan EPFs

PM Peak Hour
























Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (vph)	15	254	1787	140	5	290	2444	262	360	110	280	288
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.2	6.0	4.7		4.2	6.0	5.0	4.7	4.7	4.7	5.0
Lane Util. Factor		0.97	0.91	1.00		1.00	0.91	1.00	0.97	0.95	0.95	0.97
Fr _t		1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.93	0.85	1.00
Fl _t Protected		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95
Satd. Flow (prot)		3433	5085	1583		1770	5085	1583	3433	1648	1504	3433
Fl _t Permitted		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95
Satd. Flow (perm)		3433	5085	1583		1770	5085	1583	3433	1648	1504	3433
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	15	259	1823	143	5	296	2494	267	367	112	286	294
RTOR Reduction (vph)	0	0	0	71	0	0	0	82	0	22	149	0
Lane Group Flow (vph)	0	274	1823	72	0	301	2494	185	367	184	43	294
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	NA	Perm	Prot
Protected Phases	5	5	2	3	1	1	6	7	3	8		7
Permitted Phases				2				6			8	
Actuated Green, G (s)		16.3	55.5	75.4		24.0	63.2	80.4	19.9	33.4	33.4	17.2
Effective Green, g (s)		16.3	55.5	75.4		24.0	63.2	80.4	19.9	33.4	33.4	17.2
Actuated g/C Ratio		0.11	0.37	0.50		0.16	0.42	0.54	0.13	0.22	0.22	0.11
Clearance Time (s)		4.2	6.0	4.7		4.2	6.0	5.0	4.7	4.7	4.7	5.0
Vehicle Extension (s)		2.0	3.0	2.0		2.0	3.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)		373	1881	795		283	2142	848	455	366	334	393
v/s Ratio Prot		0.08	0.36	0.01		c0.17	c0.49	0.03	c0.11	0.11		0.09
v/s Ratio Perm				0.03				0.09			0.03	
v/c Ratio		0.73	0.97	0.09		1.06	1.16	0.22	0.81	0.50	0.13	0.75
Uniform Delay, d ₁		64.8	46.4	19.4		63.0	43.4	18.3	63.2	51.0	46.6	64.3
Progression Factor		1.09	0.71	2.37		0.75	1.23	2.42	1.00	1.00	1.00	1.00
Incremental Delay, d ₂		2.0	6.3	0.0		52.4	76.3	0.0	9.5	0.4	0.1	6.7
Delay (s)		72.5	39.2	46.0		99.8	129.5	44.3	72.7	51.4	46.7	71.0
Level of Service		E	D	D		F	F	D	E	D	D	E
Approach Delay (s)			43.7				119.2			60.5		
Approach LOS			D				F			E		
Intersection Summary												
HCM 2000 Control Delay			81.3			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.04									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)				19.9		
Intersection Capacity Utilization			105.2%			ICU Level of Service				G		
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
↓	↶	↷
Lane Configurations	↶	↷
Volume (vph)	90	574
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.7	4.7
Lane Util. Factor	0.95	0.95
Flt	0.89	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	1575	1504
Flt Permitted	1.00	1.00
Satd. Flow (perm)	1575	1504
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	92	586
RTOR Reduction (vph)	71	208
Lane Group Flow (vph)	273	126
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Actuated Green, G (s)	31.0	31.0
Effective Green, g (s)	31.0	31.0
Actuated g/C Ratio	0.21	0.21
Clearance Time (s)	4.7	4.7
Vehicle Extension (s)	2.0	2.0
Lane Grp Cap (vph)	325	310
v/s Ratio Prot	c0.17	
v/s Ratio Perm		0.08
v/c Ratio	0.84	0.41
Uniform Delay, d1	57.1	51.5
Progression Factor	1.00	1.00
Incremental Delay, d2	16.3	0.3
Delay (s)	73.4	51.9
Level of Service	E	D
Approach Delay (s)	65.3	
Approach LOS	E	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis
 26: Aviara Pkwy/College Blvd & Palomar Airport Rd

2035 + Specific Plan EPFs

PM Peak Hour























												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	320	1712	387	5	250	2017	160	261	250	160	40	610
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	6.3	6.3		4.2	6.3	6.3	4.2	5.8	5.8	4.2	6.0
Lane Util. Factor	0.97	0.91	1.00		0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.95
Flt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	5085	1583		3433	5085	1583	3433	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	5085	1583		3433	5085	1583	3433	3539	1583	1770	3539
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	327	1747	395	5	255	2058	163	266	255	163	41	622
RTOR Reduction (vph)	0	0	100	0	0	0	67	0	0	121	0	0
Lane Group Flow (vph)	327	1747	295	0	260	2058	96	266	255	42	41	622
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	1	6		3	8		7	4
Permitted Phases			2				6			8		
Actuated Green, G (s)	21.5	71.0	71.0		13.9	63.1	63.1	9.8	38.2	38.2	6.4	34.6
Effective Green, g (s)	21.5	71.0	71.0		13.9	63.1	63.1	9.8	38.2	38.2	6.4	34.6
Actuated g/C Ratio	0.14	0.47	0.47		0.09	0.42	0.42	0.07	0.25	0.25	0.04	0.23
Clearance Time (s)	4.5	6.3	6.3		4.2	6.3	6.3	4.2	5.8	5.8	4.2	6.0
Vehicle Extension (s)	2.0	3.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0
Lane Grp Cap (vph)	492	2406	749		318	2139	665	224	901	403	75	816
v/s Ratio Prot	0.10	0.34			0.08	c0.40		c0.08	c0.07		0.02	0.18
v/s Ratio Perm			0.19				0.06			0.03		
v/c Ratio	0.66	0.73	0.39		0.82	0.96	0.14	1.19	0.28	0.10	0.55	0.76
Uniform Delay, d1	60.8	31.7	25.6		66.8	42.3	26.8	70.1	44.9	42.8	70.4	53.9
Progression Factor	1.48	0.38	0.29		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	1.1	0.8		14.2	12.4	0.5	120.1	0.2	0.1	4.3	4.2
Delay (s)	91.8	13.0	8.3		81.0	54.7	27.3	190.2	45.1	42.9	74.7	58.1
Level of Service	F	B	A		F	D	C	F	D	D	E	E
Approach Delay (s)		22.7				55.6			101.0			152.3
Approach LOS		C				E			F			F
Intersection Summary												
HCM 2000 Control Delay			69.0	HCM 2000 Level of Service				E				
HCM 2000 Volume to Capacity ratio			1.14									
Actuated Cycle Length (s)			150.0	Sum of lost time (s)				21.0				
Intersection Capacity Utilization			110.3%	ICU Level of Service				H				
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBR
Lane Configurations	7
Volume (vph)	830
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.5
Lane Util. Factor	1.00
Fr _t	0.85
Fl _t Protected	1.00
Satd. Flow (prot)	1583
Fl _t Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	0.98
Adj. Flow (vph)	847
RTOR Reduction (vph)	34
Lane Group Flow (vph)	813
Turn Type	pm+ov
Protected Phases	5
Permitted Phases	4
Actuated Green, G (s)	56.1
Effective Green, g (s)	56.1
Actuated g/C Ratio	0.37
Clearance Time (s)	4.5
Vehicle Extension (s)	2.0
Lane Grp Cap (vph)	592
v/s Ratio Prot	c0.20
v/s Ratio Perm	0.32
v/c Ratio	1.37
Uniform Delay, d ₁	47.0
Progression Factor	1.00
Incremental Delay, d ₂	178.2
Delay (s)	225.2
Level of Service	F
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Signalized Intersection Capacity Analysis
 27: El Camino Real & Palomar Airport Rd

2035 + Specific Plan EPFs

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	410	2093	130	790	1306	759	20	200	1420	700	5	1178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	6.0	6.0		5.0	6.0	5.0		5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	0.88		0.97	0.91	0.88		0.94
Flt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (prot)	3433	5085	1583	3433	5085	2787		3433	5085	2787		4990
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (perm)	3433	5085	1583	3433	5085	2787		3433	5085	2787		4990
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	418	2136	133	806	1333	774	20	204	1449	714	5	1202
RTOR Reduction (vph)	0	0	86	0	0	328	0	0	0	61	0	0
Lane Group Flow (vph)	418	2136	47	806	1333	446	0	224	1449	653	0	1207
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA	pm+ov	Prot	Prot
Protected Phases	3	8		7	4		1	1	6	7	5	5
Permitted Phases			8			4				6		
Actuated Green, G (s)	21.5	51.0	51.0	23.0	52.5	52.5		13.3	30.0	53.0		24.0
Effective Green, g (s)	21.5	51.0	51.0	23.0	52.5	52.5		13.3	30.0	53.0		24.0
Actuated g/C Ratio	0.14	0.34	0.34	0.15	0.35	0.35		0.09	0.20	0.35		0.16
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0		5.0	6.0	5.0		5.0
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0	3.0		2.0	3.0	2.0		2.0
Lane Grp Cap (vph)	492	1728	538	526	1779	975		304	1017	984		798
v/s Ratio Prot	0.12	c0.42		c0.23	0.26			0.07	c0.28	0.10		c0.24
v/s Ratio Perm			0.03			0.16				0.13		
v/c Ratio	0.85	1.24	0.09	1.53	0.75	0.46		0.74	1.42	0.66		1.51
Uniform Delay, d1	62.7	49.5	33.7	63.5	43.0	37.7		66.6	60.0	41.0		63.0
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	12.4	111.4	0.3	249.0	2.9	1.5		7.8	196.9	1.3		237.1
Delay (s)	75.1	160.9	34.0	312.5	45.9	39.3		74.4	256.9	42.3		300.1
Level of Service	E	F	C	F	D	D		E	F	D		F
Approach Delay (s)		141.3			117.9				175.6			
Approach LOS		F			F				F			
Intersection Summary												
HCM 2000 Control Delay			150.8			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.38									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)			22.0			
Intersection Capacity Utilization			131.2%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												






















Movement	SBT	SBR
↓	↙	
Lane Configurations	↑↑↑	↑
Volume (vph)	940	180
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.0	5.0
Lane Util. Factor	0.91	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	5085	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	5085	1583
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	959	184
RTOR Reduction (vph)	0	34
Lane Group Flow (vph)	959	150
Turn Type	NA	pm+ov
Protected Phases	2	3
Permitted Phases		2
Actuated Green, G (s)	40.7	62.2
Effective Green, g (s)	40.7	62.2
Actuated g/C Ratio	0.27	0.41
Clearance Time (s)	6.0	5.0
Vehicle Extension (s)	3.0	2.0
Lane Grp Cap (vph)	1379	656
v/s Ratio Prot	0.19	0.03
v/s Ratio Perm		0.06
v/c Ratio	0.70	0.23
Uniform Delay, d1	49.1	28.4
Progression Factor	1.00	1.00
Incremental Delay, d2	1.5	0.1
Delay (s)	50.6	28.5
Level of Service	D	C
Approach Delay (s)	177.0	
Approach LOS	F	
Intersection Summary		

HCM Signalized Intersection Capacity Analysis

32: El Camino Real & Aviara Pkwy

2035 + Specific Plan EPFs

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Volume (vph)	180	503	457	5	410	374	104	608	2542	640	15	234
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	5.7	4.6		4.2	5.7		4.6	6.4	6.4		4.2
Lane Util. Factor	0.97	0.95	1.00		0.97	0.95		0.97	0.91	1.00		0.97
Flt	1.00	1.00	0.85		1.00	0.97		1.00	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00		0.95	1.00	1.00		0.95
Satd. Flow (prot)	3433	3539	1583		3433	3424		3433	5085	1583		3433
Flt Permitted	0.95	1.00	1.00		0.95	1.00		0.95	1.00	1.00		0.95
Satd. Flow (perm)	3433	3539	1583		3433	3424		3433	5085	1583		3433
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	184	513	466	5	418	382	106	620	2594	653	15	239
RTOR Reduction (vph)	0	0	39	0	0	19	0	0	0	40	0	0
Lane Group Flow (vph)	184	513	427	0	423	469	0	620	2594	613	0	254
Turn Type	Prot	NA	pm+ov	Prot	Prot	NA		Prot	NA	Perm	Prot	Prot
Protected Phases	7	4	5	3	3	8		5	2		1	1
Permitted Phases			4							2		
Actuated Green, G (s)	8.9	29.3	44.7		10.8	31.2		15.4	76.6	76.6		7.8
Effective Green, g (s)	8.9	29.3	44.7		10.8	31.2		15.4	76.6	76.6		7.8
Actuated g/C Ratio	0.06	0.20	0.31		0.07	0.22		0.11	0.53	0.53		0.05
Clearance Time (s)	4.2	5.7	4.6		4.2	5.7		4.6	6.4	6.4		4.2
Vehicle Extension (s)	2.0	2.0	2.0		3.0	2.0		2.0	3.0	3.0		2.0
Lane Grp Cap (vph)	210	715	488		255	736		364	2686	836		184
v/s Ratio Prot	0.05	0.14	c0.09		c0.12	0.14		c0.18	0.51			0.07
v/s Ratio Perm			0.18							0.39		
v/c Ratio	0.88	0.72	0.87		1.66	0.64		1.70	0.97	0.73		1.38
Uniform Delay, d1	67.5	54.0	47.5		67.1	51.8		64.8	32.9	26.3		68.6
Progression Factor	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2	30.1	2.9	15.4		313.3	1.3		328.0	11.0	5.7		201.4
Delay (s)	97.7	56.9	62.9		380.4	53.1		392.8	44.0	32.0		270.0
Level of Service	F	E	E		F	D		F	D	C		F
Approach Delay (s)		65.7				205.1			97.9			
Approach LOS		E				F			F			
Intersection Summary												
HCM 2000 Control Delay			115.2			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.20									
Actuated Cycle Length (s)			145.0			Sum of lost time (s)			20.9			
Intersection Capacity Utilization			113.5%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBT	SBR
Label Configurations	↑↑↑	
Volume (vph)	2582	140
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.4	
Lane Util. Factor	0.91	
Flt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	5046	
Flt Permitted	1.00	
Satd. Flow (perm)	5046	
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	2635	143
RTOR Reduction (vph)	4	0
Lane Group Flow (vph)	2774	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	68.6	
Effective Green, g (s)	68.6	
Actuated g/C Ratio	0.47	
Clearance Time (s)	6.4	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	2387	
v/s Ratio Prot	c0.55	
v/s Ratio Perm		
v/c Ratio	1.16	
Uniform Delay, d1	38.2	
Progression Factor	1.00	
Incremental Delay, d2	78.1	
Delay (s)	116.3	
Level of Service	F	
Approach Delay (s)	129.1	
Approach LOS	F	
Intersection Summary		

Specific Plan Site Access Alternative		2019 + Specific Plan		2019 + Specific Plan	
		AM	PM	AM	PM
Option 1: Couplet	Cannon/Paseo del Norte	C	D	C	E/D*
	Cannon/SP Inbound Dwy	A	B	A	B
Option 2: Full Access	Cannon/Paseo del Norte	D	C	D	C
	Cannon/Car Country	D	D	E	D
<p>Bold text indentifes undesirable operations</p> <p>*Intersection operates at LOS E with the Specific Plan, but the EPF measures that will be constructed by the Specific Plan will mitigate the impact and improve operations to LOS D</p>					