Appendix G

Traffic Study

LINSCOTT
LAW &
GREENSPAN
engineers

TRAFFIC IMPACT ANALYSIS

CRESTRIDGE PROJECT

Rancho Palos Verdes, California
July 31, 2012

Prepared for:

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TRAFFIC IMPACT ANALYSIS

CRESTRIDGE PROJECT

Rancho Palos Verdes, California
July 31, 2012

1.0 INTRODUCTION

This traffic impact analysis addresses the potential traffic impacts and circulation needs associated with the Crestridge Project (hereinafter referred to as Project). The project applicant, Trumark Homes, proposes to construct a 60-unit senior residential condominium development. The project site is a 9.76-acre, vacant parcel of land, located at 5601 Crestridge Road in the City of Rancho Palos Verdes, California.

This report documents the findings and recommendations of a traffic impact analysis conducted by Linscott, Law & Greenspan, Engineers (LLG) to determine the potential impacts associated with the proposed Project. The traffic analysis evaluates the existing operating conditions at five (5) key study intersections within the project vicinity, estimates the trip generation potential of the proposed Project, and forecasts future operating conditions without and with the proposed Project. Where necessary, intersection improvements/mitigation measures are identified.

This traffic report satisfies City of Rancho Palos Verdes criteria and is consistent with the requirements and procedures outlined in the most current *Congestion Management Program (CMP) for Los Angeles County*. The Scope of Work for this traffic study, which is included in ***Appendix A***, was developed in conjunction with City of Rancho Palos Verdes Public Works Department staff.

The project site has been visited and an inventory of adjacent area roadways and intersections was performed. Existing peak hour traffic information has been collected at five (5) key study locations on a "typical" weekday for use in the preparation of intersection level of service calculations. Information concerning cumulative projects (planned and/or approved) in the vicinity of the proposed Project has been researched at the City of Rancho Palos Verdes, the City of Rolling Hills Estates and the City of Los Angeles. Based on our research and review of the City's May 16, 2012 Cumulative Project List, there are fifteen (15) cumulative projects in the City of Rancho Palos Verdes, nine (9) cumulative projects in the City of Rolling Hills Estates and one (1) cumulative project in the City of Los Angeles within a three mile radius of the subject site. These twenty-five (25) planned and/or approved cumulative projects were considered in the cumulative traffic analysis for this project.

This traffic report analyzes existing and future weekday AM peak hour and PM peak hour traffic conditions for a near-term (Year 2015) traffic setting upon completion of the proposed Project. Peak hour traffic forecasts for the Year 2015 horizon year have been projected by increasing existing traffic volumes by an annual growth rate of one percent (1.0%) per year and adding traffic volumes generated by twenty-five (25) cumulative projects.

1.1 Study Area

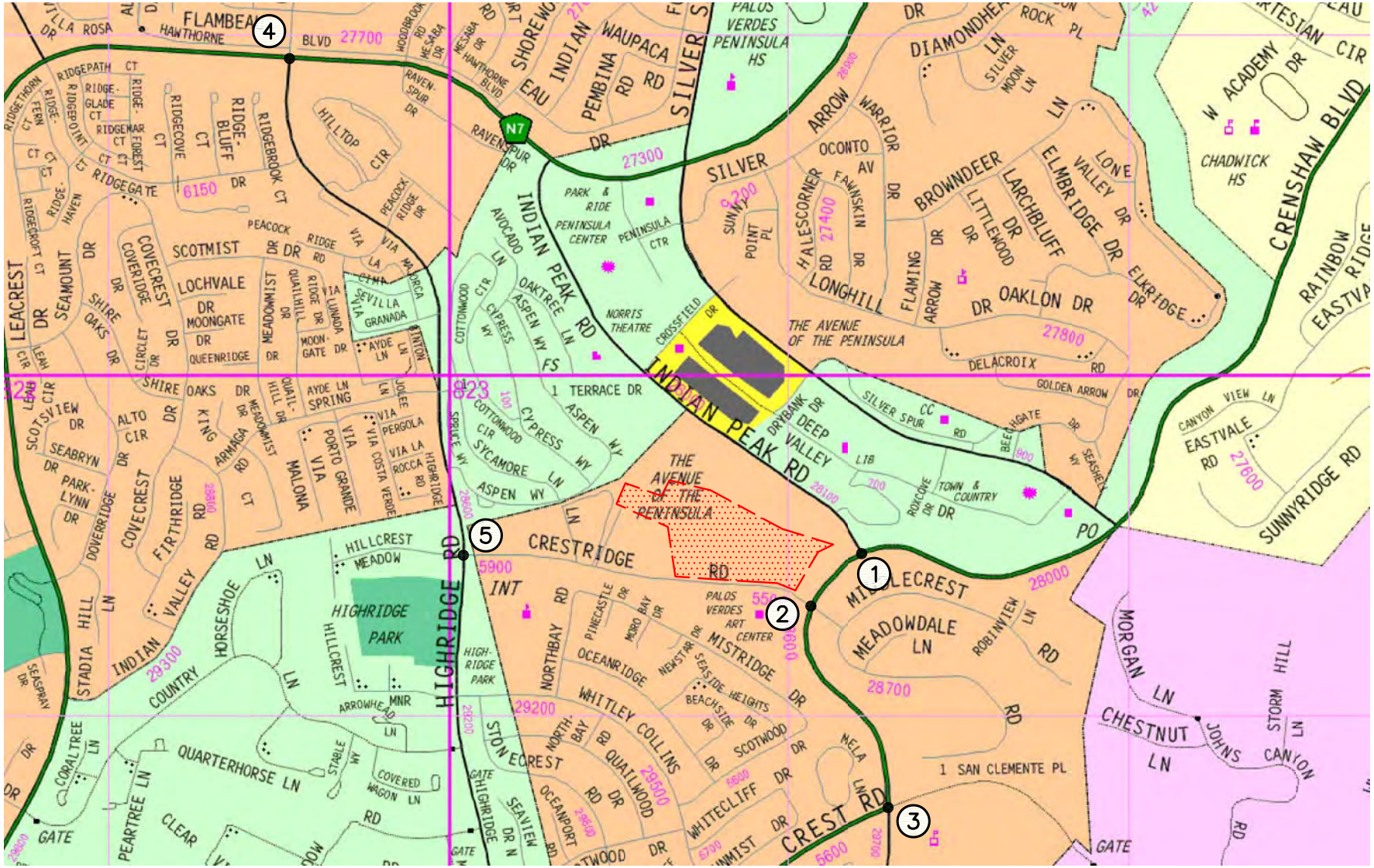
The five (5) key study intersections selected for evaluation were determined based on coordination with City of Rancho Palos Verdes staff. The intersections listed below provide local access to the study area and define the extent of the boundaries for this traffic impact investigation.

1. Crenshaw Boulevard at Indian Peak Road
2. Crenshaw Boulevard at Crestridge Road
3. Crenshaw Boulevard at Crest Road
4. Highridge Road at Hawthorne Boulevard
5. Highridge Road at Crestridge Road

Figure 1-1 presents a Vicinity Map, which illustrates the general location of the project and depicts the study locations and surrounding street system. The Level of Service (LOS) investigations at these key locations were used to evaluate the potential traffic-related impacts associated with area growth, cumulative projects and the proposed Project. When necessary, this report recommends intersection improvements that may be required to accommodate future traffic volumes and restore/maintain an acceptable Level of Service and/or mitigate the impact of the project.

Included in this Traffic Impact Analysis are:

- Existing traffic counts,
- Estimated project traffic generation/distribution/assignment,
- Estimated cumulative project traffic generation/distribution/assignment,
- AM and PM peak hour capacity analyses for existing conditions,
- AM and PM peak hour capacity analyses for future (Year 2015) conditions without and with project traffic,
- Site Access Evaluation,
- Sight Distance Evaluation,
- Project-Specific Improvements,
- Congestion Management Program (CMP) Analysis,
- Construction Traffic Analysis, and
- Special Issues.



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LINSCOTT LAW & GREENSPAN engineers

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SOURCE: THOMAS BROS.

KEY

= PROJECT SITE

(#) = STUDY INTERSECTION

FIGURE 1-1

VICINITY MAP

CRESTRIDGE PROJECT, RANCHO PALOS VERDES

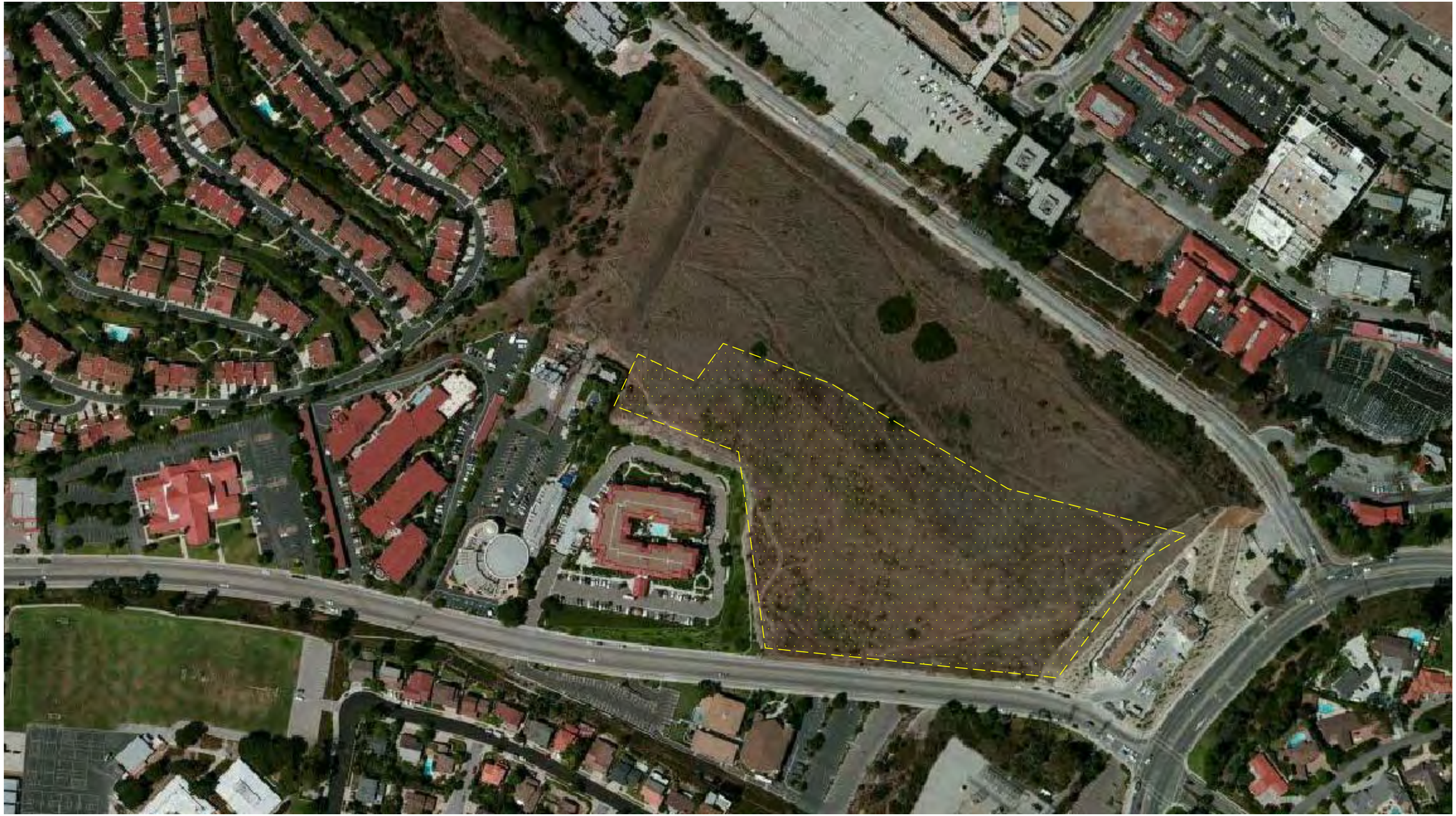
2.0 PROJECT DESCRIPTION

The project site is a 9.76-acre vacant parcel of land located at 5601 Crestridge Road in the City of Rancho Palos Verdes, California. The project site is bordered by the Vista Del Norte Ecological Preserve to the north, Crestridge Road to the south, the Belmont Assisted Living Facility to the west and the Mirandela Senior Apartments to the east. ***Figure 2-1*** presents the existing site.

Figure 2-2 presents the proposed site plan for the proposed Project. Review of the proposed site plan indicates that the proposed Project consists of a 60-unit senior residential condominium development (age restricted for 55 years of age or older), a 13,000 square-foot (SF) outdoor community recreation area and a 2,400 SF community service center. The 13,000 SF outdoor community recreation area would include a patio and trellis, a community conversation and gathering stage, a sundeck and outdoor living room, barbeque facilities, bocce ball courts and picnic tables. The 2,400 SF community service center would provide a recreation and lounge area for community gatherings, kitchen, computer center/business room, office, fitness room, indoor and outdoor fireplaces, outdoor living area, spa, barbeque and seating area. The proposed Project is expected to be constructed in one phase and will open by the Year 2015.

2.1 Site Access

As shown in *Figure 2-1*, access to the proposed project site will be provided via one full-access unsignalized gated driveway located along Crestridge Road.



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KEY

= PROPOSED PROJECT SITE

FIGURE 2-1

EXISTING AERAIL SITE PLAN

CRESTRIDGE PROJECT, RANCHO PALOS VERDES

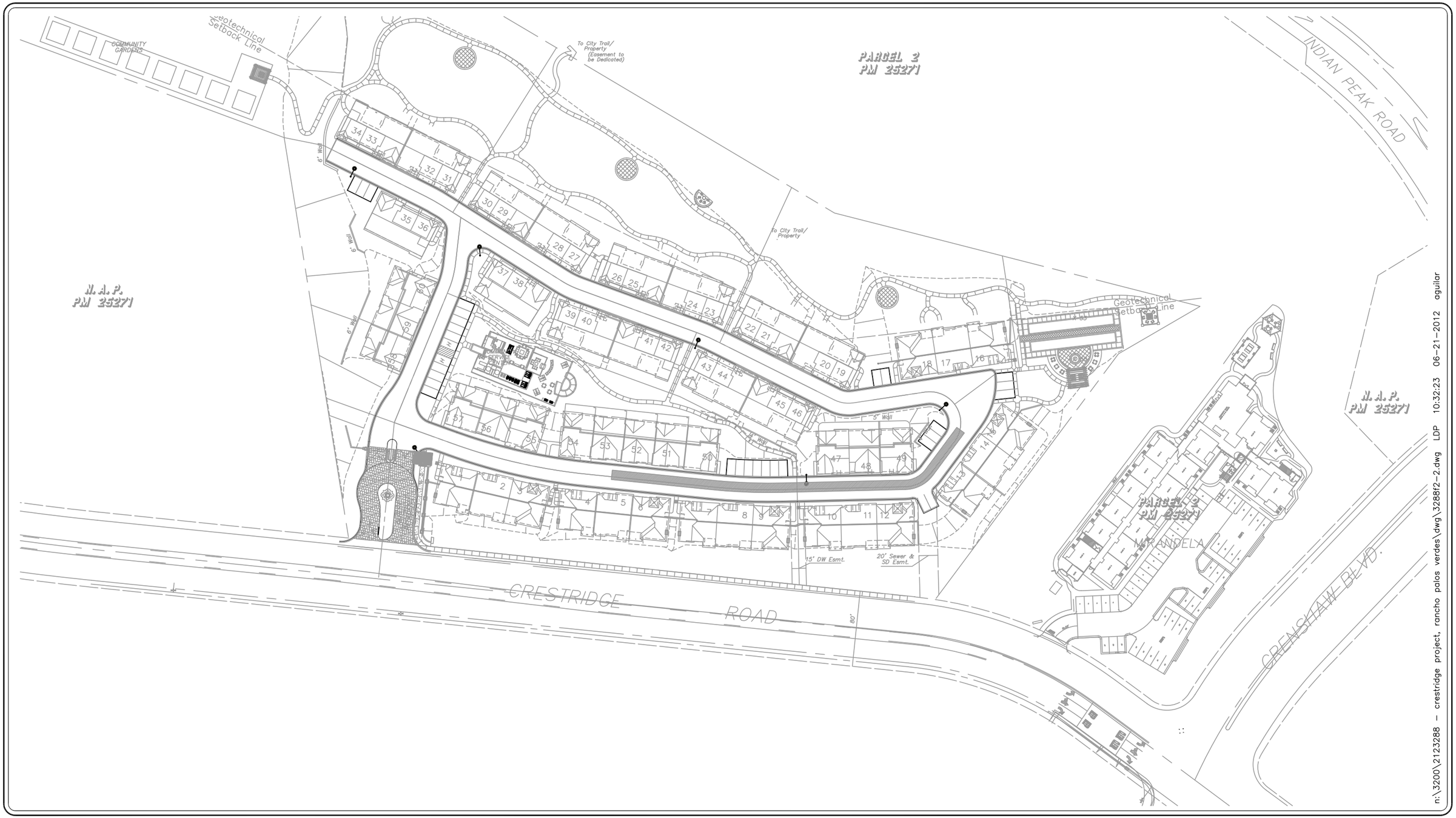

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FIGURE 2-2

PROPOSED SITE PLAN

CRESTRIDGE PROJECT, RANCHO PALOS VERDES

3.0 EXISTING CONDITIONS

3.1 Existing Street System

The principal local network of streets serving the proposed Project includes Crenshaw Boulevard, Hawthorne Boulevard, Crestridge Road, Crest Road, Highridge Road and Indian Peak Road. The following discussion provides a brief synopsis of these key area streets. The descriptions are based on an inventory of existing roadway conditions.

Crenshaw Boulevard is a four-lane, divided roadway oriented in the north-south direction. On-street parking is not permitted along this roadway in the vicinity of the project. The posted speed limit on Crenshaw Boulevard is 45 miles per hour (mph). Traffic signals control the study intersections of Crenshaw Boulevard at Indian Peak Road and Crenshaw Boulevard at Crestridge Road. This roadway is designated as an Arterial (four-lane divided) in the City of Rancho Palos Verdes General Plan Circulation Element and has an existing paved width of 50 feet within a right-of-way of 80 feet. Daily traffic on Crenshaw Boulevard ranges between 14,957 vehicles per day (vpd) and 30,175 vpd on a "typical" weekday.

Hawthorne Boulevard is a four-lane, divided roadway generally oriented in the north-south direction. On-street parking is not permitted along the majority of this roadway in the vicinity of the project. The posted speed limit on Hawthorne Boulevard is 45 mph between Crest Road and Highridge Road, 40 mph between Highridge Road and Indian Peak Road, 35 mph between Indian Peak Road and Silver Spur Road and 45 mph between Silver Spur Road and Palos Verdes Drive. A traffic signal controls the study intersection of Hawthorne Boulevard at Highridge Road. This roadway is designated as an Arterial (four-lane divided) in the City of Rancho Palos Verdes General Plan Circulation Element and has an existing paved width of 80 feet within a right-of-way of 100 feet.

Crestridge Road is a two lane, divided roadway oriented in the east-west direction, which borders the project site to the south. A fourteen-foot wide two-way left-turn lane is provided along Crestridge Road. Crestridge Road will provide access to the project site via a full access unsignalized driveway. On-street parking is permitted along this roadway in the vicinity of the project. The posted speed limit on Crestridge Road is 40 mph. A traffic signal controls the study intersection of Crestridge Road and Crenshaw Boulevard. This roadway is designated as Local (two-lane divided) in the City of Rancho Palos Verdes General Plan Circulation Element and has an existing paved width of 64 feet within a right-of-way of 80 feet. Daily traffic on Crestridge Road totals 7,510 vpd on a "typical" weekday.

Crest Road is a four-lane, divided roadway oriented in the east-west direction. On-street parking is not permitted along this roadway in the vicinity of the project. The posted speed limit on Crest Road is 45 mph. The study intersection of Crest Road and Crenshaw Boulevard is controlled by an all-way stop. This roadway is designated as an Arterial (four-lane divided) in the City of Rancho Palos Verdes General Plan Circulation Element and has an existing paved width of 72 feet within a right-of-way of 100 feet.

Highridge Road is a two-lane, divided roadway oriented in the north-south direction. On-street parking is not permitted along this roadway in the vicinity of the project. The posted speed limit on Highridge Road is 35 mph. The study intersection of Highridge Road and Crestridge Road is controlled by an all-way stop. This roadway is designated as an Arterial (four-lane divided) in the City of Rancho Palos Verdes General Plan Circulation Element and has an existing paved width of 80 feet within a right-of-way of 100 feet. Daily traffic on Highridge Road totals 8,219 vpd on a "typical" weekday.

Indian Peak Road is a two-lane, divided roadway oriented in the east-west direction. On-street parking is not permitted along this roadway in the vicinity of the project. The posted speed limit on Indian Peak Road is 40 mph. A traffic signal controls the study intersection of Indian Peak Road and Crenshaw Boulevard. This roadway is designated as a Collector (four-lane divided) in the City of Rancho Palos Verdes General Plan Circulation Element and has an existing paved width of 40 feet within a right-of-way of 80 feet. Daily traffic on Indian Peak Road totals 6,633 vpd on a "typical" weekday.

Figure 3-1 presents an inventory of the existing roadway conditions for the arterials and intersections evaluated in this report. This figure identifies the number of travel lanes for key arterials, as well as intersection configurations and controls for the key area study intersections.

3.2 Existing Traffic Volumes

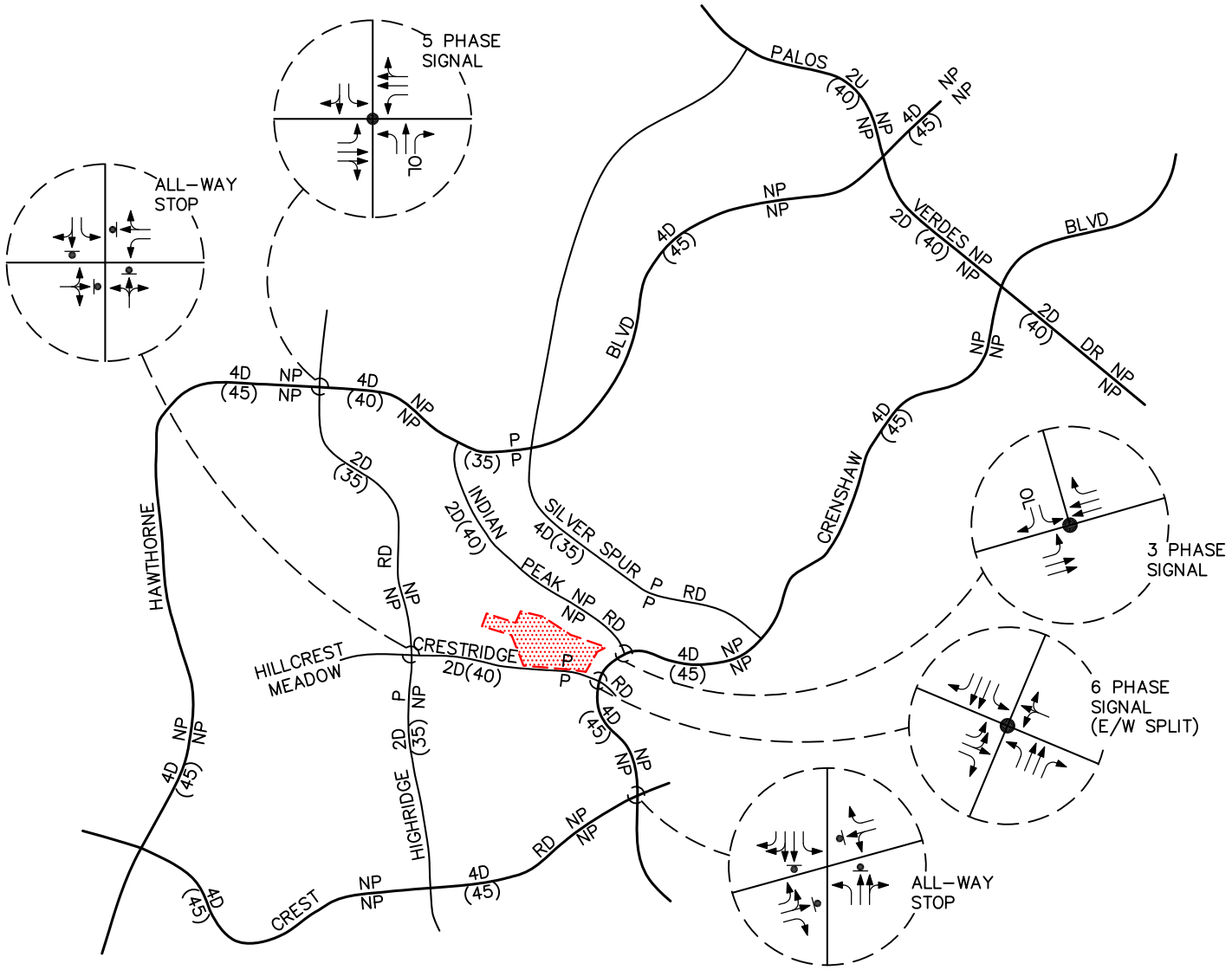
Five (5) key study intersections have been identified as the locations at which to evaluate existing and future traffic operating conditions. Some portion of potential project-related traffic will pass through each of these intersections, and their analysis will reveal the expected relative impacts of the project. These key intersections were selected for evaluation based on discussions with the City of Rancho Palos Verdes and in consideration of the criteria in the current County of Los Angeles CMP traffic impact guidelines.

Existing daily, AM and PM peak hour traffic volumes for the five (5) key study intersections and roadway segments evaluated in this report were obtained from daily machine and manual peak hour turning movement counts conducted by Transportation Studies Inc. in May 2012.

Figures 3-2 and ***3-3*** illustrate the existing AM and PM peak hour traffic volumes at the five (5) key study intersections evaluated in this report, respectively. *Figure 3-3* also presents the existing average daily traffic volumes for the key roadway segments in the vicinity of the proposed project. ***Appendix B*** contains the detailed peak hour count sheets for the key intersections evaluated in this report. *Appendix B* also contains the average daily traffic volumes for the key roadway segments.

3.3 Existing Intersection Conditions

Existing AM and PM peak hour operating conditions for the five (5) key study intersections were evaluated using the *Intersection Capacity Utilization* (ICU) methodology for signalized intersections and the methodology outlined in Chapter 17 of the *Highway Capacity Manual 2000* (HCM2000) for unsignalized intersections.



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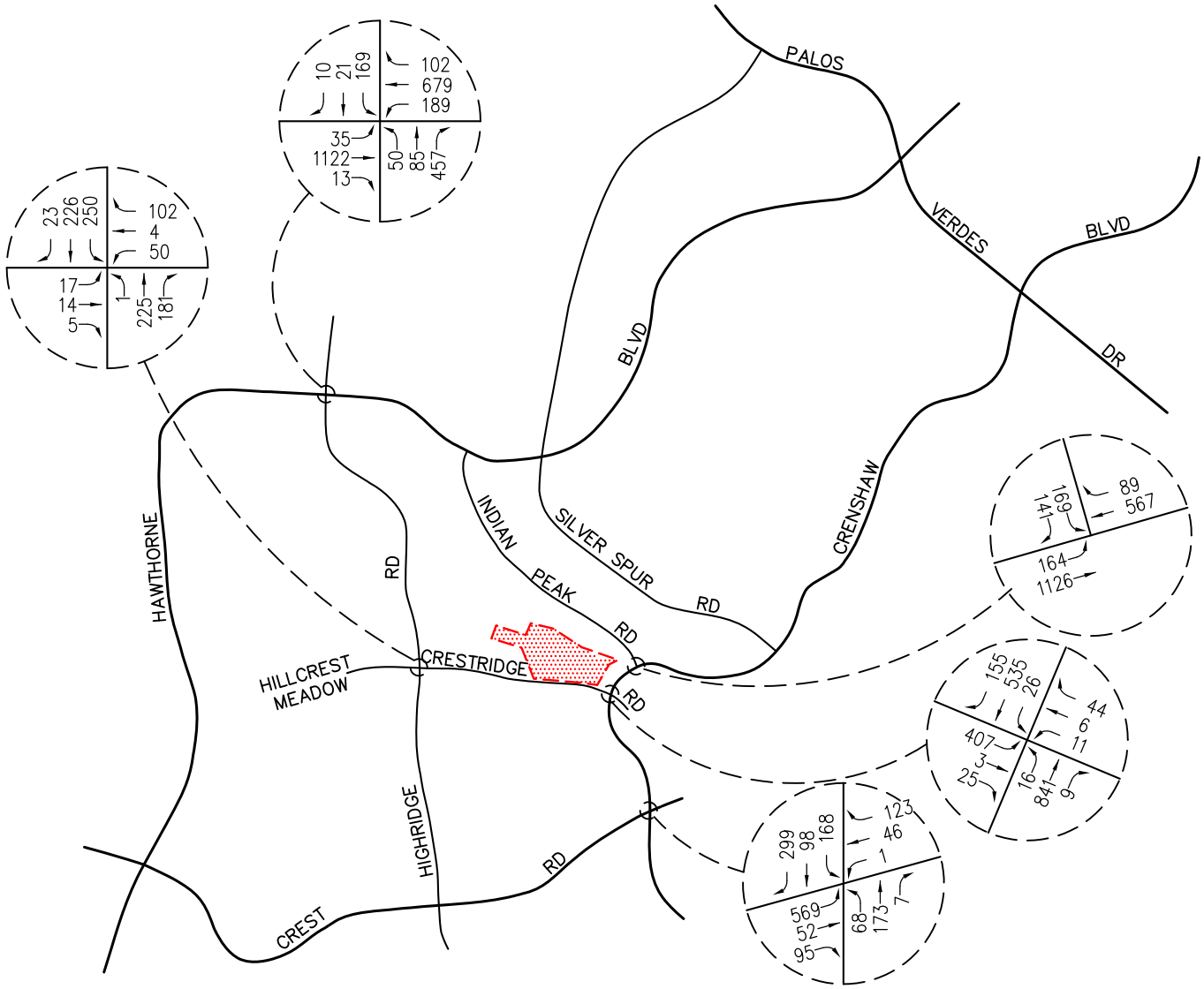
KEY

← = APPROACH LANE ASSIGNMENT
● = TRAFFIC SIGNAL, ♀ = STOP SIGN
P = PARKING, NP = NO PARKING
U = UNDIVIDED, D = DIVIDED
2 = NUMBER OF TRAVEL LANES
(XX) = POSTED SPEED LIMIT (MPH)
OL = RIGHT-TURN OVERLAP
▨ = PROJECT SITE

FIGURE 3-1

EXISTING ROADWAY CONDITIONS AND INTERSECTION CONTROLS

CRESTRIDGE PROJECT, RANCHO PALOS VERDES



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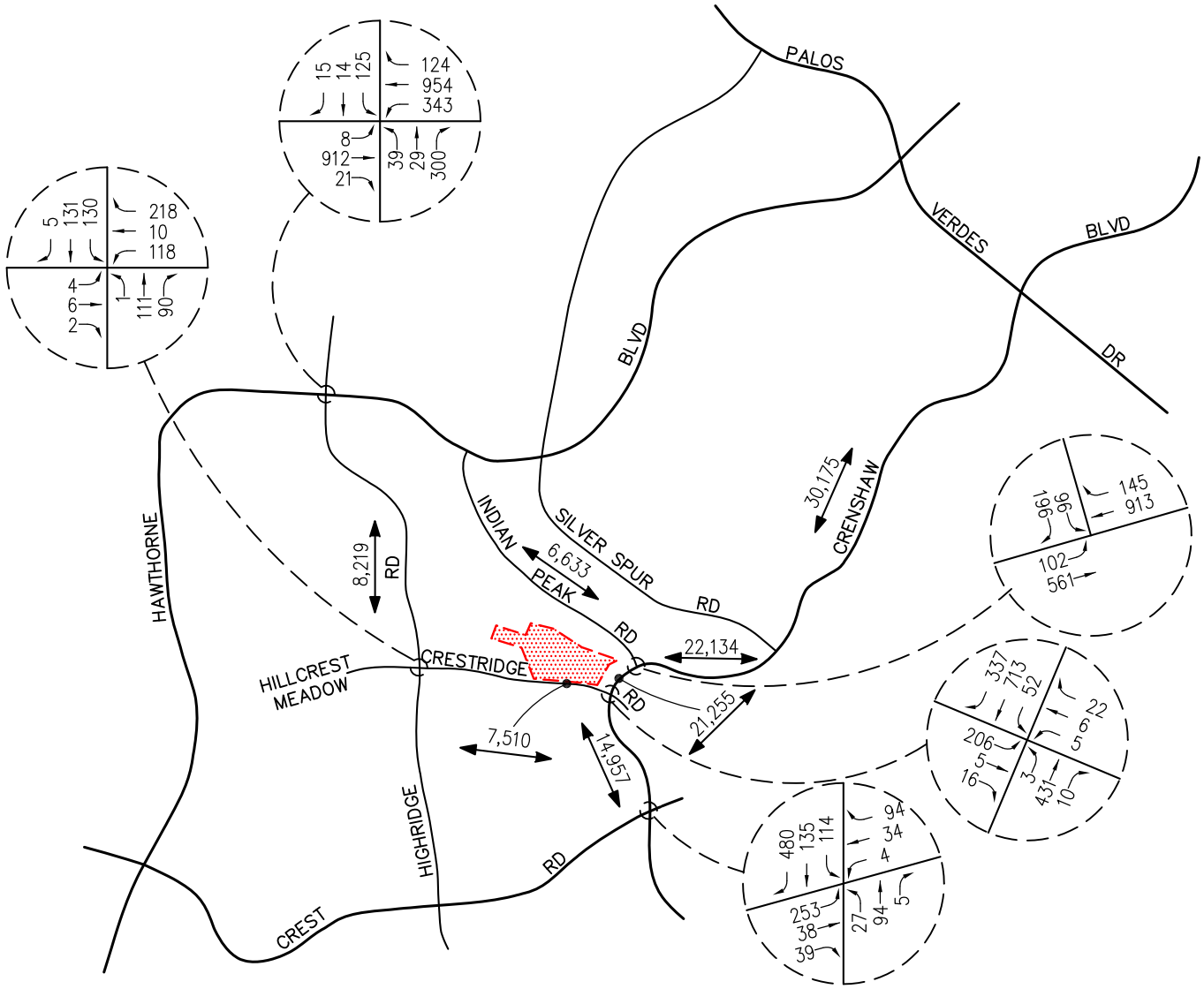
KEY
= PROJECT SITE

FIGURE 3-2

EXISTING AM PEAK HOUR TRAFFIC VOLUMES

CRESTRIDGE PROJECT, RANCHO PALOS VERDES



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KEY

= PROJECT SITE

XX,XXX = DAILY TRAFFIC VOLUME

FIGURE 3-3

EXISTING PM PEAK HOUR AND DAILY TRAFFIC VOLUMES

CRESTRIDGE PROJECT, RANCHO PALOS VERDES

3.3.1 *Intersection Capacity Utilization (ICU) Method of Analysis*

In conformance with City of Rancho Palos Verdes and LA County CMP requirements, existing AM and PM peak hour operating conditions for the key signalized study intersections were evaluated using the Intersection Capacity Utilization (ICU) method. The ICU technique is intended for signalized intersection analysis and estimates the volume to capacity (V/C) relationship for an intersection based on the individual V/C ratios for key conflicting traffic movements. The ICU numerical value represents the percent signal (green) time, and thus capacity, required by existing and/or future traffic. It should be noted that the ICU methodology assumes uniform traffic distribution per intersection approach lane and optimal signal timing.

Per LA County CMP requirements, the ICU calculations use a lane capacity of 1,600 vehicles per hour (vph) for left-turn, through, and right-turn lanes, and dual left turn capacity of 2,880 vph. A clearance adjustment factor of 0.10 was added to each Level of Service calculation.

The ICU value translates to a Level of Service (LOS) estimate, which is a relative measure of the intersection performance. The six qualitative categories of Level of Service have been defined along with the corresponding ICU value range and are shown in ***Table 3-1***. The ICU value is the sum of the critical volume to capacity ratios at an intersection; it is not intended to be indicative of the LOS of each of the individual turning movements.

3.3.2 *Highway Capacity Manual (HCM) Method of Analysis (Unsignalized Intersections)*

The 2000 HCM unsignalized methodology for stop-controlled intersections was utilized for the analysis of the unsignalized intersections. This methodology estimates the average control delay for each of the subject movements and determines the level of service for each movement. For all-way stop controlled intersections, the overall average control delay measured in seconds per vehicle, and level of service is then calculated for the entire intersection. For one-way and two-way stop-controlled (minor street stop-controlled) intersections, this methodology estimates the worst side street delay, measured in seconds per vehicle and determines the level of service for that approach. The HCM control delay value translates to a Level of Service (LOS) estimate, which is a relative measure of the intersection performance. The six qualitative categories of Level of Service have been defined along with the corresponding HCM control delay value range, as shown in ***Table 3-2***.

3.4 Level of Service Criteria

According to the City of Rancho Palos Verdes, LOS "D" is the minimum acceptable condition that should be maintained during the morning and evening peak commute hours.

3.5 Existing Level of Service Results

Table 3-3 summarizes the existing peak hour service level calculations for the five (5) key study intersections based on existing traffic volumes and current street geometry. Review of *Table 3-3* indicates that all five (5) key study intersections currently operate at acceptable LOS D or better during the AM and PM peak hours.

Appendix C presents the ICU/LOS and HCM/LOS calculations for the five (5) key study intersections for the AM peak hour and PM peak hour.

TABLE 3-1

LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS[1]

Level of Service (LOS)	Intersection Capacity Utilization Value (V/C)	Level of Service Description
A	≤ 0.600	EXCELLENT. No vehicle waits longer than one red light, and no approach phase is fully used.
B	0.601 – 0.700	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	0.701 – 0.800	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	0.801 – 0.900	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	0.901 – 1.000	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	> 1.000	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Potentially very long delays with continuously increasing queue lengths.

[1] Source: *Transportation Research Board Circular 212 – Interim Materials on Highway Capacity.*

TABLE 3-2

LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS[2]

Level of Service (LOS)	Highway Capacity Manual Delay Value (sec/veh)	Level of Service Description
A	≤ 10.0	Little or no delay
B	> 10.0 and ≤ 15.0	Short traffic delays
C	> 15.0 and ≤ 25.0	Average traffic delays
D	> 25.0 and ≤ 35.0	Long traffic delays
E	> 35.0 and ≤ 50.0	Very long traffic delays
F	> 50.0	Severe congestion

[2] Source: *Highway Capacity Manual 2000*, Chapter 17 (Unsignalized Intersections).

TABLE 3-3

EXISTING PEAK HOUR LEVELS OF SERVICE

Key Intersections	Time Period	Control Type	ICU/HCM	LOS
1. Crenshaw Boulevard at Indian Peak Road	AM	3∅ Traffic	0.558	A
	PM	Signal	0.509	A
2. Crenshaw Boulevard at Crestridge Road	AM	6∅ Traffic	0.545	A
	PM	Signal	0.412	A
3. Crenshaw Boulevard at Crest Road	AM	All – Way	19.4 sec/veh	C
	PM	Stop	11.9 sec/veh	B
4. Highridge Road at Hawthorne Boulevard	AM	5∅ Traffic	0.847	D
	PM	Signal	0.702	C
5. Highridge Road at Crestridge Road	AM	All – Way	13.5 sec/veh	B
	PM	Stop	10.4 sec/veh	B

4.0 TRAFFIC FORECASTING METHODOLOGY

In order to estimate the traffic impact characteristics of the Project, a multi-step process has been utilized. The first step is trip generation, which estimates the total arriving and departing traffic on a peak hour and daily basis. The traffic generation potential is forecast by applying the appropriate vehicle trip generation equations or rates to the project development tabulation.

The second step of the forecasting process is trip distribution, which identifies the origins and destinations of inbound and outbound project traffic. These origins and destinations are typically based on demographics and existing/anticipated travel patterns in the study area.

The third step is traffic assignment, which involves the allocation of project traffic to study area streets and intersections. Traffic assignment is typically based on minimization of travel time, which may or may not involve the shortest route, depending on prevailing operating conditions and travel speeds. Traffic distribution patterns are indicated by general percentage orientation, while traffic assignment allocates specific volume forecasts to individual roadway links and intersection turning movements throughout the study area.

With the forecasting process complete and project traffic assignments developed, the impact of the proposed project is isolated by comparing operational (LOS) conditions at selected key intersections using expected future traffic volumes with and without forecast project traffic. The need for site-specific and/or cumulative local area traffic improvements can then be evaluated and the significance of the project's impacts identified.

5.0 PROJECT TRAFFIC CHARACTERISTICS

5.1 Project Traffic Generation

Traffic generation is expressed in vehicle trip ends, defined as one-way vehicular movements, either entering or exiting the generating land use. Generation equations and/or rates used in the traffic forecasting procedure are typically found in the 8th Edition of *Trip Generation*, published by the Institute of Transportation Engineers (ITE) [Washington, D.C., 2008].

For this analysis, Condominium/Townhomes rates contained in the *Los Angeles County Traffic Impact Analysis Guidelines dated January 1, 1997*, ITE Land Use 230: Residential Condominium/Townhouse rates and ITE Land Use 252: Senior Housing – Attached rates were considered in forecasting the trip generation potential of the proposed Project. These rates are summarized in the upper portion of ***Table 5-1***. Although the condominiums will be an age-restricted (55 plus) senior condominium development, the traffic generation potential of the Project was estimated using the LA County Condominium/Townhomes rates to provide the most conservative analysis. Please note that the proposed community recreation area and the community service center will not generate any new traffic. These facilities are ancillary uses to the proposed Project and will primarily be used by its residents.

Table 5-1 also presents the project's forecast peak hour and daily traffic volumes. Review of the lower portion of *Table 5-1* indicates that the proposed Project is forecast to generate approximately 480 daily trips, with 33 trips (4 inbound, 29 outbound) produced in the AM peak hour and 44 trips (28 inbound, 16 outbound) produced in the PM peak hour on a "typical" weekday.

5.2 Project Traffic Distribution and Assignment

The general, directional traffic distribution pattern for the proposed Project is presented in ***Figure 5-1.*** Project traffic volumes both entering and exiting the site have been distributed and assigned to the adjacent street system based on the following considerations:

- the site's proximity to major traffic carriers (i.e. Crenshaw Blvd, Hawthorne Blvd, etc.),
- expected localized traffic flow patterns based on adjacent street channelization and presence of traffic signals,
- existing intersection traffic volumes,
- ingress/egress availability at the site, and
- input from City of Rancho Palos Verdes staff.

The anticipated AM and PM peak hour project volumes associated with the proposed Project are presented in ***Figures 5-2*** and ***5-3***, respectively. *Figure 5-3* also presents the Project average daily traffic volumes for the key roadway segments in the vicinity of the proposed Project. The traffic volume assignments presented in *Figures 5-2* and *5-3* reflect the traffic distribution characteristics shown in *Figure 5-1* and the traffic generation forecast presented in *Table 5-1*.

TABLE 5-1

PROJECT TRAFFIC GENERATION FORECAST

ITE Land Use Code / Project Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Generation Factors:							
▪ Condominiums/Townhomes (TE/DU)[3]	8.00	0.06	0.48	0.54	0.47	0.26	0.73
▪ 230: Residential Condo/Townhouse (TE/DU)[4]	5.81	0.07	0.37	0.44	0.35	0.17	0.52
▪ 252: Senior Housing – Attached (TE/DU)[4]	3.48	0.05	0.08	0.13	0.10	0.06	0.16
Generation Forecast:							
▪ Crestridge Project (60 DU)	480	4	29	33	28	16	44
Total Project Trip Generation Potential	**480**	**4**	**29**	**33**	**28**	**16**	**44**

Notes:

- TE/DU = Trip ends per dwelling units of development

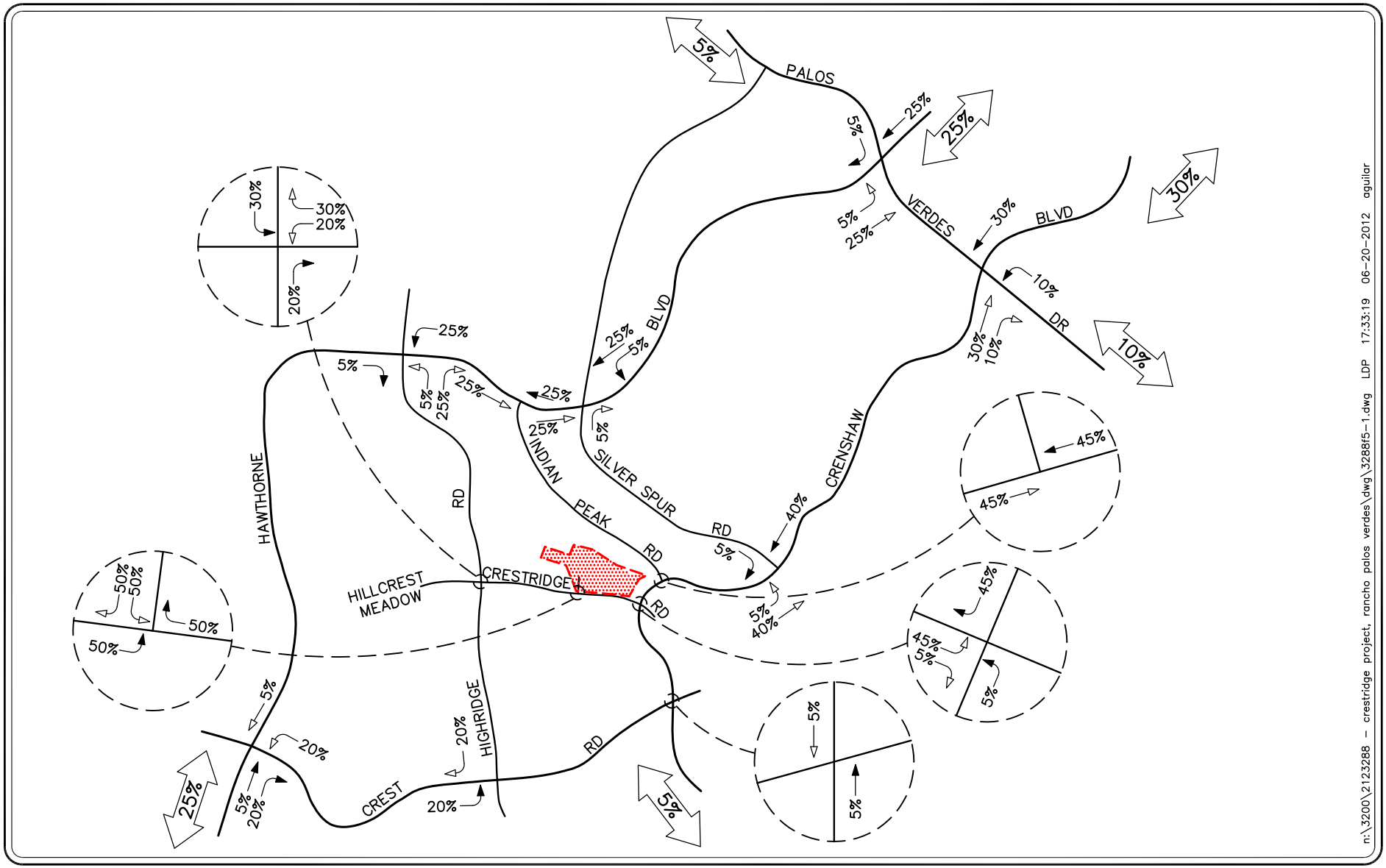
[3] Source: *Los Angeles County Traffic Impact Analysis Report Guidelines*, dated January 1, 1997.

[4] ITE Land Use 230: Residential Condominium/Townhouse and ITE Land Use 252: Senior Housing – Attached trip rates are provided for informational purposes only and are not used in forecasting the trip generation potential of the proposed Project.

5.3 Existing Plus Project Traffic Conditions

The existing plus project traffic conditions have been generated based upon existing conditions and the estimated project traffic. These forecast traffic conditions have been prepared pursuant to the City's traffic study guidelines and are consistent with the California Environmental Quality Act (CEQA) guidelines, which require that the potential impacts of a Project be evaluated upon the circulation system as it currently exists. This traffic volume scenario and the related capacity analyses will identify the roadway improvements necessary to mitigate the direct traffic impacts of the Project, if any.

Figures 5-4 and ***5-5*** present projected weekday AM and PM peak hour traffic volumes at the five (5) key study intersections with the addition of the trips generated by the proposed Project to existing peak hour traffic volumes. *Figure 5-5* also presents the existing plus Project daily traffic volumes for the key roadway segments in the vicinity of the proposed Project.



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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

XX% = INBOUND PERCENTAGE

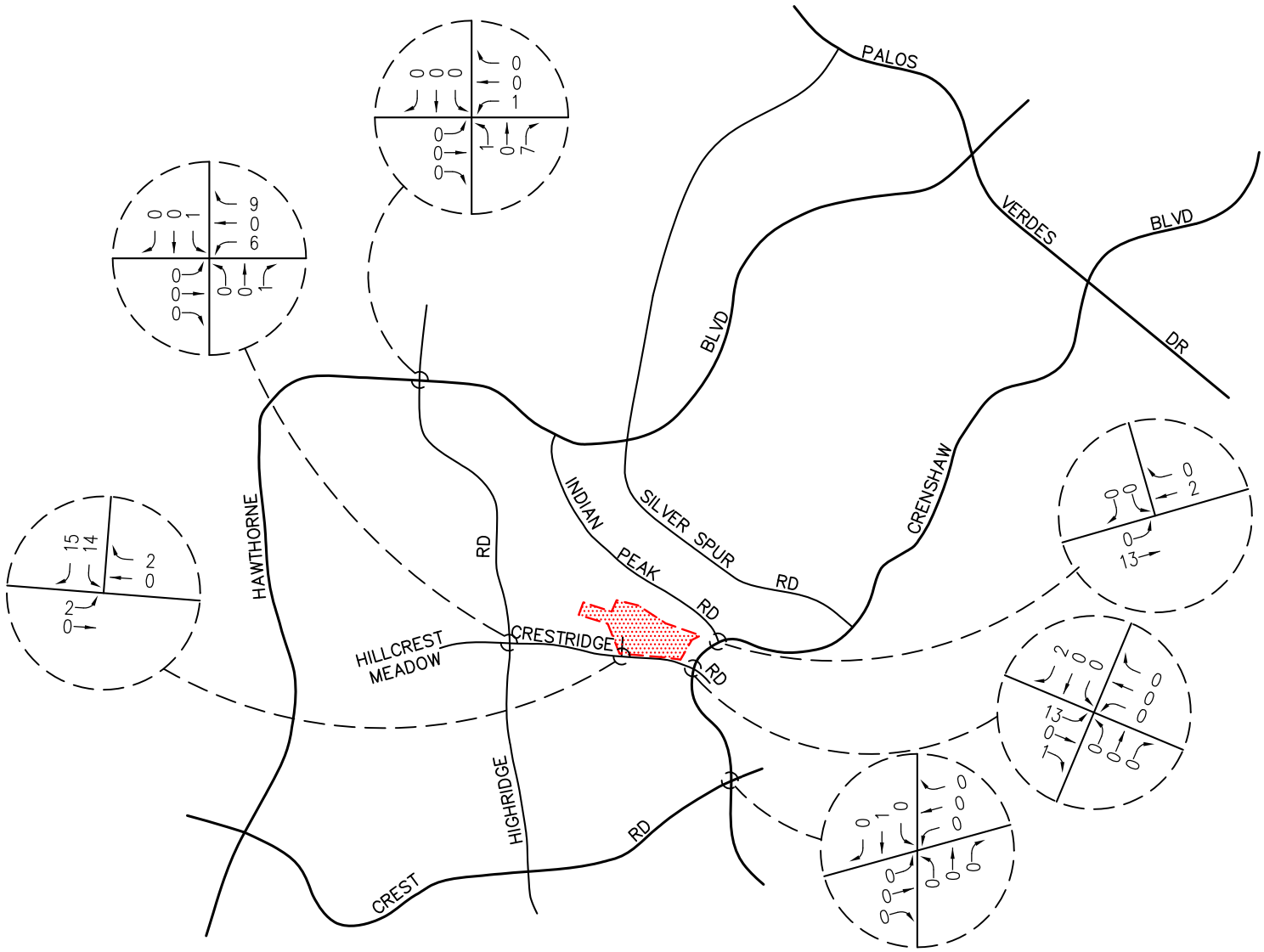
XX% = OUTBOUND PERCENTAGE

= PROJECT SITE

FIGURE 5–1

PROJECT TRAFFIC DISTRIBUTION PATTERN

CRESTRIDGE PROJECT, RANCHO PALOS VERDES


PALOS
VERDES
BLVD
DR
BLVD
CRENSHAW
SILVER SPUR
RD
INDIAN
PEAK
RD
RD
CRESTRIDGE
HILLCREST
MEADOW
HAWTHORNE
RD
HIGHRIDGE
RD
CREST
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1
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1
9
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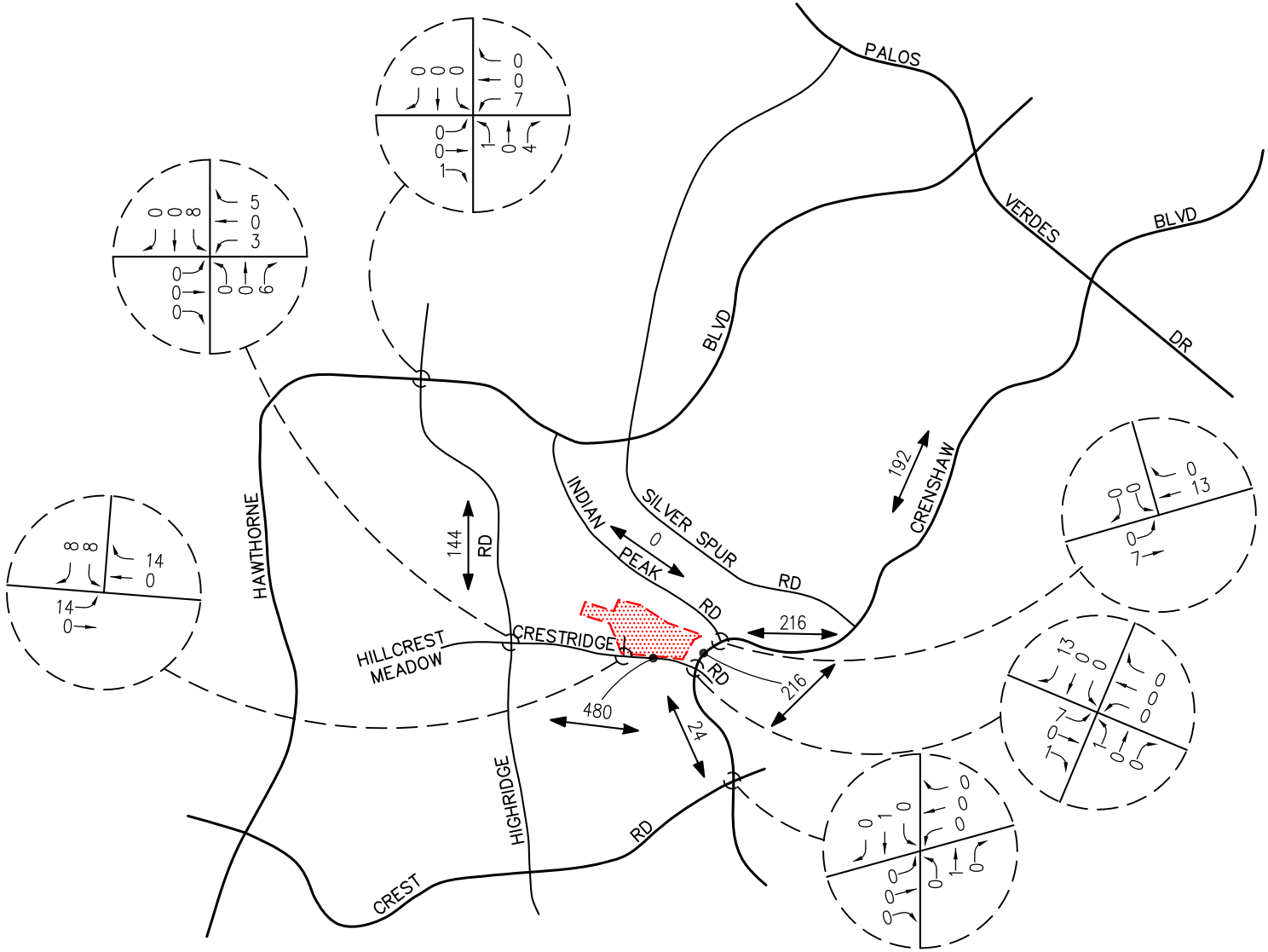

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

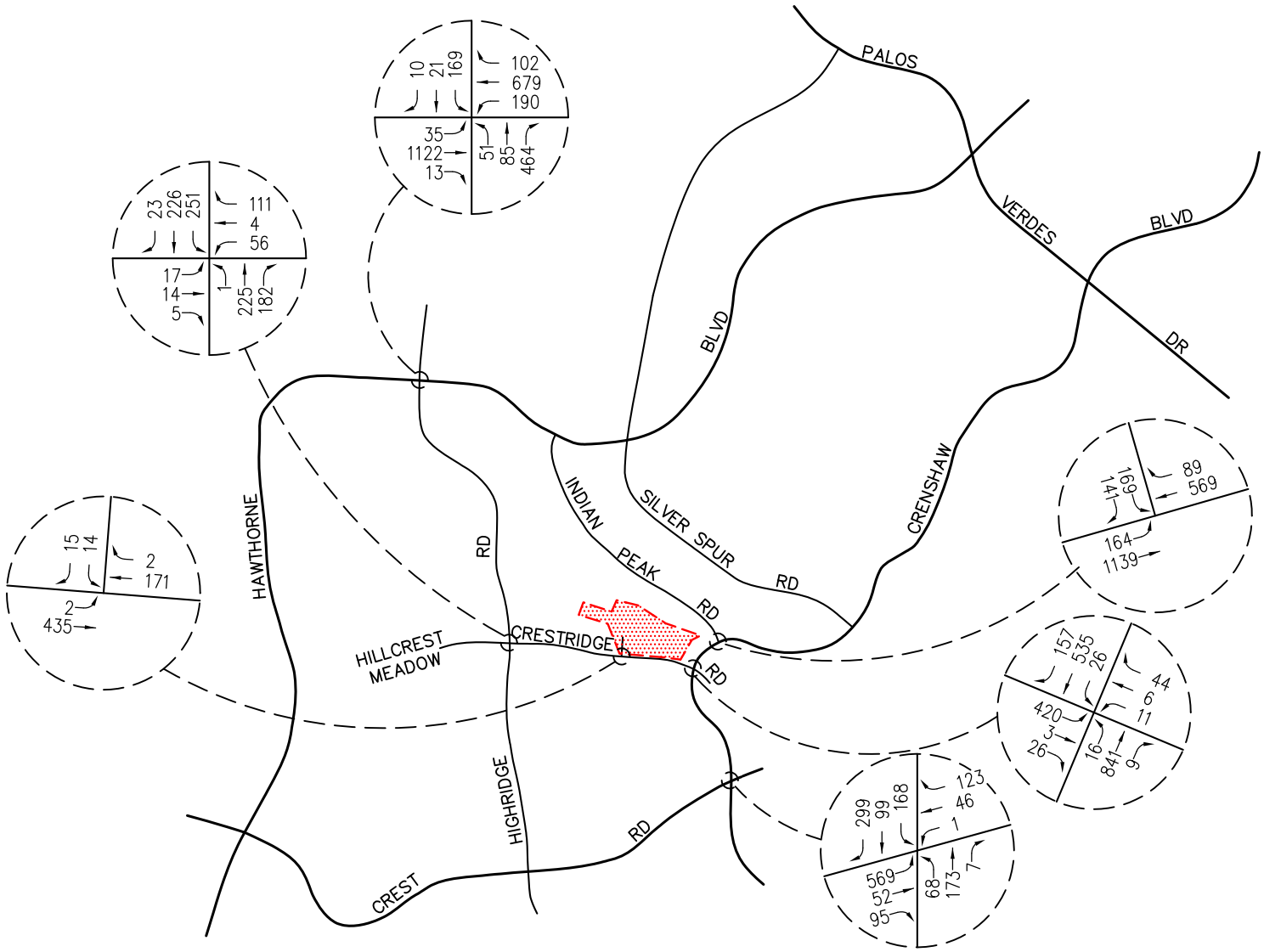
= PROJECT SITE

XX,XXX = DAILY TRAFFIC VOLUME

FIGURE 5-3

PM PEAK HOUR AND DAILY PROJECT TRAFFIC VOLUMES

CRESTRIDGE PROJECT, RANCHO PALOS VERDES



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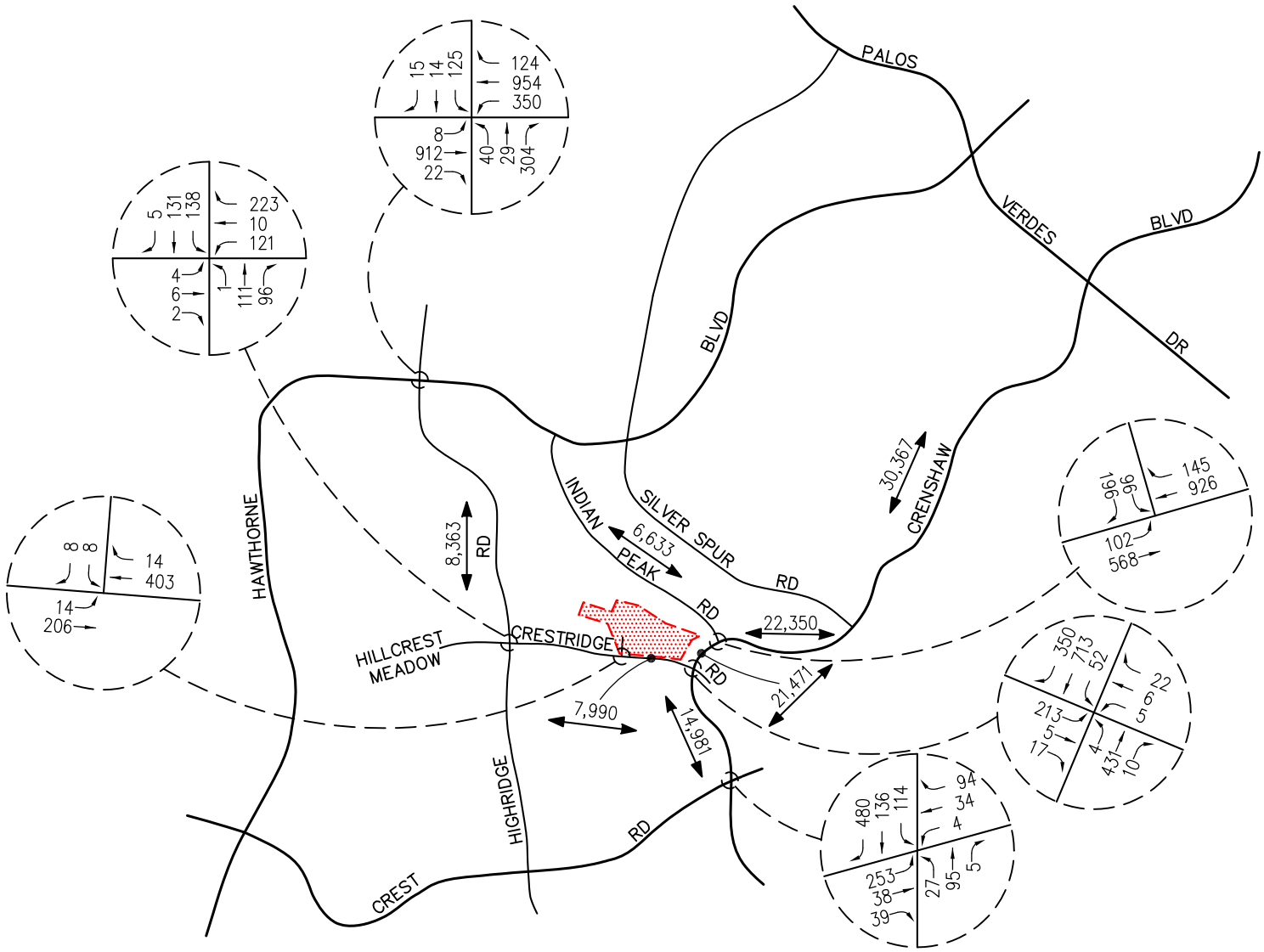
N NO SCALE

KEY
= PROJECT SITE

FIGURE 5-4

EXISTING PLUS PROJECT AM PEAK HOUR TRAFFIC VOLUMES

CRESTRIDGE PROJECT, RANCHO PALOS VERDES



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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

= PROJECT SITE

XX,XXX = DAILY TRAFFIC VOLUME

FIGURE 5–5

EXISTING PLUS PROJECT PM PEAK HOUR AND DAILY TRAFFIC VOLUMES

CRESTRIDGE PROJECT, RANCHO PALOS VERDES

6.0 FUTURE TRAFFIC CONDITIONS

6.1 Ambient Traffic Growth

Horizon year, background traffic growth estimates have been calculated using an ambient growth factor. The ambient traffic growth factor is intended to include unknown and future cumulative projects in the study area, as well as account for regular growth in traffic volumes due to the development of projects outside the study area. The future growth in traffic volumes has been calculated at one percent (1%) per year. Applied to existing Year 2012 traffic volumes results in a three percent (3.0%) increase growth in existing volumes to the horizon Year 2015.

6.2 Cumulative Projects Traffic Characteristics

In order to make a realistic estimate of future on-street conditions prior to implementation of the Project, the status of other known development projects (cumulative projects) within a three-mile radius of the Project has been researched at the City of Rancho Palos Verdes, the City of Rolling Hills Estates and the City of Los Angeles. With this information, the potential impact of the proposed project can be evaluated within the context of the cumulative impact of all ongoing development.

Based on our research and review of the City's May 16, 2012 Cumulative Project List, there are fifteen (15) cumulative projects in the City of Rancho Palos Verdes, nine (9) cumulative projects in the City of Rolling Hills Estates and one (1) cumulative project in the City of Los Angeles that have either been built, but not yet fully occupied, or are being processed for approval. These twenty-five (25) cumulative projects have been included as part of the cumulative background setting.

Table 6-1 provides the location and a brief description for each of the 25 cumulative projects. ***Figure 6-1*** graphically illustrates the location of the cumulative projects. These cumulative projects are expected to generate vehicular traffic, which may affect the operating conditions of the key study intersections.

The information pertaining to the trip generation for the cumulative projects was either directly obtained from the respective studies, which are on file with the City or was derived from the 8th Edition of *Trip Generation*, published by the Institute of Transportation Engineers (ITE) [Washington D.C., 2008]. ***Table 6-2*** presents the development totals and resultant trip generation for the cumulative projects. As shown in *Table 6-2*, the cumulative projects are forecast to generate a combined total of 18,480 daily trips, with 1,331 trips (493 inbound and 838 outbound) forecast during the AM peak hour and 1,904 (1,167 inbound and 737 outbound) during the PM peak hour. Similarly, the trip distribution and assignment information was either directly taken from the respective reports or was derived based on the best engineering judgment and familiarity with the area and proximity to the project site and study intersections.

The AM and PM peak hour traffic volumes associated with the twenty-five (25) cumulative projects are presented in ***Figures 6-2*** and ***6-3***, respectively. *Figure 6-3* also presents the daily traffic volumes associated with the cumulative projects.

TABLE 6-1

LOCATION AND DESCRIPTION OF CUMULATIVE PROJECTS

No.	Cumulative Project	Location/Address	Description
City of Rancho Palos Verdes[5]			
1.	Trump National Golf Club	Palos Verdes Drive southwest of Shoreline Park	59 DU single family detached and 4 DU affordable housing (5 homes built)
2.	Ocean Front Estates	Palos Verdes Drive South and Hawthorne Boulevard	79 DU single family detached (74 homes built)
3.	TTM No. 52666	3200 Palos Verdes Drive West	13 DU single family detached (12 homes built)
4.	Marymount College Facilities Expansion	30800 Palos Verdes Drive East	793-student enrollment cap with 250-student bachelor of arts degree program and 150-student weekend enrollment
5.	Hawthorne/Crest Office Building	29941 Hawthorne Boulevard	7,232 SF office building
6.	Peninsula Community Church	5640 Crestridge Road	Convert 2,675 SF lower level storage area into 2,207 SF multi-purpose room with 129 fixed seats and a 468 SF expansion of the existing church admin offices
7.	Green Hills Master Plan Revision	27501 Western Avenue	27.3 acres (revise master plan to allow additional mausoleums, grading and ground burials)
8.	Highridge Condominium Project	28220 Highridge Road	27 DU condominium building with subterranean parking
9.	St. John Fisher Church Expansion	5448 Crest Road	Construction of 32,426 SF of new area, demolition of 10,329 SF of existing facilities, remodel of 26,544 SF of existing facilities and a 40 student day care center
10.	Point Vicente Animal Hospital	31270 Palos Verdes Drive West	5,957 SF veterinary hospital
11.	Zone 2 Landslide Moratorium Ordinance Revision	North of Palos Verdes Drive between Narcissa Drive and Peppertree Drive	47 DU single family detached
12.	Chevron Gas Station and Car Wash	27774 Hawthorne Boulevard	Chevron station already has a car wash and small ancillary convenience market (project was approved to have an actual convenience store and office)
13.	Grandview Park Master Plan	Montemalaga Drive between Grayslake and Via Panorama	Park Master Plan[6]
14.	Lower Hesse Park Master Plan	29301 Hawthorne Boulevard	Park Master Plan[7]
15.	Point View Master Plan	6001 Palos Verdes Drive South	Master Plan[8]

5 Source: City of Rancho Palos Verdes Cumulative Project List (May 16, 2012).

6 Source: Traffic Impact Study for *Grandview Park*, prepared by Arch Beach Consulting (July 2011).

7 Source: Traffic Impact Study for *Lower Hesse Park*, prepared by Arch Beach Consulting (March 2012).

8 Source: Traffic Impact Study for the *Point View Master Plan Project*, prepared by Fehr and Peers (December 2011).

TABLE 6-1 (CONTINUED)

LOCATION AND DESCRIPTION OF CUMULATIVE PROJECTS[9]

No.	Cumulative Project	Location/Address	Description
City of Rolling Hills Estates			
16.	Rolling Hills Covenant Church	2221/2222 Palos Verdes Drive North	16,232 SF expansion to the south campus (no addition to sanctuary seating)
17.	Butcher Subdivision	Palos Verdes Drive North and Montecillo Drive	13 DU single family detached
18.	Chandler Ranch	Chandler's Landfill, Palos Verdes Drive East	114 DU single family detached, extend existing Country Club to 7,000 yards and expand the clubhouse to 61,411 SF
19.	Deep Valley Condominiums	627 Deep Valley Drive	58 DU condominiums and 5,810 SF retail
20.	827 Deep Valley Drive Condominiums	827 Deep Valley Drive	16 DU condominiums
21.	Mediterranean Village	927 Deep Valley Drive	75 DU condominiums and 2,000 SF of retail shops
22.	Brickwalk LLC Condominiums	655-683 Deep Valley Drive and 924-950 Indian Peak Road	148 DU condominiums and 14,200 SF retail
23.	Chase Bank Project	828 Silver Spur Road	4,404 SF bank
24.	Tanglewood Subdivision	Northeast corner of Rolling Hills and Tanglewood Lane	2 DU single family detached
City of Los Angeles			
25.	Ponte Vista Project	26900 Western Avenue	380 DU senior housing, 385 DU multi-family and 630 DU condominiums

[9] Source: City of Rolling Hills Estates and City of Los Angeles.

TABLE 6-2

CUMULATIVE PROJECTS TRAFFIC GENERATION FORECAST[10]

Cumulative Projects Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Rancho Palos Verdes Development							
1. Trump National Golf Club	555	11	33	44	38	21	59
2. Ocean Front Estates	48	1	3	4	3	2	5
3. Tentative Tract Map No. 52666[11]	10	0	1	1	1	0	1
4. Marymount College Facilities Expansion	1,931	149	51	200	83	92	175
5. Hawthorne/Crest Office Building	80	10	1	11	2	9	11
6. Peninsula Community Church[11]	25	2	0	2	1	2	3
7. Green Hills Master Plan Revision	129	4	1	5	8	15	23
8. Highridge Condominium Project[12]	216	2	13	15	13	7	20
9. St. John Fisher Church Expansion	380	24	20	44	22	23	45
10. Point Vicente Animal Hospital	280	18	7	25	11	17	28
11. Zone 2 Landslide Moratorium Ordinance Revision	450	9	26	35	30	17	47
12. Chevron Gas Station and Car Wash	917	37	35	72	43	41	84
13. Grandview Park Master Plan[13]	199	49	44	93	44	49	93
14. Lower Hesse Park Master Plan[14]	129	7	6	13	8	8	16
15. Point View Master Plan	313	0	0	0	100	4	104
Rolling Hills Estates Development							
16. Rolling Hills Covenant Church	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal
17. Butcher Subdivision	124	2	7	9	8	5	13
18. Chandler Ranch	1,486	24	42	66	152	70	222
19. Deep Valley Condos	636	-2	15	13	30	21	51
20. 827 Deep Valley Drive Condos[15]	128	1	8	9	8	4	12
21. Mediterranean Village[16]	689	6	37	43	37	23	60
22. Brickwalk LLC Condominiums[17]	1,813	18	77	95	87	59	146
23. Chase Bank Project[11]	652	30	24	54	57	57	114
24. Tanglewood Subdivision	20	1	1	2	1	1	2
Los Angeles Development							
25. Ponte Vista Project	7,270	90	386	476	380	190	570
Total Cumulative Projects Trip Generation Potential	**18,480**	**493**	**838**	**1,331**	**1,167**	**737**	**1,904**

10 Unless otherwise noted; Source: Traffic Impact Study for the *Point View Master Plan Project*, prepared by Fehr and Peers (December 2011).

11 Source: *Trip Generation*, 8th Edition, Institute of Transportation Engineers (ITE) [Washington, D.C. (2008)].

12 Source: Traffic Impact Study for the *28220 Highridge Road Residential Development*, prepared by DKS Associates (May 2008).

13 Source: Traffic Impact Study for *Grandview Park*, prepared by Arch Beach Consulting (July 2011).

14 Source: Traffic Impact Study for *Lower Hesse Park*, prepared by Arch Beach Consulting (March 2012).

15 Source: Traffic Impact Study for *827 Deep Valley Drive Condominiums*, prepared by LLG Costa Mesa.

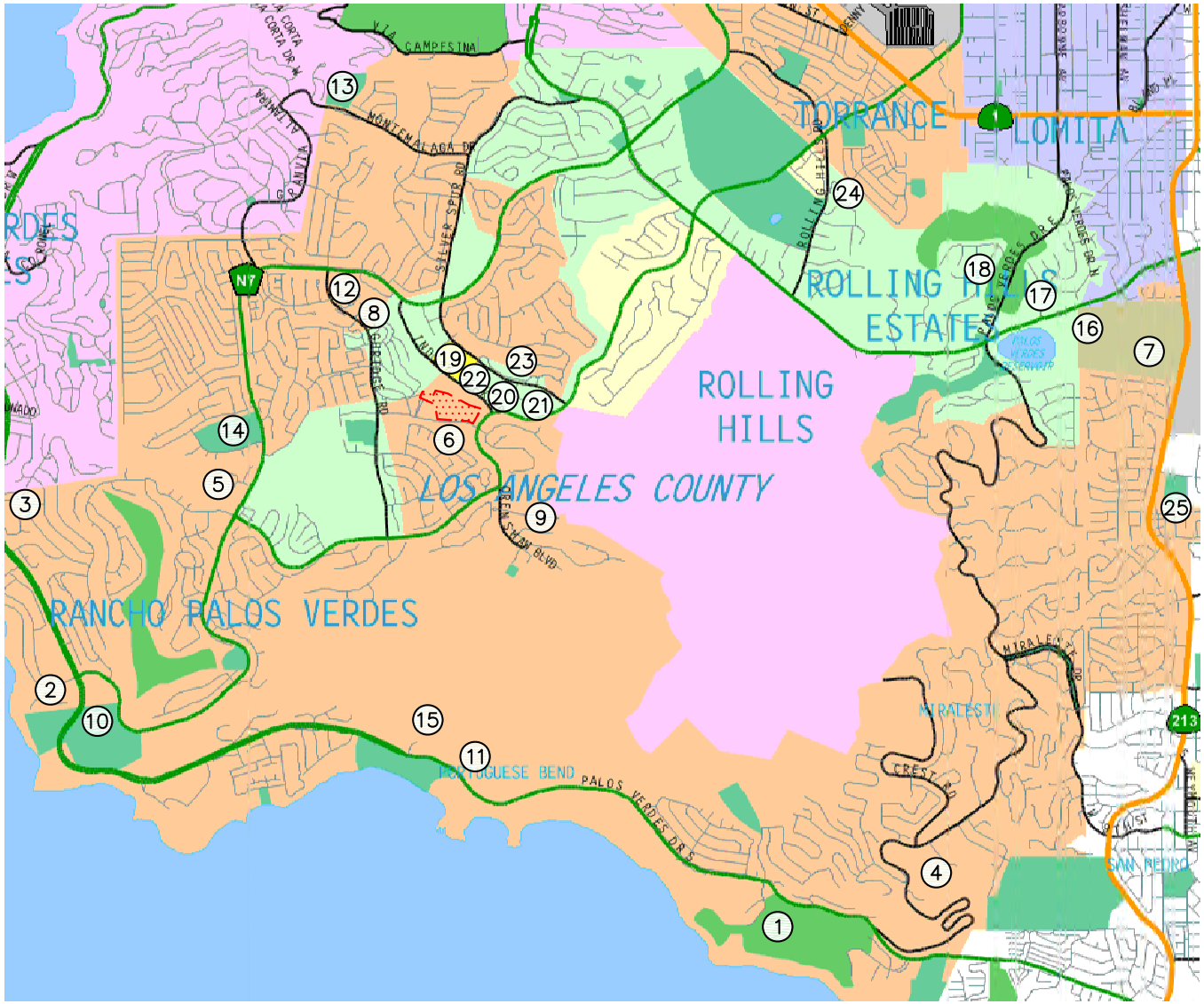
16 Source: Focused Traffic Analysis and Parking Study for *Mediterranean Village*, prepared by LLG Costa Mesa.

17 Source: Traffic Impact Study for *Brickwalk LLC Project*, prepared by LLG Costa Mesa.

6.3 Year 2015 Traffic Volumes

Figures 6-4 and ***6-5*** present the Year 2015 AM and PM peak hour cumulative traffic volumes at the five (5) key study intersections, respectively. *Figure 6-5* also presents the Year 2015 cumulative daily traffic volumes for the key roadway segments in the vicinity of the proposed project. Please note that the cumulative traffic volumes represent the accumulation of existing traffic, ambient growth traffic and cumulative project traffic.

Figures 6-6 and ***6-7*** illustrate the Year 2015 forecast AM and PM peak hour traffic volumes with the inclusion of the trips generated by the proposed Project, respectively. *Figure 6-7* also presents the Year 2015 cumulative plus Project daily traffic volumes for the key roadway segments in the vicinity of the proposed Project.



KEY

1. TRUMP NATIONAL GOLF CLUB
2. OCEAN FRONT ESTATES
3. TENTATIVE TRACT MAP NO. 52666
4. MARYMOUNT COLLEGE FACILITIES EXPANSION
5. HAWTHORNE/CREST OFFICE BUILDING
6. PENINSULA COMMUNITY CHURCH
7. GREEN HILLS MASTER PLAN REVISION
8. HIGHRIDGE CONDOMINIUM PROJECT
9. ST. JOHN FISHER CHURCH EXPANSION
10. POINT VICENTE ANIMAL HOSPITAL
11. ZONE 2 LANDSLIDE MORATORIUM ORDINANCE REVISION
12. CHEVRON GAS STATION & CAR WASH
13. GRANDVIEW PARK MASTER PLAN
14. LOWER HESSE PARK MASTER PLAN
15. POINT VIEW MASTER PLAN
16. ROLLING HILLS COVENANT CHURCH
17. BUTCHER SUBDIVISION
18. CHANDLER RANCH
19. DEEP VALLEY CONDOS
20. 827 DEEP VALLEY DRIVE
21. MEDITERRANEAN VILLAGE
22. BRICKWALK, LLC CONDOMINIUMS
23. CHASE BANK PROJECT
24. TANGLEWOOD SUBDIVISION
25. PONTE VISTA PROJECT

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

SOURCE: THOMAS BROS.

KEY

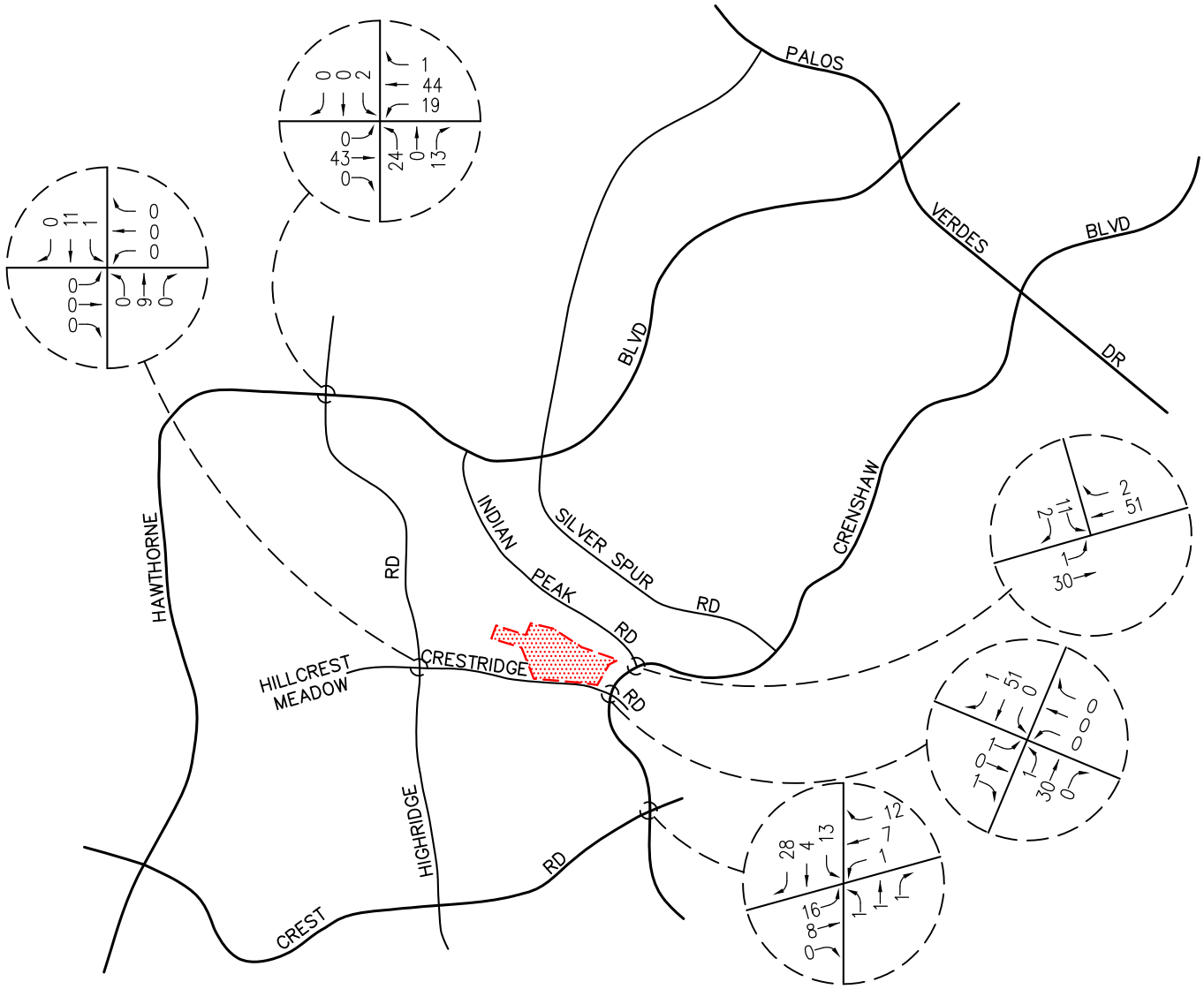
(#) = CUMULATIVE PROJECT

= PROJECT SITE

FIGURE 6-1

LOCATION OF CUMULATIVE PROJECTS

CRESTRIDGE PROJECT, RANCHO PALOS VERDES



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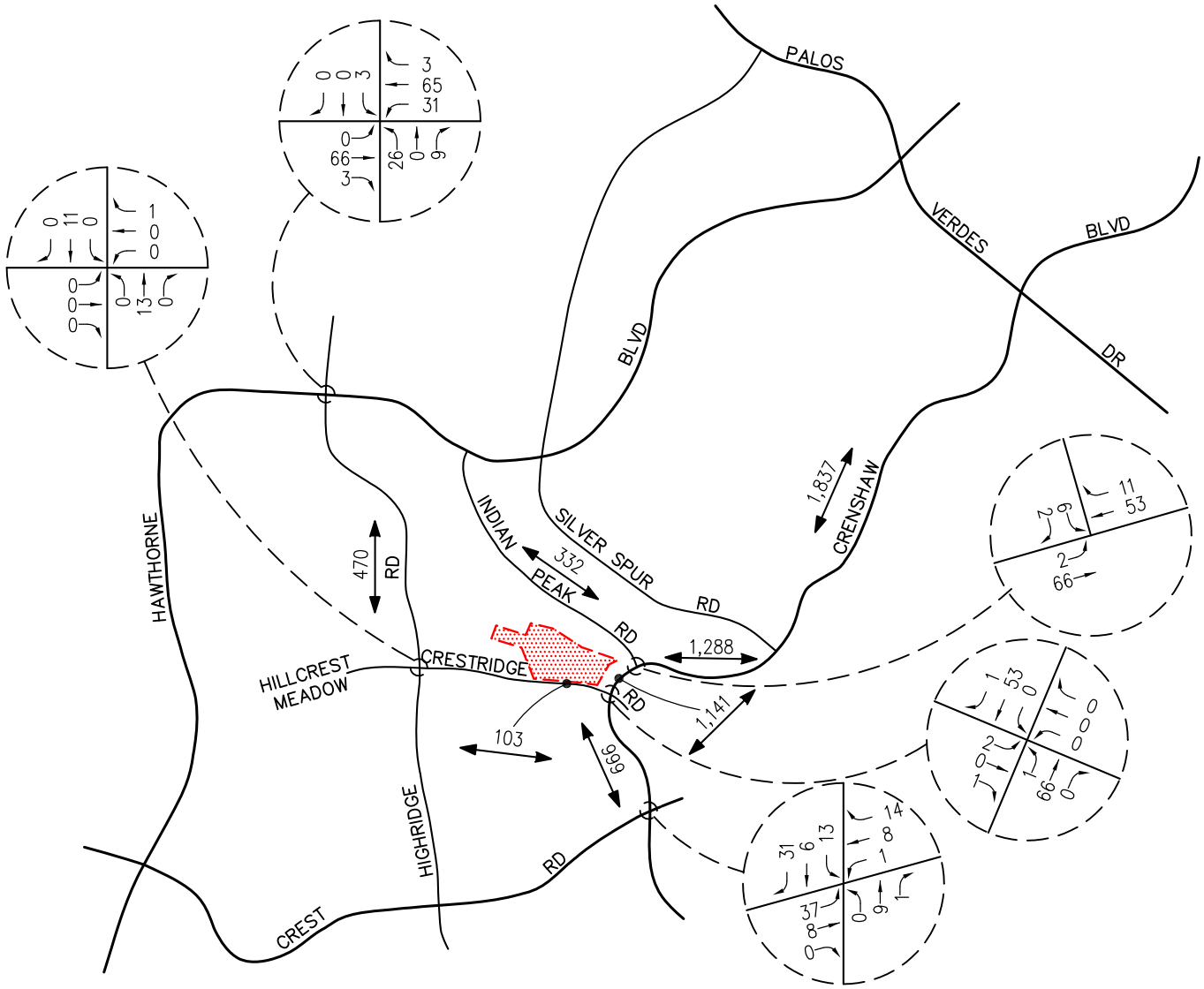
N NO SCALE

KEY
= PROJECT SITE

FIGURE 6-2

AM PEAK HOUR
CUMULATIVE PROJECTS TRAFFIC VOLUMES

CRESTRIDGE PROJECT, RANCHO PALOS VERDES



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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

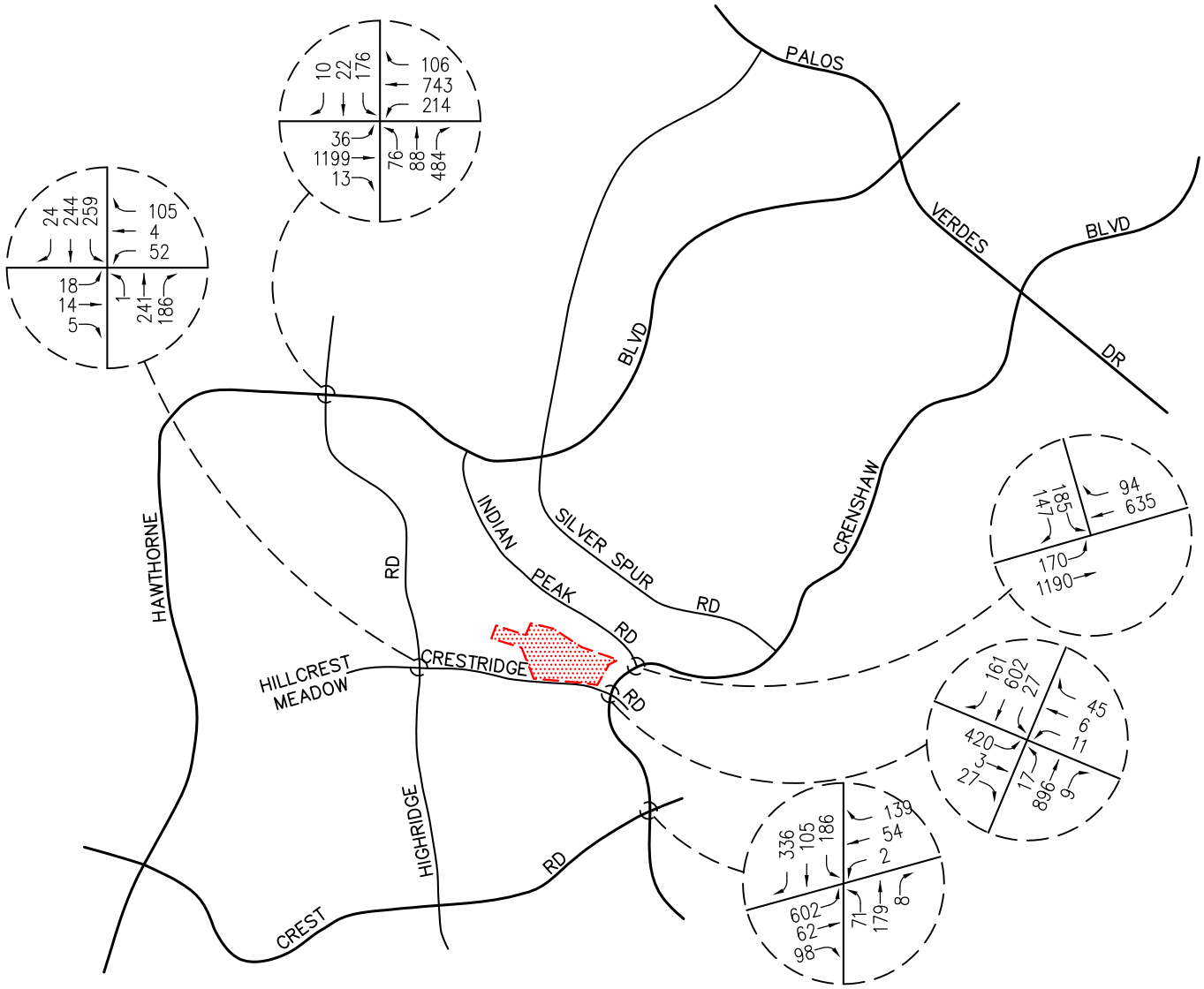
= PROJECT SITE

XX,XXX = DAILY TRAFFIC VOLUME

FIGURE 6-3

PM PEAK HOUR AND DAILY CUMULATIVE PROJECTS TRAFFIC VOLUMES

CRESTRIDGE PROJECT, RANCHO PALOS VERDES



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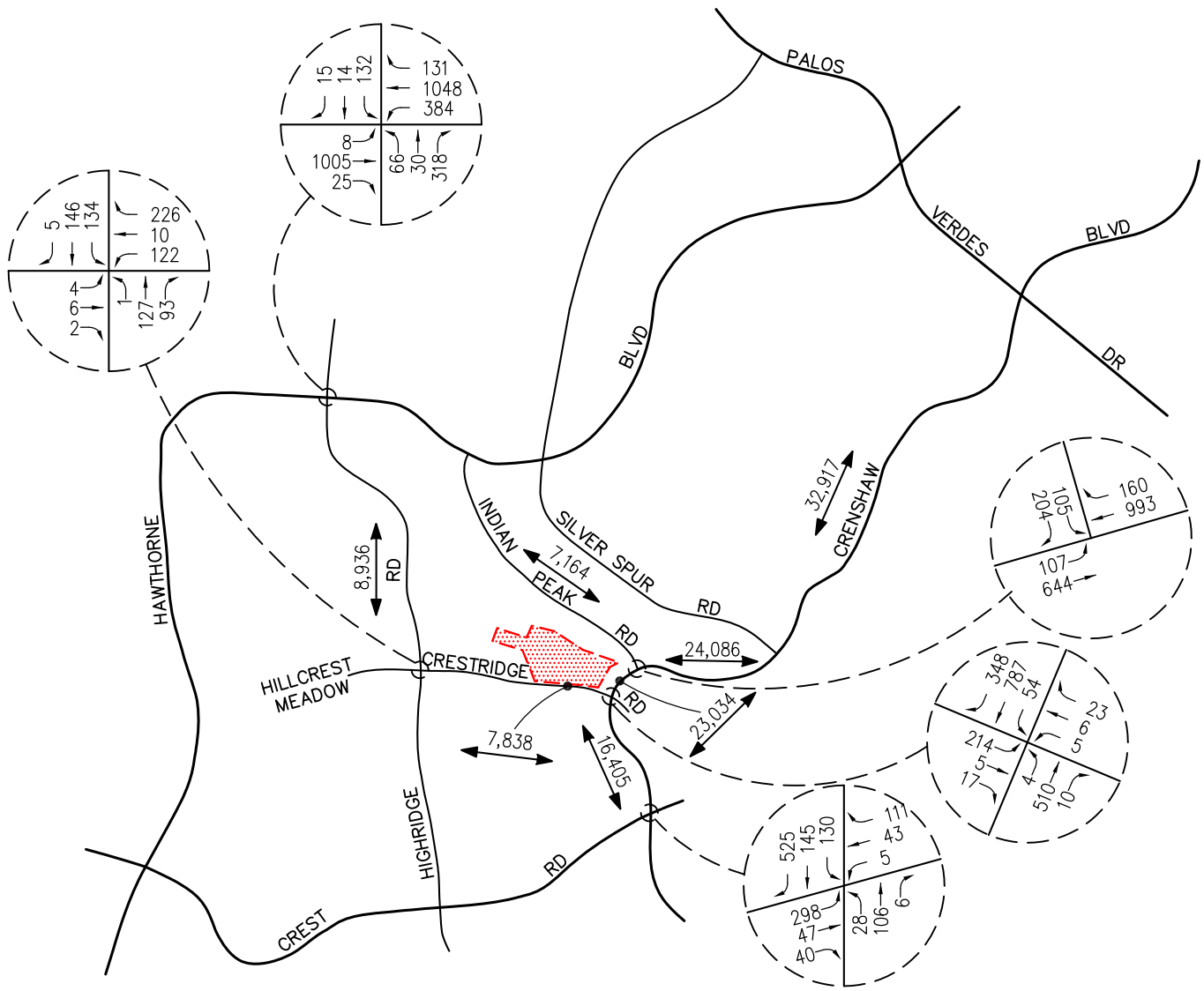
KEY
= PROJECT SITE

FIGURE 6-4

YEAR 2015 AM PEAK HOUR CUMULATIVE TRAFFIC VOLUMES

CRESTRIDGE PROJECT, RANCHO PALOS VERDES



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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

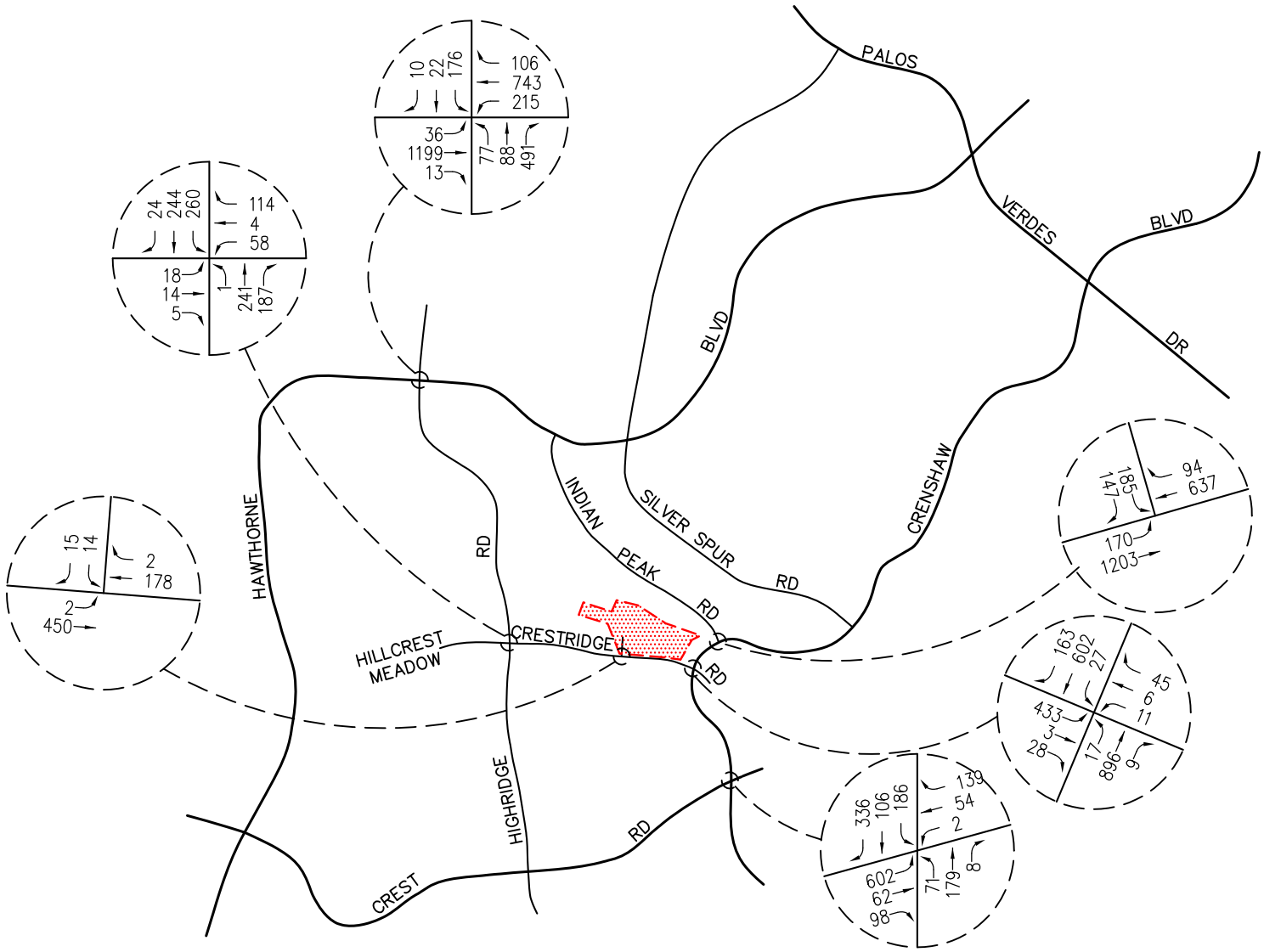
= PROJECT SITE

XX,XXX = DAILY TRAFFIC VOLUME

FIGURE 6–5

YEAR 2015 PM PEAK HOUR AND DAILY CUMULATIVE TRAFFIC VOLUMES

CRESTRIDGE PROJECT, RANCHO PALOS VERDES



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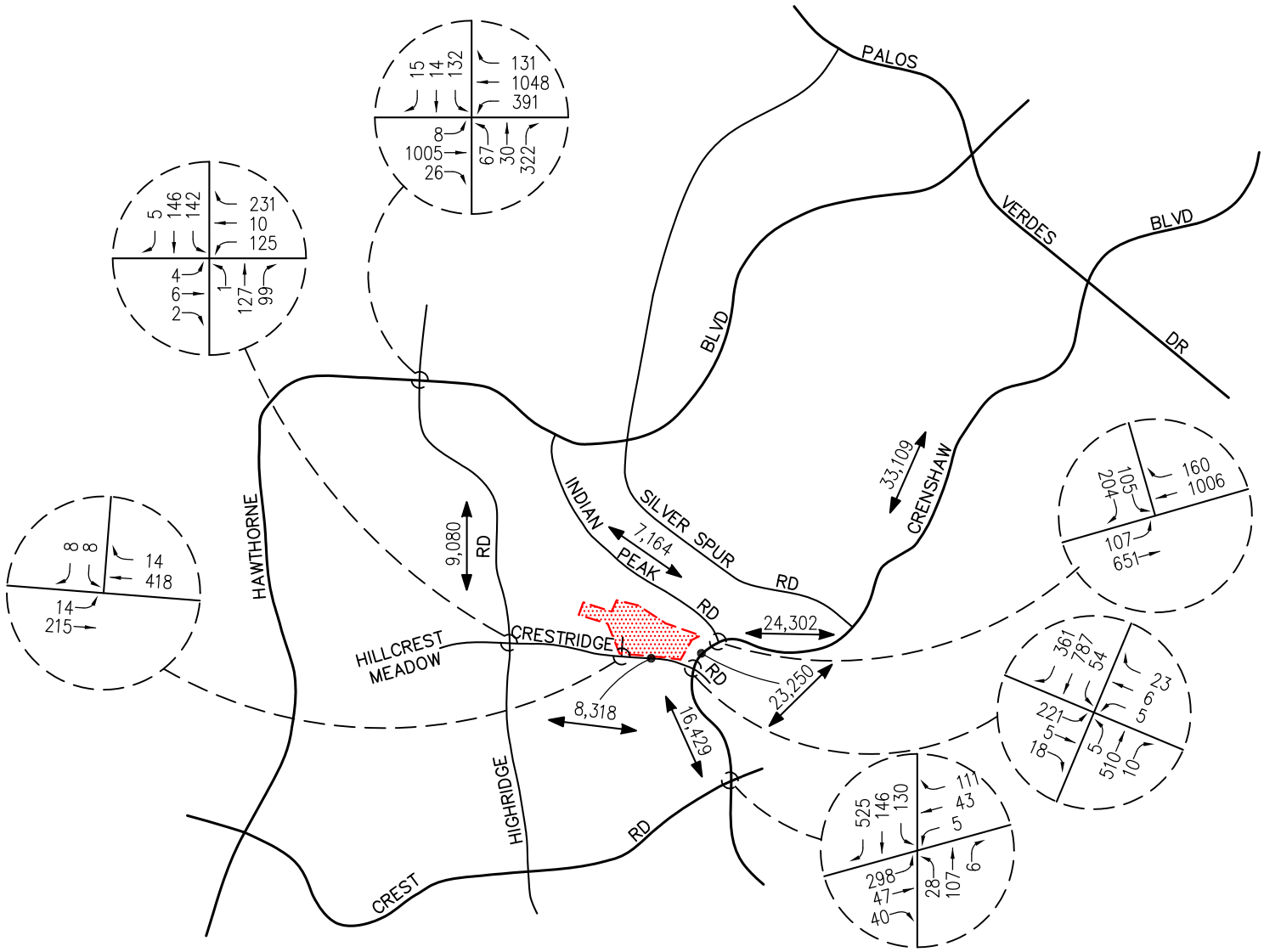
N NO SCALE

KEY
= PROJECT SITE

FIGURE 6-6

YEAR 2015 CUMULATIVE PLUS PROJECT AM PEAK HOUR TRAFFIC VOLUMES

CRESTRIDGE PROJECT, RANCHO PALOS VERDES



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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

= PROJECT SITE

XX,XXX = DAILY TRAFFIC VOLUME

FIGURE 6-7

YEAR 2015 CUMULATIVE PLUS PROJECT PM PEAK HOUR AND DAILY TRAFFIC VOLUMES

CRESTRIDGE PROJECT, RANCHO PALOS VERDES

7.0 TRAFFIC IMPACT ANALYSIS METHODOLOGY

7.1 Impact Criteria and Thresholds

The relative impact of the added project traffic volumes generated by the proposed Project during the AM and PM peak hours was evaluated based on analysis of future operating conditions at the five (5) key study intersections, without, then with, the proposed project. The previously discussed capacity analysis procedures were utilized to investigate the future volume-to-capacity relationships and service level characteristics at each study intersection. The significance of the potential impacts of the project at each key intersection was then evaluated using the City's LOS standards and significant transportation impact criteria. A significant transportation impact is determined based on the sliding scale criteria presented in ***Table 7-1***.

As indicated in *Table 7-1*, the project-related increase in ICU value for the signalized intersections that defines a significant impact varies with LOS. At LOS C or LOS D, the threshold of significance is an increase of 0.04 or greater or 0.02 or greater, respectively, in the ICU value for signalized intersections. This is reduced to 0.01 or greater under LOS E and F. Similarly, for the unsignalized intersections, a decrease in LOS by one level or more is considered significant for those locations operating at LOS D or E.

7.2 Traffic Impact Analysis Scenarios

The following scenarios are those for which volume/capacity calculations have been performed at the five (5) key intersections:

1. Existing Traffic Conditions;
2. Existing Plus Project Traffic Conditions;
3. Scenario (2) with Mitigation, if necessary;
4. Year 2015 Cumulative Traffic Conditions;
5. Year 2015 Cumulative Plus Project Traffic Conditions; and
6. Scenario (5) with Mitigation, if necessary.

TABLE 7-1

INTERSECTION IMPACT THRESHOLD CRITERIA

Level of Service	Final ICU	Project-Related Increase in ICU
C[18]	0.701 – 0.800	0.04 or more
D[18]	0.801 – 0.900	0.02 or more
E, F[18]	0.901 or more	0.01 or more
D/E - unsignalized[19]	Drop in LOS by one level	N/A

18 Source: *Los Angeles County Traffic Impact Analysis Report Guidelines,* dated January 1, 1997.

19 Source: *City of Rancho Palos Verdes LOS criteria for unsignalized intersections.*

8.0 PEAK HOUR INTERSECTION CAPACITY ANALYSIS

8.1 Existing Plus Project Traffic Conditions

Table 8-1 summarizes the peak hour level of service results at the five (5) key study intersections for Existing Plus Project traffic conditions. The first column (1) of ICU/LOS and HCM/LOS values in *Table 8-1* presents a summary of existing AM and PM peak hour traffic conditions (which were also presented in *Table 3-3*). The second column (2) lists existing plus project traffic conditions. The third column (3) shows the increase in ICU value or HCM value due to the added peak hour project trips and indicates whether the traffic associated with the Project will have a significant impact based on the LOS standards and the significant impact criteria defined in this report.

8.1.1 *Existing Traffic Conditions*

As previously presented in *Table 3-3*, the five (5) key study intersections currently operate at LOS D or better during the AM and PM peak hours.

8.1.2 *Existing Plus Project Traffic Conditions*

Review of Columns 2 and 3 of *Table 8-1* indicates that traffic associated with the proposed Project ***will not*** significantly impact any of the five (5) key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. The five (5) key study intersections currently operate and are forecast to continue to operate at an acceptable service level during the AM and PM peak hours with the addition of Project generated traffic to existing traffic.

Appendix C presents the existing plus project ICU/LOS and HCM/LOS calculations for the five (5) key study intersections.

8.2 Year 2015 Plus Project Traffic Conditions

Table 8-2 summarizes the peak hour level of service results at the five (5) key study intersections for the Year 2015. The first column (1) of ICU/LOS and HCM/LOS values in *Table 8-2* presents a summary of existing AM and PM peak hour traffic conditions (which were also presented in *Table 3-3*). The second column (2) lists forecast 2015 cumulative conditions (existing traffic plus ambient growth traffic plus cumulative project traffic) based on existing intersection geometry, but without any traffic generated from the proposed Project. The third column (3) presents future forecast traffic conditions with the addition of traffic generated by the proposed Project. The fourth column (4) shows the increase in ICU value or HCM value due to the added peak hour Project trips and indicates whether the traffic associated with the Project will have a significant impact based on the LOS standards and the significant impact criteria defined in this report.

8.2.1 *Year 2015 Cumulative Traffic Conditions*

An analysis of future (Year 2015) cumulative traffic conditions indicates that the addition of ambient traffic growth and cumulative project traffic *will not* adversely impact the five (5) key study intersections. The five (5) key study intersections are forecast to continue to operate at acceptable levels of service during the AM and PM peak hours with the addition of ambient traffic growth and cumulative project traffic.

TABLE 8-1

EXISTING PLUS PROJECT PEAK HOUR INTERSECTION CAPACITY ANALYSIS

Key Intersections	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Traffic Conditions		(3) Project Significant Impact	
		ICU/HCM	LOS	ICU/HCM	LOS	ICU/HCM Increase	Yes/No
1. Crenshaw Boulevard at Indian Peak Road	AM	0.558	A	0.562	A	0.004	No
	PM	0.509	A	0.513	A	0.004	No
2. Crenshaw Boulevard at Crestridge Road	AM	0.545	A	0.549	A	0.004	No
	PM	0.412	A	0.415	A	0.003	No
3. Crenshaw Boulevard at Crest Road	AM	19.4 sec/veh	C	19.4 sec/veh	C	0.0 sec/veh	No
	PM	11.9 sec/veh	B	11.9 sec/veh	B	0.0 sec/veh	No
4. Highridge Road at Hawthorne Boulevard	AM	0.847	D	0.851	D	0.004	No
	PM	0.702	C	0.707	C	0.005	No
5. Highridge Road at Crestridge Road	AM	13.5 sec/veh	B	13.7 sec/veh	B	0.2 sec/veh	No
	PM	10.4 sec/veh	B	10.5 sec/veh	B	0.1 sec/veh	No

TABLE 8-2

YEAR 2015 PEAK HOUR INTERSECTION CAPACITY ANALYSIS

Key Intersections	Time Period	(1) Existing Traffic Conditions		(2) Year 2015 Cumulative Traffic Conditions		(3) Year 2015 Cumulative Plus Project Traffic Conditions		(4) Project Significant Impact	
		ICU/HCM	LOS	ICU/HCM	LOS	ICU/HCM	LOS	ICU/HCM Increase	Yes/No
1. Crenshaw Boulevard at Indian Peak Road	AM	0.558	A	0.588	A	0.592	A	0.004	No
	PM	0.509	A	0.543	A	0.547	A	0.004	No
2. Crenshaw Boulevard at Crestridge Road	AM	0.545	A	0.568	A	0.572	A	0.004	No
	PM	0.412	A	0.438	A	0.441	A	0.003	No
3. Crenshaw Boulevard at Crest Road	AM	19.4 sec/veh	C	23.4 sec/veh	C	23.4 sec/veh	C	0.0 sec/veh	No
	PM	11.9 sec/veh	B	13.3 sec/veh	B	13.4 sec/veh	B	0.1 sec/veh	No
4. Highridge Road at Hawthorne Boulevard	AM	0.847	D	0.892	D	0.896	D	0.004	No
	PM	0.702	C	0.764	C	0.768	C	0.004	No
5. Highridge Road at Crestridge Road	AM	13.5 sec/veh	B	14.3 sec/veh	B	14.5 sec/veh	B	0.2 sec/veh	No
	PM	10.4 sec/veh	B	10.8 sec/veh	B	10.9 sec/veh	B	0.1 sec/veh	No

8.2.2 *Year 2015 Cumulative Plus Project Traffic Conditions*

Review of Columns 3 and 4 of *Table 8-2* indicates that traffic associated with the proposed Project ***will not*** significantly impact any of the five (5) key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. The five (5) key study intersections are forecast to continue to operate at an acceptable service level during the AM and PM peak hours with the addition of Project generated traffic in the horizon Year 2015.

Appendix C presents the Year 2015 plus project ICU/LOS and HCM/LOS calculations for the five (5) key study intersections.

9.0 SITE ACCESS AND INTERNAL CIRCULATION EVALUATION

9.1 Site Access Evaluation

As mentioned previously, access to the proposed Project site will be provided via one full-access unsignalized gated driveway located along Crestridge Road. Review of the proposed site plan presented in *Figure 2-2*, shows that the proposed Project driveway is located opposite existing driveways for the Peninsula Community Church. Furthermore, it should be noted that the church typically experiences its heaviest vehicular activity on Sundays, while the proposed Project will generally experience its heaviest vehicular activity during the weekday AM and PM peak hours. In order to validate that the Peninsula Community Church's weekday traffic activity is minimal and that their heaviest vehicular activity is on Sunday, church administration staff was contacted to obtain information on their weekday programs. As provided by church administration staff, a preschool program is provided on site Monday through Friday between 9:00 AM and 12:00 PM for approximately 30 children. Approximately 25 to 30 vehicles arrive and depart the site just before 9:00 AM and just after 12:00 PM for the preschool program. On Wednesdays, the Peninsula Community Church has an evening program between 6:30 PM and 8:30 PM for children/youths/adults. Approximately 50 vehicles arrive 15 minutes prior to 6:30 PM and leave 15 minutes after 8:30 PM for the Wednesday evening program. As a result, based on the above weekday programs, the church's weekday traffic activity is minimal.

Level of service calculations were performed at the Project driveway to determine the delay for vehicles waiting to turn left into the Project site and the delay for vehicles waiting to turn left or right out of the Project site assuming a one-way stop. The LOS calculations for the Project driveway are based on Year 2015 plus Project AM peak hour and PM peak hour traffic volumes. The results of the analysis indicate that vehicles making a left-turn into the Project site experience a delay of 7.6 seconds/vehicle (LOS A) during the AM peak hour and a delay of 8.2 seconds/vehicle (LOS A) during the PM peak hour. Vehicles making a left-turn or right-turn out of the Project site experience a delay of 11.3 seconds/vehicle (LOS B) during the AM peak hour and a delay of 12.3 seconds/vehicle (LOS B) during the PM peak hour. Overall, the proposed Project driveway is forecast to operate at LOS B during the AM and PM peak hours for Year 2015 traffic conditions. As such, project access will be adequate. Motorists entering and exiting the Project site will be able to do so comfortably, safely, and without undue congestion. ***Appendix D*** presents the Year 2015 level of service calculation worksheets for the proposed Project driveway.

9.2 Vehicular Gate Stacking Analysis

The following section summarizes the required storage reservoir for the project's gated entry along Crestridge Road using the Crommelin Methodology.

9.2.1 *Crommelin Methodology*

The Crommelin Methodology determines the minimum storage reservoir required to provide adequate access and control at gated entries. Experience has proven that poorly designed gated entries with inadequate storage capacities often times create an adverse effect on the operating characteristics of the street network. The Crommelin Methodology virtually eliminates this scenario

as it ensures the design of an efficient, well-working access system with minimum impacts upon the surrounding street system.

The methodology is based on a Poisson distribution, peak hour traffic volumes, gate control strategies, processing rates at a control point, and the number of travel lanes. These characteristics are used to calculate a traffic intensity factor value (IF), which is derived by dividing the peak hour traffic volumes by the design processing rate. The IF value is then plotted on the 99% confidence level curve (where storage capacity will not be exceeded 99 times of 100) per the Crommelin Reservoir Needs nomograph (See *Appendix D*). This process ultimately estimates the maximum number of queuing vehicles that will store behind the service position vehicle at the control point. This number is rounded up to the nearest vehicle and added to the single service position vehicle, resulting in the total number of vehicles stored behind the control point. The required storage capacity, in vehicles, is converted into a length (feet) by multiplying the number of expected vehicles by a vehicle length of 22 feet.

9.2.2 *Vehicular Stacking Analysis*

Table 9-1 presents a summary of the vehicular stacking analysis for inbound visitor/guest traffic at the proposed project driveway along Crestridge Road. Please note that this queuing analysis conservatively assumes that 25% of inbound project traffic during the AM and PM peak hours will be visitors/guests. In addition, a conservative design service/processing rate of 60 vehicles per hour was assumed (which is equivalent to a processing rate of one vehicle every 60 seconds) for visitors/guests to the site.

As shown in column five (5) of *Table 9-1*, the proposed Project driveway along Crestridge Road is expected to have a maximum queue of two (2) "visitor/guest" vehicles during the AM peak hour and PM peak hour. As shown in column six (6), this queue will require a storage reservoir length of approximately 44 feet between the call box and the back of sidewalk to satisfy the maximum vehicle queue. Review of the Project site plan shows that the Project driveway will provide adequate storage.

9.3 Internal Circulation Evaluation

The on-site circulation layout of the proposed Project as illustrated in *Figure 2-2* on an overall basis is adequate. Curb return radii have been confirmed and are generally adequate for small service/delivery (FedEx, UPS) trucks, trash trucks and fire trucks.

TABLE 9-1

VEHICULAR QUEUING ANALYSIS SUMMARY

Project Driveway	Time Period	(1) Entering Traffic Volumes (veh/hr)[20]	(2) Service Rate (veh/hr)	(3) Traffic Intensity Factor (I)	(4) Required Reservoir Behind Service Position	(5) Add Vehicle Waiting at Call Box (4) + 1 vehicle	(6) Required Storage Capacity (5) * 22 feet
▪ Project Driveway at Crestridge Road	AM	1	60	0.017	1 vehicle	2 vehicles	44 ft
	PM	7	60	0.117	1 vehicle	2 vehicles	44 ft

[20] Conservatively assumes that 25% of the inbound AM and PM peak hour traffic volume at the proposed project driveway along Crestridge Road is associated with visitors/guests.

10.0 SIGHT DISTANCE EVALUATION

A sight distance evaluation was prepared for the proposed project driveway along Crestridge Road. The posted speed limit on Crestridge Road is 40 mph; however to remain conservative a design speed of 50 mph was utilized in the sight distance evaluation. Minimum stopping sight distance was utilized for this evaluation and is defined in the Caltrans Highway Design Manual (HDM) as the distance required by the driver of a vehicle, traveling at a given speed, to bring his vehicle to a stop after an object on the road becomes visible. Stopping sight distance is measured from the driver's eyes, which are assumed to be 3.5 feet above the pavement surface, to an object 0.5-foot high on the roadway. Based on the criteria set forth in Table 201.1 of the Caltrans HDM, a minimum stopping sight distance of 430 feet is required.

To address the impact of the vertical crest on Crestridge Road, a field investigation was conducted by LLG Engineers at the Project site to determine the distance between the proposed Project driveway and the crest on Crestridge Road. The field study revealed that a sight distance of approximately 520 feet is provided between the mid point of the proposed Project driveway and the crest. Based on a design speed of 50 mph and the criteria set forth in Figure 201.4 of the Caltrans HDM, a minimum stopping sight distance of 430 feet is required. With a minimum of 520 feet of sight distance provided between the proposed Project driveway and the crest, adequate vertical sight distance will be provided.

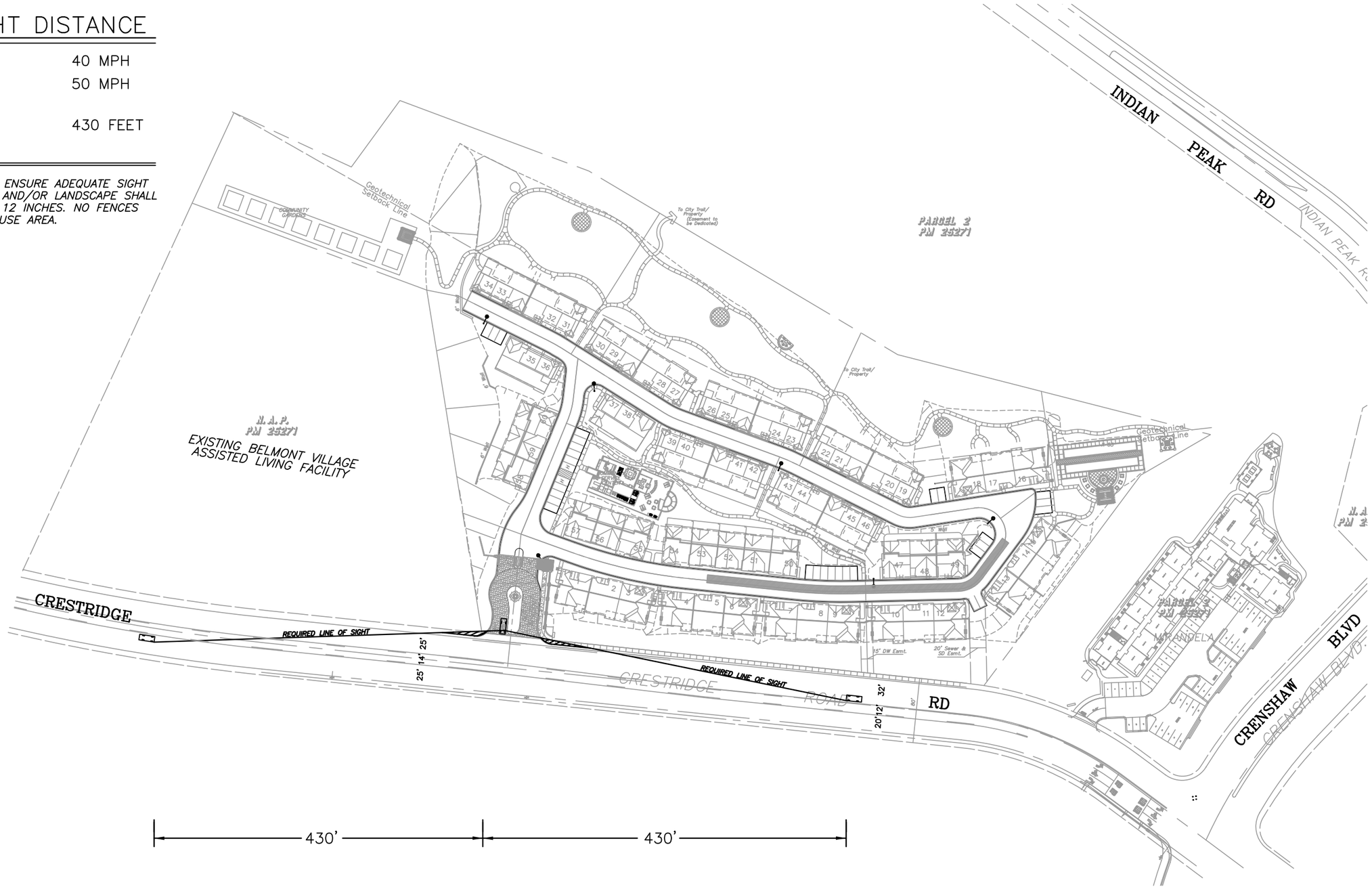
Figure 10-1 presents a schematic of the sight distance evaluation performed at the Project driveway, which illustrates the actual sight distances and corresponding limited use areas. As shown, a motorist's sight distance may be obstructed by future project landscapes and/or hardscapes along project frontage. Therefore, any landscaping and/or hardscapes should be designed such that a driver's clear line of sight is not obstructed.

STOPPING SIGHT DISTANCE

POSTED SPEED LIMIT:	40 MPH
DESIGN SPEED LIMIT:	50 MPH
REQUIRED STOPPING SIGHT DISTANCE:	430 FEET

LEGEND

LIMITED USE AREA: TO ENSURE ADEQUATE SIGHT DISTANCE, HARDSCAPE AND/OR LANDSCAPE SHALL NOT BE HIGHER THAN 12 INCHES. NO FENCES OR WALLS IN LIMITED USE AREA.



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LINSCOTT LAW & GREENSPAN engineers

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FIGURE 10–1

SIGHT DISTANCE EVALUATION
CRESTRIDGE ROAD AT PROPOSED PROJECT DRIVEWAY
CRESTRIDGE PROJECT, RANCHO PALOS VERDES

11.0 RECOMMENDED IMPROVEMENTS

11.1 Existing Plus Project Traffic Conditions

The results of the intersection capacity analysis presented previously in *Table 8-1* shows that the proposed Project will not significantly impact the five (5) key study intersections under the "Existing Plus Project" traffic scenario. Given that there are no significant project impacts, no improvements are required under this traffic scenario.

11.2 Year 2015 Plus Project Traffic Conditions

The results of the intersection capacity analysis presented previously in *Table 8-2* shows that the proposed Project will not significantly impact the five (5) key study intersections under the "Year 2015 Plus Project" traffic scenario. Given that there are no significant Project impacts, no improvements are required under this traffic scenario.

11.3 Project Specific Improvements

The following improvements are recommended to ensure adequate access and egress to the Project site is provided:

- Install a "STOP" sign and stop bar at the Project driveway on Crestridge Road.

12.0 CONGESTION MANAGEMENT PROGRAM (CMP) ANALYSIS

The Congestion Management Program (CMP) was created statewide as a result of Proposition 111 and has been implemented locally by the Los Angeles County Metropolitan Transportation Authority (LACMTA). The CMP for Los Angeles County requires that the traffic impact of individual development projects of potential regional significance be analyzed. A specific system of arterial roadways plus all freeways comprise the CMP system.

12.1 Traffic Impact Review

As required by the current *Congestion Management Program for Los Angeles County*, a review has been made of designated monitoring locations on the CMP highway system for potential impact analysis. Per CMP TIA criteria, the geographic area examined in the TIA must include the following, at a minimum:

- All CMP arterial monitoring intersections, including freeway on and off-ramp intersections, where the project will add 50 or more trips during either the AM or PM weekday peak hours.
- Mainline freeway-monitoring stations where the project will add 150 or more trips, in either direction, during the AM or PM weekday peak hours.

12.1.1 *Intersections*

The following CMP intersection monitoring locations in the vicinity of the proposed project have been identified:

CMP Station	Location
58	Pacific Coast Highway at Western Avenue
84	Western Avenue at 9th Street
128	Western Avenue at Toscanini Drive
151	Pacific Coast Highway at Crenshaw Boulevard
152	Pacific Coast Highway at Hawthorne Boulevard
153	Pacific Coast Highway at Palos Verdes Boulevard

As stated earlier, the CMP guidelines require that arterial monitoring intersection locations must be examined if the proposed project will add 50 or more trips during either the AM or PM weekday peak hours (of adjacent street traffic) at CMP monitoring intersections. Based on the proposed project's trip generation potential, trip distribution and trip assignment, the Project will not add 50 or more trips at the identified CMP intersections during either the weekday AM peak hour or PM peak hour. Therefore a CMP intersection traffic impact analysis is not required.

12.1.2 *Freeways*

There are no CMP freeway monitoring locations in the vicinity of the proposed project. Therefore, a CMP freeway traffic impact analysis is not required.

Based on the result of this CMP evaluation, it is concluded that the proposed project will not have any significant traffic impact on the Congestion Management Program Highway System.

12.2 Transit

As required by the current *Congestion Management Program for Los Angeles County*, a review has been made of the potential impacts of the project on transit service. The Palos Verdes Peninsula Transit Authority currently provides transit service in the vicinity of the proposed Project.

The project trip generation, as shown in *Table 5–1*, was adjusted by values set forth in the CMP (i.e. person trips equal 1.4 times vehicle trips, and transit trips equal 3.5 percent of the total person trips) to estimate transit trip generation. Pursuant to the CMP guidelines, the proposed project is forecast to generate demand for two transit trips during the weekday AM peak hour and two transit trips during the weekday PM peak hour. Over a 24-hour period, the proposed Project is forecast to generate demand for 24 daily transit trips. The calculations are as follows:

- AM Peak Hour = $33 \times 1.4 \times 0.035 = 2$ Transit Trips
- PM Peak Hour = $44 \times 1.4 \times 0.035 = 2$ Transit Trips
- Daily Trips = $480 \times 1.4 \times 0.035 = 24$ Transit Trips

It is anticipated that the existing transit service in the project area will adequately accommodate the increase of project generated transit trips. Thus, based on the calculated number of generated transit trips, no project impacts on existing or future transit services in the project area are expected to occur as a result of the proposed Project.

13.0 CONSTRUCTION TRAFFIC IMPACTS

This section of the report summarizes the potential traffic impacts due to construction activities at the project site, associated with the 143,000 cubic yard soil export. The construction activities associated with the soil export include 1) clearing and grubbing, 2) rough grading and 3) precise grading/site preparation/underground. The following section describes the potential construction related trips associated with each construction activity and provides an assessment as to whether or not the forecast construction trips will have an impact on the existing street system.

13.1 Construction Traffic Trip Generation

In order to forecast the potential construction related trips associated with the soil export construction activities at the project site, the following assumptions, as provided by Rincon Consultants, have been utilized for the three aforementioned construction components.

Clearing and Grubbing

- 7,150 cubic yards to be exported during the clearing and grubbing construction phase.
- A five-day work week (Monday through Friday from 8:15 AM to 4:15 PM) was assumed.
- The clearing and grubbing construction phase is anticipated to last approximately 20 days.
- All trucks have a capacity of 20 cubic yards.
- A total of 5 employees will be on the site Monday through Friday from 8:15 AM to 4:15 PM.

Rough Grading

- 114,400 cubic yards to be exported during the rough grading construction phase.
- A five-day work week (Monday through Friday from 8:15 AM to 4:15 PM) was assumed.
- The rough grading construction phase is anticipated to last approximately 80 days.
- All trucks have a capacity of 20 cubic yards.
- A total of 10 employees will be on the site Monday through Friday from 8:15 AM to 4:15 PM.

Precise Grading/Site Preparation/Underground

- 21,450 cubic yards to be exported during this construction phase.
- A five-day work week (Monday through Friday from 8:15 AM to 4:15 PM) was assumed.
- This construction phase is anticipated to last approximately 80 days.
- All trucks have a capacity of 20 cubic yards.
- A total of 10 employees will be on the site Monday through Friday from 8:15 AM to 4:15 PM.

In addition to the aforementioned assumptions for each construction component, the following assumptions were utilized for truck trips and employee trips.

- Each truckload requires an inbound trip and an outbound trip.
- The daily number of truck trips was averaged over the eight-hour workday to obtain the number of peak hour truck trips (50% entering and 50% exiting).
- All truck trips were converted to passenger car equivalents (P.C.E.'s) using a P.C.E. factor of 3.0.
- Each employee would make 4 trips per day (one during the AM peak hour, two during the lunch hour and one during the PM peak hour.

Using the aforementioned assumptions, ***Table 13-1*** provides a summary of the forecast construction peak hour and daily traffic volumes for each of the three construction components. Review of the first row of *Table 13-1* shows that the clearing and grubbing construction component is expected to generate 128 daily trips with 20 trips produced during the AM peak hour and 20 trips produced during the PM peak hour. Review of the second row of *Table 13-1* shows that the rough grading construction component is expected to generate 472 daily trips with 64 trips produced during the AM peak hour and 64 trips produced during the PM peak hour. Review of the last row of *Table 13-1* shows that the precise grading/site preparation/underground construction component is expected to generate 124 daily trips with 22 trips produced during the AM peak hour and 22 trips produced during the PM peak hour.

13.2 Construction Traffic Analysis

Given that the rough grading construction component will generate the greatest amount of construction-related traffic; this construction traffic assessment focuses to the potential impacts associated with the rough grading construction component.

13.2.1 *Construction Traffic Distribution Pattern*

The City of Rancho Palos Verdes has identified the following haul route for all construction and rough grading trucks.

- All loaded trucks shall use Crestridge Road to Highridge Road to Hawthorne Boulevard to export all materials.
- All unloaded trucks shall use Crenshaw Boulevard to Crestridge Road to access the site.

Figure 13-1 graphically illustrates the traffic distribution pattern for the rough grading construction component. The anticipated AM and PM peak hour construction traffic volumes associated with the rough grading construction component are presented in ***Figures 13-2*** and ***13-3***, respectively. The traffic volume assignments presented in *Figures 13-2* and *13-3* reflect the construction traffic distribution characteristics shown in *Figure 13-1* and the construction traffic generation forecast for rough grading construction component presented in *Table 13-1*.

13.2.2 *Existing Plus Construction Traffic Volumes*

Figures 13-4 and ***13-5*** present the existing plus construction traffic volumes (i.e. rough grading) at the five (5) key study intersections during the AM and PM peak hours, respectively.

13.2.3 *Existing Plus Construction Traffic Level of Service Results*

Table 13-2 summarizes the results of the existing plus construction traffic level of service analysis at the five (5) key study intersections for the rough grading construction component. Review of *Table 13-2* shows that all five (5) key study intersections are forecast to operate at acceptable levels of service during the AM and PM peak hours for existing plus construction traffic conditions, therefore no construction traffic impacts associated with the rough grading construction component are anticipated. Given that no construction traffic impacts are anticipated for the rough grading construction component, it can be concluded that the remaining construction components (i.e.

clearing/grubbing and precise grading/site preparation/underground) will also have no significant impacts at the five (5) key study intersections, because they have a lesser trip generation potential than that of the rough grading construction component.

Appendix E presents the construction traffic (rough grading construction component) ICU/LOS and HCM/LOS calculations for the five (5) key study intersections for the AM peak hour and PM peak hour.

TABLE 13-1

PROJECT CONSTRUCTION–RELATED TRAFFIC GENERATION

Project Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Clearing and Grubbing Generation Forecast:							
• Construction Truck Traffic (3 Trucks)	36	3	2	5	3	2	5
Passenger Car Equivalent Factor[21]	3	3	3	3	3	3	3
Subtotal	108	9	6	15	9	6	15
• Employees (5 Employees)	20	5	0	5	0	5	5
Total Clearing and Grubbing Construction Related Traffic Trip Generation Potential	**128**	**14**	**6**	**20**	**9**	**11**	**20**
Rough Grading Generation Forecast:							
• Construction Truck Traffic (9 Trucks)	144	9	9	18	9	9	18
Passenger Car Equivalent Factor[21]	3	3	3	3	3	3	3
Subtotal	432	27	27	54	27	27	54
• Employees (10 Employees)	40	10	0	10	0	10	10
Total Rough Grading Construction Related Traffic Trip Generation Potential	**472**	**37**	**27**	**64**	**27**	**37**	**64**
Precise Grading / Site Preparation / Underground Generation Forecast:							
• Construction Truck Traffic (2 Trucks)	28	2	2	4	2	2	4
Passenger Car Equivalent Factor[21]	3	3	3	3	3	3	3
Subtotal	84	6	6	12	6	6	12
• Employees (10 Employees)	40	10	0	10	0	10	10
Total Precise Grading / Site Preparation / Underground Construction Related Traffic Trip Generation Potential	**124**	**16**	**6**	**22**	**6**	**16**	**22**

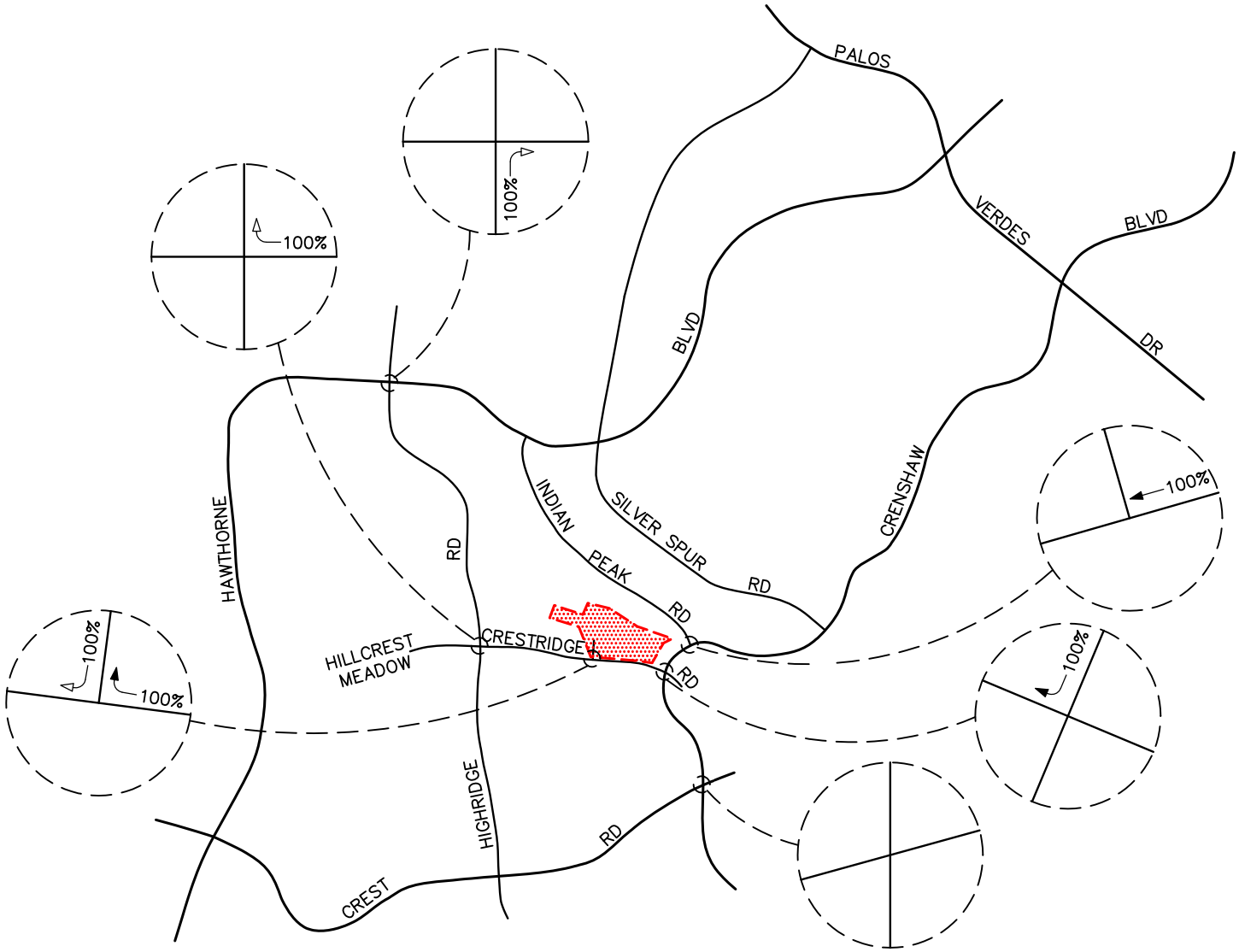
[21] A passenger car equivalent factor of 3.0 was applied to the truck trips to convert them into passenger car trips.

TABLE 13-2

EXISTING PLUS CONSTRUCTION TRAFFIC PEAK HOUR INTERSECTION CAPACITY ANALYSIS

ROUGH GRADING CONSTRUCTION COMPONENT

Key Intersections	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Construction Traffic Conditions		(3) Significant Impact	
		ICU/HCM	LOS	ICU/HCM	LOS	ICU/HCM Increase	Yes/No
1. Crenshaw Boulevard at Indian Peak Road	AM	0.558	A	0.558	A	0.000	No
	PM	0.509	A	0.518	A	0.009	No
2. Crenshaw Boulevard at Crestridge Road	AM	0.545	A	0.545	A	0.000	No
	PM	0.412	A	0.417	A	0.005	No
3. Crenshaw Boulevard at Crest Road	AM	19.4 sec/veh	C	19.4 sec/veh	C	0.0 sec/veh	No
	PM	11.9 sec/veh	B	11.9 sec/veh	B	0.0 sec/veh	No
4. Highridge Road at Hawthorne Boulevard	AM	0.847	D	0.864	D	0.017	No
	PM	0.702	C	0.702	C	0.000	No
5. Highridge Road at Crestridge Road	AM	13.5 sec/veh	B	13.8 sec/veh	B	0.3 sec/veh	No
	PM	10.4 sec/veh	B	10.7 sec/veh	B	0.3 sec/veh	No



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KEY

XX% = INBOUND PERCENTAGE

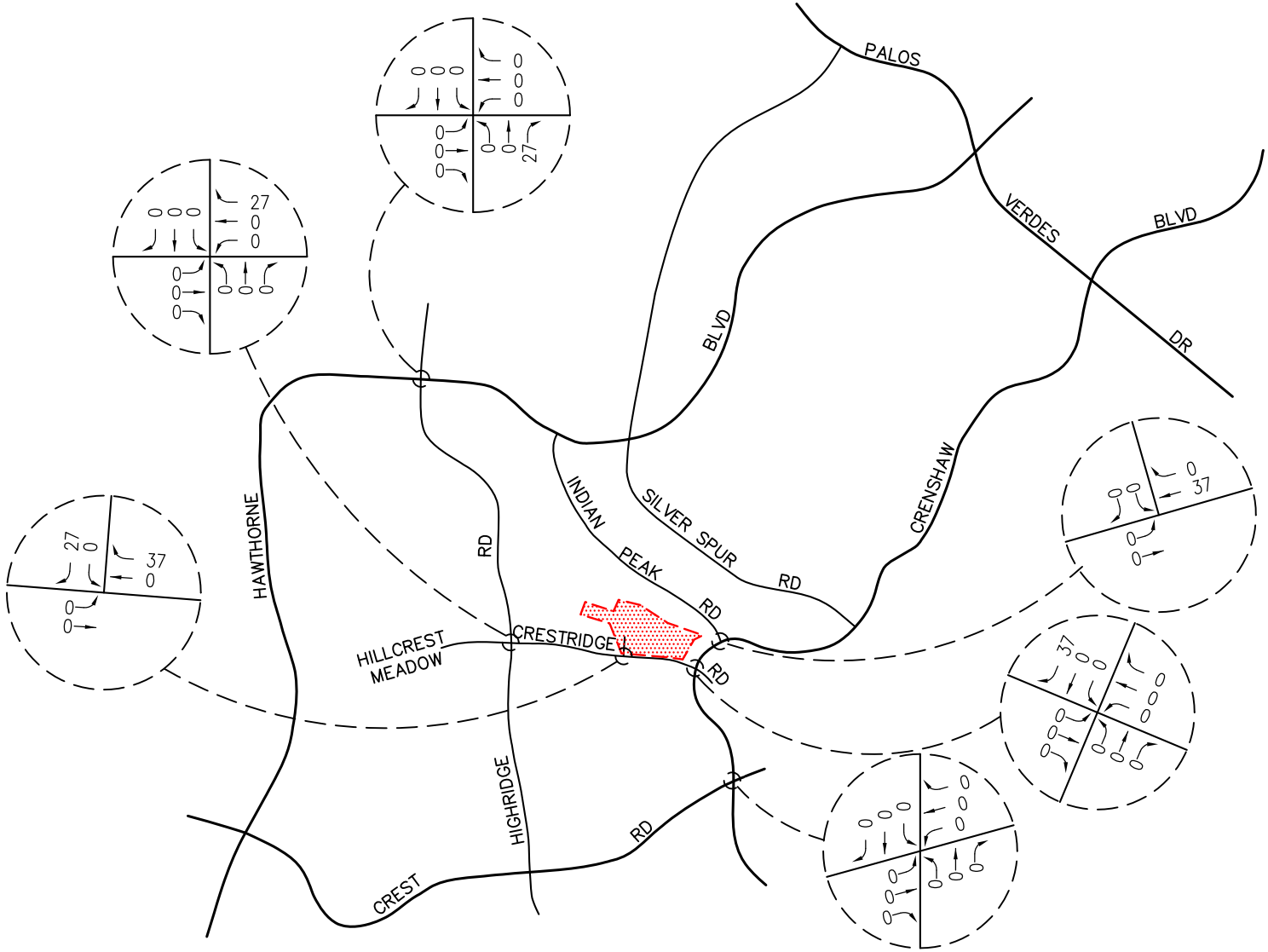
XX% = OUTBOUND PERCENTAGE

= PROJECT SITE

FIGURE 13–1

PROJECT CONSTRUCTION TRAFFIC DISTRIBUTION PATTERN

CRESTRIDGE PROJECT, RANCHO PALOS VERDES


PALOS
VERDES
BLVD
DR
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CRENSHAW
SILVER SPUR
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INDIAN
PEAK
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HAWTHORNE
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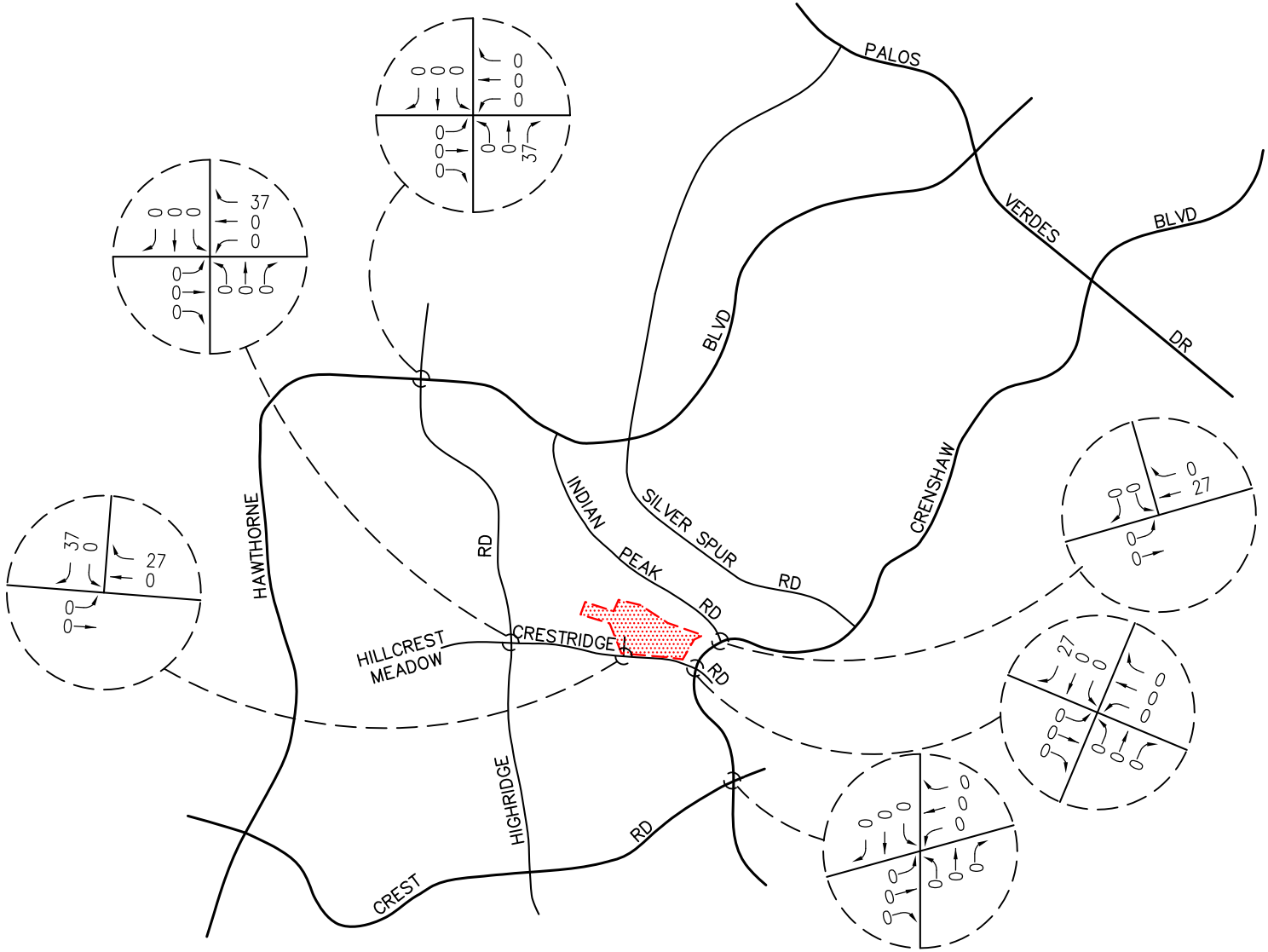
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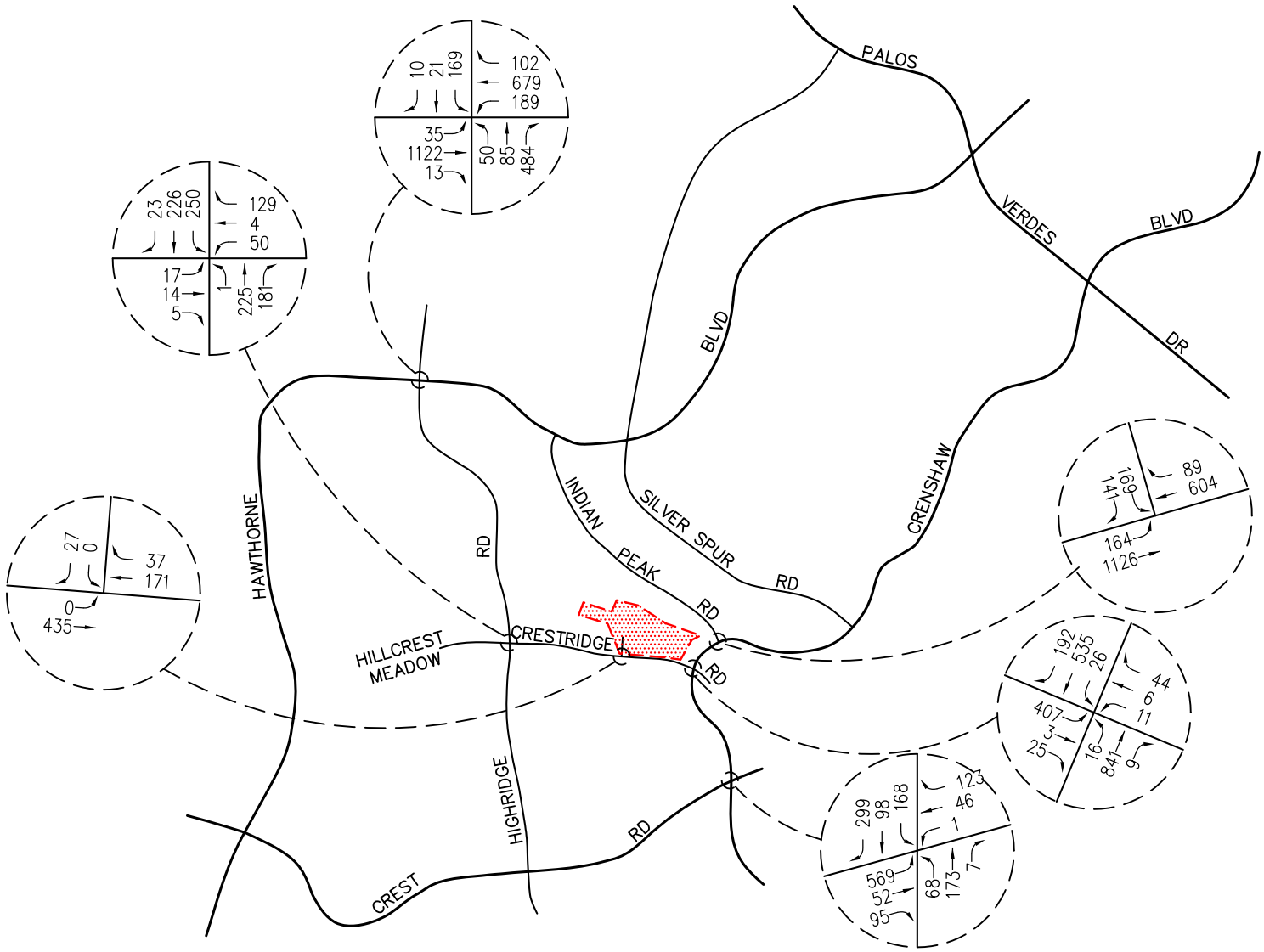

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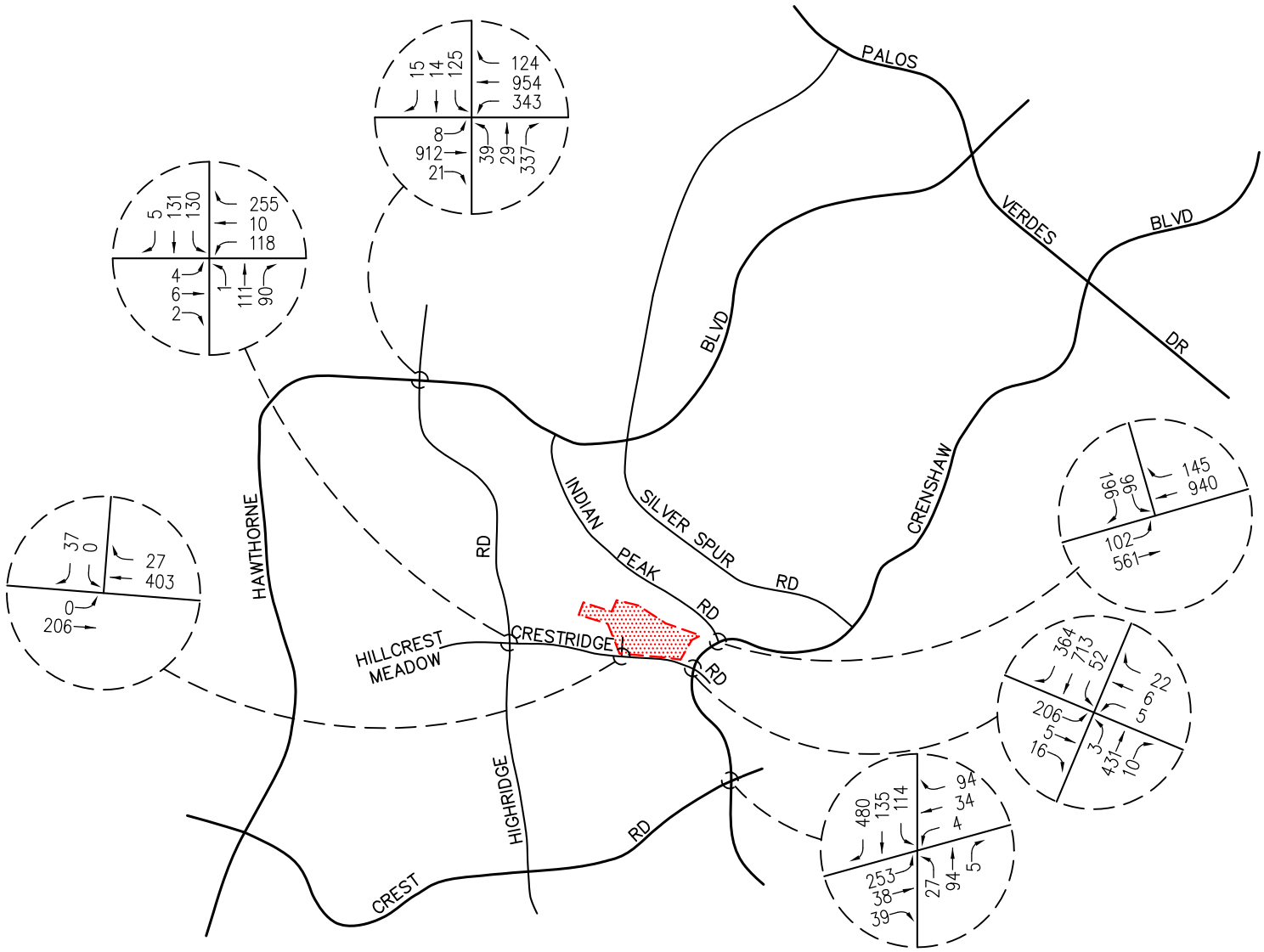
KEY
= PROJECT SITE

FIGURE 13-4

EXISTING PLUS CONSTRUCTION AM PEAK HOUR TRAFFIC VOLUMES

CRESTRIDGE PROJECT, RANCHO PALOS VERDES



n:\3200\2123288 – crestridge project, rancho palos verdes\dwg\3288f13-5.dwg LDP 14:25:25 06-21-2012 milovich

LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

= PROJECT SITE

FIGURE 13–5

EXISTING PLUS CONSTRUCTION PM PEAK HOUR TRAFFIC VOLUMES

CRESTRIDGE PROJECT, RANCHO PALOS VERDES

14.0 SPECIAL ISSUES

14.1 Crestridge Road Roadway Segment Analysis

A roadway level of service analysis was prepared for Crestridge Road between Highridge Road and Crenshaw Boulevard to satisfy City of Rancho Palos Verdes requirements. The roadway level of service analysis is based on the two-lane roadway criteria contained in the *Los Angeles County Traffic Impact Analysis Guidelines* dated January 1, 1997. ***Table 14-1*** presents the criteria for the roadway level of service analysis. Peak hour traffic volumes were developed for all City required traffic volume scenarios. Based on existing AM peak hour and PM peak hour traffic, the directional split is approximately 67/33; however, to provide a conservative analysis, a 70/30 directional split criteria was used to evaluate Crestridge Road between Highridge Road and Crenshaw Boulevard. Thus, a capacity of 2,500 passenger cars per hour (PCPH) was used in this roadway segment analysis.

Table 14-2 summarizes the peak hour roadway Level of Service results at Crestridge Road between Highridge Road and Crenshaw Boulevard for Existing plus Project traffic conditions. As shown, Crestridge Road currently operates at LOS A during the AM and PM peak hours and will continue to operate at LOS A with the Project. ***Table 14-3*** summarizes the peak hour roadway Level of Service results at Crestridge Road between Highridge Road and Crenshaw Boulevard for Year 2015 Cumulative plus Project traffic conditions (existing traffic plus ambient growth traffic plus cumulative projects traffic plus project traffic). Review of this table shows that Crestridge Road will continue to operate at LOS A in the Year 2015 during the AM and PM peak hours, without or with Project traffic.

TABLE 14-1

ROADWAY SEGMENT IMPACT THRESHOLD CRITERIA[22]

Two – Lane Roadways				
		Percentages Increase in Passenger Car Per Hour (PCPH) by Project		
		Pre-project LOS		
Directional Split	**Total Capacity (PCPH)**	**C**	**D**	**E/F**
50/50	2,800	4	2	1
60/40	2,650	4	2	1
70/30	2,500	4	2	1
80/20	2,300	4	2	1
90/10	2,100	4	2	1
100/0	2,000	4	2	1

Notes:
- The directional split for Crestridge Road between Highridge Road and Crenshaw Boulevard is 70/30 for the AM and PM peak hour

[22] Source: *Los Angeles County Traffic Impact Analysis Report Guidelines*, dated January 1, 1997.

TABLE 14-2

EXISTING PLUS PROJECT ROADWAY LEVEL OF SERVICE ANALYSIS

Key Roadway Segment	Time Period	Total Capacity (PCPH)	(1) Existing Traffic Conditions			(2) Existing Plus Project Traffic Conditions			(3) Project Significant Impact	
			Peak Hour Volume	V/C	LOS	Peak Hour Volume	V/C	LOS	V/C Increase	Yes/No
Crestridge Road between Highridge Rd and Crenshaw Blvd	AM	2,500	612	0.245	A	628	0.251	A	0.006	No
	PM	2,500	573	0.229	A	595	0.238	A	0.009	No

Notes:

- PCPH = Passenger Car Per Hour

TABLE 14-3

YEAR 2015 ROADWAY LEVEL OF SERVICE ANALYSIS

Key Roadway Segment	Time Period	Total Capacity (PCPH)	(1) Existing Traffic Conditions			(2) Year 2015 Cumulative Traffic Conditions			(3) Year 2015 Cumulative Plus Project Traffic Conditions			(4) Project Significant Impact	
			Peak Hour Volume	V/C	LOS	Peak Hour Volume	V/C	LOS	Peak Hour Volume	V/C	LOS	V/C Increase	Yes/No
Crestridge Road between Highridge Rd and Crenshaw Blvd	AM	2,500	612	0.245	A	634	0.254	A	650	0.260	A	0.006	No
	PM	2,500	573	0.229	A	594	0.238	A	616	0.246	A	0.008	No

Notes:
- PCPH = Passenger Car Per Hour

14.2 Intersection Queuing Analysis

As requested by City of Rancho Palos Verdes staff, this section of the report evaluates the stacking/storage requirements of specific turn lanes for the key study intersections of Crenshaw Boulevard/Crestridge Road and Highridge Road/Hawthorne Boulevard for existing plus Project traffic conditions and Year 2015 plus Project traffic conditions. The queuing evaluation was conducted based on the Highway Capacity Manual (HCM) signalized methodology, which reports the 95th percentile queue length in number of vehicles. The number of vehicles reported was then multiplied by a vehicle length of 22 feet to obtain the 95th percentile queue in feet. The following locations have been evaluated:

- Eastbound left-turn lane for the Crenshaw Boulevard/Crestridge Road intersection
- Eastbound shared left-through lane for the Crenshaw Boulevard/Crestridge Road intersection
- Westbound left-turn lane for the Highridge Road/Hawthorne Boulevard intersection

14.2.1 *Existing Plus Project Traffic Conditions*

Table 14-4 presents the existing plus Project queuing analysis results for the intersections of Crenshaw Boulevard/Crestridge Road and Highridge Road/Hawthorne Boulevard. Column one (1) shows the AM and PM peak hour queue lengths for existing traffic conditions and column (2) shows the AM and PM peak hour queue lengths for existing plus Project traffic conditions.

Review of columns one (1) and two (2) of *Table 14-4* indicates that the eastbound left-turn lane and eastbound shared left-through lane at the intersection of Crenshaw Boulevard/Crestridge Road currently provide and are forecast to continue to provide adequate storage during the AM and PM peak hours with the addition of Project generated traffic to existing traffic. As indicated in the footnotes of *Table 14-4*, the striped storage capacity for the eastbound left-turn lane is 250 feet, however vehicles can store beyond the storage reservoir due to the presence of a two-way-left-turn-lane along Crestridge Road. As further indicated in the footnotes of *Table 14-4*, the striped storage capacity for the eastbound shared left-through lane is 75 feet, however vehicles can store beyond the storage reservoir due to this lane continuing as the through lane along Crestridge Road.

Further review of *Table 14-4* indicates that the westbound left-turn lane at the intersection of Highridge Road/Hawthorne Boulevard does not currently and is forecast to continue to not provide adequate storage during the AM and PM peak hours with the addition of Project generated traffic to existing traffic. Although this location does not provide adequate storage, it should be noted that the proposed Project does not exacerbate the existing deficient storage capacity for the westbound left-turn lane. The queue remains 264 feet during the AM peak hour and 418 feet during the PM peak hour without and with the proposed Project.

14.2.2 *Year 2015 Plus Project Traffic Conditions*

Table 14-5 presents the Year 2015 plus Project queuing analysis results for the intersections of Crenshaw Boulevard/Crestridge Road and Highridge Road/Hawthorne Boulevard. Column one (1) shows the AM and PM peak hour queue lengths for Year 2015 cumulative traffic conditions and

column (2) shows the AM and PM peak hour queue lengths for Year 2015 cumulative plus Project traffic conditions.

Review of columns one (1) and two (2) of *Table 14-5* indicates that the eastbound left-turn lane and eastbound shared left-through lane at the intersection of Crenshaw Boulevard/Crestridge Road are forecast to continue to provide adequate storage during the AM and PM peak hours with the addition of project generated traffic in the Year 2015. As indicated in the footnotes of *Table 14-5*, the striped storage capacity for the eastbound left-turn lane is 250 feet, however vehicles can store beyond the storage reservoir due to the presence of a two-way-left-turn-lane along Crestridge Road. As further indicated in the footnotes of *Table 14-5*, the striped storage capacity for the eastbound shared left-through lane is 75 feet, however vehicles can store beyond the storage reservoir due to this lane continuing as the through lane along Crestridge Road.

Further review of *Table 14-5* indicates that the westbound left-turn lane at the intersection of Highridge Road/Hawthorne Boulevard is forecast to continue to not provide adequate storage during the AM and PM peak hours with the addition of Project generated traffic in the Year 2015. Although this location does not provide adequate storage, it should be noted that the proposed Project does not exacerbate the forecast Year 2015 cumulative without Project deficient storage capacity for the westbound left-turn lane. The queue remains 308 feet during the AM peak hour and 506 feet during the PM peak hour without and with the proposed Project.

TABLE 14-4
EXISTING PLUS PROJECT QUEUING ANALYSIS

Key Intersection	(1) Existing Traffic Conditions					(2) Existing Plus Project Traffic Conditions				
		AM Peak Hour		PM Peak Hour			AM Peak Hour		PM Peak Hour	
	Storage Provided (feet)	Max. Queue (feet)	Adequate Storage Yes / No	Max. Queue (feet)	Adequate Storage Yes / No	Storage Provided (feet)	Max. Queue (feet)	Adequate Storage Yes / No	Max. Queue (feet)	Adequate Storage Yes / No
3. Crenshaw Blvd at Crestridge Rd										
▪ Eastbound Left-Turn	250 feet [a]	308 feet	Yes	154 feet	Yes	250 feet [a]	308 feet	Yes	154 feet	Yes
▪ Eastbound Shared Left-Through	75 feet [b]	308 feet	Yes	154 feet	Yes	75 feet [b]	308 feet	Yes	154 feet	Yes
4. Highridge Rd at Hawthorne Blvd										
▪ Westbound Left-Turn	200 feet	264 feet	No	418 feet	No	200 feet	264 feet	No	418 feet	No

Notes:
[a] Although the striped storage capacity for this location is 250 feet, vehicles can store beyond the storage reservoir due to the presence of a two-way-left-turn-lane along Crestridge Road.
[b] Although the striped storage capacity for this location is 75 feet, vehicles can store beyond the storage reservoir due to this lane continuing as the through lane along Crestridge Road.

TABLE 14-5
YEAR 2015 PLUS PROJECT QUEUING ANALYSIS

Key Intersection	(1) Year 2015 Cumulative Traffic Conditions					(2) Year 2015 Cumulative Plus Project Traffic Conditions				
		AM Peak Hour		PM Peak Hour			AM Peak Hour		PM Peak Hour	
	Storage Provided (feet)	Max. Queue (feet)	Adequate Storage Yes / No	Max. Queue (feet)	Adequate Storage Yes / No	Storage Provided (feet)	Max. Queue (feet)	Adequate Storage Yes / No	Max. Queue (feet)	Adequate Storage Yes / No
3. Crenshaw Blvd at Crestridge Rd										
▪ Eastbound Left-Turn	250 feet [a]	308 feet	Yes	154 feet	Yes	250 feet [a]	308 feet	Yes	154 feet	Yes
▪ Eastbound Shared Left-Through	75 feet [b]	308 feet	Yes	154 feet	Yes	75 feet [b]	308 feet	Yes	154 feet	Yes
4. Highridge Rd at Hawthorne Blvd										
▪ Westbound Left-Turn	200 feet	308 feet	No	506 feet	No	200 feet	308 feet	No	506 feet	No

Notes:
[a] Although the striped storage capacity for this location is 250 feet, vehicles can store beyond the storage reservoir due to the presence of a two-way-left-turn-lane along Crestridge Road.
[b] Although the striped storage capacity for this location is 75 feet, vehicles can store beyond the storage reservoir due to this lane continuing as the through lane along Crestridge Road.

15.0 SUMMARY OF FINDINGS AND CONCLUSIONS

- ***Project Description*** – The project site is a 9.76-acre, vacant parcel of land, located at 5601 Crestridge Road in the City of Rancho Palos Verdes, California. The Project site is bordered by the Vista Del Norte Ecological Preserve to the north, Crestridge Road to the south, the Belmont Assisted Living Facility to the west and the Mirandela Senior Apartments to the east. The proposed Project consists of a 60-unit senior residential condominium development (age restricted for 55 years of age or older), a 13,000 square-foot (SF) outdoor community recreation area and a 2,400 SF community service center. The 13,000 SF outdoor community recreation area would include a patio and trellis, a community conversation and gathering stage, a sundeck and outdoor living room, barbeque facilities, bocce ball courts and picnic tables. The 2,400 SF community service center would provide a recreation and lounge area for community gatherings, kitchen, computer center/business room, office, fitness room, indoor and outdoor fireplaces, outdoor living area, spa, barbeque and seating area. The proposed Project is expected to be constructed in one phase and will open by the Year 2015.

  Access to the proposed project site will be provided via one full-access unsignalized gated driveway located along Crestridge Road.

- ***Study Scope*** – The following five (5) key study intersections were selected for detailed peak hour level of service analyses under Existing Traffic Conditions, Existing Plus Project Traffic Conditions, Year 2015 Cumulative Traffic Conditions and Year 2015 Cumulative plus Project Traffic Conditions:

  1. Crenshaw Boulevard at Indian Peak Road
  2. Crenshaw Boulevard at Crestridge Road
  3. Crenshaw Boulevard at Crest Road
  4. Highridge Road at Hawthorne Boulevard
  5. Highridge Road at Crestridge Road

  The analysis is focused on assessing potential traffic impacts during the morning and evening commute peak hours (between 7:00-9:00 AM, and 4:00-6:00 PM) on a typical weekday.

- ***Existing Traffic Conditions*** – All five (5) key study intersections currently operate at acceptable LOS D or better during the AM and PM peak hours.

- ***Project Trip Generation*** – The proposed Project is forecast to generate approximately 480 daily trips, with 33 trips (4 inbound, 29 outbound) produced in the AM peak hour and 44 trips (28 inbound, 16 outbound) produced in the PM peak hour on a "typical" weekday.

- ***Cumulative Projects Trip Generation*** – The twenty-five (25) cumulative projects are expected to generate a combined total of 18,480 daily trips, with 1,331 trips (493 inbound and 838 outbound) forecast during the AM peak hour and 1,904 (1,167 inbound and 737 outbound) during the PM peak hour.

- ***Existing Plus Project Traffic Conditions*** – The results of the "Existing Plus Project" analysis indicates that traffic associated with the proposed Project ***will not*** significantly impact the five (5) key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. The five (5) key study intersections currently operate and are forecast to continue to operate at an acceptable service level during the AM and PM peak hours with the addition of Project generated traffic to existing traffic.

- ***Year 2015 Plus Project Traffic Conditions*** – The results of the "Year 2015 Plus Project" analysis indicates that traffic associated with the proposed Project ***will not*** significantly impact the five (5) key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. The five (5) key study intersections are forecast to continue to operate at an acceptable LOS with the addition of project generated traffic in the Year 2015.

- ***Site Access and Internal Circulation Evaluation –*** Site access and internal circulation for the Project site plan is adequate. Adequate storage is provided for the proposed Project's gated entry along Crestridge Road. Curb return radii have been confirmed and are generally adequate for small service/delivery (FedEx, UPS) trucks, trash trucks and fire trucks.

- ***Project Specific Improvements –*** The following improvements are recommended to ensure adequate access and egress to the Project site is provided:

  - Install a "STOP" sign and stop bar at the Project driveway on Crestridge Road.

- ***CMP Compliance Assessment –*** No significant transportation impacts are expected to occur on the Los Angeles County Congestion Management Program roadway network (intersection or freeway) due to the development and full occupancy of the proposed Project. No significant transportation impacts are expected to occur on the Los Angeles County Congestion Management Program transit system due to the development and full occupancy of the proposed Project.

- ***Construction Traffic Impacts*** – The results of the existing plus construction traffic analysis indicates that all five (5) key study intersections are forecast to operate at acceptable levels of service during the AM and PM peak hours for existing plus construction traffic conditions, therefore no construction traffic impacts associated with the rough grading construction component are anticipated. Given that no construction traffic impacts are anticipated for the rough grading construction component, it can be concluded that the remaining construction components (i.e. clearing/grubbing and precise grading/site preparation/underground) will also have no significant impacts at the five (5) key study intersections, because they have a lesser trip generation potential than that of the rough grading construction component.

- ***Special Issues*** – Refer to Section 14.0 for detailed information regarding the Crestridge Road roadway segment analysis and the queuing analysis for the intersections of Crenshaw Boulevard/Crestridge Road and Highridge Road/Hawthorne Boulevard.

APPENDIX A

TRAFFIC STUDY SCOPE OF WORK

MEMORANDUM

To:	Ms. Nicole Jules, P.E. City of Rancho Palos Verdes	Date:	April 26, 2012
From:	Daniel A. Kloos, P.E. Linscott, Law & Greenspan, Engineers	LLG Ref:	2.12.3288.1
Subject:	TIA Scope of Work Agreement – Crestridge Project Rancho Palos Verdes, California		

LINSCOTT LAW & GREENSPAN engineers

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Transportation
Parking

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Pasadena
Costa Mesa
San Diego
Las Vegas

As discussed, Linscott, Law & Greenspan, Engineers (LLG) is pleased to submit the following Traffic Study Scope of Work Agreement for the proposed Crestridge Project for your review and approval.

Traffic Study Scope of Work

The Traffic Impact Analysis Report for the proposed Crestridge Project will be prepared according to City of Rancho Palos Verdes criteria and in consideration of the traffic requirements of the most current *Congestion Management Program (CMP) for Los Angeles County.*

A. **Project Location:** The project site is located north of Crestridge Road and west of Crenshaw Boulevard in the City of Rancho Palos Verdes, California. See the attached vicinity map – ***Figure 1.***

B. **Project Description:** The proposed Crestridge Project will consist of a 60-unit senior residential condominium/townhouse complex, a 13,000 square-foot (SF) community recreation area and a 2,400 SF community service center. The community recreation area and the community service center are considered ancillary uses to the proposed Project. Access to the proposed Project will be provided via one gated driveway located along Crestridge Road. See the attached preliminary site plan – ***Figure 2.***

C. **Project Study Area:** The following four (4) key study intersections have been selected for evaluation.

Key Study Intersections

1. Crenshaw Boulevard at Indian Peak Road
2. Crenshaw Boulevard at Crestridge Road
3. Crenshaw Boulevard at Crest Road
4. Highridge Road at Crestridge Road
5. Highridge Road at Hawthorne Boulevard

add per Nicole Jules 5-4-12

D. **Traffic Counts:** The traffic counts for the above listed intersections will be conducted on a Tuesday, Wednesday or Thursday during the morning peak period (7:00 AM – 9:00 AM) and evening peak period (4:00 PM – 6:00 PM).

E. Project Traffic Generation: For this analysis, Condominium/Townhomes rates contained in the *Los Angeles County Traffic Impact Analysis Guidelines dated January 1, 1997,* ITE Land Use 230: Residential Condominium/Townhouse rates and ITE Land Use 252: Senior Housing – Attached rates were considered in forecasting the trip generation potential of the proposed Project. Although the condominiums will be an age-restricted (55 plus) senior condominium development, the traffic generation potential of the Project will be estimated using the LA County Condominium/Townhomes rates to provide the most conservative analysis and to be consistent with prior analyses prepared for the project site. Please note that the proposed community recreation area and the community service center will not generate any new traffic. These facilities are ancillary uses to the proposed Project and will only be used by its residents.

Based on the above, the proposed Project is forecast to generate 480 daily trips, with 33 trips (4 inbound, 29 outbound) produced in the AM peak hour and 44 trips (28 inbound, 16 outbound) produced in the PM peak hour on a "typical" weekday. *See attached* ***Table 1 – Project Traffic Generation Forecast.***

F. Project Trip Distribution Pattern: *See attached* ***Figure 3.***

G. Near-Term Background Traffic:

- Ambient Growth Rate: 1.0% per year.
- Cumulative Projects – Obtain information regarding cumulative projects in the vicinity of the proposed project from the City of Rancho Palos Verdes and the City of Rolling Hills Estates.

H. Analysis Scenarios: The following traffic analysis scenarios will be prepared for the proposed Project.

(a) Existing Traffic Conditions;
(b) Existing Plus Project Traffic Conditions;
(c) Scenario (b) with Mitigation, if necessary;
(d) Year 2015 Cumulative Traffic Conditions (Existing plus Ambient Growth plus Related Projects);
(e) Year 2015 Cumulative Plus Project Traffic Conditions and
(f) Scenario (e) with Mitigation, if necessary.

The LOS calculations will be based on the Intersection Capacity Utilization methodology for signalized intersections and the Highway Capacity Manual (HCM) methodology for unsignalized intersections. The Project's potential impacts will be based on City of Rancho Palos Verdes significant impact criteria and Los Angeles County CMP requirements.

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GREENSPAN
engineers

I. Other Issues:

- Evaluate Site Access and Internal Circulation to include a gate stacking analysis for the proposed project driveway.
- Sight Distance Evaluation for the proposed project driveway.
- Consistent with prior analyses prepared for the project site, evaluate potential impact of the proposed project on the segment of Crestridge Road, between Highridge Road and Crenshaw Boulevard based on the two-lane roadway criteria contained in the *Los Angeles County Traffic Impact Analysis Guidelines* dated January 1, 1997.
- Construction Traffic Assessment.
- Conduct queuing analysis of left-turn lanes for left-turn (WB) from Hawthorne to Highridge and eastbound left-turn from Crestridge Rd to northbound Crenshaw

per Nicole Jules 5-4-12

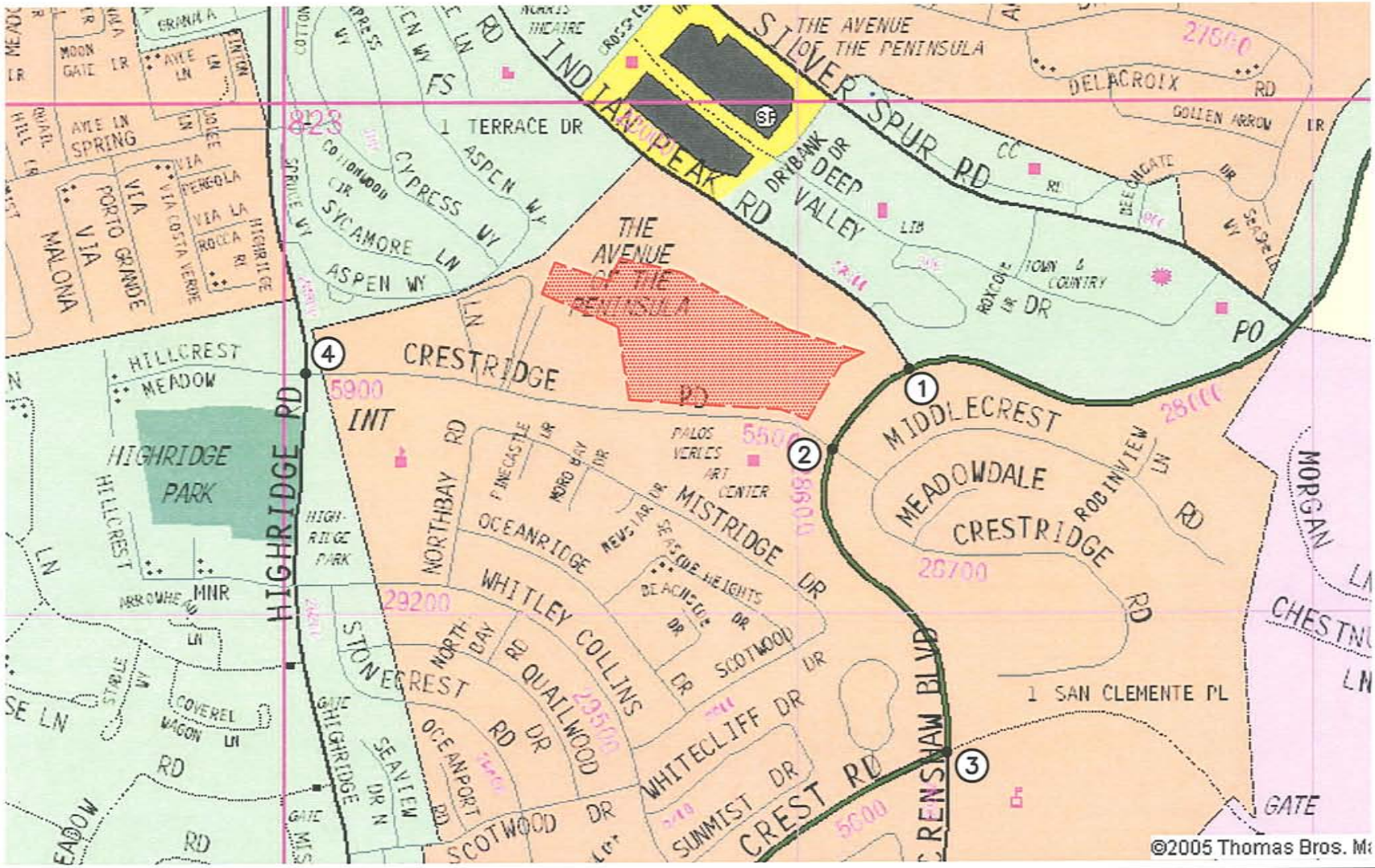
We appreciate the opportunity to provide this scope of work. Should you have any questions, please call us at (714) 641-1587. Thank you.

Approved by:

City of Rancho Palos Verdes

Date

Attachments



LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

SOURCE: THOMAS BROS.

KEY

= PROJECT SITE

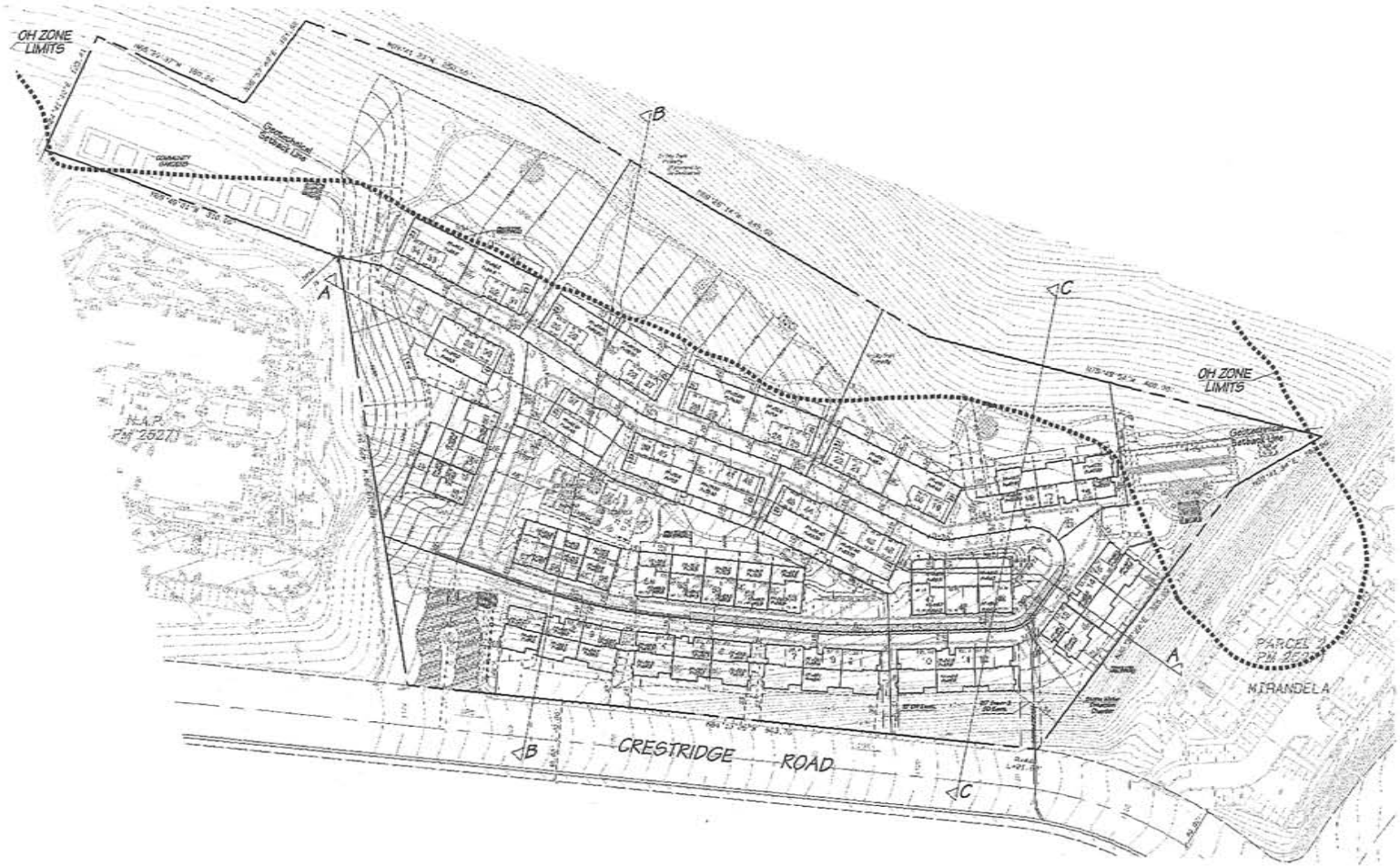
(#) = STUDY INTERSECTION

FIGURE 1

VICINITY MAP

CRESTRIDGE PROJECT, RANCHO PALOS VERDES

n:\3200\2123288 – crestridge project, rancho palos verdes\dwg\3288f1.dwg LDP 10:11:39 04-26-2012 green



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SOURCE: RBF CONSULTING

LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

FIGURE 2

PRELIMINARY SITE PLAN
CRESTRIDGE PROJECT, RANCHO PALOS VERDES

LINSCOTT LAW & GREENSPAN engineers

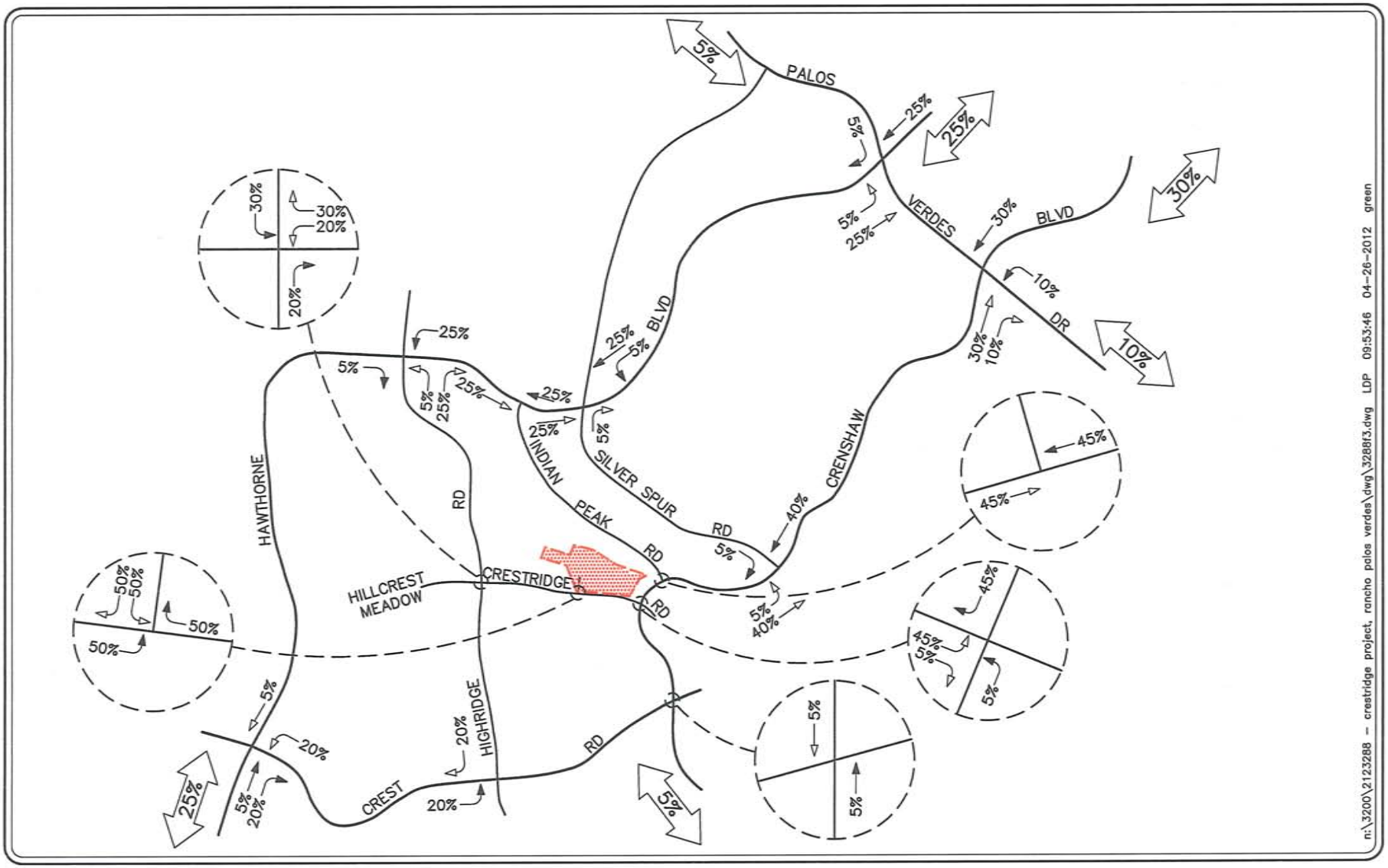
TABLE 1
PROJECT TRAFFIC GENERATION FORECAST

ITE Land Use Code / Project Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Generation Factors:							
▪ Condominiums/Townhomes (TE/DU)[1]	8.00	0.06	0.48	0.54	0.47	0.26	0.73
▪ 230: Residential Condo/Townhouse (TE/DU)[2]	5.81	0.07	0.37	0.44	0.35	0.17	0.52
▪ 252: Senior Housing – Attached (TE/DU)[2]	3.48	0.05	0.08	0.13	0.10	0.06	0.16
Generation Forecast:							
▪ Crestridge Project (60 DU)	480	4	29	33	28	16	44
Total Project Trip Generation Potential	**480**	**4**	**29**	**33**	**28**	**16**	**44**

Notes:
- TE/DU = Trip ends per dwelling units of development

1 Source: *Los Angeles County Traffic Impact Analysis Report Guidelines,* dated January 1, 1997.

2 ITE Land Use 230: Residential Condominium/Townhouse and ITE Land Use 252: Senior Housing – Attached trip rates are provided for informational purposes only and are not used in forecasting the trip generation potential of the proposed Project.



LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

XX% = INBOUND PERCENTAGE

XX% = OUTBOUND PERCENTAGE

= PROJECT SITE

FIGURE 3

PROJECT TRAFFIC DISTRIBUTION PATTERN

CRESTRIDGE PROJECT, RANCHO PALOS VERDES

APPENDIX B

EXISTING TRAFFIC COUNT DATA

Transportation Studies, Inc.
2640 Walnut Avenue, Suite H
Tustin, CA. 92780

City: RANCHO PALOS VERDES
N-S Direction: CRENSHAW BOULEVARD
E-W Direction: INDIAN PEAK ROAD

File Name : h1205030
Site Code : 00003873
Start Date : 5/10/2012
Page No : 1

#1

Groups Printed- Turning Movements

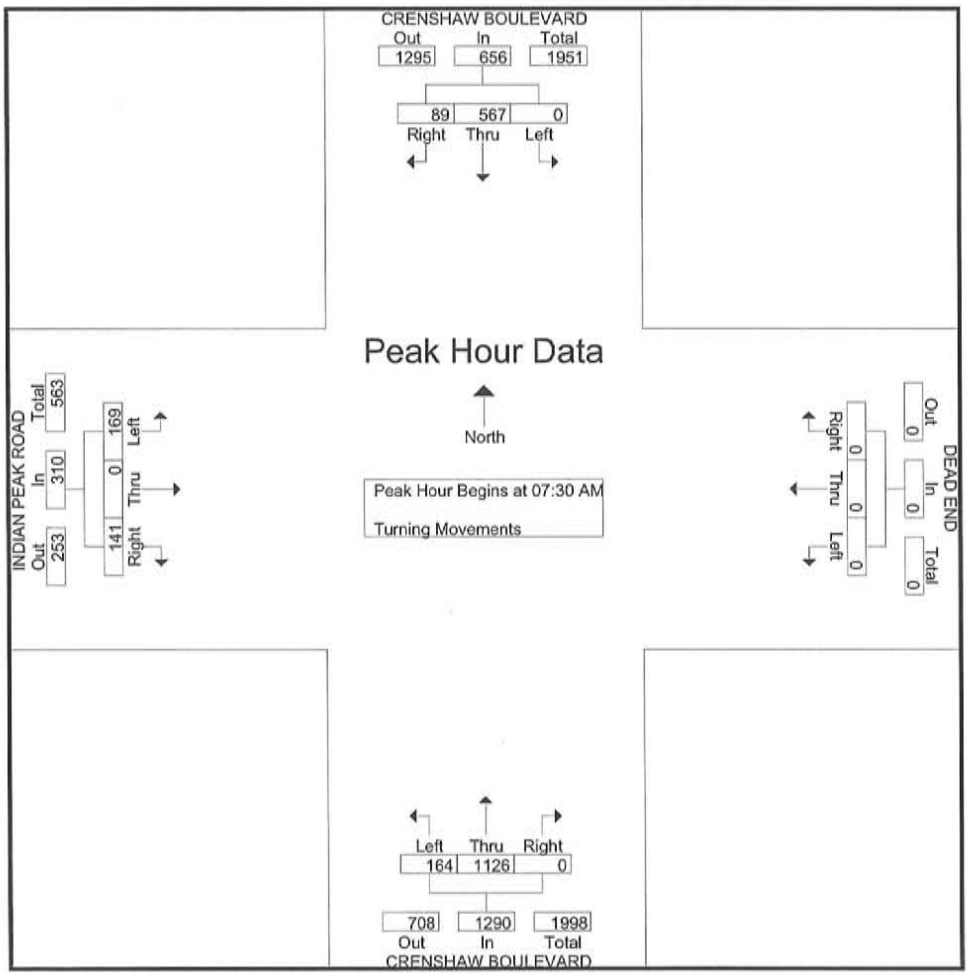
	CRENSHAW BOULEVARD Southbound			DEAD END Westbound			CRENSHAW BOULEVARD Northbound			INDIAN PEAK ROAD Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:00 AM	13	69	0	0	0	0	0	194	16	19	0	31	342
07:15 AM	6	80	0	0	0	0	0	208	16	22	0	33	365
07:30 AM	17	148	0	0	0	0	0	268	21	51	0	36	541
07:45 AM	18	152	0	0	0	0	0	370	75	37	0	48	700
Total	54	449	0	0	0	0	0	1040	128	129	0	148	1948
08:00 AM	31	155	0	0	0	0	0	256	40	28	0	38	548
08:15 AM	23	112	0	0	0	0	0	232	28	25	0	47	467
08:30 AM	41	129	0	0	0	0	0	207	24	21	0	49	471
08:45 AM	18	135	0	0	0	0	0	269	25	13	0	44	504
Total	113	531	0	0	0	0	0	964	117	87	0	178	1990
*** BREAK ***													
04:00 PM	39	208	0	0	0	0	0	158	25	37	0	24	491
04:15 PM	34	161	0	0	0	0	0	137	34	33	0	15	414
04:30 PM	31	218	0	0	0	0	0	147	28	45	0	23	492
04:45 PM	26	163	0	0	0	0	0	152	28	43	0	29	441
Total	130	750	0	0	0	0	0	594	115	158	0	91	1838
05:00 PM	36	207	0	0	0	0	0	156	29	47	0	26	501
05:15 PM	43	232	0	0	0	0	0	160	28	61	0	28	552
05:30 PM	36	218	0	0	0	0	0	106	20	48	0	20	448
05:45 PM	30	256	0	0	0	0	0	139	25	40	0	22	512
Total	145	913	0	0	0	0	0	561	102	196	0	96	2013
Grand Total	442	2643	0	0	0	0	0	3159	462	570	0	513	7789
Apprch %	14.3	85.7	0	0	0	0	0	87.2	12.8	52.6	0	47.4	
Total %	5.7	33.9	0	0	0	0	0	40.6	5.9	7.3	0	6.6	

Transportation Studies, Inc.
2640 Walnut Avenue, Suite H
Tustin, CA. 92780

City: RANCHO PALOS VERDES
N-S Direction: CRENSHAW BOULEVARD
E-W Direction: INDIAN PEAK ROAD

File Name : h1205030
Site Code : 00003873
Start Date : 5/10/2012
Page No : 2

	CRENSHAW BOULEVARD Southbound				DEAD END Westbound				CRENSHAW BOULEVARD Northbound				INDIAN PEAK ROAD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	17	148	0	165	0	0	0	0	0	268	21	289	**51**	0	36	**87**	541
07:45 AM	18	152	0	170	0	0	0	0	0	**370**	**75**	**445**	37	0	**48**	85	**700**
08:00 AM	**31**	**155**	0	**186**	0	0	0	0	0	256	40	296	28	0	38	66	548
08:15 AM	23	112	0	135	0	0	0	0	0	232	28	260	25	0	47	72	467
Total Volume	89	567	0	656	0	0	0	0	0	1126	164	1290	141	0	169	310	2256
% App. Total	13.6	86.4	0		0	0	0		0	87.3	12.7		45.5	0	54.5		
PHF	.718	.915	.000	.882	.000	.000	.000	.000	.000	.761	.547	.725	.691	.000	.880	.891	.806

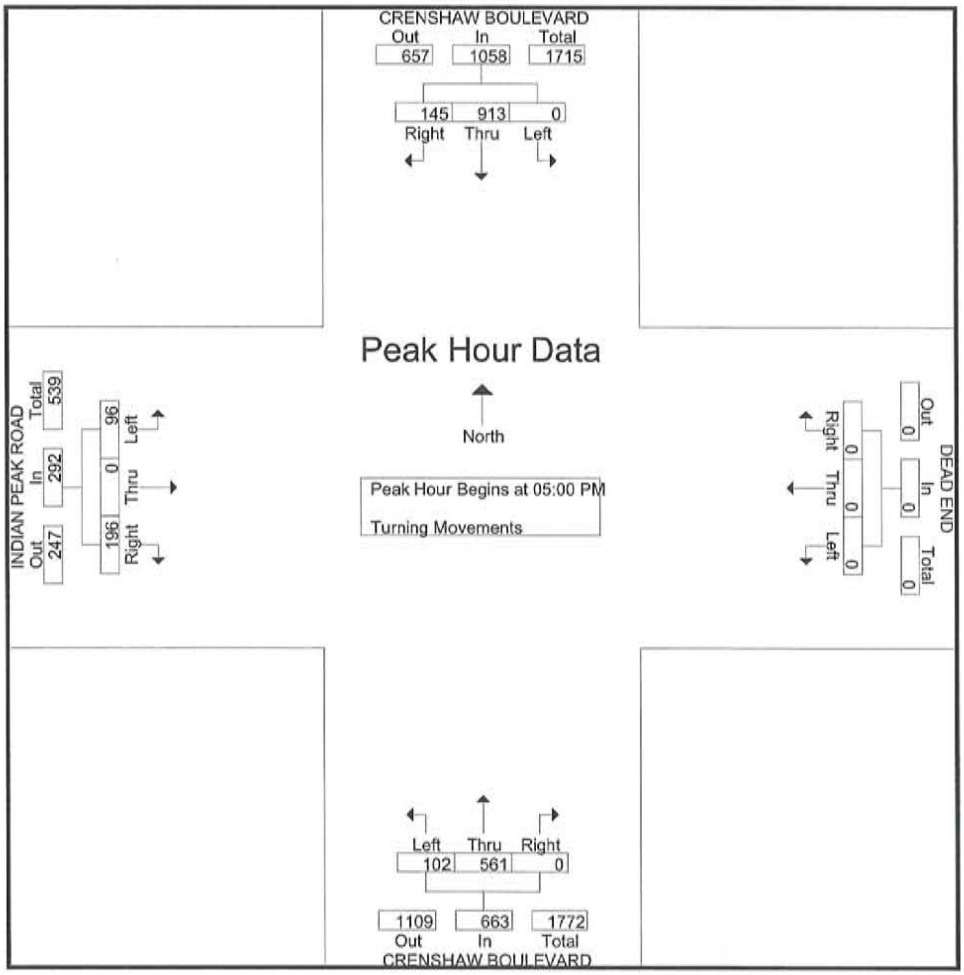


Transportation Studies, Inc.
2640 Walnut Avenue, Suite H
Tustin, CA. 92780

City: RANCHO PALOS VERDES
N-S Direction: CRENSHAW BOULEVARD
E-W Direction: INDIAN PEAK ROAD

File Name : h1205030
Site Code : 00003873
Start Date : 5/10/2012
Page No : 3

	CRENSHAW BOULEVARD Southbound				DEAD END Westbound				CRENSHAW BOULEVARD Northbound				INDIAN PEAK ROAD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	36	207	0	243	0	0	0	0	0	156	**29**	185	47	0	26	73	501
05:15 PM	**43**	232	0	275	0	0	0	0	0	**160**	28	**188**	**61**	0	**28**	**89**	**552**
05:30 PM	36	218	0	254	0	0	0	0	0	106	20	126	48	0	20	68	448
05:45 PM	30	**256**	0	**286**	0	0	0	0	0	139	25	164	40	0	22	62	512
Total Volume	145	913	0	1058	0	0	0	0	0	561	102	663	196	0	96	292	2013
% App. Total	13.7	86.3	0		0	0	0		0	84.6	15.4		67.1	0	32.9		
PHF	.843	.892	.000	.925	.000	.000	.000	.000	.000	.877	.879	.882	.803	.000	.857	.820	.912



Transportation Studies, Inc.
2640 Walnut Avenue, Suite H
Tustin, CA. 92780

City: RANCHO PALOS VERDES
N-S Direction: CRENSHAW BOULEVARD
E-W Direction: CRESTRIDGE ROAD

File Name : H1205031
Site Code : 00005163
Start Date : 5/10/2012
Page No : 1

B2

Groups Printed- Turning Movements

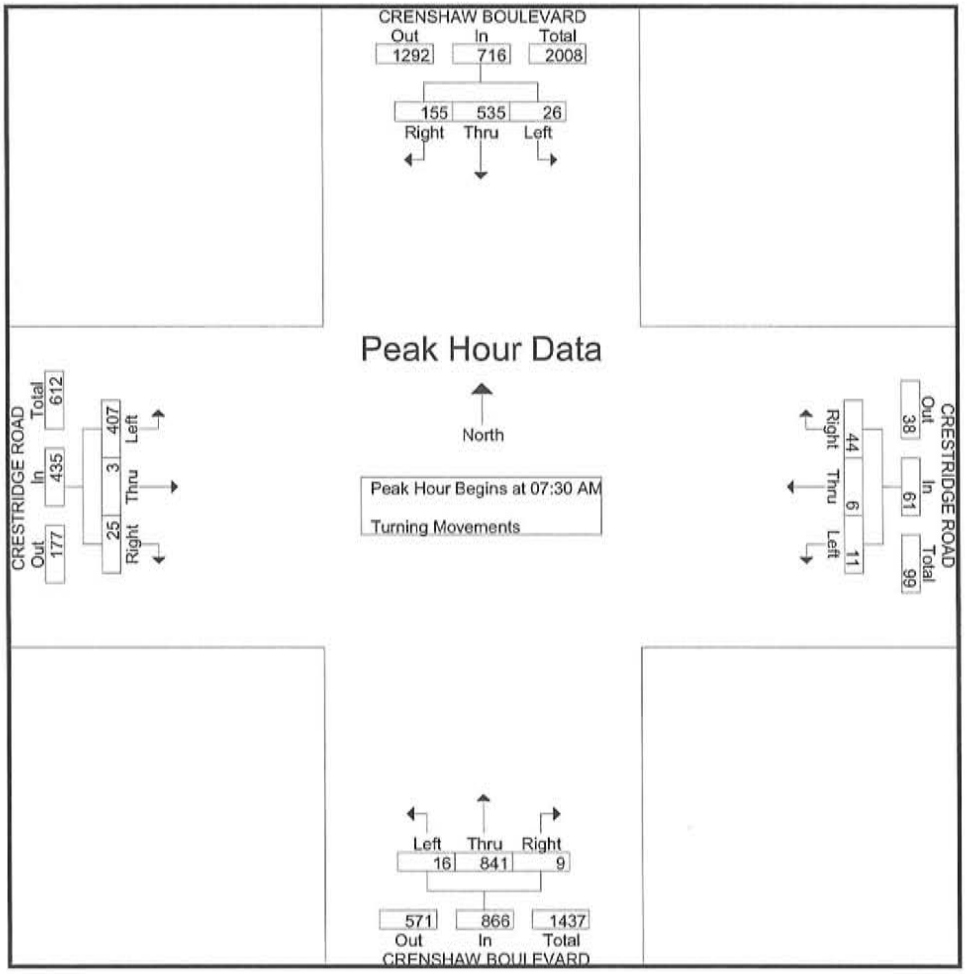
	CRENSHAW BOULEVARD Southbound			CRESTRIDGE ROAD Westbound			CRENSHAW BOULEVARD Northbound			CRESTRIDGE ROAD Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:00 AM	27	60	3	12	1	0	0	104	1	2	0	63	273
07:15 AM	24	66	2	7	1	3	0	123	1	4	1	78	310
07:30 AM	47	149	7	11	1	6	3	189	3	4	1	106	527
07:45 AM	40	147	4	17	3	4	4	313	3	12	1	147	695
Total	138	422	16	47	6	13	7	729	8	22	3	394	1805
08:00 AM	38	139	10	8	1	0	1	184	3	6	1	74	465
08:15 AM	30	100	5	8	1	1	1	155	7	3	0	80	391
08:30 AM	48	98	6	5	2	4	1	172	11	2	3	66	418
08:45 AM	41	100	6	8	0	1	2	195	6	4	1	96	460
Total	157	437	27	29	4	6	5	706	27	15	5	316	1734
*** BREAK ***													
04:00 PM	90	147	7	7	2	0	4	117	3	9	4	62	452
04:15 PM	51	144	4	4	3	1	0	116	3	0	1	49	376
04:30 PM	86	161	11	5	0	1	2	129	2	1	0	45	443
04:45 PM	53	133	11	13	0	3	1	111	2	4	0	55	386
Total	280	585	33	29	5	5	7	473	10	14	5	211	1657
05:00 PM	80	170	11	9	2	0	4	126	1	6	0	48	457
05:15 PM	92	181	17	7	1	3	3	119	1	6	1	66	497
05:30 PM	82	167	15	3	1	2	3	83	1	2	2	40	401
05:45 PM	83	195	9	3	2	0	0	103	0	2	2	52	451
Total	337	713	52	22	6	5	10	431	3	16	5	206	1806
Grand Total	912	2157	128	127	21	29	29	2339	48	67	18	1127	7002
Apprch %	28.5	67.5	4	71.8	11.9	16.4	1.2	96.8	2	5.5	1.5	93	
Total %	13	30.8	1.8	1.8	0.3	0.4	0.4	33.4	0.7	1	0.3	16.1	

Transportation Studies, Inc.
2640 Walnut Avenue, Suite H
Tustin, CA. 92780

City: RANCHO PALOS VERDES
N-S Direction: CRENSHAW BOULEVARD
E-W Direction: CRESTRIDGE ROAD

File Name : H1205031
Site Code : 00005163
Start Date : 5/10/2012
Page No : 2

	CRENSHAW BOULEVARD Southbound				CRESTRIDGE ROAD Westbound				CRENSHAW BOULEVARD Northbound				CRESTRIDGE ROAD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**47**	**149**	7	**203**	11	1	**6**	18	3	189	3	195	4	**1**	106	111	527
07:45 AM	40	147	4	191	**17**	**3**	4	**24**	**4**	**313**	3	**320**	**12**	1	**147**	**160**	**695**
08:00 AM	38	139	**10**	187	8	1	0	9	1	184	3	188	6	1	74	81	465
08:15 AM	30	100	5	135	8	1	**1**	10	1	155	**7**	163	3	0	80	83	391
Total Volume	155	535	26	716	44	6	11	61	9	841	16	866	25	3	407	435	2078
% App. Total	21.6	74.7	3.6		72.1	9.8	18		1	97.1	1.8		5.7	0.7	93.6		
PHF	.824	.898	.650	.882	.647	.500	.458	.635	.563	.672	.571	.677	.521	.750	.692	.680	.747

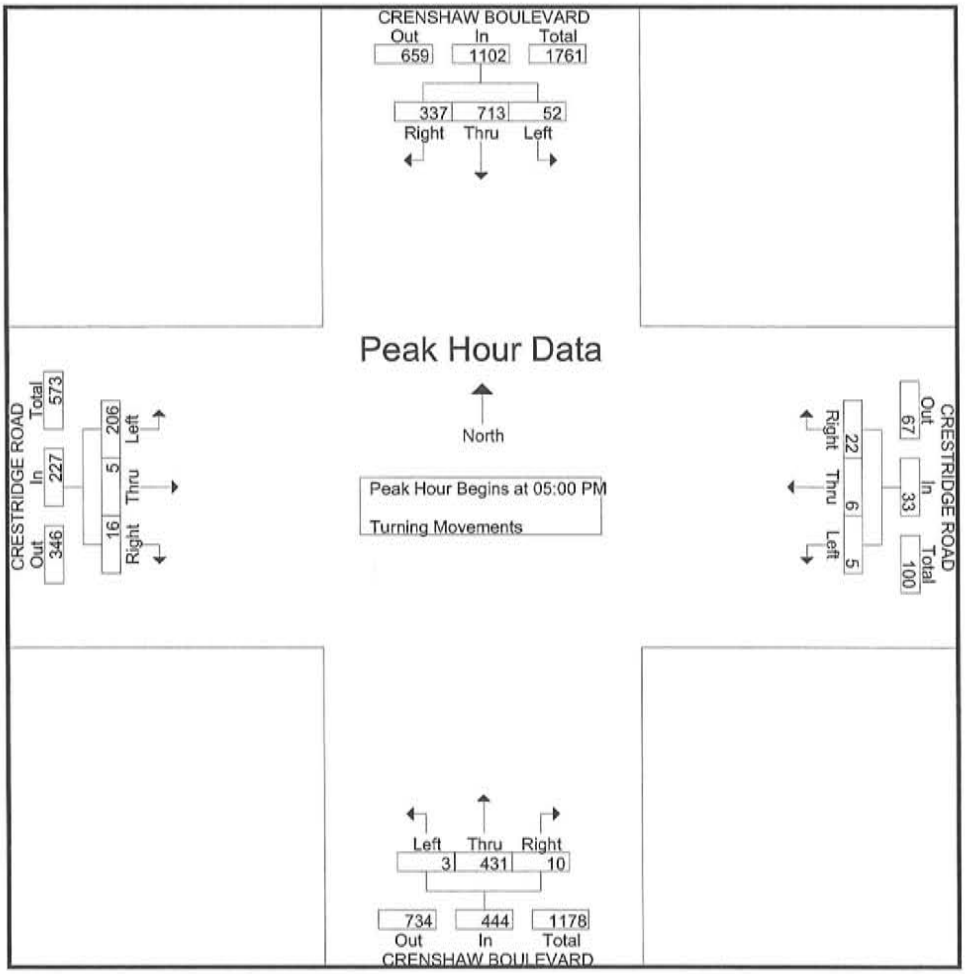


Transportation Studies, Inc.
2640 Walnut Avenue, Suite H
Tustin, CA. 92780

City: RANCHO PALOS VERDES
N-S Direction: CRENSHAW BOULEVARD
E-W Direction: CRESTRIDGE ROAD

File Name : H1205031
Site Code : 00005163
Start Date : 5/10/2012
Page No : 3

	CRENSHAW BOULEVARD Southbound				CRESTRIDGE ROAD Westbound				CRENSHAW BOULEVARD Northbound				CRESTRIDGE ROAD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	80	170	11	261	**9**	**2**	0	**11**	**4**	**126**	**1**	**131**	**6**	0	48	54	457
05:15 PM	**92**	181	**17**	**290**	7	1	**3**	11	3	119	1	123	6	1	**66**	**73**	**497**
05:30 PM	82	167	15	264	3	1	2	6	3	83	1	87	2	**2**	40	44	401
05:45 PM	83	**195**	9	287	3	2	0	5	0	103	0	103	2	2	52	56	451
Total Volume	337	713	52	1102	22	6	5	33	10	431	3	444	16	5	206	227	1806
% App. Total	30.6	64.7	4.7		66.7	18.2	15.2		2.3	97.1	0.7		7	2.2	90.7		
PHF	.916	.914	.765	.950	.611	.750	.417	.750	.625	.855	.750	.847	.667	.625	.780	.777	.908



Transportation Studies, Inc.
2640 Walnut Avenue, Suite H
Tustin, CA. 92780

City: RANCHO PALOS VERDES
N-S Direction: CRENSHAW BOULEVARD
E-W Direction: CREST ROAD

File Name : H1205032
Site Code : 00005059
Start Date : 5/10/2012
Page No : 1

#3

Groups Printed- Turning Movements

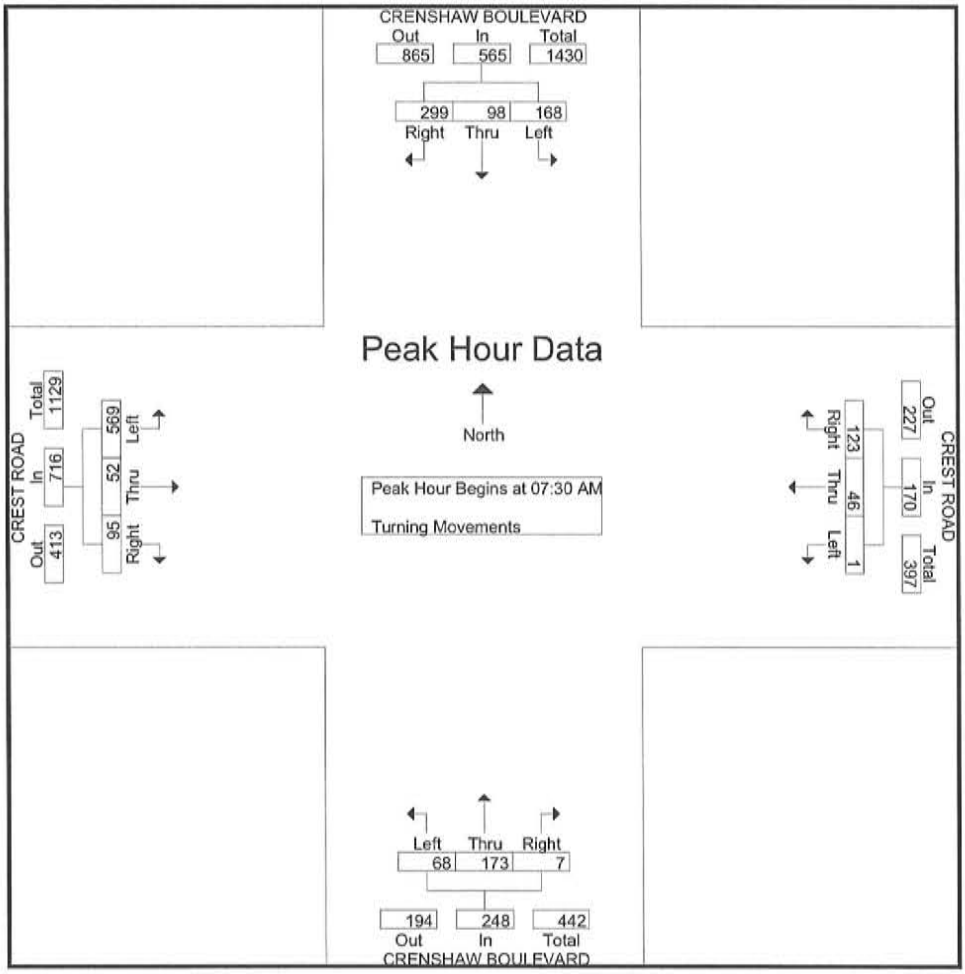
	CRENSHAW BOULEVARD Southbound			CREST ROAD Westbound			CRENSHAW BOULEVARD Northbound			CREST ROAD Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:00 AM	36	17	8	6	6	0	3	16	1	2	2	77	174
07:15 AM	47	11	15	12	7	0	0	12	5	4	11	101	225
07:30 AM	107	13	27	17	15	0	2	39	21	16	11	147	415
07:45 AM	76	32	57	44	12	0	2	80	21	54	11	184	573
Total	266	73	107	79	40	0	7	147	48	76	35	509	1387
08:00 AM	61	29	45	24	6	0	1	30	14	16	13	133	372
08:15 AM	55	24	39	38	13	1	2	24	12	9	17	105	339
08:30 AM	53	24	28	33	19	1	1	36	16	8	15	123	357
08:45 AM	58	24	19	25	8	1	2	35	5	4	12	132	325
Total	227	101	131	120	46	3	6	125	47	37	57	493	1393
*** BREAK ***													
04:00 PM	104	20	32	22	16	0	2	26	9	9	12	77	329
04:15 PM	85	23	25	31	5	1	2	16	10	9	5	64	276
04:30 PM	102	29	35	35	8	0	1	28	4	5	8	74	329
04:45 PM	89	30	25	25	5	1	2	21	4	10	3	67	282
Total	380	102	117	113	34	2	7	91	27	33	28	282	1216
05:00 PM	106	33	30	32	9	0	3	34	4	11	11	74	347
05:15 PM	118	42	30	22	4	1	1	20	10	11	10	71	340
05:30 PM	115	28	29	20	7	0	0	19	7	11	7	49	292
05:45 PM	141	32	25	20	14	3	1	21	6	6	10	59	338
Total	480	135	114	94	34	4	5	94	27	39	38	253	1317
Grand Total	1353	411	469	406	154	9	25	457	149	185	158	1537	5313
Apprch %	60.6	18.4	21	71.4	27.1	1.6	4	72.4	23.6	9.8	8.4	81.8	
Total %	25.5	7.7	8.8	7.6	2.9	0.2	0.5	8.6	2.8	3.5	3	28.9	

Transportation Studies, Inc.
2640 Walnut Avenue, Suite H
Tustin, CA. 92780

City: RANCHO PALOS VERDES
N-S Direction: CRENSHAW BOULEVARD
E-W Direction: CREST ROAD

File Name : H1205032
Site Code : 00005059
Start Date : 5/10/2012
Page No : 2

	CRENSHAW BOULEVARD Southbound				CREST ROAD Westbound				CRENSHAW BOULEVARD Northbound				CREST ROAD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**107**	13	27	147	17	**15**	0	32	**2**	39	**21**	62	16	11	147	174	415
07:45 AM	76	**32**	**57**	**165**	**44**	12	0	**56**	2	**80**	21	**103**	**54**	11	**184**	**249**	**573**
08:00 AM	61	29	45	135	24	6	0	30	1	30	14	45	16	13	133	162	372
08:15 AM	55	24	39	118	38	13	1	52	2	24	12	38	9	**17**	105	131	339
Total Volume	299	98	168	565	123	46	1	170	7	173	68	248	95	52	569	716	1699
% App. Total	52.9	17.3	29.7		72.4	27.1	0.6		2.8	69.8	27.4		13.3	7.3	79.5		
PHF	.699	.766	.737	.856	.699	.767	.250	.759	.875	.541	.810	.602	.440	.765	.773	.719	.741

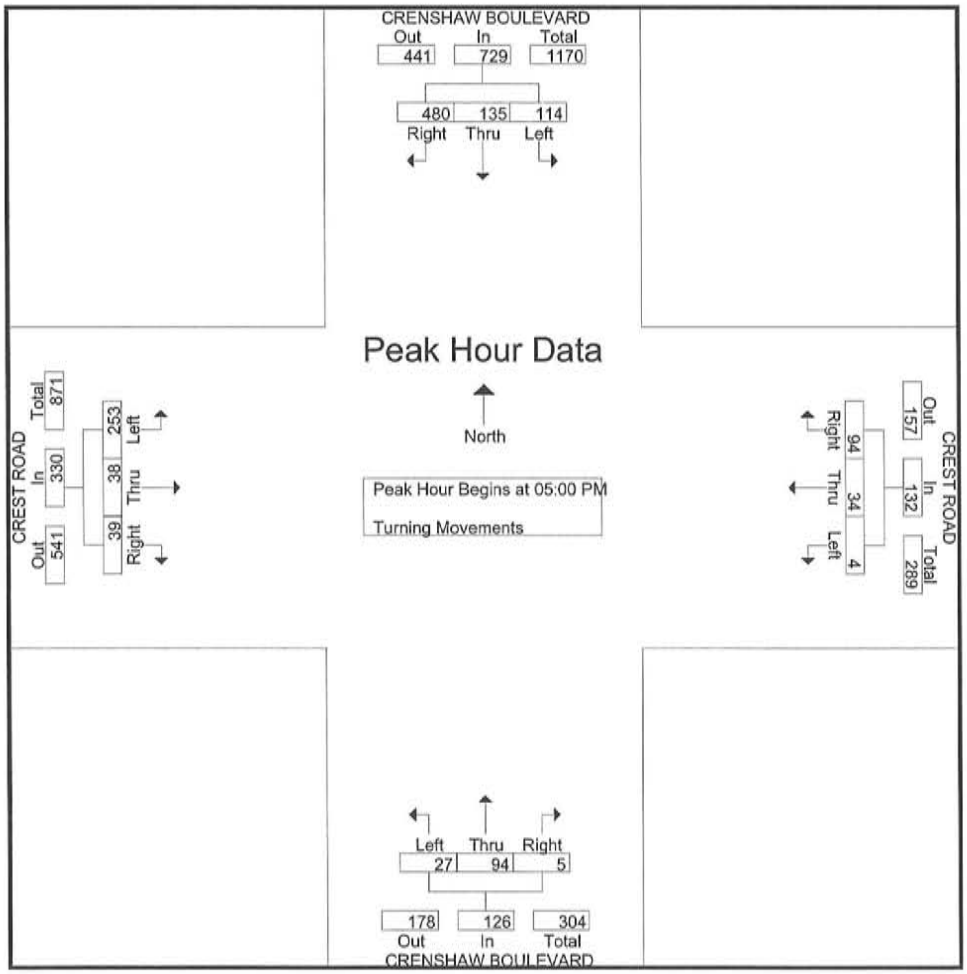


Transportation Studies, Inc.
2640 Walnut Avenue, Suite H
Tustin, CA. 92780

City: RANCHO PALOS VERDES
N-S Direction: CRENSHAW BOULEVARD
E-W Direction: CREST ROAD

File Name : H1205032
Site Code : 00005059
Start Date : 5/10/2012
Page No : 3

	CRENSHAW BOULEVARD Southbound				CREST ROAD Westbound				CRENSHAW BOULEVARD Northbound				CREST ROAD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	106	33	**30**	169	**32**	9	0	**41**	**3**	**34**	4	**41**	**11**	**11**	**74**	**96**	**347**
05:15 PM	118	**42**	30	190	22	4	1	27	1	20	**10**	31	11	10	71	92	340
05:30 PM	115	28	29	172	20	7	0	27	0	19	7	26	11	7	49	67	292
05:45 PM	**141**	32	25	**198**	20	**14**	**3**	37	1	21	6	28	6	10	59	75	338
Total Volume	480	135	114	729	94	34	4	132	5	94	27	126	39	38	253	330	1317
% App. Total	65.8	18.5	15.6		71.2	25.8	3		4	74.6	21.4		11.8	11.5	76.7		
PHF	.851	.804	.950	.920	.734	.607	.333	.805	.417	.691	.675	.768	.886	.864	.855	.859	.949



Transportation Studies, Inc.
2640 Walnut Avenue, Suite H
Tustin, CA. 92780

City: RANCHO PALOS VERDES
N-S Direction: HIGHRIDGE ROAD
E-W Direction: HAWTHORNE BOULEVARD

File Name : h1205034
Site Code : 00005694
Start Date : 5/10/2012
Page No : 1

#4

Groups Printed- Turning Movements

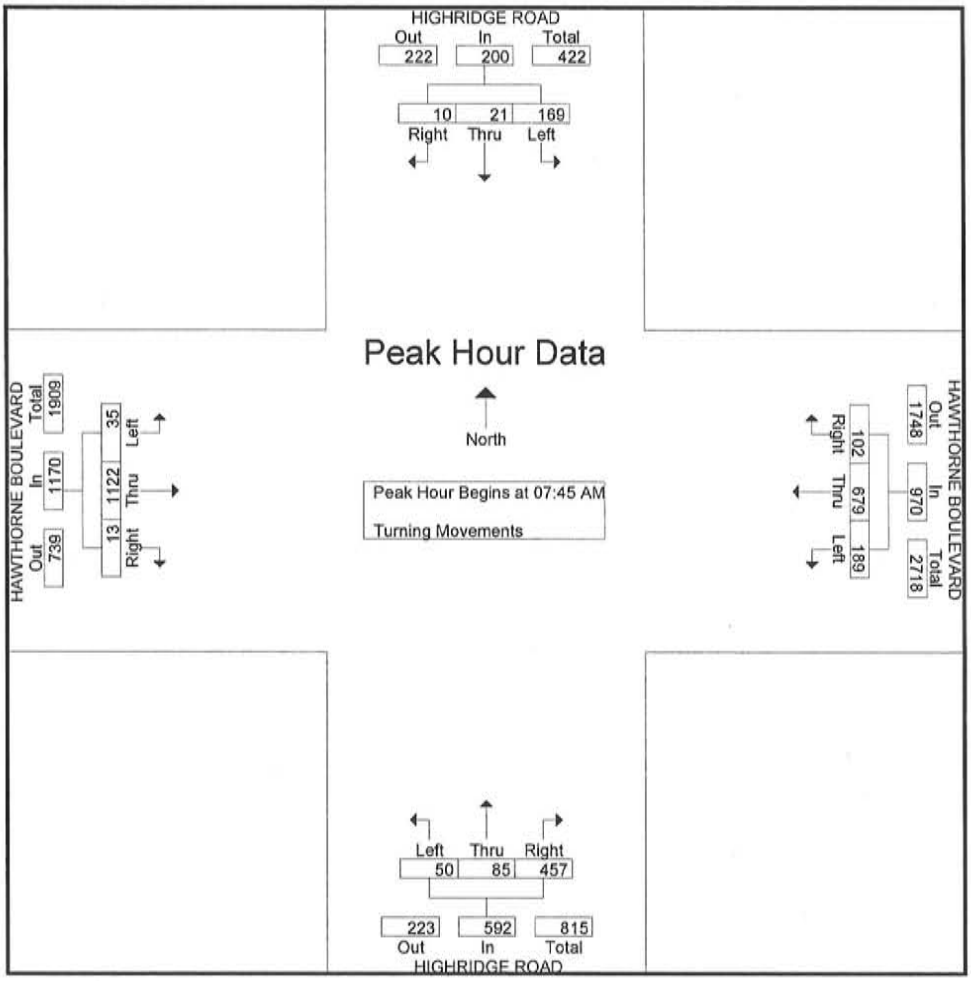
	HIGHRIDGE ROAD Southbound			HAWTHORNE BOULEVARD Westbound			HIGHRIDGE ROAD Northbound			HAWTHORNE BOULEVARD Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:00 AM	0	2	19	11	104	71	80	8	5	4	175	1	480
07:15 AM	1	4	29	7	88	30	83	6	7	4	201	0	460
07:30 AM	1	13	33	11	107	42	137	10	10	12	260	1	637
07:45 AM	1	1	38	14	203	54	147	15	14	7	365	1	860
Total	3	20	119	43	502	197	447	39	36	27	1001	3	2437
08:00 AM	1	2	25	18	187	59	92	4	7	3	215	3	616
08:15 AM	4	5	50	27	155	25	107	28	15	1	255	10	682
08:30 AM	4	13	56	43	134	51	111	38	14	2	287	21	774
08:45 AM	5	25	60	26	129	35	108	33	14	3	327	7	772
Total	14	45	191	114	605	170	418	103	50	9	1084	41	2844
*** BREAK ***													
04:00 PM	6	7	42	30	227	98	78	5	13	4	226	4	740
04:15 PM	2	1	17	43	231	92	70	7	14	6	241	2	726
04:30 PM	4	3	24	23	243	74	80	7	8	5	221	2	694
04:45 PM	3	3	42	28	253	79	72	10	4	6	224	0	724
Total	15	14	125	124	954	343	300	29	39	21	912	8	2884
05:00 PM	0	8	28	37	235	80	58	7	13	9	220	4	699
05:15 PM	2	3	21	53	295	76	71	0	10	6	205	4	746
05:30 PM	1	5	18	37	251	79	60	8	9	8	142	0	618
05:45 PM	3	6	23	30	297	85	72	5	11	6	179	0	717
Total	6	22	90	157	1078	320	261	20	43	29	746	8	2780
Grand Total	38	101	525	438	3139	1030	1426	191	168	86	3743	60	10945
Apprch %	5.7	15.2	79.1	9.5	68.1	22.4	79.9	10.7	9.4	2.2	96.2	1.5	
Total %	0.3	0.9	4.8	4	28.7	9.4	13	1.7	1.5	0.8	34.2	0.5	

Transportation Studies, Inc.
2640 Walnut Avenue, Suite H
Tustin, CA. 92780

City: RANCHO PALOS VERDES
N-S Direction: HIGHRIDGE ROAD
E-W Direction: HAWTHORNE BOULEVARD

File Name : h1205034
Site Code : 00005694
Start Date : 5/10/2012
Page No : 2

	HIGHRIDGE ROAD Southbound				HAWTHORNE BOULEVARD Westbound				HIGHRIDGE ROAD Northbound				HAWTHORNE BOULEVARD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	1	1	38	40	14	**203**	54	**271**	**147**	15	14	**176**	**7**	**365**	1	**373**	**860**
08:00 AM	1	2	25	28	18	187	**59**	264	92	4	7	103	3	215	3	221	616
08:15 AM	**4**	5	50	59	27	155	25	207	107	28	**15**	150	1	255	10	266	682
08:30 AM	4	**13**	**56**	**73**	**43**	134	51	228	111	**38**	14	163	2	287	**21**	310	774
Total Volume	10	21	169	200	102	679	189	970	457	85	50	592	13	1122	35	1170	2932
% App. Total	5	10.5	84.5		10.5	70	19.5		77.2	14.4	8.4		1.1	95.9	3		
PHF	.625	.404	.754	.685	.593	.836	.801	.895	.777	.559	.833	.841	.464	.768	.417	.784	.852

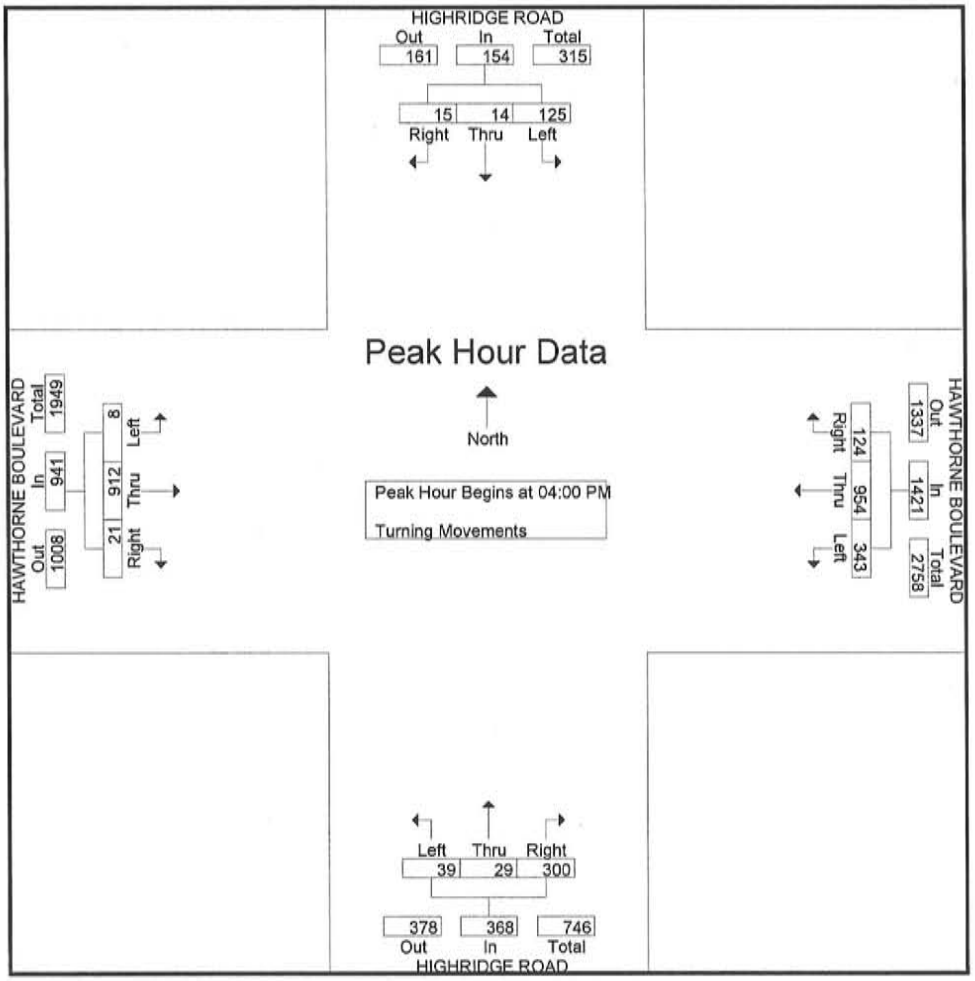


Transportation Studies, Inc.
2640 Walnut Avenue, Suite H
Tustin, CA. 92780

City: RANCHO PALOS VERDES
N-S Direction: HIGHRIDGE ROAD
E-W Direction: HAWTHORNE BOULEVARD

File Name : h1205034
Site Code : 00005694
Start Date : 5/10/2012
Page No : 3

	HIGHRIDGE ROAD Southbound				HAWTHORNE BOULEVARD Westbound				HIGHRIDGE ROAD Northbound				HAWTHORNE BOULEVARD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**6**	**7**	**42**	**55**	30	227	**98**	355	78	5	13	**96**	4	226	**4**	234	**740**
04:15 PM	2	1	17	20	**43**	231	92	**366**	70	7	**14**	91	**6**	**241**	2	**249**	726
04:30 PM	4	3	24	31	23	243	74	340	**80**	7	8	95	5	221	2	228	694
04:45 PM	3	3	42	48	28	**253**	79	360	72	**10**	4	86	6	224	0	230	724
Total Volume	15	14	125	154	124	954	343	1421	300	29	39	368	21	912	8	941	2884
% App. Total	9.7	9.1	81.2		8.7	67.1	24.1		81.5	7.9	10.6		2.2	96.9	0.9		
PHF	.625	.500	.744	.700	.721	.943	.875	.971	.938	.725	.696	.958	.875	.946	.500	.945	.974



Transportation Studies, Inc.
2640 Walnut Avenue, Suite H
Tustin, CA. 92780

City: RANCHO PALOS VERDES
N-S Direction: HIGHRIDGE ROAD
E-W Direction: CRESTRIDGE ROAD

File Name : H1205033
Site Code : 00000571
Start Date : 5/10/2012
Page No : 1

RS

Groups Printed- Turning Movements

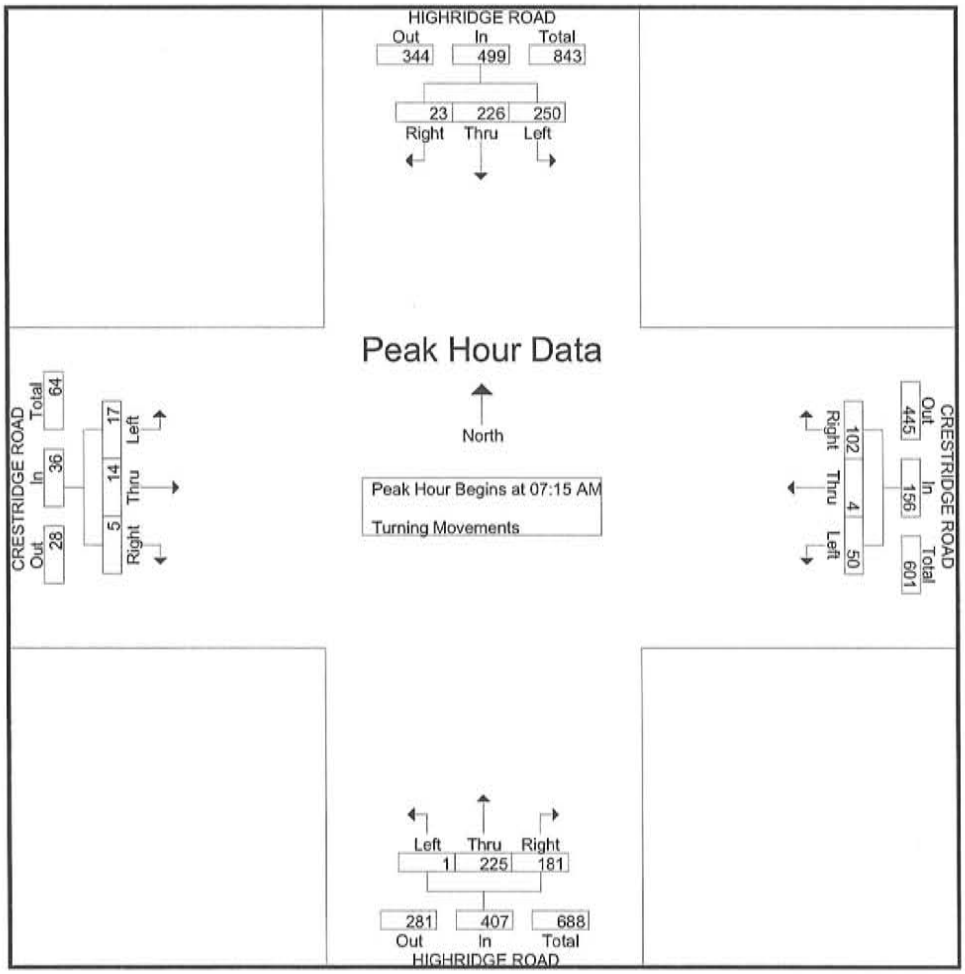
	HIGHRIDGE ROAD Southbound			CRESTRIDGE ROAD Westbound			HIGHRIDGE ROAD Northbound			CRESTRIDGE ROAD Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:00 AM	0	22	40	10	0	8	11	21	0	0	0	1	113
07:15 AM	1	42	51	11	0	10	25	33	0	1	2	3	179
07:30 AM	6	110	80	32	0	15	54	78	0	0	4	6	385
07:45 AM	12	57	73	39	3	11	77	94	0	3	6	7	382
Total	19	231	244	92	3	44	167	226	0	4	12	17	1059
08:00 AM	4	17	46	20	1	14	25	20	1	1	2	1	152
08:15 AM	1	20	54	18	0	14	23	38	0	0	1	3	172
08:30 AM	2	13	47	30	0	11	25	47	0	0	3	1	179
08:45 AM	0	25	68	23	0	8	30	36	0	1	5	2	198
Total	7	75	215	91	1	47	103	141	1	2	11	7	701
*** BREAK ***													
04:00 PM	3	36	32	61	3	26	25	42	0	0	0	2	230
04:15 PM	3	32	28	36	3	21	20	37	0	0	1	2	183
04:30 PM	1	32	24	68	1	17	16	30	0	1	2	1	193
04:45 PM	0	26	36	29	1	19	16	27	1	0	2	0	157
Total	7	126	120	194	8	83	77	136	1	1	5	5	763
05:00 PM	2	36	32	50	3	32	20	23	0	1	4	2	205
05:15 PM	1	33	48	61	4	29	21	34	0	1	0	0	232
05:30 PM	0	30	26	52	1	30	27	31	1	0	1	1	200
05:45 PM	2	32	24	55	2	27	22	23	0	0	1	1	189
Total	5	131	130	218	10	118	90	111	1	2	6	4	826
Grand Total	38	563	709	595	22	292	437	614	3	9	34	33	3349
Apprch %	2.9	43	54.1	65.5	2.4	32.1	41.5	58.3	0.3	11.8	44.7	43.4	
Total %	1.1	16.8	21.2	17.8	0.7	8.7	13	18.3	0.1	0.3	1	1	

Transportation Studies, Inc.
2640 Walnut Avenue, Suite H
Tustin, CA. 92780

City: RANCHO PALOS VERDES
N-S Direction: HIGHRIDGE ROAD
E-W Direction: CRESTRIDGE ROAD

File Name : H1205033
Site Code : 00000571
Start Date : 5/10/2012
Page No : 2

	HIGHRIDGE ROAD Southbound				CRESTRIDGE ROAD Westbound				HIGHRIDGE ROAD Northbound				CRESTRIDGE ROAD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	1	42	51	94	11	0	10	21	25	33	0	58	1	2	3	6	179
07:30 AM	6	**110**	**80**	**196**	32	0	**15**	47	54	78	0	132	0	4	6	10	**385**
07:45 AM	**12**	57	73	142	**39**	**3**	11	**53**	**77**	**94**	0	**171**	**3**	**6**	**7**	**16**	382
08:00 AM	4	17	46	67	20	1	14	35	25	20	**1**	46	1	2	1	4	152
Total Volume	23	226	250	499	102	4	50	156	181	225	1	407	5	14	17	36	1098
% App. Total	4.6	45.3	50.1		65.4	2.6	32.1		44.5	55.3	0.2		13.9	38.9	47.2		
PHF	.479	.514	.781	.636	.654	.333	.833	.736	.588	.598	.250	.595	.417	.583	.607	.563	.713

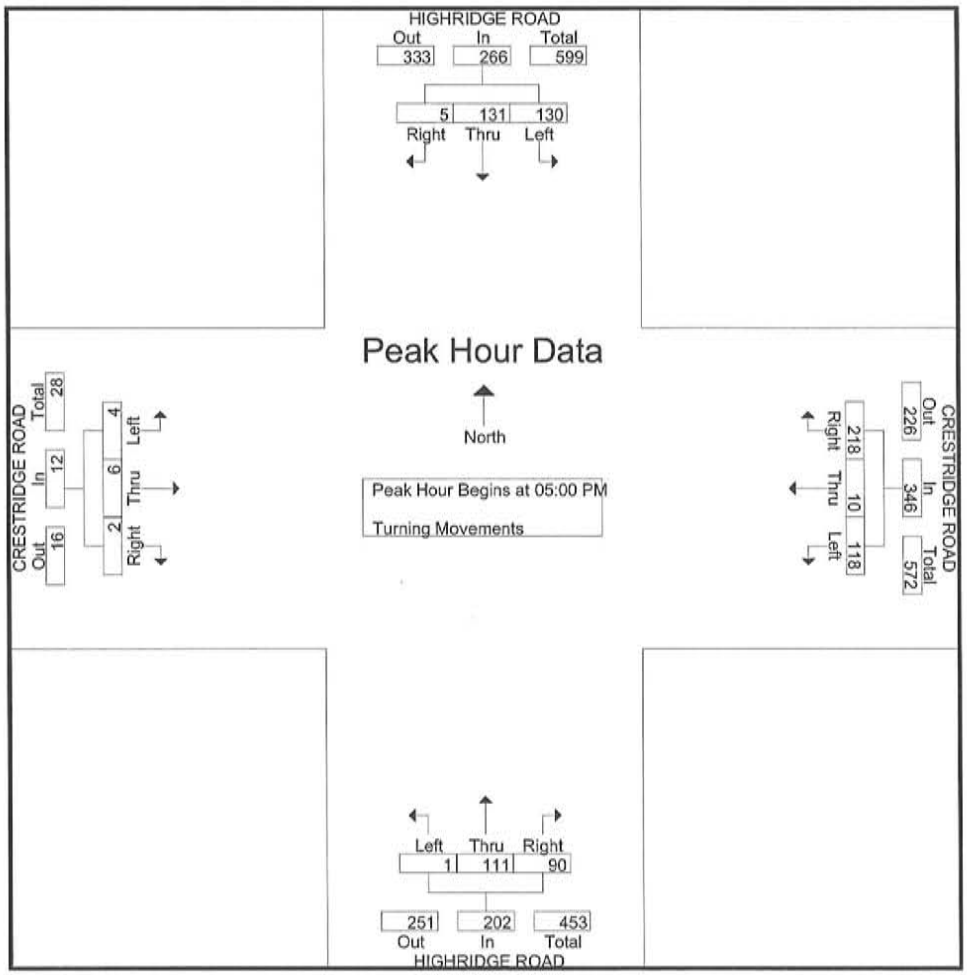


Transportation Studies, Inc.
2640 Walnut Avenue, Suite H
Tustin, CA. 92780

City: RANCHO PALOS VERDES
N-S Direction: HIGHRIDGE ROAD
E-W Direction: CRESTRIDGE ROAD

File Name : H1205033
Site Code : 00000571
Start Date : 5/10/2012
Page No : 3

	HIGHRIDGE ROAD Southbound				CRESTRIDGE ROAD Westbound				HIGHRIDGE ROAD Northbound				CRESTRIDGE ROAD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**2**	**36**	32	70	50	3	**32**	85	20	23	0	43	**1**	**4**	**2**	**7**	205
05:15 PM	1	33	**48**	**82**	**61**	**4**	29	**94**	21	**34**	0	55	1	0	0	1	**232**
05:30 PM	0	30	26	56	52	1	30	83	**27**	31	**1**	**59**	0	1	1	2	200
05:45 PM	2	32	24	58	55	2	27	84	22	23	0	45	0	1	1	2	189
Total Volume	5	131	130	266	218	10	118	346	90	111	1	202	2	6	4	12	826
% App. Total	1.9	49.2	48.9		63	2.9	34.1		44.6	55	0.5		16.7	50	33.3		
PHF	.625	.910	.677	.811	.893	.625	.922	.920	.833	.816	.250	.856	.500	.375	.500	.429	.890



Transportation Studies, Inc.

2640 Walnut Avenue, Ste H

Tustin, CA. 92780

Location : CRENSHAW BOULEVARD

Segment : N/O SILVER SPUR ROAD

Client : LL&G

Site: RPV

Date: 05/10/12

Day: Thursday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	17	42	222	906	25	72	195	878	42	114	417	1,784
12:15	13		222		19		198		32		420	
12:30	7		234		18		263		25		497	
12:45	5		228		10		222		15		450	
01:00	0	20	230	842	15	49	214	948	15	69	444	1,790
01:15	12		222		13		224		25		446	
01:30	2		176		16		219		18		395	
01:45	6		214		5		291		11		505	
02:00	3	10	218	956	14	30	234	1,085	17	40	452	2,041
02:15	2		204		6		262		8		466	
02:30	4		260		6		283		10		543	
02:45	1		274		4		306		5		580	
03:00	4	20	328	1,133	4	28	307	1,234	8	48	635	2,367
03:15	4		274		8		300		12		574	
03:30	10		273		5		281		15		554	
03:45	2		258		11		346		13		604	
04:00	4	48	250	977	10	52	276	1,142	14	100	526	2,119
04:15	12		236		3		262		15		498	
04:30	16		248		23		288		39		536	
04:45	16		243		16		316		32		559	
05:00	29	209	296	1,020	28	139	288	1,288	57	348	584	2,308
05:15	43		261		26		312		69		573	
05:30	63		243		29		346		92		589	
05:45	74		220		56		342		130		562	
06:00	101	599	256	840	46	413	312	1,247	147	1,012	568	2,087
06:15	110		198		80		314		190		512	
06:30	166		204		111		299		277		503	
06:45	222		182		176		322		398		504	
07:00	248	1,310	197	674	132	886	242	916	380	2,196	439	1,590
07:15	276		170		204		224		480		394	
07:30	390		148		262		242		652		390	
07:45	396		159		288		208		684		367	
08:00	322	1,327	144	455	210	900	180	707	532	2,227	324	1,162
08:15	316		114		212		214		528		328	
08:30	342		103		241		161		583		264	
08:45	347		94		237		152		584		246	
09:00	267	1,035	131	375	222	779	131	480	489	1,814	262	855
09:15	286		103		183		130		469		233	
09:30	236		77		196		120		432		197	
09:45	246		64		178		99		424		163	
10:00	231	912	66	207	162	722	100	301	393	1,634	166	508
10:15	240		56		172		80		412		136	
10:30	231		46		172		68		403		114	
10:45	210		39		216		53		426		92	
11:00	234	899	31	102	157	762	71	199	391	1,661	102	301
11:15	216		34		200		45		416		79	
11:30	250		19		199		41		449		60	
11:45	199		18		206		42		405		60	
Totals	6,431		8,487		4,832		10,425		11,263		18,912	
Split%	57.1		44.9		42.9		55.1					
Day Totals		14,918				15,257				30,175		
Day Splits		49.4				50.6						
Peak Hour	07:30		02:45		07:30		05:30		07:30		03:00	
Volume	1,424		1,149		972		1,314		2,396		2,367	
Factor	0.90		0.88		0.84		0.95		0.88		0.93	

* Data File : D1205059

Transportation Studies, Inc.

2640 Walnut Avenue, Ste H

Tustin, CA. 92780

Location : CRENSHAW BOULEVARD

Segment : SILVER SPUR TO INDIAN PEAK

Client : LL&G

Site: RPV

Date: 05/10/12

Day: Thursday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	14	32	157	640	24	64	150	635	38	96	307	1,275
12:15	11		161		15		149		26		310	
12:30	3		178		15		176		18		354	
12:45	4		144		10		160		14		304	
01:00	0	7	169	604	10	41	168	687	10	48	337	1,291
01:15	4		158		8		152		12		310	
01:30	0		123		17		177		17		300	
01:45	3		154		6		190		9		344	
02:00	2	7	152	716	10	26	162	790	12	33	314	1,506
02:15	1		154		8		190		9		344	
02:30	3		173		5		230		8		403	
02:45	1		237		3		208		4		445	
03:00	4	16	224	806	2	18	277	982	6	34	501	1,788
03:15	3		204		4		230		7		434	
03:30	6		198		5		220		11		418	
03:45	3		180		7		255		10		435	
04:00	2	32	172	670	2	17	206	840	4	49	378	1,510
04:15	7		153		2		195		9		348	
04:30	11		163		7		232		18		395	
04:45	12		182		6		207		18		389	
05:00	27	168	188	634	18	76	232	1,036	45	244	420	1,670
05:15	35		164		18		263		53		427	
05:30	48		144		12		266		60		410	
05:45	58		138		28		275		86		413	
06:00	72	454	158	525	19	223	254	1,084	91	677	412	1,609
06:15	90		112		44		284		134		396	
06:30	126		132		64		280		190		412	
06:45	166		123		96		266		262		389	
07:00	187	1,156	112	373	82	528	230	812	269	1,684	342	1,185
07:15	236		90		110		186		346		276	
07:30	329		81		164		199		493		280	
07:45	404		90		172		197		576		287	
08:00	260	1,070	82	267	160	622	176	637	420	1,692	258	904
08:15	252		67		144		148		396		215	
08:30	279		54		177		171		456		225	
08:45	279		64		141		142		420		206	
09:00	218	818	71	222	132	442	126	441	350	1,260	197	663
09:15	220		58		102		122		322		180	
09:30	192		51		102		105		294		156	
09:45	188		42		106		88		294		130	
10:00	172	662	48	120	105	467	82	270	277	1,129	130	390
10:15	177		28		98		81		275		109	
10:30	160		27		138		65		298		92	
10:45	153		17		126		42		279		59	
11:00	172	611	22	75	116	556	48	155	288	1,167	70	230
11:15	158		26		132		36		290		62	
11:30	143		15		134		38		277		53	
11:45	138		12		174		33		312		45	
Totals	5,033		5,652		3,080		8,369		8,113		14,021	
Split%	62.0		40.3		38.0		59.7					
Day Totals		10,685				11,449				22,134		
Day Splits		48.3				51.7						
Peak Hour	07:30		02:45		07:45		05:45		07:30		02:45	
Volume	1,245		863		653		1,093		1,885		1,798	
Factor	0.77		0.91		0.92		0.96		0.82		0.90	

Data File : D1205060

Transportation Studies, Inc.

2640 Walnut Avenue, Ste H

Tustin, CA. 92780

Location : CRENSHAW BOULEVARD

Segment : INDIAN PEAK TO CRESTRIDGE

Client : LL&G

Site: RPV

Date: 05/10/12

Day: Thursday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	7	16	157	620	12	39	147	709	19	55	304	1,329
12:15	2		172		0		190		2		362	
12:30	6		150		15		182		21		332	
12:45	1		141		12		190		13		331	
01:00	3	7	145	586	13	30	173	654	16	37	318	1,240
01:15	0		147		3		164		3		311	
01:30	2		153		6		146		8		299	
01:45	2		141		8		171		10		312	
02:00	0	6	144	622	7	24	184	881	7	30	328	1,503
02:15	1		134		2		204		3		338	
02:30	1		180		5		251		6		431	
02:45	4		164		10		242		14		406	
03:00	3	18	190	777	8	25	252	874	11	43	442	1,651
03:15	4		186		5		211		9		397	
03:30	6		215		8		199		14		414	
03:45	5		186		4		212		9		398	
04:00	5	36	172	644	8	20	244	921	13	56	416	1,565
04:15	3		156		2		218		5		374	
04:30	12		164		5		224		17		388	
04:45	16		152		5		235		21		387	
05:00	24	165	144	582	9	60	240	1,073	33	225	384	1,655
05:15	28		140		11		270		39		410	
05:30	54		140		26		279		80		419	
05:45	59		158		14		284		73		442	
06:00	72	464	160	519	14	142	259	977	86	606	419	1,496
06:15	78		133		26		243		104		376	
06:30	129		120		40		229		169		349	
06:45	185		106		62		246		247		352	
07:00	174	1,027	80	333	93	563	223	799	267	1,590	303	1,132
07:15	233		92		116		212		349		304	
07:30	243		83		172		174		415		257	
07:45	377		78		182		190		559		268	
08:00	304	1,036	59	240	182	590	168	548	486	1,626	227	788
08:15	266		69		120		142		386		211	
08:30	234		70		148		126		382		196	
08:45	232		42		140		112		372		154	
09:00	232	836	35	132	123	484	112	382	355	1,320	147	514
09:15	216		38		115		90		331		128	
09:30	196		40		133		106		329		146	
09:45	192		19		113		74		305		93	
10:00	163	604	30	82	126	532	78	243	289	1,136	108	325
10:15	134		23		130		70		264		93	
10:30	158		17		118		49		276		66	
10:45	149		12		158		46		307		58	
11:00	154	627	13	55	128	569	30	82	282	1,196	43	137
11:15	169		23		140		20		309		43	
11:30	140		13		134		16		274		29	
11:45	164		6		167		16		331		22	
Totals	4,842		5,192		3,078		8,143		7,920		13,335	
Split%	61.1		38.9		38.9		61.1					
Day Totals		10,034				11,221				21,255		
Day Splits		47.2				52.8						
Peak Hour	07:30		03:00		07:30		05:15		07:30		05:15	
Volume	1,190		777		656		1,092		1,846		1,690	
Factor	0.79		0.90		0.90		0.96		0.83		0.96	

* Data File : D1205061

Transportation Studies, Inc.

2640 Walnut Avenue, Ste H

Tustin, CA. 92780

Location : CRENSHAW BOULEVARD

Segment : CRESTRIDGE TO CREST

Client : LL&G

Site: RPV

Date: 05/10/12

Day: Thursday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	9	16	121	441	14	31	98	446	23	47	219	887
12:15	4		120		7		116		11		236	
12:30	2		114		6		126		8		240	
12:45	1		86		4		106		5		192	
01:00	0	4	142	448	6	21	120	457	6	25	262	905
01:15	1		96		7		104		8		200	
01:30	0		99		5		111		5		210	
01:45	3		111		3		122		6		233	
02:00	0	3	96	520	8	14	106	575	8	17	202	1,095
02:15	2		112		3		143		5		255	
02:30	0		136		1		164		1		300	
02:45	1		176		2		162		3		338	
03:00	2	6	170	569	0	9	198	665	2	15	368	1,234
03:15	1		137		2		147		3		284	
03:30	1		130		3		160		4		290	
03:45	2		132		4		160		6		292	
04:00	2	25	113	492	2	17	146	582	4	42	259	1,074
04:15	4		136		2		143		6		279	
04:30	9		119		6		144		15		263	
04:45	10		124		7		149		17		273	
05:00	18	110	130	447	13	49	178	713	31	159	308	1,160
05:15	21		106		8		174		29		280	
05:30	37		106		8		186		45		292	
05:45	34		105		20		175		54		280	
06:00	38	307	100	336	17	155	162	685	55	462	262	1,021
06:15	58		72		34		172		92		244	
06:30	84		82		36		169		120		251	
06:45	127		82		68		182		195		264	
07:00	103	755	76	236	69	489	132	489	172	1,244	208	725
07:15	146		58		90		114		236		172	
07:30	234		49		164		128		398		177	
07:45	272		53		166		115		438		168	
08:00	182	730	44	152	118	427	111	385	300	1,157	155	537
08:15	166		38		104		80		270		118	
08:30	196		36		106		100		302		136	
08:45	186		34		99		94		285		128	
09:00	148	554	30	130	81	294	80	274	229	848	110	404
09:15	132		38		60		80		192		118	
09:30	142		34		71		60		213		94	
09:45	132		28		82		54		214		82	
10:00	120	452	18	55	87	331	48	160	207	783	66	215
10:15	109		12		68		47		177		59	
10:30	112		16		88		43		200		59	
10:45	111		9		88		22		199		31	
11:00	112	418	10	26	78	387	22	70	190	805	32	96
11:15	100		7		108		13		208		20	
11:30	98		6		97		18		195		24	
11:45	108		3		104		17		212		20	
Totals	3,380		3,852		2,224		5,501		5,604		9,353	
Split%	60.3		41.2		39.7		58.8					
Day Totals		7,232				7,725				14,957		
Day Splits		48.4				51.6						
Peak Hour	07:30		02:30		07:30		05:00		07:30		02:30	
Volume	854		619		552		713		1,406		1,290	
Factor	0.78		0.88		0.83		0.96		0.80		0.88	

Data File : D1205062

Transportation Studies, Inc.

2640 Walnut Avenue, Ste H

Tustin, CA. 92780

Location : INDIAN PEAK ROAD

Segment : W/O CRENSHAW BOULEVARD

Client : LL&G

Site: RPV

Date: 05/10/12

Day: Thursday

Interval	WB				EB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	4	13	68	200	1	7	54	201	5	20	122	401
12:15	3		44		2		48		5		92	
12:30	4		54		3		37		7		91	
12:45	2		34		1		62		3		96	
01:00	3	8	36	164	3	7	38	164	6	15	74	328
01:15	1		45		1		47		2		92	
01:30	1		42		2		44		3		86	
01:45	3		41		1		35		4		76	
02:00	0	2	45	209	2	3	62	260	2	5	107	469
02:15	1		47		0		53		1		100	
02:30	1		55		0		72		1		127	
02:45	0		62		1		73		1		135	
03:00	1	3	68	285	1	4	79	250	2	7	147	535
03:15	1		73		1		62		2		135	
03:30	1		69		2		55		3		124	
03:45	0		75		0		54		0		129	
04:00	0	8	64	266	1	7	60	227	1	15	124	493
04:15	1		80		2		60		3		140	
04:30	2		52		1		40		3		92	
04:45	5		70		3		67		8		137	
05:00	2	26	58	287	2	29	73	276	4	55	131	563
05:15	3		65		5		47		8		112	
05:30	7		62		5		91		12		153	
05:45	14		102		17		65		31		167	
06:00	11	88	72	241	20	112	59	208	31	200	131	449
06:15	8		65		17		46		25		111	
06:30	21		48		34		53		55		101	
06:45	48		56		41		50		89		106	
07:00	28	585	44	149	44	305	41	139	72	890	85	288
07:15	116		34		68		41		184		75	
07:30	230		31		91		26		321		57	
07:45	211		40		102		31		313		71	
08:00	58	210	27	93	68	266	36	102	126	476	63	195
08:15	44		30		58		21		102		51	
08:30	54		18		68		26		122		44	
08:45	54		18		72		19		126		37	
09:00	54	176	22	59	45	181	23	64	99	357	45	123
09:15	40		12		48		15		88		27	
09:30	33		19		45		13		78		32	
09:45	49		6		43		13		92		19	
10:00	41	149	6	27	50	164	15	32	91	313	21	59
10:15	42		4		40		5		82		9	
10:30	33		10		37		8		70		18	
10:45	33		7		37		4		70		11	
11:00	25	171	4	17	51	181	2	8	76	352	6	25
11:15	46		6		37		2		83		8	
11:30	50		4		42		2		92		6	
11:45	50		3		51		2		101		5	
Totals	1,439		1,997		1,266		1,931		2,705		3,928	
Split%	53.2		50.8		46.8		49.2					
Day Totals		3,436				3,197				6,633		
Day Splits		51.8				48.2						
Peak Hour	07:15		05:15		07:15		02:30		07:15		05:00	
Volume	615		301		329		286		944		563	
Factor	0.67		0.74		0.81		0.91		0.74		0.84	

* Data File : D1205063

Transportation Studies, Inc.

2640 Walnut Avenue, Ste H

Tustin, CA. 92780

Location : CRESTRIDGE ROAD — Site: RPV

Segment : W/O CRENSHAW BOULEVARD — Date: 05/10/12

Client : LL&G

Day: Thursday

Interval	EB				WB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	3	8	49	203	7	21	59	221	10	29	108	424
12:15	4		57		4		53		8		110	
12:30	0		55		8		61		8		116	
12:45	1		42		2		48		3		90	
01:00	0	3	48	168	3	19	58	232	3	22	106	400
01:15	1		47		5		46		6		93	
01:30	0		33		9		59		9		92	
01:45	2		40		2		69		4		109	
02:00	0	0	49	253	1	9	55	299	1	9	104	552
02:15	0		46		3		69		3		115	
02:30	0		51		4		96		4		147	
02:45	0		107		1		79		1		186	
03:00	1	11	59	262	1	9	80	318	2	20	139	580
03:15	5		55		4		90		9		145	
03:30	4		74		2		60		6		134	
03:45	1		74		2		88		3		162	
04:00	0	6	47	213	1	4	75	293	1	10	122	506
04:15	2		55		1		66		3		121	
04:30	3		53		2		84		5		137	
04:45	1		58		0		68		1		126	
05:00	9	53	74	237	3	25	69	340	12	78	143	577
05:15	15		64		7		98		22		162	
05:30	12		48		5		80		17		128	
05:45	17		51		10		93		27		144	
06:00	26	147	59	196	4	76	96	412	30	223	155	608
06:15	24		54		13		108		37		162	
06:30	41		42		24		106		65		148	
06:45	56		41		35		102		91		143	
07:00	72	435	38	139	20	153	92	314	92	588	130	453
07:15	95		38		32		73		127		111	
07:30	132		33		55		72		187		105	
07:45	136		30		46		77		182		107	
08:00	72	322	32	95	38	190	55	241	110	512	87	336
08:15	81		16		40		68		121		84	
08:30	80		21		60		60		140		81	
08:45	89		26		52		58		141		84	
09:00	74	233	17	45	47	156	45	164	121	389	62	209
09:15	59		11		33		45		92		56	
09:30	50		6		38		40		88		46	
09:45	50		11		38		34		88		45	
10:00	49	190	21	52	30	165	31	95	79	355	52	147
10:15	50		14		40		28		90		42	
10:30	48		7		53		16		101		23	
10:45	43		10		42		20		85		30	
11:00	62	202	11	35	40	188	22	58	102	390	33	93
11:15	54		14		41		13		95		27	
11:30	47		6		44		12		91		18	
11:45	39		4		63		11		102		15	
Totals	1,610		1,898		1,015		2,987		2,625		4,885	
Split%	61.3		38.9		38.7		61.1					
Day Totals		3,508				4,002				7,510		
Day Splits		46.7				53.3						
Peak Hour	07:00		02:45		08:15		06:00		07:15		02:30	
Volume	435		295		199		412		606		617	
Factor	0.80		0.69		0.83		0.95		0.81		0.83	

* Data File : D1205064

Transportation Studies, Inc.

2640 Walnut Avenue, Ste H

Tustin, CA. 92780

Location : HIGHRIDGE ROAD

Segment : HAWTHORNE BLVD TO CRESTRIDGE

Client : LL&G

Site: RPV

Date: 05/10/12

Day: Thursday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	6	22	59	215	5	8	45	204	11	30	104	419
12:15	6		49		2		60		8		109	
12:30	6		53		0		57		6		110	
12:45	4		54		1		42		5		96	
01:00	2	11	70	244	0	3	57	210	2	14	127	454
01:15	3		56		1		59		4		115	
01:30	4		64		0		42		4		106	
01:45	2		54		2		52		4		106	
02:00	1	8	68	359	0	2	62	338	1	10	130	697
02:15	3		62		1		70		4		132	
02:30	4		79		0		108		4		187	
02:45	0		150		1		98		1		248	
03:00	3	7	104	364	0	6	70	261	3	13	174	625
03:15	1		80		2		57		3		137	
03:30	1		86		3		62		4		148	
03:45	2		94		1		72		3		166	
04:00	1	8	102	342	0	6	54	246	1	14	156	588
04:15	1		80		1		69		2		149	
04:30	4		98		3		56		7		154	
04:45	2		62		2		67		4		129	
05:00	6	27	65	332	6	45	77	260	12	72	142	592
05:15	4		99		10		72		14		171	
05:30	10		78		9		53		19		131	
05:45	7		90		20		58		27		148	
06:00	8	88	87	351	25	129	50	214	33	217	137	565
06:15	11		96		19		62		30		158	
06:30	30		80		39		46		69		126	
06:45	39		88		46		56		85		144	
07:00	38	363	80	302	76	506	52	174	114	869	132	476
07:15	70		80		154		50		224		130	
07:30	150		60		192		36		342		96	
07:45	105		82		84		36		189		118	
08:00	40	252	45	236	67	297	29	102	107	549	74	338
08:15	74		61		75		23		149		84	
08:30	82		60		72		23		154		83	
08:45	56		70		83		27		139		97	
09:00	66	198	54	170	74	236	18	66	140	434	72	236
09:15	36		42		52		18		88		60	
09:30	54		45		54		11		108		56	
09:45	42		29		56		19		98		48	
10:00	48	186	23	92	44	179	16	54	92	365	39	146
10:15	36		32		49		18		85		50	
10:30	54		22		40		6		94		28	
10:45	48		15		46		14		94		29	
11:00	58	226	23	50	51	199	6	21	109	425	29	71
11:15	64		9		58		3		122		12	
11:30	44		12		42		8		86		20	
11:45	60		6		48		4		108		10	
Totals	1,396		3,057		1,616		2,150		3,012		5,207	
Split%	46.3		58.7		53.7		41.3					
Day Totals		4,453				3,766				8,219		
Day Splits		54.2				45.8						
Peak Hour	07:30		02:45		07:00		02:15		07:00		02:30	
Volume	369		420		506		346		869		746	
Factor	0.62		0.70		0.66		0.80		0.64		0.75	

* Data File : D1205065

APPENDIX C

INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEETS

APPENDIX C-I

EXISTING PLUS PROJECT TRAFFIC CONDITIONS

LINSCOTT, LAW & GREENSPAN, ENGINEERS
1580 Corporate Drive, Suite 122, Costa Mesa CA 92626
(714) 641-1587

INTERSECTION CAPACITY UTILIZATION

Intersection: 1.
N-S St: Crenshaw Boulevard
E-W St: Indian Peak Road
Project: Crestridge Project, Rancho Palos Verdes
File: 3288 Existing Plus Project.xls
Control Type: 3Ø Traffic Signal Split: No N/S Split? No E/W Split? No

Crenshaw Boulevard at Indian Peak Road
Peak Hour: AM
Annual Growth: 0.00%

Date: 06/20/12
Date of Count: 2012
Projection Year: 2012

	2012 EXISTING TRAFFIC				2012 WITH AMBIENT GROWTH					2012 WITH CUMULATIVE PROJECTS					2012 WITH PROJECT TRAFFIC					2012 WITH MITIGATION				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	164	1	1600	0.103	0	164	1	1600	0.103	0	164	1	1600	0.103	0	164	1	1600	0.103	0	164	1	1600	0.103
Nb Thru	1126	2	3200	0.352 *	0	1126	2	3200	0.352 *	0	1126	2	3200	0.352 *	13	1139	2	3200	0.356 *	0	1139	2	3200	0.356 *
Nb Right	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-
Sb Left	0	0	0	0.000 *	0	0	0	0	0.000 *	0	0	0	0	0.000 *	0	0	0	0	0.000 *	0	0	0	0	0.000 *
Sb Thru	567	2	3200	0.177	0	567	2	3200	0.177	0	567	2	3200	0.177	2	569	2	3200	0.178	0	569	2	3200	0.178
Sb Right	89	1	1600	0.056	0	89	1	1600	0.056	0	89	1	1600	0.056	0	89	1	1600	0.056	0	89	1	1600	0.056
Eb Left	169	1	1600	0.106	0	169	1	1600	0.106	0	169	1	1600	0.106	0	169	1	1600	0.106	0	169	1	1600	0.106
Eb Thru	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000
Eb Right	141	1	1600	0.088	0	141	1	1600	0.088	0	141	1	1600	0.088	0	141	1	1600	0.088	0	141	1	1600	0.088
Wb Left	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000
Wb Thru	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000
Wb Right	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-
Yellow Allowance:				0.100 *					0.100 *					0.100 *					0.100 *					0.100 *
ICU				0.558					0.558					0.558					0.562					0.562
LOS				A					A					A					A					A

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.004
Significant Impact: No

Area Traffic Mitigation:

Total Vol.	*2256*				*0*	*2256*				*0*	*2256*				*15*	*2271*				*0*	*2271*			

LINSCOTT, LAW & GREENSPAN, ENGINEERS
1580 Corporate Drive, Suite 122, Costa Mesa CA 92626
(714) 641-1587

INTERSECTION CAPACITY UTILIZATION

Intersection: 1.
N-S St: Crenshaw Boulevard
E-W St: Indian Peak Road
Project: Crestridge Project, Rancho Palos Verdes
File: 3288 Existing Plus Project.xls
Control Type: 3Ø Traffic Signal

Crenshaw Boulevard at Indian Peak Road
Peak Hour: PM
Annual Growth: 0.00%

Date: 06/20/12
Date of Count: 2012
Projection Year: 2012

	2012 EXISTING TRAFFIC				2012 WITH AMBIENT GROWTH					2012 WITH CUMULATIVE PROJECTS					2012 WITH PROJECT TRAFFIC					2012 WITH MITIGATION				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	102	1	1600	0.064 *	0	102	1	1600	0.064 *	0	102	1	1600	0.064 *	0	102	1	1600	0.064 *	0	102	1	1600	0.064 *
Nb Thru	561	2	3200	0.175	0	561	2	3200	0.175	0	561	2	3200	0.175	7	568	2	3200	0.178	0	568	2	3200	0.178
Nb Right	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-
Sb Left	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000
Sb Thru	913	2	3200	0.285 *	0	913	2	3200	0.285 *	0	913	2	3200	0.285 *	13	926	2	3200	0.289 *	0	926	2	3200	0.289 *
Sb Right	145	1	1600	0.091	0	145	1	1600	0.091	0	145	1	1600	0.091	0	145	1	1600	0.091	0	145	1	1600	0.091
Eb Left	96	1	1600	0.060	0	96	1	1600	0.060	0	96	1	1600	0.060	0	96	1	1600	0.060	0	96	1	1600	0.060
Eb Thru	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000
Eb Right	196	1	1600	0.123	0	196	1	1600	0.123	0	196	1	1600	0.123	0	196	1	1600	0.123	0	196	1	1600	0.123
Wb Left	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000
Wb Thru	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000
Wb Right	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-
Yellow Allowance:				0.100 *					0.100 *					0.100 *					0.100 *					0.100 *
ICU				0.509					0.509					0.509					0.513					0.513
LOS				A					A					A					A					A

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.004
Significant Impact: No

Area Traffic Mitigation:

Total Vol.	*2013*				*0*	*2013*				*0*	*2013*				*20*	*2033*				*0*	*2033*			

LINSCOTT, LAW & GREENSPAN, ENGINEERS
1580 Corporate Drive, Suite 122, Costa Mesa CA 92626
(714) 641-1587

INTERSECTION CAPACITY UTILIZATION

Intersection: 2.
N-S St: Crenshaw Boulevard
E-W St: Crestridge Road
Project: Crestridge Project, Rancho Palos Verdes
File: 3288 Existing Plus Project.xls
Control Type: 6Ø Traffic Signal Split: Yes N/S Split? No E/W Split? Yes

Crenshaw Boulevard at Crestridge Road
Peak Hour: AM
Annual Growth: 0.00%

Date: 06/20/12
Date of Count: 2012
Projection Year: 2012

	2012 EXISTING TRAFFIC				2012 WITH AMBIENT GROWTH					2012 WITH CUMULATIVE PROJECTS					2012 WITH PROJECT TRAFFIC					2012 WITH MITIGATION				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	16	1	1600	0.010	0	16	1	1600	0.010	0	16	1	1600	0.010	0	16	1	1600	0.010	0	16	1	1600	0.010
Nb Thru	841	2	3200	0.263 *	0	841	2	3200	0.263 *	0	841	2	3200	0.263 *	0	841	2	3200	0.263 *	0	841	2	3200	0.263 *
Nb Right	9	1	1600	0.006	0	9	1	1600	0.006	0	9	1	1600	0.006	0	9	1	1600	0.006	0	9	1	1600	0.006
Sb Left	26	1	1600	0.016 *	0	26	1	1600	0.016 *	0	26	1	1600	0.016 *	0	26	1	1600	0.016 *	0	26	1	1600	0.016 *
Sb Thru	535	2	3200	0.167	0	535	2	3200	0.167	0	535	2	3200	0.167	0	535	2	3200	0.167	0	535	2	3200	0.167
Sb Right	155	1	1600	0.097	0	155	1	1600	0.097	0	155	1	1600	0.097	2	157	1	1600	0.098	0	157	1	1600	0.098
Eb Left	407	0	0	0.000	0	407	0	0	0.000	0	407	0	0	0.000	13	420	0	0	0.000	0	420	0	0	0.000
Eb Thru	3	2	3200	0.128 *	0	3	2	3200	0.128 *	0	3	2	3200	0.128 *	0	3	2	3200	0.132 *	0	3	2	3200	0.132 *
Eb Right	25	1	1600	0.016	0	25	1	1600	0.016	0	25	1	1600	0.016	1	26	1	1600	0.016	0	26	1	1600	0.016
Wb Left	11	0	0	0.000	0	11	0	0	0.000	0	11	0	0	0.000	0	11	0	0	0.000	0	11	0	0	0.000
Wb Thru	6	1	1600	0.038 *	0	6	1	1600	0.038 *	0	6	1	1600	0.038 *	0	6	1	1600	0.038 *	0	6	1	1600	0.038 *
Wb Right	44	0	0	-	0	44	0	0	-	0	44	0	0	-	0	44	0	0	-	0	44	0	0	-
Yellow Allowance:				0.100					0.100					0.100					0.100					0.100
ICU				0.545					0.545					0.545					0.549					0.549
LOS				A					A					A					A					A

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.004
Significant Impact: No

Area Traffic Mitigation:

Total Vol.	*2078*	*0 2078*	*0 2078*	*16 2094*	*0 2094*

LINSCOTT, LAW & GREENSPAN, ENGINEERS
1580 Corporate Drive, Suite 122, Costa Mesa CA 92626
(714) 641-1587

INTERSECTION CAPACITY UTILIZATION

Intersection: 2.
N-S St: Crenshaw Boulevard
E-W St: Crestridge Road
Project: Crestridge Project, Rancho Palos Verdes
File: 3288 Existing Plus Project.xls
Control Type: 6Ø Traffic Signal

Crenshaw Boulevard at Crestridge Road
Peak Hour: PM
Annual Growth: 0.00%

Date: 06/20/12
Date of Count: 2012
Projection Year: 2012

	2012 EXISTING TRAFFIC				2012 WITH AMBIENT GROWTH					2012 WITH CUMULATIVE PROJECTS					2012 WITH PROJECT TRAFFIC					2012 WITH MITIGATION				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	3	1	1600	0.002 *	0	3	1	1600	0.002 *	0	3	1	1600	0.002 *	1	4	1	1600	0.003 *	0	4	1	1600	0.003 *
Nb Thru	431	2	3200	0.135	0	431	2	3200	0.135	0	431	2	3200	0.135	0	431	2	3200	0.135	0	431	2	3200	0.135
Nb Right	10	1	1600	0.006	0	10	1	1600	0.006	0	10	1	1600	0.006	0	10	1	1600	0.006	0	10	1	1600	0.006
Sb Left	52	1	1600	0.033	0	52	1	1600	0.033	0	52	1	1600	0.033	0	52	1	1600	0.033	0	52	1	1600	0.033
Sb Thru	713	2	3200	0.223 *	0	713	2	3200	0.223 *	0	713	2	3200	0.223 *	0	713	2	3200	0.223 *	0	713	2	3200	0.223 *
Sb Right	337	1	1600	0.211	0	337	1	1600	0.211	0	337	1	1600	0.211	13	350	1	1600	0.219	0	350	1	1600	0.219
Eb Left	206	0	0	0.000	0	206	0	0	0.000	0	206	0	0	0.000	7	213	0	0	0.000	0	213	0	0	0.000
Eb Thru	5	2	3200	0.066 *	0	5	2	3200	0.066 *	0	5	2	3200	0.066 *	0	5	2	3200	0.068 *	0	5	2	3200	0.068 *
Eb Right	16	1	1600	0.010	0	16	1	1600	0.010	0	16	1	1600	0.010	1	17	1	1600	0.011	0	17	1	1600	0.011
Wb Left	5	0	0	0.000	0	5	0	0	0.000	0	5	0	0	0.000	0	5	0	0	0.000	0	5	0	0	0.000
Wb Thru	6	1	1600	0.021 *	0	6	1	1600	0.021 *	0	6	1	1600	0.021 *	0	6	1	1600	0.021 *	0	6	1	1600	0.021 *
Wb Right	22	0	0	-	0	22	0	0	-	0	22	0	0	-	0	22	0	0	-	0	22	0	0	-
Yellow Allowance:				0.100					0.100					0.100					0.100					0.100
ICU				0.412					0.412					0.412					0.415					0.415
LOS				A					A					A					A					A

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.003
Significant Impact: No

Area Traffic Mitigation:

Total Vol.	*1806*				*0*	*1806*				*0*	*1806*				*22*	*1828*				*0*	*1828*			

AM Existing (2012)
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

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

Intersection #3 Crenshaw Blvd at Crest Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.722
Loss Time (sec):	0	Average Delay (sec/veh):	19.4
Optimal Cycle:	0	Level Of Service:	C

Street Name:	Crenshaw Blvd						Crest Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	1	1 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	68	173	7	168	98	299	569	52	95	1	46	123
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	68	173	7	168	98	299	569	52	95	1	46	123
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	68	173	7	168	98	299	569	52	95	1	46	123
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	68	173	7	168	98	299	569	52	95	1	46	123
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	68	173	7	168	98	299	569	52	95	1	46	123
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	68	173	7	168	98	299	569	52	95	1	46	123
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.92	0.08	1.00	1.00	2.00	1.83	0.17	1.00	0.02	0.98	1.00
Final Sat.:	354	720	29	399	419	917	788	72	486	9	396	443
Capacity Analysis Module:												
Vol/Sat:	0.19	0.24	0.24	0.42	0.23	0.33	0.72	0.72	0.20	0.12	0.12	0.28
Crit Moves:		****		****			****					****
Delay/Veh:	14.2	14.2	14.1	17.3	13.3	13.6	28.9	28.5	11.4	12.0	12.0	12.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.2	14.2	14.1	17.3	13.3	13.6	28.9	28.5	11.4	12.0	12.0	12.9
LOS by Move:	B	B	B	C	B	B	D	D	B	B	B	B
ApproachDel:		14.2			14.6			26.5			12.7	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		14.2			14.6			26.5			12.7	
LOS by Appr:		B			B			D			B	
AllWayAvgQ:	0.2	0.3	0.3	0.6	0.3	0.4	2.1	2.1	0.2	0.1	0.1	0.3

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AM Existing Plus Project
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

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

Intersection #3 Crenshaw Blvd at Crest Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.722
Loss Time (sec):	0	Average Delay (sec/veh):	19.4
Optimal Cycle:	0	Level Of Service:	C

Street Name:	Crenshaw Blvd						Crest Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	1	1 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	68	173	7	168	99	299	569	52	95	1	46	123
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	68	173	7	168	99	299	569	52	95	1	46	123
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	68	173	7	168	99	299	569	52	95	1	46	123
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	68	173	7	168	99	299	569	52	95	1	46	123
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	68	173	7	168	99	299	569	52	95	1	46	123
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	68	173	7	168	99	299	569	52	95	1	46	123
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.92	0.08	1.00	1.00	2.00	1.83	0.17	1.00	0.02	0.98	1.00
Final Sat.:	354	720	29	399	419	917	788	72	486	9	395	442
Capacity Analysis Module:												
Vol/Sat:	0.19	0.24	0.24	0.42	0.24	0.33	0.72	0.72	0.20	0.12	0.12	0.28
Crit Moves:		****		****			****					****
Delay/Veh:	14.2	14.2	14.2	17.3	13.3	13.6	28.9	28.5	11.4	12.0	12.0	12.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.2	14.2	14.2	17.3	13.3	13.6	28.9	28.5	11.4	12.0	12.0	12.9
LOS by Move:	B	B	B	C	B	B	D	D	B	B	B	B
ApproachDel:		14.2			14.6			26.6			12.7	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		14.2			14.6			26.6			12.7	
LOS by Appr:		B			B			D			B	
AllWayAvgQ:	0.2	0.3	0.3	0.6	0.3	0.4	2.1	2.1	0.2	0.1	0.1	0.3

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PM Existing (2012)
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

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

Intersection #3 Crenshaw Blvd at Crest Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.397
Loss Time (sec):	0	Average Delay (sec/veh):	11.9
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Crenshaw Blvd						Crest Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	1	1 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	27	94	5	114	135	480	253	38	39	4	34	94
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	27	94	5	114	135	480	253	38	39	4	34	94
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	27	94	5	114	135	480	253	38	39	4	34	94
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	27	94	5	114	135	480	253	38	39	4	34	94
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	27	94	5	114	135	480	253	38	39	4	34	94
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	27	94	5	114	135	480	253	38	39	4	34	94
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.90	0.10	1.00	1.00	2.00	1.74	0.26	1.00	0.11	0.89	1.00
Final Sat.:	413	839	45	501	539	1210	792	120	528	49	418	520
Capacity Analysis Module:												
Vol/Sat:	0.07	0.11	0.11	0.23	0.25	0.40	0.32	0.32	0.07	0.08	0.08	0.18
Crit Moves:		****				****	****					****
Delay/Veh:	11.3	11.1	11.0	11.6	11.2	12.0	13.5	13.4	9.6	10.5	10.5	10.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.3	11.1	11.0	11.6	11.2	12.0	13.5	13.4	9.6	10.5	10.5	10.4
LOS by Move:	B	B	B	B	B	B	B	B	A	B	B	B
ApproachDel:		11.1			11.8			13.0			10.4	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		11.1			11.8			13.0			10.4	
LOS by Appr:		B			B			B			B	
AllWayAvgQ:	0.1	0.1	0.1	0.3	0.3	0.6	0.4	0.4	0.1	0.1	0.1	0.2

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PM Existing Plus Project
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

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

Intersection #3 Crenshaw Blvd at Crest Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.397
Loss Time (sec):	0	Average Delay (sec/veh):	11.9
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Crenshaw Blvd						Crest Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	1	1 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	27	95	5	114	136	480	253	38	39	4	34	94
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	27	95	5	114	136	480	253	38	39	4	34	94
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	27	95	5	114	136	480	253	38	39	4	34	94
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	27	95	5	114	136	480	253	38	39	4	34	94
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	27	95	5	114	136	480	253	38	39	4	34	94
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	27	95	5	114	136	480	253	38	39	4	34	94
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.90	0.10	1.00	1.00	2.00	1.74	0.26	1.00	0.11	0.89	1.00
Final Sat.:	413	839	44	501	539	1209	792	120	527	49	418	519
Capacity Analysis Module:												
Vol/Sat:	0.07	0.11	0.11	0.23	0.25	0.40	0.32	0.32	0.07	0.08	0.08	0.18
Crit Moves:		****				****	****					****
Delay/Veh:	11.3	11.1	11.1	11.6	11.3	12.0	13.5	13.4	9.6	10.5	10.5	10.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.3	11.1	11.1	11.6	11.3	12.0	13.5	13.4	9.6	10.5	10.5	10.4
LOS by Move:	B	B	B	B	B	B	B	B	A	B	B	B
ApproachDel:		11.1			11.8			13.1			10.4	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		11.1			11.8			13.1			10.4	
LOS by Appr:		B			B			B			B	
AllWayAvgQ:	0.1	0.1	0.1	0.3	0.3	0.6	0.4	0.4	0.1	0.1	0.1	0.2

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LINSCOTT, LAW & GREENSPAN, ENGINEERS
1580 Corporate Drive, Suite 122, Costa Mesa CA 92626
(714) 641-1587

INTERSECTION CAPACITY UTILIZATION

Intersection: 4.
N-S St: Highridge Road
E-W St: Hawthorne Boulevard
Project: Crestridge Project, Rancho Palos Verdes
File: 3288 Existing Plus Project.xls
Control Type: 5Ø Traffic Signal Split: No N/S Split? No E/W Split? No

Highridge Road at Hawthorne Boulevard
Peak Hour: AM
Annual Growth: 0.00%

Date: 06/21/12
Date of Count: 2012
Projection Year: 2012

	2012 EXISTING TRAFFIC				2012 WITH AMBIENT GROWTH					2012 WITH CUMULATIVE PROJECTS					2012 WITH PROJECT TRAFFIC					2012 WITH MITIGATION				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	50	1	1600	0.031	0	50	1	1600	0.031	0	50	1	1600	0.031	1	51	1	1600	0.032	0	51	1	1600	0.032
Nb Thru	85	1	1600	0.053	0	85	1	1600	0.053	0	85	1	1600	0.053	0	85	1	1600	0.053	0	85	1	1600	0.053
Nb Right	457	1	1600	0.286 *	0	457	1	1600	0.286 *	0	457	1	1600	0.286 *	7	464	1	1600	0.290 *	0	464	1	1600	0.290 *
Sb Left	169	1	1600	0.106 *	0	169	1	1600	0.106 *	0	169	1	1600	0.106 *	0	169	1	1600	0.106 *	0	169	1	1600	0.106 *
Sb Thru	21	1	1600	0.019	0	21	1	1600	0.019	0	21	1	1600	0.019	0	21	1	1600	0.019	0	21	1	1600	0.019
Sb Right	10	0	0	-	0	10	0	0	-	0	10	0	0	-	0	10	0	0	-	0	10	0	0	-
Eb Left	35	1	1600	0.022	0	35	1	1600	0.022	0	35	1	1600	0.022	0	35	1	1600	0.022	0	35	1	1600	0.022
Eb Thru	1122	2	3200	0.355 *	0	1122	2	3200	0.355 *	0	1122	2	3200	0.355 *	0	1122	2	3200	0.355 *	0	1122	2	3200	0.355 *
Eb Right	13	0	0	-	0	13	0	0	-	0	13	0	0	-	0	13	0	0	-	0	13	0	0	-
Wb Left	189	1	1600	0.118	0	189	1	1600	0.118	0	189	1	1600	0.118	1	190	1	1600	0.119	0	190	1	1600	0.119
Wb Thru	679	2	3200	0.244	0	679	2	3200	0.244	0	679	2	3200	0.244	0	679	2	3200	0.244	0	679	2	3200	0.244
Wb Right	102	0	0	-	0	102	0	0	-	0	102	0	0	-	0	102	0	0	-	0	102	0	0	-
Yellow Allowance:				0.100					0.100					0.100					0.100					0.100
ICU				0.847					0.847					0.847					0.851					0.851
LOS				D					D					D					D					D
Total Vol.	*2932*				*0*	*2932*				*0*	*2932*				*9*	*2941*				*0*	*2941*			

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.004
Significant Impact: No

Area Traffic Mitigation:

LINSCOTT, LAW & GREENSPAN, ENGINEERS
1580 Corporate Drive, Suite 122, Costa Mesa CA 92626
(714) 641-1587

INTERSECTION CAPACITY UTILIZATION

Intersection: 4.
N-S St: Highridge Road
E-W St: Hawthorne Boulevard
Project: Crestridge Project, Rancho Palos Verdes
File: 3288 Existing Plus Project.xls
Control Type: 5Ø Traffic Signal

Highridge Road at Hawthorne Boulevard
Peak Hour: PM
Annual Growth: 0.00%

Date: 06/21/12
Date of Count: 2012
Projection Year: 2012

	2012 EXISTING TRAFFIC				2012 WITH AMBIENT GROWTH					2012 WITH CUMULATIVE PROJECTS					2012 WITH PROJECT TRAFFIC					2012 WITH MITIGATION				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	39	1	1600	0.024	0	39	1	1600	0.024	0	39	1	1600	0.024	1	40	1	1600	0.025	0	40	1	1600	0.025
Nb Thru	29	1	1600	0.018 *	0	29	1	1600	0.018 *	0	29	1	1600	0.018 *	0	29	1	1600	0.018 *	0	29	1	1600	0.018 *
Nb Right	300	1	1600	0.188	0	300	1	1600	0.188	0	300	1	1600	0.188	4	304	1	1600	0.190	0	304	1	1600	0.190
Sb Left	125	1	1600	0.078 *	0	125	1	1600	0.078 *	0	125	1	1600	0.078 *	0	125	1	1600	0.078 *	0	125	1	1600	0.078 *
Sb Thru	14	1	1600	0.018	0	14	1	1600	0.018	0	14	1	1600	0.018	0	14	1	1600	0.018	0	14	1	1600	0.018
Sb Right	15	0	0	-	0	15	0	0	-	0	15	0	0	-	0	15	0	0	-	0	15	0	0	-
Eb Left	8	1	1600	0.005	0	8	1	1600	0.005	0	8	1	1600	0.005	0	8	1	1600	0.005	0	8	1	1600	0.005
Eb Thru	912	2	3200	0.292 *	0	912	2	3200	0.292 *	0	912	2	3200	0.292 *	0	912	2	3200	0.292 *	0	912	2	3200	0.292 *
Eb Right	21	0	0	-	0	21	0	0	-	0	21	0	0	-	1	22	0	0	-	0	22	0	0	-
Wb Left	343	1	1600	0.214 *	0	343	1	1600	0.214 *	0	343	1	1600	0.214 *	7	350	1	1600	0.219 *	0	350	1	1600	0.219 *
Wb Thru	954	2	3200	0.337	0	954	2	3200	0.337	0	954	2	3200	0.337	0	954	2	3200	0.337	0	954	2	3200	0.337
Wb Right	124	0	0	-	0	124	0	0	-	0	124	0	0	-	0	124	0	0	-	0	124	0	0	-
Yellow Allowance:				**0.100**					**0.100**					**0.100**					**0.100**					**0.100**
ICU				**0.702**					**0.702**					**0.702**					**0.707**					**0.707**
LOS				**C**					**C**					**C**					**C**					**C**

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.005
Significant Impact: No

Area Traffic Mitigation:

Total Vol.	*2884*				*0*	*2884*				*0*	*2884*				*13*	*2897*				*0*	*2897*			

AM Existing (2012)
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

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

Intersection #5 Highridge Rd at Crestridge Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.620
Loss Time (sec):	0	Average Delay (sec/veh):	13.5
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Highridge Rd						Crestridge Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	1 0	0 1	0	0 0	1! 0	0	1 0	0 1	0
Volume Module:												
Base Vol:	1	225	181	250	226	23	17	14	5	50	4	102
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	225	181	250	226	23	17	14	5	50	4	102
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	225	181	250	226	23	17	14	5	50	4	102
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1	225	181	250	226	23	17	14	5	50	4	102
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	225	181	250	226	23	17	14	5	50	4	102
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	225	181	250	226	23	17	14	5	50	4	102
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.01	0.55	0.44	1.00	0.91	0.09	0.47	0.39	0.14	1.00	0.04	0.96
Final Sat.:	2	363	292	588	587	60	220	181	65	470	21	534
Capacity Analysis Module:												
Vol/Sat:	0.62	0.62	0.62	0.42	0.38	0.38	0.08	0.08	0.08	0.11	0.19	0.19
Crit Moves:		****		****				****			****	
Delay/Veh:	16.5	16.5	16.5	13.0	11.4	11.4	10.4	10.4	10.4	10.7	10.0	10.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	16.5	16.5	16.5	13.0	11.4	11.4	10.4	10.4	10.4	10.7	10.0	10.0
LOS by Move:	C	C	C	B	B	B	B	B	B	B	A	A
ApproachDel:		16.5			12.2			10.4			10.2	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		16.5			12.2			10.4			10.2	
LOS by Appr:		C			B			B			B	
AllWayAvgQ:	1.5	1.5	1.5	0.7	0.6	0.6	0.1	0.1	0.1	0.1	0.2	0.2

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AM Existing Plus Project
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

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

Intersection #5 Highridge Rd at Crestridge Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.628
Loss Time (sec):	0	Average Delay (sec/veh):	13.7
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Highridge Rd						Crestridge Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	1 0	0 1	0	0 0	1! 0	0	1 0	0 1	0
Volume Module:												
Base Vol:	1	225	182	251	226	23	17	14	5	56	4	111
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	225	182	251	226	23	17	14	5	56	4	111
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	225	182	251	226	23	17	14	5	56	4	111
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1	225	182	251	226	23	17	14	5	56	4	111
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	225	182	251	226	23	17	14	5	56	4	111
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	225	182	251	226	23	17	14	5	56	4	111
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.01	0.55	0.44	1.00	0.91	0.09	0.47	0.39	0.14	1.00	0.03	0.97
Final Sat.:	2	358	290	581	581	59	218	180	64	469	19	535
Capacity Analysis Module:												
Vol/Sat:	0.63	0.63	0.63	0.43	0.39	0.39	0.08	0.08	0.08	0.12	0.21	0.21
Crit Moves:	****			****				****				****
Delay/Veh:	16.9	16.9	16.9	13.2	11.6	11.6	10.5	10.5	10.5	10.8	10.1	10.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	16.9	16.9	16.9	13.2	11.6	11.6	10.5	10.5	10.5	10.8	10.1	10.1
LOS by Move:	C	C	C	B	B	B	B	B	B	B	B	B
ApproachDel:		16.9			12.4			10.5			10.3	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		16.9			12.4			10.5			10.3	
LOS by Appr:		C			B			B			B	
AllWayAvgQ:	1.5	1.5	1.5	0.7	0.6	0.6	0.1	0.1	0.1	0.1	0.2	0.2

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PM Existing (2012)
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

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

Intersection #5 Highridge Rd at Crestridge Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.335
Loss Time (sec):	0	Average Delay (sec/veh):	10.4
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Highridge Rd						Crestridge Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	1 0	0 1	0	0 0	1! 0	0	1 0	0 1	0
Volume Module:												
Base Vol:	1	111	90	130	131	5	4	6	2	118	10	218
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	111	90	130	131	5	4	6	2	118	10	218
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	111	90	130	131	5	4	6	2	118	10	218
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1	111	90	130	131	5	4	6	2	118	10	218
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	111	90	130	131	5	4	6	2	118	10	218
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	111	90	130	131	5	4	6	2	118	10	218
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.01	0.55	0.44	1.00	0.96	0.04	0.33	0.50	0.17	1.00	0.04	0.96
Final Sat.:	3	348	282	564	592	23	179	268	89	556	30	650
Capacity Analysis Module:												
Vol/Sat:	0.32	0.32	0.32	0.23	0.22	0.22	0.02	0.02	0.02	0.21	0.34	0.34
Crit Moves:	****			****				****				****
Delay/Veh:	10.9	10.9	10.9	10.6	9.9	9.9	9.3	9.3	9.3	10.5	10.2	10.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.9	10.9	10.9	10.6	9.9	9.9	9.3	9.3	9.3	10.5	10.2	10.2
LOS by Move:	B	B	B	B	A	A	A	A	A	B	B	B
ApproachDel:		10.9			10.2			9.3			10.3	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		10.9			10.2			9.3			10.3	
LOS by Appr:		B			B			A			B	
AllWayAvgQ:	0.4	0.4	0.4	0.3	0.3	0.3	0.0	0.0	0.0	0.2	0.4	0.4

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PM Existing Plus Project
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

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

Intersection #5 Highridge Rd at Crestridge Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.345
Loss Time (sec):	0	Average Delay (sec/veh):	10.5
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Highridge Rd						Crestridge Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1!	0 0	1 0	0 1	0	0 0	1!	0 0	1 0	0 1	0
Volume Module:												
Base Vol:	1	111	96	138	131	5	4	6	2	121	10	223
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	111	96	138	131	5	4	6	2	121	10	223
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	111	96	138	131	5	4	6	2	121	10	223
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1	111	96	138	131	5	4	6	2	121	10	223
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	111	96	138	131	5	4	6	2	121	10	223
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	111	96	138	131	5	4	6	2	121	10	223
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.01	0.53	0.46	1.00	0.96	0.04	0.33	0.50	0.17	1.00	0.04	0.96
Final Sat.:	3	337	291	561	588	22	177	265	88	553	29	646
Capacity Analysis Module:												
Vol/Sat:	0.33	0.33	0.33	0.25	0.22	0.22	0.02	0.02	0.02	0.22	0.35	0.35
Crit Moves:		****		****			****				****	
Delay/Veh:	11.1	11.1	11.1	10.8	9.9	9.9	9.4	9.4	9.4	10.7	10.3	10.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.1	11.1	11.1	10.8	9.9	9.9	9.4	9.4	9.4	10.7	10.3	10.3
LOS by Move:	B	B	B	B	A	A	A	A	A	B	B	B
ApproachDel:		11.1			10.4			9.4			10.4	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		11.1			10.4			9.4			10.4	
LOS by Appr:		B			B			A			B	
AllWayAvgQ:	0.4	0.4	0.4	0.3	0.3	0.3	0.0	0.0	0.0	0.3	0.5	0.5

Traffix 8.0.0715 (c) 2008 Dowling Assoc. Licensed to LLG Costa Mesa, CA

APPENDIX C-II

YEAR 2015 PLUS PROJECT TRAFFIC CONDITIONS

LINSCOTT, LAW & GREENSPAN, ENGINEERS
1580 Corporate Drive, Suite 122, Costa Mesa CA 92626
(714) 641-1587

INTERSECTION CAPACITY UTILIZATION

Crenshaw Boulevard at Indian Peak Road
Peak Hour: AM
Annual Growth: 1.00%

Date: 06/21/12
Date of Count: 2012
Projection Year: 2015

Intersection: 1.
N-S St: Crenshaw Boulevard
E-W St: Indian Peak Road
Project: Crestridge Project, Rancho Palos Verdes
File: 3288 Year 2015 Plus Project.xls
Control Type: 3Ø Traffic Signal Split: No N/S Split? No E/W Split? No

	2012 EXISTING TRAFFIC				2015 WITH AMBIENT GROWTH					2015 WITH CUMULATIVE PROJECTS					2015 WITH PROJECT TRAFFIC					2015 WITH MITIGATION				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	164	1	1600	0.103	5	169	1	1600	0.106	1	170	1	1600	0.106	0	170	1	1600	0.106	0	170	1	1600	0.106
Nb Thru	1126	2	3200	0.352 *	34	1160	2	3200	0.363 *	30	1190	2	3200	0.372 *	13	1203	2	3200	0.376 *	0	1203	2	3200	0.376 *
Nb Right	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-
Sb Left	0	0	0	0.000 *	0	0	0	0	0.000 *	0	0	0	0	0.000 *	0	0	0	0	0.000 *	0	0	0	0	0.000 *
Sb Thru	567	2	3200	0.177	17	584	2	3200	0.183	51	635	2	3200	0.198	2	637	2	3200	0.199	0	637	2	3200	0.199
Sb Right	89	1	1600	0.056	3	92	1	1600	0.058	2	94	1	1600	0.059	0	94	1	1600	0.059	0	94	1	1600	0.059
Eb Left	169	1	1600	0.106	5	174	1	1600	0.109	11	185	1	1600	0.116	0	185	1	1600	0.116	0	185	1	1600	0.116
Eb Thru	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000
Eb Right	141	1	1600	0.088	4	145	1	1600	0.091	2	147	1	1600	0.092	0	147	1	1600	0.092	0	147	1	1600	0.092
Wb Left	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000
Wb Thru	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000
Wb Right	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-
Yellow Allowance:				0.100 *					0.100 *					0.100 *					0.100 *					0.100 *
ICU				0.558					0.572					0.588					0.592					0.592
LOS				A					A					A					A					A

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.004
Significant Impact: No

Area Traffic Mitigation:

Total Vol.	*2256*				*68*	*2324*				*97*	*2421*				*15*	*2436*				*0*	*2436*			

LINSCOTT, LAW & GREENSPAN, ENGINEERS
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INTERSECTION CAPACITY UTILIZATION

Intersection: 1.
N-S St: Crenshaw Boulevard
E-W St: Indian Peak Road
Project: Crestridge Project, Rancho Palos Verdes
File: 3288 Year 2015 Plus Project.xls
Control Type: 3Ø Traffic Signal

Crenshaw Boulevard at Indian Peak Road
Peak Hour: PM
Annual Growth: 1.00%

Date: 06/21/12
Date of Count: 2012
Projection Year: 2015

	2012 EXISTING TRAFFIC				2015 WITH AMBIENT GROWTH					2015 WITH CUMULATIVE PROJECTS					2015 WITH PROJECT TRAFFIC					2015 WITH MITIGATION				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	102	1	1600	0.064 *	3	105	1	1600	0.066 *	2	107	1	1600	0.067 *	0	107	1	1600	0.067 *	0	107	1	1600	0.067 *
Nb Thru	561	2	3200	0.175	17	578	2	3200	0.181	66	644	2	3200	0.201	7	651	2	3200	0.203	0	651	2	3200	0.203
Nb Right	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-
Sb Left	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000
Sb Thru	913	2	3200	0.285 *	27	940	2	3200	0.294 *	53	993	2	3200	0.310 *	13	1006	2	3200	0.314 *	0	1006	2	3200	0.314 *
Sb Right	145	1	1600	0.091	4	149	1	1600	0.093	11	160	1	1600	0.100	0	160	1	1600	0.100	0	160	1	1600	0.100
Eb Left	96	1	1600	0.060	3	99	1	1600	0.062	6	105	1	1600	0.066	0	105	1	1600	0.066	0	105	1	1600	0.066
Eb Thru	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000
Eb Right	196	1	1600	0.123	6	202	1	1600	0.126	2	204	1	1600	0.128	0	204	1	1600	0.128	0	204	1	1600	0.128
Wb Left	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000
Wb Thru	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000
Wb Right	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-
Yellow Allowance:				0.100 *					0.100 *					0.100 *					0.100 *					0.100 *
ICU				0.509					0.522					0.543					0.547					0.547
LOS				A					A					A					A					A

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.004
Significant Impact: No

Area Traffic Mitigation:

Total Vol.	*2013*				*60*	*2073*				*140*	*2213*				*20*	*2233*				*0*	*2233*			

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INTERSECTION CAPACITY UTILIZATION

Intersection: 2.
N-S St: Crenshaw Boulevard
E-W St: Crestridge Road
Project: Crestridge Project, Rancho Palos Verdes
File: 3288 Year 2015 Plus Project.xls
Control Type: 6Ø Traffic Signal Split: Yes N/S Split? No E/W Split? Yes

Crenshaw Boulevard at Crestridge Road
Peak Hour: AM
Annual Growth: 1.00%

Date: 06/21/12
Date of Count: 2012
Projection Year: 2015

	2012 EXISTING TRAFFIC				2015 WITH AMBIENT GROWTH					2015 WITH CUMULATIVE PROJECTS					2015 WITH PROJECT TRAFFIC					2015 WITH MITIGATION				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	16	1	1600	0.010	0	16	1	1600	0.010	1	17	1	1600	0.011	0	17	1	1600	0.011	0	17	1	1600	0.011
Nb Thru	841	2	3200	0.263 *	25	866	2	3200	0.271 *	30	896	2	3200	0.280 *	0	896	2	3200	0.280 *	0	896	2	3200	0.280 *
Nb Right	9	1	1600	0.006	0	9	1	1600	0.006	0	9	1	1600	0.006	0	9	1	1600	0.006	0	9	1	1600	0.006
Sb Left	26	1	1600	0.016 *	1	27	1	1600	0.017 *	0	27	1	1600	0.017 *	0	27	1	1600	0.017 *	0	27	1	1600	0.017 *
Sb Thru	535	2	3200	0.167	16	551	2	3200	0.172	51	602	2	3200	0.188	0	602	2	3200	0.188	0	602	2	3200	0.188
Sb Right	155	1	1600	0.097	5	160	1	1600	0.100	1	161	1	1600	0.101	2	163	1	1600	0.102	0	163	1	1600	0.102
Eb Left	407	0	0	0.000	12	419	0	0	0.000	1	420	0	0	0.000	13	433	0	0	0.000	0	433	0	0	0.000
Eb Thru	3	2	3200	0.128 *	0	3	2	3200	0.132 *	0	3	2	3200	0.132 *	0	3	2	3200	0.136 *	0	3	2	3200	0.136 *
Eb Right	25	1	1600	0.016	1	26	1	1600	0.016	1	27	1	1600	0.017	1	28	1	1600	0.018	0	28	1	1600	0.018
Wb Left	11	0	0	0.000	0	11	0	0	0.000	0	11	0	0	0.000	0	11	0	0	0.000	0	11	0	0	0.000
Wb Thru	6	1	1600	0.038 *	0	6	1	1600	0.039 *	0	6	1	1600	0.039 *	0	6	1	1600	0.039 *	0	6	1	1600	0.039 *
Wb Right	44	0	0	-	1	45	0	0	-	0	45	0	0	-	0	45	0	0	-	0	45	0	0	-
Yellow Allowance:				0.100					0.100					0.100					0.100					0.100
ICU				0.545					0.559					0.568					0.572					0.572
LOS				A					A					A					A					A

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.004
Significant Impact: No

Area Traffic Mitigation:

Total Vol.	*2078*				*61*	*2139*				*85*	*2224*				*16*	*2240*				*0*	*2240*			

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INTERSECTION CAPACITY UTILIZATION

Intersection: 2.
N-S St: Crenshaw Boulevard
E-W St: Crestridge Road
Project: Crestridge Project, Rancho Palos Verdes
File: 3288 Year 2015 Plus Project.xls
Control Type: 6Ø Traffic Signal

Crenshaw Boulevard at Crestridge Road
Peak Hour: PM
Annual Growth: 1.00%

Date: 06/21/12
Date of Count: 2012
Projection Year: 2015

	2012 EXISTING TRAFFIC				2015 WITH AMBIENT GROWTH					2015 WITH CUMULATIVE PROJECTS					2015 WITH PROJECT TRAFFIC					2015 WITH MITIGATION				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	3	1	1600	0.002 *	0	3	1	1600	0.002 *	1	4	1	1600	0.003 *	1	5	1	1600	0.003 *	0	5	1	1600	0.003 *
Nb Thru	431	2	3200	0.135	13	444	2	3200	0.139	66	510	2	3200	0.159	0	510	2	3200	0.159	0	510	2	3200	0.159
Nb Right	10	1	1600	0.006	0	10	1	1600	0.006	0	10	1	1600	0.006	0	10	1	1600	0.006	0	10	1	1600	0.006
Sb Left	52	1	1600	0.033	2	54	1	1600	0.034	0	54	1	1600	0.034	0	54	1	1600	0.034	0	54	1	1600	0.034
Sb Thru	713	2	3200	0.223 *	21	734	2	3200	0.229 *	53	787	2	3200	0.246 *	0	787	2	3200	0.246 *	0	787	2	3200	0.246 *
Sb Right	337	1	1600	0.211	10	347	1	1600	0.217	1	348	1	1600	0.218	13	361	1	1600	0.226	0	361	1	1600	0.226
Eb Left	206	0	0	0.000	6	212	0	0	0.000	2	214	0	0	0.000	7	221	0	0	0.000	0	221	0	0	0.000
Eb Thru	5	2	3200	0.066 *	0	5	2	3200	0.068 *	0	5	2	3200	0.068 *	0	5	2	3200	0.071 *	0	5	2	3200	0.071 *
Eb Right	16	1	1600	0.010	0	16	1	1600	0.010	1	17	1	1600	0.011	1	18	1	1600	0.011	0	18	1	1600	0.011
Wb Left	5	0	0	0.000	0	5	0	0	0.000	0	5	0	0	0.000	0	5	0	0	0.000	0	5	0	0	0.000
Wb Thru	6	1	1600	0.021 *	0	6	1	1600	0.021 *	0	6	1	1600	0.021 *	0	6	1	1600	0.021 *	0	6	1	1600	0.021 *
Wb Right	22	0	0	-	1	23	0	0	-	0	23	0	0	-	0	23	0	0	-	0	23	0	0	-
Yellow Allowance:				0.100					0.100					0.100					0.100					0.100
ICU				0.412					0.420					0.438					0.441					0.441
LOS				A					A					A					A					A

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.003
Significant Impact: No

Area Traffic Mitigation:

Total Vol.	*1806*				*53*	*1859*				*124*	*1983*				*22*	*2005*				*0*	*2005*			

AM Cumulative (2015)
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

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

Intersection #3 Crenshaw Blvd at Crest Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.806
Loss Time (sec):	0	Average Delay (sec/veh):	23.4
Optimal Cycle:	0	Level Of Service:	C

Street Name:	Crenshaw Blvd						Crest Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	1	1 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	71	179	8	186	105	336	602	62	98	2	54	139
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	71	179	8	186	105	336	602	62	98	2	54	139
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	71	179	8	186	105	336	602	62	98	2	54	139
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	71	179	8	186	105	336	602	62	98	2	54	139
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	71	179	8	186	105	336	602	62	98	2	54	139
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	71	179	8	186	105	336	602	62	98	2	54	139
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.91	0.09	1.00	1.00	2.00	1.81	0.19	1.00	0.04	0.96	1.00
Final Sat.:	334	675	30	384	401	877	747	77	459	14	374	424
Capacity Analysis Module:												
Vol/Sat:	0.21	0.27	0.26	0.48	0.26	0.38	0.81	0.80	0.21	0.14	0.14	0.33
Crit Moves:		****		****			****					****
Delay/Veh:	15.2	15.3	15.2	19.6	14.1	15.1	37.9	37.2	12.1	12.7	12.7	14.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.2	15.3	15.2	19.6	14.1	15.1	37.9	37.2	12.1	12.7	12.7	14.2
LOS by Move:	C	C	C	C	B	C	E	E	B	B	B	B
ApproachDel:		15.2			16.3			34.5			13.8	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		15.2			16.3			34.5			13.8	
LOS by Appr:		C			C			D			B	
AllWayAvgQ:	0.2	0.3	0.3	0.8	0.3	0.6	3.0	3.0	0.2	0.1	0.1	0.4

Traffix 8.0.0715 (c) 2008 Dowling Assoc. Licensed to LLG Costa Mesa, CA

AM Cumulative Plus Project (2015)
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

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

Intersection #3 Crenshaw Blvd at Crest Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.806
Loss Time (sec):	0	Average Delay (sec/veh):	23.4
Optimal Cycle:	0	Level Of Service:	C

Street Name:	Crenshaw Blvd						Crest Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	1	1 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	71	179	8	186	106	336	602	62	98	2	54	139
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	71	179	8	186	106	336	602	62	98	2	54	139
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	71	179	8	186	106	336	602	62	98	2	54	139
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	71	179	8	186	106	336	602	62	98	2	54	139
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	71	179	8	186	106	336	602	62	98	2	54	139
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	71	179	8	186	106	336	602	62	98	2	54	139
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.91	0.09	1.00	1.00	2.00	1.81	0.19	1.00	0.04	0.96	1.00
Final Sat.:	334	674	30	384	401	877	746	77	459	14	374	424
Capacity Analysis Module:												
Vol/Sat:	0.21	0.27	0.26	0.48	0.26	0.38	0.81	0.80	0.21	0.14	0.14	0.33
Crit Moves:		****		****			****					****
Delay/Veh:	15.2	15.3	15.2	19.6	14.2	15.1	38.0	37.3	12.1	12.7	12.7	14.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.2	15.3	15.2	19.6	14.2	15.1	38.0	37.3	12.1	12.7	12.7	14.2
LOS by Move:	C	C	C	C	B	C	E	E	B	B	B	B
ApproachDel:		15.3			16.3			34.6			13.8	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		15.3			16.3			34.6			13.8	
LOS by Appr:		C			C			D			B	
AllWayAvgQ:	0.2	0.3	0.3	0.8	0.3	0.6	3.0	3.0	0.2	0.1	0.1	0.4

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PM Cumulative (2015)
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

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

Intersection #3 Crenshaw Blvd at Crest Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.462
Loss Time (sec):	0	Average Delay (sec/veh):	13.3
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Crenshaw Blvd						Crest Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	1	1 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	28	106	6	130	145	525	298	47	40	5	43	111
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	28	106	6	130	145	525	298	47	40	5	43	111
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	28	106	6	130	145	525	298	47	40	5	43	111
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	28	106	6	130	145	525	298	47	40	5	43	111
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	28	106	6	130	145	525	298	47	40	5	43	111
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	28	106	6	130	145	525	298	47	40	5	43	111
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.89	0.11	1.00	1.00	2.00	1.73	0.27	1.00	0.10	0.90	1.00
Final Sat.:	385	776	44	476	509	1137	754	120	499	46	398	493
Capacity Analysis Module:												
Vol/Sat:	0.07	0.14	0.14	0.27	0.28	0.46	0.40	0.39	0.08	0.11	0.11	0.23
Crit Moves:		****				****	****					****
Delay/Veh:	11.9	11.9	11.9	12.7	12.1	13.8	15.4	15.2	10.0	11.1	11.1	11.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.9	11.9	11.9	12.7	12.1	13.8	15.4	15.2	10.0	11.1	11.1	11.3
LOS by Move:	B	B	B	B	B	B	C	C	B	B	B	B
ApproachDel:		11.9			13.3			14.8			11.2	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		11.9			13.3			14.8			11.2	
LOS by Appr:		B			B			B			B	
AllWayAvgQ:	0.1	0.1	0.1	0.3	0.4	0.8	0.6	0.6	0.1	0.1	0.1	0.2

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PM Cumulative Plus Project (2015)
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

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

Intersection #3 Crenshaw Blvd at Crest Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.462
Loss Time (sec):	0	Average Delay (sec/veh):	13.4
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Crenshaw Blvd						Crest Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	1	1 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	28	107	6	130	146	525	298	47	40	5	43	111
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	28	107	6	130	146	525	298	47	40	5	43	111
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	28	107	6	130	146	525	298	47	40	5	43	111
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	28	107	6	130	146	525	298	47	40	5	43	111
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	28	107	6	130	146	525	298	47	40	5	43	111
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	28	107	6	130	146	525	298	47	40	5	43	111
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.89	0.11	1.00	1.00	2.00	1.73	0.27	1.00	0.10	0.90	1.00
Final Sat.:	385	776	44	475	509	1136	753	120	498	46	398	493
Capacity Analysis Module:												
Vol/Sat:	0.07	0.14	0.14	0.27	0.29	0.46	0.40	0.39	0.08	0.11	0.11	0.23
Crit Moves:		****				****	****					****
Delay/Veh:	11.9	11.9	11.9	12.7	12.2	13.8	15.4	15.2	10.0	11.1	11.1	11.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.9	11.9	11.9	12.7	12.2	13.8	15.4	15.2	10.0	11.1	11.1	11.3
LOS by Move:	B	B	B	B	B	B	C	C	B	B	B	B
ApproachDel:		11.9			13.3			14.8			11.3	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		11.9			13.3			14.8			11.3	
LOS by Appr:		B			B			B			B	
AllWayAvgQ:	0.1	0.1	0.1	0.3	0.4	0.8	0.6	0.6	0.1	0.1	0.1	0.2

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INTERSECTION CAPACITY UTILIZATION

Intersection: 4.
N-S St: Highridge Road
E-W St: Hawthorne Boulevard
Project: Crestridge Project, Rancho Palos Verdes
File: 3288 Year 2015 Plus Project.xls
Control Type: 5Ø Traffic Signal Split: No N/S Split? No E/W Split? No

Highridge Road at Hawthorne Boulevard
Peak Hour: AM
Annual Growth: 1.00%

Date: 06/21/12
Date of Count: 2012
Projection Year: 2015

	2012 EXISTING TRAFFIC				2015 WITH AMBIENT GROWTH					2015 WITH CUMULATIVE PROJECTS					2015 WITH PROJECT TRAFFIC					2015 WITH MITIGATION				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	50	1	1600	0.031	2	52	1	1600	0.033	24	76	1	1600	0.048	1	77	1	1600	0.048	0	77	1	1600	0.048
Nb Thru	85	1	1600	0.053	3	88	1	1600	0.055	0	88	1	1600	0.055	0	88	1	1600	0.055	0	88	1	1600	0.055
Nb Right	457	1	1600	0.286 *	14	471	1	1600	0.294 *	13	484	1	1600	0.303 *	7	491	1	1600	0.307 *	0	491	1	1600	0.307 *
Sb Left	169	1	1600	0.106 *	5	174	1	1600	0.109 *	2	176	1	1600	0.110 *	0	176	1	1600	0.110 *	0	176	1	1600	0.110 *
Sb Thru	21	1	1600	0.019	1	22	1	1600	0.020	0	22	1	1600	0.020	0	22	1	1600	0.020	0	22	1	1600	0.020
Sb Right	10	0	0	-	0	10	0	0	-	0	10	0	0	-	0	10	0	0	-	0	10	0	0	-
Eb Left	35	1	1600	0.022	1	36	1	1600	0.023	0	36	1	1600	0.023	0	36	1	1600	0.023	0	36	1	1600	0.023
Eb Thru	1122	2	3200	0.355 *	34	1156	2	3200	0.365 *	43	1199	2	3200	0.379 *	0	1199	2	3200	0.379 *	0	1199	2	3200	0.379 *
Eb Right	13	0	0	-	0	13	0	0	-	0	13	0	0	-	0	13	0	0	-	0	13	0	0	-
Wb Left	189	1	1600	0.118	6	195	1	1600	0.122	19	214	1	1600	0.134	1	215	1	1600	0.134	0	215	1	1600	0.134
Wb Thru	679	2	3200	0.244	20	699	2	3200	0.251	44	743	2	3200	0.265	0	743	2	3200	0.265	0	743	2	3200	0.265
Wb Right	102	0	0	-	3	105	0	0	-	1	106	0	0	-	0	106	0	0	-	0	106	0	0	-
Yellow Allowance:				0.100					0.100					0.100					0.100					0.100
ICU				0.847					0.868					0.892					0.896					0.896
LOS				D					D					D					D					D

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.004
Significant Impact: No

Area Traffic Mitigation:

Total Vol.	*2932*				*89*	*3021*				*146*	*3167*				*9*	*3176*				*0*	*3176*			

LINSCOTT, LAW & GREENSPAN, ENGINEERS
1580 Corporate Drive, Suite 122, Costa Mesa CA 92626
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INTERSECTION CAPACITY UTILIZATION

Intersection: 4.
N-S St: Highridge Road
E-W St: Hawthorne Boulevard
Project: Crestridge Project, Rancho Palos Verdes
File: 3288 Year 2015 Plus Project.xls
Control Type: 5Ø Traffic Signal

Highridge Road at Hawthorne Boulevard
Peak Hour: PM
Annual Growth: 1.00%

Date: 06/21/12
Date of Count: 2012
Projection Year: 2015

	2012 EXISTING TRAFFIC				2015 WITH AMBIENT GROWTH					2015 WITH CUMULATIVE PROJECTS					2015 WITH PROJECT TRAFFIC					2015 WITH MITIGATION				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	39	1	1600	0.024	1	40	1	1600	0.025	26	66	1	1600	0.041	1	67	1	1600	0.042	0	67	1	1600	0.042
Nb Thru	29	1	1600	0.018 *	1	30	1	1600	0.019 *	0	30	1	1600	0.019 *	0	30	1	1600	0.019 *	0	30	1	1600	0.019 *
Nb Right	300	1	1600	0.188	9	309	1	1600	0.193	9	318	1	1600	0.199	4	322	1	1600	0.201	0	322	1	1600	0.201
Sb Left	125	1	1600	0.078 *	4	129	1	1600	0.081 *	3	132	1	1600	0.083 *	0	132	1	1600	0.083 *	0	132	1	1600	0.083 *
Sb Thru	14	1	1600	0.018	0	14	1	1600	0.018	0	14	1	1600	0.018	0	14	1	1600	0.018	0	14	1	1600	0.018
Sb Right	15	0	0	-	0	15	0	0	-	0	15	0	0	-	0	15	0	0	-	0	15	0	0	-
Eb Left	8	1	1600	0.005	0	8	1	1600	0.005	0	8	1	1600	0.005	0	8	1	1600	0.005	0	8	1	1600	0.005
Eb Thru	912	2	3200	0.292 *	27	939	2	3200	0.300 *	66	1005	2	3200	0.322 *	0	1005	2	3200	0.322 *	0	1005	2	3200	0.322 *
Eb Right	21	0	0	-	1	22	0	0	-	3	25	0	0	-	1	26	0	0	-	0	26	0	0	-
Wb Left	343	1	1600	0.214 *	10	353	1	1600	0.221 *	31	384	1	1600	0.240 *	7	391	1	1600	0.244 *	0	391	1	1600	0.244 *
Wb Thru	954	2	3200	0.337	29	983	2	3200	0.347	65	1048	2	3200	0.368	0	1048	2	3200	0.368	0	1048	2	3200	0.368
Wb Right	124	0	0	-	4	128	0	0	-	3	131	0	0	-	0	131	0	0	-	0	131	0	0	-
Yellow Allowance:				0.100					0.100					0.100					0.100					0.100
ICU				0.702					0.721					0.764					0.768					0.768
LOS				C					C					C					C					C

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.004
Significant Impact: No

Area Traffic Mitigation:

Total Vol.	*2884*	*86 2970*	*206 3176*	*13 3189*	*0 3189*

AM Cumulative (2015)
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

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

Intersection #5 Highridge Rd at Crestridge Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.659
Loss Time (sec):	0	Average Delay (sec/veh):	14.3
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Highridge Rd						Crestridge Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	1 0	0 1	0	0 0	1! 0	0	1 0	0 1	0
Volume Module:												
Base Vol:	1	241	186	259	244	24	18	14	5	52	4	105
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	241	186	259	244	24	18	14	5	52	4	105
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	241	186	259	244	24	18	14	5	52	4	105
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1	241	186	259	244	24	18	14	5	52	4	105
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	241	186	259	244	24	18	14	5	52	4	105
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	241	186	259	244	24	18	14	5	52	4	105
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.01	0.56	0.43	1.00	0.91	0.09	0.49	0.38	0.13	1.00	0.04	0.96
Final Sat.:	2	366	282	583	583	57	222	173	62	463	20	525
Capacity Analysis Module:												
Vol/Sat:	0.66	0.66	0.66	0.44	0.42	0.42	0.08	0.08	0.08	0.11	0.20	0.20
Crit Moves:		****		****				****			****	
Delay/Veh:	18.1	18.1	18.1	13.4	12.0	12.0	10.6	10.6	10.6	10.8	10.2	10.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	18.1	18.1	18.1	13.4	12.0	12.0	10.6	10.6	10.6	10.8	10.2	10.2
LOS by Move:	C	C	C	B	B	B	B	B	B	B	B	B
ApproachDel:		18.1			12.7			10.6			10.4	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		18.1			12.7			10.6			10.4	
LOS by Appr:		C			B			B			B	
AllWayAvgQ:	1.7	1.7	1.7	0.8	0.7	0.7	0.1	0.1	0.1	0.1	0.2	0.2

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AM Cumulative Plus Project (2015)
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

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

Intersection #5 Highridge Rd at Crestridge Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.667
Loss Time (sec):	0	Average Delay (sec/veh):	14.5
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Highridge Rd						Crestridge Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	1 0	0 1	0	0 0	1! 0	0	1 0	0 1	0
Volume Module:												
Base Vol:	1	241	187	260	244	24	18	14	5	58	4	114
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	241	187	260	244	24	18	14	5	58	4	114
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	241	187	260	244	24	18	14	5	58	4	114
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1	241	187	260	244	24	18	14	5	58	4	114
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	241	187	260	244	24	18	14	5	58	4	114
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	241	187	260	244	24	18	14	5	58	4	114
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.01	0.56	0.43	1.00	0.91	0.09	0.49	0.38	0.13	1.00	0.03	0.97
Final Sat.:	1	361	280	577	577	57	220	171	61	463	18	527
Capacity Analysis Module:												
Vol/Sat:	0.67	0.67	0.67	0.45	0.42	0.42	0.08	0.08	0.08	0.13	0.22	0.22
Crit Moves:		****		****				****				****
Delay/Veh:	18.5	18.5	18.5	13.7	12.2	12.2	10.7	10.7	10.7	11.0	10.3	10.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	18.5	18.5	18.5	13.7	12.2	12.2	10.7	10.7	10.7	11.0	10.3	10.3
LOS by Move:	C	C	C	B	B	B	B	B	B	B	B	B
ApproachDel:		18.5			12.9			10.7			10.6	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		18.5			12.9			10.7			10.6	
LOS by Appr:		C			B			B			B	
AllWayAvgQ:	1.8	1.8	1.8	0.8	0.7	0.7	0.1	0.1	0.1	0.1	0.2	0.2

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PM Cumulative (2015)
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

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

Intersection #5 Highridge Rd at Crestridge Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.354
Loss Time (sec):	0	Average Delay (sec/veh):	10.8
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Highridge Rd						Crestridge Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	1 0	0 1	0	0 0	1! 0	0	1 0	0 1	0
Volume Module:												
Base Vol:	1	127	93	134	146	5	4	6	2	122	10	226
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	127	93	134	146	5	4	6	2	122	10	226
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	127	93	134	146	5	4	6	2	122	10	226
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1	127	93	134	146	5	4	6	2	122	10	226
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	127	93	134	146	5	4	6	2	122	10	226
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	127	93	134	146	5	4	6	2	122	10	226
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.01	0.57	0.42	1.00	0.97	0.03	0.33	0.50	0.17	1.00	0.04	0.96
Final Sat.:	3	359	263	558	587	20	174	261	87	547	28	638
Capacity Analysis Module:												
Vol/Sat:	0.35	0.35	0.35	0.24	0.25	0.25	0.02	0.02	0.02	0.22	0.35	0.35
Crit Moves:		****				****		****			****	
Delay/Veh:	11.4	11.4	11.4	10.8	10.2	10.2	9.4	9.4	9.4	10.8	10.5	10.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.4	11.4	11.4	10.8	10.2	10.2	9.4	9.4	9.4	10.8	10.5	10.5
LOS by Move:	B	B	B	B	B	B	A	A	A	B	B	B
ApproachDel:		11.4			10.5			9.4			10.6	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		11.4			10.5			9.4			10.6	
LOS by Appr:		B			B			A			B	
AllWayAvgQ:	0.5	0.5	0.5	0.3	0.3	0.3	0.0	0.0	0.0	0.3	0.5	0.5

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PM Cumulative Plus Project (2015)
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

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

Intersection #5 Highridge Rd at Crestridge Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.365
Loss Time (sec):	0	Average Delay (sec/veh):	10.9
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Highridge Rd						Crestridge Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	1 0	0 1	0	0 0	1! 0	0	1 0	0 1	0
Volume Module:												
Base Vol:	1	127	99	142	146	5	4	6	2	125	10	231
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	127	99	142	146	5	4	6	2	125	10	231
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	127	99	142	146	5	4	6	2	125	10	231
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1	127	99	142	146	5	4	6	2	125	10	231
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	127	99	142	146	5	4	6	2	125	10	231
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	127	99	142	146	5	4	6	2	125	10	231
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.01	0.56	0.43	1.00	0.97	0.03	0.33	0.50	0.17	1.00	0.04	0.96
Final Sat.:	3	348	271	555	583	20	172	258	86	544	27	634
Capacity Analysis Module:												
Vol/Sat:	0.37	0.37	0.37	0.26	0.25	0.25	0.02	0.02	0.02	0.23	0.36	0.36
Crit Moves:		****		****				****			****	
Delay/Veh:	11.6	11.6	11.6	11.0	10.3	10.3	9.5	9.5	9.5	10.9	10.7	10.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.6	11.6	11.6	11.0	10.3	10.3	9.5	9.5	9.5	10.9	10.7	10.7
LOS by Move:	B	B	B	B	B	B	A	A	A	B	B	B
ApproachDel:		11.6			10.6			9.5			10.7	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		11.6			10.6			9.5			10.7	
LOS by Appr:		B			B			A			B	
AllWayAvgQ:	0.5	0.5	0.5	0.3	0.3	0.3	0.0	0.0	0.0	0.3	0.5	0.5

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APPENDIX D

PROJECT DRIVEWAY INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEETS

APPENDIX D-I

YEAR 2015 PLUS PROJECT TRAFFIC CONDITIONS

AM Cumulative Plus Project (2015)
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #6 Project Driveway 1 at Crestridge Rd

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[11.3]

Street Name:	Project Driveway 1						Crestridge Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 0	0	0 0	1! 0	0	1 0	1 0	0	0 0	0 1	0
Volume Module:												
Base Vol:	0	0	0	14	0	15	2	450	0	0	178	2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	14	0	15	2	450	0	0	178	2
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	14	0	15	2	450	0	0	178	2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	14	0	15	2	450	0	0	178	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	14	0	15	2	450	0	0	178	2
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	633	633	179	180	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	447	400	869	1408	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	447	399	869	1408	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.03	0.00	0.02	0.00	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	597	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	11.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	*	*	*	*	*	*
ApproachDel:	xxxxxx				11.3		xxxxxx			xxxxxx		
ApproachLOS:		*			B			*			*	

Note: Queue reported is the number of cars per lane.

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PM Cumulative Plus Project (2015)
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #6 Project Driveway 1 at Crestridge Rd

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[12.3]

Street Name:	Project Driveway 1						Crestridge Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 0	0	0 0	1! 0	0	1 0	1 0	0	0 0	0 1	0
Volume Module:												
Base Vol:	0	0	0	8	0	8	14	215	0	0	418	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	8	0	8	14	215	0	0	418	14
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	8	0	8	14	215	0	0	418	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	8	0	8	14	215	0	0	418	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	8	0	8	14	215	0	0	418	14
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	668	668	425	432	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	426	382	634	1138	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	422	377	634	1138	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.02	0.00	0.01	0.01	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	507	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	12.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	*	*	*	*	*	*
ApproachDel:	xxxxxx				12.3		xxxxxx			xxxxxx		
ApproachLOS:	*				B		*			*		

Note: Queue reported is the number of cars per lane.

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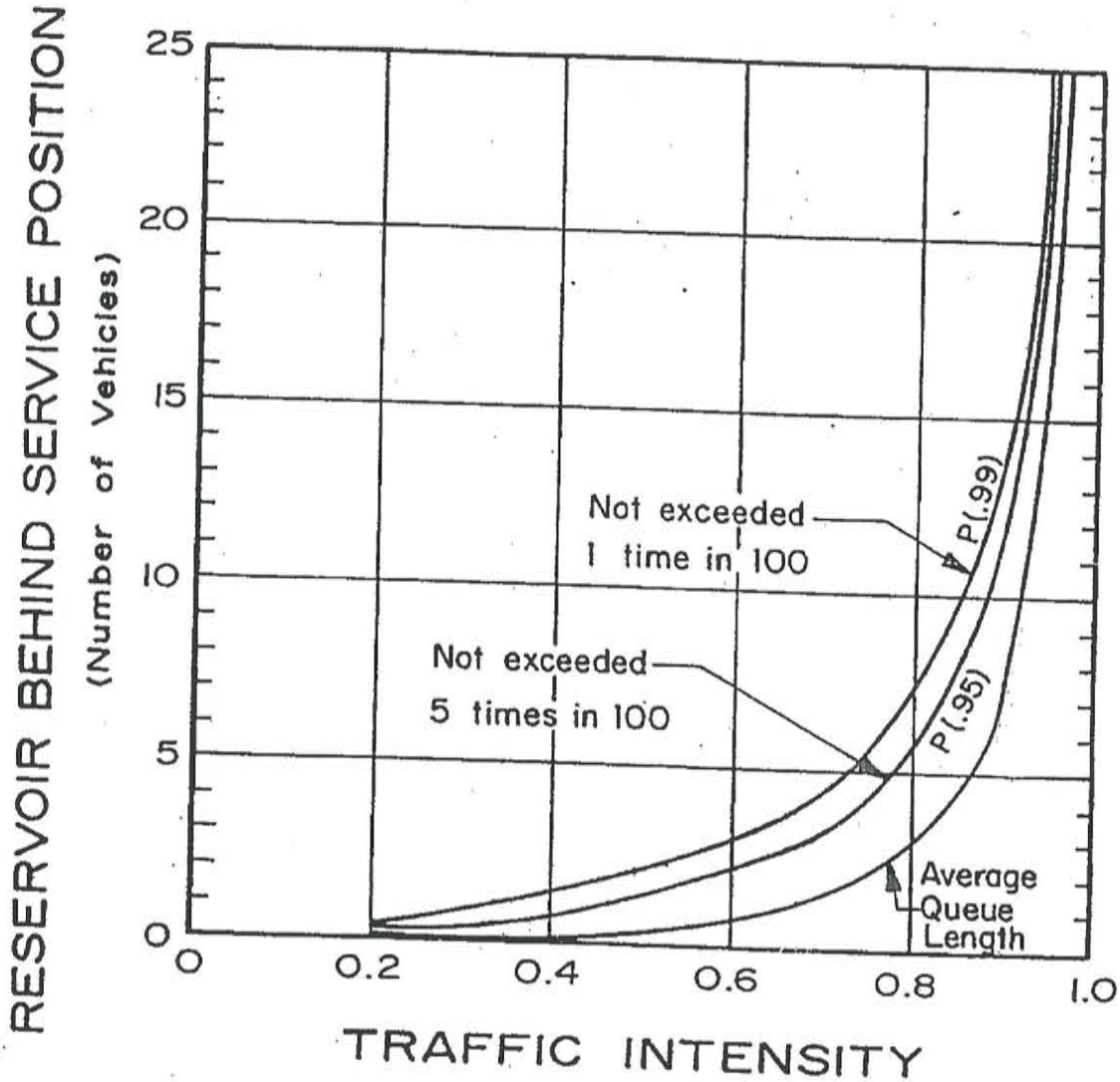
APPENDIX D-II

GATE STACKING ANALYSIS

RESERVOIR NEEDS VS TRAFFIC INTENSITY



1

Assumptions:

1. Arrivals follow a Poisson Distribution
2. Service rate can be represented by an exponential probability function.
3. Flow is equally divided between each lane if more than one is available.

Note: To obtain reservoir length, use 22 feet per vehicle.

APPENDIX E

CONSTRUCTION TRAFFIC INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEETS

LINSCOTT, LAW & GREENSPAN, ENGINEERS
1580 Corporate Drive, Suite 122, Costa Mesa CA 92626
(714) 641-1587

INTERSECTION CAPACITY UTILIZATION

Intersection: 1.
N-S St: Crenshaw Boulevard
E-W St: Indian Peak Road
Project: Crestridge Project, Rancho Palos Verdes
File: 3288 Existing Plus Construction.xls
Control Type: 3Ø Traffic Signal Split: No N/S Split? No E/W Split? No

Crenshaw Boulevard at Indian Peak Road
Peak Hour: AM
Annual Growth: 0.00%

Date: 06/21/12
Date of Count: 2012
Projection Year: 2012

	2012 EXISTING TRAFFIC				2012 WITH AMBIENT GROWTH					2012 WITH CUMULATIVE PROJECTS					2012 WITH PROJECT TRAFFIC					2012 WITH MITIGATION				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	164	1	1600	0.103	0	164	1	1600	0.103	0	164	1	1600	0.103	0	164	1	1600	0.103	0	164	1	1600	0.103
Nb Thru	1126	2	3200	0.352 *	0	1126	2	3200	0.352 *	0	1126	2	3200	0.352 *	0	1126	2	3200	0.352 *	0	1126	2	3200	0.352 *
Nb Right	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-
Sb Left	0	0	0	0.000 *	0	0	0	0	0.000 *	0	0	0	0	0.000 *	0	0	0	0	0.000 *	0	0	0	0	0.000 *
Sb Thru	567	2	3200	0.177	0	567	2	3200	0.177	0	567	2	3200	0.177	37	604	2	3200	0.189	0	604	2	3200	0.189
Sb Right	89	1	1600	0.056	0	89	1	1600	0.056	0	89	1	1600	0.056	0	89	1	1600	0.056	0	89	1	1600	0.056
Eb Left	169	1	1600	0.106	0	169	1	1600	0.106	0	169	1	1600	0.106	0	169	1	1600	0.106	0	169	1	1600	0.106
Eb Thru	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000
Eb Right	141	1	1600	0.088	0	141	1	1600	0.088	0	141	1	1600	0.088	0	141	1	1600	0.088	0	141	1	1600	0.088
Wb Left	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000
Wb Thru	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000
Wb Right	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-
Yellow Allowance:				0.100 *					0.100 *					0.100 *					0.100 *					0.100 *
ICU				0.558					0.558					0.558					0.558					0.558
LOS				A					A					A					A					A

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.000
Significant Impact: No

Area Traffic Mitigation:

Total Vol.	*2256*				*0*	*2256*				*0*	*2256*				*37*	*2293*				*0*	*2293*			

LINSCOTT, LAW & GREENSPAN, ENGINEERS
1580 Corporate Drive, Suite 122, Costa Mesa CA 92626
(714) 641-1587

INTERSECTION CAPACITY UTILIZATION

Intersection: 1.
N-S St: Crenshaw Boulevard
E-W St: Indian Peak Road
Project: Crestridge Project, Rancho Palos Verdes
File: 3288 Existing Plus Construction.xls
Control Type: 3Ø Traffic Signal

Crenshaw Boulevard at Indian Peak Road
Peak Hour: PM
Annual Growth: 0.00%

Date: 06/21/12
Date of Count: 2012
Projection Year: 2012

	2012 EXISTING TRAFFIC				2012 WITH AMBIENT GROWTH					2012 WITH CUMULATIVE PROJECTS					2012 WITH PROJECT TRAFFIC					2012 WITH MITIGATION				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	102	1	1600	0.064 *	0	102	1	1600	0.064 *	0	102	1	1600	0.064 *	0	102	1	1600	0.064 *	0	102	1	1600	0.064 *
Nb Thru	561	2	3200	0.175	0	561	2	3200	0.175	0	561	2	3200	0.175	0	561	2	3200	0.175	0	561	2	3200	0.175
Nb Right	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-
Sb Left	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000
Sb Thru	913	2	3200	0.285 *	0	913	2	3200	0.285 *	0	913	2	3200	0.285 *	27	940	2	3200	0.294 *	0	940	2	3200	0.294 *
Sb Right	145	1	1600	0.091	0	145	1	1600	0.091	0	145	1	1600	0.091	0	145	1	1600	0.091	0	145	1	1600	0.091
Eb Left	96	1	1600	0.060	0	96	1	1600	0.060	0	96	1	1600	0.060	0	96	1	1600	0.060	0	96	1	1600	0.060
Eb Thru	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000
Eb Right	196	1	1600	0.123	0	196	1	1600	0.123	0	196	1	1600	0.123	0	196	1	1600	0.123	0	196	1	1600	0.123
Wb Left	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000
Wb Thru	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0	0.000
Wb Right	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-
Yellow Allowance:				**0.100 ***					**0.100 ***					**0.100 ***					**0.100 ***					**0.100 ***
ICU				**0.509**					**0.509**					**0.509**					**0.518**					**0.518**
LOS				**A**					**A**					**A**					**A**					**A**

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.009
Significant Impact: No

Area Traffic Mitigation:

Total Vol.	*2013*				*0*	*2013*				*0*	*2013*				*27*	*2040*				*0*	*2040*			

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(714) 641-1587

INTERSECTION CAPACITY UTILIZATION

Intersection: 2.
N-S St: Crenshaw Boulevard
E-W St: Crestridge Road
Project: Crestridge Project, Rancho Palos Verdes
File: 3288 Existing Plus Construction.xls
Control Type: 6Ø Traffic Signal Split: Yes N/S Split? No E/W Split? Yes

Crenshaw Boulevard at Crestridge Road
Peak Hour: AM
Annual Growth: 0.00%

Date: 06/21/12
Date of Count: 2012
Projection Year: 2012

	2012 EXISTING TRAFFIC				2012 WITH AMBIENT GROWTH					2012 WITH CUMULATIVE PROJECTS					2012 WITH PROJECT TRAFFIC					2012 WITH MITIGATION				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	16	1	1600	0.010	0	16	1	1600	0.010	0	16	1	1600	0.010	0	16	1	1600	0.010	0	16	1	1600	0.010
Nb Thru	841	2	3200	0.263 *	0	841	2	3200	0.263 *	0	841	2	3200	0.263 *	0	841	2	3200	0.263 *	0	841	2	3200	0.263 *
Nb Right	9	1	1600	0.006	0	9	1	1600	0.006	0	9	1	1600	0.006	0	9	1	1600	0.006	0	9	1	1600	0.006
Sb Left	26	1	1600	0.016 *	0	26	1	1600	0.016 *	0	26	1	1600	0.016 *	0	26	1	1600	0.016 *	0	26	1	1600	0.016 *
Sb Thru	535	2	3200	0.167	0	535	2	3200	0.167	0	535	2	3200	0.167	0	535	2	3200	0.167	0	535	2	3200	0.167
Sb Right	155	1	1600	0.097	0	155	1	1600	0.097	0	155	1	1600	0.097	37	192	1	1600	0.120	0	192	1	1600	0.120
Eb Left	407	0	0	0.000	0	407	0	0	0.000	0	407	0	0	0.000	0	407	0	0	0.000	0	407	0	0	0.000
Eb Thru	3	2	3200	0.128 *	0	3	2	3200	0.128 *	0	3	2	3200	0.128 *	0	3	2	3200	0.128 *	0	3	2	3200	0.128 *
Eb Right	25	1	1600	0.016	0	25	1	1600	0.016	0	25	1	1600	0.016	0	25	1	1600	0.016	0	25	1	1600	0.016
Wb Left	11	0	0	0.000	0	11	0	0	0.000	0	11	0	0	0.000	0	11	0	0	0.000	0	11	0	0	0.000
Wb Thru	6	1	1600	0.038 *	0	6	1	1600	0.038 *	0	6	1	1600	0.038 *	0	6	1	1600	0.038 *	0	6	1	1600	0.038 *
Wb Right	44	0	0	-	0	44	0	0	-	0	44	0	0	-	0	44	0	0	-	0	44	0	0	-
Yellow Allowance:				0.100					0.100					0.100					0.100					0.100
ICU				0.545					0.545					0.545					0.545					0.545
LOS				A					A					A					A					A
Total Vol.	*2078*				*0*	*2078*				*0*	*2078*				*37*	*2115*				*0*	*2115*			

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.000
Significant Impact: No

Area Traffic Mitigation:

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INTERSECTION CAPACITY UTILIZATION

Intersection: 2.
N-S St: Crenshaw Boulevard
E-W St: Crestridge Road
Project: Crestridge Project, Rancho Palos Verdes
File: 3288 Existing Plus Construction.xls
Control Type: 6Ø Traffic Signal

Crenshaw Boulevard at Crestridge Road
Peak Hour: PM
Annual Growth: 0.00%

Date: 06/21/12
Date of Count: 2012
Projection Year: 2012

	2012 EXISTING TRAFFIC				2012 WITH AMBIENT GROWTH					2012 WITH CUMULATIVE PROJECTS					2012 WITH PROJECT TRAFFIC					2012 WITH MITIGATION				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	3	1	1600	0.002 *	0	3	1	1600	0.002 *	0	3	1	1600	0.002 *	0	3	1	1600	0.002 *	0	3	1	1600	0.002 *
Nb Thru	431	2	3200	0.135	0	431	2	3200	0.135	0	431	2	3200	0.135	0	431	2	3200	0.135	0	431	2	3200	0.135
Nb Right	10	1	1600	0.006	0	10	1	1600	0.006	0	10	1	1600	0.006	0	10	1	1600	0.006	0	10	1	1600	0.006
Sb Left	52	1	1600	0.033	0	52	1	1600	0.033	0	52	1	1600	0.033	0	52	1	1600	0.033	0	52	1	1600	0.033
Sb Thru	713	2	3200	0.223 *	0	713	2	3200	0.223 *	0	713	2	3200	0.223 *	0	713	2	3200	0.223	0	713	2	3200	0.223
Sb Right	337	1	1600	0.211	0	337	1	1600	0.211	0	337	1	1600	0.211	27	364	1	1600	0.228 *	0	364	1	1600	0.228 *
Eb Left	206	0	0	0.000	0	206	0	0	0.000	0	206	0	0	0.000	0	206	0	0	0.000	0	206	0	0	0.000
Eb Thru	5	2	3200	0.066 *	0	5	2	3200	0.066 *	0	5	2	3200	0.066 *	0	5	2	3200	0.066 *	0	5	2	3200	0.066 *
Eb Right	16	1	1600	0.010	0	16	1	1600	0.010	0	16	1	1600	0.010	0	16	1	1600	0.010	0	16	1	1600	0.010
Wb Left	5	0	0	0.000	0	5	0	0	0.000	0	5	0	0	0.000	0	5	0	0	0.000	0	5	0	0	0.000
Wb Thru	6	1	1600	0.021 *	0	6	1	1600	0.021 *	0	6	1	1600	0.021 *	0	6	1	1600	0.021 *	0	6	1	1600	0.021 *
Wb Right	22	0	0	-	0	22	0	0	-	0	22	0	0	-	0	22	0	0	-	0	22	0	0	-
Yellow Allowance:				0.100					0.100					0.100					0.100					0.100
ICU				0.412					0.412					0.412					0.417					0.417
LOS				A					A					A					A					A

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.005
Significant Impact: No

Area Traffic Mitigation:

Total Vol.	*1806*				*0*	*1806*				*0*	*1806*				*27*	*1833*				*0*	*1833*			

AM Existing Plus Construction
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

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

Intersection #3 Crenshaw Blvd at Crest Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.722
Loss Time (sec):	0	Average Delay (sec/veh):	19.4
Optimal Cycle:	0	Level Of Service:	C

Street Name:	Crenshaw Blvd						Crest Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	1	1 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	68	173	7	168	98	299	569	52	95	1	46	123
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	68	173	7	168	98	299	569	52	95	1	46	123
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	68	173	7	168	98	299	569	52	95	1	46	123
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	68	173	7	168	98	299	569	52	95	1	46	123
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	68	173	7	168	98	299	569	52	95	1	46	123
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	68	173	7	168	98	299	569	52	95	1	46	123
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.92	0.08	1.00	1.00	2.00	1.83	0.17	1.00	0.02	0.98	1.00
Final Sat.:	354	720	29	399	419	917	788	72	486	9	396	443
Capacity Analysis Module:												
Vol/Sat:	0.19	0.24	0.24	0.42	0.23	0.33	0.72	0.72	0.20	0.12	0.12	0.28
Crit Moves:		****		****			****					****
Delay/Veh:	14.2	14.2	14.1	17.3	13.3	13.6	28.9	28.5	11.4	12.0	12.0	12.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.2	14.2	14.1	17.3	13.3	13.6	28.9	28.5	11.4	12.0	12.0	12.9
LOS by Move:	B	B	B	C	B	B	D	D	B	B	B	B
ApproachDel:		14.2			14.6			26.5			12.7	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		14.2			14.6			26.5			12.7	
LOS by Appr:		B			B			D			B	
AllWayAvgQ:	0.2	0.3	0.3	0.6	0.3	0.4	2.1	2.1	0.2	0.1	0.1	0.3

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PM Existing Plus Construction
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

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

Intersection #3 Crenshaw Blvd at Crest Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.397
Loss Time (sec):	0	Average Delay (sec/veh):	11.9
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Crenshaw Blvd						Crest Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	1	1 1	0 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	27	94	5	114	135	480	253	38	39	4	34	94
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	27	94	5	114	135	480	253	38	39	4	34	94
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	27	94	5	114	135	480	253	38	39	4	34	94
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	27	94	5	114	135	480	253	38	39	4	34	94
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	27	94	5	114	135	480	253	38	39	4	34	94
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	27	94	5	114	135	480	253	38	39	4	34	94
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.90	0.10	1.00	1.00	2.00	1.74	0.26	1.00	0.11	0.89	1.00
Final Sat.:	413	839	45	501	539	1210	792	120	528	49	418	520
Capacity Analysis Module:												
Vol/Sat:	0.07	0.11	0.11	0.23	0.25	0.40	0.32	0.32	0.07	0.08	0.08	0.18
Crit Moves:		****				****	****					****
Delay/Veh:	11.3	11.1	11.0	11.6	11.2	12.0	13.5	13.4	9.6	10.5	10.5	10.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.3	11.1	11.0	11.6	11.2	12.0	13.5	13.4	9.6	10.5	10.5	10.4
LOS by Move:	B	B	B	B	B	B	B	B	A	B	B	B
ApproachDel:		11.1			11.8			13.0			10.4	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		11.1			11.8			13.0			10.4	
LOS by Appr:		B			B			B			B	
AllWayAvgQ:	0.1	0.1	0.1	0.3	0.3	0.6	0.4	0.4	0.1	0.1	0.1	0.2

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INTERSECTION CAPACITY UTILIZATION

Intersection: 4.
N-S St: Highridge Road
E-W St: Hawthorne Boulevard
Project: Crestridge Project, Rancho Palos Verdes
File: 3288 Existing Plus Construction.xls
Control Type: 5Ø Traffic Signal Split: No N/S Split? No E/W Split? No

Highridge Road at Hawthorne Boulevard
Peak Hour: AM
Annual Growth: 0.00%

Date: 06/21/12
Date of Count: 2012
Projection Year: 2012

	2012 EXISTING TRAFFIC				2012 WITH AMBIENT GROWTH					2012 WITH CUMULATIVE PROJECTS					2012 WITH PROJECT TRAFFIC					2012 WITH MITIGATION				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	50	1	1600	0.031	0	50	1	1600	0.031	0	50	1	1600	0.031	0	50	1	1600	0.031	0	50	1	1600	0.031
Nb Thru	85	1	1600	0.053	0	85	1	1600	0.053	0	85	1	1600	0.053	0	85	1	1600	0.053	0	85	1	1600	0.053
Nb Right	457	1	1600	0.286 *	0	457	1	1600	0.286 *	0	457	1	1600	0.286 *	27	484	1	1600	0.303 *	0	484	1	1600	0.303 *
Sb Left	169	1	1600	0.106 *	0	169	1	1600	0.106 *	0	169	1	1600	0.106 *	0	169	1	1600	0.106 *	0	169	1	1600	0.106 *
Sb Thru	21	1	1600	0.019	0	21	1	1600	0.019	0	21	1	1600	0.019	0	21	1	1600	0.019	0	21	1	1600	0.019
Sb Right	10	0	0	-	0	10	0	0	-	0	10	0	0	-	0	10	0	0	-	0	10	0	0	-
Eb Left	35	1	1600	0.022	0	35	1	1600	0.022	0	35	1	1600	0.022	0	35	1	1600	0.022	0	35	1	1600	0.022
Eb Thru	1122	2	3200	0.355 *	0	1122	2	3200	0.355 *	0	1122	2	3200	0.355 *	0	1122	2	3200	0.355 *	0	1122	2	3200	0.355 *
Eb Right	13	0	0	-	0	13	0	0	-	0	13	0	0	-	0	13	0	0	-	0	13	0	0	-
Wb Left	189	1	1600	0.118	0	189	1	1600	0.118	0	189	1	1600	0.118	0	189	1	1600	0.118	0	189	1	1600	0.118
Wb Thru	679	2	3200	0.244	0	679	2	3200	0.244	0	679	2	3200	0.244	0	679	2	3200	0.244	0	679	2	3200	0.244
Wb Right	102	0	0	-	0	102	0	0	-	0	102	0	0	-	0	102	0	0	-	0	102	0	0	-
Yellow Allowance:				0.100					0.100					0.100					0.100					0.100
ICU				0.847					0.847					0.847					0.864					0.864
LOS				D					D					D					D					D
Total Vol.	*2932*				*0*	*2932*				*0*	*2932*				*27*	*2959*				*0*	*2959*			

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.017
Significant Impact: No

Area Traffic Mitigation:

LINSCOTT, LAW & GREENSPAN, ENGINEERS
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(714) 641-1587

INTERSECTION CAPACITY UTILIZATION

Intersection: 4.
N-S St: Highridge Road
E-W St: Hawthorne Boulevard
Project: Crestridge Project, Rancho Palos Verdes
File: 3288 Existing Plus Construction.xls
Control Type: 5Ø Traffic Signal

Highridge Road at Hawthorne Boulevard
Peak Hour: PM
Annual Growth: 0.00%

Date: 06/21/12
Date of Count: 2012
Projection Year: 2012

	2012 EXISTING TRAFFIC				2012 WITH AMBIENT GROWTH					2012 WITH CUMULATIVE PROJECTS					2012 WITH PROJECT TRAFFIC					2012 WITH MITIGATION				
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	39	1	1600	0.024	0	39	1	1600	0.024	0	39	1	1600	0.024	0	39	1	1600	0.024	0	39	1	1600	0.024
Nb Thru	29	1	1600	0.018 *	0	29	1	1600	0.018 *	0	29	1	1600	0.018 *	0	29	1	1600	0.018 *	0	29	1	1600	0.018 *
Nb Right	300	1	1600	0.188	0	300	1	1600	0.188	0	300	1	1600	0.188	37	337	1	1600	0.211	0	337	1	1600	0.211
Sb Left	125	1	1600	0.078 *	0	125	1	1600	0.078 *	0	125	1	1600	0.078 *	0	125	1	1600	0.078 *	0	125	1	1600	0.078 *
Sb Thru	14	1	1600	0.018	0	14	1	1600	0.018	0	14	1	1600	0.018	0	14	1	1600	0.018	0	14	1	1600	0.018
Sb Right	15	0	0	-	0	15	0	0	-	0	15	0	0	-	0	15	0	0	-	0	15	0	0	-
Eb Left	8	1	1600	0.005	0	8	1	1600	0.005	0	8	1	1600	0.005	0	8	1	1600	0.005	0	8	1	1600	0.005
Eb Thru	912	2	3200	0.292 *	0	912	2	3200	0.292 *	0	912	2	3200	0.292 *	0	912	2	3200	0.292 *	0	912	2	3200	0.292 *
Eb Right	21	0	0	-	0	21	0	0	-	0	21	0	0	-	0	21	0	0	-	0	21	0	0	-
Wb Left	343	1	1600	0.214 *	0	343	1	1600	0.214 *	0	343	1	1600	0.214 *	0	343	1	1600	0.214 *	0	343	1	1600	0.214 *
Wb Thru	954	2	3200	0.337	0	954	2	3200	0.337	0	954	2	3200	0.337	0	954	2	3200	0.337	0	954	2	3200	0.337
Wb Right	124	0	0	-	0	124	0	0	-	0	124	0	0	-	0	124	0	0	-	0	124	0	0	-
Yellow Allowance:				0.100					0.100					0.100					0.100					0.100
ICU				0.702					0.702					0.702					0.702					0.702
LOS				C					C					C					C					C

* Key conflicting movement as a part of ICU.
** Functions as a separate turn lane, however, is not striped as such.
Counts conducted by: Transportation Studies, Inc.
Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.000
Significant Impact: No

Area Traffic Mitigation:

Total Vol.	*2884*				*0*	*2884*				*0*	*2884*				*37*	*2921*				*0*	*2921*			

AM Existing Plus Construction
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

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

Intersection #5 Highridge Rd at Crestridge Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.631
Loss Time (sec):	0	Average Delay (sec/veh):	13.8
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Highridge Rd						Crestridge Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	1 0	0 1	0	0 0	1! 0	0	1 0	0 1	0
Volume Module:												
Base Vol:	1	225	181	250	226	23	17	14	5	50	4	129
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	225	181	250	226	23	17	14	5	50	4	129
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	225	181	250	226	23	17	14	5	50	4	129
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1	225	181	250	226	23	17	14	5	50	4	129
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	225	181	250	226	23	17	14	5	50	4	129
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	225	181	250	226	23	17	14	5	50	4	129
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.01	0.55	0.44	1.00	0.91	0.09	0.47	0.39	0.14	1.00	0.03	0.97
Final Sat.:	2	357	287	577	577	59	217	178	64	470	17	538
Capacity Analysis Module:												
Vol/Sat:	0.63	0.63	0.63	0.43	0.39	0.39	0.08	0.08	0.08	0.11	0.24	0.24
Crit Moves:		****		****				****			****	
Delay/Veh:	17.1	17.1	17.1	13.3	11.7	11.7	10.5	10.5	10.5	10.7	10.4	10.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	17.1	17.1	17.1	13.3	11.7	11.7	10.5	10.5	10.5	10.7	10.4	10.4
LOS by Move:	C	C	C	B	B	B	B	B	B	B	B	B
ApproachDel:		17.1			12.5			10.5			10.5	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		17.1			12.5			10.5			10.5	
LOS by Appr:		C			B			B			B	
AllWayAvgQ:	1.5	1.5	1.5	0.7	0.6	0.6	0.1	0.1	0.1	0.1	0.3	0.3

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PM Existing Plus Construction
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

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

Intersection #5 Highridge Rd at Crestridge Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.389
Loss Time (sec):	0	Average Delay (sec/veh):	10.7
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Highridge Rd						Crestridge Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	1 0	0 1	0	0 0	1! 0	0	1 0	0 1	0
Volume Module:												
Base Vol:	1	111	90	130	131	5	4	6	2	118	10	255
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	111	90	130	131	5	4	6	2	118	10	255
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	111	90	130	131	5	4	6	2	118	10	255
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1	111	90	130	131	5	4	6	2	118	10	255
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	111	90	130	131	5	4	6	2	118	10	255
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	111	90	130	131	5	4	6	2	118	10	255
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.01	0.55	0.44	1.00	0.96	0.04	0.33	0.50	0.17	1.00	0.04	0.96
Final Sat.:	3	342	277	555	581	22	177	265	88	556	26	655
Capacity Analysis Module:												
Vol/Sat:	0.32	0.32	0.32	0.23	0.23	0.23	0.02	0.02	0.02	0.21	0.39	0.39
Crit Moves:	****			****				****			****	
Delay/Veh:	11.1	11.1	11.1	10.8	10.0	10.0	9.4	9.4	9.4	10.6	10.8	10.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.1	11.1	11.1	10.8	10.0	10.0	9.4	9.4	9.4	10.6	10.8	10.8
LOS by Move:	B	B	B	B	B	B	A	A	A	B	B	B
ApproachDel:		11.1			10.4			9.4			10.7	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		11.1			10.4			9.4			10.7	
LOS by Appr:		B			B			A			B	
AllWayAvgQ:	0.4	0.4	0.4	0.3	0.3	0.3	0.0	0.0	0.0	0.2	0.6	0.6

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APPENDIX F

INTERSECTION QUEUING CALCULATION WORKSHEETS

APPENDIX F-I

EXISTING PLUS PROJECT TRAFFIC CONDITIONS

AM Existing (2012) [Queuing Analysis]
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Crenshaw Boulevard at Crestridge Road

Cycle (sec):	120	Critical Vol./Cap.(X):	0.514
Loss Time (sec):	16	Average Crit Del (sec/veh):	38.9
Optimal Cycle:	99	Level Of Service:	D

Street Name:	Crenshaw Boulevard						Crestridge Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	6	14	14	6	21	21	28	28	28	28	28	28
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 1	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	16	841	9	26	535	155	407	3	25	11	6	44
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	16	841	9	26	535	155	407	3	25	11	6	44
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	16	841	9	26	535	155	407	3	25	11	6	44
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	16	841	9	26	535	155	407	3	25	11	6	44
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	841	9	26	535	155	407	3	25	11	6	44
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	16	841	9	26	535	155	407	3	25	11	6	44
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.99	0.01	1.00	0.18	0.10	0.72
Final Sat.:	1600	3200	1600	1600	3200	1600	3177	23	1600	289	157	1154
Capacity Analysis Module:												
Vol/Sat:	0.01	0.26	0.01	0.02	0.17	0.10	0.13	0.13	0.02	0.04	0.04	0.04
Crit Moves:		****		****				****		****		
Green/Cycle:	0.09	0.35	0.35	0.05	0.31	0.31	0.23	0.23	0.23	0.23	0.23	0.23
Volume/Cap:	0.11	0.75	0.02	0.33	0.54	0.31	0.55	0.55	0.07	0.16	0.16	0.16
Delay/Veh:	50.7	37.3	25.5	57.4	34.8	31.9	41.3	41.3	35.9	36.9	36.9	36.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.7	37.3	25.5	57.4	34.8	31.9	41.3	41.3	35.9	36.9	36.9	36.9
LOS by Move:	D	D	C	E	C	C	D	D	D	D	D	D
HCM2k95thQ:	1	26	0	3	16	9	14	14	1	4	4	4

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AM Existing Plus Project (2012) [Queuing Analysis]
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Crenshaw Boulevard at Crestridge Road

Cycle (sec):	120	Critical Vol./Cap.(X):	0.519
Loss Time (sec):	16	Average Crit Del (sec/veh):	39.0
Optimal Cycle:	99	Level Of Service:	D

Street Name:	Crenshaw Boulevard						Crestridge Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	6	14	14	6	21	21	28	28	28	28	28	28
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 1	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	16	841	9	26	535	157	420	3	26	11	6	44
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	16	841	9	26	535	157	420	3	26	11	6	44
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	16	841	9	26	535	157	420	3	26	11	6	44
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	16	841	9	26	535	157	420	3	26	11	6	44
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	841	9	26	535	157	420	3	26	11	6	44
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	16	841	9	26	535	157	420	3	26	11	6	44
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.99	0.01	1.00	0.18	0.10	0.72
Final Sat.:	1600	3200	1600	1600	3200	1600	3177	23	1600	289	157	1154
Capacity Analysis Module:												
Vol/Sat:	0.01	0.26	0.01	0.02	0.17	0.10	0.13	0.13	0.02	0.04	0.04	0.04
Crit Moves:		****		****			****			****		
Green/Cycle:	0.09	0.35	0.35	0.05	0.31	0.31	0.23	0.23	0.23	0.23	0.23	0.23
Volume/Cap:	0.11	0.75	0.02	0.33	0.54	0.32	0.57	0.57	0.07	0.16	0.16	0.16
Delay/Veh:	50.7	37.3	25.5	57.4	34.8	31.9	41.7	41.7	35.9	36.9	36.9	36.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.7	37.3	25.5	57.4	34.8	31.9	41.7	41.7	35.9	36.9	36.9	36.9
LOS by Move:	D	D	C	E	C	C	D	D	D	D	D	D
HCM2k95thQ:	1	26	0	3	16	9	14	14	2	4	4	4

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PM Existing (2012) [Queuing Analysis]
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Crenshaw Boulevard at Crestridge Road

Cycle (sec):	120	Critical Vol./Cap.(X):	0.359
Loss Time (sec):	16	Average Crit Del (sec/veh):	34.9
Optimal Cycle:	99	Level Of Service:	C

Street Name:	Crenshaw Boulevard						Crestridge Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	6	14	14	6	21	21	28	28	28	28	28	28
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 1	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	3	431	10	52	713	337	206	5	16	5	6	22
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	431	10	52	713	337	206	5	16	5	6	22
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	3	431	10	52	713	337	206	5	16	5	6	22
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	3	431	10	52	713	337	206	5	16	5	6	22
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	431	10	52	713	337	206	5	16	5	6	22
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	3	431	10	52	713	337	206	5	16	5	6	22
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.95	0.05	1.00	0.15	0.18	0.67
Final Sat.:	1600	3200	1600	1600	3200	1600	3124	76	1600	242	291	1067
Capacity Analysis Module:												
Vol/Sat:	0.00	0.13	0.01	0.03	0.22	0.21	0.07	0.07	0.01	0.02	0.02	0.02
Crit Moves:	****				****			****		****		
Green/Cycle:	0.05	0.29	0.29	0.11	0.35	0.35	0.23	0.23	0.23	0.23	0.23	0.23
Volume/Cap:	0.04	0.46	0.02	0.30	0.64	0.60	0.28	0.28	0.04	0.09	0.09	0.09
Delay/Veh:	54.4	35.1	30.3	50.3	33.8	34.0	38.0	38.0	35.7	36.1	36.1	36.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.4	35.1	30.3	50.3	33.8	34.0	38.0	38.0	35.7	36.1	36.1	36.1
LOS by Move:	D	D	C	D	C	C	D	D	D	D	D	D
HCM2k95thQ:	0	13	1	4	21	20	7	7	1	2	2	2

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PM Existing Plus Project (2012) [Queuing Analysis]
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Crenshaw Boulevard at Crestridge Road

Cycle (sec):	120	Critical Vol./Cap.(X):	0.362
Loss Time (sec):	16	Average Crit Del (sec/veh):	35.0
Optimal Cycle:	99	Level Of Service:	C

Street Name:	Crenshaw Boulevard						Crestridge Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	6	14	14	6	21	21	28	28	28	28	28	28
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 1	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	4	431	10	52	713	350	213	5	17	5	6	22
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	431	10	52	713	350	213	5	17	5	6	22
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	431	10	52	713	350	213	5	17	5	6	22
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	4	431	10	52	713	350	213	5	17	5	6	22
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	4	431	10	52	713	350	213	5	17	5	6	22
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	4	431	10	52	713	350	213	5	17	5	6	22
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.95	0.05	1.00	0.15	0.18	0.67
Final Sat.:	1600	3200	1600	1600	3200	1600	3127	73	1600	242	291	1067
Capacity Analysis Module:												
Vol/Sat:	0.00	0.13	0.01	0.03	0.22	0.22	0.07	0.07	0.01	0.02	0.02	0.02
Crit Moves:	****				****		****			****		
Green/Cycle:	0.05	0.29	0.29	0.11	0.35	0.35	0.23	0.23	0.23	0.23	0.23	0.23
Volume/Cap:	0.05	0.46	0.02	0.30	0.64	0.62	0.29	0.29	0.05	0.09	0.09	0.09
Delay/Veh:	54.5	35.1	30.3	50.3	33.8	34.7	38.1	38.1	35.7	36.1	36.1	36.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.5	35.1	30.3	50.3	33.8	34.7	38.1	38.1	35.7	36.1	36.1	36.1
LOS by Move:	D	D	C	D	C	C	D	D	D	D	D	D
HCM2k95thQ:	0	13	1	4	21	21	7	7	1	2	2	2

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AM Existing (2012) [Queuing Analysis]
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2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Highridge Road at Hawthorne Boulevard

Cycle (sec):	90	Critical Vol./Cap.(X):	0.675
Loss Time (sec):	12	Average Crit Del (sec/veh):	23.4
Optimal Cycle:	55	Level Of Service:	C

Street Name:	Highridge Road						Hawthorne Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	17	17	17	17	17	17	6	17	17	6	17	17
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	50	85	457	169	21	10	35	1142	13	189	679	102
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	85	457	169	21	10	35	1142	13	189	679	102
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	50	85	457	169	21	10	35	1142	13	189	679	102
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	50	85	457	169	21	10	35	1142	13	189	679	102
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	85	457	169	21	10	35	1142	13	189	679	102
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	85	457	169	21	10	35	1142	13	189	679	102
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.68	0.32	1.00	1.98	0.02	1.00	1.74	0.26
Final Sat.:	1600	1600	1600	1600	1084	516	1600	3164	36	1600	2782	418
Capacity Analysis Module:												
Vol/Sat:	0.03	0.05	0.29	0.11	0.02	0.02	0.02	0.36	0.36	0.12	0.24	0.24
Crit Moves:				****				****		****		
Green/Cycle:	0.19	0.19	0.36	0.19	0.19	0.19	0.15	0.51	0.51	0.17	0.53	0.53
Volume/Cap:	0.17	0.28	0.80	0.56	0.10	0.10	0.15	0.71	0.71	0.71	0.46	0.46
Delay/Veh:	30.8	31.8	34.2	35.5	30.3	30.3	33.9	18.3	18.3	43.8	13.2	13.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.8	31.8	34.2	35.5	30.3	30.3	33.9	18.3	18.3	43.8	13.2	13.2
LOS by Move:	C	C	C	D	C	C	C	B	B	D	B	B
HCM2k95thQ:	3	4	24	10	2	2	2	24	24	12	13	13

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AM Existing Plus Project (2012) [Queuing Analysis]
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2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Highridge Road at Hawthorne Boulevard

Cycle (sec):	90	Critical Vol./Cap.(X):	0.675
Loss Time (sec):	12	Average Crit Del (sec/veh):	23.5
Optimal Cycle:	55	Level Of Service:	C

Street Name:	Highridge Road						Hawthorne Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	17	17	17	17	17	17	6	17	17	6	17	17
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	51	85	464	169	21	10	35	1142	13	190	679	102
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	51	85	464	169	21	10	35	1142	13	190	679	102
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	51	85	464	169	21	10	35	1142	13	190	679	102
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	51	85	464	169	21	10	35	1142	13	190	679	102
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	51	85	464	169	21	10	35	1142	13	190	679	102
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	51	85	464	169	21	10	35	1142	13	190	679	102
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.68	0.32	1.00	1.98	0.02	1.00	1.74	0.26
Final Sat.:	1600	1600	1600	1600	1084	516	1600	3164	36	1600	2782	418
Capacity Analysis Module:												
Vol/Sat:	0.03	0.05	0.29	0.11	0.02	0.02	0.02	0.36	0.36	0.12	0.24	0.24
Crit Moves:				****				****		****		
Green/Cycle:	0.19	0.19	0.36	0.19	0.19	0.19	0.15	0.51	0.51	0.17	0.53	0.53
Volume/Cap:	0.17	0.28	0.81	0.56	0.10	0.10	0.15	0.71	0.71	0.71	0.46	0.46
Delay/Veh:	30.8	31.8	34.9	35.5	30.3	30.3	33.9	18.4	18.4	43.8	13.2	13.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.8	31.8	34.9	35.5	30.3	30.3	33.9	18.4	18.4	43.8	13.2	13.2
LOS by Move:	C	C	C	D	C	C	C	B	B	D	B	B
HCM2k95thQ:	3	4	25	10	2	2	2	24	24	12	13	13

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PM Existing (2012) [Queuing Analysis]
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2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Highridge Road at Hawthorne Boulevard

Cycle (sec):	90	Critical Vol./Cap.(X):	0.674
Loss Time (sec):	12	Average Crit Del (sec/veh):	29.1
Optimal Cycle:	55	Level Of Service:	C

Street Name:	Highridge Road						Hawthorne Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	17	17	17	17	17	17	6	17	17	6	17	17
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	39	29	300	125	14	15	8	912	21	343	954	124
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	39	29	300	125	14	15	8	912	21	343	954	124
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	39	29	300	125	14	15	8	912	21	343	954	124
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	39	29	300	125	14	15	8	912	21	343	954	124
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	39	29	300	125	14	15	8	912	21	343	954	124
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	39	29	300	125	14	15	8	912	21	343	954	124
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.48	0.52	1.00	1.95	0.05	1.00	1.77	0.23
Final Sat.:	1600	1600	1600	1600	772	828	1600	3128	72	1600	2832	368
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.19	0.08	0.02	0.02	0.01	0.29	0.29	0.21	0.34	0.34
Crit Moves:				****				****		****		
Green/Cycle:	0.19	0.19	0.48	0.19	0.19	0.19	0.11	0.39	0.39	0.29	0.57	0.57
Volume/Cap:	0.13	0.10	0.39	0.41	0.10	0.10	0.04	0.75	0.75	0.75	0.60	0.60
Delay/Veh:	30.5	30.3	15.5	33.0	30.3	30.3	35.8	26.1	26.1	35.7	13.3	13.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.5	30.3	15.5	33.0	30.3	30.3	35.8	26.1	26.1	35.7	13.3	13.3
LOS by Move:	C	C	B	C	C	C	D	C	C	D	B	B
HCM2k95thQ:	2	1	11	7	1	1	0	23	23	19	19	19

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Intersection #4 Highridge Road at Hawthorne Boulevard

Cycle (sec):	90	Critical Vol./Cap.(X):	0.679
Loss Time (sec):	12	Average Crit Del (sec/veh):	29.4
Optimal Cycle:	55	Level Of Service:	C

Street Name:	Highridge Road						Hawthorne Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	17	17	17	17	17	17	6	17	17	6	17	17
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	40	29	304	125	14	15	8	912	22	350	954	124
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	40	29	304	125	14	15	8	912	22	350	954	124
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	40	29	304	125	14	15	8	912	22	350	954	124
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	40	29	304	125	14	15	8	912	22	350	954	124
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	40	29	304	125	14	15	8	912	22	350	954	124
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	40	29	304	125	14	15	8	912	22	350	954	124
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.48	0.52	1.00	1.95	0.05	1.00	1.77	0.23
Final Sat.:	1600	1600	1600	1600	772	828	1600	3125	75	1600	2832	368
Capacity Analysis Module:												
Vol/Sat:	0.03	0.02	0.19	0.08	0.02	0.02	0.01	0.29	0.29	0.22	0.34	0.34
Crit Moves:				****				****		****		
Green/Cycle:	0.19	0.19	0.48	0.19	0.19	0.19	0.11	0.39	0.39	0.29	0.57	0.57
Volume/Cap:	0.13	0.10	0.40	0.41	0.10	0.10	0.04	0.75	0.75	0.75	0.60	0.60
Delay/Veh:	30.6	30.3	15.4	33.0	30.3	30.3	35.8	26.5	26.5	35.9	13.3	13.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.6	30.3	15.4	33.0	30.3	30.3	35.8	26.5	26.5	35.9	13.3	13.3
LOS by Move:	C	C	B	C	C	C	D	C	C	D	B	B
HCM2k95thQ:	2	1	11	7	1	1	0	23	23	19	19	19

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APPENDIX F-II

YEAR 2015 PLUS PROJECT TRAFFIC CONDITIONS

AM Cumulative (2015) [Queuing Analysis]
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Crenshaw Boulevard at Crestridge Road

Cycle (sec):	120	Critical Vol./Cap.(X):	0.540
Loss Time (sec):	16	Average Crit Del (sec/veh):	42.1
Optimal Cycle:	101	Level Of Service:	D

Street Name:	Crenshaw Boulevard						Crestridge Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	6	14	14	6	21	21	30	30	30	28	28	28
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 1	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	17	896	9	27	602	161	420	3	27	11	6	45
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	17	896	9	27	602	161	420	3	27	11	6	45
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	17	896	9	27	602	161	420	3	27	11	6	45
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	17	896	9	27	602	161	420	3	27	11	6	45
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	17	896	9	27	602	161	420	3	27	11	6	45
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	17	896	9	27	602	161	420	3	27	11	6	45
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.99	0.01	1.00	0.18	0.10	0.72
Final Sat.:	1600	3200	1600	1600	3200	1600	3177	23	1600	284	155	1161
Capacity Analysis Module:												
Vol/Sat:	0.01	0.28	0.01	0.02	0.19	0.10	0.13	0.13	0.02	0.04	0.04	0.04
Crit Moves:		****		****			****				****	
Green/Cycle:	0.08	0.33	0.33	0.05	0.30	0.30	0.25	0.25	0.25	0.23	0.23	0.23
Volume/Cap:	0.13	0.84	0.02	0.34	0.62	0.33	0.53	0.53	0.07	0.17	0.17	0.17
Delay/Veh:	51.7	43.1	26.8	57.6	37.2	32.8	39.6	39.6	34.4	36.9	36.9	36.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.7	43.1	26.8	57.6	37.2	32.8	39.6	39.6	34.4	36.9	36.9	36.9
LOS by Move:	D	D	C	E	D	C	D	D	C	D	D	D
HCM2k95thQ:	1	30	0	3	19	9	14	14	2	4	4	4

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AM Cumulative Plus Project (2015) [Queuing Analysis]
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Crenshaw Boulevard at Crestridge Road

Cycle (sec):	120	Critical Vol./Cap.(X):	0.544
Loss Time (sec):	16	Average Crit Del (sec/veh):	42.1
Optimal Cycle:	101	Level Of Service:	D

Street Name:	Crenshaw Boulevard						Crestridge Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	6	14	14	6	21	21	30	30	30	28	28	28
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 1	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	17	896	9	27	602	163	433	3	28	11	6	45
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	17	896	9	27	602	163	433	3	28	11	6	45
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	17	896	9	27	602	163	433	3	28	11	6	45
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	17	896	9	27	602	163	433	3	28	11	6	45
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	17	896	9	27	602	163	433	3	28	11	6	45
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	17	896	9	27	602	163	433	3	28	11	6	45
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.99	0.01	1.00	0.18	0.10	0.72
Final Sat.:	1600	3200	1600	1600	3200	1600	3178	22	1600	284	155	1161
Capacity Analysis Module:												
Vol/Sat:	0.01	0.28	0.01	0.02	0.19	0.10	0.14	0.14	0.02	0.04	0.04	0.04
Crit Moves:		****		****			****				****	
Green/Cycle:	0.08	0.33	0.33	0.05	0.30	0.30	0.25	0.25	0.25	0.23	0.23	0.23
Volume/Cap:	0.13	0.84	0.02	0.34	0.62	0.34	0.55	0.54	0.07	0.17	0.17	0.17
Delay/Veh:	51.7	43.1	26.8	57.6	37.2	32.9	39.9	39.9	34.4	36.9	36.9	36.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.7	43.1	26.8	57.6	37.2	32.9	39.9	39.9	34.4	36.9	36.9	36.9
LOS by Move:	D	D	C	E	D	C	D	D	C	D	D	D
HCM2k95thQ:	1	30	0	3	19	9	14	14	2	4	4	4

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PM Cumulative (2015) [Queuing Analysis]
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Crenshaw Boulevard at Crestridge Road

Cycle (sec):	120	Critical Vol./Cap.(X):	0.390
Loss Time (sec):	16	Average Crit Del (sec/veh):	36.2
Optimal Cycle:	99	Level Of Service:	D

Street Name:	Crenshaw Boulevard						Crestridge Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	6	14	14	6	21	21	28	28	28	28	28	28
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 1	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	4	510	10	54	787	348	214	5	17	5	6	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	510	10	54	787	348	214	5	17	5	6	23
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	510	10	54	787	348	214	5	17	5	6	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	4	510	10	54	787	348	214	5	17	5	6	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	4	510	10	54	787	348	214	5	17	5	6	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	4	510	10	54	787	348	214	5	17	5	6	23
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.95	0.05	1.00	0.15	0.18	0.67
Final Sat.:	1600	3200	1600	1600	3200	1600	3127	73	1600	235	282	1082
Capacity Analysis Module:												
Vol/Sat:	0.00	0.16	0.01	0.03	0.25	0.22	0.07	0.07	0.01	0.02	0.02	0.02
Crit Moves:	****				****			****			****	
Green/Cycle:	0.05	0.30	0.30	0.10	0.35	0.35	0.23	0.23	0.23	0.23	0.23	0.23
Volume/Cap:	0.05	0.52	0.02	0.35	0.70	0.62	0.29	0.29	0.05	0.09	0.09	0.09
Delay/Veh:	54.5	35.0	29.2	52.2	35.7	34.6	38.1	38.1	35.7	36.1	36.1	36.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.5	35.0	29.2	52.2	35.7	34.6	38.1	38.1	35.7	36.1	36.1	36.1
LOS by Move:	D	D	C	D	D	C	D	D	D	D	D	D
HCM2k95thQ:	0	15	1	4	24	20	7	7	1	2	2	2

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PM Cumulative Plus Project (2015) [Queuing Analysis]
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Crenshaw Boulevard at Crestridge Road

Cycle (sec):	120	Critical Vol./Cap.(X):	0.393
Loss Time (sec):	16	Average Crit Del (sec/veh):	36.3
Optimal Cycle:	99	Level Of Service:	D

Street Name:	Crenshaw Boulevard						Crestridge Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	6	14	14	6	21	21	28	28	28	28	28	28
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 1	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	5	510	10	54	787	361	221	5	18	5	6	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	510	10	54	787	361	221	5	18	5	6	23
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	510	10	54	787	361	221	5	18	5	6	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	5	510	10	54	787	361	221	5	18	5	6	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	510	10	54	787	361	221	5	18	5	6	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	5	510	10	54	787	361	221	5	18	5	6	23
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.96	0.04	1.00	0.15	0.18	0.67
Final Sat.:	1600	3200	1600	1600	3200	1600	3129	71	1600	235	282	1082
Capacity Analysis Module:												
Vol/Sat:	0.00	0.16	0.01	0.03	0.25	0.23	0.07	0.07	0.01	0.02	0.02	0.02
Crit Moves:	****				****			****			****	
Green/Cycle:	0.05	0.30	0.30	0.10	0.35	0.35	0.23	0.23	0.23	0.23	0.23	0.23
Volume/Cap:	0.06	0.52	0.02	0.35	0.70	0.64	0.30	0.30	0.05	0.09	0.09	0.09
Delay/Veh:	54.6	35.0	29.2	52.2	35.7	35.3	38.2	38.2	35.7	36.1	36.1	36.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.6	35.0	29.2	52.2	35.7	35.3	38.2	38.2	35.7	36.1	36.1	36.1
LOS by Move:	D	D	C	D	D	D	D	D	D	D	D	D
HCM2k95thQ:	0	15	1	4	24	21	7	7	1	2	2	2

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AM Cumulative (2015) [Queuing Analysis]
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Highridge Road at Hawthorne Boulevard

Cycle (sec):	90	Critical Vol./Cap.(X):	0.718
Loss Time (sec):	12	Average Crit Del (sec/veh):	25.4
Optimal Cycle:	60	Level Of Service:	C

Street Name:	Highridge Road						Hawthorne Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	17	17	17	17	17	17	6	17	17	6	17	17
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	76	88	484	176	22	10	36	1199	13	214	743	106
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	76	88	484	176	22	10	36	1199	13	214	743	106
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	76	88	484	176	22	10	36	1199	13	214	743	106
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	76	88	484	176	22	10	36	1199	13	214	743	106
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	76	88	484	176	22	10	36	1199	13	214	743	106
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	76	88	484	176	22	10	36	1199	13	214	743	106
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.69	0.31	1.00	1.98	0.02	1.00	1.75	0.25
Final Sat.:	1600	1600	1600	1600	1100	500	1600	3166	34	1600	2800	400
Capacity Analysis Module:												
Vol/Sat:	0.05	0.06	0.30	0.11	0.02	0.02	0.02	0.38	0.38	0.13	0.27	0.27
Crit Moves:				****				****		****		
Green/Cycle:	0.19	0.19	0.37	0.19	0.19	0.19	0.14	0.50	0.50	0.18	0.54	0.54
Volume/Cap:	0.25	0.29	0.83	0.58	0.11	0.11	0.17	0.76	0.76	0.76	0.49	0.49
Delay/Veh:	31.5	31.9	35.4	36.1	30.4	30.4	34.7	20.2	20.2	46.3	13.1	13.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.5	31.9	35.4	36.1	30.4	30.4	34.7	20.2	20.2	46.3	13.1	13.1
LOS by Move:	C	C	D	D	C	C	C	C	C	D	B	B
HCM2k95thQ:	4	5	26	10	2	2	2	26	26	14	14	14

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AM Cumulative Plus Project (2015) [Queuing Analysis]
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Highridge Road at Hawthorne Boulevard

Cycle (sec):	90	Critical Vol./Cap.(X):	0.719
Loss Time (sec):	12	Average Crit Del (sec/veh):	25.5
Optimal Cycle:	60	Level Of Service:	C

Street Name:	Highridge Road						Hawthorne Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	17	17	17	17	17	17	6	17	17	6	17	17
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	77	88	491	176	22	10	36	1199	13	215	743	106
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	77	88	491	176	22	10	36	1199	13	215	743	106
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	77	88	491	176	22	10	36	1199	13	215	743	106
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	77	88	491	176	22	10	36	1199	13	215	743	106
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	77	88	491	176	22	10	36	1199	13	215	743	106
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	77	88	491	176	22	10	36	1199	13	215	743	106
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.69	0.31	1.00	1.98	0.02	1.00	1.75	0.25
Final Sat.:	1600	1600	1600	1600	1100	500	1600	3166	34	1600	2800	400
Capacity Analysis Module:												
Vol/Sat:	0.05	0.06	0.31	0.11	0.02	0.02	0.02	0.38	0.38	0.13	0.27	0.27
Crit Moves:				****				****		****		
Green/Cycle:	0.19	0.19	0.37	0.19	0.19	0.19	0.14	0.50	0.50	0.18	0.54	0.54
Volume/Cap:	0.25	0.29	0.84	0.58	0.11	0.11	0.17	0.76	0.76	0.76	0.49	0.49
Delay/Veh:	31.5	31.9	36.3	36.1	30.4	30.4	34.7	20.2	20.2	46.3	13.1	13.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.5	31.9	36.3	36.1	30.4	30.4	34.7	20.2	20.2	46.3	13.1	13.1
LOS by Move:	C	C	D	D	C	C	C	C	C	D	B	B
HCM2k95thQ:	4	5	27	10	2	2	2	26	26	14	14	14

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PM Cumulative (2015) [Queuing Analysis]
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Highridge Road at Hawthorne Boulevard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.732
Loss Time (sec):	12	Average Crit Del (sec/veh):	32.9
Optimal Cycle:	64	Level Of Service:	C

Street Name:	Highridge Road						Hawthorne Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	17	17	17	17	17	17	6	17	17	6	17	17
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	66	30	318	132	14	15	8	1005	25	384	1048	131
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	66	30	318	132	14	15	8	1005	25	384	1048	131
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	66	30	318	132	14	15	8	1005	25	384	1048	131
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	66	30	318	132	14	15	8	1005	25	384	1048	131
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	66	30	318	132	14	15	8	1005	25	384	1048	131
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	66	30	318	132	14	15	8	1005	25	384	1048	131
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.48	0.52	1.00	1.95	0.05	1.00	1.78	0.22
Final Sat.:	1600	1600	1600	1600	772	828	1600	3122	78	1600	2844	356
Capacity Analysis Module:												
Vol/Sat:	0.04	0.02	0.20	0.08	0.02	0.02	0.01	0.32	0.32	0.24	0.37	0.37
Crit Moves:				****				****		****		
Green/Cycle:	0.17	0.17	0.47	0.17	0.17	0.17	0.10	0.41	0.41	0.30	0.61	0.61
Volume/Cap:	0.24	0.11	0.42	0.49	0.11	0.11	0.05	0.79	0.79	0.79	0.60	0.60
Delay/Veh:	36.4	35.3	17.7	38.9	35.3	35.3	40.9	29.3	29.3	40.5	12.5	12.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.4	35.3	17.7	38.9	35.3	35.3	40.9	29.3	29.3	40.5	12.5	12.5
LOS by Move:	D	D	B	D	D	D	D	C	C	D	B	B
HCM2k95thQ:	4	2	13	8	2	2	1	28	28	23	21	21

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PM Cumulative Plus Project (2015) [Queuing Analysis]
Crestridge Project, Rancho Palos Verdes
Linscott, Law and Greenspan, Engineers

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Highridge Road at Hawthorne Boulevard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.738
Loss Time (sec):	12	Average Crit Del (sec/veh):	33.3
Optimal Cycle:	65	Level Of Service:	C

Street Name:	Highridge Road						Hawthorne Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	17	17	17	17	17	17	6	17	17	6	17	17
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	67	30	322	132	14	15	8	1005	26	391	1048	131
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	67	30	322	132	14	15	8	1005	26	391	1048	131
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	67	30	322	132	14	15	8	1005	26	391	1048	131
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	67	30	322	132	14	15	8	1005	26	391	1048	131
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	67	30	322	132	14	15	8	1005	26	391	1048	131
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	67	30	322	132	14	15	8	1005	26	391	1048	131
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.48	0.52	1.00	1.95	0.05	1.00	1.78	0.22
Final Sat.:	1600	1600	1600	1600	772	828	1600	3119	81	1600	2844	356
Capacity Analysis Module:												
Vol/Sat:	0.04	0.02	0.20	0.08	0.02	0.02	0.01	0.32	0.32	0.24	0.37	0.37
Crit Moves:				****				****		****		
Green/Cycle:	0.17	0.17	0.48	0.17	0.17	0.17	0.10	0.40	0.40	0.31	0.61	0.61
Volume/Cap:	0.25	0.11	0.42	0.49	0.11	0.11	0.05	0.80	0.80	0.80	0.60	0.60
Delay/Veh:	36.4	35.3	17.6	38.9	35.3	35.3	40.9	29.8	29.8	40.8	12.5	12.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.4	35.3	17.6	38.9	35.3	35.3	40.9	29.8	29.8	40.8	12.5	12.5
LOS by Move:	D	D	B	D	D	D	D	C	C	D	B	B
HCM2k95thQ:	4	2	13	8	2	2	1	28	28	23	21	21

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