

Appendix G

Traffic: Supplemental Traffic Analysis (August 2012)

Traffic Impact Study (April 2011)

Construction Traffic Impact Analysis

Emergency Access and Evacuation Evaluation



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Traffic Impact Study (April 2011)

Construction Traffic Impact Analysis

Emergency Access and Evacuation Evaluation



MEMORANDUM

To: Abe Leider, AICP CEP
Rincon Consultants, Inc. Date: August 20, 2012

From: Clare Look-Jaeger, P.E., *CL-Jaeger*
Francesca Bravo, *FB* LLG Ref: 1-10-3845-1
LLG, Engineers

Subject: Supplemental Traffic Analysis for the Zone 2 Landslide Moratorium –
Portuguese Bend Project

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As requested, Linscott, Law & Greenspan, Engineers is pleased to submit this supplemental traffic analysis for inclusion into the Draft EIR for the Zone 2 Moratorium – Portuguese Bend Project. Due to the length of time that has transpired since the Notice of Preparation was circulated for public review, changes have occurred in the cumulative development projects list (i.e., the related projects list). Therefore, this supplemental traffic impact analysis was prepared in order to determine if the deletion of the former Annenberg project would change any of the previous findings and conclusions with respect to significant traffic impacts. The following paragraphs summarize the conclusions of the April 12, 2012 LLG traffic analysis as well as the supplemental traffic analysis which is presented for informational purposes.

Conclusions of the April 12, 2011 LLG Traffic Analysis

It was previously concluded in the traffic study that the proposed project would contribute on a cumulative basis to significant traffic impacts at a total of three study intersections (i.e., via application of the City's threshold criteria to the "Year 2020 Future With Project Traffic Conditions" scenario). According to the City's impact criteria, the following locations were reported to be significantly impacted by cumulative growth during the peak hours shown below with the addition of ambient growth, related projects and project-related traffic:

- Int. No. 1: Via Rivera/Hawthorne Boulevard
AM peak hour *delay* increase of 4.4 seconds [to 141.7 from 137.3 (LOS F)]
PM peak hour *delay* increase of 5.3 seconds [to 102.3 from 97.0 (LOS F)]
- Int. No. 2: Seahill Drive-Tramonto Drive/Palos Verdes Drive South
AM peak hour *delay* increase of 2.4 seconds [to 47.0 from 44.6 (LOS E)]
PM peak hour *delay* increase of 3.8 seconds [to 53.3 (LOS F) from 49.5 (LOS E)]
- Int. No. 6: Forrestal Drive/Palos Verdes Drive South
AM peak hour *delay* increase of 2.8 seconds [to 78.6 from 75.8 (LOS F)]
PM peak hour *delay* increase of 4.5 seconds [to 91.9 from 87.4 (LOS F)]

Conclusions of the Supplemental Traffic Analysis

Without the forecast traffic associated with the former Annenberg Project, we conclude that the same three study intersections identified above are expected to be significantly impacted on a cumulative basis. However, as shown in the attached **Revised Table 8-2**, Intersection No. 2 (Seahill Drive-Tramonto Drive/Palos Verdes Drive South) is now expected to be significantly impacted on a cumulative basis during *only* the PM peak hour, as compared to both the AM *and* PM peak hours when traffic associated with the Annenberg project was incorporated into the traffic analysis. Subsequently, the mitigation measures as outlined in the April 12, 2012 traffic study remain valid and unchanged.

Please feel free to call us with any questions or comments at 626.796.2322.

cc: File

REVISED TABLE 8-2
YEAR 2020 WITH PROJECT INTERSECTION LEVELS OF SERVICE SUMMARY

Int No.	Key Intersection	Unsignalized (1)/ Signalized (2)	Time Period	[1] Year 2020 Future Pre-Project Traffic Conditions			[2] Year 2020 Future With Project Traffic Conditions			[3]		[4] Year 2020 Future With Project + Mitigation			[5]	
				Delay	V/C	LOS [a]	Delay	V/C	LOS [a]	Change in V/C or Delay [(3-2)]	Significant Impact [b],[c]	Delay	V/C	LOS [a]	Change in V/C or Delay [(3-2)]	Significant Impact [b],[c]
1	Via Rivera/ Hawthorne Boulevard	1	AM	122.8	0.916	F	127.1	0.928	F	4.3	YES	83.0	0.928	F	-39.8	NO
			PM	89.5	0.698	F	94.1	0.715	F	4.6	YES	79.7	0.715	F	-9.8	NO
2	Tramonto Drive-Seahill Drive/ Palos Verdes Drive South	1	AM	39.8	0.577	E	41.7	0.592	E	1.9	NO	19.7	---	C	-20.1	NO
			PM	43.8	0.479	E	46.8	0.501	E	3.0	YES	21.2	---	C	-22.6	YES
3	Barkentine Road/ Palos Verdes Drive South	1	AM	24.9	0.133	C	25.5	0.137	D	0.6	NO	25.5	0.137	D	0.6	NO
			PM	27.6	0.115	D	28.7	0.120	D	1.1	NO	28.7	0.120	D	1.1	NO
4	Narcissa Drive/ Palos Verdes Drive South	1	AM	23.1	0.111	C	25.7	0.172	D	2.6	NO	25.7	0.172	D	2.6	NO
			PM	23.2	0.121	C	24.3	0.162	C	1.1	NO	24.3	0.162	C	1.1	NO
5	Peppertree Drive/ Palos Verdes Drive South	1	AM	26.7	0.105	D	25.6	0.131	D	-1.1	NO	25.6	0.131	D	-1.1	NO
			PM	27.7	0.122	D	26.7	0.145	D	-1.0	NO	26.7	0.145	D	-1.0	NO
6	Forrestal Drive/ Palos Verdes Drive South	1	AM	65.8	0.574	F	68.2	0.587	F	2.4	YES	---	0.713	C	0.139	YES
			PM	75.6	0.597	F	79.3	0.615	F	3.7	YES	---	0.687	B	0.090	YES
7	Palos Verdes Drive East/ Palos Verdes Drive South	1	AM	8.5	0.366	A	8.9	0.370	A	0.4	NO	8.9	0.370	A	0.4	NO
			PM	6.7	0.507	A	7.6	0.520	A	0.9	NO	7.6	0.520	A	0.9	NO

[a] Level of Service (LOS) is based on the delay for unsignalized intersections and on the reported ICU value for signalized intersections.

[b] For signalized intersections, the City of Rancho Palos Verdes utilizes the County of Los Angeles traffic thresholds of significance. According to the County of Los Angeles Department of Public Works' "Traffic Impact Analysis Report Guidelines," January 1, 1997, Page 6: "an impact is considered significant if the project related increase in the volume-to-capacity ratio (v/c) equals or exceeds the thresholds shown below:

Level of Service	Pre-Project ICU	Project-Related Increase in V/C
C	>= 0.71 - 0.80	equal to or greater than 0.040
D	>= 0.81 - 0.90	equal to or greater than 0.020
E/F	>= 0.91	equal to or greater than 0.010

[c] For unsignalized intersections, the City of Rancho Palos Verdes has established the following thresholds of significance:

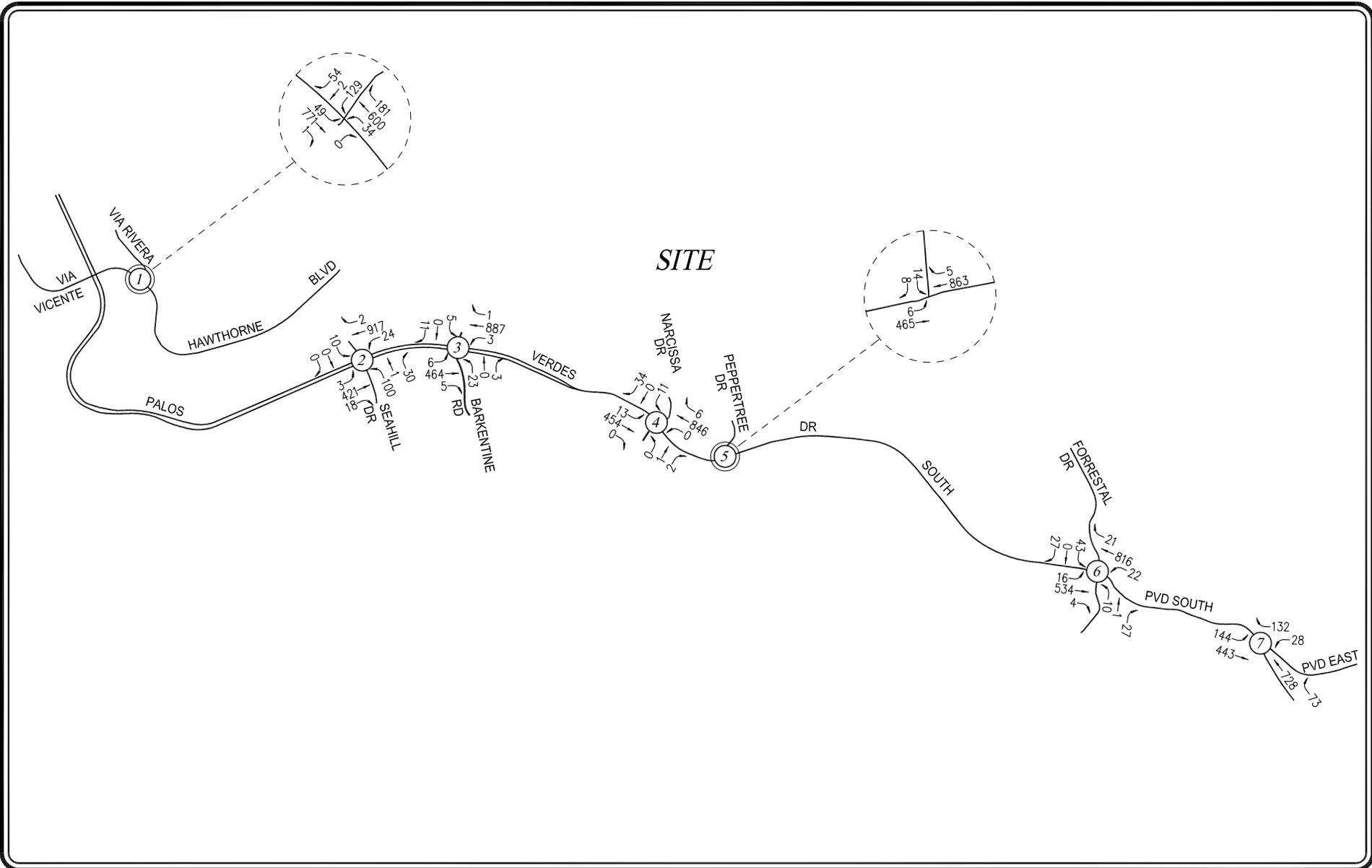
- A significant impact would occur at an unsignalized intersection when the addition of project-generated trips causes the peak hour level of service of the intersection to change from acceptable operation (LOS D or better) to deficient operation (LOS E or F); or
- A significant impact would occur at an unsignalized intersection if the peak hour level of service of the intersection is LOS E or F and the addition of project-generated trips changes the delay by 2.0 seconds or more.

APPENDIX

TRAFFIC VOLUME FIGURES

INTERSECTION LEVELS OF SERVICE DATA WORKSHEETS

c:\job_files\3845\dwg\16-6.dwg LDP 08/22/2012 08:01:51

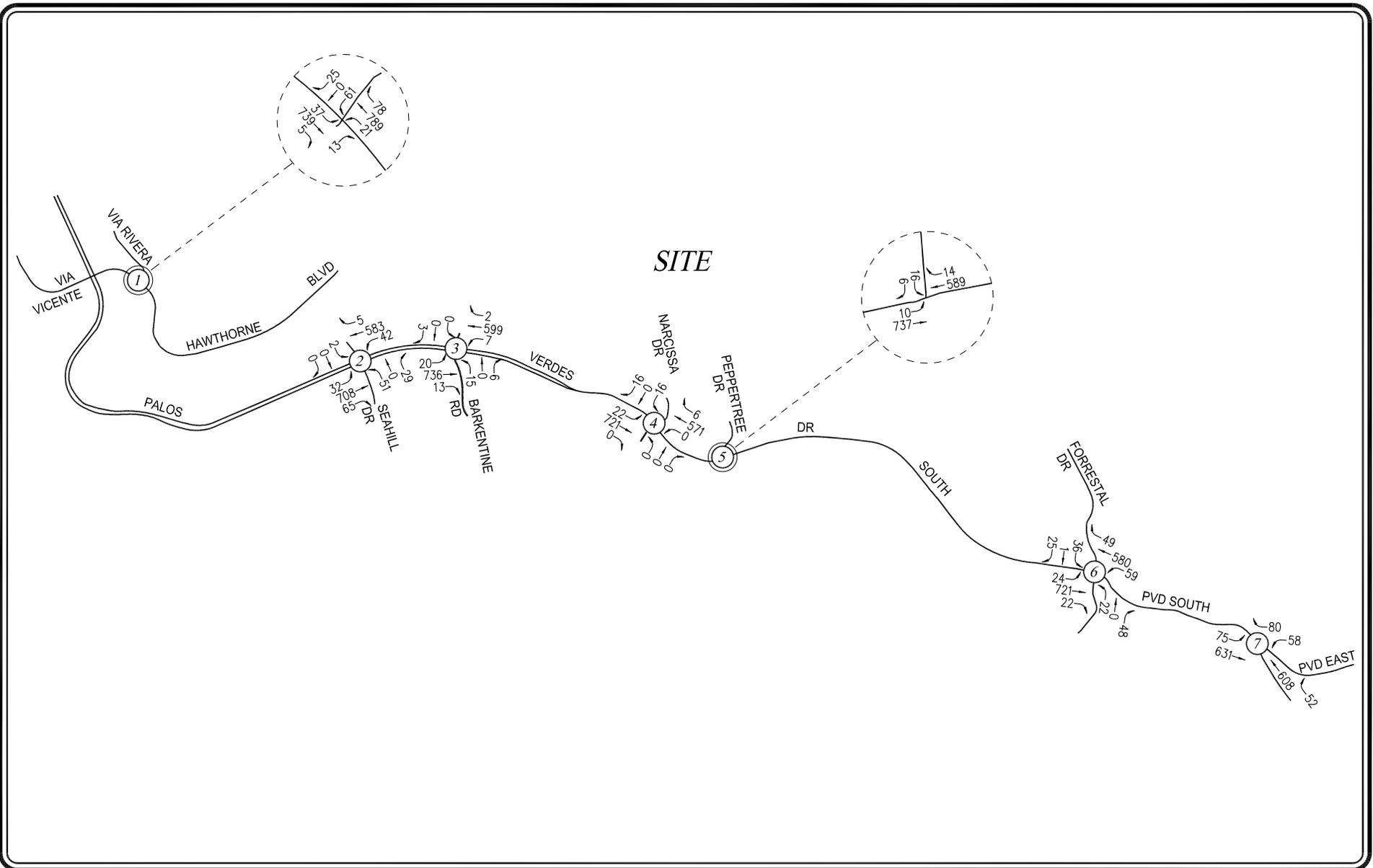


NOT TO SCALE

(X) = INTERSECTION NUMBER

FIGURE 6-6
YEAR 2020 FUTURE PRE-PROJECT TRAFFIC VOLUMES
 WEEKDAY AM PEAK HOUR

c:\job_file\3845\dwg\16-7.dwg LDP 08:05:10 08/22/2012 rodriguez



NOT TO SCALE

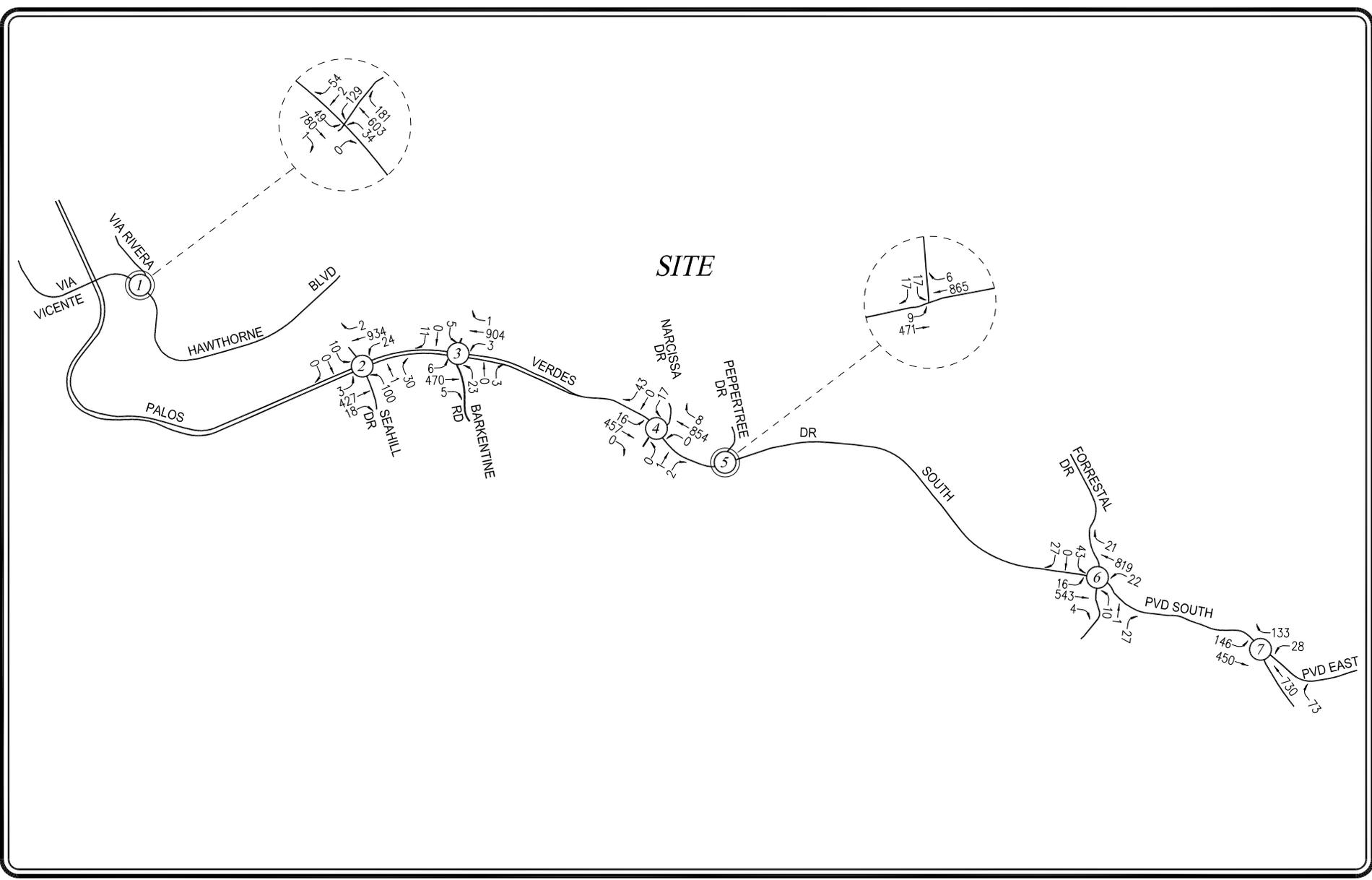
(X) = INTERSECTION NUMBER

YEAR 2020 FUTURE PRE-PROJECT TRAFFIC VOLUMES

WEEKDAY PM PEAK HOUR

FIGURE 6-7

c:\job_files\3845\dwg\16-8.dwg LDP 08/22/2012 08:07:00 rodriquez



NOT TO SCALE

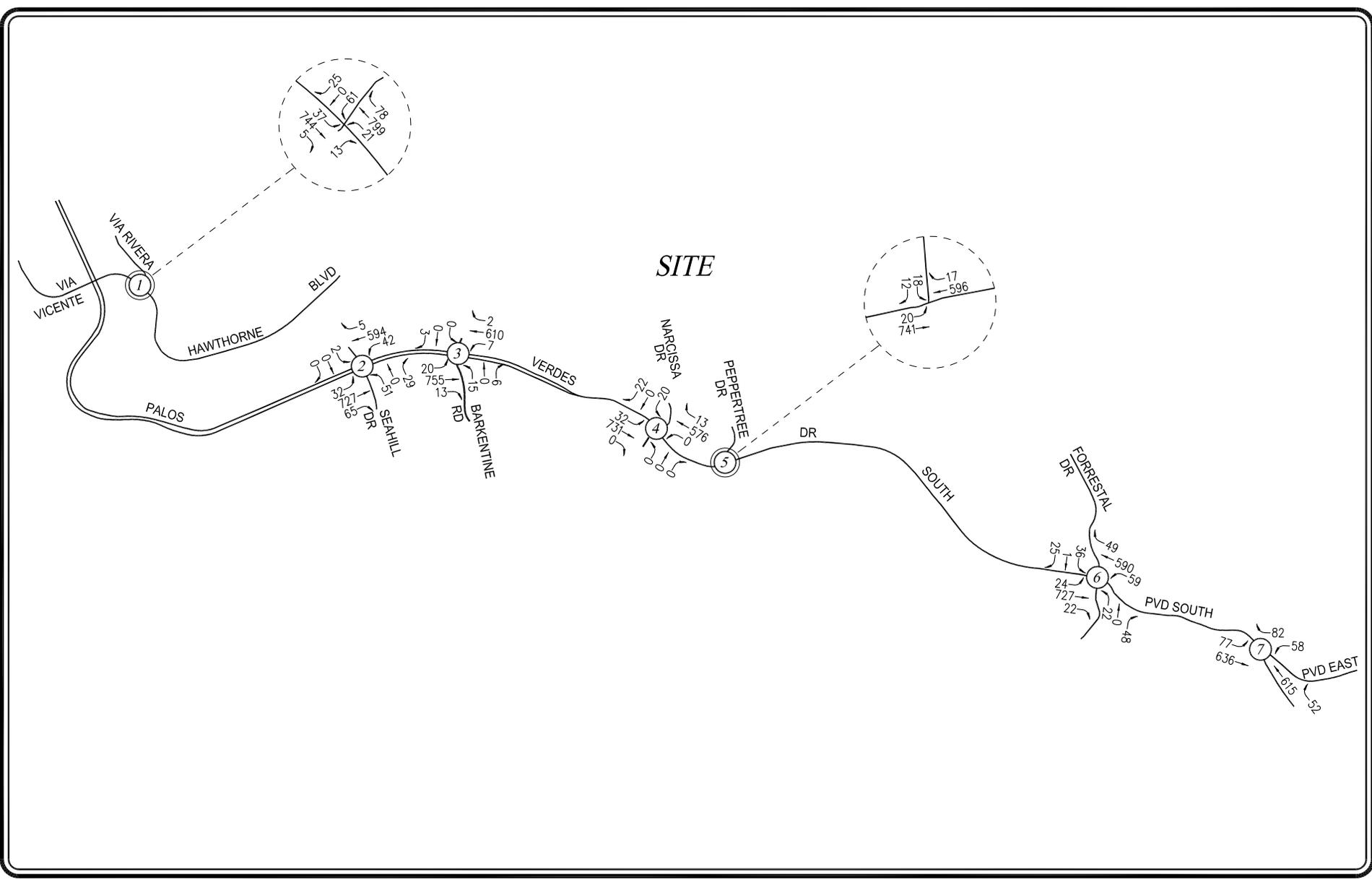
(X) = INTERSECTION NUMBER

YEAR 2020 FUTURE WITH PROJECT TRAFFIC VOLUMES

WEEKDAY AM PEAK HOUR

FIGURE 6-8

c:\job_files\3845\dwg\16-9.dwg LDP 08/22/2012 08:08:11



(X) = INTERSECTION NUMBER

NOT TO SCALE

FIGURE 6-9
YEAR 2020 FUTURE WITH PROJECT TRAFFIC VOLUMES
 WEEKDAY PM PEAK HOUR

Year 2020 With Related Projects Traffic Conditions
AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #6 Via Rivera/Hawthorne Boulevard

Average Delay (sec/veh): 12.9 Worst Case Level Of Service: F[122.8]

Street Name: Via Rivera 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: Stop Sign Stop Sign Uncontrolled Uncontrolled

Rights: Include Include Include Include

Lanes: 0 0 0 0 1 0 0 1! 0 0 1 0 1 1 0 1 0 2 0 1

Volume Module:

Table with 13 columns and 13 rows of traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module:

Table with 13 columns and 2 rows of critical gap data including Critical Gp and FollowUpTim.

Capacity Module:

Table with 13 columns and 4 rows of capacity data including Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 13 columns and 10 rows of level of service data including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

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

Year 2020 With Related Projects Traffic Conditions
AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Tramonto Drive-Seahill Drive/Palos Verdes Drive South

Average Delay (sec/veh): 3.8 Worst Case Level Of Service: E[39.8]

Street Name: Tramonto Drive-Seahill Drive Palos Verdes Drive South
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 1 0 0 1 1 0 0 0 0 1 0 1 1 0 1 0 2 0 1

Volume Module:

Table with 13 columns and 13 rows showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module:

Table with 13 columns and 2 rows showing critical gap and follow-up time data.

Capacity Module:

Table with 13 columns and 4 rows showing capacity data including Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 13 columns and 10 rows showing level of service data including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

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

Year 2020 With Related Projects Traffic Conditions
AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 Barkentine Road/Palos Verdes Drive South

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: C[24.9]

Street Name: Barkentine Road Palos Verdes Drive South

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 1! 0 0 0 0 1! 0 0 1 0 1 1 0 1 0 2 0 1

Volume Module:

Table with 13 columns and 13 rows of traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module:

Table with 13 columns and 2 rows of critical gap data including Critical Gp and FollowUpTim.

Capacity Module:

Table with 13 columns and 4 rows of capacity data including Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 13 columns and 10 rows of level of service data including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

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

Year 2020 With Related Projects Traffic Conditions
AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #48 Narcissa Drive/Palos Verdes Drive South

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: C[23.1]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes for Narcissa Drive and Palos Verdes Drive South.

Volume Module:

Table showing traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module:

Table showing critical gap metrics: Critical Gp, FollowUpTim.

Capacity Module:

Table showing capacity metrics: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table showing level of service metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

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

Year 2020 With Related Projects Traffic Conditions
AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #74 Peppertree Drive/Palos Verdes Drive South

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: D[26.7]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes. Rows include Peppertree Drive and Palos Verdes Drive South with various lane configurations and control types like Stop Sign and Uncontrolled.

Volume Module:

Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume across different approaches.

Critical Gap Module:

Table showing critical gap and follow-up time data for different approaches, with values like 6.4, 6.2, 4.1, 3.5, 3.3, and 2.2.

Capacity Module:

Table showing capacity-related data such as Conflict Vol, Potent Cap., Move Cap., and Volume/Cap. for various approaches.

Level Of Service Module:

Table showing level of service data including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

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

Year 2020 With Related Projects Traffic Conditions
AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #15 Forrestal Drive/Palos Verdes Drive South

Average Delay (sec/veh): 3.9 Worst Case Level Of Service: F[65.8]

Table with columns: Street Name, Approach, Movement, Control, Rights, Lanes. Rows include Forrestal Drive and Palos Verdes Drive South with various traffic parameters.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume. Rows show traffic volume calculations for different movements.

Critical Gap Module:

Table with columns: Critical Gp, FollowUpTim. Rows show critical gap and follow-up time values for different movements.

Capacity Module:

Table with columns: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap. Rows show capacity-related metrics for different movements.

Level Of Service Module:

Table with columns: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS. Rows show level of service and delay metrics.

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

Year 2020 With Related Projects Traffic Conditions
AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #16 Palos Verdes Drive East/Palos Verdes Drive South

Average Delay (sec/veh): 3.6 Worst Case Level Of Service: D[25.5]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes. Rows include Palos Verdes Drive East and Palos Verdes Drive South with North, South, East, and West bounds.

Volume Module:

Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module:

Table showing critical gap and follow-up time data with values like 6.4, 6.2, 4.1, 3.5, 3.3, 2.2.

Capacity Module:

Table showing capacity data including Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table showing level of service data including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

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

Year 2020 With Related Projects Traffic Conditions
PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #6 Via Rivera/Hawthorne Boulevard

Average Delay (sec/veh): 4.8 Worst Case Level Of Service: F[89.5]

Street Name: Via Rivera 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: Stop Sign Stop Sign Uncontrolled Uncontrolled

Rights: Include Include Include Include

Lanes: 0 0 0 0 1 0 0 1! 0 0 1 0 1 1 0 1 0 2 0 1

Volume Module:

Table with 13 columns and 13 rows of traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module:

Table with 13 columns and 2 rows of critical gap data including Critical Gp and FollowUpTim.

Capacity Module:

Table with 13 columns and 4 rows of capacity data including Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 13 columns and 10 rows of level of service data including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

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

Year 2020 With Related Projects Traffic Conditions
PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Tramonto Drive-Seahill Drive/Palos Verdes Drive South

Average Delay (sec/veh): 2.8 Worst Case Level Of Service: E[43.8]

Street Name: Tramonto Drive-Seahill Drive Palos Verdes Drive South
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 1 0 0 1 1 0 0 0 0 1 0 1 1 0 1 0 2 0 1

Volume Module:

Table with 13 columns and 13 rows of traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module:

Table with 13 columns and 2 rows of critical gap data including Critical Gp and FollowUpTim.

Capacity Module:

Table with 13 columns and 4 rows of capacity data including Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 13 columns and 10 rows of level of service data including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

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

Year 2020 With Related Projects Traffic Conditions
PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 Barkentine Road/Palos Verdes Drive South

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: D[27.6]

Table with columns: Street Name, Approach, Movement, Control, Rights, Lanes. Rows include Barkentine Road and Palos Verdes Drive South with various traffic parameters.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume. Rows show traffic volume calculations for each approach.

Critical Gap Module:

Table with columns: Critical Gp, FollowUpTim. Rows show critical gap and follow-up time for each approach.

Capacity Module:

Table with columns: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap. Rows show capacity-related metrics for each approach.

Level Of Service Module:

Table with columns: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS. Rows show level of service and delay metrics.

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

Year 2020 With Related Projects Traffic Conditions
PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #48 Narcissa Drive/Palos Verdes Drive South

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: C[23.2]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes for Narcissa Drive and Palos Verdes Drive South.

Volume Module:

Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module:

Table showing critical gap and follow-up time data for different movements.

Capacity Module:

Table showing capacity data including Conflict Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table showing level of service data including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

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

Year 2020 With Related Projects Traffic Conditions
PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #74 Peppertree Drive/Palos Verdes Drive South

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: D[27.7]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes. Rows include Peppertree Drive and Palos Verdes Drive South with various lane configurations and control types like Stop Sign and Uncontrolled.

Volume Module:

Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume across different movements.

Critical Gap Module:

Table showing critical gap and follow-up time data for different movements, with values like 6.4, 6.2, 4.1, 3.5, and 3.3.

Capacity Module:

Table showing capacity-related data such as Conflict Vol, Potent Cap., Move Cap., and Volume/Cap. for various movements.

Level Of Service Module:

Table showing level of service data including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

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

Year 2020 With Related Projects Traffic Conditions
PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #15 Forrestal Drive/Palos Verdes Drive South

Average Delay (sec/veh): 5.1 Worst Case Level Of Service: F[75.6]

Table with columns: Street Name, Approach, Movement, Control, Rights, Lanes. Rows include Forrestal Drive and Palos Verdes Drive South with various approach and movement details.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume. Rows show traffic volume and adjustment factors.

Critical Gap Module:

Table with columns: Critical Gp, FollowUpTim. Rows show critical gap and follow-up time values.

Capacity Module:

Table with columns: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap. Rows show conflict volume, capacity, and volume-to-capacity ratios.

Level Of Service Module:

Table with columns: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS. Rows show level of service and delay metrics.

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

Year 2020 With Related Projects Traffic Conditions
PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #16 Palos Verdes Drive East/Palos Verdes Drive South

Average Delay (sec/veh): 3.6 Worst Case Level Of Service: D[33.8]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes. Rows include Palos Verdes Drive East and Palos Verdes Drive South with North, South, East, and West bounds.

Volume Module:

Table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume. Rows include various traffic volume metrics.

Critical Gap Module:

Table with columns for Critical Gp and FollowUpTim. Rows include critical gap and follow-up time values.

Capacity Module:

Table with columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap. Rows include capacity and volume per lane metrics.

Level Of Service Module:

Table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS. Rows include level of service and delay metrics.

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

Year 2020 With Project Traffic Conditions
AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #6 Via Rivera/Hawthorne Boulevard

Average Delay (sec/veh): 13.3 Worst Case Level Of Service: F[127.1]

Table with columns for Street Name (Via Rivera, Hawthorne Boulevard), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Stop Sign, Uncontrolled), Rights (Include), and Lanes (0, 1, 2).

Volume Module:

Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume for various movements.

Critical Gap Module:

Table showing critical gap and follow-up time data for different movements, with values like 6.9, 6.8, 6.5, 6.9, 4.1, etc.

Capacity Module:

Table showing capacity data including Conflict Vol, Potent Cap., Move Cap., and Volume/Cap for various movements.

Level Of Service Module:

Table showing level of service data including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

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

Year 2020 With Project Traffic Conditions
AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Tramonto Drive-Seahill Drive/Palos Verdes Drive South

Average Delay (sec/veh): 3.9 Worst Case Level Of Service: E[41.7]

Street Name: Tramonto Drive-Seahill Drive Palos Verdes Drive South

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 1 0 0 1 1 0 0 0 0 1 0 1 1 0 1 0 2 0 1

Volume Module:

Table with 13 columns and 13 rows of traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module:

Table with 13 columns and 2 rows of critical gap data including Critical Gp and FollowUpTim.

Capacity Module:

Table with 13 columns and 4 rows of capacity data including Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 13 columns and 10 rows of level of service data including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

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

Year 2020 With Project Traffic Conditions
AM Peak Hour

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

Intersection #12 Barkentine Road/Palos Verdes Drive South

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: D[25.5]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes. Rows include Barkentine Road and Palos Verdes Drive South with various approach and movement details.

Volume Module:

Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume for various movements.

Critical Gap Module:

Table showing critical gap and follow-up time data for different movements.

Capacity Module:

Table showing capacity data including conflict volume, potent capacity, move capacity, and volume per capacity for various movements.

Level Of Service Module:

Table showing level of service data including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap, Shared Queue, Shrd ConDel, Shared LOS, Approach Del, and Approach LOS.

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

Year 2020 With Project Traffic Conditions
AM Peak Hour

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

Intersection #48 Narcissa Drive/Palos Verdes Drive South

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: D[25.7]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes for Narcissa Drive and Palos Verdes Drive South.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume for various movements.

Critical Gap Module table showing Critical Gp and FollowUpTim for various movements.

Capacity Module table showing Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap for various movements.

Level Of Service Module table showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS for various movements.

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

Year 2020 With Project Traffic Conditions
AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #74 Peppertree Drive/Palos Verdes Drive South

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: D[25.6]

Table with columns: Street Name, Approach, Movement, Control, Rights, Lanes. Rows for Peppertree Drive and Palos Verdes Drive South.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume. Rows for Peppertree Drive and Palos Verdes Drive South.

Critical Gap Module:

Table with columns: Critical Gp, FollowUpTim. Rows for Peppertree Drive and Palos Verdes Drive South.

Capacity Module:

Table with columns: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap. Rows for Peppertree Drive and Palos Verdes Drive South.

Level Of Service Module:

Table with columns: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS. Rows for Peppertree Drive and Palos Verdes Drive South.

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

Year 2020 With Project Traffic Conditions
AM Peak Hour

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

Intersection #15 Forrestal Drive/Palos Verdes Drive South

Average Delay (sec/veh): 4.0 Worst Case Level Of Service: F[68.2]

Table with columns: Street Name, Approach, Movement, Control, Rights, Lanes. Rows include Forrestal Drive and Palos Verdes Drive South with various traffic details.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume. Rows show traffic volume calculations for each approach.

Critical Gap Module:

Table with columns: Critical Gp, FollowUpTim. Rows show critical gap and follow-up time for each approach.

Capacity Module:

Table with columns: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap. Rows show capacity-related metrics for each approach.

Level Of Service Module:

Table with columns: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS. Rows show level of service and delay metrics.

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

Year 2020 With Project Traffic Conditions
AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #16 Palos Verdes Drive East/Palos Verdes Drive South

Average Delay (sec/veh): 3.7 Worst Case Level Of Service: D[25.9]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes. Rows include Palos Verdes Drive East and Palos Verdes Drive South with various approach and movement details.

Volume Module:

Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume across different approaches.

Critical Gap Module:

Table showing critical gap and follow-up time data for different approaches.

Capacity Module:

Table showing capacity data including Conflict Vol, Potent Cap., Move Cap., and Volume/Cap. for different approaches.

Level Of Service Module:

Table showing level of service data including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

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

Year 2020 With Project Traffic Conditions
PM Peak Hour

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

Intersection #6 Via Rivera/Hawthorne Boulevard

Average Delay (sec/veh): 5.0 Worst Case Level Of Service: F[94.1]

Table with columns: Street Name, Approach, Movement, Control, Rights, Lanes. Rows for Via Rivera and Hawthorne Boulevard.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume. Rows for Via Rivera and Hawthorne Boulevard.

Critical Gap Module:

Table with columns: Critical Gp, FollowUpTim. Rows for Via Rivera and Hawthorne Boulevard.

Capacity Module:

Table with columns: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap. Rows for Via Rivera and Hawthorne Boulevard.

Level Of Service Module:

Table with columns: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS. Rows for Via Rivera and Hawthorne Boulevard.

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

Year 2020 With Project Traffic Conditions
PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Tramonto Drive-Seahill Drive/Palos Verdes Drive South

Average Delay (sec/veh): 2.9 Worst Case Level Of Service: E[46.8]

Street Name: Tramonto Drive-Seahill Drive Palos Verdes Drive South

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 1 0 0 1 1 0 0 0 0 1 0 1 1 0 1 0 2 0 1

Volume Module:

Table with 13 columns and 13 rows of traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module:

Table with 13 columns and 2 rows of critical gap data including Critical Gp and FollowUpTim.

Capacity Module:

Table with 13 columns and 4 rows of capacity data including Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 13 columns and 10 rows of level of service data including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

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

Year 2020 With Project Traffic Conditions
PM Peak Hour

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

Intersection #12 Barkentine Road/Palos Verdes Drive South

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: D[28.7]

Table with columns: Street Name, Approach, Movement, Control, Rights, Lanes. Rows include Barkentine Road and Palos Verdes Drive South with various traffic details.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume. Rows show traffic volume calculations for each approach.

Critical Gap Module:

Table with columns: Critical Gp, FollowUpTim. Rows show critical gap and follow-up time for each approach.

Capacity Module:

Table with columns: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap. Rows show capacity-related metrics for each approach.

Level Of Service Module:

Table with columns: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS. Rows show level of service and delay metrics.

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

Year 2020 With Project Traffic Conditions
PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #48 Narcissa Drive/Palos Verdes Drive South

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: C[24.3]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes for Narcissa Drive and Palos Verdes Drive South.

Volume Module:

Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module:

Table showing critical gap and follow-up time data for different movements.

Capacity Module:

Table showing capacity data including Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table showing level of service data including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

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

Year 2020 With Project Traffic Conditions
PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #74 Peppertree Drive/Palos Verdes Drive South

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: D[26.7]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes. Rows include Peppertree Drive and Palos Verdes Drive South with various approach and movement details.

Volume Module:

Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume across different approaches.

Critical Gap Module:

Table showing critical gap and follow-up time data for different approaches and movements.

Capacity Module:

Table showing capacity-related data including Conflict Vol, Potent Cap., Move Cap., and Volume/Cap. for various approaches.

Level Of Service Module:

Table showing level of service data including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

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

Year 2020 With Project Traffic Conditions
PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #15 Forrestal Drive/Palos Verdes Drive South

Average Delay (sec/veh): 5.2 Worst Case Level Of Service: F[79.3]

Table with columns: Street Name, Approach, Movement, Control, Rights, Lanes. Rows include Forrestal Drive and Palos Verdes Drive South with various traffic details.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume. Rows show traffic volume data for different movements.

Critical Gap Module:

Table with columns: Critical Gp, FollowUpTim. Rows show critical gap and follow-up time data.

Capacity Module:

Table with columns: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap. Rows show capacity and conflict volume data.

Level Of Service Module:

Table with columns: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS. Rows show level of service and delay data.

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

Year 2020 With Project Traffic Conditions
PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #16 Palos Verdes Drive East/Palos Verdes Drive South

Average Delay (sec/veh): 3.7 Worst Case Level Of Service: D[34.7]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes. Rows include Palos Verdes Drive East and Palos Verdes Drive South with North, South, East, and West bounds.

Volume Module:

Table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume. Rows include various traffic volume metrics.

Critical Gap Module:

Table with columns for Critical Gp and FollowUpTim. Rows include gap and follow-up time data.

Capacity Module:

Table with columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap. Rows include capacity and volume-related metrics.

Level Of Service Module:

Table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS. Rows include level of service and delay data.

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

Year 2020 With Project Traffic Conditions
AM Peak Hour

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

Intersection #6 Via Rivera/Hawthorne Boulevard

Average Delay (sec/veh): 8.8 Worst Case Level Of Service: F[83.0]

Table with columns for Street Name (Via Rivera, Hawthorne Boulevard), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, and Lanes.

Volume Module: Table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module: Table with columns for Critical Gp and FollowUpTim.

Capacity Module: Table with columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module: Table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

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

Year 2020 With Project Traffic Conditions
PM Peak Hour

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

Intersection #6 Via Rivera/Hawthorne Boulevard

Average Delay (sec/veh): 4.3 Worst Case Level Of Service: F[79.7]

Table with columns for Street Name (Via Rivera, Hawthorne Boulevard), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, and Lanes.

Table for Volume Module showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume across various movements.

Table for Critical Gap Module showing Critical Gp and FollowUpTim for different movements.

Table for Capacity Module showing Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap for various movements.

Table for Level of Service Module showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

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

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	FSB	Intersection	Int #2:PVDS/Tramonto-Seahill
Agency/Co.	LLG Engineers	Jurisdiction	City of Rancho Palos Verdes
Date Performed	08/14/12	Analysis Year	Future With Project
Analysis Time Period	AM Peak Hour		
Project Description <i>Zone 2 - Portuguese Bend Project/1-10-3845-1</i>			
East/West Street: <i>Palos Verdes Drive South</i>		North/South Street: <i>Tramonto Drive-Seahill Drive</i>	
Intersection Orientation: <i>East-West</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments						
Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	3	427	18	24	934	2
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR (veh/h)	3	464	19	26	1015	2
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Raised curb</i>					
RT Channelized			0			0
Lanes	1	2	0	1	2	1
Configuration	L	T	TR	L	T	R
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	100	1	30	10	0	0
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR (veh/h)	108	1	32	10	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R		LTR	

Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LT		R		LTR	
v (veh/h)	3	26	109		32		10	
C (m) (veh/h)	690	1090	312		802		195	
v/c	0.00	0.02	0.35		0.04		0.05	
95% queue length	0.01	0.07	1.52		0.12		0.16	
Control Delay (s/veh)	10.2	8.4	22.6		9.7		24.5	
LOS	B	A	C		A		C	
Approach Delay (s/veh)	--	--	19.7			24.5		
Approach LOS	--	--	C			C		

TWO-WAY STOP CONTROL SUMMARY

General Information			Site Information		
Analyst	FSB		Intersection	Int #2:PVDS/Tramonto-Seahill	
Agency/Co.	LLG Engineers		Jurisdiction	City of Rancho Palos Verdes	
Date Performed	08/14/12		Analysis Year	Future With Project	
Analysis Time Period	PM Peak Hour				
Project Description <i>Zone 2 - Portuguese Bend Project/1-10-3845-1</i>					
East/West Street: <i>Palos Verdes Drive South</i>			North/South Street: <i>Tramonto Drive-Seahill Drive</i>		
Intersection Orientation: <i>East-West</i>			Study Period (hrs): <i>0.25</i>		

Vehicle Volumes and Adjustments						
Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	32	727	65	42	594	5
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR (veh/h)	34	790	70	45	645	5
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Raised curb</i>					
RT Channelized			0			0
Lanes	1	2	0	1	2	1
Configuration	L	T	TR	L	T	R
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	51	0	29	2	0	0
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR (veh/h)	55	0	31	2	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R		LTR	

Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LT		R		LTR	
v (veh/h)	34	45	55		31		2	
C (m) (veh/h)	946	790	218		629		242	
v/c	0.04	0.06	0.25		0.05		0.01	
95% queue length	0.11	0.18	0.97		0.16		0.02	
Control Delay (s/veh)	8.9	9.8	27.0		11.0		20.0	
LOS	A	A	D		B		C	
Approach Delay (s/veh)	--	--	21.2			20.0		
Approach LOS	--	--	C			C		

Year 2020 With Related Projects Traffic Conditions
AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #15 Forrestal Drive/Palos Verdes Drive South

Cycle (sec): 100 Critical Vol./Cap.(X): 0.713
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 52 Level Of Service: C

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, and Lanes. Rows include Forrestal Drive (North/South Bound) and Palos Verdes Drive South (East/West Bound).

Volume Module: Table showing traffic volume metrics such as Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module: Table showing saturation flow metrics like Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table showing capacity analysis metrics like Vol/Sat and Crit Moves.

Year 2020 With Related Projects Traffic Conditions
PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #15 Forrestal Drive/Palos Verdes Drive South

Cycle (sec): 100 Critical Vol./Cap.(X): 0.687
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 48 Level Of Service: B

Street Name: Forrestal Drive Palos Verdes Drive South
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 Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
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 0 1 0 1 0 0 1 0 1 1 0 1 0 1

Volume Module:
Base Vol: 17 0 29 34 1 24 23 557 13 27 425 46
Growth Adj: 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06
Initial Bse: 18 0 31 36 1 25 24 590 14 29 451 49
Added Vol: 4 0 17 0 0 0 0 131 8 30 129 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 22 0 48 36 1 25 24 721 22 59 580 49
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92
PHF Volume: 24 0 52 39 1 28 27 784 24 64 630 53
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 24 0 52 39 1 28 27 784 24 64 630 53
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: 24 0 52 39 1 28 27 784 24 64 630 53

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 0.00 1.00 1.00 0.04 0.96 1.00 1.00 1.00 1.00 1.00 1.00
Final Sat.: 1600 0 1600 1600 64 1536 1600 1600 1600 1600 1600 1600

Capacity Analysis Module:
Vol/Sat: 0.01 0.00 0.03 0.02 0.02 0.02 0.02 0.49 0.01 0.04 0.39 0.03
Crit Moves: **** *

TRAFFIC IMPACT STUDY
**ZONE 2 LANDSLIDE MORATORIUM -
PORTUGUESE BEND PROJECT**
City of Rancho Palos Verdes, California
April 12, 2011

Prepared for:

Rincon Consultants, Inc.
790 E. Santa Clara Street
Ventura, California 93001

LLG Ref. 1-10-3845-1



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TRAFFIC IMPACT STUDY
ZONE 2 LANDSLIDE MORATORIUM -
PORTUGUESE BEND PROJECT
City of Rancho Palos Verdes, California
April 12, 2011

1.0 INTRODUCTION

This traffic impact study addresses the potential traffic impacts and parking requirements associated with the proposed Zone 2 Landslide Moratorium project. The proposed project is located in the Portuguese Bend area of the City of Rancho Palos Verdes, California. The City of Rancho Palos Verdes is considering revisions to its Landslide Moratorium Ordinance that would facilitate the future development of single-family residences on undeveloped lots within a portion of the City's Portuguese Bend community (i.e., Zone 2). The proposed Zone 2 Landslide Moratorium - Portuguese Bend project site area and general vicinity are shown in *Figure 1-1*.

This report documents the findings and recommendations of a traffic impact analysis prepared by Linscott, Law & Greenspan, Engineers and summarizes the potential traffic impacts associated with the proposed project. The traffic analysis evaluates the existing operating conditions at seven 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 and/or mitigation measures are identified. This report has been prepared in consultation with City of Rancho Palos Verdes Public Works Department staff and presents findings for future year operating conditions (Year 2020) pursuant to the requirements of City staff.

This traffic report satisfies the traffic impact study requirements of the City of Rancho Palos Verdes and is consistent with the *2010 Congestion Management Program for Los Angeles County*¹. The specific parameters for this traffic study were developed in conjunction with City of Rancho Palos Verdes Public Works Department staff. The project site has been visited and observed and the adjacent area roadways, intersections, and existing parking conditions have been inventoried. Existing peak hour traffic information has been collected at the seven study intersections on a typical weekday (i.e., Tuesday, Wednesday, or Thursday) 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 Cities of Rancho Palos Verdes, Palos Verdes Estates, Rolling Hills, Rolling Hills Estates, and Los Angeles, as well as other traffic studies prepared for projects in the vicinity. Based on this research, 34 related projects are planned in the project study area. These 34 planned and/or approved related projects were therefore considered in the cumulative traffic analysis for this project.

¹ *2010 Congestion Management Program for Los Angeles County*, Los Angeles County Metropolitan Transportation Authority, October 2010.

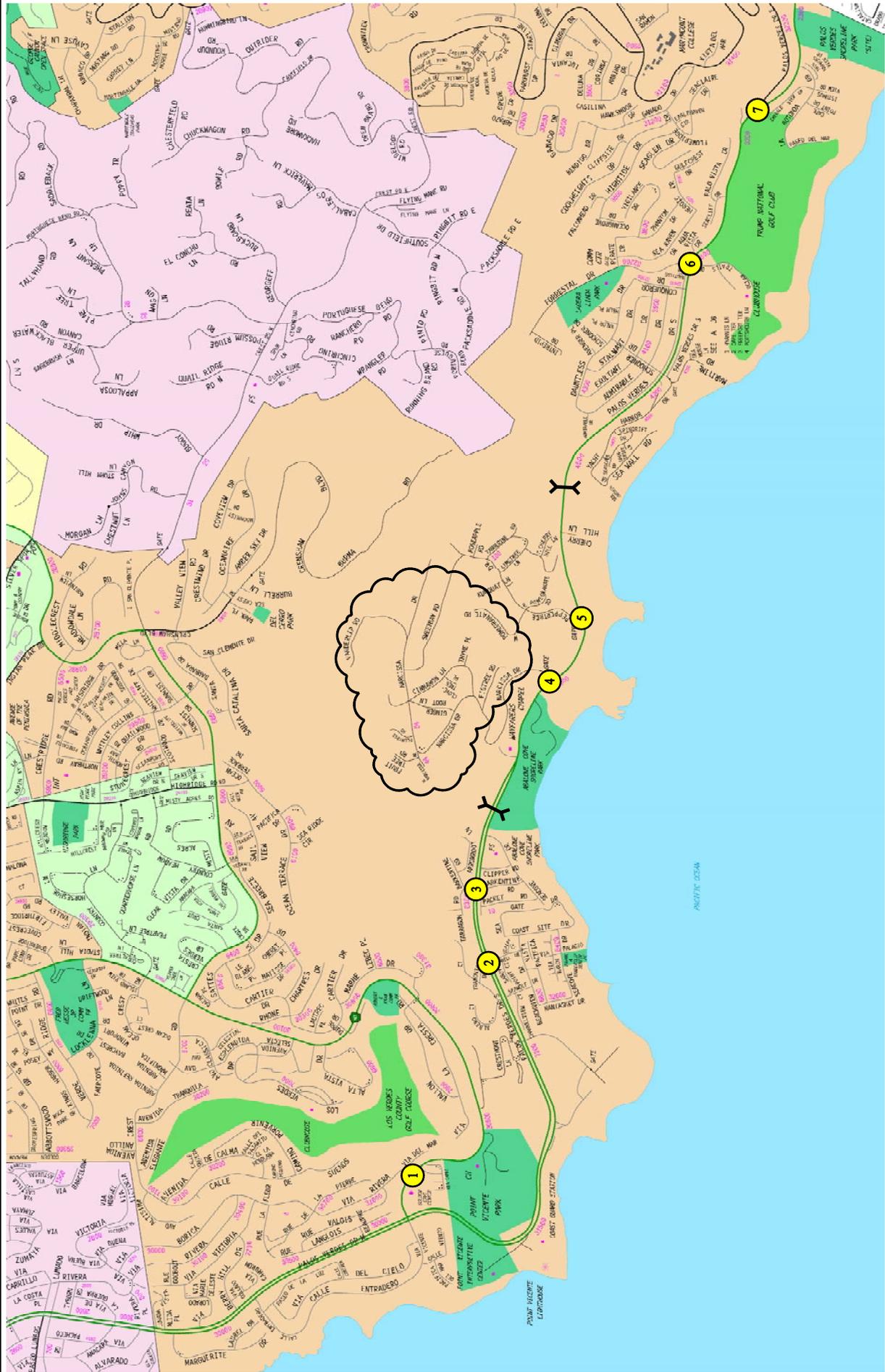


FIGURE 1-1
VICINITY MAP

MAP SOURCE: THOMAS BROS. GUIDE
 STUDY INTERSECTION
 STUDY STREET SEGMENT
 PROJECT AREA

NOT TO SCALE

LINSCOTT, LAW & GREENSPAN, engineers

ZONE 2 LANDSLIDE MORATORIUM - PORTUGUESE BEND PROJECT

This traffic report analyzes existing and future weekday AM and PM peak hour traffic conditions for future-term (Year 2020) traffic settings upon completion of the proposed Zone 2 Landslide Moratorium - Portuguese Bend project. Peak hour traffic forecasts for the future horizon years have been projected by increasing existing traffic volumes by an annual growth rate of 0.6 percent (0.6%) per year and adding traffic volumes expected to be generated by the 34 related projects.

1.1 Study Area

Seven study intersections have been identified for evaluation during the weekday morning and afternoon peak hour conditions based upon coordination with City of Rancho Palos Verdes Public Works Department staff. The seven study intersections provide local access to the study area and define the extent of the boundaries for this traffic impact analysis. Further discussion of the existing street system and study area is provided in Section 4.0 herein.

The general location of the project in relation to the study locations and surrounding street system is presented in *Figure 1-1*. The traffic analysis study area is generally comprised of those locations which have the greatest potential to experience significant traffic impacts due to the proposed project as defined by the Lead Agency. In the traffic engineering practice, the study area generally includes those intersections that are:

- a. Immediately adjacent or in close proximity to the project site;
- b. In the vicinity of the project site that are documented to have current or projected future adverse operational issues; and
- c. In the vicinity of the project site that are forecast to experience a relatively greater percentage of project-related vehicular turning movements (e.g., at freeway ramp intersections).

The locations selected for analysis were based on the above criteria, forecast project peak hour vehicle trip generation, anticipated distribution of project vehicle trips and existing intersection/corridor operations. The seven intersections listed below provide local access to the study area and define the extent of the boundaries for this traffic impact investigation.

1. Hawthorne Boulevard/Via Rivera
2. Tramonto Drive-Seahill Drive/Palos Verdes Drive South
3. Barkentine Road/Palos Verdes Drive South
4. Narcissa Drive/Palos Verdes Drive South
5. Peppertree Drive/Palos Verdes Drive South
6. Forrestal Drive/Palos Verdes Drive South

7. Palos Verdes Drive East/Palos Verdes Drive South

The Volume-Capacity and Level of Service calculations for these key locations were used to evaluate the potential traffic-related impacts associated with area growth, cumulative projects and the proposed Zone 2 Landslide Moratorium - Portuguese Bend 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 to reduce a significant project impact to less than significant levels.

The following components are included as part of this traffic and parking analysis:

- Existing traffic counts,
- Estimated project traffic generation/distribution/assignment,
- Estimated cumulative project traffic generation/distribution/assignment,
- Weekday AM and PM peak hour capacity analyses for existing conditions,
- Weekday AM and PM peak hour capacity analyses for existing with project conditions,
- Weekday AM and PM peak hour capacity analyses for future (Year 2020) conditions without and with project traffic,
- Project-specific improvements, where necessary, and
- Congestion management program traffic impact assessment.

2.0 PROJECT DESCRIPTION

2.1 Project Location

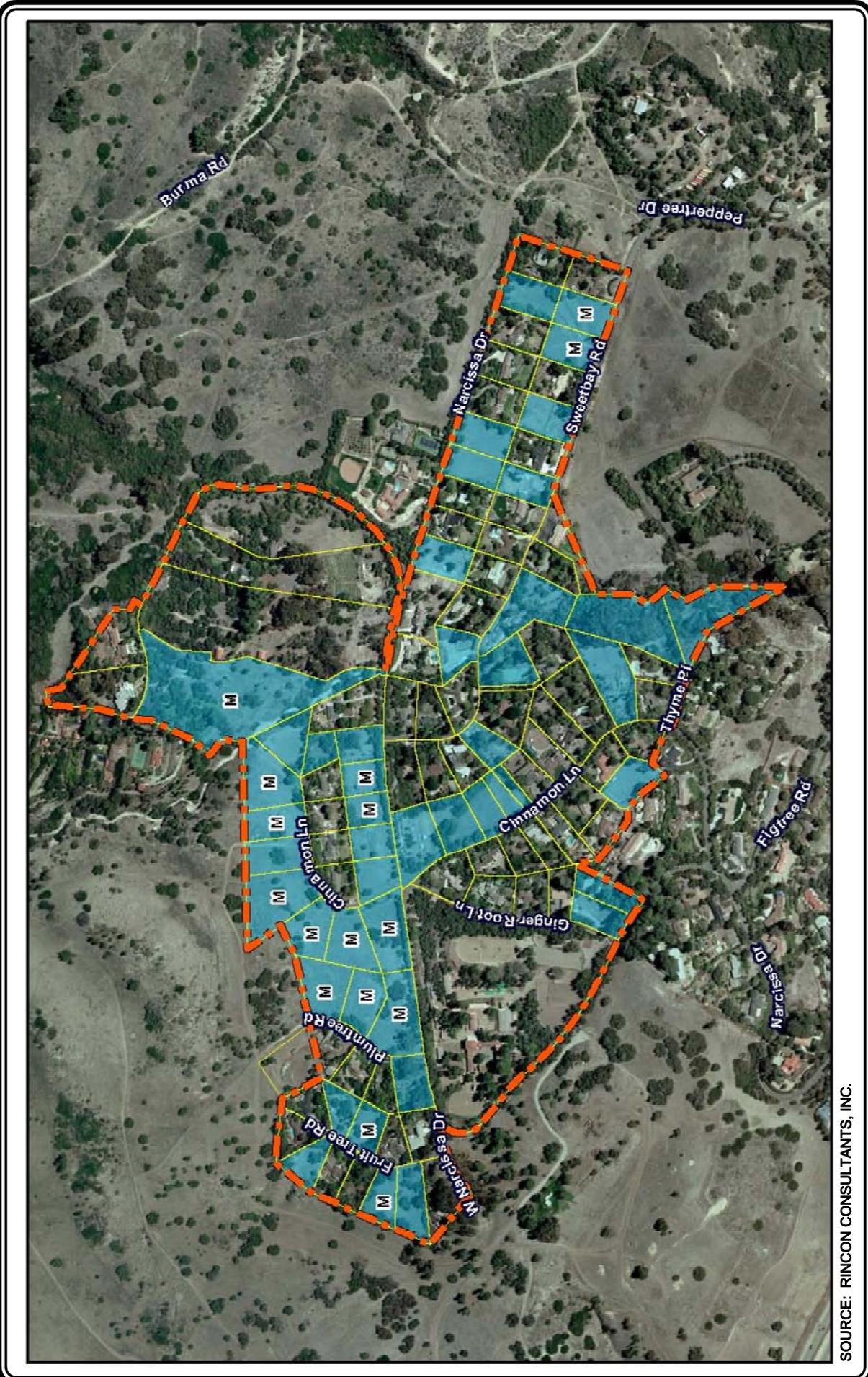
The proposed ordinance revisions would apply to the approximately 112-acre “Zone 2 Landslide Moratorium Ordinance” area, located north of the Narcissa Drive/Palos Verdes Drive South intersection in the Portuguese Bend area of the Palos Verdes Peninsula, within the City of Rancho Palos Verdes, County of Los Angeles, California. This area, located on the hills above the south-central coastline of the City, is within the City’s larger (approximately 1,200-acre) Landslide Moratorium Area (LMA). Zone 2 consists of 111 individual lots. Of these, 64 are developed with residences and accessory structures and 47 are undeveloped or underdeveloped. These latter 47 are the focus of this traffic impact study and the project’s environmental impact report. The proposed Zone 2 Landslide Moratorium - Portuguese Bend project site area and general vicinity are shown in *Figure 1-1*. The locations of the 47 undeveloped lots within the Portuguese Bend community under consideration by the City is displayed in *Figure 2-1*.

2.2 Current Land Use

Of the approximately 111 lots on the 112-acre project area (the Zone 2 area), the vast majority of the developed lots are improved with single-family residences, most dating from the 1950s, and related accessory structures and uses. The largest developed lot in Zone 2 is occupied by the Portuguese Bend Riding Club, a nonconforming commercial stable that was established prior to the City’s incorporation in 1973. Private streets within Zone 2 are maintained by the Portuguese Bend Community Association. The majority of the undeveloped lots contain non-native vegetation, and some have small, non-habitable structures (e.g., sheds, stables, fences, etc.) for equestrian or horticultural uses. The lots are generally between one-quarter acre and one acre or more in size.

2.3 Surrounding Land Uses

The approximately 112-acre Zone 2 area is primarily surrounded by open space and semi-rural residential development. To the northeast of the project area are developed residential lots in the Portuguese Bend community as well as City-owned open space in the Portuguese Bend Reserve of the Palos Verdes Nature Preserve, both of which are within Zone 1 of the Landslide Moratorium Area. To the northwest and west of the project area are developed residential lots in the Portuguese Bend community and vacant, residentially-zoned land (Upper and Lower Filiorum) which are located in Zone 1 of the Landslide Moratorium Area. To the south, southeast and east of the project area are developed and undeveloped residential lots in the Portuguese Bend community and located in Zone 5 (the area affected by the 1978 Abalone Cove landslide), Zone 6 (the active Portuguese Bend landslide area) and Zone 3 (located between Altamira Canyon and the westerly edge of the Portuguese Bend landslide area). Individual lots that would gain development potential as a result of the proposed project are located throughout Zone 2, and are therefore surrounded by the uses described above as well as other lots, both developed and undeveloped, in Zone 2.

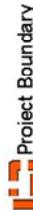


SOURCE: RINCON CONSULTANTS, INC.



NOT TO SCALE

LEGEND:



Project Boundary



Vacant or Underdeveloped, Potentially Developable under Proposed Ordinance Revisions



Monks Plaintiff Lot

FIGURE 2-1
LOCATION OF PROJECT
UNDEVELOPED LOTS

ZONE 2 LANDSLIDE MORATORIUM - PORTUGUESE BEND PROJECT

LINSCOTT, LAW & GREENSPAN, engineers

2.4 Project Characteristics

2.4.1 Project Background

In 2002, a group of Portuguese Bend property owners filed an ME application to exclude their undeveloped lots within the area known as Zone 2 from the LMA. Shortly after this application was deemed incomplete for processing, the applicants filed suit against the City. As part of the decision on the case (*Monks v. City of Rancho Palos Verdes*), the City has been ordered to remove regulatory impediments in its Municipal Code that prevent the development of the 16 *Monks* plaintiffs' lots. The City began this process with an Ordinance to allow the *Monks* plaintiffs to apply for Landslide Moratorium Exceptions (LMEs) for their lots. As of December 2010, five (5) *Monks* plaintiffs have obtained Planning entitlements to develop their lots, while the remaining *Monks* plaintiffs are at various stages in obtaining Planning entitlements for the balance of eleven (11) lots. The City now desires to consider broader revisions to the Landslide Moratorium Ordinance that could also permit the owners of the other 31 undeveloped lots in Zone 2 to be developed with new residences. This would result in the possible future development of up to 47 new residences on existing legal lots in Zone 2 within the Portuguese Bend community.

2.4.2 Project Description

Landslide Moratorium Ordinance Revisions. Section 15.20.040 of the Rancho Palos Verdes Municipal Code establishes the process for requesting exceptions from the City's landslide moratorium regulations. The current (amended in 2009) Municipal Code Section 15.20.040(P) includes the following category of exception to the moratorium on "the filing, processing, approval or issuance of building, grading or other permits" within the existing landslide moratorium area:

The moratorium shall not be applicable to any of the following:...

...P. The construction of residential buildings, accessory structures, and grading totaling less than one thousand cubic yards of combined cut and fill and including no more than fifty cubic yards of imported fill material on the sixteen undeveloped lots in Zone 2 of the "Landslide Moratorium Area" as outlined in green on the landslide moratorium map on file in the Director's office, identified as belonging to the plaintiffs in the case "Monks v. City of Rancho Palos Verdes, 167 Cal. App. 4th 263, 84 Cal. Rptr. 3d 75 (Cal. App. 2 Dist., 2008)"; provided, that a landslide moratorium exception permit is approved by the Director, and provided that the project complies with the criteria set forth in Section 15.20.050 of this Chapter. Such projects shall qualify for a landslide moratorium exception permit only if all applicable requirements of this Code are satisfied, and the parcel is served by a sanitary sewer system. Prior to the issuance of a landslide moratorium exception permit, the applicant shall submit to the Director any geological or geotechnical studies reasonably required by the City to demonstrate to the satisfaction of the City geotechnical staff that the proposed project will not aggravate the existing situation.

The proposed landslide moratorium ordinance revisions would revise the language of this section to encompass all 47 undeveloped lots in Zone 2, rather than restricting it to only the *Monks* plaintiffs' lots. This would allow for the future submittal of LMEs for all of these undeveloped lots. It should

be noted, however, that the granting of an LME does not constitute approval of a specific project request, but simply grants the property owner the ability to submit the appropriate application(s) for consideration of a specific project request.

Future Development Potential. The potential granting of up to 47 LME requests under the proposed ordinance revisions would permit individual property owners to then apply for individual entitlements to develop their lots. The undeveloped lots within Zone 2 are held in multiple private ownerships so the timing and scope of future development is not known. For the purposes of this EIR, it is assumed that development would occur over a period of at least 10 years from adoption of the ordinance revisions in a manner consistent with the private architectural standards adopted by the Portuguese Bend Community Association and the City's underlying RS-1 and RS-2 zoning regulations. Therefore, the future development assumptions for Zone 2 include the following:

- Forty-seven single-story, ranch-style residences with attached or detached three-car garages, with minimum living area of 1,500 square feet and maximum living area of 4,000 square feet or 15% of gross lot area, whichever is less;
- Less than 1,000 cubic yards of grading (cut and fill combined) per lot, with no more than 50 cubic yards of imported fill per lot;
- Maximum 25% (RS-1) or 40% (RS-2) net lot coverage;
- Maximum building height of 16 feet for residences and 12 feet for detached accessory structures;
- Minimum front setbacks of 20 feet, minimum rear setbacks of 15 feet, minimum street-side setbacks of 10 feet, and minimum interior side setbacks of five feet, with setbacks along private street rights-of-way measured from the easement line rather than the property line; and,
- No subdivision of existing lots within Zone 2.

As noted above, the City has been ordered to remove regulatory impediments in its Municipal Code that prevent the development of the 16 *Monks* plaintiffs' lots. This was accomplished by the 2009 addition to the moratorium exceptions, cited above. As of December 2010, five *Monks* plaintiffs have obtained planning entitlements to develop their lots, while the remaining *Monks* plaintiffs are at various stages in obtaining planning entitlements for the balance of eleven lots. However, to provide a conservative analysis, this traffic impact study considers the potential environmental impacts of build-out of all 47 undeveloped and underdeveloped lots (16 *Monks* lots plus 31 additional lots) under the parameters listed above.

3.0 PROJECT SITE ACCESS AND CIRCULATION

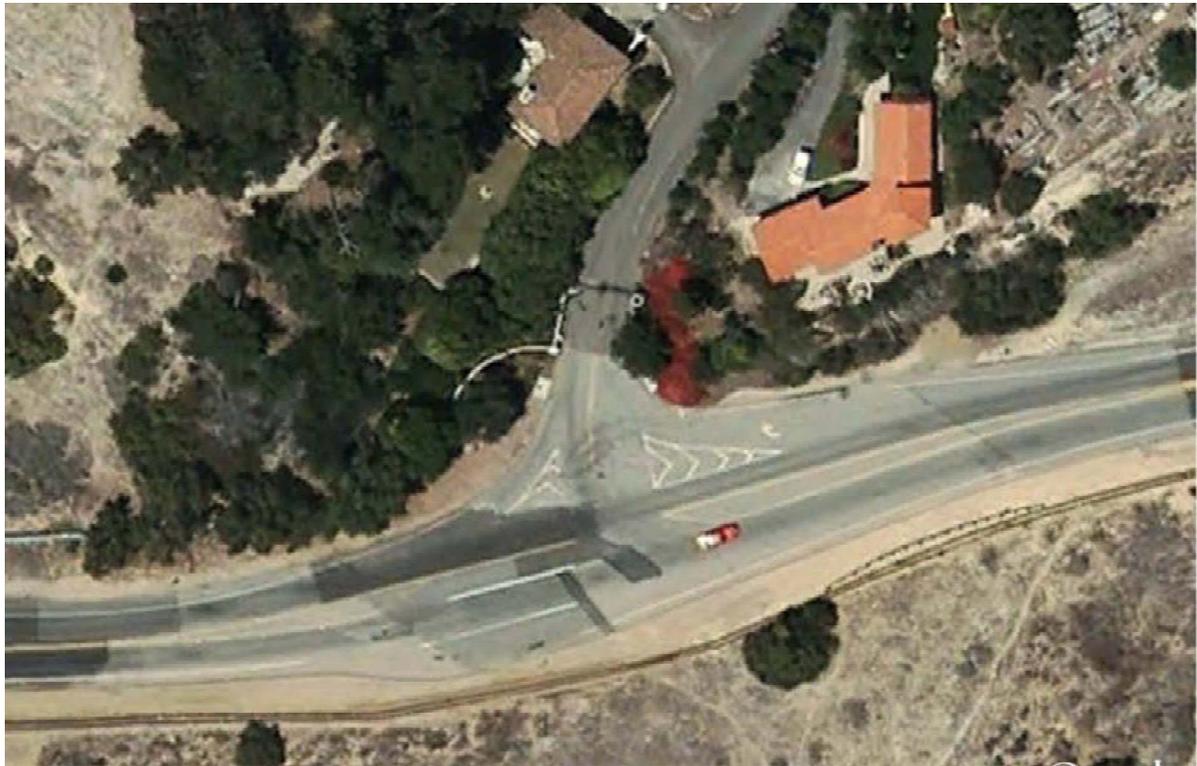
Access to the existing Portuguese Bend community of Rancho Palos Verdes is provided via Narcissa Drive and Peppertree Drive. All streets in the Portuguese Bend community are private, and the community itself is gated. The gates restricting access to the community on Narcissa Drive and Peppertree Drive are set back approximately 190 and 90 feet from Palos Verdes Drive South, respectively. The following lane configurations are provided at the existing access locations for the community:

- Narcissa Drive/Palos Verdes Drive South
 - Eastbound Approach: One left-turn lane and one shared through/right-turn lane
 - Westbound Approach: One left-turn lane, one through lane and one right-turn lane
 - Southbound Approach: One shared left-turn/through lane and one right-turn lane
- Peppertree Drive/Palos Verdes Drive South
 - Eastbound Approach: One left-turn lane and one through lane
 - Westbound Approach: One through lane and one right-turn lane
 - Southbound Approach: One left-turn lane and one right-turn lane

No changes to the existing Portuguese Bend community site access and circulation scheme are planned as part of the proposed project. Aerial photographs of the two subject Portuguese Bend community access intersections are displayed in *Figure 3-1*.



Palos Verdes Drive South and Narcissa Drive



Palos Verdes Drive South and Peppertree Drive



NOT TO SCALE

SOURCE: GOOGLE EARTH

FIGURE 3-1 PORTUGUESE BEND COMMUNITY ACCESS INTERSECTIONS

LINSCOTT, LAW & GREENSPAN, engineers

ZONE 2 LANDSLIDE MORATORIUM - PORTUGUESE BEND PROJECT

4.0 EXISTING CONDITIONS

4.1 Existing Street System

The local network of streets serving the proposed project study area includes Palos Verdes Drive West, Palos Verdes Drive South and Hawthorne Boulevard. All of the seven study intersections selected for analysis are controlled by stop signs with the stop signs facing the minor street approaches. The existing roadway configurations and intersection controls at the seven study intersections are displayed in *Figure 4-1*.

4.1.1 Roadway Classifications

The City of Rancho Palos Verdes utilizes the roadway categories recognized by regional, state and federal transportation agencies. There are four categories in the roadway hierarchy, ranging from freeways with the highest capacity to two-lane undivided roadways with the lowest capacity. The roadway categories are summarized as follows:

- *Freeways* are limited-access and high-speed travel ways included in the state and federal highway systems. Their purpose is to carry regional through-traffic. Access is provided by interchanges with typical spacing of one mile or greater. No local access is provided to adjacent land uses.
- *Arterial* roadways are major streets that primarily serve through-traffic and provide access to abutting properties as a secondary function. Arterials are generally designed with two to six travel lanes and their major intersections are signalized. This roadway type is divided into two categories: principal and minor arterials. Principal arterials are typically four-or-more lane roadways and serve both local and regional through-traffic. Minor arterials are typically two-to-four lane streets that service local and commute traffic.
- *Collector* roadways are streets that provide access and traffic circulation within residential and non-residential (e.g., commercial and industrial) areas. Collector roadways connect local streets to arterials and are typically designed with two through travel lanes (i.e., one through travel lane in each direction) that may accommodate on-street parking. They may also provide access to abutting properties.
- *Local* roadways distribute traffic within a neighborhood, or similar adjacent neighborhoods, and are not intended for use as a through-street or a link between higher capacity facilities such as collector or arterial roadways. Local streets are fronted by residential uses and do not typically serve commercial uses.

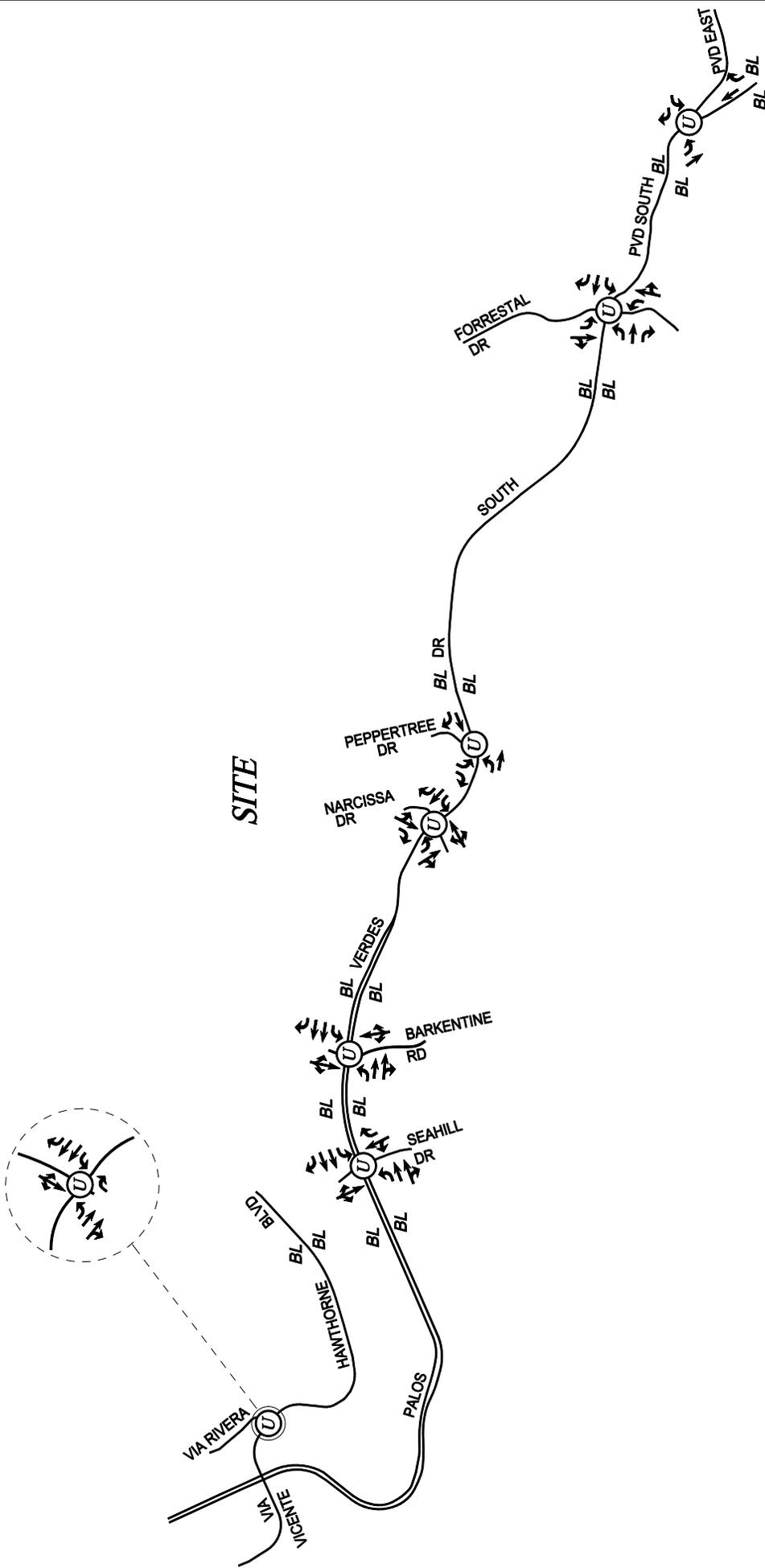


FIGURE 4-1
EXISTING ROADWAY CONFIGURATIONS AND
INTERSECTION CONTROLS
 ZONE 2 LANDSLIDE MORATORIUM - PORTUGUESE BEND PROJECT

NOTES:  UNSIGNALIZED INTERSECTION
 BL BIKE LANE


 NOT TO SCALE

LINSCOTT, LAW & GREENSPAN, engineers

4.1.2 Roadway Descriptions

Brief descriptions of the important roadways in the project vicinity are provided in the following paragraphs.

Tramonto Drive is an east-west oriented roadway located west of the project site and extends northerly of Palos Verdes Drive South. Tramonto Lane transitions to Seahill Drive south of Palos Verdes Drive South. This roadway is designated as a Local Street in the City of Rancho Palos Verdes General Plan Circulation Element. One through travel lane is provided in each direction along the roadway within the project study area. There is no posted speed limit on Tramonto Drive in the project vicinity, thus it is assumed to be a prima facie speed limit of 25 miles per hour.

Seahill Drive is an east-west oriented roadway located west of the project site and extends southerly of Palos Verdes Drive South. Seahill Drive transitions to Tramonto Lane north of Palos Verdes Drive South. This roadway is designated as a Local Street in the City of Rancho Palos Verdes General Plan Circulation Element. One through travel lane is provided in each direction along the roadway within the project study area. Seahill Drive is posted for a 25 miles per hour speed limit near the project site.

Barkentine Road is an east-west oriented roadway located west of the project site and extends northerly and south of Palos Verdes Drive South. This roadway is designated as a Local Street in the City of Rancho Palos Verdes General Plan Circulation Element. One through travel lane is provided in each direction along the roadway within the project study area. There is no posted speed limit on Barkentine Road in the project vicinity, thus it is assumed to be a prima facie speed limit of 25 miles per hour.

Narcissa Drive is a circuitous roadway that provides access to the Portuguese Bend community. This roadway is a private roadway that is maintained by the Portuguese Bend community association. One through travel lane is provided in each direction along Narcissa Drive within the community. The gate restricting access to the community on Narcissa Drive is set back approximately 190 feet from Palos Verdes Drive South.

Peppertree Drive is a circuitous roadway that provides access to the Portuguese Bend community. This roadway is a private roadway that is maintained by the Portuguese Bend community association. One through travel lane is provided in each direction along Peppertree Drive within the community. The gates restricting access to the community on Peppertree Drive is set back approximately 90 feet from Palos Verdes Drive South.

Forrestal Drive is an east-west oriented roadway located east of the project site and extends northerly of Palos Verdes Drive South. Forrestal Drive transitions to Ocean Trails Drive south of Palos Verdes Drive South. This roadway is designated as a Local Street in the City of Rancho Palos Verdes General Plan Circulation Element. One through travel lane is provided in each direction along the roadway within the project study area. There is no posted speed limit on Forrestal Drive in the project vicinity, thus it is assumed to be a prima facie speed limit of 25 miles per hour.

Hawthorne Boulevard is a predominantly north-south oriented roadway located west of the project site and extends generally between Palos Verdes Drive West and Pacific Coast Highway. This roadway is designated as an Arterial in the City of Rancho Palos Verdes General Plan Circulation Element. Two through travel lanes with raised medians and a bike lane are provided in each direction along the roadway within the project study area. Hawthorne Boulevard is posted for a 45 miles per hour speed limit near the project site.

Via Rivera is a north-south oriented roadway located west of the project site and extends generally north of Hawthorne Boulevard, east of Palos Verdes Drive West. This roadway is designated as a Local Street in the City of Rancho Palos Verdes General Plan Circulation Element. One through travel lane is provided in each direction along the roadway within the project study area. Via Rivera is posted for a 25 miles per hour speed limit near the project site.

Palos Verdes Drive East is a north-south oriented roadway located east of the project site. Palos Verdes Drive East extends from Palos Verdes Drive South to just north of Palos Verdes Drive North where it becomes Narbonne Avenue. This roadway is designated as an Arterial in the City of Rancho Palos Verdes General Plan Circulation Element. Two through travel lanes are provided in each direction along the roadway, except south of Ganado Drive where one lane in each direction is provided. Palos Verdes Drive East is posted for a 40 miles per hour speed limit in the project vicinity except near Ganado Drive where Palos Verdes Drive East is posted for a 35 miles per hour speed limit.

Palos Verdes Drive South is an east-west oriented roadway located south of the Portuguese Bend community. Palos Verdes Drive South transitions to Palos Verdes Drive West just north/west of the Point Vicente Interpretive Center easterly/southerly access point. This roadway is designated as an Arterial in the City of Rancho Palos Verdes General Plan Circulation Element. Two through travel lanes and a bike lane are provided in each direction along the roadway within the project study area, however, between Narcissa Drive and Schooner Drive, a Class II bike lane does not currently exist on Palos Verdes Drive South. Palos Verdes Drive South is posted for a 40 miles per hour speed limit near the project site.

4.2 Existing Public Bus Transit Service

Public bus transit service within the Zone 2 Landslide Moratorium - Portuguese Bend project study area is currently provided by the Los Angeles County Metropolitan Transportation Authority, Palos Verdes Peninsula Transit Authority, City of Redondo Beach Beach Cities Transit, and the City of Los Angeles Department of Transportation. A summary of the existing transit service, including the transit route, destinations and peak hour headways is presented in **Table 4-1**. The existing public transit routes in the Zone 2 Landslide Moratorium - Portuguese Bend project site vicinity are illustrated in **Figure 4-2**.

Table 4-1
EXISTING TRANSIT ROUTES [1]

ROUTE	DESTINATIONS	ROADWAY(S) NEAR SITE	NO. OF BUSES DURING PEAK HOUR		
			DIR	AM	PM
Metro 344	Rancho Palos Verdes to Harbor Gateway (via Torrance)	Palos Verdes Drive West, Palos Verdes Drive South, Hawthorne Boulevard	NB	3	3
			SB	4	3
LADOT Commuter Express 448	Downtown Los Angeles to Rancho Palos Verdes (via Lomita, Harbor City, Wilmington, Century Freeway)	Hawthorne Boulevard	NB	1	0
			SB	0	3
MAX 2	El Segundo to Rancho Palos Verdes (via Manhattan Beach, Redondo Beach)	Palos Verdes Drive West, Hawthorne Boulevard	NB	1	0
			SB	0	2
PVPTA Blue Line	Rancho Palos Verdes	Palos Verdes Drive West, Hawthorne Boulevard	EB	1	1
			WB	2	1
PVPTA Gold Line	Rolling Hills to Rancho Palos Verdes	Palos Verdes Drive West, Palos Verdes Drive South	EB	2	1
			WB	2	1
PVPTA Orange Line	Rolling Hills to Rancho Palos Verdes	Palos Verdes Drive West, Palos Verdes Drive South	EB	0	1
			WB	2	0
PVPTA 226	Palos Verdes Estates	Palos Verdes Drive West	NB	0	1
			SB	2	0

[1] Sources: Los Angeles County Metropolitan Transportation Authority (Metro), Los Angeles Department of Transportation (LADOT), Municipal Area Express (MAX), and Palos Verdes Peninsula Transit Authority (PVPTA) websites.



NOT TO SCALE

MAP SOURCE: METROPOLITAN TRANSPORTATION AUTHORITY (METRO) WEBSITE



PROJECT SITE

FIGURE 4-2
EXISTING PUBLIC TRANSIT ROUTES

4.3 Existing Traffic Volumes

Existing manual counts of vehicular turning movements were conducted in May 2010 at six of the seven existing study intersections and in March 2011 for the remaining study intersection (i.e., Intersection No. 1, Hawthorne Boulevard/Via Rivera) during the weekday morning (AM) and afternoon (PM) commuter periods to determine the peak hour traffic volumes. The manual counts were conducted by traffic count subconsultants at the study intersections from 7:00 to 9:00 AM to determine the weekday AM peak commuter hour, and from 4:00 to 6:00 PM to determine the weekday PM peak commuter hour. Traffic volumes at the seven study intersections show the weekday morning and afternoon peak periods typically associated with peak hours in the metropolitan area.

The existing weekday AM and PM peak hour manual counts of turning vehicles at the seven study intersections are summarized in **Table 4-2**. The existing traffic volumes at the study intersections during the weekday AM and PM peak hours are shown in **Figures 4-3** and **4-4**, respectively. Summary data worksheets of the manual traffic counts of the study intersections are contained in **Appendix A**.

4.4 Existing Intersection Operating Conditions

Existing AM and PM peak hour operating conditions for the seven 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*² (HCM2000) for unsignalized intersections.

4.4.1 Intersection Capacity Utilization Method of Analysis

In conformance with the City of Rancho Palos Verdes and Los Angeles County Congestion Management Program (CMP) requirements, any signalized intersections were evaluated using the Intersection Capacity Utilization (ICU) method. The ICU methodology is intended for signalized intersection analyses 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. 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. It should be noted that the ICU methodology assumes uniform traffic distribution per intersection approach lane and optimal signal timing. The ICU value translates to a 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 4-3**.

² Source: *Highway Capacity Manual 2000*, Transportation Research Board, 2000.

Table 4-2
EXISTING TRAFFIC VOLUMES [1]

NO.	INTERSECTION	DIR	DATE	AM PEAK HOUR		PM PEAK HOUR	
				BEGAN	VOLUME	BEGAN	VOLUME
1	Via Rivera/ Hawthorne Boulevard	NB	03/22/11	7:45	0	5:00	12
		SB			175		82
		EB			688		552
		WB			632		657
2	Seahill Drive-Tramonto Drive/ Palos Verdes Drive South	NB	05/19/10	7:30	123	4:45	75
		SB			9		2
		EB			348		626
		WB			788		467
3	Barkentine Road/ Palos Verdes Drive South	NB	05/19/10	7:30	25	4:45	20
		SB			15		3
		EB			380		592
		WB			739		446
4	Narcissa Drive/ Palos Verdes Drive South	NB	05/19/10	7:30	3	4:45	0
		SB			42		30
		EB			371		568
		WB			702		416
5	Peppertree Drive/ Palos Verdes Drive South	NB	05/19/10	7:30	0	4:45	0
		SB			21		21
		EB			376		571
		WB			717		440
6	Forrestal Drive/ Palos Verdes Drive South	NB	05/19/10	7:30	5	4:45	46
		SB			66		59
		EB			455		593
		WB			708		498
7	Palos Verdes Drive East Palos Verdes Drive South	NB	05/19/10	7:30	0	4:15	0
		SB			135		102
		EB			462		527
		WB			631		463

[1] Counts conducted by City Traffic Counters.

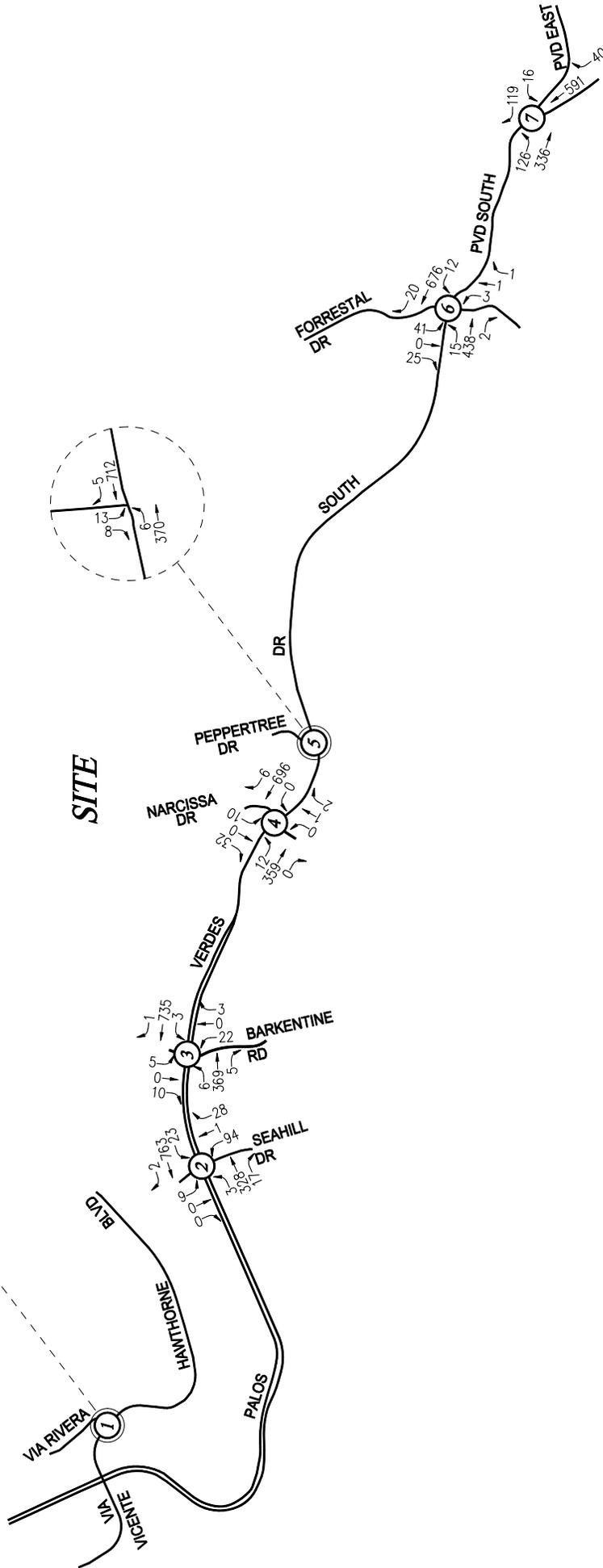


FIGURE 4-3
EXISTING TRAFFIC VOLUMES
 WEEKDAY AM PEAK HOUR
 ZONE 2 LANDSLIDE MORATORIUM - PORTUGUESE BEND PROJECT

(X) = INTERSECTION NUMBER

NOT TO SCALE

LINSCOTT, LAW & GREENSPAN, engineers

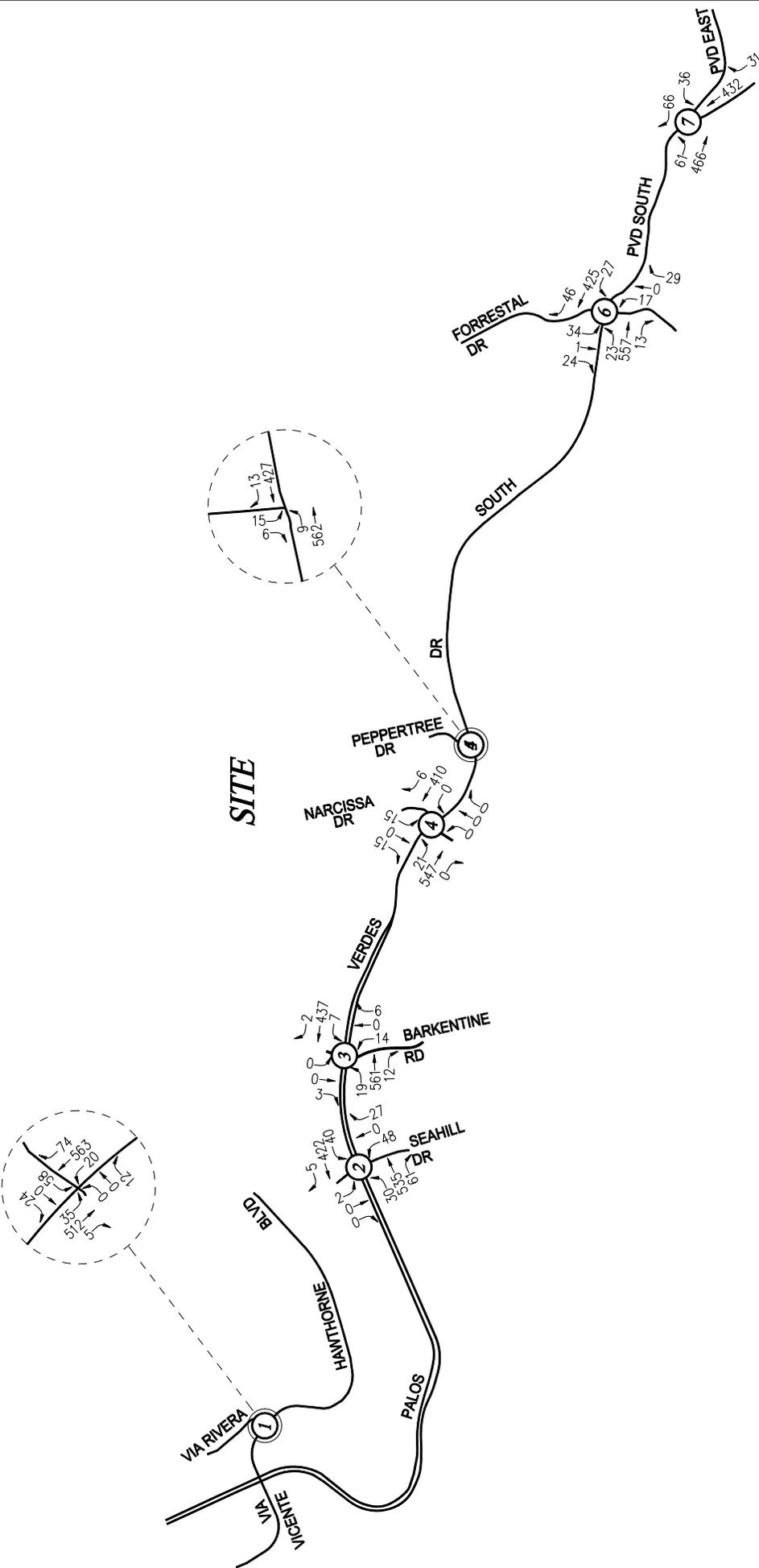


FIGURE 4-4
EXISTING TRAFFIC VOLUMES
 WEEKDAY PM PEAK HOUR
 ZONE 2 LANDSLIDE MORATORIUM - PORTUGUESE BEND PROJECT

(X) = INTERSECTION NUMBER

NOT TO SCALE

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Pursuant to Los Angeles 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 a dual left-turn capacity of 2,880 vph. Additionally, a clearance adjustment factor of 0.10 was added to each Level of Service (LOS) calculation.

Table 4-3
LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

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.

4.4.2 Highway Capacity Manual Method of Analysis (Unsignalized Intersections)

The HCM2000 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. The overall average control delay measured in seconds per vehicle, and level of service is then calculated for the entire intersection. The HCM2000 control delay value translates to a 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 4-4**.

TABLE 4-4
LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS³

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

4.5 Existing Level of Service Results

The existing peak hour service level calculations for the seven study intersections based on existing traffic volumes and current street geometry is summarized in *Table 4-5*. Review of *Table 4-5* indicates that all of the seven study intersections are currently operating at acceptable Levels of Service (i.e., LOS D or better) during the weekday AM and PM peak hours. The ICU and HCM data worksheets for the analyzed intersections for the weekday AM and PM peak hours are contained in *Appendix B*.

³Source: *Highway Capacity Manual 2000*, Chapter 17 (Unsignalized Intersections).

Table 4-5
EXISTING INTERSECTION LEVELS OF SERVICE SUMMARY

Int No.	Key Intersections	Time Period	Control Type	Delay (sec/veh)	V/C Ratio	LOS
1	Via Rivera/ Hawthorne Boulevard	AM PM	Two – Way Stop	38.6 29.4	0.572 0.342	E D
2	Tramonto Drive-Seahill Drive/ Palos Verdes Drive South	AM PM	Two – Way Stop	27.6 23.6	0.396 0.274	D C
3	Barkentine Road/ Palos Verdes Drive South	AM PM	Two – Way Stop	18.9 18.7	0.091 0.067	C C
4	Narcissa Drive/ Palos Verdes Drive South	AM PM	Two – Way Stop	17.8 16.1	0.085 0.069	C C
5	Peppertree Drive/ Palos Verdes Drive South	AM PM	Two – Way Stop	20.0 18.4	0.068 0.069	C C
6	Forrestal Drive/ Palos Verdes Drive South	AM PM	Two – Way Stop	31.3 26.6	0.315 0.251	D D
7	Palos Verdes Drive East/ Palos Verdes Drive South	AM PM	Two – Way Stop	17.0 16.3	0.271 0.175	C C

5.0 TRAFFIC FORECASTING METHODOLOGY

In order to estimate the traffic impact characteristics of the Zone 2 Landslide Moratorium - Portuguese Bend project, a multi-step process has been utilized. The first step is trip generation, which estimates the total arriving and departing traffic volumes 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 volumes. 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 (i.e., LOS) conditions at selected key intersections using existing and expected future traffic volumes without and with 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.

5.1 Project Traffic Generation Characteristics

Traffic generation is expressed in vehicle trip ends, defined as one-way vehicular movements, either entering or exiting the generating land use. Traffic volumes to be generated by the proposed project were forecast for the weekday AM and PM peak hours, and over a 24-hour period. The resource typically used by traffic engineers (including the City of Rancho Palos Verdes) to forecast trip generation for development projects is the Institute of Transportation Engineers' (ITE) *Trip Generation* manual⁴. ITE Land Use Code 210 (Single-Family Detached Housing) trip generation average rates were used to forecast traffic volumes for the proposed project.

The trip generation rates and forecast of the vehicular trips anticipated to be generated by the proposed project are presented in **Table 5-1**. The project trip generation forecast was submitted for review by City staff. As summarized in *Table 5-1*, the proposed project is expected to generate 35 vehicle trips (9 inbound trips and 26 outbound trips) during the AM peak hour. During the PM peak hour, the proposed project is expected to generate 47 vehicle trips (30 inbound trips and 17 outbound trips). Over a 24-hour period, the proposed project is forecast to generate 450 daily trip ends during a typical weekday (approximately 225 inbound trips and 225 outbound trips).

⁴ Institute of Transportation Engineers *Trip Generation* manual, 8th Edition, 2008.

Table 5-1
PROJECT TRIP GENERATION [1]

LAND USE	SIZE	DAILY TRIP ENDS [2] VOLUMES	AM PEAK HOUR VOLUMES [2]			PM PEAK HOUR VOLUMES [2]		
			IN	OUT	TOTAL	IN	OUT	TOTAL
Single-Family Housing [3]	47 DU	450	9	26	35	30	17	47
TOTAL		450	9	26	35	30	17	47

[1] Source: ITE "Trip Generation", 8th Edition, 2008.

[2] Trips are one-way traffic movements, entering or leaving.

[3] ITE Land Use Code 210 (Single-Family Detached Housing) trip generation average rates.

- Daily Trip Rate: 9.57 trips/DU; 50% inbound/50% outbound
- AM Peak Hour Trip Rate: 0.75 trips/DU; assume 25% inbound/75% outbound
- PM Peak Hour Trip Rate: 1.01 trips/DU; 63% inbound/37% outbound

5.2 Project Traffic Distribution and Assignment

The general, directional traffic distribution pattern for the proposed Zone 2 Landslide Moratorium - Portuguese Bend 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 corridors (i.e., Palos Verdes Drive South),
- Expected localized traffic flow patterns based on adjacent roadway channelization and presence of traffic signals,
- Existing intersection traffic volumes,
- Ingress/egress availability at the project site, and
- Input from City staff.

The forecast weekday AM and PM peak hour project traffic volumes associated with the proposed project under Year 2020 conditions are presented in *Figures 5-2* and *5-3*, respectively. The traffic volume assignments presented in *Figures 5-2* and *5-3* reflect the traffic distribution characteristics shown in *Figure 5-1* and the project traffic generation forecasts presented in *Table 5-1*.

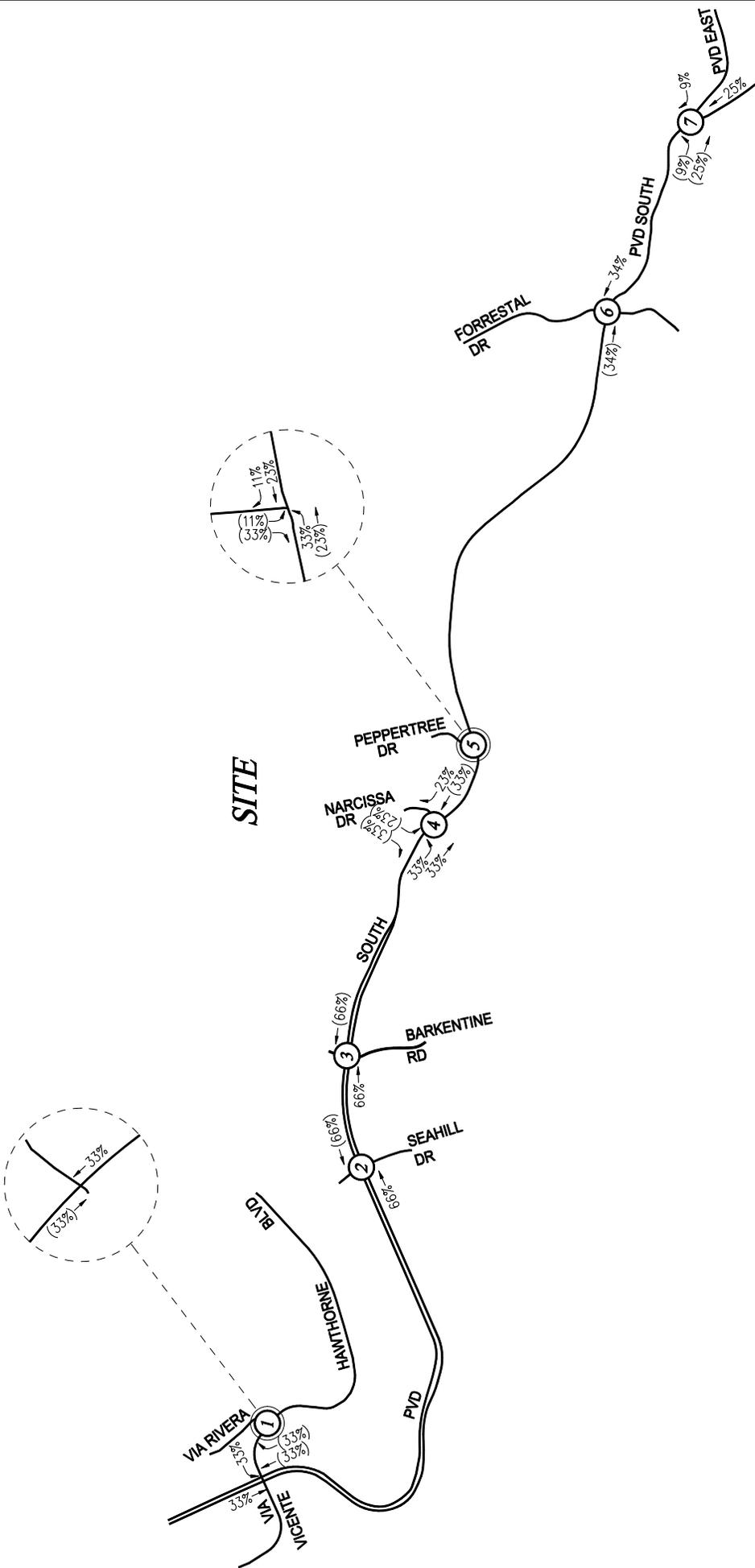


FIGURE 5-1
PROJECT TRAFFIC DISTRIBUTION PATTERN

(X) = INTERSECTION NUMBER
 XX = INBOUND PERCENTAGES
 (XX) = OUTBOUND PERCENTAGES

NOT TO SCALE

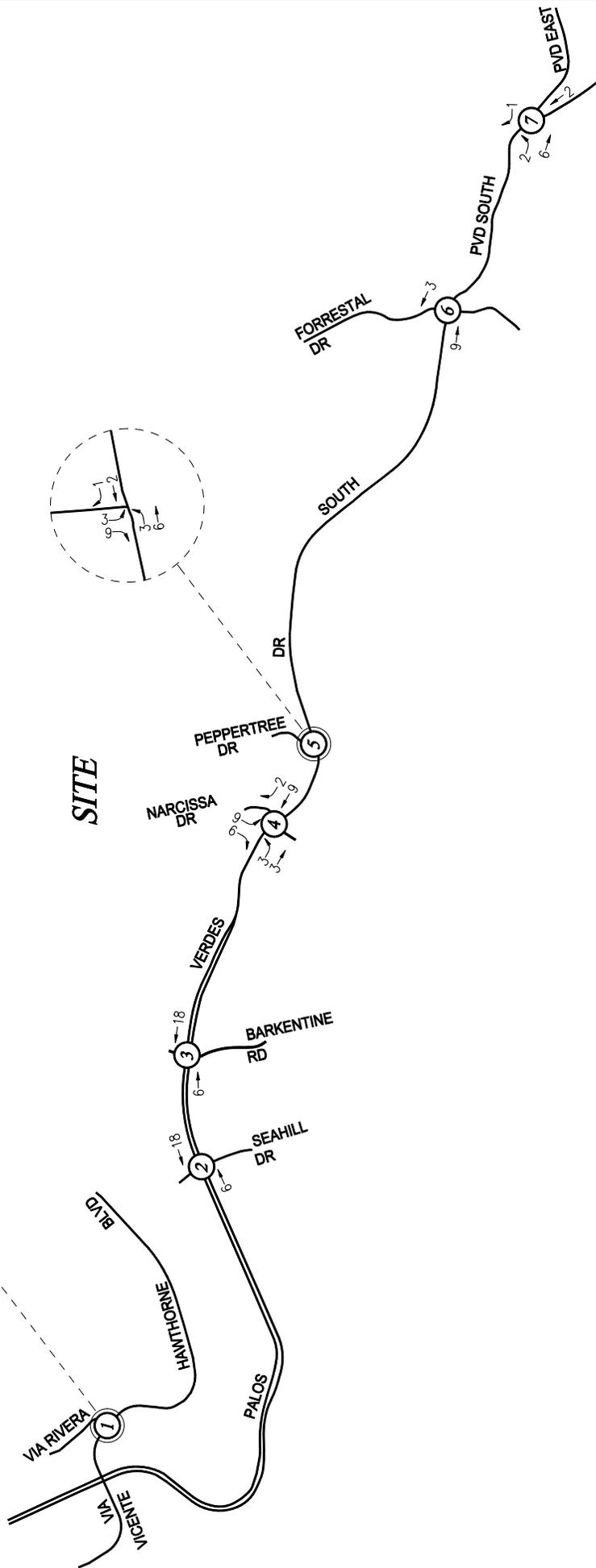


FIGURE 5-2
PROJECT TRAFFIC VOLUMES
 WEEKDAY AM PEAK HOUR
 ZONE 2 LANDSLIDE MORATORIUM - PORTUGUESE BEND PROJECT

(X) = INTERSECTION NUMBER

NOT TO SCALE

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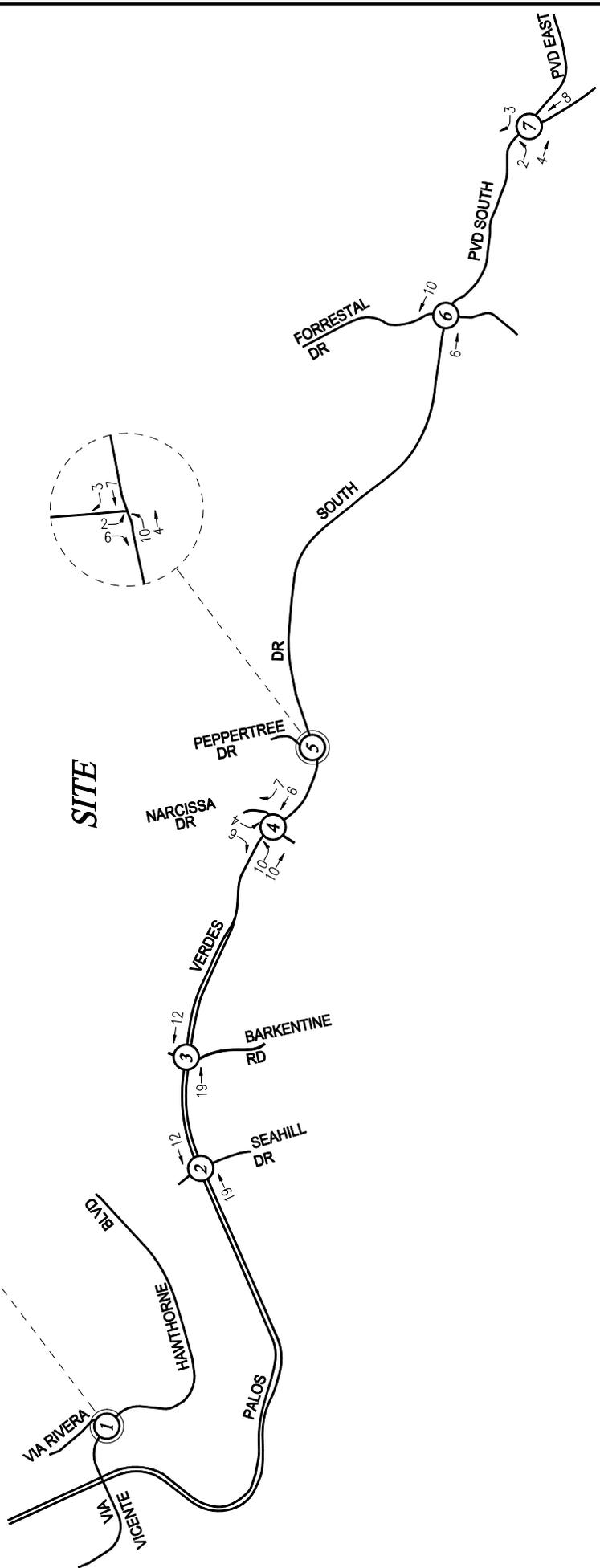


FIGURE 5-3
PROJECT TRAFFIC VOLUMES
 WEEKDAY PM PEAK HOUR
 ZONE 2 LANDSLIDE MORATORIUM - PORTUGUESE BEND PROJECT

(X) = INTERSECTION NUMBER

NOT TO SCALE

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6.0 FUTURE TRAFFIC CONDITIONS

The forecast of future pre-project conditions was prepared in accordance with procedures outlined in Section 15130 of the California Environmental Quality Act (CEQA) Guidelines. Specifically, the CEQA Guidelines provides two options for developing the future traffic volume forecast:

“(A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the [lead] agency, or

(B) A summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include: a general plan, regional transportation plan, or plans for the reduction of greenhouse gas emissions. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan. Such projections may be supplemented with additional information such as a regional modeling program. Any such document shall be referenced and made available to the public at a location specified by the lead agency.”

The traffic analysis is conservative in that for the future year 2020 pre-project condition, both option “A” and “B” have been incorporated into the analysis as outlined the CEQA Guidelines for purposes of developing the future year 2020 forecasts.

6.1 Ambient Traffic Growth

Horizon year, background traffic growth estimates have been calculated by using an ambient traffic growth factor. The ambient traffic growth factor is intended to include unknown related projects in the study area, as well as account for typical growth in traffic volumes due to the development of projects outside the study area. The future growth in traffic volumes has been calculated at 0.6 percent (0.6%) per year. The ambient growth factor was based on review of the background traffic growth estimates for the Palos Verdes area published in the *2010 Congestion Management Program for Los Angeles County*, which indicate that existing traffic volumes would be expected to increase at an annual rate of approximately 0.51 percent (0.51% per year) between years 2010 and 2020. However, in order to provide a conservative analysis, the higher ambient growth factor of 0.60 percent (0.60% per year) contained in the *2004 Congestion Management Program for Los Angeles County* was utilized in this analysis. Application of the ambient traffic growth factor to existing traffic volumes results in a 6.0 percent (6.0%) increase in existing traffic volumes to horizon Year 2020.

6.2 Related Projects Traffic Characteristics

In order to make a realistic estimate of future on-street conditions prior to implementation of the Zone 2 Landslide Moratorium - Portuguese Bend project, the status of other known development projects (related projects) in the area has been researched at the City of Rancho Palos Verdes, City of Rolling Hills Estates, and 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 current research, 34 related projects are located in the project vicinity that have either been built, but not yet fully occupied, or are being processed for approval. These 34 related projects have been included as part of the cumulative background setting in Year 2020.

The location of the related projects and a brief description for each of the 34 related projects is described in **Table 6-1**. The location of the related projects is graphically illustrated in **Figure 6-1**. These related projects are expected to generate vehicular traffic, which may affect the operating conditions of the key study intersections.

Traffic volumes expected to be generated by the related projects were calculated using rates provided in the ITE *Trip Generation* manual. The related projects respective traffic generation for the weekday AM and PM peak hours, as well as on a daily basis for a typical weekday, is summarized in **Table 6-1**. The assignment of the related projects traffic volumes to the study intersections during the weekday AM and PM peak hours are displayed in **Figures 6-2** and **6-3**, respectively.

6.3 Existing With Project Traffic Volumes

The forecast weekday AM and PM peak hour with project traffic volumes (i.e., existing traffic volumes and proposed project traffic volumes) at the seven study intersections are illustrated in **Figures 6-4** and **6-5**, respectively.

6.4 Year 2020 Traffic Volumes

6.4.1 Year 2020 Future Pre-Project Traffic Volumes

The Year 2020 future forecast weekday AM and PM peak hour pre-project traffic volumes (i.e., existing traffic volumes, ambient traffic growth to Year 2020 and related projects traffic volumes) at the seven study intersections are presented in **Figures 6-6** and **6-7**, respectively.

6.4.2 Year 2020 Future With Project Traffic Volumes

The Year 2020 future forecast weekday AM and PM peak hour with project traffic volumes (i.e., existing traffic volumes, ambient traffic growth to Year 2020, related projects and proposed project traffic volumes) at the seven study intersections are illustrated in **Figures 6-8** and **6-9**, respectively.

Table 6-1
LIST OF RELATED PROJECTS AND RELATED PROJECTS TRIP GENERATION FORECAST [1]

NO.	PROJECT STATUS	PROJECT NAME ADDRESS/LOCATION	LAND USE DATA		PROJECT DATA SOURCE	WEEKDAY						
			LAND-USE	SIZE		DAILY TRIP ENDS [2]	AM PEAK HOUR VOLUMES [2]		PM PEAK HOUR VOLUMES [2]		TOTAL	
City of Rancho Palos Verdes												
R1	Partially Built	Trump National Golf Club Project (Ocean Trails) Palos Verdes Drive South/west of Shoreline Park	Single-Family Detached Housing Affordable Housing (5 Homes Built)	54 DU 4 DU	[3]	517 38	10 1	31 2	41 3	35 3	20 1	55 4
R2	Proposed	Chevron with Car Wash 27774 Hawthorne Boulevard	Gas Station With Convenience Market and Car Wash	6 VFP	[4]	917	37	35	72	43	41	84
R3	Built	Terranea Resort and Spa Project 6610 Palos Verdes Drive South	Resort Hotel Condominium Retail Restaurant Fitness Center Golf Course	550 Rooms 32 DU 20,000 GLSF 22,500 GLSF 22,000 GSF 9 Holes	[5],[6] [7] [8] [9] [10] [11]	6,263	195	118	313	247	252	499
R4	Proposed	Green Hills Memorial Park Master Plan Project 27501 South Western Avenue	Cemetery	27.3 Acres	[12]	129	4	1	5	8	15	23
R5	Proposed	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)	Junior College Building Expansion (Demolish Existing Building) BA Degree Program (University) Junior College Jr. College Weekend Enrollment Incr.	77,504 SF (18,022) SF 250 Students (250) Students 67 Students	[13]	1,931	149	51	200	83	92	175
R6	Partially Built	TTM No. 52666 Project 3200 Palos Verdes Drive West	Single-Family Detached Housing (10 Homes Built)	3 DU	[3]	29	1	1	2	2	1	3
R7	Partially Built	Ocean Front Estates Project Seaward side of Palos Verdes Drive West terminus of Hawthorne Boulevard	Single-Family Detached Housing (74 Homes Built)	5 DU	[3]	48	1	3	4	3	2	5
R8	Under Construction	Trader Joe's Golden Cove Shopping Center 31176 Hawthorne Boulevard	Supermarket (Project Opened April 2010)	11,000 GLSF	[14]	1,125	24	15	39	59	57	116
R9	Approved	Point Vicente Animal Hospital 31270 Palos Verdes Drive West	Animal Hospital	5,759 GSF	[15]	270	17	6	23	11	16	27
R10	Permit Expired 10/09	Hawthorne/Crest Office Project 29941 Hawthorne Boulevard	Office	7,232 GSF	[16]	80	10	1	11	2	9	11
R11	Approved	Highridge Condominium Project 28220 Highridge Road	Condominium	28 DU	[7]	163	2	10	12	10	5	15
R12	Built	Salvation Army Crestridge College Project 30840 Hawthorne Boulevard	Apartment (Campus Housing) (Project Opened April 2009)	20 DU	[17]	133	2	8	10	8	4	12
R13	Proposed	Crestridge Estate LLC Project 5601 Crestridge Road	Senior Condominium Senior Center	90 DU 10,000 GSF	[18] [19]	313 229	4 10	8 6	12 16	8 6	6 9	14 15

Table 6-1 (Continued)
LIST OF RELATED PROJECTS AND RELATED PROJECTS TRIP GENERATION FORECAST [1]

NO.	PROJECT STATUS	PROJECT NAME ADDRESS/LOCATION	LAND USE DATA		PROJECT DATA SOURCE	WEEKDAY								
			LAND-USE	SIZE		DAILY TRIP ENDS [2]			AM PEAK HOUR VOLUMES [2]			PM PEAK HOUR VOLUMES [2]		
						IN	OUT	TOTAL	IN	OUT	TOTAL	IN	OUT	TOTAL
City of Rancho Palos Verdes (continued)														
R14	Approved	St. John Fisher Church Project 5488 Crest Road	Day Care Center Proposed new building area Existing to be demolished	40 Students 32,426 GSF (10,329) GSF	[20] [21] [21]	179 295 (94)	17 11 (4)	15 7 (2)	32 18 (6)	16 9 (3)	17 9 (3)	33 18 (6)		
R15	Under Construction	Mirandella Project Northwest corner of Crenshaw Boulevard/Cresridge Road	Senior Apartment	34 DU	[22]	272	2	16	18	16	9	25		
R16	Proposed	Annenberg Project at Lower Point Vicente 31501 Palos Verdes Drive West	Multi-Use Educational and Interpretive Center	35,200 SF	[23]	596	81	30	111	51	59	110		
City of Rolling Hills Estates														
RH1	Proposed	Rolling Hills Covenant Church Project 2221-2222 Palos Verdes Drive North	Church	1,650 Seats	[24]	1,000	68	28	96	41	59	100		
RH2	Proposed	Tanglewood Subdivision Project Northeast corner of Rolling Hills/Tanglewood Lane	Single-Family Detached Housing	3 DU	[3]	29	1	1	2	2	1	3		
RH3	Built/ Partially Occupied	Silver Spur Court Project 981 Silver Spur Road	Condominium	18 DU	[7]	105	1	7	8	6	3	9		
RH4	Built/ Partially Occupied	Rolling Hills Villas Project 901 Deep Valley Drive	Senior Condominium Retail	41 DU 1,526 GLSF	[18] [8]	143 66	2 1	3 1	5 2	4 3	3 3	7 6		
RH5	Approved	Crest Road Building Project 5883 Crest Road	Office Retail	4,545 GSF 1,215 GLSF	[16] [8]	50 52	6 1	1 0	7 1	1 2	6 3	7 5		
RH6	Proposed	Butcher Ranch Subdivision Project Palos Verdes Drive North and Montecillo Drive	Single-Family Detached Housing	11 DU	[3]	105	2	6	8	7	4	11		
RH7	Proposed	Chandler Ranch/Rolling Hills Country Club Project 26311 & 27000 Palos Verdes Drive East	Single-Family Detached Housing Quality Restaurant Health/Fitness Club Tennis Courts New Social Club Members	114 DU 338 Seats 7,150 GSF 5 TC 100 Members	[25], [3] [26] [10] [27] [28]	1,486	24	42	66	152	70	222		
RH8	Approved	627 Deep Valley Drive	Condominium Retail 10% Pass-By 10% Internal Capture Existing Car Wash Existing Auto Repair	58 DU 5,810 GSF (13,608) SF (13,608) SF	[29], [30] [8] [31] [32]	636	(2)	15	13	30	21	51		
RH9	Proposed	Brickwalk LLC Residential Project 655-683 Deep Valley Drive and 924-950 Indian Peak Road	Condominium Retail	148 DU 14,200 GLSF	[7] [8]	860 610	11 9	54 5	65 14	52 26	25 27	77 53		

Table 6-1 (Continued)
 LIST OF RELATED PROJECTS AND RELATED PROJECTS TRIP GENERATION FORECAST [1]

- [17] ITE Land Use Code 220 (Apartment) trip generation average rates.
- [18] ITE Land Use Code 252 (Senior Adult Housing-Attached) trip generation average rates.
- [19] ITE Land Use Code 495 (Recreational Community Center) trip generation average rates.
- [20] ITE Land Use Code 565 (Day Care Center) trip generation average rates.
- [21] ITE Land Use Code 560 (Church) trip generation average rates.
- [22] The AM and PM peak hour trip generation forecast based on County of Los Angeles trip generation rates for townhomes/condominiums consistent with the *Traffic Impact Analysis for Senior Apartment Project*, prepared by LLG Engineers, January 15, 2009.
- [23] Source: *Traffic Impact Study, The Ardenberg Project at Lower Point Vicente, City of Rancho Palos Verdes, California*, May 18, 2010, prepared by LLG Engineers.
- [24] Source: City of Rolling Hills Planning Department
 Saturday trip generation forecast based on ITE Land Use Code 252 trip generation rates for Saturday.
- [25] The AM and PM peak hour trip generation forecast obtained from the Chandler Ranch/Rolling Hills Country Club Project DEIR, April 30, 2009, Saturday trip generation forecast based on ITE Trip Generation manual.
- [26] ITE Land Use Code 931 (Quality Restaurant) trip generation average rates.
- [27] ITE Land Use Code 490 (Tennis Courts) trip generation average rates.
- [28] ITE trip rates not provided in the ITE Trip Generation manual. Saturday new member trips calculated based on existing clubhouse trips during the PM peak hour.
- [29] The AM and PM peak hour trip generation forecast obtained from the Traffic Impact Analysis, 627 Deep Valley Drive Residential Mixed-Use Development, prepared by DKS Associates, October 13, 2005. Saturday trip generation forecast based on ITE Trip Generation manual.
- [30] ITE Land Use Code 232 (High-Rise Condominium) trip generation average rates.
- [31] ITE Land Use Code 948 (Automated Car Wash) trip generation average rates.
- [32] ITE Land Use Code 943 (Automobile Parts and Service Center) trip generation average rates.
- [33] ITE Land Use Code 720 (Medical/Dental Office) trip generation average rates.

n/a = not available

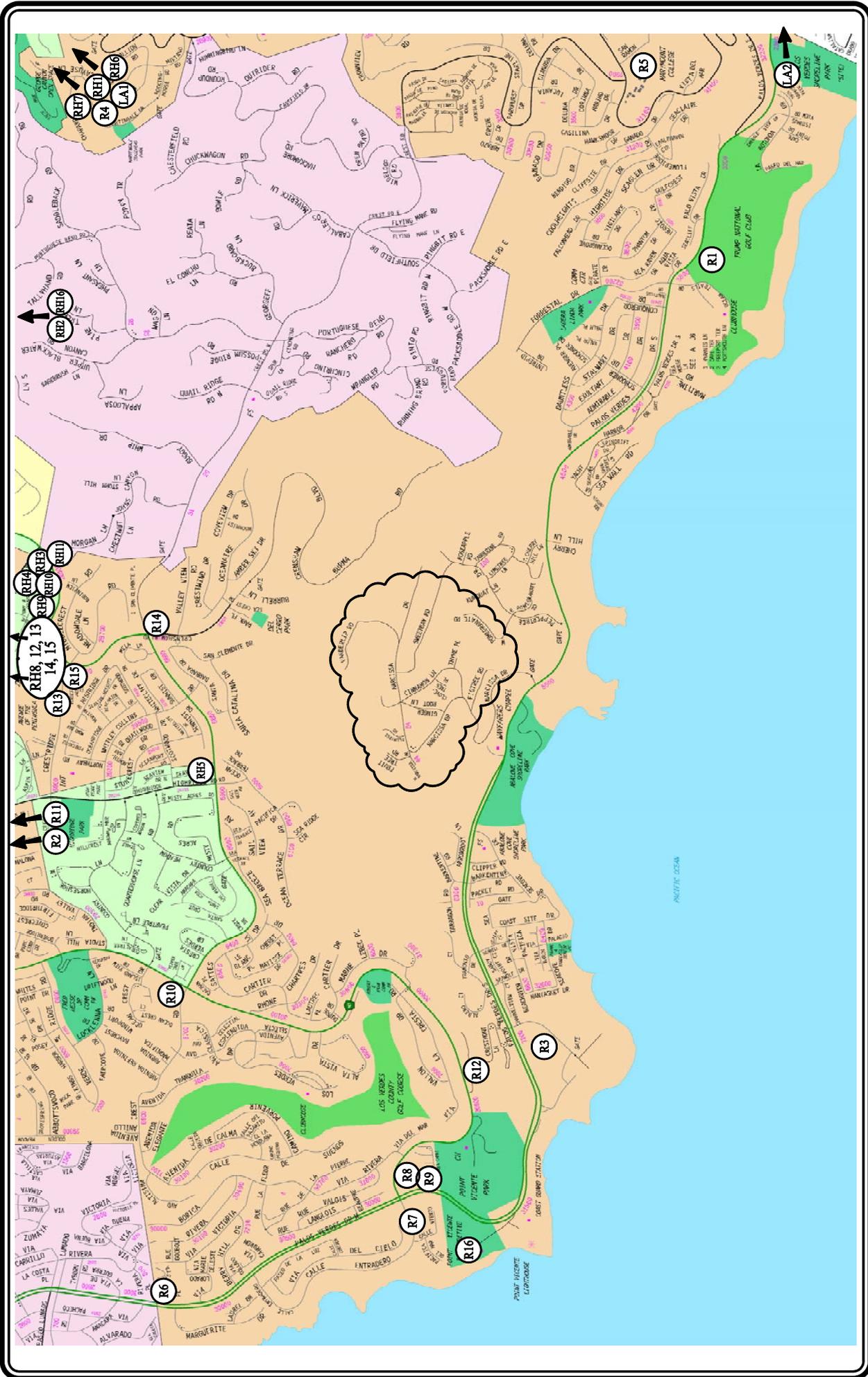


FIGURE 6-1
LOCATION OF RELATED PROJECTS
 ZONE 2 LANDSLIDE MORATORIUM - PORTUGUESE BEND PROJECT

MAP SOURCE: THOMAS BROS. GUIDE
 PROJECT AREA
 NOT TO SCALE

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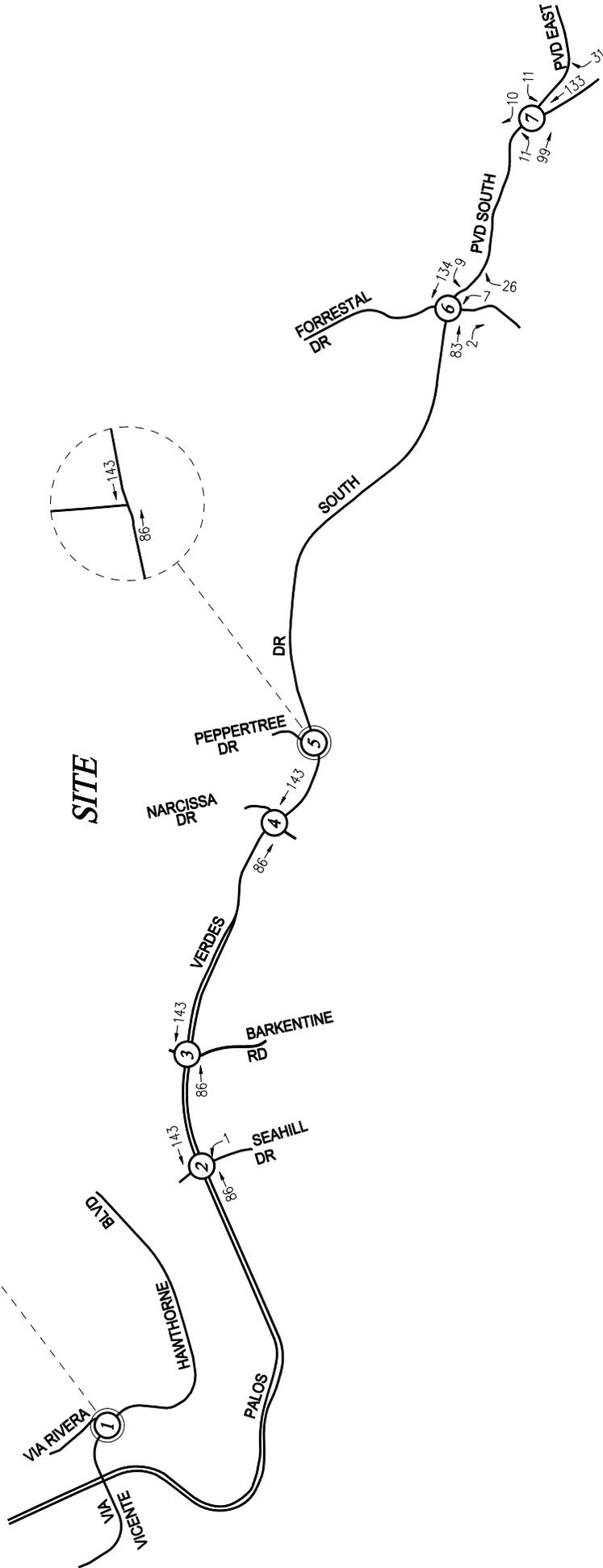


FIGURE 6-2
RELATED PROJECTS TRAFFIC VOLUMES
 WEEKDAY AM PEAK HOUR
 ZONE 2 LANDSLIDE MORATORIUM - PORTUGUESE BEND PROJECT

(X) = INTERSECTION NUMBER

NOT TO SCALE

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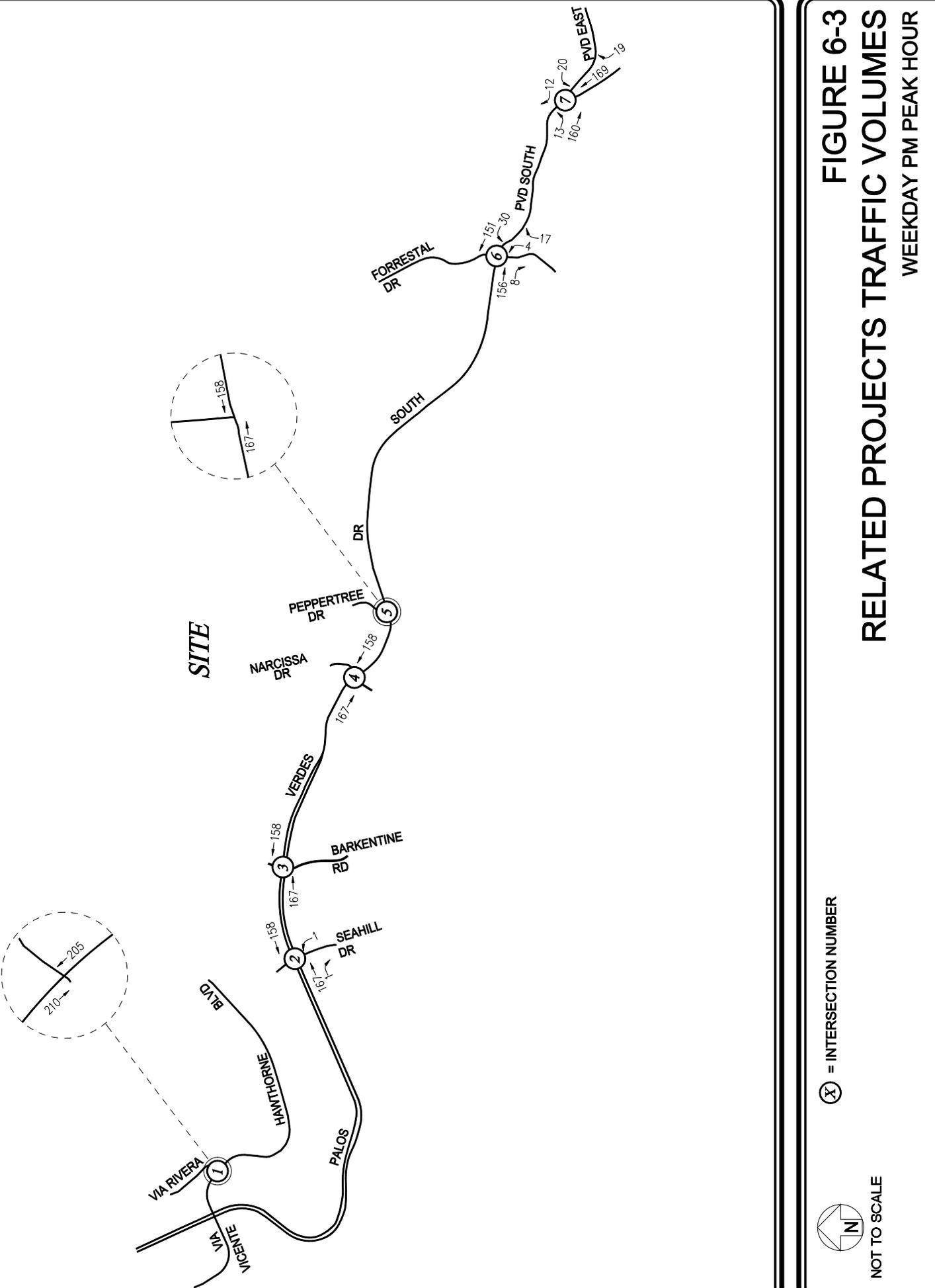


FIGURE 6-3
RELATED PROJECTS TRAFFIC VOLUMES
 WEEKDAY PM PEAK HOUR
 ZONE 2 LANDSLIDE MORATORIUM - PORTUGUESE BEND PROJECT

(X) = INTERSECTION NUMBER

NOT TO SCALE

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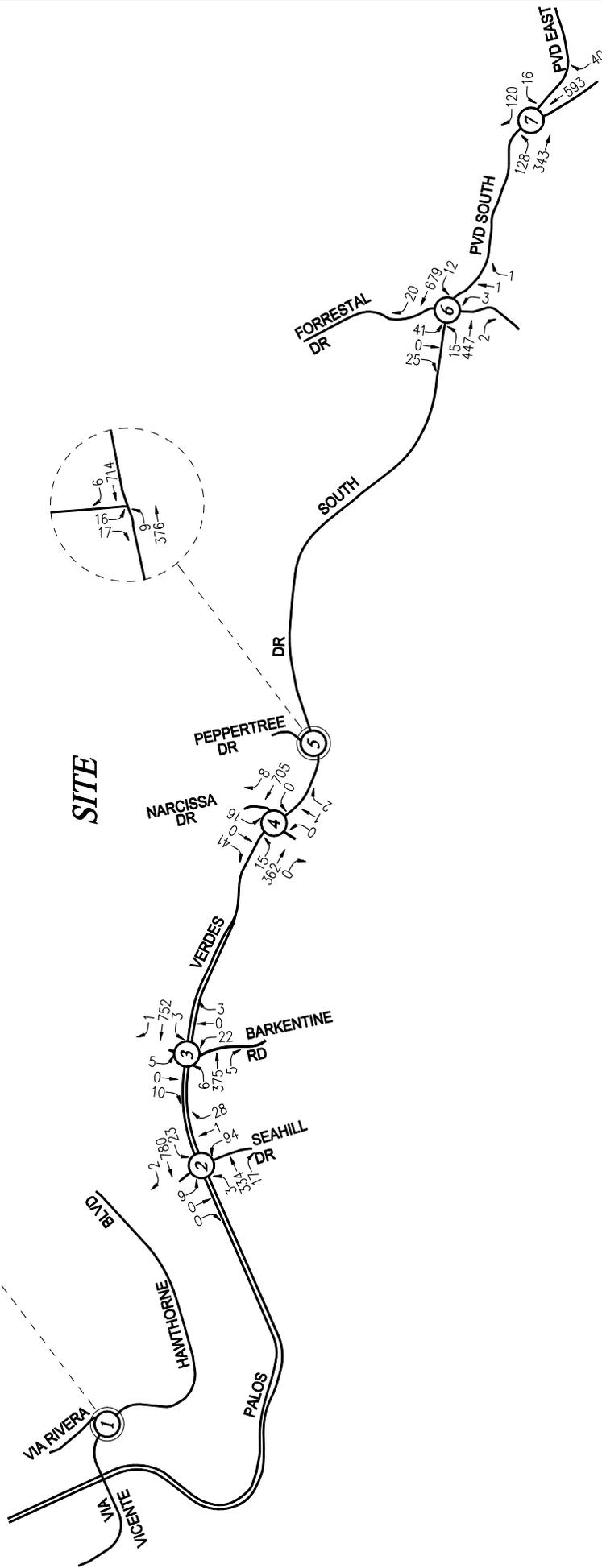


FIGURE 6-4
EXISTING WITH PROJECT TRAFFIC VOLUMES
 WEEKDAY AM PEAK HOUR
 ZONE 2 LANDSLIDE MORATORIUM - PORTUGUESE BEND PROJECT

(X) = INTERSECTION NUMBER

NOT TO SCALE

LINSCOTT, LAW & GREENSPAN, engineers

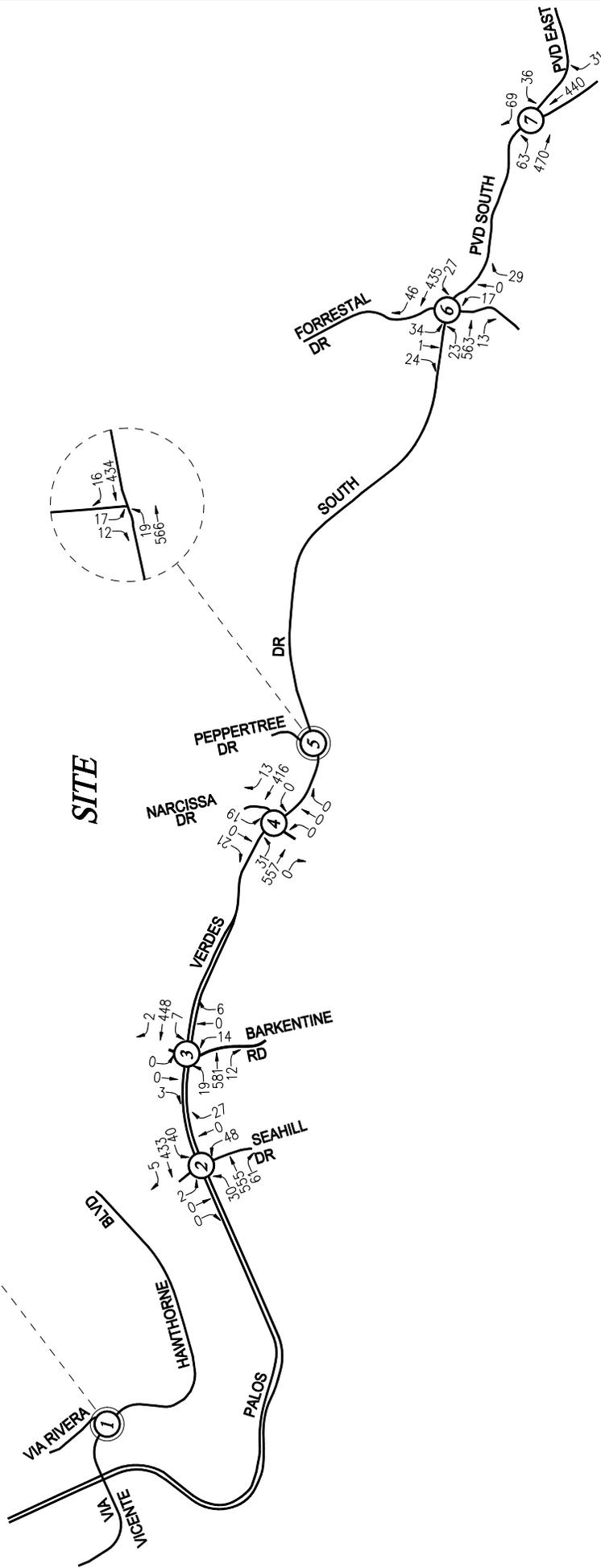


FIGURE 6-5
EXISTING WITH PROJECT TRAFFIC VOLUMES
 WEEKDAY PM PEAK HOUR
 ZONE 2 LANDSLIDE MORATORIUM - PORTUGUESE BEND PROJECT

(X) = INTERSECTION NUMBER

NOT TO SCALE

LINSCOTT, LAW & GREENSPAN, engineers

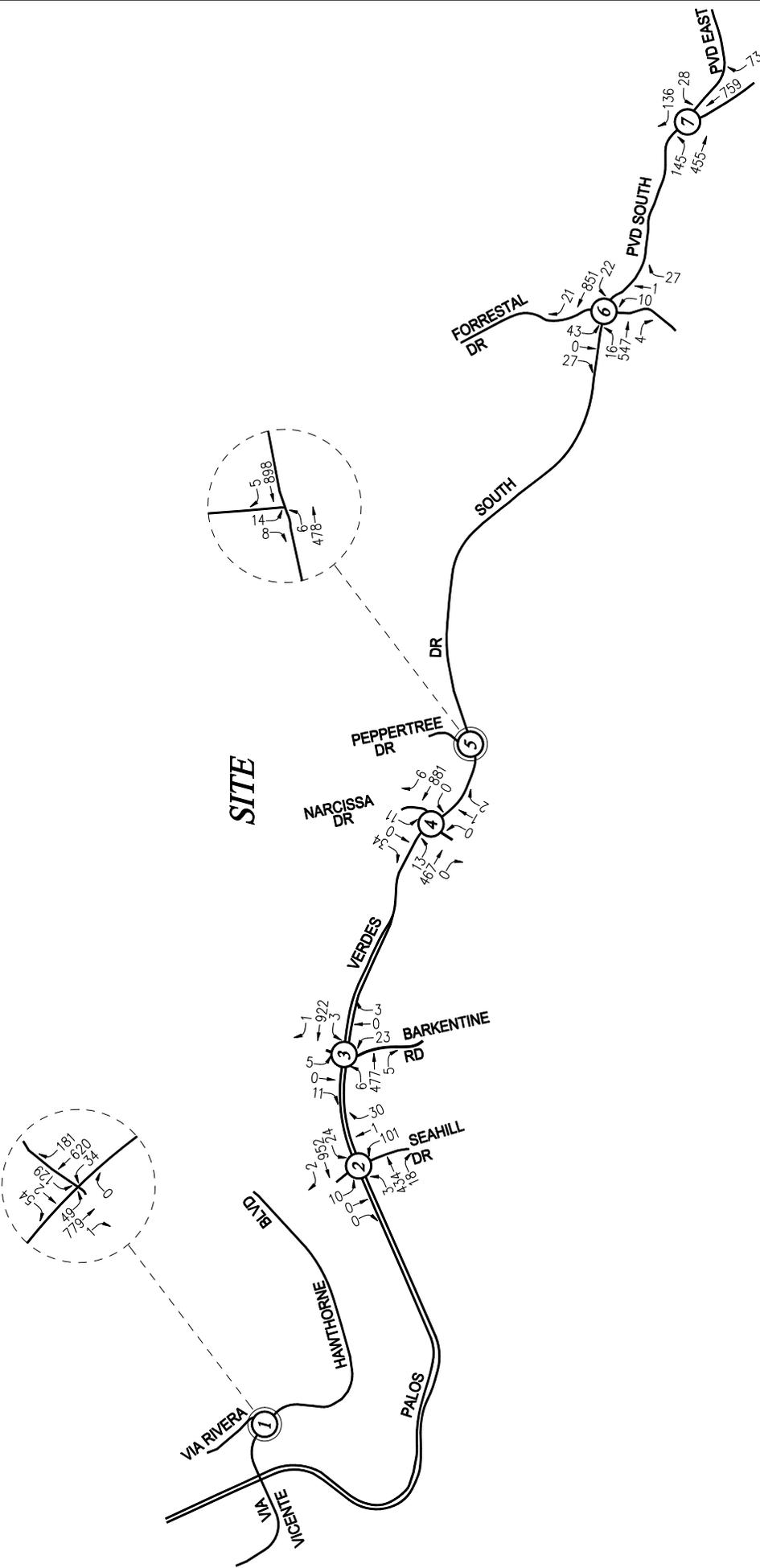


FIGURE 6-6
YEAR 2020 FUTURE PRE-PROJECT TRAFFIC VOLUMES
 WEEKDAY AM PEAK HOUR
 ZONE 2 LANDSLIDE MORATORIUM - PORTUGUESE BEND PROJECT

(X) = INTERSECTION NUMBER



NOT TO SCALE

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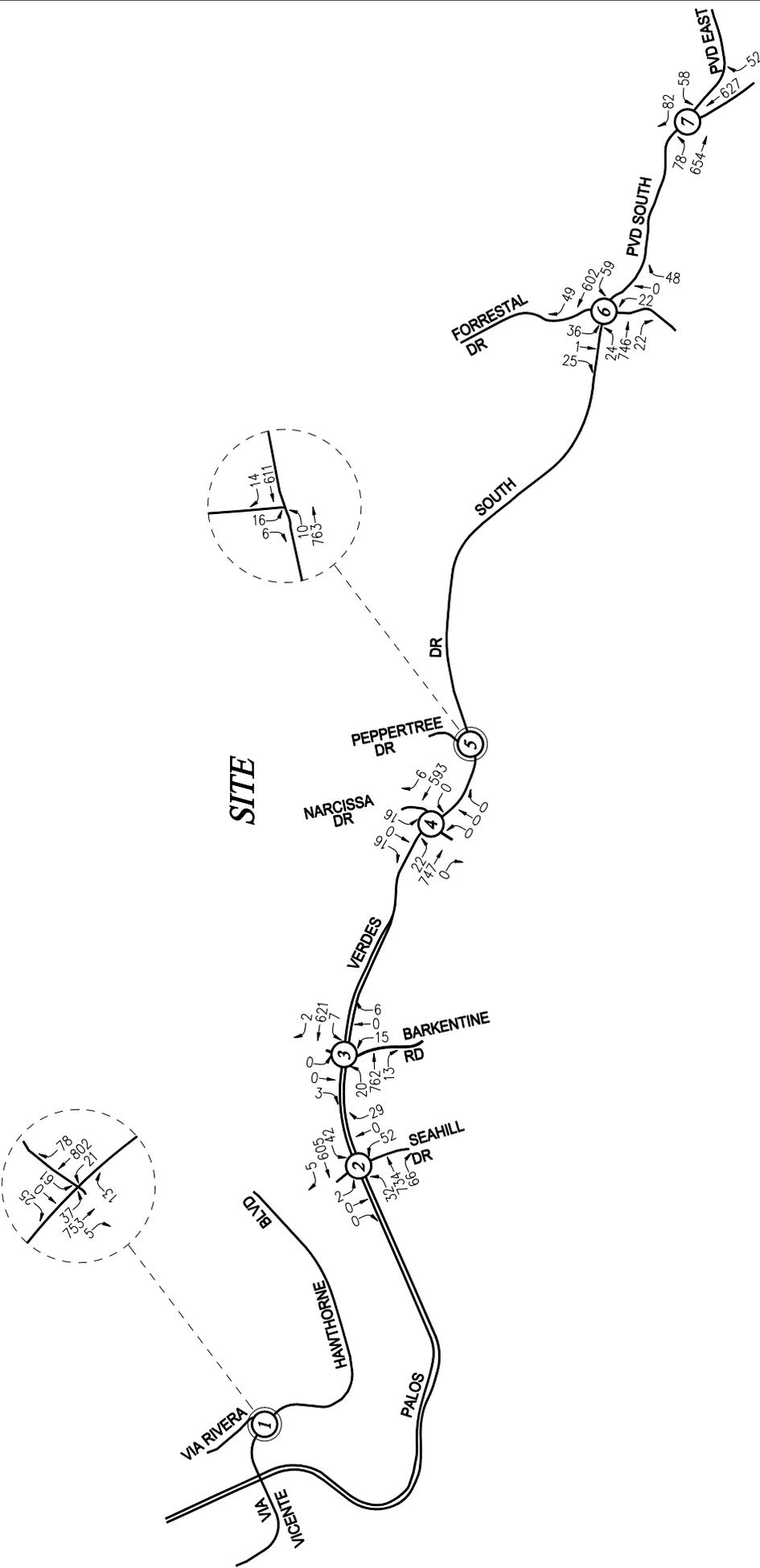


FIGURE 6-7
YEAR 2020 FUTURE PRE-PROJECT TRAFFIC VOLUMES
 WEEKDAY PM PEAK HOUR
 ZONE 2 LANDSLIDE MORATORIUM - PORTUGUESE BEND PROJECT

(X) = INTERSECTION NUMBER



NOT TO SCALE

LINSCOTT, LAW & GREENSPAN, engineers

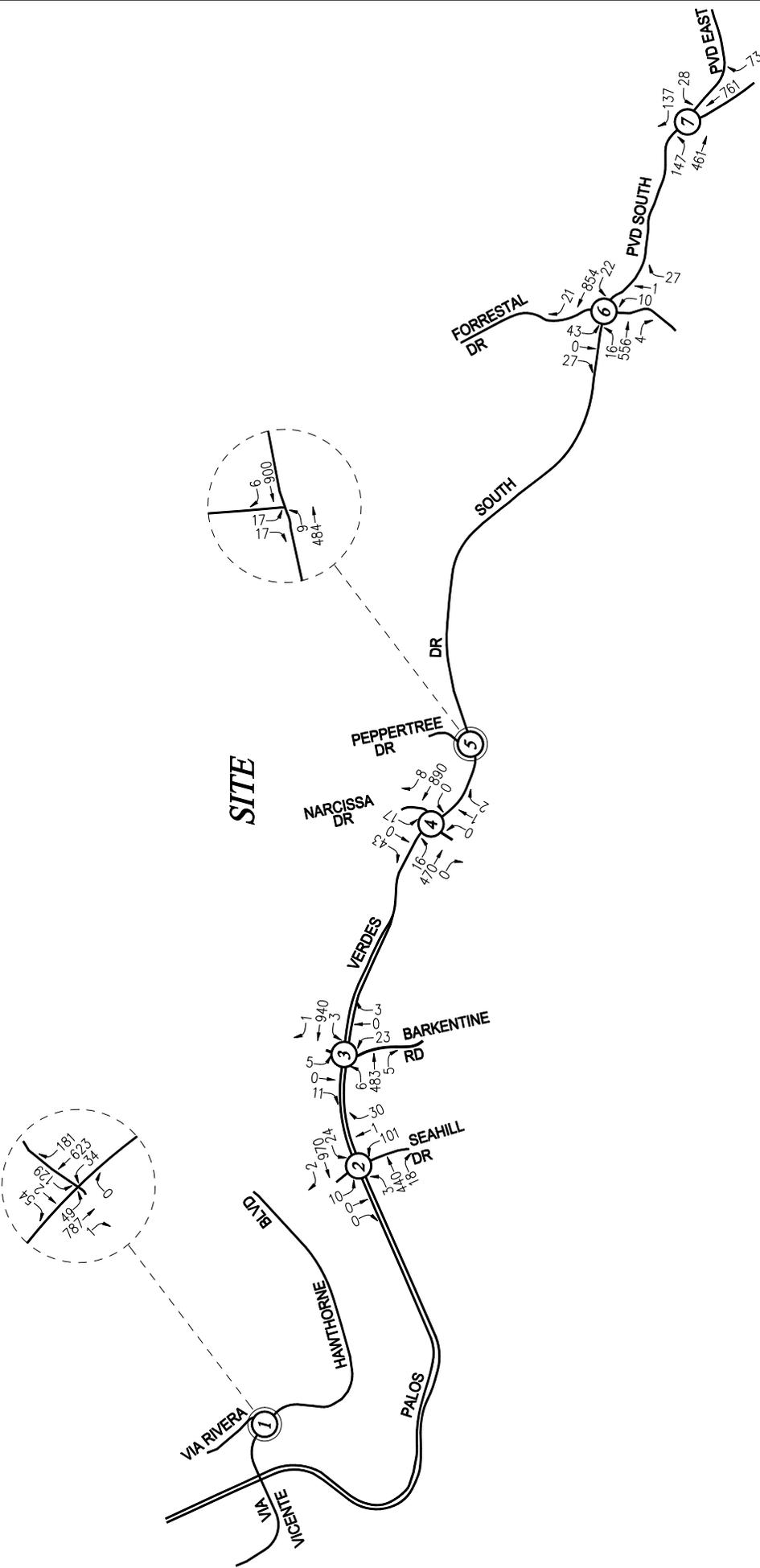


FIGURE 6-8
YEAR 2020 FUTURE WITH PROJECT TRAFFIC VOLUMES
 WEEKDAY AM PEAK HOUR
 ZONE 2 LANDSLIDE MORATORIUM - PORTUGUESE BEND PROJECT

(X) = INTERSECTION NUMBER

NOT TO SCALE

LINSCOTT, LAW & GREENSPAN, engineers

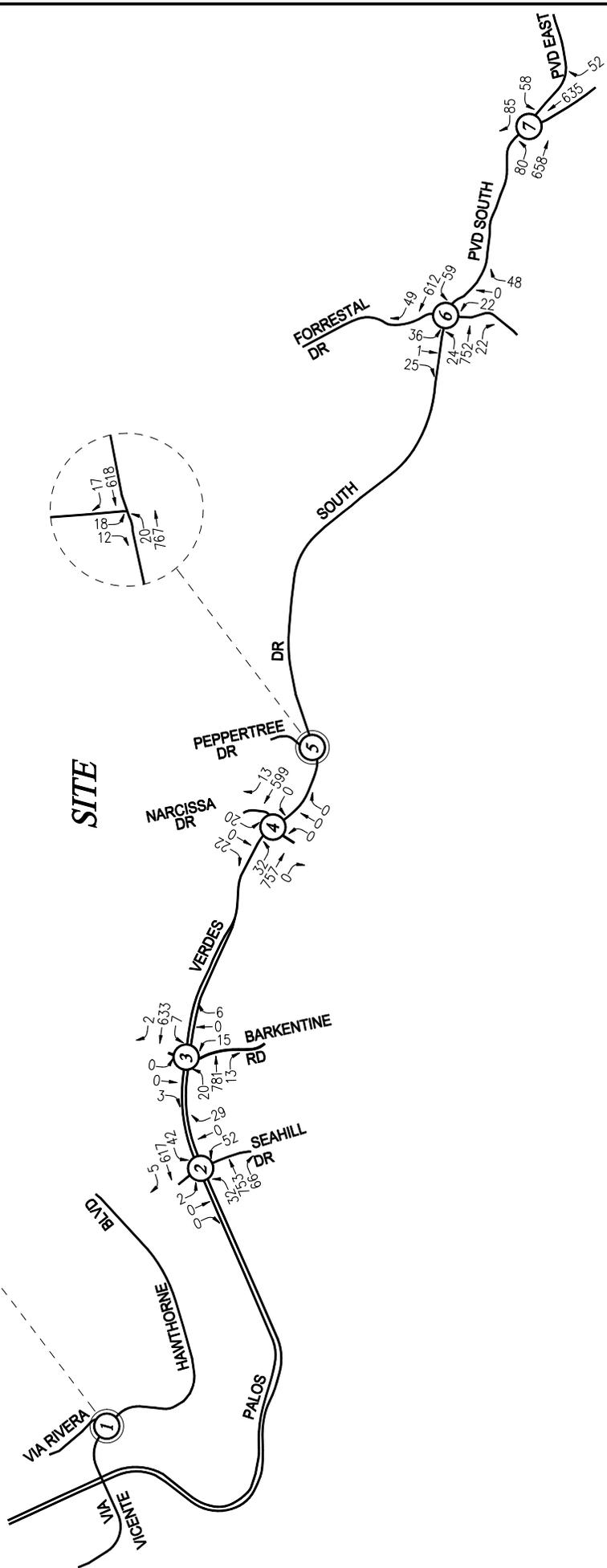


FIGURE 6-9
YEAR 2020 FUTURE WITH PROJECT TRAFFIC VOLUMES
 WEEKDAY PM PEAK HOUR
 ZONE 2 LANDSLIDE MORATORIUM - PORTUGUESE BEND PROJECT

(X) = INTERSECTION NUMBER

NOT TO SCALE

LINSCOTT, LAW & GREENSPAN, engineers

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 Zone 2 Landslide Moratorium - Portuguese Bend project during the AM and PM peak hours was evaluated based on analysis of future operating conditions at the seven 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 project impacts at each key intersection was then evaluated using the traffic impact criteria employed for projects in the City of Rancho Palos Verdes. The City of Rancho Palos Verdes's target for peak hour intersection operation is LOS D or better.

7.1.1 Signalized Intersections

The City of Rancho Palos Verdes utilizes the County of Los Angeles traffic thresholds of significance for signalized intersections. The significance of the potential project generated traffic impacts at the signalized intersections was identified using criteria set forth in the Los Angeles County Department of Public Works' *Traffic Impact Analysis Report Guidelines*⁵. According to the County's published guidelines, the impact is considered significant if the project-related increase in the *v/c* ratio equals or exceeds the thresholds presented in **Table 7-1**.

TABLE 7-1
SIGNALIZED INTERSECTION IMPACT THRESHOLD CRITERIA

Pre-Project ICU	Level of Service	Project Related Increase in ICU
≥ 0.71 - 0.80	C	equal to or greater than 0.04
≥ 0.81 - 0.90	D	equal to or greater than 0.02
≥ 0.91 or more	E/F	equal to or greater than 0.01

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 D the threshold of significance is an increase of 0.04 or greater 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.

⁵ *Los Angeles County Traffic Impact Analysis Report Guidelines*, Los Angeles County Department of Public Works, January 1, 1997.

7.1.2 Unsignalized Intersections

The City of Rancho Palos Verdes has established the following thresholds of significance for unsignalized intersections:

- A significant impact would occur at an unsignalized intersection when the addition of project-generated trips causes the peak hour level of service of the intersection to change from acceptable operation (LOS D or better) to deficient operation (LOS E or F); or
- A significant impact would occur at an unsignalized intersection if the peak hour level of service of the intersection is LOS E or F and the addition of project-generated trips changes the delay by 2.0 seconds or more.

7.2 Traffic Impact Analysis Scenarios

Volume/capacity calculations have been performed for the key study intersections for the following traffic conditions:

- (a) Existing traffic conditions;
- (b) Scenario (a) with project traffic;
- (c) Scenario (b) with mitigation, if necessary.
- (d) Scenario (a) with ambient growth traffic to the Year 2020 at 0.6% per year plus related projects traffic;
- (e) Scenario (d) with project traffic to the Year 2020; and
- (g) Scenario (e) with mitigation, if necessary.

8.0 PEAK HOUR INTERSECTION CAPACITY ANALYSIS

8.1 Existing Conditions

The peak hour Level of Service results at the seven study intersections for the existing conditions are summarized in **Table 8-1**. The first column [1] of ICU/LOS and HCM/LOS values in *Table 8-1* presents a summary of the existing AM and PM peak hour traffic conditions (which were also presented in *Table 4-5*). The second column [2] presents projected existing with project traffic conditions based on the addition of the proposed project traffic. The third column [3] shows the change in ICU value or delay 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 City of Rancho Palos Verdes LOS standards and the significance impact threshold criteria defined in this report. The ICU and HCM data worksheets for the seven analyzed intersections for the weekday AM and PM peak hours are contained in *Appendix B*.

8.1.1 Existing Traffic Conditions

As shown in column [1] of *Table 8-1* (previously presented in *Table 4-5*), six of the seven study intersections are currently operating at acceptable Levels of Service (i.e., LOS D or better) during the weekday AM and PM peak hours. The remaining study intersection (Intersection No. 1, Via Rivera/Hawthorne Boulevard) is current operating at LOS E during the AM peak hour and LOS D during the PM peak hour. The existing traffic volumes at the study intersections during the weekday AM and PM peak hours are shown in *Figures 4-3* and *4-4*, respectively.

8.1.2 Existing With Project Conditions

As shown in columns [2] and [3] of *Table 8-1*, application of the City's threshold criteria to the "Existing With Project Conditions" scenario indicates that the proposed project is not expected to create significant impacts at any of the seven study intersections. Incremental, but not significant, impacts are noted at the study intersections. Because there are no significant impacts, no traffic mitigation measures are required or recommended for the study intersections under the "Existing With Project Conditions". The existing with project traffic volumes at the study intersections during the weekday AM and PM peak hours are shown in *Figures 6-4* and *6-5*, respectively.

8.2 Year 2020 Future Traffic Conditions

The peak hour Level of Service results at the seven study intersections for the Year 2020 horizon year are summarized in **Table 8-2**. The first column [1] of ICU/LOS and HCM/LOS values in *Table 8-2* presents a summary of the projected Year 2020 future pre-project traffic conditions based on future intersection geometry, where applicable, existing traffic volumes with the addition of ambient growth, and related projects traffic volumes. It is important to note that any intersection improvements/mitigation measures associated with the related projects have been incorporated as part of this condition for purposes of this analysis. The second column [2] presents projected Year 2020 future with project traffic conditions based on the addition of the proposed project traffic. The third column [3] shows the change in ICU value or delay 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 City of Rancho Palos Verdes LOS standards and the significance impact threshold criteria

TABLE 8-1
EXISTING WITH PROJECT INTERSECTION LEVELS OF SERVICE SUMMARY

Int No.	Key Intersection	Unsignalized (1)/ Signalized (2)	Time Period	[1] Existing Traffic Conditions			[2] Existing + Project Traffic Conditions			[3] Change in V/C or Delay		Significant Impact [b], [c]
				Delay	V/C	LOS [a]	Delay	V/C	LOS [a]	[(2-1)]	[b], [c]	
1	Via Rivera/ Hawthorne Boulevard	1	AM PM	38.6 29.4	0.572 0.342	E D	39.6 30.3	0.579 0.351	E D	1.0 0.9	NO NO	
2	Tramonto Drive-Seahill Drive/ Palos Verdes Drive South	1	AM PM	27.6 23.6	0.396 0.274	D C	28.5 24.7	0.407 0.288	D C	0.9 1.1	NO NO	
3	Barkentine Road/ Palos Verdes Drive South	1	AM PM	18.9 18.7	0.091 0.067	C C	19.3 19.4	0.094 0.070	C C	0.4 0.7	NO NO	
4	Narcissa Drive/ Palos Verdes Drive South	1	AM PM	17.8 16.1	0.085 0.069	C C	19.2 16.6	0.110 0.092	C C	1.4 0.5	NO NO	
5	Peppertree Drive/ Palos Verdes Drive South	1	AM PM	20.0 18.4	0.068 0.069	C C	19.2 17.8	0.086 0.082	C C	-0.8 -0.6	NO NO	
6	Forrestal Drive/ Palos Verdes Drive South	1	AM PM	31.3 26.6	0.315 0.251	D D	32.0 27.4	0.322 0.258	D D	0.7 0.8	NO NO	
7	Palos Verdes Drive East/ Palos Verdes Drive South	1	AM PM	17.0 16.3	0.271 0.175	C C	17.1 16.5	0.274 0.180	C C	0.1 0.2	NO NO	

[a] Level of Service (LOS) is based on the delay for unsignalized intersections and on the reported ICU value for signalized intersections.
 [b] For signalized intersections, the City of Rancho Palos Verdes utilizes the County of Los Angeles traffic thresholds of significance. According to the County of Los Angeles Department of Public Works' "Traffic Impact Analysis Report Guidelines," January 1, 1997, Page 6: "an impact is considered significant if the project related increase in the volume-to-capacity ratio (v/c) equals or exceeds the thresholds shown below:

Level of Service	Pre-Project ICU	Project-Related Increase in V/C
C	>= 0.71 - 0.80	equal to or greater than 0.040
D	>= 0.81 - 0.90	equal to or greater than 0.020
E/F	>= 0.91	equal to or greater than 0.010

[c] For unsignalized intersections, the City of Rancho Palos Verdes has established the following thresholds of significance:
 - A significant impact would occur at an unsignalized intersection when the addition of project-generated trips causes the peak hour level of service of the intersection to change from acceptable operation (LOS D or better) to deficient operation (LOS E or F); or
 - A significant impact would occur at an unsignalized intersection if the peak hour level of service of the intersection is LOS E or F and the addition of project-generated trips changes the delay by 2.0 seconds or more.

TABLE 8-2
YEAR 2020 WITH PROJECT INTERSECTION LEVELS OF SERVICE SUMMARY

Int No.	Key Intersection	Unsignalized (1)/ Signalized (2)	Time Period	[1] Year 2020 Future Pre-Project Traffic Conditions			[2] Year 2020 Future With Project Traffic Conditions			[3] Change in V/C or Delay [(3-2)]		Significant Impact [b], [c]	[4] Year 2020 Future With Project + Mitigation			[5] Change in V/C or Delay [(3-2)]		Significant Impact [b], [c]
				Delay	V/C	LOS [a]	Delay	V/C	LOS [a]	Delay	V/C		LOS [a]	Delay	V/C	LOS [a]	Delay	
1	Via Rivera/ Hawthorne Boulevard	I	AM PM	137.3 97.0	0.954 0.726	F F	141.7 102.3	0.966 0.744	F F	4.4 5.3	YES YES	91.7 86.0	0.966 0.744	F F	-45.6 -11.0	NO NO		
2	Tramonto Drive-Seahill Drive/ Palos Verdes Drive South	I	AM PM	44.6 49.5	0.616 0.524	E E	47.0 53.3	0.633 0.549	E F	2.4 3.8	YES YES	20.5 22.3	--- ---	C C	-24.1 -27.2	YES YES		
3	Barkentine Road/ Palos Verdes Drive South	I	AM PM	26.2 29.3	0.141 0.123	D D	26.9 30.5	0.145 0.129	D D	0.7 1.2	NO NO	26.9 30.5	0.145 0.129	D D	0.7 1.2	NO NO		
4	Narcissa Drive/ Palos Verdes Drive South	I	AM PM	24.5 24.5	0.117 0.131	C C	27.6 25.9	0.187 0.174	D D	3.1 1.4	NO NO	27.6 25.9	0.187 0.174	D D	3.1 1.4	NO NO		
5	Pepperree Drive/ Palos Verdes Drive South	I	AM PM	28.5 29.6	0.113 0.131	D D	27.2 28.5	0.141 0.156	D D	-1.3 -1.1	NO NO	27.2 28.5	0.141 0.156	D D	-1.3 -1.1	NO NO		
6	Forrestal Drive/ Palos Verdes Drive South	I	AM PM	75.8 87.4	0.626 0.653	F F	78.6 91.9	0.640 0.673	F F	2.8 4.5	YES YES	--- ---	0.739 0.708	C C	0.113 0.055	YES YES		
7	Palos Verdes Drive East/ Palos Verdes Drive South	I	AM PM	10.4 10.1	0.394 0.548	B B	10.8 11.1	0.398 0.563	B B	0.4 1.0	NO NO	10.8 11.1	0.398 0.563	B B	0.4 1.0	NO NO		

[a] Level of Service (LOS) is based on the delay for unsignalized intersections and on the reported ICU value for signalized intersections.

[b] For signalized intersections, the City of Rancho Palos Verdes utilizes the County of Los Angeles traffic thresholds of significance. According to the County of Los Angeles Department of Public Works "Traffic Impact Analysis Report Guidelines," January 1, 1997, Page 6: "an impact is considered significant if the project related increase in the volume-to-capacity ratio (v/c) equals or exceeds the thresholds shown below:

Level of Service	Pre-Project ICU	Project-Related Increase in V/C
C	>= 0.71 - 0.80	equal to or greater than 0.040
D	>= 0.81 - 0.90	equal to or greater than 0.020
E/F	>= 0.91	equal to or greater than 0.010

[c] For unsignalized intersections, the City of Rancho Palos Verdes has established the following thresholds of significance:

- A significant impact would occur at an unsignalized intersection when the addition of project-generated trips causes the peak hour level of service of the intersection to change from acceptable operation (LOS D or better) to deficient operation (LOS E or F); or
- A significant impact would occur at an unsignalized intersection if the peak hour level of service of the intersection is LOS E or F and the addition of project-generated trips changes the delay by 2.0 seconds or more.

- Int. No. 6: Forrestal Drive/Palos Verdes Drive South

AM peak hour *delay* increase of 2.8 seconds [to 78.6 (LOS F) from 75.8 (LOS F)]

PM peak hour *delay* increase of 4.5 seconds [to 91.9 (LOS F) from 87.4 (LOS F)]

Incremental but not significant cumulative traffic impacts are noted at the remaining four study intersections under Year 2020 future with project conditions. The Year 2020 future with project traffic volumes at the study intersections during the weekday AM and PM peak hours are shown in *Figures 6-8* and *6-9*, respectively.

9.0 ROADWAY STREET SEGMENT ANALYSIS

Based on direction from City of Rancho Palos Verdes Public Works Department staff, roadway level of service analyses were prepared for two roadway segments located in the project study area. The following two roadway street segments were selected in consultation with City of Rancho Palos Verdes staff for analysis of potential impacts due to the proposed project:

1. Palos Verdes Drive South east of Seacove Drive
2. Palos Verdes Drive South east of Cherry Hill Lane

Automatic 24-hour machine traffic counts were conducted at the above locations during a mid-week day (i.e., Tuesday, Wednesday, or Thursday) in May 2010. The average weekday AM and PM peak hour volumes were then calculated based on the automatic 24-hour machine traffic counts. Copies of the 24-hour machine counts are contained in *Appendix A*.

The significance of the potential impacts of project generated traffic at the study street segments was identified using the two-lane roadway criteria set forth in the *County of Los Angeles Traffic Impact Analysis Report Guidelines* document. According to the County's published traffic impact study guidelines, a transportation impact on a roadway shall be deemed significant based on a percentage increase in passenger cars per hour (PCPH) by the project as shown in *Table 9-1*.

TABLE 9-1
ROADWAY SEGMENT IMPACT THRESHOLD CRITERIA

Two-lane Roadways				
Directional Split	Total Capacity (PCPH)	Percentage Increases in Passenger Cars Per Hour (PCPH) by Project		
		Pre-Project LOS		
		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

9.1 Year 2020 Future Traffic Conditions

The forecast traffic conditions at the analyzed street segments for existing, year 2020 future pre-project (i.e., existing traffic volumes, ambient traffic growth and related projects traffic volumes) and Year 2020 future with project analysis scenarios are summarized in **Table 9-2**. As presented in Column [1], the average AM and PM peak hour volumes were utilized to evaluate existing conditions on the roadway. As shown in Column [2] of *Table 9-2*, a 0.6 percent (0.6 %) annual ambient growth rate through the year 2020 as well as related projects traffic volumes were conservatively added to the existing weekday AM and PM peak hour volumes in order to estimate the future pre-project traffic volumes. As presented in Column [3] of *Table 9-2*, the proposed project AM and PM day trips will incrementally affect traffic volumes on the analyzed street segments. Application of the County's two-lane roadway threshold criteria for street segment analysis indicates that the proposed project is not anticipated to significantly impact the analyzed street segments. Thus, no mitigation measures are required or recommended.

Table 9-2
YEAR 2020 WITH PROJECT ROADWAY LEVELS OF SERVICE SUMMARY

NO.	ROADWAY SEGMENT	TIME PERIOD	DIRECTIONAL SPLIT [a]	TOTAL CAPACITY (PCPH) [b]	(1) EXISTING TRAFFIC CONDITIONS			(2) YEAR 2020 W/ RELATED PROJECTS TRAFFIC CONDITIONS			(3) YEAR 2020 WITH PROJECT TRAFFIC CONDITIONS						
					PEAK HOUR VOL [c]	V/C	LOS	REL. PROJ. VOL [d]	PEAK HOUR VOL [e]	V/C	LOS	PROJ VOL [f]	PEAK HOUR VOL [g]	V/C	LOS	PCPH PERCENT INCREASE	SIG. IMPACT YES/NO [h]
1	Palos Verdes Drive South east of Seacove Drive	AM	70 / 30	2,500	1,122	0.449	A	290	1,479	0.592	A	23	1,502	0.601	B	1.6%	NO
		PM	60 / 40	2,650	1,023	0.386	A	423	1,507	0.569	A	31	1,538	0.581	A	2.1%	NO
2	Palos Verdes Drive South east of Cherry Hill Lane	AM	70 / 30	2,500	1,125	0.450	A	278	1,471	0.588	A	12	1,483	0.593	A	0.8%	NO
		PM	60 / 40	2,650	972	0.367	A	403	1,433	0.541	A	16	1,449	0.547	A	1.1%	NO

Note: PCPH = Passenger Cars Per Hour

- [a] Directional split of the roadway based on existing traffic count data.
- [b] Total capacity, in passenger cars per hour (PCPH), based on existing roadway directional split per County of Los Angeles Department of Public Works' Traffic Impact Analysis Report Guidelines.
- [c] 24-hour machine counts conducted by City Traffic Counters in May 2010.
- [d] Represents related projects trips based on Table 6-1.
- [e] Derived by combining the existing with ambient traffic volumes and the related projects traffic volumes. An ambient growth rate of 0.60% per year was assumed to derive the year 2020 (i.e., future pre-project) traffic volumes based on the 2004 CMP for Los Angeles County document and consultation with City of Rancho Palos Verdes Public Works staff.
- [f] Represents net new project trips based on the project trip generation and trip distribution for the proposed Zone 2 Landslide Moratorium - Portuguese Bend project.
- [g] Derived by combining the future pre-project traffic volumes and the proposed project volumes.
- [h] According to the County of Los Angeles Department of Public Works' Traffic Impact Analysis Report Guidelines, "January 1, 1997, Page 6: an impact is considered significant if the project related increase in Passenger Car Per Hour (PCPH) equals or exceeds the thresholds shown below:

Directional Split	Total Capacity (PCPH)			Pre-project LOS			Directional Split			Total Capacity (PCPH)			Pre-project LOS		
	50/50	60/40	70/30	C	D	E/F	80/20	90/10	100/0	2,300	2,100	2,000	C	D	E/F
50/50	2,800	2,650	2,500	4	2	1	80/20	90/10	100/0	2,300	2,100	2,000	4	2	1
60/40	2,650	2,500		4	2	1				2,100	2,000		4	2	1
70/30	2,500			4	2	1				2,000			4	2	1

10.0 TRANSPORTATION IMPROVEMENT MEASURES

The following sections provide an overview of transportation improvement measures that are anticipated to address the forecast significant cumulative traffic impacts to the local roadway network associated with the proposed project. It is important to note that the traffic analysis has been based on a conservative approach with respect to the analysis of potential project-related impacts. No project-specific significant traffic impacts are forecast.

10.1 Summary of Intersection Improvement Measures

10.1.1 Cumulative Mitigation Measures

As summarized in the Year 2020 Future With Project Conditions section (refer to Subsection 8.2.2) herein, application of the City's threshold criteria to this scenario indicates that the project and related projects are expected to create significant cumulative impacts at three of the seven study intersections:

- Int. No.1: Via Rivera/Hawthorne Boulevard
- Int. No. 2: Seahill Drive-Tramonto Drive/Palos Verdes Drive South
- Int. No. 6: Forrestal Drive/Palos Verdes Drive South

The following transportation mitigation measures have been considered and if approved and implemented would reduce the project's contribution to the significant cumulative transportation impacts at the subject study intersections to less than significant levels. However, it is important to note that for Intersection No. 2 (Seahill Drive-Tramonto Drive/Palos Verdes Drive South), and Intersection No. 6 (Forrestal Drive/Palos Verdes Drive South), it has been conservatively assumed for purposes of the Draft EIR that a significant and unavoidable traffic impact would remain at these intersections as described more fully below.

- Int. No. 1: Via Rivera/Hawthorne Boulevard

Two mitigation alternatives exist which are both expected to reduce the project's contribution to the significant cumulative transportation impact to less than significant levels. Either of the two measures, as described more fully below, are anticipated to reduce the potentially significant cumulative impact to less than significant levels due to the resulting improvement in the overall intersection operations.

The first measure consists of restriping the southbound approach of Via Rivera to provide two lanes (i.e., a 10-foot wide single left-turn lane and a 12-foot wide optional through-right combination lane) versus the single lane approach that exists today. This restriping can occur by shifting the roadway centerline (double yellow paint stripe) two feet easterly and prohibiting on-street parking along the west side of Via Rivera for approximately 100 feet north of the Hawthorne Boulevard intersection. By providing a two lane approach, right-turning vehicles will not be delayed by southbound left-turning vehicles and thus intersection delay is reduced. As indicated in *Table 8-2*, this measure is anticipated to reduce the potentially significant

cumulative impact to less than significant levels. The improvement is expected to improve operations to 91.7 seconds of delay (LOS F) from 141.7 seconds of delay (LOS F) during the AM peak hour. During the PM peak hour, the improvement is expected to improve operations to 86.0 seconds of delay (LOS F) from 102.3 seconds of delay (LOS F). While this restriping measure does improve overall intersection operations as a whole by reducing the overall southbound approach delay, it should be noted that the southbound left-turn movement delay during the AM and PM peak hours is 125.9 seconds (LOS F) and 116.8 seconds (LOS F), respectively.

The second alternative consists of funding for the design and installation of a traffic signal at this intersection in order to improve overall operations and assignment of motorist right-of-way. This measure is anticipated to reduce the potentially significant cumulative impact to less than significant levels. The improvement is expected to improve operations to 0.517 (LOS A) from 141.7 seconds of delay (LOS F) during the AM peak hour. During the PM peak hour, the improvement is expected to improve operations to 0.460 (LOS A) from 102.3 seconds of delay (LOS F). From a calculation perspective, the installation of a traffic signal would in itself reduce the potentially significant cumulative impact to less than significant levels.

It is important to note that the southbound restriping measure (i.e., provide a two-lane approach versus a single lane approach) would likely be implemented along with the traffic signal installation, should the traffic signal be approved due to the forecast southbound left-turn delay and LOS. The two-lane southbound approach would further enhance the efficiency of the proposed traffic signal by devoting more green time to the predominant east-west through traffic movements (i.e., along Hawthorne Boulevard) and allocating a shorter clearance interval for the southbound approach. This operation would enhance both safety and minimize approach delays.

- Int. No. 2: Seahill Drive-Tramonto Drive/Palos Verdes Drive South

The recommended mitigation consists of providing a proportionate fair-share funding contribution towards the modification of the intersection to provide an acceleration lane to better facilitate the northbound left-turn movement (i.e., from Seahill Drive) onto westbound Palos Verdes Drive South. By modifying the existing median west of Seahill Drive-Tramonto Drive and restriping the west leg of the intersection, the improvement would provide the necessary area for vehicles to accelerate prior to merging with the westbound Palos Verdes Drive South traffic flow. In addition, the improvement allows northbound left-turns to occur via a sufficient gap in only the eastbound traffic flow versus in both the eastbound and westbound traffic flows as occurs today. As indicated in *Table 8-2*, this measure is anticipated to reduce the potentially significant cumulative impact to less than significant levels. The improvement is expected to improve operations to 20.5 seconds of delay (LOS C) from 47.0 seconds of delay (LOS E) during the AM peak hour and to 22.3 seconds of delay (LOS C) from 53.3 seconds of delay (LOS F) during the PM peak hour.

However, it is important to note that for this intersection it has been conservatively assumed for purposes of the Draft EIR that a significant and unavoidable cumulative traffic impact would remain at the intersection since the proportionate share funding contribution to this mitigation measure would not allow the City to fully implement the measure absent other funding sources.

- Int. No. 6: Forrestal Drive/Palos Verdes Drive South

Several mitigation alternatives were considered for this location and some involved the construction of additional travel lanes along Palos Verdes Drive South. While these mitigation alternatives were reviewed, they were subsequently removed from further consideration as they were determined to be in conflict with adopted City policy and the overall goals of the General Plan due to the likely removal of the bicycle lanes. It is important to note that the southbound approach is the most heavily constrained approach as southbound left-turning vehicles must yield to both the eastbound and westbound through vehicles on Palos Verdes Drive South.

Another mitigation alternative consists of the funding for the design and installation of a traffic signal at this intersection in order to improve overall operations and assignment of motorist right-of-way. This measure is anticipated to reduce the potentially significant cumulative impact to less than significant levels. The improvement is expected to improve operations to 0.739 (LOS C) from 78.6 seconds of delay (LOS F) during the AM peak hour and to 0.708 (LOS C) from 91.9 seconds of delay (LOS F) during the PM peak hour. However, it is important to note that for this intersection it has been conservatively assumed for purposes of the Draft EIR that a significant and unavoidable cumulative traffic impact would remain at the intersection due to current uncertainty regarding the approval of a traffic signal installation.

11.0 CONGESTION MANAGEMENT PROGRAM TRAFFIC IMPACT ASSESSMENT

The Congestion Management Program (CMP) is a state-mandated program that was enacted by the State Legislature with the passage of Proposition 111 in 1990. The program is intended to address the impact of local growth on the regional transportation system.

As required by the *2010 Congestion Management Program for Los Angeles County*, a Traffic Impact Assessment (TIA) has been prepared to determine the potential impacts on designated monitoring locations on the CMP highway system. The analysis has been prepared in accordance with procedures outlined in the *2010 Congestion Management Program for Los Angeles County*, County of Los Angeles Metropolitan Transportation Authority, October 2010.

11.1 Freeways

No CMP freeway monitoring locations are located in the project vicinity. Further, the CMP TIA guidelines require that freeway monitoring locations must be examined if the proposed project will add 150 or more trips (in either direction) during either the AM or PM weekday peak periods. The proposed project will not add 150 or more trips (in either direction), during either the AM or PM weekday peak hours to the CMP freeway monitoring location, which is the threshold for preparing a traffic impact assessment, as stated in the CMP manual. Therefore, no further review of potential impacts to freeway monitoring locations that are part of the CMP highway system is required.

11.2 Intersections

The following CMP intersection monitoring location in the project vicinity has been identified:

<u>CMP Station</u>	<u>Intersection</u>
Int. No. 58	Pacific Coast Highway at Western Avenue
Int. No. 84	Western Avenue at 9 th Street
Int. No. 128	Western Avenue at Toscanini Drive
Int. No. 151	Pacific Coast Highway at Crenshaw Boulevard
Int. No. 152	Pacific Coast Highway at Hawthorne Boulevard
Int. No. 153	Pacific Coast Highway at Palos Verdes Boulevard

The CMP TIA guidelines require that intersection monitoring locations must be examined if the proposed project will add 50 or more trips during either the AM or PM weekday peak periods. The proposed project will not add 50 or more trips, during the AM or PM peak hours at the CMP monitoring intersection, which is the threshold for preparing a traffic impact assessment, as stated in the CMP manual. As such, no further review of potential impacts to intersection monitoring locations that are part of the CMP highway system is required.

11.3 Transit Impact Review

As required by the *2010 Congestion Management Program for Los Angeles County*, a review has been made of the CMP transit service. Existing transit service is provided in the vicinity of the proposed project.

The project trip generation, as shown in *Table 5-2*, 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 (2) transit trip during the weekday AM peak hour, two (2) transit trips during the weekday PM peak hour, and 22 daily transit trips during the weekday. The calculations are as follows:

- Weekday AM Peak Hour = $35 \times 1.4 \times 0.035 = 2$ Transit Trips
- Weekday PM Peak Hour = $47 \times 1.4 \times 0.035 = 2$ Transit Trips
- Weekday Daily Trips = $450 \times 1.4 \times 0.035 = 22$ Transit Trips

As shown in *Table 4-1*, seven bus transit lines and routes are provided adjacent to or in close proximity to the project site, with two of these transit lines and routes directly serving the Portuguese Bend community. A total of four different bus transit providers provide service within the study area. As outlined in *Table 4-1* under the “No. of Buses During Peak Hour” column, these seven transit lines provide service for an average (i.e., an average of the directional number of buses during the peak hours) of approximately 20 buses during the AM peak hour and roughly 17 buses during the PM peak hour. Therefore, based on the above calculated peak hour transit trips, this would correspond to less than one transit rider per bus. Thus, given the low number of generated transit trips per bus, no impacts on existing or future transit services in the project area are expected to occur as a result of the proposed project.

12.0 CONCLUSIONS

This traffic impact analysis has been prepared to evaluate the potential traffic impacts associated with the Zone 2 Landslide Moratorium - Portuguese Bend project. The City of Rancho Palos Verdes is considering revisions to its Landslide Moratorium Ordinance that would facilitate the future development of 47 additional single-family residences on undeveloped lots within a portion of the City's Portuguese Bend community. This traffic analysis evaluates potential project-related impacts at seven intersections and two street segments. Application of the City's threshold criteria to the "Existing With Project" scenario indicates that none of the study locations are anticipated to be significantly impacted by the proposed project. However, the project is forecast to contribute on a cumulative basis to significant traffic impacts at a total of three study intersections.

Transportation mitigation measures have been considered and if approved and implemented would reduce the project's contribution to the significant cumulative transportation impacts at the subject study intersections to less than significant levels. It is important to note that for Intersection No. 2 (Seahill Drive-Tramonto Drive/Palos Verdes Drive South), it has been conservatively assumed for purposes of the Draft EIR that a significant and unavoidable traffic impact would remain at this intersection as described in this report, as the project's proportionate share funding contribution in and of itself would not allow the City to implement the measure absent other funding sources. Further, for Intersection No. 6 (Forrestal Drive/Palos Verdes Drive South), it has been conservatively assumed for purposes of the Draft EIR that a significant and unavoidable traffic impact would remain at the intersection due to current uncertainty regarding an approval of a traffic signal installation.

APPENDIX A
TRAFFIC COUNT DATA

City Traffic Counters, LLC.
626-256-4171

File Name : Hawthorne_VR
Site Code : 00000000
Start Date : 3/22/2011
Page No : 1

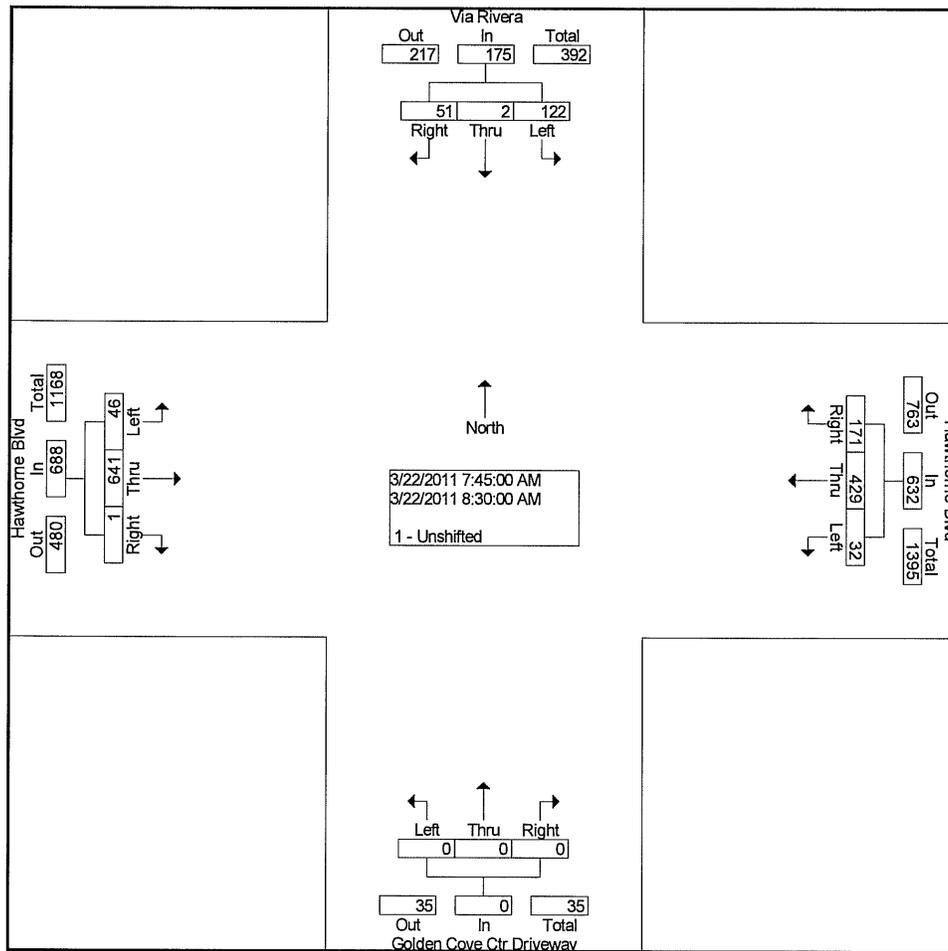
Groups Printed- 1 - Unshifted

Start Time	Via Rivera Southbound			Hawthorne Blvd Westbound			Golden Cove Ctr Driveway Northbound			Hawthorne Blvd Eastbound			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	11	0	6	2	45	4	0	0	1	6	84	0	159
07:15 AM	14	0	4	3	41	6	0	0	1	7	65	0	141
07:30 AM	25	0	10	2	98	11	0	0	0	6	159	0	311
07:45 AM	23	0	12	2	153	24	0	0	0	3	153	1	371
Total	73	0	32	9	337	45	0	0	2	22	461	1	982
08:00 AM	16	2	1	5	102	39	0	0	0	7	160	0	332
08:15 AM	28	0	19	15	81	78	0	0	0	22	173	0	416
08:30 AM	55	0	19	10	93	30	0	0	0	14	155	0	376
08:45 AM	27	0	7	11	106	8	0	0	2	3	130	0	294
Total	126	2	46	41	382	155	0	0	2	46	618	0	1418
04:00 PM	14	0	14	6	126	26	0	0	1	11	136	1	335
04:15 PM	27	0	9	5	144	14	0	0	2	8	110	0	319
04:30 PM	12	1	8	3	164	16	1	0	0	9	113	0	327
04:45 PM	11	1	14	7	140	15	0	0	2	10	115	0	315
Total	64	2	45	21	574	71	1	0	5	38	474	1	1296
05:00 PM	14	0	7	3	112	19	0	0	1	6	137	0	299
05:15 PM	15	0	6	7	157	11	0	0	3	12	105	2	318
05:30 PM	12	0	8	9	141	19	0	1	5	12	138	1	346
05:45 PM	17	0	3	1	153	25	0	1	1	5	132	2	340
Total	58	0	24	20	563	74	0	2	10	35	512	5	1303
Grand Total	321	4	147	91	1856	345	1	2	19	141	2065	7	4999
Apprch %	68.0	0.8	31.1	4.0	81.0	15.1	4.5	9.1	86.4	6.4	93.3	0.3	
Total %	6.4	0.1	2.9	1.8	37.1	6.9	0.0	0.0	0.4	2.8	41.3	0.1	

City Traffic Counters, LLC.
626-256-4171

File Name : Hawthorne_VR
Site Code : 00000000
Start Date : 3/22/2011
Page No : 2

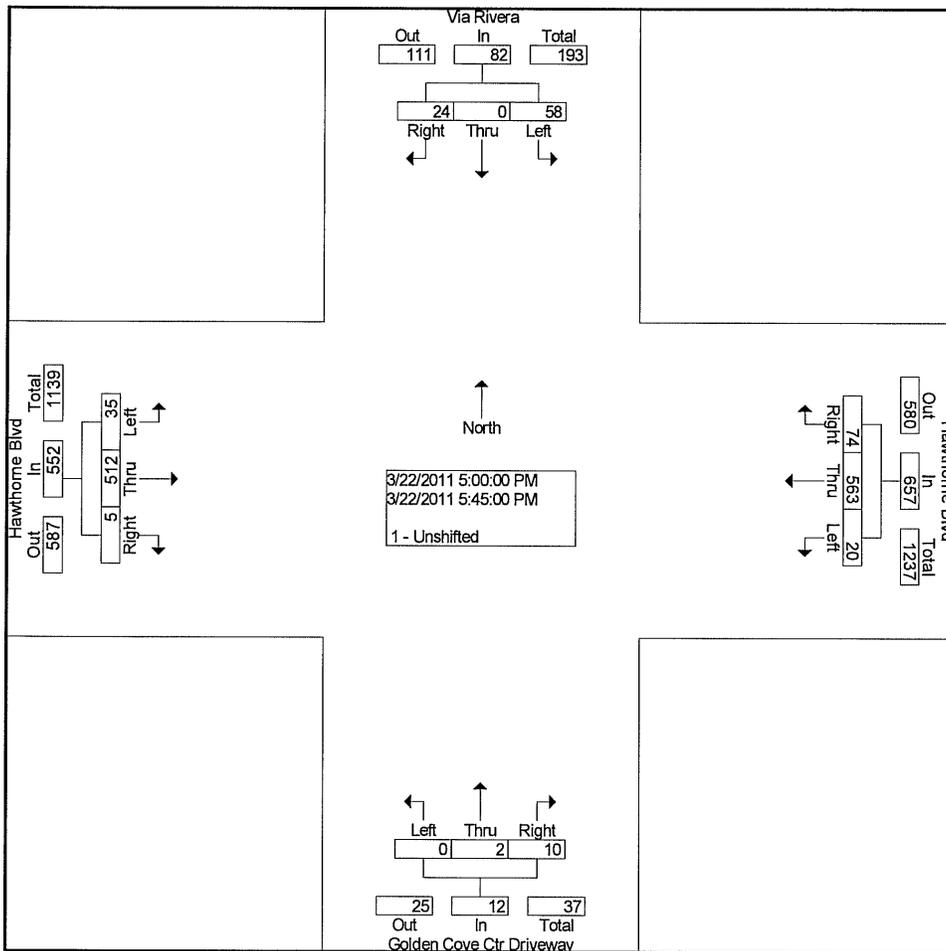
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	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Intersection	07:45 AM																
Volume	122	2	51	175	32	429	171	632	0	0	0	0	46	641	1	688	1495
Percent	69.7	1.1	29.1		5.1	67.9	27.1		0.0	0.0	0.0		6.7	93.2	0.1		
08:15	28	0	19	47	15	81	78	174	0	0	0	0	22	173	0	195	416
Volume																	
Peak Factor																	0.898
High Int.	08:30 AM																
Volume	55	0	19	74	2	153	24	179	0	0	0	0	22	173	0	195	
Peak Factor				0.591				0.883									0.882



City Traffic Counters, LLC.
626-256-4171

File Name : Hawthorne_VR
Site Code : 00000000
Start Date : 3/22/2011
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Start Time	Via Rivera Southbound				Hawthorne Blvd Westbound				Golden Cove Ctr Driveway Northbound				Hawthorne Blvd Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection	05:00 PM																
Volume	58	0	24	82	20	563	74	657	0	2	10	12	35	512	5	552	1303
Percent	70.7	0.0	29.3		3.0	85.7	11.3		0.0	16.7	83.3		6.3	92.8	0.9		
05:30	12	0	8	20	9	141	19	169	0	1	5	6	12	138	1	151	346
Volume																	
Peak Factor	0.941																
High Int.	05:00 PM																
Volume	14	0	7	21	1	153	25	179	0	1	5	6	12	138	1	151	
Peak Factor	0.976				0.918				0.500				0.914				



City Traffic Counters
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File Name : RPVSeahill
Site Code : 00000000
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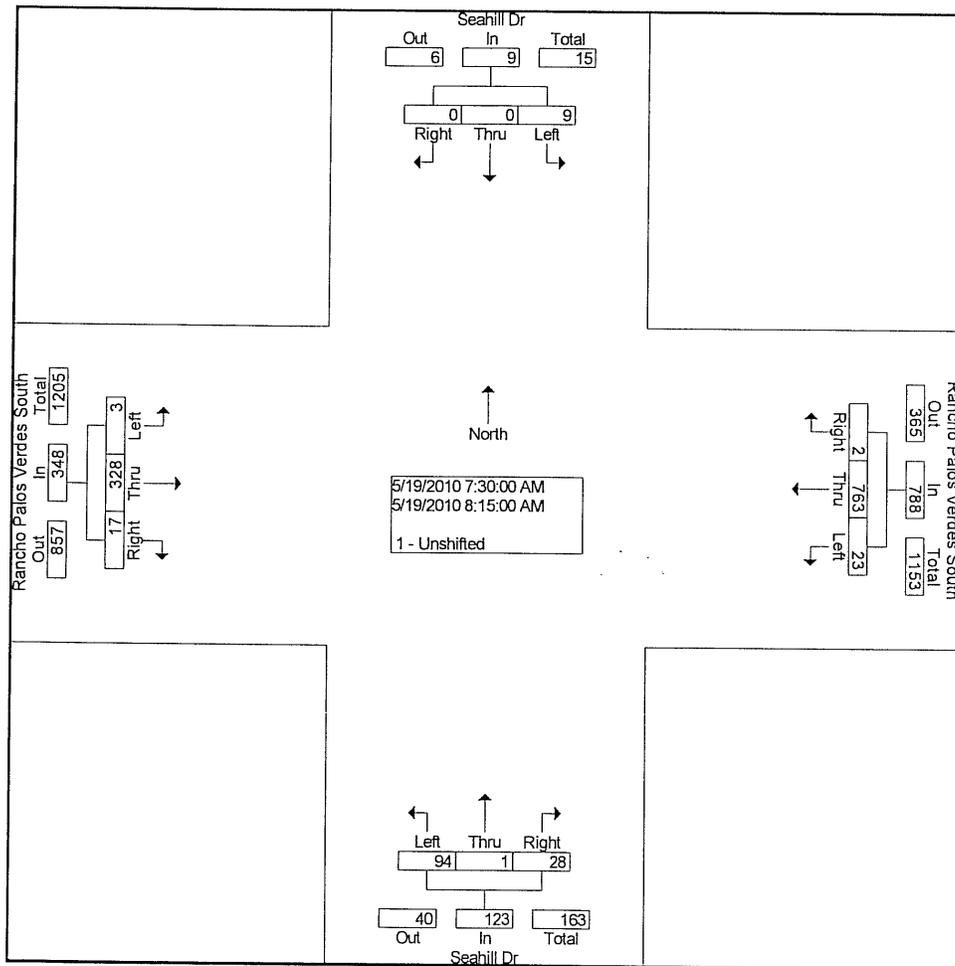
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Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	2	0	0	2	95	0	10	1	7	2	53	4	176
07:15 AM	0	0	2	4	145	0	21	0	10	3	45	3	233
07:30 AM	2	0	0	2	218	0	27	1	8	1	69	0	328
07:45 AM	3	0	0	5	195	1	21	0	8	0	86	6	325
Total	7	0	2	13	653	1	79	2	33	6	253	13	1062
08:00 AM	2	0	0	9	180	0	15	0	4	0	84	5	299
08:15 AM	2	0	0	7	170	1	31	0	8	2	89	6	316
08:30 AM	6	0	1	3	133	0	10	0	11	1	106	7	278
08:45 AM	1	0	0	7	123	0	13	0	4	1	100	8	257
Total	11	0	1	26	606	1	69	0	27	4	379	26	1150
04:00 PM	0	0	0	4	90	0	12	0	3	1	115	10	235
04:15 PM	2	0	0	8	104	0	11	0	7	3	129	6	270
04:30 PM	1	0	0	9	90	1	9	0	6	13	126	12	267
04:45 PM	0	0	0	6	120	3	11	0	6	8	138	12	304
Total	3	0	0	27	404	4	43	0	22	25	508	40	1076
05:00 PM	0	0	0	13	100	0	16	0	11	6	122	12	280
05:15 PM	1	0	0	6	99	1	10	0	3	8	148	14	290
05:30 PM	1	0	0	15	103	1	11	0	7	8	127	23	296
05:45 PM	0	0	0	8	77	3	11	0	7	9	112	20	247
Total	2	0	0	42	379	5	48	0	28	31	509	69	1113
Grand Total	23	0	3	108	2042	11	239	2	110	66	1649	148	4401
Apprch %	88.5	0.0	11.5	5.0	94.5	0.5	68.1	0.6	31.3	3.5	88.5	7.9	
Total %	0.5	0.0	0.1	2.5	46.4	0.2	5.4	0.0	2.5	1.5	37.5	3.4	

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File Name : RPVSeahill
Site Code : 00000000
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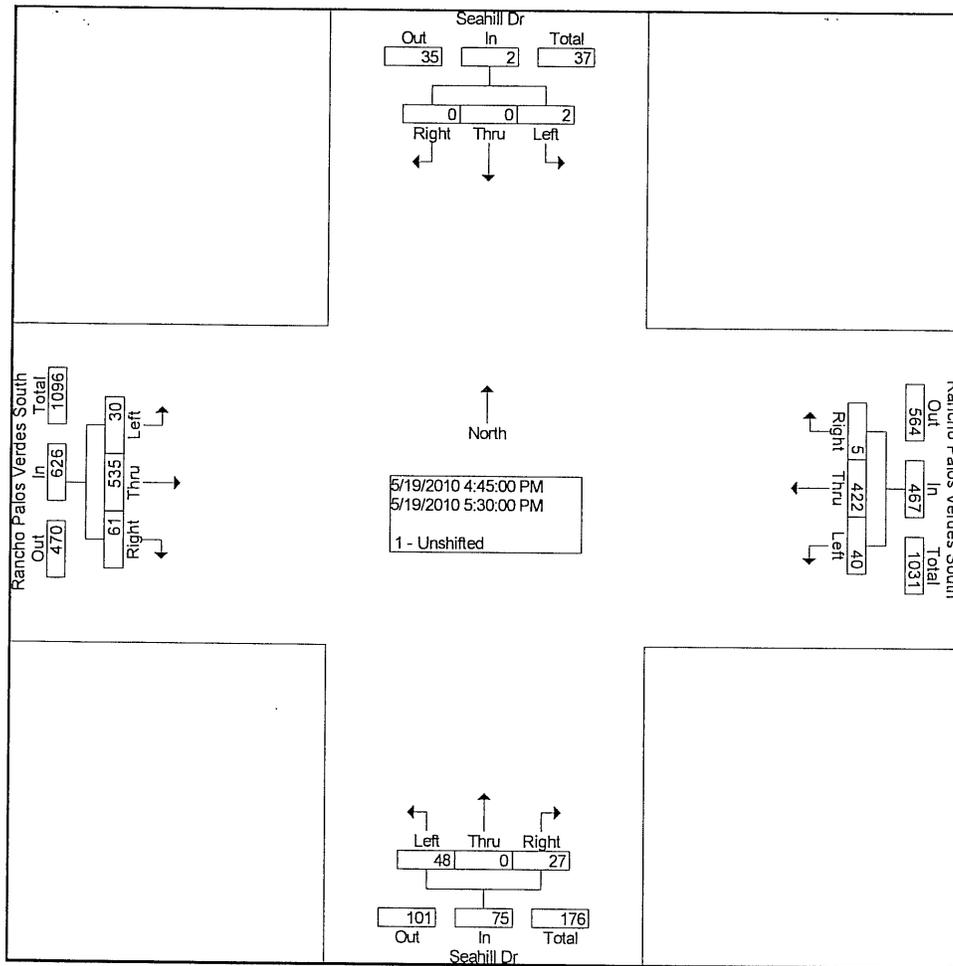
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Peak Hour From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Intersection	07:30 AM																
Volume	9	0	0	9	23	763	2	788	94	1	28	123	3	328	17	348	1268
Percent	100.0	0.0	0.0		2.9	96.8	0.3		76.4	0.8	22.8		0.9	94.3	4.9		
07:30 Volume	2	0	0	2	2	218	0	220	27	1	8	36	1	69	0	70	328
Peak Factor	0.966																
High Int.	07:45 AM																
Volume	3	0	0	3	2	218	0	220	31	0	8	39	2	89	6	97	
Peak Factor	0.750				0.895				0.788				0.897				



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File Name : RPVSeahill
Site Code : 00000000
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Start Time	Seahill Dr Southbound				Rancho Palos Verdes South Westbound				Seahill Dr Northbound				Rancho Palos Verdes South Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection	04:45 PM																
Volume	2	0	0	2	40	422	5	467	48	0	27	75	30	535	61	626	1170
Percent	100.0	0.0	0.0		8.6	90.4	1.1		64.0	0.0	36.0		4.8	85.5	9.7		
04:45 Volume	0	0	0	0	6	120	3	129	11	0	6	17	8	138	12	158	304
Peak Factor	0.962																
High Int.	05:15 PM																
Volume	1	0	0	1	6	120	3	129	16	0	11	27	8	148	14	170	
Peak Factor				0.500				0.905				0.694				0.921	



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File Name : RPVBarkentine
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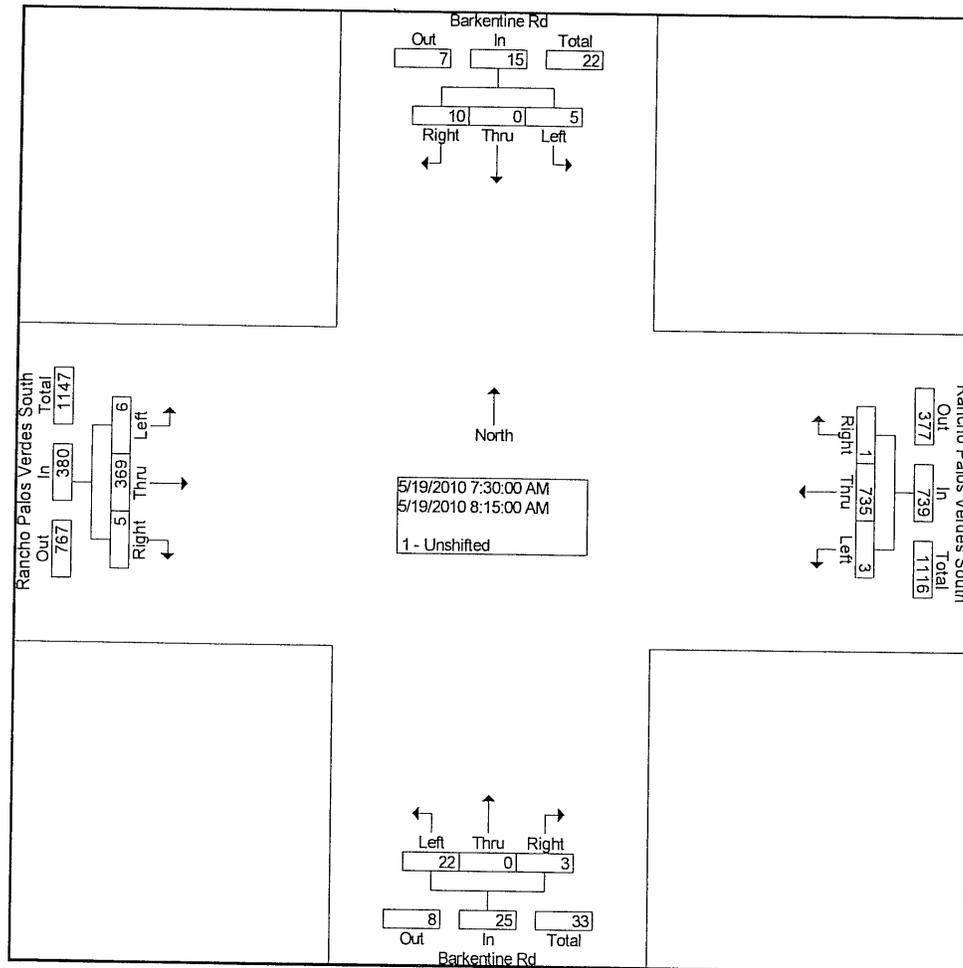
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	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	0	0	2	0	90	0	2	0	1	1	58	1	155
07:15 AM	0	0	1	0	143	1	2	0	0	0	59	1	207
07:30 AM	0	0	2	0	216	0	4	0	1	1	74	1	299
07:45 AM	1	0	2	1	195	1	5	0	0	0	101	0	306
Total	1	0	7	1	644	2	13	0	2	2	292	3	967
08:00 AM	4	0	5	0	171	0	7	0	0	1	96	1	285
08:15 AM	0	0	1	2	153	0	6	0	2	4	98	3	269
08:30 AM	0	0	4	1	135	1	4	0	2	2	123	2	274
08:45 AM	1	0	4	5	128	2	2	0	2	1	87	7	239
Total	5	0	14	8	587	3	19	0	6	8	404	13	1067
04:00 PM	0	0	1	2	92	0	1	0	0	2	130	5	233
04:15 PM	0	0	2	2	109	3	0	0	1	2	129	4	252
04:30 PM	1	0	0	2	90	1	3	0	1	5	124	2	229
04:45 PM	0	0	1	1	119	0	6	0	3	4	138	4	276
Total	1	0	4	7	410	4	10	0	5	13	521	15	990
05:00 PM	0	0	2	3	108	1	4	0	1	7	131	2	259
05:15 PM	0	0	0	2	101	0	0	0	0	4	152	2	261
05:30 PM	0	0	0	1	109	1	4	0	2	4	140	4	265
05:45 PM	3	0	0	3	81	2	3	0	1	3	108	2	206
Total	3	0	2	9	399	4	11	0	4	18	531	10	991
Grand Total	10	0	27	25	2040	13	53	0	17	41	1748	41	4015
Apprch %	27.0	0.0	73.0	1.2	98.2	0.6	75.7	0.0	24.3	2.2	95.5	2.2	
Total %	0.2	0.0	0.7	0.6	50.8	0.3	1.3	0.0	0.4	1.0	43.5	1.0	

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File Name : RPVBarkentine
Site Code : 00000000
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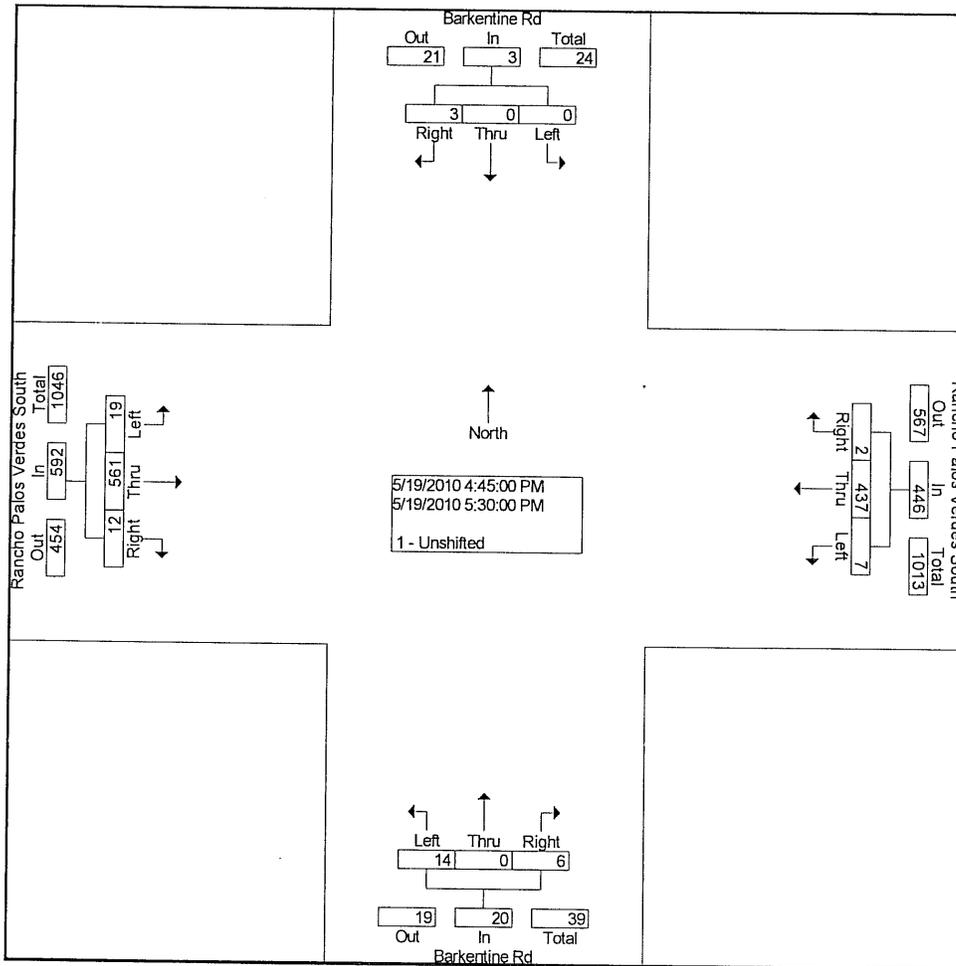
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	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total				
Peak Hour From 07:00 AM to 11:45 AM - Peak 1 of 1																				
Intersection	07:30 AM																			
Volume	5	0	10	15	3	735	1	739	22	0	3	25	6	369	5	380	1159			
Percent	33.3	0.0	66.7		0.4	99.5	0.1		88.0	0.0	12.0		1.6	97.1	1.3					
07:45																				
Volume	1	0	2	3	1	195	1	197	5	0	0	5	0	101	0	101	306			
Peak Factor																				
High Int.	08:00 AM																			
Volume	4	0	5	9	0	216	0	216	6	0	2	8	4	98	3	105	0.947			
Peak Factor	0.417								0.855				0.781				0.905			



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File Name : RPVBarkentine
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Start Time	Barkentine Rd Southbound				Rancho Palos Verdes South Westbound				Barkentine Rd Northbound				Rancho Palos Verdes South Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection	04:45 PM																
Volume	0	0	3	3	7	437	2	446	14	0	6	20	19	561	12	592	1061
Percent	0.0	0.0	100.0		1.6	98.0	0.4		70.0	0.0	30.0		3.2	94.8	2.0		
04:45																	
Volume	0	0	1	1	1	119	0	120	6	0	3	9	4	138	4	146	276
Peak Factor	0.961																
High Int.	05:00 PM																
Volume	0	0	2	2	04:45 PM				04:45 PM				05:15 PM				
Peak Factor	0.375				0.929				0.556				0.937				



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File Name : RPVNarcissa
Site Code : 00000000
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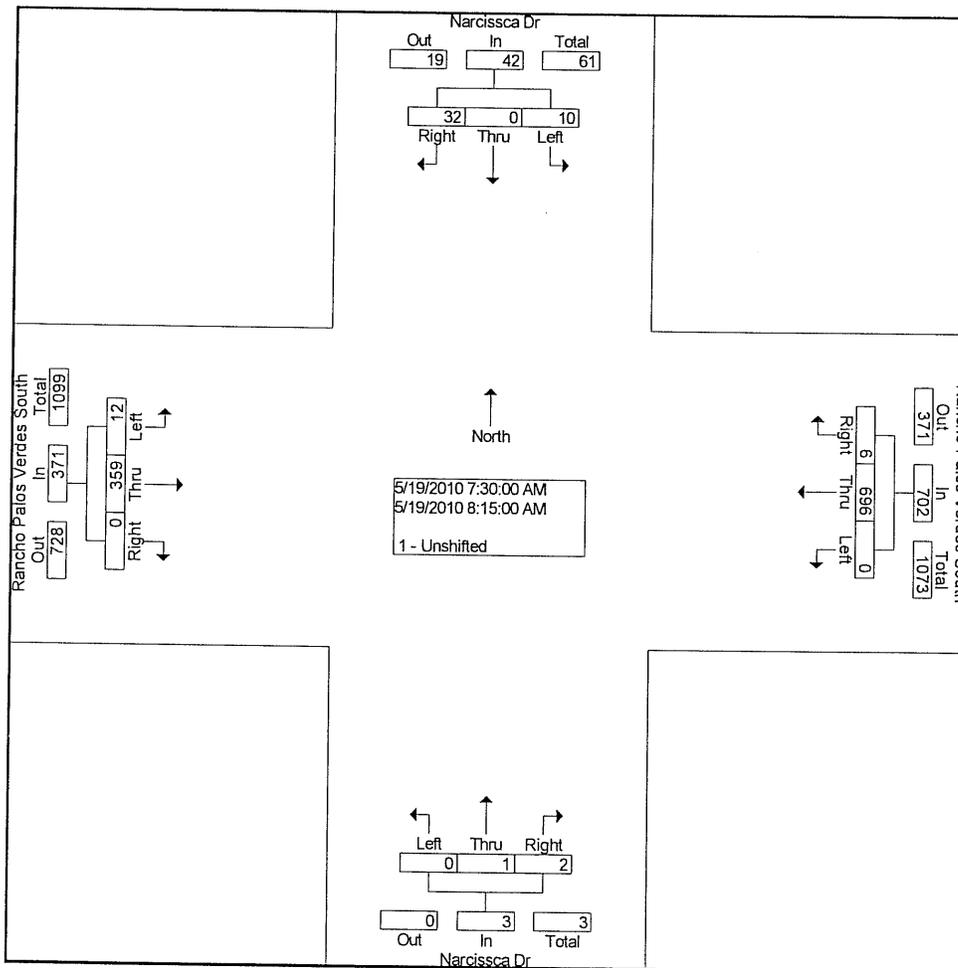
Groups Printed- 1 - Unshifted

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	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
07:00 AM	0	0	2	1	89	1	1	0	0	0	0	62	0	156
07:15 AM	0	0	6	1	143	2	0	0	0	2	55	0	0	209
07:30 AM	1	0	12	0	210	2	0	1	1	3	70	0	0	300
07:45 AM	2	0	8	0	183	1	0	0	0	4	104	0	0	302
Total	3	0	28	2	625	6	1	1	1	9	291	0	0	967
08:00 AM	4	0	4	0	164	1	0	0	0	1	96	0	0	270
08:15 AM	3	0	8	0	139	2	0	0	1	4	89	0	0	246
08:30 AM	2	0	1	0	138	0	0	0	0	5	122	0	0	268
08:45 AM	4	0	4	0	132	4	0	0	0	5	83	0	0	232
Total	13	0	17	0	573	7	0	0	1	15	390	0	0	1016
04:00 PM	3	0	3	0	92	4	0	0	0	6	118	0	0	226
04:15 PM	1	0	4	0	113	2	0	0	0	8	117	0	0	245
04:30 PM	5	0	11	0	82	1	0	0	0	4	119	0	0	222
04:45 PM	2	0	4	0	114	1	0	0	0	4	145	0	0	270
Total	11	0	22	0	401	8	0	0	0	22	499	0	0	963
05:00 PM	3	0	2	0	101	1	0	0	0	11	113	0	0	231
05:15 PM	1	0	6	0	105	2	0	0	0	1	156	0	0	271
05:30 PM	9	0	3	0	90	2	0	0	0	5	133	0	0	242
05:45 PM	4	0	2	0	84	5	0	0	0	3	114	0	0	212
Total	17	0	13	0	380	10	0	0	0	20	516	0	0	956
Grand Total	44	0	80	2	1979	31	1	1	2	66	1696	0	0	3902
Apprch %	35.5	0.0	64.5	0.1	98.4	1.5	25.0	25.0	50.0	3.7	96.3	0.0	0.0	
Total %	1.1	0.0	2.1	0.1	50.7	0.8	0.0	0.0	0.1	1.7	43.5	0.0	0.0	

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Site Code : 00000000
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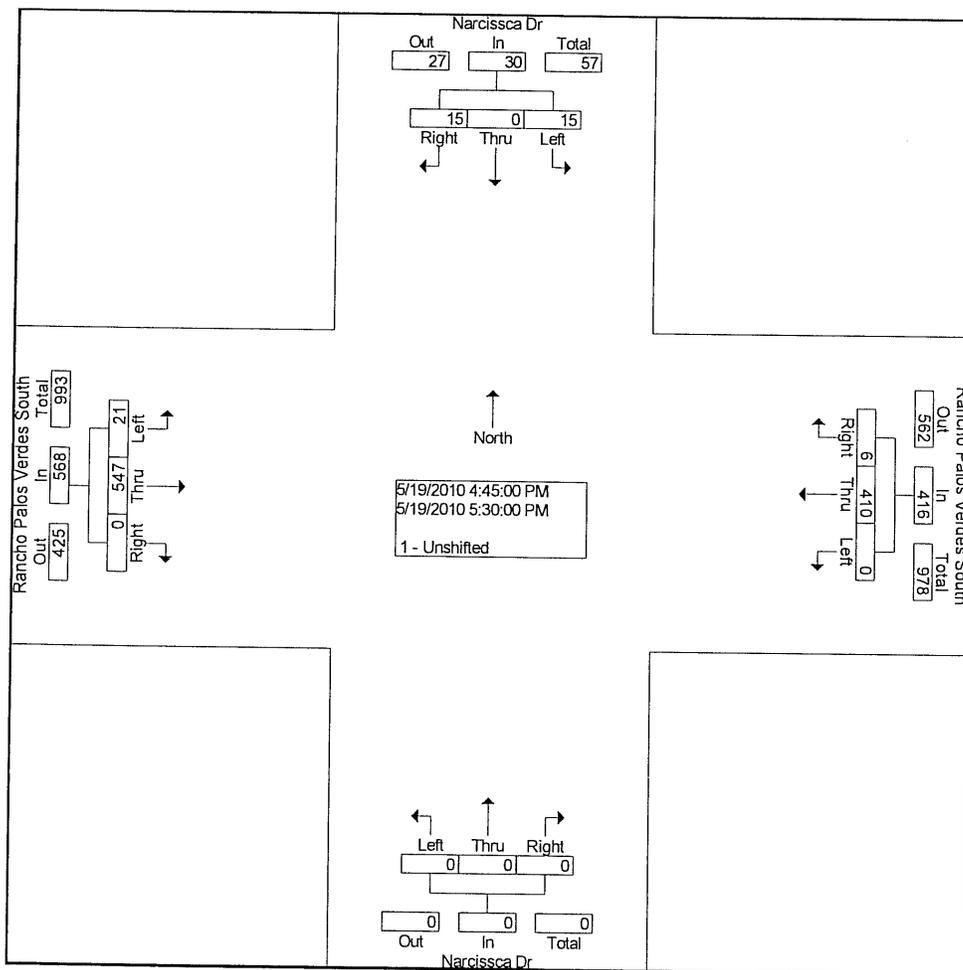
Start Time	Narcissca Dr Southbound				Rancho Palos Verdes South Westbound				Narcissca Dr Northbound				Rancho Palos Verdes South Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Intersection	07:30 AM																
Volume	10	0	32	42	0	696	6	702	0	1	2	3	12	359	0	371	1118
Percent	23.8	0.0	76.2		0.0	99.1	0.9		0.0	33.3	66.7		3.2	96.8	0.0		
07:45	2	0	8	10	0	183	1	184	0	0	0	0	4	104	0	108	302
Peak Factor																	
High Int.	07:30 AM																
Volume	1	0	12	13	0	210	2	212	0	1	1	2	4	104	0	108	0.925
Peak Factor	0.808				0.828				0.375				0.859				



City Traffic Counters
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File Name : RPVNarcissa
Site Code : 00000000
Start Date : 5/19/2010
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Start Time	Narcissca Dr Southbound				Rancho Palos Verdes South Westbound				Narcissca Dr Northbound				Rancho Palos Verdes South Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection	04:45 PM																
Volume	15	0	15	30	0	410	6	416	0	0	0	0	21	547	0	568	1014
Percent	50.0	0.0	50.0		0.0	98.6	1.4		0.0	0.0	0.0		3.7	96.3	0.0		
05:15 Volume	1	0	6	7	0	105	2	107	0	0	0	0	1	156	0	157	271
Peak Factor	0.935																
High Int.	05:30 PM																
Volume	9	0	3	12	0	114	1	115	0	0	0	0	1	156	0	157	
Peak Factor	0.625								0.904								



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File Name : RPVPepper
Site Code : 00000000
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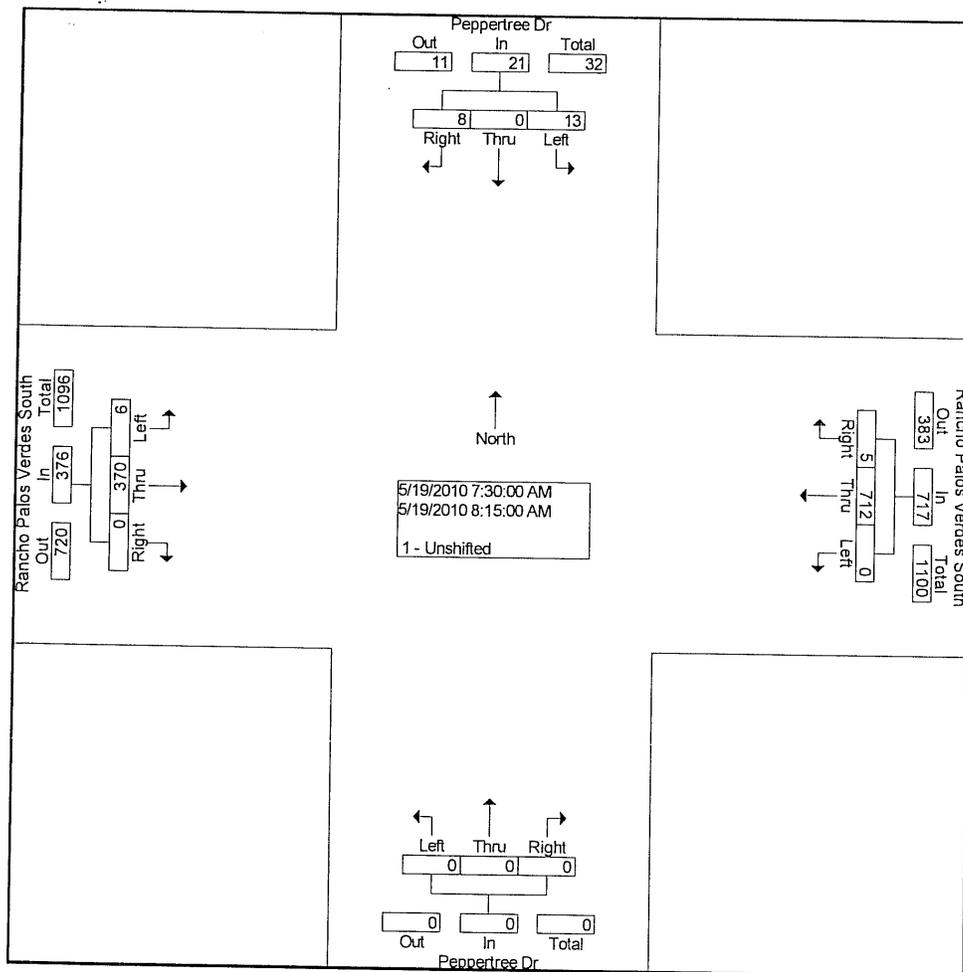
Groups Printed- 1 - Unshifted

Start Time	Peppertree Dr Southbound			Rancho Palos Verdes South Westbound			Peppertree Dr Northbound			Rancho Palos Verdes South Eastbound			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	2	0	2	0	89	2	0	0	0	1	61	0	157
07:15 AM	1	0	2	0	144	1	0	0	0	1	51	0	200
07:30 AM	4	0	3	0	215	1	0	0	0	2	75	0	300
07:45 AM	5	0	0	0	185	1	0	0	0	0	101	0	292
Total	12	0	7	0	633	5	0	0	0	4	288	0	949
08:00 AM	2	0	3	0	164	2	0	0	0	4	103	0	278
08:15 AM	2	0	2	0	148	1	0	0	0	0	91	0	244
08:30 AM	8	0	4	0	127	2	0	0	0	5	118	0	264
08:45 AM	4	0	0	0	137	5	0	0	0	1	86	0	233
Total	16	0	9	0	576	10	0	0	0	10	398	0	1019
04:00 PM	2	0	2	0	110	4	0	0	0	2	124	0	244
04:15 PM	6	0	6	0	105	4	0	0	0	3	123	0	247
04:30 PM	6	0	1	0	83	3	0	0	0	0	119	0	212
04:45 PM	6	0	2	0	117	5	0	0	0	5	149	0	284
Total	20	0	11	0	415	16	0	0	0	10	515	0	987
05:00 PM	2	0	1	0	100	2	0	0	0	3	112	0	220
05:15 PM	2	0	2	0	107	4	0	0	0	0	156	0	271
05:30 PM	5	0	1	0	103	2	0	0	0	1	145	0	257
05:45 PM	1	0	1	0	86	2	0	0	0	1	121	0	212
Total	10	0	5	0	396	10	0	0	0	5	534	0	960
Grand Total	58	0	32	0	2020	41	0	0	0	29	1735	0	3915
Apprch %	64.4	0.0	35.6	0.0	98.0	2.0	0.0	0.0	0.0	1.6	98.4	0.0	
Total %	1.5	0.0	0.8	0.0	51.6	1.0	0.0	0.0	0.0	0.7	44.3	0.0	

City Traffic Counters
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File Name : RPVPepper
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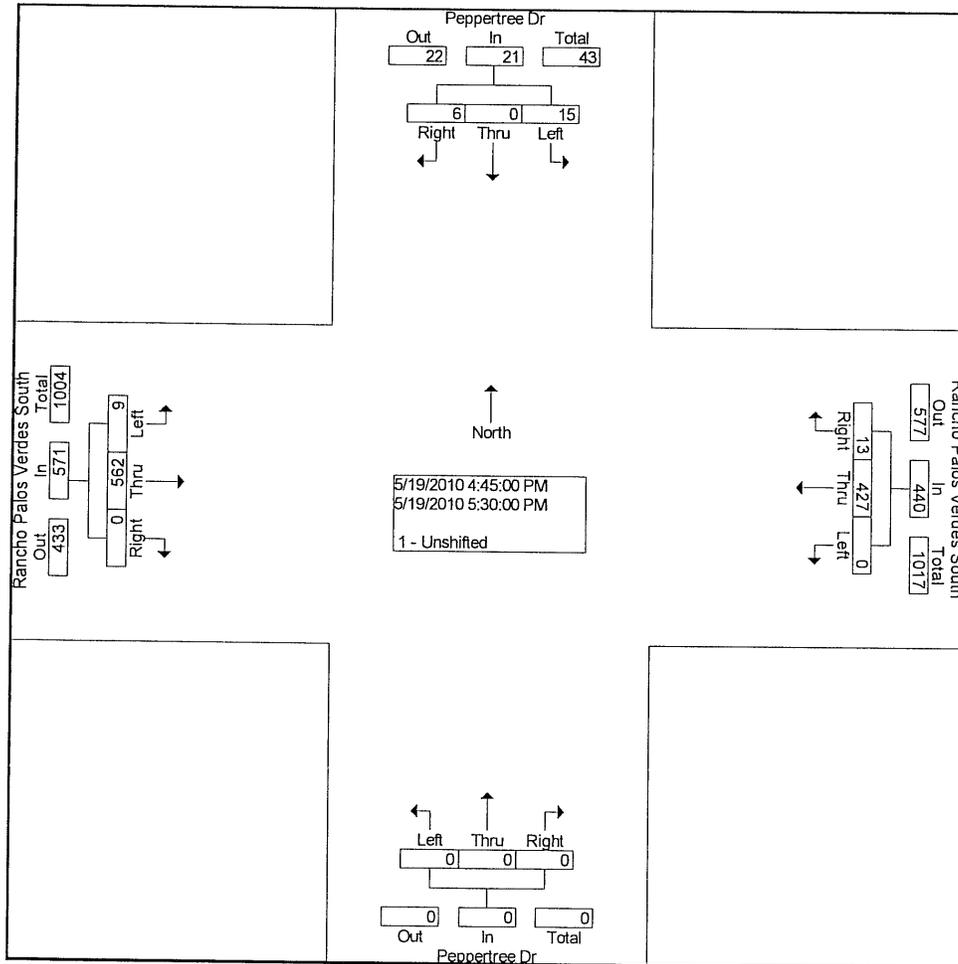
Start Time	Peppertree Dr Southbound				Rancho Palos Verdes South Westbound				Peppertree Dr Northbound				Rancho Palos Verdes South Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Intersection	07:30 AM																
Volume	13	0	8	21	0	712	5	717	0	0	0	0	6	370	0	376	1114
Percent	61.9	0.0	38.1		0.0	99.3	0.7		0.0	0.0	0.0		1.6	98.4	0.0		
07:30 Volume	4	0	3	7	0	215	1	216	0	0	0	0	2	75	0	77	300
Peak Factor	0.928																
High Int.	07:30 AM				07:30 AM				6:45:00 AM				08:00 AM				
Volume	4	0	3	7	0	215	1	216	0	0	0	0	4	103	0	107	
Peak Factor	0.750				0.830								0.879				



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File Name : RPVPepper
Site Code : 00000000
Start Date : 5/19/2010
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Start Time	Peppertree Dr Southbound				Rancho Palos Verdes South Westbound				Peppertree Dr Northbound				Rancho Palos Verdes South Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection	04:45 PM																
Volume	15	0	6	21	0	427	13	440	0	0	0	0	9	562	0	571	1032
Percent	71.4	0.0	28.6		0.0	97.0	3.0		0.0	0.0	0.0		1.6	98.4	0.0		
04:45 Volume	6	0	2	8	0	117	5	122	0	0	0	0	5	149	0	154	284
Peak Factor	0.908																
High Int.	04:45 PM																
Volume	6	0	2	8	0	117	5	122	0	0	0	0	0	156	0	156	
Peak Factor	0.656				0.902								0.915				



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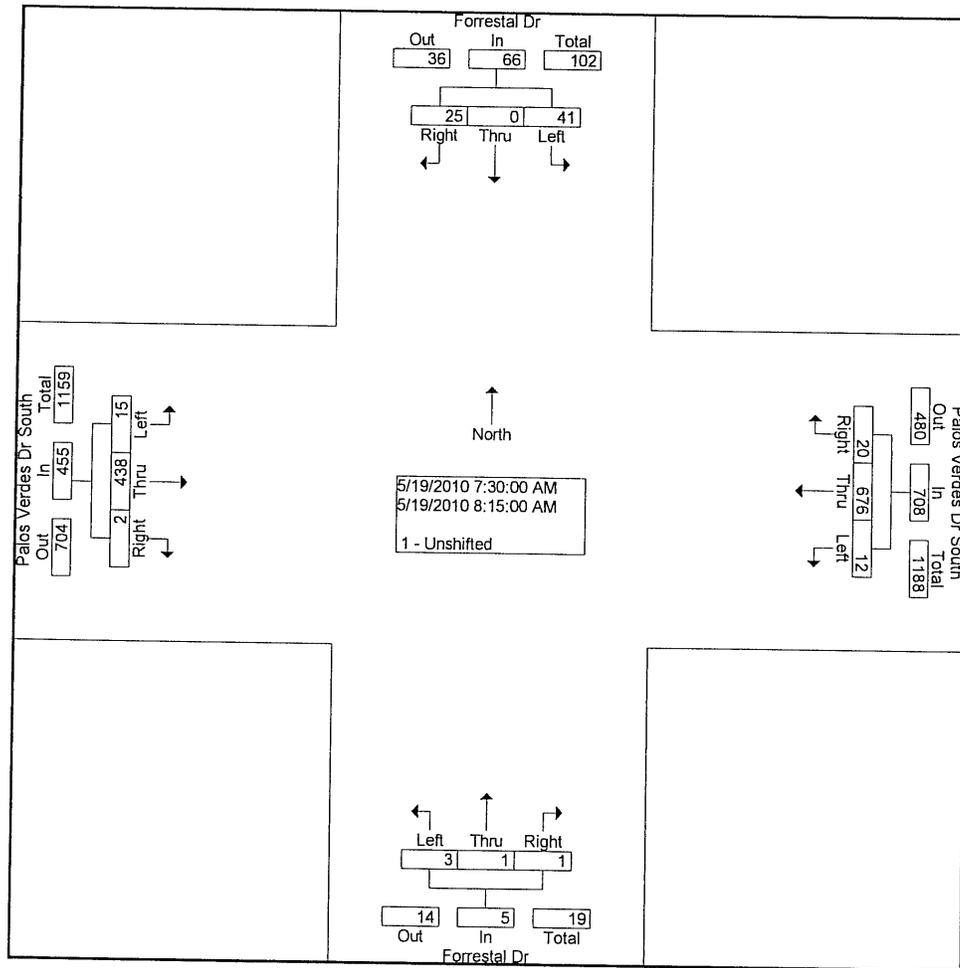
Groups Printed- 1 - Unshifted

Start Time	Forrestal Dr Southbound			Palos Verdes Dr South Westbound			Forrestal Dr Northbound			Palos Verdes Dr South Eastbound			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	9	1	4	1	96	2	0	0	1	4	71	1	190
07:15 AM	11	0	6	1	158	4	0	0	1	0	69	1	251
07:30 AM	9	0	6	6	183	2	0	1	1	3	87	0	298
07:45 AM	10	0	5	3	174	5	1	0	0	3	129	1	331
Total	39	1	21	11	611	13	1	1	3	10	356	3	1070
08:00 AM	12	0	10	0	167	6	0	0	0	5	114	0	314
08:15 AM	10	0	4	3	152	7	2	0	0	4	108	1	291
08:30 AM	13	0	2	4	127	10	0	0	0	9	131	2	298
08:45 AM	15	0	6	5	126	14	1	0	2	8	99	4	280
Total	50	0	22	12	572	37	3	0	2	26	452	7	1183
04:00 PM	28	0	8	6	103	9	3	0	8	3	132	1	301
04:15 PM	9	0	8	5	104	10	5	0	1	4	118	4	268
04:30 PM	17	0	6	2	91	17	0	0	4	4	121	3	265
04:45 PM	8	0	4	6	113	12	6	0	12	5	154	3	323
Total	62	0	26	19	411	48	14	0	25	16	525	11	1157
05:00 PM	8	0	8	9	106	15	5	0	8	3	109	3	274
05:15 PM	6	0	3	7	110	11	4	0	4	8	146	5	304
05:30 PM	12	1	9	5	96	8	2	0	5	7	148	2	295
05:45 PM	7	0	1	4	100	14	4	0	5	3	110	3	251
Total	33	1	21	25	412	48	15	0	22	21	513	13	1124
Grand Total	184	2	90	67	2006	146	33	1	52	73	1846	34	4534
Apprch %	66.7	0.7	32.6	3.0	90.4	6.6	38.4	1.2	60.5	3.7	94.5	1.7	
Total %	4.1	0.0	2.0	1.5	44.2	3.2	0.7	0.0	1.1	1.6	40.7	0.7	

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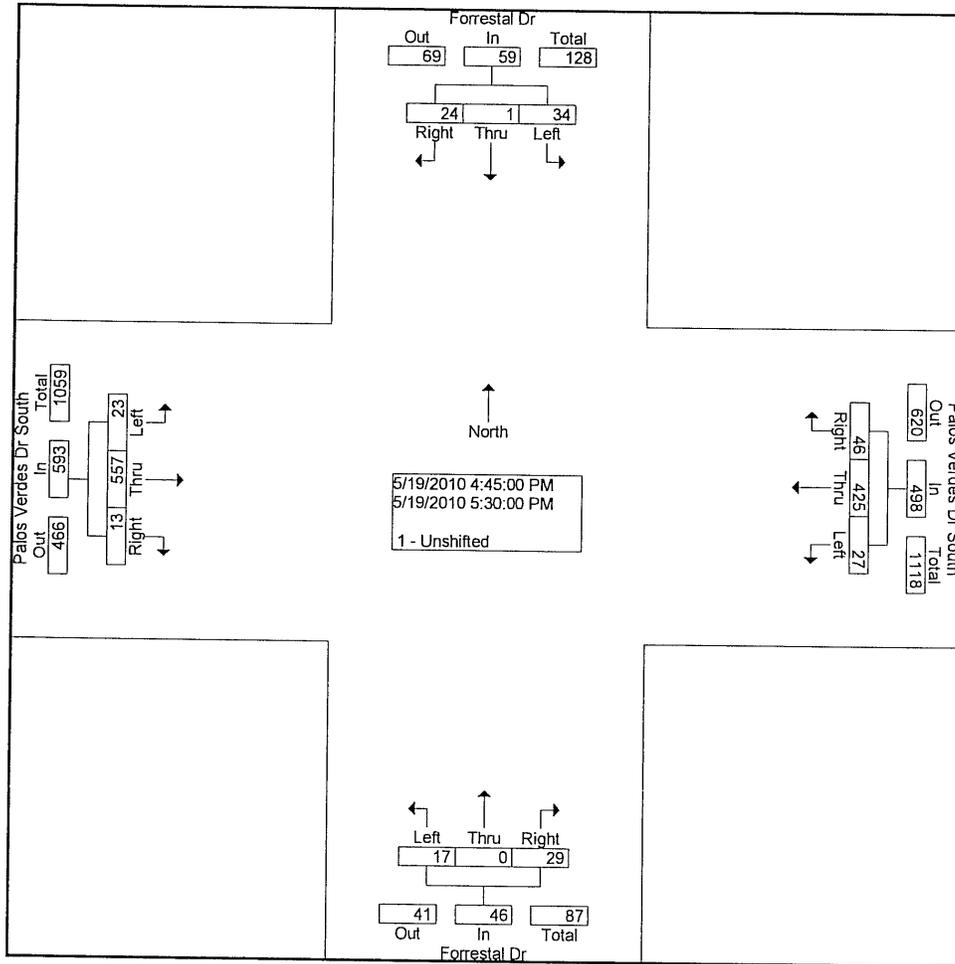
Start Time	Forrestal Dr Southbound				Palos Verdes Dr South Westbound				Forrestal Dr Northbound				Palos Verdes Dr South Eastbound				Int. Total			
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total				
Peak Hour From 07:00 AM to 11:45 AM - Peak 1 of 1																				
Intersection	07:30 AM																			
Volume	41	0	25	66	12	676	20	708	3	1	1	5	15	438	2	455	1234			
Percent	62.1	0.0	37.9		1.7	95.5	2.8		60.0	20.0	20.0		3.3	96.3	0.4					
07:45																				
Volume	10	0	5	15	3	174	5	182	1	0	0	1	3	129	1	133	331			
Peak Factor	0.932																			
High Int.	08:00 AM																			
Volume	12	0	10	22	07:30 AM				07:30 AM				07:45 AM							
Peak Factor	0.750								0.927				0.625				0.855			



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Start Time	Forrestal Dr Southbound				Palos Verdes Dr South Westbound				Forrestal Dr Northbound				Palos Verdes Dr South Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection	04:45 PM																
Volume	34	1	24	59	27	425	46	498	17	0	29	46	23	557	13	593	1196
Percent	57.6	1.7	40.7		5.4	85.3	9.2		37.0	0.0	63.0		3.9	93.9	2.2		
04:45																	
Volume	8	0	4	12	6	113	12	131	6	0	12	18	5	154	3	162	323
Peak Factor	0.926																
High Int.	05:30 PM																
Volume	12	1	9	22	6	113	12	131	6	0	12	18	5	154	3	162	
Peak Factor	0.670				0.950				0.639				0.915				



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File Name : PVD_PVD
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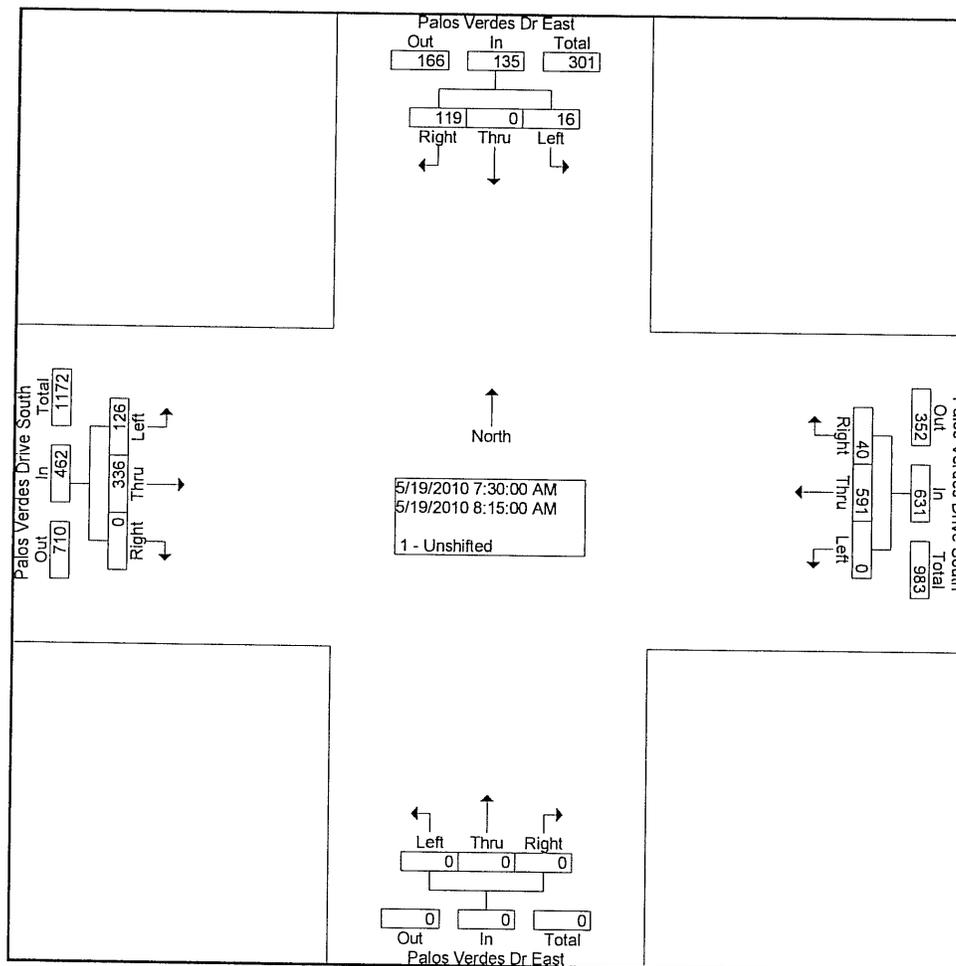
Groups Printed- 1 - Unshifted

Start Time	Palos Verdes Dr East Southbound			Palos Verdes Drive South Westbound			Palos Verdes Dr East Northbound			Palos Verdes Drive South Eastbound			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	3	0	22	0	77	3	0	0	0	11	60	0	176
07:15 AM	4	0	39	0	138	4	0	0	0	8	67	0	260
07:30 AM	5	0	39	0	166	7	0	0	0	20	81	0	318
07:45 AM	3	0	29	0	150	11	0	0	0	51	84	0	328
Total	15	0	129	0	531	25	0	0	0	90	292	0	1082
08:00 AM	2	0	30	0	141	7	0	0	0	37	91	0	308
08:15 AM	6	0	21	0	134	15	0	0	0	18	80	0	274
08:30 AM	3	0	22	0	114	22	0	0	0	39	99	0	299
08:45 AM	8	0	28	0	117	12	0	0	0	15	84	0	264
Total	19	0	101	0	506	56	0	0	0	109	354	0	1145
04:00 PM	8	0	10	0	85	8	0	0	0	20	120	0	251
04:15 PM	10	0	16	0	108	7	0	0	0	20	102	0	263
04:30 PM	10	0	13	0	100	2	0	0	0	14	118	0	257
04:45 PM	7	0	16	0	117	11	0	0	0	15	146	0	312
Total	35	0	55	0	410	28	0	0	0	69	486	0	1083
05:00 PM	9	0	21	0	107	11	0	0	0	12	100	0	260
05:15 PM	6	0	14	0	95	8	0	0	0	9	104	0	236
05:30 PM	10	0	12	0	92	3	0	0	0	10	94	0	221
05:45 PM	10	0	15	0	97	9	0	0	0	11	84	0	226
Total	35	0	62	0	391	31	0	0	0	42	382	0	943
Grand Total	104	0	347	0	1838	140	0	0	0	310	1514	0	4253
Apprch %	23.1	0.0	76.9	0.0	92.9	7.1	0.0	0.0	0.0	17.0	83.0	0.0	
Total %	2.4	0.0	8.2	0.0	43.2	3.3	0.0	0.0	0.0	7.3	35.6	0.0	

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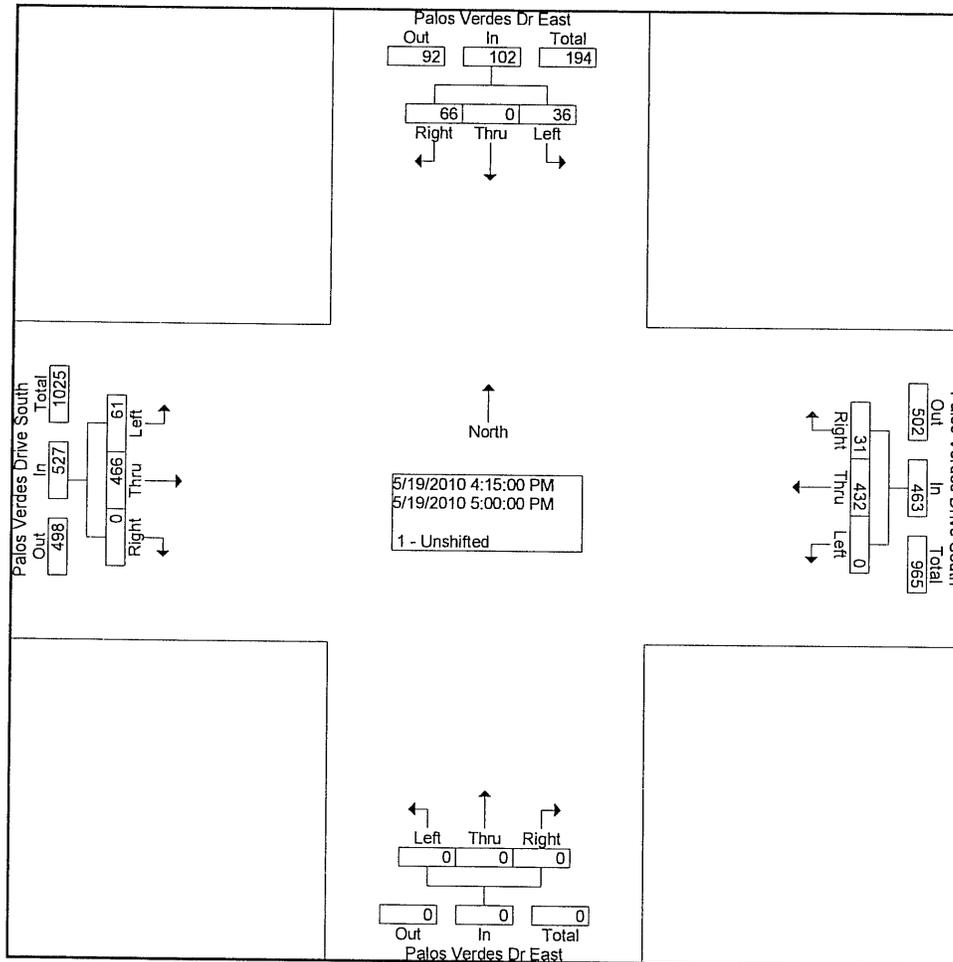
Start Time	Palos Verdes Dr East Southbound				Palos Verdes Drive South Westbound				Palos Verdes Dr East Northbound				Palos Verdes Drive South Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Intersection	07:30 AM																
Volume	16	0	119	135	0	591	40	631	0	0	0	0	126	336	0	462	1228
Percent	11.9	0.0	88.1		0.0	93.7	6.3		0.0	0.0	0.0		27.3	72.7	0.0		
07:45																	
Volume	3	0	29	32	0	150	11	161	0	0	0	0	51	84	0	135	328
Peak Factor	0.936																
High Int.	07:30 AM				07:30 AM				6:45:00 AM				07:45 AM				
Volume	5	0	39	44	0	166	7	173	0	0	0	0	51	84	0	135	
Peak Factor	0.767				0.912								0.856				



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File Name : PVD_PVD
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Start Date : 5/19/2010
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Start Time	Palos Verdes Dr East Southbound				Palos Verdes Drive South Westbound				Palos Verdes Dr East Northbound				Palos Verdes Drive South Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection	04:15 PM																
Volume	36	0	66	102	0	432	31	463	0	0	0	0	61	466	0	527	1092
Percent	35.3	0.0	64.7		0.0	93.3	6.7		0.0	0.0	0.0		11.6	88.4	0.0		
04:45																	
Volume	7	0	16	23	0	117	11	128	0	0	0	0	15	146	0	161	312
Peak Factor																	
High Int.	05:00 PM																
Volume	9	0	21	30	0	117	11	128	0	0	0	0	15	146	0	161	0.875
Peak Factor	0.850				0.904								0.818				



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Site Code : 00000000178
Start Date: 05/26/2010
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Street name : Palos Verdes Dr South Cross street: E/O Cherry Hill Ln Direction 1												
Begin Time	West				East				Combined			
	A.M.		P.M.		A.M.		P.M.		A.M.		P.M.	
12:00	05/26	5	90	6	70	11	160					
12:15		6	75	12	83	18	158					
12:30		5	82	4	79	9	161					
12:45		6	99	8	85	14	184	52			663	
01:00		0	97	5	78	5	175					
01:15		4	86	4	89	8	175					
01:30		2	83	2	96	4	179					
01:45		4	99	4	92	8	191	25			720	
02:00		1	95	2	77	3	172					
02:15		3	77	2	121	5	198					
02:30		2	99	1	113	3	212					
02:45		6	125	0	124	6	249	17			831	
03:00		3	99	3	121	6	220					
03:15		2	100	1	146	3	246					
03:30		1	109	1	119	2	228					
03:45		6	87	0	138	6	225	17			919	
04:00		1	101	0	127	1	228					
04:15		3	106	2	130	5	236					
04:30		3	106	3	124	6	230					
04:45		6	109	4	147	10	256	22			950	
05:00		3	74	7	140	10	214					
05:15		9	100	6	129	15	229					
05:30		13	119	15	136	28	255					
05:45		19	132	14	142	33	274	86			972	
06:00		28	83	24	114	52	197					
06:15		37	81	31	115	68	196					
06:30		64	90	29	87	93	177					
06:45		99	106	29	113	78	394	341			754	
07:00		71	79	55	69	128	148					
07:15		150	67	61	81	211	148					
07:30		228	66	60	79	288	145					
07:45		211	52	94	270	45	274	930			538	
08:00		144	58	131	69	275	127					
08:15		166	63	91	82	257	145					
08:30		114	42	92	55	206	97					
08:45		135	41	101	415	45	251	974			455	
09:00		92	38	78	44	170	82					
09:15		90	40	68	74	158	114					
09:30		85	38	59	50	144	88					
09:45		84	20	79	284	56	224	635			360	
10:00		65	26	42	25	107	51					
10:15		67	18	82	33	149	51					
10:30		56	23	51	26	107	49					
10:45		79	25	59	234	24	108	501			200	
11:00		85	33	66	20	151	53					
11:15		79	16	70	18	149	34					
11:30		67	10	75	15	142	25					
11:45		109	10	63	274	12	65	614			134	
Totals		2518	3474	1696	4022	4214	7496					
Day Totals		5992		5718		11710						
Split %		59.7%	46.3%	40.2%	53.6%							
Peak Hour	07:30		05:15	08:00	04:45	07:30	05:00					
Volume	749		434	415	552	1125	972					
P.H.F.	.82		.82	.79	.93	.92	.88					

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Site Code : 00000000135
Start Date: 05/26/2010
File I.D. : E:\DATA\ALL F
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Street name : Palos Verdes Dr South Cross street: E/O Seacove Direction 1													
Begin Time	West				East				Combined				Wednesday
	A.M.		P.M.		A.M.		P.M.		A.M.		P.M.		
12:00	05/26	5	86		4		72		9		158		
12:15		7	84		14		79		21		163		
12:30		7	82		4		74		11		156		
12:45		5	83	335	11	33	80	305	16	57	163	640	
01:00		1	101		4		95		5		196		
01:15		3	91		4		95		7		186		
01:30		3	84		2		97		5		181		
01:45		3	102	378	3	13	95	382	6	23	197	760	
02:00		2	81		2		95		4		176		
02:15		2	91		2		137		4		228		
02:30		1	98		1		122		2		220		
02:45		7	134	404	0	5	117	471	7	17	251	875	
03:00		3	103		3		142		6		245		
03:15		3	108		1		162		4		270		
03:30		2	110		1		130		3		240		
03:45		5	93	414	0	5	150	584	5	18	243	998	
04:00		1	113		0		127		1		240		
04:15		2	105		0		122		2		227		
04:30		4	102		4		138		8		240		
04:45		4	97	417	3	7	148	535	7	18	245	952	
05:00		5	108		6		142		11		250		
05:15		9	103		10		140		19		243		
05:30		11	116		10		147		21		263		
05:45		19	44	122	449	18	44	145	574	37	88	267	1023
06:00		22	84		21		126		43		210		
06:15		37	91		30		101		67		192		
06:30		45	81		33		94		78		175		
06:45		102	206	111	367	25	109	85	406	127	315	196	773
07:00		74		77		40		78		114		155	
07:15		136		62		64		76		200		138	
07:30		214		57		56		73		270		130	
07:45		206	630	51	247	118	278	53	280	324	908	104	527
08:00		152		60		118		65		270		125	
08:15		164		56		94		85		258		141	
08:30		117		46		101		43		218		89	
08:45		123	556	43	205	117	430	42	235	240	986	85	440
09:00		95		36		70		51		165		87	
09:15		85		37		55		76		140		113	
09:30		89		36		63		51		152		87	
09:45		80	349	19	128	76	264	53	231	156	613	72	359
10:00		61		24		53		29		114		53	
10:15		60		24		76		33		136		57	
10:30		66		25		54		31		120		56	
10:45		78	265	22	95	70	253	25	118	148	518	47	213
11:00		83		29		77		18		160		47	
11:15		72		20		70		17		142		37	
11:30		65		9		78		14		143		23	
11:45		90	310	7	65	63	288	12	61	153	598	19	126
Totals		2430		3504		1729		4182		4159		7686	
Day Totals			5934				5911				11845		
Split %		58.4%		45.5%		41.5%		54.4%					
Peak Hour	07:30		02:45		07:45		03:00		07:30		05:00		
Volume	736		455		431		584		1122		1023		
P.H.F.	.85		.84		.91		.90		.86		.95		

APPENDIX B

INTERSECTION LEVELS OF SERVICE DATA WORKSHEETS HCM AND LEVELS OF SERVICE EXPLANATION ICU AND LEVELS OF SERVICE EXPLANATION

LEVEL OF SERVICE FOR UNSIGNALIZED INTERSECTIONS

In the *Highway Capacity Manual (HCM)*, published by the Transportation Research Board, 2000, level of service for unsignalized intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, geometrics, traffic, and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions, in the absence of incidents, control, traffic, or geometric delay. Only the portion of total delay attributed to the traffic control measures, either traffic signals or stop signs, is quantified. This delay is called *control delay*. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

Level of Service criteria for unsignalized intersections are stated in terms of the average control delay per vehicle. The level of service is determined by the computed or measured control delay and is defined for each minor movement. Average control delay for any particular minor movement is a function of the service time for the approach and the degree of utilization. (Level of service is not defined for the intersection as a whole for two-way stop controlled intersections.)

Level of Service Criteria for TWSC/AWSC Intersections	
Level of Service	Average Control Delay (Sec/Veh)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

Level of Service (LOS) values are used to describe intersection operations with service levels varying from LOS A (free flow) to LOS F (jammed condition). The following descriptions summarize *HCM* criteria for each level of service:

LOS A describes operations with very low control delay, up to 10 seconds per vehicle.

LOS B describes operations with control delay greater than 10 and up to 15 seconds per vehicle.

LOS C describes operations with control delay greater than 15 and up to 25 seconds per vehicle.

LOS D describes operations with control delay greater than 25 and up to 35 seconds per vehicle.

LOS E describes operations with control delay greater than 35 and up to 50 seconds per vehicle.

LOS F describes operations with control delay in excess of 50 seconds per vehicle. For two-way stop controlled intersections, LOS F exists when there are insufficient gaps of suitable size to allow side-street demand to safely cross through a major-street traffic stream. This level of service is generally evident from extremely long control delays experienced by side-street traffic and by queuing on the minor-street approaches.

INTERSECTION CAPACITY UTILIZATION (ICU) DESCRIPTION

Level of Service is a term used to describe prevailing conditions and their effect on traffic. Broadly interpreted, the Levels of Service concept denotes any one of a number of differing combinations of operating conditions which may occur as a roadway is accommodating various traffic volumes. Level of Service is a qualitative measure of the effect of such factors as travel speed, travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience.

Six Levels of Service, A through F, have been defined in the 1965 *Highway Capacity Manual*, published by the Transportation Research Board. Level of Service A describes a condition of free flow, with low traffic volumes and relatively high speeds, while Level of Service F describes forced traffic flow at low speeds with jammed conditions and queues which cannot clear during the green phases.

The Intersection Capacity Utilization (ICU) method of intersection capacity analysis has been used in our studies. It directly relates traffic demand and available capacity for key intersection movements, regardless of present signal timing. The capacity per hour of green time for each approach is calculated based on the methods of the *Highway Capacity Manual*. The proportion of total signal time needed by each key movement is determined and compared to the total time available (100 percent of the hour). The result of summing the requirements of the conflicting key movements plus an allowance for clearance times is expressed as a decimal fraction. Conflicting key traffic movements are those opposing movements whose combined green time requirements are greatest.

The resulting ICU represents the proportion of the total hour required to accommodate intersection demand volumes if the key conflicting traffic movements are operating at capacity. Other movements may be operating near capacity, or may be operating at significantly better levels. The ICU may be translated to a Level of Service as tabulated below.

The Levels of Service (abbreviated from the *Highway Capacity Manual*) are listed here with their corresponding ICU and Load Factor equivalents. Load Factor is that proportion of the signal cycles during the peak hour which are fully loaded; i.e. when all of the vehicles waiting at the beginning of green are not able to clear on that green phase.

Intersection Capacity Utilization Characteristics		
Level of Service	Load Factor	Equivalent ICU
A	0.0	0.00 - 0.60
B	0.0 - 0.1	0.61 - 0.70
C	0.1 - 0.3	0.71 - 0.80
D	0.3 - 0.7	0.81 - 0.90
E	0.7 - 1.0	0.91 - 1.00
F	Not Applicable	Not Applicable

SERVICE LEVEL A

There are no loaded cycles and few are even close to loaded at this service level. No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication.

SERVICE LEVEL B

This level represents stable operation where an occasional approach phase is fully utilized and a substantial number are approaching full use. Many drivers begin to feel restricted within platoons of vehicles.

SERVICE LEVEL C

At this level stable operation continues. Loading is still intermittent but more frequent than at Level B. Occasionally drivers may have to wait through more than one red signal indication and backups may develop behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so.

SERVICE LEVEL D

This level encompasses a zone of increasing restriction approaching instability at the intersection. Delays to approaching vehicles may be substantial during short peaks within the peak hour, but enough cycles with lower demand occur to permit periodic clearance of queues, thus preventing excessive backups. Drivers frequently have to wait through more than one red signal. This level is the lower limit of acceptable operation to most drivers.

SERVICE LEVEL E

This represents near capacity and capacity operation. At capacity (ICU = 1.0) it represents the most vehicles that the particular intersection can accommodate. However, full utilization of every signal cycle is seldom attained no matter how great the demand. At this level all drivers wait through more than one red signal, and frequently through several.

SERVICE LEVEL F

Jammed conditions. Traffic backed up from a downstream location on one of the street restricts or prevents movement of traffic through the intersection under consideration.

APPENDIX B-1
EXISTING CONDITIONS

Existing Traffic Conditions
AM Peak Hour

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

 Intersection #6 Via Rivera/Hawthorne Boulevard

 Average Delay (sec/veh): 5.0 Worst Case Level Of Service: E [38.6]

 Street Name: Via Rivera 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: Stop Sign Stop Sign Uncontrolled Uncontrolled
 Rights: Include Include Include Include
 Lanes: 0 0 0 0 1 0 0 1 0 0 1 0 1 0 1 0 2 0 1
 Volume Module:
 Base Vol: 0 0 122 2 51 46 641 1 32 429 171
 Growth Adj: 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 0 122 2 51 46 641 1 32 429 171
 Added Vol: 0 0 0 0 0 0 0 0 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 0 0 122 2 51 46 641 1 32 429 171
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Adj: 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92
 PHF Volume: 0 0 133 2 55 50 697 1 35 466 186
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0
 FinalVolume: 0 0 133 2 55 50 697 1 35 466 186
 Critical Gap Module:
 Critical Gap:xxxxx 6.9 6.8 6.5 6.9 4.1 xxxxx xxxxx 4.1 xxxx xxxxx
 FollowUpTim:xxxxx 3.3 3.5 4.0 3.3 2.2 xxxxx xxxxx 2.2 xxxxx xxxxx
 Capacity Module:
 Conflict Vol: 349 984 1334 233 652 xxxxx xxxxx 698 xxxxx xxxxx
 Potent Cap.: 653 249 155 775 944 xxxxx xxxxx 908 xxxxx xxxxx
 Move Cap.: 653 232 141 775 944 xxxxx xxxxx 908 xxxxx xxxxx
 Volume/Cap: 0.00 0.57 0.02 0.07 0.05 xxxxx xxxxx 0.04 xxxxx xxxxx
 Level Of Service Module:
 2Way95thQ: xxxxx xxxxx xxxxx xxxxx xxxxx 0.2 xxxxx xxxxx 0.1 xxxxx xxxxx
 Control Del:xxxxx xxxxx xxxxx xxxxx xxxxx 9.0 xxxxx xxxxx 9.1 xxxxx xxxxx
 LOS by Move: * * * * * A * * * * * A * * * * *
 Movement: LT - LTR - RT
 Shared Cap.: xxxxx xxxxx xxxxx 289 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
 SharedQueue:xxxxx xxxxx xxxxx 4.3 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
 Shrd ConDel:xxxxx xxxxx xxxxx 38.6 xxxxx xxxxx xxxxx xxxxx xxxxx
 Shared LOS: * * * * * E * * * * * * * * * * *
 ApproachDel: xxxxxx 38.6 xxxxxx * * * * *
 ApproachLOS: * * * * * * * * * * *
 Note: Queue reported is the number of cars per lane.

Existing Traffic Conditions
AM Peak Hour

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

 Intersection #11 Tramonto Drive-Seahill Drive/Palos Verdes Drive South

 Average Delay (sec/veh): 2.7 Worst Case Level Of Service: D [27.6]

 Street Name: Tramonto Drive-Seahill Drive Palos Verdes Drive South
 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 1 0 0 1 1 0 0 0 1 0 1 1 0 1 0 2 0 1
 Volume Module:
 Base Vol: 94 1 28 9 0 0 3 328 17 23 763 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
 Initial Bse: 94 1 28 9 0 0 3 328 17 23 763 2
 Added Vol: 0 0 0 0 0 0 0 0 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 94 1 28 9 0 0 3 328 17 23 763 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
 PHF Adj: 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92
 PHF Volume: 102 1 30 10 0 0 3 357 18 25 829 2
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0
 FinalVolume: 102 1 30 10 0 0 3 357 18 25 829 2
 Critical Gap Module:
 Critical Gap: 7.5 6.5 6.9 7.5 xxxxx xxxxx 4.1 xxxxx xxxxx 4.1 xxxxx xxxxx
 FollowUpTim: 3.5 4.0 3.3 3.5 xxxxx xxxxx 2.2 xxxxx xxxxx 2.2 xxxxx xxxxx
 Capacity Module:
 Conflict Vol: 837 1254 187 1065 xxxxx xxxxx 832 xxxxx xxxxx 375 xxxxx xxxxx
 Potent Cap.: 263 173 829 180 xxxxx xxxxx 810 xxxxx xxxxx 1195 xxxxx xxxxx
 Move Cap.: 258 169 829 169 xxxxx xxxxx 810 xxxxx xxxxx 1195 xxxxx xxxxx
 Volume/Cap: 0.40 0.01 0.04 0.06 xxxxx xxxxx 0.00 xxxxx xxxxx 0.02 xxxxx xxxxx
 Level Of Service Module:
 2Way95thQ: xxxxx xxxxx 0.1 0.2 xxxxx xxxxx 0.0 xxxxx xxxxx 0.1 xxxxx xxxxx
 Control Del:xxxxx xxxxx 9.5 27.6 xxxxx xxxxx 9.5 xxxxx xxxxx 8.1 xxxxx xxxxx
 LOS by Move: * * * * * A D * * * * * A * * * * *
 Movement: LT - LTR - RT
 Shared Cap.: 256 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
 SharedQueue: 1.8 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
 Shrd ConDel: 28.2 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
 Shared LOS: D * * * * * * * * * * *
 ApproachDel: 23.9 27.6 xxxxxx * * * * *
 ApproachLOS: * * * * * D * * * * *
 Note: Queue reported is the number of cars per lane.

Existing Traffic Conditions
AM Peak Hour

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

Intersection #74 Peppertree Drive/Palos Verdes Drive South
Average Delay (sec/veh): 0.4 Worst Case Level Of Service: C [20.0]

Street Name: Peppertree Drive Palos Verdes Drive South
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 1 0 0 1 1 0 1 0 0 0 0 1 0 1

Volume Module:
Base Vol: 0 0 0 13 0 8 6 370 0 0 712 5
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 0 0 0 13 0 8 6 370 0 0 712 5
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 0 13 0 8 6 370 0 0 712 5
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92
PHF Volume: 0 0 0 14 0 9 7 402 0 0 774 5
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 0 0 14 0 9 7 402 0 0 774 5

Critical Gap Module:
Critical Gap:xxxxx 6.4 6.5 6.2 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx
FollowUpPrim:xxxxx 3.5 4.0 3.3 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx

Capacity Module:
Conflict Vol: xxxxx xxxxx xxxxx 1189 1189 774 779 xxxxx xxxxx xxxxx xxxxx xxxxx
Potent Cap.: xxxxx xxxxx xxxxx 210 189 402 847 xxxxx xxxxx xxxxx xxxxx xxxxx
Move Cap.: xxxxx xxxxx xxxxx 208 188 402 847 xxxxx xxxxx xxxxx xxxxx xxxxx
Volume/Cap: xxxxx xxxxx xxxxx 0.07 0.00 0.02 0.01 xxxxx xxxxx xxxxx xxxxx xxxxx

Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxx xxxxx xxxxx 0.1 0.0 xxxxx xxxxx xxxxx xxxxx xxxxx
Control Del:xxxxx xxxxx xxxxx xxxxx xxxxx 14.2 9.3 xxxxx xxxxx xxxxx xxxxx xxxxx
LOS by Move: * * * * * B A * * * * *
Movement: LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx 208 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
SharedQueue:xxxxx xxxxx xxxxx 0.2 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shrd ComDel:xxxxx xxxxx xxxxx 23.5 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shared LOS: * * * * * C * * * * *
ApproachDel: xxxxxx 20.0 xxxxxx xxxxxx
ApproachLOS: * * * * * C * * * * *
Note: Queue reported is the number of cars per lane.

Existing Traffic Conditions PM Peak Hour

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

Intersection #12 Barkentine Road/Palos Verdes Drive South
Average Delay (sec/veh): 0.6 Worst Case Level Of Service: C [18.7]

Street Name: Barkentine Road Palos Verdes Drive South
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 1 0 0 0 0 0 1 1 0 1 1 0 1 0 2 0 1

Volume Module:
Base Vol: 14 0 6 0 0 3 19 561 12 7 437 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: 14 0 6 0 0 3 19 561 12 7 437 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: 14 0 6 0 0 3 19 561 12 7 437 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: 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92

PHF Volume: 15 0 7 0 0 3 21 610 13 8 475 2

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 15 0 7 0 0 3 21 610 13 8 475 2

Critical Gap Module:
Critical Gap: 7.5 6.5 6.9 xxxxxx xxxxx 6.9 4.1 xxxxx xxxxxx 4.1 xxxxx xxxxxx

FollowUpTim: 3.5 4.0 3.3 xxxxxx xxxxx 3.3 2.2 xxxxx xxxxxx 2.2 xxxxx xxxxxx

Capacity Module:
Conflict Vol: 910 1150 311 xxxxx xxxxx 238 477 xxxxx xxxxxx 623 xxxxx xxxxxx

Potent Cap.: 233 200 690 xxxxx xxxxx 770 1096 xxxxx xxxxxx 968 xxxxx xxxxxx

Move Cap.: 227 195 690 xxxxx xxxxx 770 1096 xxxxx xxxxxx 968 xxxxx xxxxxx

Volume/Cap: 0.07 0.00 0.01 xxxxx xxxxx 0.00 0.02 xxxxx xxxxx 0.01 xxxxx xxxxx

Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx xxxxx xxxxx 0.0 0.1 xxxxx xxxxxx 0.0 xxxxx xxxxxx

Control Del: xxxxxx xxxxx xxxxxx xxxxx xxxxx 9.7 8.3 xxxxx xxxxxx 8.7 xxxxx xxxxxx

LOS by Move: * * * * * A * A * * * A * * * * * A * * * * * A * * * * *

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap.: xxxxx 284 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx

Existing Traffic Conditions PM Peak Hour

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

Intersection #15 Forrestal Drive/Palos Verdes Drive South
Average Delay (sec/veh): 2.5 Worst Case Level Of Service: D [26.6]

Street Name: Forrestal Drive Palos Verdes Drive South
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: 1 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1

Volume Module:
Base Vol: 17 0 29 34 1 24 23 557 13 27 425 46

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 0 29 34 1 24 23 557 13 27 425 46

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 0 29 34 1 24 23 557 13 27 425 46

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92

PHF Volume: 18 0 32 37 1 26 25 605 14 29 462 50

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 18 0 32 37 1 26 25 605 14 29 462 50

Critical Gap Module:
Critical Gap: 7.1 6.5 6.2 7.1 6.5 6.2 4.1 xxxxx xxxxxx 4.1 xxxxx xxxxxx

FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 2.2 xxxxx xxxxxx 2.2 xxxxx xxxxxx

Capacity Module:
Conflict Vol: 1215 1226 605 1199 1190 462 512 xxxxx xxxxxx 620 xxxxx xxxxxx

Potent Cap.: 160 180 501 164 189 604 1064 xxxxx xxxxxx 971 xxxxx xxxxxx

Move Cap.: 146 171 501 147 179 604 1064 xxxxx xxxxxx 971 xxxxx xxxxxx

Volume/Cap: 0.13 0.00 0.06 0.25 0.01 0.04 0.02 xxxxx xxxxx 0.03 xxxxx xxxxx

Level Of Service Module:
2Way95thQ: 0.4 xxxxx xxxxxx 0.9 xxxxx xxxxxx 0.1 xxxxx xxxxxx 0.1 xxxxx xxxxxx

Control Del: 33.2 xxxxx xxxxxx 37.5 xxxxx xxxxxx 8.5 xxxxx xxxxxx 8.8 xxxxx xxxxxx

LOS by Move: D * * * * * E * * * * * A * * * * * A * * * * * A * * * * *

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap.: xxxxx xxxxx 501 xxxxx xxxxx 552 xxxxx xxxxx xxxxx xxxxx xxxxx

Existing Traffic Conditions
PM Peak Hour

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

Intersection #16 Palos Verdes Drive East/Palos Verdes Drive South
Average Delay (sec/veh): 2.0 Worst Case Level Of Service: C [16.3]

Street Name: Palos Verdes Drive East Palos Verdes Drive South
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 1 0 0 0 1 1 0 1 0 0 0 0 1 0 1

Volume Module:

Table with traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module:

Table with critical gap data including Critical Gap, FollowUpTim.

Capacity Module:

Table with capacity data including Conflict Vol, Potent Cap, Move Cap, Volume/Cap.

Level Of Service Module:

Table with level of service data including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap, Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

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

Existing Traffic Conditions
PM Peak Hour

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

Intersection #48 Narcissa Drive/Palos Verdes Drive South
Average Delay (sec/veh): 0.6 Worst Case Level Of Service: C [16.1]

Street Name: Narcissa Drive Palos Verdes Drive South
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 1 1 0 0 1 1 0 0 1 1 0 0 1 0 1 0 1

Volume Module:

Table with traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module:

Table with critical gap data including Critical Gap, FollowUpTim.

Capacity Module:

Table with capacity data including Conflict Vol, Potent Cap, Move Cap, Volume/Cap.

Level Of Service Module:

Table with level of service data including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap, Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

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

Existing Traffic Conditions
PM Peak Hour

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

Intersection #74 Peppertree Drive/Palos Verdes Drive South
Average Delay (sec/veh): 0.4 Worst Case Level Of Service: C [18.4]

Street Name: Peppertree Drive Palos Verdes Drive South
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 1 0 0 1 1 0 1 0 0 0 0 1 0 1

Volume Module:
Base Vol: 0 0 0 15 0 6 9 562 0 0 427 13

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 0 0 0 15 0 6 9 562 0 0 427 13

Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 0 0 0 15 0 6 9 562 0 0 427 13

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92

PHF Volume: 0 0 0 16 0 7 10 611 0 0 464 14

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 0 0 0 16 0 7 10 611 0 0 464 14

Critical Gap Module:
Critical Gap:xxxxx 6.4 6.5 6.2 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx

FollowUpTim:xxxxx 3.5 4.0 3.3 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx

Capacity Module:
Conflict Vol: xxxxx xxxxx 1095 1095 464 478 xxxxx xxxxx xxxxx xxxxx

Potent Cap.: xxxxx xxxxx 239 216 602 1095 xxxxx xxxxx xxxxx xxxxx

Move Cap.: xxxxx xxxxx 237 214 602 1095 xxxxx xxxxx xxxxx xxxxx

Volume/Cap: xxxxx xxxxx 0.07 0.00 0.01 0.01 xxxxx xxxxx xxxxx xxxxx

Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxx 0.0 0.0 xxxxx xxxxx xxxxx xxxxx xxxxx

Control Del:xxxxx xxxxx xxxxx 11.0 8.3 xxxxx xxxxx xxxxx xxxxx xxxxx

LOS by Move: * * * * * B A * * * * *

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap.: xxxxx xxxxx xxxxx 237 xxxxx xxxxx xxxxx xxxxx xxxxx

SharedQueue:xxxxx xxxxx xxxxx 0.2 xxxxx xxxxx xxxxx xxxxx xxxxx

Shrd ConDel:xxxxx xxxxx xxxxx 21.3 xxxxx xxxxx xxxxx xxxxx xxxxx

Shared LOS: * * * * * C * * * * *

ApproachDel: xxxxxx 18.4 xxxxxx xxxxxx

ApproachLOS: * * * * * C * * * * *

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

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APPENDIX B-2
EXISTING WITH PROJECT CONDITIONS

Existing With Project Traffic Conditions
AM Peak Hour

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

 Intersection #6 Via Rivera/Hawthorne Boulevard

 Average Delay (sec/veh): 5.1 Worst Case Level Of Service: E [39.6]

 Street Name: Via Rivera 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: Stop Sign Stop Sign Uncontrolled Uncontrolled
 Rights: Include Include Include Include
 Lanes: 0 0 0 1 0 0 1 0 0 1 0 1 0 1 0 2 0 1
 Volume Module:
 Base Vol: 0 0 122 2 51 46 641 1 32 429 171
 Growth Adj: 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 0 122 2 51 46 641 1 32 429 171
 Added Vol: 0 0 0 0 0 0 9 0 0 3 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 0 0 122 2 51 46 650 1 32 432 171
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Adj: 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92
 PHF Volume: 0 0 133 2 55 50 707 1 35 470 186
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0
 FinalVolume: 0 0 133 2 55 50 707 1 35 470 186
 Critical Gap Module:
 Critical Gp: 6.9 6.8 6.5 6.9 4.1 xxxxx xxxxx 4.1 xxxxx xxxxx
 FollowUpTim: 3.3 3.5 4.0 3.3 2.2 xxxxx xxxxx 2.2 xxxxx xxxxx
 Capacity Module:
 Cnflct Vol: 354 992 1347 235 655 xxxxx xxxxx 708 xxxxx xxxxx
 Potent Cap.: 648 246 153 773 941 xxxxx xxxxx 900 xxxxx xxxxx
 Move Cap.: 648 229 139 773 941 xxxxx xxxxx 900 xxxxx xxxxx
 Volume/Cap: 0.00 0.58 0.02 0.07 0.05 xxxxx xxxxx 0.04 xxxxx xxxxx
 Level Of Service Module:
 2Way95thQ: xxxxx xxxxx xxxxx xxxxx 0.2 xxxxx xxxxx 0.1 xxxxx xxxxx
 Control Del: xxxxx xxxxx xxxxx xxxxx 9.0 xxxxx xxxxx 9.2 xxxxx xxxxx
 LOS by Move: * * * * * A * * * * * A * * * * *
 Movement: LT - LTR - RT
 Shared Cap.: xxxxx xxxxx xxxxx 286 xxxxx xxxxx xxxxx xxxxx xxxxx
 SharedQueue: xxxxx xxxxx xxxxx 4.4 xxxxx xxxxx xxxxx xxxxx xxxxx
 Shrd ConDel: xxxxx xxxxx xxxxx 39.6 xxxxx xxxxx xxxxx xxxxx xxxxx
 Shared LOS: * * * * * E * * * * * * * * * *
 ApproachDel: xxxxxx 39.6 xxxxxxxx xxxxxxxx
 ApproachLOS: * E * * * * *
 Note: Queue reported is the number of cars per lane.

Existing With Project Traffic Conditions
AM Peak Hour

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

 Intersection #11 Tramonto Drive-Seahill Drive/Palos Verdes Drive South

 Average Delay (sec/veh): 2.7 Worst Case Level Of Service: D [28.5]

 Street Name: Tramonto Drive-Seahill Drive Palos Verdes Drive South
 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 1 0 0 1 1 0 0 0 1 0 1 1 0 1 0 2 0 1
 Volume Module:
 Base Vol: 94 1 28 9 0 0 3 328 17 23 763 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
 Initial Bse: 94 1 28 9 0 0 3 328 17 23 763 2
 Added Vol: 0 0 0 0 0 0 6 0 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 94 1 28 9 0 0 3 334 17 23 780 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
 PHF Adj: 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92
 PHF Volume: 102 1 30 10 0 0 3 363 18 25 848 2
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0
 FinalVolume: 102 1 30 10 0 0 3 363 18 25 848 2
 Critical Gap Module:
 Critical Gp: 7.5 6.5 6.9 7.5 xxxxx xxxxx 4.1 xxxxx xxxxx
 FollowUpTim: 3.5 4.0 3.3 3.5 xxxxx xxxxx 2.2 xxxxx xxxxx
 Capacity Module:
 Cnflct Vol: 853 1279 191 1086 xxxxx xxxxx 850 xxxxx xxxxx
 Potent Cap.: 256 168 825 173 xxxxx xxxxx 797 xxxxx xxxxx
 Move Cap.: 251 163 825 163 xxxxx xxxxx 797 xxxxx xxxxx
 Volume/Cap: 0.41 0.01 0.04 0.06 xxxxx xxxxx 0.00 xxxxx xxxxx
 Level Of Service Module:
 2Way95thQ: xxxxx xxxxx 0.1 0.2 xxxxx xxxxx 0.0 xxxxx xxxxx
 Control Del: xxxxx xxxxx 9.5 28.5 xxxxx xxxxx 9.5 xxxxx xxxxx
 LOS by Move: * * * * * A D * * * * * A * * * * *
 Movement: LT - LTR - RT
 Shared Cap.: 250 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
 SharedQueue: 1.9 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
 Shrd ConDel: 29.2 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
 Shared LOS: D * * * * * * * * * * * * * * *
 ApproachDel: 24.7 28.5 xxxxxxxx xxxxxxxx
 ApproachLOS: C D * * * * *
 Note: Queue reported is the number of cars per lane.

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

 Intersection #74 Peppertree Drive/Palos Verdes Drive South
 Average Delay (sec/veh): 0.6 Worst Case Level Of Service: C [19.2]

 Street Name: Peppertree Drive Palos Verdes Drive South
 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 1 0 0 1 1 0 1 0 0 0 0 1 0 1
 Volume Module:
 Base Vol: 0 0 0 13 0 8 6 370 0 0 712 5
 Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 Initial Bse: 0 0 0 13 0 8 6 370 0 0 712 5
 Added Vol: 0 0 0 3 0 9 3 6 0 0 2 1
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 0 0 0 16 0 17 9 376 0 0 714 6
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Adj: 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92
 PHF Volume: 0 0 0 17 0 18 10 409 0 0 776 7
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 FinalVolume: 0 0 0 17 0 18 10 409 0 0 776 7
 Critical Gap Module:
 Critical Gp:xxxxx xxxx xxxxx 6.4 6.5 6.2 4.1 xxxx xxxxx xxxxx xxxxx xxxxx
 FollowUpTm:xxxxx xxxx xxxxx 3.5 4.0 3.3 2.2 xxxx xxxxx xxxxx xxxxx xxxxx
 Capacity Module:
 Conflict Vol: xxxx xxxx xxxxx 1204 1204 776 783 xxxxx xxxxx xxxxx xxxxx
 Potent Cap.: xxxx xxxx xxxxx 205 186 401 844 xxxxx xxxxx xxxxx xxxxx
 Move Cap.: xxxx xxxx xxxxx 203 183 401 844 xxxxx xxxxx xxxxx xxxxx
 Volume/Cap: xxxx xxxx xxxxx 0.09 0.00 0.05 0.01 xxxxx xxxxx xxxxx xxxxx
 Level Of Service Module:
 2Way95thQ: xxxxx xxxx xxxxx xxxxx xxxxx 0.1 0.0 xxxxx xxxxx xxxxx xxxxx
 Control Del:xxxxx xxxx xxxxx xxxxx xxxxx 14.4 9.3 xxxxx xxxxx xxxxx xxxxx
 LOS by Move: * * * * * B A * * * * *
 Movement: LT - LTR - RT
 Shared Cap.: xxxx xxxx xxxxx 203 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
 SharedQueue:xxxxx xxxx xxxxx 0.3 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
 Shrd ConDel:xxxxx xxxx xxxxx 24.4 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
 Shared LOS: * * * * * C * * * * *
 ApproachDel: xxxxxx 19.2 xxxxxx *
 ApproachLOS: *
 Note: Queue reported is the number of cars per lane.

Existing With Project Traffic Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #74 Peppertree Drive/Palos Verdes Drive South
Average Delay (sec/veh): 0.6 Worst Case Level Of Service: C [17.8]

Street Name: Peppertree Drive Palos Verdes Drive South
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 Uncontrolled Uncontrolled
Rights: Include Include Include
Lanes: 0 0 0 0 0 1 0 0 1 1 0 0 0 0 1 0 1

Volume Module:
Base Vol: 0 0 0 0 15 0 6 9 562 0 0 427 13
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 0 0 0 0 15 0 6 9 562 0 0 427 13
Added Vol: 0 0 0 0 2 0 6 10 4 0 0 7 3
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 0 0 17 0 12 19 566 0 0 434 16
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 1.00
PHF Adj: 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92
PHF Volume: 0 0 0 0 18 0 13 21 615 0 0 472 17
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 0 0 0 18 0 13 21 615 0 0 472 17

Critical Gap Module:
Critical Gp:xxxxx 6.4 6.5 6.2 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx
FollowUpTm:xxxxx 3.5 4.0 3.3 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx

Capacity Module:
Conflict Vol: xxxxx xxxxx 1128 1128 472 489 xxxxx xxxxx xxxxx xxxxx xxxxx
Potent Cap.: xxxxx xxxxx xxxxx 228 206 596 1085 xxxxx xxxxx xxxxx xxxxx xxxxx
Move Cap.: xxxxx xxxxx xxxxx 225 202 596 1085 xxxxx xxxxx xxxxx xxxxx xxxxx
Volume/Cap: xxxxx xxxxx xxxxx 0.08 0.00 0.02 0.02 xxxxx xxxxx xxxxx xxxxx xxxxx

Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxx xxxxx 0.1 0.1 xxxxx xxxxx xxxxx xxxxx xxxxx
Control Del:xxxxx xxxxx xxxxx xxxxx 11.2 8.4 xxxxx xxxxx xxxxx xxxxx xxxxx
LOS by Move: * * * * * B A * * * * *
Movement: LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx 225 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
SharedQueue:xxxxx xxxxx xxxxx 0.3 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shrd ConDel:xxxxx xxxxx xxxxx 22.5 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shared LOS: * * * * * C * * * * *
ApproachDel: xxxxxx 17.8 xxxxxx
ApproachLOS: *

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

APPENDIX B-3
YEAR 2020 FUTURE PRE-PROJECT CONDITIONS

Level Of Service Computation Report
 2000 HCM Unsignalized Method (Future Volume Alternative)
 Intersection #12 Barkentine Road/Palos Verdes Drive South
 Average Delay (sec/veh): 0.8 Worst Case Level Of Service: D [26.2]
 Street Name: Barkentine Road Palos Verdes Drive South
 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 1 0 0 0 1 0 1 0 1 0 1 0 2 0 1

Volume Module:

Base Vol:	22	0	3	5	0	10	6	369	5	3	735	1
Growth Adj:	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Initial Bse:	23	0	3	5	0	11	6	391	5	3	779	1
Added Vol:	0	0	0	0	0	0	86	0	0	0	143	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	23	0	3	5	0	11	6	477	5	3	922	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	25	0	3	6	0	12	7	519	6	3	1002	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	25	0	3	6	0	12	7	519	6	3	1002	1

Critical Gap Module:
 Critical Gp: 7.5 6.5 6.9 7.5 6.5 6.9 4.1 xxxxx xxxxx 4.1 xxxxx xxxxx
 FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 2.2 xxxxx xxxxx 2.2 xxxxx xxxxx

Capacity Module:
 Cnflct Vol: 1043 1546 262 1282 1547 501 1003 xxxxx xxxxx 524 xxxxx xxxxx
 Potent Cap.: 186 116 742 124 115 521 698 xxxxx xxxxx 1053 xxxxx xxxxx
 Move Cap.: 180 114 742 123 114 521 698 xxxxx xxxxx 1053 xxxxx xxxxx
 Volume/Cap: 0.14 0.00 0.00 0.05 0.00 0.02 0.01 xxxxx xxxxx 0.00 xxxxx xxxxx

Level Of Service Module:
 2Way95thQ: xxxx xxxxx xxxxx xxxx xxxxx xxxxx 0.0 xxxxx xxxxx 0.0 xxxxx xxxxx
 Control Del:xxxxx xxxxx xxxxx xxxxx xxxxx 10.2 xxxxx xxxxx 8.4 xxxxx xxxxx
 LOS by Move: * * * * * B * * * * * A * * * * *
 Movement: LT - LTR - RT
 Shared Cap.: xxxx 198 xxxxx xxxx 250 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx
 SharedQueue:xxxxx 0.5 xxxxx xxxxx 0.2 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
 Shrd ConDel:xxxxx 26.2 xxxxx xxxxx 20.5 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
 Shared LOS: * * * * * C * * * * * * * * * * *
 ApproachDel: 26.2 xxxxxxxx 20.5 xxxxxxxx xxxxxxxx
 ApproachLOS: D C * * * * *
 Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
 2000 HCM Unsignalized Method (Future Volume Alternative)
 Intersection #15 Forrestal Drive/Palos Verdes Drive South
 Average Delay (sec/veh): 4.3 Worst Case Level Of Service: F [75.8]
 Street Name: Forrestal Drive Palos Verdes Drive South
 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: 1 0 0 1 0 1 0 0 1 0 1 0 1 0 1 0 1

Volume Module:

Base Vol:	3	1	1	41	0	25	15	438	2	12	676	20
Growth Adj:	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Initial Bse:	7	1	1	43	0	27	16	464	2	13	717	21
Added Vol:	0	0	0	0	0	0	83	0	0	9	134	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	10	1	1	27	43	0	27	16	547	4	22	851
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	11	1	1	29	47	0	29	17	595	4	24	925
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	11	1	1	29	47	0	29	17	595	4	24	925

Critical Gap Module:
 Critical Gp: 7.1 6.5 6.2 7.1 6.5 6.2 4.1 xxxxx xxxxx 4.1 xxxxx xxxxx
 FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 2.2 xxxxx xxxxx 2.2 xxxxx xxxxx

Capacity Module:
 Cnflct Vol: 1627 1624 595 1619 1606 925 948 xxxxx xxxxx 599 xxxxx xxxxx
 Potent Cap.: 83 104 508 84 106 329 733 xxxxx xxxxx 988 xxxxx xxxxx
 Move Cap.: 73 99 508 76 101 329 733 xxxxx xxxxx 988 xxxxx xxxxx
 Volume/Cap: 0.15 0.01 0.06 0.63 0.00 0.09 0.02 xxxxx xxxxx 0.02 xxxxx xxxxx

Level Of Service Module:
 2Way95thQ: 0.5 xxxxx xxxxx 2.8 xxxxx xxxxx 0.1 xxxxx xxxxx 0.1 xxxxx xxxxx
 Control Del: 63.1 xxxxx xxxxx 111.7 xxxxx xxxxx 10.0 xxxxx xxxxx 8.7 xxxxx xxxxx
 LOS by Move: F * * * * * F * * * * * B * * * * * A * * * * *
 Movement: LT - LTR - RT
 Shared Cap.: xxxx xxxxx 439 xxxxx xxxxx 329 xxxxx xxxxx xxxxx xxxxx xxxxx
 SharedQueue:xxxxx xxxxx 0.2 xxxxx xxxxx 0.3 xxxxx xxxxx xxxxx xxxxx xxxxx
 Shrd ConDel:xxxxx xxxxx 13.8 xxxxx xxxxx 17.0 xxxxx xxxxx xxxxx xxxxx xxxxx
 Shared LOS: * * * * * B * * * * * C * * * * * * * * * * *
 ApproachDel: 26.9 75.8 xxxxxxxx xxxxxxxx
 ApproachLOS: D F * * * * *
 Note: Queue reported is the number of cars per lane.

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

 Intersection #6 Via Rivera/Hawthorne Boulevard
 Average Delay (sec/veh): 5.1 Worst Case Level Of Service: F [97.0]

 Street Name: Via Rivera 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:	Stop Sign	Stop Sign	Stop Sign	Uncontrolled	Uncontrolled
Rights:	Include	Include	Include	Include	Include
Lanes:	0 0 0 1	0 0 1 0 0	1 0 1 1 0	1 0 2 0 1	1 0 2 0 1
Volume Module:					
Base Vol:	0 0 12 58 0 24	35 512 5	20 563 74		
Growth Adj:	1.06 1.06 1.06 1.06 1.06	1.06 1.06 1.06	1.06 1.06 1.06		
Initial Bse:	0 0 13 61 0 25	37 543 5	21 597 78		
Added Vol:	0 0 0 0 0 0	0 0 210 0	0 0 205 0		
PasserByVol:	0 0 0 0 0 0	0 0 0 0	0 0 0 0		
Initial Fut:	0 0 13 61 0 25	37 753 5	21 802 78		
User Adj:	1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00		
PHF Adj:	0.92 0.92 0.92 0.92 0.92	0.92 0.92 0.92	0.92 0.92 0.92		
PHF Volume:	0 0 14 67 0 28	40 818 6	23 872 85		
Reduct Vol:	0 0 0 0 0 0	0 0 0 0	0 0 0 0		
FinalVolume:	0 0 14 67 0 28	40 818 6	23 872 85		

Critical Gap Module:
 Critical Gp:xxxxx xxxx 6.9 7.5 6.5 6.9 4.1 xxxxx xxxxxx 4.1 xxxxx xxxxxx
 FollowUpTim:xxxxx xxxx 3.3 3.5 4.0 3.3 2.2 xxxxx xxxxxx 2.2 xxxxx xxxxxx

Capacity Module:
 Conflict Vol:xxxxx xxxx 412 1407 1822 436 957 xxxxx xxxxxx 824 xxxxx xxxxxx
 Potent Cap.:xxxxx xxxx 595 101 78 574 727 xxxxx xxxxxx 815 xxxxx xxxxxx
 Move Cap.:xxxxx xxxx 595 92 72 574 727 xxxxx xxxxxx 815 xxxxx xxxxxx
 Volume/Cap:xxxxx xxxx 0.02 0.73 0.00 0.05 0.06 xxxxx xxxxx 0.03 xxxxx xxxxx

Level Of Service Module:
 2Way95thQ:xxxxx xxxx 0.1 xxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx 0.1 xxxxx xxxxxx
 Control Del:xxxxx xxxx 11.2 xxxxx xxxxx xxxxxx 10.2 xxxxx xxxxxx 9.5 xxxxx xxxxxx

LOS by Move: * * B * * A * *
 Movement: LT - LTR - RT
 Shared Cap.:xxxxx xxxxx xxxxx 122 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
 SharedQueue:xxxxx xxxxx xxxxx 4.5 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
 Shrd ConDel:xxxxx xxxxx xxxxx 97.0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx

Shared LOS: * * F * * * * *
 ApproachDel: 11.2 97.0 xxxxxxx xxxxxxx
 ApproachLOS: B F * * * * *

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

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

 Intersection #11 Tramonto Drive-Seahill Drive/Palos Verdes Drive South
 Average Delay (sec/veh): 3.0 Worst Case Level Of Service: E [49.5]

 Street Name: Tramonto Drive-Seahill Drive Palos Verdes Drive South
 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	Uncontrolled	Uncontrolled
Rights:	Include	Include	Include	Include	Include
Lanes:	0 1 0 0 1	1 0 0 0 0	1 0 1 1 0	1 0 2 0 1	1 0 2 0 1
Volume Module:					
Base Vol:	48 0 27 2 0 0	30 535 61	40 422 5		
Growth Adj:	1.06 1.06 1.06 1.06 1.06	1.06 1.06 1.06	1.06 1.06 1.06		
Initial Bse:	51 0 29 2 0 0	32 567 65	42 447 5		
Added Vol:	1 0 0 0 0	0 0 167 1	0 158 0		
PasserByVol:	0 0 0 0 0	0 0 0 0	0 0 0 0		
Initial Fut:	52 0 29 2 0 0	32 734 66	42 605 5		
User Adj:	1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00		
PHF Adj:	0.92 0.92 0.92 0.92 0.92	0.92 0.92 0.92	0.92 0.92 0.92		
PHF Volume:	56 0 31 2 0 0	35 798 71	46 658 6		
Reduct Vol:	0 0 0 0 0	0 0 0 0	0 0 0 0		
FinalVolume:	56 0 31 2 0 0	35 798 71	46 658 6		

Critical Gap Module:
 Critical Gp:xxxxx xxxx 7.5 6.5 6.9 7.5 xxxxx xxxxxx 4.1 xxxxx xxxxxx 4.1 xxxxx xxxxxx
 FollowUpTim:xxxxx xxxx 3.5 4.0 3.3 3.5 xxxxx xxxxxx 2.2 xxxxx xxxxxx 2.2 xxxxx xxxxxx

Capacity Module:
 Conflict Vol:1324 1659 435 1218 xxxxx xxxxxx 664 xxxxx xxxxxx 869 xxxxx xxxxxx
 Potent Cap.:116 99 575 139 xxxxx xxxxxx 935 xxxxx xxxxxx 784 xxxxx xxxxxx
 Move Cap.:108 89 575 122 xxxxx xxxxxx 935 xxxxx xxxxxx 784 xxxxx xxxxxx
 Volume/Cap:0.52 0.00 0.05 0.02 xxxxx xxxxx 0.04 xxxxx xxxxx 0.06 xxxxx xxxxx

Level Of Service Module:
 2Way95thQ:xxxxx xxxx 0.2 0.1 xxxxx xxxxxx 0.1 xxxxx xxxxxx 0.2 xxxxx xxxxxx
 Control Del:xxxxx xxxx 11.6 35.1 xxxxx xxxxxx 9.0 xxxxx xxxxxx 9.9 xxxxx xxxxxx

LOS by Move: * * B * * A * *
 Movement: LT - LTR - RT
 Shared Cap.:108 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
 SharedQueue:2.4 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
 Shrd ConDel:70.4 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx

Shared LOS: F * * * * *
 ApproachDel: 49.5 35.1 xxxxxxx xxxxxxx
 ApproachLOS: E E * * * * *

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

APPENDIX B-4
YEAR 2020 FUTURE WITH PROJECT CONDITIONS

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

 Intersection #6 Via Rivera/Hawthorne Boulevard
 Average Delay (sec/veh): 14.6 Worst Case Level Of Service: F[141.7]

 Street Name: Via Rivera 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: Stop Sign Uncontrolled Include Uncontrolled
 Rights: Include
 Lanes: 0 0 0 1 0 0 1 0 0 1 0 1 0 1 0 2 0 1
 Volume Module:
 Base Vol: 0 0 122 2 51 46 641 1 32 429 171
 Growth Adj: 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06
 Initial Bse: 0 0 129 2 54 49 679 1 34 455 181
 Added Vol: 0 0 0 0 0 0 108 0 0 0 168 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 0 0 129 2 54 49 787 1 34 623 181
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Adj: 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92
 PHF Volume: 0 0 141 2 59 53 856 1 37 677 197
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0
 FinalVolume: 0 0 141 2 59 53 856 1 37 677 197

Critical Gap Module:
 Critical Gp:xxxxx xxxx 6.9 6.8 6.5 6.9 4.1 xxxxx xxxxxx 4.1 xxxxx xxxxxx
 FollowUpTim:xxxxx xxxx 3.3 3.5 4.0 3.3 2.2 xxxxx xxxxxx 2.2 xxxxx xxxxxx
 Capacity Module:
 Cnflct Vol: xxxxx xxxxx 429 1285 1714 338 874 xxxxx xxxxxx 857 xxxxx xxxxxx
 Potent Cap.: xxxxx xxxxx 580 159 91 663 781 xxxxx xxxxxx 792 xxxxx xxxxxx
 Move Cap.: xxxxx xxxxx 580 146 81 663 781 xxxxx xxxxxx 792 xxxxx xxxxxx
 Volume/Cap: xxxxx xxxxx 0.00 0.97 0.03 0.09 0.07 xxxxx xxxxx 0.05 xxxxx xxxxx
 Level Of Service Module:
 2Way95thQ: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.2 xxxxx xxxxxx 0.1 xxxxx xxxxxx
 Control Del:xxxxx xxxx xxxxx xxxxx xxxxx xxxxx 9.9 xxxxx xxxxxx 9.8 xxxxx xxxxxx
 LOS by Move: * * * * * A * * * * * A * * * * * A * * * * *
 Movement: LT - LTR - RT
 Shared Cap.: xxxxx
 SharedQueue:xxxxx xxxxx xxxxx xxxxx 9.7 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
 Shrd ConDel:xxxxx xxxxx xxxxx xxxxx 142 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
 Shared LOS: * * * * * F *
 ApproachDel: xxxxxx 141.7 xxxxxx xxxxxx
 ApproachLOS: * * * * * F * * * * *
 Note: Queue reported is the number of cars per lane.

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

 Intersection #11 Tramonto Drive-Seahill Drive/Palos Verdes Drive South
 Average Delay (sec/veh): 4.3 Worst Case Level Of Service: E [47.0]

 Street Name: Tramonto Drive-Seahill Drive Palos Verdes Drive South
 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 Uncontrolled Include Uncontrolled
 Rights: Include
 Lanes: 0 1 0 0 1 1 0 0 0 0 1 0 1 0 1 0 2 0 1
 Volume Module:
 Base Vol: 94 1 28 9 0 0 3 328 17 23 763 2
 Growth Adj: 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06
 Initial Bse: 100 1 30 10 0 0 3 348 18 24 809 2
 Added Vol: 1 0 0 0 0 0 0 92 0 0 0 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 101 1 30 10 0 0 3 440 18 24 970 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 1.00
 PHF Adj: 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92
 PHF Volume: 109 1 32 10 0 0 3 478 20 27 1054 2
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 FinalVolume: 109 1 32 10 0 0 3 478 20 27 1054 2

Critical Gap Module:
 Critical Gp: 7.5 6.5 6.9 7.5 xxxxx xxxxxx 4.1 xxxxx xxxxxx 4.1 xxxxx xxxxxx
 FollowUpTim: 3.5 4.0 3.3 3.5 xxxxx xxxxxx 2.2 xxxxx xxxxxx 2.2 xxxxx xxxxxx
 Capacity Module:
 Cnflct Vol: 1075 1604 249 1354 xxxxx xxxxxx 1056 xxxxx xxxxxx 498 xxxxx xxxxxx
 Potent Cap.: 177 107 757 110 xxxxx xxxxxx 667 xxxxx xxxxxx 1077 xxxxx xxxxxx
 Move Cap.: 173 103 757 102 xxxxx xxxxxx 667 xxxxx xxxxxx 1077 xxxxx xxxxxx
 Volume/Cap: 0.63 0.01 0.04 0.10 xxxxx xxxxxx 0.01 xxxxx xxxxxx 0.02 xxxxx xxxxxx
 Level Of Service Module:
 2Way95thQ: xxxxx xxxxx 0.1 0.3 xxxxx xxxxxx 0.0 xxxxx xxxxxx 0.1 xxxxx xxxxxx
 Control Del:xxxxx xxxx 10.0 44.1 xxxxx xxxxxx 10.4 xxxxx xxxxxx 8.4 xxxxx xxxxxx
 LOS by Move: * * * * * A E * * * * * B * * * * * A * * * * *
 Movement: LT - LTR - RT
 Shared Cap.: 171 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
 SharedQueue: 3.7 xxxxx
 Shrd ConDel: 57.8 xxxxx
 Shared LOS: F *
 ApproachDel: 47.0 44.1 xxxxxx xxxxxx
 ApproachLOS: E * * * * *
 Note: Queue reported is the number of cars per lane.

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

Intersection #12 Barkentine Road/Palos Verdes Drive South

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: D [26.9]

Street Name: Barkentine Road Palos Verdes Drive South
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 1 0 0 0 1 0 1 0 1 0 1 0 2 0 1

Volume Module:
Base Vol: 22 0 3 5 0 10 6 369 5 3 735 1
Growth Adj: 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06
Initial Bse: 23 0 3 5 0 11 6 391 5 3 779 1
Added Vol: 0 0 0 0 0 0 92 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 23 0 3 5 0 11 6 483 5 3 940 1
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 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92
PHF Volume: 25 0 3 6 0 12 7 525 6 3 1022 1
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 25 0 3 6 0 12 7 525 6 3 1022 1

Critical Gap Module:
Critical Gp: 7.5 6.5 6.9 7.5 6.5 6.9 4.1 xxxxx xxxxx 4.1 xxxxx xxxxx
FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 2.2 xxxxx xxxxx 2.2 xxxxx xxxxx

Capacity Module:
Conflict Vol: 1060 1572 265 1305 1574 511 1023 xxxxx xxxxx 531 xxxxx xxxxx
Potential Cap.: 181 111 739 120 111 513 686 xxxxx xxxxx 1047 xxxxx xxxxx
Move Cap.: 175 110 739 118 110 513 686 xxxxx xxxxx 1047 xxxxx xxxxx
Volume/Cap: 0.14 0.00 0.00 0.05 0.00 0.02 0.01 xxxxx xxxxx 0.00 xxxxx xxxxx

Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxx xxxxx xxxxx 0.0 xxxxx xxxxx 0.0 xxxxx xxxxx
Control Del: xxxxx xxxxx xxxxx xxxxx xxxxx 10.3 xxxxx xxxxx 8.5 xxxxx xxxxx
LOS by Move: * * * * * B * * * * * A * * * * *
Movement: LT - LTR - RT
Shared Cap.: xxxxx 193 xxxxx xxxxx 242 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
SharedQueue: xxxxx 0.5 xxxxx xxxxx 0.2 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shrd ConDel: xxxxx 26.9 xxxxx xxxxx 21.0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shared LOS: * * * * * C * * * * * * * * * * *
ApproachDel: 26.9 21.0 xxxxxxxx xxxxxxxx
ApproachLOS: D C * * * * *

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

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

Intersection #15 Forrestal Drive/Palos Verdes Drive South

Average Delay (sec/veh): 4.4 Worst Case Level Of Service: F [78.6]

Street Name: Forrestal Drive Palos Verdes Drive South
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: 1 0 0 1 0 1 0 0 1 0 1 0 1 0 1 0 1

Volume Module:
Base Vol: 3 1 1 41 0 25 15 438 2 12 676 20
Growth Adj: 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06
Initial Bse: 3 1 1 43 0 27 16 464 2 13 717 21
Added Vol: 7 0 26 0 0 0 0 92 2 9 137 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 10 1 27 43 0 27 16 556 4 22 854 21
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 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92
PHF Volume: 11 1 29 47 0 29 17 605 4 24 928 23
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 11 1 29 47 0 29 17 605 4 24 928 23

Critical Gap Module:
Critical Gp: 7.1 6.5 6.2 7.1 6.5 6.2 4.1 xxxxx xxxxx 4.1 xxxxx xxxxx
FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 2.2 xxxxx xxxxx 2.2 xxxxx xxxxx

Capacity Module:
Conflict Vol: 1640 1637 605 1632 1619 928 951 xxxxx xxxxx 609 xxxxx xxxxx
Potential Cap.: 81 102 502 82 104 328 731 xxxxx xxxxx 979 xxxxx xxxxx
Move Cap.: 71 97 502 74 99 328 731 xxxxx xxxxx 979 xxxxx xxxxx
Volume/Cap: 0.16 0.01 0.06 0.64 0.00 0.09 0.02 xxxxx xxxxx 0.02 xxxxx xxxxx

Level Of Service Module:
2Way95thQ: 0.5 xxxxx xxxxx 2.9 xxxxx xxxxx 0.1 xxxxx xxxxx 0.1 xxxxx xxxxx
Control Del: 64.6 xxxxx xxxxx 116.2 xxxxx xxxxx 10.0 xxxxx xxxxx 8.8 xxxxx xxxxx
LOS by Move: F * * * * * F * * * * * B * * * * * A * * * * *
Movement: LT - LTR - RT
Shared Cap.: xxxxx xxxxx 433 xxxxx xxxxx 328 xxxxx xxxxx xxxxx xxxxx xxxxx
SharedQueue: xxxxx xxxxx 0.2 xxxxx xxxxx 0.3 xxxxx xxxxx xxxxx xxxxx xxxxx
Shrd ConDel: xxxxx xxxxx 13.9 xxxxx xxxxx 17.0 xxxxx xxxxx xxxxx xxxxx xxxxx
Shared LOS: * * * * * B * * * * * C * * * * * * * * * * *
ApproachDel: 27.4 78.6 xxxxxxxx xxxxxxxx
ApproachLOS: D F * * * * *

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

Level Of Service Computation Report
 2000 HCM Unsignalized Method (Future Volume Alternative)
 Intersection #6 Via Rivera/Hawthorne Boulevard
 Average Delay (sec/veh): 5.3 Worst Case Level Of Service: F[102.3]
 Street Name: Via Rivera 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: Stop Sign Stop Sign Uncontrolled Uncontrolled
 Rights: Include Include Include Include
 Lanes: 0 0 0 1 0 0 1 0 0 1 0 1 0 1 0 2 0 1

Volume Module:
 Base Vol: 0 0 12 58 0 24 35 512 5 20 563 74
 Growth Adj: 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06
 Initial Bse: 0 0 13 61 0 25 37 543 5 21 597 78
 Added Vol: 0 0 0 0 0 0 0 216 0 0 215 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 0 0 13 61 0 25 37 759 5 21 812 78
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Adj: 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92
 PHF Volume: 0 0 14 67 0 28 40 825 6 23 882 85
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 FinalVolume: 0 0 14 67 0 28 40 825 6 23 882 85

Critical Gap Module:
 Critical Gp:xxxxx xxxx 6.9 7.5 6.5 6.9 4.1 xxxxx xxxxxx 4.1 xxxxx xxxxxx
 FollowUpTim:xxxxx xxxx 3.3 3.5 4.0 3.3 2.2 xxxxx xxxxxx 2.2 xxxxx xxxxxx
 Capacity Module:
 Cnflct Vol: xxxx xxxx 415 1421 1840 441 968 xxxxx xxxxxx 830 xxxxx xxxxxx
 Potent Cap.: xxxx xxxx 592 98 76 569 720 xxxxx xxxxxx 810 xxxxx xxxxxx
 Move Cap.: xxxx xxxx 592 90 70 569 720 xxxxx xxxxxx 810 xxxxx xxxxxx
 Volume/Cap: xxxx xxxx 0.02 0.74 0.00 0.05 0.06 xxxxx xxxxx 0.03 xxxxx xxxxx

Level Of Service Module:
 2Way95thQ: xxxx xxxx 0.1 xxxxx xxxxx 0.2 xxxxx xxxxxx 0.1 xxxxx xxxxxx
 Control Del:xxxxx xxxx 11.2 xxxxx xxxxx xxxxxx 10.3 xxxxx xxxxxx 9.6 xxxxx xxxxxx
 LOS by Move: * B * * * * * A * * * * *
 Movement: LT - LTR - RT
 Shared Cap.: xxxx xxxx xxxxx xxxxx 119 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
 SharedQueue:xxxxx xxxx xxxxx xxxxx 4.6 xxxxx xxxxx xxxxx xxxxx xxxxx
 Shrd ConDel:xxxxx xxxx xxxxx xxxxx 102 xxxxx xxxxx xxxxx xxxxx xxxxx
 Shared LOS: * * * * * F * * * * * * * * * * *
 ApproachDel: 11.2 102.3 xxxxxxxx xxxxxxxx
 ApproachLOS: B F * * * * *
 Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
 2000 HCM Unsignalized Method (Future Volume Alternative)
 Intersection #11 Tramoto Drive-Seahill Drive/Palos Verdes Drive South
 Average Delay (sec/veh): 3.2 Worst Case Level Of Service: F[53.3]
 Street Name: Tramoto Drive-Seahill Drive Palos Verdes Drive South
 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 1 0 0 1 1 0 0 0 1 0 1 1 0 1 0 2 0 1

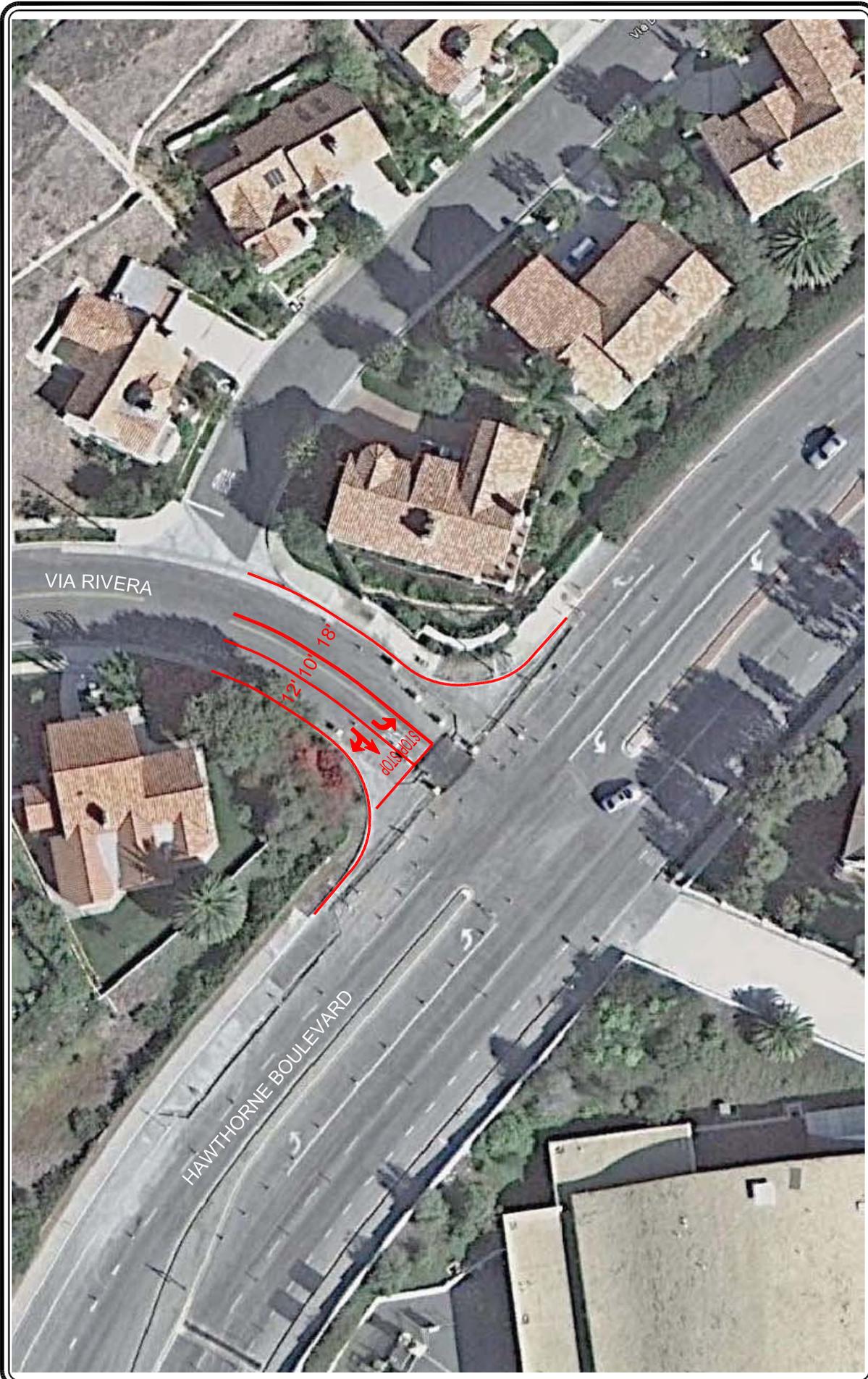
Volume Module:
 Base Vol: 48 0 27 2 0 0 30 535 61 40 422 5
 Growth Adj: 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06
 Initial Bse: 51 0 29 2 0 0 32 567 65 42 447 5
 Added Vol: 1 0 0 0 0 0 0 186 1 0 170 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 52 0 29 2 0 0 32 753 66 42 617 5
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Adj: 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92
 PHF Volume: 56 0 31 2 0 0 35 819 71 46 671 6
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 FinalVolume: 56 0 31 2 0 0 35 819 71 46 671 6

Critical Gap Module:
 Critical Gp: 7.5 6.5 6.9 7.5 xxxxx xxxxxx 4.1 xxxxx xxxxxx 4.1 xxxxx xxxxxx
 FollowUpTim: 3.5 4.0 3.3 3.5 xxxxx xxxxxx 2.2 xxxxx xxxxxx 2.2 xxxxx xxxxxx
 Capacity Module:
 Cnflct Vol: 1351 1692 445 1242 xxxxx xxxxxx 677 xxxxx xxxxxx 890 xxxxx xxxxxx
 Potent Cap.: 111 94 566 133 xxxxx xxxxxx 924 xxxxx xxxxxx 770 xxxxx xxxxxx
 Move Cap.: 103 85 566 117 xxxxx xxxxxx 924 xxxxx xxxxxx 770 xxxxx xxxxxx
 Volume/Cap: 0.55 0.00 0.05 0.02 xxxxx xxxxx 0.04 xxxxx xxxxx 0.06 xxxxx xxxxx

Level Of Service Module:
 2Way95thQ: xxxx xxxx 0.2 0.1 xxxxx xxxxxx 0.1 xxxxx xxxxxx 0.2 xxxxx xxxxxx
 Control Del:xxxxx xxxx 11.7 36.4 xxxxx xxxxxx 9.0 xxxxx xxxxxx 10.0 xxxxx xxxxxx
 LOS by Move: * * * * * B * * * * * A * * * * *
 Movement: LT - LTR - RT
 Shared Cap.: 103 xxxxx xxxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
 SharedQueue: 2.5 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
 Shrd ConDel: 76.3 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
 Shared LOS: F * * * * * * * * * * * * * * * * *
 ApproachDel: 53.3 36.4 xxxxxxxx xxxxxxxx
 ApproachLOS: F E * * * * *
 Note: Queue reported is the number of cars per lane.

APPENDIX B-5

YEAR 2020 FUTURE WITH PROJECT WITH MITIGATION CONDITIONS



MAP SOURCE: GOOGLE EARTH



NOT TO SCALE

APPENDIX FIGURE B-1 CONCEPTUAL MITIGATION MEASURE

HAWTHORNE BOULEVARD/VIA RIVERA

ZONE 2 LANDSLIDE MORATORIUM - PORTUGUESE BEND PROJECT

LINSCOTT, LAW & GREENSPAN, engineers

Year 2020 With Project Traffic Conditions
AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #6 Via Rivera/Hawthorne Boulevard

Average Delay (sec/veh): 9.6 Worst Case Level Of Service: F[91.7]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes for Via Rivera and Hawthorne Boulevard.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume for various movements.

Critical Gap Module table showing Critical Gp and FollowUpTim for different movements.

Capacity Module table showing Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap for various movements.

Level Of Service Module table showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

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

Year 2020 With Project Traffic Conditions
AM Peak Hour

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

Intersection #6 Via Rivera/Hawthorne Boulevard

Approach:	North Bound			South Bound			East Bound			West Bound										
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
HevVeh:	0%			0%			0%			0%										
Grade:	0%			0%			0%			0%										
Peds/Hour:	0			0			0			0										
Pedestrian Walk Speed:	4.00 feet/sec																			
LaneWidth:	12 feet			12 feet			12 feet			12 feet										
Time Period:	0.25 hour																			
Upstream Signals:																				
Link Index:							#19						#22							
Dist(miles):							0.000						0.000							
Speed (mph):							0.00						0.00							
SignalIndex:							#3						#9							
Cycle Time:							0 secs						0 secs							
InitVolume:	0			0			0			0										
Saturation:	0			0			0			0										
ArrivalType:	0			0			0			0										
G/C:	0.00			0.00			0.00			0.00										
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection																				
P:	0.000			0.000			0.000			0.000										
gq1:	0.00			0.00			0.00			0.00										
gq2:	0.00			0.00			0.00			0.00										
gq:	0.00			0.00			0.00			0.00										
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons																				
alpha:	0.000						0.000													
beta:	0.000						0.000													
ta (secs):	0.000						0.000													
F:	0.000						0.000													
f:	0.000			0.000			0.000			0.000										
vcmax:	0			0			0			0										
vcg:	0			0			0			0										
vcmin:	0			0			0			0										
tp:	0.0			0.0			0.0			0.0										
p:	0.000						0.000													
*** Computation 3: Platoon Event Periods																				
pdom/psubo:	0.000/0.000/Unconstrained																			
*** Computation 4: Conflicting Flows During Each Unblocked Period																				
InitCnflVol:	1376	1910	429	1285	1714	338	874	xxxxx	xxxxx	857	xxxxx	xxxxx								
AdjCnflVol:	1376	1910	429	1285	1714	338	874	xxxxx	xxxxx	857	xxxxx	xxxxx								
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx								
ConflictVol:	1376	1910	429	1285	1714	338	874	xxxxx	xxxxx	857	xxxxx	xxxxx								
*** Computation 5: Capacity for Subject Movement During Unblocked Period																				
InitPotCap:	106	69	580	159	91	663	781	xxxxx	xxxxx	792	xxxxx	xxxxx								
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx								
Potent Cap.:	106	69	580	159	91	663	781	xxxxx	xxxxx	792	xxxxx	xxxxx								

Year 2020 With Project Traffic Conditions
AM Peak Hour

Peak Hour Delay Signal Warrant Report

Intersection #6 Via Rivera/Hawthorne Boulevard

Future Volume Alternative: Peak Hour Warrant NOT Met

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							
Lanes:	0	0	0	0	1	1	0	0	1	0	1	0	1	1	0	1	0	2	0	1
Initial Vol:	0	0	0	0	0	129	2	54			49	787	1			34	623	181		
ApproachDel:	xxxxxx				91.7				xxxxxx				xxxxxx							

Approach[southbound] [lanes=2] [control=Stop Sign]

Signal Warrant Rule #1: [vehicle-hours=4.7]

FAIL - Vehicle-hours less than 5 for two or more lane approach.

Signal Warrant Rule #2: [approach volume=186]

SUCCEED - Approach volume >= 150 for two or more lane approach.

Signal Warrant Rule #3: [approach count=3] [total volume=1861]

SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

 Year 2020 With Project Traffic Conditions
 AM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #6 Via Rivera/Hawthorne Boulevard

Future Volume Alternative: Peak Hour Warrant Met

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			
Lanes:	0	0	0	1	1	0	0	1	0	1	1	0	1	0	2
Initial Vol:	0	0	0		129	2	54		49	787	1		34	623	181
Major Street Volume:														1675	
Minor Approach Volume:														186	
Minor Approach Volume Threshold:														152	

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Year 2020 With Project Traffic Conditions
PM Peak Hour

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

Intersection #6 Via Rivera/Hawthorne Boulevard

Average Delay (sec/veh): 4.5 Worst Case Level Of Service: F[86.0]

Street Name:	Via Rivera				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:	Stop Sign		Stop Sign		Uncontrolled		Uncontrolled													
Rights:	Include		Include		Include		Include													
Lanes:	0	0	0	0	1	1	0	0	1	0	1	0	1	1	0	1	0	2	0	1

Volume Module:

Base Vol:	0	0	12	58	0	24	35	512	5	20	563	74
Growth Adj:	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Initial Bse:	0	0	13	61	0	25	37	543	5	21	597	78
Added Vol:	0	0	0	0	0	0	0	216	0	0	215	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	13	61	0	25	37	759	5	21	812	78
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	14	67	0	28	40	825	6	23	882	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	14	67	0	28	40	825	6	23	882	85

Critical Gap Module:

Critical Gp:	xxxxx	xxxxx	6.9	7.5	6.5	6.9	4.1	xxxxx	xxxxxx	4.1	xxxxx	xxxxxx
FollowUpTim:	xxxxx	xxxxx	3.3	3.5	4.0	3.3	2.2	xxxxx	xxxxxx	2.2	xxxxx	xxxxxx

Capacity Module:

Cnflct Vol:	xxxxx	xxxxx	415	1421	1840	441	968	xxxxx	xxxxxx	830	xxxxx	xxxxxx
Potent Cap.:	xxxxx	xxxxx	592	98	76	569	720	xxxxx	xxxxxx	810	xxxxx	xxxxxx
Move Cap.:	xxxxx	xxxxx	592	90	70	569	720	xxxxx	xxxxxx	810	xxxxx	xxxxxx
Volume/Cap:	xxxxx	xxxxx	0.02	0.74	0.00	0.05	0.06	xxxxx	xxxxxx	0.03	xxxxx	xxxxxx

Level Of Service Module:

2Way95thQ:	xxxxx	xxxxx	0.1	3.8	xxxxx	xxxxxx	0.2	xxxxx	xxxxxx	0.1	xxxxx	xxxxxx			
Control Del:	xxxxxx	xxxxx	11.2	116.8	xxxxx	xxxxxx	10.3	xxxxx	xxxxxx	9.6	xxxxx	xxxxxx			
LOS by Move:	*	*	B	F	*	*	B	*	*	A	*	*			
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxxx	xxxxx	xxxxxx	xxxxx	xxxxx	569	xxxxx	xxxxx	xxxxxx	xxxxx	xxxxx	xxxxxx			
SharedQueue:	xxxxxx	xxxxx	xxxxxx	xxxxxx	xxxxx	0.2	xxxxxx	xxxxx	xxxxxx	xxxxxx	xxxxx	xxxxxx			
Shrd ConDel:	xxxxxx	xxxxx	xxxxxx	xxxxxx	xxxxx	11.6	xxxxxx	xxxxx	xxxxxx	xxxxxx	xxxxx	xxxxxx			
Shared LOS:	*	*	*	*	*	B	*	*	*	*	*	*			
ApproachDel:	11.2			86.0			xxxxxxx			xxxxxxx					
ApproachLOS:	B			F			*			*		*			

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

Year 2020 With Project Traffic Conditions
PM Peak Hour

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

Intersection #6 Via Rivera/Hawthorne Boulevard

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:	0%			0%			0%			0%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed:	4.00 feet/sec											
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period:	0.25 hour											

Upstream Signals:

Link Index:	#19			#22		
Dist (miles):	0.000			0.000		
Speed (mph):	0.00			0.00		
SignalIndex:	#3			#9		
Cycle Time:	0 secs			0 secs		
InitVolume:	0			0		
Saturation:	0			0		
ArrivalType:	0			0		
G/C:	0.00			0.00		

*** Computation 1: Time for Queue to Clear at Each Upstream Intersection

P:	0.000	0.000	0.000	0.000
gq1:	0.00	0.00	0.00	0.00
gq2:	0.00	0.00	0.00	0.00
gq:	0.00	0.00	0.00	0.00

*** Computation 2: Time Intersection Blocked Because of Upstream Platoons

alpha:	0.000			0.000		
beta:	0.000			0.000		
ta (secs):	0.000			0.000		
F:	0.000			0.000		
f:	0.000			0.000		
vcmax:	0			0		
vcg:	0			0		
vcmin:	0			0		
tp:	0.0			0.0		
p:	0.000			0.000		

*** Computation 3: Platoon Event Periods

pdom/psubo: 0.000/0.000/Unconstrained

*** Computation 4: Conflicting Flows During Each Unblocked Period

InitCnflVol:	1396	1922	415	1421	1840	441	968	xxxxx	xxxxx	830	xxxxx	xxxxx
AdjCnflVol:	1396	1922	415	1421	1840	441	968	xxxxx	xxxxx	830	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
ConflictVol:	1396	1922	415	1421	1840	441	968	xxxxx	xxxxx	830	xxxxx	xxxxx

*** Computation 5: Capacity for Subject Movement During Unblocked Period

InitPotCap:	103	68	592	98	76	569	720	xxxxx	xxxxx	810	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
Potent Cap.:	103	68	592	98	76	569	720	xxxxx	xxxxx	810	xxxxx	xxxxx

 Year 2020 With Project Traffic Conditions
 PM Peak Hour

Peak Hour Delay Signal Warrant Report

 Intersection #6 Via Rivera/Hawthorne Boulevard

Future Volume Alternative: Peak Hour Warrant NOT Met

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							
Lanes:	0	0	0	0	1	1	0	0	1	0	1	0	1	1	0	1	0	2	0	1
Initial Vol:	0	0	0	0	13	61	0	0	25	0	37	759	5	5	0	21	812	0	0	78
ApproachDel:	11.2				86.0				xxxxxx				xxxxxx							

Approach[northbound] [lanes=1] [control=Stop Sign]

Signal Warrant Rule #1: [vehicle-hours=0.0]

FAIL - Vehicle-hours less than 4 for one lane approach.

Signal Warrant Rule #2: [approach volume=13]

FAIL - Approach volume less than 100 for one lane approach.

Signal Warrant Rule #3: [approach count=4] [total volume=1812]

SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

 Approach[southbound] [lanes=2] [control=Stop Sign]

Signal Warrant Rule #1: [vehicle-hours=2.1]

FAIL - Vehicle-hours less than 5 for two or more lane approach.

Signal Warrant Rule #2: [approach volume=87]

FAIL - Approach volume less than 150 for two or more lane approach.

Signal Warrant Rule #3: [approach count=4] [total volume=1812]

SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

 SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

 Year 2020 With Project Traffic Conditions
 PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #6 Via Rivera/Hawthorne Boulevard

Future Volume Alternative: Peak Hour Warrant NOT Met

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			
Lanes:	0	0	0	1	1	0	0	1	1	0	1	1	1	0	2	0
Initial Vol:	0	0	13		61	0	25		37	759	5		21	812	78	
Major Street Volume:	1713															
Minor Approach Volume:	87															
Minor Approach Volume Threshold:	143 [less than minimum of 150]															

 SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Year 2020 With Project Traffic Conditions
AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Via Rivera/Hawthorne Boulevard

Cycle (sec): 100 Critical Vol./Cap.(X): 0.517
Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 34 Level Of Service: A

Street Name:	Via Rivera						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						Permitted												
Rights:	Include						Include						Include												
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
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	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Lanes:	0	0	0	0	1	0	0	0	1	0	0	1	0	1	0	1	0	1	1	0	1	0	2	0	1

Volume Module:

Base Vol:	0	0	0	122	2	51	46	641	1	32	429	171
Growth Adj:	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Initial Bse:	0	0	0	129	2	54	49	679	1	34	455	181
Added Vol:	0	0	0	0	0	0	0	108	0	0	168	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	129	2	54	49	787	1	34	623	181
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	141	2	59	53	856	1	37	677	197
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	141	2	59	53	856	1	37	677	197
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:	0	0	0	141	2	59	53	856	1	37	677	197

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:	0.00	0.00	1.00	0.70	0.01	0.29	1.00	2.00	0.00	1.00	2.00	1.00
Final Sat.:	0	0	1600	1115	18	466	1600	3196	4	1600	3200	1600

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.09	0.13	0.13	0.03	0.27	0.27	0.02	0.21	0.12
Crit Moves:				****			****			****		

Year 2020 With Project Traffic Conditions
PM Peak Hour

Level of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Via Rivera/Hawthorne Boulevard

Cycle (sec): 100 Critical Vol./Cap.(X): 0.460

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 31 Level Of Service: A

Street Name:	Via Rivera						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			Permitted			Permitted											
Rights:	Include			Include			Include			Include											
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0									
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:	0	0	0	0	0	1	0	0	1	0	0	1	0	1	1	0	1	0	2	0	1

Volume Module:

Base Vol:	0	0	12	58	0	24	35	512	5	20	563	74
Growth Adj:	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Initial Bse:	0	0	13	61	0	25	37	543	5	21	597	78
Added Vol:	0	0	0	0	0	0	0	216	0	0	215	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	13	61	0	25	37	759	5	21	812	78
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	14	67	0	28	40	825	6	23	882	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	14	67	0	28	40	825	6	23	882	85
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:	0	0	14	67	0	28	40	825	6	23	882	85

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:	0.00	0.00	1.00	0.71	0.00	0.29	1.00	1.99	0.01	1.00	2.00	1.00
Final Sat.:	0	0	1600	1132	0	468	1600	3178	22	1600	3200	1600

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.01	0.04	0.00	0.06	0.03	0.26	0.26	0.01	0.28	0.05
Crit Moves:	****					****	****			****		



MAP SOURCE: GOOGLE EARTH



NOT TO SCALE

APPENDIX FIGURE B-2 CONCEPTUAL MITIGATION MEASURE

SEAHILL DRIVE-TRAMONTO DRIVE/PALOS VERDES DRIVE SOUTH
ZONE 2 LANDSLIDE MORATORIUM - PORTUGUESE BEND PROJECT

LINSCOTT, LAW & GREENSPAN, engineers

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	<i>FSB</i>	Intersection	<i>Int #2:PVDS/Tramonto-Seahill</i>
Agency/Co.	<i>LLG Engineers</i>	Jurisdiction	<i>City of Rancho Palos Verdes</i>
Date Performed	<i>3/23/2011</i>	Analysis Year	<i>Future With Project</i>
Analysis Time Period	<i>AM Peak Hour</i>		

Project Description <i>Zone 2 - Portuguese Bend Project/1-10-3845-1</i>	
East/West Street: <i>Palos Verdes Drive South</i>	North/South Street: <i>Tramonto Drive-Seahill Drive</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>0.25</i>

Vehicle Volumes and Adjustments

Major Street Movement	Eastbound			Westbound		
	1 L	2 T	3 R	4 L	5 T	6 R
Volume (veh/h)	3	440	18	24	970	2
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR (veh/h)	3	478	19	26	1054	2
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Raised curb</i>					
RT Channelized			0			0
Lanes	1	2	0	1	2	1
Configuration	L	T	TR	L	T	R
Upstream Signal		0			0	

Minor Street Movement	Northbound			Southbound		
	7 L	8 T	9 R	10 L	11 T	12 R
Volume (veh/h)	101	1	30	10	0	0
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR (veh/h)	109	1	32	10	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R		LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
			7	8	9	10	11	12
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LT		R		LTR	
v (veh/h)	3	26	110		32		10	
C (m) (veh/h)	667	1077	302		796		184	
v/c	0.00	0.02	0.36		0.04		0.05	
95% queue length	0.01	0.07	1.61		0.13		0.17	
Control Delay (s/veh)	10.4	8.4	23.6		9.7		25.7	
LOS	B	A	C		A		D	
Approach Delay (s/veh)	--	--	20.5			25.7		
Approach LOS	--	--	C			D		

TWO-WAY STOP CONTROL SUMMARY

General Information			Site Information		
Analyst	FSB		Intersection	Int #2:PVDS/Tramonto-Seahill	
Agency/Co.	LLG Engineers		Jurisdiction	City of Rancho Palos Verdes	
Date Performed	3/23/2011		Analysis Year	Future With Project	
Analysis Time Period	PM Peak Hour				

Project Description		Zone 2 - Portuguese Bend Project/1-10-3845-1			
East/West Street: Palos Verdes Drive South			North/South Street: Tramonto Drive-Seahill Drive		
Intersection Orientation: East-West			Study Period (hrs): 0.25		

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	32	753	66	42	617	5
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR (veh/h)	34	818	71	45	670	5
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Raised curb					
RT Channelized			0			0
Lanes	1	2	0	1	2	1
Configuration	L	T	TR	L	T	R
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	52	0	29	2	0	0
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR (veh/h)	56	0	31	2	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R		LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LT		R		LTR	
v (veh/h)	34	45	56		31		2	
C (m) (veh/h)	926	771	209		618		232	
v/c	0.04	0.06	0.27		0.05		0.01	
95% queue length	0.11	0.19	1.04		0.16		0.03	
Control Delay (s/veh)	9.0	10.0	28.4		11.1		20.7	
LOS	A	A	D		B		C	
Approach Delay (s/veh)	--	--	22.3			20.7		
Approach LOS	--	--	C			C		

Year 2020 With Project Traffic Conditions
AM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #15 Forrestal Drive/Palos Verdes Drive South

Cycle (sec): 100 Critical Vol./Cap.(X): 0.739
 Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 55 Level Of Service: C

Street Name:	Forrestal Drive						Palos Verdes Drive South					
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			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
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	0	1	0	0	1	0	1	1	0	1

Volume Module:

Base Vol:	3	1	1	41	0	25	15	438	2	12	676	20
Growth Adj:	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Initial Bse:	3	1	1	43	0	27	16	464	2	13	717	21
Added Vol:	7	0	26	0	0	0	0	92	2	9	137	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	10	1	27	43	0	27	16	556	4	22	854	21
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	11	1	29	47	0	29	17	605	4	24	928	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	11	1	29	47	0	29	17	605	4	24	928	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:	11	1	29	47	0	29	17	605	4	24	928	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	0.04	0.96	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1600	60	1540	1600	0	1600	1600	1600	1600	1600	1600	1600

Capacity Analysis Module:

Vol/Sat:	0.01	0.02	0.02	0.03	0.00	0.02	0.01	0.38	0.00	0.01	0.58	0.01
Crit Moves:	****			****			****			****		

Year 2020 With Project Traffic Conditions
PM Peak Hour

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #15 Forrestal Drive/Palos Verdes Drive South

Cycle (sec): 100 Critical Vol./Cap.(X): 0.708

Loss Time (sec): 10 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 51 Level Of Service: C

Street Name:	Forrestal Drive						Palos Verdes Drive South					
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			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
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	0	1	0	0	1	0	1	1	0	1

Volume Module:

Base Vol:	17	0	29	34	1	24	23	557	13	27	425	46
Growth Adj:	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Initial Bse:	18	0	31	36	1	25	24	590	14	29	451	49
Added Vol:	4	0	17	0	0	0	0	162	8	30	161	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	22	0	48	36	1	25	24	752	22	59	612	49
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	24	0	52	39	1	28	27	818	24	64	665	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	0	52	39	1	28	27	818	24	64	665	53
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:	24	0	52	39	1	28	27	818	24	64	665	53

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	0.00	1.00	1.00	0.04	0.96	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1600	0	1600	1600	64	1536	1600	1600	1600	1600	1600	1600

Capacity Analysis Module:

Vol/Sat:	0.01	0.00	0.03	0.02	0.02	0.02	0.02	0.51	0.01	0.04	0.42	0.03
Crit Moves:			****	****			****			****		

1.0 CONSTRUCTION IMPACT ANALYSIS

Project construction would generate traffic from construction worker travel, the arrival and departure of trucks delivering construction materials to the site, and the removal of debris generated by on-site demolition activities. Both the number of construction workers and trucks would vary throughout the construction process. It is important to note that the following construction summary and corresponding analyses assume that *all* 47 homes within the project site would be under construction simultaneously, which is a highly unlikely scenario and extremely conservative. This conservative assumption has been employed for illustrative purposes only so as to identify the maximum potential impact of construction activities in the vicinity.

1.1 Overview of Construction Phases

The construction of the project is anticipated to consist of several main construction work efforts: Demolition/Site Preparation/Grading/Building Construction/Paving/Architectural Coating. The total construction period is anticipated to last approximately 48 months within the above six general periods or phases of construction. The following provides a general overview of the various phases of construction, based on information provided by the environmental consultant: Phase 1 (two months) consists of demolition; Phase 2 (roughly one and one-half months) consists of site preparation, Phase 3 (almost four months) consists of grading, Phase 4 (36 months) consists of building construction activities, Phase 5 (two and one-half months) consists of paving, and Phase 6 (two and one-half months) consists of architectural coating.

1.1.1 Demolition/Site Preparation/Grading

Construction would initially begin with the demolition and removal of any existing on-site secondary structure/s and landscaping. It is anticipated that equipment needs would include heavy machinery such as a concrete/industrial saw, rubber tired dozers and excavators, and other miscellaneous machinery. During the peak period of this phase, a work force of seven construction workers per lot or a total of 329 construction workers for the entire project would be necessary and workers would occur in two general shifts. This phase is anticipated to take two months to complete and assumes all 47 homes are under construction simultaneously (a highly unlikely scenario).

The site preparation phase includes heavy construction equipment which would be located on-site during site preparation activities and would not travel to and from the project site on a daily basis. It is anticipated that equipment needs associated with site preparation activities would include rubber tired dozers, tractors/loaders/backhoes, and other miscellaneous machinery. During the peak period of this phase, a work force of a nine construction workers per lot or a total of 423 construction workers for the entire project would be necessary. This work is estimated to take roughly one and one-half months to complete, after completion of the building demolition and assumes all 47 homes are under construction simultaneously (a highly unlikely scenario).

The grading phase includes heavy construction equipment which would be located on-site during site grading activities and would not travel to and from the project site on a daily basis. It is anticipated that equipment needs associated with grading activities would include an excavator, a grader, rubber tired dozer, scraper, a tractor/loader/backhoe and other miscellaneous machinery. In addition, ten wheel dump trucks (i.e., the smaller 10 cubic yard capacity dump trucks) would be utilized in this area for any import of fill material. It is assumed that no more than 50 cubic yards of fill per lot would need to be imported. During the peak period of this phase, a work force of six construction workers per lot or a total of 282 construction workers for the entire project would be necessary. This work is estimated to take roughly four months to complete, after completion of the site preparation phase and assumes all 47 homes are under construction simultaneously (a highly unlikely scenario).

1.1.2 Building Construction

Building construction of the project consists of all aspects of building construction with the exception of paving and architectural coatings. It is anticipated that equipment needs associated with these building construction activities would include a crane, fork-lifts, generator sets, concrete pump, cement and mortar mixers and air compressors, skill saws and power drills, tractor/loader/backhoes, welders, as well as miscellaneous machinery. During the peak period of this building construction phase, a work force of eight construction workers per lot or a total of 376 construction workers for the entire project would be necessary. Based on a similar residential project, it is estimated that two trucks per day per home is anticipated to be generated to/from the project site during building construction activities. Thus, a total of 94 material delivery trucks per day are anticipated during this phase of construction. Building construction is anticipated to take approximately 34 months to complete and assumes all 47 homes are under construction simultaneously (a highly unlikely scenario).

1.1.3 Paving/Architectural Coating

The paving phase includes heavy construction equipment which would be located on-site during site preparation activities and would not travel to and from the project site on a daily basis. It is anticipated that equipment needs associated with paving activities would include pavers, paving equipment, and rollers. During the peak period of this phase, a work force of seven construction workers per lot or a total of 329 construction workers for the entire project would be necessary. This work is estimated to take roughly two and one-half months to complete, after completion of the building construction and assumes all 47 homes are under construction simultaneously (a highly unlikely scenario).

The architectural coating phase includes some heavy construction equipment which would be located on-site during site grading activities and would not travel to and from the project site on a daily basis. It is anticipated that equipment needs associated with architectural coating activities would include air compressors and miscellaneous machinery. During the peak period of this phase, a work force of two construction workers per lot or a total of 94 construction workers for the entire project would be necessary. This work is estimated to take roughly two

and one-half months to complete, after completion of the paving phase and assumes all 47 homes are under construction simultaneously (a highly unlikely scenario).

1.2 Construction Assumptions

It is assumed that the homesites would be cleared and that after completion of the first three phases of short-term construction activities (i.e., demolition, site preparation and grading) building construction would commence. The equipment staging area during the construction period would occur on-site. Building construction activities are anticipated to occur between the hours of 7:00 AM and 7:00 PM, with two shifts of construction workers.

1.3 Construction Traffic Trip Generation

Activities related to the building construction (Phase 4) have been determined to generate the greatest number of vehicle trips compared to the other phases of construction. Thus, the greatest potential for impact on the adjacent street system would occur during the building construction phase when the peak construction workforce is present and truck trip generation is also at its highest level. As stated previously, it is important to note that the following construction summary and corresponding analyses assume that *all* 47 homes within the project site would be under construction simultaneously, which is a highly unlikely scenario and extremely conservative. This conservative assumption has been employed for illustrative purposes only so as to identify the maximum potential impact of construction activities in the vicinity.

1.3.1 Peak Construction Worker Demand

During the peak period of construction activities, a work force of 376 construction workers would be required assuming eight workers per lot and the highly unlikely scenario of *all* 47 homes under construction at the same time. Based on information provided by the environmental consultant, the construction workers would work in two shifts, with the first shift beginning at 7:00 AM and ending at 3:00 PM, and the second shift beginning at 11:00 AM and ending at 7:00 PM. Therefore, these particular construction workers would arrive and depart the project site during off-peak hours (the peak hour of traffic at the study intersections in the vicinity of the site primarily occurs between approximately 7:45 AM and 8:45 AM during the morning commuter period and between approximately 5:00 and 6:00 PM during the afternoon commuter period). It is anticipated that construction workers would remain on-site throughout their shift.

The number of construction worker vehicles is estimated using an average vehicle ridership (AVR) of 1.135 persons per vehicle (as provided in the South Coast Air Quality Management District in its CEQA Air Quality Handbook). Therefore, it is estimated that up to 332 vehicles (332 inbound trips and 332 outbound trips) on a daily basis would be generated by the construction workers during the peak construction phase (i.e., building construction) of the project area. For the first shift, the inbound construction worker trips (i.e., 166 inbound trips) would occur outside/before the AM commuter peak hour and the outbound worker trips (i.e., 166 outbound trips) would occur outside/before the PM commuter peak hour. For the second shift, the inbound construction worker trips (i.e., 166 inbound trips) would occur outside/before the

PM commuter peak hour and the outbound worker trips (i.e., 166 outbound trips) would occur outside/after the PM commuter peak. Thus, these construction work trips would occur outside of the morning and afternoon peak commuter hours of the local street system.

1.3.2 Peak Construction Truck Demand

In addition to construction worker vehicles, additional trips may be generated by miscellaneous trucks traveling to and from the project area. These trucks may consist of larger vehicles delivering equipment and/or construction materials to the project area, or smaller pick-up trucks or four-wheel drive vehicles used by construction supervisors and/or City inspectors. Heavy construction equipment would be located on-site during the building construction activities and would not travel to and from the project site on a daily basis.

Based on a similar residential project, it is estimated that two trucks per day per home is anticipated to be generated to/from the project site during peak building construction activities. Thus, based on 47 proposed dwelling units, a maximum of 94 material delivery trucks per day are anticipated to be generated to/from the project site during construction activities. Therefore, peak truck trip generation would total up to 188 truck round-trips per day (94 inbound trucks and 94 outbound trucks) are anticipated. Assuming a material delivery period of 12 hours per day (beginning at 7:00 AM, with the last delivery at 7:00 PM), this corresponds to a total of eight trucks per hour. Since construction truck trips would occur along major roadways with the number of trips during the AM and PM peak hours being relatively limited, construction impacts from this particular type of construction activity source would be less than significant based on the forecast traffic operations as reported in the traffic study.

It is anticipated that delivery trucks/construction equipment would be brought onto the project site and be stored within the perimeter fence of each construction site, thus, no staging is expected to occur on the perimeter public streets. Therefore, detours around the construction sites would not be required. Flagmen, however, would be used to control traffic movement during the ingress or egress of trucks and heavy equipment from each construction site. As noted below in Section 1.5, a Construction Traffic Control Plan may be required by the City to be developed to minimize potential conflicts between construction activity and through traffic.

Construction worker parking is anticipated to occur primarily within each lot. As noted in the emergency access and evacuation section, current roadway widths (as measured in the field from edge of pavement to edge of pavement) within the Portuguese Bend area typically vary between 20 and 24 feet in width. Several of the internal private roadways also have areas off road that might provide sufficient width for several construction worker vehicles, although not recommended. Refer to the emergency access and evacuation section for further discussion of the traffic analysis during times of an emergency and subsequent evacuation.

1.3.3 Peak Construction Traffic Generation Summary

During peak building construction activities (assuming conservatively that *all 47* lots are under construction concurrently which is highly unlikely), construction worker vehicles and trucks are

forecast to generate 852 vehicle trips per day (426 inbound trips and 426 outbound trips). The inbound and outbound construction worker trips are anticipated to occur outside of the AM and PM commuter peak hours. As mentioned in the Section 1.3.2, a total of eight material delivery trucks per hour are anticipated to be generated to/from the project site during peak construction activities. With two gateways on Palos Verdes Drive South (i.e., at Narcissa Drive and Peppertree Drive), this would result in no more than four vehicles at each of the gateway study intersections during either the AM or PM peak hour. As noted in the traffic study, these intersections are projected to operate at Level of Service D with the proposed project and this increase is not anticipated to result in any significant impacts based on the City's significance criteria. This level of trip generation also does not exceed 50 or more vehicle trips during either the AM or PM peak hours, which is the threshold contained in the Congestion Management Program for analysis of a location is required. Therefore, the traffic impacts associated with construction activities are determined to be less than significant.

1.4 Haul Routes

Approvals by the City of Rancho Palos Verdes may be required for the implementation of a Truck Haul Route program for the project and would be subject to review by the City of Rancho Palos Verdes Department of Public Works. Based on current plans, haul trucks and delivery trucks would access the site via Palos Verdes Drive South, Peppertree Drive and Narcissa Drive. Haul routes to and from the project area would therefore require approval from the City of Rancho Palos Verdes Department of Public Works.

1.5 Construction Effects on Existing Roads

Several comments received during the Notice of Preparation (NOP) process expressed concern about the potential effects of project-related construction vehicles on the existing pavement integrity for roads within the Portuguese Bend Community. Based on review of the Portuguese Bend Community Association publications, it is noted that all roads behind the Portuguese Bend gates on Narcissa Drive and Peppertree Drive (i.e., located north of Palos Verdes Drive South) are private, including land (whether vacant or developed). As such, the design and maintenance of private streets is not the responsibility of the City of Rancho Palos Verdes, and therefore these streets may or may not meet accepted design standards, and in some cases are not in keeping with customary maintenance standards.

Further research was conducted of the Covenants, Conditions and Restrictions (CC&Rs) for the Portuguese Bend Community Association as it relates to the purposes, memberships and maintenance charges. The Association has the right and power to purchase, construct, improve, repair, maintain, among others, and hold easements for or the fee to improve, light and maintain streets, roads, alleys, trails, bridle paths, walks, gateways, among others. The owners of lots within the Portuguese Bend Community Association must therefore pay and fund the appropriate general charges, assessments and liens in this regard. Damage caused to any private roadways within the community as a result of construction activities within the community is therefore the responsibility of the Association to repair.

1.6 Construction Traffic Impacts

With the required haul route approval, the off-peak arrival and departure of construction workers and the other construction management practices described above, impacts from construction activity are concluded to be less than significant. Impacts would be further reduced with the implementation of the following design features:

- Maintain existing access for land uses in proximity of the project site;
- Limit any potential lane closures to off-peak travel periods;
- Schedule receipt of construction materials during non-peak travel periods, to the extent possible;
- Coordinate deliveries to reduce the potential of trucks waiting to unload for extended periods of time; and
- Prohibit parking by construction workers on adjacent streets and direct construction workers to available parking as determined in conjunction with City staff.

In order to minimize potential conflicts between construction activity and through traffic, a Construction Traffic Control Plan may be required by the City to be developed for use during project construction. The Construction Traffic Control Plan would identify all traffic control measures, signs, and delineators to be implemented by the construction contractor through the duration of demolition and construction activity. In addition, the City of Rancho Palos Verdes would review and be responsible for approval of any proposed Truck Haul Route program. Because of these requirements, and, moreover, construction-related trips would be nominal and well dispersed during the AM and PM peak hours, construction-related transportation impacts due to the construction of the project area is expected to be less than significant.

1.0 EMERGENCY ACCESS AND EVACUATION EVALUATION

Summaries of the emergency access and evacuation have been prepared for the proposed project in response to comments received during the Notice of Preparation process. In addition, an evaluation has been prepared to determine the estimated amount of time (i.e., clearing time) needed for area residents of the Portuguese Bend community to evacuate the area in the event of a major incident (e.g., wildland fire). This analysis has been performed assuming existing and full development of the proposed project (i.e., all additional 47 single family homes).

1.1 Summary of Emergency Access and Evacuation

The City utilizes Los Angeles County for both fire and public safety services and emergency “first responder” responsibilities are implemented by the County without the requirement or need of City staff involvement. In the case of the August 27, 2009 brush fire in the Portuguese Bend area of the City, while the County was the primary responding agency, the City did play an important and supporting role during the incident to disseminate information to the residents, City Council and City staff. A summary report following the incident was prepared and presented to the City Council (report dated October 20, 2009). That report provided an overview of lessons learned as well as details regarding the Los Angeles County Emergency Mass Notification System, emergency communications procedures, the management and coordination of recovery operations, among others.

Research has been conducted with respect to existing emergency evacuation procedures. Residents are directed to several preparedness documents and procedures, such as those contained in the *Ready! Set! Go! Your Personal Wildfire Action Plan*, published by the County of Los Angeles Fire Department. Several fire protection plans for various communities have also been researched as part of this section. In addition, an evacuation study entitled *Modeling Small Area Evacuation: Can Existing Transportation Infrastructure Impede Public Safety?*, April 2002 prepared by Vehicle Intelligence and Transportation Analysis Laboratory, University of California, Santa Barbara and a paper entitled *Public Safety in the Urban-Wildland Interface: Should Fire-Prone Communities Have a Maximum Occupancy?*, contained in the National Hazards Review, August 2005, were reviewed in detail as part of this analysis.

1.1.1 Emergency Access Summary

The Portuguese Bend area of Rancho Palos Verdes is a private community that is served by two primary access points; one access point via Narcissa Drive (on the west end) and one access point via Peppertree Drive (on the east end). Both of these access points are gated north of Palos Verdes Drive South and are used by residents to access other local roads and their respective homes. A total of approximately 165 homes are planned within the Portuguese Bend community/association, including 111 homes in the project area (i.e., which includes the 47 additional single family homes analyzed as part of the proposed project as well as 64 developed lots within the project area).

Field observations have been conducted in order to verify existing signage, traffic control and pavement widths associated with the private roadways within the Portuguese Bend area. Narcissa Drive has a pavement width of roughly 23 feet north of the existing gate (north of Palos Verdes Drive South) and the pavement width generally varies between 22 feet and 24 feet in width along its length. Peppertree Drive has a pavement width of roughly 22 feet north of the existing gate (north of Palos Verdes Drive South) and the pavement width generally varies between 22 feet and 24 feet in width along its length. Based on field observations conducted along the private roadways it is recommended that these access roads be posted with “No Parking – Fire Lane” signs. The roadways are of sufficient width to allow large vehicles (i.e., fire engine type trucks) to access the Portuguese Bend area. It should also be noted that the majority of the roadways are not fully improved (e.g., with formal curb and gutter) thus, the above widths and measurements reflect the edge of pavement widths. Additional (i.e., unimproved) width is available along many portions of the roadways, however.

Two fire stations are located within the project study area: Fire Station #53 (located at 6124 Palos Verdes Drive South, Rancho Palos Verdes, CA 90275) and Fire Station #83 (located at 83 Miraleste Plaza, Rancho Palos Verdes, CA 90275). In addition, it is important to note that the County’s Division I Battalion 14 Headquarters is located at Fire Station #106 in Rolling Hills Estates. These first response teams will utilize Palos Verdes Drive South to access either Narcissa Drive or Peppertree Drive in order to respond to a fire incident as well as other fire access roads. Further, it is expected that the gates located at both public gateways will be set/controlled to remain open during an evacuation period.

As part of controlling access to and from an evacuation area for a wildland fire within the Portuguese Bend area, nearby roadways will be closed by law enforcement agencies to inbound traffic with the exception for public safety vehicles. Therefore, a minimum of one travel lane will remain open at all times. Any closed roads or traffic closure points would be identified by County emergency personnel and fire staging areas would be set up for public safety officials and equipment. These staging areas would be located where resources can be placed while waiting for tactical assignment to combat wildland fires.

Further, as required by the California Vehicle Code (Section 21806, authorized Emergency Vehicles), motorists are required to pull to the right side of the highway and stop to allow an emergency vehicle to pass. If required, drivers of emergency vehicles are trained to utilize center turn lanes, or travel in opposing through lanes to pass through and traverse crowded or tight areas. Thus, the respect entitled to emergency vehicles and driver training allow emergency vehicles to negotiate typical as well as atypical street conditions in urban and rural areas.

1.1.2 Evacuation Summary

Evacuation from a wildfire should be the number one priority that the public can take to protect themselves. The law enforcement agencies’ primary responsibility during a wildland fire is to assist in evacuation of an area. Residents are expected to follow the evacuation routes as

communicated and directed by Los Angeles County fire personnel via local roads and onto either Narcissa Drive or Peppertree Drive to exit the area via Palos Verdes Drive South.

1.2 Evacuation Evaluation

An evaluation was prepared to determine the estimated amount of time (i.e., clearing time) needed for area residents to evacuate the Portuguese Bend area in the event of a nearby wildland fire.

1.2.1 Number of Residential Units in the Portuguese Bend Area to be Evacuated

A study documenting the number of existing residential units and potential future residential units for the Portuguese Bend area that would utilize either Narcissa Drive or Peppertree Drive to evacuate has been prepared. The existing and future residential units were separated by street segment first and then combined and the results are presented in **Table 1**. As stated above, the number of existing and potential units for the entire Portuguese Bend community is forecast to total approximately 165 units. Based on field observations and use of aerial photography, a total of roughly 54 homes exist outside of the project area, with roughly 26 expected to predominantly utilize Narcissa Drive and 28 expected to predominantly utilize Peppertree Drive during an evacuation. The project area consists of approximately 64 developed lots as well as the potential development of up to 47 additional lots. Given an overall gateway distribution of 56 percent via Narcissa Drive and 44 percent via Peppertree Drive associated with the future potential homes (i.e., 26 via Narcissa Drive and 21 via Peppertree Drive) the total number of existing and future homes expected to evacuate via Narcissa Drive totals 86 homes (i.e., 60 existing and up to 26 future homes) and via Peppertree Drive totals 79 homes (i.e., 58 existing and up to 21 future homes).

1.2.2 Forecast Trip Generation and Evacuation Clearing Times – Future Conditions

Based on the above referenced technical documents, it is conservatively estimated that during an evacuation, two vehicles per residential unit will be evacuated. It should be noted that this can be considered a conservative assumption, as not every residential unit would be occupied during an evacuation nor would every home have two drivers present in order to evacuate two vehicles. The total forecast trip generation for the existing and future homes within the Portuguese Bend area by gateway is presented in **Table 2**. As shown in **Table 2**, approximately 172 vehicles are forecast to exit via Narcissa Drive and 158 vehicles are forecast to exit via Peppertree Drive.

An evacuation study, *Modeling Small Area Evacuation: Can Existing Transportation Infrastructure Impede Public Safety?*, April 2002 was prepared by Vehicle Intelligence and Transportation Analysis Laboratory, University of California, Santa Barbara to document the modeled clearing times for a neighborhood similar in nature to the Portuguese Bend community in Rancho Palos Verdes. That neighborhood contained a total of two access points and the internal roadways comprised of one lane in each direction. As part of the study, three five-minute intervals were used to separate the forecast trip generation in which 30 percent of the total number of vehicles evacuate within the first five minutes, 50 percent evacuated in the next five minutes, and 20 percent evacuate in the next five minutes.

The *Modeling Small Area Evacuation: Can Existing Transportation Infrastructure Impede Public Safety?* study modeled the evacuation clearing times for several scenarios. For the purposes of this evaluation, it was assumed that some traffic closures and traffic control officers would be posted at the critical intersections to quickly process vehicles evacuating the area. The referenced study modeled an evacuation clearing time for residential units, with two vehicles evacuating per unit, traffic closures, and traffic control at 74.9 vehicles per minute. The average 74.9 vehicles per minute evacuation clearing time was therefore used to determine the evacuation clearing time for the Portuguese Bend area.

As shown in column [3] of *Table 2*, which is the condition with highest amount of vehicles evacuating (i.e., 50 percent evacuated in the second five minutes), it is estimated that the clearing time to evacuate the vehicles traveling south on Narcissa Drive is approximately 1.1 minutes and the time to evacuate the vehicles traveling south on Peppertree Drive is approximately 1.1 minutes. These findings are found to be within an acceptable range for evacuation purposes.

1.2.3 Proposed Minimum Exits – For Evacuations

Table 4 (Proposed Minimum Exits Table for Interface Communities) contained in the *Public Safety in the Urban-Wildland Interface: Should Fire-Prone Communities Have a Maximum Occupancy?*, National Hazards Review, August 2005 article, was also reviewed in detail in order to verify the validity of the number of exiting roadways to adequately serve the Portuguese Bend community during times of an emergency evacuation.

As indicated in the above referenced table, for a total number of households of between 51 and 300 homes, the minimum number of exiting roads is two (2) and the maximum number of households per exit totals 150 homes. As the community has been constructed with two exiting roads and a total of 86 and 79 total households are forecast to exit the Narcissa Drive and Peppertree Drive gateways, respectively, the design of the roadway system with respect to number of exiting roadways and number of households per exit is concluded to be adequate for emergency evacuation purposes.

1.3 Equestrian Evacuation

The Los Angeles County Equine Response Team has previously addressed the City of Rancho Palos Verdes Equestrian Committee regarding the Fire Department's coordination and request regarding preplans for equine evacuation in case of a wildland fire. The Equine Response Team has sites that can be used for emergency equine evacuation pick-up, thus allowing the Equine Response Team to pick-up the horse/s and transport them to emergency shelters. Given that one inbound travel lane will be maintained during an evacuation period to allow for entry of emergency vehicles, equestrian evacuation will be possible.

1.4 Construction Traffic Implications During an Evacuation

Several comments received during the formal Notice of Preparation process noted some concern regarding possible implications of construction traffic during an emergency evacuation. As

summarized in *Table 2*, and concluded above, it is estimated that the clearing time to evacuate resident vehicles traveling south on Narcissa Drive is approximately 1.1 minutes and the time to evacuate the resident vehicles traveling south on Peppertree Drive is also approximately 1.1 minutes. These estimates assume that all 47 homes proposed as part of the project have been completed and the findings are found to be within an acceptable range for evacuation purposes.

Based on the construction analysis contained herein, it was conservatively determined that the maximum construction activity in terms of construction trip generation would occur during the building construction phase given the highly unlikely scenario of all 47 homes being under construction at the same time. Accounting for the addition of the construction worker and construction truck trip generation/vehicles (while subtracting the future resident vehicles from the evacuation analysis), the above evacuation clearance times would increase slightly to 1.4 minutes for Narcissa Drive and 1.3 minutes for Peppertree Drive, respectively. It should also be noted that the provisions for resident evacuation would also apply to construction-related vehicles and personnel. Therefore, it can be concluded that these clearance times would increase by 0.3 minutes (18 seconds) and 0.2 minutes (12 seconds) for the Narcissa Drive and Peppertree Drive access points, respectively.

Table 1
 POTENTIAL BUILDOUT OF SINGLE-FAMILY DWELLING UNITS
 IN THE PORTUGUESE BEND AREA - EVACUATION ROUTE SCENARIO [1]

Location	Existing Units Outside of Project Area	Developed Lots Within Project Area	Potential Units (Proposed Project)	Total Units
Narcissa Drive north of Palos Verdes Drive South	26	34	26	86
Peppertree Drive north of Palos Verdes Drive South	28	30	21	79
Total	54	64	47	165

[1] Source: Based on field observations, existing aerial photography, and the project description.

Table 2
FORECAST OF TRIP GENERATION AND CLEARING TIMES
PORTUGUESE BEND AREA - BUILDOUT
EVACUATION ROUTE SCENARIO

Location	[1]	[2]		[3]		[4]	
	Total Evacuation Forecast Trips [a]	Forecast Trips [a]	Clearing Time [c] (Minutes)	Forecast Trips [a]	Clearing Time [c] (Minutes)	Forecast Trips [a]	Clearing Time [c] (Minutes)
Narcissa Drive north of Palos Verdes Drive South	172	52	0.7	86	1.1	34	0.5
Peppertree Drive north of Palos Verdes Drive South	158	47	0.6	79	1.1	32	0.4

[a] It is estimated that two vehicles per residential unit would be used during evacuation. Note that this is a conservative assumption as not every residential unit would be occupied during evacuation. A total of 86 and 79 homes are expected to evacuate via the Narcissa Drive and Peppertree Drive gateways, respectively.

[b] The forecast trips were separated into three five-minute intervals in which 30% of the total number of vehicles evacuate in the first five minutes, 50% evacuate in the next five minutes, and 20% evacuate in the next five minutes. The five-minute intervals were based on information documented in the "Modeling Small Area Evacuation: Can Existing Transportation Infrastructure Impede Public Safety", by Vehicle Intelligence & Transportation Analysis Laboratory, University of California, Santa Barbara, April 2002.

[c] An average of 74.9 cars per minute was used to determine the clearing time during evacuation. This average was based on the clearing times documented in the "Modeling Small Area Evacuation: Can Existing Transportation Infrastructure Impede Public Safety", by Vehicle Intelligence & Transportation Analysis Laboratory, University of California, Santa Barbara, April 2002. It should be noted that the 74.9 cars per minute rate assumes traffic control and inbound traffic closures in the area.