



Legacy at Coto Traffic Study

Coto de Caza, CA

April 13, 2020

Prepared for:

CGV Coto, LLC

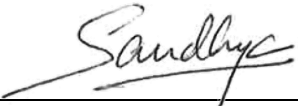
Prepared by:

Stantec Consulting Services Inc.



LEGACY AT COTO TRAFFIC STUDY

This document entitled Legacy at Coto Traffic Study was prepared by Stantec Consulting Services Inc. ("Stantec") for the account of CGV Coto, LLC. (the "Client").

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Introduction
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1.0 INTRODUCTION

Stantec Consulting Services Inc. (Stantec) has performed a traffic impact analysis for the proposed Legacy at Coto (Project), a new resort style apartment development for active seniors, located in the Coto de Caza area of the County of Orange. The purpose of this study is to determine the amount of traffic generated by the proposed Project and to analyze the impacts of the Project on the circulation system for the County's review and approval. This report summarizes the traffic impact analysis prepared for the environmental review process.

1.1 PROJECT DESCRIPTION

The proposed Project consists of approximately 101 residential units geared toward active seniors and would include resort-type amenities on-site such as a gourmet restaurant with room service, concierge service, movie theater, computer café, art studio, salon, spa, valet parking, and chauffeur service in the gated community of Coto de Caza. These amenities will not be available to outside residents. A specialty retail store type of use is also planned. Primary access to the Project site will be via a driveway on Ave La Caza, with a proposed emergency access on Via Alondra. The Project site is a former Vic Braden Tennis Center. The location of the Project site is shown in Figure 1-1.

1.2 METHODOLOGY

The traffic study provides impact analysis of existing and cumulative conditions with the proposed Project. The analysis will address the Project impacts compared with no-project scenarios. Traffic analysis data sets presented in this traffic study are as follows:

1. Existing conditions
2. Existing-plus-Project
3. Existing-plus-Cumulative Projects-without-Project
4. Existing-plus-Cumulative Projects-plus-Project

The Existing conditions scenario utilizes observed traffic counts collected in May and December 2019 for the intersections and roadway segments in the study area. The Cumulative conditions scenario considers traffic generated by all known and reasonably anticipated related projects in the proximity of the study area.

Chapter 2.0 of this report provides the transportation setting for the impact analysis, and Chapter 3.0 provides a detailed project description. Chapter 4.0 focuses on the potential traffic impacts of implementation of the Project under existing and cumulative settings.



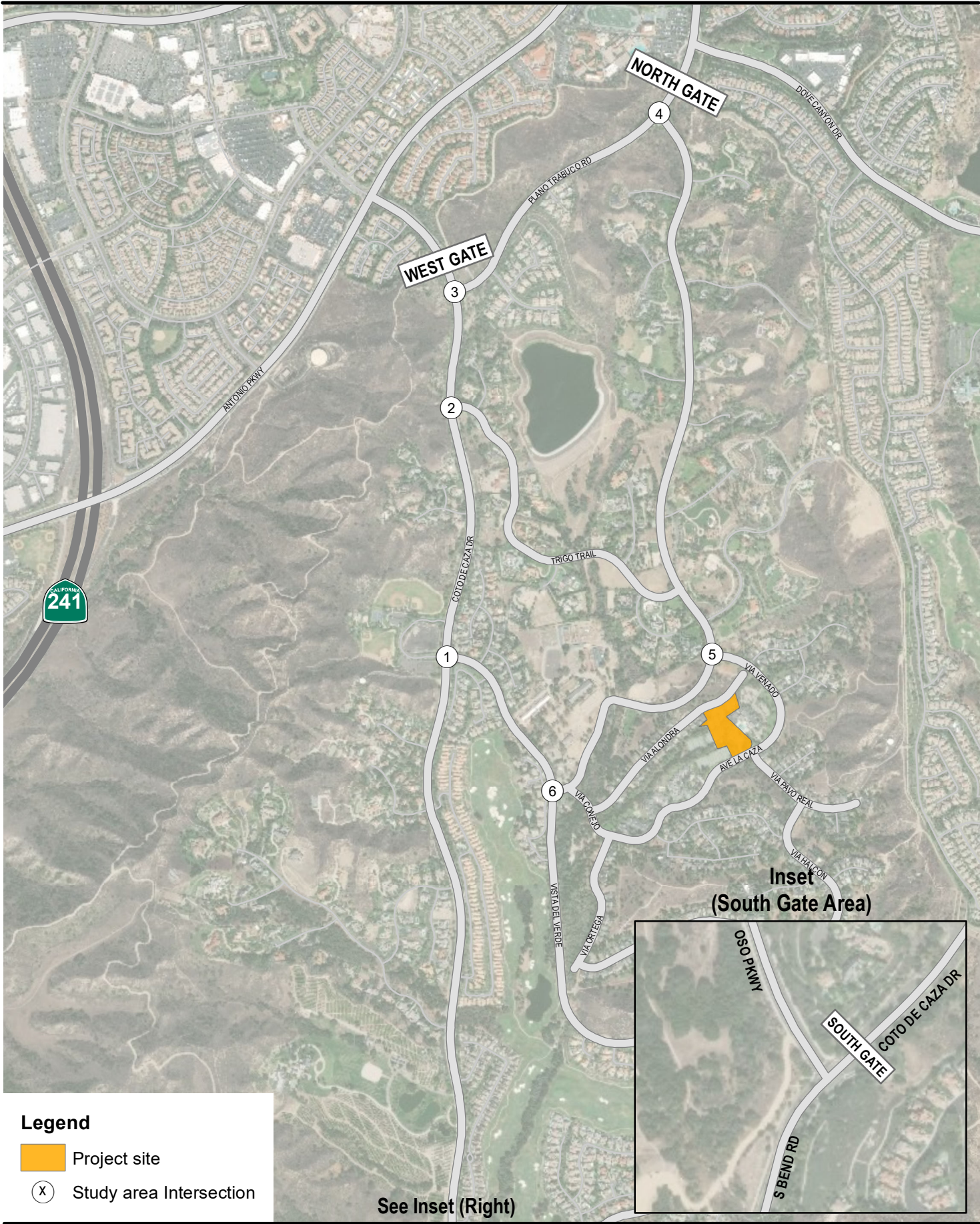


Figure 1-1

Project Site Location

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1.3 PERFORMANCE CRITERIA

In traffic impact studies, impact criteria are based on two primary measures. The first is “capacity,” which establishes the vehicle carrying ability of a road segment, and the second is “volume.” The volume measure is either a traffic count (in the case of existing volumes) or a traffic forecast for a future point in time. The volume-to-capacity (V/C) ratio corresponds with a level of service (LOS). Traffic LOS is designated A through F, with LOS A representing free flow conditions, and LOS F representing severe traffic congestion. Traffic flow quality for the different LOS is described in Table 1-1.

Both the V/C and LOS are used in identifying impacts. Certain LOS values are deemed acceptable by the various governing jurisdictions within the traffic analysis study area and increases in the V/C ratio which cause or contribute to the LOS being unacceptable are defined as an adverse impact. LOS D is the performance standard applied in this study for the intersections in the study area.

Peak hour intersection performance for this analysis is measured by the intersection capacity utilization (ICU) methodology. The ICU values that correspond to LOS A through F are summarized in Table 1-2.

Significant impacts are defined for this analysis as an increase of 0.01 or more in the ICU value per the Orange County GMP Transportation Implementation Manual. An increase of 0.01 or more at an intersection operating at LOS D or better is not considered a significant impact. Significant impacts shall be mitigated by the proposed Project.

1.4 STUDY AREA

The study area encompasses six intersections located in the gated community of Coto de Caza in unincorporated Orange County. The study area was determined in consultation with the Orange County Department of Public Works. Figure 1-2 illustrates the study area for the Project. There are no Orange County Congestion Management Program (CMP) monitoring intersections within the study area.

1.5 REFERENCES

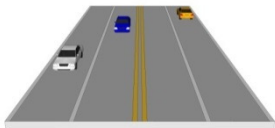
1. *Highway Capacity Manual Sixth Edition*, Transportation Research Board.
2. *Coto de Caza Lyon Subdivision Traffic Study*, Stantec, 2016.
3. *Trip Generation Manual, 10th Edition*, Institute of Transportation Engineers, 2017.
4. *Coto de Caza General Store Project Traffic Impact Study*, RK Engineering Group, 2015.



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Table 1-1 Level of Service Descriptions – Arterial Streets and Intersections

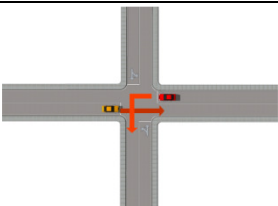
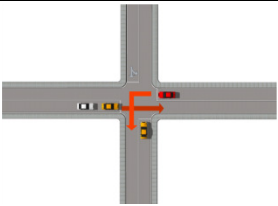
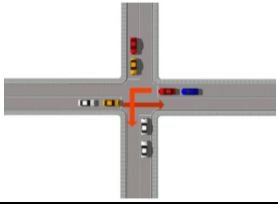
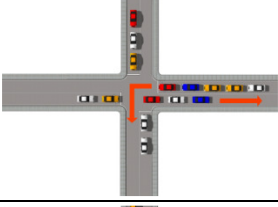
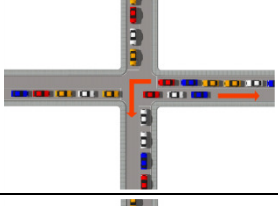
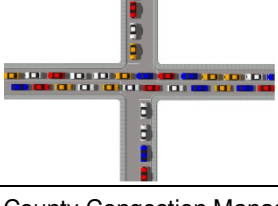
Level of Service (LOS)		Description
A		LOS A describes primarily free-flow operations. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at the intersections is minimal. The travel speed exceeds 85% of the base free-flow speed.
B		LOS B describes reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted, and control delay at the intersections is not significant. The travel speed is between 67% and 85% of the base free-flow speed.
C		LOS C describes stable operation. The ability to maneuver and change lanes at midsegment locations may be more restricted than at LOS B. Longer queues at the intersections may contribute to lower travel speeds. The travel speed is between 50% and 67% of the base free-flow speed.
D		LOS D indicates a less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volume, or inappropriate signal timing at the intersections. The travel speed is between 40% and 50% of the base free-flow speed.
E		LOS E is characterized by unstable operation and significant delay. Such operations may be due to some combination of adverse progression, high volume, and inappropriate signal timing at the intersections. The travel speed is between 30% and 40% of the base free-flow speed.
F		LOS F is characterized by flow at extremely low speed. Congestion is likely occurring at the intersections, as indicated by high delay and extensive queuing. The travel speed is 30% or less of the base free-flow speed.
Source: Highway Capacity Manual Sixth Edition, Transportation Research Board, National Research Council		



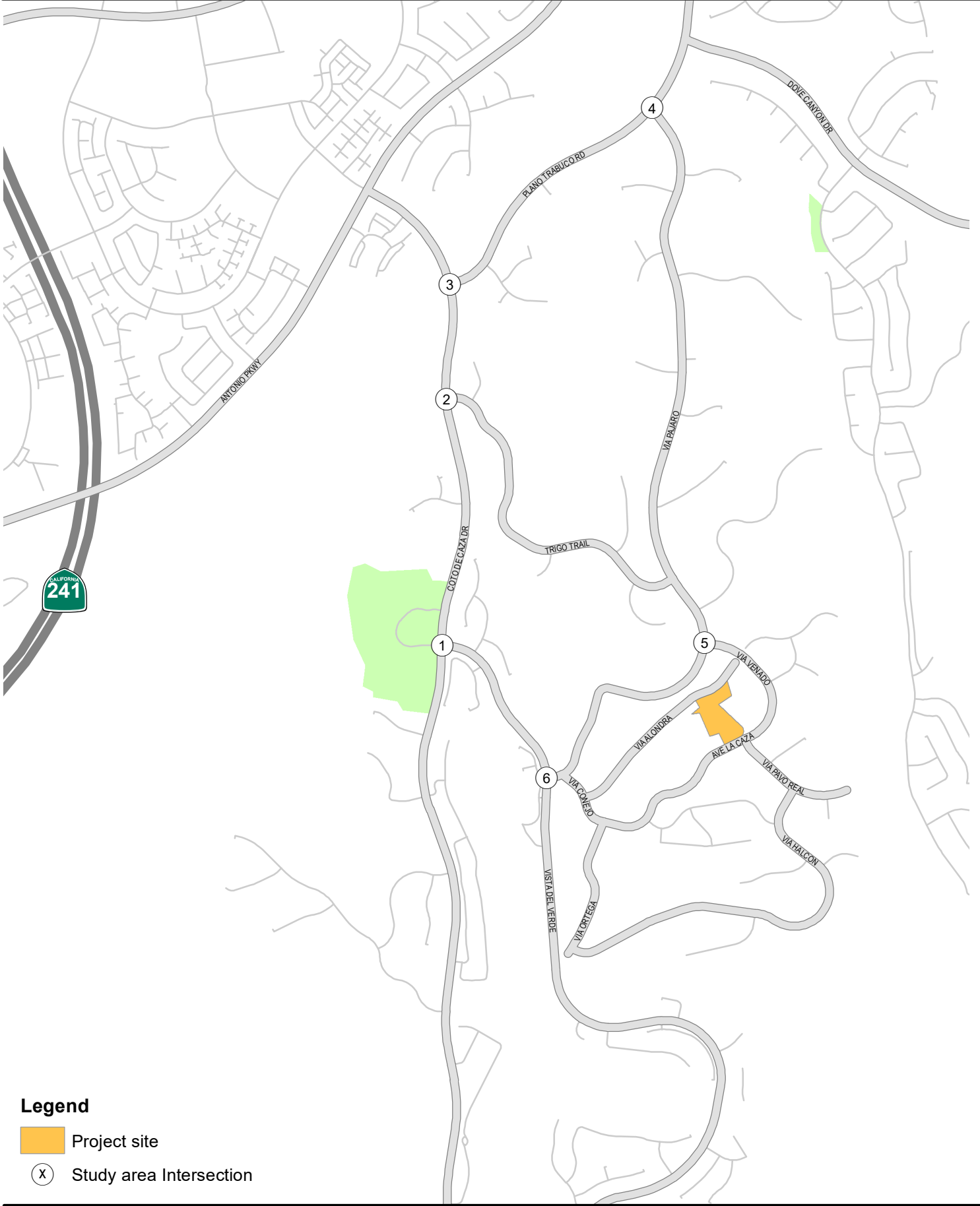
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Table 1-2 Intersection Level of Service Ranges (ICU and HCM Delay)

Level of Service (LOS)		Intersection Capacity Utilization (ICU)
A		0.00 – 0.60
B		0.61 – 0.70
C		0.71 – 0.80
D		0.81 – 0.90
E		0.91 – 1.00
F		Above 1.00
Source: Orange County Congestion Management Program		





Legend

- Project site
- Study area Intersection

Figure 1-2

Study Area

2.0 TRANSPORTATION SETTING

This chapter describes the transportation setting for the proposed Project. Existing traffic conditions in the traffic analysis study area are summarized.

2.1 EXISTING ROADWAY SYSTEM

As noted above, the study area used for this analysis includes six intersections located in the gated community of Coto de Caza in the unincorporated Orange County. The study area was determined in consultation with the Orange County Department of Public Works.

The study area includes one intersection (Via Pajaro and Plano Trabuco Road) at the north gate, one intersection (Coto de Caza Drive and Plano Trabuco Road) at the west gate, two intersections along Coto de Caza Drive, and two intersections where Via Pajaro intersects with Vista del Verde (west of the Project) and with Via Venado (east of the Project). The study intersections are all stop-controlled, either an all-way stop control (AWSC) or two-way stop control (TWSC) as follows:

- Coto de Caza Drive & Vista Del Verde (AWSC)
- Coto de Caza Drive & Trigo Trail (TWSC)
- Coto de Caza Drive & Plano Trabuco Road (TWSC)
- Via Pajaro & Plano Trabuco Road (TWSC)
- Via Pajaro & Via Venado (AWSC)
- Vista Del Verde & Via Pajaro (AWSC)

Coto de Caza Drive is a private road within the gated community of Coto de Caza and is configured with four vehicle lanes with a raised median and left-turn pockets at intersections.

2.2 EXISTING INTERSECTION VOLUMES

Existing peak hour turning movement volumes at the study intersections and 24-hour ADT at the key roadway segments were collected in May and December 2019. Illustrations of existing conditions for ADT and for peak hour turning movement volumes at each study area intersection can be found in Figure 2-1, Figure 2-2 and Figure 2-3 for the ADT, AM peak hour, and PM peak hours respectively. Copies of the traffic count data sheets are provided in Appendix A.

2.3 EXISTING INTERSECTION LEVELS OF SERVICE

A summary of the existing ICUs and the corresponding LOS of the study area intersections is provided in Table 2-1. The intersections are evaluated using the methodology described in the previous Chapter. The



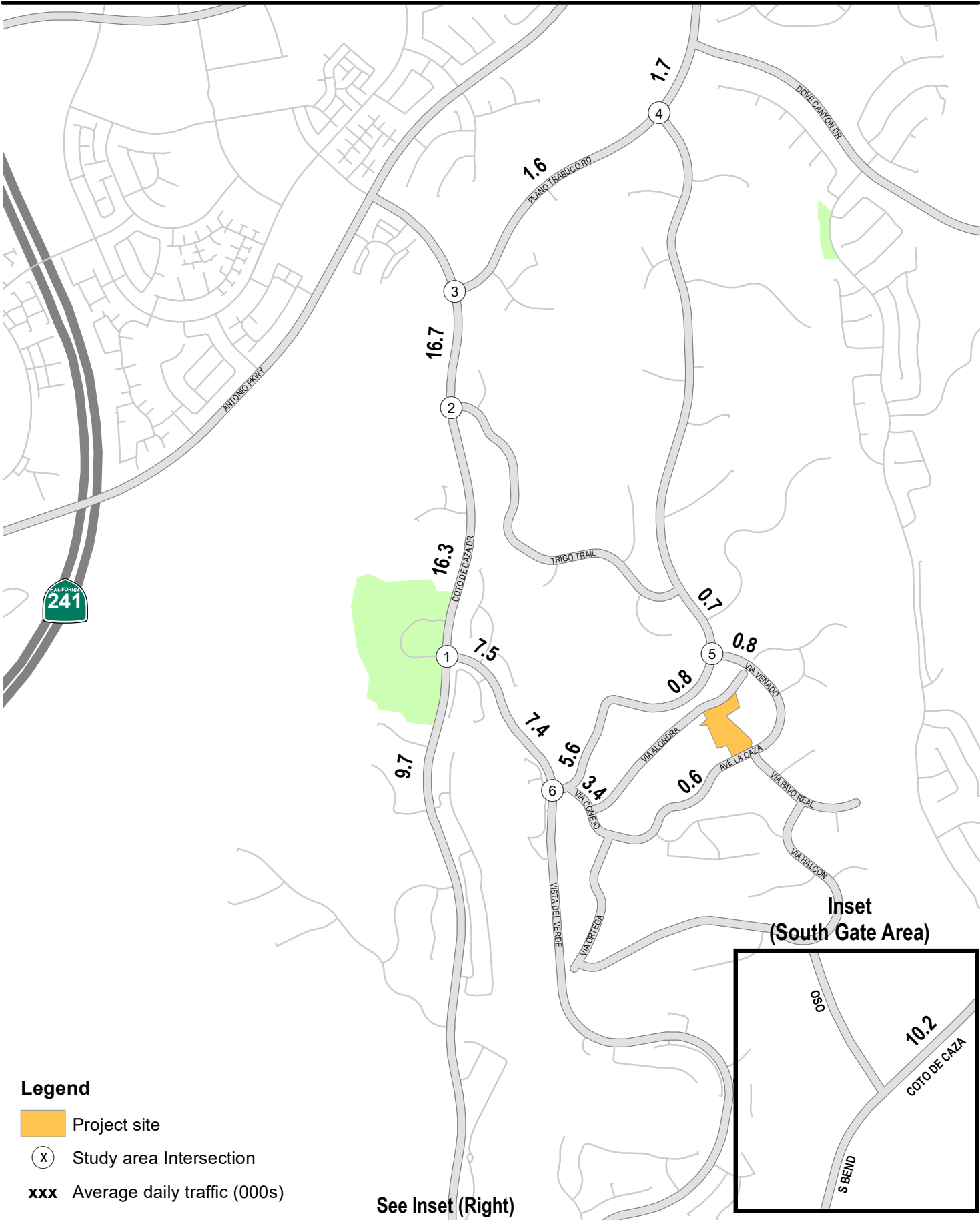


Figure 2.1

Existing Project - ADT (000s)

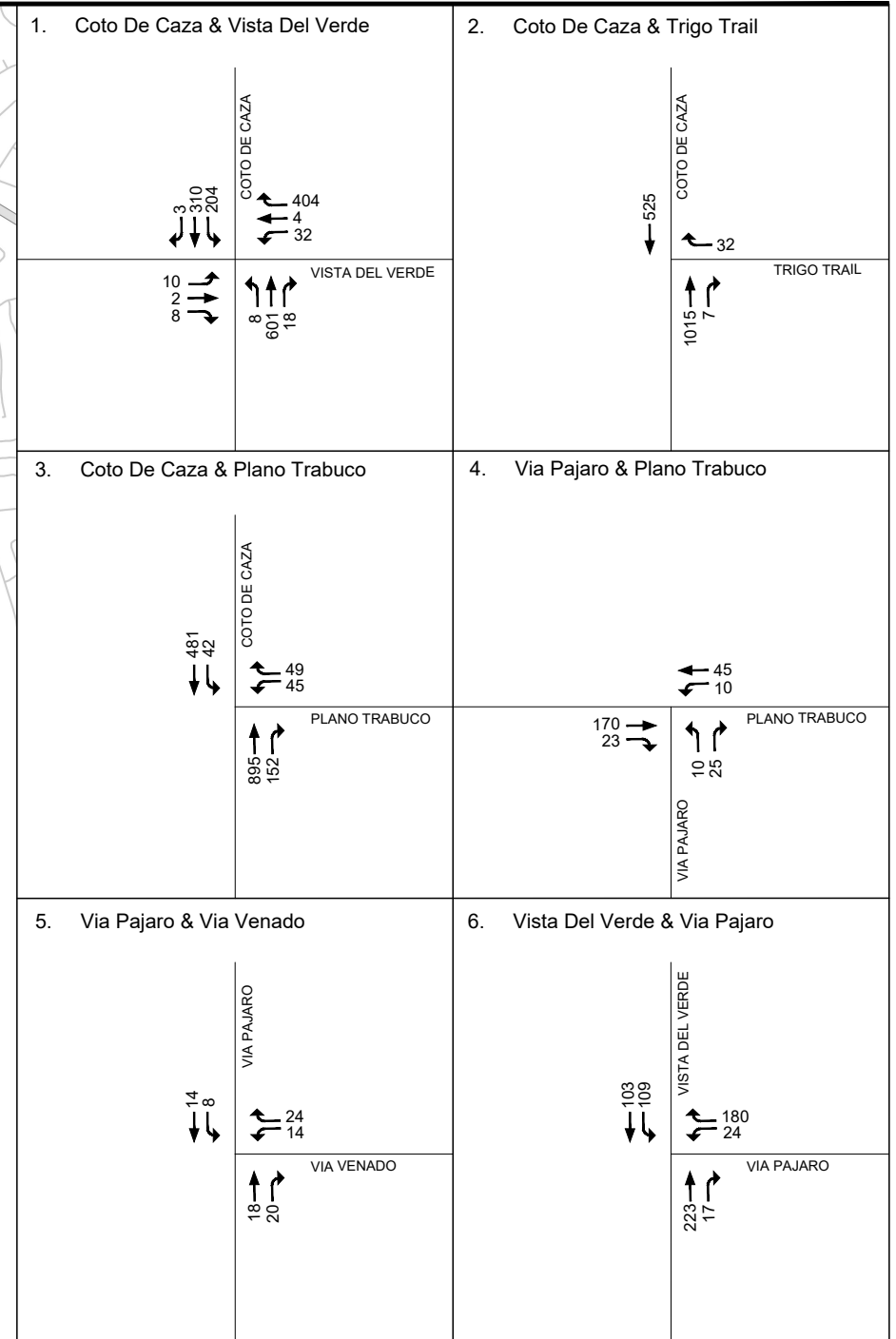
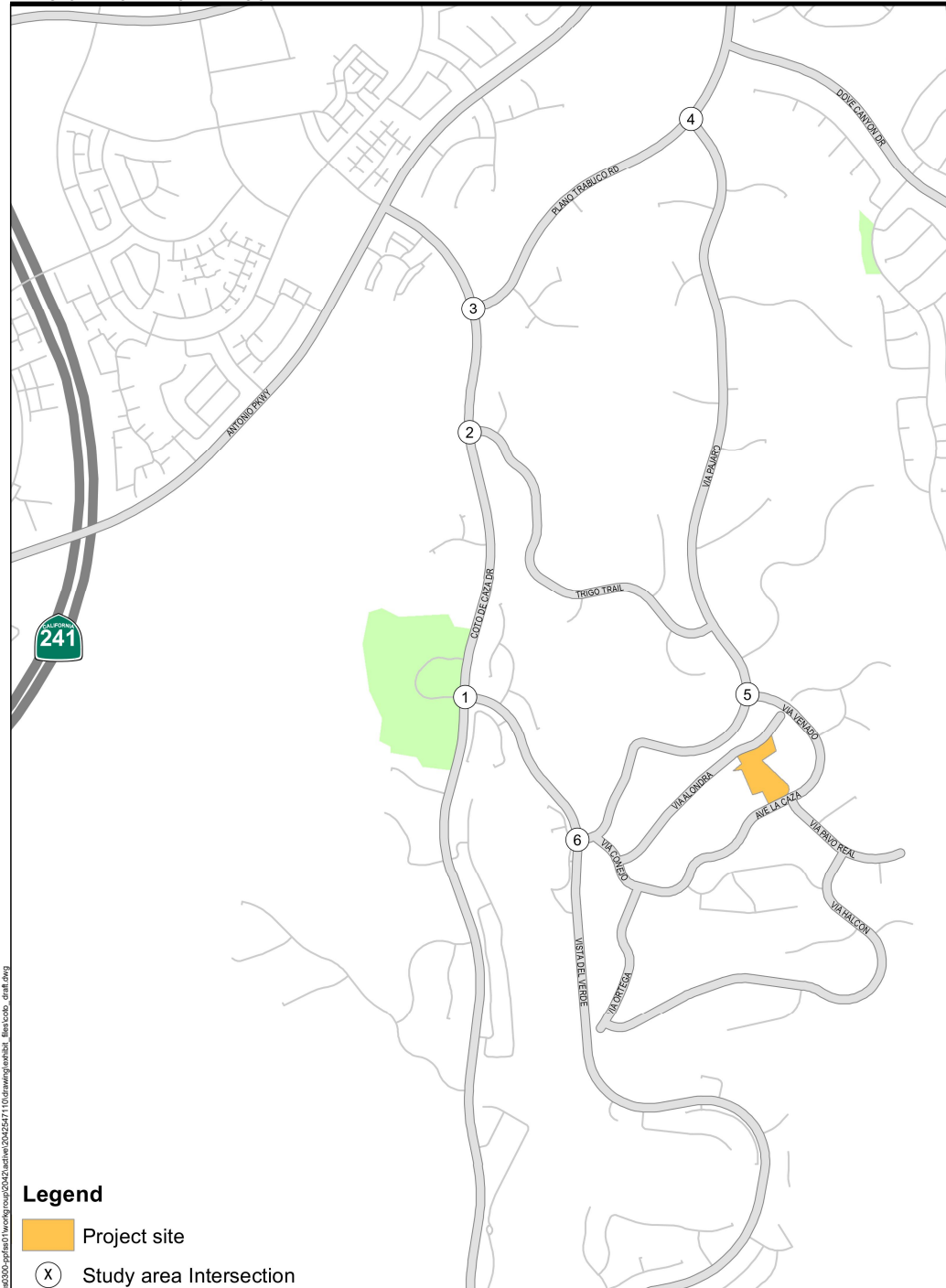


Figure 2-2

Existing Project - AM Peak Hour Volumes

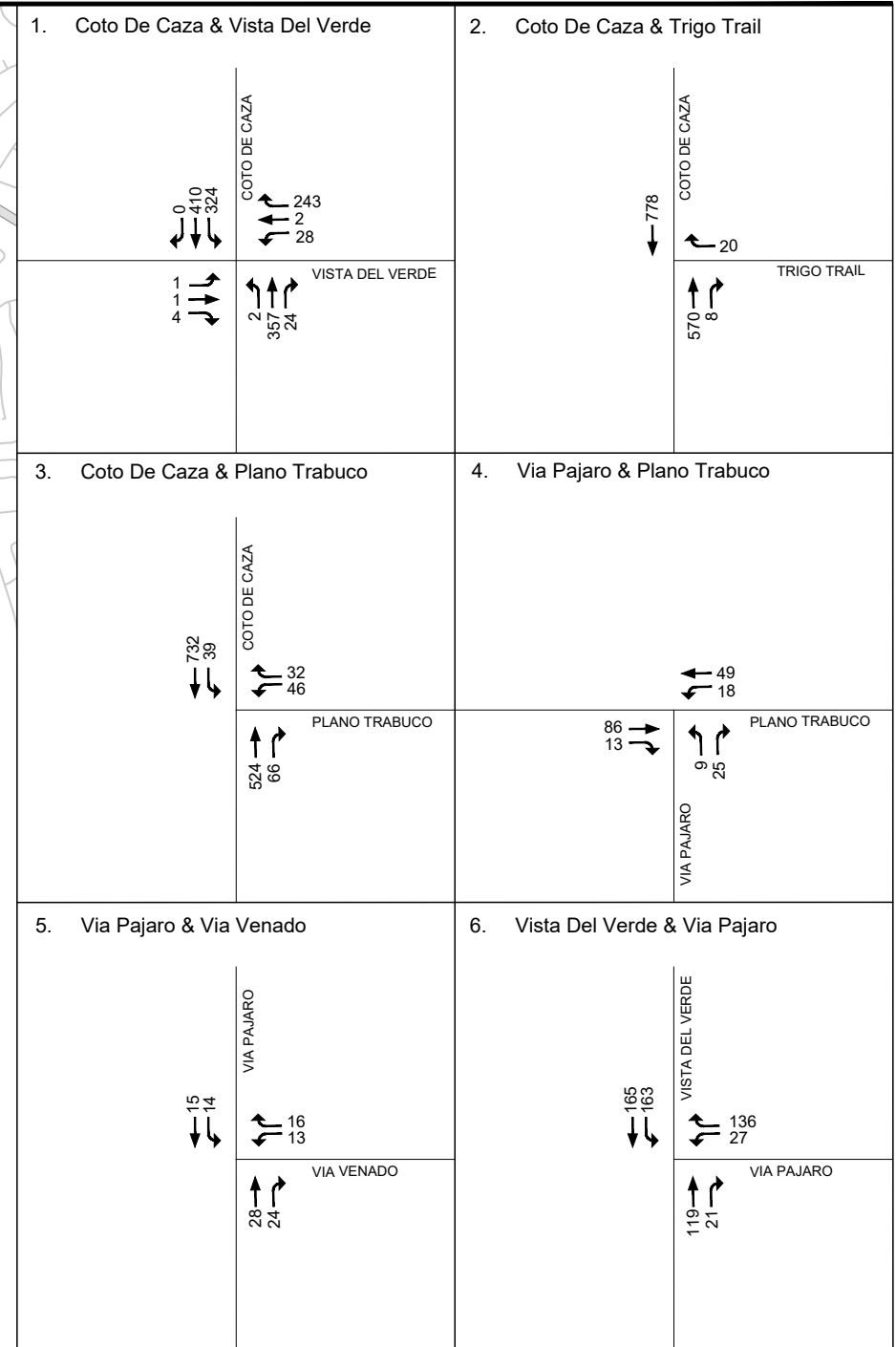
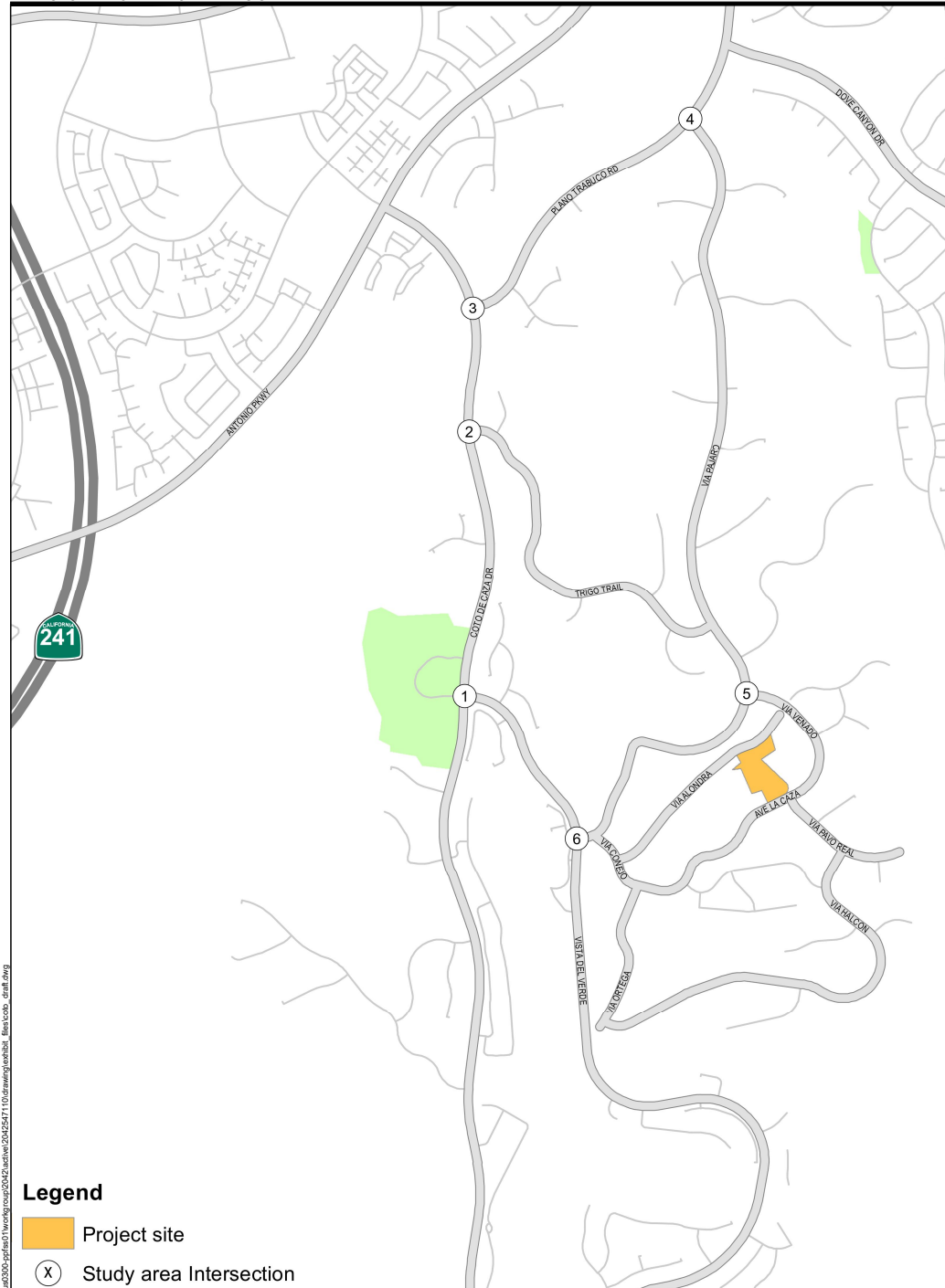


Figure 2-3

Existing Project - PM Peak Hour Volumes

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table shows that each intersection currently operates at LOS B or better. Detailed ICU calculation worksheets are provided in Appendix B.

Table 2-1 Intersection LOS Summary – Existing Conditions

Int No.	Intersection Location	Existing			
		AM		PM	
		ICU	LOS	ICU	LOS
1	Coto de Caza Dr & Vista Del Verde	0.62	B	0.51	A
2	Coto de Caza Dr & Trigo Trail	0.37	A	0.29	A
3	Coto de Caza Dr & Plano Trabuco Rd	0.41	A	0.30	A
4	Via Pajaro & Plano Trabuco Rd	0.19	A	0.14	A
5	Via Pajaro & Via Venado	0.09	A	0.11	A
6	Vista Del Verde & Via Pajaro	0.37	A	0.34	A

2.4 CUMULATIVE PROJECTS TRAFFIC VOLUMES

A list of projects was provided by the County that includes the approved, pending and/or proposed developments in the area. These projects are located in the City of Rancho Santa Margarita, Coto de Caza and other portions of unincorporated Orange County. Four projects in Coto de Caza as shown in Table 2-2 were determined to affect the study area based on their proximity to the proposed Project. A map showing the location of those four cumulative projects is provided in Figure 2-4.

Table 2-2 Cumulative Project Summary

Land Use	AM Peak Hour			PM Peak Hour			Traffic Study
	In	Out	Total	In	Out	Total	
1. Coto de Caza General Store Project							Yes
Retail 16,704 SF	36	22	58	48	47	95	
2. Coto de Caza Equestrian Center/Oak Grove Project							No
Single-Family 13 DU	2	8	10	8	6	14	
3. Via Terracaleta Project							No
Single-Family 7 DU	1	4	5	4	3	7	
4. Lyon Subdivision							Yes
Single-Family 25 DU	5	14	19	16	9	25	
Sources: ITE Trip Generation Manual, 10th Edition, 2017 Coto de Caza General Store Project Traffic Impact Study, 2015 Lyon Subdivision Traffic Impact Study, 2016							



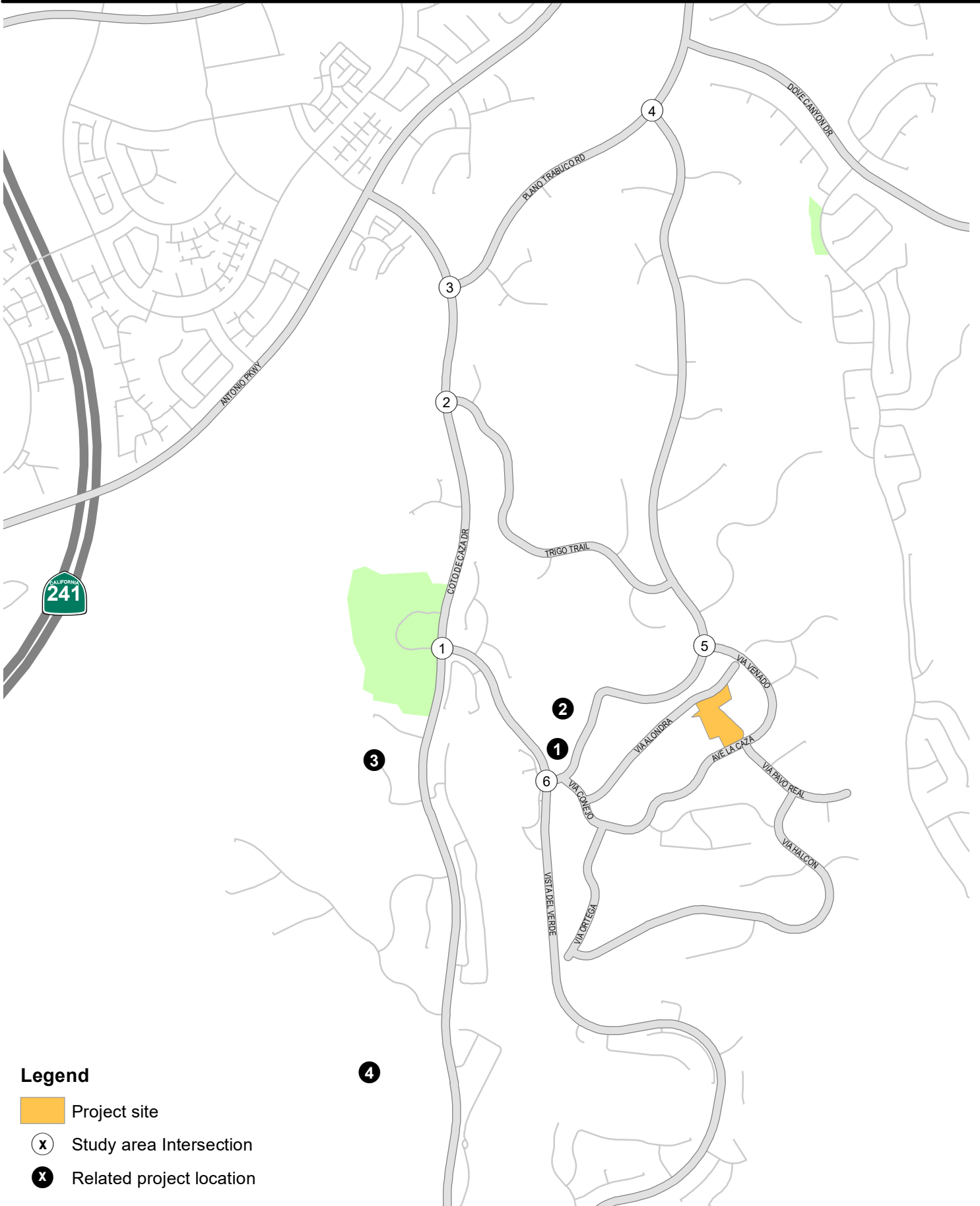


Figure 2-4

Cumulative Project Locations

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The first cumulative project included in the analysis is the 16,704 square feet Coto de Caza General Store Project, which is located at the corner of the intersection of Vista del Verde and Via Pajaro. The second cumulative project is the Coto de Caza Equestrian Center/Oak Grove project, a residential development of 13 single family dwelling units with five acres equestrian center, located in Planning Area 2 of Coto de Caza. The third cumulative project is the Via Terracaleta project, a residential development of seven single family dwelling units located on Via Terracaleta west of Coto de Caza Drive. The remaining cumulative project to be included in the analysis is the Lyons Subdivision project, a residential development of 25 single family dwelling units, located on the west side of Coto de Caza drive, south of the Via Terracaleta project.

As mentioned above, Table 2-2 displays the location of the four cumulative projects in the study area, as well as their land use, project size, and the AM and PM peak hour trips generated by each project. These new trips generated by each of the cumulative projects were added to the existing conditions volumes to determine if the cumulative projects will impact traffic conditions.



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3.0 PROJECT DESCRIPTION

This chapter describes the traffic characteristics of the proposed Project. Trip generation for the Project is summarized and the distribution of Project trips on the study area circulation system is presented.

The proposed Project consists of approximately 101 residential units geared toward active seniors and would include resort-type amenities on-site such as a gourmet restaurant with room service, concierge service, movie theater, computer café, art studio, salon, spa, valet parking, and chauffeur service in the gated community of Coto de Caza. These amenities will not be available to outside residents. A specialty retail store type of use is also planned.

Primary access to the Project site will be via a driveway on Ave La Caza, with a proposed emergency access on Via Alondra. The Project site is a former Vic Braden Tennis Center. The proposed site plan is illustrated in Figure 3-1.

3.1 PROJECT TRIP GENERATION

Trip generation estimates for the Project are based on trip rates provided in the Institute of Transportation Engineers (ITE) Trip Generation Manual 10th Edition for Senior Adult Attached Housing category (251). Based on these standardized rates, as shown in Table 3-1, the Project would generate approximately 22 AM peak hour trips, 28 PM peak hour trips, and a total of 382 daily trips.

Table 3-1 Project Trip Generation Summary

Land Use	Amount	Unit	AM Peak Hour			PM Peak Hour			ADT
			In	Out	Total	In	Out	Total	
Trip Rates									
Senior Adult Housing - Attached (252)		DU	0.07	0.13	0.20	0.14	0.12	0.26	3.70
Specialty Retail Center		TSF	0.72	0.48	1.20	1.80	1.80	3.60	40.00
Trip Generation									
Senior - Attached Housing ^{1,3}	101		7	13	20	14	12	26	374
Specialty Retail ²	0.188		1	1	2	1	1	2	8
Total			8	14	22	15	13	28	382
Notes: Specialty Retail Peak hour trips are rounded up ADT - Average Daily Traffic DU - Dwelling Units TSF - Thousand square feet Trip Rate Sources: ¹ Senior Adult Housing - Attached: Institute of Transportation Engineers (ITE), 10th Edition, 2017, with ITE code in parentheses ² Specialty Retail: SANDAG Traffic Generators, April 2002 ³ This traffic study was prepared based on an initial project description with higher number (110 DU) of Senior - Attached Housing dwelling units. Refinements to the dwelling unit total were subsequently made by the applicant and the trip generation analysis showed that the new unit total of 101 DU resulted in fewer trips than the initial project description. Therefore, this traffic study evaluates a conservative, worst-case scenario.									



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3.2 PROJECT TRIP DISTRIBUTION

The trips generated by the Project will use Coto de Caza Drive and Via Pajaro to access the surrounding circulation system. Based on the site's location in relation to the various Coto de Caza entry gates, it is estimated that the majority of the Project trips, approximately 85 percent would use the entrance to Coto de Caza at the Antonio Parkway, the west gate into the community.

As shown in Figure 3-2, approximately 95 percent of the Project trips would travel west along Avenida La Caza/Via Conejo/Via Pajaro/Vista Del Verde, with 85 percent continuing north on Coto de Caza Drive to the west gate and 10 percent continuing south on to Coto de Caza Drive to the south gate, and 5 percent of the Project trips would travel east along Avenida La Caza/Via Venado/Via Pajaro to the north gate. Figure 3-3 illustrates the total Project trips for ADT. AM and PM peak hour Project generated trips are illustrated in the Figure 3-4 and Figure 3-5, respectively based on the Project's anticipated trip distribution.



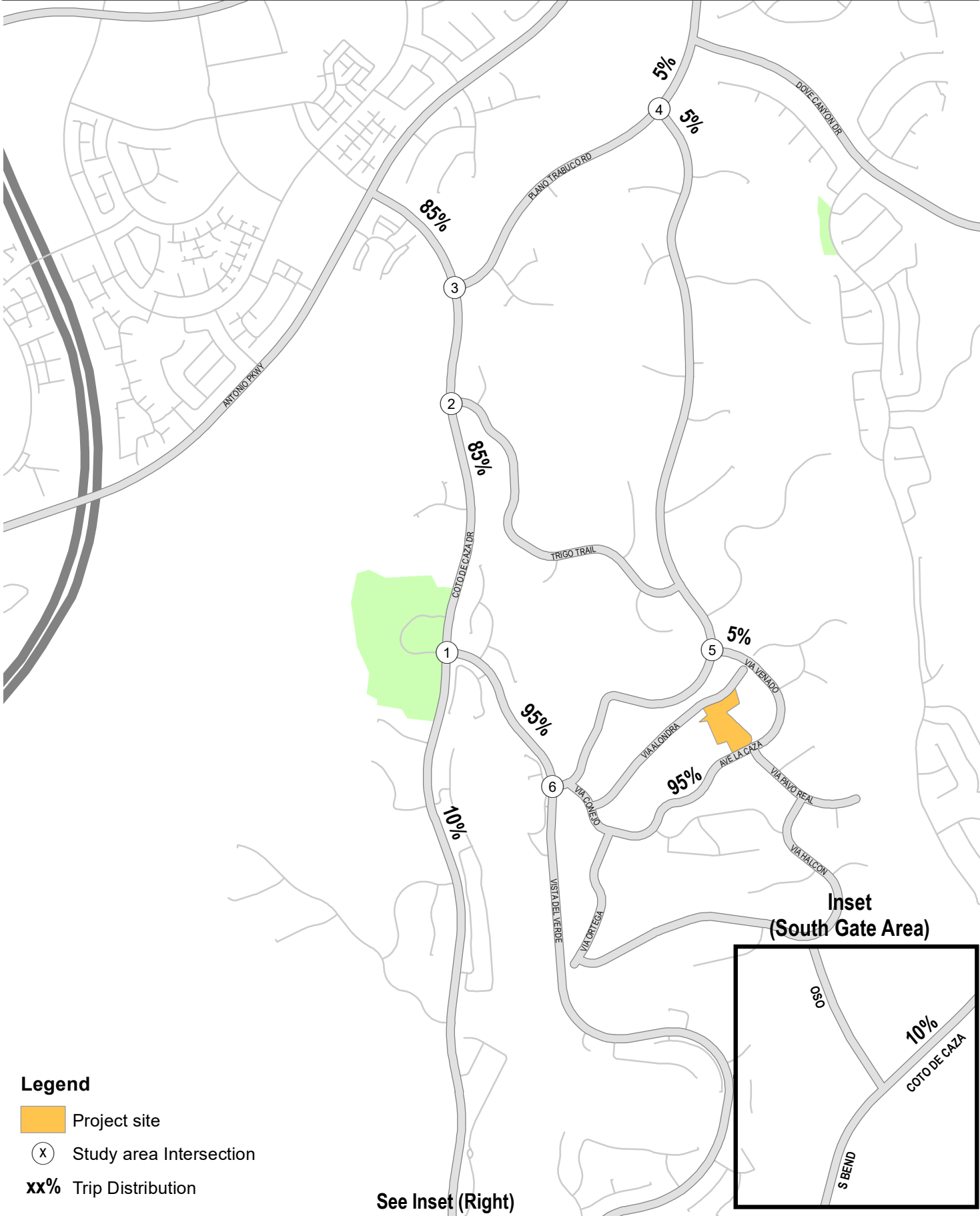


Figure 3-2

Project Trip Distribution

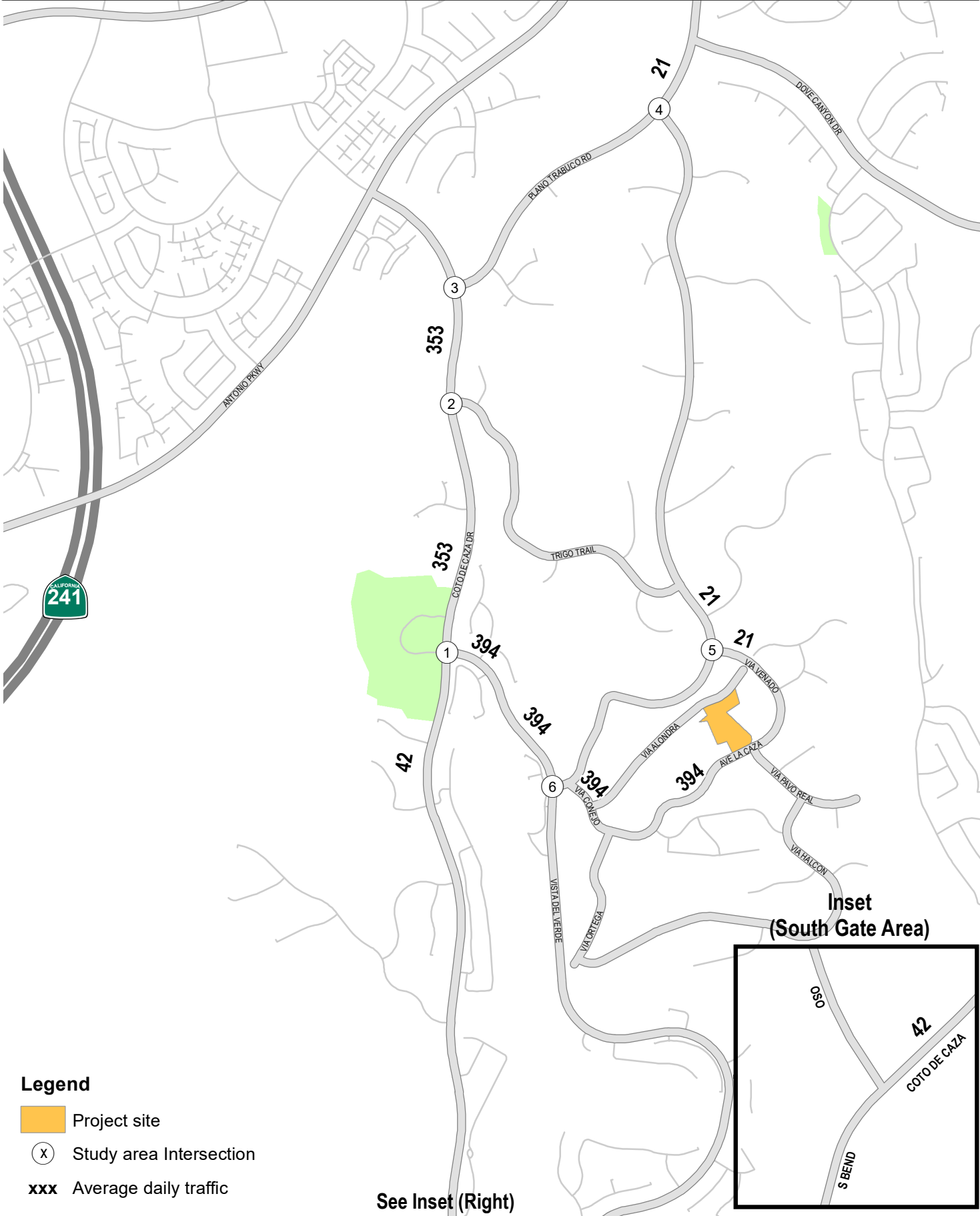
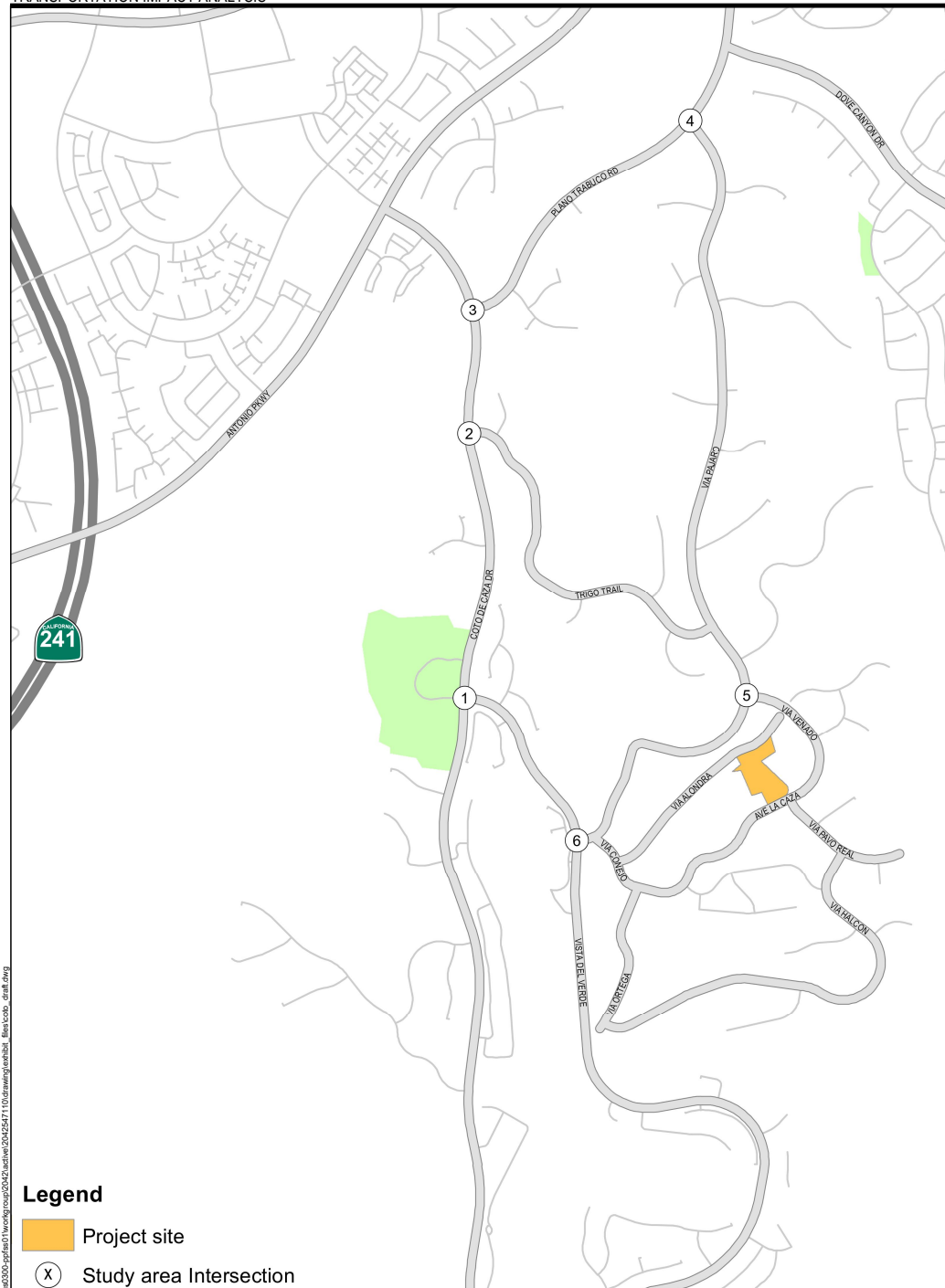


Figure 3-3

Project Trips - ADT
3.5



Legend

- Project site
- Study area Intersection

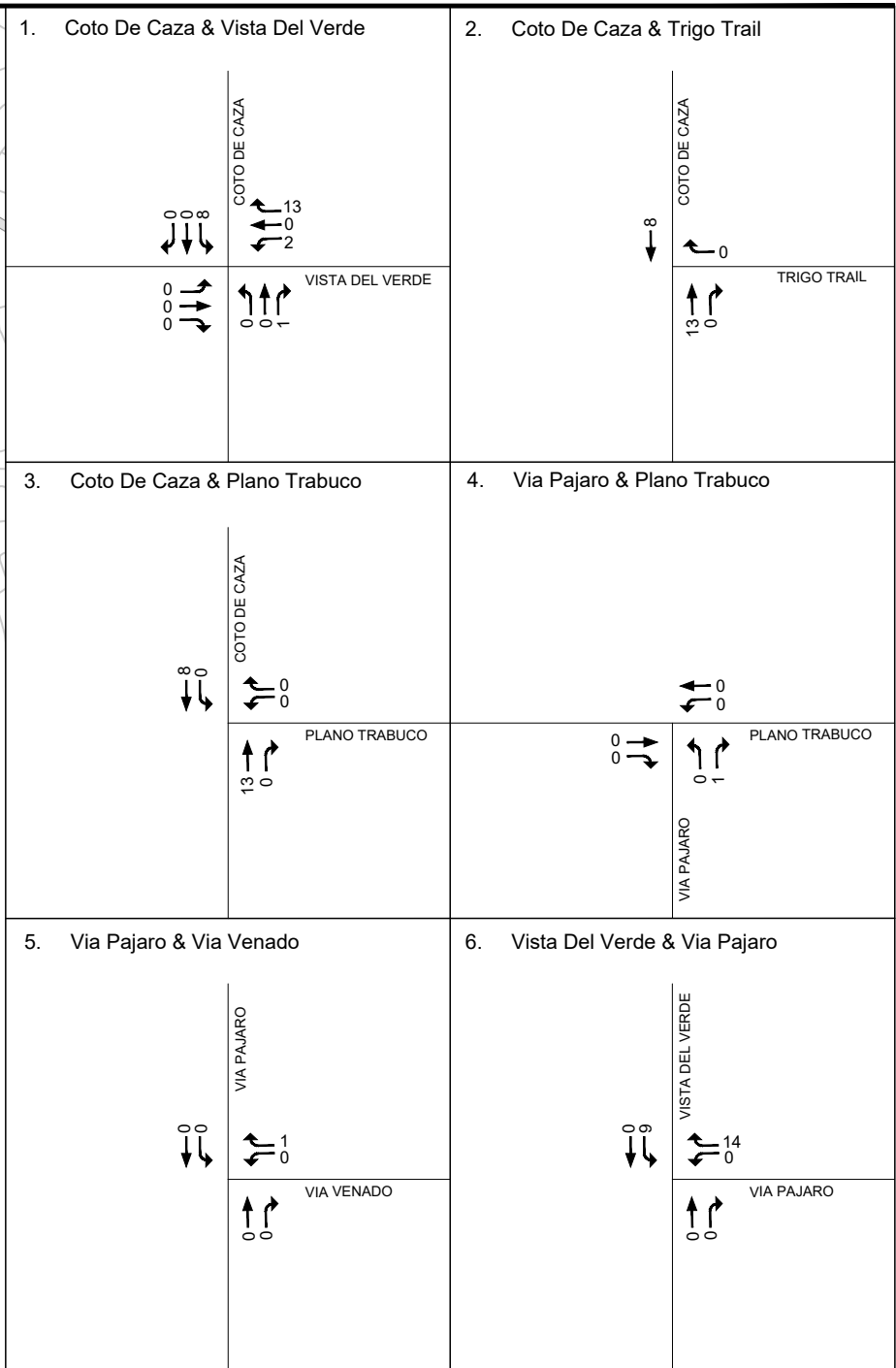
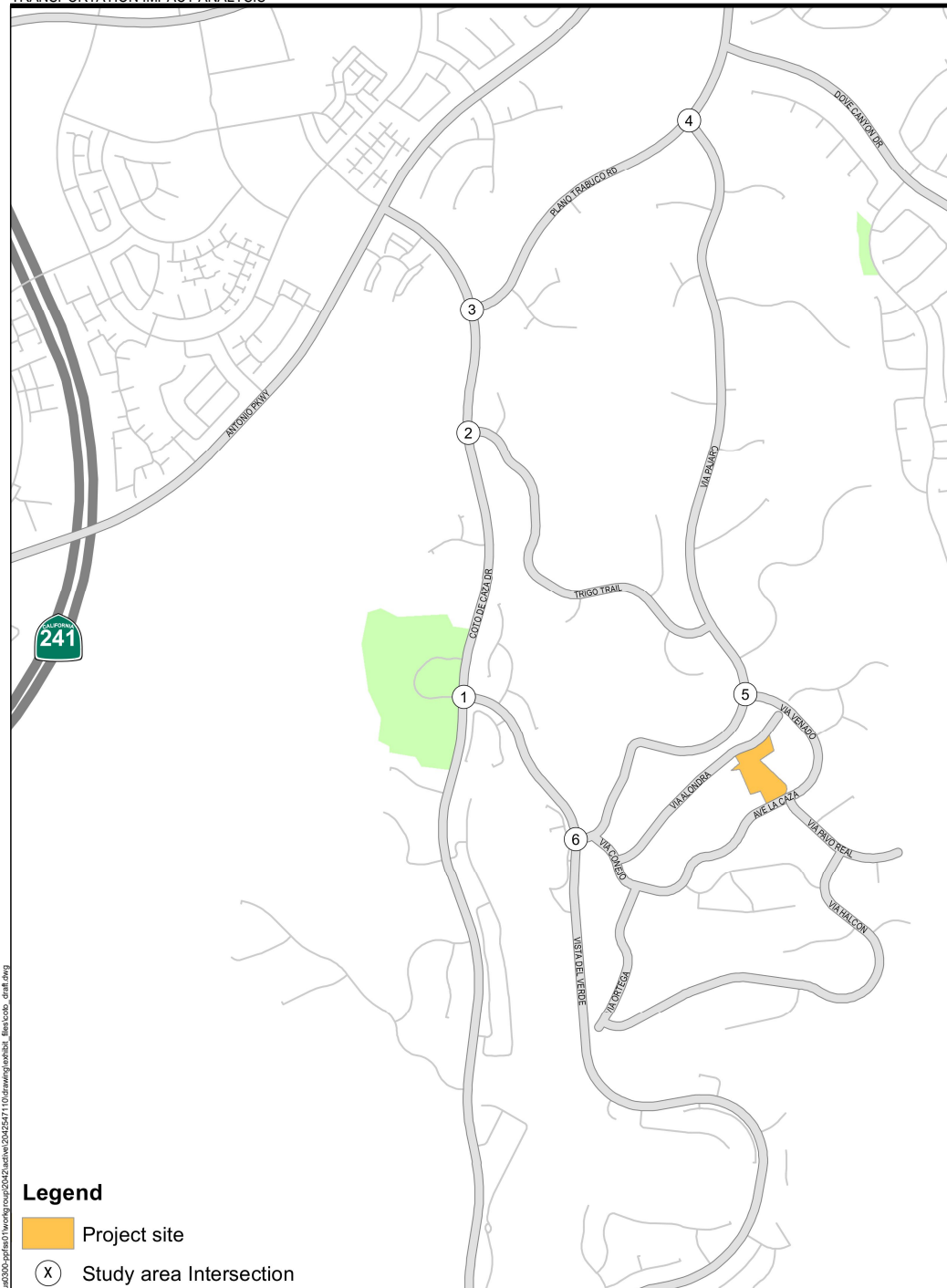


Figure 3-4

Project Trips - AM Peak Hour



Legend

- Project site
- Study area Intersection

1. Coto De Caza & Vista Del Verde <table> <tr> <td> COTO DE CAZA 0 0 0 14 </td> <td> VISTA DEL VERDE 0 0 0 2 </td> </tr> </table>	COTO DE CAZA 0 0 0 14	VISTA DEL VERDE 0 0 0 2	2. Coto De Caza & Trigo Trail <table> <tr> <td> COTO DE CAZA 14 </td> <td> TRIGO TRAIL 12 0 </td> </tr> </table>	COTO DE CAZA 14	TRIGO TRAIL 12 0
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COTO DE CAZA 14	TRIGO TRAIL 12 0				
3. Coto De Caza & Plano Trabuco <table> <tr> <td> COTO DE CAZA 14 0 </td> <td> PLANO TRABUCO 12 0 </td> </tr> </table>	COTO DE CAZA 14 0	PLANO TRABUCO 12 0	4. Via Pajaro & Plano Trabuco <table> <tr> <td> VIA PAJARO 0 0 </td> <td> PLANO TRABUCO 0 1 </td> </tr> </table>	VIA PAJARO 0 0	PLANO TRABUCO 0 1
COTO DE CAZA 14 0	PLANO TRABUCO 12 0				
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5. Via Pajaro & Via Venado <table> <tr> <td> VIA PAJARO 0 1 </td> <td> VIA VENADO 0 0 </td> </tr> </table>	VIA PAJARO 0 1	VIA VENADO 0 0	6. Vista Del Verde & Via Pajaro <table> <tr> <td> VISTA DEL VERDE 0 16 </td> <td> VIA PAJARO 0 0 </td> </tr> </table>	VISTA DEL VERDE 0 16	VIA PAJARO 0 0
VIA PAJARO 0 1	VIA VENADO 0 0				
VISTA DEL VERDE 0 16	VIA PAJARO 0 0				

Figure 3-5

Project Trips - PM Peak Hour
3.7

4.0 TRAFFIC IMPACT ANALYSIS

This chapter addresses the traffic impacts of the Project. Existing conditions with the addition of Project traffic are first summarized, followed by the cumulative setting. The following sections summarize the results of the analysis of the study area. Project increases resulting in significant impacts, if any, are discussed and mitigation measures are identified if necessary.

4.1 EXISTING CONDITIONS - WITH PROJECT

Existing-plus-Project peak hour volumes were derived by adding the Project generated peak hour trips presented in the Section 2.0 to the existing intersection turning movement volumes for each of the study intersections. The ADT volumes for existing-plus-Project conditions for the study area circulation system are illustrated in Figure 4-1. Illustrations of peak hour turning movement volumes can be found in Figure 4-2 for the AM peak hour and Figure 4-3 for the PM peak hour.

Peak hour ICU and LOS that correspond with the existing traffic and existing-plus-Project traffic forecasts can be found in Table 4-1, which provides a comparison between the no-Project and the with-Project conditions. The evaluation of study intersections based on the existing lane configurations is prepared using ICU methodology. The ICU calculation worksheets are included in Appendix B.

Table 4-1 Intersection LOS Summary – Existing Plus Project Conditions

Int No.	Intersection Location	Existing				Existing plus Project				Difference	
		AM		PM		AM		PM			
		ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	AM	PM
1	Coto de Caza Dr & Vista Del Verde	0.62	B	0.51	A	0.63	B	0.53	A	0.01	0.02
2	Coto de Caza Dr & Trigo Trail	0.37	A	0.29	A	0.37	A	0.29	A	0.00	0.00
3	Coto de Caza Dr & Plano Trabuco Rd	0.41	A	0.30	A	0.41	A	0.30	A	0.00	0.00
4	Via Pajaro & Plano Trabuco Rd	0.19	A	0.14	A	0.19	A	0.14	A	0.00	0.00
5	Via Pajaro & Via Venado	0.09	A	0.11	A	0.09	A	0.11	A	0.00	0.00
6	Vista Del Verde & Via Pajaro	0.37	A	0.34	A	0.39	A	0.35	A	0.02	0.01

The County of Orange has adopted LOS D as the maximum threshold for significance. A significant impact is defined as an increase of 0.01 or more in the ICU value for intersections operating at LOS D or worse.

The Project doesn't change the ICU value for four of the study intersections but increases the ICU value by 0.01 or 0.02 for two study intersections. However, each of these intersections continue to operate at LOS A or B during the peak hours; therefore, the Project would have no significant impact on the study intersections based on the ICU analysis.



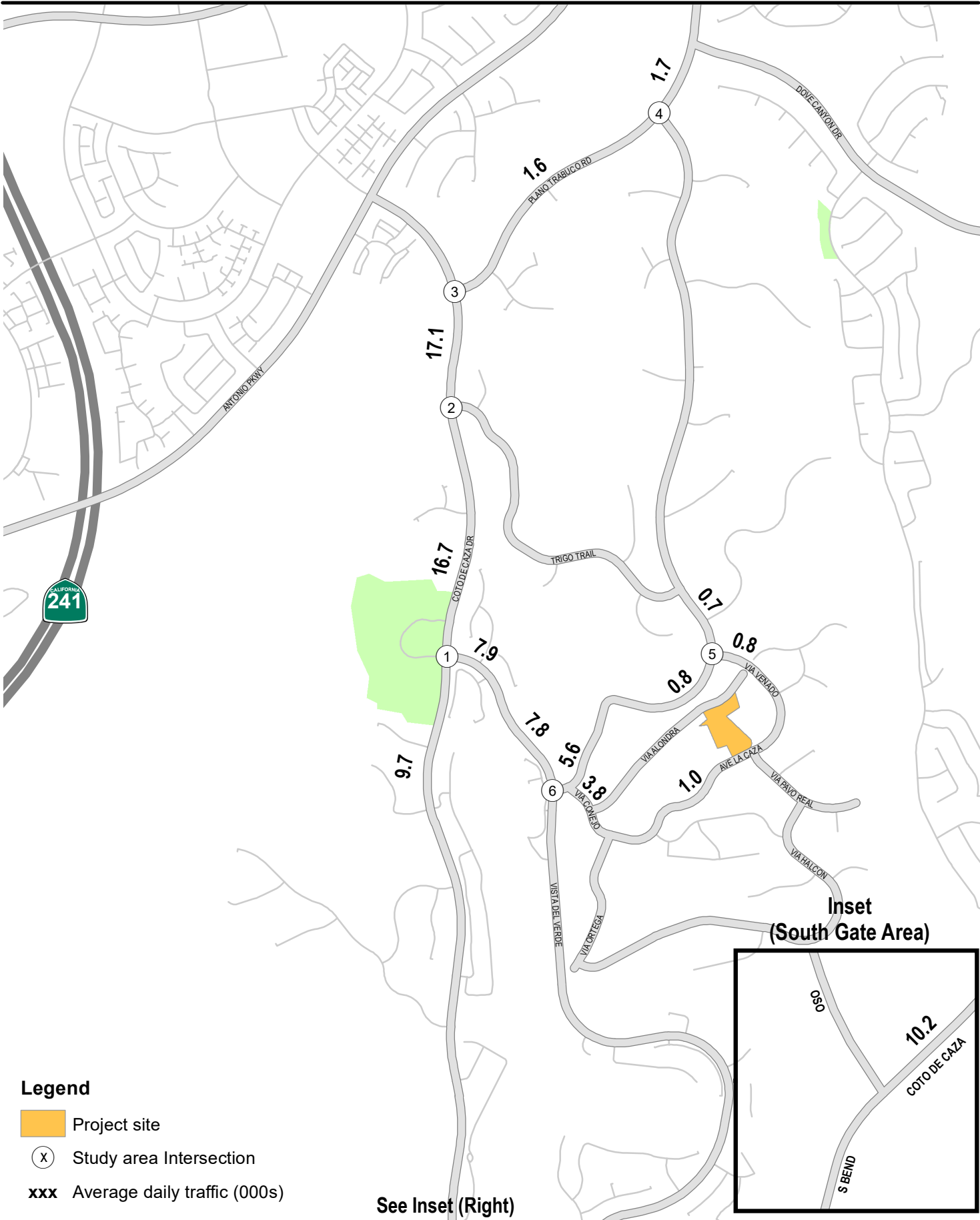


Figure 4-1

Existing Plus Project - ADT (000s)



Figure 4-2
Existing Plus Project - AM Peak Hour Volumes
4.3

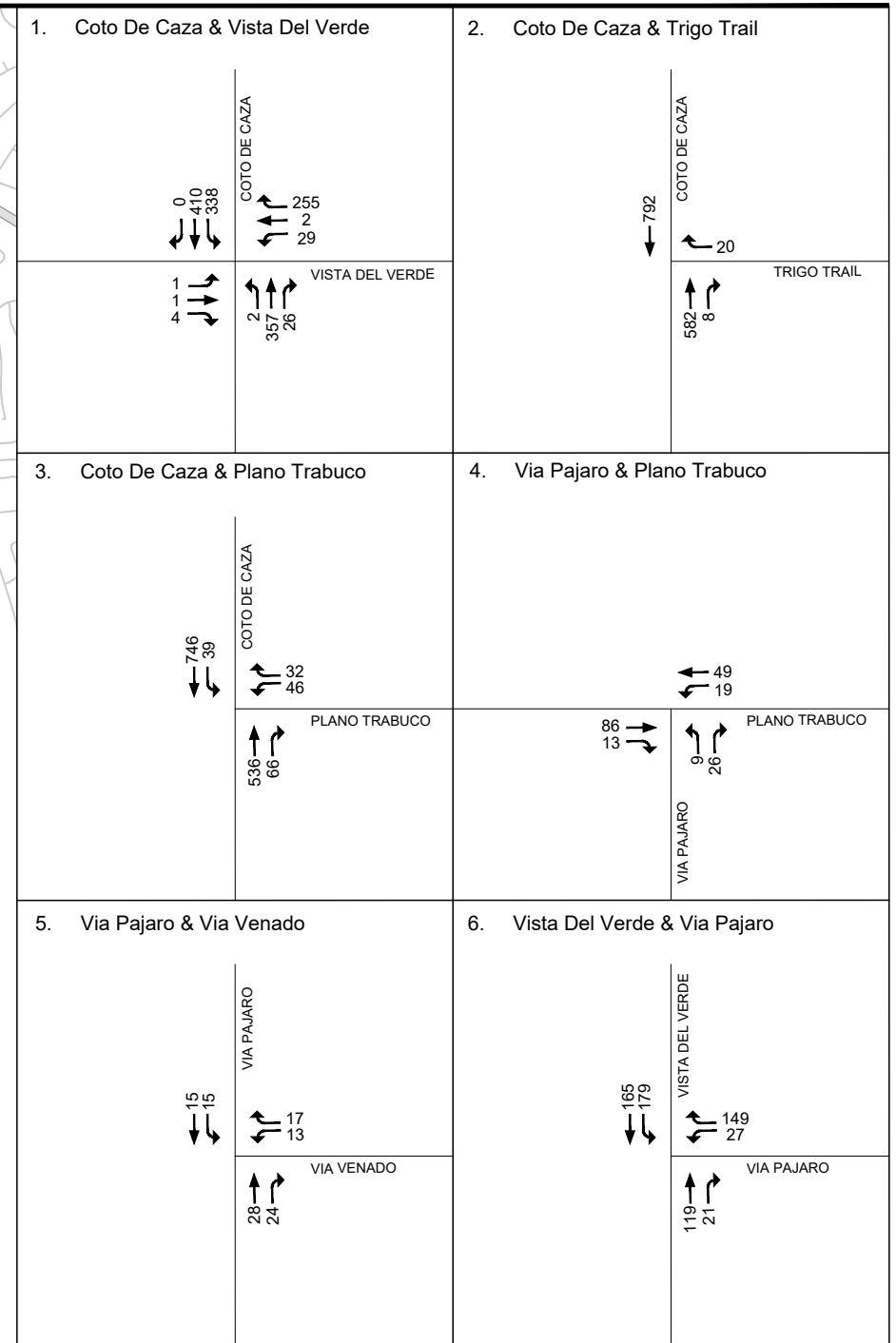
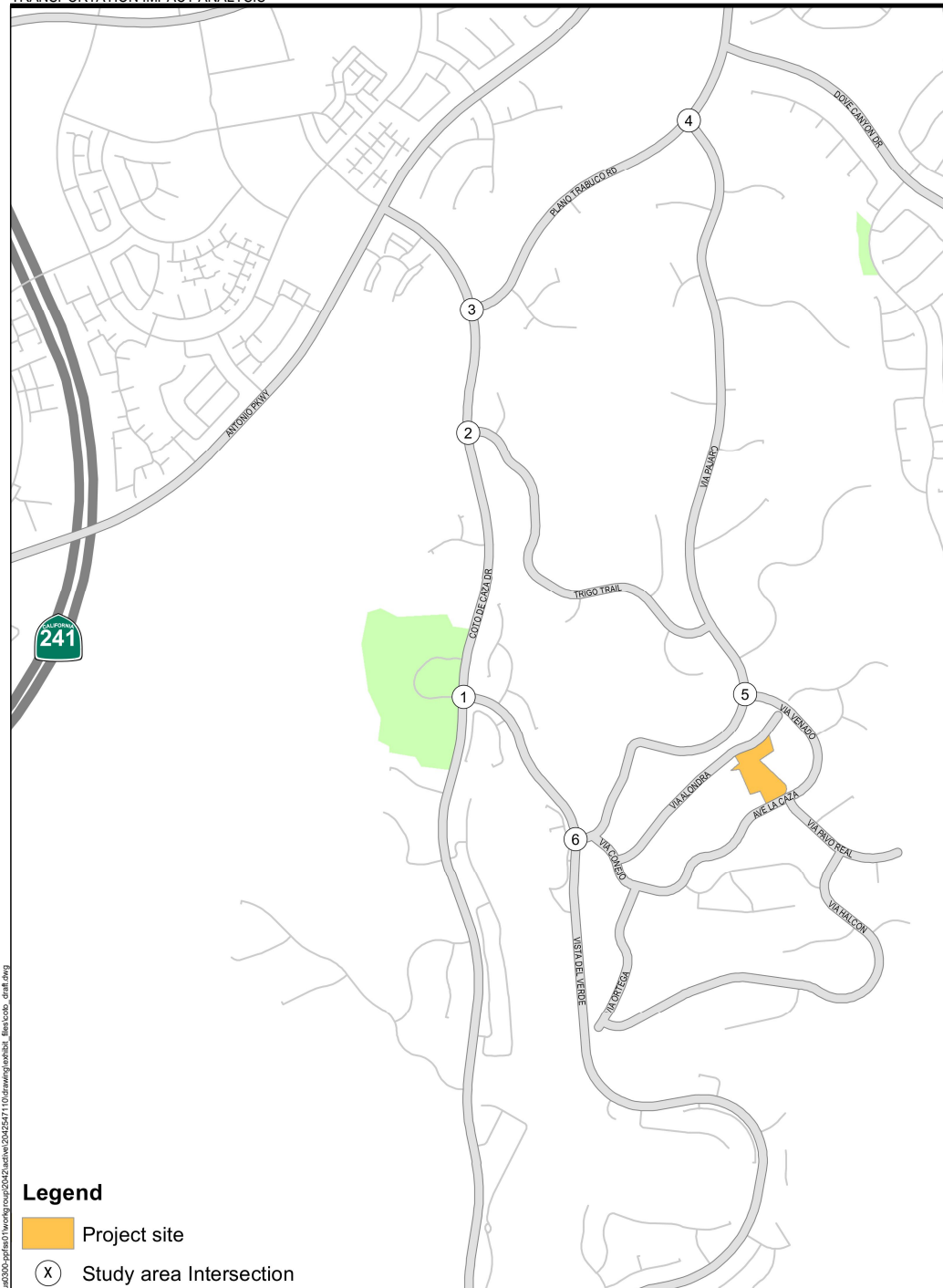


Figure 4-3

Existing Plus Project - PM Peak Hour Volumes

LEGACY AT COTO TRAFFIC STUDY

Traffic Impact Analysis
April 2020

4.2 CUMULATIVE CONDITIONS ANALYSIS

The purpose of the cumulative conditions impact analysis is to evaluate the Project's impacts in the context of other approved, planned or anticipated projects. The intent of the analysis is to determine the combined impact of Project and related project traffic. This is in contrast to the direct impact of the Project traffic only, which was evaluated in Section 4.1.

As described in Section 2.4, four cumulative projects were determined to affect the study area. The new trips generated by each of these cumulative projects were added to the existing conditions volumes, to determine if the cumulative projects will add to traffic congestion and create an impact.

The ADT volumes for cumulative conditions without Project are illustrated in Figure 4-4. Peak hour turning movement volumes for cumulative without Project conditions for the intersections in the study area are illustrated in Figure 4-5 for the AM peak hour and in Figure 4-6 for the PM peak hour. The ADT volumes for cumulative conditions with Project are illustrated in Figure 4-7. Peak hour turning movement volumes for cumulative with Project conditions for the intersections in the study area are illustrated in Figure 4-8 for the AM peak hour and in Figure 4-9 for the PM peak hour.

Peak hour ICU and the corresponding LOS can be found in Table 4-2, which provides a comparison between cumulative conditions without and with the proposed Project based on existing lane configurations. As shown in the table, the Project doesn't change the ICU value for three of the study intersections but increases the ICU value by 0.01 or 0.02 at the remaining three study intersections. However, each of these intersections would continue to operate at LOS A or B during the peak hours; therefore, the Project would have no significant impact on the study intersections based on the ICU analysis.

Even with the cumulative volumes added from other projects in the area of Coto de Caza, the Project has no significant impact on the study intersections under cumulative conditions, and no mitigation is required.

Table 4-2 Intersection LOS Summary – Cumulative Conditions

Int No.	Intersection Location	Cumulative Conditions No-Project				Cumulative Conditions with-Project				Difference	
		AM		PM		AM		PM			
		ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	AM	PM
1	Coto de Caza Dr & Vista Del Verde	0.65	B	0.55	A	0.66	B	0.57	A	0.01	0.02
2	Coto de Caza Dr & Trigo Trail	0.38	A	0.30	A	0.38	A	0.30	A	0.00	0.00
3	Coto de Caza Dr & Plano Trabuco Rd	0.41	A	0.30	A	0.42	A	0.31	A	0.01	0.01
4	Via Pajaro & Plano Trabuco Rd	0.19	A	0.14	A	0.19	A	0.14	A	0.00	0.00
5	Via Pajaro & Via Venado	0.09	A	0.11	A	0.09	A	0.11	A	0.00	0.00
6	Vista Del Verde & Via Pajaro	0.37	A	0.34	A	0.39	A	0.35	A	0.02	0.01



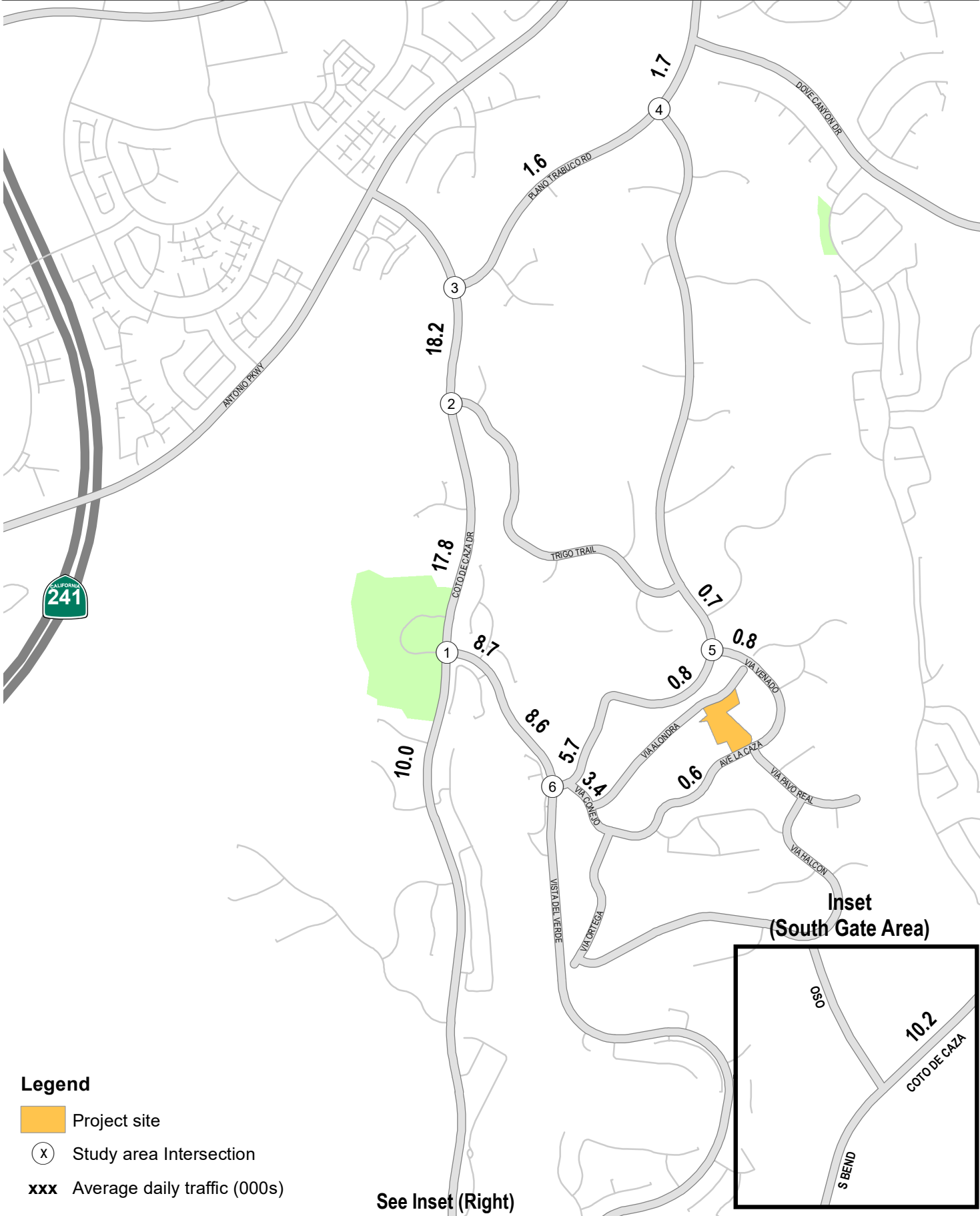


Figure 4.4

Cumulative without Project - ADT (000s)

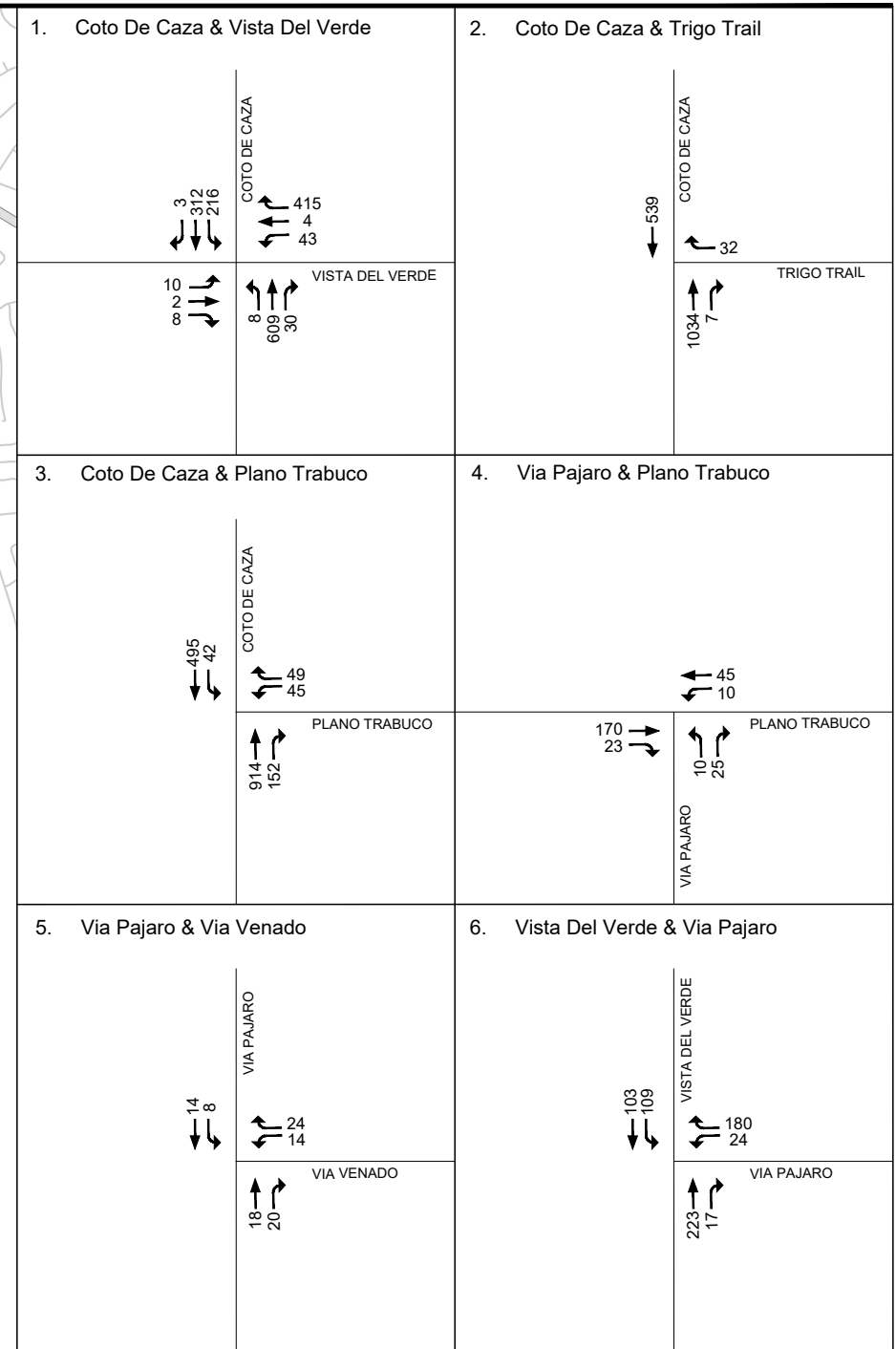
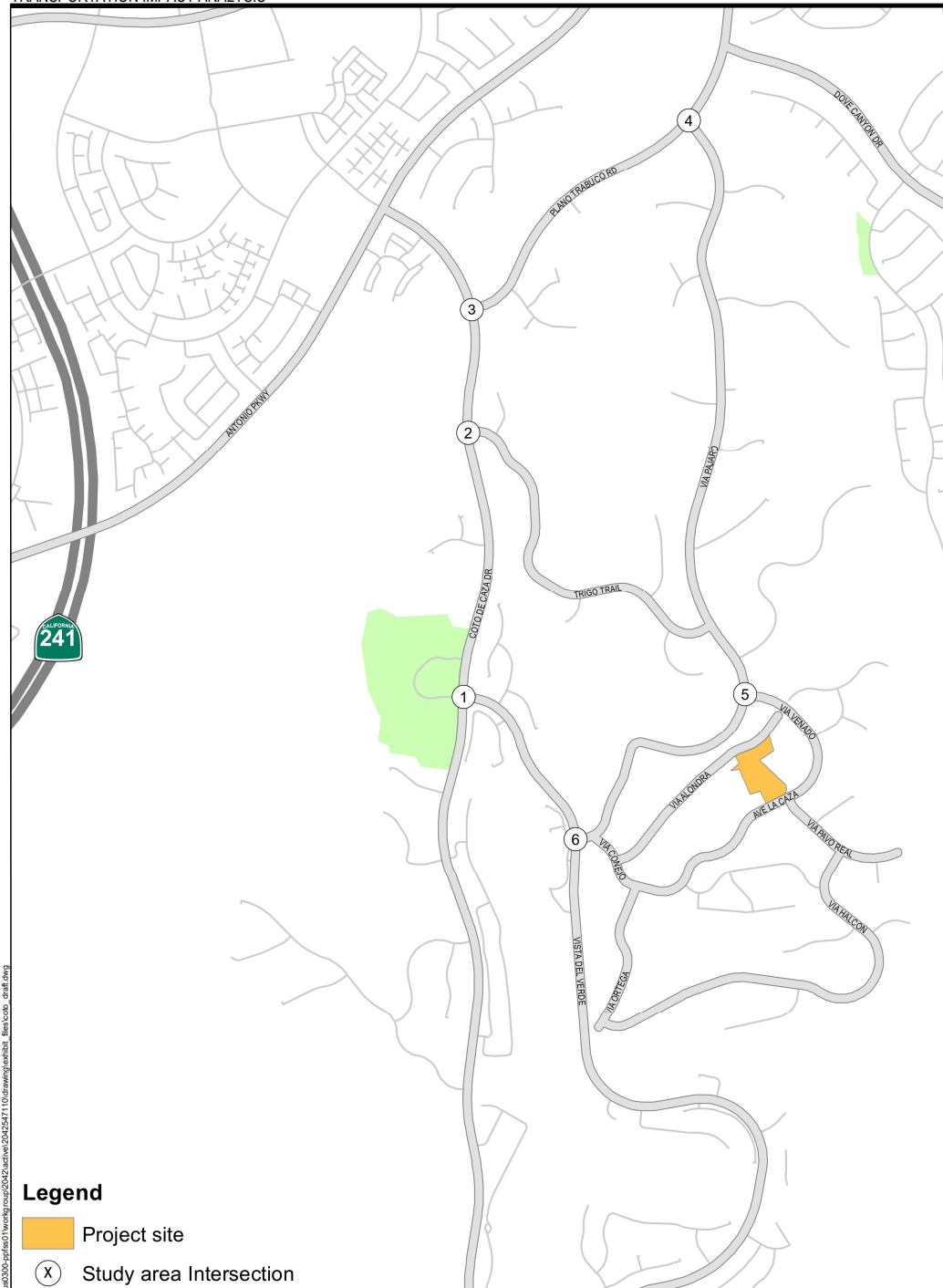


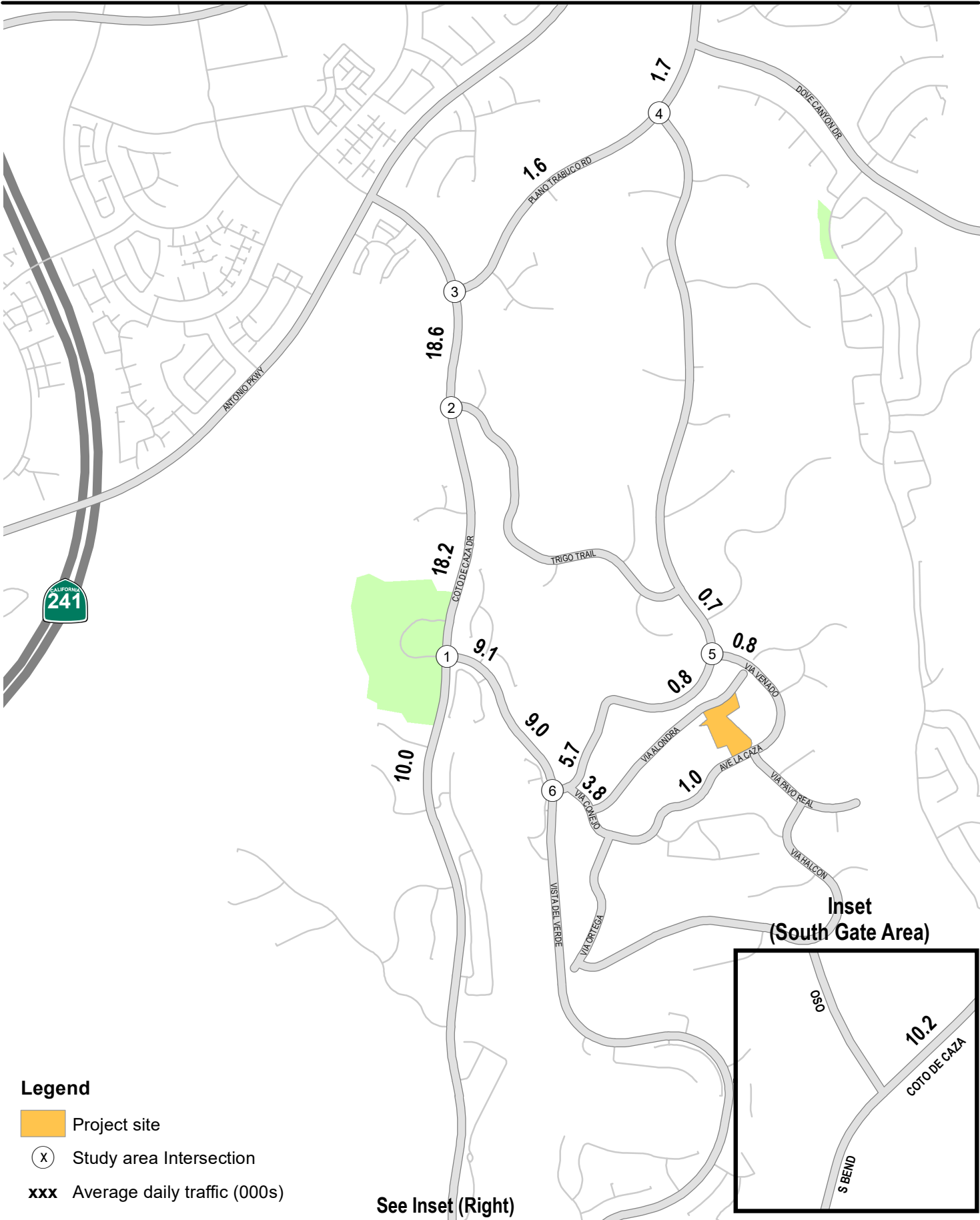
Figure 4-5

Cumulative Without Project - AM Peak Hour Volumes



Figure 4-6
Cumulative Without Project - PM Peak Hour Volumes
4.8

Figure 4-6



\\U03000-pp0501\workgroup\2042\active\2042547110\gis\msd\cum_with_pj.mxd



Figure 4-7
Cumulative with Project - ADT (000s)
4.9

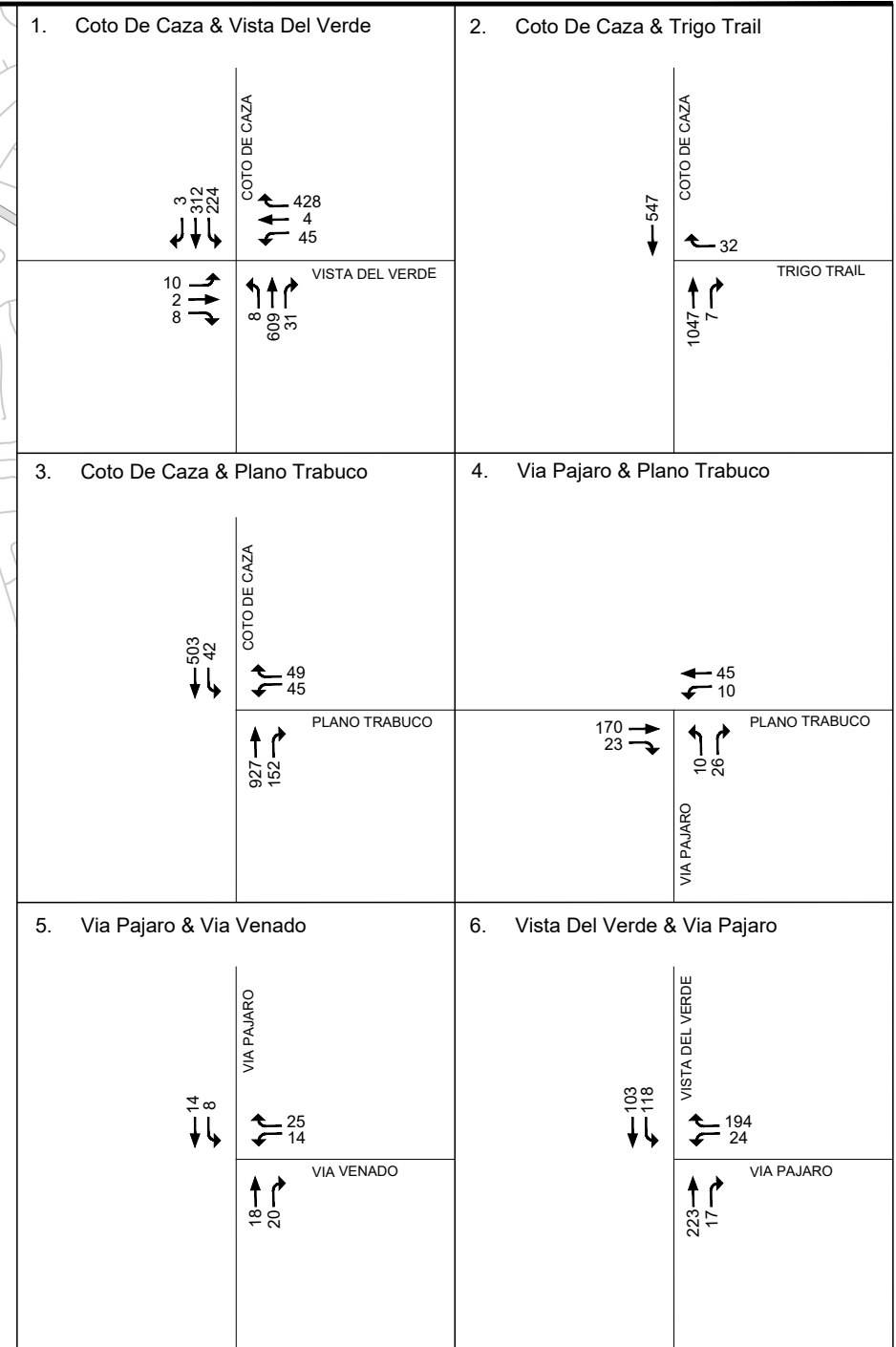
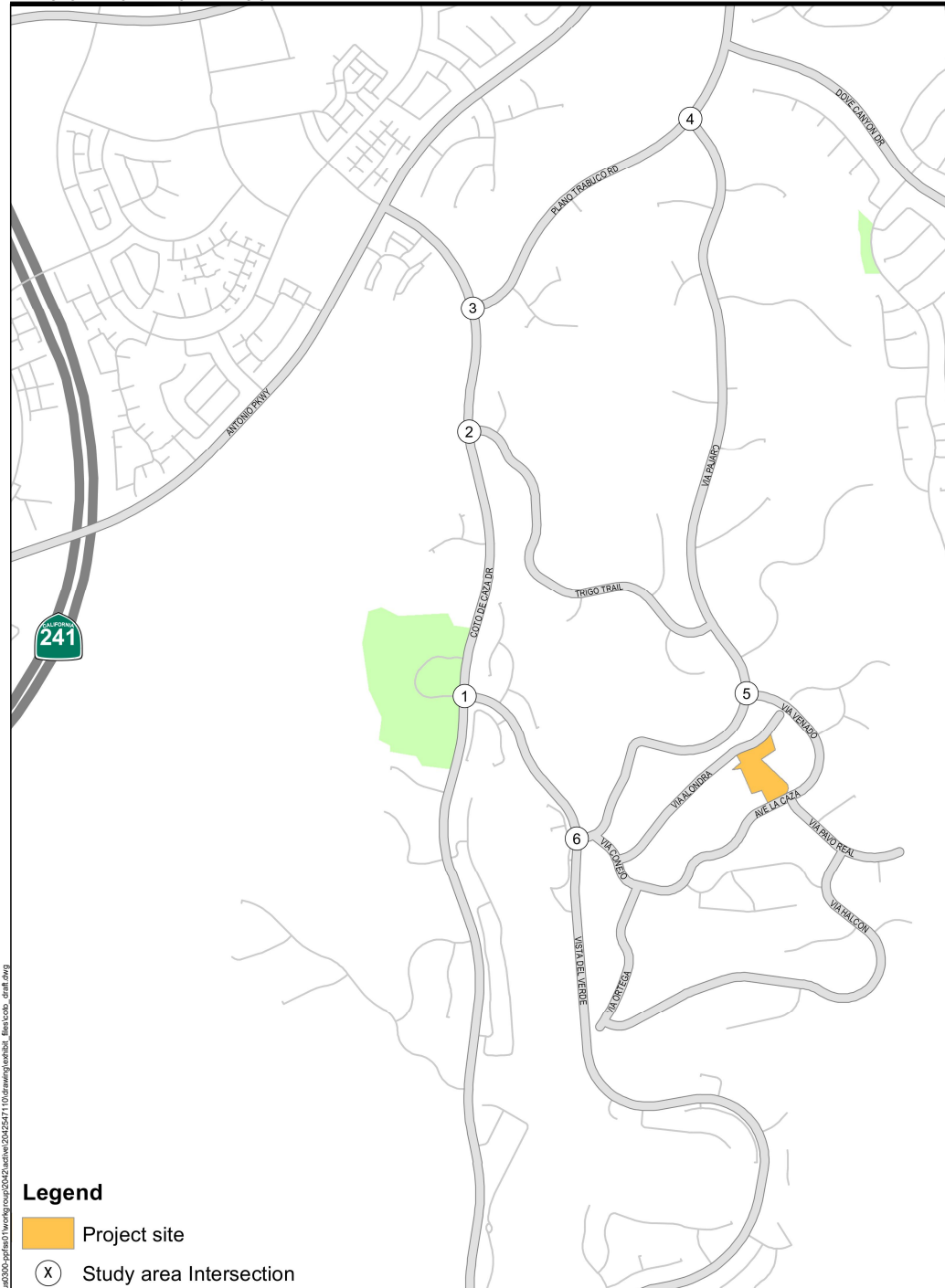


Figure 4-8

Cumulative With Project - AM Peak Hour Volumes



Figure 4-9
Cumulative With Project - PM Peak Hour Volumes
4.11

Figure 4-9

Conclusion
April 2020

5.0 CONCLUSION

The proposed Project consists of approximately 101 residential units geared toward active seniors and would include resort-type amenities on-site that will not be available to outside residents and a specialty retail store type of use in the gated community of Coto de Caza in south Orange County. The Project would generate approximately 382 trips daily, of which 22 would occur during the AM peak hour and 28 would occur during the PM peak hour. These peak hour trips were assigned to the surrounding street system and added to background traffic volumes to determine the Project impacts.

Primary access to the Project site will be via a driveway on Ave La Caza, with a proposed emergency access on Via Alondra.

Existing conditions with and without Project and a cumulative conditions scenario which includes buildout of the Project together with cumulative projects in the proximity of the study area were analyzed, and the findings of each scenario show that under existing conditions, all study intersections continued to operate at LOS A or B during the AM and PM peak hours. The Project increases the ICU values by 0.02 or less. The Project has no significant impact on the study intersections under existing conditions.

When traffic from cumulative projects was included and evaluated in the existing conditions analysis, the results show that all study intersections continued to operate at LOS A or B during the AM and PM peak hours. The Project increases the ICU values by 0.02 or less. The Project has no significant impact on the study intersections.

In conclusion, the Project was determined to have no significant impact on the surrounding circulation system under existing and cumulative conditions, and therefore no traffic mitigation is needed.



LEGACY AT COTO TRAFFIC STUDY

Appendix A Traffic Count Data

Appendix A TRAFFIC COUNT DATA



PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Wed, Dec 11, 19

LOCATION:
NORTH & SOUTH:
EAST & WEST:

Coto De Caza
Coto De Caza
Vista Del Verde

PROJECT #: SC
LOCATION #: 1
CONTROL: STOP ALL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

 Add U-Turns to Left Turns

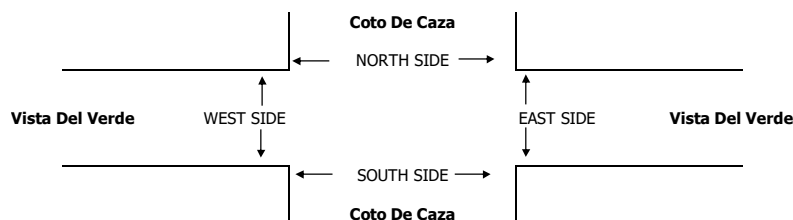
	NORTHBOUND Coto De Caza			SOUTHBOUND Coto De Caza			EASTBOUND Vista Del Verde			WESTBOUND Vista Del Verde			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL

U-TURNS

AM	7:00 AM	0	78	4	28	27	1	0	0	0	5	0	67	210	
	7:15 AM	6	124	4	37	60	1	7	0	4	6	4	93	346	
	7:30 AM	2	203	6	42	68	1	2	1	1	7	0	117	450	
	7:45 AM	0	190	3	66	102	0	1	1	1	8	0	106	478	
	8:00 AM	0	84	5	59	80	1	0	0	2	11	0	88	330	
	8:15 AM	1	74	13	41	61	1	3	0	0	7	0	72	273	
	8:30 AM	0	76	13	45	48	0	2	1	0	4	1	76	266	
	8:45 AM	0	93	4	47	44	1	0	0	0	2	0	80	271	
	VOLUMES	9	922	52	365	490	6	15	3	8	50	5	699	2,624	
	APPROACH %	1%	94%	5%	42%	57%	1%	58%	12%	31%	7%	1%	93%		
APP/DEPART	983	/	1,643	861	/	550	26	/	413	754	/	18	0		
BEGIN PEAK HR	7:15 AM														
VOLUMES	8	601	18	204	310	3	10	2	8	32	4	404	1,604		
APPROACH %	1%	96%	3%	39%	60%	1%	50%	10%	40%	7%	1%	92%			
PEAK HR FACTOR	0.743		0.769		0.455		0.887		0.839						
APP/DEPART	627	/	1,019	517	/	352	20	/	220	440	/	13	0		
PM	4:00 PM	0	82	5	67	115	0	0	0	0	5	0	55	329	
	4:15 PM	0	107	7	79	91	0	0	0	1	6	0	68	359	
	4:30 PM	1	76	8	78	99	0	0	0	1	8	0	57	328	
	4:45 PM	1	101	7	94	104	0	0	0	1	7	2	46	363	
	5:00 PM	0	73	2	73	116	0	1	1	1	7	0	72	346	
	5:15 PM	2	82	1	87	92	0	0	0	2	10	0	67	343	
	5:30 PM	0	71	3	88	121	0	0	0	0	6	0	51	340	
	5:45 PM	0	80	7	83	97	0	0	0	0	2	0	49	318	
	VOLUMES	4	672	40	649	835	0	1	1	6	51	2	465	2,726	
	APPROACH %	1%	94%	6%	44%	56%	0%	13%	13%	75%	10%	0%	90%		
	APP/DEPART	716	/	1,149	1,484	/	892	8	/	679	518	/	90	0	
	BEGIN PEAK HR	4:15 PM													
	VOLUMES	2	357	24	324	410	0	1	1	4	28	2	243	1,396	
APPROACH %	1%	93%	6%	44%	56%	0%	17%	17%	67%	10%	1%	89%			
PEAK HR FACTOR	0.840		0.927		0.500		0.864		0.961						
APP/DEPART	383	/	606	734	/	442	6	/	344	273	/	4	0		

0	0	0	0	0
1	1	0	0	2
1	0	0	0	1
0	3	0	0	3
0	0	0	0	0
0	2	0	0	2
0	1	0	0	1
0	0	0	0	0
2	2	0	0	9

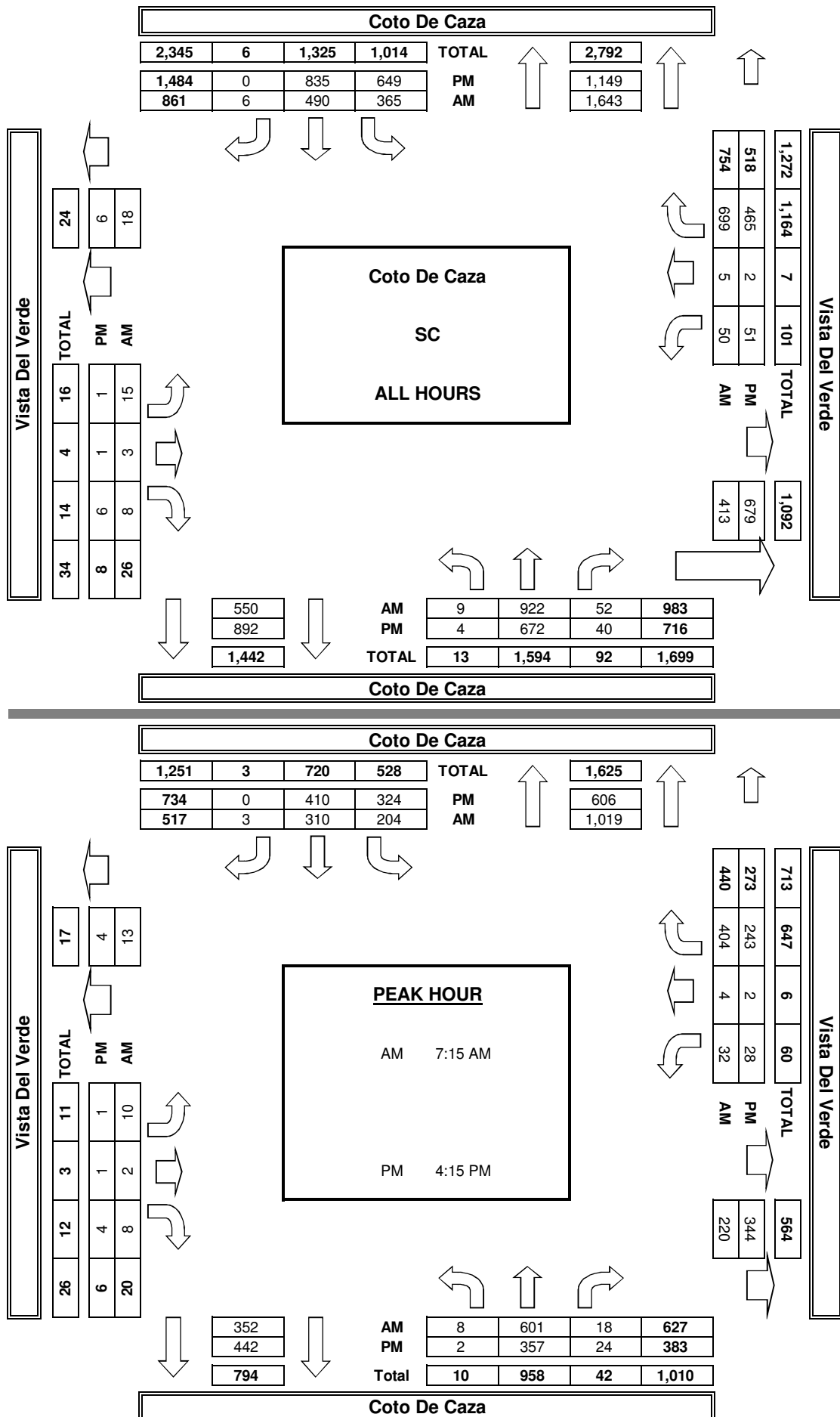
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0	0	0	0	0
0	2	0	0	2
0	1	0	0	1
0	2	0	0	2
0	3	0	0	3
0	0	0	0	0
0	11	0	0	11



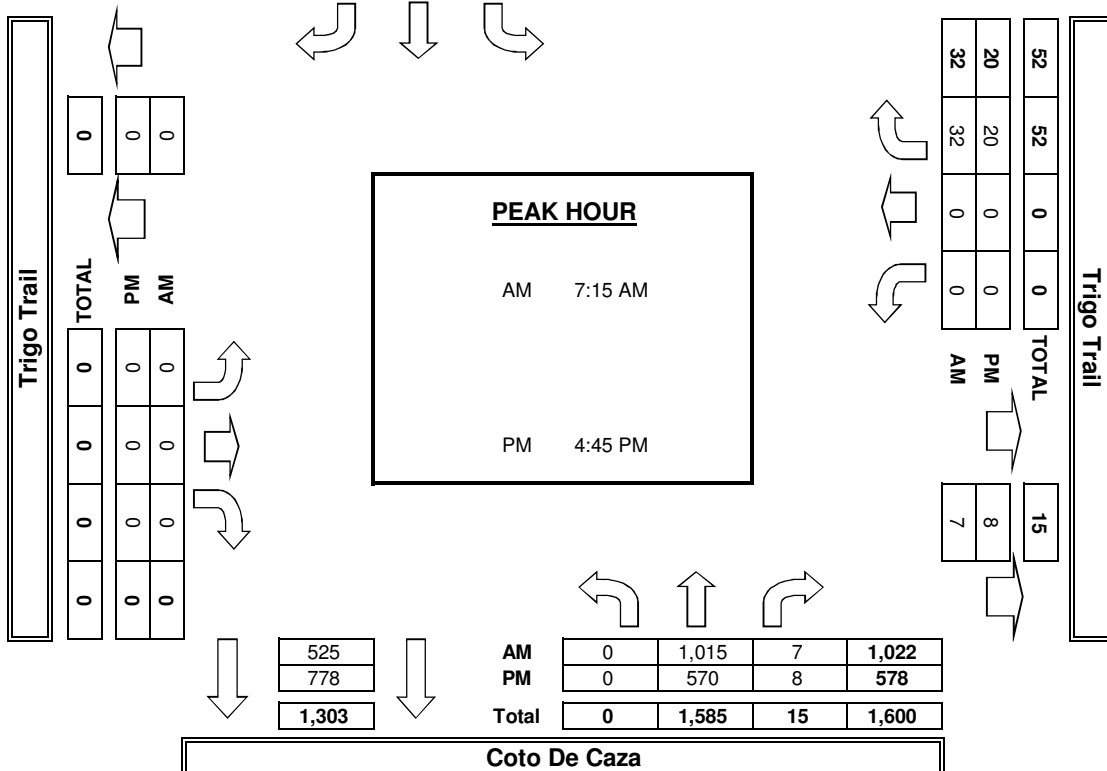
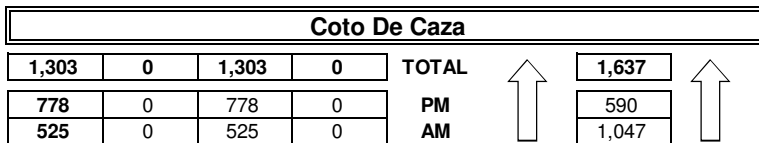
AM	7:00 AM
	7:15 AM
	7:30 AM
	7:45 AM
	8:00 AM
	8:15 AM
	8:30 AM
	8:45 AM
TOTAL	
AM BEGIN PEAK HR	
PM	4:00 PM
	4:15 PM
	4:30 PM
	4:45 PM
	5:00 PM
	5:15 PM
	5:30 PM
	5:45 PM
TOTAL	
PM BEGIN PEAK HR	

[illegible][illegible][illegible]

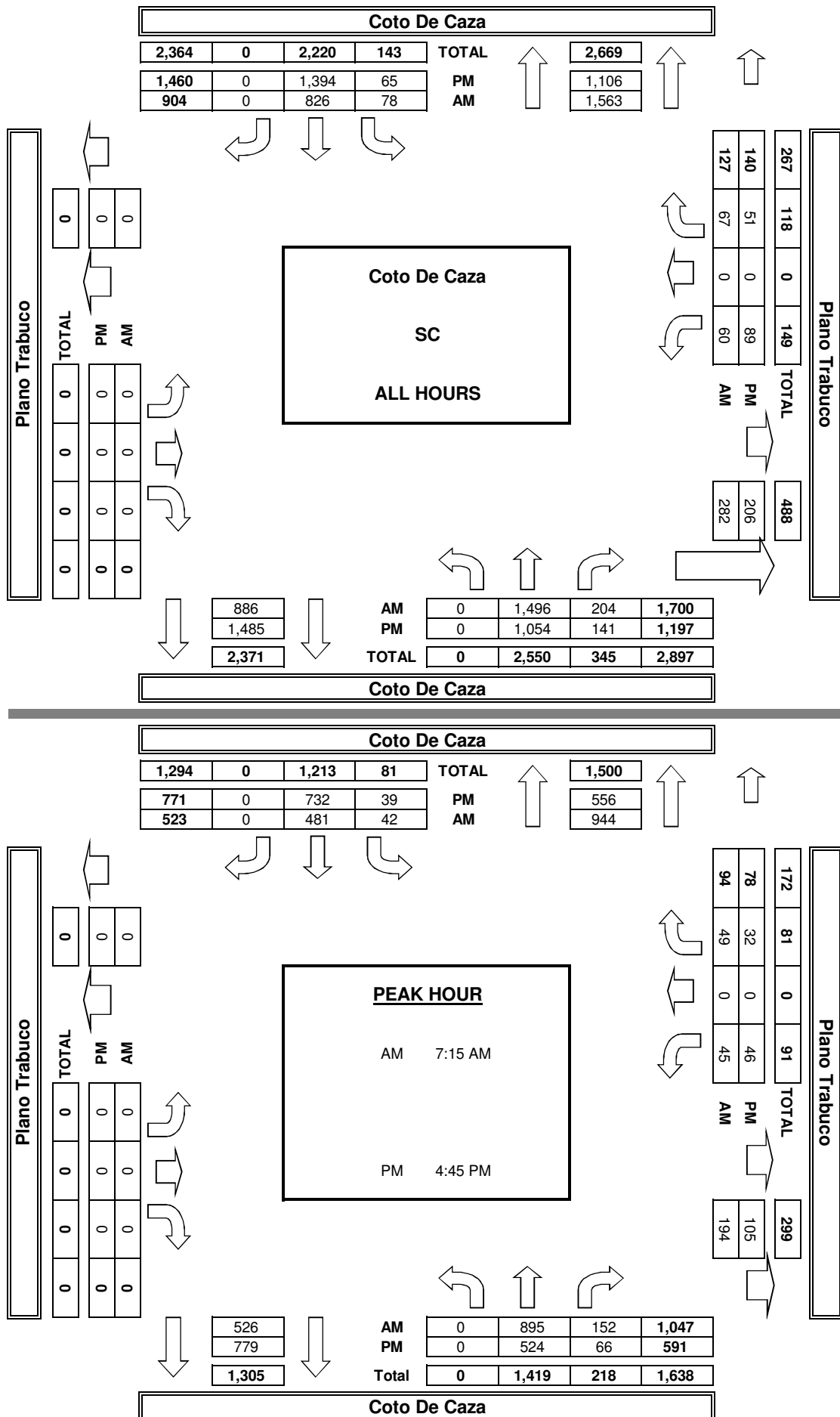
AimTD LLC
TURNING MOVEMENT COUNTS



Coto De Caza					
2,371	0	2,371	0	TOTAL	2,897
1,484	0	1,484	0	PM	1,198
887	0	887	0	AM	1,699



AimTD LLC
TURNING MOVEMENT COUNTS

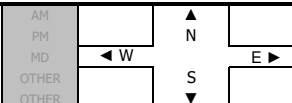


INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

PROJECT #: SC
LOCATION #: 4
CONTROL: STOP NDATE:
Wed, Dec 11, 19LOCATION:
NORTH & SOUTH: Coto De Caza
EAST & WEST: Via Pajaro
Plano Trabuco

NOTES:

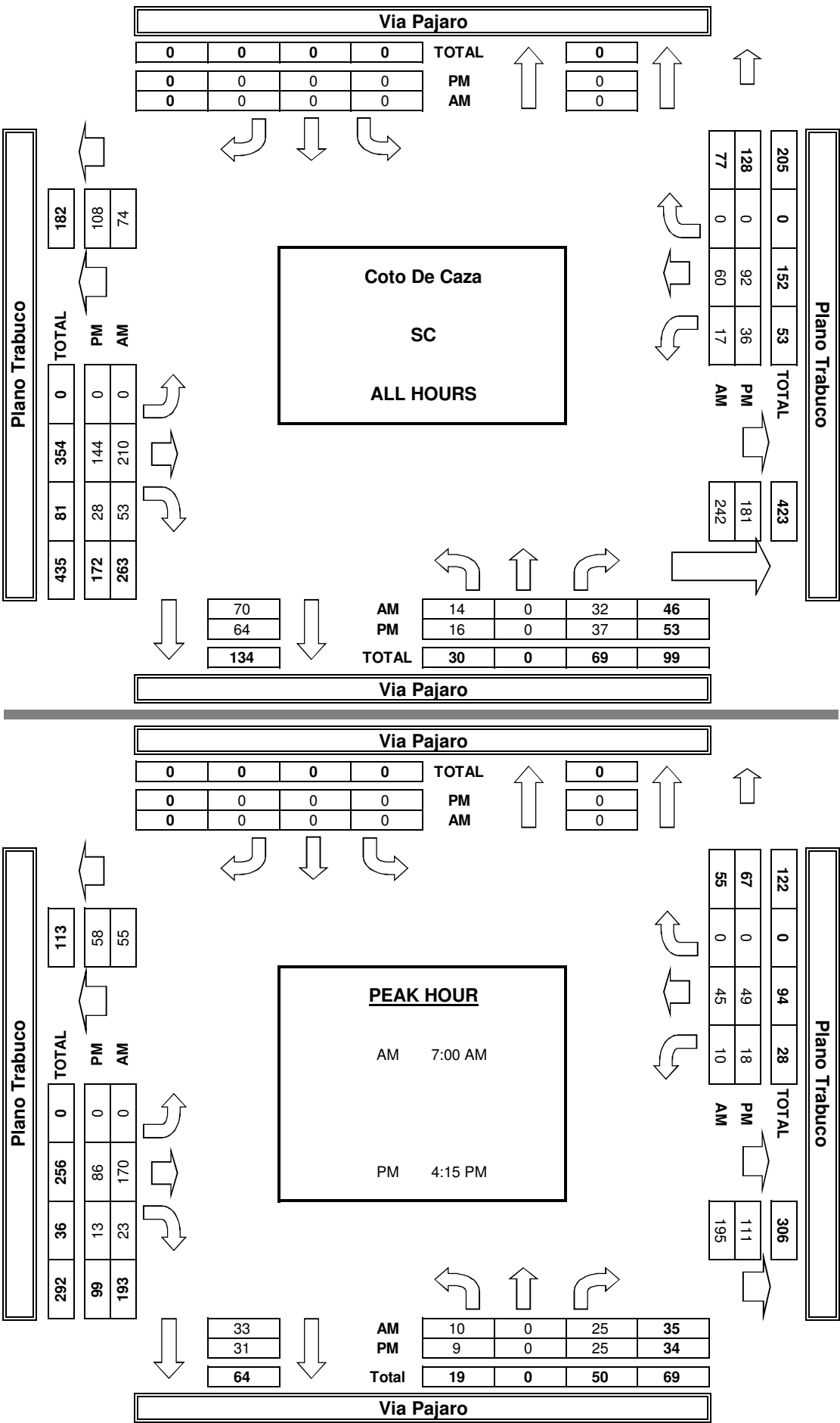
☒ Add U-Turns to Left Turns

	NORTHBOUND Via Pajaro			SOUTHBOUND Via Pajaro			EASTBOUND Plano Trabuco			WESTBOUND Plano Trabuco			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL

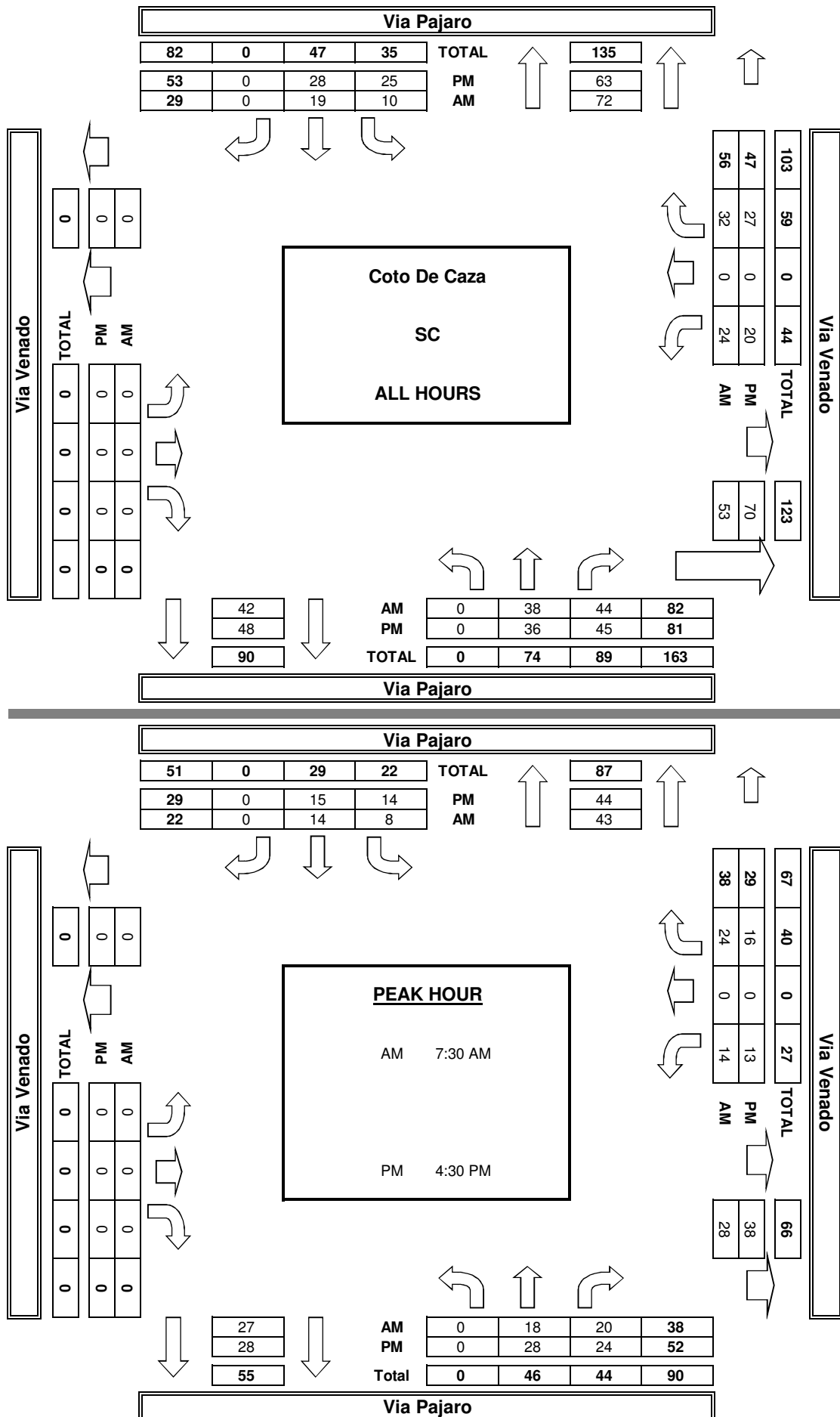
U-TURNS				
NB	SB	EB	WB	TTL

AM	7:00 AM	2	0	1	0	0	0	14	8	1	3	0	29		
	7:15 AM	2	0	4	0	0	0	28	5	0	3	0	42		
	7:30 AM	4	0	11	0	0	0	57	2	3	8	0	85		
	7:45 AM	2	0	9	0	0	0	71	8	6	31	0	127		
	8:00 AM	2	0	2	0	0	0	6	6	4	4	0	24		
	8:15 AM	1	0	2	0	0	0	11	6	1	4	0	25		
	8:30 AM	0	0	2	0	0	0	12	7	2	4	0	27		
	8:45 AM	1	0	1	0	0	0	11	11	0	3	0	27		
	VOLUMES	14	0	32	0	0	0	0	210	53	17	60	0	386	
	APPROACH %	30%	0%	70%	0%	0%	0%	0%	80%	20%	22%	78%	0%		
APP/DEPART	46	/	0	0	/	70	263	/	242	77	/	74	0		
BEGIN PEAK HR	7:00 AM														
VOLUMES	10	0	25	0	0	0	0	170	23	10	45	0	283		
APPROACH %	29%	0%	71%	0%	0%	0%	0%	88%	12%	18%	82%	0%			
PEAK HR FACTOR	0.583													0.557	
APP/DEPART	35	/	0	0	/	33	193	/	195	55	/	55	0		
PM	4:00 PM	3	0	6	0	0	0	14	2	6	8	0	39		
	4:15 PM	1	0	3	0	0	0	26	4	5	17	0	56		
	4:30 PM	5	0	7	0	0	0	24	2	2	10	0	50		
	4:45 PM	0	0	6	0	0	0	20	4	3	7	0	40		
	5:00 PM	3	0	9	0	0	0	16	3	8	15	0	54		
	5:15 PM	3	0	1	0	0	0	20	1	6	15	0	46		
	5:30 PM	1	0	2	0	0	0	9	9	5	10	0	36		
	5:45 PM	0	0	3	0	0	0	15	3	1	10	0	32		
	VOLUMES	16	0	37	0	0	0	0	144	28	36	92	0	353	
	APPROACH %	30%	0%	70%	0%	0%	0%	0%	84%	16%	28%	72%	0%		
	APP/DEPART	53	/	0	0	/	64	172	/	181	128	/	108	0	
	BEGIN PEAK HR	4:15 PM													
	VOLUMES	9	0	25	0	0	0	0	86	13	18	49	0	200	
	APPROACH %	26%	0%	74%	0%	0%	0%	0%	87%	13%	27%	73%	0%		
PEAK HR FACTOR	0.708													0.893	
APP/DEPART	34	/	0	0	/	31	99	/	111	67	/	58	0		

AimTD LLC
TURNING MOVEMENT COUNTS



AimTD LLC
TURNING MOVEMENT COUNTS



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Wed, Dec 11, 19

LOCATION:
NORTH & SOUTH:
EAST & WEST:

Coto De Caza
Vista Del Verde
Via Pajaro

PROJECT #: SC
LOCATION #: 6
CONTROL: STOP ALL

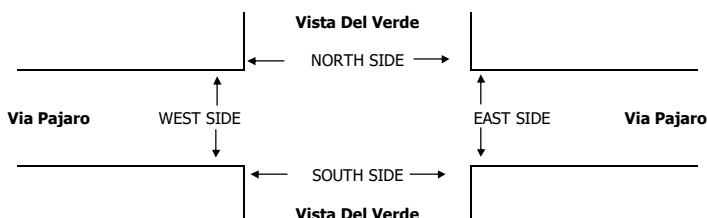
NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

 Add U-Turns to Left Turns

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	Vista Del Verde			Vista Del Verde			Via Pajaro			Via Pajaro			
LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	

AM	7:00 AM	0	35	0	16	14	0	0	0	0	3	0	32	100
	7:15 AM	0	58	6	20	20	0	0	0	0	2	0	35	141
	7:30 AM	0	60	2	27	20	0	0	0	0	4	0	52	165
	7:45 AM	0	59	6	32	33	0	0	0	0	9	0	47	186
	8:00 AM	0	46	3	30	30	0	0	0	0	9	0	46	164
	8:15 AM	0	37	1	25	23	0	0	0	0	3	0	39	128
	8:30 AM	0	42	6	32	22	0	0	0	0	5	0	33	140
	8:45 AM	0	43	6	24	22	0	0	0	0	2	0	35	132
	VOLUMES	0	380	30	206	184	0	0	0	0	37	0	319	1,156
	APPROACH %	0%	93%	7%	53%	47%	0%	0%	0%	0%	10%	0%	90%	
APP/DEPART	410	/	699	390	/	221	0	/	236	356	/	0	0	
BEGIN PEAK HR	7:15 AM													
VOLUMES	0	223	17	109	103	0	0	0	0	24	0	180	656	
APPROACH %	0%	93%	7%	51%	49%	0%	0%	0%	0%	12%	0%	88%		
PEAK HR FACTOR	0.923			0.815			0.000			0.911			0.882	
APP/DEPART	240	/	403	212	/	127	0	/	126	204	/	0	0	
PM	4:00 PM	0	34	6	32	37	0	0	0	0	7	0	23	139
	4:15 PM	0	37	1	39	39	0	0	0	0	7	0	31	154
	4:30 PM	0	29	6	43	39	0	0	0	0	8	0	32	157
	4:45 PM	0	26	5	47	42	0	0	0	0	7	0	25	152
	5:00 PM	0	31	4	30	37	0	0	0	0	7	0	41	150
	5:15 PM	0	33	6	43	47	0	0	0	0	5	0	38	172
	5:30 PM	0	25	3	45	38	0	0	0	0	5	0	27	143
	5:45 PM	0	29	3	49	33	0	0	0	0	5	0	23	142
	VOLUMES	0	244	34	328	312	0	0	0	0	51	0	240	1,209
	APPROACH %	0%	88%	12%	51%	49%	0%	0%	0%	0%	18%	0%	82%	
APP/DEPART	278	/	484	640	/	363	0	/	362	291	/	0	0	
BEGIN PEAK HR	4:30 PM													
VOLUMES	0	119	21	163	165	0	0	0	0	27	0	136	631	
APPROACH %	0%	85%	15%	50%	50%	0%	0%	0%	0%	17%	0%	83%		
PEAK HR FACTOR	0.897			0.911			0.000			0.849			0.917	
APP/DEPART	140	/	255	328	/	192	0	/	184	163	/	0	0	

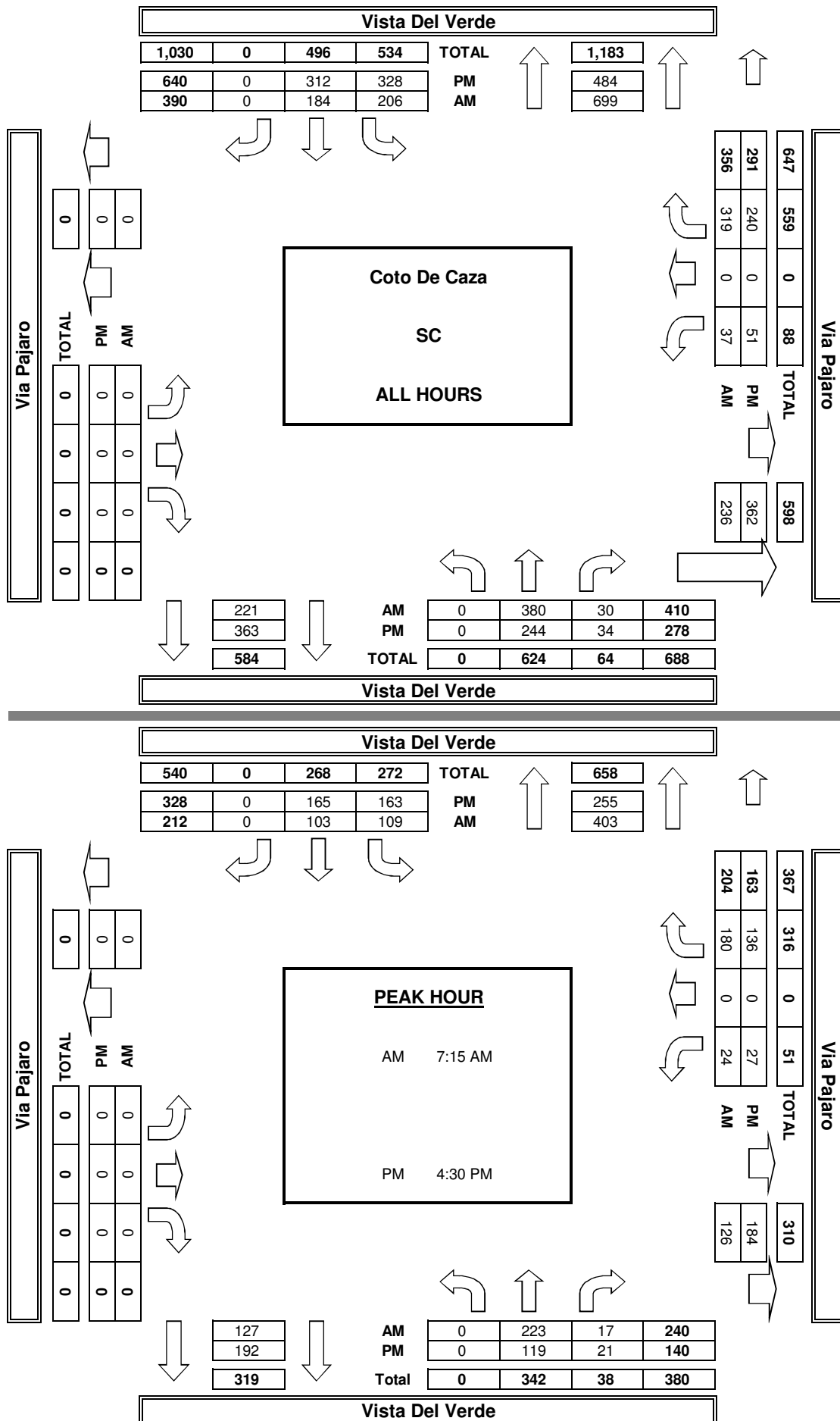
[illegible][illegible]

AM		7:00 AM
		7:15 AM
		7:30 AM
		7:45 AM
		8:00 AM
		8:15 AM
		8:30 AM
		8:45 AM
		TOTAL
		AM BEGIN PEAK HR
PM		4:00 PM
		4:15 PM
		4:30 PM
		4:45 PM
		5:00 PM
		5:15 PM
		5:30 PM
		5:45 PM
		TOTAL
		PM BEGIN PEAK HR

PEDESTRIAN + BIKE CROSSINGS					
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
7:15 AM					
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
4:30 PM					

[illegible][illegible]

AimTD LLC
TURNING MOVEMENT COUNTS



Transportation Studies, Inc.

2640 Walnut Avenue, Suite L
Tustin, CA. 92780

Location : VISTA DEL VERDE (1)
Segment : E/O COTO DE CAZA DR
Client : STANTEC

Site: COTO DE CAZA
Date: 05/08/19

Interval	WB				EB				Combined				Day:	Wednesday
Begin	AM		PM		AM		PM		AM		PM			
12:00	1	2	65	239	10	14	64	271	11	16	129	510		
12:15	0		50		0		54		0		104			
12:30	0		60		2		68		2		128			
12:45	1		64		2		85		3		149			
01:00	0	2	55	216	3	6	76	265	3	8	131	481		
01:15	1		42		1		65		2		107			
01:30	1		55		0		54		1		109			
01:45	0		64		2		70		2		134			
02:00	3	5	52	240	1	4	56	254	4	9	108	494		
02:15	0		55		0		60		0		115			
02:30	1		70		0		70		1		140			
02:45	1		63		3		68		4		131			
03:00	4	9	64	238	0	1	71	328	4	10	135	566		
03:15	1		54		0		86		1		140			
03:30	2		62		0		89		2		151			
03:45	2		58		1		82		3		140			
04:00	2	24	67	279	1	3	82	314	3	27	149	593		
04:15	3		69		1		66		4		135			
04:30	9		72		1		84		10		156			
04:45	10		71		0		82		10		153			
05:00	11	80	78	262	0	14	89	374	11	94	167	636		
05:15	18		67		2		86		20		153			
05:30	22		56		6		101		28		157			
05:45	29		61		6		98		35		159			
06:00	30	181	56	186	8	56	75	322	38	237	131	508		
06:15	31		44		6		78		37		122			
06:30	48		45		15		90		63		135			
06:45	72		41		27		79		99		120			
07:00	88	415	32	88	25	177	60	247	113	592	92	335		
07:15	128		27		40		74		168		101			
07:30	117		13		47		55		164		68			
07:45	82		16		65		58		147		74			
08:00	89	329	16	78	52	193	49	180	141	522	65	258		
08:15	83		28		45		48		128		76			
08:30	81		23		48		40		129		63			
08:45	76		11		48		43		124		54			
09:00	82	277	13	44	44	188	48	132	126	465	61	176		
09:15	69		17		53		34		122		51			
09:30	68		5		49		23		117		28			
09:45	58		9		42		27		100		36			
10:00	70	237	11	37	46	164	22	62	116	401	33	99		
10:15	60		10		42		16		102		26			
10:30	54		12		46		15		100		27			
10:45	53		4		30		9		83		13			
11:00	54	248	2	9	47	169	11	41	101	417	13	50		
11:15	58		1		48		11		106		12			
11:30	76		2		44		8		120		10			
11:45	60		4		30		11		90		15			
Totals	1,809		1,916		989		2,790		2,798		4,706			
Split%	64.7		40.7		35.3		59.3							
Day Totals		3,725				3,779				7,504				
Day Splits		49.6				50.4								
Peak Hour	07:15		04:15		07:45		05:00		07:15		05:00			
Volume	416		290		210		374		620		636			
Factor	0.81		0.93		0.81		0.93		0.92		0.95			

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L
Tustin, CA. 92780

Location : VISTA DEL VERDE (2)
Segment : N/O VIA PAJARO
Client : STANTEC

Site: COTO DE CAZA
Date: 05/08/19

Interval	SB				NB				Combined				Day:	Wednesday
Begin	AM		PM		AM		PM		AM		PM			
12:00	7	11	60	259	0	0	67	246	7	11	127	505		
12:15	0		50		0		54		0		104			
12:30	1		65		0		61		1		126			
12:45	3		84		0		64		3		148			
01:00	2	5	78	259	0	2	66	222	2	7	144	481		
01:15	2		61		1		40		3		101			
01:30	0		53		1		52		1		105			
01:45	1		67		0		64		1		131			
02:00	1	4	52	238	2	4	54	250	3	8	106	488		
02:15	0		48		0		60		0		108			
02:30	0		73		1		68		1		141			
02:45	3		65		1		68		4		133			
03:00	0	1	72	316	4	10	65	241	4	11	137	557		
03:15	0		78		2		56		2		134			
03:30	0		78		2		61		2		139			
03:45	1		88		2		59		3		147			
04:00	1	4	84	300	2	25	74	284	3	29	158	584		
04:15	1		58		2		68		3		126			
04:30	1		78		10		72		11		150			
04:45	1		80		11		70		12		150			
05:00	0	14	84	360	12	85	74	264	12	99	158	624		
05:15	2		85		19		70		21		155			
05:30	6		91		24		60		30		151			
05:45	6		100		30		60		36		160			
06:00	9	53	62	295	28	177	52	192	37	230	114	487		
06:15	6		71		31		46		37		117			
06:30	13		88		50		48		63		136			
06:45	25		74		68		46		93		120			
07:00	24	179	64	235	92	445	37	93	116	624	101	328		
07:15	34		63		145		28		179		91			
07:30	54		54		120		12		174		66			
07:45	67		54		88		16		155		70			
08:00	41	186	49	176	90	346	20	79	131	532	69	255		
08:15	47		48		86		25		133		73			
08:30	44		38		84		24		128		62			
08:45	54		41		86		10		140		51			
09:00	40	185	49	129	78	270	14	44	118	455	63	173		
09:15	43		34		66		16		109		50			
09:30	54		21		66		6		120		27			
09:45	48		25		60		8		108		33			
10:00	42	147	20	57	66	234	12	36	108	381	32	93		
10:15	34		14		64		8		98		22			
10:30	43		16		52		11		95		27			
10:45	28		7		52		5		80		12			
11:00	42	158	13	42	57	254	2	9	99	412	15	51		
11:15	48		11		60		1		108		12			
11:30	40		6		76		2		116		8			
11:45	28		12		61		4		89		16			
Totals	947		2,666		1,852		1,960		2,799		4,626			
Split%	33.8		57.6		66.2		42.4							
Day Totals		3,613				3,812				7,425				
Day Splits		48.7				51.3								
Peak Hour	07:30		05:00		07:00		04:30		07:15		05:00			
Volume	209		360		445		286		639		624			
Factor	0.78		0.90		0.77		0.97		0.89		0.98			

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : VIA PAJARO (3)
Segment : E/O VISTA DEL VERDE
Client : STANTEC

Site: COTA DE CAZA
Date: 05/08/19

Interval	EB				WB				Combined				Day:	Wednesday
Begin	AM		PM		AM		PM		AM		PM			
12:00	2	2	38	150	2	3	43	205	4	5	81	355		
12:15	0		30		0		36		0		66			
12:30	0		40		0		66		0		106			
12:45	0		42		1		60		1		102			
01:00	0	1	35	135	3	5	67	237	3	6	102	372		
01:15	0		28		2		70		2		98			
01:30	1		37		0		47		1		84			
01:45	0		35		0		53		0		88			
02:00	0	1	30	149	2	8	47	208	2	9	77	357		
02:15	0		28		0		44		0		72			
02:30	0		57		0		59		0		116			
02:45	1		34		6		58		7		92			
03:00	4	8	44	157	0	0	64	308	4	8	108	465		
03:15	0		36		0		68		0		104			
03:30	2		36		0		87		2		123			
03:45	2		41		0		89		2		130			
04:00	1	12	38	166	2	4	88	286	3	16	126	452		
04:15	0		40		0		68		0		108			
04:30	5		46		1		72		6		118			
04:45	6		42		1		58		7		100			
05:00	7	42	54	165	0	12	70	308	7	54	124	473		
05:15	8		37		2		76		10		113			
05:30	15		34		4		80		19		114			
05:45	12		40		6		82		18		122			
06:00	14	84	31	105	8	65	72	281	22	149	103	386		
06:15	16		28		8		54		24		82			
06:30	22		22		17		88		39		110			
06:45	32		24		32		67		64		91			
07:00	40	228	20	63	10	130	65	215	50	358	85	278		
07:15	64		18		28		50		92		68			
07:30	63		10		46		44		109		54			
07:45	61		15		46		56		107		71			
08:00	48	194	11	44	46	198	46	176	94	392	57	220		
08:15	46		12		44		56		90		68			
08:30	54		14		42		40		96		54			
08:45	46		7		66		34		112		41			
09:00	42	156	7	36	38	181	51	110	80	337	58	146		
09:15	44		16		39		24		83		40			
09:30	34		6		60		19		94		25			
09:45	36		7		44		16		80		23			
10:00	42	156	8	29	50	159	16	53	92	315	24	82		
10:15	40		8		46		12		86		20			
10:30	40		11		37		19		77		30			
10:45	34		2		26		6		60		8			
11:00	22	131	2	7	44	142	13	36	66	273	15	43		
11:15	30		1		34		4		64		5			
11:30	46		2		34		10		80		12			
11:45	33		2		30		9		63		11			
Totals	1,015		1,206		907		2,423		1,922		3,629			
Split%	52.8		33.2		47.2		66.8							
Day Totals		2,221				3,330				5,551				
Day Splits		40.0				60.0								
Peak Hour	07:15		04:15		08:45		03:15		07:15		03:30			
Volume	236		182		203		332		402		487			
Factor	0.92		0.84		0.77		0.93		0.92		0.94			

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L
Tustin, CA. 92780

Location : VIA CONEJO (4)
Segment : S/O VIA PAJARO
Client : STANTEC

Site: COTO DE CAZA
Date: 05/08/19

Interval	SB				NB				Combined				Day:	Wednesday
Begin	AM		PM		AM		PM		AM		PM			
12:00	1	2	17	100	0	0	26	108	1	2	43	208		
12:15	0		16		0		22		0		38			
12:30	0		32		0		22		0		54			
12:45	1		35		0		38		1		73			
01:00	1	2	34	124	0	1	26	101	1	3	60	225		
01:15	1		34		0		26		1		60			
01:30	0		26		1		24		1		50			
01:45	0		30		0		25		0		55			
02:00	1	4	16	79	0	2	29	112	1	6	45	191		
02:15	0		16		0		16		0		32			
02:30	0		29		0		37		0		66			
02:45	3		18		2		30		5		48			
03:00	0	1	30	142	3	6	24	107	3	7	54	249		
03:15	0		34		0		30		0		64			
03:30	0		40		2		26		2		66			
03:45	1		38		1		27		2		65			
04:00	1	2	48	154	2	14	20	110	3	16	68	264		
04:15	0		28		0		28		0		56			
04:30	0		37		6		30		6		67			
04:45	1		41		6		32		7		73			
05:00	0	5	38	156	6	33	28	116	6	38	66	272		
05:15	0		35		6		27		6		62			
05:30	4		40		11		27		15		67			
05:45	1		43		10		34		11		77			
06:00	3	23	41	150	12	80	22	81	15	103	63	231		
06:15	2		28		16		19		18		47			
06:30	5		44		20		16		25		60			
06:45	13		37		32		24		45		61			
07:00	8	66	39	107	37	185	14	46	45	251	53	153		
07:15	16		22		52		12		68		34			
07:30	24		18		52		10		76		28			
07:45	18		28		44		10		62		38			
08:00	18	94	26	91	42	182	12	48	60	276	38	139		
08:15	24		27		48		14		72		41			
08:30	20		18		48		12		68		30			
08:45	32		20		44		10		76		30			
09:00	16	70	28	64	38	132	7	35	54	202	35	99		
09:15	16		14		36		16		52		30			
09:30	22		12		30		6		52		18			
09:45	16		10		28		6		44		16			
10:00	21	76	10	32	36	113	6	23	57	189	16	55		
10:15	24		9		34		4		58		13			
10:30	17		9		23		11		40		20			
10:45	14		4		20		2		34		6			
11:00	20	70	8	27	20	85	3	13	40	155	11	40		
11:15	18		3		15		2		33		5			
11:30	18		8		29		4		47		12			
11:45	14		8		21		4		35		12			
Totals	415		1,226		833		900		1,248		2,126			
Split%	33.3		57.7		66.7		42.3							
Day Totals		1,641				1,733				3,374				
Day Splits		48.6				51.4								
Peak Hour	08:00		03:15		07:15		02:30		08:00		05:00			
Volume	94		160		190		121		276		272			
Factor	0.73		0.83		0.91		0.82		0.91		0.88			

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : AVE LA CAZA (5)
Segment : S/O VIA PAVO REAL
Client : STANTEC

Site: COTO DE CAZA
Date: 05/08/19

Interval	NB				SB				Combined				Day:	Wednesday
Begin	AM		PM		AM		PM		AM		PM			
12:00	0	0	4	27	0	0	6	23	0	0	10	50		
12:15	0		5		0		3		0		8			
12:30	0		4		0		4		0		8			
12:45	0		14		0		10		0		24			
01:00	0	0	11	32	0	0	6	28	0	0	17	60		
01:15	0		7		0		4		0		11			
01:30	0		4		0		8		0		12			
01:45	0		10		0		10		0		20			
02:00	0	0	4	16	0	0	10	25	0	0	14	41		
02:15	0		4		0		3		0		7			
02:30	0		3		0		10		0		13			
02:45	0		5		0		2		0		7			
03:00	0	0	4	22	0	1	3	18	0	1	7	40		
03:15	0		4		0		4		0		8			
03:30	0		9		0		4		0		13			
03:45	0		5		1		7		1		12			
04:00	0	0	6	22	0	1	1	19	0	1	7	41		
04:15	0		8		0		4		0		12			
04:30	0		3		0		4		0		7			
04:45	0		5		1		10		1		15			
05:00	1	4	9	29	1	6	6	21	2	10	15	50		
05:15	1		4		1		4		2		8			
05:30	2		4		2		7		4		11			
05:45	0		12		2		4		2		16			
06:00	0	1	4	17	0	13	3	4	0	14	7	21		
06:15	0		4		4		0		4		4			
06:30	0		4		1		0		1		4			
06:45	1		5		8		1		9		6			
07:00	2	16	7	15	6	24	0	9	8	40	7	24		
07:15	4		4		6		2		10		6			
07:30	3		2		6		4		9		6			
07:45	7		2		6		3		13		5			
08:00	4	24	4	10	2	18	2	5	6	42	6	15		
08:15	6		2		7		1		13		3			
08:30	4		1		3		0		7		1			
08:45	10		3		6		2		16		5			
09:00	2	8	2	5	9	28	2	6	11	36	4	11		
09:15	2		0		7		2		9		2			
09:30	2		3		9		2		11		5			
09:45	2		0		3		0		5		0			
10:00	9	20	1	2	3	18	2	3	12	38	3	5		
10:15	3		0		8		0		11		0			
10:30	4		0		5		0		9		0			
10:45	4		1		2		1		6		2			
11:00	6	41	1	3	3	18	1	1	9	59	2	4		
11:15	10		0		4		0		14		0			
11:30	22		0		9		0		31		0			
11:45	3		2		2		0		5		2			
Totals	114		200		127		162		241		362			
Split%	47.3		55.2		52.7		44.8							
Day Totals		314				289				603				
Day Splits		52.1				47.9								
Peak Hour	10:45		12:30		08:45		01:45		10:45		12:45			
Volume	42		36		31		33		60		64			
Factor	0.48		0.64		0.86		0.82		0.48		0.67			

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : VIA VENADO (6)

Segment : E/O VIA PAJARO

Client : STANTEC

Site: COTO DE CAZA

Date: 05/08/19

Interval	EB				WB				Combined				Day:	Wednesday
Begin	AM		PM		AM		PM		AM		PM			
12:00	0	0	6	29	0	0	12	42	0	0	18	71		
12:15	0		5		0		4		0		9			
12:30	0		5		0		12		0		17			
12:45	0		13		0		14		0		27			
01:00	0	0	4	31	0	0	6	26	0	0	10	57		
01:15	0		14		0		6		0		20			
01:30	0		5		0		8		0		13			
01:45	0		8		0		6		0		14			
02:00	0	0	5	28	0	0	4	24	0	0	9	52		
02:15	0		4		0		8		0		12			
02:30	0		11		0		6		0		17			
02:45	0		8		0		6		0		14			
03:00	0	0	5	36	0	0	6	31	0	0	11	67		
03:15	0		8		0		6		0		14			
03:30	0		11		0		9		0		20			
03:45	0		12		0		10		0		22			
04:00	0	0	9	33	0	0	5	31	0	0	14	64		
04:15	0		10		0		8		0		18			
04:30	0		8		0		10		0		18			
04:45	0		6		0		8		0		14			
05:00	0	1	7	45	0	9	12	31	0	10	19	76		
05:15	1		11		2		7		3		18			
05:30	0		16		3		4		3		20			
05:45	0		11		4		8		4		19			
06:00	1	6	7	30	2	15	6	27	3	21	13	57		
06:15	1		6		6		2		7		8			
06:30	2		10		5		13		7		23			
06:45	2		7		2		6		4		13			
07:00	1	14	3	17	8	34	0	9	9	48	3	26		
07:15	2		5		11		1		13		6			
07:30	4		6		5		2		9		8			
07:45	7		3		10		6		17		9			
08:00	6	19	5	15	10	25	1	3	16	44	6	18		
08:15	3		4		8		2		11		6			
08:30	2		5		3		0		5		5			
08:45	8		1		4		0		12		1			
09:00	2	23	4	8	8	27	0	1	10	50	4	9		
09:15	7		3		8		1		15		4			
09:30	6		0		3		0		9		0			
09:45	8		1		8		0		16		1			
10:00	3	10	1	1	10	35	0	0	13	45	1	1		
10:15	3		0		7		0		10		0			
10:30	2		0		8		0		10		0			
10:45	2		0		10		0		12		0			
11:00	5	17	0	0	5	22	0	1	10	39	0	1		
11:15	8		0		6		0		14		0			
11:30	2		0		6		0		8		0			
11:45	2		0		5		1		7		1			
Totals	90		273		167		226		257		499			
Split%	35.0		54.7		65.0		45.3							
Day Totals		363				393				756				
Day Splits		48.0				52.0								
Peak Hour	09:15		05:00		07:15		12:00		07:15		05:00			
Volume	24		45		36		42		55		76			
Factor	0.75		0.70		0.82		0.75		0.81		0.95			

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : VIA PAJARO (7)
Segment : S/O VIA VENADO
Client : STANTEC

Site: COTO DE CAZA
Date: 05/08/19

Interval	NB				SB				Combined				Day:	Wednesday
Begin	AM		PM		AM		PM		AM		PM			
12:00	0	0	6	30	0	0	14	41	0	0	20	71		
12:15	0		4		0		6		0		10			
12:30	0		9		0		13		0		22			
12:45	0		11		0		8		0		19			
01:00	1	1	5	31	0	0	7	21	1	1	12	52		
01:15	0		12		0		2		0		14			
01:30	0		6		0		7		0		13			
01:45	0		8		0		5		0		13			
02:00	0	0	8	36	0	0	4	30	0	0	12	66		
02:15	0		10		0		14		0		24			
02:30	0		9		0		7		0		16			
02:45	0		9		0		5		0		14			
03:00	0	0	10	51	1	1	8	30	1	1	18	81		
03:15	0		8		0		6		0		14			
03:30	0		15		0		6		0		21			
03:45	0		18		0		10		0		28			
04:00	0	0	7	35	0	0	6	23	0	0	13	58		
04:15	0		12		0		8		0		20			
04:30	0		10		0		3		0		13			
04:45	0		6		0		6		0		12			
05:00	0	2	8	33	0	5	10	31	0	7	18	64		
05:15	0		10		1		9		1		19			
05:30	0		8		0		6		0		14			
05:45	2		7		4		6		6		13			
06:00	1	8	6	33	0	5	6	21	1	13	12	54		
06:15	2		6		1		6		3		12			
06:30	2		14		3		6		5		20			
06:45	3		7		1		3		4		10			
07:00	7	39	6	27	3	24	4	12	10	63	10	39		
07:15	5		7		5		2		10		9			
07:30	15		9		6		0		21		9			
07:45	12		5		10		6		22		11			
08:00	10	29	4	17	2	16	2	3	12	45	6	20		
08:15	5		6		5		1		10		7			
08:30	4		7		3		0		7		7			
08:45	10		0		6		0		16		0			
09:00	4	37	3	5	2	17	2	8	6	54	5	13		
09:15	11		2		6		3		17		5			
09:30	12		0		3		0		15		0			
09:45	10		0		6		3		16		3			
10:00	10	25	1	3	6	26	1	6	16	51	2	9		
10:15	3		0		7		3		10		3			
10:30	6		2		8		2		14		4			
10:45	6		0		5		0		11		0			
11:00	5	24	0	0	5	22	1	2	10	46	1	2		
11:15	8		0		7		0		15		0			
11:30	6		0		7		0		13		0			
11:45	5		0		3		1		8		1			
Totals	165		301		116		228		281		529			
Split%	58.7		56.9		41.3		43.1							
Day Totals		466				344				810				
Day Splits		57.5				42.5								
Peak Hour	09:15		03:30		09:45		12:00		07:15		03:30			
Volume	43		52		27		41		65		82			
Factor	0.90		0.72		0.84		0.73		0.74		0.73			

Wednesday, December 11, 2019

CITY: Coto De Caza

PROJECT:

ADT1 Via Pajaro north of Via Venado.

Prepared by AimTD tel. 714 253 7888

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
0:00	0	0			12:00	14	3		
0:15	0	0			12:15	8	3		
0:30	0	0			12:30	10	7		
0:45	0	0	0	0	12:45	7	39	5	18
1:00	0	0			13:00	8	7		
1:15	0	0			13:15	6	0		
1:30	0	0			13:30	6	7		
1:45	0	0	0	0	13:45	9	29	0	14
2:00	0	0			14:00	4	0		
2:15	0	0			14:15	7	8		
2:30	0	0			14:30	13	4		
2:45	0	0	0	0	14:45	10	34	5	17
3:00	0	0			15:00	11	4		
3:15	0	0			15:15	6	6		
3:30	0	0			15:30	12	6		
3:45	0	0	0	0	15:45	10	39	7	23
4:00	0	0			16:00	8	6		
4:15	0	0			16:15	7	7		
4:30	0	0			16:30	12	8		
4:45	0	0	0	0	16:45	10	37	7	28
5:00	0	0			17:00	12	8		
5:15	0	0			17:15	11	7		
5:30	2	0			17:30	2	6		
5:45	2	4	0	0	4	17:45	2	27	4
6:00	0	0			18:00	4	7		
6:15	0	0			18:15	3	5		
6:30	8	2			18:30	7	6		
6:45	2	10	2	4	14	18:45	9	23	8
7:00	5	2			19:00	4	3		
7:15	11	0			19:15	4	0		
7:30	12	4			19:30	7	4		
7:45	12	40	8	14	54	19:45	16	31	6
8:00	10	7			20:00	14	0		
8:15	9	3			20:15	9	0		
8:30	6	3			20:30	3	2		
8:45	10	35	3	16	51	20:45	10	36	0
9:00	8	7			21:00	0	0		
9:15	10	6			21:15	3	3		
9:30	8	3			21:30	2	2		
9:45	6	32	3	19	51	21:45	2	7	0
10:00	7	6			22:00	0	0		
10:15	6	3			22:15	0	2		
10:30	8	5			22:30	0	0		
10:45	6	27	2	16	43	22:45	0	0	0
11:00	9	3			23:00	0	0		
11:15	7	4			23:15	0	0		
11:30	7	2			23:30	0	0		
11:45	8	31	3	12	43	23:45	0	0	0
Total Vol.	179	81			260	302	173		
					Daily Totals				
					NB	SB	EB	WB	Combined
					481	254			735
AM					PM				
Split %	68.8%	31.2%			63.6%	36.4%			64.6%
Peak Hour	7:15	7:30			19:30	16:15			16:30
Volume	45	22			46	30			75
P.H.F.	0.94	0.69			0.80	0.94			0.94

PROJECT:

Prepared by AimTD tel. 714 253 7888

A.22

Wednesday, December 11, 2019

CITY: Coto De Caza

PROJECT:

ADT3 Coto De Caza south of Via Peralta.

Prepared by AimTD tel. 714 253 7888

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
0:00	2	5			12:00	119	125		
0:15	8	10			12:15	132	133		
0:30	0	10			12:30	122	122		
0:45	0	10	2	27	12:45	114	487	153	533
									1020
1:00	4	5			13:00	131	140		
1:15	2	4			13:15	132	122		
1:30	0	0			13:30	126	138		
1:45	0	6	3	12	13:45	132	521	121	521
									1042
2:00	0	0			14:00	129	137		
2:15	3	0			14:15	131	108		
2:30	3	0			14:30	152	142		
2:45	2	8	0	0	14:45	162	574	163	550
									1124
3:00	0	0			15:00	131	228		
3:15	0	0			15:15	150	180		
3:30	4	0			15:30	126	178		
3:45	8	12	3	3	15:45	152	559	199	785
									1344
4:00	5	0			16:00	149	185		
4:15	6	0			16:15	160	167		
4:30	8	0			16:30	145	173		
4:45	11	30	4	4	16:45	151	605	198	723
									1328
5:00	22	3			17:00	140	185		
5:15	17	6			17:15	156	183		
5:30	39	4			17:30	129	208		
5:45	35	113	10	23	17:45	127	552	172	748
									1300
6:00	45	13			18:00	108	204		
6:15	53	21			18:15	106	176		
6:30	85	30			18:30	114	191		
6:45	113	296	42	106	18:45	105	433	175	746
									1179
7:00	149	64			19:00	69	145		
7:15	220	94			19:15	45	144		
7:30	319	111			19:30	46	103		
7:45	296	984	175	444	19:45	48	208	115	507
									715
8:00	165	138			20:00	47	85		
8:15	154	96			20:15	37	121		
8:30	154	96			20:30	48	101		
8:45	179	652	108	438	20:45	40	172	114	421
									593
9:00	147	105			21:00	22	82		
9:15	195	111			21:15	23	80		
9:30	152	101			21:30	19	72		
9:45	141	635	101	418	21:45	15	79	38	272
									351
10:00	137	91			22:00	17	43		
10:15	122	115			22:15	9	33		
10:30	106	93			22:30	11	24		
10:45	130	495	108	407	22:45	9	46	20	120
									166
11:00	126	93			23:00	10	16		
11:15	140	100			23:15	4	19		
11:30	98	116			23:30	6	12		
11:45	143	507	129	438	23:45	8	28	15	62
									90
Total Vol.	3748	2320			6068	4264	5988		10252
					Daily Totals				
					NB	SB	EB	WB	Combined
					8012	8308			16320
AM					PM				
Split %	61.8%	38.2%		37.2%	41.6%	58.4%			62.8%
Peak Hour	7:15	7:30		7:15	15:45	15:00			16:45
Volume	1000	520		1518	606	785			1350
P.H.F.	0.78	0.74		0.81	0.97	0.86			0.97

Wednesday, December 11, 2019

CITY: Coto De Caza

PROJECT:

ADT4 Coto De Caza south of Plano Trabuco.

Prepared by AimTD tel. 714 253 7888

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
0:00	2	8			12:00	132	130		
0:15	8	8			12:15	136	126		
0:30	0	10			12:30	128	128		
0:45	0	10	2	28	38	122	518	152	536
1:00	2	5			13:00	135	145		
1:15	4	5			13:15	136	120		
1:30	0	0			13:30	135	141		
1:45	0	6	3	13	19	143	549	119	525
2:00	0	0			14:00	133	141		
2:15	3	0			14:15	134	108		
2:30	2	0			14:30	156	143		
2:45	3	8	0	0	8	160	583	173	565
3:00	0	0			15:00	136	226		
3:15	0	0			15:15	157	180		
3:30	4	0			15:30	131	178		
3:45	8	12	2	2	14	163	587	205	789
4:00	5	0			16:00	154	187		
4:15	6	0			16:15	160	170		
4:30	7	0			16:30	163	174		
4:45	13	31	4	4	35	150	627	198	729
5:00	20	3			17:00	139	186		
5:15	19	6			17:15	160	179		
5:30	43	4			17:30	130	212		
5:45	38	120	10	23	143	138	567	173	750
6:00	45	14			18:00	117	210		
6:15	58	19			18:15	106	171		
6:30	90	32			18:30	114	188		
6:45	115	308	42	107	415	111	448	179	748
7:00	149	64			19:00	78	154		
7:15	226	96			19:15	45	141		
7:30	333	117			19:30	47	102		
7:45	307	1015	177	454	1469	44	214	118	515
8:00	177	133			20:00	54	88		
8:15	164	102			20:15	36	123		
8:30	164	94			20:30	46	102		
8:45	182	687	106	435	1122	41	177	113	426
9:00	153	109			21:00	25	84		
9:15	207	120			21:15	22	81		
9:30	164	95			21:30	20	73		
9:45	145	669	107	431	1100	15	82	36	274
10:00	136	86			22:00	16	43		
10:15	131	118			22:15	11	34		
10:30	110	95			22:30	11	23		
10:45	135	512	105	404	916	10	48	20	120
11:00	136	93			23:00	9	17		
11:15	141	102			23:15	6	18		
11:30	111	115			23:30	7	12		
11:45	146	534	131	441	975	8	30	15	62
Total Vol.					6254	4430	6039		10469
					Daily Totals				
					NB	SB	EB	WB	Combined
					8342	8381			16723
AM					PM				
Split %	62.6%	37.4%		37.4%	42.3%	57.7%			62.6%
Peak Hour	7:15	7:30		7:15	15:45	15:00			15:00
Volume	1043	529		1566	640	789			1376
P.H.F.	0.78	0.75		0.81	0.98	0.87			0.93

Wednesday, December 11, 2019

CITY: Coto De Caza

PROJECT:

ADT6 Plano Trabuco east of Via Pajaro.

Prepared by AimTD tel. 714 253 7888

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
0:00			0	0	12:00			23	5
0:15			2	0	12:15			8	5
0:30			0	0	12:30			12	4
0:45			0	2	12:45			6	49
1:00			0	0	13:00			13	8
1:15			0	0	13:15			20	4
1:30			0	0	13:30			16	2
1:45			0	0	13:45			18	67
2:00			0	0	14:00			10	4
2:15			0	0	14:15			30	7
2:30			0	0	14:30			22	11
2:45			0	0	14:45			35	97
3:00			0	0	15:00			22	37
3:15			0	0	15:15			29	19
3:30			0	0	15:30			30	18
3:45			0	0	15:45			33	114
4:00			0	0	16:00			26	15
4:15			0	0	16:15			24	21
4:30			0	0	16:30			31	13
4:45			2	2	16:45			23	104
5:00			0	0	17:00			26	24
5:15			3	0	17:15			22	17
5:30			0	0	17:30			10	16
5:45			3	6	17:45			21	79
6:00			6	0	18:00			15	15
6:15			4	2	18:15			6	6
6:30			5	5	18:30			9	9
6:45			10	25	18:45			15	45
7:00			16	4	19:00			13	8
7:15			32	3	19:15			11	4
7:30			68	11	19:30			10	5
7:45			77	193	19:45			14	48
8:00			8	8	20:00			18	3
8:15			13	4	20:15			17	5
8:30			15	6	20:30			8	8
8:45			12	48	20:45			18	61
9:00			13	5	21:00			7	10
9:15			12	7	21:15			6	4
9:30			17	3	21:30			3	2
9:45			11	53	21:45			0	16
10:00			6	7	22:00			5	4
10:15			12	2	22:15			0	3
10:30			9	6	22:30			0	2
10:45			17	44	22:45			3	8
11:00			15	4	23:00			2	0
11:15			16	11	23:15			0	0
11:30			8	6	23:30			0	0
11:45			14	53	23:45			2	4
Total Vol.			426	149	575			692	438

				Daily Totals			
				NB	SB	EB	WB
							Combined
						1118	587
							1705
				PM			
						61.2%	38.8%
							14:45
						118	120
							236
						0.89	0.65
							0.73

AM

Split %	74.1%	25.9%	33.7%
Peak Hour	7:00	7:30	7:00
Volume	193	61	249
P.H.F.	0.63	0.40	0.54

PM

61.2%	38.8%	66.3%
15:15	14:45	14:45
118	120	236
0.89	0.65	0.73

cs@aimtd.com

Tell. 714 253 7888

Wednesday, December 11, 2019

CITY: Coto De Caza

PROJECT:

ADT7 Coto De Caza south of Summit Ascent.

Prepared by AimTD tel. 714 253 7888

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
0:00	7	4			12:00	63	70		
0:15	3	2			12:15	89	70		
0:30	3	3			12:30	67	85		
0:45	3	16	3	12	12:45	86	305	82	307
1:00	2	2			13:00	84	91		
1:15	5	0			13:15	62	108		
1:30	0	2			13:30	55	73		
1:45	3	10	0	4	13:45	51	252	67	339
2:00	2	3			14:00	64	87		
2:15	0	0			14:15	82	108		
2:30	0	2			14:30	80	86		
2:45	0	2	0	5	14:45	105	331	82	363
3:00	0	0			15:00	122	107		
3:15	0	0			15:15	130	98		
3:30	0	0			15:30	133	100		
3:45	2	2	0	0	15:45	132	517	110	415
4:00	0	8			16:00	93	91		
4:15	3	6			16:15	136	78		
4:30	9	9			16:30	90	89		
4:45	6	18	10	33	16:45	95	414	96	354
5:00	0	17			17:00	85	80		
5:15	5	20			17:15	97	96		
5:30	6	16			17:30	106	71		
5:45	6	17	29	82	17:45	104	392	71	318
6:00	18	33			18:00	102	62		
6:15	9	44			18:15	85	57		
6:30	26	47			18:30	99	53		
6:45	36	89	60	184	18:45	89	375	61	233
7:00	41	110			19:00	83	40		
7:15	78	144			19:15	101	45		
7:30	124	145			19:30	57	39		
7:45	109	352	121	520	19:45	48	289	28	152
8:00	85	154			20:00	59	32		
8:15	100	125			20:15	60	18		
8:30	88	105			20:30	61	32		
8:45	76	349	82	466	20:45	62	242	39	121
9:00	65	105			21:00	59	35		
9:15	53	139			21:15	68	25		
9:30	68	102			21:30	40	17		
9:45	65	251	85	431	21:45	37	204	13	90
10:00	53	80			22:00	43	11		
10:15	62	84			22:15	27	11		
10:30	62	83			22:30	17	6		
10:45	76	253	73	320	22:45	13	100	11	39
11:00	80	76			23:00	10	2		
11:15	83	88			23:15	14	5		
11:30	71	67			23:30	2	5		
11:45	61	295	83	314	23:45	12	38	2	14
Total Vol.	1654	2371			4025	3459	2745		
					Daily Totals				
					NB	SB	EB	WB	Combined
					5113	5116			10229
AM					PM				
Split %	41.1%	58.9%		39.3%	55.8%	44.2%			60.7%
Peak Hour	7:30	7:15		7:30	15:00	15:00			15:00
Volume	418	564		963	517	415			932
P.H.F.	0.84	0.92		0.89	0.97	0.94			0.96

Appendix B ICU CALCULATION WORKSHEETS



LEGACY AT COTO TRAFFIC STUDY

Appendix B ICU Calculation worksheets

INTERSECTION CAPACITY UTILIZATION

Peak hour intersection volume/capacity ratios are calculated by means of intersection capacity utilization (ICU) values.

The procedure is based on the critical movement methodology and shows the amount of capacity utilized by each critical move. A capacity of 1,700 vehicles per hour (VPH) per lane is assumed together with a 0.05 clearance interval. A "de-facto" right-turn lane is used in the ICU calculation for cases where a curb lane is wide enough to separately serve both through and right-turn traffic (i.e., with a width of 19 feet from curb to outside of through-lane with parking prohibited during peak periods). Such lanes are treated the same as striped right-turn lanes during the ICU calculations, but they are denoted on the ICU calculation worksheets using the letter "d" in place of a numerical entry for right-turn lanes.

The methodology also incorporates a check for right-turn capacity utilization. Both right-turn-on-green (RTOG) and right-turn-on-red (RTOR) capacity availability are calculated and checked against the total right-turn capacity need. If insufficient capacity is available, then an adjustment is made to the total capacity utilization value. The following example shows how this adjustment is made.

Example for Northbound Right

1. Right-Turn-On-Green (RTOG)

If NBT is critical move, then:

$$\text{RTOG} = V/C (\text{NBT})$$

Otherwise,

$$\text{RTOG} = V/C (\text{NBL}) + V/C (\text{SBT}) - V/C (\text{SBL})$$

2. Right-Turn-On-Red (RTOR)

If WBL is critical move, then:

$$\text{RTOR} = V/C (\text{WBL})$$

Otherwise,

$$\text{RTOR} = V/C (\text{EBL}) + V/C (\text{WBT}) - V/C (\text{EBT})$$

3. Right-Turn Overlap Adjustment

If the northbound right is assumed to overlap with the adjacent westbound left, adjustments to the RTOG and RTOR values are made as follows:



LEGACY AT COTO TRAFFIC STUDY

Appendix B ICU Calculation worksheets

$$RTOG = RTOG + V/C \text{ (WBL)}$$

$$RTOR = RTOR - V/C \text{ (WBL)}$$

4. Total Right-Turn Capacity (RTC) Availability for NBR

$$RTC = RTOG + \text{factor} \times RTOR$$

Where factor = RTOR saturation flow factor (75%)

Right-turn adjustment is then as follows:

$$\text{Additional ICU} = V/C \text{ (NBR)} - RTC$$

A zero or negative value indicates that adequate capacity is available and no adjustment is necessary. A positive value indicates that the available RTOR and RTOG capacity does not adequately accommodate the right-turn V/C; therefore, the right-turn is essentially considered to be a critical movement. In such cases, the right-turn adjustment is noted on the ICU worksheet and it is included in the total capacity utilization value. When it is determined that a right-turn adjustment is required for more than one right-turn movement, the word "multi" is printed on the worksheet instead of an actual right-turn movement reference, and the right-turn adjustments are cumulatively added to the total capacity utilization value. In such cases, further operational evaluation is typically carried out to determine if under actual operational conditions, the critical right-turns would operate simultaneously, and therefore a right-turn adjustment credit should be applied.

Shared Lane V/C Methodology

For intersection approaches where shared usage of a lane is permitted by more than one turn movement (e.g., left/through, through/right, left/through/right), the individual turn volumes are evaluated to determine whether dedication of the shared lane is warranted to any one given turn movement. The following example demonstrates how this evaluation is carried out:

Example for Shared Left/Through Lane

1. Average Lane Volume (ALV)

$$ALV = \frac{\text{Left-Turn Volume} + \text{Through Volume}}{\text{Total Left} + \text{Through Approach Lanes (including shared lane)}}$$

2. ALV for Each Approach

$$ALV \text{ (Left)} = \frac{\text{Left-Turn Volume}}{\text{Left Approach Lanes (including shared lane)}}$$

$$ALV \text{ (Through)} = \frac{\text{Through Volume}}{\text{Through Approach Lanes (including shared lane)}}$$



LEGACY AT COTO TRAFFIC STUDY

Appendix B ICU Calculation worksheets

3. Lane Dedication is Warranted

If ALV (Left) is greater than ALV, then full dedication of the shared lane to the left-turn approach is warranted. Left-turn and through V/C ratios for this case are calculated as follows:

$$V/C \text{ (Left)} = \frac{\text{Left-Turn Volume}}{\text{Left Approach Capacity (including shared lane)}}$$

$$V/C \text{ (Through)} = \frac{\text{Through Volume}}{\text{Through Approach Capacity (excluding shared lane)}}$$

Similarly, if ALV (Through) is greater than ALV then full dedication to the through approach is warranted, and left-turn and through V/C ratios are calculated as follows:

$$V/C \text{ (Left)} = \frac{\text{Left-Turn Volume}}{\text{Left Approach Capacity (excluding shared lane)}}$$

$$V/C \text{ (Through)} = \frac{\text{Through Volume}}{\text{Through Approach Capacity (including shared lane)}}$$

4. Lane Dedication is not Warranted

If ALV (Left) and ALV (Through) are both less than ALV, the left/through lane is assumed to be truly shared and each left, left/through or through approach lane carries an evenly distributed volume of traffic equal to ALV. A combined left/through V/C ratio is calculated as follows:

$$V/C \text{ (Left/Through)} = \frac{\text{Left-Turn Volume} + \text{Through Volume}}{\text{Total Left + Through Approach Capacity (including shared lane)}}$$

This V/C (Left/Through) ratio is assigned as the V/C (Through) ratio for the critical movement analysis and ICU summary listing.

If split phasing has not been designated for this approach, the relative proportion of V/C (Through) that is attributed to the left-turn volume is estimated as follows:

If approach has more than one left-turn lane (including shared lane), then:

$$V/C \text{ (Left)} = V/C \text{ (Through)}$$

If approach has only one left-turn lane (shared lane), then:

$$V/C \text{ (Left)} = \frac{\text{Left-Turn Volume}}{\text{Single Approach Lane Capacity}}$$



LEGACY AT COTO TRAFFIC STUDY

Appendix B ICU Calculation worksheets

If this left-turn movement is determined to be a critical movement, the V/C (Left) value is posted in brackets on the ICU summary printout.

These same steps are carried out for shared through/right lanes. If full dedication of a shared through/right lane to the right-turn movement is warranted, the right-turn V/C value calculated in step three is checked against the RTOR and RTOG capacity availability if the option to include right-turns in the V/C ratio calculations is selected. If the V/C value that is determined using the shared lane methodology described here is reduced due to RTOR and RTOG capacity availability, the V/C value for the through/right lanes is posted in brackets.

When an approach contains more than one shared lane (e.g., left/through and through/right), steps one and two listed above are carried out for the three turn movements combined. Step four is carried out if dedication is not warranted for either of the shared lanes. If dedication of one of the shared lanes is warranted to one movement or another, step three is carried out for the two movements involved, and then steps one through four are repeated for the two movements involved in the other shared lane.



1. Coto de Caza Dr & Vista Del Verde

Existing						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1	1700	8	.00	2	.00
NBT	2	3400	601	.18*	357	.11*
NBR	0	0	18		24	
SBL	1	1700	204	.12*	324	.19*
SBT	2	3400	310	.09	410	.12
SBR	0	0	3		0	
EBL	0	0	10	{.01}*	1	
EBT	1	1700	2	.01	1	.00
EBR	0	0	8		4	
WBL	0	0	32		28	
WBT	1	1700	4	.26*	2	.16*
WBR	0	0	404		243	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.62		.51

Existing plus Project						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1	1700	8	.00	2	.00
NBT	2	3400	601	.18*	357	.11*
NBR	0	0	19		26	
SBL	1	1700	211	.12*	338	.20*
SBT	2	3400	310	.09	410	.12
SBR	0	0	3		0	
EBL	0	0	10	{.01}*	1	
EBT	1	1700	2	.01	1	.00
EBR	0	0	8		4	
WBL	0	0	33		29	
WBT	1	1700	4	.27*	2	.17*
WBR	0	0	416		254	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.63		.53

Cumulative No-Project						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1	1700	8	.00	2	.00
NBT	2	3400	609	.19*	362	.12*
NBR	0	0	30		42	
SBL	1	1700	216	.13*	342	.20*
SBT	2	3400	312	.09	418	.12
SBR	0	0	3		0	
EBL	0	0	10	{.01}*	1	
EBT	1	1700	2	.01	1	.00
EBR	0	0	8		4	
WBL	0	0	43		45	
WBT	1	1700	4	.27*	2	.18*
WBR	0	0	415		260	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.65		.55

Cumulative with Project						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1	1700	8	.00	2	.00
NBT	2	3400	609	.19*	362	.12*
NBR	0	0	31		44	
SBL	1	1700	223	.13*	356	.21*
SBT	2	3400	312	.09	418	.12
SBR	0	0	3		0	
EBL	0	0	10	{.01}*	1	
EBT	1	1700	2	.01	1	.00
EBR	0	0	8		4	
WBL	0	0	44		46	
WBT	1	1700	4	.28*	2	.19*
WBR	0	0	427		271	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.66		.57

2. Coto de Caza Dr & Trigo Trail

Existing						
	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	1015	.30*	570	.17
NBR	0	0	7		8	
SBL	0	0	0		0	
SBT	2	3400	525	.15	778	.23*
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1700	0	.02*	0	.01*
WBR	0	0	32		20	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.37		.29

Existing plus Project						
	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	1027	.30*	581	.17
NBR	0	0	7		8	
SBL	0	0	0		0	
SBT	2	3400	532	.16	792	.23*
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1700	0	.02*	0	.01*
WBR	0	0	32		20	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.37		.29

Cumulative No-Project						
	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	1034	.31*	592	.18
NBR	0	0	7		8	
SBL	0	0	0		0	
SBT	2	3400	539	.16	804	.24*
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1700	0	.02*	0	.01*
WBR	0	0	32		20	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.38		.30

Cumulative with Project						
	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	1046	.31*	603	.18
NBR	0	0	7		8	
SBL	0	0	0		0	
SBT	2	3400	546	.16	818	.24*
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1700	0	.02*	0	.01*
WBR	0	0	32		20	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.38		.30

3. Coto de Caza Dr & Plano Trabuco Rd

Existing						
	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	895	.31*	524	.17
NBR	0	0	152		66	
SBL	1	1700	42	.02*	39	.02
SBT	2	3400	481	.14	732	.22*
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	45	.03	46	.03*
WBT	1	1700	0	.03*	0	.02
WBR	0	0	49		32	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.41		.30

Existing plus Project						
	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	907	.31*	535	.18
NBR	0	0	152		66	
SBL	1	1700	42	.02*	39	.02
SBT	2	3400	488	.14	746	.22*
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	45	.03	46	.03*
WBT	1	1700	0	.03*	0	.02
WBR	0	0	49		32	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.41		.30

Cumulative No-Project						
	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	914	.31*	546	.18
NBR	0	0	152		66	
SBL	1	1700	42	.02*	39	.02
SBT	2	3400	495	.15	758	.22*
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	45	.03	46	.03*
WBT	1	1700	0	.03*	0	.02
WBR	0	0	49		32	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.41		.30

Cumulative with Project						
	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	926	.32*	557	.18
NBR	0	0	152		66	
SBL	1	1700	42	.02*	39	.02
SBT	2	3400	502	.15	772	.23*
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	45	.03	46	.03*
WBT	1	1700	0	.03*	0	.02
WBR	0	0	49		32	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.42		.31

4. Via Pajaro & Plano Trabuco Rd

Existing						
	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	10		9	
NBT	1	1700	0	.02*	0	.02*
NBR	0	0	25		25	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	1	1700	170	.11*	86	.06*
EBR	0	0	23		13	
WBL	0	0	10	{.01}*	18	{.01}*
WBT	1	1700	45	.03	49	.04
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.19		.14

Existing plus Project						
	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	10		9	
NBT	1	1700	0	.02*	0	.02*
NBR	0	0	26		26	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	1	1700	170	.11*	86	.06*
EBR	0	0	23		13	
WBL	0	0	10	{.01}*	19	{.01}*
WBT	1	1700	45	.03	49	.04
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.19		.14

Cumulative No-Project						
	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	10		9	
NBT	1	1700	0	.02*	0	.02*
NBR	0	0	25		25	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	1	1700	170	.11*	86	.06*
EBR	0	0	23		13	
WBL	0	0	10	{.01}*	18	{.01}*
WBT	1	1700	45	.03	49	.04
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.19		.14

Cumulative with Project						
	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	10		9	
NBT	1	1700	0	.02*	0	.02*
NBR	0	0	26		26	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	1	1700	170	.11*	86	.06*
EBR	0	0	23		13	
WBL	0	0	10	{.01}*	19	{.01}*
WBT	1	1700	45	.03	49	.04
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.19		.14

5. Via Pajaro & Via Venado

Existing						
	LANES	CAPACITY	AM PK HOUR VOL	V/C	PM PK HOUR VOL	V/C
NBL	0	0	0		0	
NBT	1	1700	18	.02*	28	.03*
NBR	0	0	20		24	
SBL	0	0	8		14	{.01}*
SBT	1	1700	14	.01	15	.02
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	14		13	
WBT	1	1700	0	.02*	0	.02*
WBR	0	0	24		16	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.09		.11

Existing plus Project						
	LANES	CAPACITY	AM PK HOUR VOL	V/C	PM PK HOUR VOL	V/C
NBL	0	0	0		0	
NBT	1	1700	18	.02*	28	.03*
NBR	0	0	20		24	
SBL	0	0	8		14	{.01}*
SBT	1	1700	14	.01	15	.02
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	14		13	
WBT	1	1700	0	.02*	0	.02*
WBR	0	0	25		16	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.09		.11

Cumulative No-Project						
	LANES	CAPACITY	AM PK HOUR VOL	V/C	PM PK HOUR VOL	V/C
NBL	0	0	0		0	
NBT	1	1700	18	.02*	28	.03*
NBR	0	0	20		24	
SBL	0	0	8		14	{.01}*
SBT	1	1700	14	.01	15	.02
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	14		13	
WBT	1	1700	0	.02*	0	.02*
WBR	0	0	24		16	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.09		.11

Cumulative with Project						
	LANES	CAPACITY	AM PK HOUR VOL	V/C	PM PK HOUR VOL	V/C
NBL	0	0	0		0	
NBT	1	1700	18	.02*	28	.03*
NBR	0	0	20		24	
SBL	0	0	8		14	{.01}*
SBT	1	1700	14	.01	15	.02
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	14		13	
WBT	1	1700	0	.02*	0	.02*
WBR	0	0	25		16	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.09		.11

6. Vista Del Verde & Via Pajaro

Existing						
	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1700	223	.14*	119	.08
NBR	0	0	17		21	
SBL	0	0	109	{.06}*	163	
SBT	1	1700	103	.12	165	.19*
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	24		27	
WBT	1	1700	0	.12*	0	.10*
WBR	0	0	180		136	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.37		.34

Existing plus Project						
	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1700	223	.14*	119	.08
NBR	0	0	17		21	
SBL	0	0	117	{.07}*	178	
SBT	1	1700	103	.13	165	.20*
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	24		27	
WBT	1	1700	0	.13*	0	.10*
WBR	0	0	193		148	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.39		.35

Cumulative No-Project						
	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1700	223	.14*	119	.08
NBR	0	0	17		21	
SBL	0	0	109	{.06}*	163	
SBT	1	1700	103	.12	165	.19*
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	24		27	
WBT	1	1700	0	.12*	0	.10*
WBR	0	0	180		136	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.37		.34

Cumulative with Project						
	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1700	223	.14*	119	.08
NBR	0	0	17		21	
SBL	0	0	117	{.07}*	178	
SBT	1	1700	103	.13	165	.20*
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	24		27	
WBT	1	1700	0	.13*	0	.10*
WBR	0	0	193		148	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.39		.35