MEMORANDUM

To:	Mr. Steve Lane Project Manager	Date:	March 26, 2014
From:	Chris Mendiara LLG, Engineers	LLG Ref:	3-10-1953
Subject:	Vista Valley Pool Center – Traffic Memorandum PDS2014-MUP-14-021, PDS2014-VAC-14-002, PDS2014-ER-14-08008		

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Linscott, Law & Greenspan, Engineers (LLG) has completed the following memorandum for the proposed *Vista Valley Pool Center* project (Project) to address County of San Diego comments on the Project's initial application.

The project site is located across from the Vista Valley Country Club (VVCC), located at 29354 Vista Valley Drive in the County San Diego. The Project is to be located along the north side of Vista Valley Drive. Existing conditions data and traffic distribution assumptions are based in part on a traffic report prepared by LLG for the "*Vista Valley Country Club Clubhouse Expansion*", which is located across from the Project.

Given the site's location and existing Levels of Service (LOS) in the study area, this analysis focuses on the following nearby locations with failing LOS during the commuter peak hours and on a daily basis:

- I-15 / Gopher Canyon Road Southbound Ramps intersection
- I-15 / Gopher Canyon Road Northbound Ramps intersection
- Gopher Canyon Road segment: between Vista Valley Drive and I-15

This memorandum assesses the traffic operations at the two intersections and one street segment detailed above to determine what if any impacts would result with development of the Project. A "without" and "with-project" comparison is included based on site-specific project trip generation developed by LLG. The following sections are included in this report:

a. Project Description
b. Project Trip Generation
c. Project Trip Distribution//Assignment
d. Significance Criteria
e. Existing Conditions
f. Existing with Project Operations; and
g. Conclusions

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A. Project Description

The project site is located across from the Vista Valley Country Club, located at 29354 Vista Valley Drive in the northern portion of San Diego County. The Project is to be located along the north side of Vista Valley Drive. Freeway access to the site will be via Interstate 15 (I-15) to the Gopher Canyon Road interchange. An existing single-family dwelling unit on the site will be maintained as a caretaker residence, and the pool and recreation facility will be developed on approximately 2.65 acres of land on the southern portion of the 9.4-acre site.

There will be swimming pool and a children's wading pool, as well as an approximately 2,500 square foot (SF) "Building A" which will house restrooms, showers, lockers, laundry facility, utility room, office and snack bar. "Building B" will be an approximately 3,400 SF multipurpose building containing offices, child game rooms, a large activity room, restrooms, and an adjoining 1,200 SF covered patio.

Based on the current project description, the following operating characteristics are expected:

- This private recreation facility is not open to the public and serves VVCC members and guests only
- Hours of operation: 7:00 AM to 9:00 PM daily
- Maximum capacity: 60 guests per day
- 2-3 daily employees (typical)[1]

Driveway access to the Project will be via Vista Valley Drive. ***Figure 1*** shows the Project's Site Plan.

B. Project Trip Generation

LLG reviewed the regional and national published trip generation guidelines and determine that no rates exist specifically for "Private Pool Center" land uses. Consideration was given to other "recreational" land uses with published rates (such as "health club"), but ultimately it was determined that development of site-specific trip generation values based on operating characteristics was most appropriate.

[1] To be conservative, the analysis is based on an atypical 15-person staff, such as for an event.

The project characteristics discussed above were used as the basis for the site-specific trip generation. It was determined that the Project would have three primary trip generating components:

1. Guests
2. Staff
3. Deliveries/Miscellaneous

LLG used the project description and engineering judgment to estimate the daily trip rate, the percent of traffic that occurs during the peak hour, and the "in:out splits" for each trip-generating component.

LLG conservatively assumed the full 60-person proposed capacity for the guests, and that every trip was a single-occupant vehicle (SOV). To derive the AM peak hour project trips, it was estimated that given the recreational/amenity type land use and location, only a few guest and miscellaneous trips would occur during the AM peak hour, although all employees would be expected to arrive between 7-9 AM. It is expected that during the 4-6 PM peak hour, slightly more guest activity would occur as guests that arrived in the early afternoon leave the site, and that all employees would depart during this time.

Generally, the majority of trip activity for the site would be expected to occur during the mid-day, off-peak hours. Again to be conservative, it was assumed approximately ½ of the employees would leave/return once during the day for lunch or errands.

Table 1 shows the projected daily and peak hour trip generation for the Project. The total project is calculated to generate 175 ADT with 22 inbound/ 2 outbound trips during the AM peak hour and 3 inbound/ 33 outbound trips during the PM peak hour. This is considered a conservative estimate of project traffic, based on the assumptions outlined above.

C. Project Trip Distribution / Assignment

Based on the project location adjacent to the Vista Valley Country Club and similarities in clientele, LLG used the same traffic distribution as was used in the *Vista Valley Country Club Clubhouse Expansion* traffic study. This distribution took into account the Project's proximity to state highways and arterials, as well as the observed distribution of exiting traffic volumes (including local trips within the Vista Valley Country Club community). ***Figure 2*** depicts the project traffic distribution, while ***Figure 3*** depicts the project traffic assignment.

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TABLE 1
SITE SPECIFIC TRIP GENERATION

Land Use	Size	Daily Trip Ends (ADTs)		AM Peak Hour				PM Peak Hour			
		Rate [a]	Volume	% of ADT	In:Out Split	Volume In	Volume Out	% of ADT	In:Out Split	Volume In	Volume Out
Pool Center Guests	60	2.0 [b]	120	5%	90:10	5	1	15%	10:90	2	16
Employees	3 [c]	3.0 [d]	45	35%	100:0	16	0	35%	0:100	0	16
Miscellaneous Trips	5	2.0	10	20%	50:50	1	1	20%	50:50	1	1
Total Trips:			175	–	–	22	2	–	–	3	33

Footnotes:

a. Site specific based on project characteristics.
b. All pool guests are assumed to arrive and depart only once per day, and drive alone.
c. The site will typically employee 2-3 staff. This analysis evaluates a worst-case workforce of fifteen, which would represent a special event. Thus, the findings of this report are conservative.
d. All employees are assumed to arrive and depart once a day, with half assumed leaving and returning once a day for lunch or personal trips.

D. Significance Criteria

The following criteria was utilized to evaluate potential significant impacts, based on the *County of San Diego Guidelines for Determining Significance—Transportation and Traffic*, dated June 30, 2009 with a second modification effective August 24, 2011. The County of San Diego's General Plan Mobility Element discusses the County's Level of Service criteria under Goal M-2. It requires that development projects provide associated road improvements necessary to achieve a level of service of "D" or higher on all Mobility Element roads except for those where a failing level of service has been accepted by the County. The County maintains a list of such roads.

For intersections operating at LOS F, the County allows a maximum contribution of project traffic to a "critical movement" of 5 trips. The critical movement is defined as a movement that is experiencing excessive queues.

In the case of the I-15/Gopher Canyon Road interchange, the potential critical movements could be the northbound and southbound off-ramp approaches, because they are the stop-controlled legs of these two intersections. If exceptional queues are identified with LOS F operations, 5 peak hour project trips would be allowed. Peak

hour project traffic contributions in excess of this value would be considered significant.

For poorly operating street segments, the same published criteria allows for a maximum project-related increase of 200 ADT to an LOS E-operating two-lane roadway, and 100 ADT to an LOS F-operating two-lane roadway. Daily project traffic contributions in excess of these values would be considered significant.

These criteria will be used to determine if the addition of Project traffic to the study area intersections and roadways would be considered significant.

E. Existing Conditions

Traffic Volumes

Existing weekday AM and PM peak hour traffic volumes at the I-15/Gopher Canyon Road interchange were commissioned by LLG and conducted on February 4, 2014.

LLG commissioned a 2014 24-hour ADT counts on Gopher Canyon Road between Vista Valley Drive and I-15. ***Table 2*** lists the existing ADT count. ***Figure 4*** illustrates the existing traffic volumes. ***Appendix A*** contains the manual peak hour and daily traffic volume count sheets.

TABLE 2
EXISTING DAILY TRAFFIC VOLUMES

Street Segment	ADT[a]	Source[b]
Gopher Canyon Road		
Vista Valley Drive to I-15	14,380	LLG

Footnotes:

a. Average Daily Traffic
b. Count commissioned by LLG, February 2014.

Operations

An analysis of existing unsignalized intersection operations at the Gopher Canyon Road/I-15 interchange was conducted utilizing methodologies found in Chapter 18 of the *2010 Highway Capacity Manual (HCM)*. ***Table 3*** shows that both intersections are calculated to operate at LOS F during the peak hours.

The calculated peak hour queues for the northbound and southbound off-ramp approaches fall well within the existing storage length of the off-ramps themselves. Since the queues are accommodated, they do not affect operations at the freeway diverge points. Thus, the queues are not deemed excessive and therefore are not considered "critical movements".

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Appendix B contains the existing analysis worksheets.

TABLE 3
EXISTING INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing	
			Delay[a]	LOS[b]
Gopher Canyon Road / Interstate 15 SB Ramps	OWSC	AM	>100.0	F
		PM	95.6	F
Gopher Canyon Road / Interstate 15 NB Ramps	OWSC	AM	59.8	F
		PM	>100.0	F

Footnotes:
a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. OWSC: One Way Stop Controlled. Minor street delay is reported

UNSIGNALIZED

DELAY/LOS THRESHOLDS

Delay	LOS
0.0 < 10.0	A
10.1 to 15.0	B
15.1 to 25.0	C
25.1 to 35.0	D
35.1 to 50.0	E
> 50.1	F

The existing street segment analysis is based upon the comparison of daily traffic volumes (ADTs) to the County of San Diego's *Roadway Classification, Level of Service, and ADT Table*. This table provides segment capacities for different street classifications, based on traffic volumes and roadway characteristics. The County of San Diego's *Roadway Classification, Level of Service, and ADT Table* is attached in ***Appendix C***.

Table 4 shows that the Gopher Canyon Road street segment between Vista Valley Drive and I-15 is calculated to currently operate at LOS E on a daily basis. This near failing LOS results from the high daily two-way traffic volumes on Gopher Canyon Road, which is currently constructed as a two-lane undivided roadway. Given the poor existing LOS, a maximum project contribution of 200 ADT could occur before a significant impact was calculated.

TABLE 4
EXISTING DAILY TRAFFIC OPERATIONS

Street Segment	Capacity (LOS E)[a]	ADT[b]	V/C[c]	LOS[d]
Gopher Canyon Road				
Vista Valley Drive to I-15	16,200	14,380	0.89	E

Footnotes:

a. Capacity based on County of San Diego roadway classifications.
b. Average Daily Traffic
c. V/C = Volume ÷ Capacity
d. Level of Service.

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F. Existing with Project Operations

Intersections

Table 5 summarizes the peak hour intersection operations with the addition of Project traffic. This tables shows that the Gopher Canyon Road interchange is calculated to continue to operate at LOS F during both the AM and PM peak hours, respectively.

Table 6 shows that the additional Project-related queuing is still maintained well within the available storage of the NB and SB ramps. As such, the peak hour limits described in *Section D* do not apply, and the delta (Δ) in Table 5 is described as "N/A" (Not Applicable).

Based on the County's criteria, ***no significant direct peak hour intersection impacts*** would be calculated. However, the Project does contribute to the already poorly operating intersections. This contribution would be considered ***a cumulative significant peak hour intersection impact*** at both locations. Payment of the appropriate Traffic Impact Fee (TIF) would mitigate this impact.

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TABLE 5
INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing		Existing + Project			Direct Impact?
			Delay[a]	LOS[b]	Delay	LOS	Δ[d]	
Gopher Canyon Road/ Interstate 15 SB Ramps	OWSC	AM	>100.0	F	>100.0	F	N/A	None
		PM	95.6	F	99.0	F	N/A	
Gopher Canyon Road/ Interstate 15 NB Ramps	OWSC	AM	59.8	F	62.0	F	N/A	None
		PM	>100.0	F	>100.0	F	N/A	

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. OWSC: One Way Stop Controlled. Minor street delay is reported
d. "Δ" denotes the project traffic added to Critical Movement for Unsignalized Intersections.

UNSIGNALIZED

DELAY/LOS THRESHOLDS

Delay	LOS
0.0 < 10.0	A
10.1 to 15.0	B
15.1 to 25.0	C
25.1 to 35.0	D
35.1 to 50.0	E
> 50.1	F

TABLE 6
INTERSECTION QUEUING OPERATIONS

Intersection	Critical Movement	Storage (feet)	Existing		Existing + Project	
			95th Percentile	Critical?	95th Percentile	Critical?
Gopher Canyon Road/ Interstate 15 SB Ramps	SB R	860	120' / 120'	No	120' / 120'	No
Gopher Canyon Road/ Interstate 15 NB Ramps	NB L	2,000	200' / 680'	No	200' / 700'	No

Footnotes:

a. 95th Percentile queue is defined as the queue length that has only a 5% probability of being exceeded.

General Notes:

XX/YY – AM / PM Queues.
Queue is assumed as 20 feet per vehicle (40' = 2 queued vehicles).

Street Segment

Table 7 summarizes the street segment operations with the addition of Project traffic. The Gopher Canyon Road segment between Vista Valley Drive and I-15 is calculated to continue to operate at LOS E on a daily basis.

The Project contribution to this LOS E-operating segment is less than the 200 ADT allowed based on the published County of San Diego significance criteria. Therefore, ***no significant direct segment impacts*** would be calculated.

Again, the contribution to the already poorly operating roadway would be considered a ***cumulative significant segment impact*** at this location. Payment of the appropriate Traffic Impact Fee (TIF) would mitigate this impact.

Figure 5 illustrates the existing with Project traffic volumes.

TABLE 7
NEAR-TERM STREET SEGMENT OPERATIONS

Street Segment	Capacity (LOS E) [a]	Existing		Existing + Project		Increase due to Project[d]	Direct Impact
		ADT[b]	LOS[c]	ADT	LOS		
Gopher Canyon Road							
Vista Valley Drive to I-15	16,200	14,380	E	14,450	E	70	None

Footnotes:

a. Capacities based on County of San Diego Roadway Classification Table.
b. Average Daily Traffic Volumes.
c. Level of Service.
d. Project attributable increase

G. Conclusions

The Project would serve a maximum of 60 guests per day between the hours of 7:00 AM to 9:00 PM daily. A typical staff of two to three people is anticipated. The worst-case Project trip generation is calculated at 175 ADT with 22 inbound/ 2 outbound trips during the AM peak hour and 3 inbound/ 33 outbound trips during the PM peak hour.

The Project will result in ***no significant direct project impacts***. However, it will contribute cumulatively to two poorly operating intersections and on roadway in the vicinity. The Project's TIF payment will mitigate these cumulative impacts.

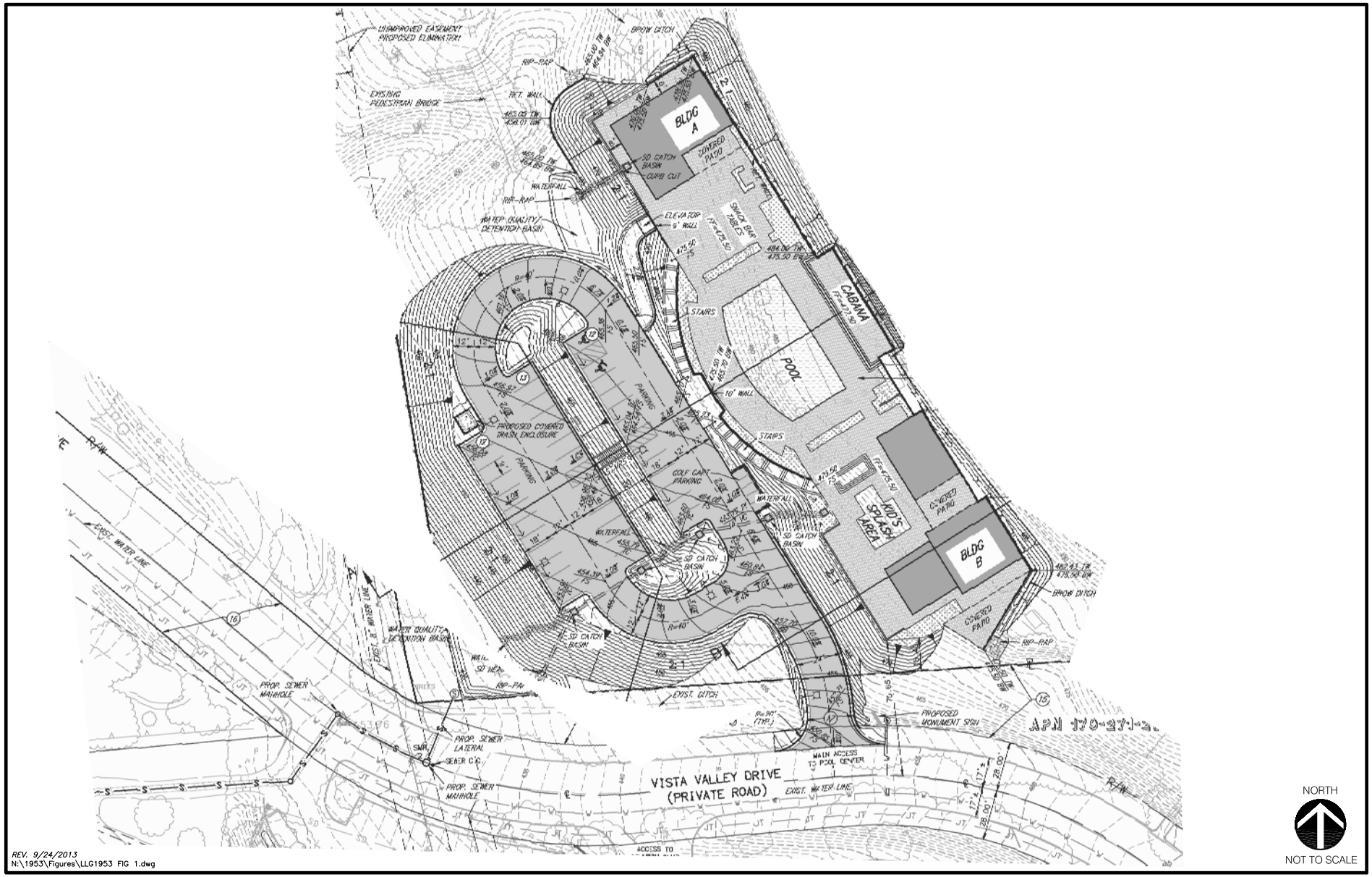

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Figure 1

Site Plan

VISTA VALLEY POOL CENTER

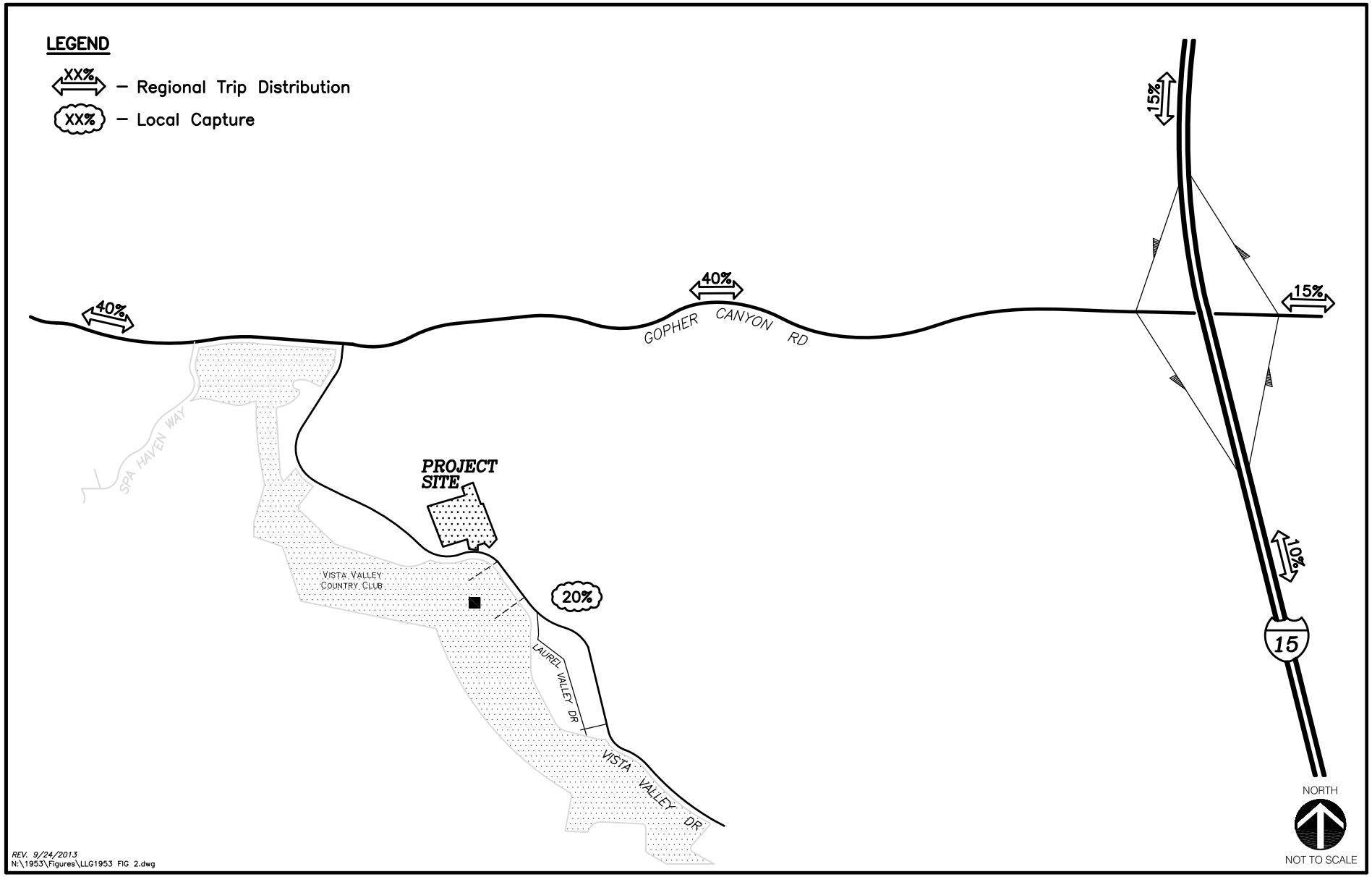

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Figure 2

Regional Distribution

VISTA VALLEY POOL CENTER

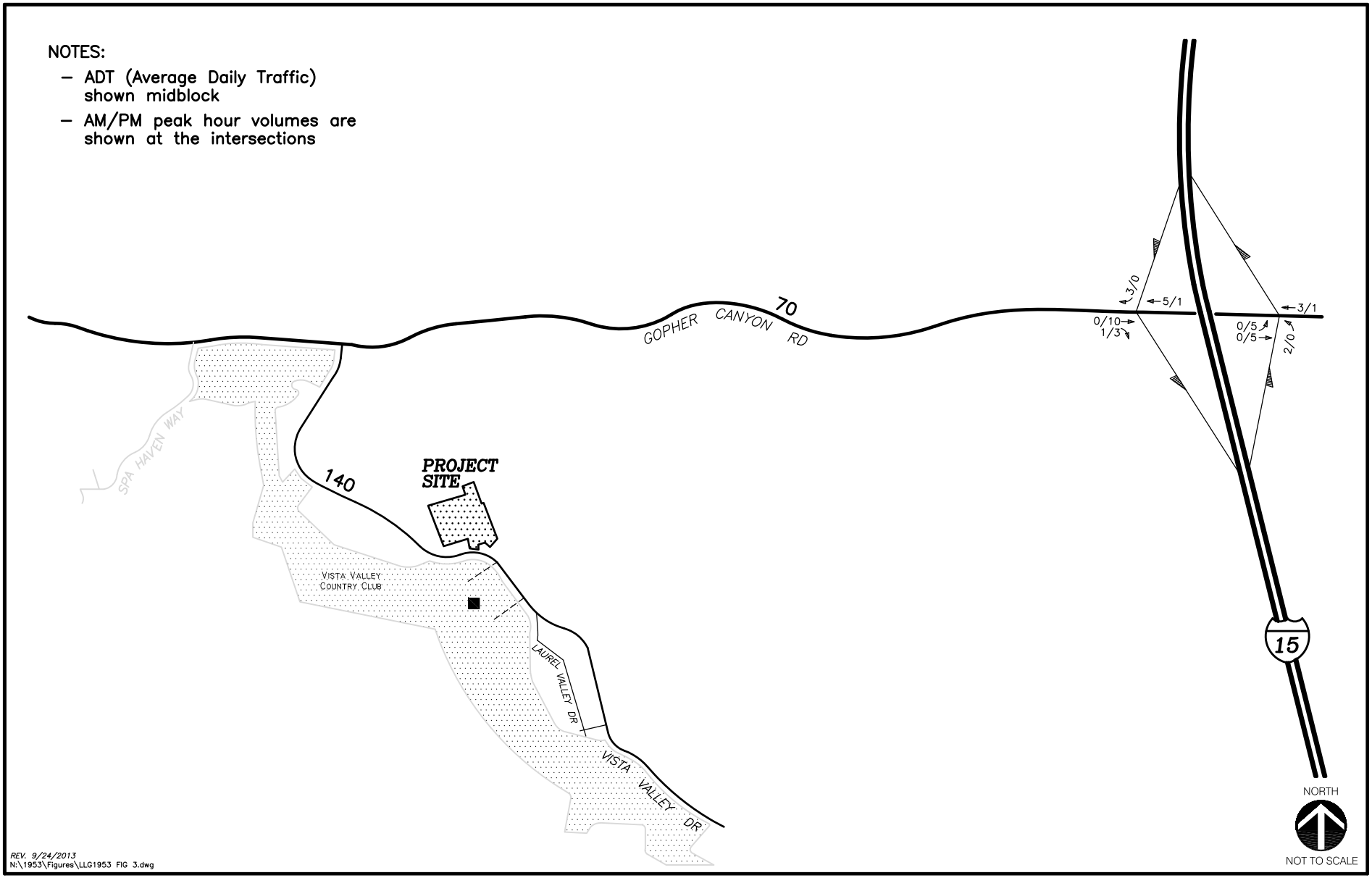

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Figure 3

Project Traffic Volumes AM/PM Peak Hours & ADT

VISTA VALLEY POOL CENTER

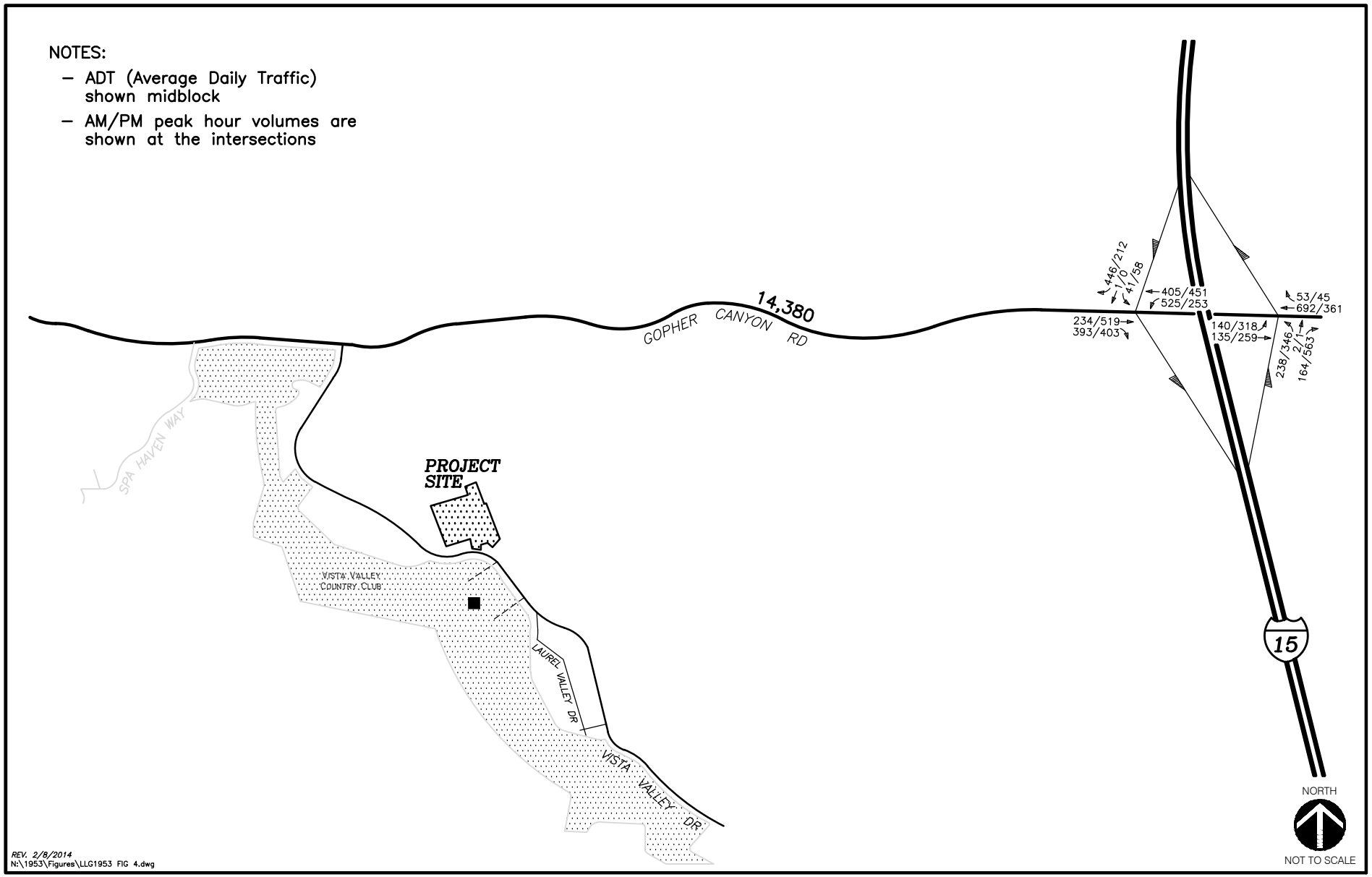

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Figure 4

Existing Traffic Volumes AM/PM Peak Hours & ADT

VISTA VALLEY POOL CENTER

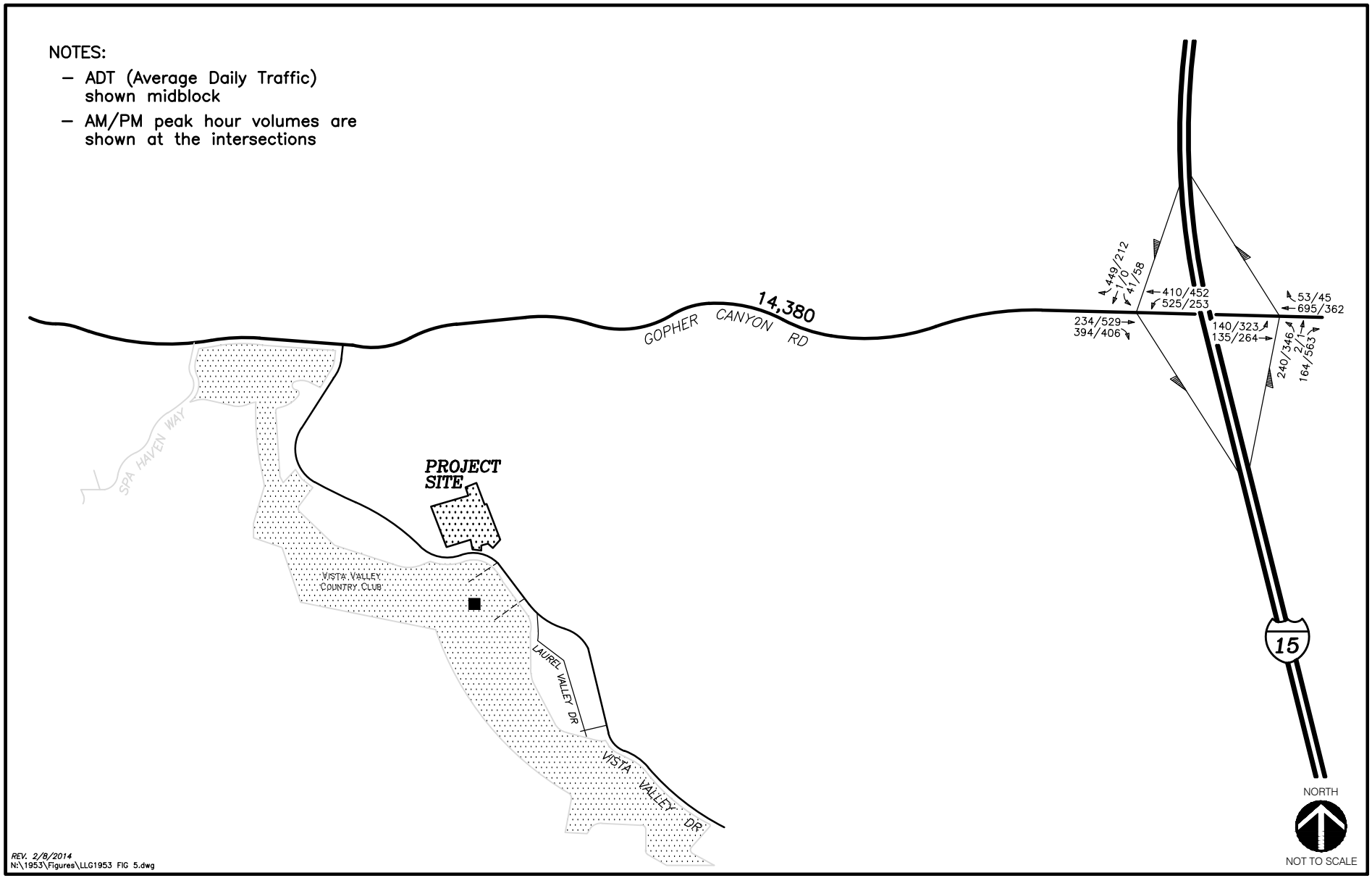

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Figure 5

Existing + Project Traffic Volumes AM/PM Peak Hours & ADT

VISTA VALLEY POOL CENTER

APPENDIX A

INTERSECTION COUNT SHEETS

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136

Location: Gopher Canyon Rd @ I-15 Northbound ramps

Date of Count: *Tuesday, February 04, 2014*

Analysts: *LV/CD*

Weather: *Sunny*

AVC Proj No: *14-0152*

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Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136

AVC

Location: Gopher Canyon Rd @ I-15 Northbound ramps

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	TOTAL
7:00 AM	0	0	0	0	160	13	58	0	40	38	25	0	334
7:15 AM	0	0	0	0	187	14	50	1	40	20	21	0	333
7:30 AM	0	0	0	0	179	13	55	0	40	42	35	0	364
7:45 AM	0	0	0	0	160	13	69	1	44	26	39	0	352
8:00 AM	0	0	0	0	156	26	49	0	40	34	26	0	331
8:15 AM	0	0	0	0	122	10	64	1	45	39	39	0	320
8:30 AM	0	0	0	0	139	14	46	0	25	35	24	0	283
8:45 AM	0	0	0	0	105	15	50	0	39	45	40	0	294
Total	0	0	0	0	1,208	118	441	3	313	279	249	0	2,611

AM Intersection Peak Hour : **7:00 AM - 8:00 AM** Intersection PHF : **0.95**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Volume	0	0	0	0	686	53	232	2	164	126	120	0	1,383
PHF	#####	#####	#####	#####	0.92	0.95	0.84	0.50	0.93	0.75	0.77	#####	0.95
Movement PHF	#DIV/0!				0.92			0.87			0.80		0.95

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	TOTAL
4:00 PM	0	0	0	0	82	19	52	2	79	74	57	0	365
4:15 PM	0	0	0	0	110	13	64	0	104	95	44	0	430
4:30 PM	0	0	0	0	96	14	66	2	97	69	70	0	414
4:45 PM	0	0	0	0	93	20	75	1	110	75	55	0	429
5:00 PM	0	0	0	0	105	14	65	0	105	79	66	0	434
5:15 PM	0	0	0	0	84	9	96	0	151	80	61	0	481
5:30 PM	0	0	0	0	85	7	97	0	160	78	70	0	497
5:45 PM	0	0	0	0	87	15	88	1	147	71	44	0	453
Total	0	0	0	0	742	111	603	6	953	621	467	0	3,503

PM Intersection Peak Hour : **5:00 PM - 6:00 PM** Intersection PHF : **0.94**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Volume	0	0	0	0	361	45	346	1	563	308	241	0	1865
PHF	#####	#####	#####	#####	0.86	0.75	0.892	0.25	0.88	0.963	0.861	#####	0.94
Movement PHF	#DIV/0!				0.85			0.89			0.93		0.94

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136

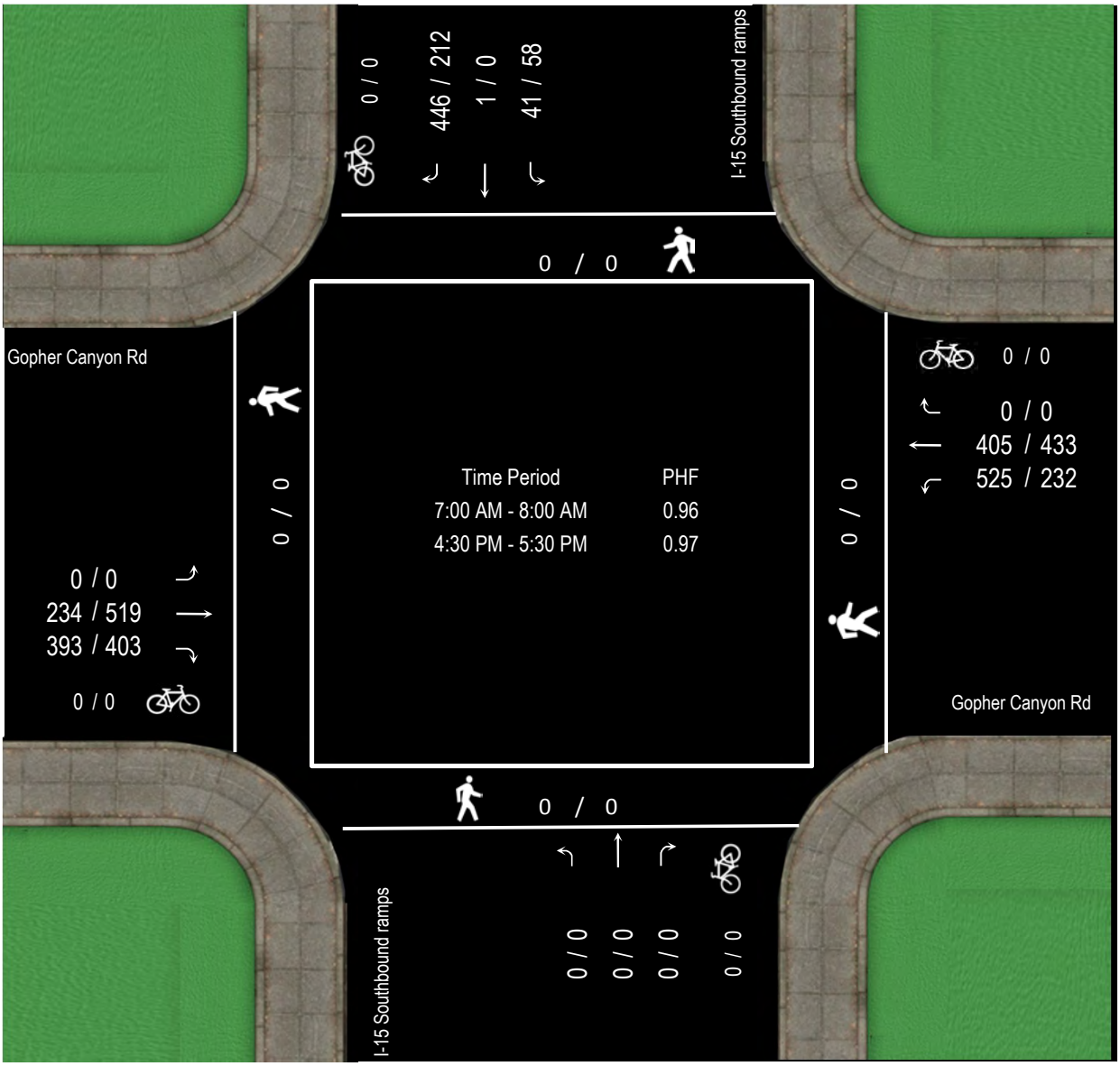
Location: Gopher Canyon Rd @ I-15 Southbound ramps

Date of Count: *Tuesday, February 04, 2014*

Analysts: *LV/CD*

Weather: *Sunny*

AVC Proj No: *14-0152*



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136

Location: Gopher Canyon Rd @ I-15 Southbound ramps

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	TOTAL
7:00 AM	5	0	121	117	108	0	0	0	0	0	56	89	496
7:15 AM	14	0	118	135	98	0	0	0	0	0	42	102	509
7:30 AM	10	1	113	145	96	0	0	0	0	0	70	100	535
7:45 AM	12	0	94	128	103	0	0	0	0	0	66	102	505
8:00 AM	6	0	72	114	96	0	0	0	0	0	66	113	467
8:15 AM	13	0	73	99	75	0	0	0	0	0	66	66	392
8:30 AM	11	0	57	109	69	0	0	0	0	0	48	65	359
8:45 AM	21	0	42	79	73	0	0	0	0	0	65	68	348
Total	92	1	690	926	718	0	0	0	0	0	479	705	3,611

AM Intersection Peak Hour : **7:00 AM - 8:00 AM** Intersection PHF : **0.96**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Volume	41	1	446	525	405	0	0	0	0	0	234	393	2,045
PHF	0.73	0.25	0.92	0.91	0.94	#####	#####	#####	#####	#####	0.84	0.96	0.96
Movement PHF		0.92			0.96			#DIV/0!			0.92		0.96

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	TOTAL
4:00 PM	15	0	57	52	85	0	0	0	0	0	115	93	417
4:15 PM	14	0	52	74	102	0	0	0	0	0	131	85	458
4:30 PM	19	0	65	61	97	0	0	0	0	0	126	98	466
4:45 PM	15	0	41	56	115	0	0	0	0	0	118	97	442
5:00 PM	9	0	61	67	100	0	0	0	0	0	144	97	478
5:15 PM	15	0	45	48	121	0	0	0	0	0	131	111	471
5:30 PM	15	0	35	52	120	0	0	0	0	0	135	65	422
5:45 PM	13	0	37	47	111	0	0	0	0	0	113	63	384
Total	115	0	393	457	851	0	0	0	0	0	1,013	709	3,538

PM Intersection Peak Hour : **4:30 PM - 5:30 PM** Intersection PHF : **0.97**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Volume	58	0	212	232	433	0	0	0	0	0	519	403	1857
PHF	0.76	#####	0.815	0.866	0.895	#####	#####	#####	#####	#####	0.901	0.908	0.97
Movement PHF		0.80			0.97			#DIV/0!			0.95		0.97

24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136

Location: Gopher Canyon Road: between Vista Valley Drive and Interstate 15

Orientation: *East-West*

Date of Count: *Tuesday, February 04, 2014*

Analysts: *DASH*

Weather: *Sunny*

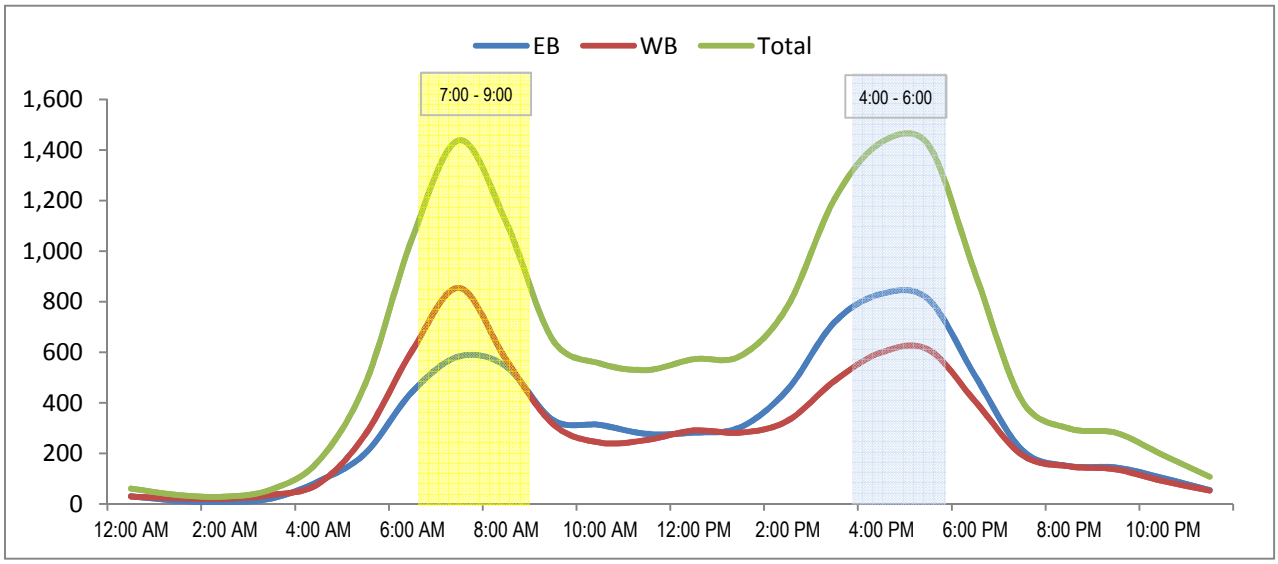
AVC Proj. No: *14-0152*

24 Hour Segment Volume			*14,375*

Time	Hourly Volume		
	EB	WB	Total
12:00 AM - 1:00 AM	31	30	61
1:00 AM - 2:00 AM	13	23	36
2:00 AM - 3:00 AM	8	21	29
3:00 AM - 4:00 AM	22	36	58
4:00 AM - 5:00 AM	90	80	170
5:00 AM - 6:00 AM	201	276	477
6:00 AM - 7:00 AM	445	608	1,053
7:00 AM - 8:00 AM	584	855	1,439
8:00 AM - 9:00 AM	544	571	1,115
9:00 AM - 10:00 AM	332	316	648
10:00 AM - 11:00 AM	313	243	556
11:00 AM - 12:00 PM	277	253	530
Total	**2,860**	**3,312**	**6,172**

Time	Hourly Volume		
	EB	WB	Total
12:00 PM - 1:00 PM	282	291	573
1:00 PM - 2:00 PM	304	282	586
2:00 PM - 3:00 PM	453	329	782
3:00 PM - 4:00 PM	719	487	1,206
4:00 PM - 5:00 PM	831	600	1,431
5:00 PM - 6:00 PM	810	611	1,421
6:00 PM - 7:00 PM	507	406	913
7:00 PM - 8:00 PM	214	194	408
8:00 PM - 9:00 PM	150	149	299
9:00 PM - 10:00 PM	145	137	282
10:00 PM - 11:00 PM	103	91	194
11:00 PM - 12:00 AM	55	53	108
Total	**4,573**	**3,630**	**8,203**

24-Hour	*EB*	*Volume*	*7,433*	*24-Hour*	*WB*	*Volume*	*6,942*



APPENDIX B

INTERSECTION ANALYSIS SHEETS

Intersection	
Int Delay, s/veh	28

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	0	234	393	525	405	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	254	427	571	440	0	0	0	0

Major/Minor	Major1			Major2		
Conflicting Flow All	440	0	0	682	0	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.12	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.218	-	-
Pot Cap-1 Maneuver	1116	-	-	911	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %		-	-		-	-
Mov Cap-1 Maneuver	1116	-	-	911	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB
HCM Control Delay, s	0	8.7
HCM LOS		

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1116	-	-	911	-	-	20	785
HCM Lane V/C Ratio	-	-	-	0.626	-	-	2.283	0.62
HCM Control Delay (s)	0	-	-	15.3	-	-	$ 991.4	16.8
HCM Lane LOS	A	-	-	C	-	-	F	C
HCM 95th %tile Q(veh)	0	-	-	4.5	-	-	6	4.4

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	41	1	448
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	0
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	45	1	487

Major/Minor	Minor2		
Conflicting Flow All	2050	2264	220
Stage 1	1582	1582	-
Stage 2	468	682	-
Critical Hdwy	6.63	6.53	6.93
Critical Hdwy Stg 1	5.83	5.53	-
Critical Hdwy Stg 2	5.43	5.53	-
Follow-up Hdwy	3.519	4.019	3.319
Pot Cap-1 Maneuver	54	41	785
Stage 1	155	168	-
Stage 2	629	449	-
Platoon blocked, %			
Mov Cap-1 Maneuver	~ 20	0	785
Mov Cap-2 Maneuver	~ 20	0	-
Stage 1	58	0	-
Stage 2	629	0	-

Approach	SB
HCM Control Delay, s	100.3
HCM LOS	F

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	18

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	140	135	0	0	692	53	238	2	164
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	152	147	0	0	752	58	259	2	178

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	810	0	0	147	0	0	827	1261	147
Stage 1	-	-	-	-	-	-	451	451	-
Stage 2	-	-	-	-	-	-	376	810	-
Critical Hdwy	4.14	-	-	4.12	-	-	6.63	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.43	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.83	5.53	-
Follow-up Hdwy	2.22	-	-	2.218	-	-	3.519	4.019	3.319
Pot Cap-1 Maneuver	812	-	-	1435	-	-	325	170	899
Stage 1	-	-	-	-	-	-	641	570	-
Stage 2	-	-	-	-	-	-	665	392	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	812	-	-	1435	-	-	264	0	899
Mov Cap-2 Maneuver	-	-	-	-	-	-	264	0	-
Stage 1	-	-	-	-	-	-	521	0	-
Stage 2	-	-	-	-	-	-	665	0	-

Approach	EB	WB	NB
HCM Control Delay, s	5.3	0	59.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	264	899	812	-	-	1435	-	-
HCM Lane V/C Ratio	0.988	0.198	0.187	-	-	-	-	-
HCM Control Delay (s)	93.9	10	10.5	-	-	0	-	-
HCM Lane LOS	F	B	B	-	-	A	-	-
HCM 95th %tile Q(veh)	9.7	0.7	0.7	-	-	0	-	-

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	0	0	0

Major/Minor
Conflicting Flow All
Stage 1
Stage 2
Critical Hdwy
Critical Hdwy Stg 1
Critical Hdwy Stg 2
Follow-up Hdwy
Pot Cap-1 Maneuver
Stage 1
Stage 2
Platoon blocked, %
Mov Cap-1 Maneuver
Mov Cap-2 Maneuver
Stage 1
Stage 2

Approach
HCM Control Delay, s
HCM LOS

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	15.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	0	519	403	253	451	3	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	564	438	275	490	3	0	0	0

Major/Minor	Major1			Major2		
Conflicting Flow All	493	0	0	1002	0	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.12	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.218	-	-
Pot Cap-1 Maneuver	1067	-	-	691	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %		-	-		-	-
Mov Cap-1 Maneuver	1067	-	-	691	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB
HCM Control Delay, s	0	4.9
HCM LOS		

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1067	-	-	691	-	-	46	754
HCM Lane V/C Ratio	-	-	-	0.398	-	-	1.371	0.306
HCM Control Delay (s)	0	-	-	13.6	-	-	$ 401.6	11.9
HCM Lane LOS	A	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	0	-	-	1.9	-	-	6	1.3

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	58	0	212
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	25
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	63	0	230

Major/Minor	Minor2		
Conflicting Flow All	1825	2044	247
Stage 1	1042	1042	-
Stage 2	783	1002	-
Critical Hdwy	6.63	6.53	6.93
Critical Hdwy Stg 1	5.83	5.53	-
Critical Hdwy Stg 2	5.43	5.53	-
Follow-up Hdwy	3.519	4.019	3.319
Pot Cap-1 Maneuver	76	56	754
Stage 1	302	306	-
Stage 2	449	319	-
Platoon blocked, %			
Mov Cap-1 Maneuver	~ 46	0	754
Mov Cap-2 Maneuver	~ 46	0	-
Stage 1	182	0	-
Stage 2	449	0	-

Approach	SB
HCM Control Delay, s	95.6
HCM LOS	F

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	167.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	318	259	0	0	361	45	346	1	563
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	346	282	0	0	392	49	376	1	612

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	441	0	0	282	0	0	1169	1414	282
Stage 1	-	-	-	-	-	-	973	973	-
Stage 2	-	-	-	-	-	-	196	441	-
Critical Hdwy	4.14	-	-	4.12	-	-	6.63	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.43	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.83	5.53	-
Follow-up Hdwy	2.22	-	-	2.218	-	-	3.519	4.019	3.319
Pot Cap-1 Maneuver	1115	-	-	1280	-	-	~ 199	137	756
Stage 1	-	-	-	-	-	-	~ 365	329	-
Stage 2	-	-	-	-	-	-	818	576	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1115	-	-	1280	-	-	~ 137	0	756
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 137	0	-
Stage 1	-	-	-	-	-	-	~ 252	0	-
Stage 2	-	-	-	-	-	-	818	0	-

Approach	EB	WB	NB
HCM Control Delay, s	5.3	0	$ 344.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	137	756	1115	-	-	1280	-	-
HCM Lane V/C Ratio	2.753	0.809	0.31	-	-	-	-	-
HCM Control Delay (s)	$ 859.5	26.7	9.7	-	-	0	-	-
HCM Lane LOS	F	D	A	-	-	A	-	-
HCM 95th %tile Q(veh)	34.2	8.6	1.3	-	-	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	0	0	0

Major/Minor
Conflicting Flow All
Stage 1
Stage 2
Critical Hdwy
Critical Hdwy Stg 1
Critical Hdwy Stg 2
Follow-up Hdwy
Pot Cap-1 Maneuver
Stage 1
Stage 2
Platoon blocked, %
Mov Cap-1 Maneuver
Mov Cap-2 Maneuver
Stage 1
Stage 2

Approach
HCM Control Delay, s
HCM LOS

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	27.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	0	234	394	525	410	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	254	428	571	446	0	0	0	0

Major/Minor	Major1			Major2		
Conflicting Flow All	446	0	0	683	0	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.12	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.218	-	-
Pot Cap-1 Maneuver	1111	-	-	910	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %		-	-		-	-
Mov Cap-1 Maneuver	1111	-	-	910	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB
HCM Control Delay, s	0	8.6
HCM LOS		

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1111	-	-	910	-	-	20	781
HCM Lane V/C Ratio	-	-	-	0.627	-	-	2.283	0.628
HCM Control Delay (s)	0	-	-	15.4	-	-	$ 991.4	17.1
HCM Lane LOS	A	-	-	C	-	-	F	C
HCM 95th %tile Q(veh)	0	-	-	4.6	-	-	6	4.5

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	41	1	451
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	25
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	45	1	490

Major/Minor	Minor2		
Conflicting Flow All	2055	2270	223
Stage 1	1587	1587	-
Stage 2	468	683	-
Critical Hdwy	6.63	6.53	6.93
Critical Hdwy Stg 1	5.83	5.53	-
Critical Hdwy Stg 2	5.43	5.53	-
Follow-up Hdwy	3.519	4.019	3.319
Pot Cap-1 Maneuver	54	40	781
Stage 1	154	167	-
Stage 2	629	448	-
Platoon blocked, %			
Mov Cap-1 Maneuver	~ 20	0	781
Mov Cap-2 Maneuver	~ 20	0	-
Stage 1	57	0	-
Stage 2	629	0	-

Approach	SB
HCM Control Delay, s	100.1
HCM LOS	F

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	18.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	140	135	0	0	695	53	240	2	164
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	152	147	0	0	755	58	261	2	178

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	813	0	0	147	0	0	829	1264	147
Stage 1	-	-	-	-	-	-	451	451	-
Stage 2	-	-	-	-	-	-	378	813	-
Critical Hdwy	4.14	-	-	4.12	-	-	6.63	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.43	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.83	5.53	-
Follow-up Hdwy	2.22	-	-	2.218	-	-	3.519	4.019	3.319
Pot Cap-1 Maneuver	810	-	-	1435	-	-	324	169	899
Stage 1	-	-	-	-	-	-	641	570	-
Stage 2	-	-	-	-	-	-	663	391	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	810	-	-	1435	-	-	263	0	899
Mov Cap-2 Maneuver	-	-	-	-	-	-	263	0	-
Stage 1	-	-	-	-	-	-	521	0	-
Stage 2	-	-	-	-	-	-	663	0	-

Approach	EB	WB	NB
HCM Control Delay, s	5.3	0	62
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	263	899	810	-	-	1435	-	-
HCM Lane V/C Ratio	1	0.198	0.188	-	-	-	-	-
HCM Control Delay (s)	97.2	10	10.5	-	-	0	-	-
HCM Lane LOS	F	B	B	-	-	A	-	-
HCM 95th %tile Q(veh)	9.9	0.7	0.7	-	-	0	-	-

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	0	0	0

Major/Minor
Conflicting Flow All
Stage 1
Stage 2
Critical Hdwy
Critical Hdwy Stg 1
Critical Hdwy Stg 2
Follow-up Hdwy
Pot Cap-1 Maneuver
Stage 1
Stage 2
Platoon blocked, %
Mov Cap-1 Maneuver
Mov Cap-2 Maneuver
Stage 1
Stage 2

Approach
HCM Control Delay, s
HCM LOS

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	15.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	0	529	406	253	452	3	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	575	441	275	491	3	0	0	0

Major/Minor	Major1			Major2		
Conflicting Flow All	495	0	0	1016	0	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.12	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.218	-	-
Pot Cap-1 Maneuver	1065	-	-	683	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %		-	-		-	-
Mov Cap-1 Maneuver	1065	-	-	683	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB
HCM Control Delay, s	0	4.9
HCM LOS		

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1065	-	-	683	-	-	45	754
HCM Lane V/C Ratio	-	-	-	0.403	-	-	1.401	0.306
HCM Control Delay (s)	0	-	-	13.8	-	-	$ 417.2	11.9
HCM Lane LOS	A	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	0	-	-	1.9	-	-	6.1	1.3

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	58	0	212
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	25
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	63	0	230

Major/Minor	Minor2		
Conflicting Flow All	1839	2059	247
Stage 1	1043	1043	-
Stage 2	796	1016	-
Critical Hdwy	6.63	6.53	6.93
Critical Hdwy Stg 1	5.83	5.53	-
Critical Hdwy Stg 2	5.43	5.53	-
Follow-up Hdwy	3.519	4.019	3.319
Pot Cap-1 Maneuver	75	55	754
Stage 1	301	305	-
Stage 2	443	315	-
Platoon blocked, %			
Mov Cap-1 Maneuver	~ 45	0	754
Mov Cap-2 Maneuver	~ 45	0	-
Stage 1	180	0	-
Stage 2	443	0	-

Approach	SB
HCM Control Delay, s	99
HCM LOS	F

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	171.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	323	264	0	0	362	45	346	1	563
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	351	287	0	0	393	49	376	1	612

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	442	0	0	287	0	0	1186	1431	287
Stage 1	-	-	-	-	-	-	989	989	-
Stage 2	-	-	-	-	-	-	197	442	-
Critical Hdwy	4.14	-	-	4.12	-	-	6.63	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.43	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.83	5.53	-
Follow-up Hdwy	2.22	-	-	2.218	-	-	3.519	4.019	3.319
Pot Cap-1 Maneuver	1114	-	-	1275	-	-	~ 195	134	751
Stage 1	-	-	-	-	-	-	~ 359	324	-
Stage 2	-	-	-	-	-	-	817	576	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1114	-	-	1275	-	-	~ 134	0	751
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 134	0	-
Stage 1	-	-	-	-	-	-	~ 246	0	-
Stage 2	-	-	-	-	-	-	817	0	-

Approach	EB	WB	NB
HCM Control Delay, s	5.3	0	$ 355.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	134	751	1114	-	-	1275	-	-
HCM Lane V/C Ratio	2.815	0.815	0.315	-	-	-	-	-
HCM Control Delay (s)	$ 888.2	27.2	9.7	-	-	0	-	-
HCM Lane LOS	F	D	A	-	-	A	-	-
HCM 95th %tile Q(veh)	34.5	8.8	1.4	-	-	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	0	0	0

Major/Minor
Conflicting Flow All
Stage 1
Stage 2
Critical Hdwy
Critical Hdwy Stg 1
Critical Hdwy Stg 2
Follow-up Hdwy
Pot Cap-1 Maneuver
Stage 1
Stage 2
Platoon blocked, %
Mov Cap-1 Maneuver
Mov Cap-2 Maneuver
Stage 1
Stage 2

Approach
HCM Control Delay, s
HCM LOS

Minor Lane/Major Mvmt

APPENDIX C

COUNTY OF SAN DIEGO ROADWAY CLASSIFICATION TABLE

TABLE 1
AVERAGE DAILY VEHICLE TRIPS*

CIRCULATION ELEMENT ROADS			LEVELS OF SERVICE				
Road Classification		# of Travel Lanes	A	B	C	D	E
Expressway (6.1)		6	<36,000	<54,000	<70,000	<86,000	<108,000
Prime Arterial (6.2)		6	<22,200	<37,000	<44,600	<50,000	<57,000
Major Road	(4.1A)	4	<14,800	<24,700	<29,600	<33,400	<37,000
	w/ Intermittent Turn Lanes (4.1B)	4	<13,700	<22,800	<27,400	<30,800	<34,200
Collector		4	<13,700	<22,800	<27,400	<30,800	<34,200
Boulevard	w/ Raised Median (4.2A)	4	<18,000	<21,000	<24,000	<27,000	<30,000
	w/ Intermittent Turn Lanes (4.2B)	4	<16,800	<19,600	<22,500	<25,000	<28,000
Town Collector		2	<3,000	<6,000	<9,500	<13,500	<19,000
Community Collector	w/ Raised Median (2.1A)	2	<10,000	<11,700	<13,400	<15,000	<19,000
	w/ Continuous Left Turn Lane (2.1B)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	w/ Intermittent Turn Lane (2.1C)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	w/ Passing Lane (2.1D)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	No Median (2.1E)	2	<1,900	<4,100	<7,100	<10,900	<16,200
Light Collector	w/ Raised Median (2.2A)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	w/ Continuous Left Turn Lane (2.2B)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	w/ Intermittent Turn Lane (2.2C)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	w/ Passing Lane (2.2D)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	No Median (2.2E)	2	<1,900	<4,100	<7,100	<10,900	<16,200
		2	<1,900	<4,100	<7,100	<10,900	<16,200
	w/ Reduced Shoulder (2.2F)	2	<5,800	<6,800	<7,800	<8,700	<9,700
Rural Collector		2	<1,900	<4,100	<7,100	<10,900	<16,200
Rural Light Collector		2	<1,900	<4,100	<7,100	<10,900	<16,200
Rural Mountain		2	<1,900	<4,100	<7,100	<10,900	<16,200
Recreational Parkway		2	<1,900	<4,100	<7,100	<10,900	<16,200
Minor Collector	w/ Raised Median (2.3A)	2	<3,000	<6,000	<7,000	<8,000	<9,000
	w/ Intermittent Turn Lane (2.3B)	2	<3,000	<6,000	<7,000	<8,000	<9,000
	No Median (2.3C)	2	<1,900	<4,100	<6,000	<7,000	<8,000
NON-CIRCULATION ELEMENT ROADS**			LEVELS OF SERVICE				
Residential Collector		2	-	-	<4,500	-	-
Rural Residential Collector***		2	-	-	<4,500	-	-
Residential Road		2	-	-	<1,500	-	-
Rural Residential Road***		2	-	-	<1,500	-	-
Residential Cul-de-Sac or Loop Road		2	-	-	<200	-	-

* The values shown are subject to adjustment based on the geometry of the roadway, side frictions, and other relevant factors as determined by the Director, Department of Public Works.

** Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

*** Rural Residential Collectors and Rural Residential Roads are intended to serve areas with lot sizes of 2 acres or more which do not have a demand for on-street parking. On-street parking is not assured for these cross sections. Additional right-of-way is needed if on-street parking is in paved area.

**** See Tables 2A and 2B for roadway surfacing and right-of-way widths.