Appendix "L"

Focused Traffic Study for TTM 39011

TECHNICAL MEMORANDUM

DATE: July 16, 2025
TO: Mitch Adkison, Adkan Engineers
FROM: Charlene So, Urban Crossroads, Inc.
JOB NO: 16144-02 FTA Memo

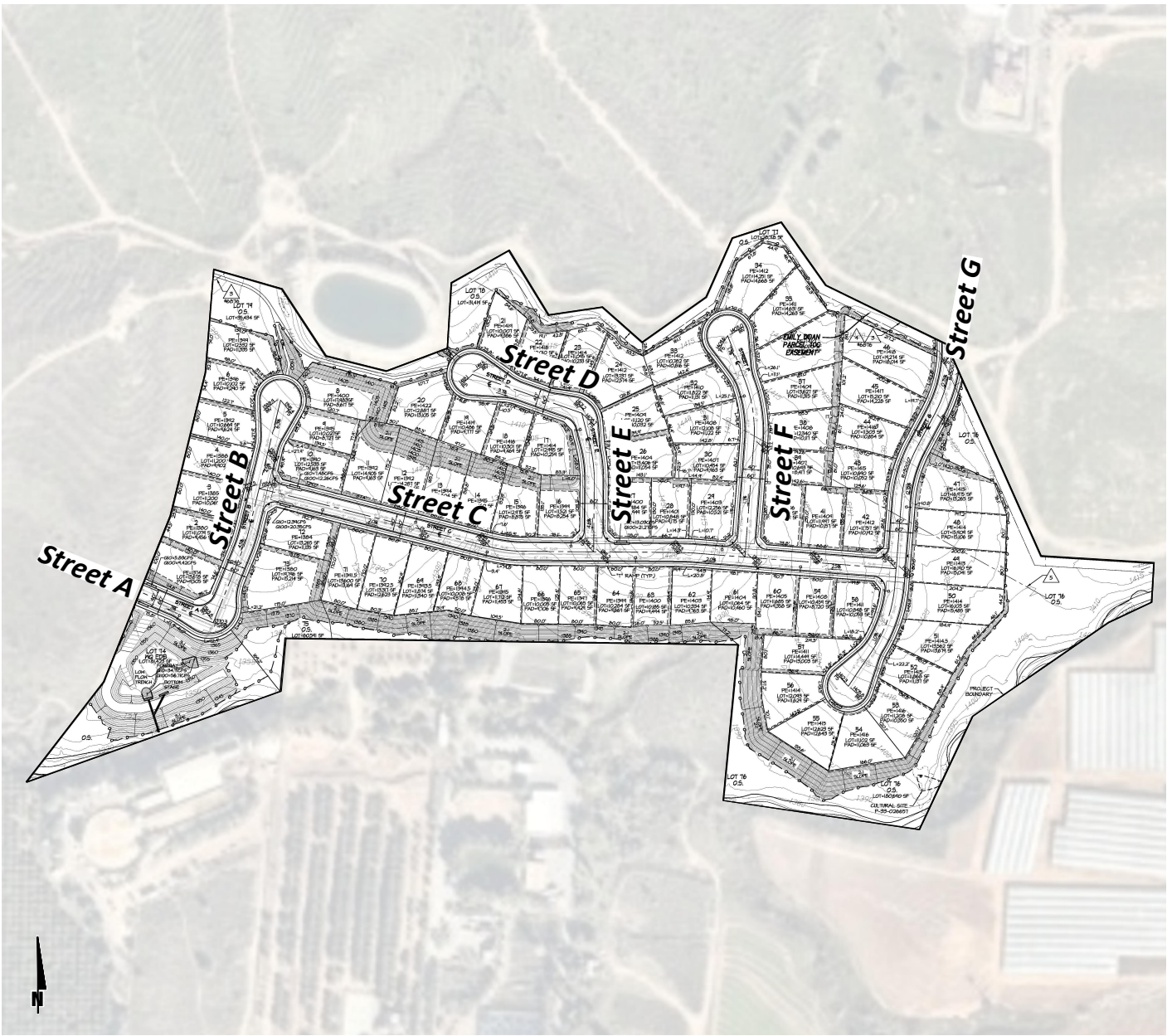
SUBJECT: HG5 FOCUSED TRAFFIC ASSESSMENT

Urban Crossroads, Inc. has prepared the following Focused Traffic Assessment (FTA) for the HG5 development (Project), which is located north of El Sobrante Road, east of McAllister Street and west of Mockingbird Canyon Road in the County of Riverside. The following FTA has been prepared in accordance with the County of Riverside's Transportation Analysis Guidelines for Level of Service Vehicle Miles Traveled (December 2020).

PROJECT OVERVIEW

The proposed site is approximately 36.5 acres and includes the development of 73 single-family detached residential dwelling units. A preliminary site plan for the Project is shown in Exhibit 1. Primary access will be accommodated via a new connection to El Sobrante Road (via Street A, now Highland Grove Road) and a new connection onto Travertine Drive to the north. Both Street A at El Sobrante Road and at Travertine Drive are assumed to allow for full access (no left turn restrictions). The Project is anticipated to have an Opening Year of 2027.

EXHIBIT 1 : SITE PLAN



ASSUMPTIONS AND METHODOLOGIES

This section provides a review of the assumptions and methodologies utilized for this FTA, consistent with County of Riverside Guidelines.

SIGNALIZED INTERSECTION OPERATIONS ANALYSIS METHODOLOGY

The County of Riverside requires signalized intersection operations analysis based on the methodology described in the Highway Capacity Manual (HCM). Intersection Level of Service (LOS) operations are based on an intersection's average control delay. Control delays include initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. For signalized intersections, LOS is related to the average control delay per vehicle and is correlated to a LOS designation.

UNSIGNALIZED INTERSECTION OPERATIONS ANALYSIS METHODOLOGY

The LOS rating is based on the weighted average control delay expressed in seconds per vehicle. At two-way or side-street stop-controlled intersections, LOS is calculated for each controlled movement and for the left turn movement from the major street, as well as for the intersection as a whole. Delay for the intersection is reported for the worst individual movement at a two-way stop-controlled intersection.

PEAK HOUR FACTOR

The peak hour traffic volumes have been adjusted using a peak hour factor (PHF) to reflect peak 15-minute volumes. Customary practice for LOS analysis is to use a peak 15-minute rate of flow. However, flow rates are typically expressed in vehicles per hour. The PHF is the relationship between the peak 15-minute flow rate and the full hourly volume (e.g., PHF = [Hourly Volume] / [4 x Peak 15-minute Flow Rate]). The use of a 15-minute PHF produces a more detailed analysis as compared to analyzing vehicles per hour. Existing PHFs have been used for all analysis scenarios.

LEVEL OF SERVICE (LOS) CRITERIA

The County of Riverside General Plan Policy C 2.1 states that a minimum acceptable LOS of D is utilized for projects within the Lake Mathews/Woodcrest Area Plan. Therefore, any intersection operating at LOS E or F will be considered deficient for the purposes of this FTA.

PROJECT TRAFFIC

This section presents the traffic volumes estimated to be generated by the Project, as well as the Project's trip assignment onto the study area roadway network.

PROJECT TRIP GENERATION

Trip generation represents the amount of traffic which is both attracted to and produced by a development. Determining traffic generation for a specific project is therefore based upon forecasting the amount of traffic that is expected to be both attracted to and produced by the specific land uses being proposed for a given development.

In order to estimate the generated traffic volumes of the proposed Project, trip generation statistics published in the ITE Trip Generation Manual (11th Edition, 2021) for Single Family Detached

Residential (ITE Land Use Code 210) was used to calculate the trip generation. The trip generation rates are summarized in Table 1.

TABLE 1: TRIP GENERATION RATES

Land Use[1]	Units[2]	ITE LU Code	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Single Family Detached Residential	DU	210	0.18	0.52	0.70	0.59	0.35	0.94	9.43

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Eleventh Edition (2021).

[2] DU = Dwelling Units

The proposed Project trip generation summary is shown in Table 2. As shown in Table 2, the proposed Project is anticipated to generate approximately 632 average daily trips (ADT) with 47 (12 in, 35 out) AM peak hour trips and 63 (40 in, 23 out) PM peak hour trips. The AM peak hour occurs between 7-9 AM and the PM peak hour occurs between 4-6 PM.

TABLE 2: PROJECT TRIP GENERATION

Land Use	Quantity	Units[1]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
HG5 Project	73	DU	13	38	51	43	25	68	688

[1] DU = Dwelling Units

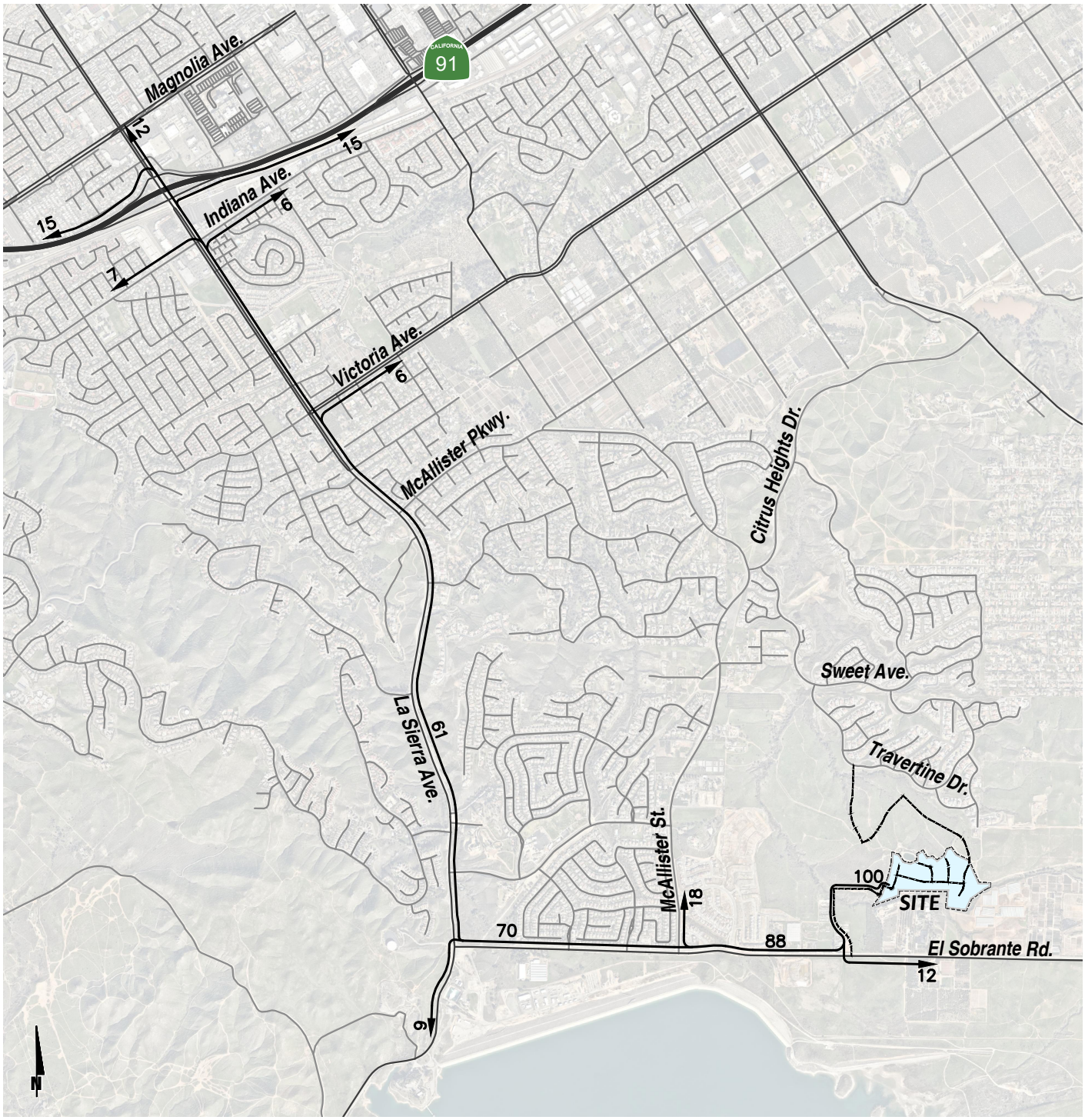
PROJECT TRIP DISTRIBUTION

The Project trip distribution represents the directional orientation of traffic to and from the Project site. Trip distribution is the process of identifying the probable destinations, directions or traffic routes that will be utilized by Project traffic. The potential interaction between the planned land uses and surrounding regional access routes are considered, to identify the route where the Project traffic would distribute. Exhibit 2 shows the Project's trip distribution patterns which is consistent with other tract maps evaluated in the vicinity of the Project.

PROJECT TRIP ASSIGNMENT

The assignment of traffic from the Project area to the adjoining roadway system is based upon the Project trip generation, trip distribution, and the arterial highway and local street system improvements that would be in place by the time of initial occupancy of the Project. Based on the identified Project traffic generation and trip distribution patterns, Project weekday ADT and peak hour intersection turning movement volumes are shown on Exhibit 3.

EXHIBIT 2 : PROJECT TRIP DISTRIBUTION

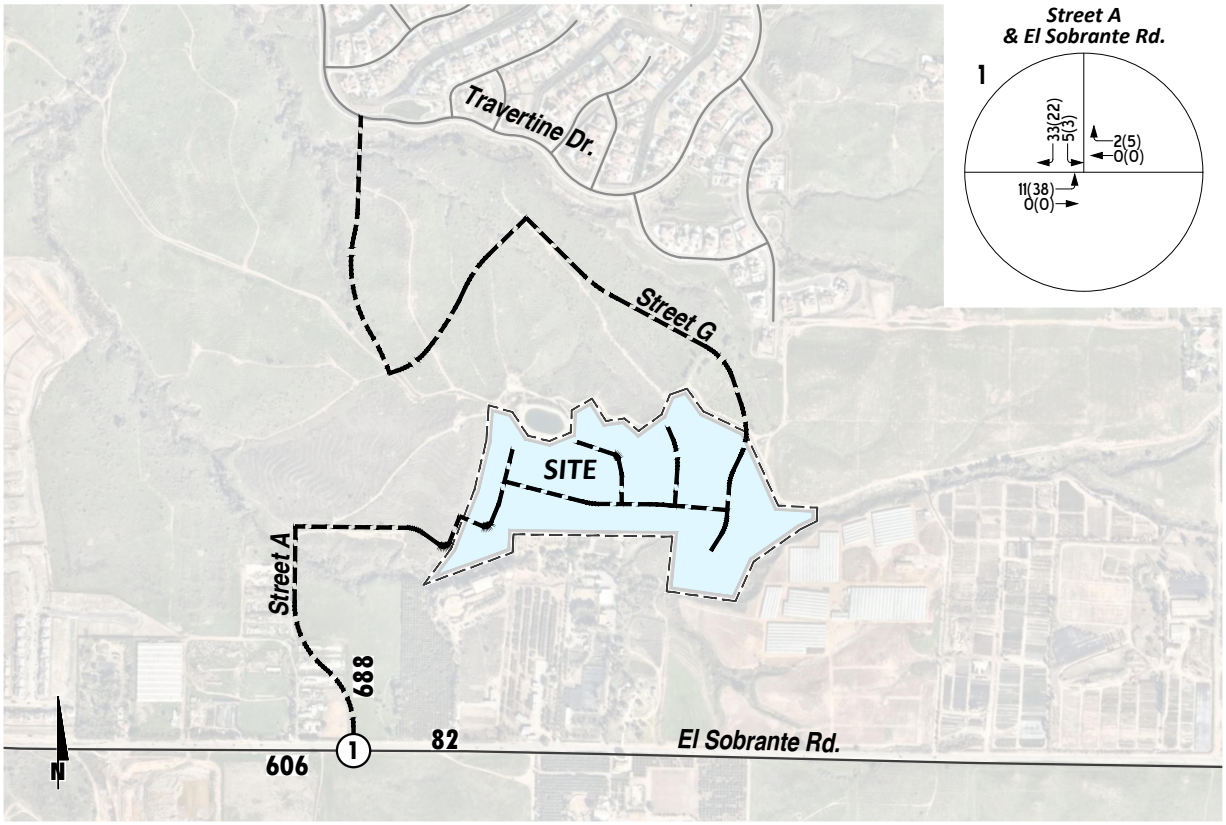


LEGEND:

10 = *Percent To/From Project*

→ = *Trip Distribution*

EXHIBIT 3 : PROJECT ONLY VOLUMES



LEGEND:

(0) = *Future Intersection Analysis Location*

00(00) = *Peak Hour Volume AM(PM)*

00 = *Average Daily Traffic (ADT)*

ANALYSIS LOCATIONS

STUDY INTERSECTION

The Project is anticipated to generate fewer than 100 peak hour trips and would contribute fewer than 50 peak hour trips to any study area intersection beyond the proposed access points. For the purposes of this FTA, the study area evaluated is depicted in Exhibit 4. The study area intersection includes the intersection of Street A at El Sobrante Road.

The study area intersection will be evaluated using the Highway Capacity Manual (HCM) 7th Edition analysis methodology (Synchro 12 Software).

EXISTING (2025) CONDITIONS

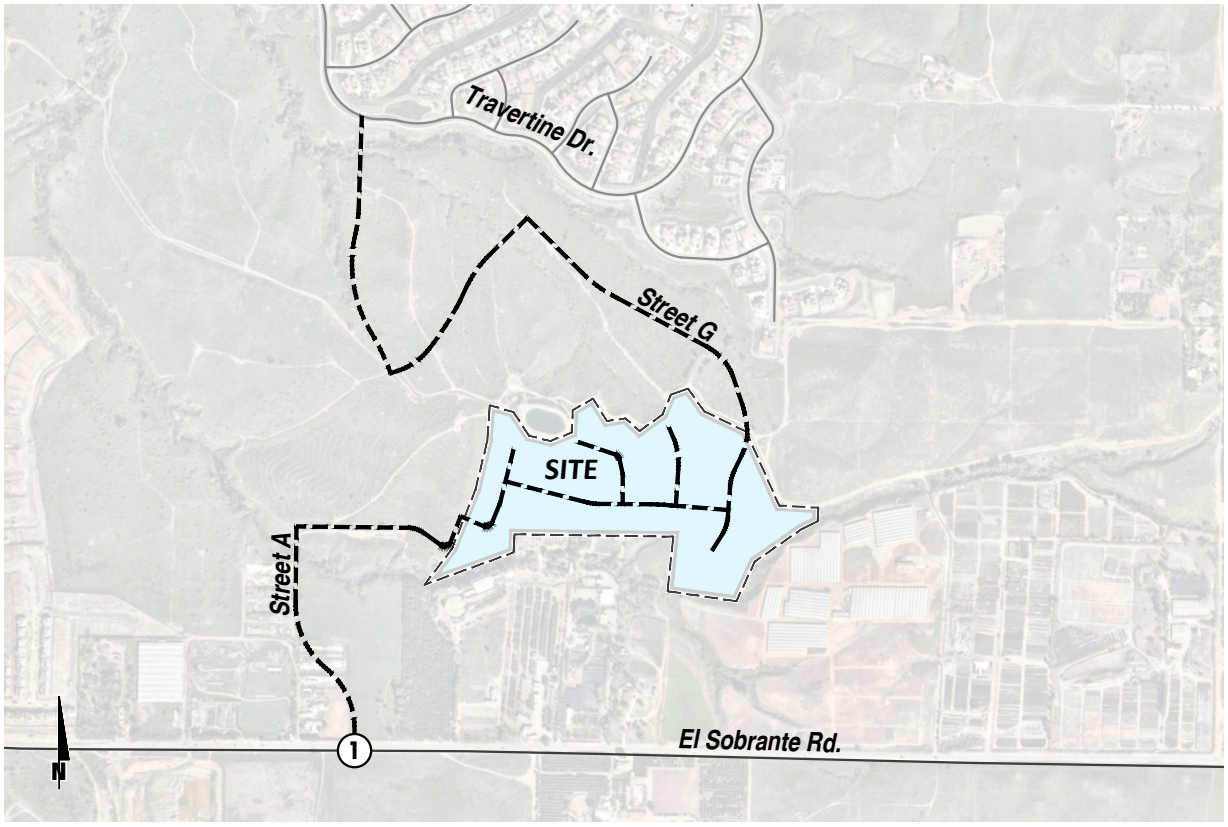
VOLUME DEVELOPMENT

The intersection LOS analysis is based on the traffic volumes observed during the peak hour conditions using traffic count data collected on Tuesday, February 25, 2025 at the intersection of McAllister Street at El Sobrante Road. Traffic counts at McAllister Street and El Sobrante Road serve as a baseline for Existing (2025) conditions for the study area intersection which was not open at the time the counts were collected. The eastbound and westbound through volumes calculated from the intersection of McAllister Street and El Sobrante Road have been applied to the analysis of the study area intersection under all future traffic conditions. The following peak hours were selected for analysis:

- Weekday AM Peak Hour (peak hour between 7:00 AM and 9:00 AM)
- Weekday PM Peak Hour (peak hour between 4:00 PM and 6:00 PM)

Construction activity was observed occurring at the intersection of McAllister Street at El Sobrante Road; however, the usual number of lanes were not affected (one through lane in each direction of travel). There were no detours in place on the date of the traffic counts. The raw manual peak hour turning movement traffic count data sheets for McAllister Street at El Sobrante Road are included in Appendix 1.

EXHIBIT 4 : STUDY AREA



LEGEND:

(0) *= Future Intersection Analysis Location*

EAP (2027) CONDITIONS

VOLUME DEVELOPMENT

EAP (2027) (Project Only)

Existing plus Ambient Growth plus Project (EAP) (2027) traffic volumes are based on the manual addition of existing volumes, an ambient growth factor of 4.04% (2 percent per year, compounded over 2 years), and Project traffic. The weekday AM and PM peak hour volumes for the EAP (2027) (Project Only) traffic scenario is provided in Exhibit 5.

EAP (2027) (Project + Others)

This scenario includes existing volumes, an ambient growth factor of 4.04% (2 percent per year, compounded over 2 years), the addition of Project traffic, and the addition of traffic from the Highland Grove II, Greentree, and Highland Grove IV developments as all of these tracts would utilize the same access points and would need to contribute their equitable share towards improvements (referred to as Others). The weekday AM and PM peak hour volumes for the EAP (2027) (Project + Others) traffic scenario is provided in Exhibit 6.

INTERSECTIONS

Table 3 provides a summary of the intersection operations analysis for EAP (2027) traffic conditions. As shown in Table 3, the study area intersection is anticipated to operate at an acceptable LOS during the peak hours under EAP (2027) (Project Only) and EAP (2027) (Project + Others) traffic conditions.

The intersection operations analysis worksheets for EAP (2027) (Project Only) and EAP (2027) (Project + Others) traffic conditions are included in Appendices 2 and 3, respectively.

TABLE 3: EAP (2027) INTERSECTION ANALYSIS

#	Intersection	Traffic Control[2]	EAP (2027) - Project Only				EAP (2027) - Project + Others[3]			
			Delay[1] (secs.)		Level of Service		Delay[1] (secs.)		Level of Service	
			AM	PM	AM	PM	AM	PM	AM	PM
1	Street A & El Sobrante Rd.	CSS	13.5	11.4	B	B	28.3	18.2	D	C

* **BOLD** = Level of Service (LOS) does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[1] Per the Highway Capacity Manual (7th Edition), overall average intersection Delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown. HCM delay reported in seconds.

[2] CSS = Cross-street Stop; CSS = Improvement

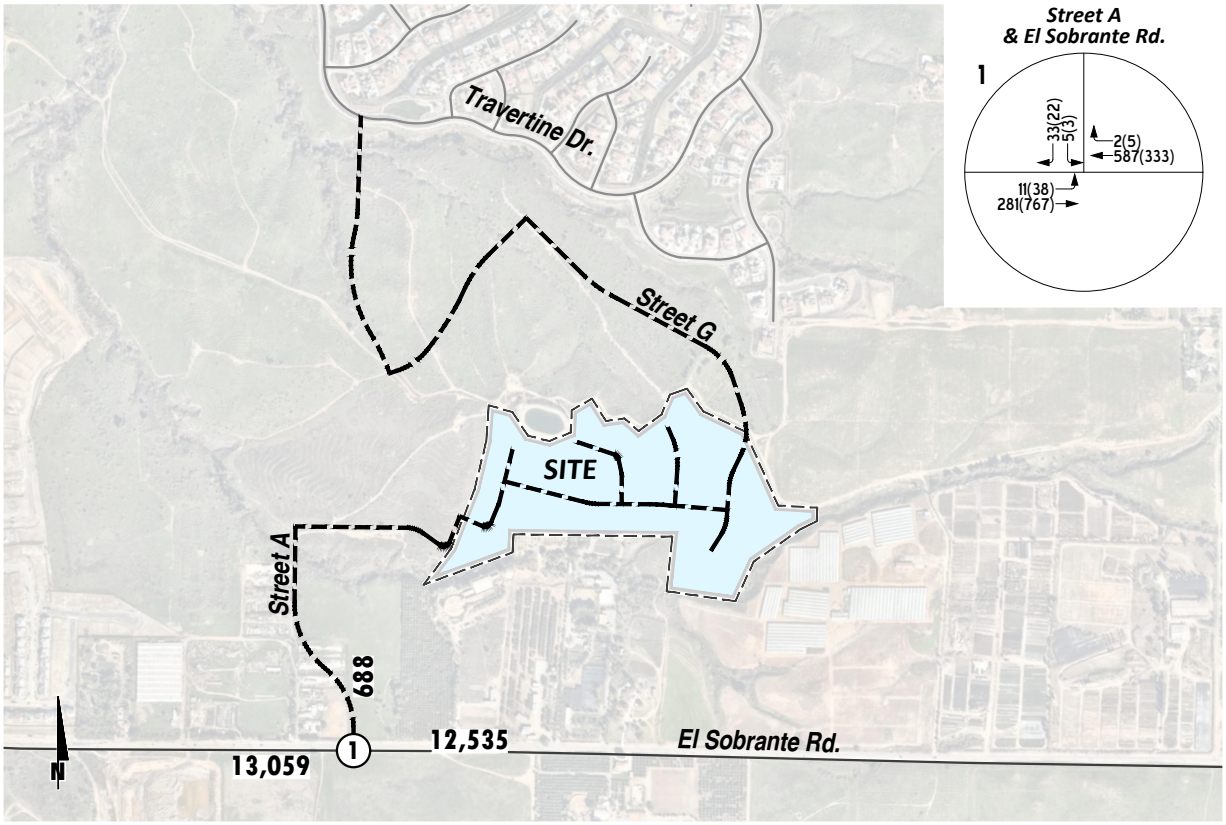
[3] Others refers to the addition of the following developments: Highland Grove II, Greentree, and Highland Grove IV.

TRAFFIC SIGNAL WARRANTS

The traffic signal warrant analysis for EAP (2027) traffic conditions is based on the planning level ADT volume-based traffic signal warrants. The intersection of Street A at El Sobrante Road is not anticipated to meet an ADT volume-based warrant under EAP (2027) (Project Only) conditions (see Appendix 4).

With the addition of Highland Grove II, Greentree, and Highland Grove IV development traffic, the study area intersection of Street A at El Sobrante Road is anticipated to meet an ADT volume-based traffic signal warrant under EAP (2027) (Project + Others) conditions (see Appendix 5).

EXHIBIT 5 : EAP (2027) (PROJECT ONLY) VOLUMES



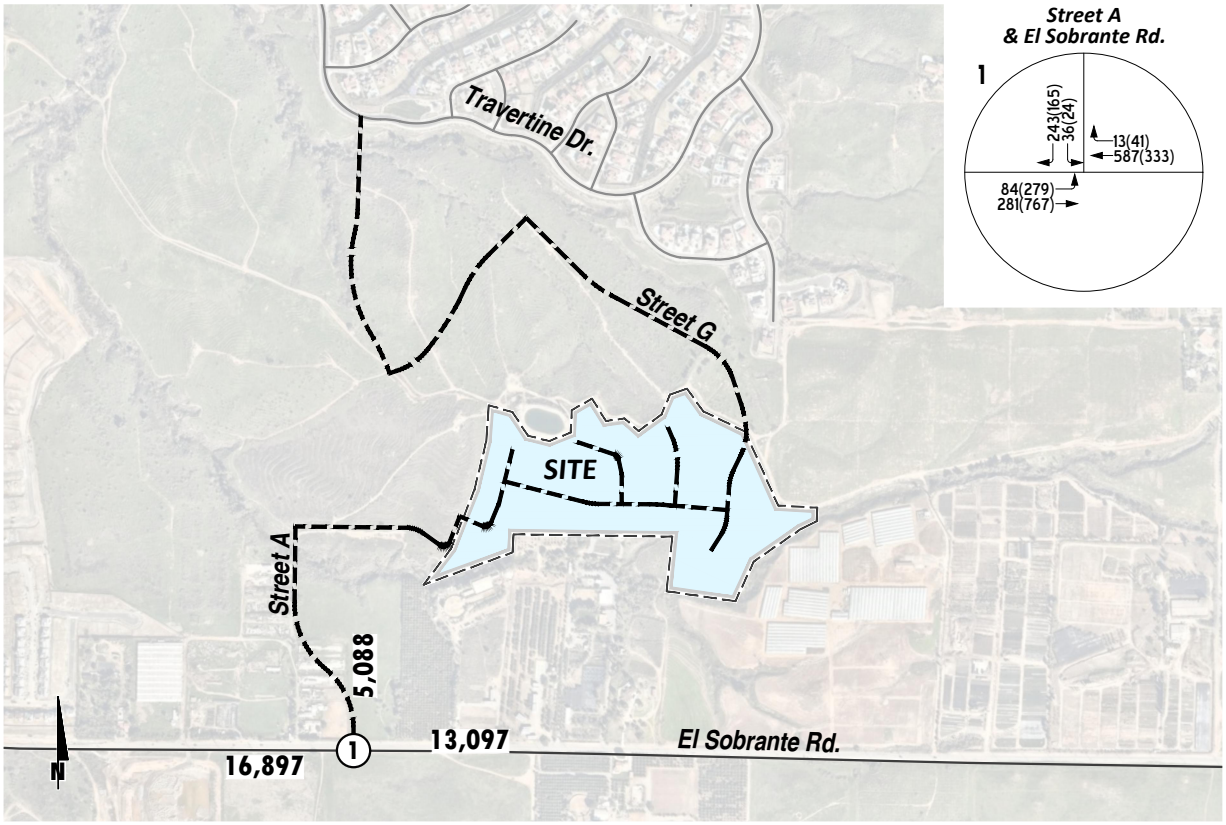
LEGEND:

(0) = *Future Intersection Analysis Location*

00(00) = *Peak Hour Volume AM(PM)*

00 = *Average Daily Traffic (ADT)*

EXHIBIT 6 : EAP (2027) (PROJECT + OTHERS) VOLUMES



LEGEND:

(0) = *Future Intersection Analysis Location*

00(00) = *Peak Hour Volume AM(PM)*

00 = *Average Daily Traffic (ADT)*

EAPC (2027) CONDITIONS

VOLUME DEVELOPMENT

Existing plus Ambient Growth plus Project plus Cumulative (EAPC) (2027) traffic volumes are based on the manual addition of existing volumes, an ambient growth factor of 4.04% (2 percent per year, compounded over 2 years), Project traffic, and traffic generated by known cumulative development projects. Cumulative development projects include the Highland Grove II, Greentree, and Highland Grove IV developments. The weekday AM and PM peak hour volumes for the EAPC (2027) traffic scenario is provided in Exhibit 7.

A cumulative project list was developed for the purposes of this analysis through consultation with planning and engineering staff from the County of Riverside and City of Riverside. The cumulative project list includes known and foreseeable projects that are anticipated to contribute traffic to the study area intersection. For the purposes of this analysis, the cumulative projects that were determined to affect the study area intersection are provided in Appendix 6.

INTERSECTIONS

Table 4 provides a summary of the intersection operations analysis for EAPC (2027) traffic conditions. As shown in Table 4, the study area intersection is anticipated to operate at an acceptable LOS during the peak hours under EAPC (2027) traffic conditions.

The intersection operations analysis worksheets for EAPC (2027) traffic conditions is included in Appendix 7.

TABLE 4: EAPC (2027) INTERSECTION ANALYSIS

#	Intersection	Traffic Control[2]	EAPC (2027)			
			Delay[1] (secs.)		Level of Service	
			AM	PM	AM	PM
1	Street A & El Sobrante Rd.	CSS	28.9	18.7	D	C

* **BOLD** = Level of Service (LOS) does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

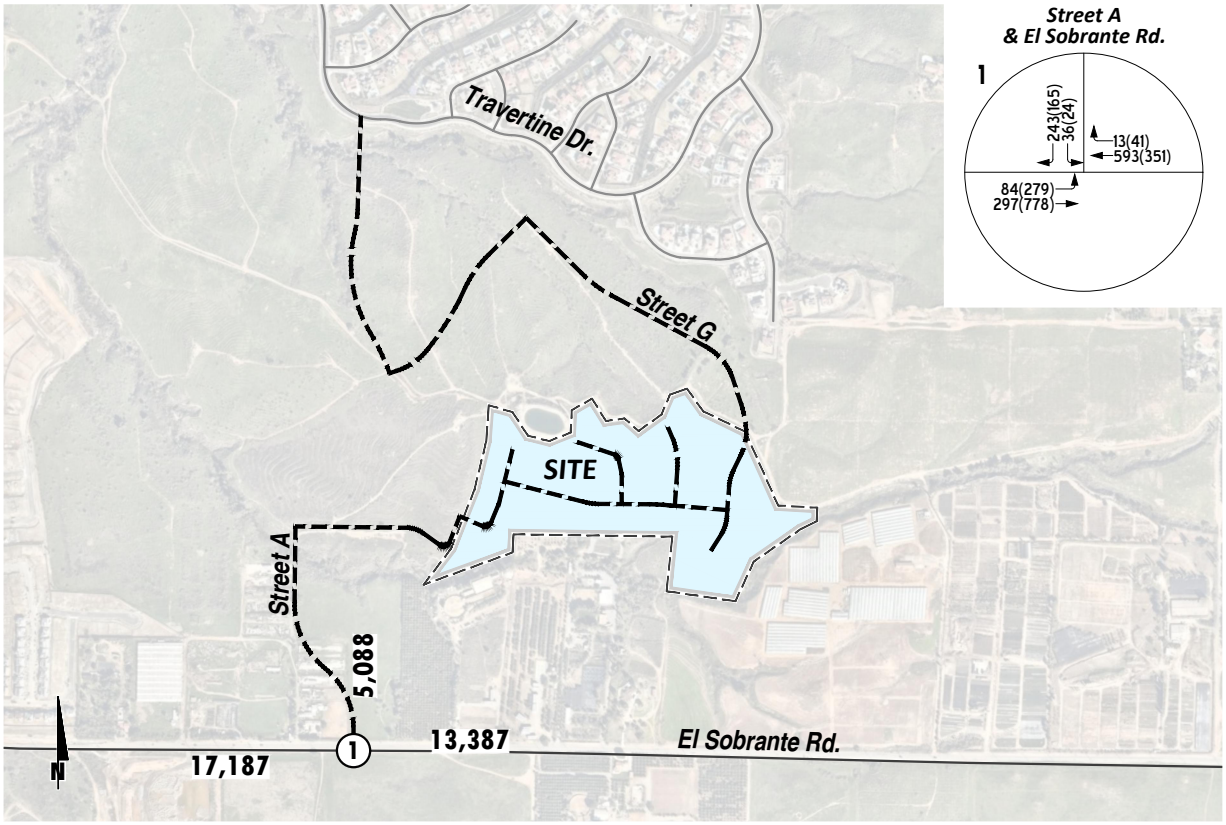
1 Per the Highway Capacity Manual (7th Edition), overall average intersection Delay and level of service are shown for intersections with a traffic signal or all-way stop control. For intersections with cross-street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown. HCM delay is reported in seconds.

2 CSS = Cross-street Stop; CSS = Improvement

TRAFFIC SIGNAL WARRANTS

The study area intersection of Street A at El Sobrante Road is anticipated to meet a traffic signal warrant under EAP (2027) (Project + Others) conditions. As such, traffic signal warrants have not been evaluated for the EAPC (2027) traffic condition.

EXHIBIT 7 : EAPC (2027) VOLUMES



LEGEND:

(0) = *Future Intersection Analysis Location*

00(00) = *Peak Hour Volume AM(PM)*

00 = *Average Daily Traffic (ADT)*

ON-SITE CIRCULATION RECOMMENDATIONS

The following recommendations are based on the improvements needed to accommodate site access and maintain acceptable peak hour LOS at site access and on-site intersections.

Recommendation #1 - Street A & El Sobrante Road – The following improvements are necessary to accommodate site access (which have since been constructed and currently exist):

- Project to install a stop control on the southbound approach (Street A, now Highland Grove Road) to implement a cross-street stop-controlled intersection and construct a shared left-right turn lane.
- Project to construct an eastbound left turn lane with a minimum of 100 feet of storage.
- Project to construct a westbound right turn lane with a minimum of 100-feet of storage.

Recommendation #2 - Street A is a north-south oriented roadway bisecting the Project site, providing primary Project access to El Sobrante Road. Project to construct Street A at its ultimate full-section width as a Local roadway (60-foot right-of-way), from El Sobrante Road to the Project's northern boundary, consistent with the County's standards.

On-site traffic signing and striping should be implemented agreeable with the provisions of the California Manual on Uniform Traffic Control Devices (CA MUTCD) and in conjunction with detailed construction plans for the Project site.

Sight distance at each Project access point should be reviewed with respect to standard Caltrans and County of Riverside sight distance standards at the time of preparation of final grading, landscape, and street improvement plans.

If you have any questions, please contact me directly at cso@urbanxroads.com.

APPENDIX 1:

EXISTING COUNTS

INTERSECTION TURNING MOVEMENT COUNTS

T101823

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

DATE: Tue, Feb 25, 25

LOCATION: Riverside
NORTH & SOUTH: McAllister St
EAST & WEST: El Sobrante Rd

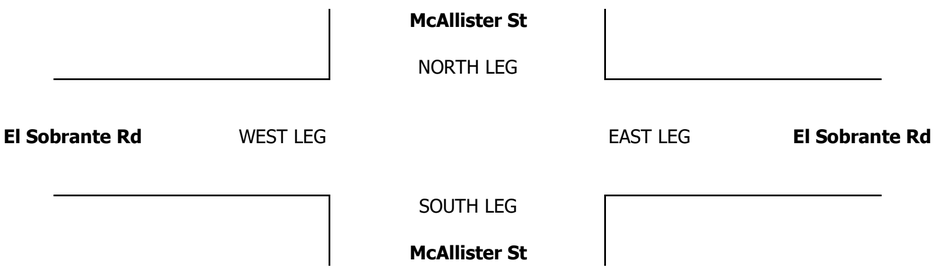
PROJECT #: SC5212
LOCATION #: 1
CONTROL: STOP S

NOTES: AM Minor Construction

AM
PM
MD
OTHER
OTHER

◄ W
E ►
▲ N
S ▼

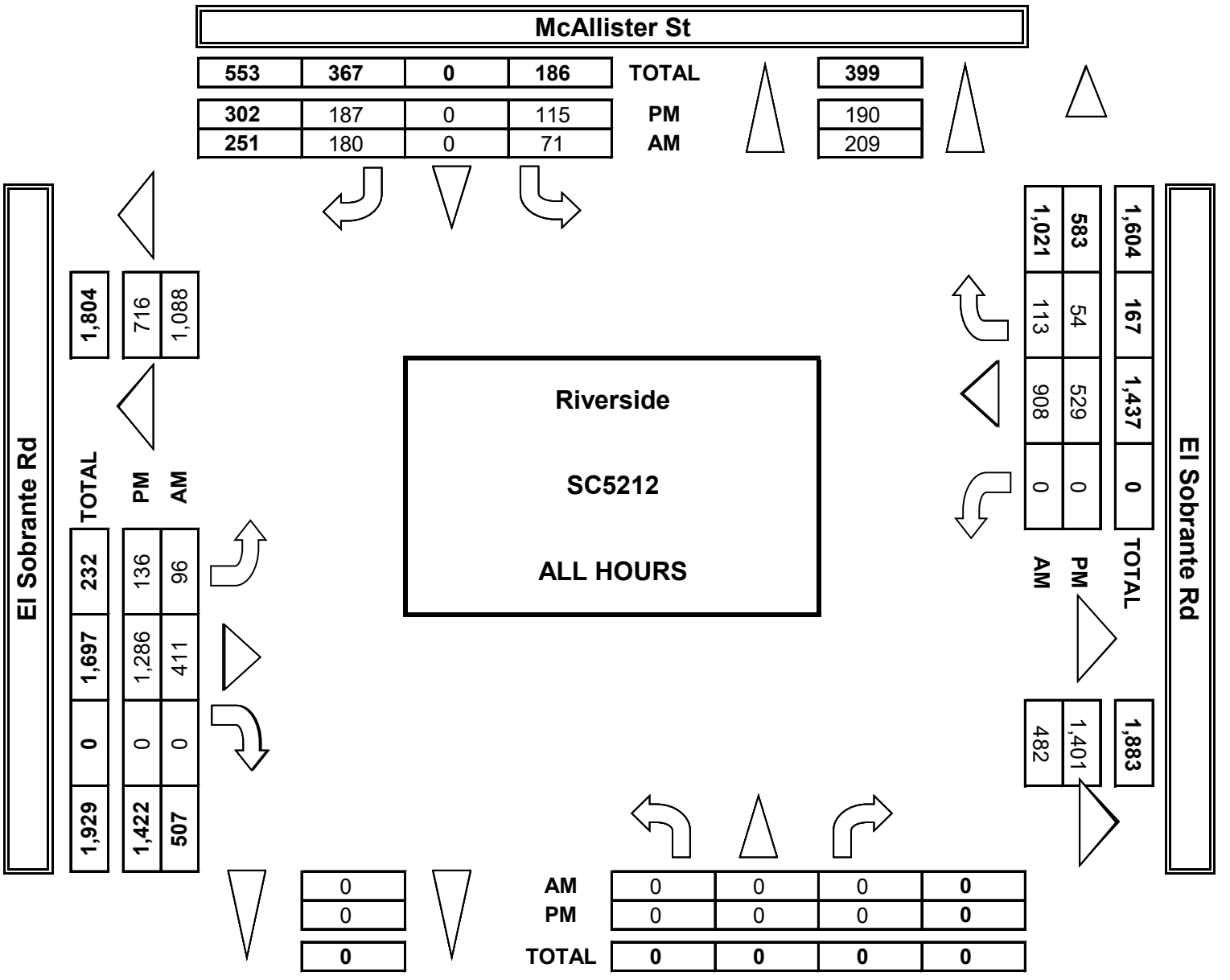
		NORTHBOUND McAllister St			SOUTHBOUND McAllister St			EASTBOUND El Sobrante Rd			WESTBOUND El Sobrante Rd				U-TURNS					RTOR			
	LANES:	NL X	NT X	NR X	SL 0	ST X	SR 0	EL 1	ET 1	ER X	WL X	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL	NRR X	SRR X	ERR X	WRR X
AM	7:00 AM	0	0	0	7	0	22	13	55	0	0	93	4	194	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	6	0	25	14	48	0	0	107	8	208	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	4	0	23	15	52	0	0	110	11	215	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	12	0	30	19	54	0	0	126	26	267	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	15	0	24	10	62	0	0	101	39	251	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	18	0	24	13	52	0	0	121	11	239	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	7	0	18	8	50	0	0	133	7	223	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	2	0	14	4	38	0	0	117	7	182	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	71	0	180	96	411	0	0	908	113	1,779	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	28%	0%	72%	19%	81%	0%	0%	89%	11%										
	APP/DEPART	0	/	209	251	/	0	507	/	482	1,021	/	1,088	0									
	BEGIN PEAK HR		7:45 AM																				
	VOLUMES	0	0	0	52	0	96	50	218	0	0	481	83	980	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	0%	35%	0%	65%	19%	81%	0%	0%	85%	15%										
	PEAK HR FACTOR		0.000			0.881			0.918			0.928		0.918									
	APP/DEPART	0	/	133	148	/	0	268	/	270	564	/	577	0									
PM	04:00 PM	0	0	0	5	0	20	16	162	0	0	63	9	275	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	10	0	22	18	164	0	0	80	10	304	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	28	0	20	19	170	0	0	66	9	312	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	12	0	30	24	160	0	0	67	9	302	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	33	0	32	9	160	0	0	71	8	313	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	11	0	23	23	154	0	0	66	5	282	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	11	0	27	12	149	0	0	66	2	267	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	5	0	13	15	167	0	0	50	2	252	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	115	0	187	136	1,286	0	0	529	54	2,307	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	38%	0%	62%	10%	90%	0%	0%	91%	9%										
	APP/DEPART	0	/	190	302	/	0	1,422	/	1,401	583	/	716	0									
	BEGIN PEAK HR		4:15 PM																				
	VOLUMES	0	0	0	83	0	104	70	654	0	0	284	36	1,231	0	0	0	0		0	0	0	0
	APPROACH %	0%	0%	0%	44%	0%	56%	10%	90%	0%	0%	89%	11%										
	PEAK HR FACTOR		0.000			0.719			0.958			0.889		0.983									
	APP/DEPART	0	/	106	187	/	0	724	/	737	320	/	388	0									

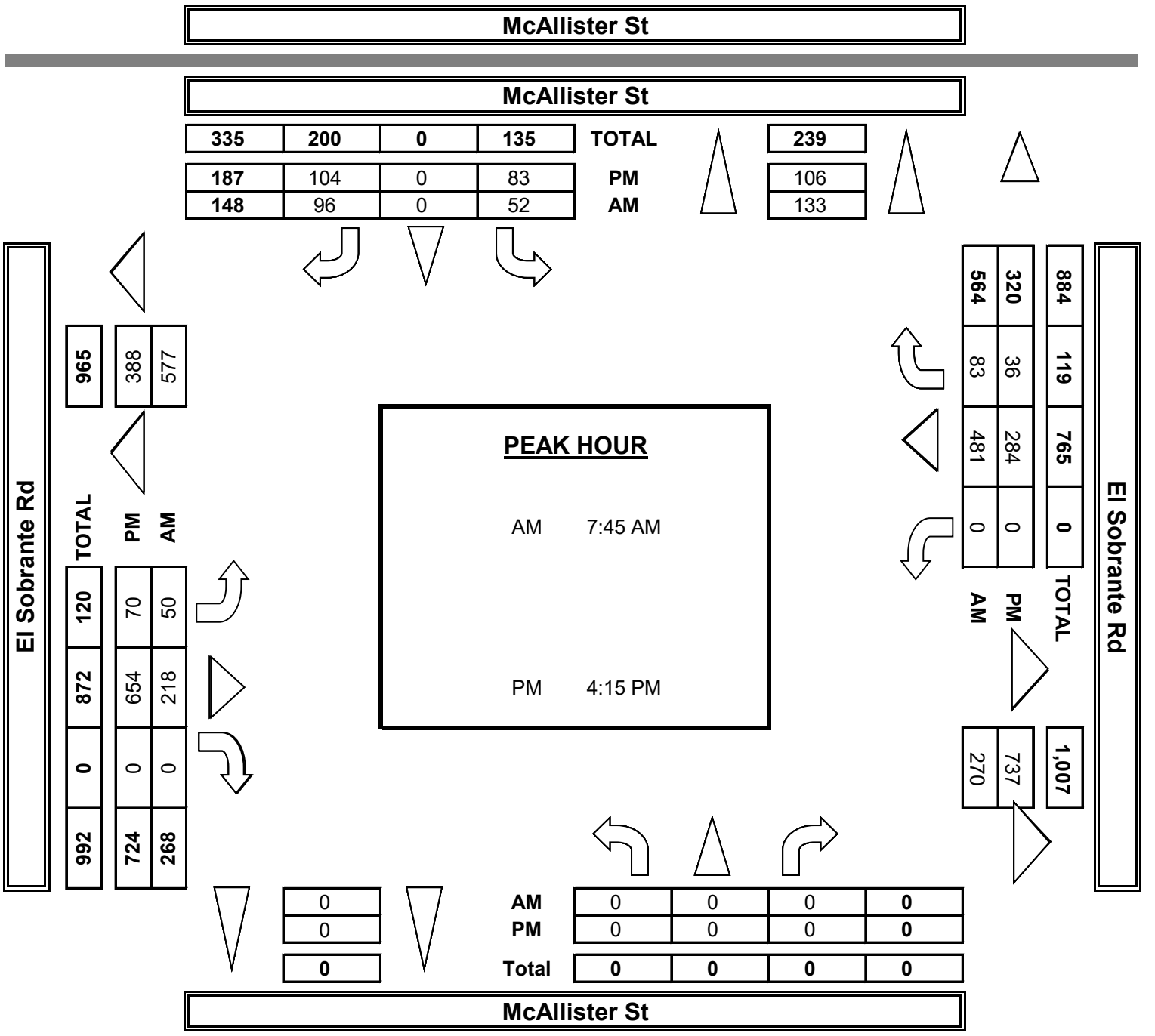


		ALL PED + BIKE & SCOOTER					PEDESTRIAN CROSSINGS					BICYCLE & SCOOTER CROSSINGS				
		E LEG	W LEG	S LEG	N LEG	TOTAL	E LEG	W LEG	S LEG	N LEG	TOTAL	EL	WL	SL	NL	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





APPENDIX 2:

EAP (2027) (PROJECT ONLY) INTERSECTION ANALYSIS

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	281	587	2	5	33
Future Vol, veh/h	11	281	587	2	5	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	305	638	2	5	36

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	640	0	-	0	968	639
Stage 1	-	-	-	-	639	-
Stage 2	-	-	-	-	329	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	944	-	-	-	281	476
Stage 1	-	-	-	-	526	-
Stage 2	-	-	-	-	729	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	944	-	-	-	278	476
Mov Cap-2 Maneuver	-	-	-	-	397	-
Stage 1	-	-	-	-	519	-
Stage 2	-	-	-	-	729	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.33	0	13.52
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	944	-	-	-	464
HCM Lane V/C Ratio	0.013	-	-	-	0.089
HCM Control Delay (s/veh)	8.9	-	-	-	13.5
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	38	767	333	5	3	22
Future Vol, veh/h	38	767	333	5	3	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	834	362	5	3	24

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	367	0	-	0	1281	365
Stage 1	-	-	-	-	365	-
Stage 2	-	-	-	-	916	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1191	-	-	-	183	680
Stage 1	-	-	-	-	703	-
Stage 2	-	-	-	-	390	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1191	-	-	-	176	680
Mov Cap-2 Maneuver	-	-	-	-	298	-
Stage 1	-	-	-	-	678	-
Stage 2	-	-	-	-	390	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.38	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1191	-	-	-	589
HCM Lane V/C Ratio	0.035	-	-	-	0.046
HCM Control Delay (s/veh)	8.1	-	-	-	11.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

APPENDIX 3:

EAP (2027) (PROJECT + OTHERS) INTERSECTION ANALYSIS

Intersection	
Int Delay, s/veh	7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	84	281	587	13	36	243
Future Vol, veh/h	84	281	587	13	36	243
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	91	305	638	14	39	264

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	652	0	-	0	1133	645
Stage 1	-	-	-	-	645	-
Stage 2	-	-	-	-	488	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	934	-	-	-	224	472
Stage 1	-	-	-	-	522	-
Stage 2	-	-	-	-	617	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	934	-	-	-	202	472
Mov Cap-2 Maneuver	-	-	-	-	334	-
Stage 1	-	-	-	-	471	-
Stage 2	-	-	-	-	617	-

Approach	EB	WB	SB
HCM Control Delay, s/v	2.13	0	28.25
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	934	-	-	-	448
HCM Lane V/C Ratio	0.098	-	-	-	0.677
HCM Control Delay (s/veh)	9.3	-	-	-	28.3
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0.3	-	-	-	4.9

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	279	767	333	41	24	165
Future Vol, veh/h	279	767	333	41	24	165
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	303	834	362	45	26	179

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	407	0	-	0	1824	384
Stage 1	-	-	-	-	384	-
Stage 2	-	-	-	-	1440	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1152	-	-	-	85	663
Stage 1	-	-	-	-	688	-
Stage 2	-	-	-	-	218	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1152	-	-	-	62	663
Mov Cap-2 Maneuver	-	-	-	-	162	-
Stage 1	-	-	-	-	507	-
Stage 2	-	-	-	-	218	-

Approach	EB	WB	SB
HCM Control Delay, s/v	2.46	0	18.16
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1152	-	-	-	476
HCM Lane V/C Ratio	0.263	-	-	-	0.431
HCM Control Delay (s/veh)	9.2	-	-	-	18.2
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	1.1	-	-	-	2.1

APPENDIX 4:

EAP (2027) (PROJECT ONLY) TRAFFIC SIGNAL WARRANTS

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	**2027 Project**
				CALC IA	DATE 03/31/25
Jurisdiction: **County of Riverside**				CHK IA	DATE 03/31/25
Major Street: **El Sobrante Rd.**				Critical Approach Speed (Major)	45 mph
Minor Street: **Street A**				Critical Approach Speed (Minor)	25 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes = **1** lane

Major Street Future ADT = **12,797** vpd Minor Street Future ADT = **344** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ..... √

or

In built up area of isolated community of < 10,000 population .....

RURAL (R)

(Based on Estimated Average Daily Traffic - See Note)

URBAN / RURAL	Minimum Requirements EADT			
CONDITION A - Minimum Vehicular Volume	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied / Not Satisfied: XX / XX	Urban	Rural	Urban	Rural
Number of lanes for moving traffic on each approach: Major Street / Minor Street				
1 **12,797** / 1 **344**	8,000	5,600 *	2,400	1,680
2 + / 1	9,600	6,720	2,400	1,680
2 + / 2 +	9,600	6,720	3,200	2,240
1 / 2 +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied / Not Satisfied: XX	Urban	Rural	Urban	Rural
Number of lanes for moving traffic on each approach: Major Street / Minor Street				
1 **12,797** / 1 **344**	12,000	8,400 *	1,200	850
2 + / 1	14,400	10,080	1,200	850
2 + / 2 +	14,400	10,080	1,600	1,120
1 / 2 +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B				
Satisfied / Not Satisfied: XX	2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more ..... A: 20% B: 40%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

APPENDIX 5:

EAP (2027) (PROJECT + OTHERS) TRAFFIC SIGNAL WARRANTS

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	2027 (Project + Others)
				CALC IA DATE	03/31/25
Jurisdiction:	County of Riverside			CHK IA DATE	03/31/25
Major Street:	El Sobrante Rd.			Critical Approach Speed (Major)	45 mph
Minor Street:	Street A			Critical Approach Speed (Minor)	25 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes = **1** lane

Major Street Future ADT = **14,997** vpd Minor Street Future ADT = **2,544** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ..... [√]

or

In built up area of isolated community of < 10,000 population ..... [ ]

RURAL (R)

(Based on Estimated Average Daily Traffic - See Note)

URBAN / RURAL	Number of lanes for moving traffic on each approach		Minimum Requirements EADT			
			Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	Major Street	Minor Street	Urban	Rural	Urban	Rural
CONDITION A - Minimum Vehicular Volume						
Not Satisfied / XX (Satisfied)	*1* **14,997**	*1* **2,545**	8,000	5,600 *	2,400	1,680 *
	2 +	*1*	9,600	6,720	2,400	1,680
	2 +	*2* +	9,600	6,720	3,200	2,240
	1	*2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic			Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	Major Street	Minor Street	Urban	Rural	Urban	Rural
Not Satisfied / XX (Satisfied)	*1* **14,997**	*1* **2,545**	12,000	8,400 *	1,200	850 *
	2 +	*1*	14,400	10,080	1,200	850
	2 +	*2* +	14,400	10,080	1,600	1,120
	1	*2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B						
Not Satisfied / XX (Satisfied)			2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more	**A** 100%	**B** 100%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

APPENDIX 6:

CUMULATIVE DEVELOPMENT PROJECTS

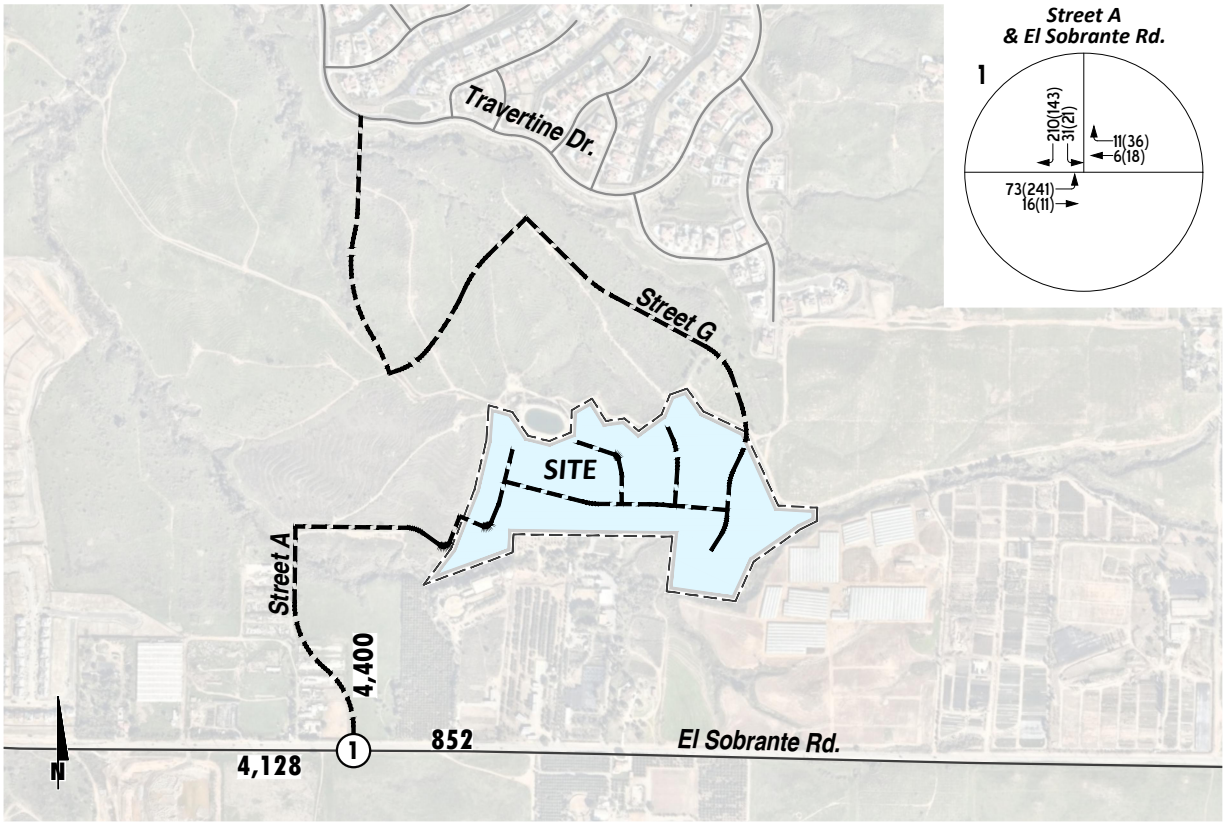
Table 5

Cumulative Development Land Use Summary

No.	Project Name	Land Use[1]	Quantity	Units[2]
County of Riverside				
RC1	PM37227	Single Family Residential	9	DU
RC2	Highland Grove II (TTM No. 38910)	Single Family Residential	128	DU
RC3	TTM38520	Single Family Residential	45	DU
RC4	Greentree (TTM No. 38605)	Single Family Residential	163	DU
RC5	Highland Grove III (TTM No. 38927)	Single Family Residential	206	DU
City of Riverside				
R1	P13-0165, P13-0166, P13-0167, P13-0168	Gas Sation w/ Car Wash	16.0	AC
R2	P18-0600	Retail/Restaurant w/ Drive Thru	4.494	TSF
R3	PR-2021-001151	Apartment Units & Dental Office	8.139	TSF
R4	P19-0410, P19-0411, P19-0412	Single Family Residential	34	DU
R5	PR-2023-001476	Coffee Shop w/ Drive-Thru (Starbucks)	2.300	TSF
R6	P18-0396, P18-0370	Multi-Family Residential	57	DU
R7	PR-2021-000713	Hospital Tower Expansion	318.433	TSF
R8	PR-2022-001468	Multi-Family Residential	38	DU
R9	P19-0863	Multi-Family Residential	450	DU
		Commercial Retail	9.000	TSF
R10	P14-0176	Single Family Residential	14	DU

[1] TSF = Thousand Square Feet; DU = Dwelling Units; AC = Acres

EXHIBIT 8 : CUMULATIVE ONLY VOLUMES



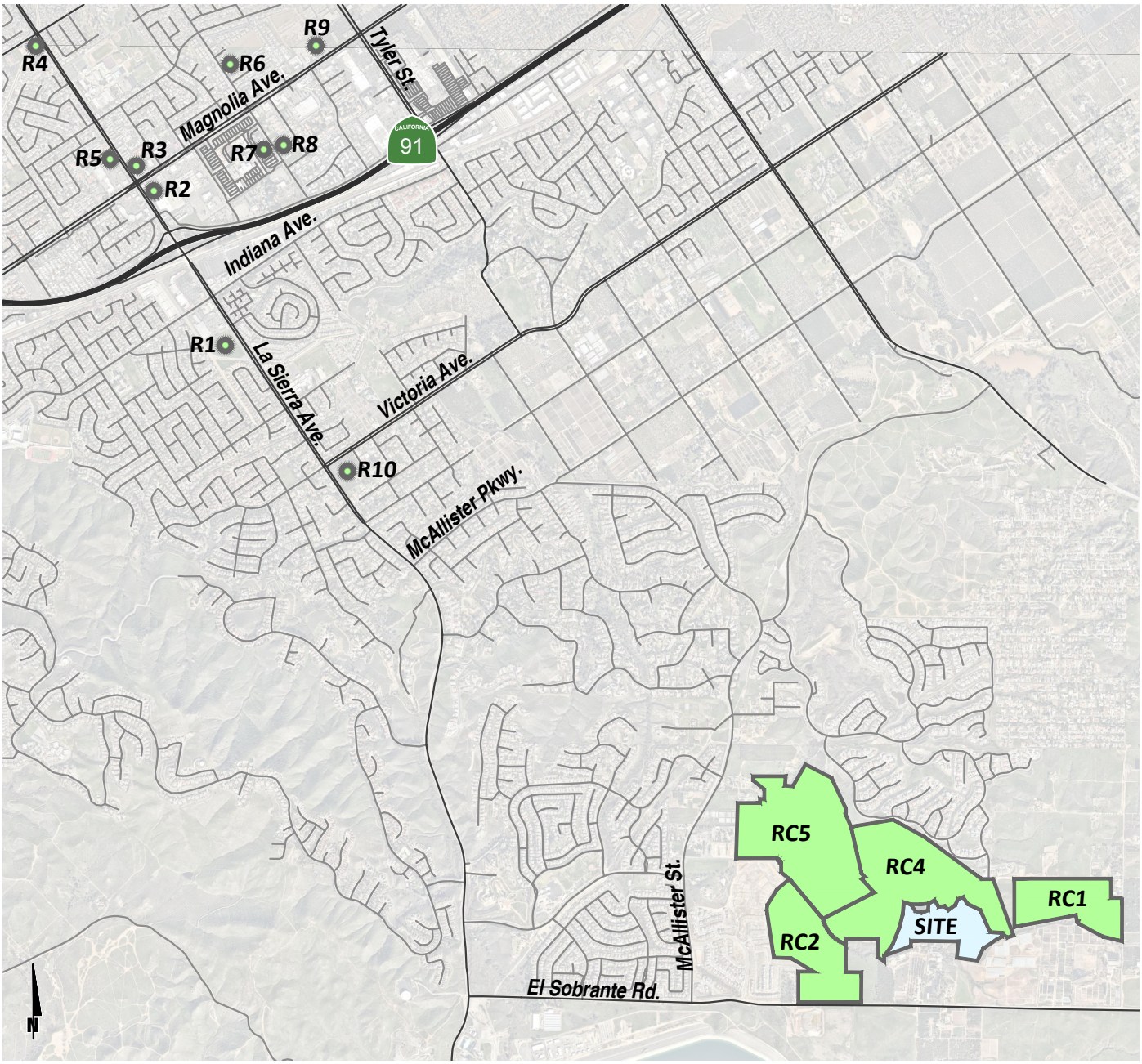
LEGEND:

(0) = *Future Intersection Analysis Location*

00(00) = *Peak Hour Volume AM(PM)*

00 = *Average Daily Traffic (ADT)*

EXHIBIT 9 : CUMULATIVE DEVELOPMENT MAP



APPENDIX 7:

EAPC (2027) INTERSECTION ANALYSIS

Intersection	
Int Delay, s/veh	7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	84	297	593	13	36	243
Future Vol, veh/h	84	297	593	13	36	243
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	91	323	645	14	39	264

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	659	0	-	0	1157	652
Stage 1	-	-	-	-	652	-
Stage 2	-	-	-	-	505	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	929	-	-	-	217	468
Stage 1	-	-	-	-	519	-
Stage 2	-	-	-	-	606	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	929	-	-	-	196	468
Mov Cap-2 Maneuver	-	-	-	-	328	-
Stage 1	-	-	-	-	468	-
Stage 2	-	-	-	-	606	-

Approach	EB	WB	SB
HCM Control Delay, s/v	2.05	0	28.89
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	929	-	-	-	444
HCM Lane V/C Ratio	0.098	-	-	-	0.684
HCM Control Delay (s/veh)	9.3	-	-	-	28.9
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0.3	-	-	-	5

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	279	778	351	41	24	165
Future Vol, veh/h	279	778	351	41	24	165
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	303	846	382	45	26	179

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	426	0	-	0	1856	404
Stage 1	-	-	-	-	404	-
Stage 2	-	-	-	-	1452	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1133	-	-	-	81	647
Stage 1	-	-	-	-	674	-
Stage 2	-	-	-	-	215	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1133	-	-	-	59	647
Mov Cap-2 Maneuver	-	-	-	-	159	-
Stage 1	-	-	-	-	494	-
Stage 2	-	-	-	-	215	-

Approach	EB	WB	SB
HCM Control Delay, s/v	2.46	0	18.71
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1133	-	-	-	465
HCM Lane V/C Ratio	0.268	-	-	-	0.442
HCM Control Delay (s/veh)	9.3	-	-	-	18.7
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	1.1	-	-	-	2.2