APPENDIX 19.0

TRAFFIC IMPACT ANALYSIS

October 21, 2021

Mr. Stephen Macie
Somar Land Group, Inc.
16391 Harwich Circle
Riverside, CA 92503

SUBJECT: CLINTON KEITH MARKETPLACE TRIP GENERATION ASSESSMENT

Dear Mr. Stephen Macie:

Urban Crossroads, Inc. is pleased to provide the following Trip Generation Assessment for Clinton Keith Marketplace development (**Project**) which is located on the northwest corner of Hidden Springs Road and Clinton Keith Road in the City of Wildomar. The purpose of this work effort is to assess the potential changes in trip generation associated with the update to the uses proposed for the Project.

BACKGROUND

The purpose of this trip generation assessment is to ensure the development of the proposed Project uses does not exceed the traffic generation evaluated in the Clinton Keith Marketplace Traffic Impact Analysis (prepared by Urban Crossroads, Inc., dated October 21, 2019, referred to as **Traffic Study**). If the proposed Project uses generates the same or less than the trip generation evaluated in the Traffic Study, then traffic impacts and associated mitigation measures are also assumed to be the same or less than those previously identified.

APPROVED PROJECT TRIP GENERATION

The Traffic Study evaluated the following uses:

- Building 1: 4,800 square feet of fast-food restaurant with drive-through window
- Building 2: 10,870 square feet of retail shops
- Building 3 & 4: 26,500 square foot grocery store
- Building 5: 24,700 square foot pharmacy with drive-through window
- Building 6: 1,800 square foot coffee/donut shop with drive-through window
- Building 6A: 3,000 square foot fast-food restaurant with drive-through window

The trip generation from the Traffic Study was calculated based on the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition (2017). As shown in Table 1, the Traffic Study concluded that the Project would generate 4,908 trip-ends per day, with 351 trips generated during the AM peak hour and 412 trips generated during the PM peak hour.

TABLE 1: TRIP GENERATION SUMMARY FROM TRAFFIC STUDY

Project	Quantity	Units[1]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
The Commons at Hidden Springs									
Building 1: Fast Food w/ Drive Thru	4.800	TSF	98	95	193	82	75	157	2,262
Internal Capture (10%):			-10	-9	-19	-8	-8	-16	-226
Pass-by Reduction (49% AM, 50% PM/Daily):			-42	-42	-84	-34	-34	-67	-1,018
Building 1 Total Net Trips:			***46***	***44***	***90***	***41***	***33***	***74***	***1,018***
Building 2: Shopping Center	10.870	TSF	6	4	11	20	22	41	410
Internal Capture (10%):			-1	0	-1	-2	-2	-4	-42
Pass-by Reduction (34% PM/Daily):			0	0	0	-6	-6	-12	-126
Building 2 Total Net Trips:			***6***	***3***	***9***	***12***	***13***	***25***	***242***
Building 3 & 4: Supermarket	26.500	TSF	61	40	101	125	120	245	2,830
Internal Capture (10%):			-6	-4	-10	-12	-12	-24	-284
Pass-by Reduction (36% PM/Daily):			0	0	0	-39	-39	-78	-916
Building 3 & 4 Total Net Trips:			***55***	***36***	***91***	***74***	***69***	***143***	***1,630***
Building 5: Pharmacy w/ Drive Thru	24.700	TSF	50	45	95	127	127	254	2,696
Internal Capture (10%):			-5	-4	-9	-13	-13	-26	-270
Pass-by Reduction (49% PM/Daily):			0	0	0	-56	-56	-112	-1,190
Building 5 Total Net Trips:			***45***	***41***	***86***	***58***	***58***	***116***	***1,236***
Building 6: Coffee/Donut Shop w/ Drive Thru	1.800	TSF	82	78	160	39	39	78	1,478
Internal Capture (10%):			-8	-8	-16	-4	-4	-8	-148
Pass-by Reduction (89% AM, 89% PM/Daily):			-63	-63	-126	-31	-31	-62	-1,184
Building 6 Total Net Trips:			***11***	***7***	***18***	***4***	***4***	***8***	***146***
Building 6A: Fast Food w/ Drive Thru	3.000	TSF	61	59	120	51	47	98	1,414
Internal Capture (10%):			-6	-6	-12	-5	-5	-10	-142
Pass-by Reduction (49% AM, 50% PM/Daily):			-26	-26	-52	-21	-21	-42	-636
Building 6A Total Net Trips:			***29***	***27***	***56***	***25***	***21***	***46***	***636***
The Commons at Hidden Springs Total Trips			***192***	***159***	***351***	***213***	***199***	***412***	***4,908***

[1] TSF = Thousand Square Feet

PROPOSED PROJECT TRIP GENERATION

The Project is proposing the development of the following uses:

- Pad 1: 4,800 square feet of fast-food restaurant with drive-through window
- Major A: 22,000 square foot grocery store
- Shops 1: 7,700 square feet of retail shops
- Pad 2: 7,600 square foot automotive retail store
- Major B: 13,000 square foot pharmacy with drive-through window (first floor)
- Major B: 8,000 square feet of professional business/medical office (second floor)

- Parcel 6: 3,590 square foot car wash
- Pad 3: 4,800 square foot restaurant

Table 2 presents the trip generation rates obtained from the ITE Trip Generation Manual (10th Edition, 2017) for the proposed uses.

TABLE 2: ITE TRIP GENERATION RATES

Land Use[1]	ITE LU Code	Units[2]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Project Trip Generation Rates									
Medical Office	720	TSF	2.17	0.61	2.78	0.97	2.49	3.46	34.80
Shopping Center	820	TSF	0.58	0.36	0.94	1.83	1.98	3.81	37.75
Automobile Parts Sales	843	TSF	1.42	1.17	2.59	2.36	2.55	4.91	55.34
Supermarket	850	TSF	2.29	1.53	3.82	4.71	4.53	9.24	106.78
Pharmacy w/ Drive Thru	881	TSF	2.04	1.80	3.84	5.15	5.14	10.29	109.16
High Turnover (Sit-Down) Restaurant	932	TSF	5.47	4.47	9.94	6.06	3.71	9.77	112.18
Fast Food w/ Drive Thru	934	TSF	20.50	19.69	40.19	16.99	15.68	32.67	470.95
Car Wash[3]	948	TSF	--	--	--	7.10	7.10	14.20	142.00

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Tenth Edition (2017).

[2] TSF = Thousand Square Feet

[3] Daily trip rate not available in the ITE Trip Generation Manual; as such, the daily trip rate has been calculated at 10 times the PM peak hour total.

At the time this trip generation assessment was prepared, the proposed Project consisted of the development of up to 8,000 square feet of professional business/medical office use. However, the current site plan shows up to 5,000 square feet of professional business/medical office use. The higher square footage has been utilized for the purpose of this trip generation assessment in order to account for any minor changes that may occur to the building area as part of the final design.

Consistent with the Traffic Study, pass-by trips are defined as intermediate stops on the way from an origin to a primary trip destination without a route diversion. Pass-by trips are attracted from traffic passing the site on an adjacent street or roadway that offers direct access to the generator. These types of trips are many times associated with retail uses. As the Project is proposed to include restaurant use and other applicable uses, pass-by percentages have been obtained from the ITE Trip Generation Handbook (3rd Edition, 2017) have been applied accordingly.

Patrons of the office uses may also visit the proposed restaurant or retail uses without leaving the site (and vice versa). The ITE Trip Generation Handbook has been utilized to determine the internal capture for the applicable mix of uses. Internal capture is a percentage reduction that can be applied to the trip generation estimates for individual land uses to account for trips internal to the site. In other words, trips may be made between individual restaurant, office, or retail uses on-site and can be made either by walking or using internal roadways without using external streets. As such, an internal capture reduction was applied to recognize the interactions that would occur between the various

complementary land uses. Consistent with the Traffic Study, an internal capture reduction of 10% has been applied to all uses. As shown in Table 3, the proposed Project is anticipated to generate a total of 4,390 trip-ends per day, with 298 AM peak hour trips and 386 PM peak hour trips.

TABLE 3: PROPOSED PROJECT TRIP GENERATION SUMMARY

Project	Quantity	Units[1]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Project Trip Generation									
The Commons at Hidden Springs									
Pad 1: Fast Food w/ Drive Thru	4.800	TSF	98	95	193	82	75	157	2,262
Internal Capture (10%):			-10	-9	-19	-8	-8	-16	-226
Pass-by Reduction (49% AM, 50% PM/Daily):			-42	-42	-84	-34	-34	-67	-1,018
Pad 1 Net Trips:			***46***	***44***	***90***	***41***	***33***	***74***	***1,018***
Shops 1: Shopping Center	7.700	TSF	4	3	8	14	15	29	292
Internal Capture (10%):			0	0	0	-1	-2	-3	-30
Pass-by Reduction (34% PM/Daily):			0	0	0	-4	-4	-8	-90
Shops 1 Net Trips:			***5***	***2***	***7***	***9***	***10***	***18***	***172***
Major A: Supermarket	22.000	TSF	50	34	84	104	100	203	2,350
Internal Capture (10%):			-5	-3	-8	-10	-10	-20	-236
Pass-by Reduction (36% PM/Daily):			0	0	0	-32	-32	-65	-762
Major A Net Trips:			***45***	***30***	***76***	***62***	***57***	***119***	***1,352***
Pad 2: Automobile Parts Sales	7.600	TSF	11	9	20	18	19	37	422
Internal Capture (10%):			-1	-1	-2	-2	-2	-4	-42
Pass-by Reduction (43% PM/Daily):			0	0	0	-7	-7	-14	-164
Pad 2 Net Trips:			***10***	***8***	***18***	***9***	***11***	***19***	***216***
Major B: Pharmacy w/ Drive Thru	13.000	TSF	26	23	50	67	67	134	1,420
Internal Capture (10%):			-3	-2	-5	-7	-7	-14	-142
Pass-by Reduction (49% PM/Daily):			0	0	0	-30	-29	-59	-628
Major B: Medical Office	8.000	TSF	17	5	22	8	20	28	278
Internal Capture (10%):			-2	0	-2	-1	-2	-3	-28
Major B Net Trips:			***39***	***26***	***65***	***38***	***49***	***86***	***900***
Pad 3: High Turnover (Sit-Down) Restaurant	4.800	TSF	26	21	48	29	18	47	538
Internal Capture (10%):			-3	-2	-5	-3	-2	-5	-54
Pass-by Reduction (43% PM/Daily):			0	0	0	-11	-7	-18	-210
Pad 3 Net Trips:			***24***	***19***	***43***	***15***	***9***	***24***	***274***
Parcel 6: Car Wash	3.590	TSF	--	--	--	25	25	51	510
Internal Capture (10%):			--	--	--	-3	-3	-5	-52
Parcel 6 Net Trips:			***0***	***0***	***0***	***23***	***23***	***46***	***458***
The Commons at Hidden Springs Total Trips			***169***	***129***	***298***	***196***	***191***	***386***	***4,390***

[1] TSF = Thousand Square Feet

PROJECT TRIP GENERATION COMPARISON

As shown in Table 4, the development of the proposed Project is anticipated to generate 518 fewer trip-ends per day with 53 fewer AM and 26 fewer PM peak hour trips as compared to the currently approved Project. This equates to a 15% reduction during the AM, 6% reduction during the PM peak hours, and a 11% reduction to daily two-way trips.

TABLE 4: TRIP GENERATION COMPARISON

Project	AM Peak Hour			PM Peak Hour			Daily
	In	Out	Total	In	Out	Total	
Traffic Study (See Table 1)	192	159	351	213	199	412	4,908
Currently Proposed (See Table 2)	169	129	298	196	191	386	4,390
VARIANCE	***-23***	***-30***	***-53***	***-18***	***-7***	***-26***	***-518***

CONCLUSION

Since the proposed Project would result in a net reduction in AM and PM peak hour trips in comparison to currently approved Project, the peak hour intersection deficiencies are anticipated to be the same or less than those previously identified in the Traffic Study. Therefore, no additional traffic-related deficiencies are anticipated as a result of the proposed development that is currently being contemplated in addition to those previously disclosed in the Traffic Study. If you have any questions, please contact me directly at (949) 861-0177.

Respectfully submitted,

URBAN CROSSROADS, INC.

Charlene So

Charlene So, PE
Associate Principal

FINAL - 2/2/2022

Clinton Keith Marketplace

TRAFFIC IMPACT ANALYSIS

CITY OF WILDOMAR

PREPARED BY:

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JUNE 4, 2021

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LIST OF EXHIBITS

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LIST OF ABBREVIATED TERMS

(1)	Reference
ADT	Average Daily Traffic
CA MUTCD	California Manual on Uniform Traffic Control Devices
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CMP	Congestion Management Program
DIF	Development Impact Fee
E+P	Existing Plus Project
HCM	Highway Capacity Manual
ITE	Institute of Transportation Engineers
LOS	Level of Service
PHF	Peak Hour Factor
Project	Clinton Keith Marketplace
RBBD	Road and Bridge Benefit District
RTA	Riverside Transit Authority
TIA	Traffic Impact Analysis
TUMF	Transportation Uniform Mitigation Fee Program
Vphg	Vehicles Per Hour Green
v/c	Volume to Capacity
WRCOG	Western Riverside Council of Governments

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1 INTRODUCTION

This report presents the results of the traffic impact analysis (TIA) for the proposed Clinton Keith Marketplace development ("Project"), which is generally located on the northwest corner of Hidden Springs Road and Clinton Keith Road in the City of Wildomar as shown on Exhibit 1-1.

The purpose of this TIA is to evaluate the potential deficiencies related to traffic and circulation system deficiencies that may result from the development of the proposed Project, and to recommend improvements to achieve acceptable circulation system operational conditions. As the City of Wildomar does not have their own traffic study guidelines, the Riverside County Transportation Department Traffic Impact Analysis Preparation Guide (April 2008) has been utilized for the purposes of this traffic impact analysis. (1) The approved Project Traffic Study Scoping agreement is provided in Appendix 1.1 of this TIA.

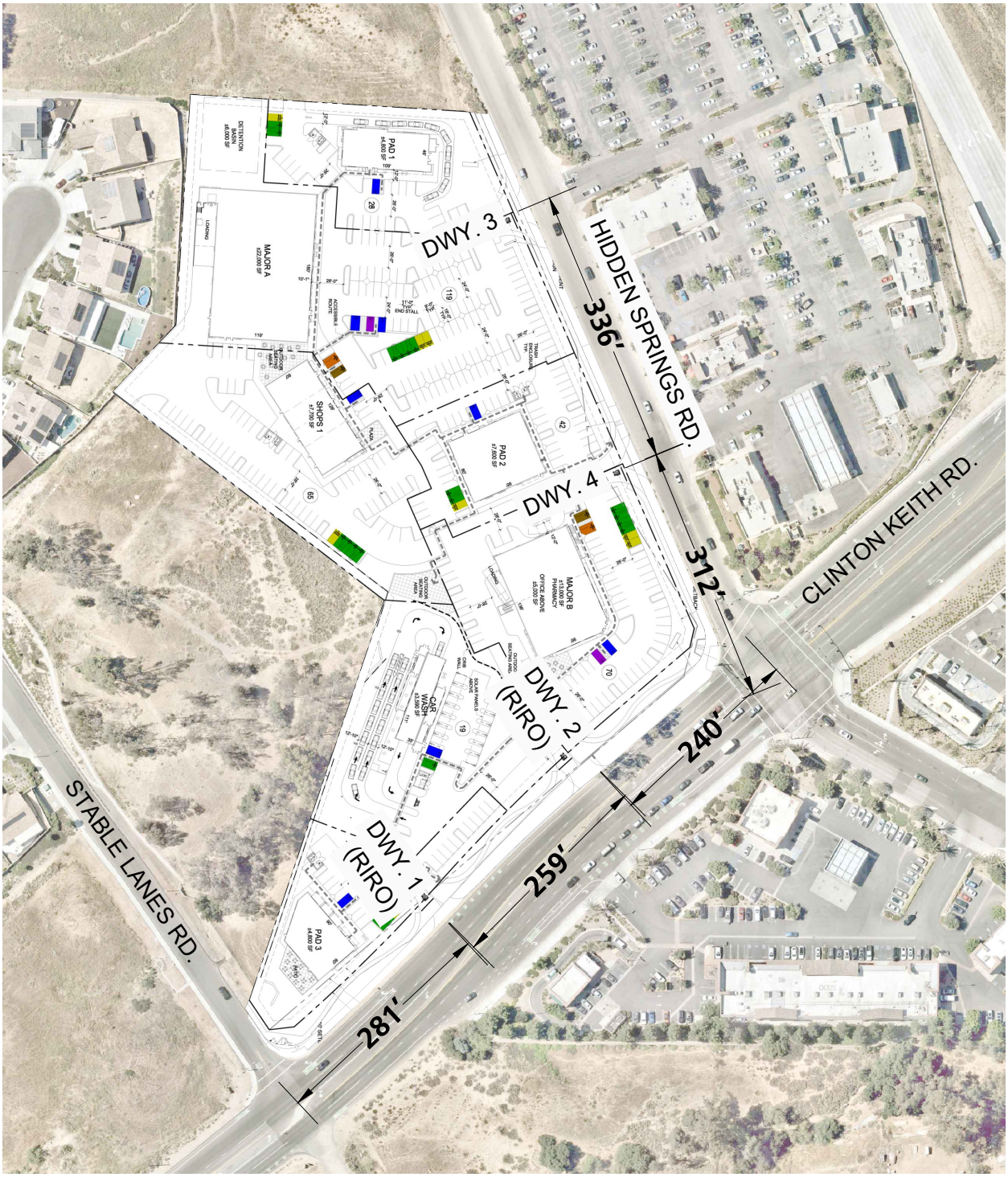
1.1 SUMMARY OF FINDINGS

The Project is proposing to construct the following improvements as design features in conjunction with development of the site:

- Construct Clinton Keith Road to its ultimate half-section width as an Urban Arterial Highway (152-foot right-of-way) from Stable Lanes Road to Hidden Springs Road in compliance with applicable City of Wildomar standards. These improvements include roadway pavement, curb and gutter, and sidewalk improvements.
- Hidden Springs Road appears to be constructed to its ultimate full-section along the Project's frontage on the west side as a Collector (44-foot curb-to-curb) in compliance with applicable City of Wildomar standards. However, the Project should construct the necessary curb and gutter and sidewalk improvements along the Project's frontage from the northern Project boundary to Clinton Keith Road.
- Stable Lanes Road is currently constructed to its ultimate cross-section as a local road. However, the Project should construct applicable curb-and-gutter and sidewalk improvements along its frontage on Stable Lanes Road.
- Construct Driveway 1 and Driveway 2 as cross-street stop controlled intersections (stop control on the southbound approach). Both driveways will restrict access to right-in/right-out access only.
- Construct Driveway 3 and Driveway 4 as cross-street stop controlled intersections (stop control on the eastbound approach). Both driveways will allow for full access (no turn restrictions). Left turn storage is to be accommodated within the painted two-way-left-turn lane.
- Construct a 2nd southbound left turn lane at the intersection of Hidden Springs Road and Clinton Keith Road with a minimum storage of 200-feet. Modify the traffic signal to implement overlap phasing on the westbound right turn lane.

Additional details are provided in Section 1.6 *Recommendations* of this report.

EXHIBIT 1-1: PRELIMINARY SITE PLAN



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Recommendation 1.1: Prior to the issuance of building permits, the Project Applicant shall participate in the City's Development Impact Fee (DIF), the County's Transportation Uniform Mitigation Fee (TUMF), and County's Road and Bridge Benefit District (RBBD) fee programs by paying the requisite DIF, TUMF, and RBBD fees.

Recommendation 2.1: Prior to the issuance of building permits, the Project Applicant shall contribute fair share towards the improvements identified at the intersection of Palomar Street and Clinton Keith Road that are not covered by a pre-existing fee program. The fair share contribution is necessary to address Opening Year Cumulative deficiencies.

1.2 PROJECT OVERVIEW

An area plan for the proposed Project is shown on Exhibit 1-1. The Project is to consist of 4,800 square feet of fast food with drive-thru use, 10,870 square feet of shopping center use, 26,500 square feet of supermarket use, 24,700 square feet of pharmacy with drive thru use, 1,800 square feet of coffee/donut shop with drive thru use, 3,000 square feet of fast food with drive thru use for a total of 71,670 square feet. It is anticipated that the Project would be developed in a single phase with an anticipated Opening Year of 2021. For the purpose of this analysis, the following driveways will provide access to the Project site:

- Driveway 1 on Clinton Keith Road – Right-in/Right-out Access Only
- Driveway 2 on Clinton Keith Road – Right-in/Right-out Access Only
- Driveway 3 on Hidden Springs Road – Full Access
- Driveway 4 on Hidden Springs Road – Full Access

Regional access to the Project site is available from the I-15 Freeway via Clinton Keith Road interchange.

Trips generated by the Project's proposed land uses have been estimated based on the Institute of Transportation Engineers (ITE) Trip Generation Manual (10^{th} Edition, 2017). (2) The Project generates a total of 4,908 trip-ends per day on a typical weekday with approximately 351 AM peak hour trips and 412 PM peak hour trips. The assumptions and methods used to estimate the Project's trip generation characteristics are discussed in greater detail in Section 4.1 *Project Trip Generation* of this report.

It should be noted, since the time this report has been produced, the site plan has been modified. The updated site plan is shown in Exhibit 1-1, however the old site plan has been utilized for the purposes of the analysis.

1.3 ANALYSIS SCENARIOS

For the purposes of this traffic study, potential deficiencies to traffic and circulation have been assessed for each of the following conditions:

- Existing (2019)
- Existing Plus Project (E+P)

- Opening Year Cumulative (2021) Without Project
- Opening Year Cumulative (2021) With Project

1.3.1 EXISTING (2019) CONDITIONS

Information for Existing (2019) conditions is disclosed to represent the baseline traffic conditions as they existed at the time this report was prepared.

1.3.2 EXISTING PLUS PROJECT CONDITIONS

The Existing Plus Project (E+P) analysis determines any traffic and circulation system deficiencies that would occur on the existing roadway system in the scenario of the Project being placed upon Existing conditions. The E+P analysis is intended to identify the project-specific traffic impacts associated solely with the development of the proposed Project based on a comparison of the E+P traffic conditions to Existing (2019) traffic conditions.

1.3.3 OPENING YEAR CUMULATIVE (2021) CONDITIONS

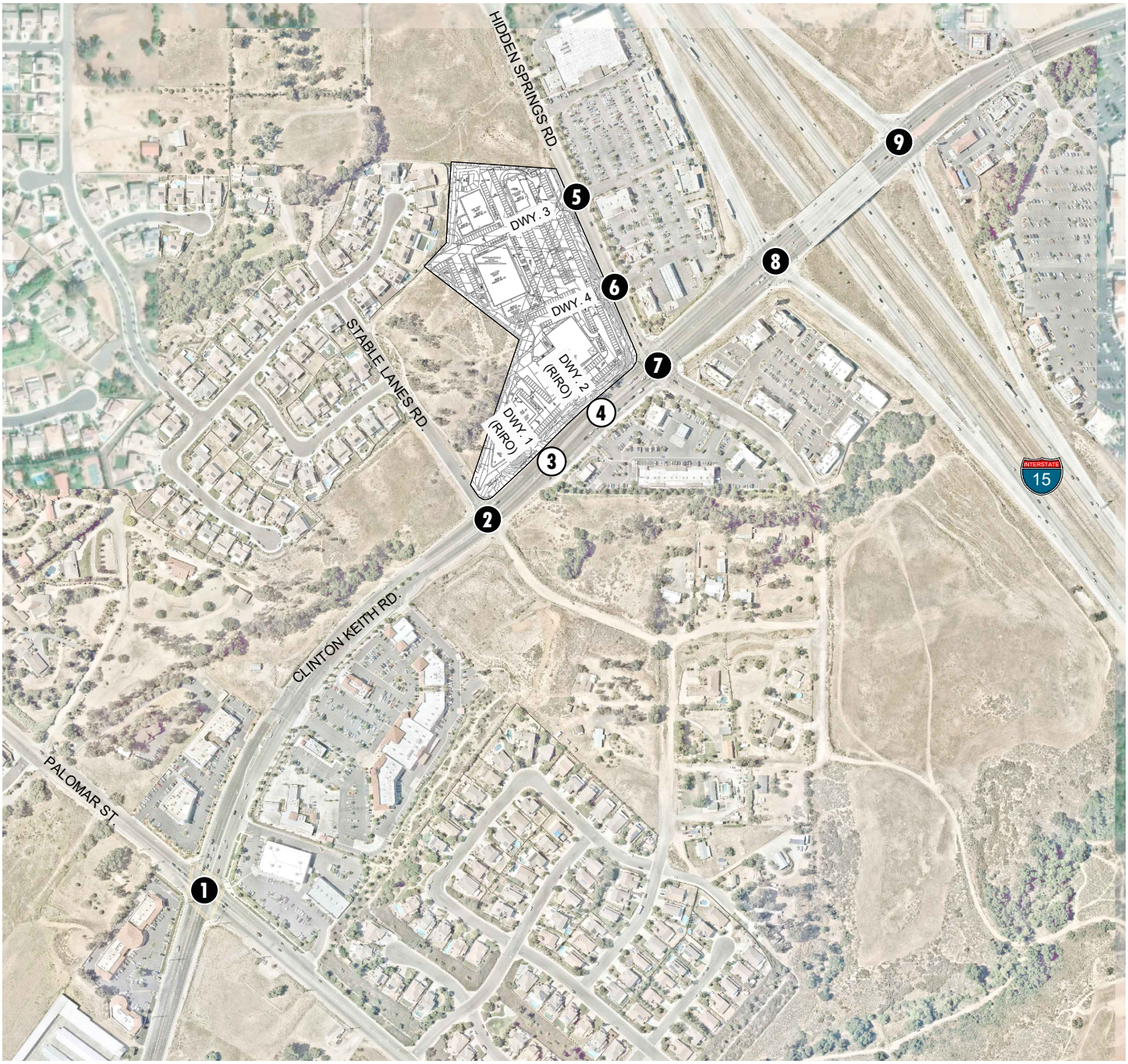
The Opening Year Cumulative conditions analysis determines the potential near-term cumulative circulation system deficiencies. To account for background traffic growth, traffic associated with other known cumulative development projects in conjunction with an ambient growth factor from Existing conditions of 2% per year (compounded annually over 2 years for a growth factor of 4.04%) are included for Opening Year Cumulative (2021) traffic conditions. Conservatively, the TIA estimates of area traffic growth then add traffic generated by other known or probable related projects. These related projects are at least in part already accounted for in the assumed 4.04% total ambient growth in traffic noted above; some of these related projects would likely not be implemented and operational within the 2021 Opening Year time frame assumed for the Project. The resulting traffic growth rate utilized in the TIA (4.04 percent ambient growth + traffic generated by related projects) would therefore tend to overstate rather than understate background cumulative traffic deficiencies under 2021 conditions. This comprehensive list was compiled from information provided by the City of Wildomar and the City of Murrieta.

1.4 STUDY AREA

To ensure that this TIA satisfies the City of Wildomar traffic study requirements, Urban Crossroads, Inc. prepared a project traffic study scoping package for review by City of Wildomar staff prior to the preparation of this report.

The following 9 study area intersections shown on Exhibit 1-2 and listed in Table 1-1 were selected for this TIA based on consultation with City of Wildomar staff. The study area includes intersections where the Project is anticipated to contribute 50 or more peak hour trips per the City of Wildomar's TIA guidelines, or have been added at the request of City staff. The "50 peak hour trip" criteria generally represents a minimum number of trips at which a typical intersection would have the potential to cause a deficiency by a given development proposal. Although each intersection may have unique operating characteristics, this traffic engineering rule of thumb is a widely utilized tool for estimating a potential area (i.e., study area) and has been utilized for other City of Wildomar projects.

EXHIBIT 1-2: LOCATION MAP



LEGEND:

(1) = EXISTING INTERSECTION ANALYSIS LOCATION

(1) = FUTURE INTERSECTION ANALYSIS LOCATION

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URBAN CROSSROADS

TABLE 1-1: INTERSECTION ANALYSIS LOCATIONS

ID	Intersection Location	Jurisdiction	CMP?
1	Palomar Street & Clinton Keith Road	City of Wildomar	No
2	Stable Lanes Road & Clinton Keith Road	City of Wildomar	No
3	Driveway 1 & Clinton Keith Road – Future Intersection	City of Wildomar	No
4	Driveway 2 & Clinton Keith Road – Future Intersection	City of Wildomar	No
5	Hidden Springs Road & Driveway 3	City of Wildomar	No
6	Hidden Springs Road & Driveway 4	City of Wildomar	No
7	Hidden Springs Road & Clinton Keith Road	City of Wildomar	No
8	I-15 Southbound Ramps & Clinton Keith Road	City of Wildomar, Caltrans	No
9	I-15 Northbound Ramps & Clinton Keith Road	City of Wildomar, Caltrans	No

The intent of a Congestion Management Program (CMP) is to more directly link land use, transportation, and air quality, thereby prompting reasonable growth management programs that will effectively utilize new transportation funds, alleviate traffic congestion and related deficiencies, and improve air quality. Counties within California have developed CMPs with varying methods and strategies to meet the intent of the CMP legislation. None of the study area intersections are identified as CMP facilities in the Riverside County CMP. (3)

1.5 ANALYSIS FINDINGS

This section provides a summary of analysis results for Existing (2019), E+P, and Opening Year Cumulative (2021) Without and With Project traffic conditions. A summary of level of service (LOS) results for all analysis scenarios is presented on Exhibit 1-3.

1.5.1 EXISTING (2019) CONDITIONS

The following study area intersections are currently operating at a deficient LOS during one or both peak hours for Existing (2019) traffic conditions:

- Palomar Street & Clinton Keith Road (#1) – LOS F AM peak hour only
- Hidden Springs Road & Clinton Keith Road (#7) – LOS E AM and PM peak hours

1.5.2 E+P CONDITIONS

The following study area intersections are anticipated to continue to operate at a deficient LOS during one or both peak hours for E+P traffic conditions. The Project is anticipated to contribute to these deficiencies by adding traffic (as measured by 50 or more peak hours trips) to already deficient intersections and will increase to peak hour delays in excess of the City's significance threshold (5.0 seconds over pre-project traffic conditions).

- Palomar Street & Clinton Keith Road (#1) – LOS F AM peak hour; LOS E PM peak hour
- Hidden Springs Road & Clinton Keith Road (#7) – LOS F AM and PM peak hours

EXHIBIT 1-3: SUMMARY OF DEFICIENT INTERSECTIONS BY ANALYSIS SCENARIO

#	Intersection	Existing (2019)	E+P	Opening Year Cumulative (2021) Without Project	Opening Year Cumulative (2021) With Project
1	Palomar St. & Clinton Keith Rd.				
2	Stable Lanes Rd. & Clinton Keith Rd.				
3	Dwy. 1 & Clinton Keith Rd.				
4	Dwy. 2 & Clinton Keith Rd.				
5	Hidden Springs Rd. & Dwy. 3	NA		NA	
6	Hidden Springs Rd. & Dwy. 4	NA		NA	
7	Hidden Springs Rd. & Clinton Keith Rd.				
8	I-15 SB Ramps & Clinton Keith Rd.				
9	I-15 NB Ramps & Clinton Keith Rd.				

LEGEND:

= AM PEAK HOUR

= PM PEAK HOUR

= LOS A-D

= LOS E

= LOS F

NA = NOT AN ANALYSIS LOCATION FOR THIS SCENARIO

1.5.3 OPENING YEAR CUMULATIVE (2021) CONDITIONS

The following study area intersections are anticipated to operate at a deficient LOS during one or both peak hours for Opening Year Cumulative (2021) Without Project traffic conditions.

- Palomar Street & Clinton Keith Road (#1) – LOS F AM and PM peak hours
- Stable Lanes Road & Clinton Keith Road (#2) – LOS F AM and PM peak hours
- Hidden Springs Road & Clinton Keith Road (#7) – LOS F AM and PM peak hours

The Project is anticipated to contribute to these deficiencies by adding traffic (as measured by 50 or more peak hours trips) to already deficient intersections and will increase to peak hour delays in excess of the City's significance threshold (5.0 seconds over pre-project traffic conditions). Cumulative impacts are deficiencies that would not be directly caused by the Project. The Project would, however, contribute traffic to these deficient facilities along with other cumulative development projects, resulting in a cumulatively considerable impact.

1.6 RECOMMENDATIONS

The following recommendations identify improvements necessary to facilitate site access and address cumulative impacts. Table 1-2 identifies the recommended improvements and indicates the Project's responsibilities towards improvements (e.g., construct or pay fees/fair share). Exhibit 1-4 shows the site adjacent recommendations. A queuing analysis of the Project driveways and site adjacent intersection of Washington Avenue and Calle Del Oso Oro/Nutmeg Street is included in Appendix 1.2.

Recommendation 1.1: Prior to the issuance of building permits, the Project Applicant shall participate in the City's DIF, County's TUMF, and County's RBBD fee programs by paying the requisite fees. See Section 7 *Local and Regional Funding Mechanisms* for details on applicable fee-programs.

Recommendation 2.1: Prior to the issuance of building permits, the Project Applicant shall contribute fair share towards the improvements identified at the intersection of Palomar Street and Clinton Keith Road that are not covered by a pre-existing fee program. The fair share contribution is necessary to address Opening Year Cumulative deficiencies.

Recommendation 3.1: ***Driveway 1 & Clinton Keith Road (#3)*** – The following improvements are necessary to accommodate site access:

- Install a stop control on the southbound approach and construct a 3rd westbound shared through-right turn lane. The driveway should be restricted to right-in/right-out access only.

Recommendation 4.1: ***Driveway 2 & Clinton Keith Road (#4)*** – The following improvements are necessary to accommodate site access:

- Install a stop control on the southbound approach and construct a 3rd westbound shared through-right turn lane. The driveway should be restricted to right-in/right-out access only.

Table 1-2

Summary of Improvements by Analysis Scenario

#	Intersection Location	Jurisdiction	Recommended Improvements		Improvements included in TUMF/DIF?[1]	Project Responsibility?[2]	Fair Share[3]
			E+P	2021 With Project			
1	Palomar St. & Clinton Keith Rd.	Wildomar	Modify the traffic signal and implement overlap phasing on the NB right turn lane	Same	No	Fair Share	17.7%
			Restripe the WB approach to accommodate 2 left turn lanes, through lane, and right turn lane.	Same	No	Fair Share	
				2nd SB left turn lane	No	Fair Share	
				2nd SB through lane	No	Fair Share	
2	Stable Lanes Rd. & Clinton Keith Rd.	Wildomar	None	Install a traffic signal[4]	Yes (DIF)	Fees	N/A
7	Hidden Springs. Rd. & Clinton Keith Rd.	Wildomar	2nd SB left turn lane	Same	No	Construct	N/A
			Modify the traffic signal and implement overlap phasing on the WB right turn lane	Same	No	Construct	N/A

[1] Improvements included in TUMF Nexus, or City of Wildomar DIF fee programs.

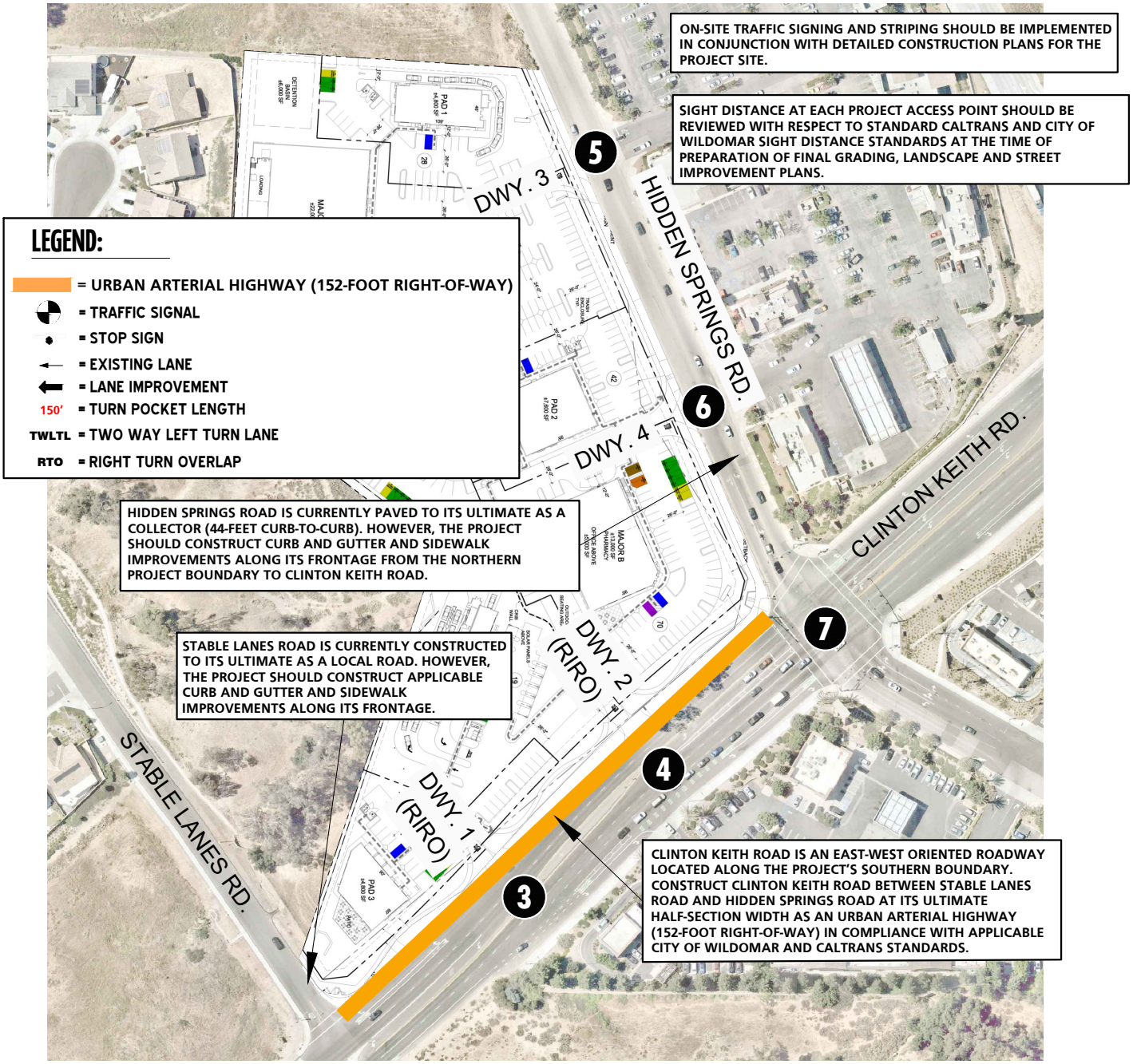
[2] Identifies the Project's responsibility to construct an improvement or contribute fair share or fee payment towards the implementation of the improvement shown.

[3] Program improvements constructed by the Project may be eligible for fee credit. In lieu fee payment is at discretion of the City.

NA = not applicable; if improvement is included in a pre-existing fee program or Project is constructing the improvement, fair share has not been provided as it does not apply.

[4] Improvement includes removing the existing median with the construction of the traffic signal to allow full turning movements at this intersection.

EXHIBIT 1-4: SITE ADJACENT ROADWAY AND SITE ACCESS RECOMMENDATIONS



Recommendation 5.1: ***Hidden Springs Road & Driveway 3 (#5)*** – The following improvements are necessary to accommodate site access:

- Align the driveway with the existing driveway on the east side and install a stop control on the eastbound approach. Accommodate a northbound left turn lane within the painted two-way-left turn lane median.

Recommendation 6.1: ***Hidden Springs Road & Driveway 4 (#6)*** – The following improvements are necessary to accommodate site access:

- Align the driveway with the existing driveway on the east side and install a stop control on the eastbound approach. Accommodate a northbound left turn lane within the painted two-way-left turn lane median.

Recommendation 7.1: Hidden Springs Road & Clinton Keith Road (#7) – The following improvements are necessary to accommodate site access:

- Construct a 2nd southbound left turn lane and modify the traffic signal to accommodate westbound right turn overlap phasing on the right turn lane.

Recommendation 8.1: Clinton Keith Road is an east-west oriented roadway located along the Project's southern boundary. Construct Clinton Keith Road to its ultimate half-section width as an Urban Arterial Highway (152-foot right-of-way) from Stable Lanes Road to Hidden Springs Road in compliance with applicable City of Wildomar standards.

Recommendation 9.1: Hidden Springs Road is a north-south oriented roadway located along the Project's eastern boundary. Hidden Springs Road appears to be constructed to its ultimate full-section along the Project's frontage on the west side as a Collector (44-foot curb-to-curb) in compliance with applicable City of Wildomar standards. However, the Project should construct the necessary curb and gutter and sidewalk modifications to accommodate the proposed Project access points along Hidden Springs Road.

Recommendation 10.1: Stable Lanes Road is currently constructed to its ultimate cross-section as a local road. However, the Project should construct applicable curb-and-gutter and sidewalk improvements along its frontage on Stable Lanes Road.

Wherever necessary, roadways adjacent to the Project, site access points and site-adjacent intersections will be constructed to be consistent with the identified roadway classifications and respective cross-sections in the City of Wildomar General Plan Circulation Element.

On-site traffic signing and striping should be implemented in conjunction with detailed construction plans for the Project site.

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2 METHODOLOGIES

This section of the report presents the methodologies used to perform the traffic analyses summarized in this report. The methodologies described are generally consistent with City of Wildomar traffic study guidelines.

2.1 LEVEL OF SERVICE

Traffic operations of roadway facilities are described using the term "Level of Service" (LOS). LOS is a qualitative description of traffic flow based on several factors such as speed, travel time, delay, and freedom to maneuver. Six levels are typically defined ranging from LOS A, representing completely free-flow conditions, to LOS F, representing breakdown in flow resulting in stop-and-go conditions. LOS E represents operations at or near capacity, an unstable level where vehicles are operating with the minimum spacing for maintaining uniform flow.

2.2 INTERSECTION CAPACITY ANALYSIS

The definitions of LOS for interrupted traffic flow (flow restrained by the existence of traffic signals and other traffic control devices) differ slightly depending on the type of traffic control. The LOS is typically dependent on the quality of traffic flow at the intersections along a roadway. The *Highway Capacity Manual* (HCM) methodology expresses the LOS at an intersection in terms of delay time for the various intersection approaches. (4) The HCM uses different procedures depending on the type of intersection control.

2.2.1 SIGNALIZED INTERSECTIONS

The City of Wildomar requires signalized intersection operations analysis based on the methodology described in the HCM. Intersection LOS operations are based on an intersection's average control delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. For signalized intersections LOS is directly related to the average control delay per vehicle and is correlated to a LOS designation as described in Table 2-1. Study area intersections have been evaluated using the Synchro (Version 10) analysis software package.

TABLE 2-1: SIGNALIZED INTERSECTION LOS THRESHOLDS

Description	Average Control Delay (Seconds), V/C ≤ 1.0	Level of Service, V/C ≤ 1.0	Level of Service, V/C > 1.0
Operations with very low delay occurring with favorable progression and/or short cycle length.	0 to 10.00	A	F
Operations with low delay occurring with good progression and/or short cycle lengths.	10.01 to 20.00	B	F

Description	Average Control Delay (Seconds), V/C ≤ 1.0	Level of Service, V/C ≤ 1.0	Level of Service, V/C > 1.0
Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.01 to 35.00	C	F
Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35.01 to 55.00	D	F
Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.01 to 80.00	E	F
Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	80.01 and up	F	F

Source: HCM, 6th Edition

The traffic modeling and signal timing optimization software package Synchro (Version 10) has been utilized to analyze signalized intersections within the study area. Synchro is a macroscopic traffic software program that is based on the signalized intersection capacity analysis as specified in the HCM (6th Edition). (4) Macroscopic level models represent traffic in terms of aggregate measures for each movement at the study intersections. Equations are used to determine measures of effectiveness such as delay and queue length. The LOS and capacity analysis performed by Synchro takes into consideration optimization and coordination of signalized intersections within a network.

The LOS analysis for signalized intersections has been performed using existing signal timing for Existing, E+P, and Opening Year Cumulative (2021) traffic conditions. Appropriate time for pedestrian crossings has also been considered in the signalized intersection analysis.

The peak hour traffic volumes have been adjusted using a peak hour factor (PHF) to reflect peak 15-minute volumes. Common 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. Per the HCM (6th Edition), PHF values over 0.95 often are indicative of high traffic volumes with capacity constraints on peak hour flows while lower PHF values are indicative of greater variability of flow during the peak hour. (4)

Saturation flow rates of 1,900 vehicles per hour of green (vphg) has been utilized, consistent with the recommended values in the County's traffic study guidelines. (1)

2.2.2 UNSIGNALIZED INTERSECTIONS

The City of Wildomar requires the operations of unsignalized intersections be evaluated using the methodology described the HCM. (4) The LOS rating is based on the weighted average control delay expressed in seconds per vehicle (see Table 2-2).

TABLE 2-2: UNSIGNALIZED INTERSECTION LOS THRESHOLDS

Description	Average Control Delay Per Vehicle (Seconds)	Level of Service, V/C ≤ 1.0	Level of Service, V/C > 1.0
Little or no delays.	0 to 10.00	A	F
Short traffic delays.	10.01 to 15.00	B	F
Average traffic delays.	15.01 to 25.00	C	F
Long traffic delays.	25.01 to 35.00	D	F
Very long traffic delays.	35.01 to 50.00	E	F
Extreme traffic delays with intersection capacity exceeded.	> 50.00	F	F

Source: HCM, 6th Edition

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. For approaches composed of a single lane, the delay is computed as the average of all movements in that lane. For all-way stop controlled intersections, LOS is computed for the intersection as a whole.

2.3 TRAFFIC SIGNAL WARRANT ANALYSIS METHODOLOGY

The term "signal warrants" refers to the list of established criteria used by Caltrans and other public agencies to quantitatively justify or ascertain the potential need for installation of a traffic signal at an otherwise unsignalized intersection. This TIA uses the signal warrant criteria presented in the latest edition of the California Department of Transportation (Caltrans) California Manual on Uniform Traffic Control Devices (CA MUTCD). (5)

The signal warrant criteria for Existing study area intersections are based upon several factors, including volume of vehicular and pedestrian traffic, frequency of accidents, and location of school areas. The CA MUTCD indicates that the installation of a traffic signal should be considered if one or more of the signal warrants are met. (5) Specifically, this TIA utilizes the Peak Hour Volume-based Warrant 3 as the appropriate representative traffic signal warrant analysis for existing traffic conditions. Warrant 3 is appropriate to use for this TIA because it provides specialized warrant criteria for intersections with rural characteristics (e.g. located in communities with populations of less than 10,000 persons or with adjacent major streets operating above 40 miles per hour). For the purposes of this study, the speed limit was the basis for determining whether Urban or Rural warrants were used for a given intersection.

As shown in Table 2-3, traffic signal warrant analyses were performed for the following unsignalized study area intersections during the peak weekday conditions wherein the Project is anticipated to contribute the highest trips:

TABLE 2-3: TRAFFIC SIGNAL WARRANT ANALYSIS LOCATIONS

ID	Intersection Location	Jurisdiction
2	Stable Lanes Road & Clinton Keith Road	City of Wildomar
5	Hidden Springs Road & Driveway 3	City of Wildomar
6	Hidden Springs Road & Driveway 4	City of Wildomar

A traffic signal warrant analysis has not been conducted for the intersection of Stable Lanes Road and Clinton Keith Road for Existing and E+P traffic conditions as the intersection currently has and is anticipated to maintain the restricted access (right-in/right-out/left-in only). However, a traffic signal warrant analysis has been conducted for Opening Year Cumulative traffic conditions when the intersection is proposed for full access. The Existing conditions traffic signal warrant analysis is presented in the subsequent section, Section 3 *Area Conditions* of this report. The traffic signal warrant analyses for future conditions are presented in Section 5 *E+P Traffic Analysis,* and Section 6 *Opening Year Cumulative (2021) Traffic Analysis*.

It is important to note that a signal warrant defines the minimum condition under which the installation of a traffic signal might be warranted. Meeting this threshold condition does not require that a traffic control signal be installed at a particular location, but rather, that other traffic factors and conditions be evaluated in order to determine whether the signal is truly justified. It should also be noted that signal warrants do not necessarily correlate with LOS. An intersection may satisfy a signal warrant condition and operate at or above acceptable LOS or operate below acceptable LOS and not meet a signal warrant.

2.4 FREEWAY OFF-RAMP QUEUING ANALYSIS

Consistent with Caltrans requirements, the 95th percentile queuing of vehicles has been assessed at the off-ramps to determine potential queuing deficiencies at the freeway ramp intersections at the I-15 Freeway and Clinton Keith Road interchange. Specifically, the queuing analysis is utilized to identify any potential queuing and "spill back" onto the I-15 Freeway mainline from the off-ramps.

The traffic progression analysis tool and HCM intersection analysis program, Synchro, has been used to assess the potential deficiencies/needs of the intersections with traffic added from the proposed Project. Storage (turn-pocket) length recommendations at the ramps have been based upon the 95th percentile queue resulting from the Synchro progression analysis. The footnote from the Synchro output sheets indicates if the 95th percentile cycle exceeds capacity.

A vehicle is considered queued whenever it is traveling at less than 10 feet/second. A vehicle will only become queued when it is either at the stop bar or behind another queued vehicle. The 50th percentile or average queue represents the typical queue length for peak hour traffic conditions, while the 95th percentile queue is derived from the average queue plus 1.65 standard deviations. The 95th percentile queue is not necessarily ever observed it is simply based on statistical calculations.

2.5 MINIMUM LEVEL OF SERVICE (LOS)

2.5.1 CITY OF WILDOMAR

The City of Wildomar defines intersection performance deficiency standards consistent with those of the County of Riverside General Plan Circulation Element. The Riverside County General Plan Policy C 2.1 states that the County will maintain the following County-wide target LOS:

The following minimum target levels of service have been designated for the review of development proposals in the unincorporated areas of Riverside County with respect to transportation impacts on roadways designated in the Riverside County Circulation Plan which are currently County maintained, or are intended to be accepted into the County maintained roadway system:

- *LOS C shall apply to all development proposals in any area of the Riverside County not located within the boundaries of an Area Plan, as well as those areas located within the following Area Plans: REMAP, Eastern Coachella Valley, Desert Center, Palo Verde Valley, and those non-Community Development areas of the Elsinore, Lake Mathews/Woodcrest, Mead Valley and Temescal Canyon Area Plans.*
- *LOS D shall apply to all development proposals located within any of the following Area Plans: Eastvale, Jurupa, Highgrove, Reche Canyon/Badlands, Lakeview/Nuevo, Sun City/Menifee Valley, Harvest Valley/Winchester, Southwest Area, The Pass, San Jacinto Valley, Western Coachella Valley and those Community Development Areas of the Elsinore, Lake Mathews/Woodcrest, Mead Valley and Temescal Canyon Area Plans.*
- *LOS E may be allowed by the Board of Supervisors within designated areas where transit-oriented development and walkable communities are proposed.*

The applicable minimum LOS utilized for the purposes of this analysis for the intersections located within the City of Wildomar is LOS D per the County-wide target LOS for projects located within a Community Development Area.

2.5.2 CALTRANS

Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on their State facilities; however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing State highway facility is operating at less than this target LOS, the existing LOS should be maintained. Caltrans acknowledges that the region-wide goal for an acceptable LOS on all freeways, roadway segments, and intersections is LOS D. Consistent with the City of Wildomar LOS threshold of LOS D, LOS D will be used as the target LOS for the arterial-to-freeway ramps.

2.6 THRESHOLDS OF SIGNIFICANCE

2.6.1 CITY OF WILDOMAR

To determine whether the addition of project-related traffic at a study intersection would result in a significant project-related impact, the following thresholds of significance will be utilized:

- A significant project-related impact occurs at a study intersection if the addition of project-generated trips reduces the peak hour level of service of the study intersection to change from acceptable "pre-project" operation (LOS A, B, C, or D) to deficient operation (LOS E or F);
- A significant project-related impact occurs at a study intersection if the addition of project-generated trips changes the pre-project delay by the value shown below.

TABLE 2-1: CITY OF WILDOMAR INTERSECTION TRAFFIC LEVEL OF SERVICE STANDARD

Pre-Project Los	Project-Related Delay Increase	Mitigation Measure
E or F	More than 5.0 seconds	Reduce delay increase to within 5.0 seconds

The City of Wildomar significance thresholds will be applied at study area intersections for the purposes of determining project-related impacts. A fair share analysis will also be conducted for applicable study area intersections.

2.6.2 CALTRANS

Per Caltrans traffic study guidelines, to determine whether the addition of Project traffic to the State Highway System freeway segments would result in a deficiency, the following will be utilized:

- The traffic study finds that the LOS of a segment will degrade from D or better to E or F.
- The traffic study finds that the project will exacerbate an already deficient condition by contributing 50 or more peak hour trips. A segment that is operating at or near capacity is deemed to be deficient.

2.7 PROJECT FAIR SHARE CALCULATION METHODOLOGY

For improvements that do not appear to be in either of the pre-existing fee programs, a fair share financial contribution based on the Project's proportional share may be imposed in order to improve the Project's share of deficiencies in lieu of construction. It should be noted that fair share calculations are for informational purposes only and the City's Traffic Engineer will determine the appropriate improvements to be implemented by a project (to be identified in the conditions of approval).

The Project's fair share The Project's fair share cost of improvements would be determined based on the following equation, which is the ratio of Project traffic to new traffic, where new traffic is total future traffic less existing baseline traffic:

Project Fair Share % = Project Traffic / (2021 With Project Total Traffic – Existing Traffic)

3 AREA CONDITIONS

This section provides a summary of the existing circulation network, the City of Wildomar General Plan Circulation Network, and a review of existing peak hour intersection operations off-ramp queuing, and traffic signal warrant analyses.

3.1 EXISTING CIRCULATION NETWORK

Pursuant to the agreement with City of Wildomar staff (Appendix 1.1), the study area includes a total of 3 existing and future intersections as shown previously on Exhibit 1-2. Exhibit 3-1 illustrates the study area intersections located near the proposed Project and identifies the number of through traffic lanes for existing roadways and intersection traffic controls.

3.2 CITY OF WILDOMAR GENERAL PLAN CIRCULATION ELEMENT

Exhibit 3-2 shows the City of Wildomar General Plan Circulation Element, and Exhibit 3-3 illustrates the City of Wildomar General Plan roadway cross-sections.

Urban Arterial Highways are intended to serve through traffic where anticipated traffic volumes exceed four-lane capacity. An example of an Urban Arterial Highway within the study area includes:

- Clinton Keith Road

Arterial Highways are divided highways primarily for through traffic to which access from abutting property shall be kept at a minimum. An example of an Arterial Highway within the study area includes:

- Palomar Street

Collectors are streets intended to serve intensive residential land use, multiple-family dwellings, or to convey traffic through an area to roads of equal or similar classification or higher. Examples of Collectors within the study area include:

- Stable Lanes Road
- Hidden Springs Road

3.3 BICYCLE & PEDESTRIAN FACILITIES

Exhibit 3-4 illustrates the City of Wildomar community/regional roadside, off-road multi-use trails map. Palomar Street has a multi-use trail within the study area. There are two regional trails to the south of Clinton Keith Road within the study area: Madison Chaney Regional Trail and Forbes-McGee Regional Trail. Existing pedestrian facilities within the study area are shown on Exhibit 3-5. Class II bike lanes are striped on-street bike lanes. There are Class II bike lanes along Clinton Keith Road through the study area in both the eastbound and westbound directions. Field observations conducted in August 2019 indicate nominal pedestrian and bicycle activity within the study area.

EXHIBIT 3-1: EXISTING NUMBER OF THROUGH LANES AND INTERSECTION CONTROLS

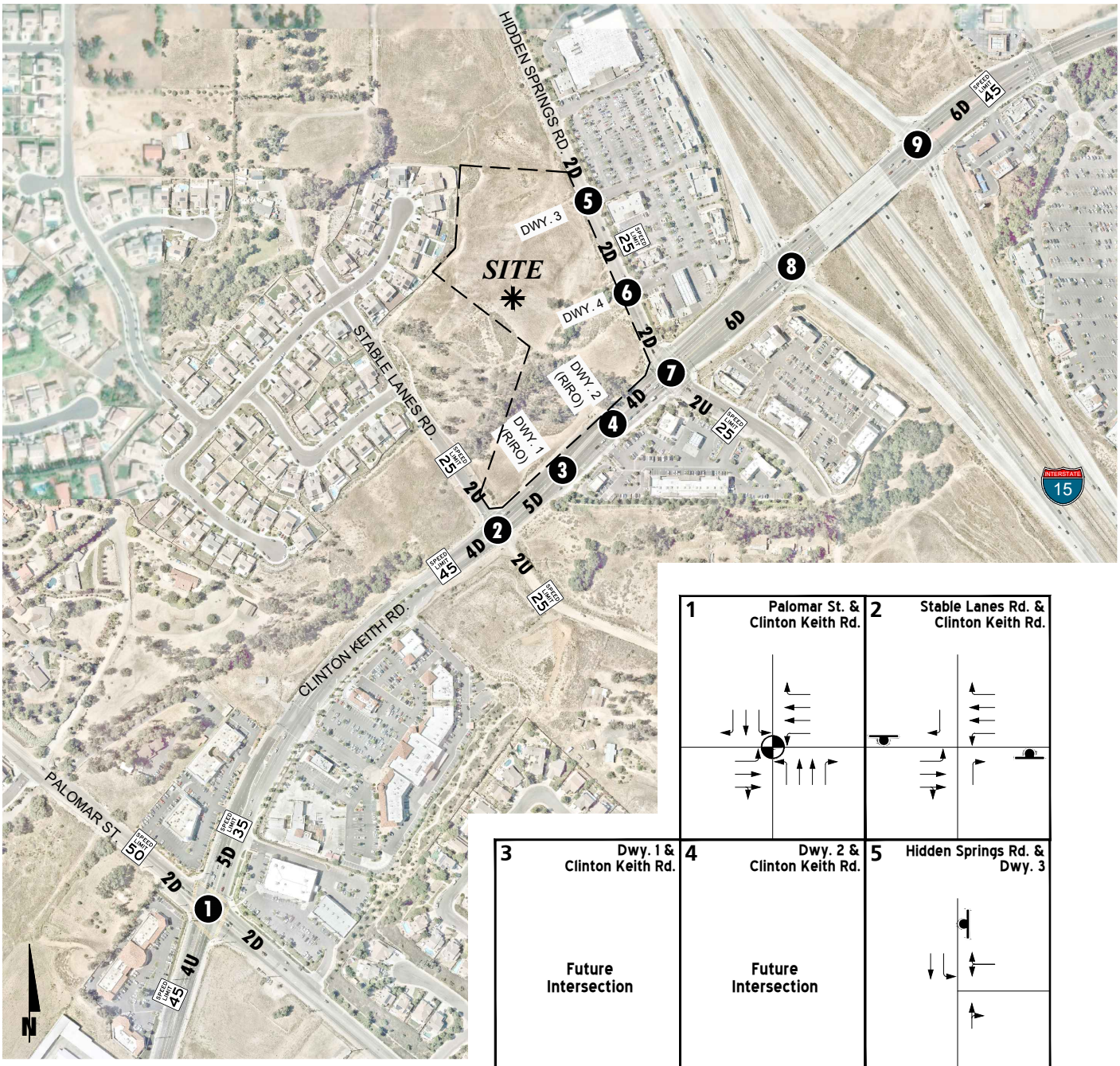

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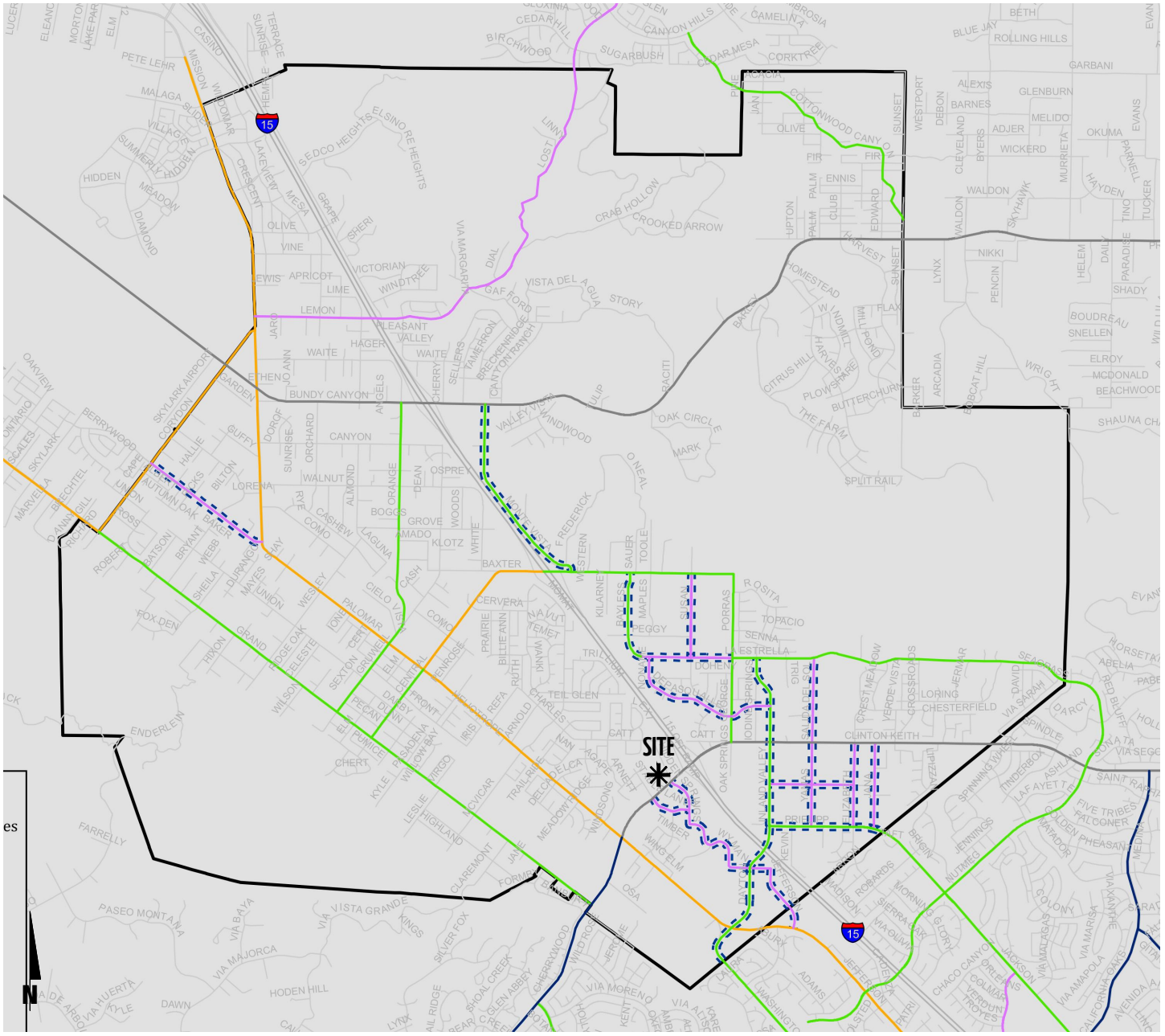
EXHIBIT 3-2: CITY OF WILDOMAR GENERAL PLAN CIRCULATION AND INFRASTRUCTURE ELEMENT



LEGEND:

- Wildomar Proposed Circulation Changes
- Urban Arterial
- Arterial
- Major
- Secondary
- Collector
- Wildomar City Limit Boundary

NOTE: CITY OF WILDOMAR DRAFT GENERAL PLAN UPDATE JANUARY 2015

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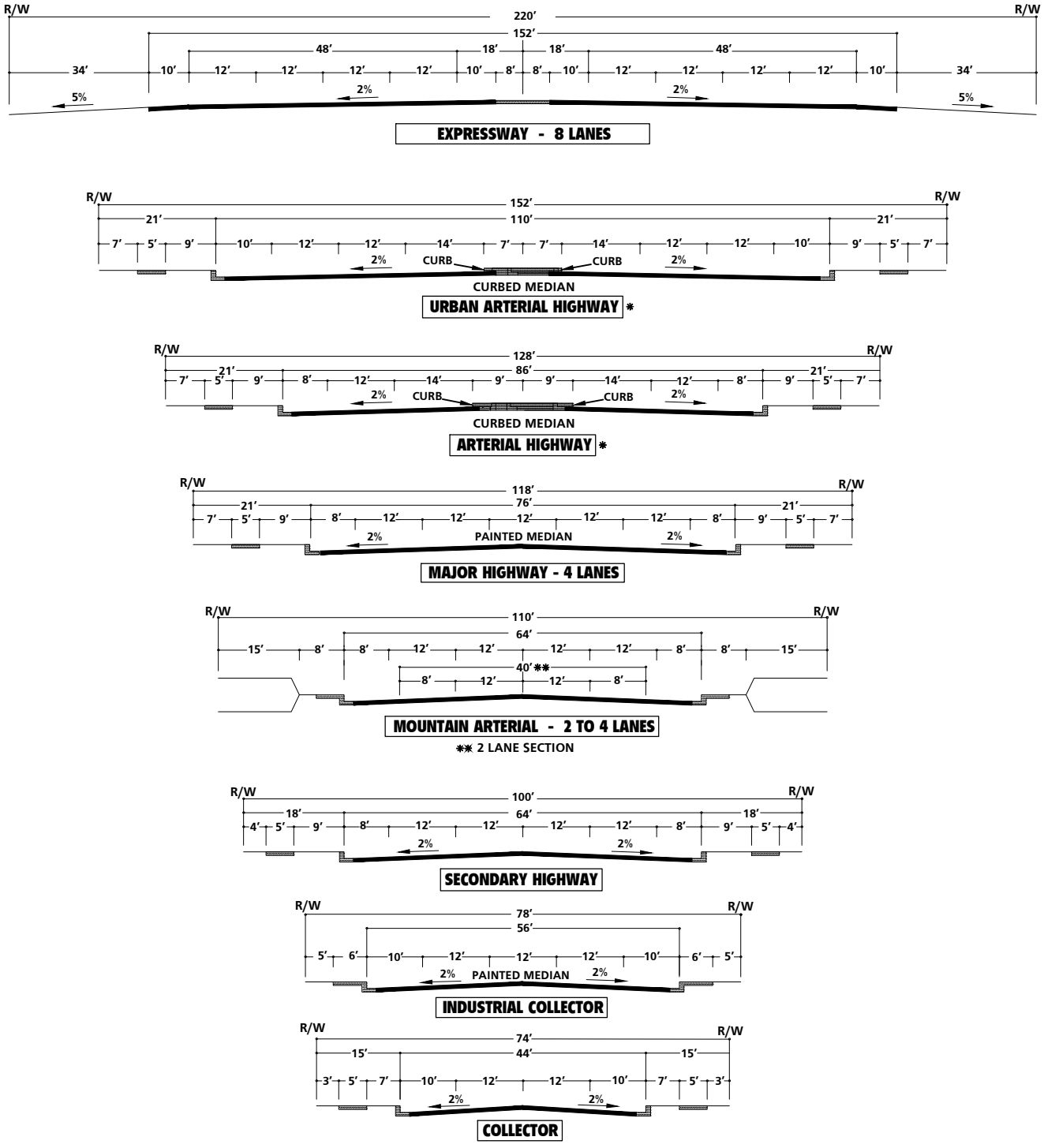
URBAN CROSSROADS

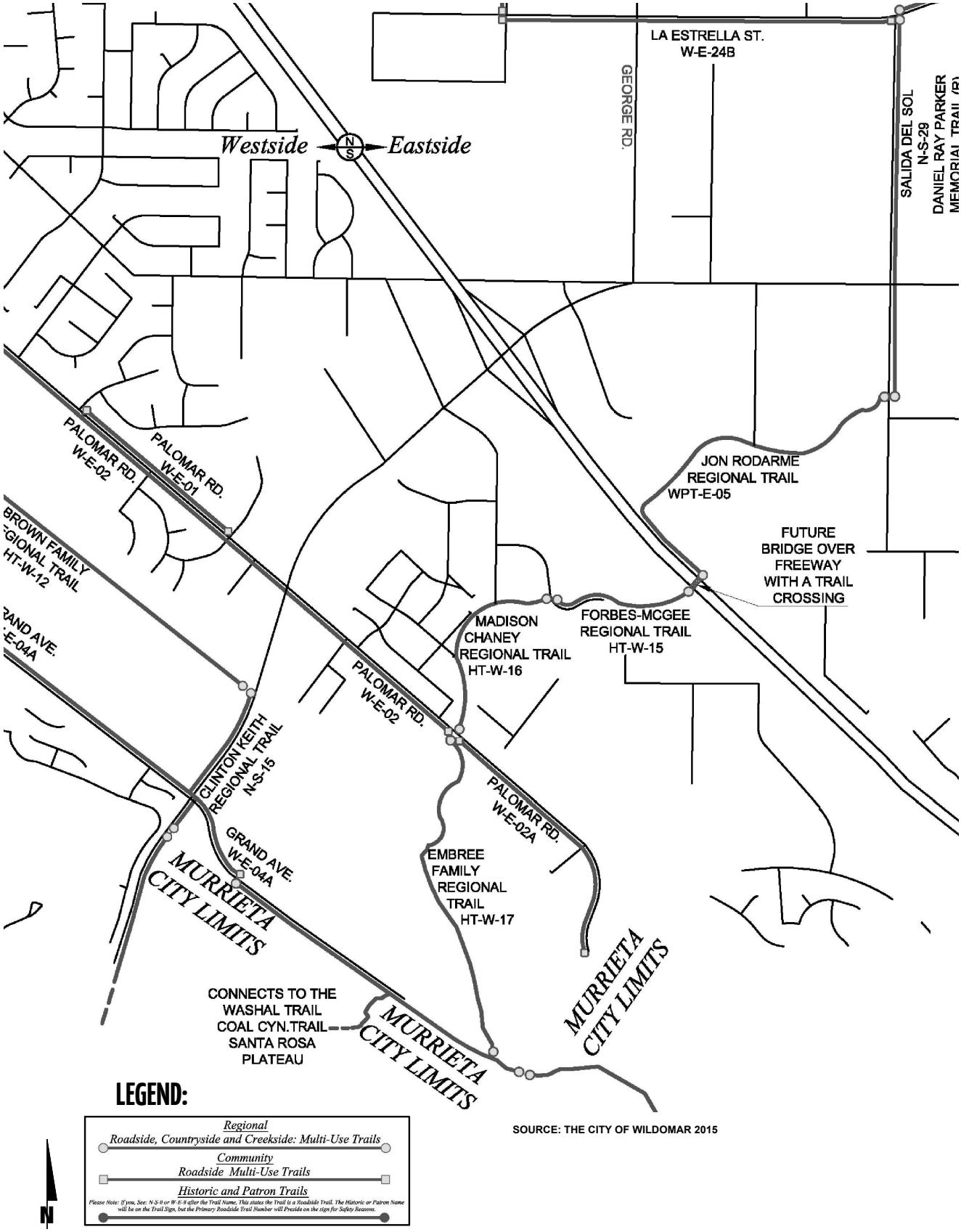
EXHIBIT 3-3: CITY OF WILDOMAR GENERAL PLAN ROADWAY CROSS-SECTIONS



* *IMPROVEMENTS MAY BE RECONFIGURED TO ACCOMMODATE EXCLUSIVE TRANSIT LANES OR ALTERNATIVE LANE ARRANGEMENTS ADDITIONAL RIGHT OF WAY MAY BE REQUIRED AT INTERSECTIONS TO ACCOMMODATE ULTIMATE IMPROVEMENTS FOR STATE HIGHWAYS SHALL CONFORM TO CALTRANS DESIGN STANDARDS.*

NOTE: THE CITY OF WILDOMAR HAS ADOPTED THE COUNTY OF RIVERSIDE'S GENERAL PLAN AND STANDARDS

EXHIBIT 3-4: CITY OF WILDOMAR COMMUNITY/REGIONAL ROADSIDE, OFF-ROAD MULTI-USE-TRAILS



SOURCE: THE CITY OF WILDOMAR 2015

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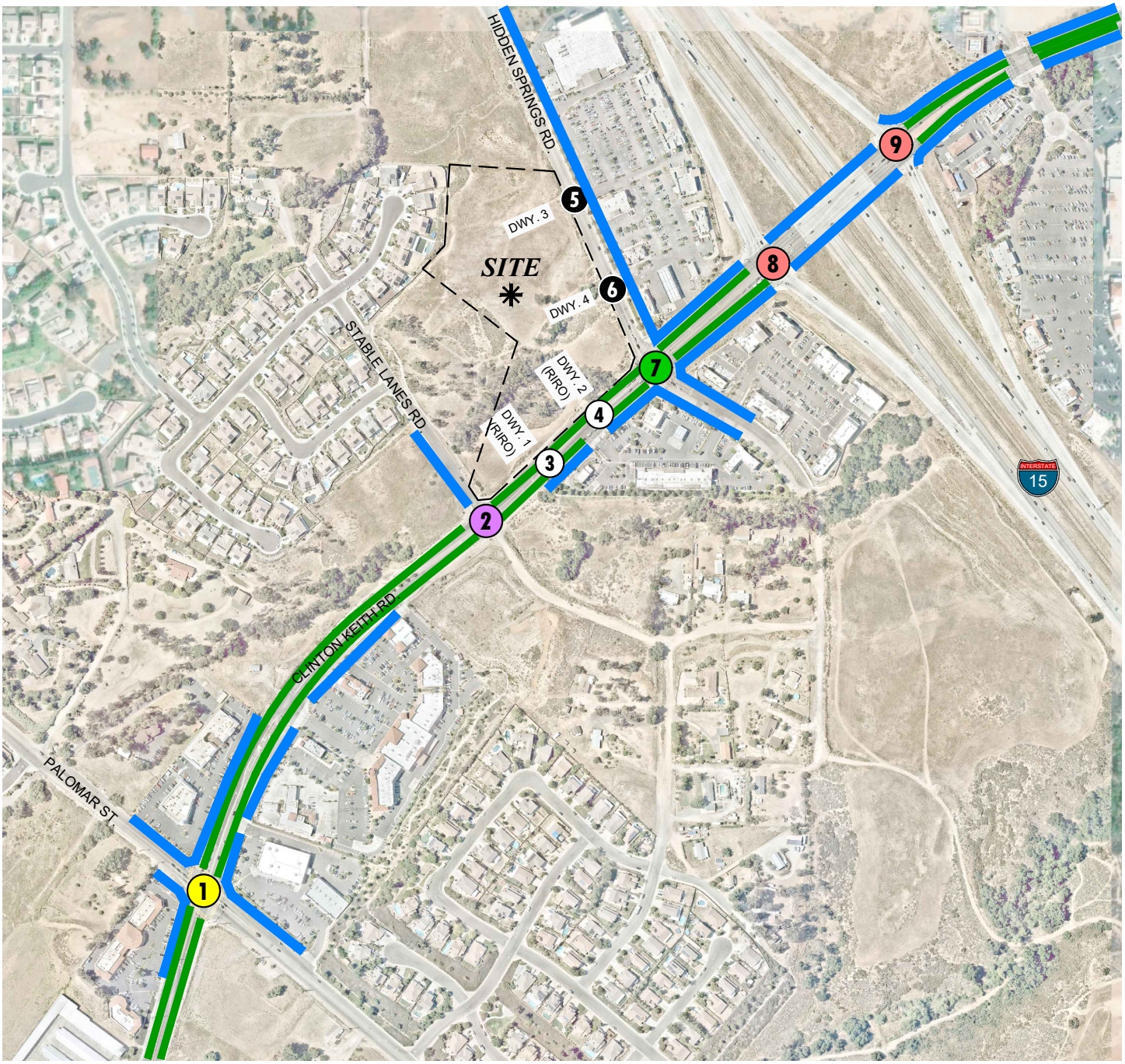
EXHIBIT 3-5: EXISTING PEDESTRIAN FACILITIES



LEGEND:

- = SIDEWALK
- = BIKE LANE
- B = BUS STOP
- 0 = NO CROSSWALK
- 0 = FUTURE INTERSECTION
- 0 = CROSSWALK ON ALL APPROACHES
- 0 = CROSSWALK ON TWO APPROACHES
- 0 = CROSSWALK ON ONE APPROACH
- 0 = SCHOOL CROSSWALK ON # APPROACHES

N

3.4 TRANSIT SERVICE

The study area is currently served by Riverside Transit Authority (RTA), a public transit agency serving various jurisdictions within Riverside County. The existing bus route serving the study area is shown on Exhibit 3-6. The study area currently served by RTA Route 23, which operates along Clinton Keith Road to the east of Hidden Springs Road and Hidden Springs Road north of Clinton Keith Road. There is an existing bus stop located north of the Project site on the east side of Hidden Springs Road. It is likely that the existing RTA Route 23 could serve the Project in the future. Transit service is reviewed and updated by RTA periodically to address ridership, budget and community demand needs. Changes in land use can affect these periodic adjustments which may lead to either enhanced or reduced service where appropriate.

3.5 EXISTING (2019) TRAFFIC COUNTS

The intersection LOS analysis is based on the traffic volumes observed during the peak hour conditions using traffic count data collected in August 2019. The following peak hours were selected for analysis:

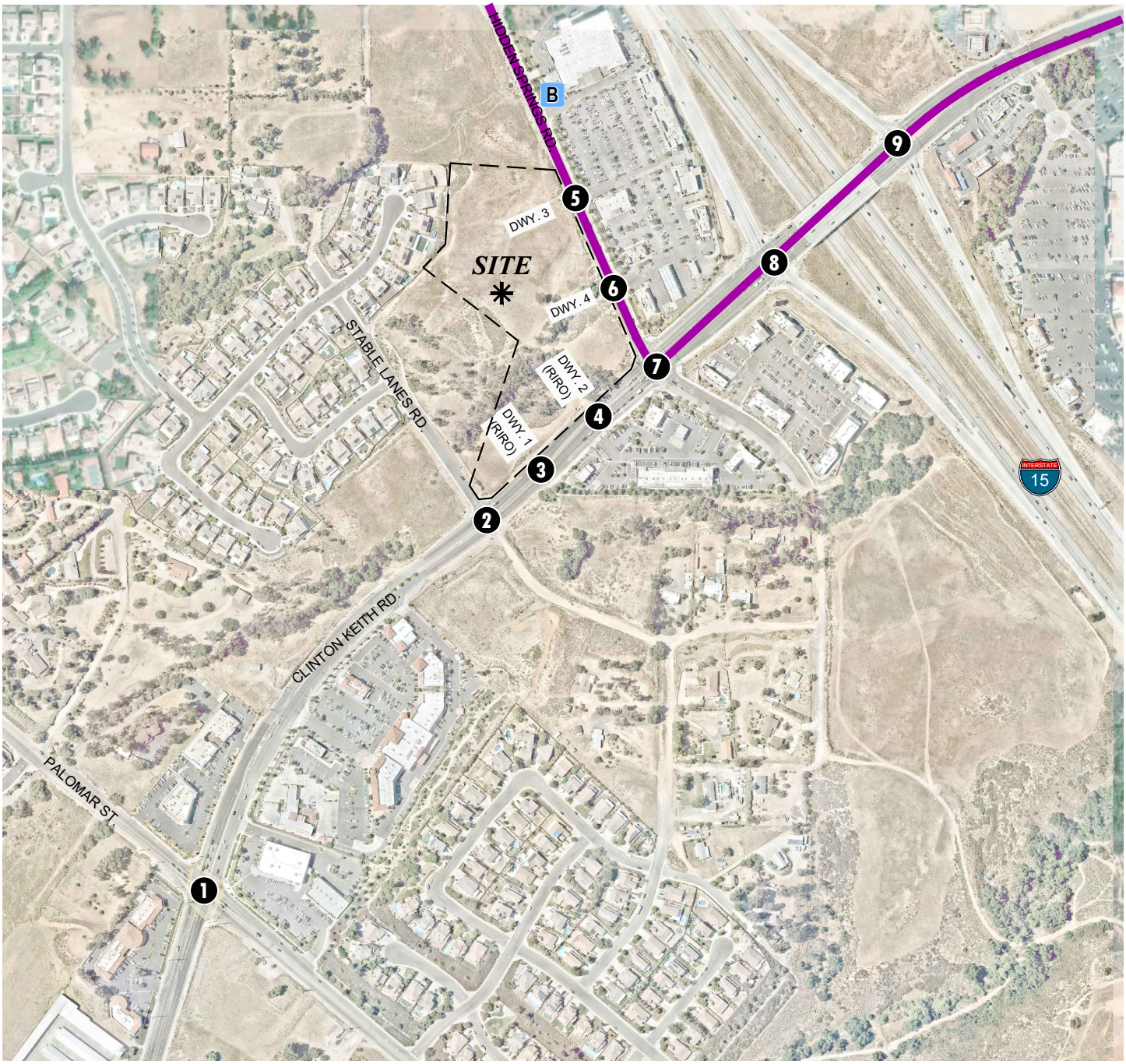
- Weekday AM Peak Hour (peak hour between 7:00 AM and 9:00 AM)
- Weekday PM Peak Hour (peak hour between 4:00 PM and 6:00 PM)

The weekday AM and weekday PM peak hour count data is representative of typical weekday peak hour traffic conditions in the study area. During the PM peak hour there were long queues observed for the southbound left turn lane at Hidden Springs Road and Clinton Keith Road. In addition, there were heavy queues observed for the westbound approach along Clinton Keith Road at Hidden Springs Road, however, these queues would be served within a cycle and does not appear to adversely affect the operations of the interchange. There were no observations made in the field that would indicate atypical traffic conditions on the count dates, such as construction activity or detour routes and near-by schools were in session and operating on normal schedules. The raw manual peak hour turning movement traffic count data sheets are included in Appendix 3.1. These raw turning volumes have been flow conserved between intersections with limited access, no access and where there are currently no uses generating traffic (e.g., between ramp-to-arterial intersections, etc.).

Existing AM and PM peak hour turning movement volumes and average daily traffic (ADT) volumes on arterial highways throughout the study area are shown on Exhibit 3-7. Existing ADT volumes are based upon factored intersection peak hour counts collected by Urban Crossroads, Inc. using the following formula for each intersection leg:

Weekday PM Peak Hour (Approach Volume + Exit Volume) x 12.61 = Leg Volume

EXHIBIT 3-6: EXISTING TRANSIT ROUTES



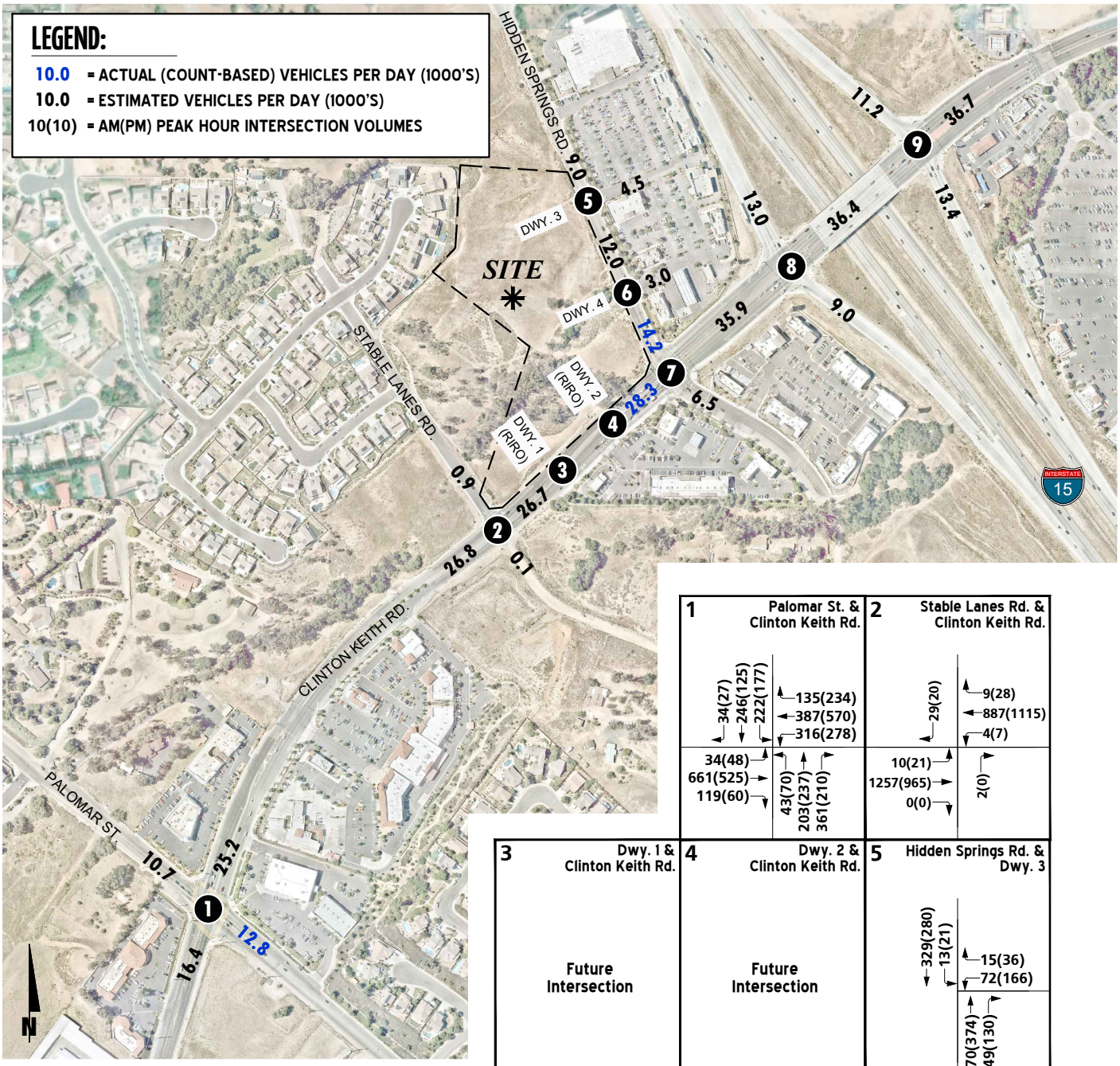
LEGEND:

= RTA ROUTE 23

B = BUS STOP

N

EXHIBIT 3-7: EXISTING (2019) TRAFFIC VOLUMES



For those roadway segments which have 24-hour tube count data available in close proximity to the study area, a comparison between the PM peak hour and daily traffic volumes indicated that the peak-to-daily relationship of approximately 7.93 percent would sufficiently estimate ADT volumes for planning-level analyses. As such, the above equation utilizing a factor of 12.61 estimates the ADT volumes on the study area roadway segments assuming a peak-to-daily relationship of approximately 7.93 percent (i.e., 1/0.0793 = 12.61).

3.6 EXISTING (2019) CONDITIONS INTERSECTION OPERATIONS ANALYSIS

Existing peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2.2 *Intersection Capacity Analysis* of this report. The intersection operations analysis results are summarized in Table 3-1, which indicates that the study area intersection currently operates at an acceptable LOS during the peak hours, with the exception of the following:

- Palomar Street & Clinton Keith Road (#1) – LOS F AM peak hour only
- Hidden Springs Road & Clinton Keith Road (#7) – LOS E AM and PM peak hours

Consistent with Table 3-1, a summary of the peak hour intersection LOS for Existing conditions are shown on Exhibit 3-8. The intersection operations analysis worksheets are included in Appendix 3.2 of this TIA.

3.7 EXISTING (2019) CONDITIONS TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants for Existing traffic conditions are based on existing peak hour intersection turning volumes. There are no existing intersections that currently warrant a traffic signal for Existing (2019) traffic conditions. Existing conditions traffic signal warrant analysis worksheets are provided in Appendix 3.3.

3.8 EXISTING (2019) OFF-RAMP QUEUING ANALYSIS

A queuing analysis was performed for the off-ramps at the I-15 Freeway and Clinton Keith Road interchange to assess vehicle queues for the off ramps that may potentially result in deficient peak hour operations at the ramp-to-arterial intersections and may potentially "spill back" onto the I-15 Freeway mainline. Queuing analysis findings are presented in Table 3-2. It is important to note that off-ramp lengths are consistent with the measured distance between the intersection and the freeway mainline. As shown in Table 3-2, there are no movements currently experiencing queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows. This finding is consistent with field observations at the time traffic counts were conducted. Worksheets for Existing traffic conditions off-ramp queuing analysis are provided in Appendix 3.4.

Table 3-1

Intersection Analysis for Existing (2019) Conditions

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[2] (Secs.)		Level of Service	
			Northbound			Southbound			Eastbound			Westbound						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
1	Palomar St. & Clinton Keith Rd.	TS	1	2	1	1	1	1	1	2	0	1	2	1	**87.2**	49.0	**F**	D
2	Stable Lanes Rd. & Clinton Keith Rd.	CSS	0	0	1	0	0	1	1	2	0	1	2	1	14.3	13.4	B	B
3	Driveway 1 & Clinton Keith Rd.		Future Intersection												--	--	--	--
4	Driveway 2 & Clinton Keith Rd.		Future Intersection												--	--	--	--
5	Hidden Springs Rd. & Driveway 3	CSS	0	1	0	1	1	0	0	0	0	0	1	0	12.6	18.6	B	C
6	Hidden Springs Rd. & Driveway 4	CSS	0	1	0	1	1	0	0	0	0	0	1	0	14.1	17.7	B	C
7	Hidden Springs Rd. & Clinton Keith Rd.	TS	1	1	1	1	1	0	1	3	1	2	2	1	**63.3**	**66.5**	**E**	**E**
8	I-15 SB Ramps & Clinton Keith Rd.	TS	0	0	0	1	1	2	0	3	1	2	3	0	24.1	21.6	C	C
9	I-15 NB Ramps & Clinton Keith Rd.	TS	1	1	1	0	0	0	2	3	0	0	3	1	16.9	19.0	B	B

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

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right

[2] Per the Highway Capacity Manual (6th 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.

[3] CSS = Cross-street Stop; TS = Traffic Signal

Table 3-2

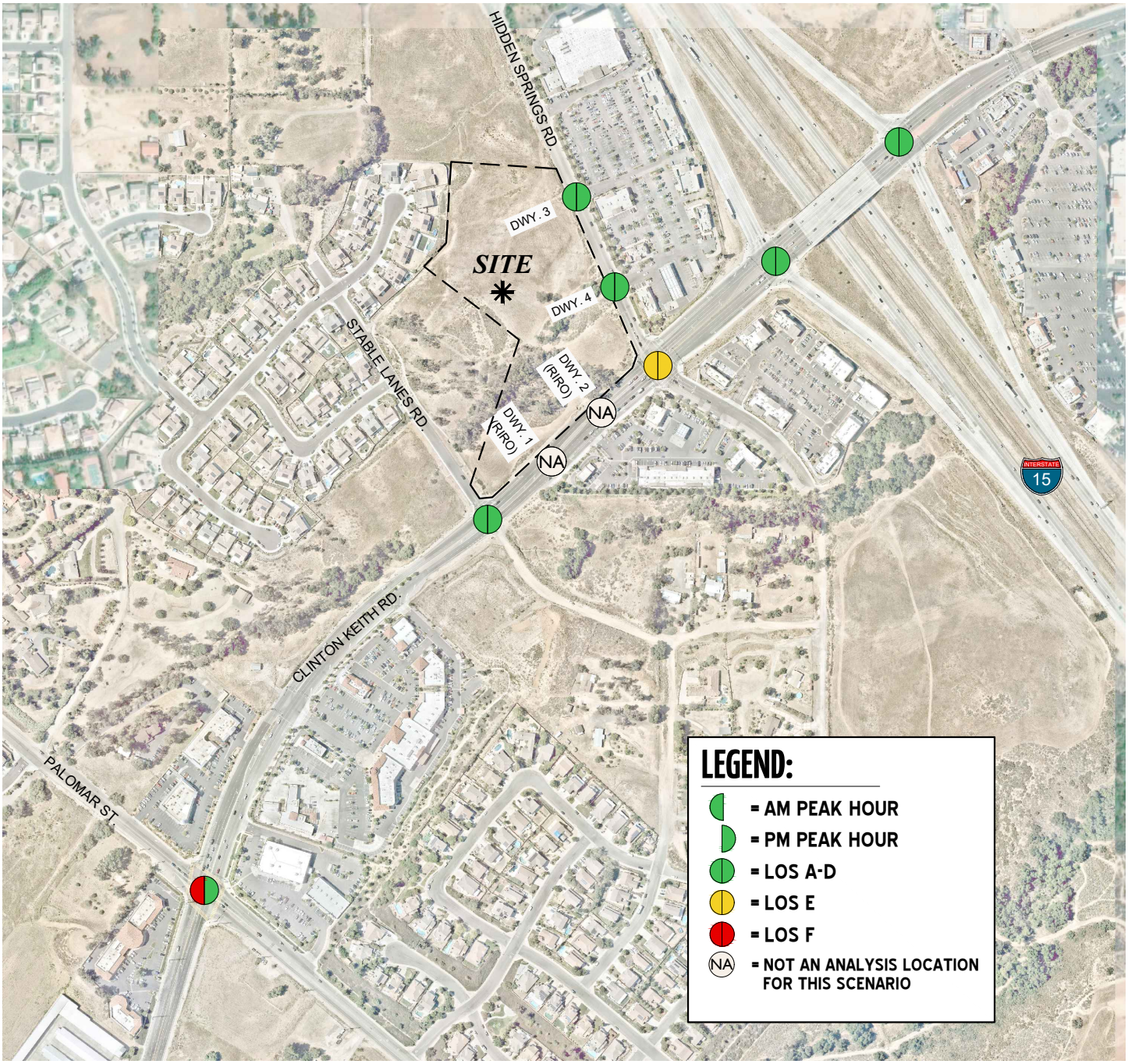
Peak Hour Freeway Off-Ramp Queuing Summary for Existing (2019) Conditions

Intersection	Movement	Available Stacking Distance (Feet)	95th Percentile Queue (Feet)		Acceptable? [1]	
			AM Peak Hour	PM Peak Hour	AM	PM
I-15 Southbound Ramps & Clinton Keith Rd.	SBL	1,185	225 [2]	258	Yes	Yes
	SBL/T	1,185	235 [2]	261	Yes	Yes
	SBR	600	42	130	Yes	Yes
I-15 Northbound Ramps & Clinton Keith Rd.	NBL	1,180	188	305	Yes	Yes
	NBL/T/R	1,180	169	318 [2]	Yes	Yes
	NBR	650	96	226	Yes	Yes

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 15 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.

[2] 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

EXHIBIT 3-8: EXISTING (2019) SUMMARY OF LOS



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4 PROJECTED FUTURE 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. The Project is to consist of the following uses:

- 4,800 square feet of fast food with drive-thru use
- 10,870 square feet of shopping center use
- 26,500 square feet of supermarket use
- 24,700 square feet of pharmacy with drive thru use
- 1,800 square feet of coffee/donut shop with drive thru use
- 3,000 square feet of fast food with drive thru use
- **Total of 71,670 square feet**

It is anticipated that the Project would be developed in a single phase with an anticipated Opening Year of 2021. For the purpose of this analysis, the following driveways will be assumed to provide access to the Project site:

- Driveway 1 on Clinton Keith Road – Right-in/Right-out Access Only
- Driveway 2 on Clinton Keith Road – Right-in/Right-out Access Only
- Driveway 3 on Hidden Springs Road – Full Access
- Driveway 4 on Hidden Springs Road – Full Access

Regional access to the Project site is available from the I-15 Freeway via Clinton Keith Road.

4.1 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. Trip generation rates used to estimate Project traffic are shown in Table 4-1. The trip generation rates used for this analysis are based upon information collected by the ITE as provided in their Trip Generation Manual, 10th Edition, 2017, for Shopping Center (ITE Land Use Code 820), Supermarket (ITE Land Use Code 850), Pharmacy with Drive Thru (ITE Land Use Code 881), Fast Food with Drive Thru (ITE Land Use Code 934), and Coffee/Donut Shop with Drive Thru (ITE Land Use Code 937). (2)

Table 4-1

Project Trip Generation Summary

Project Trip Generation Rates									
Land Use[1]	ITE LU Code	Units[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Actual Vehicles									
Shopping Center	820	TSF	0.58	0.36	0.94	1.83	1.98	3.81	37.75
Supermarket	850	TSF	2.29	1.53	3.82	4.71	4.53	9.24	106.78
Pharmacy w/ Drive Thru	881	TSF	2.04	1.80	3.84	5.15	5.14	10.29	109.16
Fast Food w/ Drive Thru	934	TSF	20.50	19.69	40.19	16.99	15.68	32.67	470.95
Coffee/Donut Shop w/ Drive Thru	937	TSF	45.38	43.61	88.99	21.69	21.69	43.38	820.38

Project Trip Generation									
Project	Quantity	Units[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Actual Vehicles									
The Commons at Hidden Springs									
Building 1: Fast Food w/ Drive Thru	4.800	TSF	98	95	193	82	75	157	2,262
Internal Capture (10%):			-10	-9	-19	-8	-8	-16	-226
Pass-by Reduction (49% AM, 50% PM/Daily):			-42	-42	-84	-34	-34	-67	-1,018
Building 1 Total Net Trips:			***46***	***44***	***90***	***41***	***33***	***74***	***1,018***
Building 2: Shopping Center	10.870	TSF	6	4	11	20	22	41	410
Internal Capture (10%):			-1	0	-1	-2	-2	-4	-42
Pass-by Reduction (34% PM/Daily):			0	0	0	-6	-6	-12	-126
Building 2 Total Net Trips:			***6***	***3***	***9***	***12***	***13***	***25***	***242***
Building 3 & 4: Supermarket	26.500	TSF	61	40	101	125	120	245	2,830
Internal Capture (10%):			-6	-4	-10	-12	-12	-24	-284
Pass-by Reduction (36% PM/Daily):			0	0	0	-39	-39	-78	-916
Building 3 & 4 Total Net Trips:			***55***	***36***	***91***	***74***	***69***	***143***	***1,630***
Building 5: Pharmacy w/ Drive Thru	24.700	TSF	50	45	95	127	127	254	2,696
Internal Capture (10%):			-5	-4	-9	-13	-13	-26	-270
Pass-by Reduction (49% PM/Daily):			0	0	0	-56	-56	-112	-1,190
Building 5 Total Net Trips:			***45***	***41***	***86***	***58***	***58***	***116***	***1,236***
Building 6: Coffee/Donut Shop w/ Drive Thru	1.800	TSF	82	78	160	39	39	78	1,478
Internal Capture (10%):			-8	-8	-16	-4	-4	-8	-148
Pass-by Reduction (89% AM, 89% PM/Daily):			-63	-63	-126	-31	-31	-62	-1,184
Building 6 Total Net Trips:			***11***	***7***	***18***	***4***	***4***	***8***	***146***
Building 6A: Fast Food w/ Drive Thru	3.000	TSF	61	59	120	51	47	98	1,414
Internal Capture (10%):			-6	-6	-12	-5	-5	-10	-142
Pass-by Reduction (49% AM, 50% PM/Daily):			-26	-26	-52	-21	-21	-42	-636
Building 6A Total Net Trips:			***29***	***27***	***56***	***25***	***21***	***46***	***636***
The Commons at Hidden Springs Total Trips			***192***	***159***	***351***	***213***	***199***	***412***	***4,908***

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Tenth Edition (2017).

[2] TSF = Thousand Square Feet

Internal capture is a percentage reduction that can be applied to the trip generation estimates for individual land uses to account for trips internal to the site. In other words, trips may be made between individual retail uses on-site and can be made either by walking or using internal roadways without using external streets. It has been assumed that approximately 10% of Project trips would remain within the Project boundary. As the trip generation for the site was conservatively estimated based on individual land uses as opposed to the overall ITE Shopping Center rate, an internal capture reduction of 10% was applied to recognize the interactions that would occur between the complimentary land uses. For example, patrons of the retail may visit the fast food restaurant without leaving the site and are therefore considered as vehicle trips that are internal to the site. As shown in Table 7.1 of the ITE Trip Generation Handbook, the internal capture percentage between retail-to-retail land uses is approximately 29% during the weekday mid-day peak hour and approximately 20% during the weekday PM peak hour. (6) As such, a 10% internal capture reduction has been utilized in an effort to estimate a conservative trip generation for the proposed Project.

Pass-by trips are defined as intermediate stops on the way from an origin to a primary trip destination without a route diversion. Pass-by trips are attracted from traffic passing the site on an adjacent street or roadway that offers direct access to the generator. These types of trips are many times associated with retail uses. As the Project is proposed to include retail use, pass-by percentages have been obtained and applied from the ITE Trip Generation Handbook, 3rd Edition (2017). (6)

The proposed Project is anticipated to generate a net total of approximately 4,908 trip-ends per day with 351 AM peak hour trips and 412 PM peak hour trips as shown in Table 4-1.

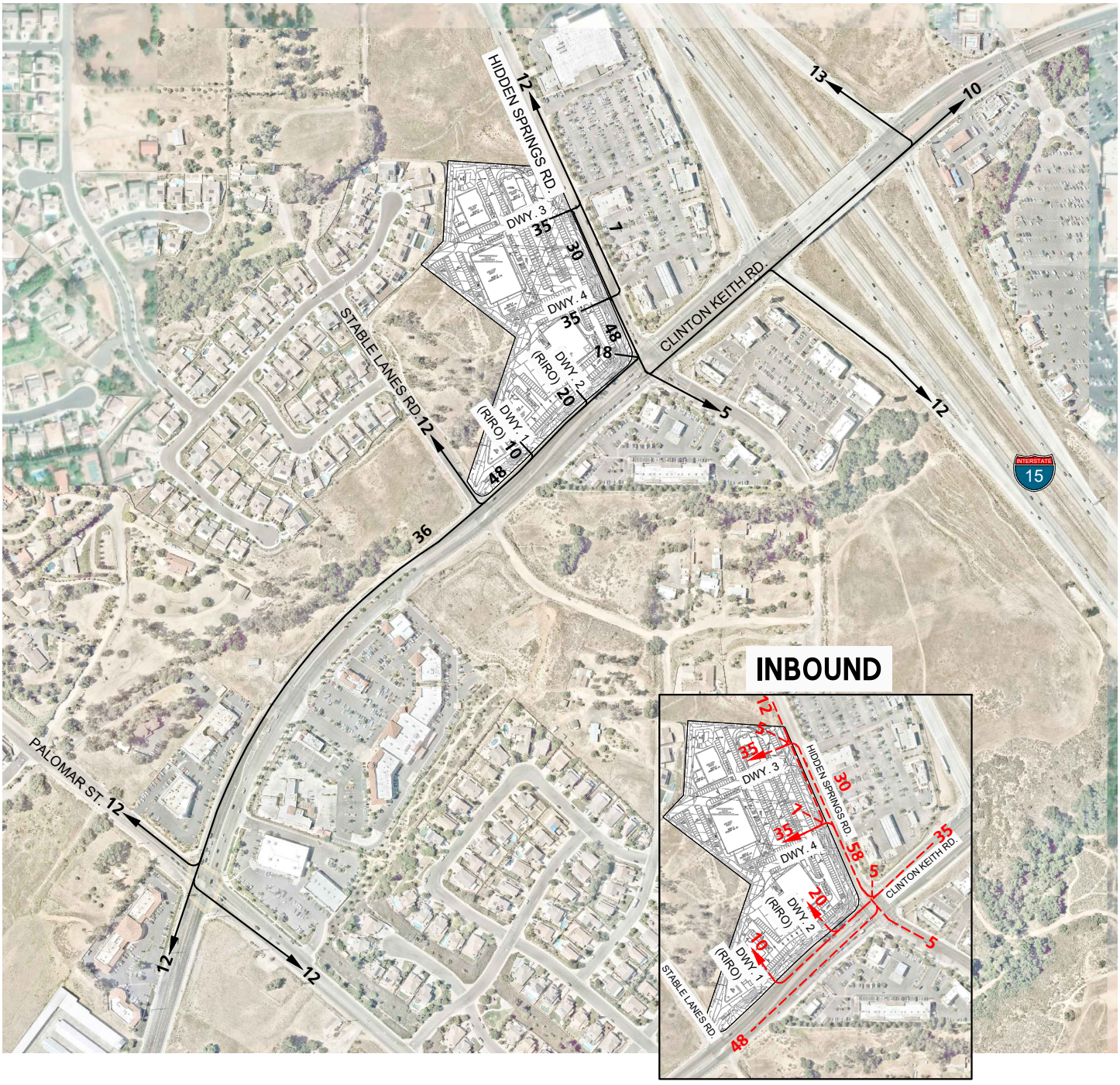
4.2 PROJECT TRIP DISTRIBUTION

The Project trip distribution and assignment process represents the directional orientation of traffic to and from the Project site. The trip distribution pattern is heavily influenced by the geographical location of the site, the location of surrounding uses, and the proximity to the regional freeway system. The Project trip distribution patterns are graphically depicted on Exhibit 4-1.

4.3 MODAL SPLIT

The potential for Project trip to be reduced by the use of public transit, walking or bicycling have not been included as part of the Project's estimated trip generation. Essentially, the Project's traffic projections are "conservative" in that these alternative travel modes would reduce the forecasted traffic volumes.

EXHIBIT 4-1: PROJECT TRIP DISTRIBUTION



LEGEND:

10 = PERCENT TO/FROM PROJECT

◄—— = OUTBOUND

◄- - - = INBOUND

N

12519 - trip.dwg

4.4 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 only ADT and peak hour intersection turning movement volumes are shown on Exhibit 4-2.

4.5 BACKGROUND TRAFFIC

Future year traffic forecasts have been based upon a background (ambient) growth factor of 2% per year, compounded annually. The ambient growth factor is intended to approximate traffic growth. The total ambient growth is 4.04% for 2021 traffic conditions (compounded growth of 2 percent per year over 2 years). This ambient growth rate is added to existing traffic volumes to account for area-wide growth not reflected by cumulative development projects. Ambient growth has been added to daily and peak hour traffic volumes on surrounding roadways, in addition to traffic generated by the development of future projects that have been approved but not yet built and/or for which development applications have been filed and are under consideration by governing agencies.

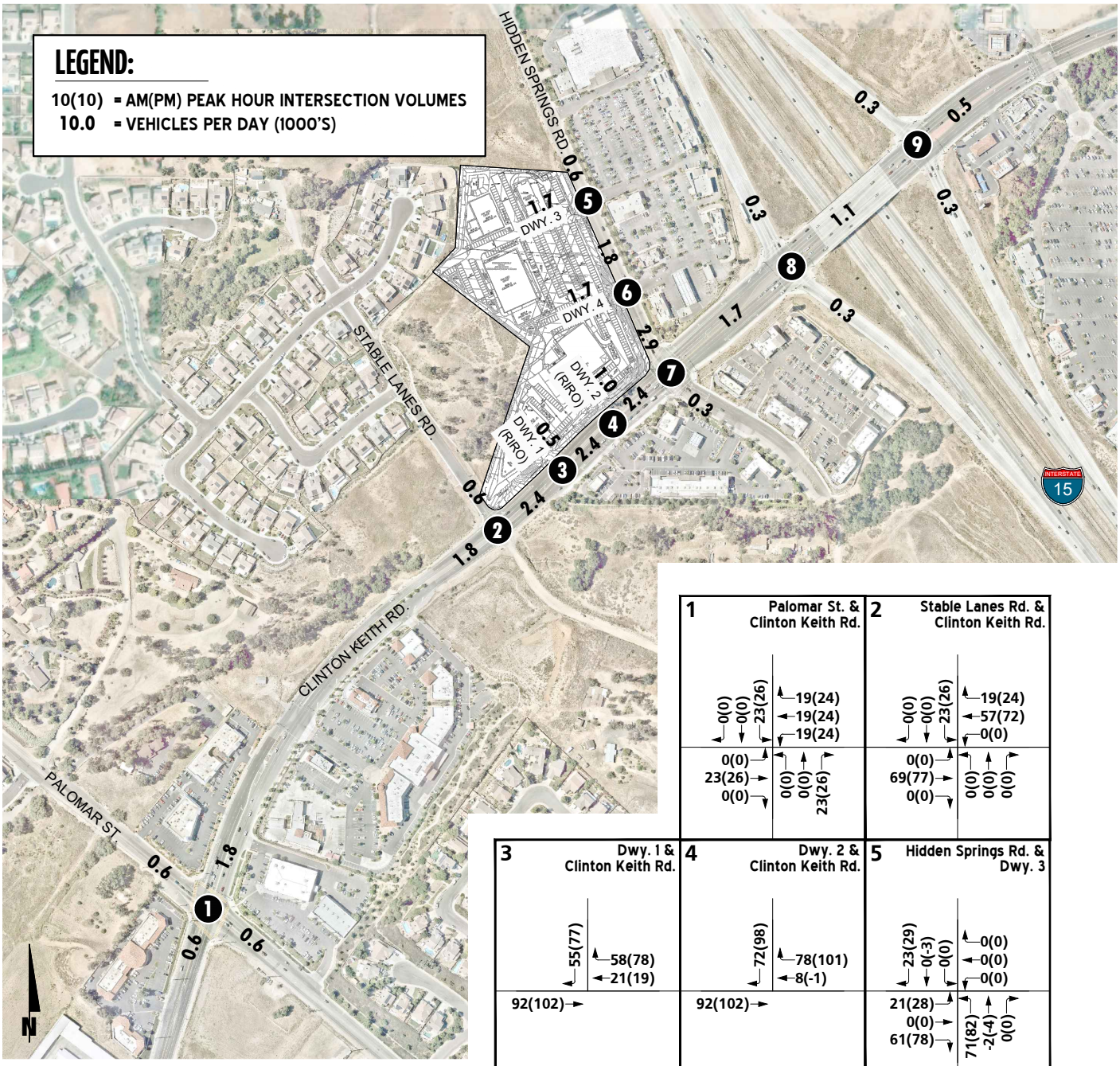
Ambient growth has been added to daily and peak hour traffic volumes on surrounding roadways, in addition to traffic generated by the development of future projects that have been approved but not yet built and/or for which development applications have been filed and are under consideration by governing agencies.

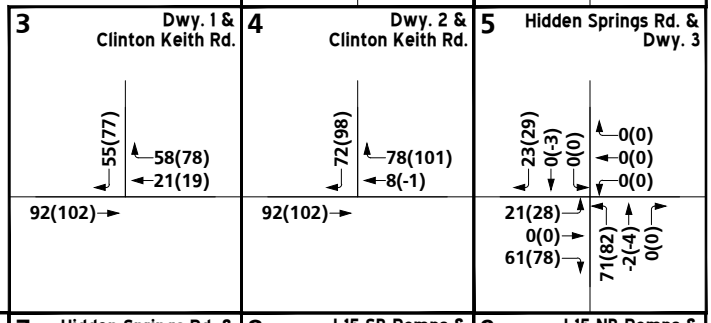
4.6 CUMULATIVE DEVELOPMENT TRAFFIC

California Environmental Quality Act (CEQA) guidelines require that other reasonably foreseeable development projects which are either approved or being processed concurrently in the study area also be included as part of a cumulative analysis scenario. A cumulative project list was developed from consultation with the City of Wildomar and City of Fontana staff.

Exhibit 4-3 illustrates the cumulative development location map. A summary of cumulative development projects and their proposed land uses are provided in Table 4-2. If applicable, the traffic generated by individual cumulative projects was manually added to Opening Year Cumulative (2021) traffic conditions forecasts to ensure that traffic generated by the listed cumulative development projects in Table 4-2 are reflected as part of the background traffic. The ADT and peak hour intersection turning movement volumes generated by the cumulative development projects are shown in Exhibit 4-4.

EXHIBIT 4-2: PROJECT ONLY TRAFFIC VOLUMES





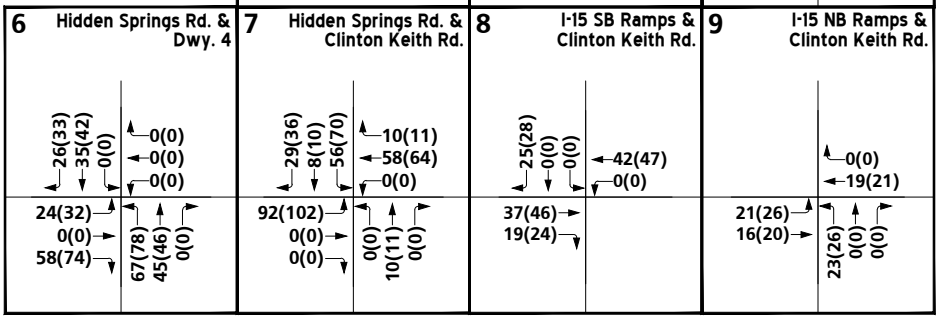


EXHIBIT 4-3: CUMULATIVE DEVELOPMENT PROJECT LOCATION MAP

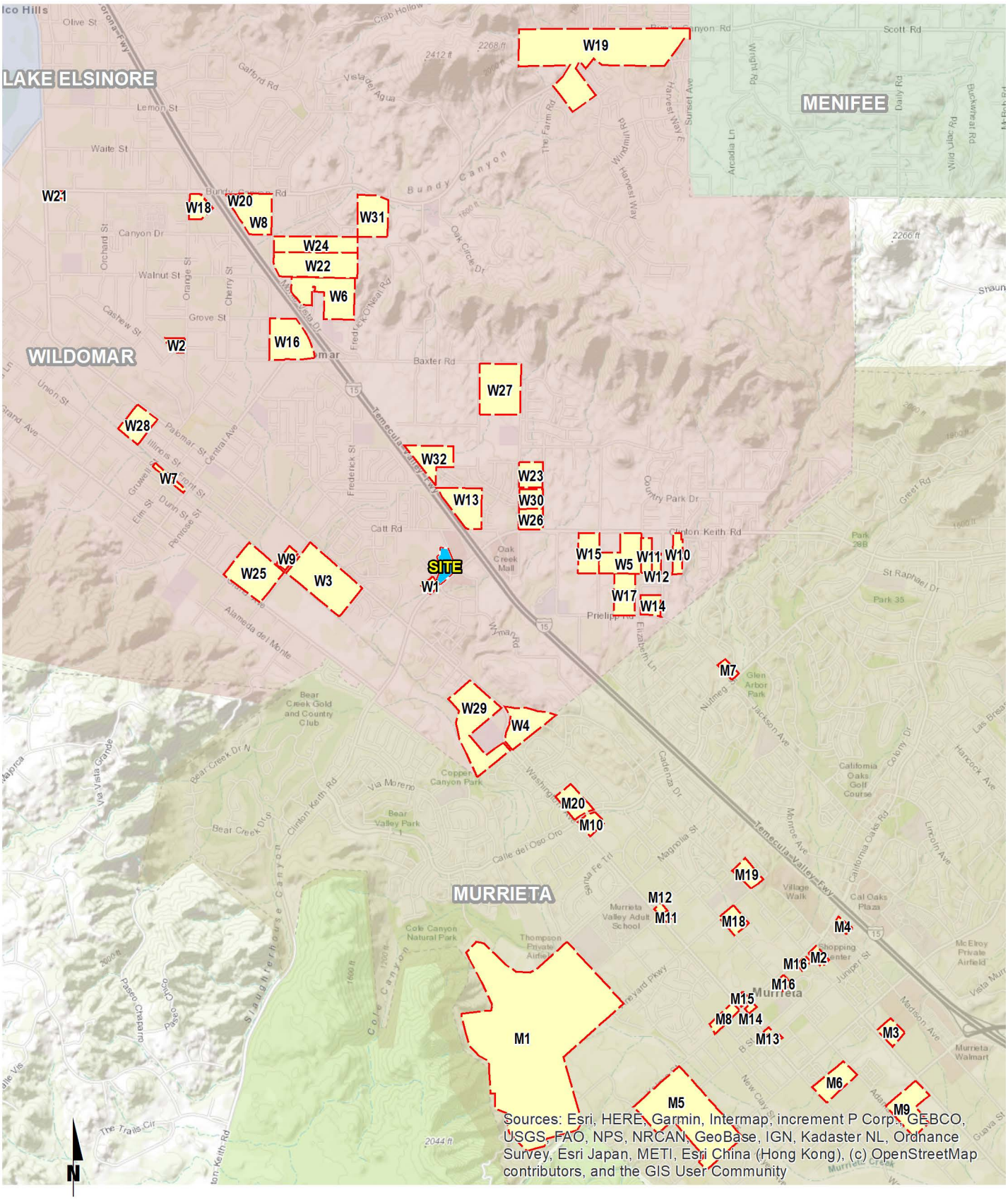


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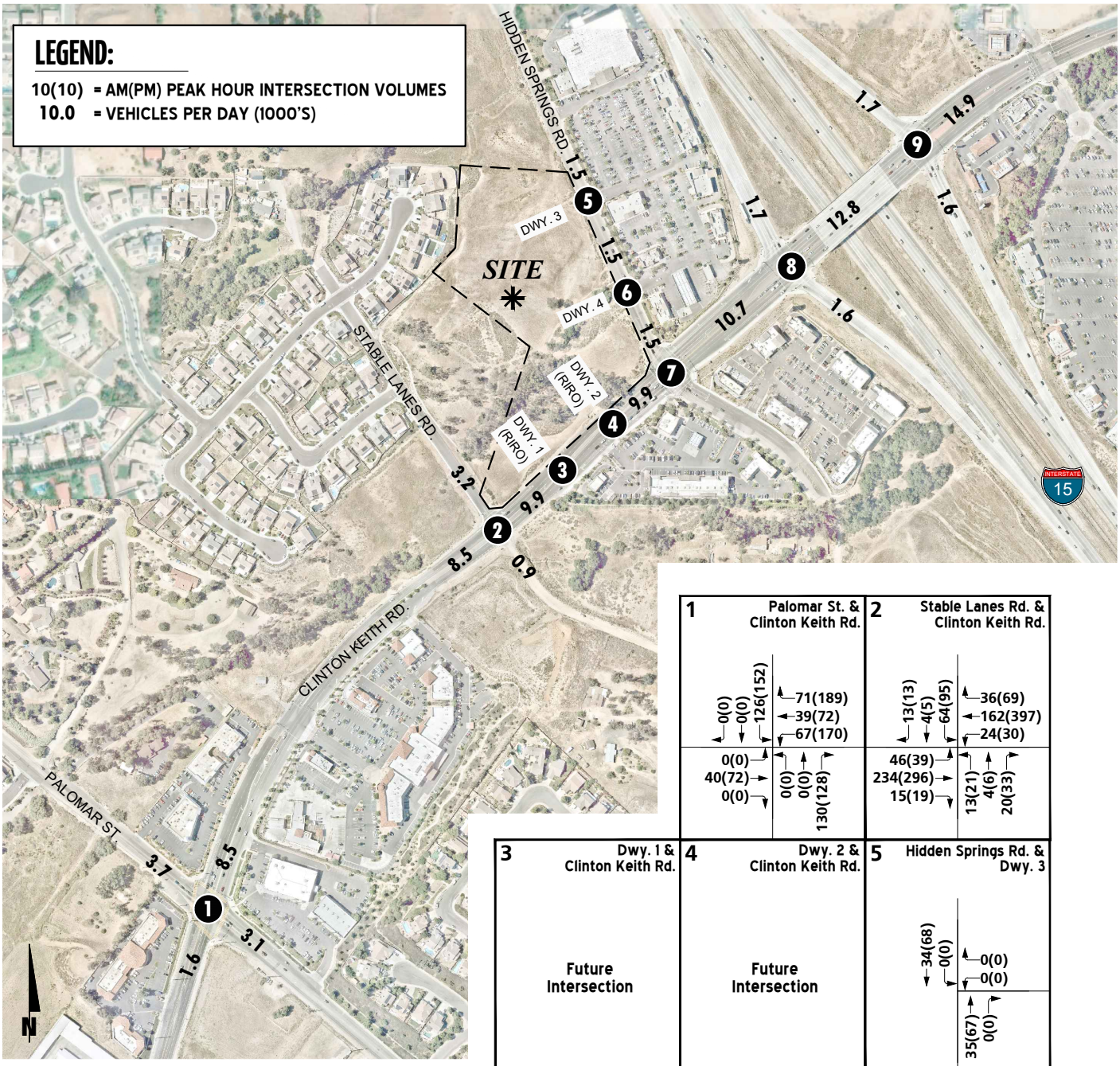
EXHIBIT 4-4: CUMULATIVE ONLY TRAFFIC VOLUMES



1 Palomar St. & Clinton Keith Rd.

2 Stable Lanes Rd. & Clinton Keith Rd.

3 Dwy. 1 & Clinton Keith Rd.

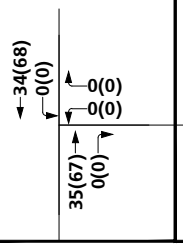
Future Intersection

4 Dwy. 2 & Clinton Keith Rd.

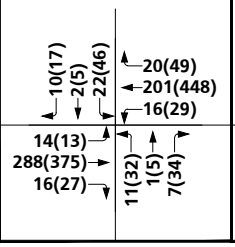
Future Intersection

5 Hidden Springs Rd. & Dwy. 3

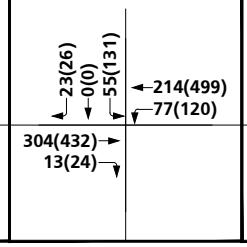
6 Hidden Springs Rd. & Dwy. 4



7 Hidden Springs Rd. & Clinton Keith Rd.



8 I-15 SB Ramps & Clinton Keith Rd.



9 I-15 NB Ramps & Clinton Keith Rd.

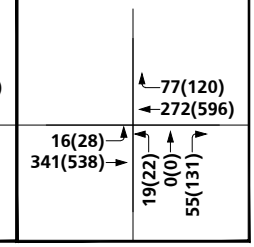


Table 4-2

Cumulative Development Land Use Summary

TAZ	Project Name	Land Use[1]	Quantity	Units[2]
CITY OF WILDOMAR				
W1	Wildomar Crossings	Free Standing Discount Store	10.000	TSF
		Auto Parts Sales	7.004	TSF
		Fast-Food w/ Drive Through	2.600	TSF
		Retail	3.300	TSF
		Fast-Food w/o Drive Through	3.300	TSF
W2	Lesle Tract Map	SFDR	10	DU
W3	Richmond American	SFDR	149	DU
W4	Camelia Townhouse Project	Condo/Townhomes	163	DU
W5	Rancon Medical & Retail Center	Retail	200.000	TSF
		Office	94.000	TSF
W6	Cornerstone Church Preschool & Admin. Building	School	170	STU
		Office	25.462	TSF
W7	Elm Street Subdivision	SFDR	14	DU
W8	Walmart Retail Project	Free-Standing Discount Superstore	193.792	TSF
W9	McVicar Residential Project	SFDR	47	DU
W10	Smith Ranch Self Storage	Self-Storage	150.000	TSF
		Office	10	TSF
W11	Life-Storage Mini Warehouse	Self-Storage	60.800	TSF
W12	Milestone RV/Boat Storage	Self-Storage	8.300	TSF
W13	Westpark Promenade Development (mixed use)	Shopping Center	118.354	TSF
		Condo/Townhomes	191	DU
W14	Villa Sienna Apartment Project	Condo/Townhomes	180	DU
W15	Grove Park Mixed Use Project	Condo/Townhomes	162	DU
		Retail	50.000	TSF
W16	Baxter Village	Shopping Center	75.000	TSF
		SFDR	67	DU
		Condo/Townhomes	204	DU
W17	Horizons/Strata Mixed Use Project	Assisted Living	86	BED
		Condo/Townhomes	138	DU
W18	Orange Bundy/Parcel Map	Retail	79.497	TSF
		Fast Food w/ Drive Through	1.500	TSF
		Gas Station w/ Market	6	VFP
W19	Oak Creek Canyon	SFDR	275	DU
W20	Bundy Canyon Plana	Shopping Center	36.990	TSF
W21	Wildomar Shooting Academy[3]	Gun Shooting Range	--	--
W22	The "Village at Monte Vista"	SFDR	80	DU
		Business Park	136.000	TSF
W23	Diversified Pacific Homes	SFDR	51	DU
W24	Pacific cove Inv.	SFDR	70	DU
W25	Beazer Homes	SFDR	108	DU
W26	Clinton Keith Village Retail Center	Shopping Center	40.000	TSF
W27	Baxter/Susan GPA/TTM	SFDR	48	DU

Cumulative Development Land Use Summary

TAZ	Project Name	Land Use[1]	Quantity	Units[2]
W28	Ione/Palomar Residential	SFDR	60	DU
W29	Rhoades Residential Project	SFDR	131	DU
W30	Nova Homes Residential	SFDR	77	DU
W31	Darling/Bundy Canyon Residential	Condo/Townhomes	140	DU
W32	Faith Bible Church	Church	45.155	TSF
CITY OF MURRIETA				
M1	The Vineyards (VTTM 28903) (EXT-2019-1864)	SFDR	1012	DU
M2	Fast 5 Car Wash (DP-2019-1857)	Car Wash	4.975	TSF
M3	Jefferson Residential	Apartments	160	DU
M4	Raising Cane's (DP-2018-1782)	Fast-Food w/ Drive Through	2.796	TSF
M5	TTM 37621 (TTM-2018-1780)	SFDR	25	DU
M6	25190 Washington Av. (TTM 36848) (TTM-2018-1744)	SFDR	86	DU
M7	Pars Global (DP-2018-1657)	Self-Storage	113.395	TSF
M8	Wyndham Timeshare - WorldMark (DP-2018-1593)	Timeshare	161	DU
M9	Murrieta Gateway Business Park (DP-2017-1391)	Industrial Park	285.270	TSF
		Hotel	150	ROOMS
		Retail with Gas Station	43.400	TSF
M10	Pinnacle Senior Living (DP-2016-992)	Assisted Living	108	BED
M11	TTM 31467 (DP-2013-255)	Condo/Townhomes	64	DU
M12	TTM 30953 (DP-2014-275)	Condo/Townhomes	141	DU
M13	Dollins Mixed Use (DP-2013-118)	Apartments	2	DU
		Commercial	6.212	TSF
M14	Downtown Market Place (DP-2018-118)	Commercial & Office	51.455	TSF
M15	Able Self Storage (DP-2017-1299)	Self-Storage	191.898	TSF
M16	Fresnius (DP-2017-1359)	Medical Center	13.100	TSF
M17	The Village Patio (DP-201-470)	Outdoor Beer & Wine Garden	1.244	TSF
M18	Lemon & Adams (TTM 37430)	SFDR	12	DU
M19	Santa Rosa Highlands (DP-201-1480) (50% occupied)	SFDR (remaining)	135	DU
M20	TPM No. 30394	Apartments	156	DU
		Senior Apartments	54	DU

[1] SFDR = Single Family Detached Residential

[2] DU = Dwelling Unit; TSF = Thousand Square Feet; BED = Beds; VFP = Vehicle Fueling Positions

[3] Source: Gun Shooting Range/Tactical Training Facility Traffic Impact Analysis (Revised), Urban Crossroads, Inc., July 2019.

4.7 NEAR-TERM CONDITIONS

The "buildup" approach has been utilized which combines existing traffic counts with a background ambient growth factor to forecast the Opening Year Cumulative (2021) traffic conditions. An ambient growth factor of 4.04% accounts for background (area-wide) traffic increases that occur over time up to the year 2021 from the year 2019 (compounded 2 percent per year growth over a 2-year period). Project traffic is added to assess Opening Year Cumulative (2021) traffic conditions, respectively. Traffic volumes generated by cumulative development projects are then added to assess the Opening Year Cumulative (2021) traffic conditions. The 2021 roadway networks are similar to the existing conditions roadway network with the exception of future roadways and intersections proposed to be developed by the Project.

The near-term traffic analysis includes the following traffic conditions, with the various traffic components:

- Opening Year Cumulative (2021) Without Project
    - Existing 2019 volumes
    - Ambient Growth Traffic (4.04%)
    - Cumulative Development Traffic
- Opening Year Cumulative (2021) Without Project
    - Existing 2019 volumes
    - Ambient Growth Traffic (4.04%)
    - Cumulative Development Traffic
    - Project Traffic

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5 E+P TRAFFIC CONDITIONS

This section discusses the traffic forecasts for Existing plus Project (E+P) conditions and the resulting intersection operations, off-ramp queuing, and traffic signal warrant analyses.

5.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for E+P conditions are consistent with those shown previously on Exhibit 3-1, with the exception of the Project driveways and those facilities assumed to be in place prior to or constructed by the Project to provide site access are also assumed to be in place for E+P conditions.

5.2 E+P TRAFFIC VOLUME FORECASTS

This scenario includes Existing traffic volumes plus Project traffic. Exhibit 5-1 shows the weekday ADT and peak hour volumes which can be expected for E+P traffic conditions (see Exhibit 1-4).

5.3 INTERSECTION OPERATIONS ANALYSIS

E+P peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2 *Methodologies* of this TIA. The intersection analysis results are summarized in Table 5-1 and shown on Exhibit 5-2, which indicates the following study area intersections are anticipated to continue to operate at a deficient LOS during one or both peak hours for E+P traffic conditions:

- Palomar Street & Clinton Keith Road (#1) – LOS F AM peak hour; LOS E PM peak hour
- Hidden Springs Road & Clinton Keith Road (#7) – LOS F AM and PM peak hours

The intersection operations analysis worksheets for E+P traffic conditions are included in Appendix 5.1 of this TIA.

5.4 TRAFFIC SIGNAL WARRANTS ANALYSIS

There are no traffic signals anticipated to meet peak hour volume-based traffic signal warrants with the addition of Project traffic for E+P traffic conditions (see Appendix 5.2).

5.5 OFF-RAMP QUEUING ANALYSIS

A queuing analysis was performed for the off-ramps at the I-15 Freeway and Clinton Keith Road interchange to assess vehicle queues for the off ramps that may potentially result in deficient peak hour operations at the ramp-to-arterial intersections and may potentially "spill back" onto the I-15 Freeway mainline. Queuing analysis findings are presented in Table 5-2. It is important to note that off-ramp lengths are consistent with the measured distance between the intersection and the freeway mainline. As shown in Table 5-2 and consistent with Existing (2019) traffic conditions, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows. Worksheets for E+P traffic conditions off-ramp queuing analysis are provided in Appendix 5.3.

EXHIBIT 5-1: E+P TRAFFIC VOLUMES

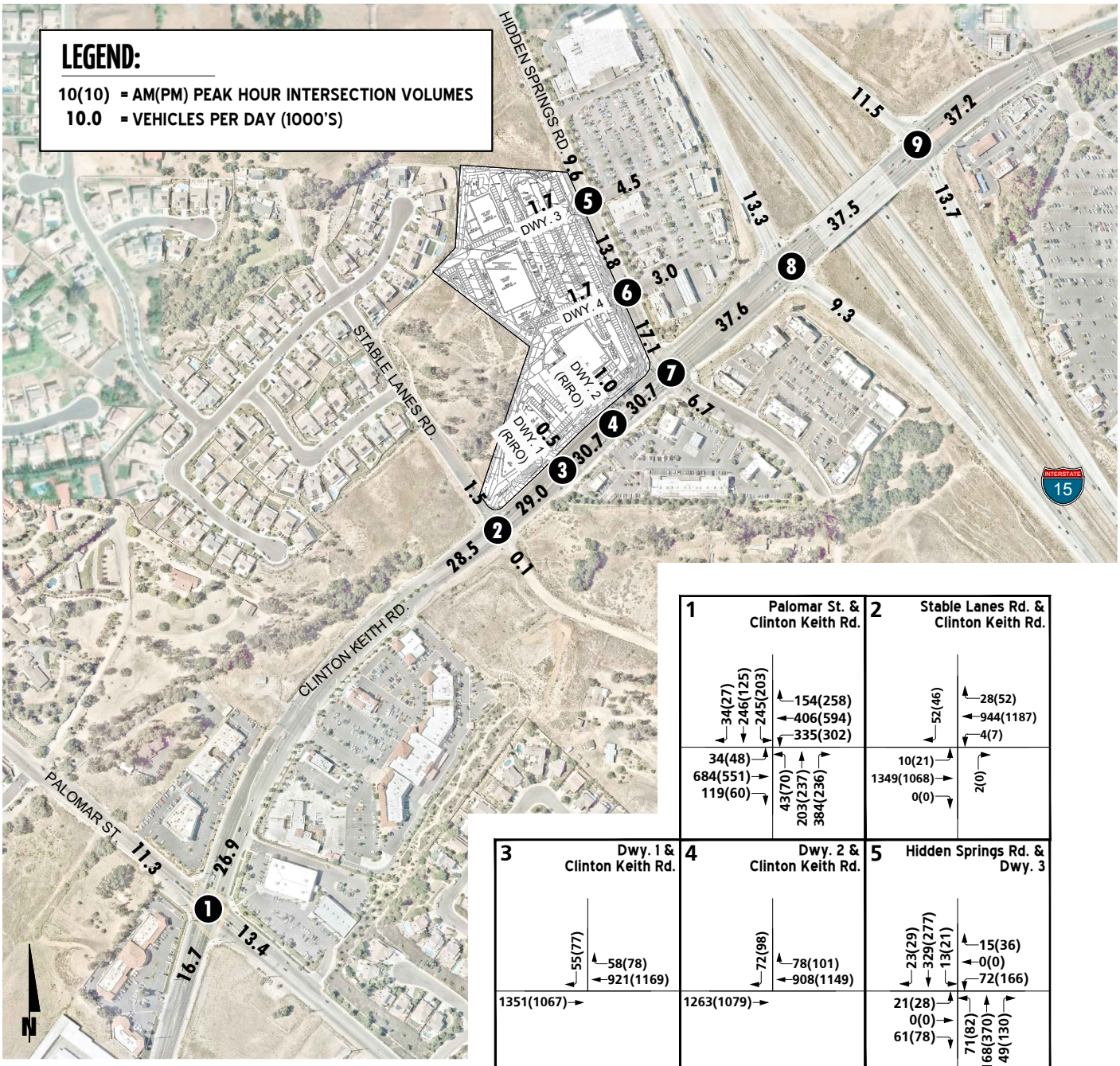

EXHIBIT 5-2: E+P SUMMARY OF LOS

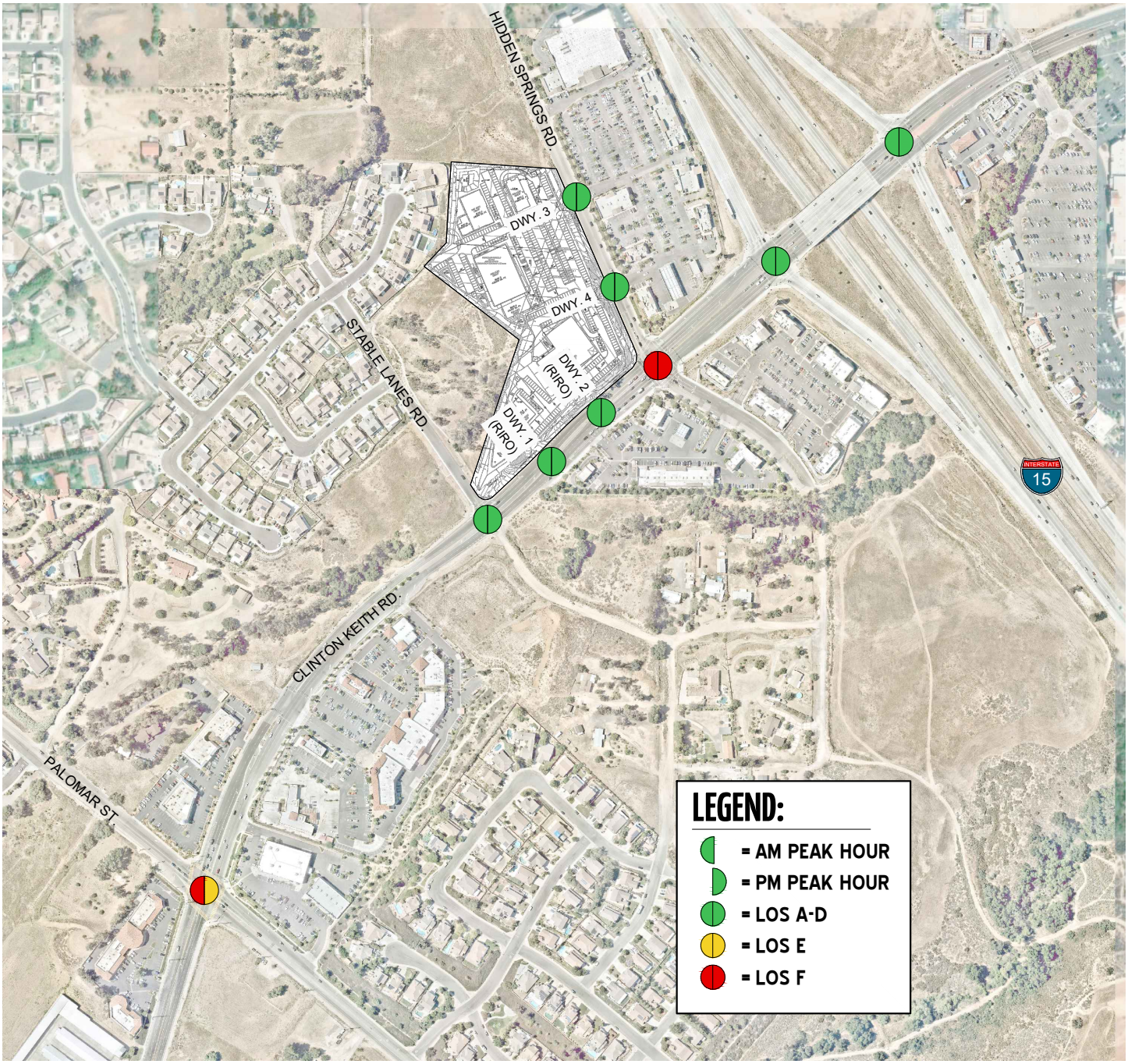

Table 5-1

Intersection Analysis for E+P Conditions

#	Intersection	Traffic Control[2]	Existing (2019)				E+P				Change in Delay		Significant Impact?[4]
			Delay[1] (Secs.)		LOS[3]		Delay[1] (Secs.)		LOS[3]				
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	
1	Palomar St. & Clinton Keith Rd.	TS	**87.2**	49.0	**F**	D	**100.4**	**58.3**	**F**	**E**	13.2	9.3	**Yes**
2	Stable Lanes Rd. & Clinton Keith Rd.	CSS	14.3	13.4	B	B	15.0	14.6	C	B	--	--	No
3	Driveway 1 & Clinton Keith Rd.	**CSS**	Future Intersection				13.3	16.5	B	C	--	--	No
4	Driveway 2 & Clinton Keith Rd.	**CSS**	Future Intersection				13.8	17.5	B	C	--	--	No
5	Hidden Springs Rd. & Driveway 3	CSS	12.6	18.6	B	C	15.7	26.7	C	D	--	--	No
6	Hidden Springs Rd. & Driveway 4	CSS	14.1	17.7	B	C	19.6	26.6	C	D	--	--	No
7	Hidden Springs Rd. & Clinton Keith Rd.	TS	**63.3**	**66.5**	**E**	**E**	**99.9**	**108.1**	**F**	**F**	36.6	41.6	**Yes**
8	I-15 SB Ramps & Clinton Keith Rd.	TS	24.1	21.6	C	C	25.4	21.6	C	C	--	--	No
9	I-15 NB Ramps & Clinton Keith Rd.	TS	16.9	19.0	B	B	17.4	19.6	B	B	--	--	No

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

[1] Per the Highway Capacity Manual (6th 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.

[2] CSS = Cross-street Stop; **CSS** = Improvement; TS = Traffic Signal

[3] LOS = Level of Service

[4] Significant impact if change in delay exceeds 5.0 seconds for intersections at LOS E or LOS F under pre-project conditions.

Table 5-2

Peak Hour Freeway Off-Ramp Queuing Summary for E+P Conditions

Intersection	Movement	Available Stacking Distance (Feet)	Existing (2019)				E+P			
			95th Percentile Queue (Feet)		Acceptable? [1]		95th Percentile Queue (Feet)		Acceptable? [1]	
			AM Peak Hour	PM Peak Hour	AM	PM	AM Peak Hour	PM Peak Hour	AM	PM
I-15 Southbound Ramps & Clinton Keith Rd.	SBL	1,185	225 [2]	258	Yes	Yes	225 [2]	258	Yes	Yes
	SBL/T	1,185	235 [2]	261	Yes	Yes	235 [2]	261	Yes	Yes
	SBR	600	42	130	Yes	Yes	61	144	Yes	Yes
I-15 Northbound Ramps & Clinton Keith Rd.	NBL	1,180	188	305	Yes	Yes	194	312	Yes	Yes
	NBL/T/R	1,180	169	318 [2]	Yes	Yes	182	352 [2]	Yes	Yes
	NBR	650	96	226	Yes	Yes	106	233	Yes	Yes

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 15 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.

[2] 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

5.6 RECOMMENDED IMPROVEMENTS

5.6.1 RECOMMENDED IMPROVEMENTS TO ADDRESS DEFICIENCIES AT INTERSECTIONS

The addition of Project traffic (as measured by 50 or more peak hour trips) is anticipated to increase the pre-project peak hour delays in excess of the City's significance threshold (5.0 seconds over pre-project traffic conditions at the following intersections:

- Palomar Street & Clinton Keith Road (#1)
- Hidden Springs Road & Clinton Keith Road (#7)

Improvement strategies have been recommended at intersections that have been identified as deficient under E+P traffic conditions in an effort to reduce the delay and LOS to less than 5.0 over pre-project conditions or better. The effectiveness of the recommended improvement strategies discussed below to address E+P traffic deficiencies is presented in Table 5-3, and are described below.

Palomar Street & Clinton Keith Road (#1):

- Modify the traffic signal and implement overlap phasing on the northbound right turn lane.
- Restripe the westbound approach to accommodate two left turn lanes, one through lane, and one right turn lane.

Hidden Springs Road & Clinton Keith Road (#7):

- Add a 2nd southbound left turn lane.
- Modify the traffic signal and implement overlap phasing on the westbound right turn lane.

Worksheets for E+P conditions, with improvements, HCM calculation worksheets are provided in Appendices 5.4.

5.6.2 RECOMMENDED IMPROVEMENTS TO ADDRESS DEFICIENCIES ON OFF-RAMP QUEUES

As shown previously in Table 5-2, there are no anticipated peak hour queuing issues at the I-15 Freeway and Clinton Keith Road interchange for E+P traffic conditions. As such, no improvements have been recommended.

Table 5-3

Intersection Analysis for E+P Conditions With Improvements

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[2] (secs.)		Level of Service	
			Northbound			Southbound			Eastbound			Westbound						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
1	Palomar St. & Clinton Keith Rd.																	
	- Without Improvements	TS	1	2	1	1	1	1	1	2	0	1	2	1	**100.4**	**58.3**	**F**	**E**
	- With Improvements	TS	1	2	**1>**	1	1	1	1	2	0	**2**	**1**	1	**59.3**	48.5	**E**	D
7	Hidden Springs Rd. & Clinton Keith Rd.																	
	- Without Project	TS	1	1	1	1	1	0	1	3	1	2	2	1	**99.9**	**108.1**	**F**	**F**
	- With Project	TS	1	1	1	**2**	1	0	1	3	1	2	2	**1>**	52.4	**63.6**	D	**E**

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

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; > = Right-Turn Overlap Phasing; **1** = Improvement

[2] Per the Highway Capacity Manual (6th 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.

[3] TS = Traffic Signal

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6 OPENING YEAR CUMULATIVE (2021) TRAFFIC CONDITIONS

This section discusses the traffic forecasts for Opening Year Cumulative (2021) conditions and the resulting intersection operations, off-ramp queuing, and traffic signal warrant analyses.

6.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for Opening Year Cumulative (2021) conditions are consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- Driveways and those facilities assumed to be constructed by cumulative developments to provide site access to the respective cumulative projects are also assumed to be in place for Opening Year Cumulative (e.g., intersection and roadway improvements along the cumulative development's frontages and driveways).
- Project driveways and those facilities assumed to be in place prior to or constructed by the Project to provide site access are also assumed to be in place for Opening Year Cumulative conditions (see Exhibit 1-4).
- The intersection of Stable Lanes Road and Clinton Keith Road is assumed to allow for full access for Opening Year Cumulative traffic conditions.

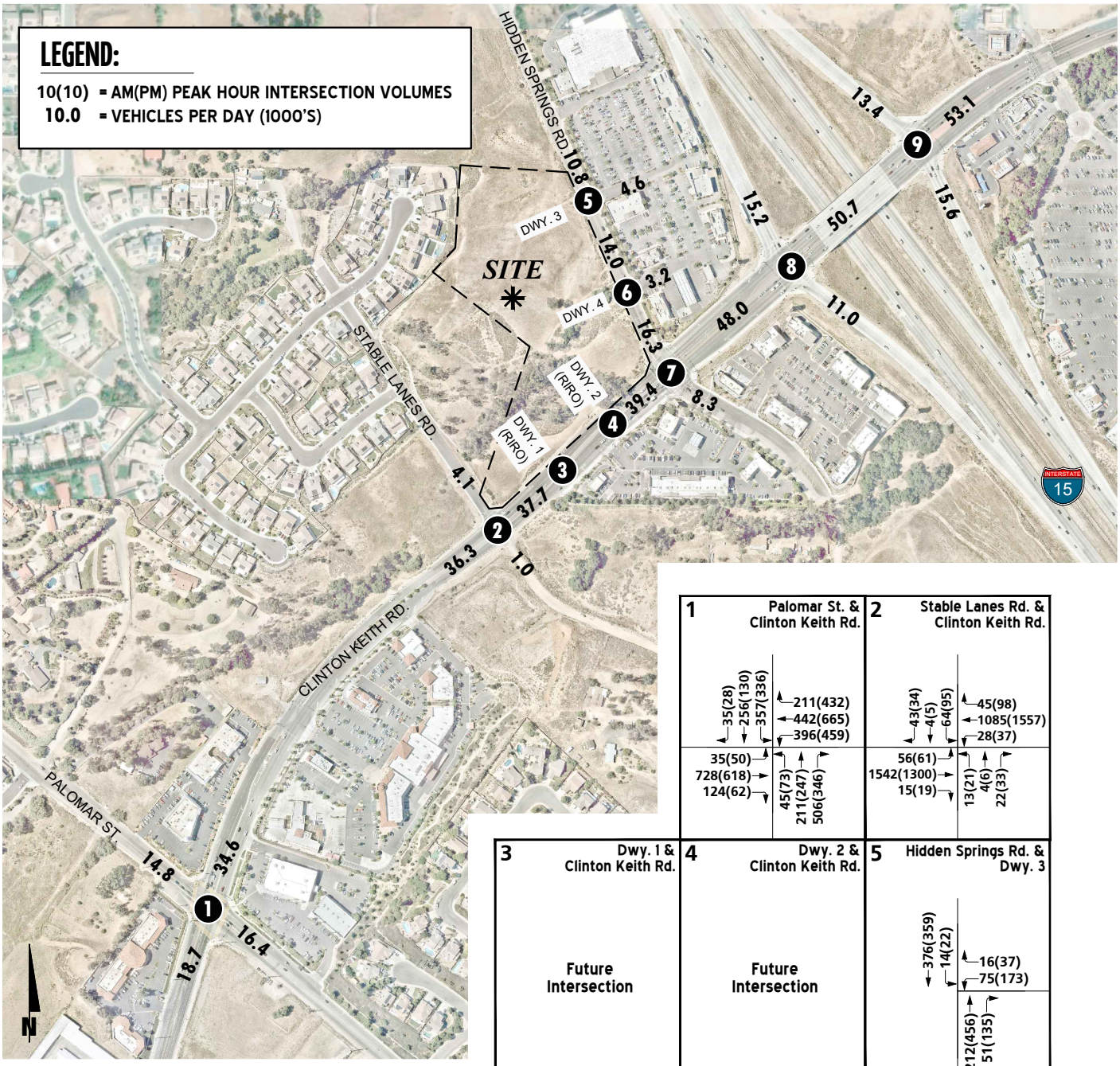
6.2 OPENING YEAR CUMULATIVE (2021) WITHOUT PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Existing traffic volumes plus an ambient growth factor of 4.04% in conjunction with the addition of cumulative project development. The weekday ADT, weekday AM, and PM peak hour volumes which can be expected for Opening Year Cumulative (2021) Without Project traffic conditions are shown on Exhibit 6-1.

6.3 OPENING YEAR CUMULATIVE (2021) WITH PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes the addition of Project traffic to Opening Year Cumulative (2021) Without Project traffic forecasts. The weekday ADT, weekday AM, and PM peak hour volumes which can be expected for Opening Year Cumulative (2021) With Project traffic conditions are shown on Exhibit 6-2.

EXHIBIT 6-1: OPENING YEAR CUMULATIVE (2021) WITHOUT PROJECT TRAFFIC VOLUMES



1 Palomar St. & Clinton Keith Rd.

35(28) 256(130) 357(336) → 211(432) ← 442(665) ← 396(459)

35(50) → 728(618) → 124(62) → 45(73) 211(247) 506(346)

2 Stable Lanes Rd. & Clinton Keith Rd.

43(34) 4(5) 64(95) → 45(98) ← 1085(1557) ← 28(37)

56(61) → 1542(1300) → 15(19) → 13(21) 4(6) 22(33)

3 Dwy. 1 & Clinton Keith Rd.

Future Intersection

4 Dwy. 2 & Clinton Keith Rd.

Future Intersection

5 Hidden Springs Rd. & Dwy. 3

376(359) 14(22) → 16(37) ← 75(173)

212(456) 51(135)

6 Hidden Springs Rd. & Dwy. 4

429(516) 22(16) → 11(17) ← 80(79)

251(575) 127(138)

7 Hidden Springs Rd. & Clinton Keith Rd.

97(158) 38(42) 374(395) → 273(543) ← 978(1400) ← 130(193)

90(124) → 1386(1233) → 61(74) → 83(135) 16(46) 163(175)

8 I-15 SB Ramps & Clinton Keith Rd.

429(452) 1(2) 520(776) → 953(1684) ← 452(404)

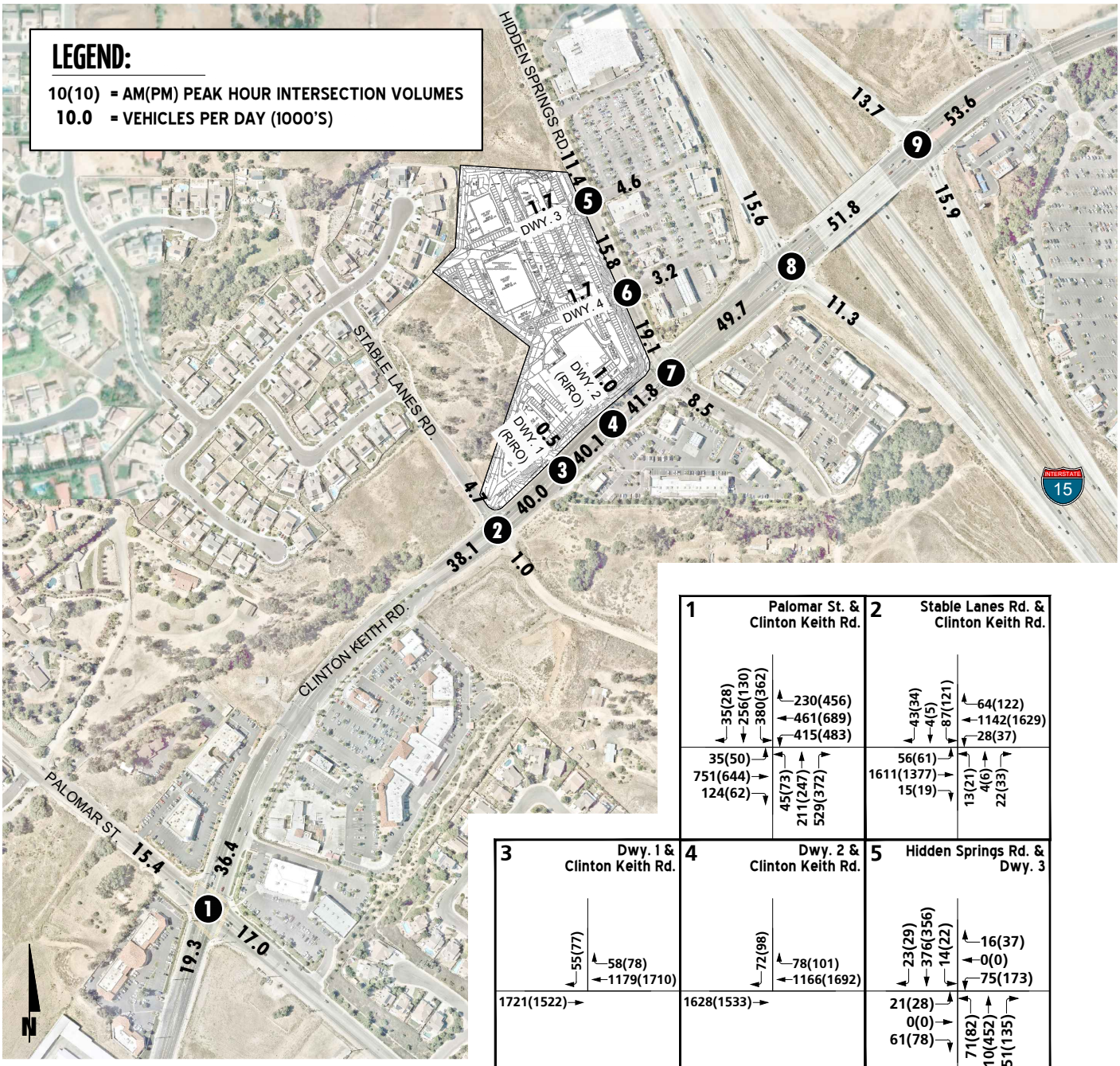
1178(1322) → 744(483) →

9 I-15 NB Ramps & Clinton Keith Rd.

660(708) ← 1077(1398)

386(363) → 1310(1738) → 327(689) 1(2) 316(566)

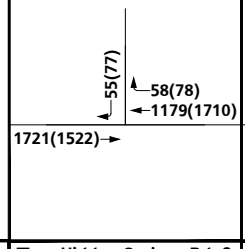
EXHIBIT 6-2: OPENING YEAR CUMULATIVE (2021) WITH PROJECT TRAFFIC VOLUMES



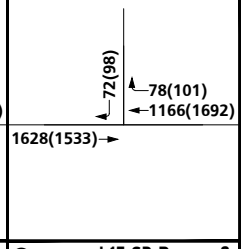
1 Palomar St. & Clinton Keith Rd.

2 Stable Lanes Rd. & Clinton Keith Rd.

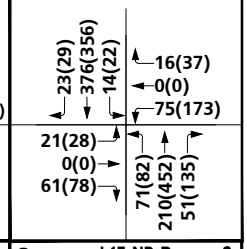
3 Dwy. 1 & Clinton Keith Rd.



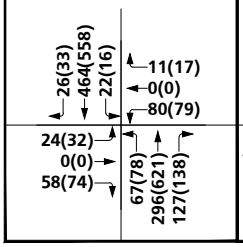
4 Dwy. 2 & Clinton Keith Rd.



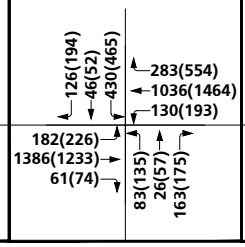
5 Hidden Springs Rd. & Dwy. 3



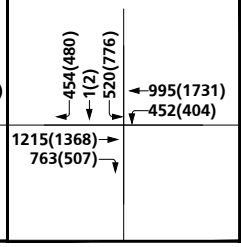
6 Hidden Springs Rd. & Dwy. 4



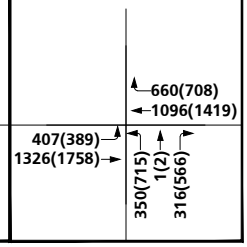
7 Hidden Springs Rd. & Clinton Keith Rd.



8 I-15 SB Ramps & Clinton Keith Rd.



9 I-15 NB Ramps & Clinton Keith Rd.



6.4 INTERSECTION OPERATIONS ANALYSIS

6.4.1 OPENING YEAR CUMULATIVE (2021) WITHOUT PROJECT TRAFFIC CONDITIONS

Opening Year Cumulative (2021) peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2 *Methodologies* of this TIA. The intersection analysis results for Opening Year Cumulative (2021) Without Project traffic conditions are summarized in Table 6-1 and shown on Exhibit 6-3, which indicates the following study area intersections are anticipated to operate at a deficient LOS during one or both peak hours for Opening Year Cumulative (2021) Without Project traffic conditions:

- Palomar Street & Clinton Keith Road (#1) – LOS F AM and PM peak hours
- Stable Lanes Road & Clinton Keith Road (#2) – LOS F AM and PM peak hours
- Hidden Springs Road & Clinton Keith Road (#7) – LOS F AM and PM peak hours

The intersection operations analysis worksheets for Opening Year Cumulative (2021) Without Project traffic conditions are included in Appendix 6.1 of this TIA.

6.4.2 OPENING YEAR CUMULATIVE (2021) WITH PROJECT TRAFFIC CONDITIONS

As shown in Table 6-1 and illustrated on Exhibit 6-4, with the addition of Project traffic, there are no additional intersections anticipated to result in an unacceptable LOS in addition to the intersections previously identified under Opening Year Cumulative (2021) Without Project traffic conditions. The intersection operations analysis worksheets for Opening Year Cumulative (2021) With Project traffic conditions are included in Appendix 6.2 of this report.

6.5 TRAFFIC SIGNAL WARRANTS ANALYSIS

The intersection of Stable Lanes Road and Clinton Keith Road is anticipated to meet peak hour volume-based traffic signal warrants for Opening Year Cumulative (2021) Without Project traffic conditions (see Appendix 6.3). The intersection is proposed to be modified for full access under Opening Year Cumulative traffic conditions. The intersection of Hidden Springs Road and Driveway 3 is anticipated to meet a peak hour volume-based traffic signal warrant with the addition of Project traffic for Opening Year Cumulative (2021) With Project traffic conditions (see Appendix 6.4). However, the intersection of Driveway 3 on Hidden Springs Road is anticipated to operate at an acceptable LOS without the addition of a traffic signal. As such, a traffic signal has not been recommended at the intersection of Hidden Springs Road and Driveway 3 in this TIA.

Table 6-1

Intersection Analysis for Opening Year Cumulative (2021) Conditions

#	Intersection	Traffic Control[2]	2021 Without Project				2021 With Project				Change in Delay		Significant Impact?[4]
			Delay[1] (Secs.)		LOS[3]		Delay[1] (Secs.)		LOS[3]				
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	
1	Palomar St. & Clinton Keith Rd.	TS	**164.6**	**140.5**	**F**	**F**	**181.8**	**158.4**	**F**	**F**	17.2	17.9	**Yes**
2	Stable Lanes Rd. & Clinton Keith Rd.	CSS	**>100.0**	**>100.0**	**F**	**F**	**>100.0**	**>100.0**	**F**	**F**	>5.0	>5.0	**Yes**
3	Driveway 1 & Clinton Keith Rd.	**CSS**	Future Intersection				15.6	26.2	C	D	--	--	No
4	Driveway 2 & Clinton Keith Rd.	**CSS**	Future Intersection				16.3	29.5	C	D	--	--	No
5	Hidden Springs Rd. & Driveway 3	CSS	13.5	23.3	B	C	17.3	34.8	C	D	--	--	No
6	Hidden Springs Rd. & Driveway 4	CSS	16.0	20.9	C	C	23.9	33.9	C	D	--	--	No
7	Hidden Springs. Rd. & Clinton Keith Rd.	TS	**142.9**	**159.6**	**F**	**F**	**180.0**	**199.5**	**F**	**F**	37.1	39.9	**Yes**
8	I-15 SB Ramps & Clinton Keith Rd.	TS	27.1	22.9	C	C	27.1	23.0	C	C	--	--	No
9	I-15 NB Ramps & Clinton Keith Rd.	TS	18.0	23.0	B	C	18.6	24.0	B	C	--	--	No

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

[1] Per the Highway Capacity Manual (6th 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.

[2] CSS = Cross-street Stop; TS = Traffic Signal; **TS** = Improvement

[3] LOS = Level of Service

[4] Significant impact if change in delay exceeds 5.0 seconds for intersections at LOS E or LOS F under pre-project conditions.

EXHIBIT 6-3: OPENING YEAR CUMULATIVE (2021) WITHOUT PROJECT SUMMARY OF LOS

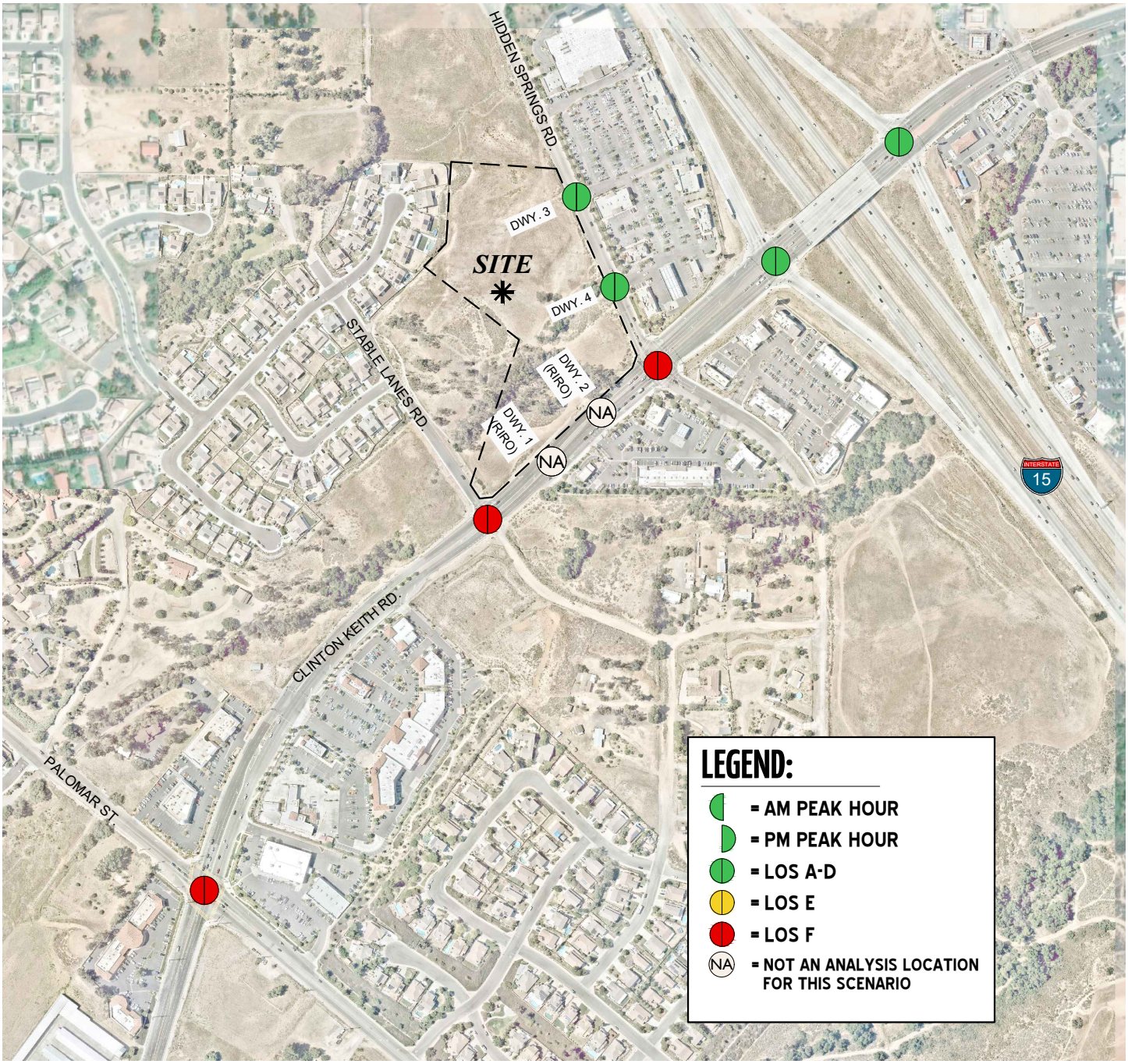
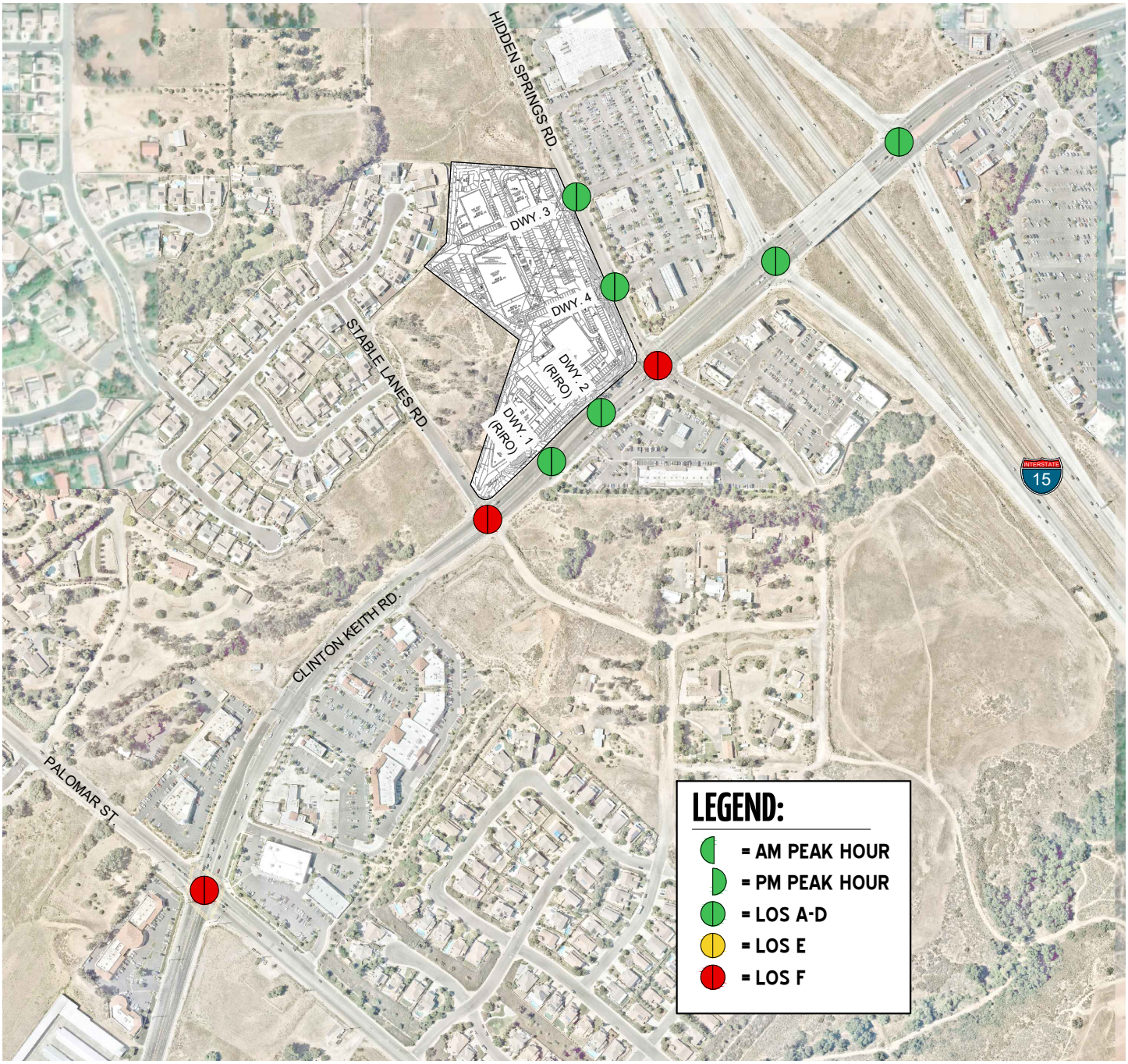


EXHIBIT 6-4: OPENING YEAR CUMULATIVE (2021) WITH PROJECT SUMMARY OF LOS



6.6 OFF-RAMP QUEUING ANALYSIS

A queuing analysis was performed for the off-ramps at the I-15 Freeway and Clinton Keith Road interchange to assess vehicle queues for the off ramps that may potentially result in deficient peak hour operations at the ramp-to-arterial intersections and may potentially "spill back" onto the I-15 Freeway mainline. Queuing analysis findings are presented in Table 6-2 for Opening Year Cumulative (2021) traffic conditions. It is important to note that off-ramp lengths are consistent with the measured distance between the intersection and the freeway mainline.

As shown in Table 6-2 and consistent with Existing (2019) traffic conditions, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows. Worksheets for Opening Year Cumulative (2021) Without Project traffic conditions off-ramp queuing analysis are provided in Appendix 6.5.

As shown in Table 6-2, with the addition of Project traffic, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows. Worksheets for Opening Year Cumulative (2021) With Project traffic conditions off-ramp queuing analysis are provided in Appendix 6.6.

6.7 RECOMMENDED IMPROVEMENTS

6.7.1 RECOMMENDED IMPROVEMENTS TO ADDRESS DEFICIENCIES AT INTERSECTIONS

The addition of Project traffic (as measured by 50 or more peak hour trips) is anticipated to increase the pre-project peak hour delays in excess of the City's significance threshold (5.0 seconds over pre-project traffic conditions at the following intersections:

- Palomar Street & Clinton Keith Road (#1)
- Stable Lanes Road & Clinton Keith Road (#2)
- Hidden Springs Road & Clinton Keith Road (#7)

Cumulative impacts are deficiencies that would not be directly caused by the Project. The Project would, however, contribute traffic to these deficient facilities along with other cumulative development projects, resulting in a cumulatively considerable impact. Improvement strategies have been recommended at intersections that have been identified with a cumulatively considerable traffic impact in an effort to reduce the delay and LOS to less than 5.0 over pre-project conditions or better. The effectiveness of the recommended improvement strategies discussed below to address Opening Year Cumulative (2021) traffic deficiencies is presented in Table 6-3, and are described below.

Palomar Street & Clinton Keith Road (#1):

- Modify the traffic signal and implement overlap phasing on the northbound right turn lane (same as E+P).
- Restripe the westbound approach to accommodate two left turn lanes, one through lane, and one right turn lane (same as E+P).
- Add a 2nd southbound left turn lane and 2nd southbound through lane.

Table 6-2

Peak Hour Freeway Off-Ramp Queuing Summary for Opening Year Cumulative (2021) Conditions

Intersection	Movement	Available Stacking Distance (Feet)	2021 Without Project				2021 With Project			
			95th Percentile Queue (Feet)		Acceptable? [1]		95th Percentile Queue (Feet)		Acceptable? [1]	
			AM Peak Hour	PM Peak Hour	AM	PM	AM Peak Hour	PM Peak Hour	AM	PM
I-15 Southbound Ramps & Clinton Keith Rd.	SBL	1,185	291 [2]	366 [2]	Yes	Yes	291 [2]	366 [2]	Yes	Yes
	SBL/T	1,185	293 [2]	370 [2]	Yes	Yes	293 [2]	370 [2]	Yes	Yes
	SBR	600	117	151	Yes	Yes	136	162	Yes	Yes
I-15 Northbound Ramps & Clinton Keith Rd.	NBL	1,180	221	417 [2]	Yes	Yes	233 [2]	432 [2]	Yes	Yes
	NBL/T	1,180	195	448 [2]	Yes	Yes	207	457 [2]	Yes	Yes
	NBR	650	147	320 [2]	Yes	Yes	152	336 [2]	Yes	Yes

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 15 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.

[2] 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Table 6-3

Intersection Analysis for Opening Year Cumulative (2021) Conditions With Improvements

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[2] (secs.)		Level of Service	
			Northbound			Southbound			Eastbound			Westbound						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
1	Palomar St. & Clinton Keith Rd.																	
	- Without Improvements	TS	1	2	1	1	1	1	1	2	0	1	2	1	**181.8**	**158.4**	**F**	**F**
	- With Improvements	TS	1	2	**1>**	**2**	**2**	1	1	2	0	**2**	**1**	1	**63.2**	**64.3**	**E**	**E**
2	Stable Lanes Rd. & Clinton Keith Rd.																	
	- Without Improvements	CSS	0	**1**	**0**	0	**1**	**0**	1	2	0	1	2	1	**>100.0**	**>100.0**	**F**	**F**
	- With Improvements	**TS**	0	**1**	**0**	0	**1**	**0**	1	2	0	1	2	1	14.0	14.1	B	B
7	Hidden Springs. Rd. & Clinton Keith Rd.																	
	- Without Project	TS	1	1	1	1	1	0	1	3	1	2	2	1	**180.0**	**199.5**	**F**	**F**
	- With Project	TS	1	1	1	**2**	1	0	1	3	1	2	2	**1>**	**65.6**	**123.2**	**E**	**F**

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

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; > = Right-Turn Overlap Phasing; **1** = Improvement

[2] Per the Highway Capacity Manual (6th 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.

[3] CSS = Cross-Street Stop; TS = Traffic Signal; **TS** = Improvement

Stable Lanes Road & Clinton Keith Road (#2):

- Modify the intersection to remove the median and allow for full turning movements. This improvement includes accommodating 150-foot eastbound and westbound left turn lanes.
- Install a traffic signal.

Hidden Springs Road & Clinton Keith Road (#7):

- Add a 2nd southbound left turn lane (same as E+P).
- Modify the traffic signal and implement overlap phasing on the westbound right turn lane (same as E+P).

Worksheets for Opening Year Cumulative (2021) With Project conditions, with improvements, HCM calculation worksheets are provided in Appendices 6.7.

6.7.2 RECOMMENDED IMPROVEMENTS TO ADDRESS DEFICIENCIES ON OFF-RAMP QUEUES

As shown previously in Table 6-2, there are no anticipated peak hour queuing issues at the I-15 Freeway and Clinton Keith Road interchange for Opening Year Cumulative (2021) traffic conditions. As such, no improvements have been recommended.

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7 LOCAL AND REGIONAL FUNDING MECHANISMS

Transportation improvements within the City of Wildomar are funded through a combination of direct project mitigation, fair share contributions or development impact fee programs, such as the City of Wildomar's Development Impact Fee (DIF) program, County's Transportation Uniform Mitigation Fee (TUMF) program, and Road and Bridge Benefit District (RBBD). Identification and timing of needed improvements is generally determined through local jurisdictions based upon a variety of factors.

7.1 CITY OF WILDOMAR DEVELOPMENT IMPACT FEE PROGRAM

The Project will also be subject to City of Wildomar's Development Impact Fee (DIF) program which includes a component for roads and signals. Chapters Three and Four of the City of Wildomar DIF Nexus Report (April 2015) discusses the local (as opposed to regional) streets and signal improvements planned for the City through build-out of the existing City limits. (7) Fees from new residential, commercial, and industrial development are collected to fund local facilities.

Under the City's DIF program, the City may grant to developers a credit against specific components of fees when those developers construct certain facilities and landscaped medians identified in the list of improvements funded by the DIF program. After the City's DIF fees are collected, they are placed in a separate restricted use account pursuant to the requirements of Government Code sections 66000 et seq. The timing to use the DIF fees is established through periodic capital improvement programs which are overseen by the City's Engineering Department.

Periodic traffic counts, review of traffic accidents, and a review of traffic trends throughout the City are also periodically performed by City staff and consultants. The City uses this data to determine the timing of the improvements listed in its facilities list. The City also uses this data to ensure that the improvements listed on the facilities list are constructed before the LOS falls below the LOS performance standards adopted by the City. In this way, the improvements are constructed before the LOS falls below the City's LOS performance thresholds. The City's DIF program establishes a timeline to fund, design, and build the improvements.

7.2 TRANSPORTATION UNIFORM MITIGATION FEE PROGRAM

Transportation improvements within the City of Wildomar are funded through a combination of construction of specific improvements by a project and participation in fee programs (i.e., payment of fees), such as the TUMF. Identification and timing of needed improvements is generally determined through local jurisdictions based upon a variety of factors.

The TUMF program is administered by the Western Riverside Council of Governments (WRCOG) based upon a regional Nexus Study, most recently updated in 2016, to address major changes in right of way acquisition and improvement cost factors. This regional program was put into place to ensure that development pays its fair share and that funding is in place for construction of facilities needed to maintain the requisite level of service and critical to mobility in the

region. TUMF is a truly regional mitigation fee program and is imposed and implemented in every jurisdiction in Western Riverside County.

TUMF fees are imposed on new residential, industrial, and commercial development through application of the TUMF fee ordinance and fees are collected at the building or occupancy permit stage. In addition, an annual inflation adjustment is considered each year in February. In this way, TUMF fees are adjusted upwards on a regular basis to ensure that the development impact fees collected keep pace with construction and labor costs, etc. The Project is located in the Southwest TUMF zone.

7.3 ROAD AND BRIDGE BENEFIT DISTRICT

The City of Wildomar is anticipated to experience substantial growth. Extensive improvements are necessitated by new development within the region. In particular, Riverside County recognized the impact of this growth on the vicinity of the study area when it formed the Southwest RBBD. The proposed Project lies within Zone A of the Southwest RBBD. Zone A is generally bounded by the City of Lake Elsinore's southern boundary to the north, Corydon Street/Grand Avenue to the west, Sunset Avenue/Murrieta Road to the east, and the City of Murrieta's northern boundary to the south. As discussed above, the improvements to facilities that will be ultimately constructed as a result of the collection of these fees and assessments are as follows for Zone A only:

- Clinton Keith Road interchange at the I-15 Freeway
- Bundy Canyon Road improvements from Mission Trail to Sunset Avenue
- Bundy Canyon Road improvements from Mission Trail to Corydon Street

7.4 FAIR SHARE CONTRIBUTION

Project improvement may include a combination of fee payments to established programs, construction of specific improvements, payment of a fair share contribution toward future improvements or a combination of these approaches. Improvements constructed by development may be eligible for a fee credit or reimbursement through the program where appropriate (to be determined at the City's discretion).

When off-site improvements are identified with a minor share of responsibility assigned to proposed development, the approving jurisdiction may elect to collect a fair share contribution or require the development to construct improvements. Detailed fair share calculations, for each peak hour, have been provided in Table 7-1 for the applicable deficient study area intersections. These fees are collected with the proceeds solely used as part of a funding mechanism aimed at ensuring that regional highways and arterial expansions keep pace with the projected population increases.

Table 7-1

Project Fair Share Calculations

#	Intersection	Existing	Project	2021 WP	Total New Traffic	Project % of New Traffic[1]
1	Palomar St. & Clinton Keith Rd.					
	AM:	2,761	126	3,472	711	**17.7%**
	PM:	2,561	150	3,597	1,036	14.5%

[1] Project percentage of new traffic between Existing (2019) and Opening Year Cumulative (2021) with Project traffic conditions.

* Highest fair share percentage indicated in **bold**.

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8 REFERENCES

1. **City of Murrieta.** *Transportation Impact Analysis Preparation Guide.* Murrieta : s.n., October 2012.

2. **Institute of Transportation Engineers.** *Trip Generation Manual.* 10th Edition. 2017.

3. **Riverside County Transportation Commission.** *2011 Riverside County Congestion Management Program.* County of Riverside : s.n., December 14, 2011.

4. **Transportation Research Board.** *Highway Capacity Manual (HCM).* s.l. : National Academy of Sciences, 2016.

5. **California Department of Transportation.** California Manual on Uniform Traffic Control Devices (CA MUTCD). [book auth.] California Department of Transportation. *California Manual on Uniform Traffic Control Devices (CA MUTCD).* 2014.

6. **Insttitue of Transportation Engineers.** *Trip Generation Handbook.* 3rd Edition. 2017.

7. **Colgan Consulting Corporation.** *City of Wildomar Impact Fee Study Update Report.* Wildomar : s.n., April 23, 2015.

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