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BAXTER VILLAGE

TRAFFIC IMPACT ANALYSIS
CITY OF WILDOMAR, CALIFORNIA

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BAXTER VILLAGE
TRAFFIC IMPACT ANALYSIS
CITY OF WILDOMAR, CALIFORNIA

1.0 EXECUTIVE SUMMARY

1.1 INTRODUCTION

This report presents the results of the traffic impact analysis (TIA) for the proposed Baxter Village development (referred to as "Project"), which is located north of Baxter Road and east of White Street in the City of Wildomar, as shown on Exhibit 1-1.

The purpose of this traffic impact analysis is to evaluate the potential impacts to traffic and circulation associated with the development of the proposed Project, and recommend improvements to mitigate impacts considered significant in comparison to established regulatory thresholds.

1.2 PROJECT OVERVIEW

The Project includes the development of approximately 66 single family detached residential units, 204 apartment units and 75,000 square feet of commercial retail use. For the purpose of this analysis, the Project is anticipated to be developed in a single phase with a projected Opening Year of 2018. It should be noted that 67 single family residential units have been assumed for the purposes of this analysis. The reduction of 1 unit is not anticipated to change the analysis results.

Trips generated by the Project's proposed land uses have been estimated based on trip generation rates collected by the Institute of Transportation Engineers (ITE) and published in their most current edition of the *Trip Generation* manual, 9th Edition, 2012. The Project is estimated to generate a net total of approximately 4,777 net trip-ends per day on a typical weekday with approximately 271 net weekday AM peak hour trips and 437 net weekday PM peak hour trips. The assumptions and methods used to estimate the Project's trip generation characteristics are discussed in detail in Section 4.1 *Project Trip Generation* of this report.

1.3 ANALYSIS SCENARIOS

Potential impacts to traffic and circulation were assessed for each of the following conditions:

- Existing (2013) Conditions (1 scenario)
- Existing plus Project Conditions (1 scenario)
- Opening Year (2018), Without and With Project (2 scenarios) – ambient growth and cumulative development projects (EAC and EAPC)

EXHIBIT 1-1

PRELIMINARY SITE PLAN

- City of Wildomar General Plan Buildout (Post-2035), Without and With Project (2 scenarios) – based on a version of Riverside County Transportation Analysis Model (RivTAM) modified to represent General Plan Buildout conditions, with recently proposed Housing Element changes, for the City of Wildomar.

1.3.1 EXISTING (2013) CONDITIONS

Information for Existing (2013) 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 (2013) plus Project (E+P) analysis determines direct project-related traffic impacts that would occur on the existing roadway system in the scenario of the Project being placed upon Existing (2013) conditions.

1.3.3 OPENING YEAR (2018) CONDITIONS

The Opening Year Cumulative (2018) conditions analysis will determine near-term cumulative traffic impacts. To account for near-term cumulative growth, twenty-nine (29) other known cumulative development projects in the study area were included in addition to 10.41% of ambient growth. This comprehensive list was compiled from information provided by the City of Wildomar Planning and Engineering Departments.

1.3.4 CITY OF WILDOMAR GENERAL PLAN BUILDOUT (POST-2035) CONDITIONS

Traffic projections for City of Wildomar General Plan Buildout (Post-2035) Without Project conditions were derived from a version of the Riverside County Traffic Analysis Model (RivTAM) modified to represent General Plan Buildout conditions for the City of Wildomar using accepted procedures for model forecast refinement and smoothing.

The General Plan Buildout (Post-2035) without and with Project traffic conditions analyses will be utilized to determine if improvements funded through regional transportation mitigation fee programs, such as the Transportation Uniform Mitigation Fee (TUMF), Southwest RBBD fee, City Development Impact Fee (DIF) programs, or other approved funding mechanism can accommodate the long-range cumulative traffic at the target LOS identified in the City of Wildomar General Plan. If the "funded" improvements can provide the target LOS, then the Project's payment into TUMF, RBBD, or DIF will be considered as cumulative mitigation through the conditions of approval. Other improvements needed beyond the "funded" improvements (such as localized improvements to non-TUMF, RBBD or DIF facilities) are identified as such.

1.4 STUDY AREA

The Project study area was defined in coordination with the City of Wildomar. Based on discussions with City staff, the study area includes any intersection of "Collector" or higher classification street, with "Collector" or higher classification streets, at which the proposed project will add 50 or more peak hour trips. Exhibit 1-2 presents the study area and intersection analysis locations.

It should be pointed out that the “50 peak hour trip” criteria utilized by the City of Wildomar is consistent with Riverside County traffic study guidelines, and generally represents a threshold of trips at which a typical intersection would have the potential to be impacted. Although each intersection may have unique operating characteristics, this traffic engineering rule of thumb is a widely utilized tool for estimating a potential area of impact (i.e., study area).

To ensure that this TIA satisfies the needs of the City of Wildomar, Urban Crossroads, Inc. prepared a Project traffic study scoping agreement for review by City staff prior to the preparation of this TIA. The agreement provides an outline of the Project study area, trip generation, trip distribution, and analysis methodology. The agreement approved by the City of Wildomar is included in Appendix “1.1”.

1.4.1 INTERSECTIONS

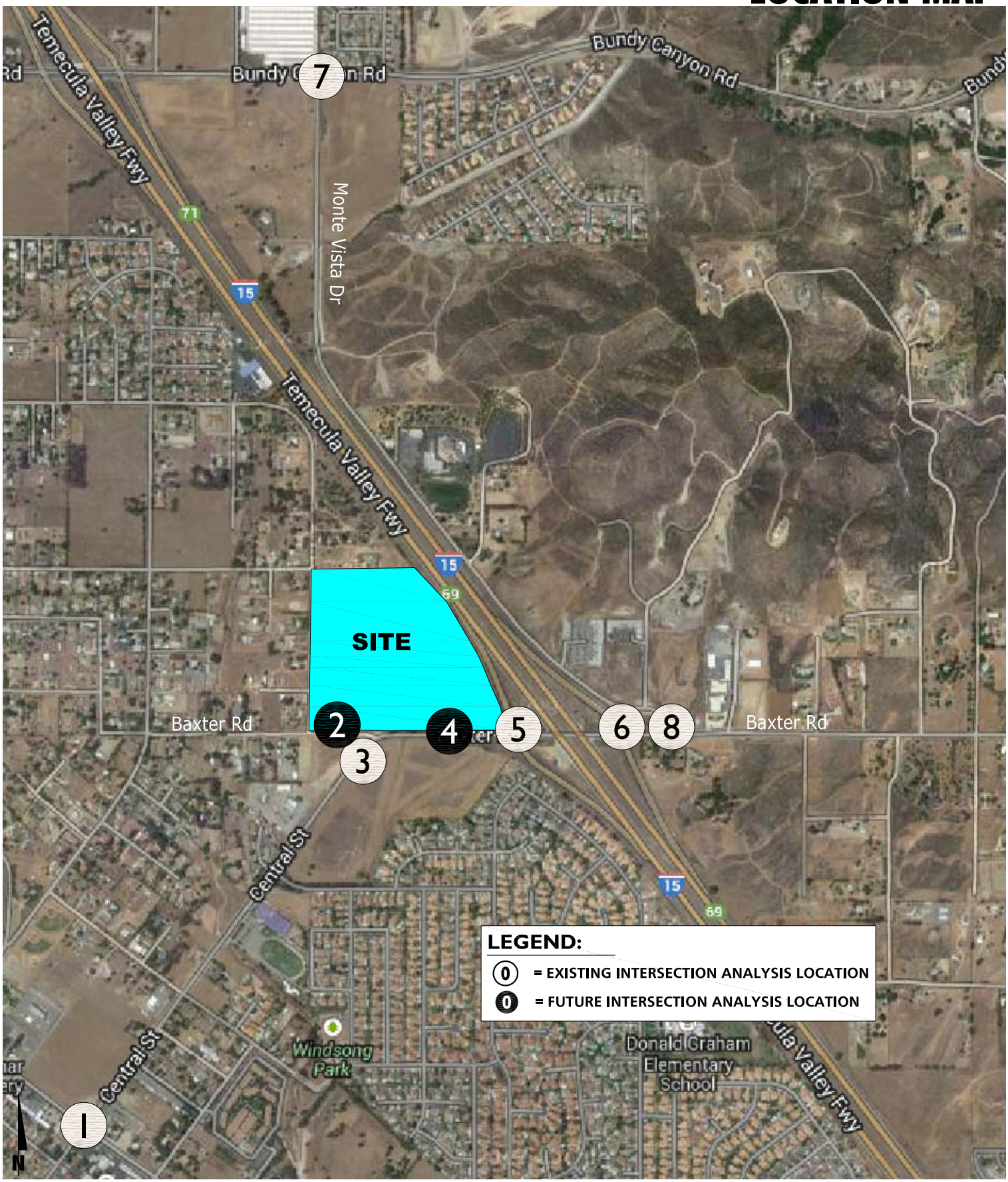
The following eight (8) Project study area intersection locations shown on Exhibit 1-2 and listed on Table 1-1 were selected for this TIA based on the following: (1) City’s TIA analysis methodology that requires analysis of intersection locations with 50 or more peak-hour Project trips and (2) input from the City of Wildomar Engineering Division.

Table 1-1 Intersection Analysis Locations

ID	Intersection Location	Jurisdiction
1	Palomar Street / Central Street	Wildomar
2	Driveway 1 / Baxter Road	Wildomar
3	Central Street / Baxter Road	Wildomar
4	Driveway 2 / Baxter Road	Wildomar
5	I-15 Southbound Ramps / Baxter Road	Caltrans
6	I-15 Northbound Ramps / Baxter Road	Caltrans
7	Monte Vista Drive / Bundy Canyon Road	Wildomar
8	Monte Vista Drive / Baxter Road	Wildomar

EXHIBIT 1-2

LOCATION MAP



1.4.2 FREEWAY MAINLINE SEGMENTS

Caltrans traffic study guidelines require analysis of State highways where a project is anticipated to contribute 100 or more two-way peak hour trips. As the proposed Project is anticipated to contribute fewer than 100 two-way peak hour trips to the I-15 Freeway at Baxter Road, an analysis of the Project's potential impacts to the I-15 Freeway is not required. However, in an overabundance of caution, freeway mainline analysis has been presented for informational purposes only for the freeway segments located immediately adjacent to the interchange at the I-15 Freeway and Baxter Road. The study area freeway mainline analysis locations include four (4) I-15 Freeway mainline segments for the, northbound and southbound directions of flow as shown on Table 1-2:

Table 1-2 Freeway Mainline Segment Analysis Locations

ID	Freeway Mainline Segments
1	I-15 Freeway – Southbound, North of Baxter Road
2	I-15 Freeway – Southbound, South of Baxter Road
3	I-15 Freeway – Northbound, North of Baxter Road
4	I-15 Freeway – Northbound, South of Baxter Road

1.4.3 FREEWAY MERGE/DIVERGE RAMP JUNCTIONS

The study area freeway merge/diverge ramp junction analysis locations include four (4) I-15 freeway ramp junctions for the northbound and southbound directions of flow as shown on Table 1-3:

Table 1-3 Freeway Merge/Diverge Ramp Junction Analysis Locations

ID	Freeway Merge/Diverge Ramp Junctions
1	I-15 Freeway – Southbound, Off-Ramp at Baxter Road (Diverge)
2	I-15 Freeway – Southbound, On-Ramp at Baxter Road (Merge)
3	I-15 Freeway – Northbound, On-Ramp at Baxter Road (Merge)
4	I-15 Freeway – Northbound, Off-Ramp at Baxter Road (Diverge)

1.5 SUMMARY OF PROJECT IMPACTS AND RECOMMENDED IMPROVEMENTS

This section provides a summary of project-related impacts and associated mitigation measures. Section 2.0 *Methodologies* provides information on the methodologies used in the analyses and Section 5.0 *Existing plus Project Traffic Analysis* includes the detailed analysis. The recommended mitigation measures necessary to reduce the direct project-related impacts to "less-than-significant" are discussed below. A comparison of Existing (2013) to Existing plus Project traffic conditions indicates

that the addition of Project traffic is anticipated to result in deficient peak hour operations at the following study area intersections:

ID	Intersection Location
3	Central Street / Baxter Road
5	I-15 Southbound Ramps / Baxter Road
7	Monte Vista Drive / Bundy Canyon Road

Impact 1.1 – Central Street / Baxter Road (#3) – The intersection is currently operating at acceptable LOS (i.e., LOS "D" or better) during the AM and PM peak hours under Existing (2013) traffic conditions. The addition of Project traffic (as measured by 50 or more peak hour trips) is anticipated to result in an unacceptable LOS (LOS "F") during the AM and PM peak hours at this intersection. Consistent with the City's significance criteria, the impact is considered significant.

Mitigation Measure 1.1 – Central Street / Baxter Road (#3) – Install a traffic signal with protected left turn phasing on the eastbound approach of Baxter Road and construct the intersection with the following geometrics (mitigation measures are in **BOLD**):

- Northbound Approach: N/A
- Southbound Approach: **One left turn lane, one right turn lane.**
- Eastbound Approach: **One left turn lane**, one through lane.
- Westbound Approach: One through lane, **one right turn lane.**

Impact 2.1 – I-15 Southbound Ramps / Baxter Road (#5) – Although the intersection is currently operating at unacceptable LOS (LOS "F") during the AM peak hour under Existing (2013) traffic conditions, the addition of Project traffic (as measured by 50 or more peak hour trips) is anticipated to result in an increase to the intersection's delay by more than 5.0 seconds during the AM peak hour and an unacceptable LOS (LOS "F") during the PM peak hour at this intersection. Consistent with the City's significance criteria, the impact is considered significant.

Mitigation Measure 2.1 – I-15 Southbound Ramps / Baxter Road (#5) – The following mitigation measure is necessary to reduce the Project's impact to less-than-significant:

- The Project shall mitigate its proportional share through payment of TUMF fees.

It should be noted that widening of the Baxter Road Bridge over the I-15 Freeway is not necessary as the recommended improvements at the I-15 Southbound Ramps at Baxter Road are sufficient enough to provide acceptable LOS during both AM and PM peak hours.

Impact 3.1 – Monte Vista Drive / Bundy Canyon Road (#7) – Although the intersection is currently operating at unacceptable LOS (LOS "F") during the PM peak hour under Existing (2013) traffic conditions, the addition of Project traffic (as measured by 50 or more peak hour trips) is anticipated to result in an increase to the intersection's delay by more than 5.0 seconds during the PM peak hour at this intersection. Consistent with the City's significance criteria, the impact is considered significant.

Mitigation Measure 3.1 – Monte Vista Drive / Bundy Canyon Road (#7) - The following mitigation measure is necessary to reduce the Project's impact to less-than-significant:

- The Project shall mitigate its proportional share through payment of City of Wildomar DIF fees.

1.6 SUMMARY OF CUMULATIVE IMPACTS AND RECOMMENDED IMPROVEMENTS

A summary of the cumulatively impacted study area intersections and recommended improvements to reduce cumulative impacts to less-than-significant are described in detail within Section 6.0 *Opening Year (2018) Traffic Analysis* and Section 7.0 *General Plan Buildout (Post-2035) Traffic Analysis* of this report. Cumulative impacts are deficiencies in the transportation network's LOS that would not be directly caused by the Project. The Project would, however, contribute traffic to these deficient facilities, resulting in a finding that the Project's contribution to the cumulative impact is considered cumulatively considerable.

In 2003, the Transportation Uniform Mitigation Fee (TUMF) program was implemented in Western Riverside County. Under the TUMF, developers of residential, industrial and commercial property are required to pay a development fee to fund regional transportation projects, which mitigates cumulative impacts to the roadway segments and intersections included in the TUMF program. The TUMF funds both local and regional arterial projects. The applicant shall participate in the funding of off-site improvements, including traffic signals that are needed to serve cumulative traffic conditions through the payment of required Western Riverside County TUMF, County of Riverside Southwest RBBD, and City of Wildomar's Development Impact Fees (DIF) and other fair share contributions as directed by the City. These fees are collected as part of a funding mechanism aimed at ensuring that regional highways and arterial expansions keep pace with the projected vehicle trip increases.

As development increases within the region, the amount of fees collected also increases thereby accelerating the construction of transportation facilities included in each funding program. Similarly, if development within the region experiences reduced growth, the amount of fees collected also is reduced. However, a slower growth cycle would likely result in a slower growth in traffic volumes, thereby lengthening the timeline necessary to complete transportation infrastructure improvements.

Intersection and roadway improvements that were identified in the analysis found in Section 7.0 *General Plan Buildout (Post-2035) Traffic Analysis* as necessary to maintain or improve the operational level of service of the street system in the vicinity of the project site are shown in Table 1-4. The table lists the

Table 1-4

Summary of Transportation Impact Fee Program Improvements for General Plan Buildout (Post-2035) Conditions

#	Intersection Location	Jurisdiction	Recommended Improvements - Opening Year (2018)	Recommended Improvements - General Plan Buildout (Post-2035)	Project Improvements	Program Improvements[1,2]	Non-Program Improvements
1	Palomar St / Central St	Wildomar	None	1. NBT, 1. SBT	None	TUMF (1. NBT, 1. SBT)	None
3	Central St / Baxter Rd	Wildomar	Install Traffic Signal, 1. SBL, 1.SBR, 1. EBL, 1.WBR	Install Traffic Signal, 1. NBL, 1. NBTR, 1. SBL, 1. SBTR, 1. EBL, 1. EBTR, 1. WBL, 1. WBT, 1. WBR	Install Traffic Signal, 1. SBL, 1. SBR, 1.EBL,1. WBR	TUMF (1. EBT, 1. WBT)	1. NBL, 1. NBTR, 1. WBL
5	I-15 Southbound Ramps / Baxter Rd	Caltrans	Install Traffic Signal, 1. EBR	Install Traffic Signal, 1. EBT, 1. EBR, 1. WBT	None	TUMF (Install Traffic Signal, 1. EBT, 1. EBR, 1. WBT)	None
6	I-15 Northbound Ramps / Baxter Rd	Caltrans	Install Traffic Signal	Install Traffic Signal, 1. EBT, 1. WBT, 1. WBR	None	TUMF (Install Traffic Signal, 1. EBT, 1. WBT, 1. WBR)	None
7	Monte Vista Dr / Bundy Canyon Rd	Wildomar	Install Traffic Signal, 1. EBT	Install Traffic Signal, 1. NBL, 1. NBR, 2. EBT, 1. EBR, 1. WBL, 2. WBT	None	TUMF & RBBD (2. EBT, 2. WBT) DIF (Install Traffic Signal, 1. NBL, 1. NBR, 1. EBR, 1. WBL)	None
8	Monte Vista Dr / Baxter Rd	Wildomar	Install Traffic Signal, 1. EBL	Install Traffic Signal, 1. SBR, 1. EBL, 1. WBR, modify TS and implement overlap phasing on WBR.	None	DIF (Install Traffic Signal, 1. SBR, 1. EBL, 1. WBR, modify TS and implement overlap phasing on WBR.)	None

[1] Improvements included in 2013 Southwest TUMF Zone Transportation Improvement Program (January 28, 2013), Southwest RBBD, or City of Wildomar 2012 Impact Fee Study Report (May 31, 2012).

[2] Program improvements constructed by project may be eligible for fee credit. In lieu fee payment is at discretion of City. Fair share selected based on peak hour with worst LOS.

Lane additions are shown as the number of lanes required and the direction of travel, for example, "1.EBTR" indicates one additional eastbound shared through-right turn lane.

total improvements that are required by General Plan Buildout (Post-2035) with Project traffic conditions. It is anticipated that the improvements required to maintain or to improve the LOS operations of transportation facilities in the vicinity of the Project will be constructed through the City's local development impact fee and regional transportation improvement programs, such as the Transportation Uniform Mitigation Fee (TUMF), County of Riverside Southwest RBBD and the City of Wildomar's Development Impact Fee (DIF). In addition, Table 1-4 identifies which of the total General Plan Buildout (Post-2035) improvements are not included in the TUMF, RBBD, or DIF programs, but may instead be covered by a fair share contribution, as directed by the City.

1.7 ON-SITE ROADWAY AND SITE ACCESS IMPROVEMENTS

The Project is proposed to have access on Baxter Road / Central Street via Driveway 1 and Baxter Road via Driveway 2. Driveway 1 is proposed to be full-access while Driveway 2 is proposed to have right-n/right-out access only. As part of the development, the Project will construct improvements on the site adjacent roadways of Baxter Road and White Street. Regional access to the Project site will be provided by the I-15 Freeway (located to the east) via Baxter Road.

As part of the development, the Project will construct improvements on the site adjacent roadways of Baxter Road and White Street. Roadway improvements necessary to provide site access and on-site circulation are assumed to be constructed in conjunction with site development and are described below. These improvements should be constructed as adjacent portions of the Project are developed.

1.7.1 ON-SITE ROADWAY IMPROVEMENTS

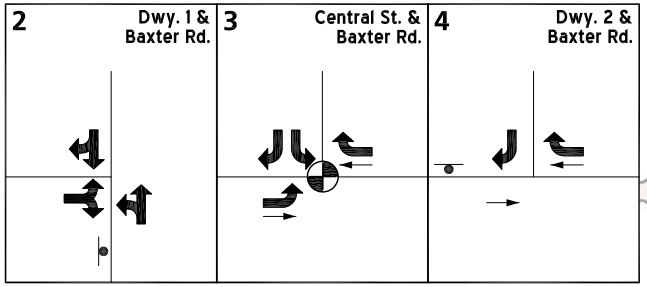
The recommended site-adjacent roadway improvements for the Project are described below. Exhibit 1-3 illustrates the site-adjacent roadway improvement recommendations.

Baxter Road – Baxter Road is an east-west oriented roadway located along the Project's southern boundary. Construct Baxter Road at its ultimate half-section width as an Arterial Highway (128-foot right-of-way) between Central Street and the Project's eastern boundary. In addition, construct the extension of Baxter Road to its ultimate cross-section width as a Local Street (60-foot right-of-way) from the edge of Central Avenue/Baxter Road to the Project entrance at Driveway 1. Construct the western extension of Baxter Road from Driveway 1 to White Street to its ultimate half-section as a Local Street (60-foot right-of-way). Improvements along the Project's frontage would be those required by final conditions of approval for the proposed Project and applicable City of Wildomar standards.

White Street – White Street is a north-south oriented roadway located along the Project's western boundary. Construct White Street at its ultimate half-section width as a Local Street (60-foot right-of-way) from the Project's northern boundary to the Project's southern boundary. Improvements along the Project's

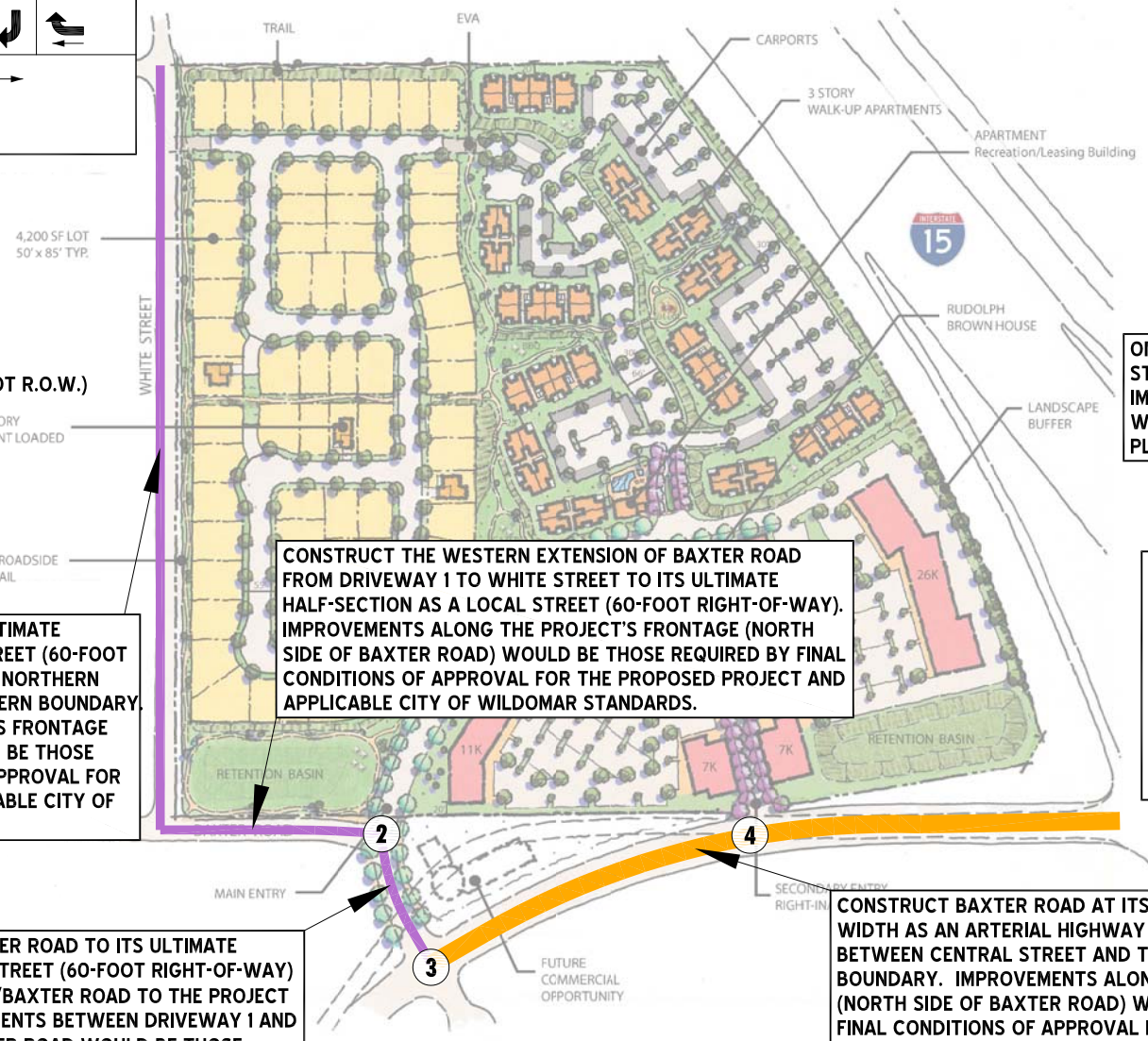
EXHIBIT 1-3

SITE ADJACENT ROADWAY RECOMMENDATIONS AND ON-SITE CIRCULATION RECOMMENDATIONS



LEGEND:

- = STOP SIGN
- = EXISTING LANE
- = LANE IMPROVEMENT
- = ARTERIAL HIGHWAY (4-LANES, 128-FOOT R.O.W.)
- = LOCAL STREET (2-LANES, 60-FOOT R.O.W.)
- = TRAFFIC SIGNAL



ON-SITE TRAFFIC SIGNING AND STRIPING SHOULD BE IMPLEMENTED IN CONJUNCTION WITH DETAILED CONSTRUCTION PLANS FOR THE PROJECT SITE.

CONSTRUCT THE WESTERN EXTENSION OF BAXTER ROAD FROM DRIVEWAY 1 TO WHITE STREET TO ITS ULTIMATE HALF-SECTION AS A LOCAL STREET (60-FOOT RIGHT-OF-WAY). IMPROVEMENTS ALONG THE PROJECT'S FRONTAGE (NORTH SIDE OF BAXTER ROAD) WOULD BE THOSE REQUIRED BY FINAL CONDITIONS OF APPROVAL FOR THE PROPOSED PROJECT AND APPLICABLE CITY OF WILDOMAR STANDARDS.

SIGHT DISTANCE AT EACH PROJECT ACCESS POINT SHOULD BE REVIEWED WITH RESPECT TO STANDARD CALTRANS AND CITY OF WILDOMAR SIGHT DISTANCE STANDARDS AT THE TIME OF PREPARATION OF FINAL GRADING, LANDSCAPE AND STREET IMPROVEMENT PLANS.

CONSTRUCT WHITE STREET AT ITS ULTIMATE HALF-SECTION WIDTH AS A LOCAL STREET (60-FOOT RIGHT-OF-WAY) FROM THE PROJECT'S NORTHERN BOUNDARY TO THE PROJECT'S SOUTHERN BOUNDARY. IMPROVEMENTS ALONG THE PROJECT'S FRONTAGE (EAST SIDE OF WHITE STREET) WOULD BE THOSE REQUIRED BY FINAL CONDITIONS OF APPROVAL FOR THE PROPOSED PROJECT AND APPLICABLE CITY OF WILDOMAR STANDARDS.

CONSTRUCT THE EXTENSION OF BAXTER ROAD TO ITS ULTIMATE CROSS-SECTION WIDTH AS A LOCAL STREET (60-FOOT RIGHT-OF-WAY) FROM THE EDGE OF CENTRAL AVENUE/BAXTER ROAD TO THE PROJECT ENTRANCE AT DRIVEWAY 1. IMPROVEMENTS BETWEEN DRIVEWAY 1 AND THE EDGE OF CENTRAL AVENUE/BAXTER ROAD WOULD BE THOSE REQUIRED BY FINAL CONDITIONS OF APPROVAL FOR THE PROPOSED PROJECT AND APPLICABLE CITY OF WILDOMAR STANDARDS.

CONSTRUCT BAXTER ROAD AT ITS ULTIMATE HALF-SECTION WIDTH AS AN ARTERIAL HIGHWAY (128-FOOT RIGHT-OF-WAY) BETWEEN CENTRAL STREET AND THE PROJECT'S EASTERN BOUNDARY. IMPROVEMENTS ALONG THE PROJECT'S FRONTAGE (NORTH SIDE OF BAXTER ROAD) WOULD BE THOSE REQUIRED BY FINAL CONDITIONS OF APPROVAL FOR THE PROPOSED PROJECT AND APPLICABLE CITY OF WILDOMAR STANDARDS.

N

frontage (east side of White Street) would be those required by final conditions of approval for the proposed Project and applicable City of Wildomar standards.

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

1.7.2 SITE ACCESS IMPROVEMENTS

The recommended site access driveway improvements for the Project are described below. On–site and site adjacent recommended roadway lane improvements are also illustrated on Exhibit 1-3. Construction of on-site and site adjacent improvements shall occur in conjunction with adjacent Project development activity or as needed for Project access purposes.

Driveway 1 / Baxter Road (#2) – Install a stop control on the eastbound approach of Baxter Road and construct the intersection with the following geometrics:

Northbound Approach: One shared left-through lane.
Southbound Approach: One shared through-right turn lane.
Eastbound Approach: One shared left-through-right turn lane.
Westbound Approach: N/A

Central Street / Baxter Road (#3) – Construct the intersection consistent with intersection controls and geometrics consistent with those identified previously under Mitigation Measure 1.1.

Driveway 2 / Baxter Road (#3) – Install a stop control on the southbound approach and construct the intersection with the following geometrics:

Northbound Approach: N/A
Southbound Approach: One right turn lane.
Eastbound Approach: One through lane.
Westbound Approach: One through lane and one right turn lane.

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

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

2.0 METHODOLOGIES

This section documents the methodologies and assumptions used to perform this traffic assessment.

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) (Transportation Research Board 2000) methodology expresses the LOS at an intersection in terms of delay time for the various intersection approaches. The HCM uses different procedures depending on the type of intersection control.

The intersection LOS analysis is based on the traffic volumes observed during the peak hour conditions using traffic count data collected on August 21, 2013 while schools in the Lake Elsinore Unified School District were in session. 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 count worksheets have been provided in Appendix "3.1" of this report.

2.2.1 SIGNALIZED INTERSECTIONS

The City of Wildomar requires signalized intersection operations analysis based on the methodology described in Chapter 16 of 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. All signalized study area intersections within the study area have been analyzed using the software package Traffix (Version 8.0 R1, 2008).

Table 2-1 Signalized Intersection LOS Thresholds

Level of Service	Description	Average Control Delay (Seconds)
A	Operations with very low delay occurring with favorable progression and/or short cycle length.	0 to 10.00
B	Operations with low delay occurring with good progression and/or short cycle lengths.	10.01 to 20.00
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.01 to 35.00
D	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
E	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
F	Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths	80.01 and up

Source: HCM 2000, Chapter 16

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-mintue 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 Existing (2013), Existing plus Project, and Opening Year (2018) traffic conditions for the purposes of this analysis. A PHF of 0.92 or higher has been used for all study area intersections for City of Wildomar General Plan Buildout (Post-2035) without and with Project traffic conditions.

2.2.2 UNSIGNALIZED INTERSECTIONS

The City of Wildomar requires the operations of unsignalized intersections be evaluated using the methodology described in Chapter 17 of the HCM (also consistent with Riverside County traffic study guidelines). 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

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

Source: HCM 2000, Chapter 17

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. The unsignalized study area intersections of the I-15 Southbound and Northbound Ramps along Baxter Road have utilized the Synchro software package (Version 8 Build 804) as they are Caltrans facilities. All other unsignalized study area intersections have utilized the Traffix software (Version 8.0 R1, 2008).

2.3 FREEWAY RAMP PROGRESSION ANALYSIS

The study area for this TIA includes segments of the I-15 Freeway north and south of Baxter Road. Consistent with Caltrans requirements, the progression of vehicles has been assessed to determine potential queuing impacts at the freeway ramp intersections on Baxter Road at the I-15 Freeway. 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 impacts/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 95th percentile queue is the maximum back of queue with 95th percentile traffic volumes.

A footnote on the Synchro outputs indicates if the 95th percentile cycle exceeds capacity. Traffic is simulated for two complete cycles of the 95th percentile traffic in Synchro in order to account for the effects of spillover between cycles. In practice, the 95th percentile queue shown will rarely be exceeded and the queues shown with the footnote are acceptable for the design of storage bays.
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. Although only the 95th percentile queue has been reported in the tables, the average queue can be found in the appendix alongside the 95th percentile queue for each ramp location. The average queue is the maximum back of queue on a typical cycle during the peak hour, while the 95th percentile queue is the maximum back of queue with 95th percentile traffic volumes during the peak hour. In other words, if traffic were observed for 100 cycles, the 95th percentile queue would be the queue experienced with the 95th busiest cycle (or 5% of the time). The 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.

2.4 FREEWAY MAINLINE SEGMENT ANALYSIS

Caltrans traffic study guidelines require analysis of State highways where a project is anticipated to contribute 100 or more two-way peak hour trips. As the proposed Project is anticipated to contribute fewer than 100 two-way peak hour trips to the I-15 Freeway at Baxter Road, an analysis of the Project's potential impacts to the I-15 Freeway is not required. However, in an overabundance of caution, freeway mainline analysis has been presented for informational purposes only for the freeway segments located immediately adjacent to the interchange at the I-15 Freeway and Baxter Road.

The freeway system in the study area, from north to south of Baxter Road has been broken into segments defined by the freeway-to-arterial interchange locations. The freeway segments have been evaluated in this TIA based upon peak hour directional volumes. The freeway segment analysis is based on the methodology described in Chapter 23 of the HCM and performed using HCS+ software. The performance measure preferred by Caltrans to calculate LOS is density. Density is expressed in terms of passenger cars per mile per lane. Table 2-3 illustrates the freeway segment LOS thresholds for each density range utilized for this analysis.

The number of lanes for existing baseline conditions has been obtained from field observations conducted by Urban Crossroads in August 2013. The Riverside County Transportation Commission (RCTC) has long-range plans in place to construct a carpool lane (high-occupancy vehicle lane) for both northbound and southbound directions of flow on the I-15 Freeway. The HOV lanes would extend from the I-15/I-215 interchange to Central Avenue (SR-74). The information provided on the RCTC website for the freeway improvements are in the preliminary stages, and because of such, no date of completion is provided.

The I-15 Freeway mainline volume data was obtained from the Caltrans Performance Measurement System (PeMS) website for the segments of the I-15 Freeway interchange at Baxter Road. The data obtained was for the dates of October 1st to October 3rd, 2013. It should be noted that these were the closest dates where reliable data could be obtained as the PeMS website indicated that freeway detectors were out of service from mid July to the end of September for the I-15 Freeway segments

north and south of Baxter Road. In an effort to conduct a conservative analysis, the maximum value observed within the three (3) day period was utilized for the weekday morning (AM) and weekday evening (PM) peak hours. Truck traffic, represented as a percentage of total traffic, has been utilized for the purposes of this analysis in an effort to not overstate traffic volumes and potential impacts. As such, actual vehicles (as opposed to passenger-car-equivalent volumes) have been utilized for the purposes of the basic freeway segment analysis.

Table 2-3 Freeway Mainline LOS Thresholds

Level of Service	Description	Density Range (pc/mi/ln)[1]
A	Free-flow operations in which vehicles are relatively unimpeded in their ability to maneuver within the traffic stream. Effects of incidents are easily absorbed.	0.0 – 11.0
B	Relative free-flow operations in which vehicle maneuvers within the traffic stream are slightly restricted. Effects of minor incidents are easily absorbed.	11.1 – 18.0
C	Travel is still at relative free-flow speeds, but freedom to maneuver within the traffic stream is noticeably restricted. Minor incidents may be absorbed, but local deterioration in service will be substantial. Queues begin to form behind significant blockages.	18.1 – 26.0
D	Speeds begin to decline slightly and flows and densities begin to increase more quickly. Freedom to maneuver is noticeably limited. Minor incidents can be expected to create queuing as the traffic stream has little space to absorb disruptions.	26.1 – 35.0
E	Operation at capacity. Vehicles are closely spaced with little room to maneuver. Any disruption in the traffic stream can establish a disruption wave that propagates throughout the upstream traffic flow. Any incident can be expected to produce a serious disruption in traffic flow and extensive queuing.	35.1 – 45.0
F	Breakdown in vehicle flow.	>45.0

[1] *pc/mi/ln = passenger cars per mile per lane. Source: HCM 2000, Chapter 23*

2.5 FREEWAY MERGE/DIVERGE RAMP JUNCTION ANALYSIS

The freeway system in the study area has been broken into segments defined by freeway-to-arterial interchange locations resulting in four (4) existing on and off ramp locations. Although the HCM indicates the influence area for a merge/diverge junction is 1,500 feet, the analysis presented in this traffic study has been performed at all ramp locations with respect to the nearest on or off ramp at each interchange in an effort to be consistent with Caltrans guidance/comments on other projects Urban Crossroads has worked on along the I-15 corridor.

The merge/diverge analysis is based on the HCM Ramps and Ramp Junctions analysis method and performed using HCS+ software. The measure of effectiveness (reported in passenger car/mile/lane)

are calculated based on the existing number of travel lanes, number of lanes at the on and off ramps both at the analysis junction and at upstream and downstream locations (if applicable) and acceleration/deceleration lengths at each merge/diverge point. Table 2-4 presents the merge/diverge area level of service thresholds for each density range utilized for this analysis.

Table 2-4 Freeway Merge and Diverge LOS Thresholds

Level of Service	Density Range (pc/mi/ln)[1]
A	≤10.0
B	10.0 – 20.0
C	20.0 – 28.0
D	28.0 – 35.0
E	>35.0
F	Demand Exceeds Capacity

[1] *pc/mi/ln = passenger cars per mile per lane. Source: HCM 2000, Chapter 25*

Similar to the basic freeway segment analysis, the I-15 Freeway mainline volume data were obtained from the Caltrans Performance Measurement System (PeMS) website for the segments of the I-15 Freeway Southbound and north of Northbound of Nichols Road. The ramp data (per the count data presented in Appendix "3.1") were then utilized to flow conserve the mainline volumes and determines the I-15 Freeway mainline volumes south of Nichols Road. The data obtained was for the dates of October 1st to October 3rd, 2013. In an effort to conduct a conservative analysis, the maximum value observed within the three (3) day period was utilized for the weekday morning (AM) and weekday evening (PM) peak hours. Truck traffic, represented as a percentage of total traffic, has been utilized for the purposes of this analysis in an effort to not overstate traffic volumes and potential impacts. As such, actual vehicles (as opposed to passenger-car-equivalent volumes) have been utilized for the purposes of the freeway ramp junction (merge/diverge) analysis.

2.6 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 Federal Highway Administration's (FHWA) *Manual on Uniform Traffic Control Devices (MUTCD)*, as amended by *the MUTCD 2012 California Supplement*, for all study area intersections.

The signal warrant criteria for Existing (2013) conditions are based upon several factors, including volume of vehicular and pedestrian traffic, frequency of accidents, and location of school areas. Both the FHWA's *MUTCD* and the *MUTCD 2012 California Supplement* indicate that the installation of a

traffic signal should be considered if one or more of the signal warrants are met. Specifically, this traffic assessment utilizes the Peak Hour Volume-based Warrant 3 as the appropriate representative traffic signal warrant analysis for existing traffic conditions. Warrant 3 criteria are basically identical for both the FHWA's *MUTCD* and the *MUTCD 2012 California Supplement*. Warrant 3 is appropriate to use for this traffic assessment 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.

Future unsignalized intersections have been assessed regarding the potential need for new traffic signals based on future average daily traffic (ADT) volumes, using the Caltrans planning level ADT-based signal warrant analysis worksheets.

Traffic signal warrant analyses were performed for the following unsignalized study area intersections and future intersections:

ID	Intersection Location	Jurisdiction
2	Driveway 1 / Baxter Road	Wildomar
3	Central Street / Baxter Road	Wildomar
4	Driveway 2 / Baxter Road	Wildomar
5	I-15 Southbound Ramps / Baxter Road	Caltrans
6	I-15 Northbound Ramps / Baxter Road	Caltrans
7	Inland Valley Drive / Wyman Road	Wildomar
8	Inland Valley Drive / Jefferson Avenue	Wildomar

The Existing (2013) conditions traffic signal warrant analysis is presented in the subsequent section, Section 3.0 *Area Conditions* of this report. The traffic signal warrant analysis for future conditions is presented in Section 5.0 *Existing plus Project Traffic Analysis*, Section 6.0 *Opening Year (2018) Traffic Analysis*, and Section 7.0 *General Plan Buildout (Post-2035) Traffic Analysis* of this report.

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 level of service. An intersection may satisfy a signal warrant condition and operate at or above LOS "D" or operate below LOS "D" and not meet a signal warrant.

2.7 LOS CRITERIA

The definition of an intersection deficiency within the City of Wildomar is based on the County of Riverside General Plan Circulation Element. Riverside County General Plan Policy C 2.1 states that the County will maintain the following County-wide target level of service (LOS): LOS "C" on all County-

maintained roads and conventional State Highways. As an exception, LOS "D" may be allowed in Community Development areas at intersections of any combination of Secondary Highways, Major Highways, Arterial Highways, Urban Arterial Highways, Expressways or conventional State Highways. LOS "E" may be allowed in designated Community Centers to the extent that it would support transit-oriented development and pedestrian communities. As such, LOS "D" has been considered acceptable at any intersection within the City of Wildomar.

Regarding Caltrans' ramp to arterial intersections and other Caltrans maintained facilities, the published Caltrans traffic study guidelines (December 2002) states the following:

"Caltrans endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" on State highway facilities, however, Caltrans acknowledges that this may not be always feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS."

As such, LOS "D" is also considered to be the limit of acceptable traffic operations during the peak hour at intersections maintained by Caltrans.

2.8 THRESHOLDS OF SIGNIFICANCE

This section outlines the significance criteria used in this analysis relating to roadway system impacts. The Criteria are based on California Environmental Quality Act (CEQA).

2.8.1 INTERSECTIONS

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.

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 through a comparison of peak hour operations under Existing (2013) and Existing plus Project traffic conditions.

A significant cumulative impact has been identified when an intersection is projected to operate below the requisite level of service standard under pre-project conditions AND the Project's measurable increase in traffic, as defined by 50 or more peak hour trips, contributes to the deficiency. Cumulative traffic impacts are created as a result of a combination of the proposed Project together with other future developments contributing to the overall traffic impacts requiring additional improvements to maintain acceptable level of service operations with or without the Project. For the purposes of this analysis, mitigation measures have been recommended for cumulatively impacted intersections to bring the "with Project" delay and associated level of service back to acceptable peak hour operations at intersections located outside of the City's jurisdiction (e.g., I-15 Freeway ramps at Baxter Road).

A Project's contribution to a cumulatively significant impact can be reduced to less-than-significant if the Project is required to implement or fund its fair share of improvements designed to alleviate the potential cumulative impact. If full funding of future cumulative improvements is not reasonably assured, a temporary unmitigated cumulative impact may occur until the needed improvement is fully funded and constructed.

2.8.2 FREEWAY

For the purposes of this traffic impact analysis, if a freeway segment is projected to operate at an acceptable level of service (i.e., LOS "D" or better) without the Project and the Project is expected to cause the facility to operate at an unacceptable level of service (i.e., LOS "E" or LOS "F"), the impact is considered significant.

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3.0 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, freeway analysis and traffic signal warrants.

The AM peak hour traffic volumes were estimated by collecting count data over a two hour period from 7:00 to 9:00 AM in August 2013. Similarly, the PM peak hour traffic volumes were identified by counting traffic volumes in the two hour period from 4:00 to 6:00 PM in August 2013. The weekday AM and PM peak hour count data is representative of typical weekday peak hour traffic conditions in the study area. There were no observations made in the field that would indicate atypical traffic conditions on the count dates, such as construction activity that would prevent or limit roadway access and detour routes.

3.1 EXISTING CIRCULATION NETWORK

The study area includes a total of eight (8) existing and future intersections as shown on Exhibit 1-2. Of these eight (8) intersections, the existing study area network includes six (6) existing intersection analysis locations shown on Table 1-1. The other two (2) intersections in the study area are future planned intersections (Project driveways) that do not currently exist.

Exhibit 3-1 illustrates the study area intersections and identifies the number of through traffic lanes for existing roadways and intersection traffic controls.

3.2 CITY OF WILDOMAR GENERAL PLAN CIRCULATION ELEMENT

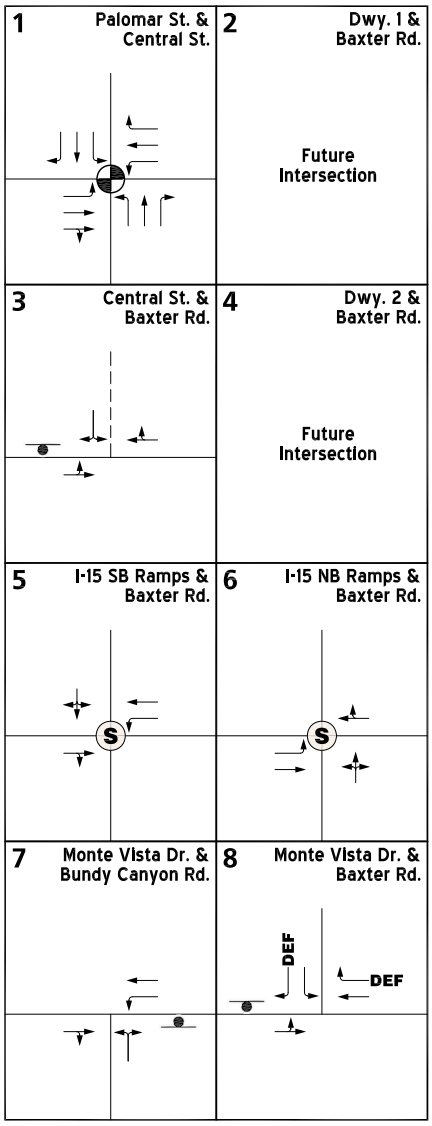
Exhibit 3-2 shows the City of Wildomar General Plan Circulation Element, and Exhibit 3-3 illustrates the City of Wildomar General Plan roadway cross-sections. It is our understanding that the City of Wildomar has adopted the County of Riverside General Plan and standards.

3.3 BICYCLE AND PEDESTRIAN FACILITIES

Field observations conducted in May 2013 indicate nominal pedestrian and bicycle activity within the study area. Exhibit 3-4 illustrates the City of Wildomar Regional Community Multi-Use Trail Map. As shown, there are trails planned in the immediate vicinity of the Project site along Grove Street to the north, White Street to the west, and Baxter Road to the south. Existing pedestrian facilities within the study area are shown on Exhibit 3-5.

EXHIBIT 3-1

EXISTING NUMBER OF THROUGH LANES AND INTERSECTION CONTROLS



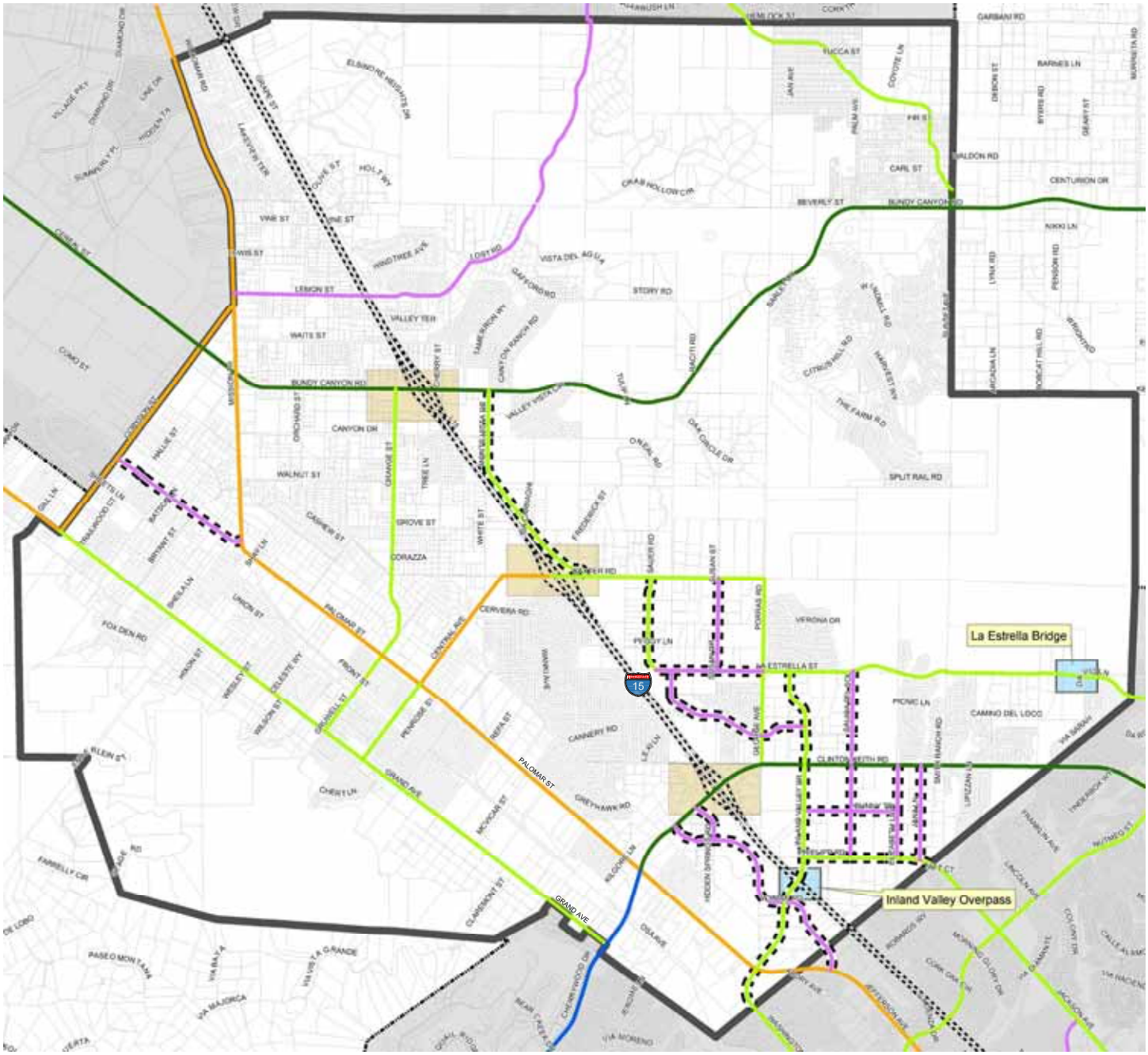
LEGEND:

- = TRAFFIC SIGNAL
- = ALL WAY STOP
- = STOP SIGN
- 4 = NUMBER OF LANES
- D = DIVIDED
- U = UNDIVIDED
- DEF = DEFACTO RIGHT TURN

N

EXHIBIT 3-2

CITY OF WILDOMAR
GENERAL PLAN CIRCULATION ELEMENT



LEGEND:

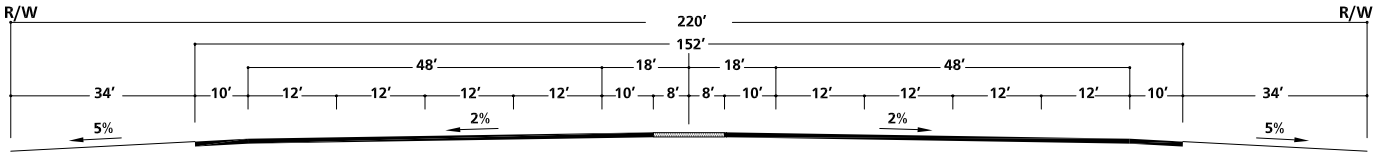
- Proposed Wildomar Circulation Changes
- URBAN ARTERIAL
- ARTERIAL
- MAJOR
- SECONDARY
- COLLECTOR
- Highways
- Parcels
- Proposed Wildomar Incorporation
- Cities
- Existing Interchanges

N

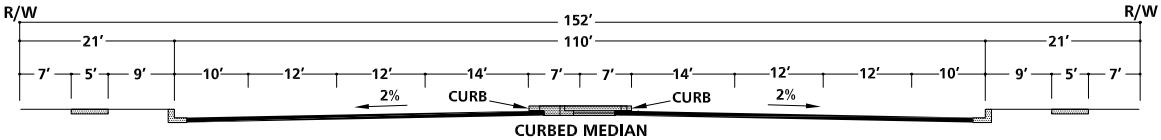
NOTE: THE CITY OF WILDOMAR HAS ADOPTED THE COUNTY OF RIVERSIDE'S GENERAL PLAN AND STANDARDS

EXHIBIT 3-3

CITY OF WILDOMAR
GENERAL PLAN ROADWAY CROSS-SECTIONS

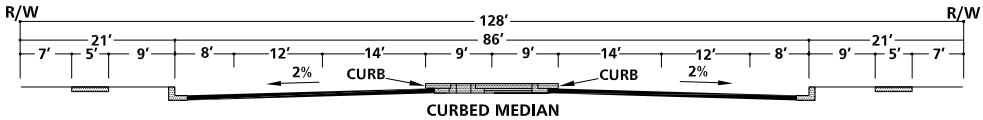


EXPRESSWAY - 8 LANES



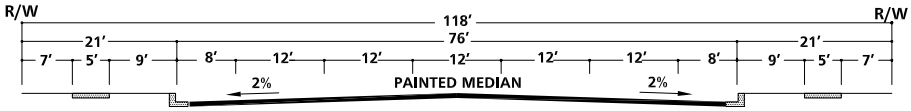
CURBED MEDIAN

URBAN ARTERIAL HIGHWAY *

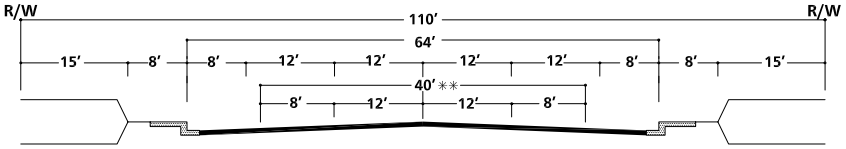


CURBED MEDIAN

ARTERIAL HIGHWAY *

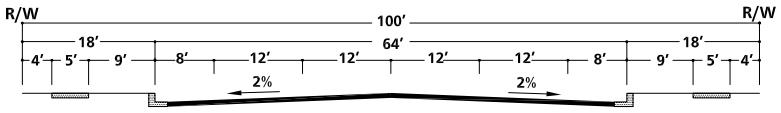


MAJOR HIGHWAY - 4 LANES

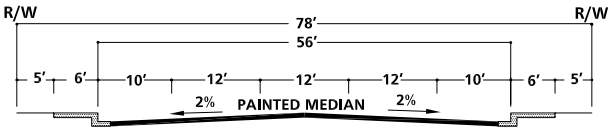


MOUNTAIN ARTERIAL - 2 TO 4 LANES

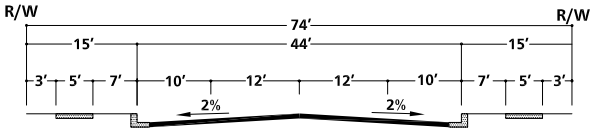
** 2 LANE SECTION



SECONDARY HIGHWAY



INDUSTRIAL COLLECTOR



COLLECTOR

* *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.*

NOT TO SCALE

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

EXHIBIT 3-4

CITY OF WILDOMAR REGIONAL COMMUNITY MULTI-USE ADOPT-A-TRAIL SYSTEM

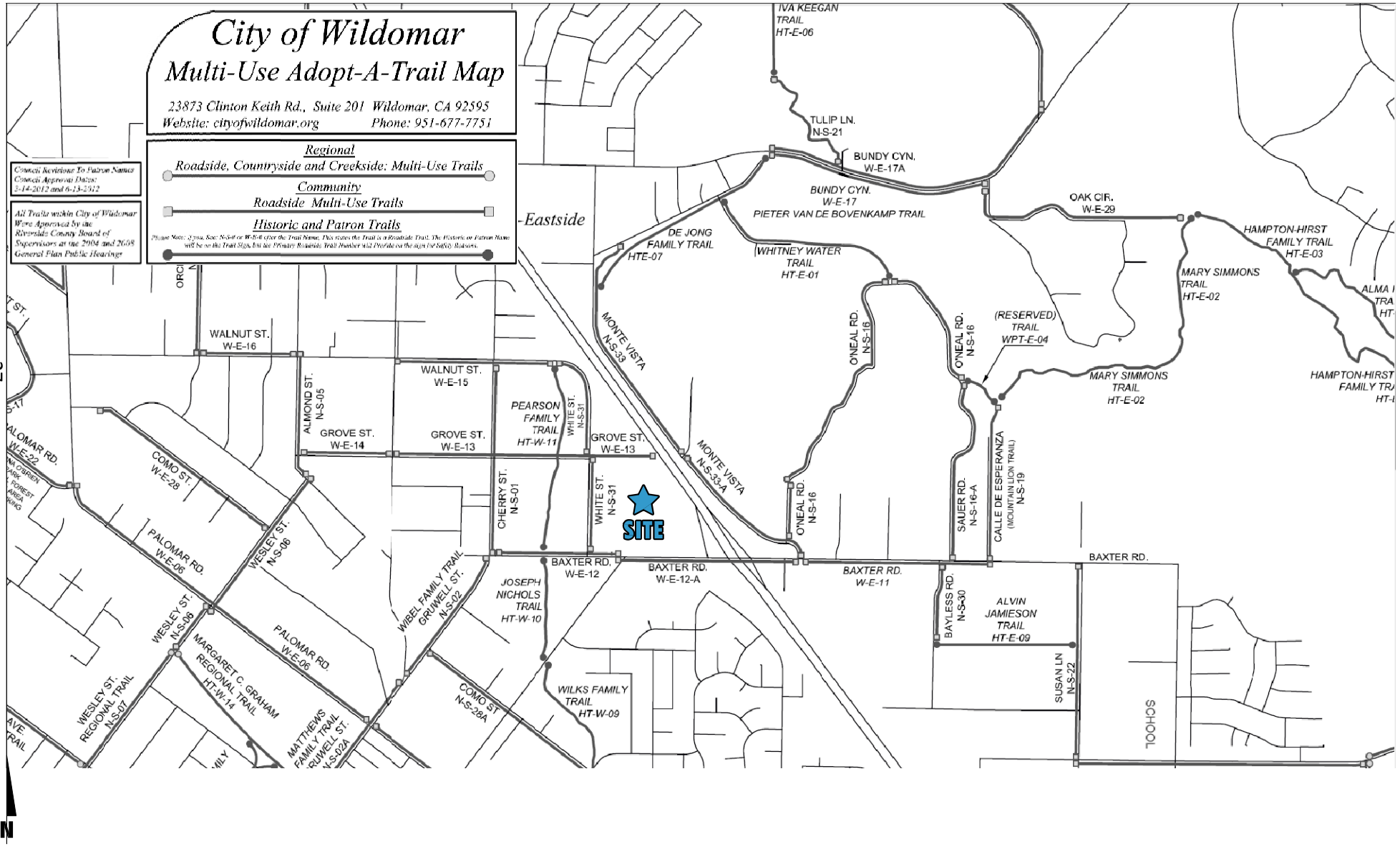


EXHIBIT 3-5

EXISTING PEDESTRIAN FACILITIES

3.4 TRANSIT SERVICE

The study area is currently served by the Riverside Transit Authority (RTA), a public transit agency serving the unincorporated Riverside County region near the City of Wildomar. Based on a review of the existing transit routes within the vicinity of the proposed Project, there does not appear to be one existing line that could feasibly serve the Project. 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. As such, it is recommended that the applicant work in conjunction with the City of Wildomar and RTA to determine the feasibility of providing future bus service within walking distance (approximately ¼ mile or less) to the site.

3.5 EXISTING TRAFFIC COUNTS

Manual weekday AM and weekday PM peak hour turning movement counts were conducted on August 21, 2013, while schools were in session. 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.

Existing (2013) weekday average daily traffic (ADT) volumes on arterial highways throughout the study area are shown on Exhibit 3-6. Existing (2013) ADT volumes are based upon factored intersection peak hour counts collected by Urban Crossroads, Inc. using the following formula for each intersection leg:

PM Peak Hour (Approach Volume + Exit Volume) x 12 = Leg Volume

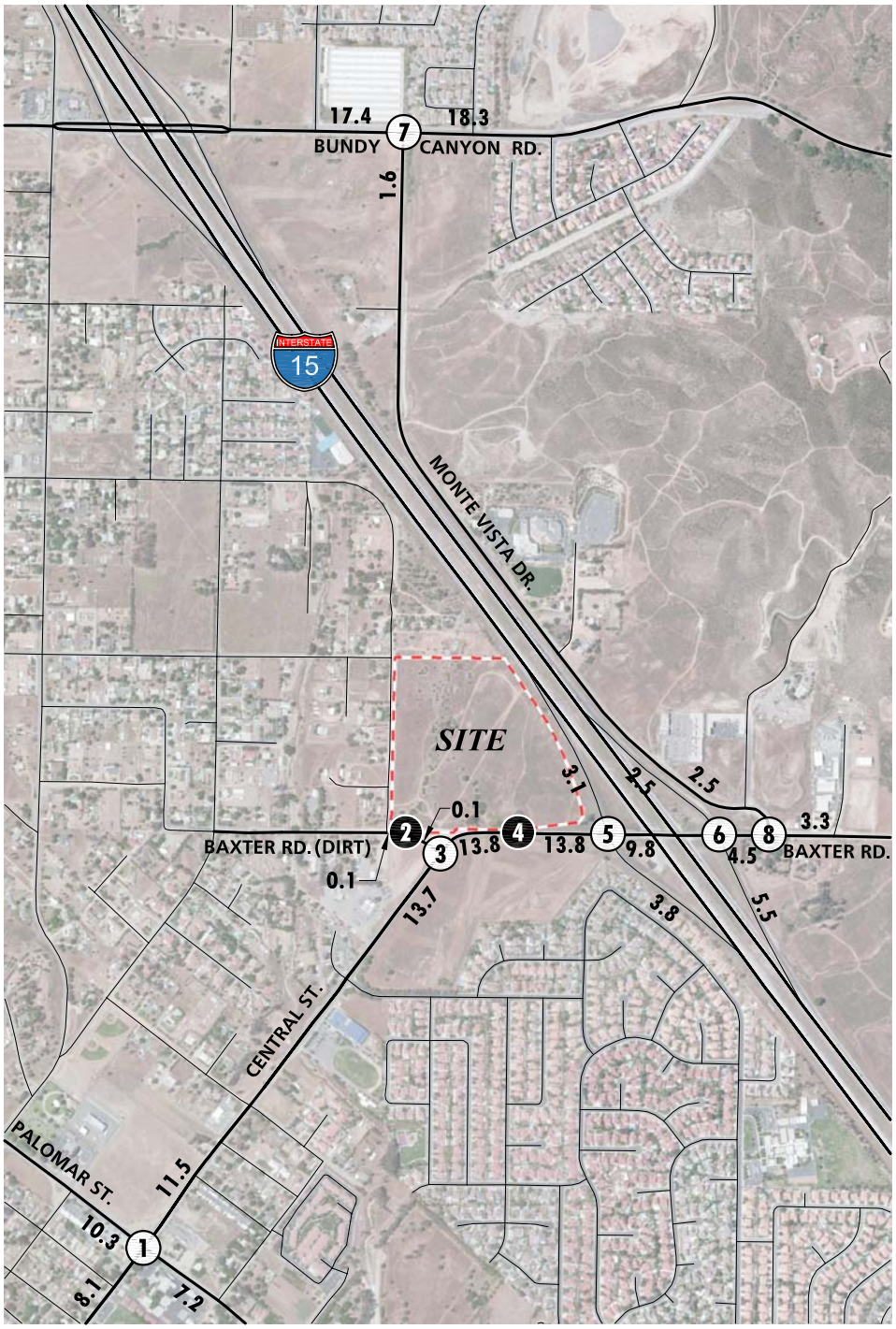
It should be noted that for those roadway segments which have 24-hour tube count data available in close proximity to the study area, a comparison between the PM peak hour and daily traffic volumes indicated that the peak-to-daily relationship of approximately 8.3 percent would sufficiently estimate average daily traffic (ADT) volumes for planning-level analyses. As such, the above equation utilizing a factor of 12 estimates the ADT volumes on the study area roadway segments assuming a peak-to-daily relationship of approximately 8.3 percent (i.e., 1/0.083 = 12). Existing (2013) weekday AM and weekday PM peak hour intersection volumes are also shown on Exhibit 3-6.

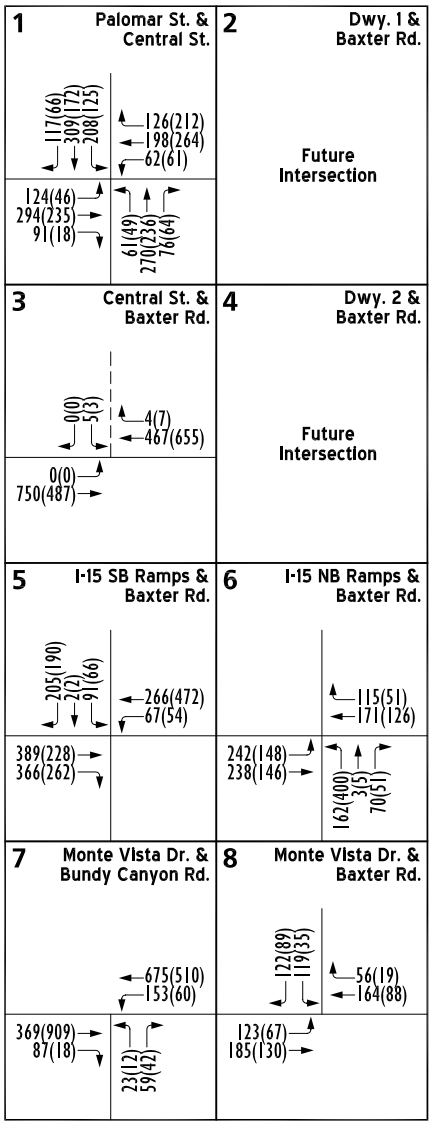
3.6 EXISTING (2013) CONDITIONS INTERSECTION OPERATIONS ANALYSIS

Existing (2013) conditions 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 existing study area intersections are currently operating at acceptable LOS (LOS "D" or better) during the peak hours, with the exception of the following two (2) intersections:

EXHIBIT 3-6

EXISTING (2013) AVERAGE DAILY TRAFFIC (ADT) AND PEAK HOUR INTERSECTION VOLUMES





LEGEND:

10.0 = VEHICLES PER DAY (1000'S)

26(31) = AM(PM) PEAK HOUR VOLUMES

N

Table 3-1

Intersection Analysis for Existing (2013) 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 / Central St	TS	1	1	1	1	1	1	1	2	0	1	1	1	33.2	28.2	C	C
2	Driveway 1 / Baxter Rd	--	Intersection Does Not Exist												--	--	--	--
3	Central St / Baxter Rd	CSS	0	0	0	0	1	0	0	1	0	0	1	0	26.9	22.9	D	C
4	Driveway 2 / Baxter Rd	--	Intersection Does Not Exist												--	--	--	--
5	I-15 Southbound Ramps / Baxter Rd	AWS	0	0	0	0	1	0	0	1	0	1	1	0	>50.0	25.6	F	D
6	I-15 Northbound Ramps / Baxter Rd	AWS	0	1	0	0	0	0	1	1	0	0	1	0	13.8	16.2	B	C
7	Monte Vista Dr / Bundy Canyon Rd	CSS	0	1	0	0	0	0	0	1	0	1	1	0	27.5	>50.0	D	F
8	Monte Vista Dr / Baxter Rd	CSS	0	0	0	1	0	d	0	1	0	0	1	d	22.1	11.5	C	B

[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; d = Defacto Right Turn Lane

A through lane shown opposite of a non-existent intersection leg denotes a shared left-right turn lane rather than an actual through lane.

[2] Delay and level of service calculated using the following analysis software:
Traffix (Version 8.0 R1, 2008) for signalized and unsignalized intersections. The I-15 freeway ramps have been analyzed using Synchro 8. Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with a traffic signal. 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] AWS = All-Way Stop; CSS = Cross Street Stop; TS = Traffic Signal

BOLD = Unsatisfactory level of service

ID	Intersection Location
5	I-15 Southbound Ramps / Baxter Road – LOS "F" AM peak hour only
7	Monte Vista Drive / Bundy Canyon Road – LOS "F" PM peak hour only

As the I-15 Freeway and Baxter Road interchange is currently unsignalized at both the I-15 Northbound and I-15 Southbound Ramps, it is anticipated that the I-15 Southbound Ramps at Baxter Road would operate at acceptable LOS during the AM peak hour with the implementation of a traffic signal for which both the I-15 Northbound and I-15 Southbound Ramps at Baxter Road currently warrant. Traffic signal warrants are discussed later in this report in Section 3.7 *Existing (2013) Conditions Traffic Signal Warrant Analysis.*

Exhibit 3-7 summarizes the weekday AM and weekday PM peak hour study area intersection LOS under Existing (2013) conditions, consistent with the summary provided in Table 3-1. The intersection operations analysis worksheets are included in Appendix "3.2".

3.7 EXISTING (2013) CONDITIONS TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants for existing traffic conditions are based on existing peak hour intersection turning volumes. For Existing (2013) traffic conditions, the following intersections currently appear to warrant traffic signals:

ID	Intersection Location	Jurisdiction
5	I-15 Southbound Ramps / Baxter Road	Caltrans
6	I-15 Northbound Ramps / Baxter Road	Caltrans
7	Monte Vista Drive / Bundy Canyon Road	Wildomar
8	Monte Vista Drive / Baxter Road	Wildomar

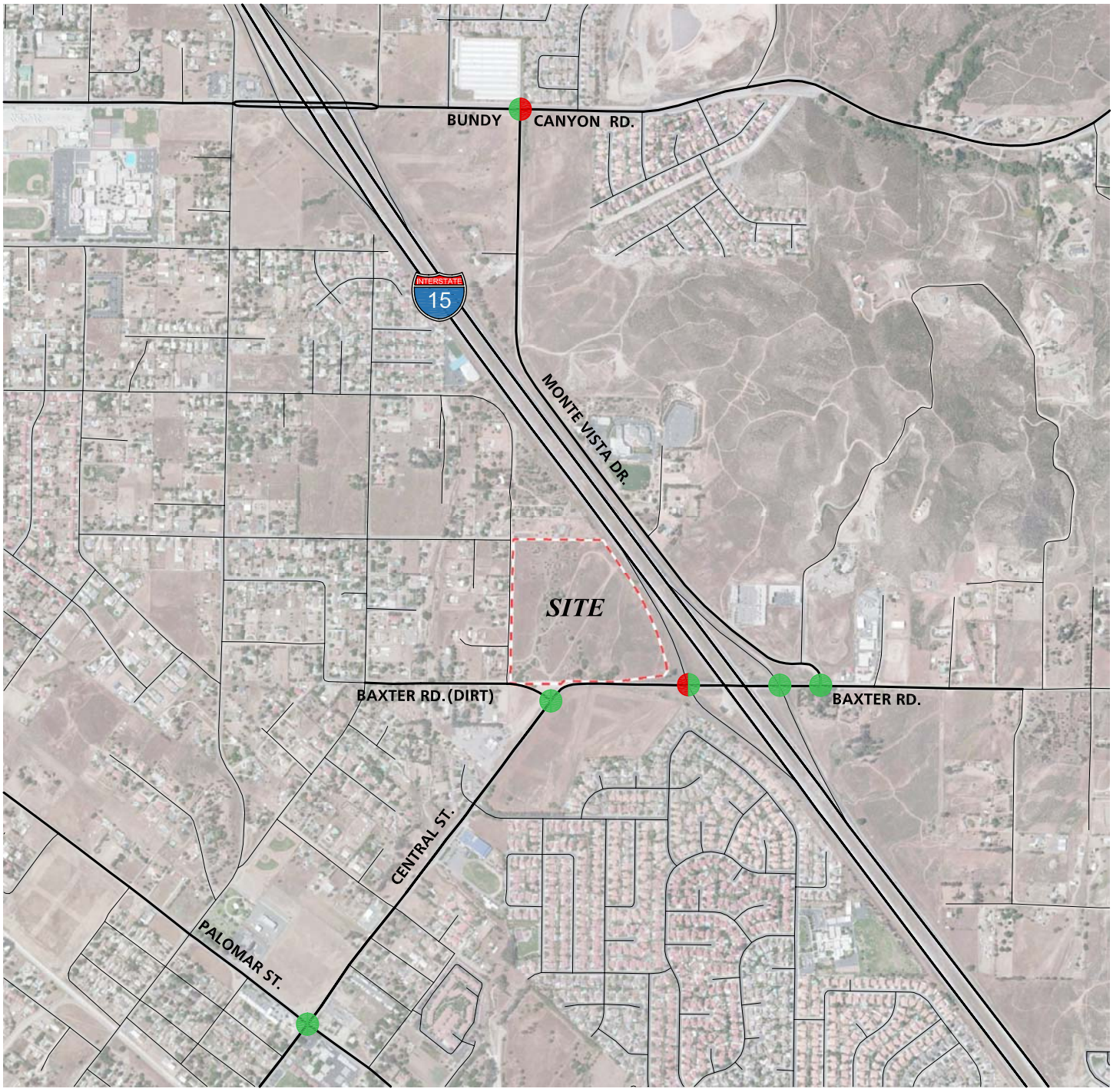
The Existing (2013) conditions traffic signal warrant analysis worksheets are included in Appendix "3.3".

3.8 EXISTING (2013) CONDITIONS QUEUE LENGTH ANALYSIS

A queue length analysis was performed for southbound and northbound off-ramps at the I-15 Freeway and Baxter Road Interchange to assess vehicle queues for the off ramps that may potentially impact peak hour operations at the ramp-to-arterial intersections and may potentially "spill back" onto the I-15 Freeway mainline. Queue length 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 on Table 3-2, the two off-ramps do not appear to experience queuing issues during the weekday AM and PM peak 95th percentile traffic flows under Existing (2013) conditions.

EXHIBIT 3-7

SUMMARY OF PEAK HOUR INTERSECTION LOS FOR EXISTING (2013) CONDITIONS



LEGEND:

- = AM PEAK HOUR ACCEPTABLE LOS
- = AM PEAK HOUR DEFICIENT LOS
- = PM PEAK HOUR ACCEPTABLE LOS
- = PM PEAK HOUR DEFICIENT LOS

N

Table 3-2

Existing (2013) Conditions
AM/PM Peak Hour Off-Ramp Queue Length Summary at I-15 Freeway and Baxter Road Interchange

Intersection	Movement	Stacking Distance (Feet)	95th Percentile Stacking Distance Required (Feet)		Acceptable? [1]	
			AM Peak Hour	PM Peak Hour	AM	PM
I-15 SB Off-Ramp / Baxter Rd.	SBL/T/R	1,300	81	70	Yes	Yes
I-15 NB Off-Ramp / Baxter Rd.	NBL/T/R	1,650	75	177	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.

Worksheets for Existing (2013) conditions queuing analysis are provided in Appendix "3.4".

3.9 EXISTING (2013) CONDITIONS BASIC FREEWAY SEGMENT ANALYSIS

Existing (2013) mainline directional volumes for the weekday AM and PM peak hours are provided on Exhibit 3-8. As shown on Table 3-3, I-15 Freeway segments analyzed for this study were found to operate at an acceptable LOS (i.e., LOS "D" or better) during the peak hours.

Existing (2013) basic freeway segment analysis worksheets are provided in Appendix "3.5".

3.10 EXISTING (2013) CONDITIONS FREEWAY MERGE/DIVERGE ANALYSIS

Ramp merge and diverge operations were also evaluated for Existing (2013) conditions and the results of this analysis are presented in Table 3-4. As shown in Table 3-4, the I-15 Freeway ramp merge and diverge areas at Baxter Road currently operate at LOS "D" or better conditions.

Existing (2013) freeway ramp junction operations analysis worksheets are provided in Appendix "3.6".

EXHIBIT 3-8

EXISTING (2013) PEAK HOUR FREEWAY MAINLINE VOLUMES

Table 3-3

Existing (2013) Conditions Basic Freeway Segment Analysis

Freeway	Direction	Mainline Segment	Lanes[1]	Density[2]		LOS	
				AM	PM	AM	PM
I-15 Freeway	Southbound	North of Baxter Road	3	20.9	21.2	C	C
		South of Baxter Road	3	21.7	21.5	C	C
	Northbound	North of Baxter Road	3	19.2	25.9	C	C
		South of Baxter Road	3	18.5	27.6	C	D

[1] Number of lanes are in the specified direction and is based on existing conditions.

[2] Density is measured by passenger cars per mile per lane (pc/mi/ln).

Note: Directional volumes based on current PeMS data. Truck percentages are consistent with available Caltrans 2011 data.

Table 3-4

Existing (2013) Conditions Basic Freeway Ramp Junction Merge/Diverge Analysis

Freeway	Direction	Ramp or Segment	Lanes[1]	Density[2]		LOS	
				AM	PM	AM	PM
I-15 Freeway	Southbound	Off-Ramp at Baxter Road	3	26.2	26.4	C	C
		On-Ramp at Baxter Road	3	22.4	21.8	C	C
	Northbound	On-Ramp at Baxter Road	3	20.4	25.8	C	C
		Off-Ramp at Baxter Road	3	23.2	31.3	C	D

[1] Number of lanes are in the specified direction and is based on existing conditions.

[2] Density is measured by passenger cars per mile per lane (pc/mi/ln).

4.0 PROJECTED FUTURE TRAFFIC

This section presents the traffic volumes estimated to be generated by the Project, as well as the implementation of Project trips onto the study area roadway network.

The proposed Project is located north of Baxter Road and east of White Street in the City of Wildomar. The proposed Project is to consist of approximately 66 single family detached residential units, 204 apartment units and 75,000 square feet of commercial retail use. For the purpose of this analysis, the Project is anticipated to be developed in a single phase with a projected Opening Year of 2018.

The Project is proposed to have access on Baxter Road / Central Street via Driveway 1 and Baxter Road via Driveway 2. Driveway 1 is proposed to be full-access while Driveway 2 is proposed to have right-n/right-out access only. As part of the development, the Project will construct improvements on the site adjacent roadways of Baxter Road and White Street.

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 and a summary of the Project's trip generation is shown in Table 4-2. The trip generation rates are based upon data collected by the Institute of Transportation Engineers (ITE) for single family detached residential (ITE Land Use Code 210), apartment (ITE Land Use Code 220) and shopping center (ITE Land Use Code 820) land uses in their recently published *Trip Generation* manual, 9th Edition, 2012.

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 such as gas stations and convenience stores just to name a few. As the project is proposed to include a commercial retail component, pass-by percentages have been obtained from Tables 5.6 of the ITE *Trip Generation Handbook* (2nd Edition, 2004) for the Shopping Center land use. As specified by the ITE *Trip Generation Handbook*, a 34% pass-by reduction on the shopping center portion of the proposed Project has been applied to PM peak hour and Daily trips in an effort to accurately represent potential trip generation characteristics.

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

Table 4-1

Project Trip Generation Rates

Land Use[1]	Units[2]	ITE LU Code	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Single Family Residential	DU	210	0.19	0.56	0.75	0.63	0.37	1.00	9.52
Apartments	DU	220	0.10	0.41	0.51	0.40	0.22	0.62	6.65
Commercial Retail[3]	TSF	820	1.08	0.66	1.74	3.16	3.43	6.59	75.10

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Ninth Edition (2012).

[2] DU = Dwelling Units; TSF = Thousand Square Feet

[3] Trip generation rates based on the regression equation for ITE Land Use 820.

Table 4-2

Project Trip Generation Summary

Land Use	Quantity	Units[1]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Single Family Residential	67	DU	13	38	50	42	25	67	638
Apartments	204	DU	20	84	104	82	45	126	1,357
Internal Capture - Residential to Commercial[2]			-3	-4	-7	-31	-21	-52	-563
Residential Subtotal			*30*	*117*	*147*	*93*	*49*	*141*	*1,431*
Commercial Retail	75.000	TSF	81	50	131	237	257	494	5,633
Internal Capture - Commercial to Residential[2]			-4	-3	-7	-21	-31	-52	-563
Pass-by Reduction (34% - PM Peak Hour and Daily)[3]			--	--	--	*-73*	*-73*	*-147*	*-1,724*
Commercial Retail Subtotal			*77*	*47*	*124*	*143*	*153*	*295*	*3,346*
TOTAL			**107**	**164**	**271**	**235**	**201**	**437**	**4,777**

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

[2] Internal capture is based on the ITE methodology per Figure 7.4 of ITE Trip Generation Handbook (2nd Edition, 2004).

[3] Pass-by reduction percentage is based on the ITE methodology per Table 5.6 of ITE Trip Generation Handbook (2nd Edition, 2004).

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 12% of Project trips would remain within the Project boundary. The internal capture reduction percentage applied has been reviewed and approved by City staff as part of the scoping process.

The Project is estimated to generate a net total of approximately 4,777 net trip-ends per day on a typical weekday with approximately 271 net weekday AM peak hour trips and 437 net weekday PM peak hour trips.

4.2 PROJECT TRIP DISTRIBUTION

Trip distribution patterns for the commercial retail and residential portions of the proposed Project are illustrated on Exhibits 4-1 and 4-2, respectively. These distributions were developed based on a "select zone" model run from the City of Wildomar focused version of the Riverside County Traffic Analysis Model (RivTAM). Further refinements to these distributions have been made based on the proposed land uses, existing transportation network and anticipated travel patterns.

4.3 MODAL SPLIT

Although the use of public transit, walking, and/or bicycling have the potential to reduce Project-related traffic, such reductions have not been taken into considerations in this traffic study in order to provide a conservative analysis of the Project's potential to result in significant traffic impacts.

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 average daily traffic (ADT) and weekday AM and PM peak hour volumes are shown on Exhibit 4-3.

4.5 BACKGROUND TRAFFIC

Future year traffic forecasts have been based upon five (5) years of background (ambient) growth at 2% per year for 2018 traffic conditions. The total ambient growth is 10.41% for 2018 traffic conditions (compounded growth of two percent per year over five years or $1.02^{5 \text{ years}}$). 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

EXHIBIT 4-1

PROJECT (COMMERCIAL RETAIL) TRIP DISTRIBUTION

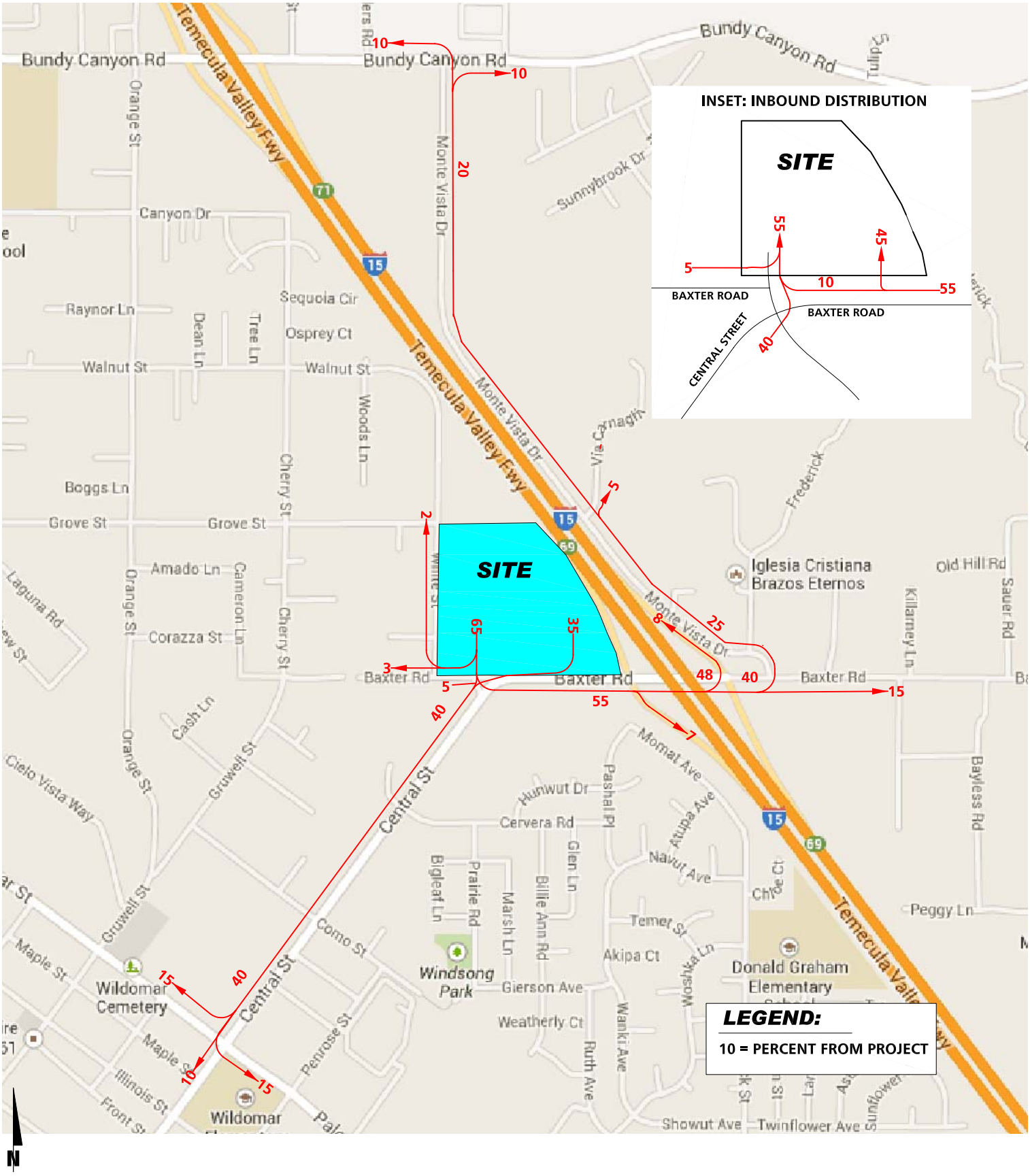


EXHIBIT 4-2

PROJECT (RESIDENTIAL) TRIP DISTRIUBTION

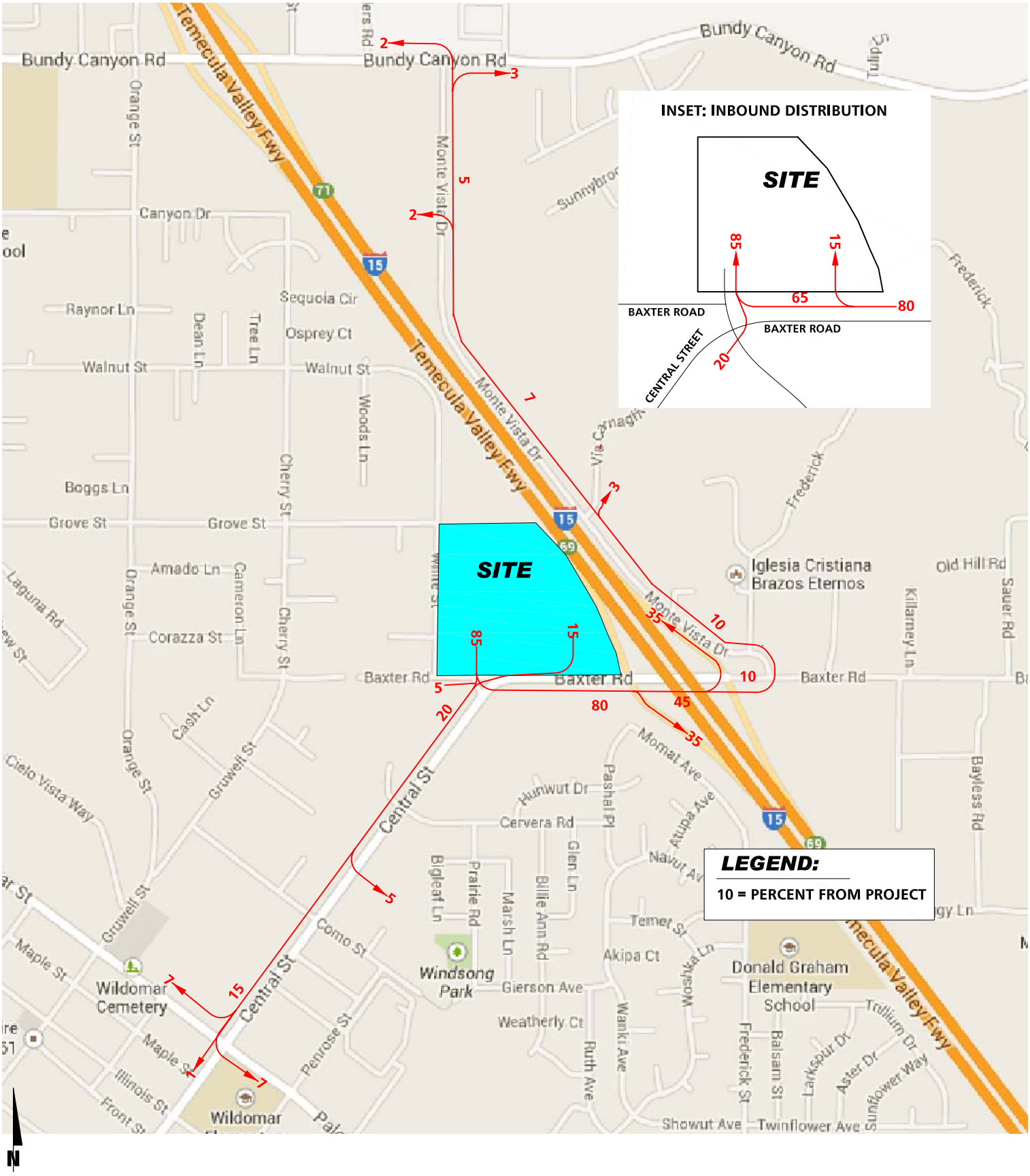
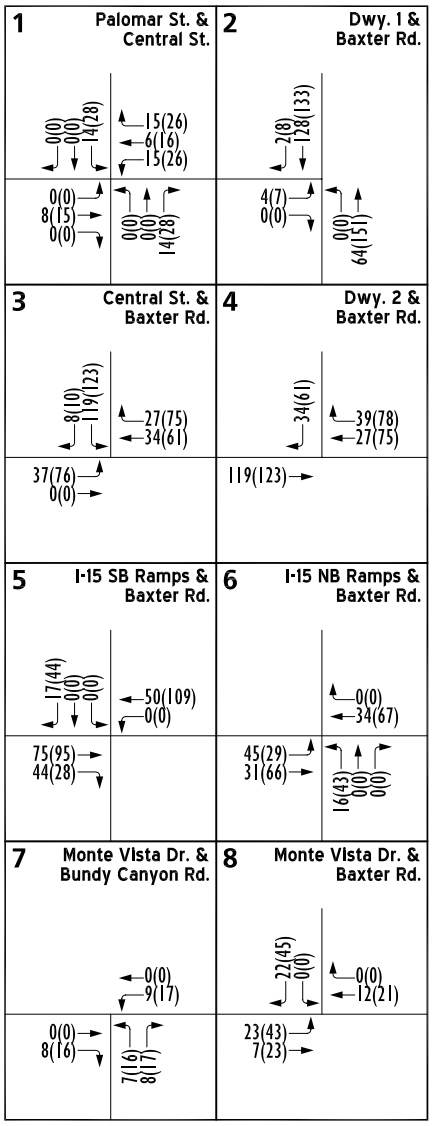


EXHIBIT 4-3

PROJECT ONLY AVERAGE DAILY TRAFFIC (ADT) AND PEAK HOUR INTERSECTION VOLUMES



LEGEND:

10.0 = VEHICLES PER DAY (1000'S)

26(31) = AM(PM) PEAK HOUR VOLUMES

N

but not yet built and/or for which development applications have been filed and are under consideration by governing agencies.

According to information published by the Riverside County Information Technology GIS staff as input to the Southern California Association of Governments (SCAG) Regional Transportation Plan (2012), the population of Western Riverside County is projected to increase by 41% in the period between 2010 and 2035, a compounded rate of approximately 1.38% annually. During the same period, employment in Western Riverside County is expected to increase by 112% or 3.06% compounded annually.

Therefore, the use of an annual growth rate of 2.0 percent would appear to accurately approximate the anticipated regional growth in traffic volumes in the City of Wildomar, especially when considered along with the addition of project-related traffic and traffic generated by other known development projects. As such, the growth in traffic volumes assumed in this traffic impact analysis would tend to overstate as opposed to understate the potential impacts to traffic and circulation.

4.6 CUMULATIVE DEVELOPMENT TRAFFIC

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 for the purposes of this analysis through consultation with planning and engineering staff from the City of Wildomar. Exhibit 4-4 illustrates the cumulative development location map. A summary of cumulative development land uses are shown on Table 4-3.

4.7 TRAFFIC FORECASTS

To provide a comprehensive assessment of the potential project-related and cumulative traffic impacts, two types of analyses, “buildup” and “buildout”, were performed in support of this work effort. The “buildup” method was used to approximate traffic forecasts for both E+P and Opening Year (2018) traffic conditions. The E+P scenario is intended to identify the significant Project impacts associated with the proposed Project while the Opening Year (2018) scenario is intended to identify near-term cumulative impacts on both the existing and planned near-term circulation system. The E+P traffic conditions include existing traffic in addition to the traffic generated by the proposed Project. The Opening Year (2018) traffic conditions include background traffic, traffic generated by other cumulative development projects within the study area and the traffic generated by the proposed Project. The “buildout” approach is used to forecast the General Plan Buildout (Post-2035) without and with Project conditions of the study area.

EXHIBIT 4-4

CUMULATIVE DEVELOPMENT LOCATION MAP

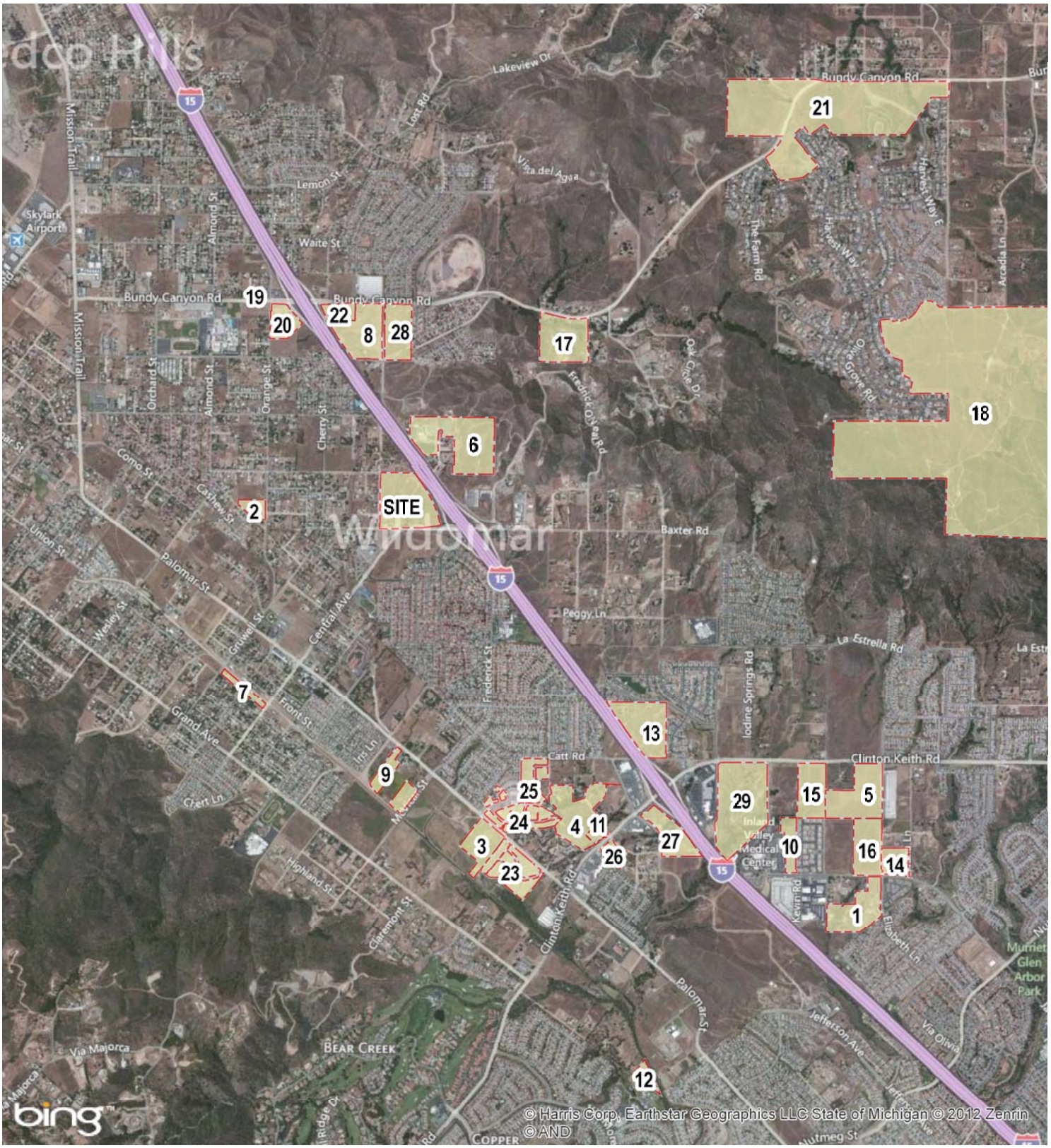


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Table 4-3
(Page 1 of 2)

List of Cumulative Developments

#	Project Name	Land Use[1]	Quantity	Units[2]
CITY OF WILDOMAR				
1	Lennar Residential (TTM 36497, APN:380-280-004, 380-280-009 to 380-280-012)	SFDR	67	DU
2	Lesle Tract Map (TTM 36519, APN:367-170-029)	SFDR	10	DU
3	CV Communities (TTM 25122, TTM 32078, APN: 380-080-008,380-080-009, 380-140-001)	SFDR	157	DU
4	CV Communities (TTM 32535, APN:380-110-005, 380-110-006, 380-120-001, 380-120-002, 380-100-006, 380-100-005, 380-130-002, 380-130-018, 380-100-004)	SFDR	84	DU
5	Rancon Medical & Retail Center (PM 36492, APN:380-250-022)[3]	Business Park	267.450	TSF
		General Office	45.000	TSF
		Medical Office	33.400	TSF
		Shopping Center	17.100	TSF
		Fast Food Restaurant w/ Drive Thru	3.000	TSF
6	Cornerstone Church Pre-School Expansion (PUP No. 778)[4]	Pre-School/Day Care	180	STU
7	Elm Street Subdivision (TTM 33840, APN:376-043-027)	SFDR	14	DU
8	Wildomar Walmart	Free-Standing Discount Superstore	200.000	TSF
		Specialty Retail	3.900	TSF
		Fast Food w/Drive Thru	3.900	TSF
9	McVicar Residential Project (TTM 32035, APN:380-040-005, 380-040-007, 380-040-008, 380-040-012)	SFDR	49	DU
10	Inland Valley Medical (Case No. 08-0062, APN:380-250-001, 380-250-012,3 80-250-013, 380-250-013, 380-250-015, 380-250-017)	Medical Office	39.000	TSF
11	Auto Zone Retail Center (Case No. 10-0101, APN: 380-120-003, 380-120-004)	Automobile Parts Sale	29.767	TSF
12	Hoover Ranch Project (TTM 31895, APN:380-160-020)	SFDR	51	DU
13	Westpark Promenade Development (TPM 36122, APN:376-410-013, 376-410-023, 376-410-025)	Apartments	322	DU
		Shopping Center	86.000	TSF
14	Sienna Apartment Project (Case No. 13-0089, APN:380-290-029)	Apartments	180	DU
15	Clinton Keith Mixed-Use Development (APN:380-250-003)	High Turnover Sit-Down Restaurant	6.000	TSF
		Commercial Retail	9.000	TSF
		Medical Office	25.000	TSF
		Apartments	192	DU
16	Prielipp Residential Development (APN 380-250-023)	Condo/Townhomes	146	DU
		Assisted Living	54	Beds
		Skilled Nursing	32	Beds
17	Sehremelis PAR (TTM 29426, APN:367-250-007)	SFDR	80	DU
18	Spring Meadow Ranch PAR (Case No. 12-0399)	SFDR	1,192	DU
		Community Center Area	5.0	AC
		Open Space	42.0	AC
19	Subway (Case No. 10-0222, APN:366-390-026, 366-390-027)	Specialty Retail	10.500	TSF
20	Orange Bundy (TPM 30522, APN: 367-100-024, 367-100-026)	Retail	79.497	TSF
		Fast Food w/Drive Thru	1.500	TSF
		Gas Station w/ Market	6	VFP
21	Oak Creek Canyon (Case No. 11-0261, TTM 36388)	SFDR	275	DU
		Pharmacy	14.469	TSF
		Gas Station w/ Market/Car Wash	8	VFP
		Specialty Retail	2.550	TSF
22	Bundy Canyon Plaza (Case No. 08-0179, TPM 32257, APN:367-100-019)	Retail	33.800	TSF
		Fast Food w/Drive Thru	6.200	TSF
		Gas Station w/ Market	12	VFP
23	Lennar Homes Andalusia I (Case No. 12-0015, TTM 30839, 30939)	SFDR	55	DU
24	Meritage Homes (Case No. 11-0099, TTM 31499)	SFDR	74	DU

Table 4-3
(Page 2 of 2)

List of Cumulative Developments

#	Project Name	Land Use[1]	Quantity	Units[2]
CITY OF WILDOMAR				
25	Lennar Homes Andalusia 2 (Case No. 12-0401, TTM 31837, APN: 380-410-001 to 380-410-019, 380-411-001 to 380-411-025)	SFDR	44	DU
26	Stable Lanes Retail Center (Case No. 08-0166, APN:380-120-012, 380-120-013)	Commercial/Retail	20.894	TSF
		Daycare Facility	9.305	TSF
27	Wildomar Square Retail Center (Case No. 08-0072, PM 36080, APN:380-110-045)	Shopping Center	46.600	TSF
28	Rancon Monte Vista Residential (TTM No. 31409, APN: 367-110-007, 367-110-008)	SFDR	126	DU
29	Oak Springs Ranch Specific Plan No. 340	SFDR	103	DU
		Apartments	312	DU

[1] SFDR = Single Family Detached Residential

[2] AC = Acres; DU = Dwelling Units; TSF = Thousand Square Feet; VFP = Vehicle Fueling Positions; STU = Students

[3] Source: Rancon Medical Education Center (Plot Plan 21603), Albert A. Webb Associates, April 2012.

[4] Source: Cornerstone Pre-School Expansion TIA (Revised), Urban Crossroads, Inc., September 2012.

4.8 NEAR-TERM (2018) CONDITIONS

The buildup approach combines existing traffic counts with a background ambient growth factor to forecast the near-term 2018 traffic conditions. An ambient growth factor of 10.41% accounts for background (area-wide) traffic increases that occur over time up to the year 2018 from the year 2013 (compounded two percent per year growth over a five year period). Traffic volumes generated by the Project are then added to assess the 2018 With Project traffic conditions. The 2018 roadway network is similar to the Existing (2013) conditions roadway network, with the exception of future driveways proposed to be developed by the Project.

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

- Opening Year (2018) Without Project
    - Existing 2013 counts
    - Ambient growth traffic (10.41%)
    - Cumulative Development Project traffic

- Opening Year (2018) With Project
    - Existing 2013 counts
    - Ambient growth traffic (10.41%)
    - Cumulative Development Project traffic
    - Project traffic

4.9 GENERAL PLAN BUILDOUT (POST-2035) CONDITIONS

Traffic projections for City of Wildomar General Plan Buildout (Post-2035) Without Project conditions were derived from a version of the Riverside County Traffic Analysis Model (RivTAM) modified to represent General Plan Buildout conditions for the City of Wildomar using accepted procedures for model forecast refinement and smoothing.

The General Plan Buildout (Post-2035) without and with Project traffic conditions analyses will be utilized to determine if improvements funded through regional transportation mitigation fee programs, such as the Transportation Uniform Mitigation Fee (TUMF), Southwest RBBD fee, City Development Impact Fee (DIF) programs, or other approved funding mechanism can accommodate the long-range cumulative traffic at the target LOS identified in the City of Wildomar General Plan. If the "funded" improvements can provide the target LOS, then the Project's payment into TUMF, Southwest RBBD, and DIF will be considered as cumulative mitigation through the conditions of approval. Other improvements needed beyond the "funded" improvements (such as localized improvements to non-TUMF, RBBD or DIF facilities) are identified as such.

Post-processing worksheets for General Plan Buildout (Post-2035) with Project traffic conditions are provided in Appendix “4.1”.

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5.0 EXISTING PLUS PROJECT TRAFFIC ANALYSIS

This section discusses the traffic forecasts for Existing plus Project (E+P) conditions and the resulting intersection, traffic signal warrant, and freeway mainline operations analysis.

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 following:

- At project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for E+P conditions only (e.g., intersection turn lane improvements at the Project driveways).

5.2 EXISTING PLUS PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Existing (2013) traffic volumes plus Project traffic. Exhibit 5-1 shows the ADT volumes which can be expected for E+P traffic conditions. E+P weekday AM and weekday PM peak hour intersection turning movement volumes are also shown on Exhibit 5-1.

5.3 EXISTING PLUS PROJECT CONDITIONS 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 2.0 *Methodologies* of this TIA. The intersection analysis results are summarized in Table 5-1, which indicates that the following additional study area intersection is anticipated experience unacceptable LOS (i.e., LOS "E" or worse) during one or more peak hours in addition to those previously identified under Existing (2013) traffic conditions:

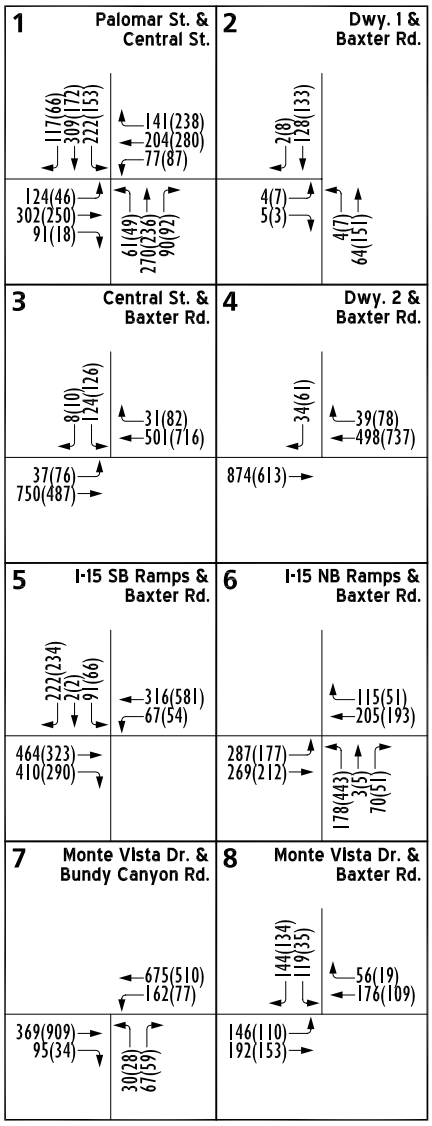
ID	Intersection Location
3	Central Street / Baxter Road – LOS "F" AM and PM peak hours

Exhibit 5-2 summarizes the weekday AM and weekday PM peak hour study area intersection LOS under E+P traffic conditions, consistent with the summary provided in Table 5-1. The intersection operations analysis worksheets are included in Appendix "5.1" of this TIA. Measures to address impacts for E+P traffic conditions are discussed in Section 5.8 *Project Impacts and Recommended Improvements.*

Based on the significance thresholds discussed in Section 2.8 *Thresholds of Significance*, the following intersections are anticipated to be significantly impacted by the Project:

EXHIBIT 5-1

EXISTING PLUS PROJECT AVERAGE DAILY TRAFFIC (ADT) AND PEAK HOUR INTERSECTION VOLUMES



LEGEND:

10.0 = VEHICLES PER DAY (1000'S)

26(31) = AM(PM) PEAK HOUR VOLUMES

N

Table 5-1

Intersection Analysis for Existing plus Project Conditions

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Existing (2013)				E+P			
			Northbound			Southbound			Eastbound			Westbound			Delay[2] (secs.)		Level of Service		Delay[2] (secs.)		Level of Service	
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM	AM	PM	AM	PM
1	Palomar St / Central St	TS	1	1	1	1	1	1	1	2	0	1	1	1	33.2	28.2	C	C	33.7	29.9	C	C
2	Driveway 1 / Baxter Rd	CSS	0	1	0	0	1	0	0	1	0	0	0	0	--	--	--	--	9.3	10.0	A	B
3	Central St / Baxter Rd	CSS	0	0	0	0	1	0	0	1	0	0	1	0	26.9	22.9	D	C	>50.0	>50.0	F	F
4	Driveway 2 / Baxter Rd	CSS	0	0	0	0	0	1	0	1	0	0	1	1	--	--	--	--	12.1	16.2	B	C
5	I-15 Southbound Ramps / Baxter Rd	AWS	0	0	0	0	1	0	0	1	0	1	1	0	>50.0	25.6	F	D	>50.0	>50.0	F	F
6	I-15 Northbound Ramps / Baxter Rd	AWS	0	1	0	0	0	0	1	1	0	0	1	0	13.8	16.2	B	C	16.5	23.5	C	C
7	Monte Vista Dr / Bundy Canyon Rd	CSS	0	1	0	0	0	0	0	1	0	1	1	0	27.5	>50.0	D	F	34.4	>50.0	D	F
8	Monte Vista Dr / Baxter Rd	CSS	0	0	0	1	0	d	0	1	0	0	1	d	22.1	11.5	C	B	26.5	13.3	D	B

[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; d = Defacto Right Turn Lane

A through lane shown opposite of a non-existent intersection leg denotes a shared left-right turn lane rather than an actual through lane.

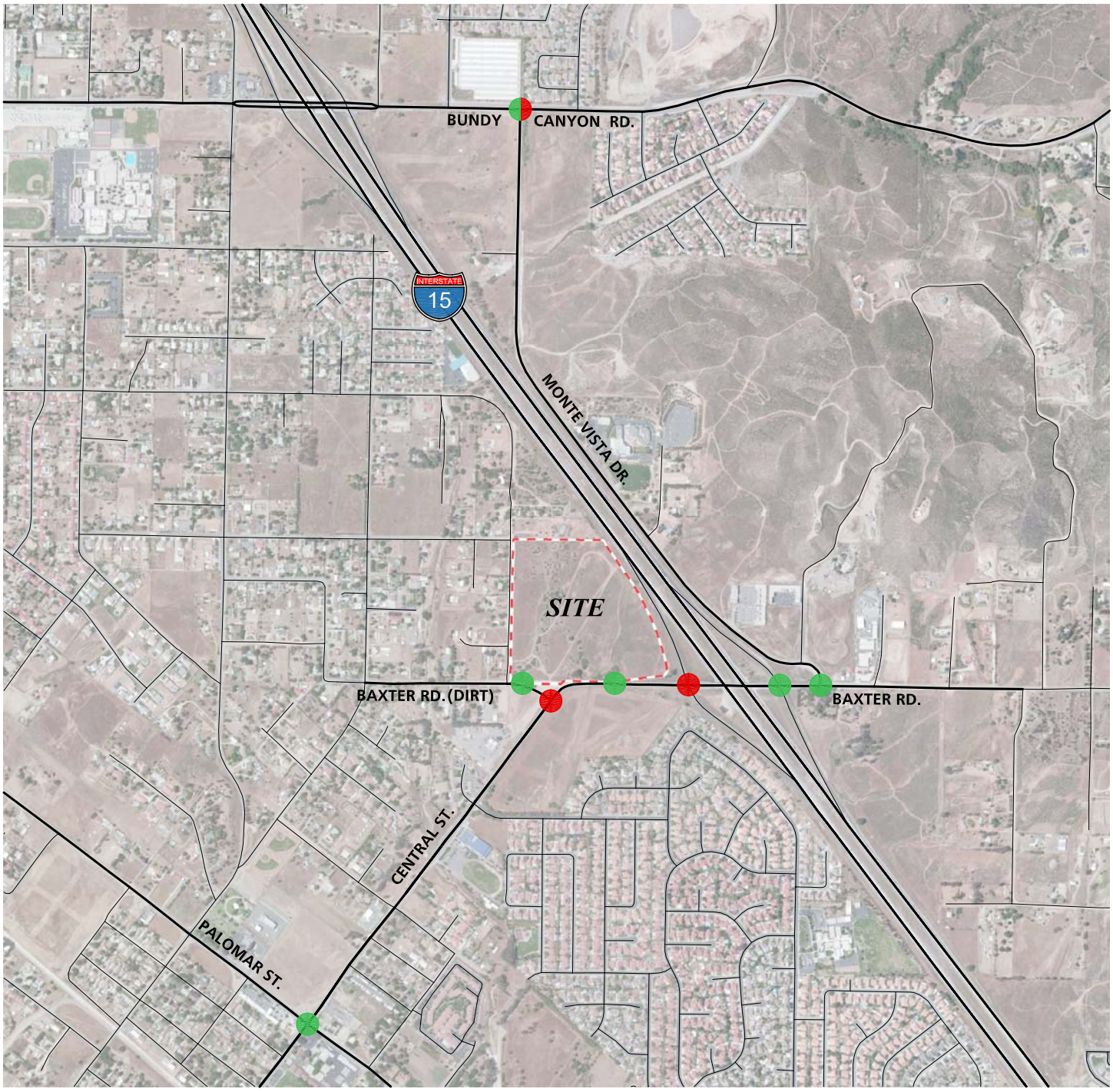
[2] Delay and level of service calculated using the following analysis software:
Traffix (Version 8.0 R1, 2008) for signalized and unsignalized intersections. The I-15 freeway ramps have been analyzed using Synchro 8. Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with a traffic signal. 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] AWS = All-Way Stop; CSS = Cross Street Stop; TS = Traffic Signal

BOLD = Unsatisfactory level of service
BOLD = Significant Impact as defined by City of Wildomar standards.

EXHIBIT 5-2

SUMMARY OF PEAK HOUR INTERSECTION LOS FOR EXISTING PLUS PROJECT CONDITIONS



LEGEND:

- = AM PEAK HOUR ACCEPTABLE LOS
- = AM PEAK HOUR DEFICIENT LOS
- = PM PEAK HOUR ACCEPTABLE LOS
- = PM PEAK HOUR DEFICIENT LOS

N

Impact 1.1 – Central Street / Baxter Road (#3) – The intersection is currently operating at acceptable LOS (i.e., LOS "D" or better) during the AM and PM peak hours under Existing (2013) traffic conditions. The addition of Project traffic (as measured by 50 or more peak hour trips) is anticipated to result in an unacceptable LOS (LOS "F") during the AM and PM peak hours at this intersection. Consistent with the City's significance criteria, the impact is considered significant.

Impact 2.1 – I-15 Southbound Ramps / Baxter Road (#5) – Although the intersection is currently operating at an unacceptable LOS (LOS "F") during the AM peak hour under Existing (2013) traffic conditions, the addition of Project traffic (as measured by 50 or more peak hour trips) is anticipated to result in an increase to the intersection's delay by more than 5.0 seconds during the AM peak hour and an unacceptable LOS (LOS "F") during the PM peak hour at this intersection. Consistent with the City's significance criteria, the impact is considered significant.

Impact 3.1 – Monte Vista Drive / Bundy Canyon Road (#7) – The intersection is currently operating at an unacceptable LOS (LOS "F") during the PM peak hour under Existing (2013) traffic conditions. The addition of Project traffic (as measured by 50 or more peak hour trips) is anticipated to result in an increase to the intersection's delay by more than 5.0 seconds during the PM peak hour at this intersection. Consistent with the City's significance criteria, the impact is considered significant.

5.4 EXISTING PLUS PROJECT CONDITIONS TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants for E+P traffic conditions are based on E+P ADT volumes. For E+P conditions, the following intersection appears to warrant a traffic signal in addition to those currently warranted under Existing (2013) conditions (see Appendix "5.2"):

ID	Intersection Location	Jurisdiction
3	Central Street / Baxter Road	Wildomar

The intersection should be monitored and a traffic signal should be installed at the City Traffic Engineer's discretion.

5.5 EXISTING PLUS PROJECT CONDITIONS QUEUE LENGTH ANALYSIS

A queue length analysis was performed for southbound and northbound off-ramps at the I-15 Freeway and Baxter Road Interchange to assess vehicle queues for the off ramps that may potentially impact peak hour operations at the ramp-to-arterial intersections and may potentially "spill back" onto the I-15 Freeway mainline. Queue length 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 on Table 5-2, the two off-ramps do not appear to experience queuing

Table 5-2

Existing plus Project Conditions
AM/PM Peak Hour Off-Ramp Queue Length Summary at I-15 Freeway and Baxter Road Interchange

Intersection	Movement	Stacking Distance (Feet)	95th Percentile Stacking Distance Required (Feet)		Acceptable?[1]	
			AM Peak Hour	PM Peak Hour	AM	PM
I-15 SB Off-Ramp / Baxter Rd.	SBL/T/R	1,300	95	98	Yes	Yes
I-15 NB Off-Ramp / Baxter Rd.	NBL/T/R	1,650	86	271	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.

issues during the weekday AM and PM peak 95th percentile traffic flows under Existing plus Project conditions.

Worksheets for Existing plus Project conditions queuing analysis are provided in Appendix "5.3".

5.6 EXISTING PLUS PROJECT CONDITIONS BASIC FREEWAY SEGMENT ANALYSIS

Existing plus Project conditions mainline directional volumes for the weekday AM and weekday PM peak hours are provided on Exhibit 5-3. As shown on Table 5-3, I-15 Freeway segments analyzed for this study were found to operate at an acceptable LOS (i.e., LOS "D" or better) during the peak hours for E+P traffic conditions.

Existing plus Project conditions basic freeway segment analysis worksheets are provided in Appendix "5.4".

5.7 EXISTING PLUS PROJECT CONDITIONS FREEWAY MERGE/DIVERGE ANALYSIS

Ramp merge and diverge operations were also evaluated for Existing plus Project conditions and the results of this analysis are presented in Table 5-4. As shown in Table 5-4, the I-15 Freeway ramp merge and diverge areas at Baxter Road currently operate at LOS "D" or better for Existing plus Project traffic conditions.

Existing plus Project conditions freeway ramp junction operations analysis worksheets are provided in Appendix "5.5".

5.8 PROJECT IMPACTS AND RECOMMENDED IMPROVEMENTS

Improvement strategies have been recommended at intersections that have been identified as impacted to reduce each location's peak hour delay and improve the associated LOS grade to LOS "D" or better. The effectiveness of the proposed recommended improvements is presented in Table 5-5 for Existing plus Project traffic conditions. The effectiveness of the recommended improvement strategies discussed below to address Existing plus Project traffic impacts are presented in Table 5-5. The following intersection improvements are recommended to reduce the Existing plus Project impact to less-than-significant:

Mitigation Measure 1.1 – Central Street / Baxter Road (#3) – Install a traffic signal with protected left turn phasing on the eastbound approach of Baxter Road and construct the intersection with the following geometrics (mitigation measures are in **BOLD**):

- Northbound Approach: N/A

EXHIBIT 5-3

EXISTING PLUS PROJECT PEAK HOUR FREEWAY MAINLINE VOLUMES

Table 5-3

Existing plus Project Conditions Basic Freeway Segment Analysis

Freeway	Direction	Mainline Segment	Lanes[1]	Existing (2013)				Existing plus Project			
				Density[2]		LOS		Density[2]		LOS	
				AM	PM	AM	PM	AM	PM	AM	PM
I-15 Freeway	Southbound	North of Baxter Road	3	20.9	21.2	C	C	21.0	21.4	C	C
		South of Baxter Road	3	21.7	21.5	C	C	22.0	21.7	C	C
	Northbound	North of Baxter Road	3	19.2	25.9	C	C	19.4	26.1	C	D
		South of Baxter Road	3	18.5	27.6	C	D	18.6	27.9	C	D

[1] Number of lanes are in the specified direction and is based on existing conditions.

[2] Density is measured by passenger cars per mile per lane (pc/mi/ln).

Table 5-4

Existing plus Project Conditions Basic Freeway Ramp Junction Merge/Diverge Analysis

Freeway	Direction	Ramp or Segment	Lanes[1]	Existing (2013)				Existing plus Project			
				Density[2]		LOS		Density[2]		LOS	
				AM	PM	AM	PM	AM	PM	AM	PM
I-15 Freeway	Southbound	Off-Ramp at Baxter Road	3	26.2	26.4	C	C	26.3	26.7	C	C
		On-Ramp at Baxter Road	3	22.4	21.8	C	C	22.7	22.0	C	C
	Northbound	On-Ramp at Baxter Road	3	20.4	25.8	C	C	20.8	26.1	C	C
		Off-Ramp at Baxter Road	3	23.2	31.3	C	D	23.3	31.6	C	D

[1] Number of lanes are in the specified direction and is based on existing conditions.

[2] Density is measured by passenger cars per mile per lane (pc/mi/ln).

Table 5-5

Intersection Analysis for Existing plus Project Conditions, with Mitigation Measures

#	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
3	Central St / Baxter Rd																	
	- without Mitigation Measures	CSS	0	0	0	0	1	0	0	1	0	0	1	0	>50.0	>50.0	F	F
	- with Mitigation Measure 1.1	TS	0	0	0	1	0	1	1	1	0	0	1	1	27.4	17.2	C	B
5	I-15 Southbound Ramps / Baxter Rd																	
	- without Mitigation Measures	AWS	0	0	0	0	1	0	0	1	0	1	1	0	>50.0	>50.0	F	F
	- with Mitigation Measure 2.1	TS	0	0	0	0	1	0	0	1	0	1	1	0	39.6	23.3	D	C
7	Monte Vista Dr / Bundy Canyon Rd																	
	- without Mitigation Measures	CSS	0	1	0	0	0	0	0	1	0	1	1	0	34.4	>50.0	D	F
	- with Mitigation Measure 3.1	TS	0	1	0	0	0	0	0	1	0	1	1	0	21.9	26.7	C	C

[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; 1 = Improvement

A through lane shown opposite of a non-existent intersection leg denotes a shared left-right turn lane rather than an actual through lane.

[2] Delay and level of service calculated using the following analysis software:
Traffix (Version 8.0 R1, 2008) for signalized and unsignalized intersections. The I-15 freeway ramps have been analyzed using Synchro 8. Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with a traffic signal. 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] AWS = All-Way Stop; CSS = Cross Street Stop; TS = Traffic Signal

BOLD = Unsatisfactory level of service

- Southbound Approach: **One left turn lane, one right turn lane.**
- Eastbound Approach: **One left turn lane**, one through lane.
- Westbound Approach: One through lane, **one right turn lane.**

Mitigation Measure 2.1 – I-15 Southbound Ramps / Baxter Road (#5) – The following mitigation measure is necessary to reduce the Project's impact to less-than-significant:

- The Project shall mitigate its proportional share through payment of TUMF fees.

Mitigation Measure 3.1 – Monte Vista Drive / Bundy Canyon Road (#7) - The following mitigation measure is necessary to reduce the Project's impact to less-than-significant:

- The Project shall mitigate its proportional share through payment of City of Wildomar DIF fees.

Worksheets for E+P traffic conditions, with improvements, HCM calculations are provided in Appendix "5.6".

6.0 OPENING YEAR (2018) TRAFFIC ANALYSIS

This section discusses the methods used to develop Opening Year (2018) traffic forecasts for without and with Project conditions, and the resulting intersection, traffic signal warrant, and freeway mainline operations analysis.

6.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for Opening Year (2018) conditions are consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- At project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for Opening Year (2018) with Project conditions only (e.g., intersection turn lane improvements at the Project driveways).

6.2 OPENING YEAR (2018) WITHOUT PROJECT CONDITIONS TRAFFIC VOLUME FORECASTS

This scenario includes Existing (2013) traffic volumes plus an ambient growth factor of 10.41% plus traffic from pending and approved but not yet constructed known development projects in the area. The weekday ADT, AM and PM peak hour volumes which can be expected for Opening Year (2018) without Project traffic conditions are shown on Exhibit 6-1.

6.3 OPENING YEAR (2018) WITH PROJECT CONDITIONS TRAFFIC VOLUME FORECASTS

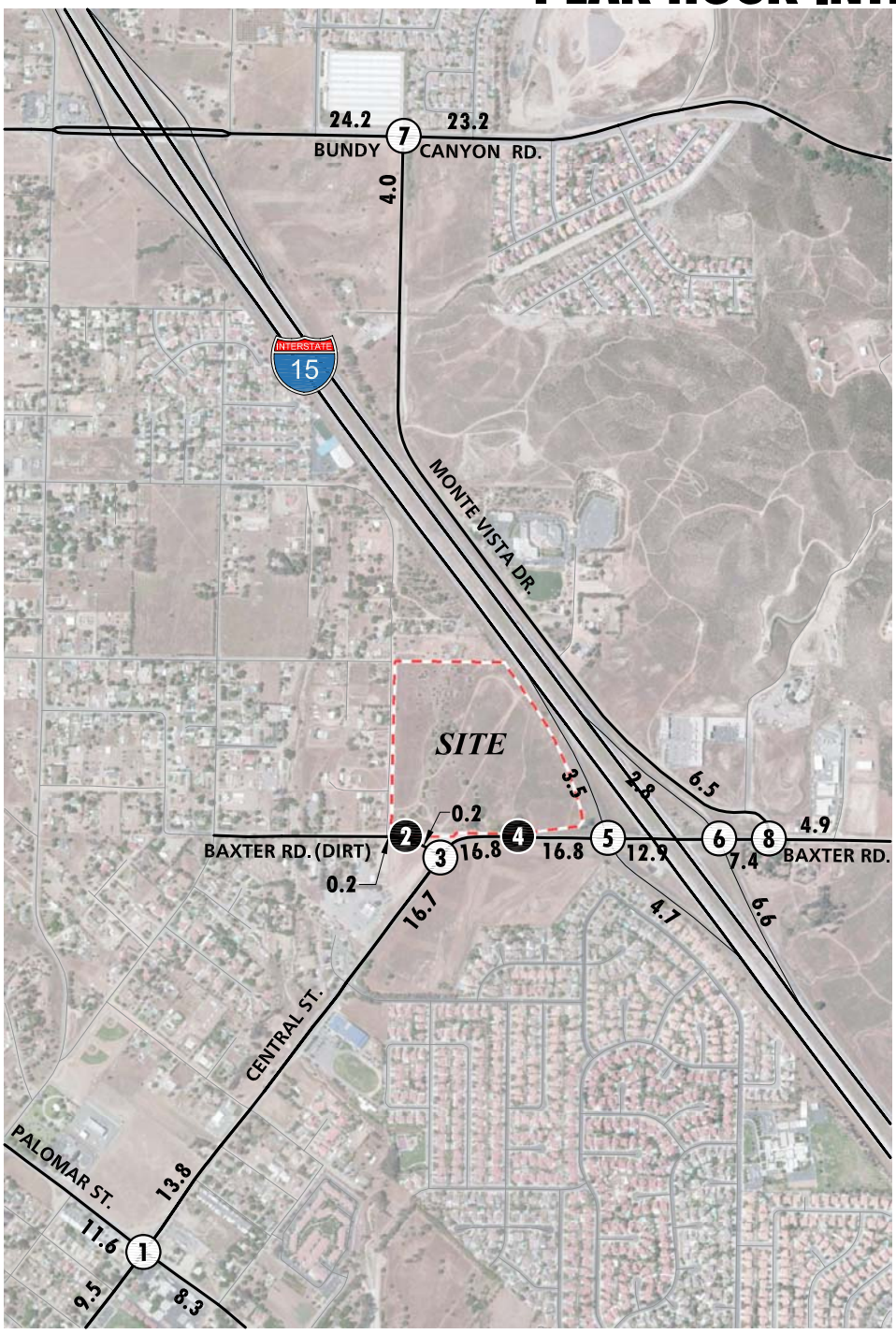
This scenario includes Existing (2013) traffic volumes, an ambient growth factor of 10.41%, traffic from pending and approved but not yet constructed known development projects in the area and the addition of Project traffic. The weekday ADT, AM and PM peak hour volumes which can be expected for Opening Year (2018) with Project traffic conditions are shown on Exhibit 6-2.

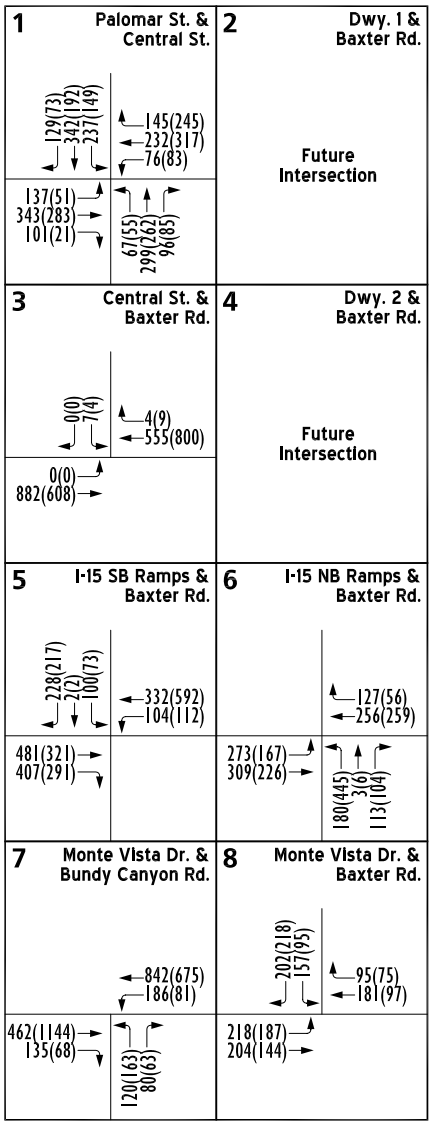
6.4 OPENING YEAR (2018) CONDITIONS INTERSECTION OPERATIONS ANALYSIS

Level of service calculations were conducted for the study intersections to evaluate their operations under Opening Year (2018) conditions with existing roadway and intersection geometrics consistent with Exhibit 3-1. The intersection analysis results are summarized in Table 6-1, which indicates that the following intersection is anticipated to experience unacceptable LOS (i.e., LOS "E" or worse) during one or more peak hours for Opening Year (2018) without Project traffic conditions in addition to those previously identified under Existing (2013) traffic conditions:

EXHIBIT 6-1

OPENING YEAR (2018) WITHOUT PROJECT AVERAGE DAILY TRAFFIC (ADT) AND PEAK HOUR INTERSECTION VOLUMES





LEGEND:

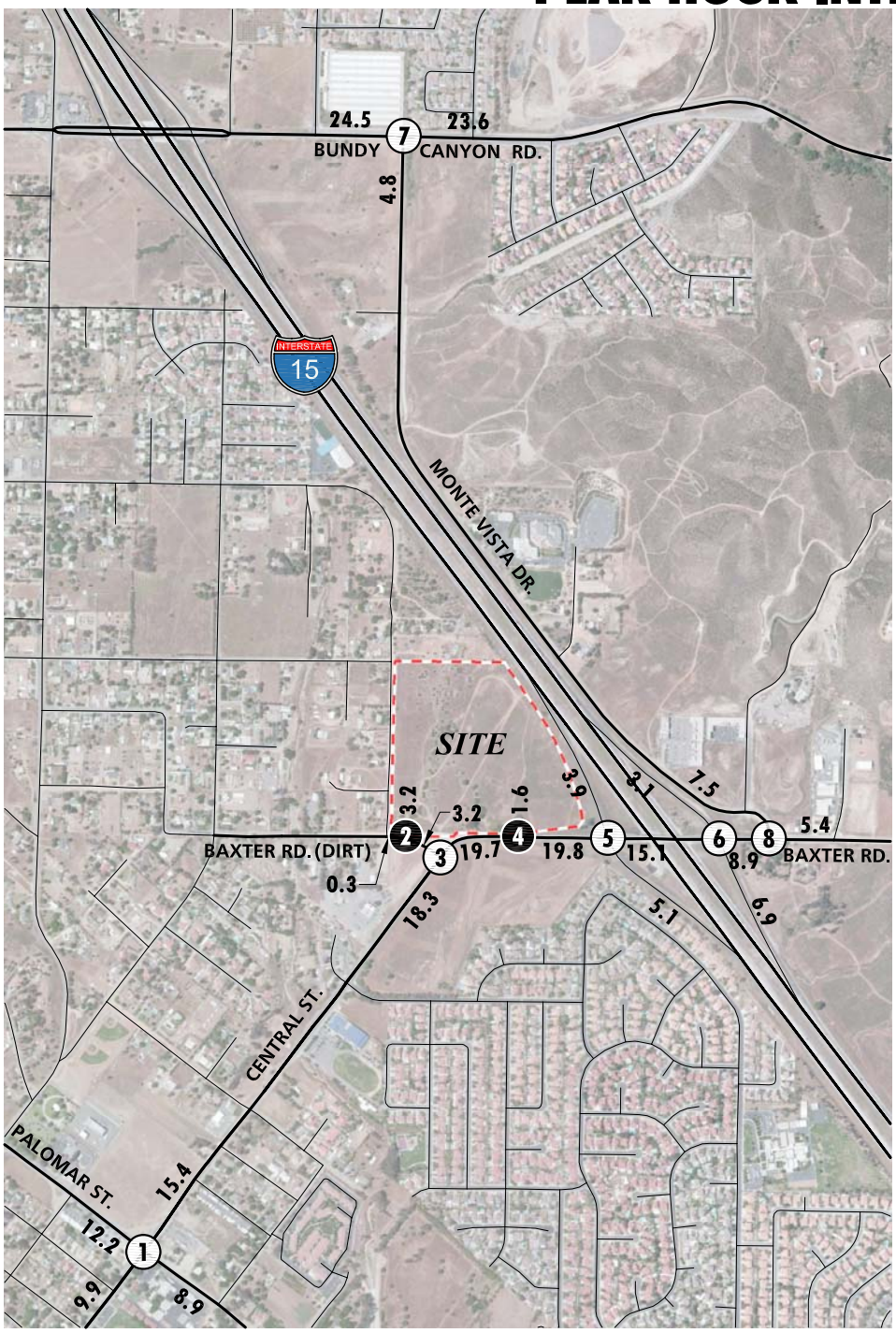
10.0 = VEHICLES PER DAY (1000'S)

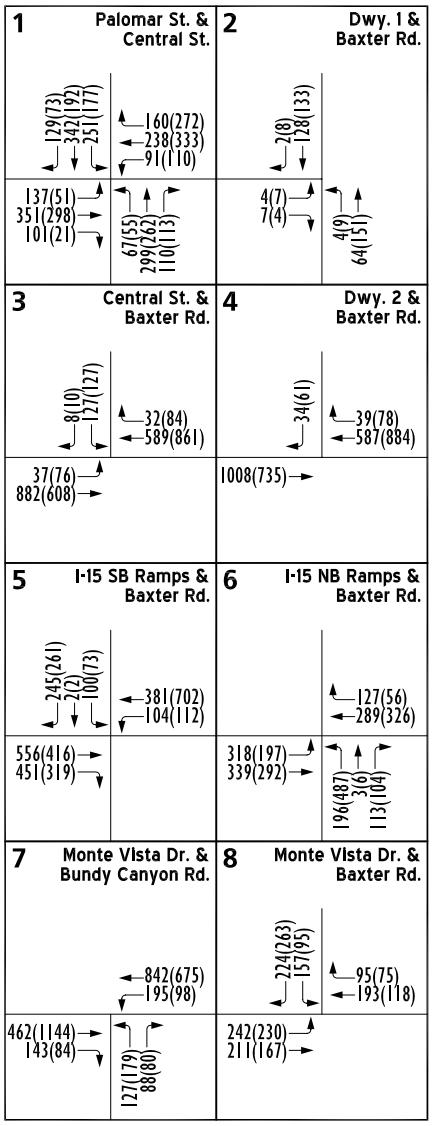
26(31) = AM(PM) PEAK HOUR VOLUMES

N

EXHIBIT 6-2

OPENING YEAR (2018) WITH PROJECT AVERAGE DAILY TRAFFIC (ADT) AND PEAK HOUR INTERSECTION VOLUMES





LEGEND:

10.0 = VEHICLES PER DAY (1000'S)

26(31) = AM(PM) PEAK HOUR VOLUMES

N

Table 6-1

Intersection Analysis for Opening Year (2018) Conditions

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Without Project				With Project			
			Northbound			Southbound			Eastbound			Westbound			Delay[2] (secs.)		Level of Service		Delay[2] (secs.)		Level of Service	
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM	AM	PM	AM	PM
1	Palomar St / Central St	TS	1	1	1	1	1	1	1	2	0	1	1	1	35.0	29.8	D	C	35.8	31.5	D	C
2	Driveway 1 / Baxter Rd	CSS	0	1	0	0	1	0	0	1	0	0	0	0	--	--	--	--	9.3	10.0	A	A
3	Central St / Baxter Rd	CSS	0	0	0	0	1	0	0	1	0	0	1	0	36.6	31.9	E	D	>50.0	>50.0	F	F
4	Driveway 2 / Baxter Rd	CSS	0	0	0	0	0	1	0	1	0	0	1	1	--	--	--	--	13.1	19.5	B	C
5	I-15 Southbound Ramps / Baxter Rd	AWS	0	0	0	0	1	0	0	1	0	1	1	0	>50.0	>50.0	F	F	>50.0	>50.0	F	F
6	I-15 Northbound Ramps / Baxter Rd	AWS	0	1	0	0	0	0	1	1	0	0	1	0	21.5	36.9	C	E	29.0	>50.0	D	F
7	Monte Vista Dr / Bundy Canyon Rd	CSS	0	1	0	0	0	0	0	1	0	1	1	0	>50.0	>50.0	F	F	>50.0	>50.0	F	F
8	Monte Vista Dr / Baxter Rd	CSS	0	0	0	1	0	d	0	1	0	0	1	d	>50.0	18.9	F	C	>50.0	24.8	F	C

[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; d = Defacto Right Turn Lane

A through lane shown opposite of a non-existent intersection leg denotes a shared left-right turn lane rather than an actual through lane.

[2] Delay and level of service calculated using the following analysis software:
Traffix (Version 8.0 R1, 2008) for signalized and unsignalized intersections. The I-15 freeway ramps have been analyzed using Synchro 8. Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with a traffic signal. 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] AWS = All-Way Stop; CSS = Cross Street Stop; TS = Traffic Signal

BOLD = Unsatisfactory level of service
BOLD = Cumulative Impact as defined by City of Wildomar standards.

ID	Intersection Location
3	Central Street / Baxter Road – LOS “E” AM peak hour only
6	I-15 Northbound Ramps / Baxter Road – LOS “E” PM peak hour only
7	Monte Vista Drive / Bundy Canyon Road – LOS “F” AM and PM peak hours
8	Monte Vista Drive / Baxter Road – LOS “F” AM peak hour only

Exhibit 6-3 summarizes the weekday AM and weekday PM peak hour study area intersection LOS under Opening Year (2018) without Project traffic conditions, consistent with the summary provided in Table 6-1.

The intersection operations analysis worksheets for Opening Year (2018) without Project conditions are included in Appendix “6.1” of this TIA.

As shown on Table 6-1, the addition of Project traffic is not anticipated to result in any additional deficient intersections in addition to those identified for Opening Year (2018) without Project traffic conditions. Exhibit 6-4 summarizes the weekday AM and weekday PM peak hour study area intersection LOS under Opening Year (2018) with Project traffic conditions, consistent with the summary provided in Table 6-1.

The intersection operations analysis worksheets for Opening Year (2018) With Project conditions are included in Appendix “6.2” of this TIA.

Measures to address near-term cumulative impacts for Opening Year (2018) traffic conditions are discussed in Section 6.9 *Near-Term Cumulative Impacts and Recommended Improvements*.

6.5 OPENING YEAR (2018) CONDITIONS TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrant analysis has not been performed for Opening Year (2018) without Project conditions as all study area intersections currently warrant a traffic signal under Existing (2013) traffic conditions.

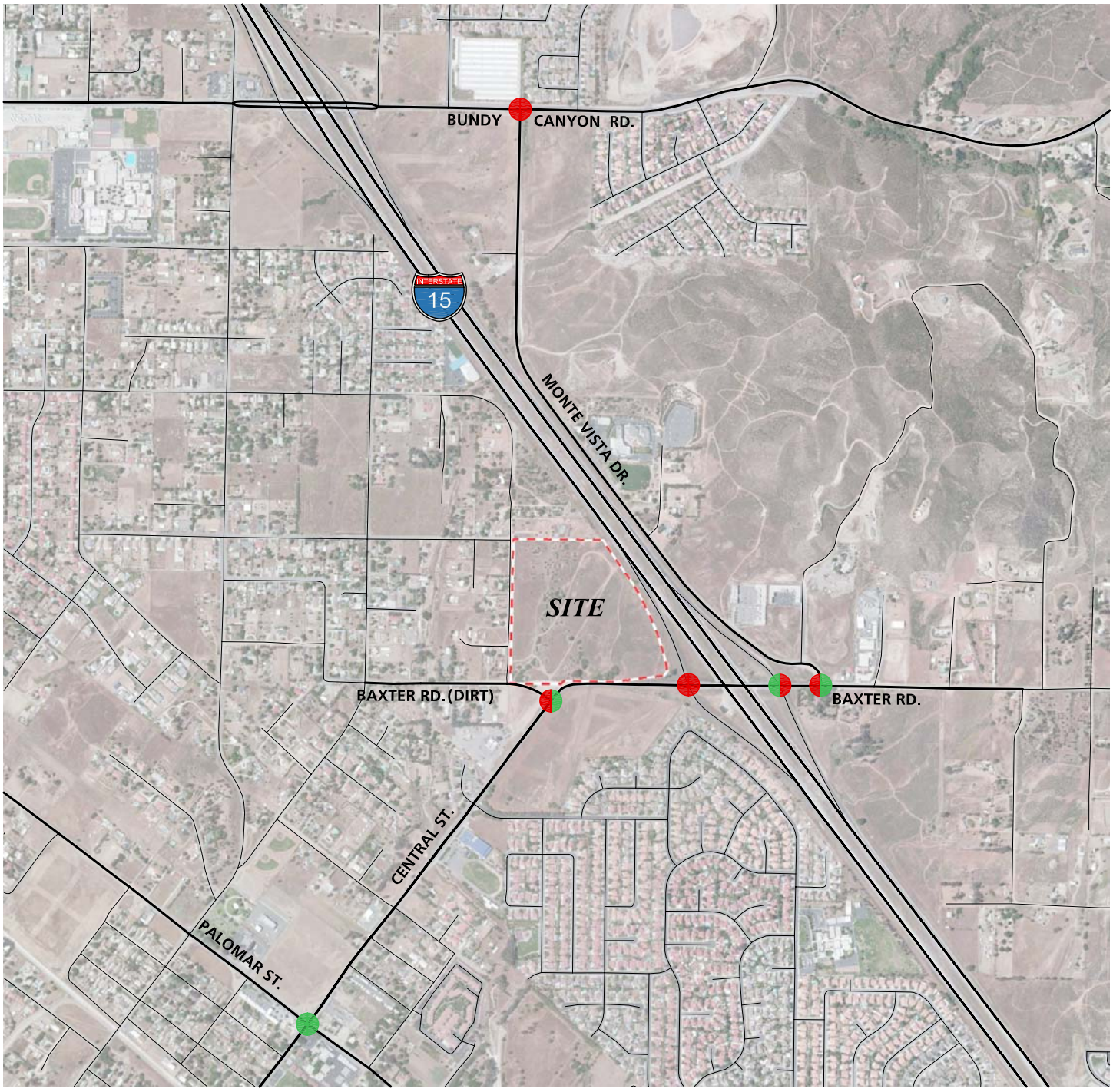
Traffic signal warrant analysis has been performed for Opening Year (2018) with Project conditions at the two (2) Project driveways. The following intersection appears to warrant a traffic signal based on the future ADT traffic volumes in addition to those previously warranted under E+P traffic conditions (see Appendix “6.3”):

ID	Intersection Location	Jurisdiction
4	Driveway 2 / Baxter Road	Wildomar

As noted previously, 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

EXHIBIT 6-3

SUMMARY OF PEAK HOUR INTERSECTION LOS FOR OPENING YEAR (2018) WITHOUT PROJECT CONDITIONS



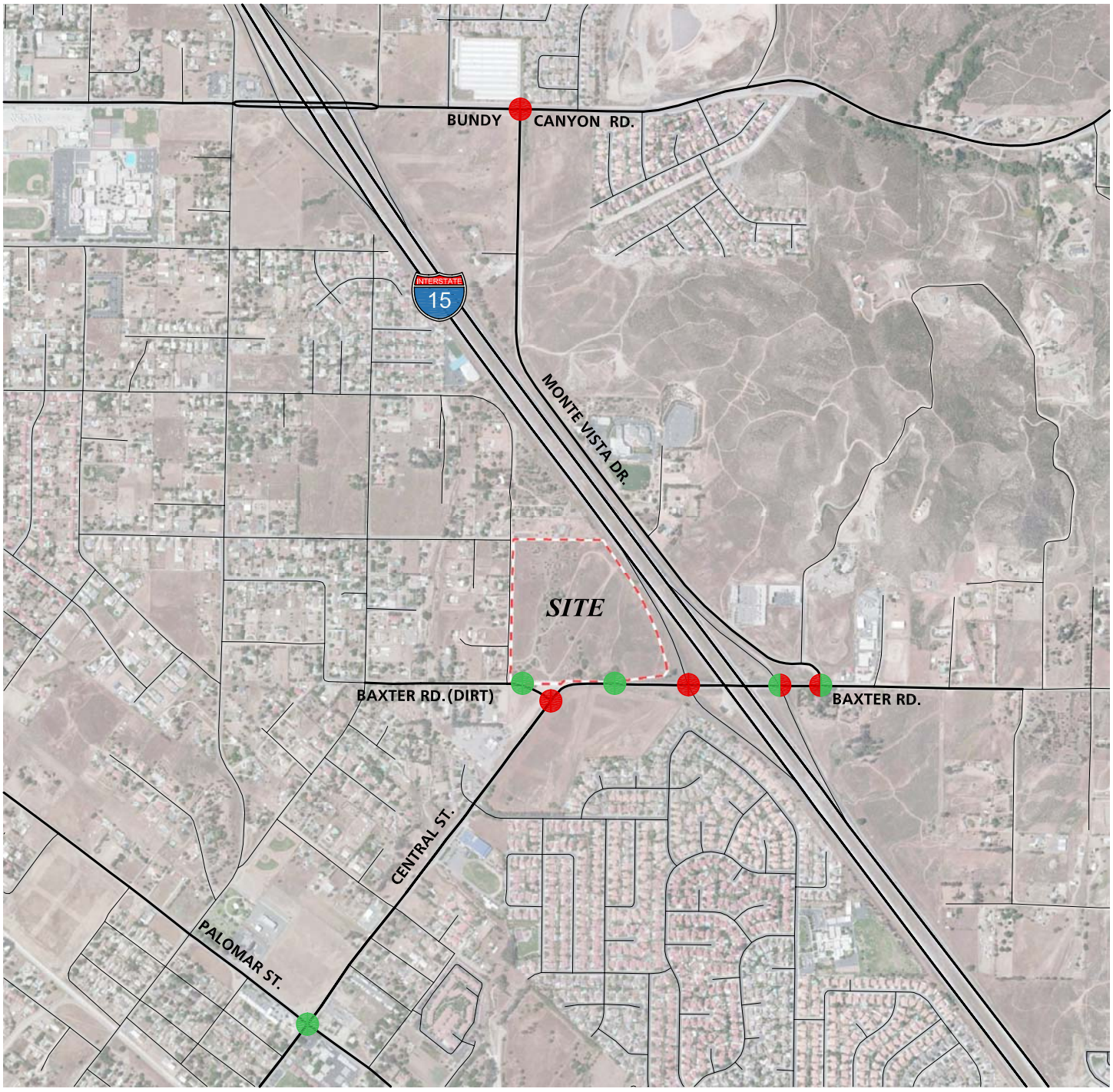
LEGEND:

- = AM PEAK HOUR ACCEPTABLE LOS
- = AM PEAK HOUR DEFICIENT LOS
- = PM PEAK HOUR ACCEPTABLE LOS
- = PM PEAK HOUR DEFICIENT LOS

N

EXHIBIT 6-4

SUMMARY OF PEAK HOUR INTERSECTION LOS FOR OPENING YEAR (2018) WITH PROJECT CONDITIONS



LEGEND:

- = AM PEAK HOUR ACCEPTABLE LOS
- = AM PEAK HOUR DEFICIENT LOS
- = PM PEAK HOUR ACCEPTABLE LOS
- = PM PEAK HOUR DEFICIENT LOS

N

evaluated in order to determine whether the signal is truly justified. It should also be noted that signal warrants do not necessarily correlate with level of service.

6.6 Opening Year (2018) Conditions Queue Length Analysis

A queue length analysis was performed for southbound and northbound off-ramps at the I-15 Freeway and Baxter Road Interchange to assess vehicle queues for the off ramps that may potentially impact peak hour operations at the ramp-to-arterial intersections and may potentially "spill back" onto the I-15 Freeway mainline. Queue length analysis findings are presented in Table 6-2. It is important to note that off-ramp lengths are consistent with the measured distance between the intersection and the freeway mainline. As shown on Table 6-2, the two off-ramps do not appear to experience queuing issues during the weekday AM and PM peak 95th percentile traffic flows under Opening Year (2018) without Project conditions. There are no potential queuing issues anticipated with the addition of Project traffic.

Worksheets for Opening Year (2018) without and with Project conditions queuing analyses are provided in Appendix "6.4" and Appendix "6.5", respectively.

6.7 Opening Year (2018) Conditions Basic Freeway Segment Analysis

Opening Year (2018) without and with Project peak hour mainline directional volumes are provided on Exhibits 6-5 and 6-6, respectively. As shown on Table 6-3, I-15 Freeway segments analyzed for this study were found to operate at an acceptable LOS (i.e., LOS "D" or better) during the peak hours for Opening Year (2018) without Project traffic conditions. There are no potential vehicle density issues anticipated with the addition of Project traffic.

Opening Year (2018) without and with Project conditions basic freeway segment analysis worksheets are provided in Appendix "6.6" and Appendix "6.7", respectively.

6.8 Opening Year (2018) Conditions Freeway Merge/Diverge Analysis

Ramp merge and diverge operations were also evaluated for Opening Year (2018) without and with Project conditions and the results of this analysis are presented in Table 6-4. As shown in Table 6-4, the I-15 Freeway ramp merge and diverge areas at Baxter Road currently operate at LOS "D" or better for Opening Year (2018) without Project traffic conditions. There are no freeway ramp junctions anticipated to operate at unacceptable LOS with the addition of Project traffic.

Opening Year (2018) without and with Project conditions freeway ramp junction operations analysis worksheets are provided in Appendix "6.8" and Appendix "6.9", respectively.

Table 6-2

Opening Year (2018) Conditions
AM/PM Peak Hour Off-Ramp Queue Length Summary at I-15 Freeway and Baxter Road Interchange

Intersection	Movement	Stacking Distance (Feet)	95th Percentile Stacking Distance Required (Feet)		Acceptable?[1]	
			AM Peak Hour	PM Peak Hour	AM	PM
Opening Year (2018) without Project Conditions						
I-15 SB Off-Ramp / Baxter Rd.	SBL/T/R	1,300	104	91	Yes	Yes
I-15 NB Off-Ramp / Baxter Rd.	NBL/T/R	1,650	93	365	Yes	Yes
Opening Year (2018) with Project Conditions						
I-15 SB Off-Ramp / Baxter Rd.	SBL/T/R	1,300	106	97	Yes	Yes
I-15 NB Off-Ramp / Baxter Rd.	NBL/T/R	1,650	101	881	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.

EXHIBIT 6-5

OPENING YEAR (2018) WITHOUT PROJECT PEAK HOUR FREEWAY MAINLINE VOLUMES

EXHIBIT 6-6

OPENING YEAR (2018) WITH PROJECT PEAK HOUR FREEWAY MAINLINE VOLUMES

Table 6-3

Opening Year (2018) Conditions Basic Freeway Segment Analysis

Freeway	Direction	Mainline Segment	Lanes[1]	Without Project				With Project			
				Density[2]		LOS		Density[2]		LOS	
				AM	PM	AM	PM	AM	PM	AM	PM
I-15 Freeway	Southbound	North of Baxter Road	3	23.2	25.6	C	C	23.3	25.9	C	C
		South of Baxter Road	3	24.3	26.3	C	D	24.5	26.5	C	D
	Northbound	North of Baxter Road	3	23.2	28.6	C	D	23.4	28.8	C	D
		South of Baxter Road	3	22.6	31.2	C	D	22.7	31.6	C	D

[1] Number of lanes are in the specified direction and is based on existing conditions.

[2] Density is measured by passenger cars per mile per lane (pc/mi/ln).

Table 6-4

Opening Year (2018) Conditions Basic Freeway Ramp Junction Merge/Diverge Analysis

Freeway	Direction	Ramp or Segment	Lanes[1]	Without Project				With Project			
				Density[2]		LOS		Density[2]		LOS	
				AM	PM	AM	PM	AM	PM	AM	PM
I-15 Freeway	Southbound	Off-Ramp at Baxter Road	3	28.3	30.2	D	D	28.5	30.5	D	D
		On-Ramp at Baxter Road	3	24.9	26.2	C	C	25.2	26.4	D	C
	Northbound	On-Ramp at Baxter Road	3	24.2	28.0	C	C	24.5	28.2	C	D
		Off-Ramp at Baxter Road	3	27.1	33.6	C	D	27.2	33.8	C	D

[1] Number of lanes are in the specified direction and is based on existing conditions.

[2] Density is measured by passenger cars per mile per lane (pc/mi/ln).

6.9 NEAR-TERM CUMULATIVE IMPACTS AND RECOMMENDED IMPROVEMENTS

Improvement strategies have been recommended at intersections that have been identified as cumulatively impacted in an effort to reduce each location's peak hour delay and improve the associated LOS grade to LOS "D" or better. The effectiveness of the recommended improvement strategies discussed below to address Opening Year (2018) cumulative traffic impacts are presented in Table 6-5.

The following improvements are recommended to reduce Opening Year (2018) cumulative impacts to "less-than-significant":

Recommended Improvement – Central Street / Baxter Road (#3)

- Install a traffic signal
- Construct a southbound left turn lane
- Construct a southbound right turn lane
- Construct an eastbound left turn lane
- Construct a westbound right turn lane

Recommended Improvement – I-15 Southbound Ramps / Baxter Road (#5)

- Install a traffic signal
- Construct an eastbound right turn lane

Recommended Improvement – I-15 Northbound Ramps / Baxter Road (#6)

- Install a traffic signal

It should be noted that widening of the Baxter Road Bridge over the I-15 Freeway is not necessary as the recommended improvements at the I-15 Northbound and Southbound Ramps at Baxter Road are sufficient enough to provide acceptable LOS during both AM and PM peak hours.

Recommended Improvement – Monte Vista Drive / Bundy Canyon Road (#7)

- Install a traffic signal
- Construct an eastbound shared through-right turn lane

Recommended Improvement – Monte Vista Drive / Baxter Road (#8)

- Install a traffic signal
- Construct an eastbound left turn lane

Table 6-5

Intersection Analysis for Opening Year (2018) with Project 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
3	Central St / Baxter Rd																	
	- without Improvements	CSS	0	0	0	0	1	0	0	1	0	0	1	0	>50.0	>50.0	F	F
	- with Improvements	TS	0	0	0	1	0	1	1	1	0	0	1	1	41.0	18.8	D	C
5	I-15 Southbound Ramps / Baxter Rd																	
	- without Improvements	AWS	0	0	0	0	1	0	0	1	0	1	1	0	>50.0	>50.0	F	F
	- with Improvements	TS	0	0	0	0	1	0	0	1	1	1	1	0	20.9	17.0	C	B
6	I-15 Northbound Ramps / Baxter Rd																	
	- without Improvements	AWS	0	1	0	0	0	0	1	1	0	0	1	0	29.0	>50.0	D	F
	- with Improvements	TS	0	1	0	0	0	0	1	1	0	0	1	0	31.1	32.1	C	C
7	Monte Vista Dr / Bundy Canyon Rd																	
	- without Improvements	CSS	0	1	0	0	0	0	0	1	0	1	1	0	>50.0	>50.0	F	F
	- with Improvements	TS	0	1	0	0	0	0	0	2	0	1	1	0	35.4	20.5	D	C
8	Monte Vista Dr / Baxter Rd																	
	- without Improvements	CSS	0	0	0	1	0	d	0	1	0	0	1	d	>50.0	24.8	F	C
	- with Improvements	TS	0	0	0	1	0	d	1	1	0	0	1	d	24.3	26.1	C	C

[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; d = Defacto Right Turn Lane; 1 = Improvement

A through lane shown opposite of a non-existent intersection leg denotes a shared left-right turn lane rather than an actual through lane.

[2] Delay and level of service calculated using the following analysis software:
Traffix (Version 8.0 R1, 2008) for signalized and unsignalized intersections. The I-15 freeway ramps have been analyzed using Synchro 8. Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with a traffic signal. 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] AWS = All-Way Stop; CSS = Cross Street Stop; TS = Traffic Signal

BOLD = Unsatisfactory level of service

The applicant shall participate in the funding of off-site improvements, including traffic signals that are needed to serve cumulative traffic conditions through the payment of Western Riverside County Transportation Uniform Mitigation Fees (TUMF), Southwest Roads and Bridge Benefit District (RBBD) fees, City of Wildomar Development Impact Fees (DIF) or a fair share contribution as directed by the City. These fees are collected as part of a funding mechanism aimed at ensuring that regional highways and arterial expansions keep pace with the projected population increases. Each of the improvements discussed above have been identified as being included as part of TUMF funding program, City DIF funding program or fair share contribution in Section 9.0 *Local and Regional Funding Mechanisms* of this TIA.

Worksheets for Opening Year (2018) with Project conditions, with improvements, HCM calculations are provided in Appendix "6.10".

7.0 GENERAL PLAN BUILDOUT (POST-2035) TRAFFIC ANALYSIS

This section discusses the methods used to develop General Plan Buildout (Post-2035) traffic forecasts for without and with Project conditions and the resulting intersection, traffic signal warrant, and freeway mainline operations analysis.

7.1 ROADWAY IMPROVEMENTS

Similar to Opening Year (2018) conditions, the lane configurations and traffic controls assumed to be in place for City of Wildomar General Plan Buildout (Post-2035) conditions is consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- General Plan Buildout (Post-2035) traffic conditions assume construction of the south leg of the intersection of Central Street at Baxter Road.
- At project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for General Plan Buildout (Post-2035) with Project conditions only (e.g., intersection turn lane improvements at the Project driveways).

7.2 GENERAL PLAN BUILDOUT (POST-2035) WITHOUT PROJECT TRAFFIC VOLUME FORECASTS

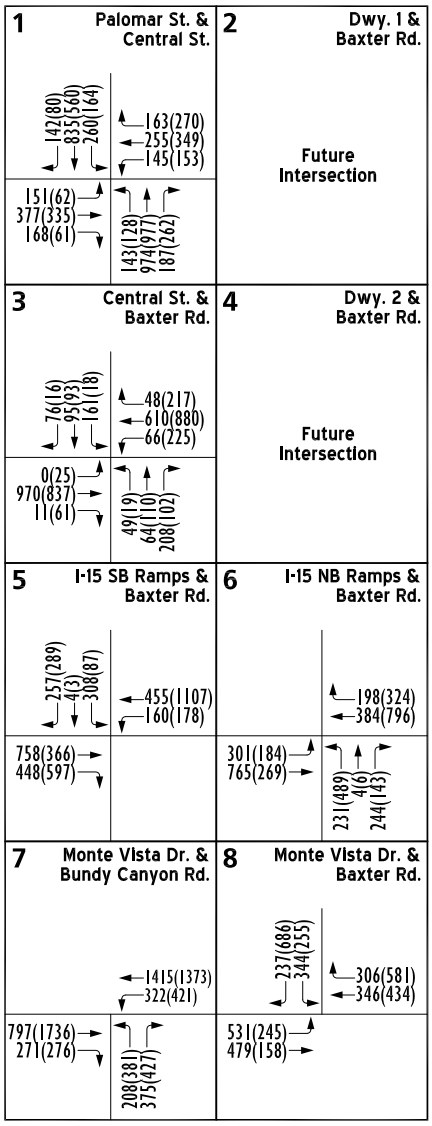
This scenario includes the refined post-processed volumes obtained from the focused version of RivTAM modified to represent the City of Wildomar's General Plan Buildout conditions, with proposed Housing Element changes from the recent Housing Element Update, less proposed Project volumes. The weekday ADT, AM and PM peak hour volumes which can be expected for General Plan Buildout (Post-2035) without Project traffic conditions are shown on Exhibit 7-1.

7.3 GENERAL PLAN BUILDOUT (POST-2035) WITH PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes the refined post-processed volumes obtained from the focused version of RivTAM modified to represent the City of Wildomar's General Plan Buildout conditions, with proposed Housing Element changes from the recent Housing Element Update. The weekday ADT, AM and PM peak hour volumes which can be expected for General Plan Buildout (Post-2035) with Project traffic conditions are shown on Exhibit 7-2.

EXHIBIT 7-1

GENERAL PLAN BUILDOUT (POST-2035) WITHOUT PROJECT AVERAGE DAILY TRAFFIC (ADT) AND PEAK HOUR INTERSECTION VOLUMES



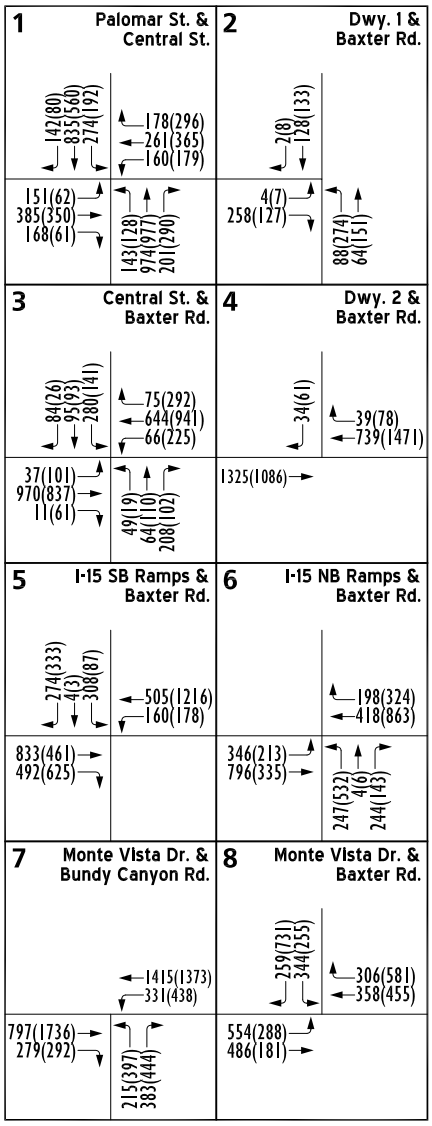
LEGEND:

10.0 = VEHICLES PER DAY (1000'S)

26(31) = AM(PM) PEAK HOUR VOLUMES

EXHIBIT 7-2

GENERAL PLAN BUILDOUT (POST-2035) WITH PROJECT AVERAGE DAILY TRAFFIC (ADT) AND PEAK HOUR INTERSECTION VOLUMES



LEGEND:

10.0 = VEHICLES PER DAY (1000'S)

26(31) = AM(PM) PEAK HOUR VOLUMES

7.4 GENERAL PLAN BUILDOUT (POST-2035) CONDITIONS INTERSECTION OPERATIONS ANALYSIS

LOS calculations were conducted for the study intersections to evaluate their operations under General Plan Buildout (Post-2035) without and with Project conditions with Existing (2013) roadway and intersection geometrics consistent with Exhibit 3-1 with the exceptions described previously in Section 7.1 *Roadway Improvements*. The intersection analysis results are summarized in Table 7-1 and illustrated on Exhibit 7-3 which indicates that all study area intersection locations will experience unacceptable LOS (i.e., LOS "E" or LOS "F") during one or both of the peak hours.

As shown on Table 7-1 and illustrated on Exhibit 7-4, the addition of Project traffic is not anticipated to cause any additional study area intersection to operate at unacceptable LOS (i.e., LOS "E or worse) in addition to those previously identified under General Plan Buildout (Post-2035) without Project traffic conditions, with the exception of the following location:

ID	Intersection Location
4	Driveway 2 / Baxter Road – LOS "F" PM peak hour only

The intersection operations analysis worksheets for General Plan Buildout (Post-2035) without Project conditions are included in Appendix "7.1" of this TIA. The intersection operations analysis worksheets for General Plan Buildout (Post-2035) with Project conditions are included in Appendix "7.2" of this TIA. Measures to address cumulative impacts for General Plan Buildout (Post-2035) traffic conditions are discussed in Section 7.10 *General Plan Buildout (Post-2035) Cumulative Impacts and Recommended Improvements*.

7.5 GENERAL PLAN BUILDOUT (POST-2035) CONDITIONS TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrant analysis has not been performed for General Plan Buildout (Post-2035) without Project conditions as all study area intersections currently warrant a traffic signal under Existing (2013) traffic conditions.

For General Plan Buildout (Post-2035) with Project conditions, there are no traffic signals that appear to be warranted in addition to those warranted under Opening Year (2018) with Project traffic conditions (see Appendix "7.3").

7.6 GENERAL PLAN BUILDOUT (POST-2035) CONDITIONS QUEUE LENGTH ANALYSIS

A queue length analysis was performed for southbound and northbound off-ramps at the I-15 Freeway and Baxter Road Interchange to assess vehicle queues for the off ramps that may potentially impact

Table 7-1

Intersection Analysis for City of Wildomar General Plan Buildout (Post-2035) Conditions

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Without Project				With Project			
			Northbound			Southbound			Eastbound			Westbound			Delay[2] (secs.)		Level of Service		Delay[2] (secs.)		Level of Service	
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM	AM	PM	AM	PM
1	Palomar St / Central St	TS	1	1	1	1	1	1	1	2	0	1	1	1	>80.0	66.0	F	E	>80.0	74.1	F	E
2	Driveway 1 / Baxter Rd	CSS	0	1	0	0	1	0	0	1	0	0	0	0	--	--	--	--	12.7	11.7	B	B
3	Central St / Baxter Rd	CSS	0	1	0	0	1	0	0	1	0	0	1	0	>50.0	>50.0	F	F	>50.0	>50.0	F	F
4	Driveway 2 / Baxter Rd	CSS	0	0	0	0	0	1	0	1	0	0	1	1	--	--	--	--	15.3	>50.0	C	F
5	I-15 Southbound Ramps / Baxter Rd	AWS	0	0	0	0	1	0	0	1	0	1	1	0	>50.0	>50.0	F	F	>50.0	>50.0	F	F
6	I-15 Northbound Ramps / Baxter Rd	AWS	0	1	0	0	0	0	1	1	0	0	1	0	>50.0	>50.0	F	F	>50.0	>50.0	F	F
7	Monte Vista Dr / Bundy Canyon Rd	CSS	0	1	0	0	0	0	0	1	0	1	1	0	>50.0	>50.0	F	F	>50.0	>50.0	F	F
8	Monte Vista Dr / Baxter Rd	CSS	0	0	0	1	0	d	0	1	0	0	1	d	>50.0	>50.0	F	F	>50.0	>50.0	F	F

[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; d = Defacto Right Turn Lane

A through lane shown opposite of a non-existent intersection leg denotes a shared left-right turn lane rather than an actual through lane.

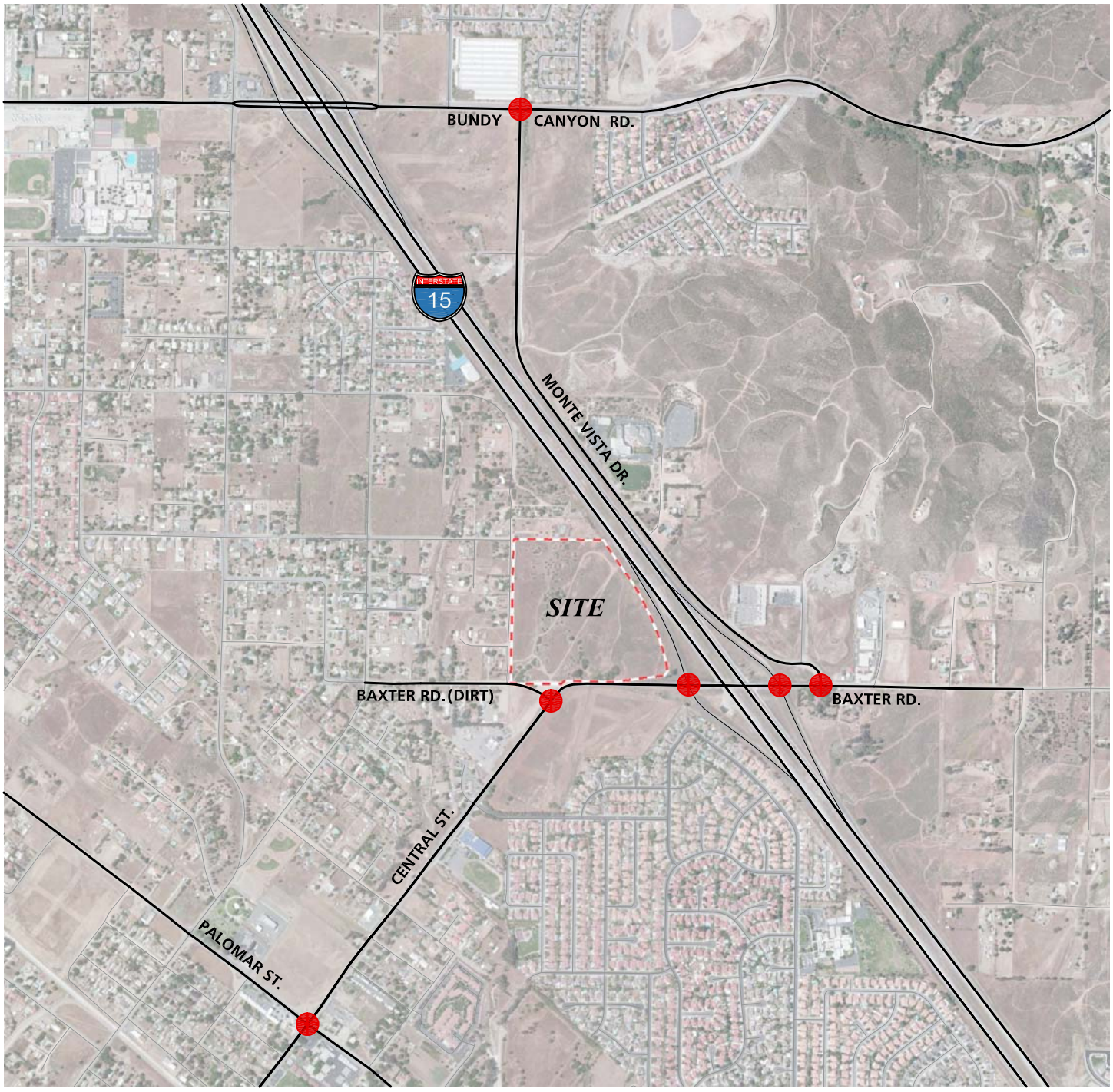
[2] Delay and level of service calculated using the following analysis software:
Traffix (Version 8.0 R1, 2008) for signalized and unsignalized intersections. The I-15 freeway ramps have been analyzed using Synchro 8. Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with a traffic signal. 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] AWS = All-Way Stop; CSS = Cross Street Stop; TS = Traffic Signal

BOLD = Unsatisfactory level of service
BOLD = Cumulative Impact as defined by City of Wildomar standards.

EXHIBIT 7-3

SUMMARY OF PEAK HOUR INTERSECTION LOS FOR GENERAL PLAN BUILDOUT (POST-2035) WITHOUT PROJECT CONDITIONS



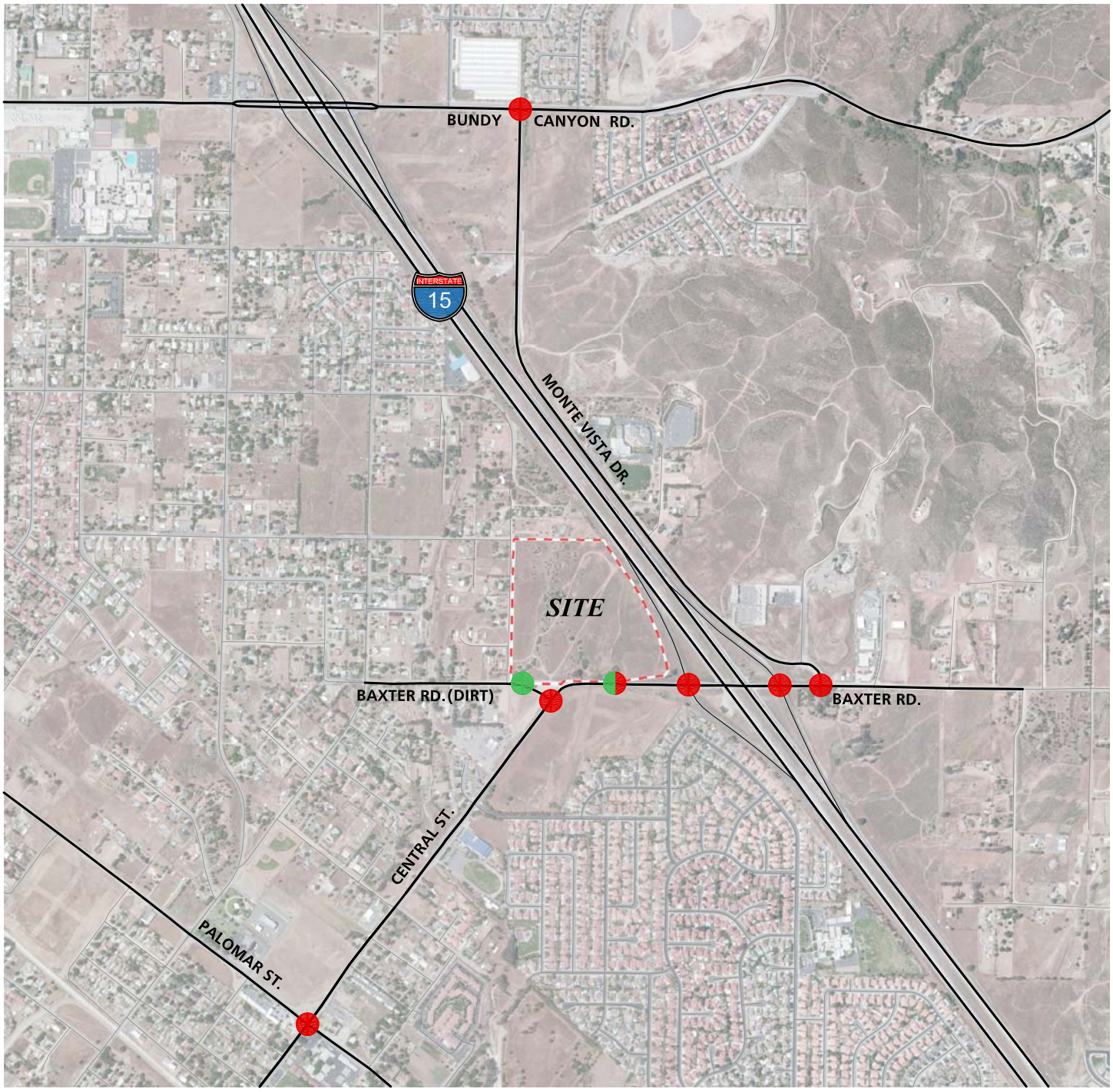
LEGEND:

- = AM PEAK HOUR ACCEPTABLE LOS
- = AM PEAK HOUR DEFICIENT LOS
- = PM PEAK HOUR ACCEPTABLE LOS
- = PM PEAK HOUR DEFICIENT LOS

N

EXHIBIT 7-4

SUMMARY OF PEAK HOUR INTERSECTION LOS FOR GENERAL PLAN BUILDOUT (POST-2035) WITH PROJECT CONDITIONS



LEGEND:

- = AM PEAK HOUR ACCEPTABLE LOS
- = AM PEAK HOUR DEFICIENT LOS
- = PM PEAK HOUR ACCEPTABLE LOS
- = PM PEAK HOUR DEFICIENT LOS

N

peak hour operations at the ramp-to-arterial intersections and may potentially "spill back" onto the I-15 Freeway mainline. Queue length analysis findings are presented in Table 7-2. It is important to note that this progression analysis has been conducted assuming existing interchange geometrics (i.e., all-way-stop controlled I-15 Ramps at Baxter Road). As shown on Table 7-2, the following movement may potentially be experiencing queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows:

ID	Intersection Location
1	I-15 Southbound Off-Ramp / Baxter Road – Southbound Shared Left-Through-Right (AM peak hour only)

The 95th percentile queues for General Plan Buildout (Post-2035) without Project traffic conditions indicates potential queuing issues during the AM peak hour for the movement identified above. The potential queues would exceed the turn pocket lengths and could spillback into the adjacent through lanes resulting in potential periodic spillback onto the I-15 Freeway mainline. There are no additional potential queuing issues anticipated with the addition of Project traffic.

Worksheets for General Plan Buildout (Post-2035) without and with Project conditions queuing analyses are provided in Appendix "7.4" and Appendix "7.5", respectively.

7.7 General Plan Buildout (Post-2035) Basic Freeway Segment Analysis

General Plan Buildout (Post-2035) without and with Project peak hour mainline directional volumes are provided on Exhibits 7-5 and 7-6, respectively.

Future capacity enhancement plans for the I-15 Freeway in the area include the addition of a carpool lane in each direction of travel between the I-15/I-215 Freeway interchange and Central Avenue (SR-74). These improvements have been assumed to be in place for General Plan Buildout (Post-2035) conditions.

Caltrans typically assumes a reduction of fourteen (14) percent to Freeway mainline through volumes in this region to account for vehicles utilizing the carpool lanes. Although the reduction to I-15 Freeway mainline volumes has been applied to account for the proposed carpool lanes, the analysis is performed assuming the same number of mixed-flow lanes and on and off-ramp configurations as existing baseline conditions.

As shown on Table 7-3, all I-15 Freeway segments analyzed for this study were found to operate at an unacceptable LOS (i.e., LOS "E" or worse) during either the AM or PM peak hour for General Plan Buildout (Post-2035) without and with Project traffic conditions.

Table 7-2

General Plan Buildout (Post-2035) Conditions
AM/PM Peak Hour Off-Ramp Queue Length Summary at I-15 Freeway and Baxter Road Interchange

Intersection	Movement	Stacking Distance (Feet)	95th Percentile Stacking Distance Required (Feet)		Acceptable?[1]	
			AM Peak Hour	PM Peak Hour	AM	PM
General Plan Buildout (Post-2035) without Project Conditions						
I-15 SB Off-Ramp / Baxter Rd.	SBL/T/R	1,300	**1,407** [2]	186	**No**	Yes
I-15 NB Off-Ramp / Baxter Rd.	NBL/T/R	1,650	422	1,159	Yes	Yes
General Plan Buildout (Post-2035) with Project Conditions						
I-15 SB Off-Ramp / Baxter Rd.	SBL/T/R	1,300	**1,432** [2]	215	**No**	Yes
I-15 NB Off-Ramp / Baxter Rd.	NBL/T/R	1,650	622	1,162	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 7-5

GENERAL PLAN BUILDOUT (POST-2035) WITHOUT PROJECT PEAK HOUR FREEWAY MAINLINE VOLUMES

EXHIBIT 7-6

GENERAL PLAN BUILDOUT (POST-2035) WITH PROJECT PEAK HOUR FREEWAY MAINLINE VOLUMES

Table 7-3

City of Wildomar General Plan Buildout (Post-2035) Conditions Basic Freeway Segment Analysis
With Planned Improvements

Freeway	Direction	Mainline Segment	Lanes[1]	Without Project				With Project			
				Density[2]		LOS		Density[2]		LOS	
				AM	PM	AM	PM	AM	PM	AM	PM
I-15 Freeway	Southbound	North of Baxter Road	3	29.0	'--	D	F	29.2	--	D	F
		South of Baxter Road	3	29.4	--	D	F	29.7	--	D	F
	Northbound	North of Baxter Road	3	--	35.1	F	E	--	35.3	F	E
		South of Baxter Road	3	--	36.5	F	E	--	37.0	F	E

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

[1] Number of lanes are in the specified direction and is based on existing conditions.

[2] Density is measured by passenger cars per mile per lane (pc/mi/ln).

General Plan Buildout (Post-2035) without and with Project conditions basic freeway segment analysis worksheets are provided in Appendix "7.6" and Appendix "7.7", respectively.

7.8 FREEWAY MERGE/DIVERGE ANALYSIS

Ramp merge and diverge operations were also evaluated for General Plan Buildout (Post-2035) without and with Project conditions and the results of this analysis are presented in Table 7-4. As shown in Table 7-4, the I-15 Freeway ramp merge and diverge areas at Baxter Road currently operate at LOS "E" or worse under either weekday AM or weekday PM peak hours for General Plan Buildout (Post-2035) without and with Project traffic conditions.

General Plan Buildout (Post-2035) without and with Project conditions freeway ramp junction operations analysis worksheets, with I-15 corridor improvements in place, are provided in Appendix "7.8" and Appendix "7.9".

7.9 GENERAL PLAN BUILDOUT (POST-2035) CUMULATIVE IMPACTS AND RECOMMENDED IMPROVEMENTS

7.9.1 RECOMMENDED IMPROVEMENTS TO ADDRESS GENERAL PLAN BUILDOUT (POST-2035) CUMULATIVE IMPACTS AT INTERSECTIONS

Improvements have been recommended at intersections that have been identified as cumulatively impacted to reduce each location's peak hour delay and improve the associated LOS grade to LOS "D" or better. These improvements are consistent with or less than the geometrics assumed in the City of Wildomar General Plan Circulation Element. The effectiveness of the recommended improvements to address General Plan Buildout (Post-2035) with Project conditions cumulative traffic impacts are presented in Table 7-5.

The applicant shall participate in the funding of off-site improvements, including traffic signals that are needed to serve cumulative traffic conditions through the payment of Western Riverside County Transportation Uniform Mitigation Fees (TUMF), Southwest Roadway and Bridge Benefit District (Southwest RBBD) fees, City of Wildomar Development Impact Fees (DIF) or a fair share contribution as directed by the City. These fees are collected as part of a funding mechanism aimed at ensuring that regional highways and arterial expansions keep pace with the projected population increases. Each of the improvements discussed above have been identified as being included as part of TUMF funding program, City DIF funding program or fair share contribution in Section 9.0 *Local and Regional Funding Mechanisms* of this TIA.

Worksheets for General Plan Buildout (Post-2035) with Project conditions, with improvements, HCM calculations are provided in Appendix "7.10".

Table 7-4

City of Wildomar General Plan Buildout (Post-2035) Conditions Basic Freeway Ramp Junction Merge/Diverge Analysis, With Planned Improvements

Freeway	Direction	Ramp or Segment	Lanes[1]	Without Project				With Project			
				Density[2]		LOS		Density[2]		LOS	
				AM	PM	AM	PM	AM	PM	AM	PM
I-15 Freeway	Southbound	Off-Ramp at Baxter Road	3	33.1	47.6	D	F	33.2	48.0	D	F
		On-Ramp at Baxter Road	3	29.1	45.4	D	F	29.5	45.5	D	F
	Northbound	On-Ramp at Baxter Road	3	38.2	32.6	F	D	38.5	32.8	F	D
		Off-Ramp at Baxter Road	3	42.0	35.9	F	E	42.1	36.2	F	E

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

[1] Number of lanes are in the specified direction and is based on existing conditions.

[2] Density is measured by passenger cars per mile per lane (pc/mi/ln).

Table 7-5

Intersection Analysis for City of Wildomar General Plan Buildout (Post-2035) 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 / Central St																	
	- without Improvements	TS	1	1	1	1	1	1	1	2	0	1	1	1	>80.0	74.1	F	E
	- with Improvements	TS	1	2	1	1	2	1	1	2	1	1	2	1	49.5	40.2	D	D
3	Central St / Baxter Rd																	
	- without Improvements	CSS	0	1	0	0	1	0	0	1	0	0	1	0	>50.0	>50.0	F	F
	- with Improvements	TS	1	1	0	1	1	0	1	2	1	1	2	1	29.0	25.2	C	C
4	Driveway 2 / Baxter Rd																	
	- without Improvements	CSS	0	0	0	0	0	1	0	1	0	0	1	0	15.6	>50.0	C	F
	- with Improvements[4]	CSS	0	0	0	0	0	1	0	2	0	0	2	0	11.6	19.6	B	C
5	I-15 Southbound Ramps / Baxter Rd																	
	- without Improvements	AWS	0	0	0	0	1	0	0	1	0	1	1	0	>50.0	>50.0	F	F
	- with Improvements	TS	0	0	0	0	1	0	0	2	1	1	2	0	28.4	19.0	C	B
6	I-15 Northbound Ramps / Baxter Rd																	
	- without Improvements	AWS	0	1	0	0	0	0	1	1	0	0	1	0	>50.0	>50.0	F	F
	- with Improvements	TS	0	1	0	0	0	0	1	2	0	0	2	1	19.0	42.9	B	D
7	Monte Vista Dr / Bundy Canyon Rd																	
	- without Improvements	CSS	0	1	0	0	0	0	0	1	0	1	1	0	>50.0	>50.0	F	F
	- with Improvements	TS	1	1	1	0	0	0	0	3	1	2	3	0	23.0	29.2	C	C
8	Monte Vista Dr / Baxter Rd																	
	- without Improvements	CSS	0	0	0	1	0	d	0	1	0	0	1	d	>50.0	>50.0	F	F
	- with Improvements	TS	0	0	0	0	1	1	1	1	0	0	1	1>	40.4	34.7	D	C

[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; d = Defacto Right Turn Lane; > = Right-Turn Overlap Phasing; 1 = Improvement

A through lane shown opposite of a non-existent intersection leg denotes a shared left-right turn lane rather than an actual through lane.

[2] Delay and level of service calculated using the following analysis software:
Traffix (Version 8.0 R1, 2008) for signalized and unsignalized intersections. The I-15 freeway ramps have been analyzed using Synchro 8. Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with a traffic signal. 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] AWS = All-Way Stop; CSS = Cross Street Stop; TS = Traffic Signal

[4] Improvements are a continuation of improvements at adjacent intersections and should not be considered an intersection improvement exclusive to this Project driveway but rather as a roadway improvement recommended for General Plan Buildout (Post-2035) conditions.

BOLD = Unsatisfactory level of service

It is important to note that with the implementation of the recommended intersection improvements discussed above, which are necessary to reduce cumulative impacts to less-than-significant, there are no potential queuing issues anticipated for General Plan Buildout (Post-2035) with Project conditions (see Table 7-6). Worksheets for General Plan Buildout (Post-2035) with Project conditions, with improvements, queuing analysis is provided in Appendix "7.11".

Table 7-6

General Plan Buildout (Post-2035) with Project Conditions, with Improvements
AM/PM Peak Hour Off-Ramp Stacking Length Summary at I-15 Freeway and Baxter Road Interchange

Intersection	Movement	Stacking Distance (Feet)	95th Percentile Stacking Distance Required (Feet)		Acceptable?[1]	
			AM Peak Hour	PM Peak Hour	AM	PM
I-15 SB Off-Ramp / Baxter Rd.	SBL/T/R	1,300	320	268	Yes	Yes
I-15 NB Off-Ramp / Baxter Rd.	NBL/T/R	1,650	339	847	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.

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8.0 LOCAL CIRCULATION AND SITE ACCESS

This section summarizes Project site access and on-site circulation recommendations.

The Project is proposed to have access on Baxter Road / Central Street via Driveway 1 and Baxter Road via Driveway 2. Driveway 1 is proposed to be full-access while Driveway 2 is proposed to have right-in/right-out access only. As part of the development, the Project will construct improvements on the site adjacent roadways of Baxter Road and White Street.

8.1 ON-SITE ROADWAY IMPROVEMENTS

Roadway improvements necessary to provide site access and on-site circulation are assumed to be constructed in conjunction with site development and are described below. These improvements should be constructed as adjacent portions of the Project are developed. Exhibit 8-1 illustrates the site-adjacent roadway improvement recommendations.

Baxter Road – Baxter Road is an east-west oriented roadway located along the Project's southern boundary. Construct Baxter Road at its ultimate half-section width as an Arterial Highway (128-foot right-of-way) between Central Street and the Project's eastern boundary. In addition, construct the extension of Baxter Road to its ultimate cross-section width as a Local Street (60-foot right-of-way) from the edge of Central Avenue/Baxter Road to the Project entrance at Driveway 1. Construct the western extension of Baxter Road from Driveway 1 to White Street to its ultimate half-section as a Local Street (60-foot right-of-way). Improvements along the Project's frontage would be those required by final conditions of approval for the proposed Project and applicable City of Wildomar standards.

White Street – White Street is a north-south oriented roadway located along the Project's western boundary. Construct White Street at its ultimate half-section width as a Local Street (60-foot right-of-way) from the Project's northern boundary to the Project's southern boundary. Improvements along the Project's frontage (east side of White Street) would be those required by final conditions of approval for the proposed Project and applicable City of Wildomar standards.

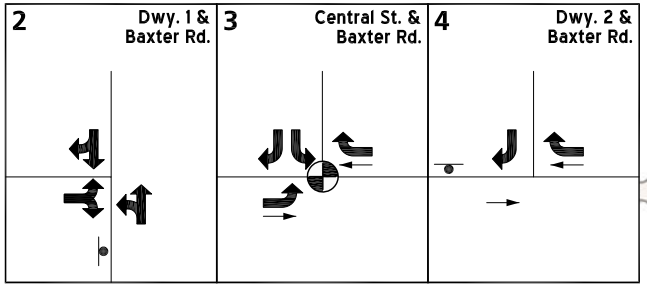
Wherever necessary, roadways adjacent to the Project, site access points and site-adjacent intersections will be constructed to be consistent with or within the recommended roadway classifications and respective cross-sections in the City of Wildomar General Plan Circulation Element.

8.2 SITE ACCESS IMPROVEMENTS

The recommended site access driveway improvements for the Project are described below. Exhibit 8-1 illustrates the on-site and site adjacent recommended roadway lane improvements. Construction of on-

EXHIBIT 8-1

SITE ADJACENT ROADWAY RECOMMENDATIONS AND ON-SITE CIRCULATION RECOMMENDATIONS



LEGEND:

- = STOP SIGN
- = EXISTING LANE
- = LANE IMPROVEMENT
- = ARTERIAL HIGHWAY (4-LANES, 128-FOOT R.O.W.)
- = LOCAL STREET (2-LANES, 60-FOOT R.O.W.)
- = TRAFFIC SIGNAL

CONSTRUCT WHITE STREET AT ITS ULTIMATE HALF-SECTION WIDTH AS A LOCAL STREET (60-FOOT RIGHT-OF-WAY) FROM THE PROJECT'S NORTHERN BOUNDARY TO THE PROJECT'S SOUTHERN BOUNDARY. IMPROVEMENTS ALONG THE PROJECT'S FRONTAGE (EAST SIDE OF WHITE STREET) WOULD BE THOSE REQUIRED BY FINAL CONDITIONS OF APPROVAL FOR THE PROPOSED PROJECT AND APPLICABLE CITY OF WILDOMAR STANDARDS.

CONSTRUCT THE WESTERN EXTENSION OF BAXTER ROAD FROM DRIVEWAY 1 TO WHITE STREET TO ITS ULTIMATE HALF-SECTION AS A LOCAL STREET (60-FOOT RIGHT-OF-WAY). IMPROVEMENTS ALONG THE PROJECT'S FRONTAGE (NORTH SIDE OF BAXTER ROAD) WOULD BE THOSE REQUIRED BY FINAL CONDITIONS OF APPROVAL FOR THE PROPOSED PROJECT AND APPLICABLE CITY OF WILDOMAR STANDARDS.

ON-SITE TRAFFIC SIGNING AND STRIPING SHOULD BE IMPLEMENTED IN CONJUNCTION WITH DETAILED CONSTRUCTION PLANS FOR THE PROJECT SITE.

SIGHT DISTANCE AT EACH PROJECT ACCESS POINT SHOULD BE REVIEWED WITH RESPECT TO STANDARD CALTRANS AND CITY OF WILDOMAR SIGHT DISTANCE STANDARDS AT THE TIME OF PREPARATION OF FINAL GRADING, LANDSCAPE AND STREET IMPROVEMENT PLANS.

CONSTRUCT BAXTER ROAD AT ITS ULTIMATE HALF-SECTION WIDTH AS AN ARTERIAL HIGHWAY (128-FOOT RIGHT-OF-WAY) BETWEEN CENTRAL STREET AND THE PROJECT'S EASTERN BOUNDARY. IMPROVEMENTS ALONG THE PROJECT'S FRONTAGE (NORTH SIDE OF BAXTER ROAD) WOULD BE THOSE REQUIRED BY FINAL CONDITIONS OF APPROVAL FOR THE PROPOSED PROJECT AND APPLICABLE CITY OF WILDOMAR STANDARDS.

CONSTRUCT THE EXTENSION OF BAXTER ROAD TO ITS ULTIMATE CROSS-SECTION WIDTH AS A LOCAL STREET (60-FOOT RIGHT-OF-WAY) FROM THE EDGE OF CENTRAL AVENUE/BAXTER ROAD TO THE PROJECT ENTRANCE AT DRIVEWAY 1. IMPROVEMENTS BETWEEN DRIVEWAY 1 AND THE EDGE OF CENTRAL AVENUE/BAXTER ROAD WOULD BE THOSE REQUIRED BY FINAL CONDITIONS OF APPROVAL FOR THE PROPOSED PROJECT AND APPLICABLE CITY OF WILDOMAR STANDARDS.

N

site and site adjacent improvements shall occur in conjunction with adjacent Project development activity or as needed for Project access purposes.

Driveway 1 / Baxter Road (#2) – Install a stop control on the eastbound approach of Baxter Road and construct the intersection with the following geometrics:

Northbound Approach: One shared left-through lane.
Southbound Approach: One shared through-right turn lane.
Eastbound Approach: One shared left-through-right turn lane.
Westbound Approach: N/A

Central Street / Baxter Road (#3) – Construct the intersection consistent with intersection controls and geometrics consistent with those identified previously under Mitigation Measure 1.1.

Driveway 2 / Baxter Road (#3) – Install a stop control on the southbound approach and construct the intersection with the following geometrics:

Northbound Approach: N/A
Southbound Approach: One right turn lane.
Eastbound Approach: One through lane.
Westbound Approach: One through lane and one right turn lane.

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

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

9.0 LOCAL AND REGIONAL FUNDING MECHANISMS

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

Table 9-1 lists the incremental improvements that are required by General Plan Buildout (Post-2035) traffic conditions to mitigate the long-range cumulative traffic impacts. The regional and local transportation impact fee programs have each been reviewed and compared to the recommended improvements for each impacted facility. Recommended improvements already identified and included in one of the pre-existing fee programs (i.e., TUMF, Southwest RBBD, City of Wildomar DIF, etc.) are clearly denoted. If an impacted facility was found to require improvements beyond those already identified within one of the pre-existing regional or local fee programs, the project may be required to contribute the associated intersection or roadway fair-share percentage toward the costs of the recommended improvements. The fair-share calculations, also presented in Table 9-1, indicate that the project contributes 18.4% of new vehicle trips to the study area intersection of Central Street at Baxter Road.

The improvements listed in Table 9-1 are comprised of lane additions, installation of signals and signal modifications. As noted, the identified improvements are covered either by the TUMF Program, Southwest RBBD fee program, the City of Wildomar DIF Program or as a fair-share contribution if not covered by a fee program. Lane additions are shown as the number of lanes required and the direction of travel, for example, "1.EBT" indicates one additional eastbound through lane. Depending on the width of the existing pavement and right-of-way, these improvements may involve only striping modifications or they may involve construction of additional pavement width. Additional discussion of the relevant pre-existing transportation impact fee programs is provided below.

9.1 TRANSPORTATION UNIFORM MITIGATION FEE (TUMF) PROGRAM

The TUMF program is administered by Western Riverside Council of Governments (WRCOG) based upon a regional Nexus Study completed in early 2003 and updated in 2009 to address major changes in right of way acquisition and improvement cost factors. TUMF identifies a network of backbone and local roadways that are needed to accommodate growth through 2035. 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.

Table 9-1

Summary of Transportation Impact Fee Program Improvements for General Plan Buildout (Post-2035) Conditions

#	Intersection Location	Jurisdiction	Recommended Improvements - Opening Year (2018)	Recommended Improvements - General Plan Buildout (Post-2035)	Project Improvements	Program Improvements[1,2]	Non-Program Improvements
1	Palomar St / Central St	Wildomar	None	1. NBT, 1. SBT	None	TUMF (1. NBT, 1. SBT)	None
3	Central St / Baxter Rd	Wildomar	Install Traffic Signal, 1. SBL, 1.SBR, 1. EBL, 1.WBR	Install Traffic Signal, 1. NBL, 1. NBTR, 1. SBL, 1. SBTR, 1. EBL, 1. EBTR, 1. WBL, 1. WBT, 1. WBR	Install Traffic Signal, 1. SBL, 1. SBR, 1.EBL,1. WBR	TUMF (1. EBT, 1. WBT)	1. NBL, 1. NBTR, 1. WBL
5	I-15 Southbound Ramps / Baxter Rd	Caltrans	Install Traffic Signal, 1. EBR	Install Traffic Signal, 1. EBT, 1. EBR, 1. WBT	None	TUMF (Install Traffic Signal, 1. EBT, 1. EBR, 1. WBT)	None
6	I-15 Northbound Ramps / Baxter Rd	Caltrans	Install Traffic Signal	Install Traffic Signal, 1. EBT, 1. WBT, 1. WBR	None	TUMF (Install Traffic Signal, 1. EBT, 1. WBT, 1. WBR)	None
7	Monte Vista Dr / Bundy Canyon Rd	Wildomar	Install Traffic Signal, 1. EBT	Install Traffic Signal, 1. NBL, 1. NBR, 2. EBT, 1. EBR, 1. WBL, 2. WBT	None	TUMF & RBBD (2. EBT, 2. WBT) DIF (Install Traffic Signal, 1. NBL, 1. NBR, 1. EBR, 1. WBL)	None
8	Monte Vista Dr / Baxter Rd	Wildomar	Install Traffic Signal, 1. EBL	Install Traffic Signal, 1. SBR, 1. EBL, 1. WBR, modify TS and implement overlap phasing on WBR.	None	DIF (Install Traffic Signal, 1. SBR, 1. EBL, 1. WBR, modify TS and implement overlap phasing on WBR.)	None

[1] Improvements included in 2013 Southwest TUMF Zone Transportation Improvement Program (January 28, 2013), Southwest RBBD, or City of Wildomar 2012 Impact Fee Study Report (May 31, 2012).

[2] Program improvements constructed by project may be eligible for fee credit. In lieu fee payment is at discretion of City. Fair share selected based on peak hour with worst LOS.

Lane additions are shown as the number of lanes required and the direction of travel, for example, "1.EBTR" indicates one additional eastbound shared through-right turn lane.

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. The fee is $10.49 per square foot of for retail use, $8,873 per single family residential dwelling unit, and $6,231 per multi-family dwelling unit (applicable to the proposed project). In addition, an annual inflation adjustment is considered each year in January. 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.

As shown in Table 9-1, a number of the facilities forecast to be cumulatively impacted by the proposed project are programmed for improvements through the TUMF program. The project applicant will be subject to the TUMF fee program and will pay the requisite TUMF fees at the rates then in effect pursuant to the TUMF Ordinance.

WRCOG has a successful track record funding and overseeing the construction of improvements funded through the TUMF program. In total, the TUMF program is anticipated to generate nearly $5 billion in transportation projects for Western Riverside County. The project's payment of TUMF fees appear to be sufficient to mitigate its fair share of cumulative impacted TUMF-funded facilities.

9.2 SOUTHWEST ROAD AND BRIDGE BENEFIT DISTRICT (RBBD)

Similar to other regions within Riverside County, 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 fee program. The proposed Project study area lies within Zone A of the Southwest RBBD. Zone A is comprised of the City of Wildomar, with the exception of the City north of Bundy Canyon Road and east of Green Meadow Way. A list of completed and planned future transportation infrastructure improvements covered by the Southwest RBBD includes:

Southwest Road and Bridge Benefits District (Zone A):

- Interchange improvements at I-15 Freeway at Clinton Keith Road
- Interchange improvements at I-215 Freeway at Murrieta Hot Springs Road
- Widening of Benton Road to two lanes between Highway 79 and Washington Street
- Widening of Bundy Canyon Road to six lanes between Mission Trail to Sunset Avenue
- Widening of Clinton Keith Road to six lanes from Menifee Road to Highway 79 with bridge improvements at Warm Springs Creek
- Widening of Clinton Keith Road to two lanes from the Southwest RBBD Zone "C" boundary to Murrieta City limits
- Widening of Keller Road to four lanes from Highway 79 to Washington Street

- Widening of Winchester Road to six lanes between Auld Road to Keller Road, with raised median improvements
- Bridge improvements on Washington Street at French Valley Stream
- Landscaped median improvements to Benton Road between Highway 79 and Washington Street

9.3 CITY OF WILDOMAR DEVELOPMENT IMPACT FEE (DIF) PROGRAM

The City of Wildomar has created its own local Development Impact Fee (DIF) program to impose and collect fees from new residential, commercial and industrial development for the purpose of funding roadways and intersections necessary to accommodate City growth as identified in the City's General Plan Circulation Element. The City's DIF program includes facilities that are not part of, or which may exceed improvements identified and covered by the TUMF program. As a result, the pairing of the regional and local fee programs provides a more comprehensive funding and implementation plan to ensure an adequate and interconnected transportation system. 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.

The timing to use the DIF fees is established through periodic capital improvement programs which are overseen by the City's Public Works 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 implementing the improvements listed in its facilities list.

As shown in Table 9-1, a number of the facilities forecasted to be impacted by the Project are planned for improvements through the City's DIF Program. The Project will be subject to the City's DIF fee program, and will pay the requisite City DIF fees at the rates then in effect pursuant to the City's ordinance. The payment of the requisite DIF fees will mitigate its impacts to DIF-funded facilities. The DIF network improvement needs were last updated in the *City of Wildomar 2012 Impact Fee Study Report* (Colgan Consulting Corporation, May 31, 2012). Improvements are identified in the study by location rather than with specific geometrics. Table 3.1 of that study identifies DIF improvement locations and eligible program costs but does not provide discrete improvements. As a result, Table 9-1 identifies DIF intersections with an expectation that City, as program administrator, can distinguish if the program fees are sufficient to cover the fair share impacts for proportionality. Given the relatively low fair share assignment of the Project to many of these locations, payment of fees appears reasonable to adequately mitigate the Project's cumulative impacts.

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