

YORBA LINDA HOUSING ELEMENT UPDATE

TRAFFIC ANALYSIS

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TABLE OF CONTENTS

Table of Contents	ii
Appendices.....	iv
List of Exhibits	v
List of Tables	vi
List of Abbreviated Terms	vii
1 Executive Summary.....	1
1.1 Introduction.....	1
1.2 Traffic Deficiencies and Improvements.....	2
1.3 Proposed Site Access and Circulation Recommendations	5
1.4 Analysis Scenarios	6
1.5 Study Area	6
1.6 Deficiencies	8
1.7 Recommendations	10
2 Introduction.....	11
2.1 Project Objectives.....	11
2.2 Analysis Overview	12
3 Methodologies	13
3.1 Level of Service.....	13
3.2 Intersection Capacity Analysis.....	13
3.3 Traffic Signal Warrant Analysis Methodology	15
3.4 Minimum Acceptable Levels of Service (LOS)	16
3.5 Deficiency Criteria	17
4 Area Conditions	19
4.1 Existing Circulation Network	19
4.2 City of Yorba Linda General Plan Circulation Element	19
4.3 Bicycle, Equestrian, & Pedestrian Facilities	24
4.4 Transit Service.....	24
4.5 Existing (2024) Traffic Counts	24
4.6 Intersection Operations Analysis	29
4.7 Traffic Signal Warrants Analysis	30
5 Horizon Year (2045) Traffic Conditions.....	31
5.1 Volume Development for Horizon Year	31
5.2 Roadway Improvements	32
5.3 Without Project Traffic Volume Forecasts	32

- 5.4 With Project Traffic Volume Forecasts..... 34
- 5.5 Intersection Operations Analysis..... 34
- 5.6 Traffic Signal Warrants Analysis..... 34
- 5.7 Long-Term Deficiencies and Recommended Improvements..... 38
- 6 Local and Regional Funding Mechanisms.....41
 - 6.1 City of Yorba Linda Traffic Impact Fee Program..... 41
 - 6.2 Fair Share Contribution..... 42
- 7 Vehicle Miles Traveled45
- 8 References.....47

APPENDICES

Appendix 1.1: Approved Traffic Study Scoping Agreement

Appendix 4.1: Traffic Counts – February 2024

Appendix 4.2: Existing (2024) Conditions Intersection Operations Analysis Worksheets

Appendix 4.3: Existing (2024) Conditions Traffic Signal Warrant Analysis Worksheets

Appendix 5.1: Post Processing Worksheets for Horizon Year (2045) Without Project

Appendix 5.2: Post Processing Worksheets for Horizon Year (2045) With Project

Appendix 5.3: Horizon Year (2045) Without Project Conditions Intersection Operations Analysis Worksheets

Appendix 5.4: Horizon Year (2045) With Project Conditions Intersection Operations Analysis Worksheets

Appendix 5.5: Horizon Year (2045) With Project Conditions Intersection Operations Analysis Worksheets With Improvements

LIST OF EXHIBITS

Exhibit 1-1: Changes to housing element sites 3

Exhibit 1-2: Currently Proposed housing element site Location Map..... 4

Exhibit 1-3: Study Area..... 7

Exhibit 4-1: Existing Number of Through Lanes and Intersection Controls 21

Exhibit 4-2: City of Yorba Linda General Plan Circulation Element..... 22

Exhibit 4-3: City of Yorba Linda General Plan Roadway Cross-Sections 23

Exhibit 4-4: City of Yorba Linda Bicycle Facilities..... 25

Exhibit 4-5: Existing Pedestrian Facilities 26

Exhibit 4-6: Existing Transit Routes..... 27

Exhibit 4-7: Existing (2024) Traffic volumes 28

Exhibit 5-1: Horizon Year (2045) Without Project Traffic Volumes 33

Exhibit 5-2: Horizon Year (2045) With Project Traffic Volumes 35

Exhibit 5-3: Project Only Traffic Volumes..... 36

Exhibit 5-4: Horizon Year (2045) Intersection Improvements 40

LIST OF TABLES

Table 1-1: Proposed Changes to Housing Element Sites 1

Table 1-2: Summary of Housing Element Sites 5

Table 1-3: Intersection Analysis Locations 8

Table 1-4: Summary of LOS..... 9

Table 1-5: Summary of Improvements..... 10

Table 3-1: Signalized Intersection LOS Thresholds with ICU 14

Table 3-2: Signalized Intersection LOS Thresholds with HCM..... 15

Table 3-3: Unsignalized Intersection LOS Thresholds 15

Table 3-4: Traffic Signal Warrant Analysis Locations 16

Table 3-5: City of Anaheim Deficiency Criteria 17

Table 4-1: Intersection Analysis for Existing (2024) Conditions 30

Table 5-1: Intersection Analysis for Horizon Year (2045) Conditions 37

Table 5-2: Intersection Analysis for Horizon Year (2045) Conditions With Improvements 39

Table 6-1: Current Traffic Impact Fees 41

Table 6-2: Project Fair Share Calculations..... 43

LIST OF ABBREVIATED TERMS

(1)	Reference
ADT	Average Daily Traffic
CAMUTCD	California Manual on Uniform Traffic Control Devices
CEQA	California Environmental Quality Act
Caltrans	California Department of Transportation
HCM	Highway Capacity Manual
ICU	Intersection Capacity Utilization
LOS	Level of Service
NCHRP	National Cooperative Highway Research Program
OCTA	Orange County Transportation Authority
OCTAM	Orange County Transportation Analysis Model
OPR	Office of Planning and Research
PEIR	Program Environmental Impact Report
PHF	Peak Hour Factor
Project	Yorba Linda Housing Element Update
RHNA	Regional Housing Needs Assessment
SB	Senate Bill
SCAG	Southern California Association of Governments
SHS	State Highway System
TA	Traffic Analysis
TIF	Traffic Impact Fee
V/C	Volume to Capacity
VMT	Vehicle Miles Traveled

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1 EXECUTIVE SUMMARY

1.1 INTRODUCTION

This Yorba Linda 2021–2029 Housing Element Update Traffic Analysis (TA) analyzes and identifies potential traffic-related deficiencies resulting from the rezoning and revised General Plan land use development assumptions necessary to address the City of Yorba Linda’s regional housing needs assessment (RHNA) allocation. The TA will be used to support the proposed Addendum to the 2024 Housing Element Program Environmental Impact Report (PEIR). The Housing Element proposes a rezoning program of 18 vacant or underutilized sites for multi-family residential use at densities of 10 to 60 units per acre. The Yorba Linda 2021 – 2029 Housing Element will revise the General Plan land use and development intensities for the identified sites to accommodate approximately 1,747 additional dwelling units for a total of 1,929 dwelling units (including the existing zoning), which is an overall reduction of 481 units from the certified 2022 Housing Element PEIR.

The TA will evaluate the proposed development intensities expected for the changes to the sites and assess the potential traffic deficiencies that result from the implementation of the rezoning and changes to land use. Table 1-1 summarizes the changes to the Housing Element Sites as proposed for the current Addendum and Exhibit 1-1 shows the respective locations of each site. Exhibit 1-2 identifies the locations of each of the currently proposed Housing Element Sites summarized in Table 1-2. The City-approved Project Traffic Study Scoping Agreement is provided in Appendix 1.1 of this TA.

TABLE 1-1: PROPOSED CHANGES TO HOUSING ELEMENT SITES

HE Site ID	Site	Acres	Existing Current Zoning	Certified 2022 PEIR		Addendum to 2022 PEIR	
				2022 PEIR Proposed Zoning	Total Net Unit Potential	Proposed Zoning	Total Net Unit Potential
S1-021	W. of 16951 Imperial Highway	1.76	CG	Commercial Mixed Use Overlay	62	Commercial Mixed Use Overlay	62
S1-200	SEC Rose Dr. & Blake Rd.	5.94	RE	RM-20 w/ Affordable Overlay	208	RM-20 w/ Affordable Overlay	208
S2-008	17151 Bastanchury Rd.	4.92	RE	Congregational Land Overlay	60	Congregational Land Overlay	60
S3-012	5320 Richfield Rd.	9.48	RU	Congregational Land Overlay	55	Congregational Land Overlay	55
S3-207	5300-5392 Richfield Rd.	8.83	RU	RM-20 w/ Affordable Overlay	340	RM-10	88
S2-013	4861 Liverpool St.	6.2	RU	Congregational Land Overlay	40	Congregational Land Overlay	40
S3-074	18132 Yorba Linda Bl.	0.42	CG	RM-20 w/ Affordable Overlay	15	* Site Removed *	
S3-024	Friends Church Overflow Parking	17.45	RE	Congregational Land Overlay	48	Congregational Land Overlay	48
S3-033	4382 Eureka Av.	3.88	RS	Congregational Land Overlay	30	* Site Removed *	
S3-210	18111 Bastanchury Rd.	9.23	PD-26	Congregational Land Overlay	105	Congregational Land Overlay	105
S3-082	4791 & 4811 Eureka Av.	1.75	CG	RM-20 w/ Affordable Overlay	61	RM-20 w/ Affordable Overlay	61
S4-075	4742 Plumosa Dr.	1.62	CG	RM-20 w/ Affordable Overlay	57	RM-20 w/ Affordable Overlay	57
S6-015	22722 Old Canal Rd.	2.56	PD	Affordable Housing Overlay	89	PD RM-60	154
S6-020	22711 Oak Crest Circle	10.35	PD	RM-20 w/ Affordable Housing Overlay	143	PD RM-60	242
S7-001	Bryant Ranch Shopping Center	9.15	CG	Commercial Mixed Use Overlay	320	* Site Removed *	
S3-034	4341 Eureka Av.	2.19	RS	RM	22	* Site Removed *	
S3-203	18101-18251 Bastanchury Rd.	19.58	PD	PD	228	PD	98
S3-205A	5225 & 5227 Highland Av.	7.08	RE	RM	71	* Site Removed *	
S4-200	18597-18602 Altrudy Ln.	2.0	RS	RM-20	40	RM-20	40
S4-204A	19045 Yorba Linda Bl.	1.85	RE	Congregational Land Overlay	17	* Site Removed *	
S4-204B	19081-19111 Yorba Linda Bl.	3.9	RE	RM-20	78	RM-20	78
S3-211	17651 Imperial Highway	2.32	RS	RM	23	RM	23
S4-053	SWC of Kellogg Dr. & Grandview Av.	0.98	RE	RM	10	* Site Removed *	
S4-060	5541 S. Ohio St.	0.96	RE	RM	10	* Site Removed *	
S4-201	5531 S. Ohio St.	1.82	RE	RM	18	* Site Removed *	
S5-008	Fairmont Bl.	9.0	PD	RM	230	PD	30
S7-005	NEC of Camino del Bryant & Meadowland	3.06	RU	RM	30	* Site Removed *	
S6-025	Bac Tran Savi Ranch Site	23.0	PD	Not Evaluated		PD RM-60	480
		148.28		TOTAL	2,410	TOTAL	1,929

1.2 TRAFFIC DEFICIENCIES AND IMPROVEMENTS

Based on either the Highway Capacity Manual (HCM) 7th Edition or Intersection Capacity Utilization (ICU) methodologies established by the Cities of Yorba Linda, Placentia, and Anaheim, the following intersections are anticipated to operate at a deficient level of service (LOS) during one or both peak hours under Horizon Year (2045) traffic conditions:

- Lakeview Avenue & Buena Vista Avenue (#6)
- Kellogg Drive & Imperial Highway SB Ramps (#7)
- Yorba Linda Boulevard & La Palma Avenue (#17)

It is our understanding that there are improvements currently planned for the intersections of Imperial Highway & Yorba Linda Boulevard (#5), Yorba Linda Boulevard & La Palma Avenue (#17), and Yorba Linda Boulevard & Savi Ranch Parkway (#18). As such, these improvements are assumed to be in place by Horizon Year (2045) conditions and are identified below:

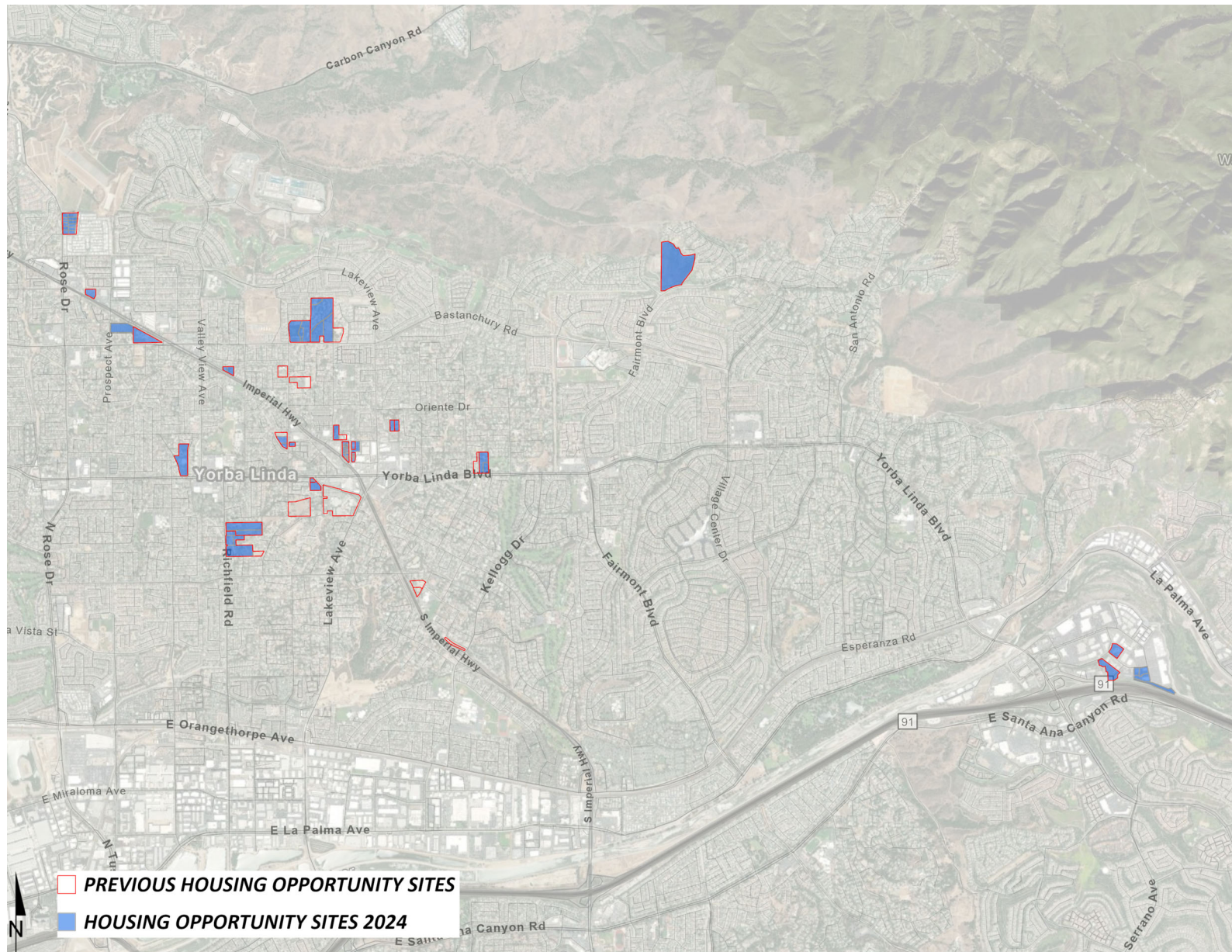
- A second eastbound left turn lane, second westbound left turn lane, and an eastbound right turn lane at Imperial Highway & Yorba Linda Boulevard (#5) is assumed to be constructed by Horizon Year (2045) conditions. The Project is to contribute 0% towards the fair share.
- A second northbound right turn lane at Yorba Linda Boulevard & La Palma Avenue (#17) is assumed to be constructed by Horizon Year (2045) conditions. The Project is to contribute 2.1% towards the fair share.
- A northbound shared through-right turn lane and second right turn lane replacing the free right turn lane, a second southbound left turn lane, and a third westbound left turn lane at Yorba Linda Boulevard & Savi Ranch Parkway (#18) is assumed to be constructed by Horizon Year (2045) conditions. The Project is to contribute 3.0% towards the fair share.

The implementation of the improvements at the intersection of Imperial Highway & Yorba Linda Boulevard (#5) and Yorba Linda Boulevard & Savi Ranch Parkway (#18) are anticipated to result in acceptable peak hour operations; however, the improvements identified above at the intersection of Yorba Linda Boulevard & La Palma Avenue (#17) are not anticipated to result in acceptable peak hour operations under Horizon Year (2045) conditions. Intersection improvements have been recommended at the following remaining deficient study area intersections which are anticipated to exceed the allowable deficiency threshold established by the Cities of Yorba Linda, Placentia, or Anaheim:

- Lakeview Avenue & Buena Vista Avenue (#6) – 2.4% fair share contribution towards a future traffic signal and necessary street improvements
- Kellogg Drive & Imperial Highway SB Ramps (#7) – 2.9% fair share contribution towards a future traffic signal and necessary street improvements

Improvements identified are the minimum needed to achieve acceptable peak hour operations (LOS D or better), with the exception of the intersection of Yorba Linda Boulevard & La Palma Avenue. As noted previously, although the planned intersection improvements at Yorba Linda Boulevard & La Palma Avenue would not improve the intersection operations back to acceptable levels, additional improvements were not recommended as they are not feasible and the addition of Project traffic is not anticipated to exceed the applicable deficiency threshold.

EXHIBIT 1-1 : CHANGES TO HOUSING ELEMENT SITES



**EXHIBIT 1-2 : CURRENTLY PROPOSED HOUSING ELEMENT SITE LOCATION MAP
TO HOUSING ELEMENT SITES**

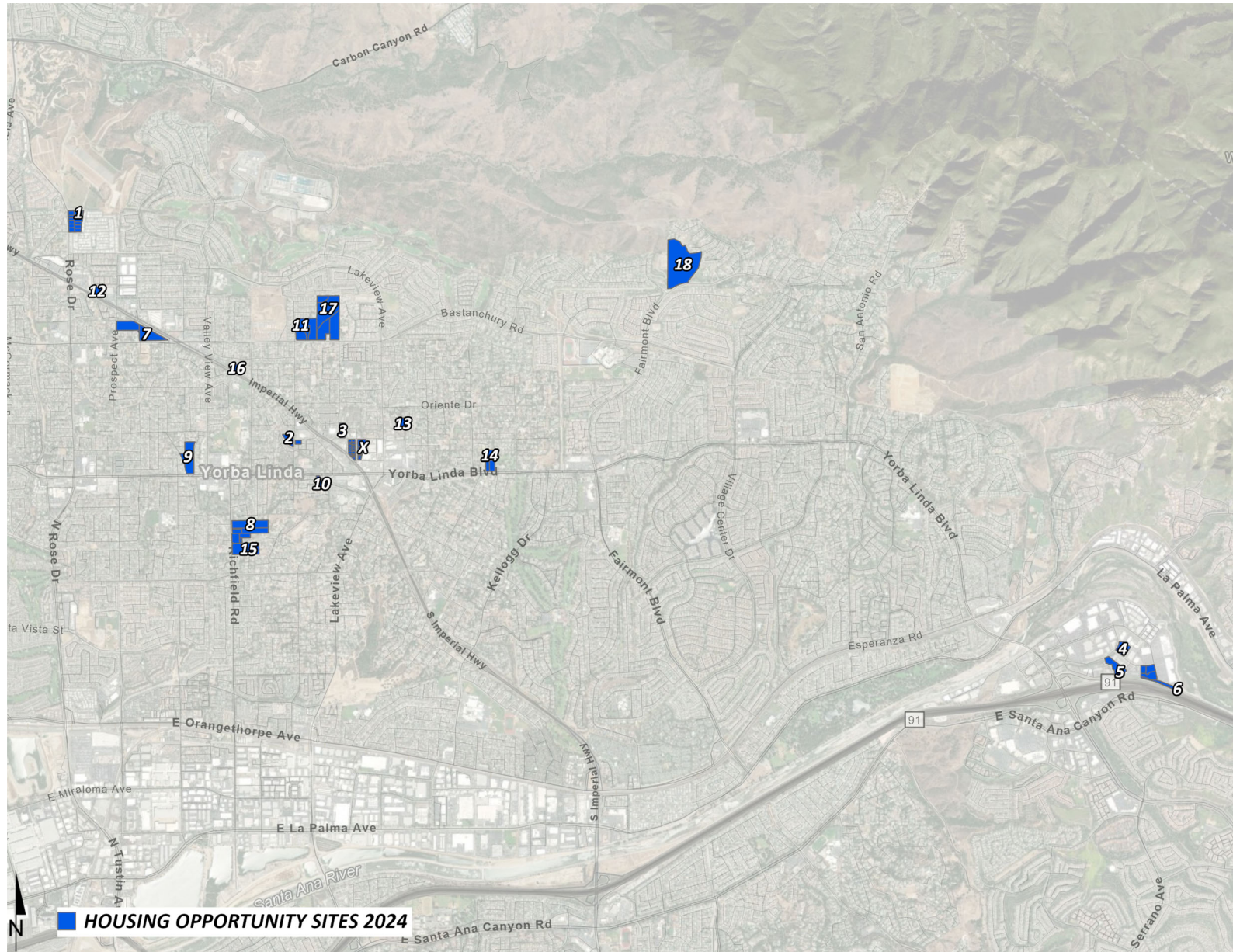


TABLE 1-2: SUMMARY OF HOUSING ELEMENT SITES

#	HE Site ID	Site	Acres	Proposed Zoning	Total Net Unit Potential
Affordable Housing Overlay (AHO) Sites (up to 35 units/acre):					
1	S1-200	SEC Rose Dr. & Blake Rd.	5.94	RM-20 w/ Affordable Overlay	208
2	S3-082	4791 & 4811 Eureka Av.	1.75	RM-20 w/ Affordable Overlay	61
3	S4-075	4742 Plumosa Dr.	1.62	RM-20 w/ Affordable Overlay	57
RM-60 Sites (between 20-60 units/acre):					
4	S6-015	22722 Old Canal Rd.	2.56	PD RM-60	154
5	S6-020	22711 Oak Crest Circle	10.35	PD RM-60	242
6	S6-025	Bac Tran Savi Ranch Site	23.0	PD RM-60	480
Congregational Land Overlay (CLO) Sites (up to 35 units/acre):					
7	S2-008	17151 Bastanchury Rd.	4.92	Congregational Land Overlay	60
8	S3-012	5320 Richfield Rd.	9.48	Congregational Land Overlay	55
9	S2-013	4861 Liverpool St.	6.2	Congregational Land Overlay	40
10	S3-024	Friends Church Overflow Parking	17.45	Congregational Land Overlay	48
11	S3-210	18111 Bastanchury Rd.	9.23	Congregational Land Overlay	105
Mixed Use Overlay (MUO) Sites (up to 35 units/acre):					
12	S1-021	W. of 16951 Imperial Highway	1.76	Commercial Mixed Use Overlay	62
RM-20 Sites (up to 20 units/acre):					
13	S4-200	18597-18602 Altrudy Ln.	2.0	RM-20	40
14	S4-204B	19081-19111 Yorba Linda Bl.	3.9	RM-20	78
RM Sites (up to 10 units/acre):					
15	S3-207	5300-5392 Richfield Rd.	8.83	RM-10	88
16	S3-211	17651 Imperial Highway	2.32	RM	23
Planned Development (PD) Sites:					
17	S3-203	18101-18251 Bastanchury Rd.	19.58	PD	98
18	S5-008	Fairmont Bl.	9.0	PD	30
TOTAL			139.89	TOTAL	1,929

1.3 PROPOSED SITE ACCESS AND CIRCULATION RECOMMENDATIONS

Given the number of Housing Element Sites and lack of detailed site plans available, a detailed review of site access was not evaluated as part of this analysis. However, it is anticipated that implementing projects on each of the Housing Element Sites will necessitate focused traffic analyses which meet the City’s standards to provide a review of potential intersection operational deficiencies in conjunction with a detailed review of site access.

1.4 ANALYSIS SCENARIOS

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

- Existing (2024) Conditions
- Horizon Year (2045) Without Project Conditions
- Horizon Year (2045) With Project Conditions

All study area intersections will be evaluated using either ICU or HCM methodologies, depending on the types of intersections and their jurisdiction (for a detailed discussion, see Section 3.2 *Intersection Capacity Analysis*).

1.4.1 EXISTING (2024) CONDITIONS

Information for Existing (2024) conditions is disclosed to represent the baseline traffic conditions as they existed at the time this report was prepared. For a detailed discussion on the existing traffic counts, see Section 4.5 *Existing (2024) Traffic Counts*.

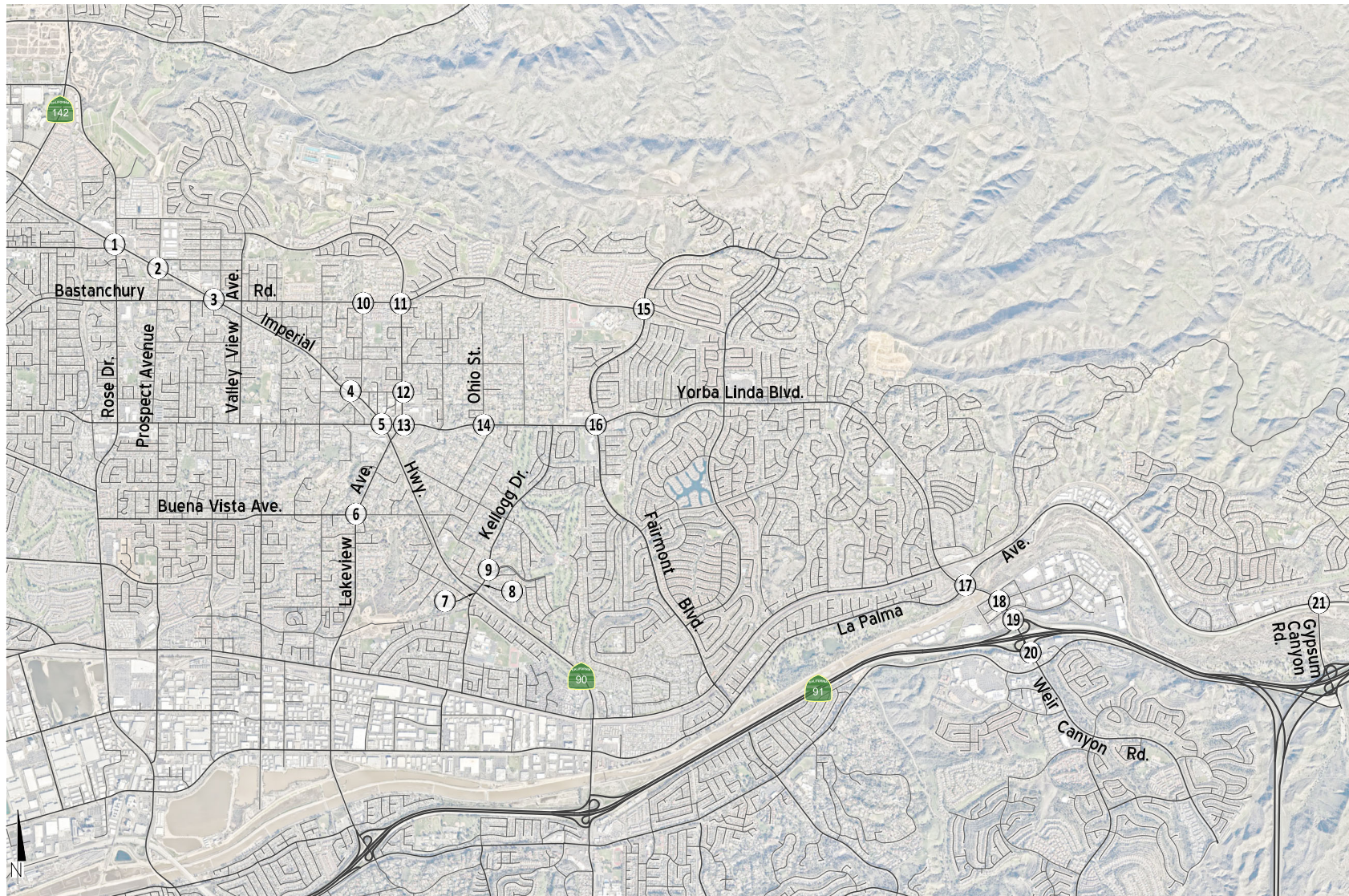
1.4.2 HORIZON YEAR (2045) CONDITIONS

Traffic projections for Horizon Year (2045) conditions were derived from the Orange County Transportation Analysis Model (OCTAM) using accepted procedures for model forecast refinement and smoothing. The Horizon Year conditions analysis will be utilized to determine if improvements funded through regional transportation mitigation fee programs can accommodate the long-range cumulative traffic at the target LOS identified in the City of Yorba Linda (lead agency) General Plan. Each of the applicable transportation fee programs are discussed in more detail in Section 6 *Local and Regional Funding Mechanisms*.

1.5 STUDY AREA

To ensure that this TA satisfies the City of Yorba Linda's traffic study requirements, a Project Traffic Study Scoping Agreement was approved by City of Yorba Linda staff prior to the preparation of this report. This Agreement provides an outline of the Project study area and analysis methodology. The City-approved Project Traffic Study Scoping Agreement is included in Appendix 1.1 of this TA. The 21 study area intersections shown in Exhibit 1-3 and listed in Table 1-3 were selected for evaluation in this TA based on consultation with City of Yorba Linda staff.

EXHIBIT 1-3 : STUDY AREA



LEGEND

① = Existing Intersection Analysis Location

TABLE 1-3: INTERSECTION ANALYSIS LOCATIONS

#	Intersections	Jurisdiction
1	Rose Dr. & Imperial Highway	Placentia/Caltrans
2	Prospect Av. & Imperial Highway	Yorba Linda
3	Imperial Highway & Bastanchury Rd.	Yorba Linda
4	Imperial Highway & Lemon Dr.	Yorba Linda
5	Imperial Highway & Yorba Linda Bl.	Yorba Linda
6	Lakeview Av. & Buena Vista Av.	Yorba Linda
7	Imperial Highway SB Ramps & Kellogg Dr.	Anaheim/Caltrans
8	Imperial Highway NB Ramps & Kellogg Dr.	Anaheim/Yorba Linda/Caltrans
9	Grandview Av. & Kellogg Dr.	Yorba Linda
10	Plumosa Dr. & Bastanchury Rd.	Yorba Linda
11	Lakeview Av. & Bastanchury Rd.	Yorba Linda
12	Lakeview Av. & Lemon Dr.	Yorba Linda
13	Lakeview Av. & Yorba Linda Bl.	Yorba Linda
14	Ohio St. & Yorba Linda Bl.	Yorba Linda
15	Fairmont Bl. & Bastanchury Rd.	Yorba Linda
16	Fairmont Bl. & Yorba Linda Bl.	Yorba Linda
17	Yorba Linda Bl. & La Palma Av.	Anaheim
18	Yorba Linda Bl. & Savi Ranch Pkwy.	Yorba Linda/Anaheim
19	Weir Canyon Rd. & SR-91 WB Ramps	Yorba Linda/Anaheim/Caltrans
20	Weir Canyon Rd. & SR-91 EB Ramps	Anaheim/Caltrans
21	Gypsum Canyon Rd. & La Palma Av.	Yorba Linda

1.6 DEFICIENCIES

This section provides a summary of deficiencies by analysis scenario. Section 3 *Methodologies* provides information on the methodologies used in the analysis and Section 5 *Horizon Year (2045) Traffic Conditions* includes the detailed analysis. A summary of LOS results for all analysis scenarios is presented in Table 1-4.

1.6.1 EXISTING (2024) CONDITIONS

The following study area intersections are currently operating at an unacceptable LOS during the weekday AM and PM peak hours under Existing traffic conditions:

- Lakeview Avenue & Buena Vista Avenue (#6) – LOS F AM and PM peak hours
- Kellogg Drive & Imperial Highway SB Ramps (#7) – LOS F AM peak hour; LOS E PM peak hour

1.6.2 HORIZON YEAR (2045) CONDITIONS

The following study area intersections are anticipated to operate at an unacceptable LOS under Horizon Year (2045) Without Project traffic conditions:

- Lakeview Avenue & Buena Vista Avenue (#6) – LOS F AM and PM peak hours
- Kellogg Drive & Imperial Highway SB Ramps (#7) – LOS F AM and PM peak hours
- Yorba Linda Boulevard & La Palma Avenue (#17) – LOS E PM peak hour only

There are no additional study area intersections anticipated to operate at an unacceptable LOS with the addition of Project traffic in addition to those listed above for Horizon Year (2045) Without Project traffic conditions. It should be noted that the addition of Project traffic is anticipated to fall below the applicable deficiency threshold at the intersection of Yorba Linda Boulevard & La Palma Avenue.

TABLE 1-4: SUMMARY OF LOS

	Existing (2024)		2045 Without Project		2045 With Project	
	AM	PM	AM	PM	AM	PM
1 Rose Dr. & Imperial Hwy.	●	●	●	●	●	●
2 Prospect Av. & Imperial Hwy.	●	●	●	●	●	●
3 Imperial Hwy. & Bastanchury Rd.	●	●	●	●	●	●
4 Imperial Hwy. & Lemon Dr.	●	●	●	●	●	●
5 Imperial Hwy. & Yorba Linda Bl.	●	●	●	●	●	●
6 Lakeview Av. & Buena Vista Av.	●	●	●	●	●	●
7 Imperial Hwy. SB Ramps & Kellogg Dr.	●	●	●	●	●	●
8 Imperial Hwy. NB Ramps & Kellogg Dr.	●	●	●	●	●	●
9 Grandview Av. & Kellogg Dr.	●	●	●	●	●	●
10 Plumosa Dr & Bastanchury Rd.	●	●	●	●	●	●
11 Lakeview Av. & Bastanchury Rd.	●	●	●	●	●	●
12 Lakeview Av. & Lemon Dr.	●	●	●	●	●	●
13 Lakeview Av. & Yorba Linda Bl.	●	●	●	●	●	●
14 Ohio St. & Yorba Linda Bl.	●	●	●	●	●	●
15 Fairmont Bl. & Bastanchury Rd.	●	●	●	●	●	●
16 Fairmont Bl. & Yorba Linda Bl.	●	●	●	●	●	●
17 Yorba Linda Bl. & La Palma Bl.	●	●	●	●	●	●
18 Yorba Linda Bl. & Savi Ranch Pkwy.	●	●	●	●	●	●
19 Weir Canyon Rd. & SR-91 WB Ramps	●	●	●	●	●	●
20 Weir Canyon Rd. & SR-91 EB Ramps	●	●	●	●	●	●
21 Gypsum Canyon Rd. & La Palma Av.	●	●	●	●	●	●

LEGEND:

- = A–D
- = E
- = F

1.7 RECOMMENDATIONS

The improvements needed to address the cumulative deficiencies identified under Horizon Year (2045) With Project traffic conditions are summarized in Table 1-5. For those improvements listed in Table 1-5 not constructed as part of the Project, the Project's contributions towards deficient intersections are fulfilled through payment of fair share and/or fees for the applicable pre-existing fee programs (see Section 6 *Local and Regional Funding Mechanisms*). Although Table 1-5 provides the Project's fair share percentage towards each mitigation measure, the cost and scope of the improvements will be developed in conjunction with the Traffic Impact Fee (TIF) Update. If an improvement shown in Table 1-5 is added to the TIF, the fair share contribution may not be applicable. The fair share percentages shown in Table 1-5 are subject to change based on the future development intensity of each Housing Element site and also any changes to the future update of the City's TIF.

TABLE 1-5: SUMMARY OF IMPROVEMENTS

Intersection #	Location	Jurisdiction	Horizon Year (2045) With Project	Project Responsibility ¹	Fair Share % ²
5	Imperial Highway & Yorba Linda Bl.	Yorba Linda	- Add 2nd EB left turn lane - Add 2nd WB left turn lane - Add EB right turn lane	Fair Share Fair Share Fair Share	0.0%
6	Lakeview Av. & Buena Vista Av.	Yorba Linda	- Install a traffic signal and necessary street improvements	Fair Share	2.4%
7	Imperial Highway SB Ramps & Kellogg Dr.	Anaheim/ Caltrans	- Install a traffic signal and necessary street improvements	Fair Share	2.9%
17	Yorba Linda Bl. & La Palma Av.	Anaheim	- Add 2nd NB right turn lane	Fair Share	2.1%
18	Yorba Linda Bl. & Savi Ranch Pkwy.	Yorba Linda/ Anaheim	- Add 2nd SB left turn lane - Add NB shared through-right turn lane - Change the NB free right turn lane to regular right turn lane - Add 3rd WB left turn lane	Fair Share Fair Share Fair Share Fair Share	3.0%

¹ Identifies the Project's responsibility to construct an improvement or contribute fair share towards the implementation of the improvements shown.

² Program improvements constructed by project may be eligible for fee credit, at discretion of the City. See Table 6-2 for Fair Share Calculations.

2 INTRODUCTION

2.1 PROJECT OBJECTIVES

The Yorba Linda 2021 – 2029 Housing Element has been prepared by the City in compliance with the update cycle of jurisdictions within the Southern California Association of Governments (SCAG) region to address the legal mandate that requires each local government to adequately plan to meet the existing and projected housing needs of all economic segments of the local community. The overarching goals of the Yorba Linda 2021-2029 Housing Element includes:

1. Goal 1 (Conserve and Improve Existing Housing): Maintain and enhance the quality and affordability of existing housing and residential neighborhoods. This Goal includes policies that focus on housing design principals, property and housing conditions, multifamily housing acquisition and improvement, rental assistance, protection of existing affordable housing, and tenant protections.
2. Goal 2 (Provision of Affordable Housing): Assist in development and provision of affordable housing. The policies under this goal focus on housing diversity, affordable housing incentives, financial resources, public/private partnerships, homeownership assistance, housing sustainability, and affordable housing education and support.
3. Goal 3 (Adequate Housing Sites): Provide adequate housing sites to accommodate regional housing needs and achieve a variety and diversity of housing. This Goal includes policies that focus on offering a variety of housing choices, mixed use, repurposing obsolete commercial, affordable housing overlay, housing on land owned by religious institutions, town center, accessory dwelling units, and future annexations.
4. Goal 4 (Remove Governmental Constraints): Reduce governmental constraints to housing production and improvement while maintaining community character. The policies under this goal focus on providing flexible development standards, objective standards, regulatory incentives for affordable housing, and efficient development processing.
5. Goal 5 (Equal Housing Opportunities and Special Needs): Promote equal housing opportunities for all residential, including Yorba Linda's special needs populations. This Goal includes policies that focus on fair housing, housing for persons with disabilities, housing for persons with development disabilities, housing options for seniors, and homeless housing and services.

This TA analyzes and identifies potential traffic-related deficiencies resulting from the rezoning and revised General Plan land use development assumptions necessary to address the City of Yorba Linda's RHNA allocation. The TA will be used to support the proposed Addendum to the 2022 Housing Element PEIR. The Housing Element proposes a rezoning program of 18 vacant or underutilized sites for multi-family residential use at densities of 10 to 60 units per acre. The Yorba Linda 2021–2029 Housing Element will revise the General Plan land use and development intensities for the identified sites to accommodate approximately 1,747 additional dwelling units for a total of 1,929 dwelling units (including the existing zoning), which is an overall reduction of 481 units from the certified 2022 Housing Element PEIR.

The Without Project scenario represents the currently adopted land use intensities based on the City of Yorba Linda's 2016 General Plan Update (last comprehensive update in 2016 and reflected in the Orange County Transportation Analysis Model). The With Project scenario reflects the buildout of the proposed Final Housing Element (i.e., rezoning of the 18 vacant or underutilized sites to multifamily residential use). The changes to the Housing Element Sites, as proposed for the current Addendum, are previously listed in Table 1-1 and shown at Exhibit 1-1. The currently proposed Housing Element Sites are previously summarized in Table 1-2 and shown at Exhibit 1-2.

2.2 ANALYSIS OVERVIEW

The study area for this TA is comprised of the roadways and intersections in the immediate Project area and includes those locations that could potentially be affected by Project traffic (e.g., located in close proximity to one or more of the rezone sites). The specific intersections identified for analysis include all facilities where peak hour intersection volume-to-capacity (v/c) ratios could increase by more than one percent as a result of the Project. This is the deficiency threshold designated by the City of Yorba Linda for use in traffic studies.

The TA evaluates existing and long-range traffic conditions for the following scenarios:

- Existing (2024) Conditions – Existing volumes obtained from recent traffic counts (2024) and existing traffic controls and lane configurations
- Horizon Year (2045) Without Project – Traffic volumes and transportation system representing the area-wide growth anticipated between 2016 and 2045 based on currently adopted City of Yorba Linda General Plan land use assumptions plus reasonably foreseeable development projects as provided by the City of Yorba Linda. This analysis scenario also accounts for other cumulative development projects within the City and surrounding areas.
- Horizon Year (2045) With Project – 2045 conditions with the Final Housing Element land use assumptions.

3 METHODOLOGIES

This section of the report presents the methodologies used to perform the traffic analyses summarized in this report. The methodologies described are consistent with City of Yorba Linda's Traffic Study Guidelines.

3.1 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 a 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.

3.2 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. LOS analysis was conducted to determine existing traffic conditions using the ICU methodology for signalized study intersections. (1) The HCM (7th Edition) methodology was used to determine LOS for unsignalized intersections and any California Department of Transportation (Caltrans) facility. The HCM methodology expresses the LOS at an intersection in terms of average control delay time for the various intersection approaches. (2) The HCM uses different procedures depending on the type of intersection control.

3.2.1 SIGNALIZED INTERSECTIONS

The City of Yorba Linda requires study area intersections to be evaluated through ICU analysis which compares forecasts peak hour traffic volumes to intersection capacity (V/C). The traffic modeling software package Traffix (Version 8) has been utilized to analyze signalized intersections in ICU. Lane capacities of 1,700 vehicles per hour of green time have been assumed for the ICU calculations, with 0.10 lost time factor (clearance) and inherent vehicle delay between cycles with an assumed signal cycle of 100 seconds. The City of Placentia and City of Anaheim ICU analysis is consistent with the City of Yorba Linda analysis as are the thresholds; therefore, the same assumptions were applied for intersections in all jurisdictions. Table 3-1 presents the ICU level of service thresholds utilized for this TA. A project is deemed to have an adverse effect on an intersection if the project results in deterioration of the LOS to an unacceptable LOS or an increase in the ICU value of 0.01 if the intersection currently operates at LOS E or F under without project conditions.

TABLE 3-1: SIGNALIZED INTERSECTION LOS THRESHOLDS WITH ICU

Level of Services	ICU
A	<0.60
B	0.61 - 0.70
C	0.71 - 0.80
D	0.81 - 0.90
E	0.91 - 1.00
F	> 1.00

Source: City of Yorba Linda, City of Placentia and City of Anaheim

Analysis of Caltrans-operated facilities (i.e., Kellogg Drive at Imperial Highway and Yorba Linda Boulevard/Weir Canyon Road at the SR-91 Freeway) was conducted in Synchro (Version 12) through the application of the Highway Capacity Manual (HCM) 7th Edition methodology for signalized intersections. Lane configurations and various other parameters such as signal timing was based on current operating characteristics as obtained from field review and signal timing worksheets provided by Caltrans District 12 staff. Future lane configurations were assumed to be the same as existing conditions for the 2045 No Project and 2045 With Project scenarios. Table 3-2 presents the signalized intersection delay and LOS standards throughout the study area.

Synchro is a macroscopic traffic software program that is based on the signalized intersection capacity analysis as specified in the HCM. Macroscopic level models represent traffic in terms of aggregate measures for each movement at the study intersections. Equations are used to determine measures of effectiveness such as delay and queue length. The level of service and capacity analysis performed by Synchro takes into consideration optimization and coordination of signalized intersections within a network.

The peak hour traffic volumes have been adjusted using a peak hour factor (PHF) to reflect peak 15-minute volumes. Customary practice for LOS analysis is to use a peak 15-minute rate of flow. However, flow rates are typically expressed in vehicles per hour. The PHF is the relationship between the peak 15-minute flow rate and the full hourly volume (e.g., $PHF = \frac{Hourly\ Volume}{4 \times Peak\ 15\ minute\ Flow\ Rate}$). The use of a 15-minute PHF produces a more detailed analysis as compared to analyzing vehicles per hour. Existing PHFs have been used for all analysis scenarios. Per the HCM, PHF values over 0.95 often are indicative of high traffic volumes with capacity constraints on peak hour flows while lower PHF values are indicative of greater variability of flow during the peak hour. (2)

3.2.2 UNSIGNALIZED INTERSECTIONS

The City of Yorba Linda requires the operations of unsignalized intersections to be evaluated using the methodology described in the HCM. (2) The LOS rating is based on the weighted average control delay expressed in seconds per vehicle (see Table 3-3). 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. Delay for the intersection is reported for the worst individual movement at a two-way stop-controlled intersection. For all-way stop controlled intersections, LOS is computed for the intersection as a whole (average delay).

TABLE 3-2: SIGNALIZED INTERSECTION LOS THRESHOLDS WITH HCM

Description	Average Control Delay (Seconds), V/C ≤ 1.0	Level of Service, V/C ≤ 1.0 ¹
Operations with very low delay occurring with favorable progression and/or short cycle length.	0 to 10.00	A
Operations with low delay occurring with good progression and/or short cycle lengths.	10.01 to 20.00	B
Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.01 to 35.00	C
Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35.01 to 55.00	D
Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.01 to 80.00	E
Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	80.01 and up	F

Source: HCM, 7th Edition

¹ if V/C is greater than 1.0 then LOS is F per HCM

TABLE 3-3: UNSIGNALIZED INTERSECTION LOS THRESHOLDS

Description	Average Control Delay (Seconds), V/C ≤ 1.0	Level of Service, V/C ≤ 1.0 ¹
Little or no delays.	0 to 10.00	A
Short traffic delays.	10.01 to 15.00	B
Average traffic delays.	15.01 to 25.00	C
Long traffic delays.	25.01 to 35.00	D
Very long traffic delays.	35.01 to 50.00	E
Extreme traffic delays with intersections capacity exceeded.	>50.00	F

Source: HCM, 7th Edition

¹ if V/C is greater than 1.0 then LOS is F per HCM

3.3 TRAFFIC SIGNAL WARRANT ANALYSIS METHODOLOGY

The term “signal warrants” refers to the list of established criteria used by Caltrans and other public agencies to quantitatively justify or determine the potential need for installation of a traffic signal at an otherwise unsignalized intersection. This TA uses the signal warrant criteria presented in the latest edition of the Caltrans [California Manual on Uniform Traffic Control Devices \(CA MUTCD\)](#). (3)

The signal warrant criteria for Existing study area intersections are based upon several factors, including volume of vehicular and pedestrian traffic, frequency of accidents, and location of school areas. The CA MUTCD indicates that the installation of a traffic signal should be considered if one or more of the signal warrants are met. (3) Specifically, this TA utilizes the Peak Hour Volume-based Warrant 3 as the appropriate representative traffic signal warrant analysis for existing traffic conditions and for all future analysis scenarios for existing unsignalized intersections. Warrant 3 is appropriate to use for this TA because it provides specialized warrant criteria for intersections with rural characteristics. 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. Rural warrants have been used where posted speed limits on the major roadways with unsignalized intersections are 40 miles per hour or greater while the urban warrants have been used for locations where the major roadway has speeds less than 40 miles per hour.

Future intersections that do not currently exist 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. Similarly, the speed limit has been used as the basis for determining the use of Urban and Rural warrants. Traffic signal warrant analyses were performed for the following study area intersections shown in Table 3-4.

TABLE 3-4: TRAFFIC SIGNAL WARRANT ANALYSIS LOCATIONS

#	Intersection Location	Jurisdiction
6	Lakeview Av. & Buena Vista Av.	Yorba Linda
7	Kellogg Dr. & Imperial Highway SB Ramps	Anaheim/Caltrans

The Existing conditions traffic signal warrant analysis is presented in the subsequent section, Section 4 *Area Conditions* of this report. The traffic signal warrant analyses for future conditions are presented in Section 5 *Horizon Year (2045) Traffic Conditions* 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 LOS. An intersection may satisfy a signal warrant condition and operate at or above acceptable LOS or operate below acceptable LOS and not meet a signal warrant.

3.4 MINIMUM ACCEPTABLE LEVELS OF SERVICE (LOS)

Minimum Acceptable LOS and associated definitions of intersection deficiencies have been obtained from each of the applicable surrounding jurisdictions.

3.4.1 CITY OF YORBA LINDA, CITY OF ANAHEIM & CITY OF PLACENTIA

According to the City of Yorba Linda, City of Anaheim, and City of Placentia's Traffic Impact Analysis Guidelines, LOS D is the minimum acceptable condition that should be maintained during the peak commute hours. (4)

3.4.2 CALTRANS

Senate Bill 743 (SB 743), approved in 2013, endeavors to change the way transportation impacts will be determined according to the California Environmental Quality Act (CEQA). The Office of Planning and Research (OPR) has recommended the use of vehicle miles traveled (VMT) as the replacement for automobile delay-based LOS. Caltrans acknowledges automobile delay will no longer be considered a CEQA impact for development projects and will use VMT as the metric for determining impacts on the State Highway System (SHS). However, LOS D has been utilized as the target LOS for Caltrans facilities, consistent with the City of Yorba Linda.

3.5 DEFICIENCY CRITERIA

This section outlines the methodology used in this analysis related to identifying circulation system deficiencies.

3.5.1 CITY OF YORBA LINDA

Per the City of Yorba Linda’s TIA Guidelines: a) a deficient intersection is defined where the intersection Without Project is at an acceptable LOS and With Project falls below an acceptable LOS, or b) intersection threshold with at LOS E or F with 1% increase V/C ratio With Project traffic condition as compared to Without Project traffic condition. (4) In all cases, the feasibility of the proposed improvements must be demonstrated, and the availability of right-of-way must be verified. The TA will also calculate the Project’s fair share towards each mitigation measure. However, the cost and scope of the improvements will be developed in conjunction with the TIF Update.

3.5.2 CITY OF ANAHEIM

Per the City of Anaheim’s TIA Guidelines, a transportation impact on an intersection shall be deemed significant in accordance with the following Table 3-5 (per the City’s Guidelines):

TABLE 3-5: CITY OF ANAHEIM DEFICIENCY CRITERIA

LOS	Final v/c Ratio	Project-Related Increase in v/c
C	> 0.701-0.800	≥ 0.050
D	> 0.801-0.900	≥ 0.030
E, F	> 0.901	≥ 0.010

The Final v/c Ratio shall mean the future V/C ratio at an intersection considering impacts with Project, ambient Growth, and Related Projects but without any proposed mitigation.

3.5.3 CITY OF PLACENTIA

Per the City of Placentia’s TIA guidelines, an effect on transportation occurs if the project causes the study intersection operating at LOS D or better to degrade to LOS E or F. If an intersection is operating at an unacceptable LOS E or F for conditions without the project, the project will contribute their fair share of an improvement to bring back the intersection an acceptable LOS.

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4 AREA CONDITIONS

This section provides a summary of the existing circulation network, the City of Yorba Linda General Plan Circulation Network, and a review of existing peak hour intersection operations and traffic signal warrant analyses.

4.1 EXISTING CIRCULATION NETWORK

Pursuant to the agreement with City of Yorba Linda staff (Appendix 1.1), the study area includes a total of 21 intersections as shown previously in Exhibit 1-3. Exhibit 4-1 illustrates the study area intersections located near the proposed Project and identifies the number of through traffic lanes for existing roadways and intersection traffic controls.

4.2 CITY OF YORBA LINDA GENERAL PLAN CIRCULATION ELEMENT

The roadway classifications and planned (ultimate) roadway cross-sections of the major roadways within the study area, as identified on the City of Yorba Linda General Plan Circulation Element, are described subsequently. Exhibit 4-2 shows the City of Yorba Linda General Plan Circulation Element and Exhibit 4-3 illustrates the City of Yorba Linda General Plan roadway cross-sections.

The study area roadway that is classified as a Smart Street (6-Lane) is identified as having a 100-foot right-of-way and 84-foot curb-to-curb measurement. Smart Street includes three lanes of travel in each direction and a 14-foot curbed and/or landscaped median. The following study area roadway within the City of Yorba Linda is classified as a Smart Street (6-Lane):

- Imperial Highway from the City Limit to Yorba Linda Boulevard

The study area roadway that is classified as a Smart Street (4-Lane) is identified as having a 96-foot right-of-way and 80-foot curb-to-curb measurement. Smart Street include two lanes of travel in each direction and a 12-foot curbed and/or landscaped median. The following study area roadway within the City of Yorba Linda is classified as a Smart Street (4-Lane):

- Imperial Highway from Yorba Linda Boulevard to Kellogg Drive

The study area roadway that is classified as a Modified Major is identified as having a 100-foot right-of-way and 84-foot curb-to-curb measurement. Modified Major includes three lanes of travel in each direction and a 14-foot curbed and/or landscaped median. The following study area roadway within the City of Yorba Linda is classified as a Modified Major:

- Yorba Linda Boulevard from City Limit to Fairmont Boulevard

The study area roadway that is classified as a Primary Arterial is identified as having a 100-foot right-of-way and 84-foot curb-to-curb measurement. Primary Arterial includes two lanes of travel in each direction and a 14-foot curbed and/or landscaped median. The following study area roadways within the City of Yorba Linda are classified as a Primary Arterial:

- Lakeview Avenue from Yorba Linda Boulevard to City Limit
- Fairmont Boulevard
- Yorba Linda Boulevard from Fairmont Boulevard to City Limit

The study area roadway that is classified as a Modified Primary Arterial is identified as having an 80-foot right-of-way and 64-foot curb-to-curb measurement. Modified Primary Arterial includes two lanes of travel in each direction and a 14-foot curbed and/or landscaped median. The following study area roadways within the City of Yorba Linda are classified as a Modified Primary Arterial:

- Bastanchury Road
- Rose Drive
- La Palma Avenue from City Limit to Gypsum Canyon Road
- Savi Ranch Parkway from Yorba Linda Boulevard to Old Canal Road

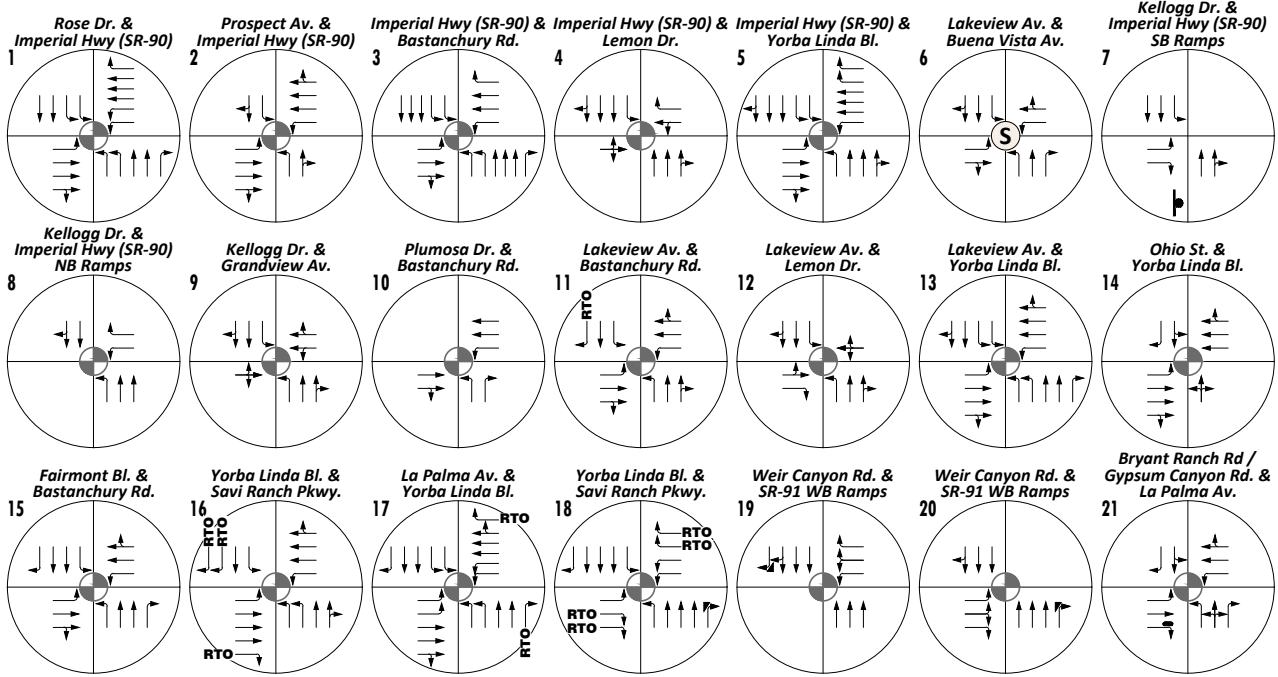
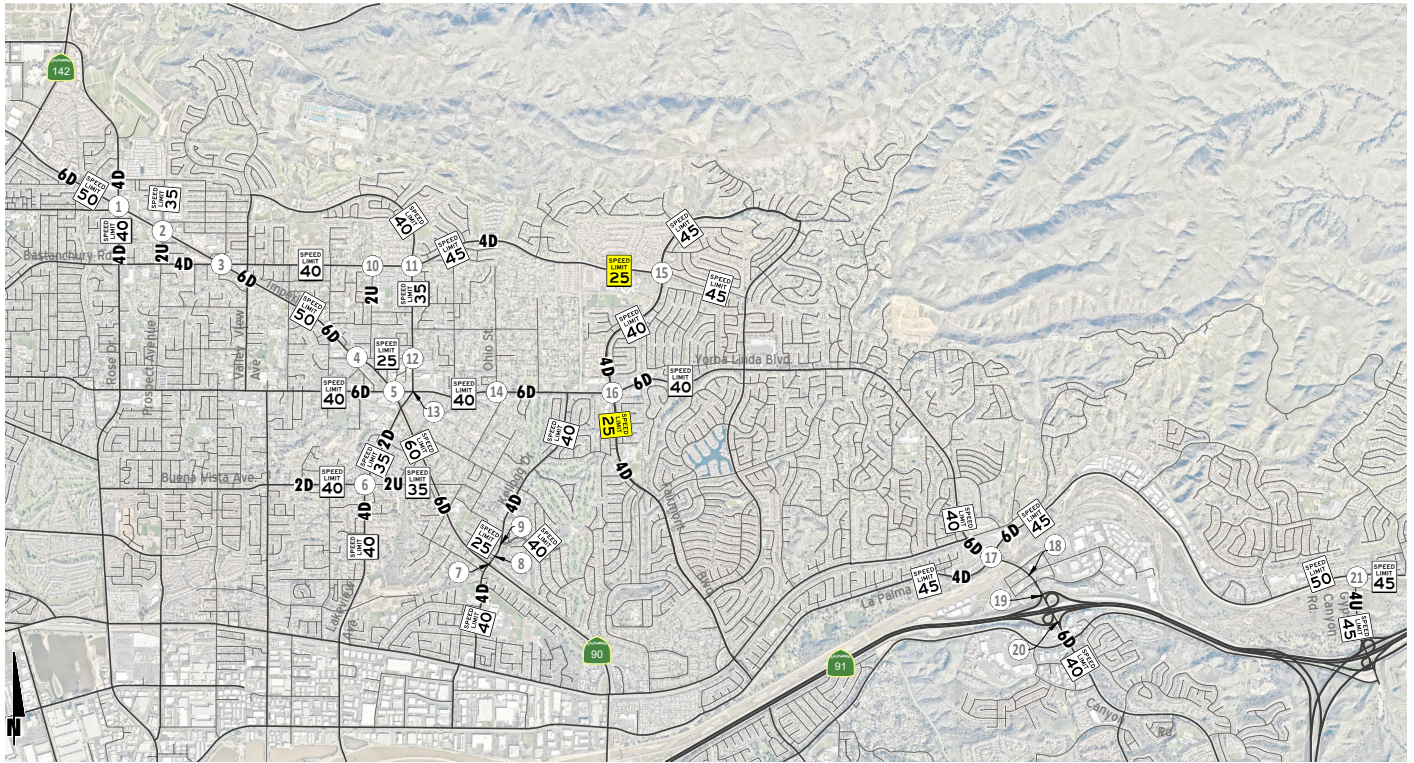
The study area roadway that is classified as a Secondary Arterial is identified as having an 80-foot right-of-way and 64-foot curb-to-curb measurement. Secondary Arterial includes two lanes of travel in each direction. The following study area roadways within the City of Yorba Linda are classified as a Secondary Arterial:

- Buena Vista Avenue
- Lakeview Avenue from north of Bastanchury Road to Yorba Linda Boulevard
- Kellogg Drive
- Gypsum Canyon Road

The study area roadway that is classified as a Collector is identified as having a 60-foot right-of-way and 40-foot curb-to-curb measurement. Collector includes one lane of travel in each direction. The following study area roadway within the City of Yorba Linda is classified as a Collector:

- Prospect Avenue

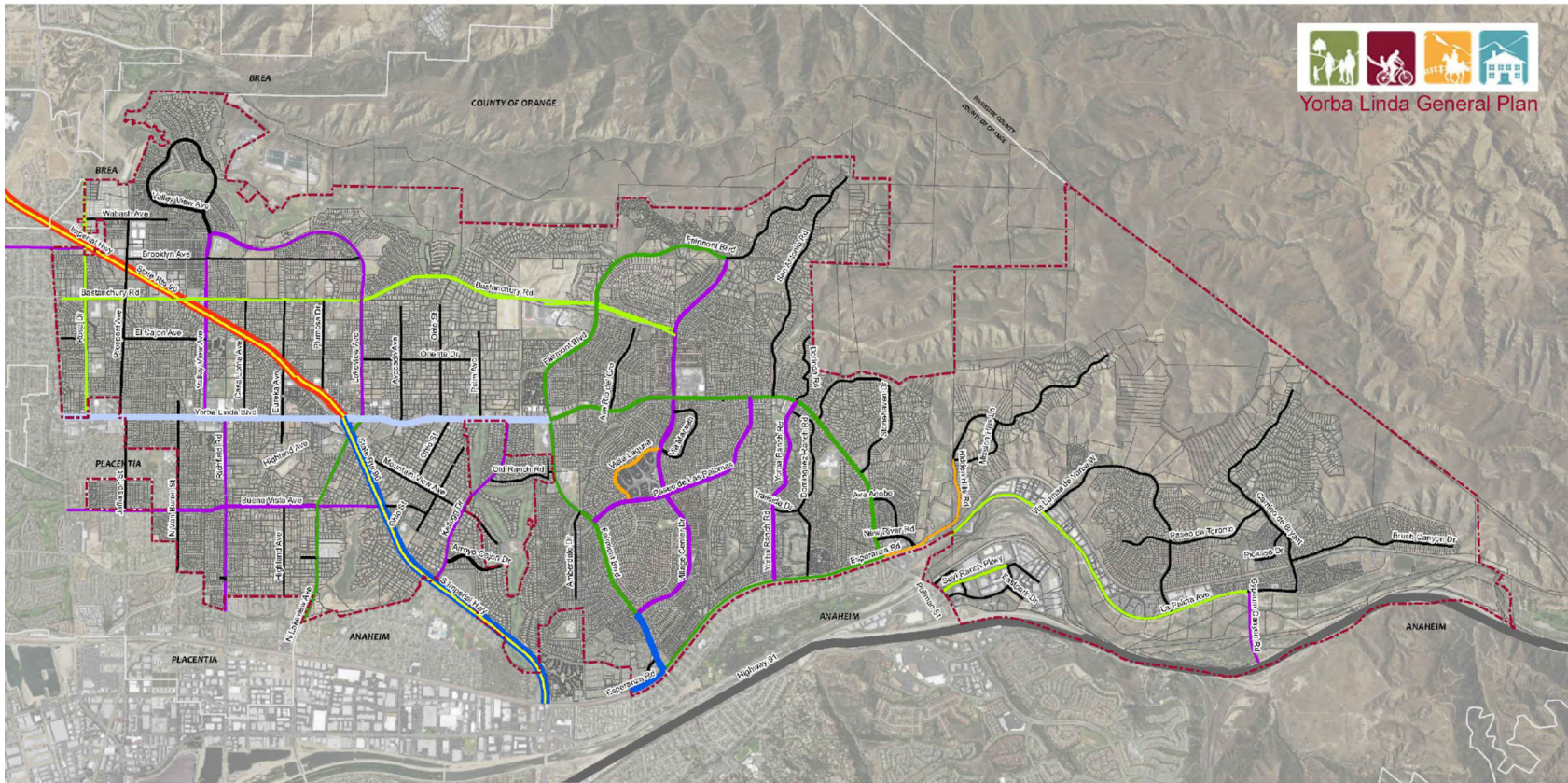
EXHIBIT 4-1 : EXISTING NUMBER OF THROUGH LANES AND INTERSECTION CONTROLS



LEGEND

- ⊙ = Intersection Analysis Location
- ⊙ = Traffic Signal
- ⊙ = All-Way Stop
- ⊙ = Stop Sign
- ↔ = Traffic Lane
- ↔ = Free Right Turn
- ↔ = Channelized Right Turn
- ↔ = Raised Right Turn Median
- RTO = Right Turn Overlap

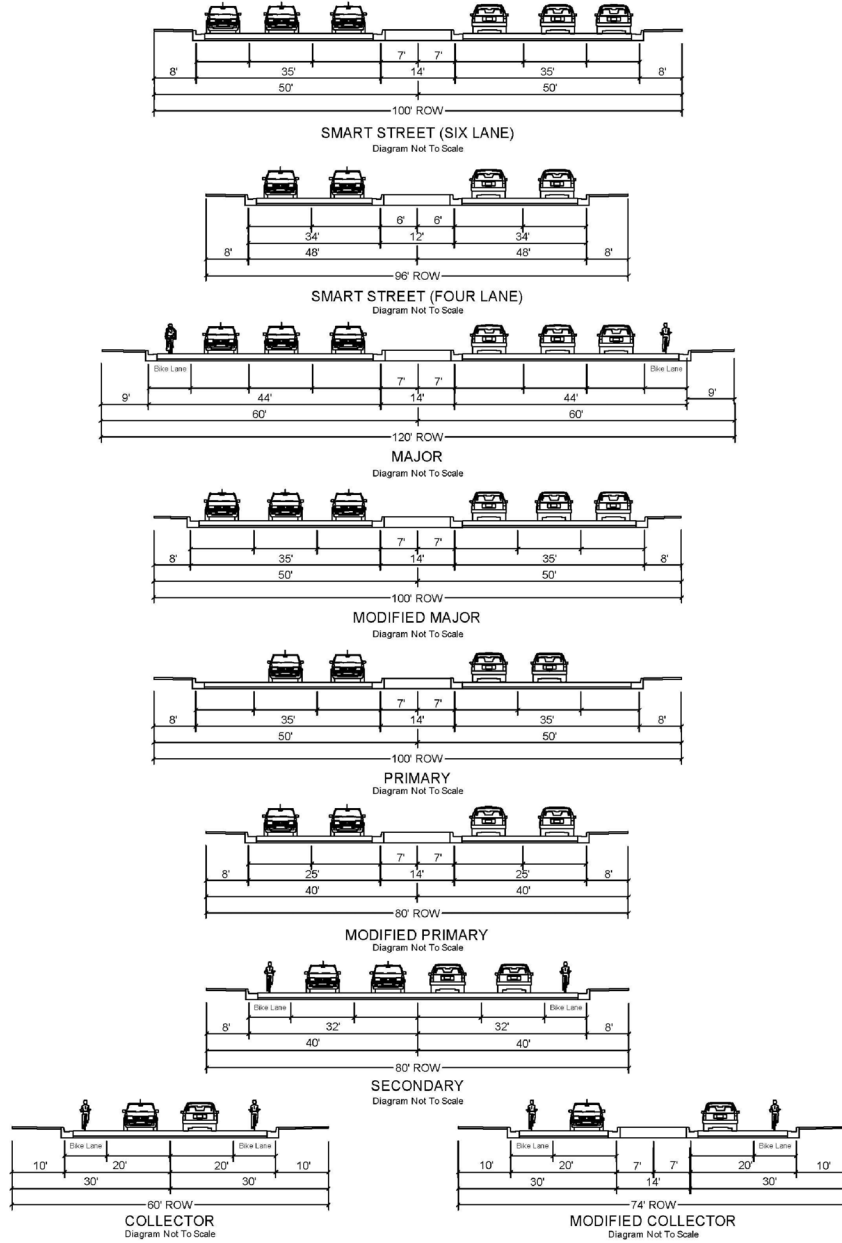
EXHIBIT 4-2 : CITY OF YORBA LINDA GENERAL PLAN CIRCULATION ELEMENT



- City Boundary
- Smart Street 6 Lane
- Smart Street 4 Lane
- Major 6 Lane
- Modified Major 6 Lane
- Primary 4 Lane
- Modified Primary 4 Lane
- Secondary 4 Lane
- Collector 2 Lane
- Modified Collector 2 Lane



EXHIBIT 4-3 : CITY OF YORBA LINDA GENERAL PLAN ROADWAY CROSS-SECTIONS



4.3 BICYCLE, EQUESTRIAN, & PEDESTRIAN FACILITIES

Exhibit 4-4 illustrates the City of Yorba Linda existing and future planned bicycle facilities per the City's Bicycle Plan (2016). Existing pedestrian facilities within the study area are shown in Exhibit 4-5. Field observations and traffic counts conducted in February 2024 indicate light pedestrian and bicycle activity within the study area.

4.4 TRANSIT SERVICE

The study area within the City of Yorba Linda is currently served by Orange County Transportation Authority (OCTA), a public transit agency serving various jurisdictions within Orange County. Based on a review of the existing transit routes within the vicinity of the proposed Project, Route 26 currently runs along Yorba Linda Boulevard, from Rose Drive to Lakeview Avenue; while Route 38 runs along La Palma Avenue from the north side to the south side of SR-91 Freeway. A portion of Route 30 also runs along the City of Yorba Linda and City of Anaheim boundary along Esperanza Road west of Fairmont Boulevard. Transit service is reviewed and updated by OCTA 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. Existing transit routes in the vicinity of the study area are illustrated in Exhibit 4-6.

4.5 EXISTING (2024) TRAFFIC COUNTS

The intersection LOS analysis is based on the traffic volumes observed during the peak hour conditions using traffic count data collected in February 2024. The following peak hours were selected for analysis:

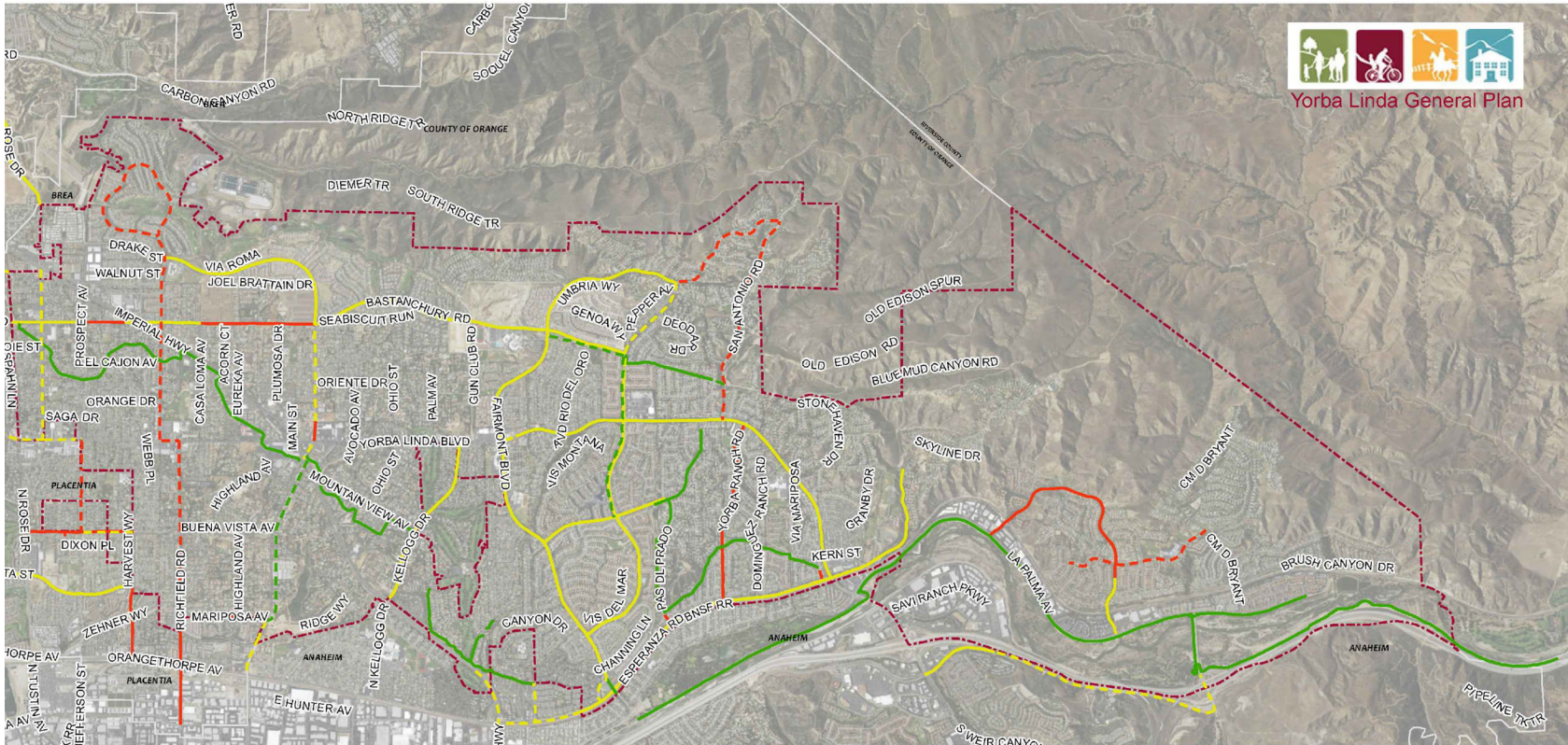
- Weekday AM Peak Hour (peak hour between 7:00 AM and 9:00 AM)
- Weekday PM Peak Hour (peak hour between 4:00 PM and 6:15 PM)

An extended timeframe was captured for the PM peak hour in order to capture the maximum afternoon peak hour traffic levels. The 2024 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 or detour routes and nearby schools were in session and operating on normal schedules. The raw manual peak hour turning movement traffic count data sheets are included in Appendix 4.1.

Existing weekday ADT volumes are shown in Exhibit 4-7. Where actual 24-hour tube count data was not available, Existing ADT volumes were based upon factored intersection peak hour counts collected by Urban Crossroads, Inc. using the following formula for each intersection leg:

$$\text{Weekday PM Peak Hour (Approach Volume + Exit Volume)} \times 10.88 = \text{Leg Volume}$$

EXHIBIT 4-4 : CITY OF YORBA LINDA BICYCLE FACILITIES



Bikeways

- City Boundary
- Class I, Existing - - - Class I, Proposed
- Class II, Existing - - - Class II, Proposed
- Class III, Existing - - - Class III, Proposed



EXHIBIT 4-5 : EXISTING PEDESTRIAN FACILITIES

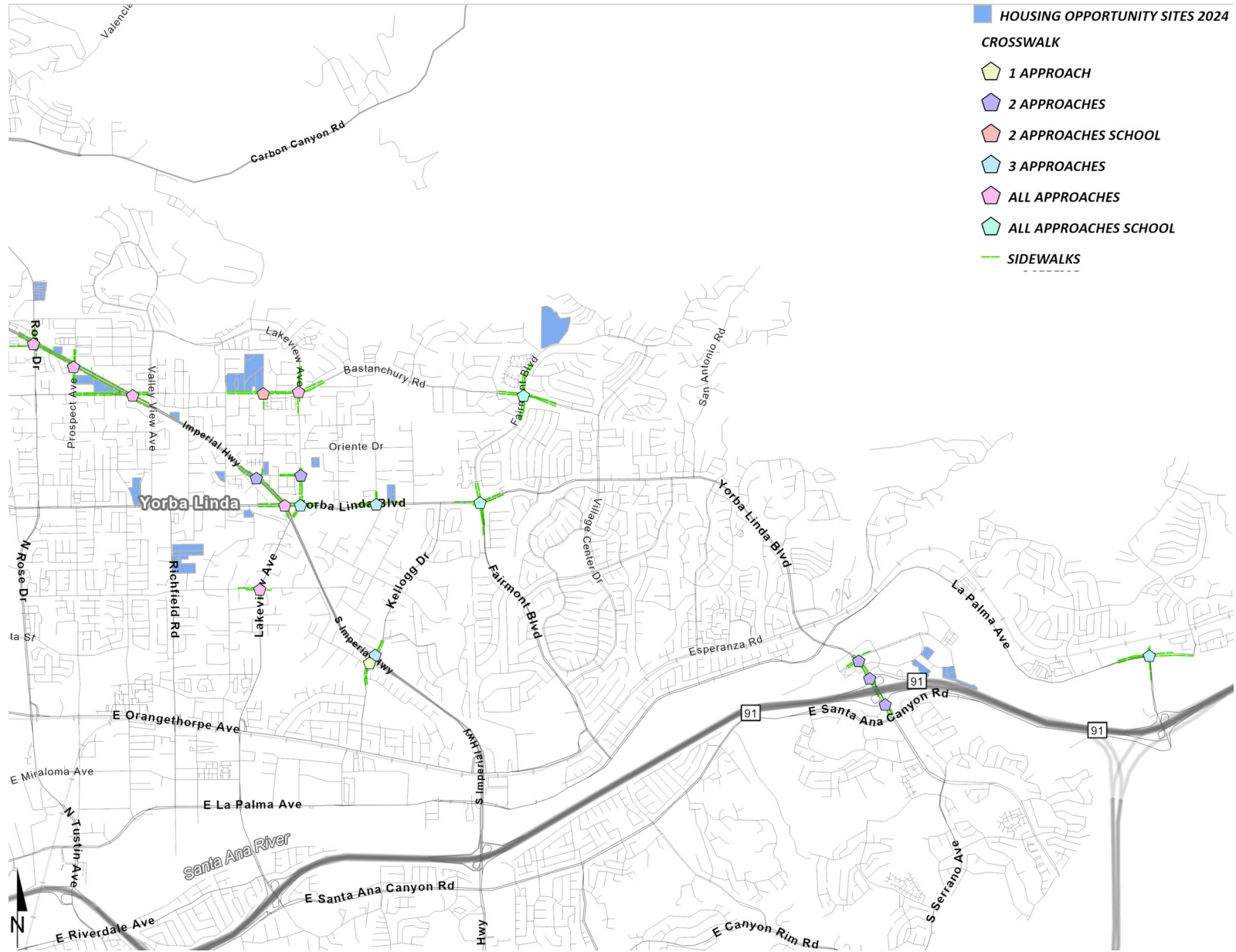


EXHIBIT 4-6 : EXISTING TRANSIT ROUTES

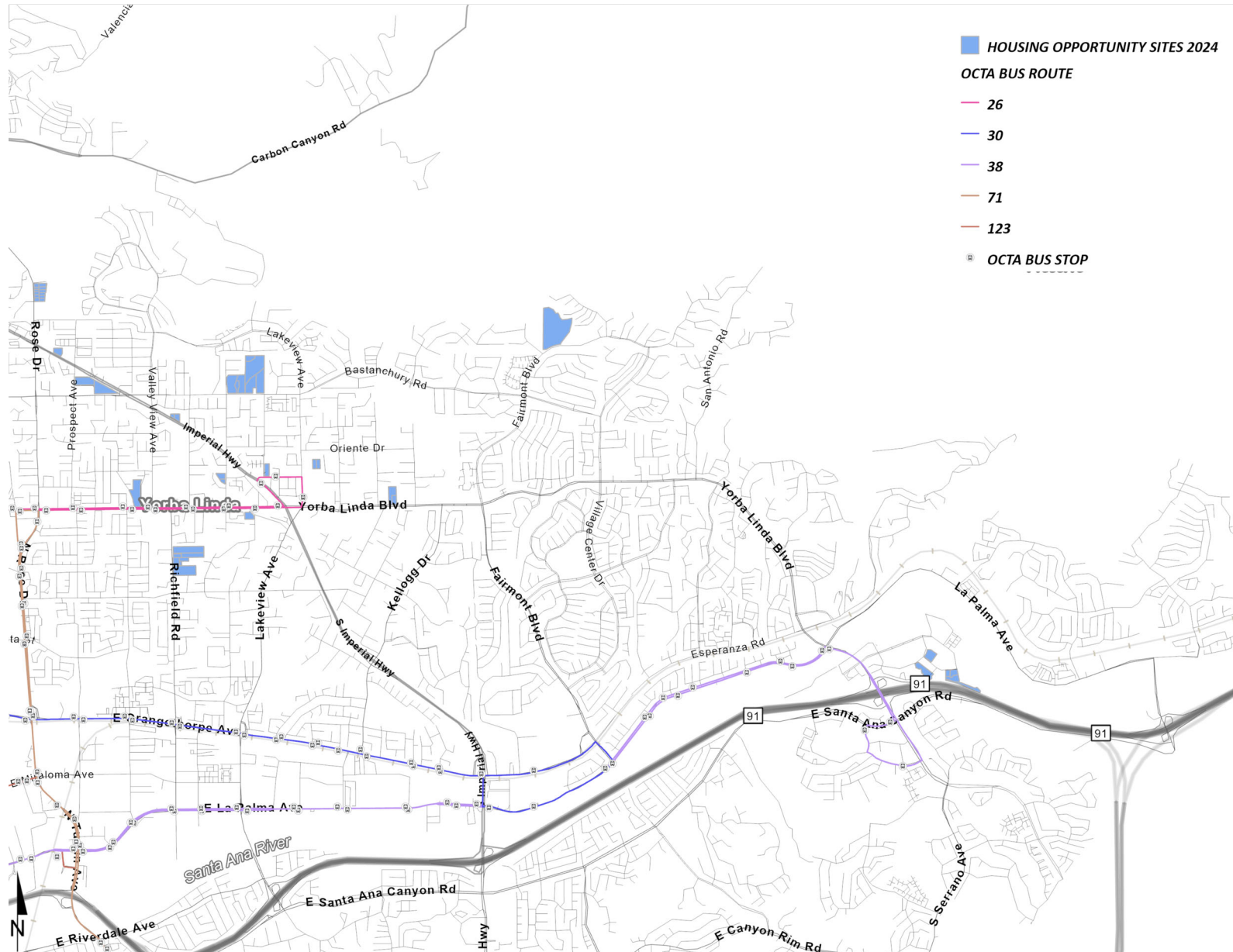
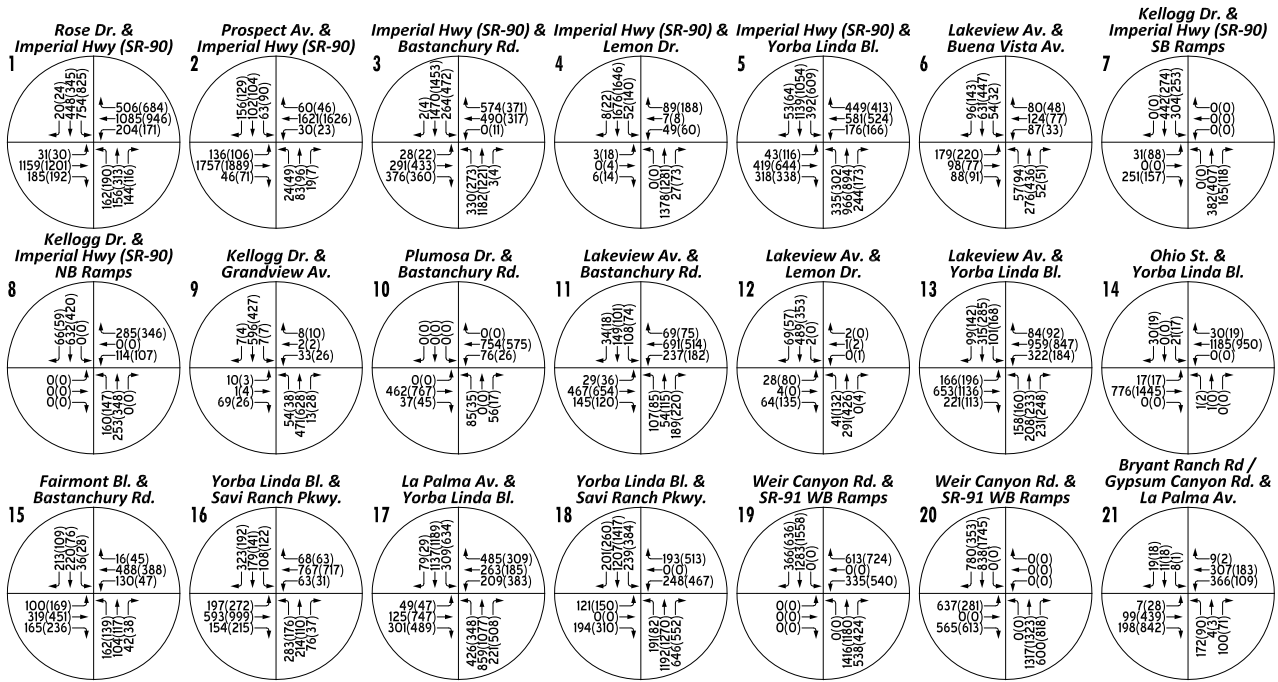
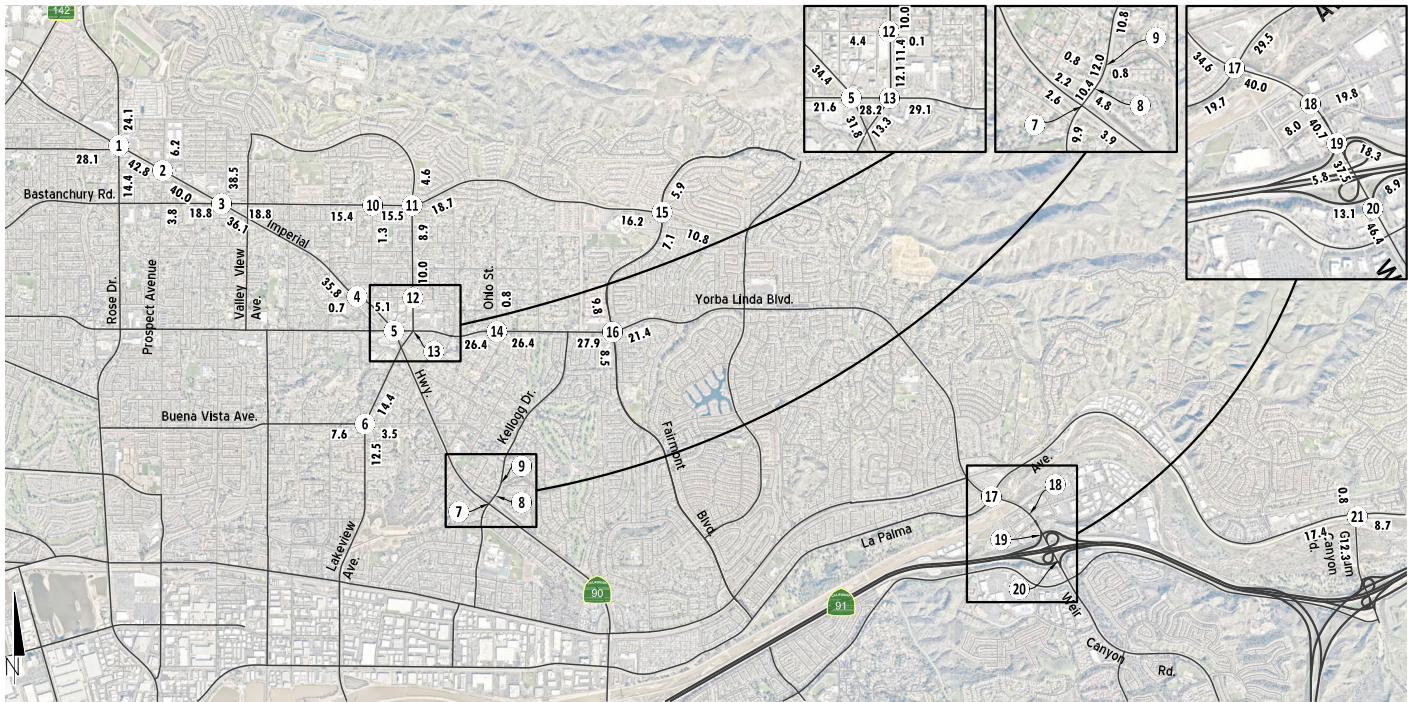


EXHIBIT 4-7 : EXISTING (2024) TRAFFIC VOLUMES



LEGEND

- ① = Existing Intersection Analysis Location
- 00.0 = Average Daily Trips (1000's)
- 00(00) = Peak Hour Intersection Volume AM (PM)

A comparison of the PM peak hour and daily traffic volumes of various roadway segments within the study area indicated that the peak-to-daily relationship is approximately 9.19 percent. As such, the above equation utilizing a factor of 10.88 estimates the ADT volumes on the study area roadway segments assuming a peak-to-daily relationship of 9.19 percent (i.e., $1/0.0919 = 10.88$) and was assumed to sufficiently estimate average daily traffic (ADT) volumes for planning-level analyses. Existing weekday AM and weekday PM peak hour intersection volumes are also shown in Exhibit 4-7.

4.6 INTERSECTION OPERATIONS ANALYSIS

Existing peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 3.2 *Intersection Capacity Analysis* of this report. The intersection operations analysis results are summarized in Table 4-1, which indicates the following existing study area intersections are currently operating at unacceptable LOS during the peak hours:

- Lakeview Avenue & Buena Vista Avenue (#6) – LOS F AM and PM peak hours
- Kellogg Drive & Imperial Highway SB Ramps (#7) – LOS F AM peak hour; LOS E PM peak hours

The intersection operations analysis worksheets are included in Appendix 4.2 of this TA. Although not deficient, the intersection of Yorba Linda Boulevard at La Palma Avenue currently experiences periodic queuing during the afternoon peak commute hours related to congestion along the SR-91 Freeway (Eastbound) in the evenings. The AM peak period did not experience many instances of queuing issues. There were no instances observed where vehicles were unable to get through an intersection (i.e., gridlock); however, there were observations of southbound through vehicles on Yorba Linda Boulevard initially queued that would not make it across La Palma Avenue in a single cycle (e.g., portion of the existing queue would get stuck behind a red light and have to wait for the next cycle of green). Based on these observations, it appears that approximately 85-90% of the existing southbound queue would be served by the first cycle of green.

Afternoon/evening PM peak hour congestion observed in the area is associated with the SR-91 Eastbound Freeway congestion and commuters using local streets to bypass congestion on the freeway. Another intersection affected by the evening peak hour queues is the intersection of Gypsum Canyon Road and La Palma Avenue. Specifically, eastbound right turn movements are heavy in the PM peak hour due to commuters utilizing La Palma Avenue to Gypsum Canyon Road as an alternative route to the SR-91 Freeway (Eastbound). Based on observations, the longest weekday queue occurred between 4:00-4:45 PM, where at times the queue length would be approximately 2,000-2,500 feet west of Gypsum Canyon Road along La Palma Avenue (reaching the intersection of Via Lomas De Yorba E. Although the queue was long during this period, the traffic was never gridlock and would be a continuous, slow-moving queue. After 4:45 PM, the queue would reduce to extend approximately 500-1,500 feet west but was observed sporadically dissipating then queuing again. Towards the end of the peak period counts, there would be no queue and queue lengths along La Palma Avenue would reach 200-400 feet. Note there were no queuing issues observed for any other turning movements during the PM peak hour aside from the eastbound right turn movement at Gypsum Canyon Road and La Palma Avenue.

Peak hour intersection operations reported in Table 4-1 at both locations discussed above are based on a calculation of peak hour volume over available capacity (V/C) for the most impacted turning movements. In other words, there may be specific turning movements that experience

congestion/queuing at each location, but when looking at the overall available capacity at an intersection relative to the overall volumes for the applicable turning movements, it does not result in a deficiency for the intersection as a whole.

TABLE 4-1: INTERSECTION ANALYSIS FOR EXISTING (2024) CONDITIONS

#	Intersection	Traffic Control ³	Existing (2024)							
			Delay ¹ (secs.)		Level of Service		ICU ² (v/c)		Level of Service	
			AM	PM	AM	PM	AM	PM	AM	PM
1	Rose Dr. & Imperial Highway	TS	33.6	37.5	D	D	Not Applicable ⁶			
2	Prospect Av. & Imperial Highway	TS	Not Applicable ⁴				0.675	0.656	B	B
3	Imperial Highway & Bastanchury Rd.	TS	Not Applicable ⁴				0.762	0.718	C	C
4	Imperial Highway & Lemon Dr.	TS	Not Applicable ⁴				0.484	0.569	A	A
5	Imperial Highway & Yorba Linda Bl.	TS	Not Applicable ⁴				0.821	0.790	D	C
6	Lakeview Av. & Buena Vista Av.	AWS	97.6	57.2	F	F	Not Applicable ⁵			
7	Imperial Highway SB Ramps & Kellogg Dr.	CSS	>100.0	47.9	F	E	Not Applicable ⁵			
8	Imperial Highway NB Ramps & Kellogg Dr.	TS	14.0	9.7	B	A	Not Applicable ⁶			
9	Grandview Av. & Kellogg Dr.	TS	Not Applicable ⁴				0.376	0.332	A	A
10	Plumosa Dr. & Bastanchury Rd.	TS	Not Applicable ⁴				0.401	0.375	A	A
11	Lakeview Av. & Bastanchury Rd.	TS	Not Applicable ⁴				0.594	0.608	A	B
12	Lakeview Av. & Lemon Dr.	TS	Not Applicable ⁴				0.328	0.379	A	A
13	Lakeview Av. & Yorba Linda Bl.	TS	Not Applicable ⁴				0.629	0.626	B	B
14	Ohio St. & Yorba Linda Bl.	TS	Not Applicable ⁴				0.366	0.393	A	A
15	Fairmont Bl. & Bastanchury Rd.	TS	Not Applicable ⁴				0.539	0.473	A	A
16	Fairmont Bl. & Yorba Linda Bl.	TS	Not Applicable ⁴				0.568	0.548	A	A
17	Yorba Linda Bl. & La Palma Av.	TS	Not Applicable ⁴				0.763	0.852	C	D
18	Yorba Linda Bl. & Savi Ranch Pkwy.	TS	Not Applicable ⁴				0.545	0.755	B	C
19	Weir Canyon Rd. & SR-91 WB Ramps	TS	9.8	13.1	A	B	Not Applicable ⁶			
20	Weir Canyon Rd. & SR-91 EB Ramps	TS	13.9	9.5	B	A	Not Applicable ⁶			
21	Gypsum Canyon Rd. & La Palma Av.	TS	Not Applicable ⁴				0.439	0.671	A	B

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

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

² Intersection capacity utilization (ICU) methodology results are presented as a volume-to-capacity ratio.

³ AWS = All-way Stop; CSS = Cross-Street Stop; TS = Traffic Signal

⁴ ICU reported for signalized intersections only.

⁵ HCM reported for unsignalized intersections only (also a Caltrans facility).

⁶ Although signalized, intersection is a Caltrans facility. Therefore, only HCM has been reported.

4.7 TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants for Existing traffic conditions are based on existing peak hour intersection turning volumes. The following unsignalized intersections currently warrant a traffic signal for Existing traffic conditions:

- Lakeview Avenue & Buena Vista Avenue (#6)
- Kellogg Drive & Imperial Highway SB Ramps (#7)

Existing conditions traffic signal warrant analysis worksheets are provided in Appendix 4.3 of this TA.

5 HORIZON YEAR (2045) TRAFFIC CONDITIONS

This section discusses the methods used to develop Horizon Year (2045) Without and With Project traffic forecasts, and the resulting intersection operations analyses.

5.1 VOLUME DEVELOPMENT FOR HORIZON YEAR

Traffic projections for Horizon Year (2045) Without Project and With Project conditions were derived from the OCTAM Version 5.0 maintained by the OCTA. To develop future traffic forecast volumes in the vicinity of the 27 sites proposed to be rezoned to multifamily residential use, changes in population related to each proposed site were added to the OCTAM models and rerun. To identify trips generated for use in the OCTAM, residential units do not require a conversion rate as they translate directly to dwelling units. Additional variables are used to further define the characteristics of the residential component, such as population per household, median income, etc. Residential based trips are calculated based on the trip rate for each dwelling unit and associated data. Based on the citywide land use data and the regional socioeconomic growth projections, future trip activity is estimated and assigned to the roadway circulation system. The Department of Finance (2021) identifies Yorba Linda with 2.94 persons per household. Model output is post-processed based on established postprocessing methodologies. The post-processor applies the model's projected growth to each turning movement for both Horizon Year (2045) Without and With Project scenarios, forecasting a value that reflects future growth.

The traffic forecasts reflect the area-wide growth anticipated between Existing (2024) conditions and Horizon Year (2045) traffic conditions. In most instances, the traffic model zone structure is not designed to provide accurate turning movements along arterial roadways unless refinement and reasonableness checking is performed. Therefore, the Horizon Year (2045) peak hour forecasts were refined using the model derived long range forecasts, base (validation) year model forecasts, along with existing peak hour traffic count data collected at each analysis location in February 2024. The OCTAM has a base (validation) year of 2016 and a horizon (future forecast) year of 2045. The difference in model volumes (2045-2016) defines the growth in traffic over the 29-year period.

The refined future peak hour approach and departure volumes obtained from the model output data are then entered into a spreadsheet program consistent with the National Cooperative Highway Research Program (NCHRP Report 765), along with initial estimates of turning movement proportions. A linear programming algorithm is used to calculate individual turning movements which match the known directional roadway segment forecast volumes computed in the previous step. This program computes a likely set of intersection turning movements from intersection approach counts and the initial turning proportions from each approach leg.

The OCTAM uses an AM peak period-to-peak hour factor of 0.36 and a PM peak period-to-peak hour factor of 0.27. These factors represent the relationship of the highest single AM peak hour to the modeled 3-hour AM peak period (an even distribution would result in a factor of 0.33) and the highest single PM peak hour to the modeled 4-hour PM peak period (an even distribution would result in a factor of 0.25).

Typically, the model growth is prorated and is subsequently added to the existing (base validation) traffic volumes to represent Horizon Year traffic conditions. In an effort to conduct a conservative analysis, reductions to traffic forecasts from either Existing or Opening Year Cumulative traffic conditions were not assumed as part of this analysis. As such, in conjunction with the addition of cumulative projects that are not consistent with the General Plan, additional growth has also been applied on a movement-by-movement basis, where applicable, to estimate reasonable Horizon Year (2045) forecasts. Future estimated peak hour traffic data was used for new intersections and intersections with an anticipated change in travel patterns to further refine the Horizon Year (2045) peak hour forecasts.

The future Horizon Year (2045) Without Project and With Project peak hour turning movements were then reviewed for reasonableness, and in some cases, were adjusted to achieve flow conservation, reasonable growth, and reasonable diversion between parallel routes. Flow conservation checks ensure that traffic flow between two closely spaced intersections, such as two adjacent driveway locations, is verified in order to make certain that vehicles leaving one intersection are entering the adjacent intersection and that there is no unexplained loss of vehicles. The result of this traffic forecasting procedure is a series of traffic volumes which are suitable for traffic operations analysis. Post processing has been performed for the weekday AM and PM peak hours only as these are the only time periods where traffic model data was readily available. The post processed volumes for Horizon Year (2045) Without and With Project traffic conditions are provided in Appendices 5.1 and 5.2, respectively.

5.2 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for Horizon Year (2045) conditions are consistent with those shown previously at Exhibit 3-1, with the exception of the following:

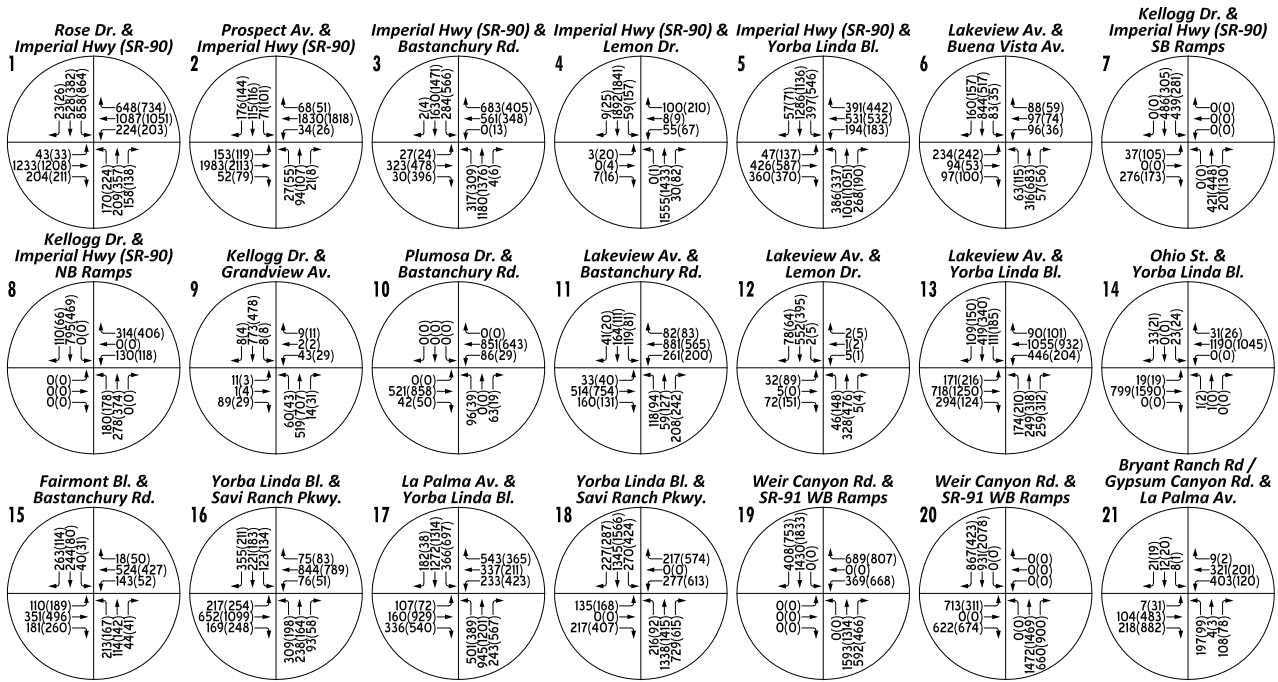
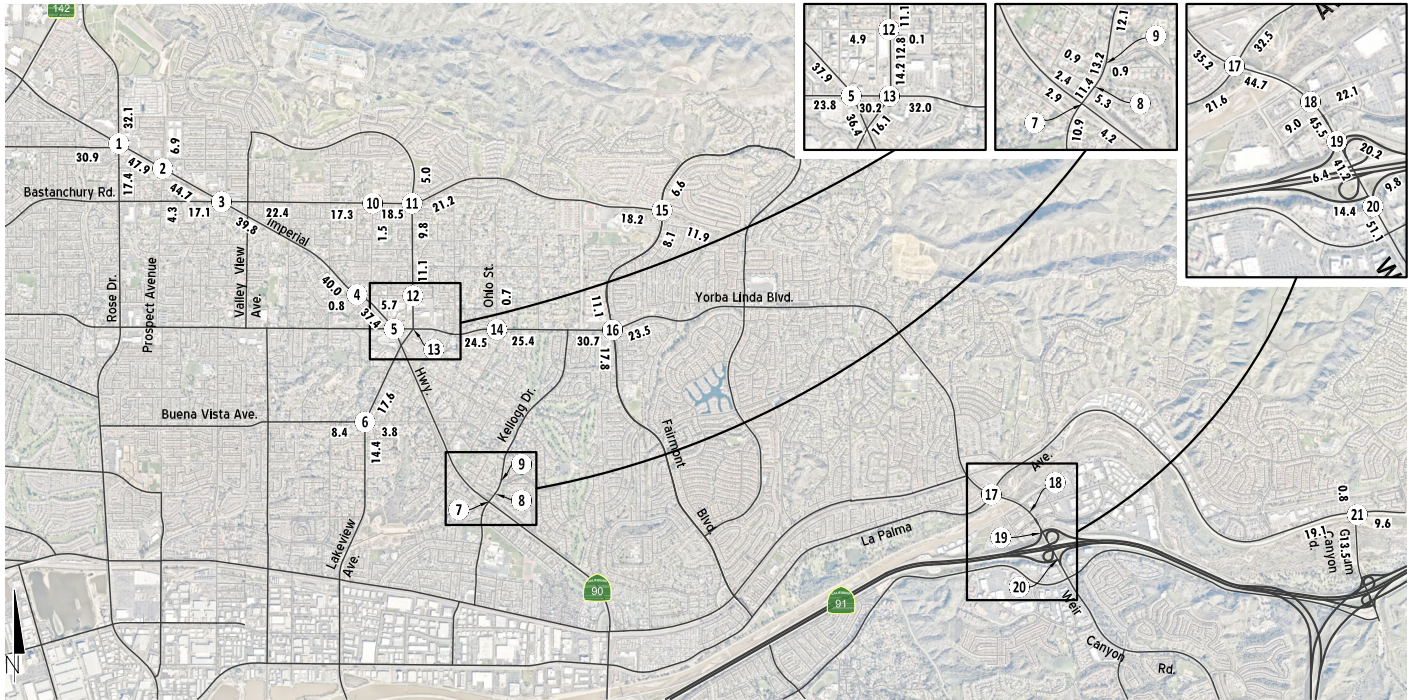
- A second eastbound left turn lane, second westbound left turn lane, and an eastbound right turn lane at Imperial Highway and Yorba Linda Boulevard (#5) is assumed to be constructed by Horizon Year (2045) conditions.
- A second northbound right turn lane at Yorba Linda Boulevard and La Palma Avenue (#17) is assumed to be constructed by Horizon Year (2045) conditions.
- A northbound shared through-right turn lane and second right turn lane replacing the free right turn lane, a second southbound left turn lane, and a third westbound left turn lane at Yorba Linda Boulevard at Savi Ranch Parkway (#18) is assumed to be constructed by Horizon Year (2045) conditions.

The aforementioned improvements have been assumed to be in place under Horizon Year (2045) traffic conditions as they are planned intersection improvement projects.

5.3 WITHOUT PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes the refined post-process volumes obtained from the OCTAM (included in Appendix 5.1 of this TA). The weekday ADT and weekday AM/PM peak hour volumes which can be expected for Horizon Year (2045) Without Project traffic conditions are shown in Exhibit 5-1.

EXHIBIT 5-1 : HORIZON YEAR (2045) WITHOUT PROJECT AVERAGE DAILY TRAFFIC (ADT) AND PEAK HOUR INTERSECTION VOLUMES



LEGEND

- ⊙ = Existing Intersection Analysis Location
- 00.0 = Average Daily Trips (1000's)
- 00(00) = Peak Hour Intersection Volume AM (PM)

5.4 WITH PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes the refined post-process volumes obtained from the OCTAM, with changes to reflect the traffic generated by the proposed Project (included in Appendix 5.2) of this TA. The weekday ADT and weekday AM/PM peak hour volumes which can be expected for Horizon Year (2045) With Project traffic conditions are shown in Exhibit 5-2. Project-only ADT and AM/PM peak hour intersection turning movement volumes were developed based on the net change between With and Without Project forecast volumes and are shown in Exhibit 5-3.

5.5 INTERSECTION OPERATIONS ANALYSIS

5.5.1 HORIZON YEAR (2045) WITHOUT PROJECT TRAFFIC CONDITIONS

LOS calculations were conducted for the study intersections to evaluate their operations under Horizon Year (2045) Without Project conditions with roadway and intersection geometrics consistent with existing traffic conditions. As shown in Table 5-1, the following study area intersections are anticipated to operate at an unacceptable LOS under Horizon Year (2045) Without Project traffic conditions:

- Lakeview Avenue & Buena Vista Avenue (#6) – LOS F AM and PM peak hours
- Kellogg Drive & Imperial Highway SB Ramps (#7) – LOS F AM and PM peak hours
- Yorba Linda Boulevard & La Palma Avenue (#17) – LOS E PM peak hour only

Although the improvements discussed in Section 5.2 were assumed to be in place, the intersection of Yorba Linda Boulevard at La Palma Avenue is still anticipated to continue to operate at a deficient LOS. The intersection operations analysis worksheets for Horizon Year (2045) Without Project traffic conditions are included in Appendix 5.3 of this TA.

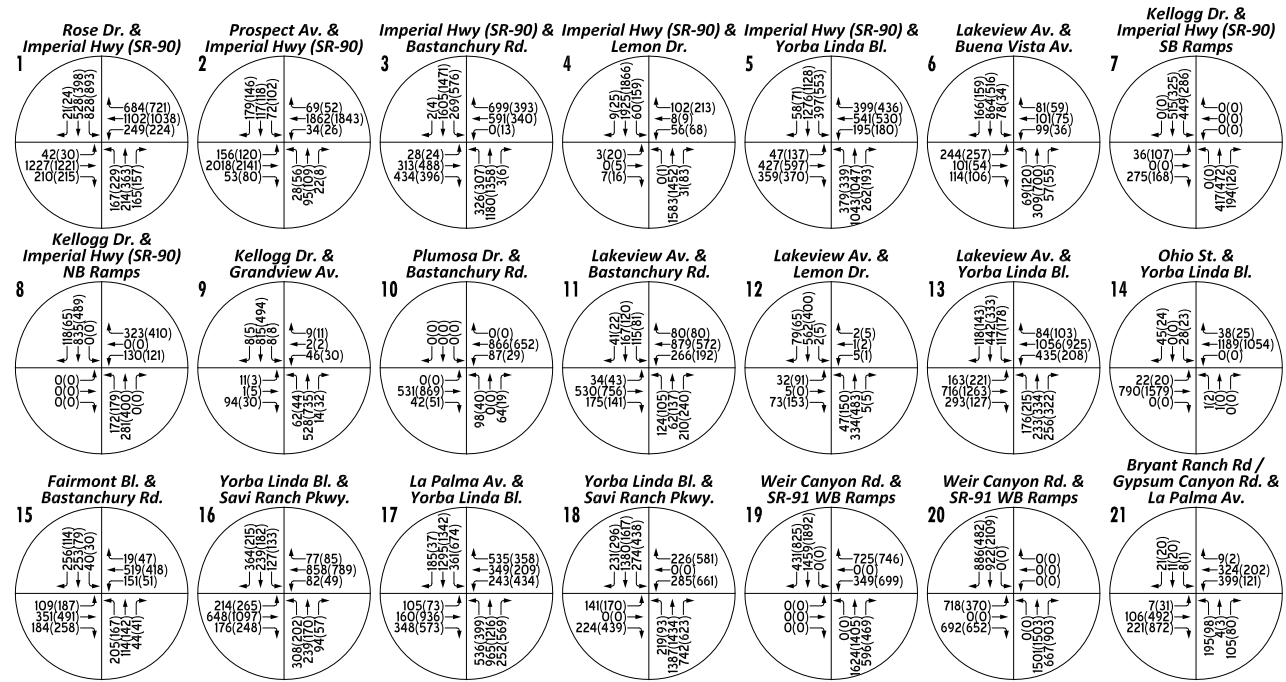
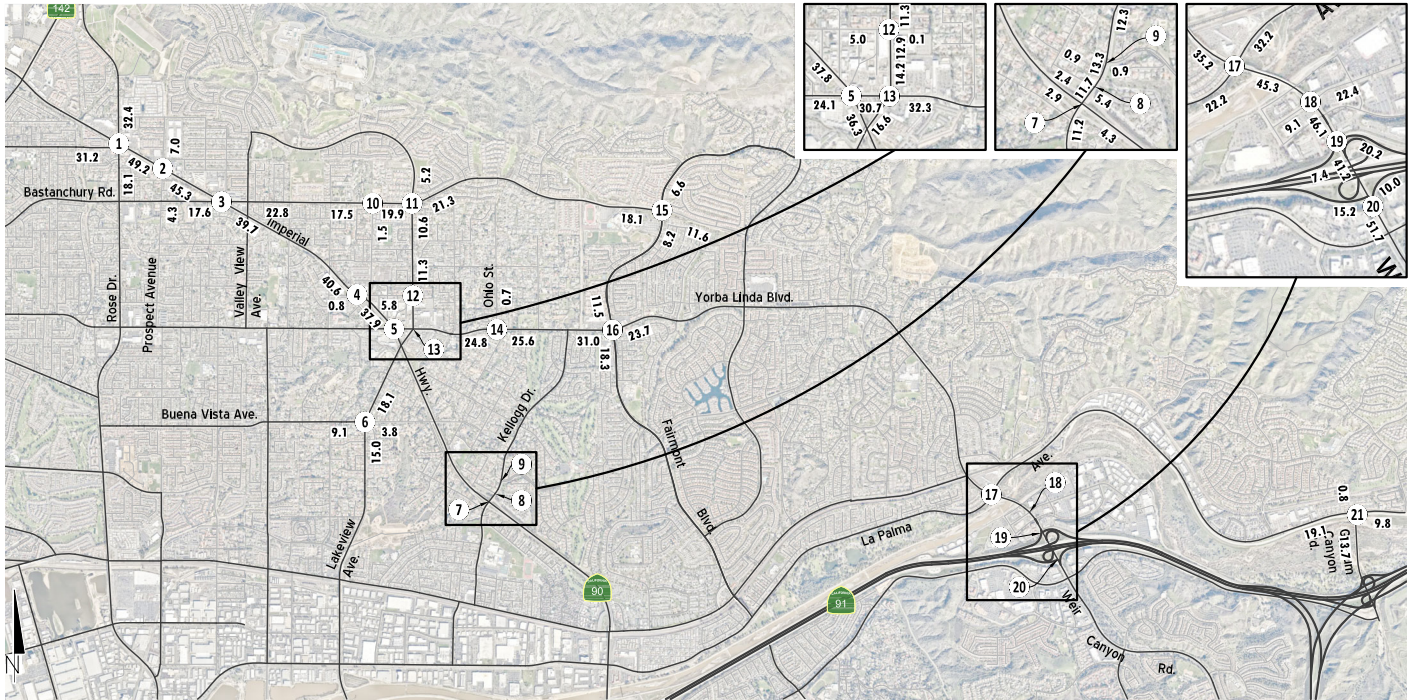
5.5.2 HORIZON YEAR (2045) WITH PROJECT TRAFFIC CONDITIONS

There are no additional study area intersections anticipated to operate at an unacceptable LOS with the addition of Project traffic as shown in Table 5-1, in addition to the locations previously identified for Horizon Year (2045) Without Project traffic conditions. The addition of Project traffic is not anticipated to increase the V/C over the applicable deficiency threshold at the intersection of Yorba Linda Boulevard and La Palma Avenue. The intersection operations analysis worksheets for Horizon Year (2045) With Project traffic conditions are included in Appendix 5.4 of this TA.

5.6 TRAFFIC SIGNAL WARRANTS ANALYSIS

The traffic signal warrant analysis for Horizon Year (2045) traffic conditions are based on the peak hour volumes or planning level ADT volume-based traffic signal warrants. The unsignalized study area intersections were found to meet peak hour volume-based traffic signal warrants under existing traffic conditions, as such, no traffic signal warrant analysis has been performed for Horizon Year (2045) Without and With Project traffic conditions.

EXHIBIT 5-2 : HORIZON YEAR (2045) WITH PROJECT AVERAGE DAILY TRAFFIC (ADT) AND PEAK HOUR INTERSECTION VOLUMES



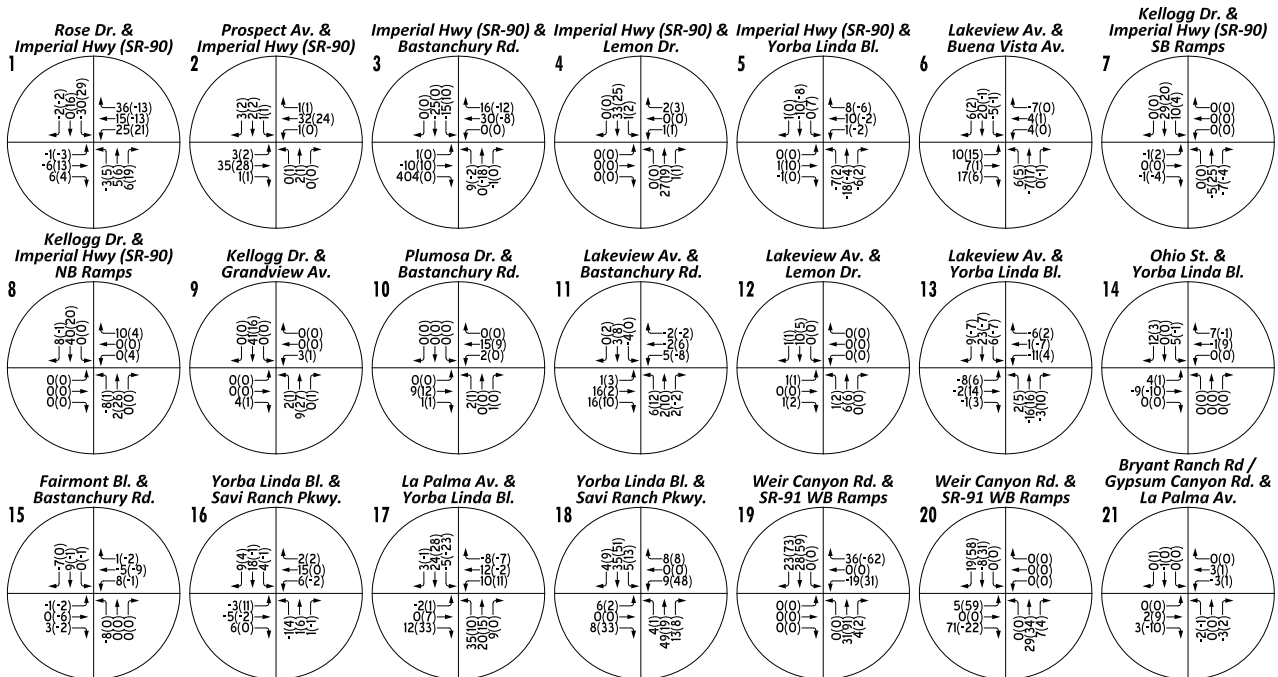
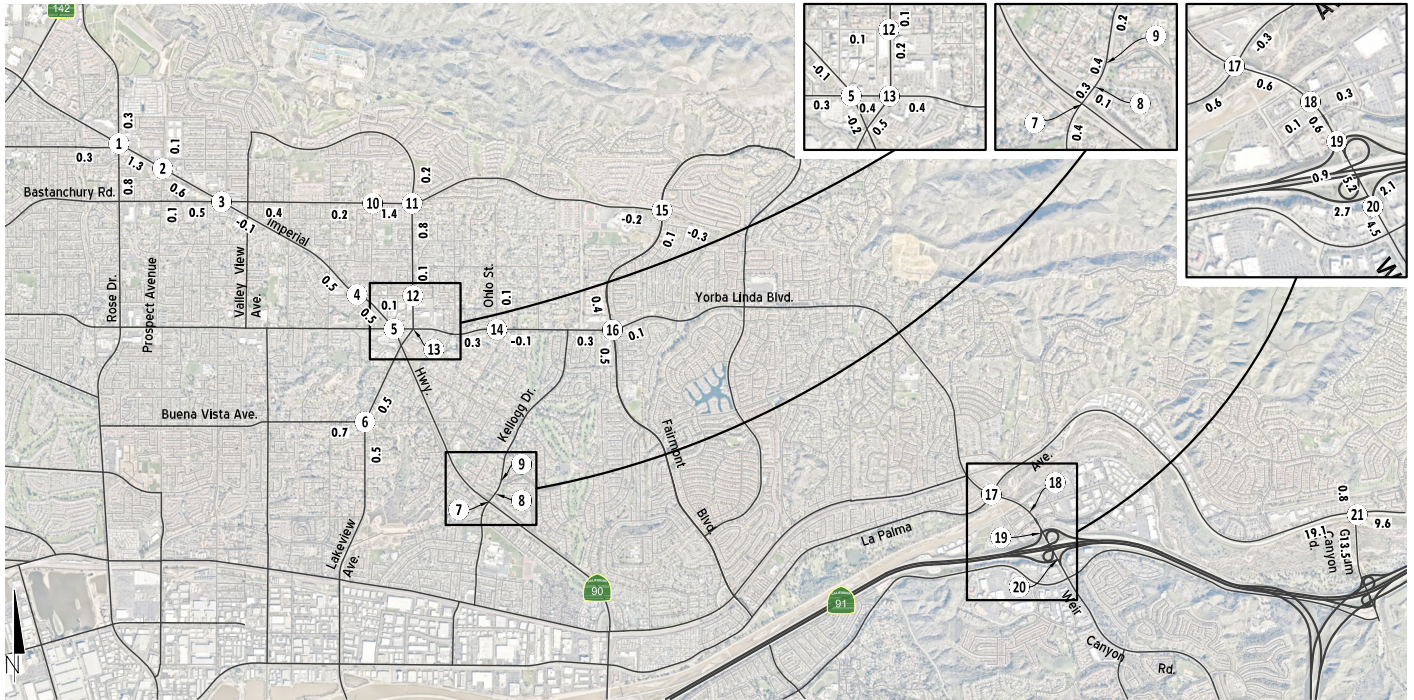
LEGEND

① = Existing Intersection Analysis Location

00.0 = Average Daily Trips (1000's)

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

EXHIBIT 5-3 : PROJECT ONLY AVERAGE DAILY TRAFFIC (ADT) AND PEAK HOUR INTERSECTION VOLUMES



LEGEND

- ① = Existing Intersection Analysis Location
- 00.0 = Average Daily Trips (1000's)
- 00(00) = Peak Hour Intersection Volume AM (PM)

TABLE 5-1: INTERSECTION ANALYSIS FOR HORIZON YEAR (2045) CONDITIONS

#	Intersection	Traffic Control ³	2045 Without Project								2045 With Project								Change in V/C ⁷	
			Delay ¹ (secs.)		Level of Service		ICU ² (v/c)		Level of Service		Delay ¹ (secs.)		Level of Service		ICU ² (v/c)		Level of Service			
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	Rose Dr. & Imperial Highway	TS	42.0	43.1	D	D	Not Applicable ⁵		Not Applicable ⁵		42.4	46.2	D	D	Not Applicable ⁵		--	--		
2	Prospect Av. & Imperial Highway	TS	Not Applicable ⁴				0.749	0.730	C	C	Not Applicable ⁴				0.761	0.739	C	C	1.6%	1.2%
3	Imperial Highway & Bastanchury Rd.	TS	Not Applicable ⁴				0.847	0.801	D	D	Not Applicable ⁴				0.859	0.803	D	D	1.4%	0.2%
4	Imperial Highway & Lemon Dr.	TS	Not Applicable ⁴				0.533	0.625	A	B	Not Applicable ⁴				0.541	0.632	A	B	1.5%	1.1%
5	Imperial Highway & Yorba Linda Bl.	TS	Not Applicable ⁴				0.859	0.806	D	D	Not Applicable ⁴				0.853	0.805	D	D	-0.7%	-0.1%
6	Lakeview Av. & Buena Vista Av.	AWS	>100.0	>100.0	F	F	Not Applicable ⁵		Not Applicable ⁵		>100.0	>100.0	F	F	Not Applicable ⁵		--	--		
7	Imperial Highway SB Ramps & Kellogg Dr.	CSS	>100.0	93.9	F	F	Not Applicable ⁵		Not Applicable ⁵		>100.0	>100.0	F	F	Not Applicable ⁵		--	--		
8	Imperial Highway NB Ramps & Kellogg Dr.	TS	19.9	11.1	B	B	Not Applicable ⁶		Not Applicable ⁶		21.4	11.2	C	B	Not Applicable ⁶		7.5%	0.9%		
9	Grandview Av. & Kellogg Dr.	TS	Not Applicable ⁴				0.450	0.360	A	A	Not Applicable ⁴				0.468	0.370	A	A	4.0%	2.8%
10	Plumosa Dr. & Bastanchury Rd.	TS	Not Applicable ⁴				0.407	0.407	A	A	Not Applicable ⁴				0.412	0.411	A	A	1.2%	1.0%
11	Lakeview Av. & Bastanchury Rd.	TS	Not Applicable ⁴				0.644	0.668	B	B	Not Applicable ⁴				0.655	0.666	B	B	1.7%	-0.3%
12	Lakeview Av. & Lemon Dr.	TS	Not Applicable ⁴				0.359	0.416	A	A	Not Applicable ⁴				0.364	0.420	A	A	1.4%	1.0%
13	Lakeview Av. & Yorba Linda Bl.	TS	Not Applicable ⁴				0.767	0.695	C	B	Not Applicable ⁴				0.770	0.698	C	B	0.4%	0.4%
14	Ohio St. & Yorba Linda Bl.	TS	Not Applicable ⁴				0.371	0.426	A	A	Not Applicable ⁴				0.381	0.423	A	A	2.7%	-0.7%
15	Fairmont Bl. & Bastanchury Rd.	TS	Not Applicable ⁴				0.621	0.517	B	A	Not Applicable ⁴				0.617	0.512	B	A	-0.6%	-1.0%
16	Fairmont Bl. & Yorba Linda Bl.	TS	Not Applicable ⁴				0.629	0.586	B	A	Not Applicable ⁴				0.640	0.881	B	D	1.7%	50.3%
17	Yorba Linda Bl. & La Palma Av.	TS	Not Applicable ⁴				0.883	0.938	D	E	Not Applicable ⁴				0.893	0.940	D	E	1.1%	0.2%
18	Yorba Linda Bl. & Savi Ranch Pkwy.	TS	Not Applicable ⁴				0.570	0.649	A	B	Not Applicable ⁴				0.582	0.675	A	B	2.1%	4.0%
19	Weir Canyon Rd. & SR-91 WB Ramps	TS	10.5	15.2	B	B	Not Applicable ⁵		Not Applicable ⁵		10.9	14.6	B	B	Not Applicable ⁵		--	--		
20	Weir Canyon Rd. & SR-91 EB Ramps	TS	15.0	9.8	B	A	Not Applicable ⁶		Not Applicable ⁶		15.8	9.9	B	A	Not Applicable ⁶		--	--		
21	Gypsum Canyon Rd. & La Palma Av.	TS	Not Applicable ⁵				0.478	0.702	A	C	Not Applicable ⁵				0.477	0.696	A	B	-0.2%	-0.9%

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

¹ Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

² Intersection capacity utilization (ICU) methodology results are presented as a volume-to-capacity ratio.

³ AWS = All-way Stop; CSS = Cross-Street Stop; TS = Traffic Signal

⁴ ICU reported for signalized intersections only.

⁵ HCM reported for unsignalized intersections only (also a Caltrans facility).

⁶ Although signalized, intersection is a Caltrans facility. Therefore, only HCM has been reported.

⁷ **Bold** text identifies locations and peak hours where the change in V/C meets the City's deficiency criteria.

5.7 LONG-TERM DEFICIENCIES AND RECOMMENDED IMPROVEMENTS

This section provides a summary of Horizon Year (2045) deficiencies and recommended improvements. Based on the deficiency criteria discussed in Section 3.4 *Minimum Acceptable LOS* and Section 3.5 *Deficiency Criteria*, the following intersections were found to be deficient:

- Lakeview Avenue & Buena Vista Avenue (#6)
- Kellogg Drive & Imperial Highway SB Ramps (#7)

Improvements necessary to improve traffic deficiencies back to acceptable levels and the effectiveness of the proposed recommended improvements is presented in Table 5-2 and shown on Exhibit 5-4. Table 5-2 summarizes the LOS results with the proposed traffic control improvements (see Appendix 5.5 for the analysis worksheets). As noted previously, the addition of Project traffic is not anticipated to increase the V/C over the applicable deficiency threshold at the intersection of Yorba Linda Boulevard and La Palma Avenue. Additional improvements were also not recommended at this intersection beyond those currently being contemplated and included in the analysis (on Table 5-1) as they are not feasible to implement.

TABLE 5-2: INTERSECTION ANALYSIS FOR HORIZON YEAR (2045) CONDITIONS WITH IMPROVEMENTS

#	Intersection	Traffic Control ⁴	Intersection Approach Lanes ¹												HCM Delay ² (sec)		Level of Service		ICU ³ (v/c)		Level of Service	
			Northbound			Southbound			Eastbound			Westbound			AM	PM	AM	PM	AM	PM	AM	PM
			L	T	R	L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM	AM
6	Lakeview Av. & Buena Vista Av.																					
	Without Improvements	AWS	1	1	1	1	2	0	1	1	0	1	1	0	>100.0	>100.0	F	F	Not Applicable ⁶			
	With Improvements	TS	1	1	1	1	2	0	1	1	0	1	1	0	Not Applicable ⁵				0.701	0.781	C	C
7	Imperial Highway SB Ramps & Kellogg Dr.																					
	Without Improvements	CSS	0	2	0	1	2	0	1	0	1	0	0	0	>100.0	>100.0	F	F	Not Applicable ⁶			
	With Improvements	TS	0	2	0	1	2	0	1	0	1	0	0	0	21.5	12.8	C	B	Not Applicable ⁷			

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

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

² Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

³ Intersection capacity utilization (ICU) methodology results are presented as a volume-to-capacity ratio.

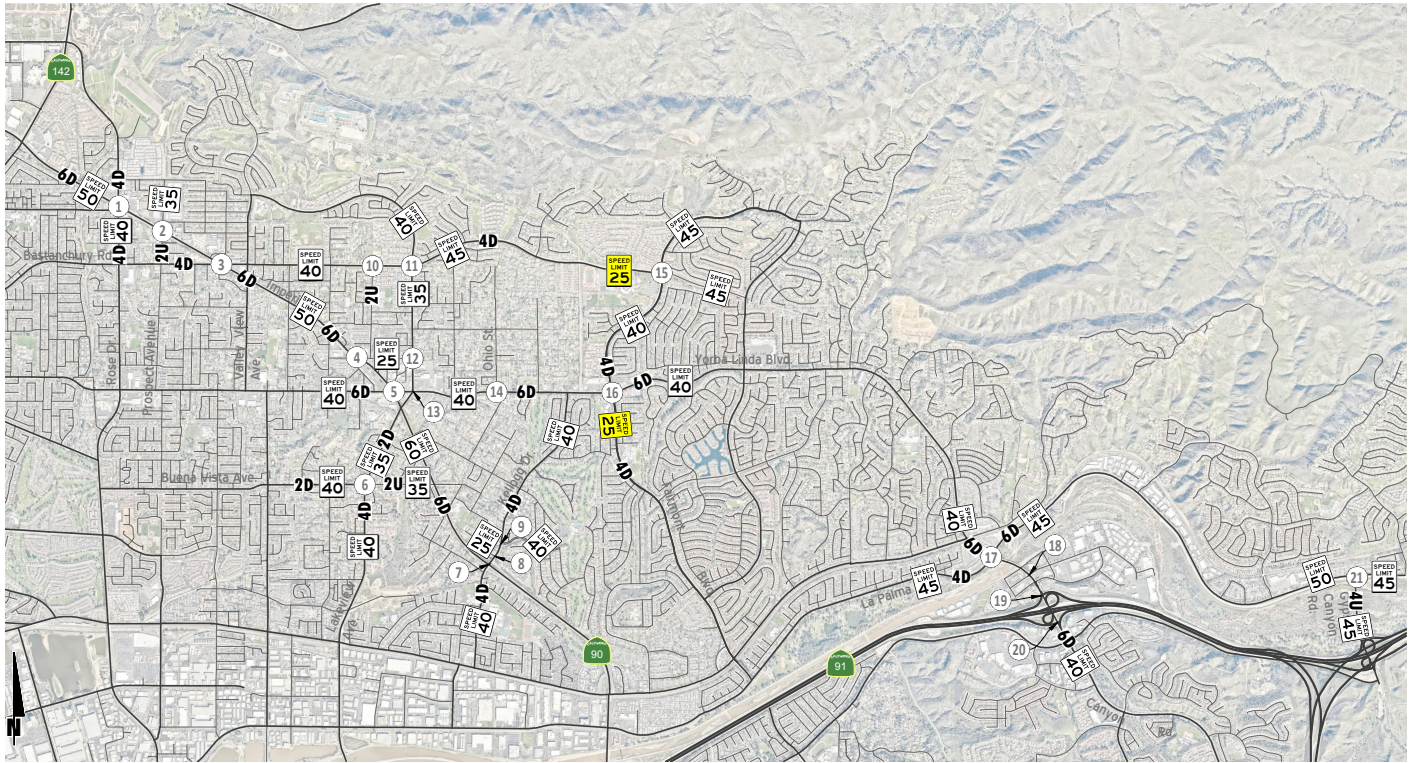
⁴ TS = Traffic Signal; AWS = All-Way Stop; CSS = Cross-Street Stop

⁵ ICU reported for signalized intersections only.

⁶ HCM reported for unsignalized intersections only.

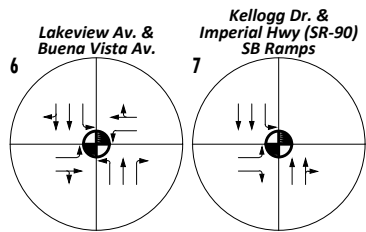
⁷ Although signalized, intersection is a Caltrans facility. Therefore, only HCM has been reported.

EXHIBIT 5-4 : HORIZON YEAR (2045) INTERSECTION IMPROVEMENTS



LEGEND

- ① = Intersection Analysis Location
- ⊕ = Traffic Signal Improvement
- ↔ = Traffic Lane



6 LOCAL AND REGIONAL FUNDING MECHANISMS

Transportation improvements within the City of Yorba Linda are funded through a combination of project mitigation, development impact fee programs or fair share contributions, such as the City of Yorba Linda TIF program. Identification and timing of needed improvements is determined through local jurisdictions based upon a variety of factors.

6.1 CITY OF YORBA LINDA TRAFFIC IMPACT FEE PROGRAM

The City of Yorba Linda has created its own local TIF program to impose and collect fees from new residential, commercial, office, 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 fee schedule was adopted on June 15, 1993. The fee schedule and project transportation impacts fees are shown in Table 6-1. Under the City's TIF program, the City may grant 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 TIF program.

The TIF fees is currently under the City's review. Thus, the cost per unit as shown in Table 6-1 may change due to this review.

TABLE 6-1: CURRENT TRAFFIC IMPACT FEES

Fee Reference	Cost
Circulation (Streets, Signals, and Bridges) System:	
Residential	\$600/unit
Industrial	\$0.15/SF
Office	\$0.48/SF
Commercial	\$1.98/SF

The timing to use the TIF 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. The City also uses this data to aim for the completion of improvements listed on the facilities list before the LOS falls below the LOS performance standards adopted by the City. In this way, the improvements are constructed before the LOS falls below the City's LOS performance thresholds.

The Project Applicant will be subject to the City's TIF fee program and will pay the requisite City TIF fees at the rates then in effect pursuant to the City's ordinance. The Project Applicant's payment of the requisite TIF at the rates then in effect, pursuant to the City TIF Program, would satisfy the Project's proportional mitigation requirements at potentially affected TIF-funded facilities.

6.2 FAIR SHARE CONTRIBUTION

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

When off-site improvements are identified with a minor share of responsibility assigned to proposed development, the approving jurisdiction may elect to collect a fair share contribution or require the development to construct improvements. Detailed fair share calculations, for each peak hour, have been provided in Table 6-2 for the applicable deficient intersections shown previously in Table 1-4. Improvements included in a defined program and constructed by development may be eligible for a fee credit or reimbursement through the program where appropriate. The cost and scope of the improvements will be developed in conjunction with the TIF Update. The Project's fair share cost of improvements is determined based on the following equation, which is the ratio of Project traffic to total future traffic:

$$\text{Project Fair Share \%} = \text{Project AM/PM Traffic} / \text{Total Future Traffic AM/PM}$$

The Project fair share percentage has been calculated for both the AM peak hour and PM peak hour and the higher of the two has been selected.

TABLE 6-2: PROJECT FAIR SHARE CALCULATIONS

#	Intersection		Horizon Year		Project % of Total Traffic
			Project Only	(2045) With Project	
5	Imperial Highway & Yorba Linda Bl. ¹	AM:	0	5,383	0.0%
		PM:	0	5,581	0.0%
6	Lakeview Av. & Buena Vista Av.	AM:	55	2,284	2.4%
		PM:	43	2,171	2.0%
7	Imperial Highway SB Ramps & Kellogg Dr.	AM:	25	1,886	1.3%
		PM:	43	1,485	2.9%
17	Yorba Linda Bl. & La Palma Av.	AM:	110	5,335	2.1%
		PM:	73	6,821	1.1%
18	Yorba Linda Bl. & Savi Ranch Pkwy.	AM:	140	5,110	2.7%
		PM:	193	6,353	3.0%

BOLD = Denotes highest fair share percentage.

¹ Project only traffic volumes are negative. Project only traffic volumes have been denoted to zero.

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7 VEHICLE MILES TRAVELED

The VMT report has been prepared under a separate cover.

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8 REFERENCES

1. **Husch, David and Albeck, John.** *Intersection Capacity Utilization: Evaluation Procedures for Intersections and Interchanges.* Albany, California : Trafficware, 2003 Edition.
2. **Transportation Research Board.** *Highway Capacity Manual (HCM).* 6th Edition. Washington, D.C. : National Academy of Sciences, 2016. 978-0-309-16077-3.
3. **California Department of Transportation.** California Manual on Uniform Traffic Control Devices (CA MUTCD). [book auth.] California Department of Transportation. *California Manual on Uniform Traffic Control Devices (CA MUTCD).* 2014, Updated January 11, 2024 (Revision 8).
4. **The City of Yorba Linda.** *City of Yorba Linda TIA Guidelines.* Yorba Linda : s.n., May 2020.

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