THE CITY OF YORBA LINDA

Appendix F: Traffic Analysis and Report

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This Traffic Impact Analysis provides an evaluation of the existing and future planned circulation system in the City of Yorba Linda and will serve as the basis for the transportation analysis for the EIR for the General Plan Update for the City of Yorba Linda.

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TRAFFIC IMPACT STUDY
FOR THE
CIRCULATION ELEMENT UPDATE

IN THE CITY YORBA LINDA

Prepared for:

City of Yorba Linda

Prepared by:

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May, 2016

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TRANSPORTATION AND CIRCULATION
CITY OF YORBA LINDA GENERAL PLAN UPDATE
TRAFFIC IMPACT ANALYSIS

INTRODUCTION

This Traffic Impact Analysis provides an evaluation of the existing and future planned circulation system in the City of Yorba Linda and will serve as the basis for the transportation analysis for the EIR for the General Plan Update for the City of Yorba Linda. It addresses existing traffic conditions, the impacts of future traffic growth, planned physical improvements, and additional improvements needed, if any, to accommodate future growth.

The City of Yorba Linda is largely built out, with individual properties throughout the city that are currently vacant or underutilized (not fully developed to their General Plan potential). The designated land uses and the potential future amount of development for each of these parcels were identified in the Land Use Element. The trips to be generated by these proposed land uses have been calculated and analyzed for the build-out circulation system for the General Plan in the City of Yorba Linda (Year 2035).

The City of Yorba Linda Circulation Element is and will continue to be the primary resource for transportation and circulation decisions in Yorba Linda. The Orange County Congestion Management Program (CMP) guides transportation decisions countywide.

EXISTING TRANSPORTATION SETTING AND CIRCULATION SYSTEM

The City of Yorba Linda is located in the northernmost area of Orange County. Yorba Linda shares borders with the Cities of Placentia and Anaheim, and the County of Orange. Many of the arterial roadways through the City of Yorba Linda extend beyond the city boundaries into neighboring cities. Circulation issues and travel patterns, likewise, extend beyond the Yorba Linda City limits. The land use decisions and traffic patterns in these other jurisdictions have the potential to affect the quality of traffic flow and mobility in the City of Yorba Linda, and conversely, traffic conditions and decisions made by the City of Yorba Linda can affect its neighbors. Impacts to the City's circulation system resulting from land use decisions and circulation system improvements in adjacent jurisdictions were considered during the course of this analysis.

Regional Access

The regional setting of the City of Yorba Linda is presented on Figure 1.

The freeways providing regional circulation for the City are:

- the Riverside Freeway (SR-91), an east-west freeway just south of the City limits,
- the Orange Freeway (SR-57)
- Imperial Highway (State Route 90) which is configured as a freeway from the south city limits to Yorba Linda Boulevard, and becomes a modified major arterial north of Yorba Linda Boulevard.

North-south arterials that extend through and beyond the boundaries of the City of Yorba Linda include Rose Drive (becomes Tustin Avenue at the boundary with the City of Anaheim), Richfield Road, Lakeview Avenue, Imperial Highway, and Fairmont Boulevard. Rose Drive, Tustin Avenue, Lakeview Avenue, Imperial Highway, and Yorba Linda Boulevard have full or partial interchanges with SR-91.

East-west arterials that extend through and beyond the city limits include Imperial Highway, Bastanchury Road, and Yorba Linda Boulevard. Imperial Highway and Yorba Linda Boulevard have full interchanges with the SR-57 Freeway, located about two miles west of the city limits of Yorba Linda in the City of Fullerton.

Local Access

The City of Yorba Linda circulation needs are served by a combination of some curvilinear streets and some straight north-south and east-west arterials. Smaller collector and neighborhood streets connect neighborhoods and commercial land uses to the arterial street system.

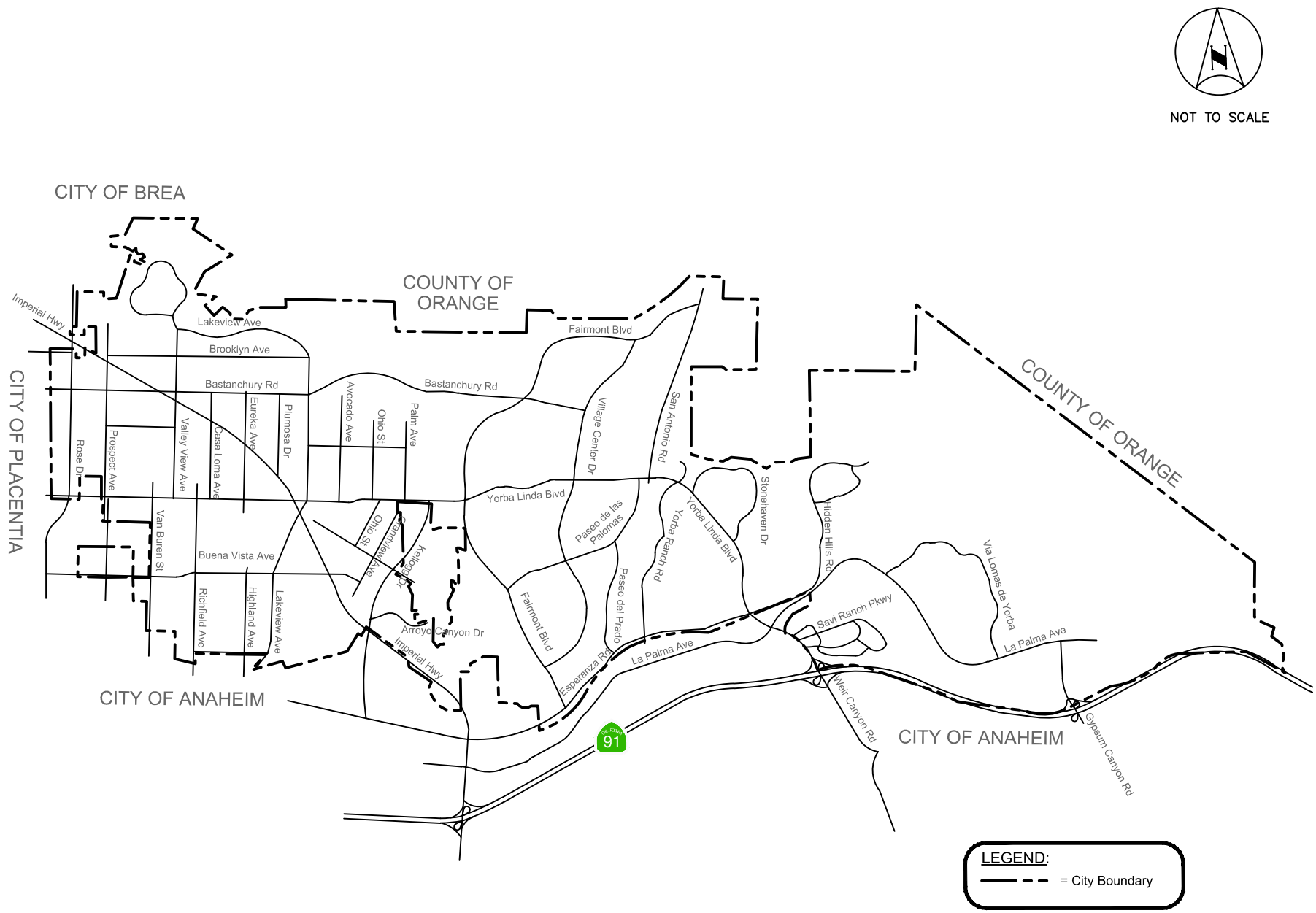

FIGURE 1
CITY MAP

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Orange County Congestion Management Program (CMP)

The Orange County Congestion Management Program (CMP) was established in 1991, to reduce traffic congestion and to provide a mechanism for coordinating land use and development decisions. Compliance with the CMP requirements ensures a city's eligibility to compete for State gas tax funds for local transportation projects.

A copy of the County of Orange CMP Highway System is provided on Figure 2. Within the City of Yorba Linda, the CMP Highway System includes two arterials: Rose Drive and Imperial Highway. There are no CMP monitoring intersections located in the City of Yorba Linda.

City of Yorba Linda Functional Roadway Classification System

The City of Yorba Linda circulation system consists of a network of local neighborhood streets providing access to the City's arterial street system, which in turn provides access to the regional arterial freeway system. This network serves two distinct and equally important functions: it provides access to adjacent land uses, and it facilitates the movement of persons and goods to and from, within and through the City. The design and operation of each street is determined by the importance placed on each of these functions. Streets that have a mobility and/or regional access function will typically have more lanes, higher speed limits and fewer driveways. Where direct access to properties is required, streets will have fewer lanes, lower speeds, on-street parking, and more frequent driveways to serve abutting properties.

To define the intended uses of roadways, many jurisdictions, including the City of Yorba Linda, use a functional roadway classification system. The system provides a logical framework for the design and operation of the roadway system and helps identify preferred characteristics of each street. In the General Plan, the City of Yorba Linda uses a functional classification system with the following street classifications:

- Smart Street
- Major
- Primary
- Secondary
- Collector

The existing functional classification for the arterial roadways in the City of Yorba Linda are presented on Figure 3. Typical cross sections for roadways in the City of Yorba Linda are presented on Figure 4.

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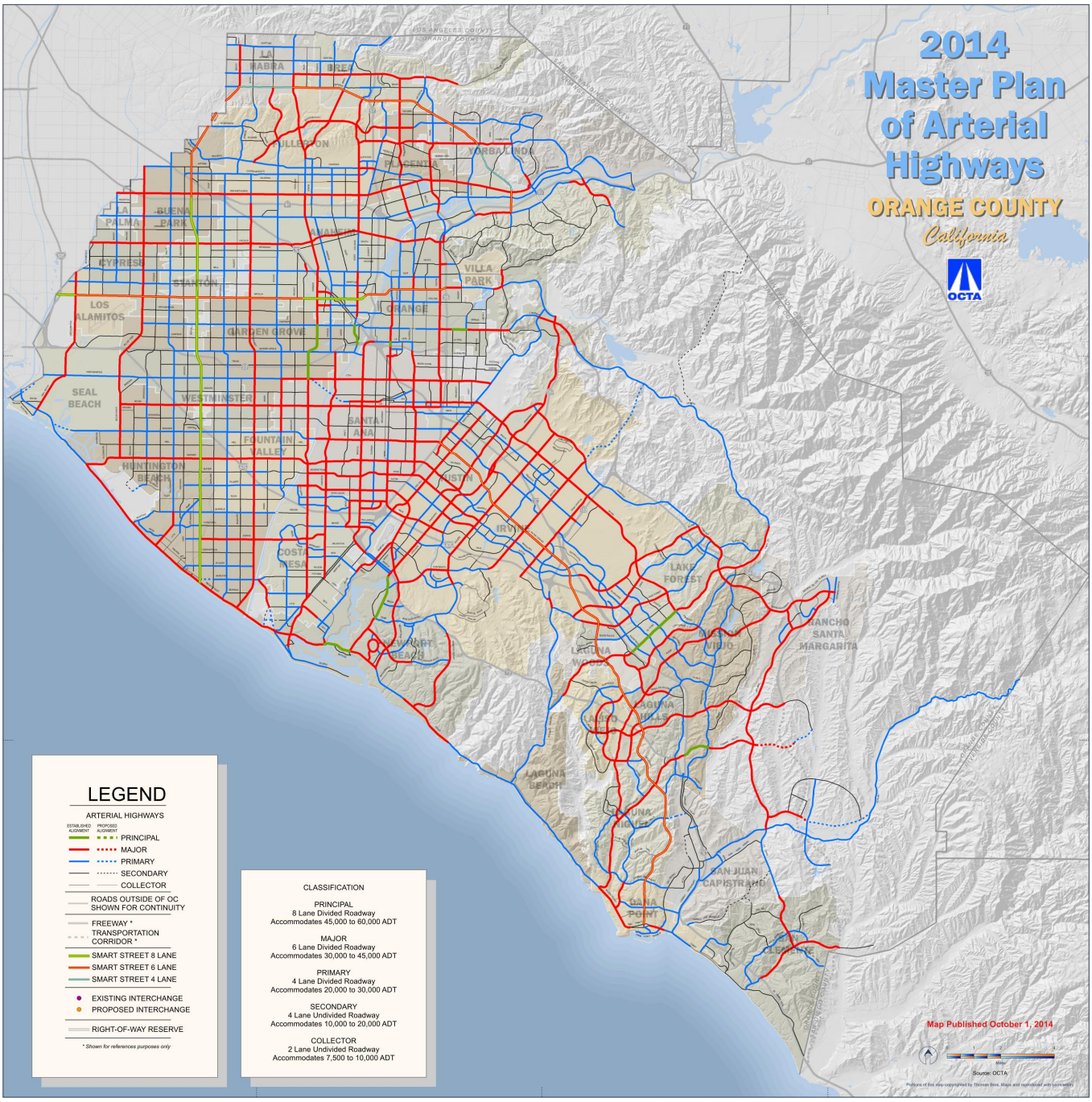

FIGURE 2
COUNTY OF ORANGE
CMP HIGHWAY SYSTEM

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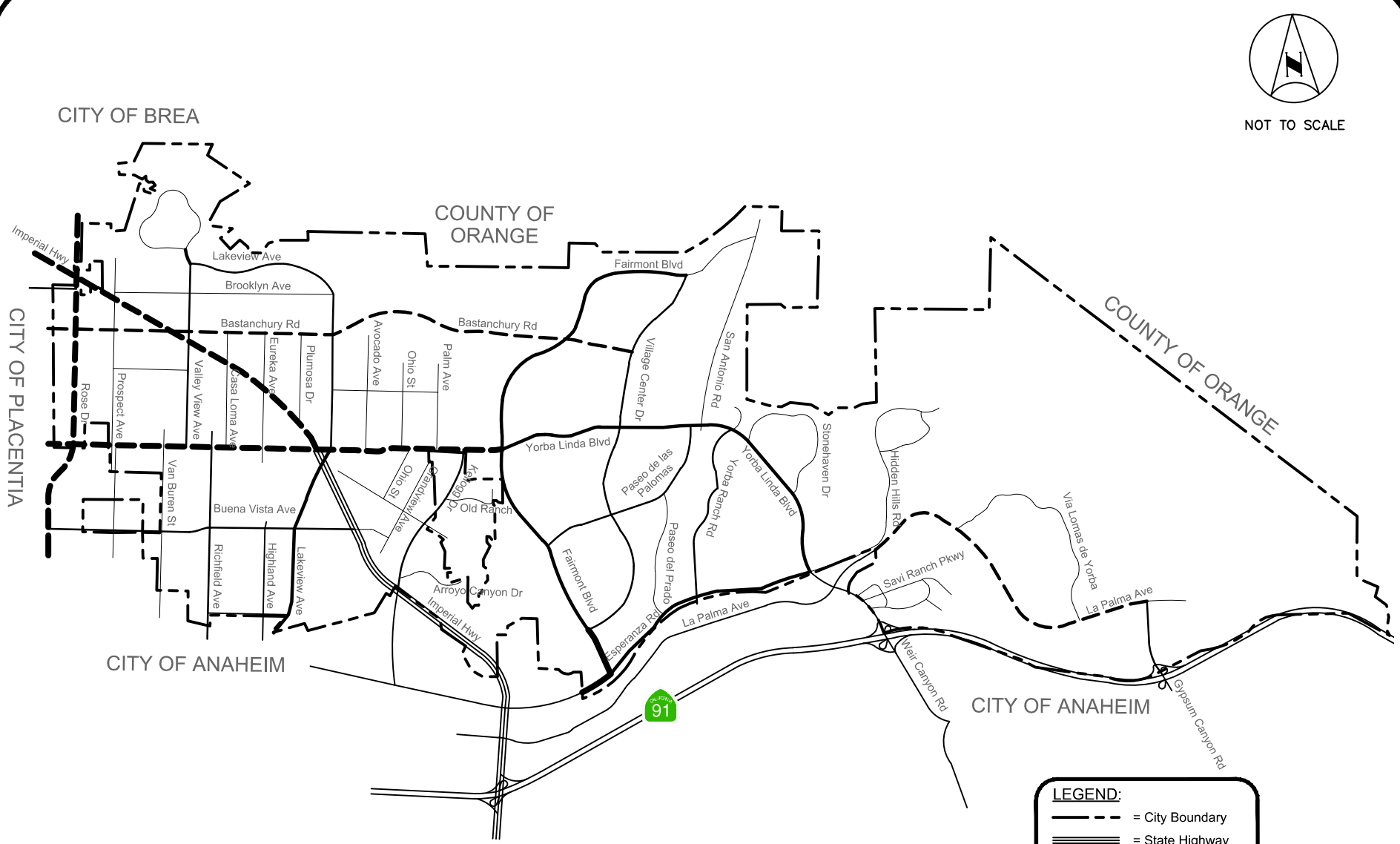

FIGURE 3
EXISTING ROADWAY FUNCTIONAL CLASSIFICATION

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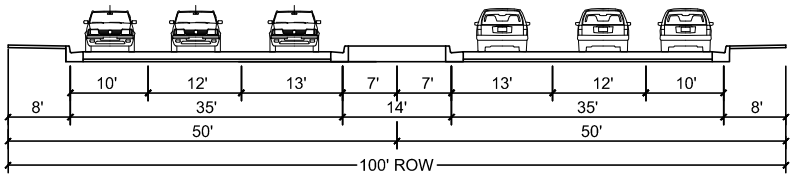
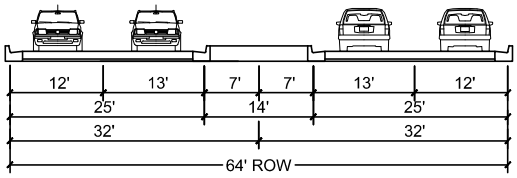


SMART STREET (SIX LANE)
Diagram Not To Scale



SMART STREET (FOUR LANE)
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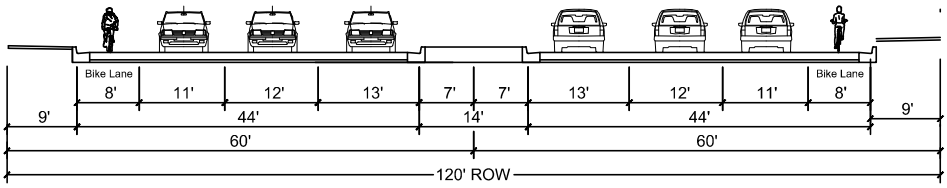
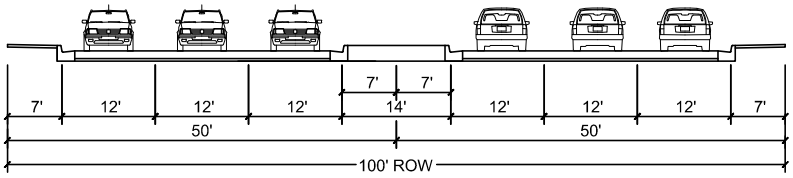
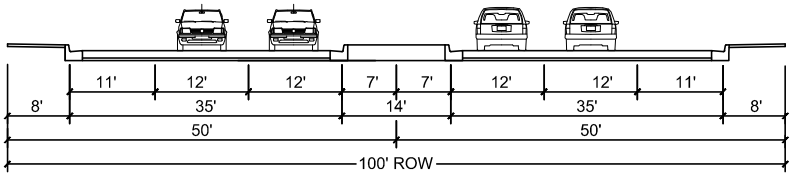


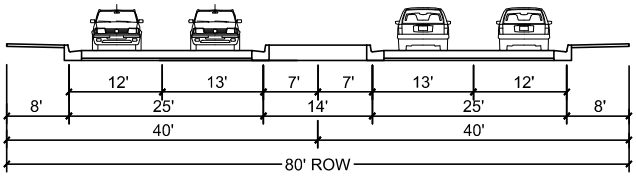
MAJOR
Diagram Not To Scale



MODIFIED MAJOR
Diagram Not To Scale



PRIMARY
Diagram Not To Scale



MODIFIED PRIMARY
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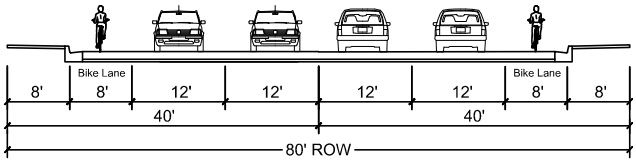

SECONDARY
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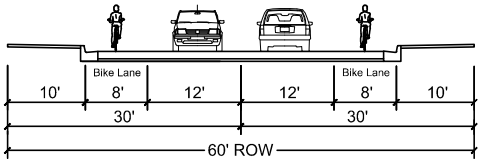
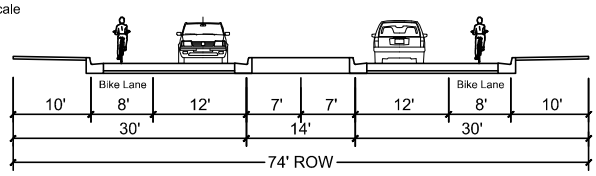


COLLECTOR
Diagram Not To Scale



MODIFIED COLLECTOR
Diagram Not To Scale

FIGURE 4
TYPICAL ROADWAY CROSS SECTIONS

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Major Arterial

A Major Arterial is a 6-lane divided roadway, with 84 to 106 feet of curb-to-curb width within 100 to 120 feet of right-of-way. The right-of-way width for a 6-lane Major arterial would be 120 feet, but where full right-of-way is not available, the 6-lane cross section could be accommodated within less right-of-way (Modified Major). A minimum right-of-way of 100 feet is considered appropriate where it is not feasible to obtain the desired right-of-way width of 120 feet. A Major arterial would be designated with emphasis for automobile, goods movement, and/or transit, and is designed to accommodate approximately 45,000 vehicles per day (vpd) at Level of Service "C". The LOS E capacity of a 6-lane Major arterial would be 56,300 vpd. Major arterials, especially those that parallel a freeway, may carry a component of regional through traffic not handled by the freeway system.

A Major arterial would typically consist of three through lanes in each direction, with one or two left-turn lanes and a dedicated right-turn lane at intersections. Major arterials in the City of Yorba Linda consist of:

- Imperial Highway: from Rose Drive to Lakeview Avenue
- Yorba Linda Boulevard: from Rose Drive to Fairmont Boulevard
- Rose Drive: Yorba Linda Boulevard to City Limit
- Fairmont Boulevard: from Village Center Drive S to Esperanza Road
- Esperanza Road: from City Limit to Fairmont Boulevard

Primary Arterial

A Primary Arterial is a 4-lane divided roadway, with 64 to 84 feet of curb-to-curb width within 80 to 100 feet of right-of-way. The right-of-way width for a Primary arterial would be 100 feet, but where necessary, the 6-lane cross section could be accommodated within less right-of-way (Modified Primary). A minimum right-of-way of 80 feet is considered appropriate where it is not feasible to obtain the desired right-of-way width of 100 feet. A Primary arterial would be designated with emphasis for automobile, goods movement, transit and bicycle, and is designed to accommodate approximately 30,000 vehicles per day at Level of Service "C". The LOS E capacity of a 4-lane Primary arterial would be 37,500 vpd. Primary arterials function similarly to Major arterials, with the primary difference between the two classifications being vehicular capacity.

A Primary arterial would typically consist of two through lanes in each direction, with a left-turn lane, and may include a dedicated right-turn lane at intersections. Primary arterials in the City of Yorba Linda consist of:

- Imperial Highway: from Lakeview Avenue to Orangethorpe Avenue
- Yorba Linda Boulevard: from Fairmont Boulevard to Esperanza Road
- Lakeview Avenue: from Yorba Linda Boulevard to southern City Limit
- Fairmont Boulevard: from Village Center Drive N to Village Center Drive S
- Bastanchury Road: from City Limit to Fairmont Boulevard
- Rose Drive: from City Limit to Imperial Highway
- Esperanza Road: from Fairmont Boulevard to Yorba Linda Boulevard
- La Palma Avenue: from Yorba Linda Boulevard to Gypsum Canyon Road

Secondary Arterial

A Secondary Arterial is a 4-lane undivided roadway, with 64 feet of curb-to-curb width within 80 feet of right-of-way. A Secondary arterial would be designated with emphasis for automobiles and bicycles, and is designed to accommodate approximately 20,000 vehicle trips per day at Level of Service "C". A Secondary arterial often provides a collector function, distributing traffic between local streets and Major and Primary arterials. Although some Secondary arterials may also serve as through routes, most provide more direct access to surrounding land uses.

A Secondary Arterial would typically consist of two travel lanes in each direction, with a left-turn lane at intersections. Secondary arterials in the City of Yorba Linda consist of:

- Buena Vista Avenue: from Rose Drive to Lakeview Avenue
- Valley View Avenue: from Yorba Linda Boulevard to Valley View Circle
- Richfield Road: from Yorba Linda Boulevard to southern City Limit
- Lakeview Avenue: from Yorba Linda Boulevard to Valley View Avenue
- Kellogg Drive: from Yorba Linda Boulevard to Imperial Highway
- Village Center Drive: from Fairmont Boulevard N to Fairmont Boulevard S
- Yorba Ranch Road: from Yorba Linda Boulevard to Esperanza Road
- Paseo de las Palomas: from Fairmont Boulevard to Yorba Linda Boulevard

Collector

A Collector is a 2-lane undivided roadway, with 40 feet of curb-to-curb width within 60 feet of right-of-way. A Collector would typically consist of one travel lane in each direction, and a parking lane or bike lane on each side. A Collector is designed to accommodate approximately 10,000 vehicle trips per day at Level of Service "C". A Collector carries traffic from the neighborhoods to the higher classification street system. A Modified Collector would serve the same function as a collector, but would also have a center median.

Existing Transit Service

The Orange County Transportation Authority (OCTA) operates local public transit routes that extend into and through the City of Yorba Linda. Bus routes currently operated by OCTA in or near the City of Yorba Linda shown on Figure 5. Routes 30, 38, and 71 of the Orange County Transportation Authority (OCTA) currently serve the City of Yorba Linda. A brief description of each of the transit lines in the City of Yorba Linda is provided below.

Route 30 operates between Cerritos and Anaheim, travelling along Fairmont Boulevard and Esperanza Road in the City of Yorba Linda. Service is provided every day with an approximate headway of 45 minutes during the weekdays and 60 minutes during the weekends and holidays.

Route 38 operates between Lakewood and Yorba Linda, travelling along Savi Ranch Parkway and Yorba Linda Boulevard in the City of Yorba Linda. Service is provided every day with varying headways during the weekdays and approximately 45 minutes headways during the weekends and holidays.

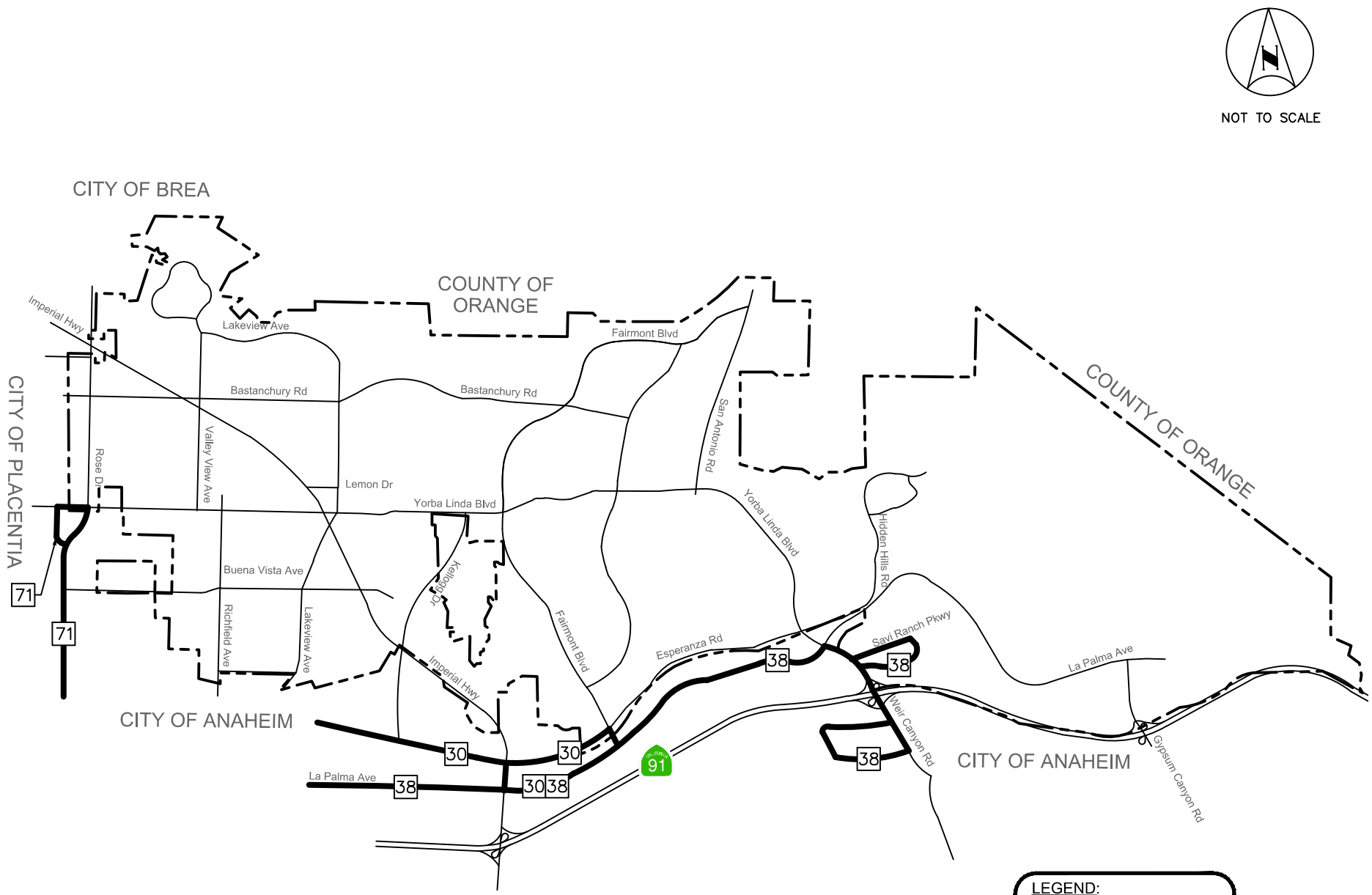

FIGURE 5
OCTA BUS ROUTES

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Route 71 operates between Balboa/Newport Beach and Yorba Linda, traveling along Rose Drive, ending at Yorba Linda Boulevard. Service is provided every day with an approximate headway of 45 minutes Monday through Saturday, and 60 minutes on Sundays and holidays.

Bicycle and Pedestrian Facilities

Bicycle lanes and bicycle routes are provided on a number of roadways within the City of Yorba Linda. Existing bicycle facilities in City of Yorba Linda are shown on Figure 6. The bike system is intended to provide bicyclists with connections between neighborhoods, parks, schools, and other neighborhood and recreational facilities. Most city bikeways are Class II – on-street bike lanes marked in the curb or parking lane on selected city streets. The City does not currently have a formal Bicycle Master Plan.

Sidewalks are generally provided along the arterial roadways and on the vast majority of residential streets throughout the city. The City of Yorba Linda circulation system has been designed to ensure that adequate facilities are provided for pedestrian circulation, especially in the vicinity of schools, parks, major retail facilities, and other locations with high levels of pedestrian activity. The City of Yorba Linda does not currently have a formal Pedestrian Master Plan.

Truck Routes

The designation of truck routes within a city limits is intended to direct truck traffic to those streets where they would cause the least amount of neighborhood intrusion and where noise and other impacts would not be considered nuisances. The City of Yorba Linda has designated one roadway as a truck route to provide for the regulated movement of trucks through the City: Imperial Highway. This designated truck route is illustrated on Figure 7.

Trucks are directed to use Imperial Highway to the greatest extent possible to get to and from their destination. Note: The designation of truck routes does not prohibit trucks from using non-designated roads or streets to make deliveries, once the truck has progressed as far as possible on the designated truck route, or for other reasons as defined in the Motor Vehicle Code of the State of California.

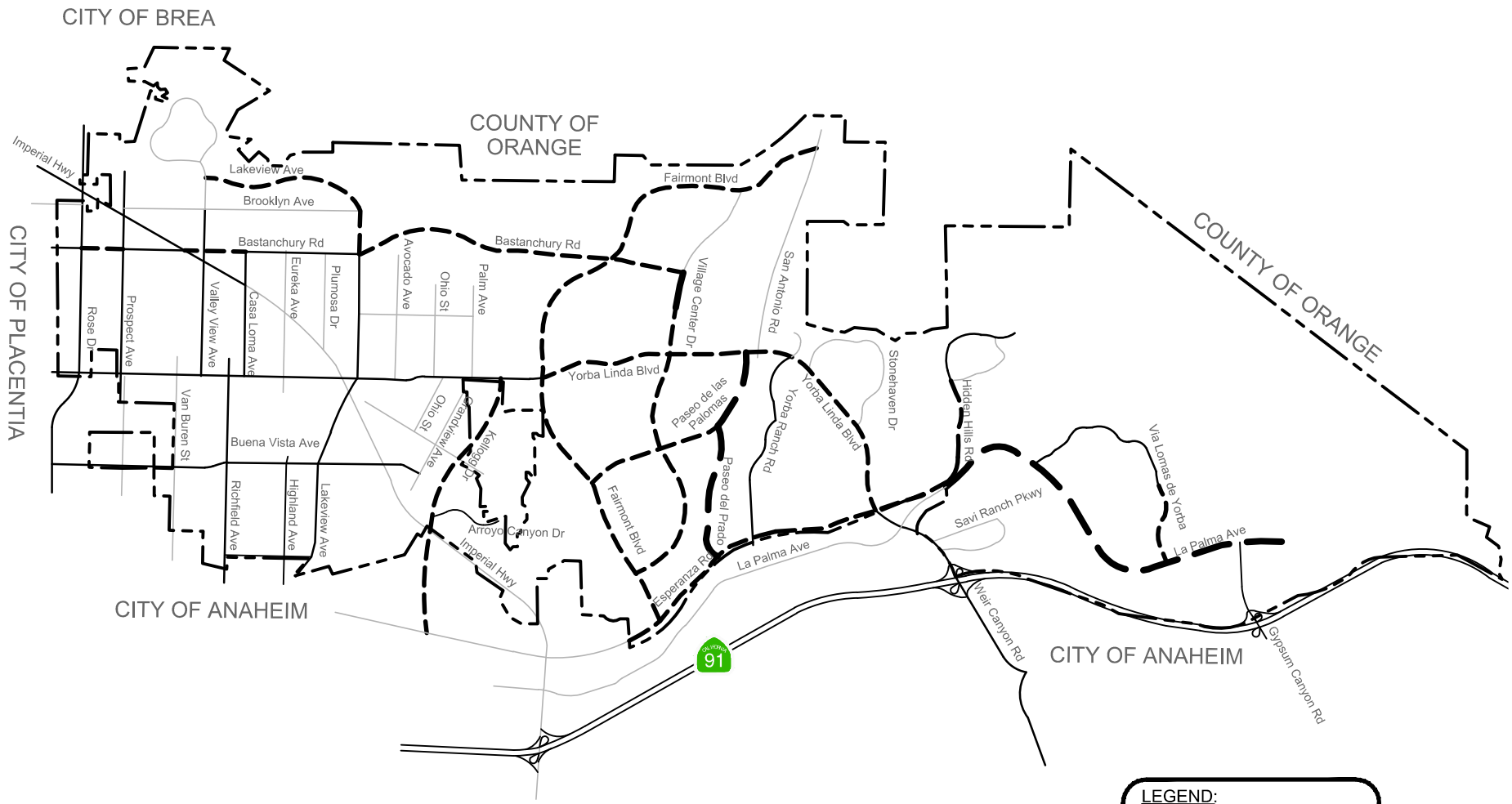

FIGURE 6
EXISTING BICYCLE FACILITIES

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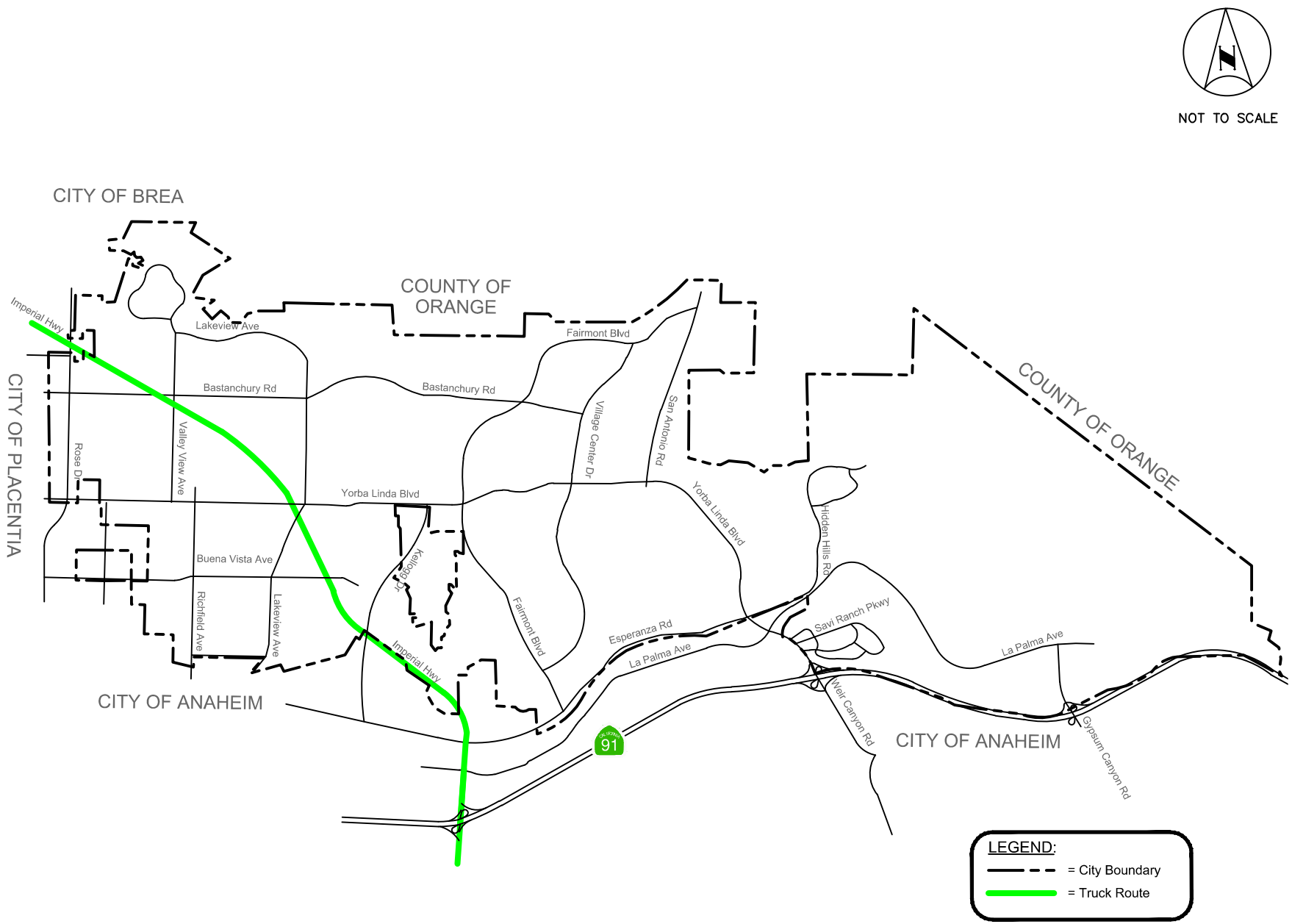

FIGURE 7
TRUCK ROUTES

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ANALYSIS OF EXISTING OPERATING CONDITIONS

Peak Hour Operating Conditions

Level of Service Definition for Intersections

Intersections are analyzed using the Intersection Capacity Utilization (ICU) methodology. The ICU methodology uses peak hourly traffic volumes and lane capacities to calculate a volume-to-capacity ratio (V/C ratio) for each turning movement on each approach. Critical movements are then identified and an ICU value determined based on a summation of the critical V/C ratios. The ICU methodology provides a comparison of intersection volumes to the intersection capacity and the results are then related to LOS values, ranging from "A" to "F", according to following chart.

Level of Service	Intersection Capacity Utilization (ICU)
A	0.00 – 0.60
B	0.61 – 0.70
C	0.71 – 0.80
D	0.81 – 0.90
E	0.91 – 1.00
F	Greater than 1.00

Study Intersections

The intersections shown on the chart on the following page were selected for analysis of peak hour operating conditions. Study intersections generally consist of intersections of two arterial roadways (Secondary or higher) within the City of Yorba Linda, as well as selected intersections that are currently carrying high peak hour volumes or have other operating characteristics based on input from City staff. The location of the study intersections are shown on Figure 8. The existing lane geometry and traffic control at each study intersection are shown on Figures 9a and 9b.

Peak Hour Intersection Traffic Volumes

Morning and evening peak hour traffic counts for many of the study intersections were provided by the City, or were obtained from previously approved traffic studies. Where no previous counts were provided, new traffic count data was collected. For prior year traffic counts, a half percent (0.5%) growth rate was applied to adjust to 2015 traffic volumes. A summary of the source of the peak hour traffic data for each of the study intersections is provided on the table on the following page. Existing peak hour traffic volumes are illustrated on Figures 10a and 10b and are provided in *Appendix A*.

Int. #	Study Intersection	Traffic Control	Traffic Count Source and Date
1	Rose Drive at Imperial Highway	Signalized	YL Commons - 2013
2	Rose Drive at Bastanchury Road	Signalized	NDS Counts - 2012
3	Rose Drive at Yorba Linda Boulevard	Signalized	YL Commons – 2013
4	Imperial Highway at Bastanchury Road	Signalized	YL Commons – 2013
5	Valley View Avenue at Bastanchury Road	Signalized	NDS Counts – 2012
6	Valley View Avenue at Imperial Highway	Signalized	NDS Counts – 2012
7	Valley View Avenue at Yorba Linda Boulevard	Signalized	New Count - 2015
8	Richfield Road at Yorba Linda Boulevard	Signalized	YL Commons – 2013
9	Richfield Road at Buena Vista Avenue	Signalized	New Count – 2015
10	Lakeview Avenue at Bastanchury Road	Signalized	Melia Study – 2014
11	Imperial Highway at Yorba Linda Boulevard	Signalized	New Count – 2015
12	Lakeview Avenue at Yorba Linda Boulevard	Signalized	Melia Study – 2014
13	Lakeview Avenue at Buena Vista Avenue	Unsignalized	YL Commons – 2013
14	Kellogg Drive at Yorba Linda Boulevard	Signalized	YL Commons – 2013
15	Kellogg Drive at Imperial Highway (North)	Signalized	New Count – 2015
16	Kellogg Drive at Imperial Highway (South)	Unsignalized	New Count – 2015
17	Fairmont Boulevard at Bastanchury Road	Signalized	New Count – 2015
18	Fairmont Boulevard at Yorba Linda Boulevard	Signalized	YL Commons – 2013
19	Fairmont Boulevard at Paseo de las Palomas	Signalized	NDS Counts - 2012
20	Fairmont Boulevard (South) at Village Center	Signalized	New Count – 2015
21	Village Center Drive at Fairmont Boulevard	Unsignalized	New Count – 2015
22	Village Center Drive at Bastanchury Road	Signalized	New Count – 2015
23	Village Center Drive at Yorba Linda Boulevard	Signalized	EH Study – 2012
24	Village Center Drive at Paseo de las Palomas	Unsignalized	New Count – 2015
25	Paseo de las Palomas at Yorba Linda Boulevard	Signalized	EH Study – 2012
26	San Antonio Road at Yorba Linda Boulevard	Signalized	EH Study – 2012
27	Yorba Ranch Road at Yorba Linda Boulevard	Signalized	EH Study – 2012
28	Yorba Ranch Road at Esperanza Road	Unsignalized	New Count – 2015
29	Yorba Linda Boulevard at La Palma Avenue	Signalized	EH Study - 2012
30	Yorba Linda Boulevard at Savi Ranch Parkway	Signalized	Costco Study - 2012

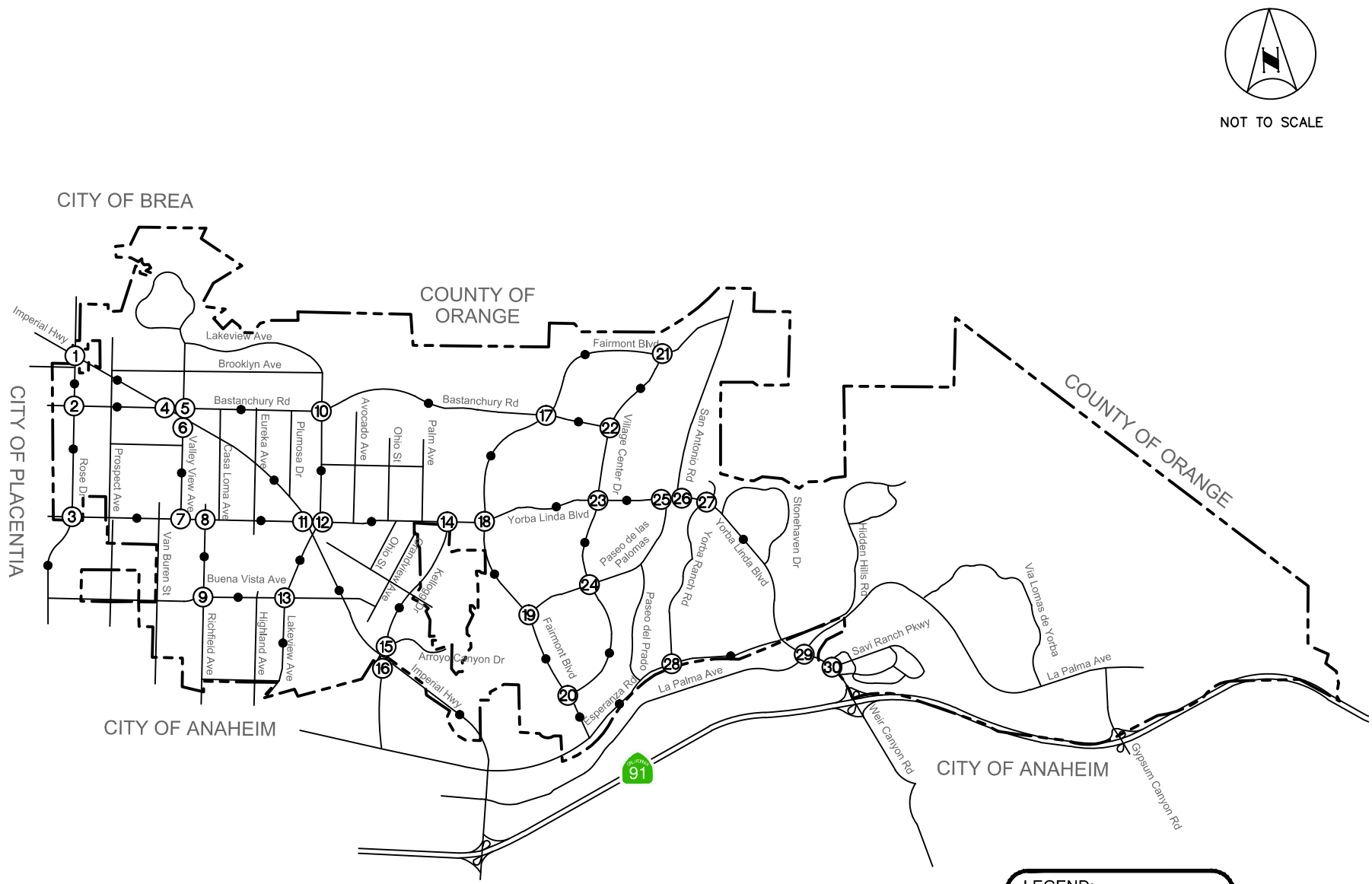

FIGURE 8
STUDY INTERSECTIONS AND ROADWAY SEGMENTS

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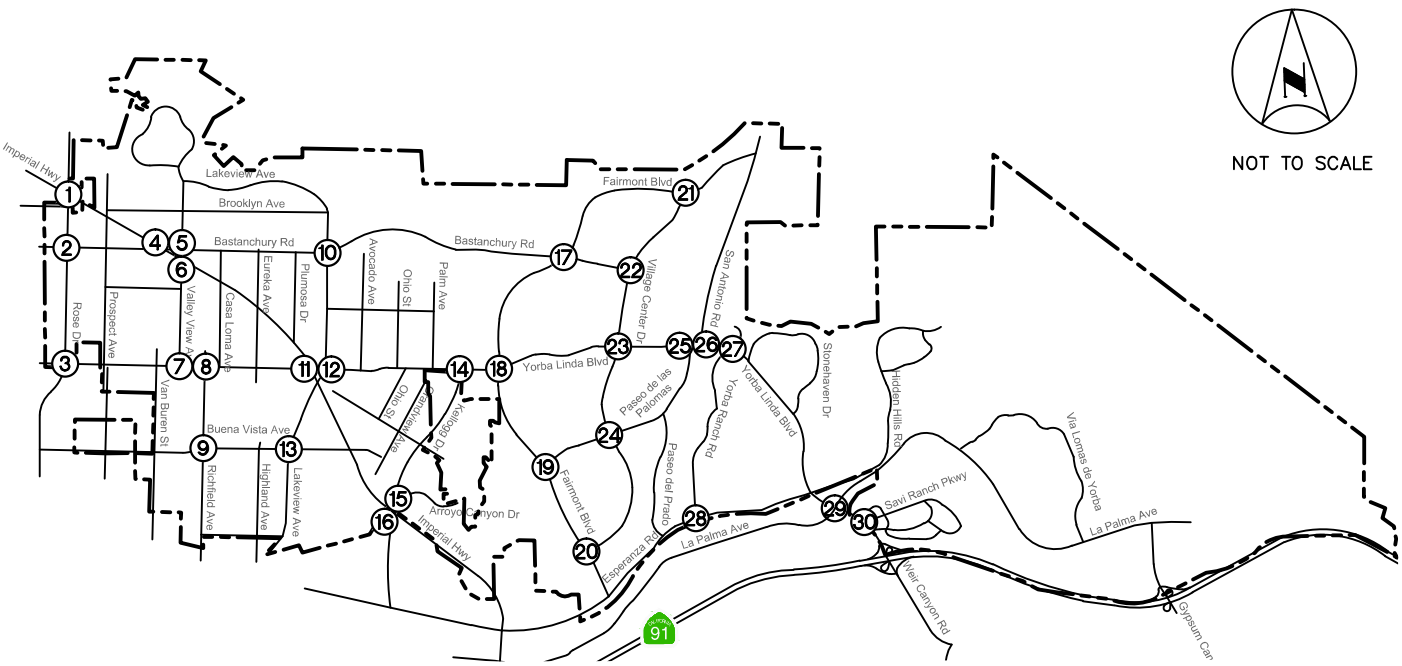
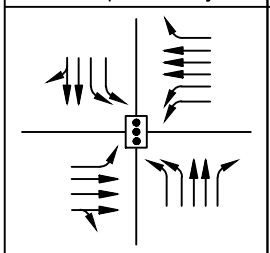
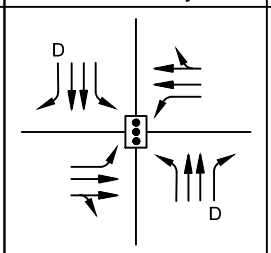
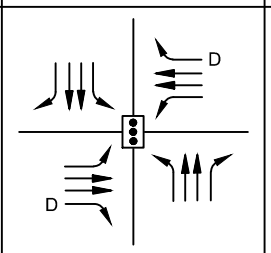
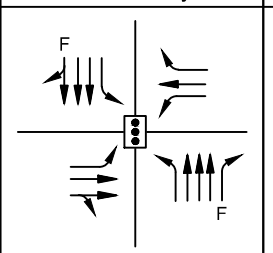
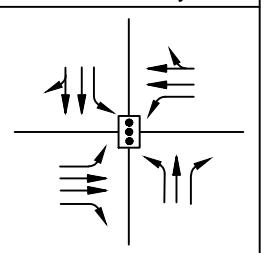
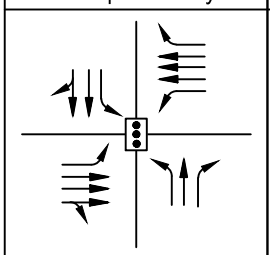
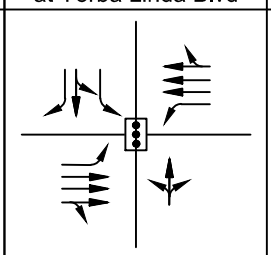
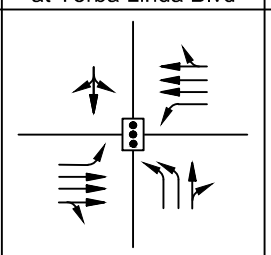
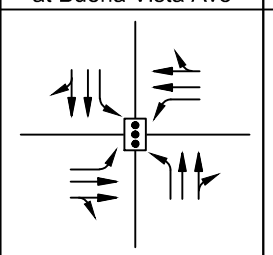
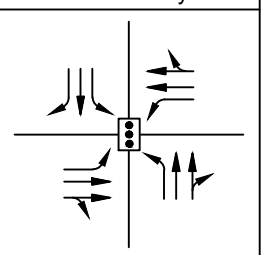
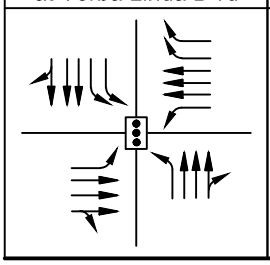
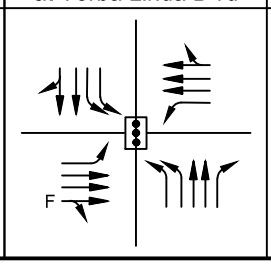
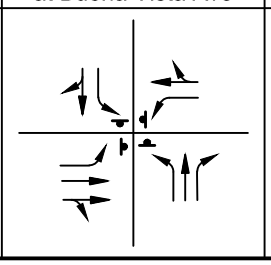
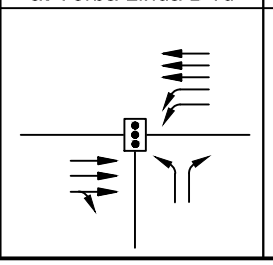
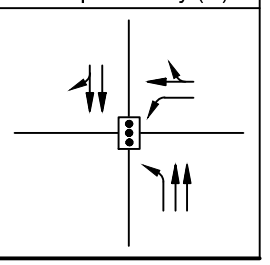


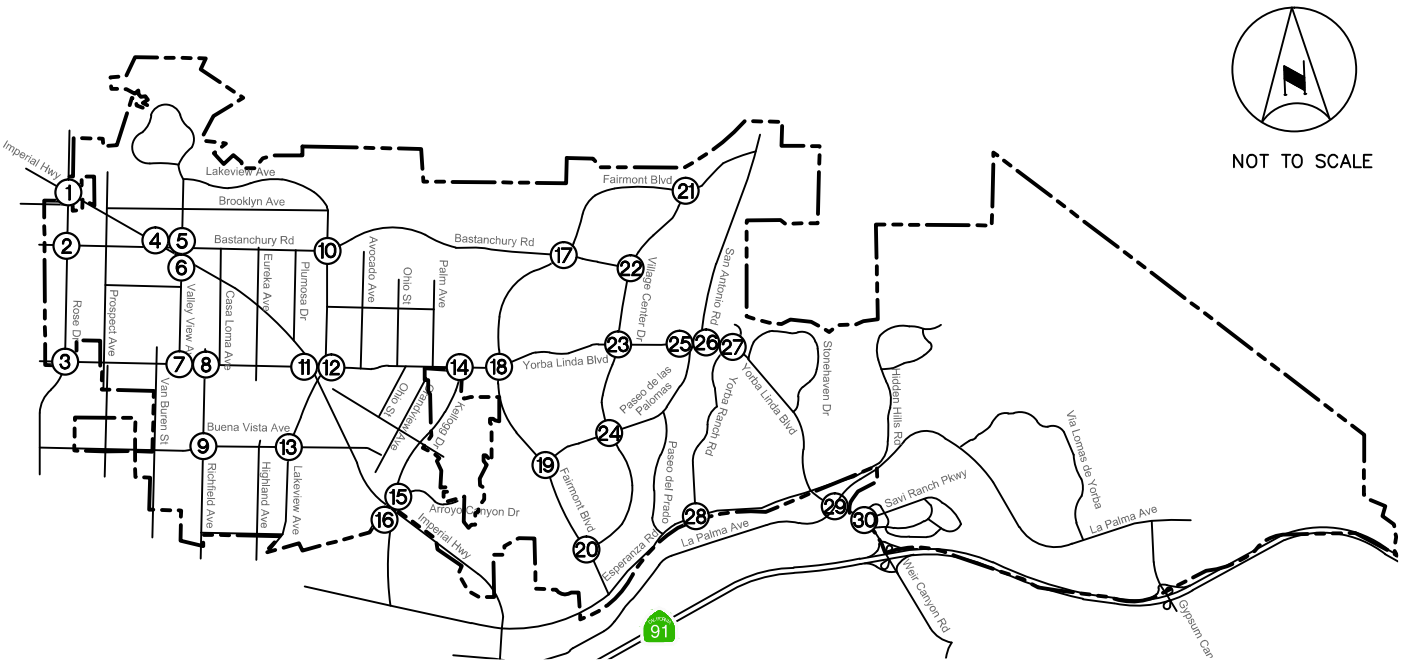
1. Rose Dr at Imperial Hwy	2. Rose Dr at Bastanchury Rd	3. Rose Dr at Yorba Linda Blvd	4. Imperial Hwy at Bastanchury Rd	5. Valley View Ave at Bastanchury Rd
				
6. Valley View Ave at Imperial Hwy	**7. Valley View Ave at Yorba Linda Blvd**	**8. Richfield Rd at Yorba Linda Blvd**	**9. Richfield Rd at Buena Vista Ave**	**10. Lakeview Ave at Bastanchury Rd**
				
11. Imperial Hwy at Yorba Linda Blvd	**12. Lakeview Ave at Yorba Linda Blvd**	**13. Lakeview Ave at Buena Vista Ave**	**14. Kellogg Dr at Yorba Linda Blvd**	**15. Kellogg Dr at Imperial Hwy (N)**
				

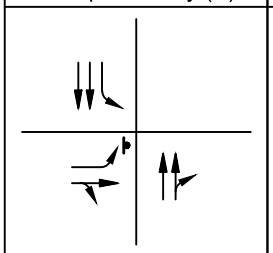
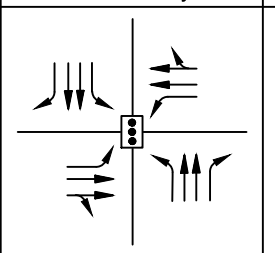
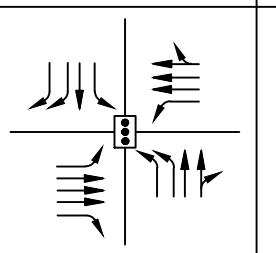
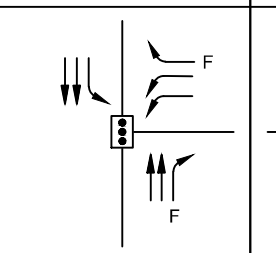
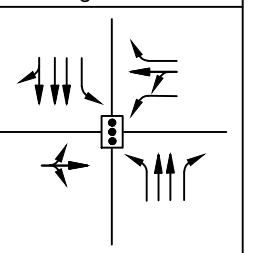
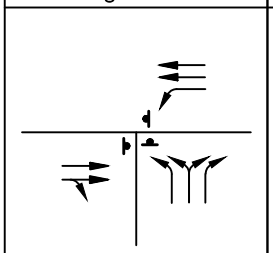
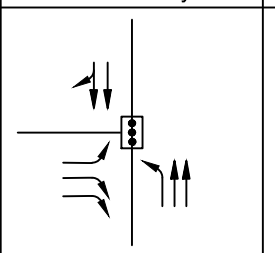
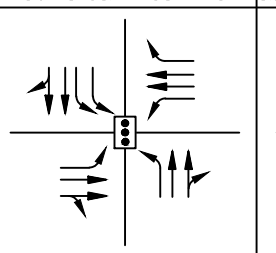
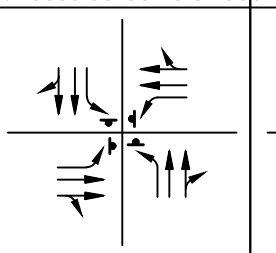
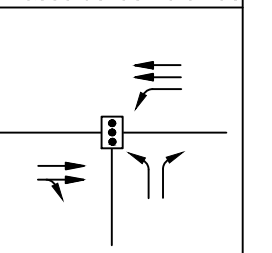
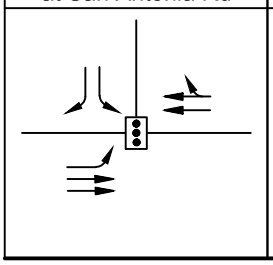
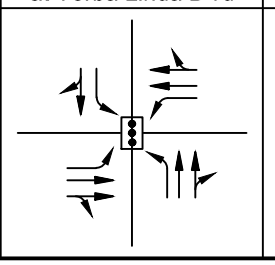
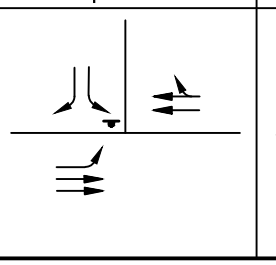
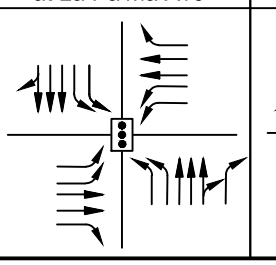
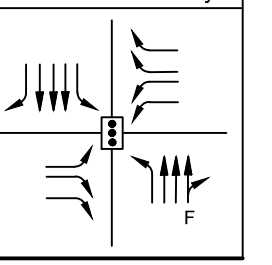
LEGEND:

- = Signal
- = Stop Sign
- = Study Intersection
- D = Defacto Right Turn
- F = Free Right Turn

FIGURE 9a
EXISTING LANE CONFIGURATION AND TRAFFIC CONTROL

Kimley»Horn



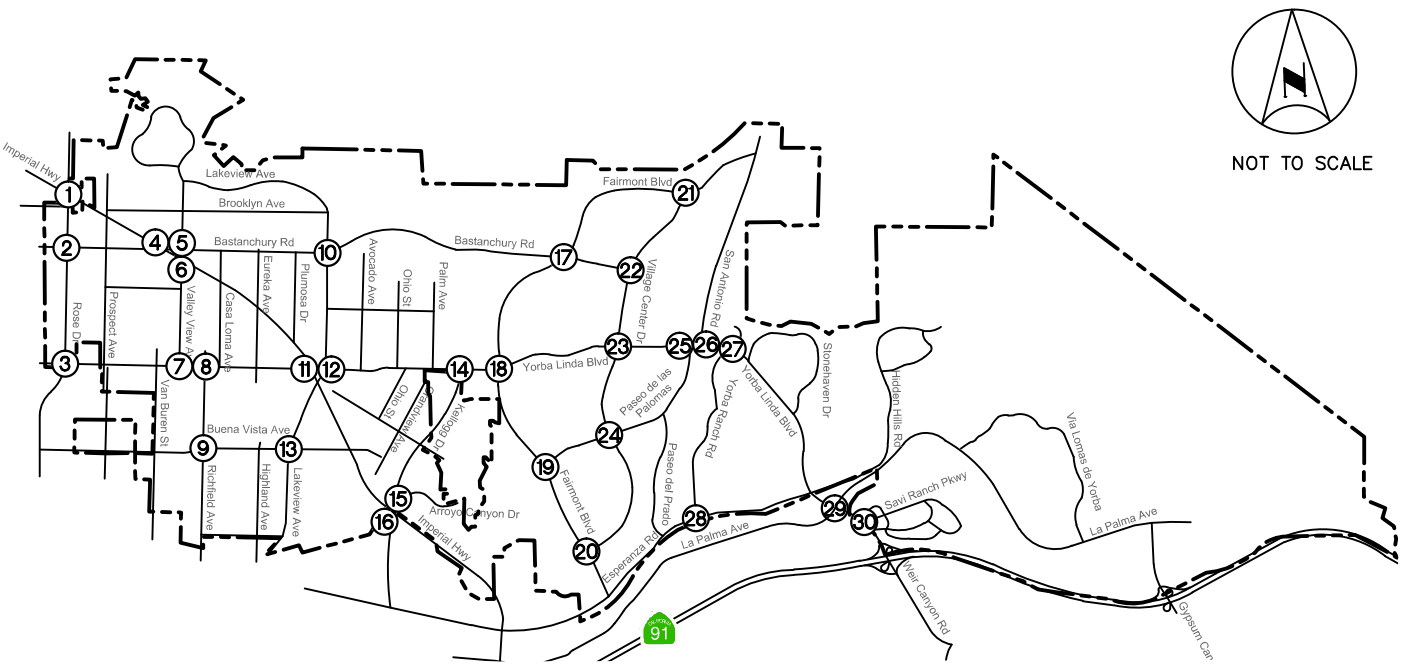
16. Kellogg Dr at Imperial Hwy (S)	17. Fairmont Blvd at Bastanchury Rd	18. Fairmont Blvd at Yorba Linda Blvd	19. Fairmont Blvd at Paseo de las Palomas	20. Fairmont Blvd (S) at Village Center Dr
				
21. Fairmont Blvd (N) at Village Center Dr	**22. Village Center Dr at Bastanchury Rd**	**23. Village Center Dr at Yorba Linda Blvd**	**24. Village Center Dr at Paseo de las Palomas**	**25. Yorba Linda Blvd at Paseo de las Palomas**
				
26. Yorba Linda Blvd at San Antonia Rd	**27. Yorba Ranch Rd at Yorba Linda Blvd**	**28. Yorba Ranch Rd at Esperanza Rd**	**29. Yorba Linda Blvd at La Palma Ave**	**30. Yorba Linda Blvd at Savi Ranch Pkwy**
				

LEGEND:

- = Signal
- = Stop Sign
- (X) = Study Intersection
- D = Defacto Right Turn
- F = Free Right Turn

FIGURE 9b
EXISTING LANE CONFIGURATION AND TRAFFIC CONTROL

Kimley»Horn



1. Rose Dr at Imperial Hwy	2. Rose Dr at Bastanchury Rd	3. Rose Dr at Yorba Linda Blvd	4. Imperial Hwy at Bastanchury Rd	5. Valley View Ave at Bastanchury Rd
23/23 ↙ 427/283 ↓ 562/715 ↘	71/74 ↙ 536/472 ↓ 119/54 ↘	64/94 ↙ 722/428 ↓ 105/136 ↘	7/9 ↙ 1209/1533 ↓ 206/468 ↘	275/169 ↙ 325/204 ↓ 68/60 ↘
590/613 ← 1334/895 ← 195/166 ←	61/40 ← 632/417 ← 83/88 ←	132/156 ← 740/574 ← 214/186 ←	610/247 ← 427/241 ← 7/5 ←	44/26 ← 687/376 ← 50/41 ←
73/42 ↗ 708/1110 → 84/110 ↘	61/70 ↗ 439/562 → 117/88 ↘	92/117 ↗ 519/677 → 64/73 ↘	17/10 ↗ 189/357 → 266/238 ↘	105/194 ↗ 255/619 → 10/23 ↘
217/218 ↑ 223/442 ↑ 117/84 ↑	135/175 ↑ 450/719 ↑ 116/111 ↑	96/174 ↑ 576/800 ↑ 118/192 ↑	288/238 ↑ 1587/1331 ↑ 5/0 ↑	16/12 ↑ 151/275 ↑ 36/96 ↑

6. Valley View Ave at Imperial Hwy	7. Valley View Ave at Yorba Linda Blvd	8. Richfield Rd at Yorba Linda Blvd	9. Richfield Rd at Buena Vista Ave	10. Lakeview Ave at Bastanchury Rd
12/8 ↙ 167/96 ↓ 181/119 ↘	121/138 ↙ 36/49 ↓ 229/239 ↘	6/2 ↙ 4/1 ↓ 0/3 ↘	59/61 ↙ 478/274 ↓ 54/67 ↘	29/14 ↙ 95/82 ↓ 29/48 ↘
90/133 ← 1826/1553 ← 16/30 ←	192/289 ← 841/829 ← 53/51 ←	4/2 ← 813/765 ← 200/111 ←	77/55 ← 240/140 ← 166/79 ←	30/59 ← 535/434 ← 135/126 ←
10/17 ↗ 1412/1742 → 166/157 ↘	103/205 ↗ 598/884 → 88/120 ↘	4/3 ↗ 642/858 → 211/171 ↘	56/67 ↗ 172/258 → 110/69 ↘	12/23 ↗ 272/578 → 51/99 ↘
118/163 ↑ 111/145 ↑ 51/26 ↑	55/94 ↑ 36/58 ↑ 41/47 ↑	159/267 ↑ 4/1 ↑ 156/145 ↑	104/121 ↑ 254/543 ↑ 83/167 ↑	86/94 ↑ 40/111 ↑ 81/154 ↑

11. Imperial Hwy at Yorba Linda Blvd	12. Lakeview Ave at Yorba Linda Blvd	13. Lakeview Ave at Buena Vista Ave	14. Kellogg Dr at Yorba Linda Blvd	15. Kellogg Dr at Imperial Hwy (N)
41/56 ↙ 1424/1221 ↓ 350/620 ↘	127/123 ↙ 211/177 ↓ 66/167 ↘	94/104 ↙ 417/247 ↓ 45/41 ↘		74/50 ↙ 730/419 ↓
494/416 ← 639/532 ← 246/197 ←	28/107 ← 726/1036 ← 166/119 ←	90/35 ← 152/60 ← 79/17 ←	1154/833 ← 285/202 ←	185/348 ← 114/119 ←
25/101 ↗ 328/661 → 294/374 ↘	107/104 ↗ 501/875 → 88/70 ↘	115/159 ↗ 121/80 → 57/35 ↘	582/1167 ↗ 66/66 ↘	
277/335 ↑ 1003/1005 ↑ 191/240 ↑	98/177 ↑ 108/264 ↑ 86/193 ↑	38/67 ↑ 256/402 ↑ 52/58 ↑	77/73 ↑ 221/326 ↑	178/190 ↑ 256/307 ↑

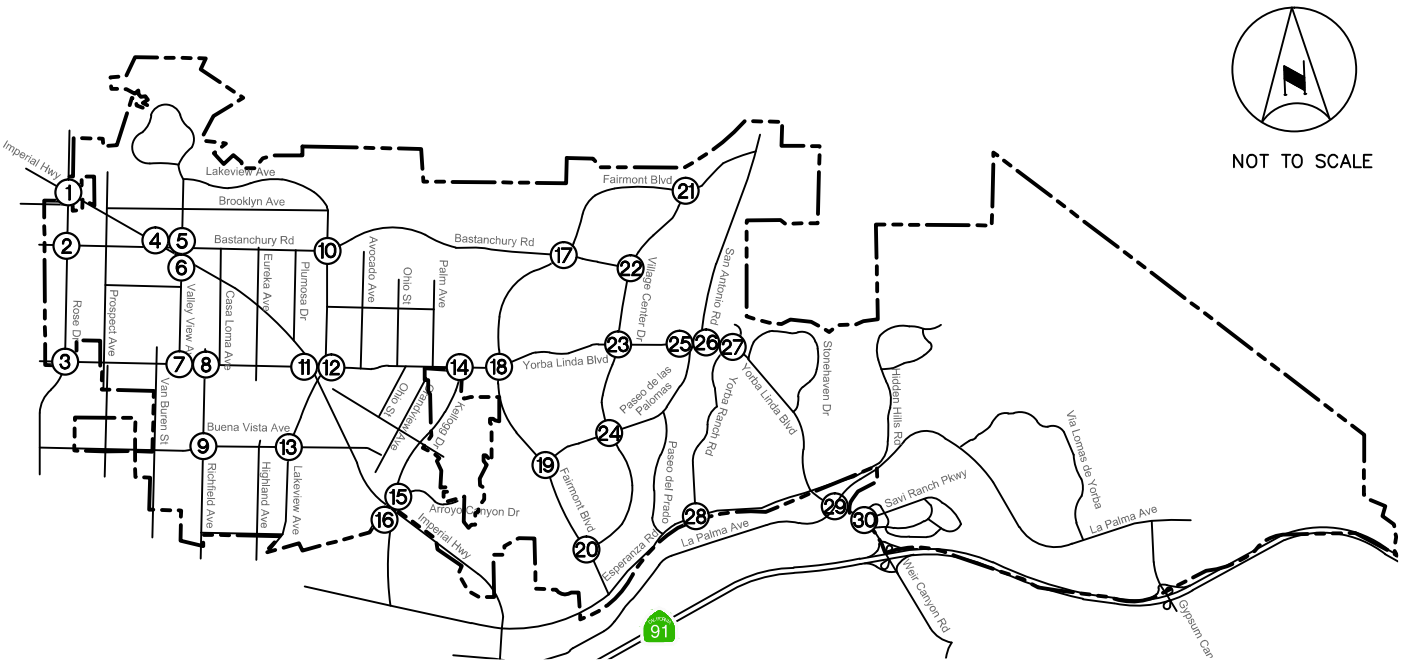
LEGEND:

(X) = Study Intersection

XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 10a
EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES

Kimley»Horn



16. Kellogg Dr at Imperial Hwy (S)	17. Fairmont Blvd at Bastanchury Rd	18. Fairmont Blvd at Yorba Linda Blvd	19. Fairmont Blvd at Paseo de las Palomas	20. Fairmont Blvd (S) at Village Center Dr
↓ 444/314 370/226	↓ 263/124 266/84 48/20 ← 13/39 515/483 131/72	↓ 321/149 267/175 99/144 ← 118/58 917/660 85/57	↓ 442/250 152/176 ← 228/132 93/75	↓ 9/13 637/294 48/40 ← 84/27 0/4 401/233
12/67 ↱ 0/1 → 241/204 ↳ ↑ 440/421 ↱ 255/79	118/174 ↱ 400/452 → 240/242 ↳ 248/177 ↑ 93/141 ↑ ↱ 43/47	151/230 ↱ 487/870 → 222/248 ↳ 290/210 ↑ 188/140 ↑ ↱ 65/55	↑ 365/288 ↱ 58/85	15/9 ↱ 1/2 → 10/5 ↳ 4/9 ↑ 371/454 ↑ ↱ 164/392

21. Fairmont Blvd (N) at Village Center Dr	22. Village Center Dr at Bastanchury Rd	23. Village Center Dr at Yorba Linda Blvd	24. Village Center Dr at Paseo de las Palomas	25. Yorba Linda Blvd at Paseo de las Palomas
← 128/55 39/31	↓ 97/51 177/95	↓ 125/82 143/269 337/380 ← 376/164 752/500 56/119	↓ 46/38 168/151 23/33 ← 25/20 63/53 60/38	← 1036/941 50/133
26/61 → 43/28 ↳ ↑ 33/40 ↱ 26/54	45/72 ↱ 435/440 ↳ 563/574 ↑ ↱ 70/128	78/151 ↱ 462/758 → 52/83 ↳ 81/32 ↑ 134/223 ↑ ↱ 38/89	39/38 ↱ 86/56 → 16/17 ↳ 25/10 ↑ 105/178 ↑ ↱ 42/86	701/1110 → 21/43 ↳ 46/41 ↑ ↱ 115/128

26. Yorba Linda Blvd at San Antonia Rd	27. Yorba Ranch Rd at Yorba Linda Blvd	28. Yorba Ranch Rd at Esperanza Rd	29. Yorba Linda Blvd at La Palma Ave	30. Yorba Linda Blvd at Savi Ranch Pkwy
↓ 71/60 115/71 ← 52/76 1138/975	↓ 2/4 9/6 21/2 ← 10/14 1112/980 49/41	↓ 96/69 27/15 ← 7/28 421/286	↓ 59/64 939/798 347/609 ← 682/327 304/167 277/333	↓ 170/170 1396/1396 194/194 ← 110/110 155/155
26/54 ↱ 931/1189 → 1/1 ↳ 2/0 ↑ ↱ 4/2	6/19 ↱ 962/1152 → 82/93 ↳ 66/87 ↑ 3/5 ↑ ↱ 41/40	39/98 ↱ 284/391 →	45/83 ↱ 145/576 → 268/403 ↳ 279/360 ↑ 796/1216 ↑ ↱ 251/595	59/59 ↱ 143/143 ↳ 169/169 ↑ 1117/1117 ↑ ↱ 678/678

LEGEND:

(X) = Study Intersection

XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 10b
EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES

Kimley»Horn

Peak Hour Intersection Analysis – Existing Conditions

ICU analyses were conducted to evaluate the existing operating conditions of the study intersections. The resulting ICU values and the corresponding LOS are summarized on Table 1. Based on Table 1, all study intersections are forecast to at LOS D or better under existing conditions, with the exception of the following study intersection:

- Yorba Linda Boulevard at Savi Ranch Parkway: LOS E – PM

Daily Traffic Conditions

Level of Service Definition for Roadways

Congestion is a result of a street network that carries traffic volumes in excess of the network's designed capacity. A roadway's capacity is a function primarily of the number of lanes provided to carry traffic volumes, and whether or not the roadway is divided with a median or center turn lane. Generally, the more lanes provided, the more capacity the roadway has to accommodate traffic demand. Below is a summary of the theoretical daily traffic-carrying capacities for each of the roadway types.

Roadway Type	Roadway Capacity (vpd)				
	LOS **A**	LOS **B**	LOS **C**	LOS **D**	LOS **E**
Major Arterial (6D)	33,900	39,400	45,000	50,600	56,300
Primary Arterial (4D)	22,500	26,300	30,000	33,800	37,500
Secondary Arterial (4U)	15,000	17,500	20,000	22,500	25,000

The daily capacity of a roadway is also affected by a number of variables, including the type and number of intersection controls, signal timing, the presence and frequency of driveways, on-street parking, percentage of the daily traffic in the peak hour, the directionality of traffic in the peak hour, and other factors. The daily capacities shown above provide a general guideline as to the adequacy or deficiency of the roadway system.

Level of Service (LOS) terms are used to qualitatively describe prevailing conditions and their effect on traffic. Broadly interpreted, the LOS concept denotes any one of a number of differing combinations of operating conditions that may take place as a roadway is accommodating various traffic volumes. The Level of Service is related to the volume-to-capacity (V/C ratio. To determine the V/C ratio, the average daily traffic volume on a particular roadway link is divided by the link capacity. There are six defined Levels of Service, A through F which describe conditions ranging from "ideal" to "worst" as defined in the following chart.

TABLE 1
SUMMARY OF INTERSECTION OPERATION
EXISTING CONDITIONS

Int. #	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			ICU	LOS	ICU	LOS
1	Rose Drive at Imperial Highway	S	0.713	C	0.821	D
2	Rose Drive at Bastanchury Road	S	0.557	A	0.567	A
3	Rose Drive at Yorba Linda Boulevard	S	0.632	B	0.713	C
4	Imperial Highway at Bastanchury Road	S	0.723	C	0.663	B
5	Valley View Avenue at Bastanchury Road	S	0.542	A	0.506	A
6	Valley View Avenue at Imperial Highway	S	0.619	B	0.629	B
7	Valley View Avenue at Yorba Linda Boulevard	S	0.488	A	0.622	B
8	Richfield Road at Yorba Linda Boulevard	S	0.459	A	0.427	A
9	Richfield Road at Buena Vista Avenue	S	0.475	A	0.465	A
10	Lakeview Avenue at Bastanchury Road	S	0.348	A	0.467	A
11	Imperial Highway at Yorba Linda Boulevard	S	0.866	D	0.860	D
12	Lakeview Avenue at Yorba Linda Blvd	S	0.413	A	0.526	A
13	Lakeview Avenue at Buena Vista Avenue	U	0.411	A	0.436	A
14	Kellogg Drive at Yorba Linda Boulevard	S	0.322	A	0.416	A
15	Kellogg Drive at Imperial Highway (North)	S	0.484	A	0.390	A
16	Kellogg Drive at Imperial Highway (South)	U	0.456	A	0.339	A
17	Fairmont Boulevard at Bastanchury Road	S	0.651	B	0.510	A
18	Fairmont Boulevard at Yorba Linda Boulevard	S	0.618	B	0.518	A
19	Fairmont Boulevard at Paseo de las Palomas	S	0.288	A	0.273	A
20	Fairmont Boulevard (South) at Village Center Drive	S	0.338	A	0.404	A
21	Village Center Drive at Fairmont Boulevard (North)	U	0.062	A	0.060	A
22	Village Center Drive at Bastanchury Road	S	0.516	A	0.499	A
23	Village Center Drive at Yorba Linda Boulevard	S	0.493	A	0.603	B
24	Village Center Drive at Paseo de las Palomas	U	0.152	A	0.150	A
25	Paseo de las Palomas at Yorba Linda Boulevard	S	0.403	A	0.519	A
26	San Antonio Road at Yorba Linda Boulevard	S	0.510	A	0.466	A
27	Yorba Ranch Road at Yorba Linda Boulevard	S	0.455	A	0.525	A
28	Yorba Ranch Road at Esperanza Road	U	0.175	A	0.169	A
29	Yorba Linda Boulevard at La Palma Avenue	S	0.765	C	0.807	D
30	Yorba Linda Boulevard at Savi Ranch Parkway	S	0.707	C	0.924	E

Notes:
Bold and shaded values indicate intersections operating at LOS E or F per City standards.
Intersection operation is expressed in volume-to-capacity (V/C) for all study intersections using the ICU Methodology.
S = Signalized
U = Unsignalized
ICU = Intersection Capacity Utilization
LOS = Level of Service

Level of Service	Description of Roadway Operating Conditions	Range of V/C Ratios
A	Describes primarily free-flow conditions at average travel speeds. Vehicles are seldom impeded in their ability to maneuver in the traffic stream. Delay at intersections are minimal.	0.00 - 0.60
B	Represents reasonably unimpeded operations at average travel speeds. The ability to maneuver in the traffic stream is slightly restricted; delays are not bothersome	0.61 - 0.70
C	Represents stable operations, however, ability to change lanes and maneuver may be more restricted than LOS B and longer queues are experienced at intersections.	0.71 - 0.80
D	Congestion occurs and a small change in volumes increases delays substantially.	0.81 - 0.90
E	Severe congestion occurs with extensive delays and low travel speeds occur.	0.91 - 1.00
F	Characterizes arterial flow at extremely low speeds and intersection congestion occurs with high delays and extensive queuing.	> 1.00

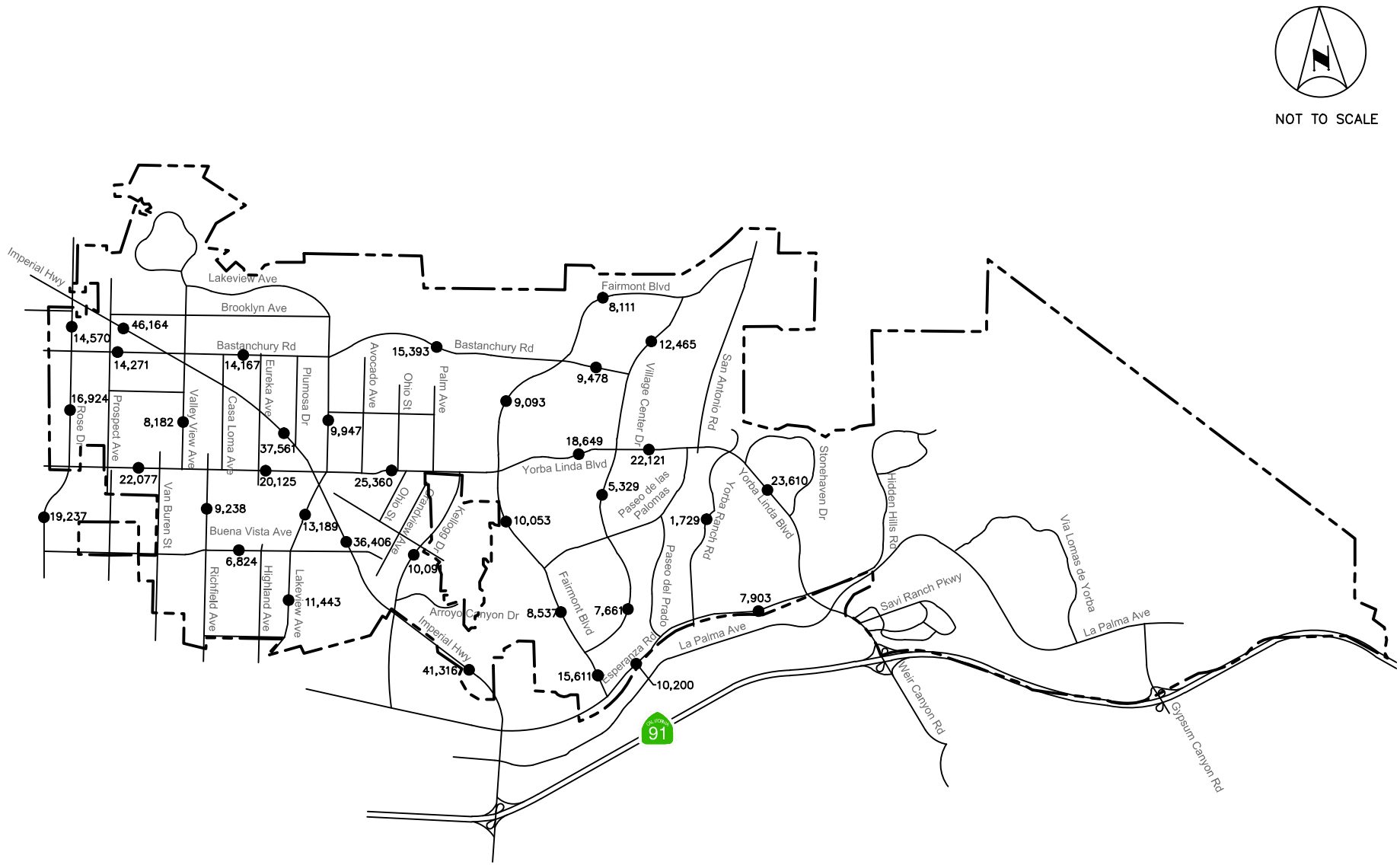
As shown on the table above, traffic conditions are best when the daily traffic volumes on a roadway are less than 60 or 70% of the theoretical capacity of the roadway, while congestion and delays can be expected when the daily traffic volumes approach or exceed 100% of the roadway capacity. The threshold Level of Service for the City of Yorba Linda for daily roadway operation is LOS C for planning purposes.

Existing Traffic Conditions on Roadways

Existing roadway volumes were compared to roadway capacity to assess existing levels of service. Existing daily traffic volumes on roadway segments are presented on Figure 11. For each roadway segment, the daily capacity was determined in accordance with the current facility type and existing number of lanes, and a v/c ratio was computed. The resulting volumes and associated v/c ratios and LOS are summarized on Table 2.

The data on Table 2 indicates that all roadway segments currently operate at LOS C or better except for the following roadway segments:

- Imperial Highway (Rose Drive to Valley View Avenue)
- Imperial Highway (Lakeview Avenue to Kellogg Drive)
- Imperial Highway (Kellogg Drive to Orangethorpe Avenue)
- Bastanchury Road (Imperial Highway to Lakeview Avenue)
- Lakeview Avenue (Yorba Linda Boulevard to Buena Vista Avenue)
- Kellogg Drive (Yorba Linda Boulevard to Imperial Highway)



LEGEND:

x,xxx = Average Daily Traffic Volume

FIGURE 11
EXISTING ROADWAY SEGMENT VOLUMES

Kimley»Horn

K:\ORA_TPTO\ZSAC\Projects\Projects for Others\2015\Barquist\Yorba Linda – Ciruclation Element Update\6 CADD\FIGURES–Yorba Linda GP.dwg

TABLE 2
SUMMARY OF ROADWAY SEGMENT ANALYSIS
EXISTING CONDITIONS

Roadway	Segment	Number of Lanes	LOS E Capacity	Daily Traffic Volume	V/C	LOS
Imperial Highway	Rose Dr to Valley View Ave	6D	56,300	46,164	0.820	D
	Valley View Ave to Yorba Linda Blvd	6D	56,300	37,561	0.667	B
	Yorba Linda Blvd to Kellogg Dr	4D	37,500	36,406	0.971	E
	Kellogg Dr to Orangethorpe Ave	4D	37,500	41,316	1.102	F
Bastanchury Road	Rose Dr to Imperial Hwy	4D	37,500	14,271	0.381	A
	Imperial Hwy to Lakeview Ave	2U	12,500	14,167	1.133	F
	Lakeview Ave to Fairmont Blvd	4D	37,500	15,393	0.410	A
	Fairmont Blvd to Village Center Dr	2U	12,500	9,478	0.758	C
Yorba Linda Boulevard	Rose Dr to Valley View Ave	4D	37,500	22,077	0.589	A
	Valley View Ave to Imperial Hwy	6D	56,300	20,125	0.357	A
	Lakeview Ave to Fairmont Blvd	6D	56,300	25,360	0.450	A
	Fairmont Blvd to Village Center Dr	4D	37,500	18,649	0.497	A
	Village Center Dr to Paseo de las Palomas	4D	37,500	22,121	0.590	A
	Paseo de las Palomas to New River Rd	4D	37,500	23,610	0.630	B
Buena Vista Avenue	Rose Dr to Lakeview Ave	4U	25,000	7,784	0.311	A
Esperanza Road	Fairmont Blvd to Paseo del Prado	4D	37,500	10,200	0.272	A
	Paseo del Prado to New River Rd	4D	37,500	7,903	0.211	A
Rose Drive	Imperial Hwy to Bastanchury Rd	4D	37,500	14,570	0.389	A
	Bastanchury Rd to Yorba Linda Blvd	4D	37,500	16,924	0.451	A
	Yorba Linda Blvd to Buena Vista Ave	4D	37,500	19,237	0.513	A
Valley View Avenue	Bastanchury Rd to Yorba Linda Blvd	2U	12,500	8,182	0.655	B
Richfield Road	Yorba Linda Blvd to Buena Vista Ave	4U	25,000	9,238	0.370	A
Lakeview Avenue	Bastanchury Rd to Yorba Linda Blvd	2U	12,500	9,947	0.796	C
	Yorba Linda Blvd to Buena Vista Ave	2U	12,500	13,189	1.055	F
	South of Buena Vista Ave	4D	37,500	11,443	0.305	A
Kellogg Drive	Yorba Linda Blvd to Imperial Hwy	2U	12,500	10,091	0.807	D
Fairmont Blvd	Village Center Dr N to Bastanchury Rd	4D	37,500	8,111	0.216	A
	Bastanchury Rd to Yorba Linda Blvd	4D	37,500	9,093	0.242	A
	Yorba Linda Blvd to Paseo de las Palomas	4D	37,500	10,053	0.268	A
	Paseo de las Palomas to Village Center Dr S	4D	37,500	8,537	0.228	A
	Village Center Dr S to Fairmont Connector	6D	56,300	15,611	0.277	A
Village Center Drive	Fairmont Blvd to Yorba Linda Blvd	4U	25,000	12,465	0.499	A
	Yorba Linda Blvd to Paseo de las Palomas	4U	25,000	5,329	0.213	A
	Paseo de las Palomas to Fairmont Blvd	4U	25,000	7,661	0.306	A
Yorba Ranch Road	Yorba Linda Blvd to Esperanza Road	4U	25,000	1,729	0.069	A

Notes: V/C = Volume-to-Capacity ratio, LOS = Level of Service, D = Divided Roadway, U = Undivided Roadway
Bold V/C and LOS values indicate a deficient Level of Service based on City of Yorba Linda General Plan Policy.

ANALYSIS OF BUILD-OUT TRAFFIC CONDITIONS

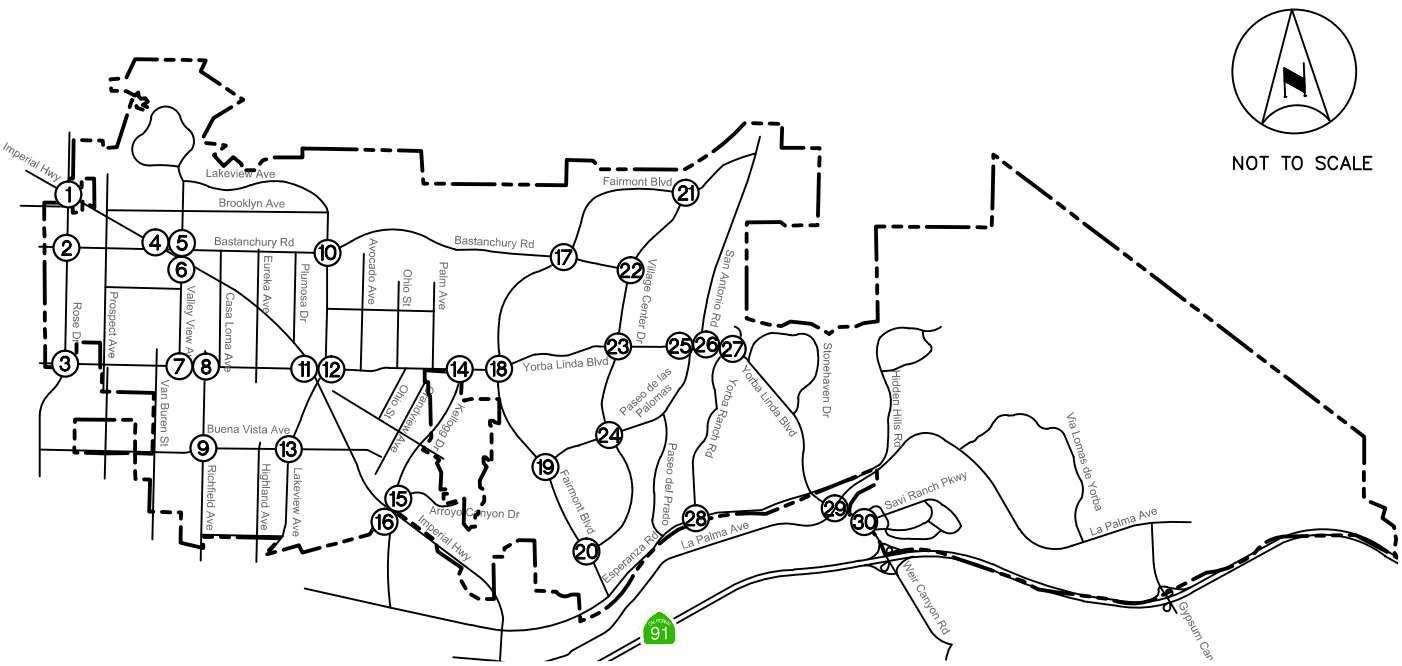
Analysis of projected traffic conditions at build-out of the City was conducted to determine whether or not the City's circulation system can accommodate the future traffic demands of the City's land use plan. Build-out year is assumed to be Year 2035. If roadway or intersection deficiencies are projected to occur as a result of build-out of General Plan land uses, then improvements needed to accommodate future traffic volumes will be identified.

Methodology

The methodology for developing future traffic forecasts volumes on the roadway segments and at the study intersections in Yorba Linda is a multi-step process, based on the following resources and assumptions:

- Regional Baseline and Build-out traffic forecasts were obtained from the Orange County Transportation Analysis Model (OCTAM).
- Baseline OCTAM forecasts reflect current land use and socio-economic data, and roadway network conditions for the City.
- Build-out conditions for the study roadway segments and intersections reflect forecasted conditions assuming build-out of the City's current General Plan land uses and roadway system, per the existing Circulation Element.
- The growth increment between the Baseline and Build-out forecasts was estimated and applied to each roadway segment and intersection approach for study locations.
- The traffic growth per intersection was applied to existing traffic volumes to generate Build Out 2035 projected volumes.

The resulting peak hour Build-out 2035 turning movement volumes are shown on Figure 12. The resulting daily roadway volumes for Build-out 2035 are shown on Figure 13.



1. Rose Dr at Imperial Hwy	2. Rose Dr at Bastanchury Rd	3. Rose Dr at Yorba Linda Blvd	4. Imperial Hwy at Bastanchury Rd	5. Valley View Ave at Bastanchury Rd
38/38 ↙ 701/378 ↓ 678/774 ↖	105/120 ↙ 800/584 ↓ 174/91 ↖	55/92 ↙ 936/526 ↓ 81/124 ↖	9/9 ↙ 1502/1539 ↓ 237/512 ↖	382/208 ↙ 410/230 ↓ 77/62 ↖
534/759 ←	95/62 ←	109/142 ←	685/282 ←	44/31 ←
1400/1082 ←	675/474 ←	750/545 ←	513/265 ←	741/395 ←
206/163 ←	90/77 ←	330/223 ←	8/6 ←	49/40 ←
107/65 ↗	100/104 ↗	76/115 ↗	19/12 ↗	129/274 ↗
883/1099 →	491/631 →	474/651 →	211/433 →	279/654 →
143/134 ↘	133/74 ↘	98/95 ↘	321/265 ↘	12/27 ↘
267/298 ↑	106/164 ↑	129/219 ↑	292/283 ↑	19/13 ↑
236/620 ↑	516/919 ↑	629/967 ↑	1500/1647 ↑	166/340 ↑
106/76 ↑	91/107 ↑	143/226 ↑	5/0 ↑	35/89 ↑

6. Valley View Ave at Imperial Hwy	7. Valley View Ave at Yorba Linda Blvd	8. Richfield Rd at Yorba Linda Blvd	9. Richfield Rd at Buena Vista Ave	10. Lakeview Ave at Bastanchury Rd
13/9 ↙ 268/128 ↓ 165/112 ↖	235/205 ↙ 60/67 ↓ 376/303 ↖	6/2 ↙ 4/1 ↓ 0/2 ↖	81/71 ↙ 574/308 ↓ 71/68 ↖	41/16 ↙ 126/99 ↓ 46/63 ↖
85/125 ←	243/415 ←	3/2 ←	88/72 ←	43/77 ←
1720/1786 ←	721/774 ←	667/707 ←	284/149 ←	667/445 ←
23/39 ←	39/44 ←	195/109 ←	171/81 ←	159/138 ←
13/17 ↗	157/315 ↗	4/3 ↗	64/97 ↗	13/29 ↗
1590/1701 →	521/754 →	582/718 →	193/267 →	289/660 →
329/214 ↘	78/110 ↘	327/224 ↘	113/79 ↘	46/104 ↘
142/290 ↑	51/84 ↑	216/381 ↑	119/110 ↑	92/97 ↑
132/211 ↑	49/80 ↑	5/1 ↑	279/605 ↑	50/146 ↑
53/37 ↑	32/36 ↑	148/140 ↑	90/133 ↑	97/184 ↑

11. Imperial Hwy at Yorba Linda Blvd	12. Lakeview Ave at Yorba Linda Blvd	13. Lakeview Ave at Buena Vista Ave	14. Kellogg Dr at Yorba Linda Blvd	15. Kellogg Dr at Imperial Hwy (N)
37/41 ↙ 1665/1386 ↓ 296/449 ↖	82/242 ↙ 461/175 ↓ 54/221 ↖	382/128 ↙ 512/170 ↓ 92/41 ↖		82/65 ↙ 763/427 ↓
289/446 ←	47/103 ←	90/48 ←	1029/791 ←	209/481 ↖
439/524 ←	390/928 ←	152/63 ←	285/209 ←	118/138 ←
221/301 ←	303/54 ←	79/10 ←		
20/87 ↗	170/115 ↗	218/276 ↗		
285/517 →	321/607 →	104/80 →	522/1066 →	
354/458 ↘	152/36 ↘	30/26 ↘	66/80 ↘	
361/373 ↑	53/294 ↑	37/77 ↑	127/49 ↑	170/172 ↑
1114/1218 ↑	182/470 ↑	274/605 ↑	160/178 ↑	251/258 ↑
235/265 ↑	59/215 ↑	25/58 ↑		

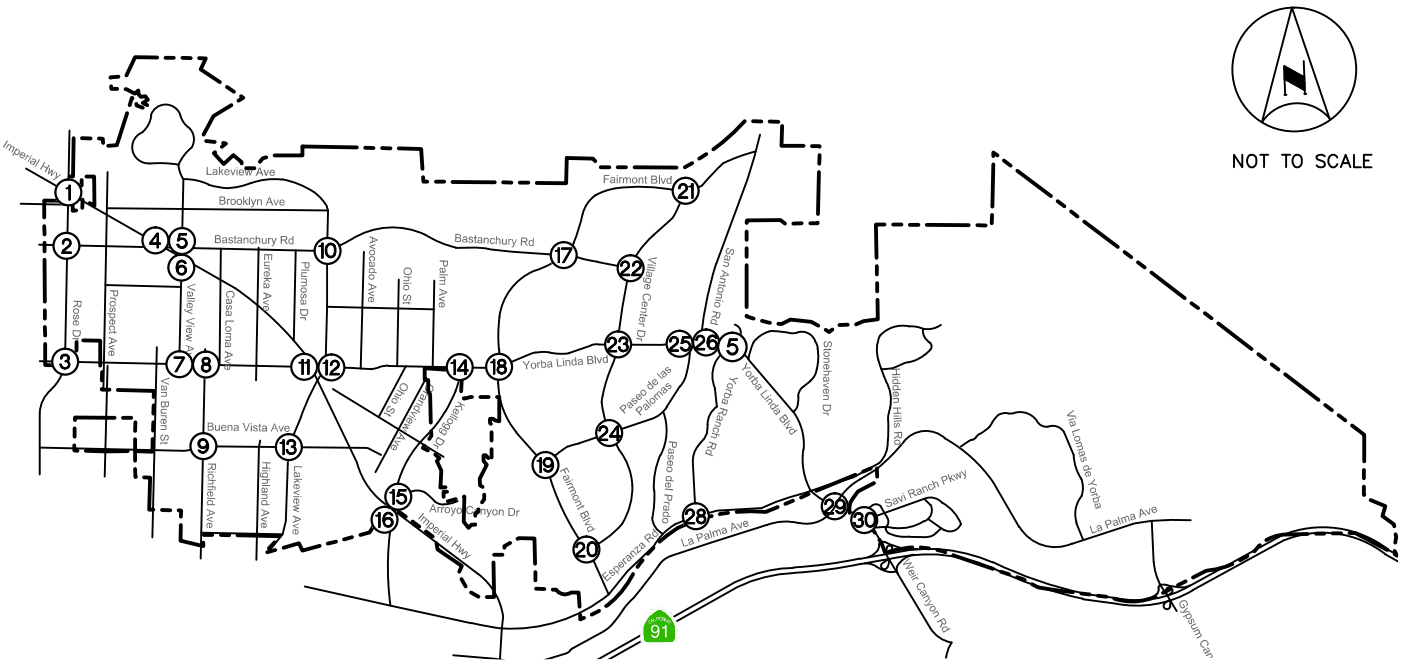
LEGEND:

(X) = Study Intersection

XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 12a
BUILD-OUT 2035 PEAK HOUR TURNING MOVEMENT VOLUMES

Kimley»Horn



16. Kellogg Dr at Imperial Hwy (S)	17. Fairmont Blvd at Bastanchury Rd	18. Fairmont Blvd at Yorba Linda Blvd	19. Fairmont Blvd at Paseo de las Palomas	20. Fairmont Blvd (S) at Village Center Dr
↓ 361/301 ↓ 489/265 ↑ 425/353 ↑ 259/79 14/67 ↗ 0/1 → 183/200 ↘	↓ 320/152 ↓ 294/108 48/22 ↖ 14/44 ← 524/475 ← 121/74 ← ↑ 329/190 ↑ 131/175 47/45 ↗ 149/226 ↗ 395/452 → 260/285 ↘	↓ 249/133 ↓ 350/238 96/135 ↖ 116/74 ← 587/599 ← 92/79 ← ↑ 240/244 ↑ 239/228 67/67 ↗ 142/220 ↗ 369/623 → 228/258 ↘	↓ 616/373 141/175 ↖ 224/124 ← 163/99 ← ↑ 432/480 ↑ 81/133	↓ 8/12 ↓ 888/445 50/46 ↖ 92/30 ← 0/3 ← 613/310 ← ↑ 5/10 ↑ 465/697 213/538 ↗ 13/9 ↗ 1/2 → 12/6 ↘
21. Fairmont Blvd (N) at Village Center Dr	**22. Village Center Dr at Bastanchury Rd**	**23. Village Center Dr at Yorba Linda Blvd**	**24. Village Center Dr at Paseo de las Palomas**	**25. Yorba Linda Blvd at Paseo de las Palomas**
← 137/62 ← 40/31 ↑ 18/33 ↑ 29/57 46/72 → 35/23 ↘	↓ 98/53 ↓ 201/108 ↑ 561/571 ↑ 80/136 46/70 ↗ 436/442 ↘	↓ 92/75 ↓ 189/274 345/393 ↖ 398/172 ← 528/440 ← 71/117 ← ↑ 52/30 ↑ 128/249 33/95 ↗ 67/120 ↗ 362/574 → 53/62 ↘	↓ 40/33 ↓ 270/181 23/37 ↖ 32/20 ← 68/54 ← 118/53 ← ↑ 25/13 ↑ 122/227 47/138 ↗ 37/32 ↗ 79/59 → 23/19 ↘	← 844/882 ← 85/153 ↑ 32/41 ↑ 125/160 630/921 → 25/35 ↘
26. Yorba Linda Blvd at San Antonia Rd	**27. Yorba Ranch Rd at Yorba Linda Blvd**	**28. Yorba Ranch Rd at Esperanza Rd**	**29. Yorba Linda Blvd at La Palma Ave**	**30. Yorba Linda Blvd at Savi Ranch Pkwy**
↓ 141/87 ↓ 151/62 48/106 ← 925/920 ← ↑ 3/0 ↑ 3/2 40/107 ↗ 842/960 → 1/1 ↘	↓ 9/15 ↓ 39/25 113/9 ↖ 17/64 ← 884/941 ← 39/46 ← ↑ 57/71 ↑ 5/19 43/41 ↗ 10/57 ↗ 932/910 → 64/68 ↘	↓ 154/107 21/1 ↖ 3/11 ← 261/238 ← 57/149 ↗ 303/71 →	↓ 19/43 ↓ 1039/389 339/420 ↖ 451/364 ← 96/193 ← 299/281 ← ↑ 99/345 ↑ 591/1124 269/589 ↗ 34/77 ↗ 156/570 → 327/282 ↘	↓ 179/147 ↓ 1350/808 409/221 ↖ 154/394 ← 289/640 ← ↑ 158/190 ↑ 719/730 1269/1005 ↗ 48/53 ↗ 153/148 ↘

LEGEND:

(X) = Study Intersection

XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 12b
BUILDOUT 2035 WITHOUT PROJECT
PEAK HOUR TURNING MOVEMENT VOLUMES

Kimley»Horn

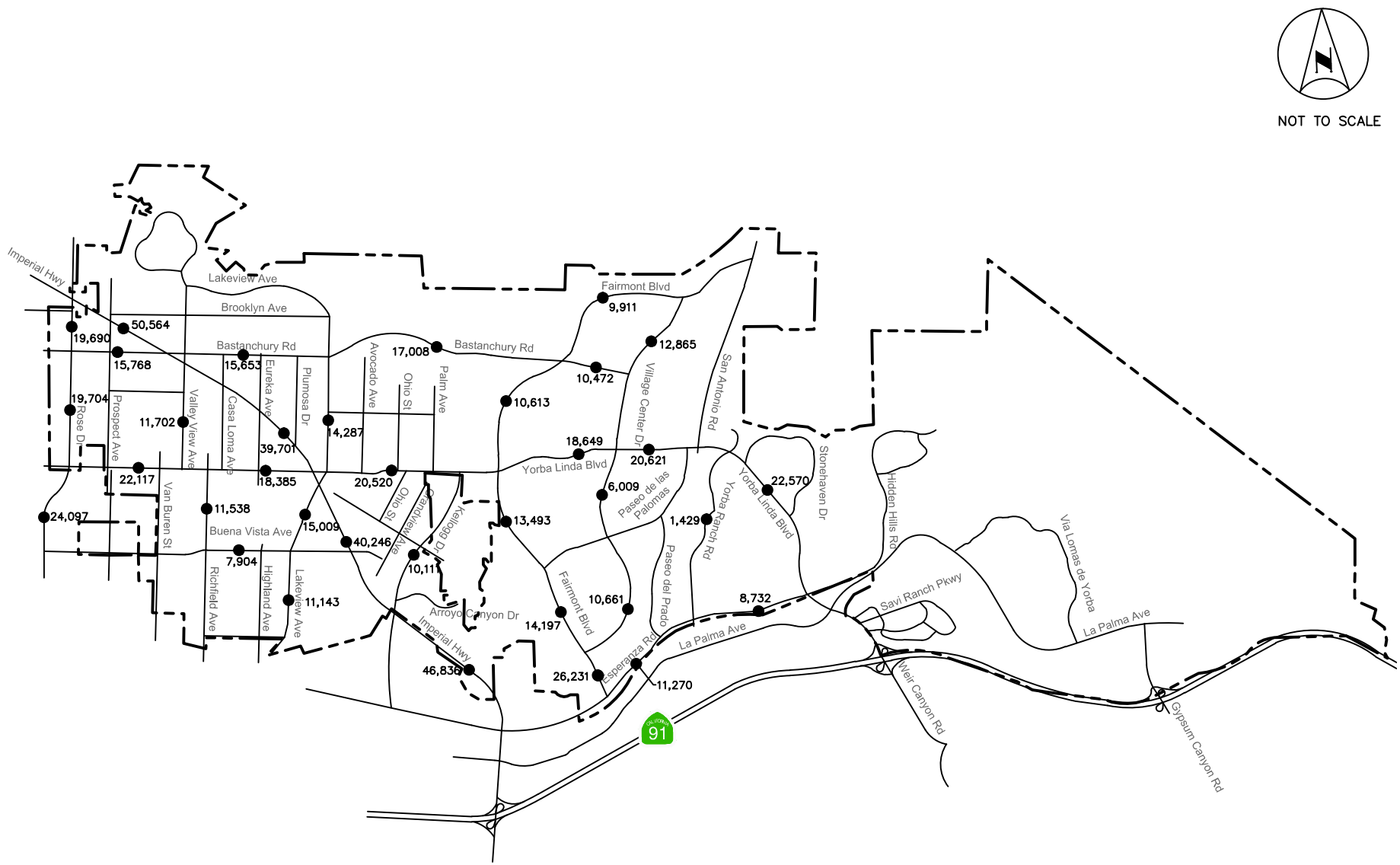


FIGURE 13
BUILD-OUT 2035 ROADWAY SEGMENT VOLUMES

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Peak Hour Intersection Analysis

Intersection Level of Service analysis was conducted for the morning and evening peak hours to evaluate the Build-out 2035 operating conditions at the study intersections. The resulting ICU values and the corresponding peak hour Level of Service are summarized on Table 3.

Based on Table 3, all study intersections are forecast to at LOS D or better, with the exception of the following study intersections:

- Rose Drive at Imperial Highway: LOS F – PM
- Imperial Highway at Yorba Linda Boulevard: LOS E – AM, LOS E – PM
- Yorba Linda Boulevard at Savi Ranch Parkway: LOS F – PM

Daily Roadway Operating Conditions

Build-out 2035 roadway volumes were compared to roadway capacity to assess Build-out 2035 levels of service. For each roadway segment, the daily capacity was determined in accordance with the designated facility type and General Plan number of lanes, and a v/c ratio was computed. The resulting volumes and associated v/c ratios and LOS are summarized on Table 4.

The analysis results on Table 4 indicates that all roadway segments would operate at LOS C or better, with the exception of the following roadway segments:

- Imperial Highway (Rose Drive to Valley View Avenue)
- Imperial Highway (Lakeview Avenue to Kellogg Drive)
- Imperial Highway (Kellogg Drive to Orangethorpe Avenue)

TABLE 3
SUMMARY OF INTERSECTION OPERATION
BUILD-OUT YEAR 2035 WITHOUT PROJECT

Int. #	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			ICU	LOS	ICU	LOS
1	Rose Drive at Imperial Highway	S	0.736	C	1.001	F
2	Rose Drive at Bastanchury Road	S	0.669	B	0.663	B
3	Rose Drive at Yorba Linda Boulevard	S	0.778	C	0.773	C
4	Imperial Highway at Bastanchury Road	S	0.880	D	0.775	C
5	Valley View Avenue at Bastanchury Road	S	0.635	B	0.606	B
6	Valley View Avenue at Imperial Highway	S	0.650	B	0.697	B
7	Valley View Avenue at Yorba Linda Boulevard	S	0.578	A	0.759	C
8	Richfield Road at Yorba Linda Boulevard	S	0.478	A	0.435	A
9	Richfield Road at Buena Vista Avenue	S	0.532	A	0.482	A
10	Lakeview Avenue at Bastanchury Road	S	0.416	A	0.529	A
11	Imperial Highway at Yorba Linda Boulevard	S	0.990	E	0.974	E
12	Lakeview Avenue at Yorba Linda Blvd	S	0.526	A	0.580	A
13	Lakeview Avenue at Buena Vista Avenue	U	0.590	A	0.646	B
14	Kellogg Drive at Yorba Linda Boulevard	S	0.341	A	0.385	A
15	Kellogg Drive at Imperial Highway (North)	S	0.494	A	0.398	A
16	Kellogg Drive at Imperial Highway (South)	U	0.528	A	0.343	A
17	Fairmont Boulevard at Bastanchury Road	S	0.736	C	0.567	A
18	Fairmont Boulevard at Yorba Linda Boulevard	S	0.579	A	0.553	A
19	Fairmont Boulevard at Paseo de las Palomas	S	0.324	A	0.340	A
20	Fairmont Boulevard (South) at Village Center Drive	S	0.448	A	0.523	A
21	Village Center Drive at Fairmont Boulevard (North)	U	0.056	A	0.059	A
22	Village Center Drive at Bastanchury Road	S	0.523	A	0.501	A
23	Village Center Drive at Yorba Linda Boulevard	S	0.499	A	0.552	A
24	Village Center Drive at Paseo de las Palomas	U	0.218	A	0.195	A
25	Paseo de las Palomas at Yorba Linda Boulevard	S	0.334	A	0.470	A
26	San Antonio Road at Yorba Linda Boulevard	S	0.473	A	0.476	A
27	Yorba Ranch Road at Yorba Linda Boulevard	S	0.483	A	0.469	A
28	Yorba Ranch Road at Esperanza Road	U	0.131	A	0.201	A
29	Yorba Linda Boulevard at La Palma Avenue	S	0.583	A	0.715	C
30	Yorba Linda Boulevard at Savi Ranch Parkway	S	0.562	A	1.059	F

Notes:
Bold and shaded values indicate intersections operating at LOS E or F.
Intersection operation is expressed in volume-to-capacity (V/C) for all study intersections using the ICU Methodology.
S = Signalized
U = Unsignalized
ICU = Intersection Capacity Utilization
LOS = Level of Service

TABLE 4
SUMMARY OF ROADWAY SEGMENT ANALYSIS
BUILD OUT 2035 CONDITIONS

Roadway	Segment	Roadway Classification	Number of Lanes	LOS **E** Capacity	Traffic Volume	V/C	LOS
Imperial Highway	Rose Dr to Valley View Ave	Major	6D	56,300	50,964	0.905	E
	Valley View Ave to Yorba Linda Blvd	Major	6D	56,300	39,701	0.705	C
	Yorba Linda Blvd to Kellogg Dr	Primary	4D	37,500	40,246	1.073	F
	Kellogg Dr to Orangethorpe Ave	Primary	4D	37,500	46,836	1.249	F
Bastanchury Road	Rose Dr to Imperial Hwy	Primary	4D	37,500	15,768	0.420	A
	Imperial Hwy to Lakeview Ave	Secondary	4U	25,000	15,653	0.626	B
	Lakeview Ave to Fairmont Blvd	Primary	4D	37,500	17,008	0.454	A
	Fairmont Blvd to Village Center Dr	Secondary	4U	25,000	10,472	0.419	A
Yorba Linda Boulevard	Rose Dr to Valley View Ave	Major	6D	56,300	22,117	0.393	A
	Valley View Ave to Imperial Hwy	Major	6D	56,300	18,385	0.327	A
	Lakeview Ave to Fairmont Blvd	Major	6D	56,300	20,520	0.364	A
	Fairmont Blvd to Village Center Dr	Primary	4D	37,500	16,149	0.431	A
	Village Center Dr to Paseo de las Palomas	Primary	4D	37,500	20,621	0.550	A
	Paseo de las Palomas to New River Rd	Primary	4D	37,500	22,570	0.602	A
Buena Vista Avenue	Rose Dr to Lakeview Ave	Secondary	4U	25,000	7,904	0.316	A
Esperanza Road	Fairmont Blvd to Paseo del Prado	Primary	4D	37,500	11,270	0.301	A
	Paseo del Prado to New River Rd	Primary	4D	37,500	8,732	0.233	A
Rose Drive	Imperial Hwy to Bastanchury Rd	Major	6D	56,300	19,690	0.350	A
	Bastanchury Rd to Yorba Linda Blvd	Major	6D	56,300	19,704	0.350	A
	Yorba Linda Blvd to Buena Vista Ave	Major	6D	56,300	24,097	0.428	A
Valley View Avenue	Bastanchury Rd to Yorba Linda Blvd	Secondary	4U	25,000	11,702	0.468	A
Richfield Road	Yorba Linda Blvd to Buena Vista Ave	Secondary	4U	25,000	11,538	0.462	A
Lakeview Avenue	Bastanchury Rd to Yorba Linda Blvd	Secondary	4U	25,000	14,287	0.571	A
	Yorba Linda Blvd to Buena Vista Ave	Primary	4D	37,500	15,009	0.400	A
	South of Buena Vista Ave	Primary	4D	37,500	11,143	0.297	A
Kellogg Drive	Yorba Linda Blvd to Imperial Hwy	Secondary	4U	25,000	10,111	0.404	A
Fairmont Blvd	Village Center Dr N to Bastanchury Rd	Primary	4D	37,500	9,911	0.264	A
	Bastanchury Rd to Yorba Linda Blvd	Primary	4D	37,500	10,613	0.283	A
	Yorba Linda Blvd to Paseo de las Palomas	Primary	4D	37,500	13,493	0.360	A
	Paseo de las Palomas to Village Center Dr S	Primary	4D	37,500	14,197	0.379	A
	Village Center Dr S to Fairmont Connector	Major	6D	56,300	26,231	0.466	A
Village Center Drive	Fairmont Blvd to Yorba Linda Blvd	Secondary	4U	25,000	12,865	0.515	A
	Yorba Linda Blvd to Paseo de las Palomas	Secondary	4U	25,000	6,009	0.240	A
	Paseo de las Palomas to Fairmont Blvd	Secondary	4U	25,000	10,661	0.426	A
Yorba Ranch Road	Yorba Linda Blvd to Esperanza Road	Secondary	4U	25,000	1,429	0.057	A

Notes: V/C = Volume-to-Capacity ratio, LOS = Level of Service, D = Divided Roadway, U = Undivided Roadway
Bold V/C and LOS values indicate a deficient Level of Service, based on City of Yorba Linda General Plan Policy

ANALYSIS OF BUILD-OUT 2035 WITH PROJECT TRAFFIC CONDITIONS

Future Land Use Trip Generation

While the City of Yorba Linda is generally fully developed, some parcels are still vacant, or underdeveloped and have the potential for enhanced or further development. For purposes of this General Plan Update, these areas have been designated "Focus Areas". The locations of these focus areas are presented on Figure 14. Discussion of the potential changes in the nature or quantity of development in these focus areas is provided in the Land Use section.

The Land Use Element of the General Plan quantifies the current potential development in these areas. The current remaining potential development in these focus areas represents the growth increment that was accounted for in the analysis of Build-out Conditions in the prior section of this report.

For the analysis of Build-out 2035 With Project traffic conditions, the focus areas were evaluated in terms of its potential future land use, including the land use type (residential, retail, office, industrial, etc.) and the quantity of those land uses (dwelling units, thousand square feet, etc.). The number of trips that would be generated by the potential development in these focus areas was calculated, and is summarized on Table 5.

As reflected on this table, the greatest amount of potential traffic growth associated with the focus areas would occur in the eastern area of the city, i.e., the Cielo Esperanza area, and the Savi Ranch area. On the other hand, some of the development potential identified in some of the focus areas are related to policy and development standards, with relatively small or no trip generation increases.

Build-out 2035 With Project Volumes

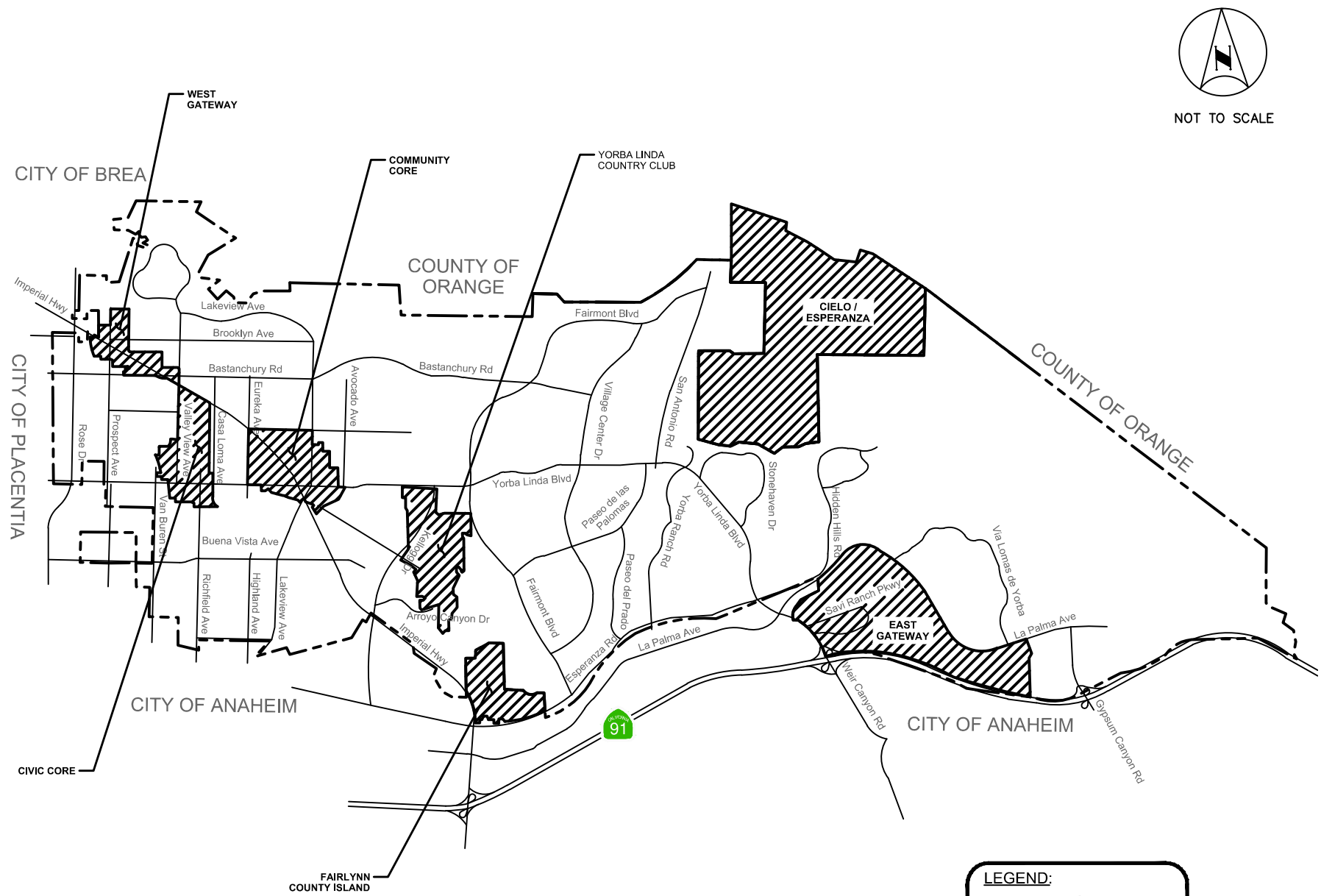
The additional trips that would be generated by the focus area development potential were estimated and distributed to the surrounding road network. The additional trips were added to the Build-out 2035 condition to create a Build-out 2035 With Project condition. The resulting peak hour Build-out 2035 With Project turning movement volumes are shown on Figure 14. The resulting daily roadway volumes for Build-out 2035 are shown on Figure 15.

TABLE 5
SUMMARY OF PROJECT TRIP GENERATION

Land Use	ITE Code	Unit	Trip Generation Rates [1]						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
General Light Industrial	110	KSF	6.970	0.810	0.110	0.920	0.116	0.854	0.970
Single-Family Detached Housing	210	DU	9.520	0.188	0.563	0.750	0.630	0.370	1.000
Apartment	220	DU	6.650	0.102	0.408	0.510	0.403	0.217	0.620
Residential Condominium/Townhouse	230	DU	5.810	0.075	0.365	0.440	0.348	0.172	0.520
General Office Building	710	KSF	11.030	1.373	0.187	1.560	0.253	1.237	1.490
Shopping Center	820	KSF	42.700	0.595	0.365	0.960	1.781	1.929	3.710

Focus Area	Land Use	Quantity	Unit	Trip Generation Estimates						
				Daily	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Cielo/Esperanza	Single-Family Detached Housing	626	DU	5,960	118	352	470	394	232	626
Civic Core	No Increase	0	N/A	0	0	0	0	0	0	0
Community Core	Single-Family Detached Housing	7	DU	67	1	4	5	4	3	7
	Apartment	47	DU	313	5	19	24	19	10	29
	Shopping Center	125.635	KSF	5,365	75	46	121	224	242	466
East Gate	Apartment	441	DU	2,933	45	180	225	178	96	274
	General Office Building	1,373.997	KSF	15,155	1,886	257	2,143	348	1,700	2,048
	Shopping Center	433.894	KSF	18,527	258	158	416	773	837	1,610
	General Light Industrial	-1,195.891	KSF	-8,335	-969	-132	-1,101	-139	-1,021	-1,160
Fairlynn	No Increase	0	N/A	0	0	0	0	0	0	0
West Gate	Single-Family Detached Housing	7	DU	67	1	4	5	4	3	7
	Shopping Center	72.244	KSF	3,085	43	26	69	129	139	268
Yorba Linda Country Club	No Increase	0	N/A	0	0	0	0	0	0	0
Total Project Trips				43,137	1,463	914	2,377	1,934	2,241	4,175

[1] Source: Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition



LEGEND:
= City Boundary
= Focus Area

FIGURE 14
LOCATION OF FOCUS AREAS

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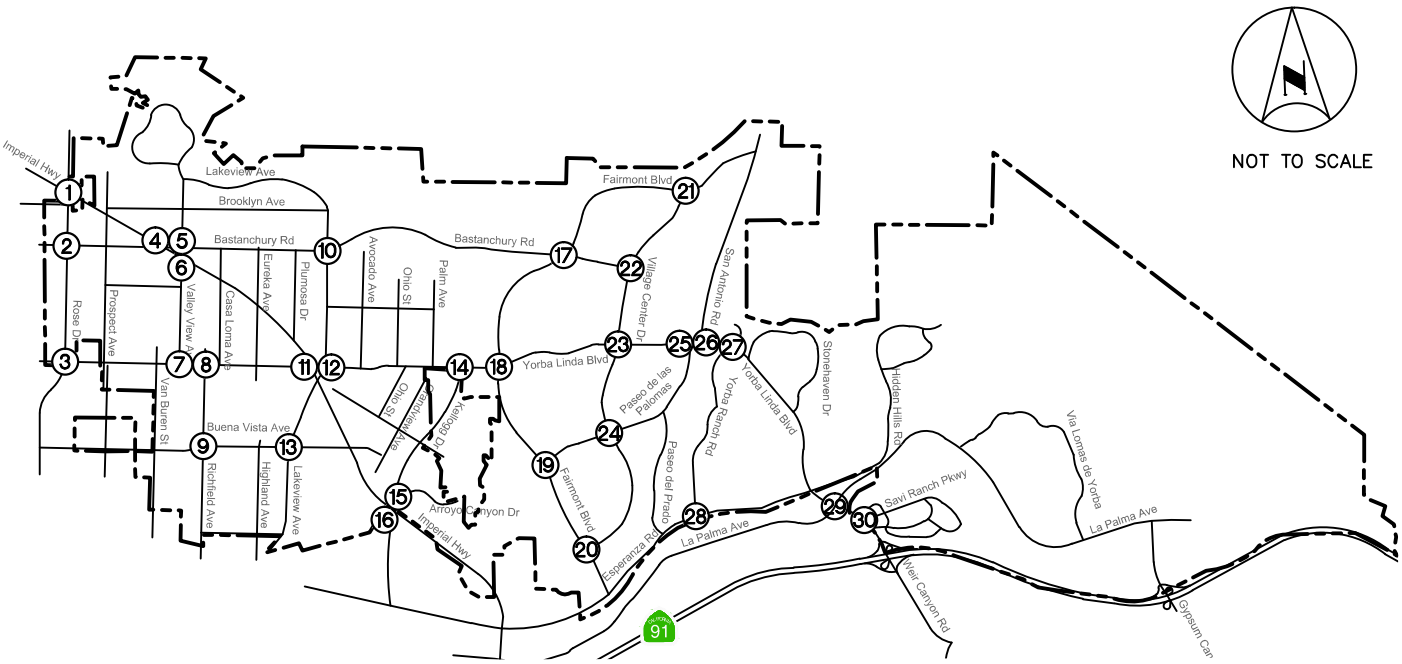

1. Rose Dr at Imperial Hwy	2. Rose Dr at Bastanchury Rd	3. Rose Dr at Yorba Linda Blvd	4. Imperial Hwy at Bastanchury Rd	5. Valley View Ave at Bastanchury Rd
↙ 43/59 ↓ 712/427 ↘ 678/774	↙ 110/141 ↓ 806/612 ↘ 174/91	↙ 58/106 ↓ 939/540 ↘ 81/124	↙ 9/9 ↓ 1529/1647 ↘ 237/512	↙ 382/208 ↓ 410/230 ↘ 77/62
↖ 534/759 ← 1421/1107 ↙ 206/163	↖ 95/62 ← 678/487 ↙ 90/77	↖ 109/142 ← 757/571 ↙ 333/236	↖ 685/282 ← 513/265 ↙ 8/6	↖ 44/31 ← 741/395 ↙ 49/40
107/65 → 900/1061 → 143/134 ↘	107/124 → 495/643 → 133/74 ↘	80/128 → 482/676 → 98/95 ↘	19/12 → 211/433 → 325/277 ↘	129/274 → 279/654 → 12/27 ↘
↗ 267/298 ↑ 236/620 ↗ 121/122	↗ 106/164 ↑ 524/945 ↗ 91/107	↗ 129/219 ↑ 633/980 ↗ 147/238	↗ 295/296 ↑ 1543/1746 ↗ 5/0	↗ 19/13 ↑ 166/340 ↗ 35/89

6. Valley View Ave at Imperial Hwy	7. Valley View Ave at Yorba Linda Blvd	8. Richfield Rd at Yorba Linda Blvd	9. Richfield Rd at Buena Vista Ave	10. Lakeview Ave at Bastanchury Rd
↙ 13/9 ↓ 268/128 ↘ 165/112	↙ 235/205 ↓ 60/67 ↘ 376/303	↙ 6/2 ↓ 4/1 ↘ 0/2	↙ 81/71 ↓ 574/308 ↘ 71/68	↙ 41/16 ↓ 126/99 ↘ 46/63
↖ 85/125 ← 1766/1898 ↙ 23/39	↖ 243/415 ← 731/813 ↙ 39/44	↖ 3/2 ← 677/746 ↙ 195/109	↖ 88/72 ← 284/149 ↙ 171/81	↖ 43/77 ← 667/445 ↙ 159/138
13/17 → 1621/1821 → 329/214 ↘	157/315 → 533/791 → 78/110 ↘	4/3 → 594/755 → 327/224 ↘	64/97 → 193/267 → 113/79 ↘	13/29 → 289/660 → 46/104 ↘
↗ 142/290 ↑ 132/211 ↗ 53/37	↗ 51/84 ↑ 49/80 ↗ 32/36	↗ 216/381 ↑ 5/1 ↗ 148/140	↗ 119/110 ↑ 279/605 ↗ 90/133	↗ 92/97 ↑ 50/146 ↗ 97/184

11. Imperial Hwy at Yorba Linda Blvd	12. Lakeview Ave at Yorba Linda Blvd	13. Lakeview Ave at Buena Vista Ave	14. Kellogg Dr at Yorba Linda Blvd	15. Kellogg Dr at Imperial Hwy (N)
↙ 37/41 ↓ 1670/1406 ↘ 318/522	↙ 82/242 ↓ 467/201 ↘ 54/221	↙ 382/128 ↓ 518/196 ↘ 92/41		↙ 82/65 ↓ 781/439
↖ 346/495 ← 439/524 ↙ 221/301	↖ 47/103 ← 447/977 ↙ 303/54	↖ 90/48 ← 152/63 ↙ 79/10	← 1181/1066 ↙ 303/221	↖ 209/481 ↙ 118/138
20/87 → 285/517 → 354/458 ↘	170/115 → 343/680 → 152/36 ↘	218/276 → 104/80 → 30/26 ↘	692/1334 → 75/113 ↘	
↗ 361/373 ↑ 1120/1237 ↗ 235/265	↗ 53/294 ↑ 190/494 ↗ 59/215	↗ 37/77 ↑ 282/629 ↗ 25/58	↗ 137/81 ↑ 166/198	↗ 170/172 ↑ 257/278

LEGEND:

(X) = Study Intersection

XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 15a
BUILDOUT 2035 WITH PROJECT
PEAK HOUR TURNING MOVEMENT VOLUMES

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16. Kellogg Dr at Imperial Hwy (S)	17. Fairmont Blvd at Bastanchury Rd	18. Fairmont Blvd at Yorba Linda Blvd	19. Fairmont Blvd at Paseo de las Palomas	20. Fairmont Blvd (S) at Village Center Dr
← 379/313 ← 489/265	← 320/152 ← 294/108 48/22 14/44 ← 524/475 ← 121/74	← 249/133 ← 350/238 96/135 116/74 ← 747/854 ← 179/333	← 628/401 ← 141/175 224/124 ← 163/99	← 8/12 ← 888/445 50/46 92/30 ← 0/3 ← 613/310
14/67 → 0/1 → 183/200 ↘ 431/373 ↑ 259/79 ↗	149/226 → 395/452 → 260/285 ↘ 329/190 ↑ 131/175 ↑ 47/45 ↗	142/220 → 533/883 → 240/286 ↘ 250/276 ↑ 239/228 ↑ 256/261 ↗	442/512 ↑ 81/133 ↗	13/9 → 1/2 → 12/6 ↘ 5/10 ↑ 465/697 ↑ 213/538 ↗

21. Fairmont Blvd (N) at Village Center Dr	22. Village Center Dr at Bastanchury Rd	23. Village Center Dr at Yorba Linda Blvd	24. Village Center Dr at Paseo de las Palomas	25. Yorba Linda Blvd at Paseo de las Palomas
← 137/62 ← 40/31	← 98/53 ← 201/108	← 92/75 ← 189/274 345/393 398/172 ← 775/949 ← 71/117	← 40/33 ← 270/181 23/37 32/20 ← 68/54 ← 118/53	← 1091/1391 ← 85/153
46/72 → 35/23 ↘ 18/33 ↑ 29/57 ↗	46/70 → 436/442 ↘ 561/571 ↑ 80/136 ↑	67/120 → 715/1028 → 53/62 ↘ 52/30 ↑ 128/249 ↑ 33/95 ↗	37/32 → 79/59 → 23/19 ↘ 25/13 ↑ 122/227 ↑ 47/138 ↗	983/1375 → 25/35 ↘ 32/41 ↑ 125/160 ↗

26. Yorba Linda Blvd at San Antonia Rd	27. Yorba Ranch Rd at Yorba Linda Blvd	28. Yorba Ranch Rd at Esperanza Rd	29. Yorba Linda Blvd at La Palma Ave	30. Yorba Linda Blvd at Savi Ranch Pkwy
← 141/87 ← 151/62 48/106 ← 1172/1429	← 137/109 ← 57/37 113/9 17/64 ← 1003/1356 ← 39/46	← 172/119 21/15 3/28 ← 353/609	← 451/43 ← 96/1224 299/420 269/364 ← 936/193 ← 99/281	← 173/180 ← 1523/824 1171/1008 467/1354 ← 412/1191
40/107 → 1195/1414 →	55/208 → 1240/1213 → 64/68 ↘ 57/71 ↑ 11/39 ↑ 43/41 ↗	63/169 → 547/623 →	339/77 → 1966/570 → 19/282 ↘ 34/345 ↑ 156/2321 ↑ 327/589 ↗	60/34 → 141/167 ↘ 164/157 ↑ 739/986 ↑ 366/1297 ↗

LEGEND:

(X) = Study Intersection

XX/YY = AM/PM Peak Hour Turning Movement Volumes

FIGURE 15b
BUILDOUT 2035 WITH PROJECT
PEAK HOUR TURNING MOVEMENT VOLUMES

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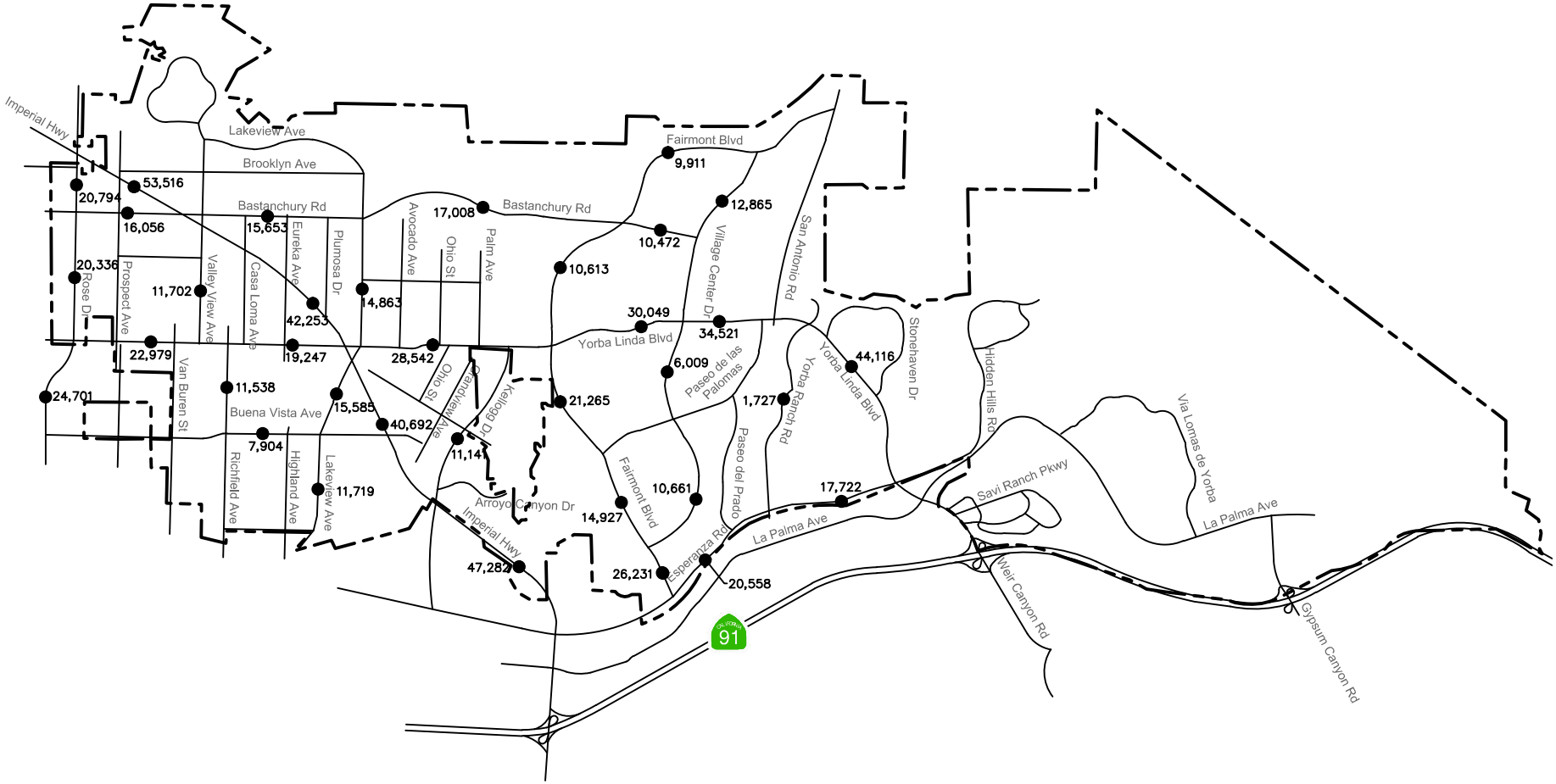

LEGEND:

xxxx = Average Daily Traffic Volume

FIGURE 16
BUILDOUT 2035 WITH PROJECT ROADWAY SEGMENT VOLUMES

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Peak Hour Intersection Analysis

Intersection Level of Service analysis was conducted for the morning and evening peak hours to evaluate the Build-out 2035 With Project operating conditions of the study intersections. The resulting ICU values and the corresponding peak hour LOS are summarized on Table 6. Based on review of this table, the study intersections would operate at LOS D or better with the exception of the following study intersections:

- #1 – Rose Drive at Imperial Highway: LOS F – PM
- #11 – Imperial Highway at Yorba Linda Boulevard: LOS E – AM, LOS E – PM
- #29 – Yorba Linda Boulevard at La Palma Avenue: LOS E – PM
- #30 – Yorba Linda Boulevard at Savi Ranch Parkway: LOS F – AM, LOS F - PM

Daily Roadway Operating Conditions

Build-out 2035 roadway volumes were compared to roadway capacity to assess Build-out 2035 levels of service. The resulting volumes and associated v/c ratios and LOS are summarized on Table 7. Review of this table indicates that the following roadway segments would operate at below the target Level of Service C or better at Build-out 2035 with project:

- Imperial Highway (Rose Drive to Valley View Avenue)
- Imperial Highway (Yorba Linda Boulevard to Kellogg Drive)
- Imperial Highway (Kellogg Drive to Orangethorpe Avenue)
- Yorba Linda Boulevard (Village Center Drive to Paseo de Palomas)
- Yorba Linda Boulevard (Paseo de Palomas to New River Road)

These roadways are either Primary or Major Arterials in the Build-out scenarios, serving a substantial amount of cross-city and/or through traffic. The forecasted Level of Service conditions on these segments could be seen as reflective of the regional and intra-municipal function these roadways provide.

TABLE 6
SUMMARY OF INTERSECTION OPERATIONS
BUILD-OUT YEAR 2035 WITH PROJECT

Int. #	Intersection	Traffic Control	AM Peak Hour				PM Peak Hour			
			Without Project		With Project		Without Project		With Project	
			ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS
1	Rose Drive at Imperial Highway	S	0.736	C	0.738	C	1.001	F	1.001	F
2	Rose Drive at Bastanchury Road	S	0.669	B	0.677	B	0.663	B	0.674	B
3	Rose Drive at Yorba Linda Boulevard	S	0.778	C	0.783	C	0.773	C	0.792	C
4	Imperial Highway at Bastanchury Road	S	0.880	D	0.887	D	0.775	C	0.799	C
5	Valley View Avenue at Bastanchury Road	S	0.635	B	0.635	B	0.606	B	0.606	B
6	Valley View Avenue at Imperial Highway	S	0.650	B	0.656	B	0.697	B	0.722	C
7	Valley View Avenue at Yorba Linda Boulevard	S	0.578	A	0.580	A	0.759	C	0.759	C
8	Richfield Road at Yorba Linda Boulevard	S	0.478	A	0.478	A	0.435	A	0.442	A
9	Richfield Road at Buena Vista Avenue	S	0.532	A	0.532	A	0.482	A	0.482	A
10	Lakeview Avenue at Bastanchury Road	S	0.416	A	0.416	A	0.529	A	0.529	A
11	Imperial Highway at Yorba Linda Boulevard	S	0.990	E	0.991	E	0.974	E	1.000	E
12	Lakeview Avenue at Yorba Linda Blvd	S	0.526	A	0.531	A	0.580	A	0.590	A
13	Lakeview Avenue at Buena Vista Avenue	U	0.590	A	0.592	A	0.646	B	0.661	B
14	Kellogg Drive at Yorba Linda Boulevard	S	0.341	A	0.390	A	0.385	A	0.471	A
15	Kellogg Drive at Imperial Highway (North)	S	0.494	A	0.500	A	0.398	A	0.401	A
16	Kellogg Drive at Imperial Highway (South)	U	0.528	A	0.530	A	0.343	A	0.349	A
17	Fairmont Boulevard at Bastanchury Road	S	0.736	C	0.736	C	0.567	A	0.567	A
18	Fairmont Boulevard at Yorba Linda Boulevard	S	0.579	A	0.615	B	0.553	A	0.677	B
19	Fairmont Boulevard at Paseo de las Palomas	S	0.324	A	0.327	A	0.340	A	0.350	A
20	Fairmont Boulevard (South) at Village Center Drive	S	0.448	A	0.448	A	0.523	A	0.523	A
21	Village Center Drive at Fairmont Boulevard (North)	U	0.056	A	0.056	A	0.059	A	0.059	A
22	Village Center Drive at Bastanchury Road	S	0.523	A	0.523	A	0.501	A	0.501	A
23	Village Center Drive at Yorba Linda Boulevard	S	0.499	A	0.499	A	0.552	A	0.694	B
24	Village Center Drive at Paseo de las Palomas	U	0.218	A	0.218	A	0.195	A	0.195	A
25	Paseo de las Palomas at Yorba Linda Boulevard	S	0.334	A	0.438	A	0.470	A	0.612	B
26	San Antonio Road at Yorba Linda Boulevard	S	0.473	A	0.551	A	0.476	A	0.635	B
27	Yorba Ranch Road at Yorba Linda Boulevard	S	0.483	A	0.639	B	0.469	A	0.759	C
28	Yorba Ranch Road at Esperanza Road	U	0.131	A	0.184	A	0.201	A	0.314	A
29	Yorba Linda Boulevard at La Palma Avenue	S	0.583	A	0.787	C	0.715	C	0.931	E
30	Yorba Linda Boulevard at Savi Ranch Parkway	S	0.562	A	1.177	F	1.059	F	1.884	F

Notes:
Bold and shaded values indicate intersections operating at LOS E or F.
Intersection operation is expressed in volume-to-capacity (V/C) for all study intersections using the ICU Methodology.
S = Signalized
U = Unsignalized
ICU = Intersection Capacity Utilization
LOS = Level of Service

TABLE 7
SUMMARY OF ROADWAY SEGMENT ANALYSIS
BUILD OUT 2035 WITH PROJECT CONDITIONS

Roadway	Segment	Number of Lanes	Opening Year Without Project				Opening Year With Project				Project Impact / Significance	
			LOS E Capacity	Traffic Volume	V/C	LOS	Project Traffic	Traffic Volume	V/C	LOS	Project Impact	Impact Sig?
Imperial Highway	Rose Dr to Valley View Ave	6D	56,300	50,964	0.905	E	2,552	53,516	0.951	E	0.045	Yes
	Valley View Ave to Yorba Linda Blvd	6D	56,300	39,701	0.705	C	2,552	42,253	0.750	C	0.045	No
	Yorba Linda Blvd to Kellogg Dr	4D	37,500	40,246	1.073	F	446	40,692	1.085	F	0.012	Yes
	Kellogg Dr to Orangethorpe Ave	4D	37,500	46,836	1.249	F	446	47,282	1.261	F	0.012	Yes
Bastanchury Road	Rose Dr to Imperial Hwy	4D	37,500	15,768	0.420	A	288	16,056	0.428	A	0.008	No
	Imperial Hwy to Lakeview Ave	4U	25,000	15,653	0.626	B	0	15,653	0.626	B	0.000	No
	Lakeview Ave to Fairmont Blvd	4D	37,500	17,008	0.454	A	0	17,008	0.454	A	0.000	No
	Fairmont Blvd to Village Center Dr	4U	25,000	10,472	0.419	A	0	10,472	0.419	A	0.000	No
Yorba Linda Boulevard	Rose Dr to Valley View Ave	6D	56,300	22,117	0.393	A	862	22,979	0.408	A	0.015	No
	Valley View Ave to Imperial Hwy	6D	56,300	18,385	0.327	A	862	19,247	0.342	A	0.015	No
	Lakeview Ave to Fairmont Blvd	6D	56,300	20,520	0.364	A	8,022	28,542	0.507	A	0.142	No
	Fairmont Blvd to Village Center Dr	4D	37,500	16,149	0.431	A	13,900	30,049	0.801	C	0.371	No
	Village Center Dr to Paseo de las Palomas	4D	37,500	20,621	0.550	A	13,900	34,521	0.921	E	0.371	Yes
	Paseo de las Palomas to New River Rd	4D	37,500	22,570	0.602	A	21,546	44,116	1.176	F	0.575	Yes
Buena Vista Avenue	Rose Dr to Lakeview Ave	4U	25,000	7,904	0.316	A	0	7,904	0.316	A	0.000	No
Esperanza Road	Fairmont Blvd to Paseo del Prado	4D	37,500	11,270	0.301	A	9,288	20,558	0.548	A	0.248	No
	Paseo del Prado to New River Rd	4D	37,500	8,732	0.233	A	8,990	17,722	0.473	A	0.240	No
Rose Drive	Imperial Hwy to Bastanchury Rd	6D	56,300	19,690	0.350	A	1,104	20,794	0.369	A	0.020	No
	Bastanchury Rd to Yorba Linda Blvd	6D	56,300	19,704	0.350	A	632	20,336	0.361	A	0.011	No
	Yorba Linda Blvd to Buena Vista Ave	6D	56,300	24,097	0.428	A	604	24,701	0.439	A	0.011	No
Valley View Avenue	Bastanchury Rd to Yorba Linda Blvd	4U	25,000	11,702	0.468	A	0	11,702	0.468	A	0.000	No
Richfield Road	Yorba Linda Blvd to Buena Vista Ave	4U	25,000	11,538	0.462	A	0	11,538	0.462	A	0.000	No
Lakeview Avenue	Bastanchury Rd to Yorba Linda Blvd	4U	25,000	14,287	0.571	A	576	14,863	0.595	A	0.023	No
	Yorba Linda Blvd to Buena Vista Ave	4D	37,500	15,009	0.400	A	576	15,585	0.416	A	0.015	No
	South of Buena Vista Ave	4D	37,500	11,143	0.297	A	576	11,719	0.313	A	0.015	No
Kellogg Drive	Yorba Linda Blvd to Imperial Hwy	4U	25,000	10,111	0.404	A	1,030	11,141	0.446	A	0.041	No
Fairmont Blvd	Village Center Dr N to Bastanchury Rd	4D	37,500	9,911	0.264	A	0	9,911	0.264	A	0.000	No
	Bastanchury Rd to Yorba Linda Blvd	4D	37,500	10,613	0.283	A	0	10,613	0.283	A	0.000	No
	Yorba Linda Blvd to Paseo de las Palomas	4D	37,500	13,493	0.360	A	7,772	21,265	0.567	A	0.207	No
	Paseo de las Palomas to Village Center Dr S	4D	37,500	14,197	0.379	A	730	14,927	0.398	A	0.019	No
	Village Center Dr S to Fairmont Connector	6D	56,300	26,231	0.466	A	0	26,231	0.466	A	0.000	No
Village Center Drive	Fairmont Blvd to Yorba Linda Blvd	4U	25,000	12,865	0.515	A	0	12,865	0.515	A	0.000	No
	Yorba Linda Blvd to Paseo de las Palomas	4U	25,000	6,009	0.240	A	0	6,009	0.240	A	0.000	No
	Paseo de las Palomas to Fairmont Blvd	4U	25,000	10,661	0.426	A	0	10,661	0.426	A	0.000	No
Yorba Ranch Road	Yorba Linda Blvd to Esperanza Road	4U	25,000	1,429	0.057	A	298	1,727	0.069	A	0.012	No

Notes: V/C = Volume-to-Capacity ratio, LOS = Level of Service, D = Divided Roadway, U = Undivided Roadway
Bold V/C and LOS values indicate a deficient Level of Service, based on City of Buena Park General Plan Policy

CIRCULATION IMPROVEMENTS FOR BUILD-OUT WITH PROJECT CONDITIONS

The foregoing analysis has indicated the potential for a number of intersections and roadway segments to operate at a deficient Level of Service at Build-out with the implementation of the potential focus area development identified.

Intersection Improvements

Improvements were identified that would achieve improved Level of Service under build-out conditions at the study intersections forecasted to operate at a deficient Level of Service. A summary of the intersection operation before and after implementation of these improvements is provided on Table 8. These improvements are:

- #1 – Rose Drive at Imperial Highway: Add 3rd NB through lane on Rose Drive. Although the intersection would continue to operate an unacceptable Level of Service (LOS F) during the evening peak hour, this improvement would improve the evening peak hour Level of Service from LOS F to LOS E.

- #11 – Imperial Highway at Yorba Linda Boulevard: Add a dedicated EB right-turn lane with overlap. With this improvement, the intersection would operate at LOS D during both peak hours.

- #29 – Yorba Linda Boulevard at La Palma Avenue: Add dedicated SB right-turn lane on Yorba Linda Boulevard. Although the intersection would continue to operate an unacceptable Level of Service (LOS E) during the evening peak hour, this improvement would provide an improvement in overall intersection capacity.

- #30 – Yorba Linda Boulevard at Savi Ranch Parkway: Currently built to ultimate configuration.

Recommended Roadway Improvements

Since the acceptable threshold for LOS is C, the 5 segments identified are considered to be impacted. A summary of roadway LOS before and after implementation of roadway improvements is provided on Table 9.

- The roadway segments of Imperial Highway from Yorba Linda Boulevard to Kellogg Drive and Yorba Linda Boulevard from Fairmont Boulevard to New River Road would need to be widened to six lanes in order to achieve acceptable daily Level of Service. The roadway segment of Imperial Highway from Kellogg Drive and Orangethorpe Avenue would also need to be widened to six lanes to achieve Level of Service D.

    - Traffic volumes will increase gradually over time, such that widening would not be an immediate action the City would need to take. Rather, the City should monitor traffic growth, and be prepared to act when the levels of congestion are reached such that widening becomes essential.

- To the extent that future development contributes to the need for widening, a fair-share contribution to the cost of the widening can be made a condition of approval for that development.

- The segment of Imperial Highway from Rose Drive to Yorba Linda Boulevard is already built to six lanes. The increase in traffic on this segment reflects traffic demands due to new development, as well as increases in regional traffic destined for the freeway.

  - Further widening on this roadway segment could have significant land use implications.
  - Instead, traffic control system improvements such as coordinated signals should be implemented to enhance traffic flow and reduce traffic delays at signalized intersections.
  - With these measures, traffic operating conditions on this segment can be maintained to acceptable levels.

TABLE 8
SUMMARY OF INTERSECTION OPERATIONS WITH PROPOSED IMPROVEMENTS
BUILD-OUT YEAR 2035 WITH PROJECT

Int. #	Intersection	AM Peak Hour				PM Peak Hour			
		Without Improvement		With Improvement		Without Improvement		With Improvement	
		ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS
Build-out without Project									
1	Rose Drive at Imperial Highway Add 3rd NB Thru Lane to Rose Drive	0.736	C	0.729	C	1.001	F	0.936	E
11	Imperial Highway at Yorba Linda Boulevard Add Dedicated EB Right-turn Lane with Overlap	0.990	E	0.828	D	0.974	E	0.795	C
30	Yorba Linda Boulevard at Savi Ranch Parkway Currently built to ultimate configuration	0.562	A	0.562	A	1.059	F	1.059	F
Build-out with Project									
1	Rose Drive at Imperial Highway Add 3rd NB Thru Lane to Rose Drive	0.738	C	0.738	C	1.001	F	0.936	E
11	Imperial Highway at Yorba Linda Boulevard Add Dedicated EB Right-turn Lane with Overlap	0.991	E	0.829	D	1.000	E	0.822	D
29	Yorba Linda Boulevard at La Palma Avenue Add Dedicated SB Right-turn Lane	0.787	C	0.783	C	0.931	E	0.931	E
30	Yorba Linda Boulevard at Savi Ranch Parkway Currently built to ultimate configuration	1.177	F	1.177	F	1.884	F	1.884	F

Notes:
Bold and shaded values indicate intersections operating at LOS E or F.
Intersection operation is expressed in volume-to-capacity (V/C) for all study intersections using the ICU Methodology.
ICU = Intersection Capacity Utilization
LOS = Level of Service

TABLE 9
SUMMARY OF ROADWAY SEGMENT WITH IMPROVEMENTS
BUILD OUT 2035 WITH PROJECT CONDITIONS

Roadway	Segment	Traffic Volume	Without Improvement				With Improvement				
			Number of Lanes	LOS E Capacity	V/C	LOS	Roadway Classification	Number of Lanes	LOS E Capacity	V/C	LOS
Imperial Highway	Rose Dr to Valley View Ave	53,516	6D	56,300	0.951	E	Major	6D	56,300	0.951	E
	Yorba Linda Blvd to Kellogg Dr	40,692	4D	37,500	1.085	F	Major	6D	56,300	0.723	C
	Kellogg Dr to Orangethorpe Ave	47,282	4D	37,500	1.261	F	Major	6D	56,300	0.840	D
Yorba Linda Boulevard	Village Center Dr to Paseo de las Palomas	34,521	4D	37,500	0.921	E	Major	6D	56,300	0.613	B
	Paseo de las Palomas to New River Rd	44,116	4D	37,500	1.176	F	Major	6D	56,300	0.784	C

Notes: V/C = Volume-to-Capacity ratio, LOS = Level of Service, D = Divided Roadway, U = Undivided Roadway

Bold V/C and LOS values indicate a deficient Level of Service, based on City of Yorba Linda General Plan Policy

SUMMARY

While the City of Yorba Linda is generally fully developed, some parcels are still vacant, or underdeveloped and have the potential for enhanced or further development. For purposes of this General Plan Update, these areas have been designated "Focus Areas".

The number of trips that would be generated by the potential development in these focus areas was calculated, and is summarized on Table 5 (previously mentioned).

With build-out of the city, increased traffic volumes will occur throughout the city, with deficient conditions forecasted at 4 study intersections and 5 study roadway segments. Recommendations for updating the Circulation Element to address future traffic conditions are presented below:

- Improvements to mitigate the deficient peak hour conditions at study intersections have been presented.

- A funding or fee assessment mechanism, such as a traffic impact fee, or an improvement district, should be implemented to collect a portion of the costs to implement these improvements from new development.

- It is recommended that the following roadway segments be improved to provide six travel lanes (three in each direction):

    - Imperial Highway from Yorba Linda Boulevard to Orangethorpe Avenue
    - Yorba Linda Blvd from Fairmont Boulevard to New River Road

- Traffic volumes will increase gradually over time, such that widening would not be an immediate action the City would need to take. Rather, the City should monitor traffic growth, and be prepared to act when the levels of congestion are reached such that widening becomes essential.

- To the extent that future development contributes to the need for widening, a fair-share contribution to the cost of the widening can be made a condition of approval for that development.