

FTIP ID# <i>(required)</i> ORA131105
TCWG Consideration Date December 3, 2024
<p>Project Description (clearly describe project)</p> <p>The California Department of Transportation (Caltrans), in partnership with the Orange County Transportation Authority (OCTA), proposes to modify and improve the existing Interstate 5 (I-5)/El Toro Road (Rd) Interchange between post miles (PM) 17.8 and 19.7, located within the cities of Lake Forest, Laguna Woods, and Laguna Hills in Orange County, California (Attached Figure 1 and Figure 2, Project Vicinity Map and Location map).</p> <p>A PM Hot-spot Interagency Review Form was prepared for the Interstate 5 (I-5) (Proposed Project) (ORA131105) for Interagency Consultation (IAC) on August 28, 2018. The Transportation Conformity Working Group (TCWG) determined that the proposed project was not a project of air quality concern (POAQC). The August 28, 2018 analysis included four build alternatives and one no build alternative. The previously developed alternatives did not reach consensus on a locally preferred alternative from the project stakeholders, and thus OCTA has initiated this alternatives analysis study to see if another alternative could gain consensus. Previous four Build Alternatives are no longer valid. Three proposed built alternatives in the revised project includes Alternative 1 (Southbound I-5 Hook Ramps) and Alternative 2 (flyover with roundabout near Rockfield) and Alternative 3 (Transportation System Management and Transportation Demand Management - TSM/TDM). The TSM/TDM alternative was added as a standalone technology-focused alternative and an add-on to Alternative 1 and Alternative 2. The purpose of this submission is to reaffirm the TCWG that ORA 131105 continues to be not POAQC.</p> <p>Changes from 2018 project:</p> <ol style="list-style-type: none"> 1. Three built alternatives are included in the proposed project. <ol style="list-style-type: none"> a. Build Alternative 1: Southbound I-5 Hook Ramps <ol style="list-style-type: none"> i. Build Alternative -1 Design Option b. Build Alternative 2: Flyover with Roundabout near Rockfield Boulevard (Blvd) c. Build Alternative 3: TSM/TDM 2. Post miles changed from PM 18.1/19.7 to PM 17.8/19.7 <p>Build Alternative 1-Southbound I-5 Hook Ramps</p> <p>Build alternative 1 proposes the following improvements (Attached Figure 3)</p> <p>1. Southbound (SB) I-5 El Toro Rd Exit</p> <p>The existing SB I-5 El Toro Rd exit lane would be reconstructed to be a two-lane off-ramp that splits, with one lane assigned to the El Toro Rd West, using the existing hook ramp connecting to the four-way intersection at Avenida De La Carlota and Paseo De Valencia, and the second lane would be assigned to a new El Toro Rd East off-ramp connecting to Avenida De La Carlota south of El Toro Rd.</p> <p>a. SB I-5 El Toro Rd West Off-ramp: The existing SB I-5 El Toro Rd West off-ramp would retain the same lane configuration but would be reconstructed and realigned.</p> <p>b. SB I-5 El Toro Rd East Off ramp: A new bridge would be constructed to accommodate the new El Toro Rd East off-ramp that would cross over the existing SB I-5 hook on-ramp and El Toro Rd. The additional SB I-5 off-ramp serving eastbound (EB) El Toro Rd motorists would terminate in a hook ramp configuration, creating a three-legged intersection at Avenida De La Carlota, south of El Toro Rd.</p>

2. SB I-5 On-ramp from Avenida De La Carlota: The existing SB I-5 on-ramp from eastbound (EB) El Toro Rd would be removed and replaced with a new hook on-ramp from Avenida De La Carlota, adjacent to the new off-ramp described above and south of El Toro Rd.

3. Avenida De La Carlota: About 0.25-mile segment of Avenida De La Carlota south of El Toro Rd would be realigned approximately 80 feet southwest. From the southern end of the Project limits up to the new on/off-ramp intersection, Avenida De La Carlota would consist of two lanes in each direction. Approaching the El Toro Rd intersection, northbound Avenida De La Carlota would consist of one dedicated left-turn lane, one through-lane and two dedicated right-turn lanes. On SB Avenida De La Carlota, approaching the new on-/off-ramp intersection, two dedicated left turn lanes and two through lanes are proposed.

4. SB I-5 On-ramp Opposite Paseo De Valencia: No modifications would be made to the existing SB I-5 hook on-ramp opposite Paseo De Valencia.

5. Northbound (NB) I-5 On-ramp from Westbound (WB) El Toro Rd: The NB I-5 on-ramp from WB El Toro Rd is being reconstructed from a one-lane on-ramp to a two-lane on-ramp as part of the I-5 South County Improvement Project. The I-5/El Toro Rd Interchange Project would lengthen this ramp, merging with the NB I-5 mainline approximately 0.15 mile north of the existing merge point.

6. NB I-5 On-ramp from EB El Toro Rd: The NB I-5 loop on-ramp from EB El Toro Rd, which is currently under construction with improvements made by I-5 Widening Project - Segment 3, would be maintained.

7. Bridger Rd: The existing terminus on Bridger Rd cul-de-sac would be relocated approximately 100 feet south to accommodate the realigned NB I-5 on-ramp from WB El Toro Rd.

8. El Toro Rd: Along EB El Toro Rd, approaching the intersection with Avenida De La Carlota, four through lanes and one dedicated right turn lane are proposed.

9. Structures

10. Right of way

11. Signage

12. Sound Walls

13. Pedestrian Facilities

14. Geotechnical Borings

Design variation of Build Alternative 1a

A design option is proposed for Build Alternative 1 that includes all features described above in addition to an approximately 90-foot public street entering the Village of Laguna at the new SB I-5/Avenida De La Carlota ramp terminal intersection south of El Toro Rd. The addition of this public street would create a four-way intersection at the new SB I-5 and Avenida De La Carlota ramp. Attached Figure 4.

Build Alternative 2-Flyover with Roundabout Near Rockfield Blvd

The following improvements are proposed under Build Alternative 2 (Attached Figure 5).

1. SB I-5 El Toro Rd Exit: The existing SB I-5 El Toro Rd exit lane would be reconstructed to be a two-lane off-ramp that splits, with one lane assigned to El Toro Rd West, using the existing hook ramp connecting to the four-way intersection Avenida De La Carlota and Paseo De Valencia, and a second lane assigned to a new El Toro Rd East flyover off-ramp connecting to a roundabout for El Toro Rd and Rockfield Blvd access.

- a. SB I-5 El Toro Rd West Off-ramp:** The existing SB I-5 El Toro Rd West off-ramp would retain the same lane configuration but would be reconstructed and realigned.
- b. SB I-5 El Toro Rd East Flyover Off-ramp:** A new bridge would be constructed to accommodate the proposed SB I-5 flyover off-ramp that would independently serve EB El Toro Rd traffic. The proposed flyover ramp would cross over the I-5 mainline and the NB I-5 El Toro Rd off-ramp. The bridge would connect to a new roundabout that provides access to EB El Toro Rd and Rockfield Blvd.
- 2. Roundabout Near El Toro Rd and Rockfield Blvd:** A roundabout intersection would be constructed at the SB I-5 El Toro Rd East off-ramp terminus, south of El Toro Rd and west of Rockfield Blvd, where the Hunter Court Shopping Center currently sits. New streets would be constructed to connect the roundabout to El Toro Rd and Rockfield Blvd.
- 3. Rockfield Blvd:** Rockfield Blvd would be widened between El Toro Rd and Orchard Lane. In the NB direction approaching El Toro Rd, Rockfield Blvd would consist of three dedicated left-turn lanes onto WB El Toro Rd, a dedicated through lane, a shared through/right-turn lane, and a dedicated right-turn lane onto EB El Toro Rd. In the SB direction, Rockfield Blvd would be realigned and maintain two lanes coming away from El Toro Rd and transitioning back to existing condition as it approaches the new the new intersection configuration.
- 4. NB I-5 On-ramp from WB El Toro Rd:** The NB I-5 on-ramp from WB El Toro Rd is being reconstructed from a one-lane on-ramp to a two-lane on-ramp as part of the I-5 South County Improvement Project. The I-5/El Toro Rd Interchange Project would lengthen this ramp, merging with the NB I-5 mainline approximately 0.15 mile north of the existing merge point.
- 5. El Toro Rd:** EB El Toro Rd approaching the NB I-5 loop on-ramp intersection would be widened to increase the number of dedicated right turn lanes on El Toro Rd from one to two.
- 6. Bridger Rd:** The existing terminus on Bridger Rd cul-de-sac would be relocated approximately 100 feet south to accommodate the realigned NB I-5 on-ramp from WB El Toro Rd.
- 7. Avenida De La Carlota -** Approximately 0.30 mile of Avenida De La Carlota would be restriped. From approximately 425 feet south of the existing Avenida De La Carlota/Plaza Lane intersection up to the intersection, Avenida De La Carlota would consist of two lanes in each direction with a dedicated left turn pocket at the intersection. Approaching El Toro Rd intersection, NB Avenida De La Carlota would consist of one dedicated left turn lane onto WB El Toro Rd, one through lane, and two dedicated right-turn lanes onto EB El Toro Rd. Between Paseo De Valencia and El Toro Rd, NB Avenida De La Carlota would consist of one dedicated left turn lane onto SB Paseo De Valencia, one through lane, one shared through/right-turn lane, and an approximately 130-foot dedicated right turn lane onto SB I-5 existing hook on-ramp. Along SB Avenida De La Carlota between Paseo De Valencia and El Toro Rd, the existing third left turn lane onto EB El Toro Rd would be eliminated to accommodate the dedicated left turn lane for NB traffic. The remaining two dedicated left turn lanes, two through lanes, and dedicated right-turn lane on SB Avenida De La Carlota approaching El Toro Rd would remain in place.
- 8. SB I-5 On-ramp from EB El Toro Rd:** The existing SB I-5 on-ramp from El Toro Rd would be maintained.
- 9. Structures**
- 10. TSM/TDM**
- 11. Right-of-way**
- 12. Signage**
- 13. Sound Walls**
- 14. Pedestrian facility**
- 15. Geotechnical Borings**

Common Design Features of the Build Alternatives

This section discusses the common design features of the Build Alternatives. The I-5/El Toro Rd Interchange Project area is complex and includes heavy traffic volumes, closely spaced intersections, and varied land uses; thus, design solutions are challenging. As a result, the Build Alternatives that have been developed included numerous unique design features, and common design features are limited. The following common design features apply to all of the Build Alternatives.

1. Transportation System Management (TSM)/Transportation Demand Management (TDM)

TSM elements would be included in each of the Build Alternatives. The TSM/TDM technology improvements would include the deployment of technologies with focus on improving Transportation Systems Management and Operations (TSMO) at each of the intersections, along the I-5 and the critical arterials, as well as the region as a whole. Design and deployment of these technological improvements would require close coordination between local cities and Caltrans. The details of deployment will depend on local agency TSMO capabilities and preferences, the ability to operate and maintain devices and systems, regional and local ITS architecture, and systems integration and interoperability. The range of technologies and their associated applications for TSM/TDM are listed below and would apply to Build Alternatives 1, 2, and 3:

- Advanced Traffic Signal Systems and Intersection Safety
- Advanced Freeway/Regional management Systems enhancements
- Advanced Traveler Information Systems

2. Lighting

3. Landscaping

4. Water Quality

Build Alternative 3- Transportation System Management (TSM) and Transportation Demand Management (TDM):

Build Alternative 3 proposes standalone TSM/TDM improvements. TSM strategies increase the efficiency of existing facilities; they are actions that increase the number of vehicle trips a facility can carry without increasing the number of through lanes. TDM focuses on regional means of reducing the number of vehicle trips and vehicle miles traveled as well as increasing vehicle occupancy. All of the TSM/TDM improvements listed under Common Features of the Build Alternatives would be implemented. A layout plan is not provided for Build Alternative 3 because it only includes technology improvements, and no physical or geometric improvements are proposed.

No Build Alternative

The No-Build Alternative proposes no action, where no construction or improvements would be made to the I-5/El Toro Rd Interchange apart from proposed projects that are under development or currently under construction. The No-Build Alternative would not address the issues and deficiencies within the Project limits. This alternative, however, does not preclude the construction of future improvements.

Type of Project <i>(use Table 1 on instruction sheet)</i> Reconfigure existing interchange
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County Orange	Narrative Location/Route & Postmiles Caltrans Projects – EA#12-0M980	12-ORA-005-PM 17.8/19.7		
Lead Agency: Caltrans District 12				
Contact Person Rabindra Bade	Phone# 949 405 4297	Fax#	Email Rabindra.bade@dot.ca.gov	
Hot Spot Pollutant of Concern <i>(check one or both)</i> PM2.5 x PM10 x				

Federal Action for which Project-Level PM Conformity is Needed <i>(check appropriate box)</i>				
Categorical Exclusion (NEPA)	<input checked="" type="checkbox"/> EA or Draft EIS	<input type="checkbox"/> FONSI or Final EIS	<input type="checkbox"/> PS&E or Construction	<input type="checkbox"/> Other
Scheduled Date of Federal Action: 2025				
NEPA Assignment – Project Type <i>(check appropriate box)</i>				
<input type="checkbox"/> Exempt	<input type="checkbox"/> Section 326 –Categorical Exemption	<input checked="" type="checkbox"/> Section 327 – Non-Categorical Exemption		
Current Programming Dates <i>(as appropriate)</i>				
	PE/Environmental	ENG	ROW	CON
Start	2017	2027	2027	2033
End	2027	2033	2039	2039

Project Purpose and Need (Summary): *(attach additional sheets as necessary)*

Purpose

The purpose of the project is to:

- Improve traffic flow and traffic signal optimization.
- Improve traffic mobility at and through adjacent local street intersections.
- Reduce freeway ramp queuing.
- Apply technology to help manage traffic demand.

Need

The need of the project is due to the following conditions within the project limits:

- Traffic delays due to the high traffic volumes.
- Geometric deficiencies related to inadequate signal operations and intersection spacing.
- Major delays due to traffic queuing at the intersections of the on-and off-ramps and local streets.

<p>Surrounding Land Use/Traffic Generators (<i>especially effect on diesel traffic</i>)</p> <p>Interstate 5 is a major north-south route connecting employment centers in Orange County to the North with residential areas to the east, west and south. El Toro Rd is a thoroughfare providing access to I-5 from commercial and residential areas adjacent to the freeway. These routes are heavily used for commuting during weekday peak periods. Heavy trucks represent about 7% of vehicle volumes in the mainline and 2% in the ramps, based on recent Caltrans data. Land uses near the I-5/El Toro Rd Interchange are primarily urban commercial and residential developments. The residential development generates mostly automobile traffic, while the commercial development generates a mixture of automobile and truck traffic.</p>
<p>Opening Year: Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility</p> <p>See attached analysis--- Table 1 and Table 5.</p>
<p>RTP Horizon Year / Design Year: Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility.</p> <p>See attached analysis--- Table 2 and Table 6</p>
<p>Opening Year: If facility is an interchange(s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT</p> <p>See attached analysis--Table 3 and Table 7</p> <p>RTP Horizon Year / Design Year: If facility is an interchange (s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT</p> <p>See attached analysis--Table 4 and Table 8</p>
<p>Describe potential traffic redistribution effects of congestion relief (<i>impact on other facilities</i>)</p> <p>The proposed improvements will improve future traffic flow to and from the local street network. In addition, congestion relief on the mainline ramps and local streets will serve to improve vehicle safety by improving mobility.</p>

Comments/Explanation/Details *(attach additional sheets as necessary)*

PM2.5/PM10 Hot-Spot Analysis

The I-5/El Toro Rd Interchange project is located within a nonattainment area for federal PM2.5 standards and within an attainment/maintenance area for the federal PM10 standards. Therefore, per 40 CFR Part 93 hot-spot analyses are required for conformity purposes. However, the EPA does not require hot-spot analyses, qualitative or quantitative, for projects that are not listed in section 93.123(b)(1) as an air quality concern.

According to 40 CFR Part 93.123(b)(1), the following are Projects of Air Quality Concern (POAQC):

- i. New highway projects that have a significant number of diesel vehicles, and expanded highway projects that have a significant increase in the number of diesel vehicles;
- ii. Projects affecting intersections that are at a Level of Service D, E, or F with a significant number of diesel vehicles, or those that will change to Level of Service D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project.
- iii. New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location.
- iv. Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; and
- v. Projects in or affecting locations, areas or categories of sites which are identified in the PM2.5 and PM10 applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

The project does not qualify as a Project of Air Quality Concern (POAQC) because of the following reasons:

- i. The proposed Project is not a new or expanded highway project. The proposed Project would reduce traffic congestion at and through adjacent local street intersections and reduce freeway ramp queuing without increasing capacity. The proposed Built Alternatives will slightly alter the traffic flow on local streets within the project area. But the truck volume would not exceed the 10,000 average daily truck criteria for POAQC. The freeway traffic volume remains the same as in no build scenario in both the Build Alternatives as shown in Table 1 and Table 2.
- ii. The LOS conditions in the project vicinity with and without the proposed project are shown in Tables 5,6,7 and 8. As shown in the Table 7 and Table 8, there is improvement in the Level of Service (LOS) at several intersections within the project limits. On the freeway mainlines there is no changes in the LOS. The proposed project would not result in a significant increase in the number of diesel vehicles in the project limits.
- iii. The proposed build alternatives do not include the construction of a new bus or rail terminal.
- iv. The proposed build alternatives do not expand an existing bus or rail terminal.
- v. The proposed build alternatives are not in or affecting locations, areas, or categories of sites that are identified in the PM2.5 and PM10 applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

Therefore, the proposed Project meets the CAA requirements and 40 CFR 93.116 without any explicit hot-spot analysis. The proposed Project would not create a new, or worsen an existing, PM10 or PM2.5 violation.

Table 1: Opening Year (2030) Traffic volume for Alternatives

Seg #	Segment Description	Direction	Type	No Build		Alternative 1				Alternative 2				Truck (%)
				AADT	Truck AADT	AADT	Truck AADT	Change in AADT	Change Truck AADT	AADT	Truck AADT	Change in AADT	Change Truck AADT	
1	Alicia Parkway On-Ramp to El Toro Road off-ramp	NB	ML	171,298	11,991	171,298	11,991	0	0	171,298	11,991	0	0	7%
			HOV	17,693	0	17,693	0	0	0	17,693	0	0	0	0
2	El Toro Road off-ramp	NB	Ramp	9,695	194	9,695	194	0	0	9,695	194	0	0	2%
3	El Toro Road off-ramp to EB El Toro Road loop on-ramp	NB	ML	157,426	11,020	157,426	11,020	0	0	157,426	11,020	0	0	7%
			HOV	21,872	0	21,872	0	0	0	21,872	0	0	0	0
4	EB El Toro Road on-ramp	NB	Ramp	11,326	227	11,326	227	0	0	11,326	227	0	0	2%
5	EB El Toro Road loop on-ramp to WB El Toro Road loop on-ramp	NB	ML	168,729	11,811	168,729	11,811	0	0	168,729	11,811	0	0	7%
			HOV	21,894	0	21,894	0	0	0	21,894	0	0	0	0
6	WB El Toro Road loop on-ramp	NB	Ramp	15,262	305	15,262	305	0	0	15,262	305	0	0	2%
7	WB El Toro Road loop on-ramp to Lake Forest Drive off-ramp	NB	ML	186,896	13,083	186,896	13,083	0	0	186,896	13,083	0	0	7%
			HOV	18,990	0	18,990	0	0	0	18,990	0	0	0	0
8	Lake Forest Drive on-ramp	SB	Ramp	6,598	132	6,598	132	0	0	6,598	132	0	0	2%
9	Lake Forest Drive on-ramp to Avenida De La Carlota (North of El Toro Road)/Paseo De Valencia hook off-ramp	SB	ML	194,303	13,601	194,303	13,601	0	0	194,303	13,601	0	0	2%
			HOV	19,003	0	19,003	0	0	0	19,003	0	0	0	0
10a	Avenida De La Carlota (North of El Toro Road)/Paseo De Valencia hook off-ramp	SB	Ramp	29,958	599	19,063	381	-10,895	-218	19,495	390	-10,463	-209	2%
10b	Avenida De La Carlota (South of El Toro Road) off-ramp	SB	Ramp	-	-	10,895	218	-	-	-	-	-	-	2%
10c	Rockfield Blvd off-ramp	SB	Ramp	-	-	-	-	-	-	10,463	209	+10,463	+209	2%
11	Avenida De La Carlota (North of El Toro)	SB	ML	162,200	11,354	162,200	11,354	0	0	162,200	11,354	0	0	7%

	Road)/Paseo De Valencia off-ramp to -Avenida De La Carlota (North of El Toro Road)/Paseo De Valencia hook on-ramp		HOV	21,347	0	21,147	0	0	0	21,147	0	0	0	0
12	Avenida De La Carlota (North of El Toro Road)/Paseo De Valencia hook on-ramp	SB	Ramp	2,603	52	2,603	52	0	0	2,603	52	0	0	2%
13	Avenida De La Carlota (North of El Toro Road)/Paseo De Valencia hook on-ramp-El Toro Road on-ramp	SB	ML	164,766	11,534	164,766	11,534	0	0	164,766	11,534	0	0	7%
			HOV	21,184	0	21,184	0	0	0	21,184	0	0	0	0
14	El Toro Road on-ramp	SB	Ramp	7,092	142	7,092	142	0	0	7,092	142	0	0	2%
15	El Toro Road on-ramp to Alicia Parkway off-ramp	SB	ML	175,505	12,285	175,505	12,285	0	0	175,505	12,285	0	0	7%
			HOV	17,536	0	17,536	0	0	0	17,536	0	0	0	0

Table 2: Design Year (2050) Traffic volume for Alternatives

Seg #	Segment Description	Direction	Type	No Build		Alternative 1				Alternative 2				Truck (%)
				AADT	Truck AADT	AADT	Truck AADT	Change in AADT	Change Truck AADT	AADT	Truck AADT	Change in AADT	Change Truck AADT	
1	Alicia Parkway On- Ramp to El Toro Road Off-Ramp	NB	ML	182,207	12,755	182,207	12,755	0	0	182,207	12,755	0	0	7%
			HOV	21,852	0	21,852	0	0	0	21,852	0	0	0	0
2	El Toro Road off-ramp	NB	Ramp	10,268	205	10,268	205	0	0	10,268	205	0	0	2%
3	El Toro Road off-ramp to EB El Toro Road Loop on-ramp	NB	ML	167,754	11,743	167,754	11,743	0	0	167,754	11,743	0	0	7%
			HOV	26,039	0	26,039	0	0	0	26,039	0	0	0	0
4	EB El Toro Road on-ramp	NB	Ramp	11,868	237	11,868	237	0	0	11,868	237	0	0	2%
5	EB El Toro Road loop on-ramp to WB El Toro Road loop on-ramp	NB	ML	179,562	12,569	179,562	12,569	0	0	179,562	12,569	0	0	7%
			HOV	26,099	0	26,099	0	0	0	26,099	0	0	0	0
6	WB El Toro Road loop on-ramp	NB	Ramp	15,319	306	15,319	306	0	0	15,319	306	0	0	2%
7	WB El Toro Road loop on-ramp to Lake Forest Drive off-ramp	NB	ML	197,499	13,825	197,499	13,822	0	0	197,499	13,822	0	0	7%
			HOV	23,480	0	23,480	0	0	0	23,480	0	0	0	-
8	Lake Forest Drive on-ramp	SB	Ramp	7,470	149	7,470	146	0	0	7,470	126	0	0	1.7%
9	Lake Forest Drive on-ramp to Avenida De La Carlota (North of El Toro Road)/Paseo De Valencia hook off-ramp	SB	ML	206,842	14,479	206,842	14,479	0	0	206,842	14,479	0	0	7%
			HOV	23,858	0	23,858	0	0	0	23,858	0	0	0	0
10a	Avenida De La Carlota (North of El Toro Road)/Paseo De Valencia hook off-ramp	SB	Ramp	31,488	630	20,036	401	-11,452	-229	20,487	410	-11,002	-220	2%
10b	Avenida De La Carlota (South of El Toro Road) off-ramp	SB	Ramp	-	-	11,452	229	+11,452	+229	-	-	-	-	2%
10c	Rockfield Blvd off-ramp	SB	Ramp	-	-	-	-	-	-	11,001	220	+11,002	+220	2%
11	Avenida De La Carlota (North of El Toro	SB	ML	174,012	12,181	174,012	12,181	0	0	174,012	12,181	0	0	7%

	Road)/Paseo De Valencia off-ramp to Avenida De La Carlota (North of El Toro Road)/Paseo De Valencia hook on-ramp		HOV	25,198	0	25,198	0	0	0	25,480	0	0	0	0
12	Avenida De La Carlota (North of El Toro Road)/Paseo De Valencia hook on-ramp	SB	Ramp	3,235	65	3,235	65	0	0	3,235	65	0	0	2%
13	Avenida De La Carlota (North of El Toro Road)/Paseo De Valencia hook on-ramp to El Toro Road on ramp	SB	ML	177,252	12,408	177,252	12,408	0	0	177,252	12,408	0	0	7%
			HOV	25,193	0	25,193	0	25,193	0	25,470	0	0	0	0
14	El Toro Road on-ramp	SB	Ramp	8,147	163	8,147	163	8,147	0	8,147	163	0	0	2%
15	El Toro Road on-ramp to Alicia Parkway off-ramp	SB	ML	189,526	13,267	189,526	13,267	189,526	0	191,148	13,380	0	0	7%
			HOV	21,066	0	21,066	0	21,066	0	21,287	0	0	0	0

Table 3 Traffic volume at intersections for No Build and Build Alternatives-Opening Year 2030

Seg #	Intersection Description	No Build				Alternative 1				Alternative 2			
		Peak hour Traffic volume		Peak hour Truck volume		Peak hour Traffic volume		Peak hour Truck volume		Peak hour Traffic volume		Peak hour Truck volume	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	Avenida De La Carlota (NS) Paseo De Valencia/I-5 SB on/off ramp	3,240	3,752	32	38	2,775	3,093	28	31	2,784	3,104	28	31
2	El Toro Road (EW)/ Avenida De La Carlota (NS)	4,890	6,463	49	65	4,677	6,050	47	61	4,433	5,815	44	58
3	El Toro Road (EW)/ Bridger Road / I-5 NB Ramps (NS)	5,117	6,404	51	64	5,096	6,367	51	64	4,732	5,934	47	59
4	El Toro Road (EW)/ Rockfield Boulevard (NS)	4,551	5,612	46	56	4,530	5,575	45	56	4,475	5,392	45	54
5	El Toro Road (EW)/ Rockfield Boulevard (NS)	3,462	3,951	35	40	3,462	3,951	35	40	3,462	3,951	35	40
6	El Toro Road (EW)/ Swartz Drive (NS)	3,583	4,453	36	45	3,562	4,417	36	44	3,199	3,983	32	40
7	Avenida De la Carlota (NS)/Plaza Lane/ Laguna Hill Development Driveway	1,356	2,141	14	0	2,095	2,790	21	28	1,263	1,932	13	0
8	Rockfield Boulevard (NS)/ Orchard Lane/Lake Forest Development Driveway (EW)	1,681	2,169	17	0	1,659	2,132	17	0	2,003	2,420	20	24
9	Rockfield Boulevard (NS)/ Landisview Avenue (EW)	1,692	1,722	0	0	1,670	1,709	0	0	1,763	1,900	0	0
10	Avenida De La Carlota (NS)/Oakbrook Village (EW)	753	1,156	8	0	796	1,217	8	0	681	978	7	0
11	Los Alisos Boulevard (EW)/ Avenida De La Carlota (NS)	2,538	3,037	25	30	2,559	3,098	26	31	2,466	2,860	25	29
12	Los Alisos Boulevard (EW)/ Rockfield Boulevard (NS)	3,122	3,442	31	0	3,121	3,465	31	0	3,121	3,443	31	0
13	Roundabout at Lake Forest Development	-	-	-	-	-	-	-	-	721	1,312	7	13

Table 4 Traffic volume at intersections for No Build and Build Alternatives-Opening Year 2050

Seg #	Intersection Description	No Build				Alternative 1				Alternative 2			
		Peak hour Traffic volume		Peak hour Truck volume		Peak hour Traffic volume		Peak hour Truck volume		Peak hour Traffic volume		Peak hour Truck volume	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	Avenida De La Carlota (NS) Paseo De Valencia/I-5 SB on/off ramp	3,558	4,197	36	42	3,048	3,460	30	35	3,057	3,472	31	35
2	El Toro Road (EW)/ Avenida De La Carlota (NS)	5,369	7,234	54	72	5,137	6,770	51	68	4,867	6,508	49	65
3	El Toro Road (EW)/ Bridger Road / I-5 NB Ramps (NS)	5,621	7,165	56	72	5,598	7,123	56	71	5,198	6,639	52	66
4	El Toro Road (EW)/ Rockfield Boulevard (NS)	5,000	6,280	50	63	4,975	6,239	50	62	4,915	6,034	49	60
5	El Toro Road (EW)/ Rockfield Boulevard (NS)	3,801	4,421	38	44	3,801	4,421	38	44	3,801	4,421	38	44
6	El Toro Road (EW)/ Swartz Drive (NS)	3,935	4,982	39	50	3,911	4,942	39	49	3,513	4,456	35	45
7	Avenida De la Carlota (NS)/Plaza Lane/ Laguna Hill Development Driveway	1488	2,397	15	0	2,300	3,121	23	31	1,386	2,163	14	0
8	Rockfield Boulevard (NS)/ Orchard Lane/Lake Forest Development Driveway (EW)	1,846	2,426	18	0	1,822	2,384	18	0	2,200	2,707	22	27
9	Rockfield Boulevard (NS)/ Landisview Avenue (EW)	1,857	1,928	0	0	1,833	1,914		0	1,935	2,127	0	0
10	Avenida De La Carlota (NS)/Oakbrook Village (EW)	828	1,294	8	0	876	1,362	9	0	749	1,095	7	0
11	Los Alisos Boulevard (EW)/ Avenida De La Carlota (NS)	2,785	3,400	28	34	2,808	3,469	28	35	2,706	3,202	27	32
12	Los Alisos Boulevard (EW)/ Rockfield Boulevard (NS)	3,428	3,851	34	0	3,427	3,877	34	0	3,427	3,851	34	0
13	Roundabout at Lake Forest Development	-	-	-	-	-	-	-	-	791	1,467	8	15

Table 5 Opening Year 2030 Freeway Segment Level of Service (LOS) Comparison between Alternatives

S.N.	Direction	Road Segment	Type	2030 Delay Comparison of Build Alternatives vs No Build for GP+Aux lanes					
				No Build		Alternative 1		Alternative 2	
				AM	PM	AM	PM	AM	PM
1	NB	Alicia Parkway on-ramp to El Toro Road off-ramp	ML	F	F	F	F	F	F
2	NB	El Toro Road off-ramp	Ramp	-	-	-	-	-	-
3	NB	El Toro Road off-ramp to EB El Toro Road loop on-ramp	ML	C	C	C	C	C	C
4	NB	EB El Toro Road loop on-ramp	Ramp	D	D	D	D	D	D
5	NB	EB El Toro Road loop on-ramp to WB El Toro Road loop on-ramp	ML	D	D	D	D	D	D
6	NB	WB El Toro Road loop on-ramp	Ramp	C	C	C	C	C	C
7	NB	WB El Toro Road loop on-ramp to Lake Forest Drive off-ramp	ML	D	C	D	C	D	C
8	SB	Lake Forest Drive on-ramp ⁽¹⁾	Ramp	-	-	-	-	-	-
9	SB	Lake Forest Drive on-ramp to Avenida De La Carlota/ Paseo De Valencia hook off-ramp	ML	C	C	C	C	C	C
10	SB	Avenida De La Carlota/ Paseo De Valencia hook off-ramp	Ramp	-	-	-	-	-	-
11	SB	Avenida De La Carlota/ Paseo De Valencia hook off-ramp to Avenida De La Carlota/Paseo De Valencia hook on-ramp	ML	C	C	C	C	C	C
12	SB	Avenida De La Carlota/ Paseo De Valencia hook on-ramp	ML	C	D	C	D	C	D
13	SB	Avenida De La Carlota/Paseo De Valencia hook on-ramp to El Toro Road on-ramp	ML	C	D	C	D	C	D
14	SB	El Toro Road on-ramp	Ramp	-	-	-	-	-	-
15	SB	El Toro Road on-ramp to Alicia Parkway off-ramp	ML	C	C	C	C	C	C

Source: Caltrans Draft Traffic Study Report (October,2024)

Note: 1) On-ramp LOS is not provided because ramp operation is part of the weaving analysis or the downstream mainline segment. See downstream mainline segment analysis.

2. Off-ramp LOS is not provided because ramp operation is part of the weaving analysis for the upstream mainline segment. See upstream mainline segment analysis.

Table 6 Design Year 2050 Freeway Segment Level of Service (LOS) Comparison between alternatives

S.N.	Direction	Road Segment	Type	2050 Comparison of Build Alternatives vs No Build for GP+Aux lanes					
				No Build		Alternative 1		Alternative 2	
				AM	PM	AM	PM	AM	PM
1	NB	Alicia Parkway on-ramp to El Toro Road off-ramp	ML	F	F	F	F	F	F
2	NB	El Toro Road off-ramp	Ramp	-	-	-	-	-	-
3	NB	El Toro Road off-ramp to EB El Toro Road loop on-ramp	ML	D	C	D	C	D	C
4	NB	EB El Toro Road loop on-ramp	Ramp	D	D	D	D	D	D
5	NB	EB El Toro Road loop on-ramp to WB El Toro Road loop on-ramp	ML	D	D	D	D	D	D
6	NB	WB El Toro Road loop on-ramp	Ramp	D	D	D	C	D	C
7	NB	WB El Toro Road loop on-ramp to Lake Forest Drive off-ramp	ML	D	D	D	D	D	D
8	SB	Lake Forest Drive on-ramp ⁽¹⁾	Ramp	-	-	-	-	-	-
9	SB	Lake Forest Drive on-ramp to Avenida De La Carlota/ Paseo De Valencia hook off-ramp	ML	F	F	F	F	F	F
10	SB	Avenida De La Carlota/ Paseo De Valencia hook off-ramp	Ramp	-	-	-	-	-	-
11	SB	Avenida De La Carlota/ Paseo De Valencia hook off-ramp to Avenida De La Carlota/Paseo De Valencia hook on-ramp	ML	C	D	C	D	C	D
12	SB	Avenida De La Carlota/ Paseo De Valencia hook on-ramp	ML	D	D	D	D	D	D
13	SB	Avenida De La Carlota/Paseo De Valencia hook on-ramp to El Toro Road on-ramp	ML	D	D	D	D	D	D
14	SB	El Toro Road on-ramp	Ramp	-	-	-	-	-	-
15	SB	El Toro Road on-ramp to Alicia Parkway off-ramp	ML	F	F	F	F	F	F

Source: Caltrans Draft Traffic Study Report (October 2024)

Table 7 Opening Year 2030 Intersection Level of Service Comparison Between Alternatives

S. N.	Intersection Location	Intersection control	2030 LOS Comparison of Build Alternatives vs No Build							
			No Build		Alternative 1		Alternative 2		Alternative 3	
			AM	PM	AM	PM	AM	PM	AM	PM
1	Avenida De La Carlota (NS) /Paseo De Valencia /I-5 SB Ramps (EW)	Signalized	F	E	D	D	D	D	F	E
2	El Toro Road (EW)/ Avenida De La Carlota (NS)	Signalized	D	F	D	D	C	D	D	F
3	El Toro Road (EW)/ Bridger Road / I-5 NB Ramps (NS)	Signalized	D	C	C	C	D	C	C	C
4	El Toro Road (EW)/ Rockfield Boulevard (NS)	Signalized	E	E	E	E	D	D	E	E
5	El Toro Road (EW)/ Paseo De Valencia (NS)	Signalized	D	D	D	D	D	D	D	D
6	El Toro Road (EW)/ Swartz Drive (NS)	Unsignalized	-	-	-	-	-	-	-	-
7	Avenida De la Carlota (NS)/Plaza Lane/ Laguna Hill Development Driveway	Signalized	C	B	B	B	C	B	B	B
8	Rockfield Boulevard (NS)/ Orchard Lane/Lake Forest Development Driveway (EW)	Signalized	B	C	C	D	D	D	B	C
9	Rockfield Boulevard (NS)/ Landisview Avenue (EW)	Signalized	C	B	C	B	C	B	B	B
10	Avenida De La Carlota (NS)/Oakbrook Village (EW)	Signalized	B	B	B	B	B	B	B	B
11	Los Alisos Boulevard (EW)/ Avenida De La Carlota (NS)	Signalized	C	D	D	D	C	D	C	D
12	Los Alisos Boulevard (EW)/ Rockfield Boulevard (NS)	Signalized	F	F	E	F	F	E	F	F
13.	Roundabout at Lake Forest Development	Roundabout	-	-	-	-	A	B	-	-

Source: Caltrans Draft Traffic Study Report (October, 2024)

Table 8 Design Year 2050 Intersection Level of Service Comparison between Alternatives

S.N.	Intersection Location	Intersection control	2050 LOS Comparison of Build Alternatives vs No Build							
			No Build		Alternative 1		Alternative 2		Alternative 3	
			AM	PM	AM	PM	AM	PM	AM	PM
1	Avenida De La Carlota (NS) / Paseo De Valencia/ I-5 SB Ramps (EW)	Signalized	F	F	D	D	E	E	F	E
2	El Toro Road (EW)/ Avenida De La Carlota (NS)	Signalized	D	F	D	D	C	D	D	F
3	El Toro Road (EW)/ Bridger Road /I-5 NB Ramps (NS)	Signalized	D	C	C	C	D	C	D	C
4	El Toro Road (EW)/ Rockfield Boulevard (NS)	Signalized	F	E	E	E	D	D	E	E
5	El Toro Road (EW)/ Paseo De Valencia (NS)	Signalized	D	D	D	D	D	D	D	D
6	El Toro Road (EW)/ Swartz Drive (NS)	Unsignalized	-	-	-	-	-	-	-	-
7	Avenida De la Carlota (NS)/Plaza Lane/ Laguna Hill Development Driveway	Signalized	C	B	B	C	C	B	C	B
8	Rockfield Boulevard (NS)/ Orchard Lane/Lake Forest Development Driveway (EW)	Signalized	B	D	B	D	D	D	B	D
9	Rockfield Boulevard (NS)/ Landisview Avenue (EW)	Signalized	C	B	C	B	C	B	C	B
10	Avenida De La Carlota (NS)/ Oakbrook Village (EW)	Signalized	B	B	B	B	B	B	B	B
11	Los Alisos Boulevard (EW) / Avenida De La Carlota (NS)	Signalized	C	D	D	D	C	D	C	D
12	Los Alisos Boulevard (EW)/ Rockfield Boulevard (NS)	Signalized	F	F	F	F	F	F	F	F
13.	Roundabout at Lake Forest Development	Roundabout	-	-	-	-	A	C	-	-

Source: Caltrans Draft Traffic Study Report (October, 2024)

Design Option Alternative 1

Intersection Location	2030 LOS Comparison of Design Option Alternative1			
	2030 LOS		2050 LOS	
	AM	PM	AM	PM
Avenida De La Carlota (NS)/I-5 SB Ramps (EW)/Village of Laguna Hills Driveway	C	D	C	D

Source: Caltrans Draft Traffic Study Report (October, 2024)

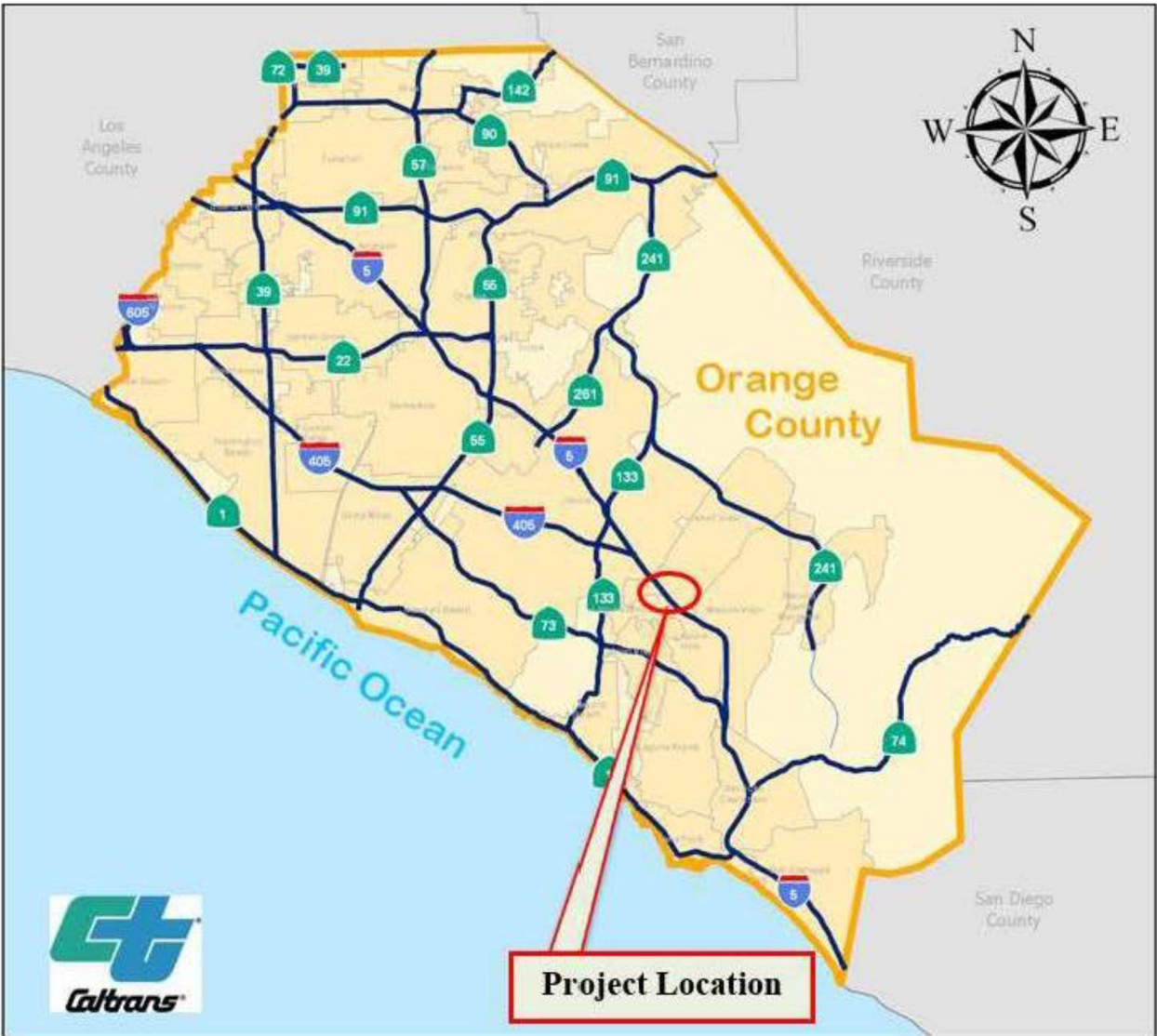
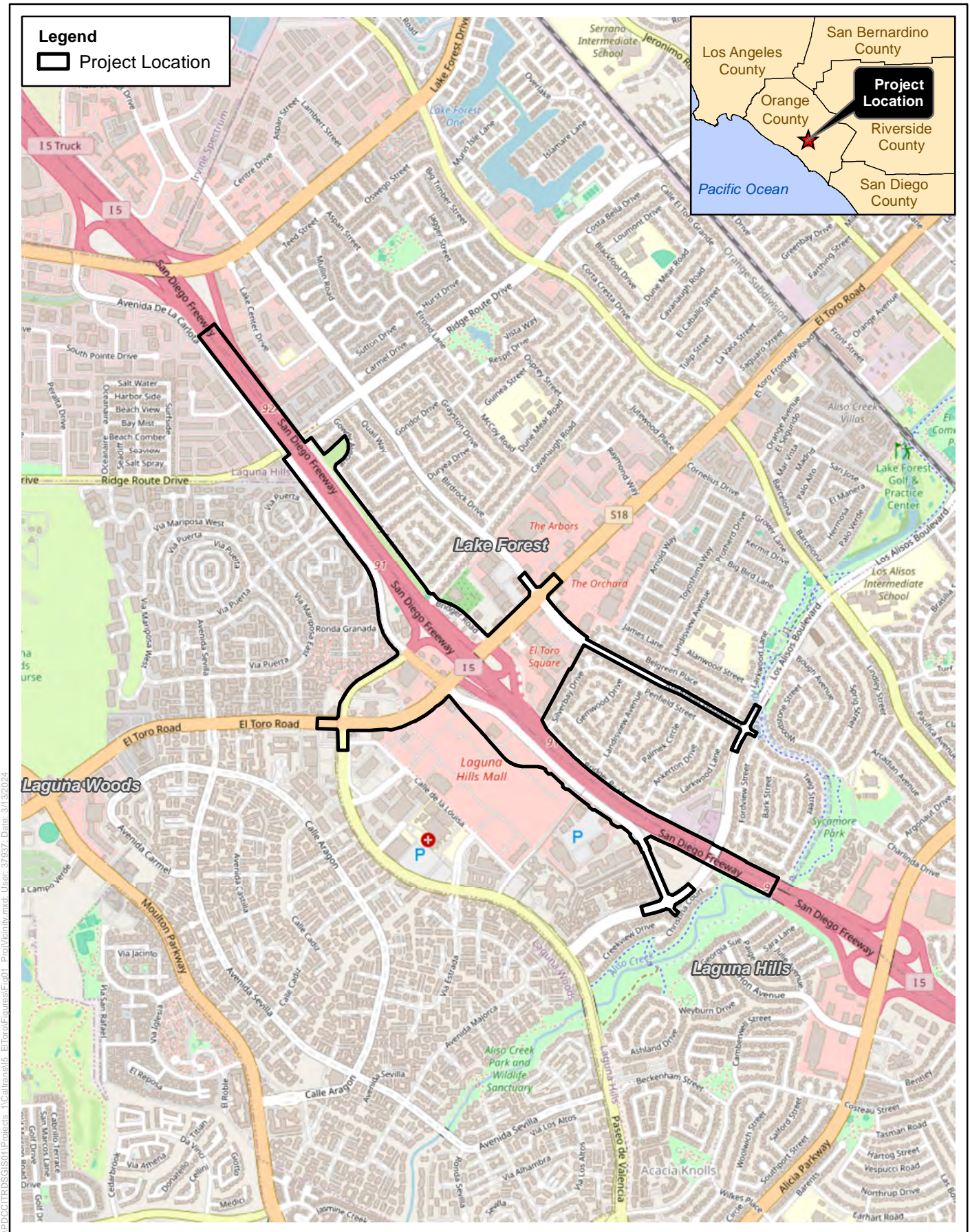


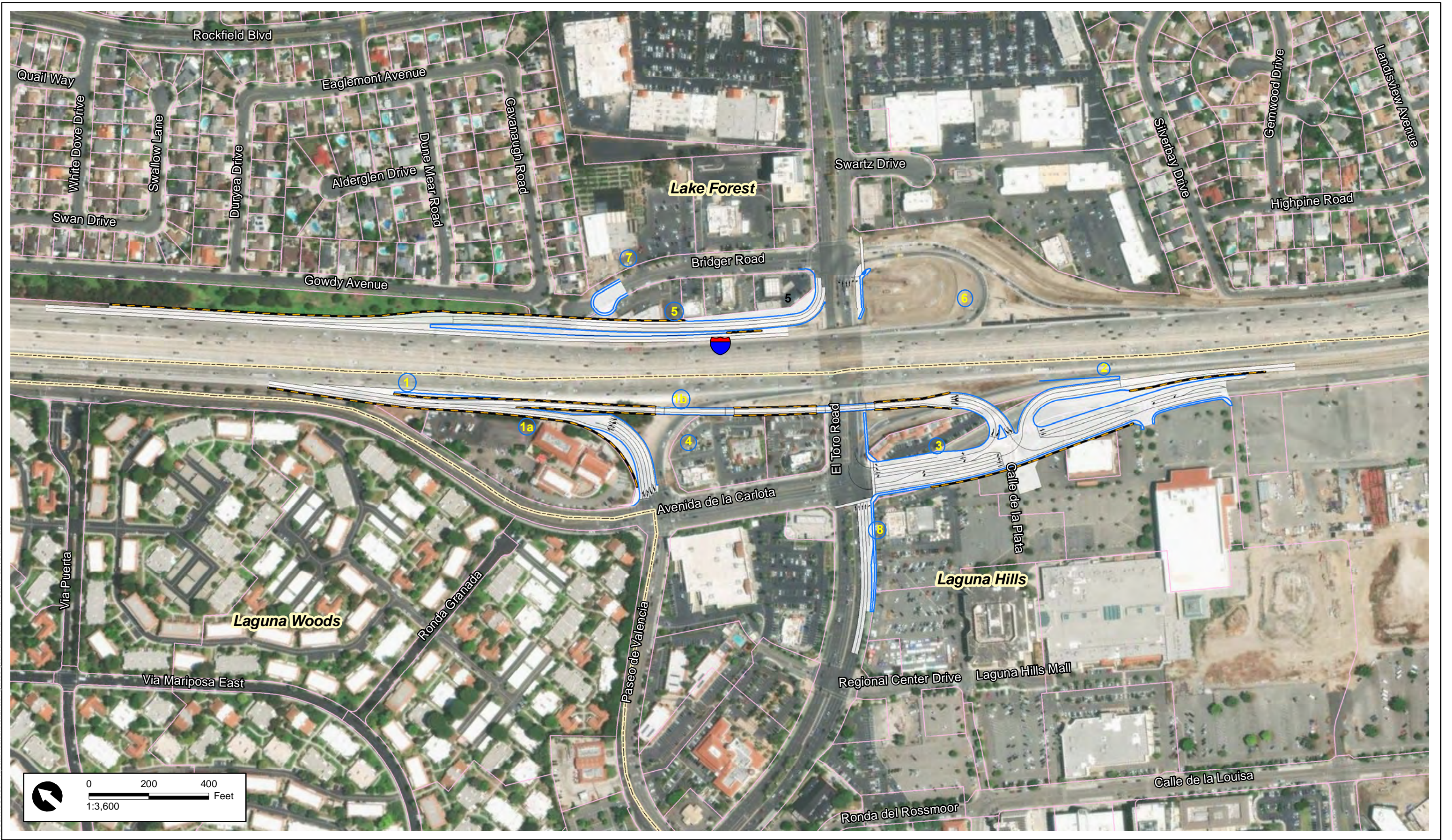
Figure 1. Project Vicinity Map



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Figure 2

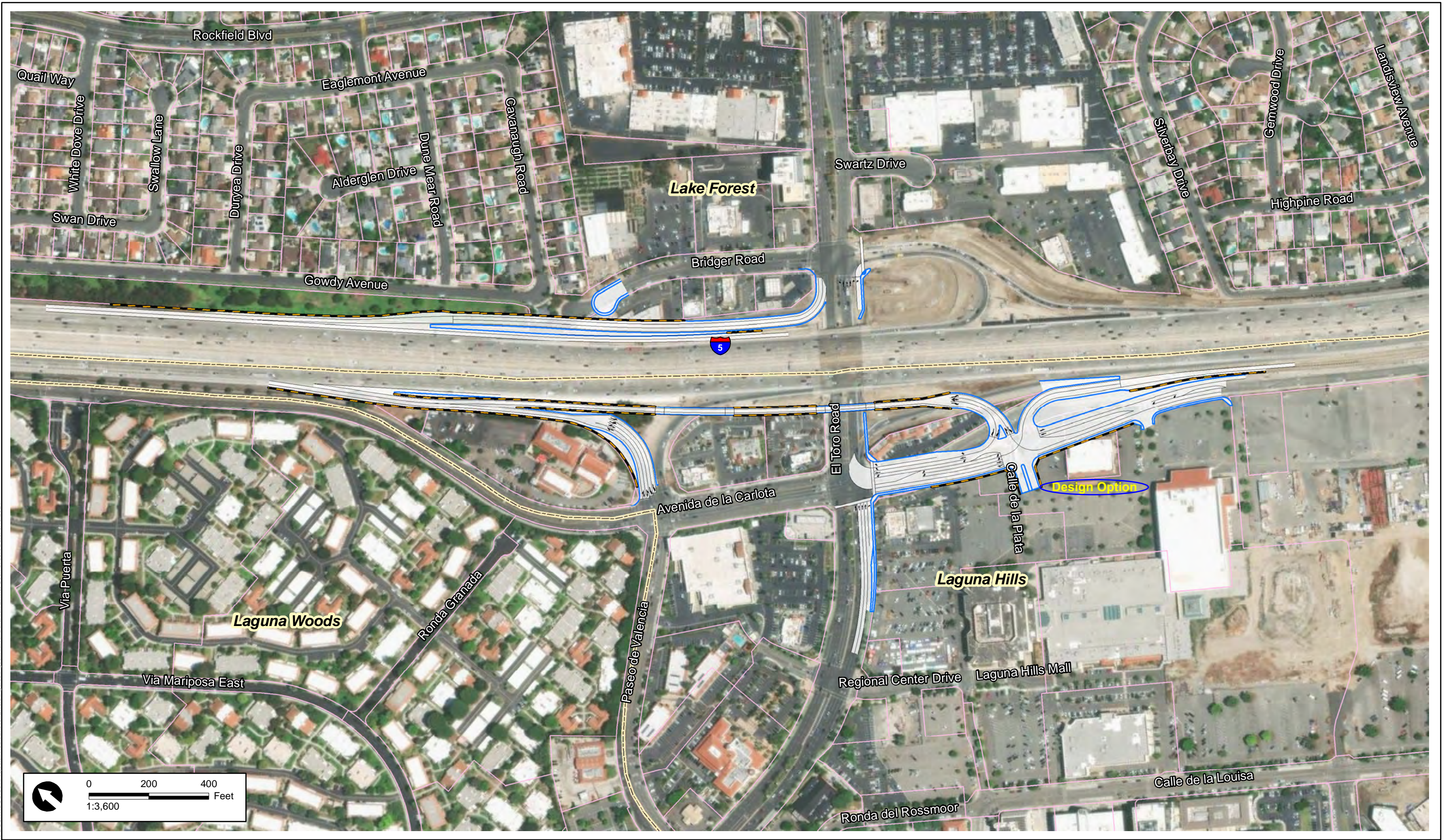
I-5 El Toro Road Interchange Project
 Project Location



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- Legend**
- City Boundary
 - Parcel Boundary
 - Build Alternative 1
 - Pavement Edge
 - Proposed Lane Striping/Marking
 - Soundwall

Figure 3
 I-5 El Toro Road Interchange Project
 Build Alternative 1



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- Legend**
- City Boundary
 - Parcel Boudnary
 - Build Alternative 1a**
 - Pavement Edge
 - Proposed Lane Striping/Marking
 - Soundwall

Figure 4
 I-5 El Toro Road Interchange Project
 Build Alternative 1a
 12-ORA-5 PM 17.8/19.7
 EA 0M980



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- Legend**
- City Boundary
 - Parcel Boundary
 - Build Alternative 2**
 - Pavement Edge
 - Proposed Lane Striping/Marking
 - Soundwall

Figure 5
 I-5 El Toro Road Interchange Project
 Build Alternative 2