1. PROPOSED PROJECT

1.1 Introduction

Caltrans, as assigned by the Federal Highway Administration (FHWA), is the lead agency under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). Caltrans, in cooperation with the Orange County Transportation Authority (OCTA), proposes to widen the northbound side of the State Route (SR) 57 freeway from 0.3 mile south of the Orangewood Avenue undercrossing (post mile [PM] 11.5) north to the Katella Avenue undercrossing (PM 12.5), a distance of about one mile (**see Figure 1-1: Project Vicinity).** The proposed improvements include the construction of a 550-foot section of the fifth general purpose (GP) lane in the northbound direction of SR 57 through the Katella Avenue interchange, upgrades to the non-standard median to meet existing standards and improve stopping sight distances, and reconfiguration of the existing on- and off-ramps to improve operation between the Orangewood Avenue interchange and the Katella Avenue interchange.

The proposed 1-mile freeway improvement Project is listed in the Southern California Association of Government's (SCAG) 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Amendment 2, and in SCAG 2019 Federal Transportation Improvement Program (FTIP) 19-00 under ID 2M0735A and ORA131303 respectively and described as "Add 1 MF lane northbound between Orangewood and Katella. (Utilize toll match for RSTP) ENG only." The project listings are shown in Appendix E, Required Consultation/Concurrence Documentation, in the Air Quality Conformity Documents. The SCAG 2016-2040 RTP/SCS Amendment 2 was found to be conforming by the Federal Highway Administration (FHWA) in March 2018.

The Project is eligible for federal-aid funding, but potential funding sources also include state and local programs. The local funding program includes Measure M 2 (which has recently been rebranded as Orange County Go (OC Go) as of July 2018), is a half-cent sales tax to fund transportation improvements in Orange County. Funding sources will continue to be explored in subsequent project development phases to assemble a project-specific funding package. The anticipated construction start date for the Project is in January 2023, and projected completion is in January of 2025.

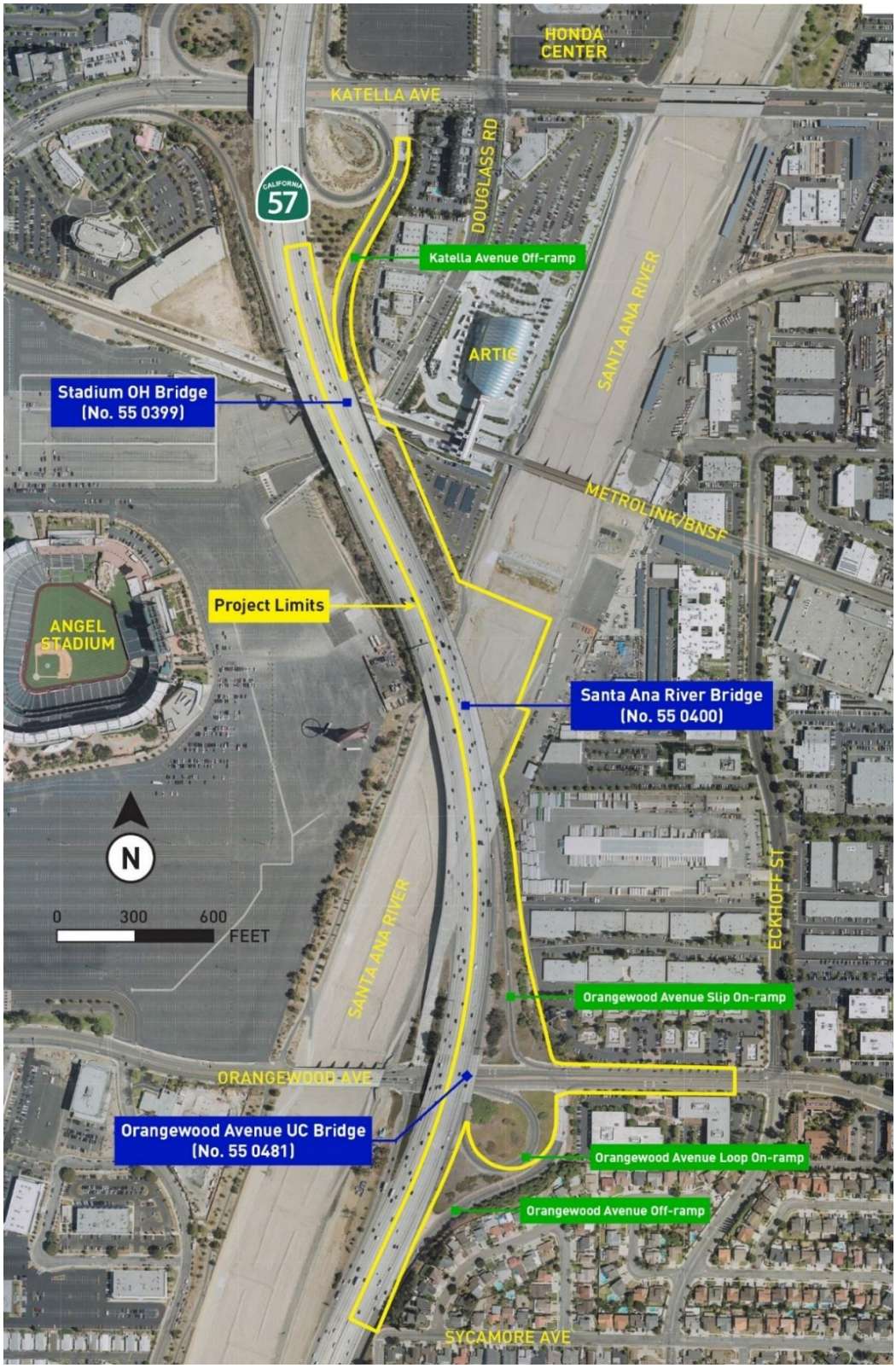
Figure 1-1: Project Vicinity

Source: WSP, Google Maps and Preliminary Design Plans. Prepared for the SR 57 NB Improvement Project, 2018.

The project area is located in the southern portion of the SR 57 freeway corridor as it travels through the cities of Orange and Anaheim in Orange County (see **Figure 1-2: Project Setting**). At the project location, the divided freeway has four to five GP lanes, an auxiliary lane, and a high-occupancy vehicle (HOV) lane. The outside and inside roadway shoulders vary in width from 4 feet to 20 feet.

Several transportation improvement projects are proposed within close proximity to the project area including the City of Anaheim's proposed improvements along Orangewood Avenue, which includes widening the bridge over the Santa Ana River immediately west of the project corridor, removing the right-turn lane onto the NB SR 57 on-ramp and adding a left-turn lane onto the SB SR 57 on-ramp. The City's adopted Fiscal Year (FY) 2017-2018 Budget (July 1, 2017) identifies improvements for the Katella Avenue and Douglass Road intersection. The City of Orange adopted FY 2017-2018 Budget identifies planned synchronization of traffic signals on Orangewood Avenue. In addition, the California High-Speed Rail Authority is proposing the Los Angeles to Anaheim section of the High-Speed Rail Project that would share the existing rail track corridor used by Metrolink and terminate at the existing Anaheim Regional Transportation Intermodal Center (ARTIC; California High-Speed Rail Authority, 2016). The final rail alignment and station configuration at the ARTIC site have not been selected at this time, but will be decided following publication of the Final EIR/EIS. See **Table 2-70: Cumulative Projects List** for a list of reasonably forseeable projects associated with project area.

Figure 1-2: Project Setting



Source: WSP, Google Maps and Preliminary Design Plans. Prepared for the SR 57 NB Improvement Project, 2018.

1.2 Purpose and Need

1.2.1 Purpose

The purpose of the proposed Project is to:

- Relieve existing and future northbound SR 57 congestion and improve mobility on the regional transportation system by adding capacity.
- Extend the northbound SR 57 fifth General Purpose (GP) lane between Orangewood Avenue and Katella Avenue to establish lane continuity.
- Improve northbound SR 57 freeway operations by eliminating and reducing existing nonstandard design features and improving weave length between interchanges.

1.2.2 Need

State Route 57 is a major north-south freeway that extends from the Interstate (I) 5 and SR 22 interchange in Orange County north to the SR 57 and SR 210 interchange in Los Angeles County. Increased traffic volumes and limited capacity within the corridor have caused mobility and congestion issues. Recent modeling analysis using 2016 traffic count data showed acceptable levels of service (LOS) C and D for the northbound freeway analysis; however, the 2011-2014 accident rates also show that the total number of accidents on the Katella Avenue off-ramp are higher than statewide averages. The forecast continued population and employment growth for Orange County is anticipated to further degrade the freeway LOS within this segment of the freeway by 2045 with unacceptable LOS E and F. The OCTA 2014 Long Range Transportation Plan (September 12, 2014) and the locally approved OC Go (formerly named Measure M2) funding for freeway improvements identify the need to make improvements to SR 57.

The 0.75-mile segment from the Orangewood Avenue interchange to the Katella Avenue off-ramp currently has an inside HOV lane, four to five GP lanes, and one auxiliary lane. The auxiliary lane merges with the fifth GP lane located between the Orangewood Avenue loop on-ramp and the Katella Avenue off-ramp. The merge results in a gap of 0.75 mile on the mainline with only four GP lanes between where the fifth GP lane merges with the auxiliary lane north of the Orangewood Avenue loop on-ramp and where the fifth GP lane resumes north of the Katella Avenue off-ramp. The loss of both the auxiliary lane and the fifth GP lane within the 0.75-mile mainline segment results in excessive lane changes and congestion. The proposed Project addresses this existing gap in the fifth lane, as well as several nonstandard design issues representing the most critical features adversely affecting mainline operations in this segment of the freeway (Orangewood Avenue to Katella Avenue). As such, the Project is intended to address the following needs:

- SR 57 is currently congested during peak periods, and the future northbound SR 57 mainline between the Orangewood Avenue and Katella Avenue interchanges is forecast to lack sufficient capacity, which will result in poor mobility.

- The existing northbound SR 57 mainline lacks continuity in the fifth general purpose lane from the Orangewood Avenue northbound on-ramp to 550 feet immediately north of the Katella Avenue northbound off-ramp.
- Several existing nonstandard design features, including weaving and merging issues, adversely affect freeway operations.

1.2.2.1 Capacity, Transportation Demand, and Safety

Existing Capacity and LOS

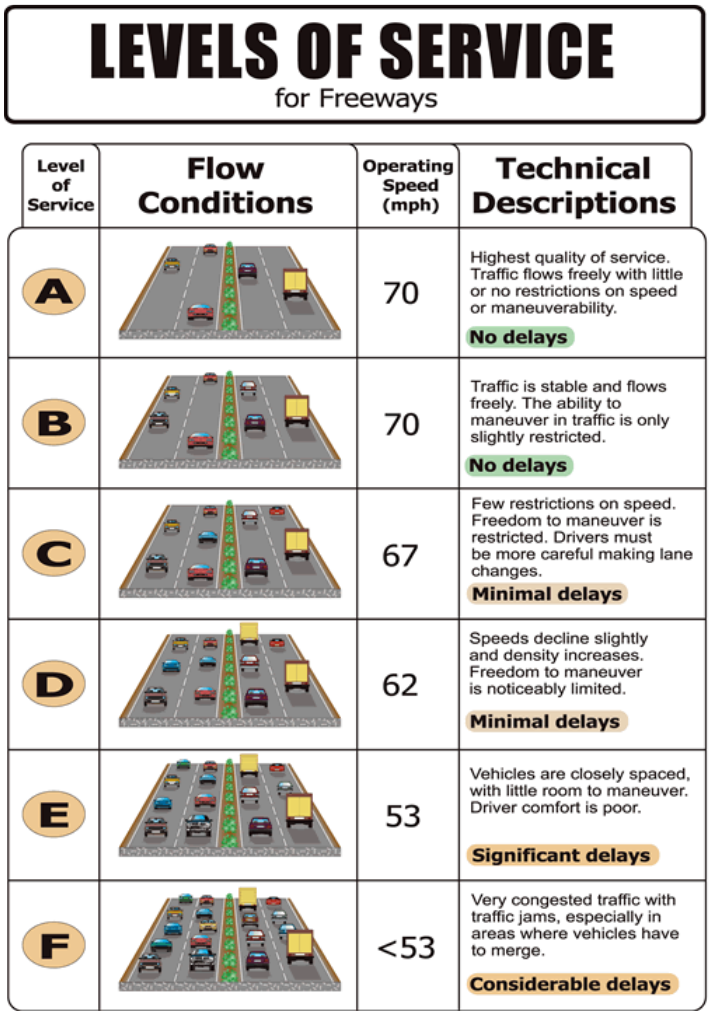
The Highway Capacity Manual (HCM) (Transportation Research Board (TRB), 2010) defines level of service (LOS) as a quality measure that describes operational conditions for traffic flow on different types of transportation facilities. A LOS measure reflects such performance measures as speed, travel time, freedom to maneuver, traffic interruptions, comfort, and convenience. Six LOS categories are defined for freeways and range from "A" for the best operating conditions to "F" for the worst. **Table 1-1: Freeway LOS Criteria** presents freeway LOS categories and the correlated traffic density in terms of passenger cars per mile per lane (pc/mi/ln). For example, LOS C typically has 18 to 26 passenger cars per mile per lane for a basic freeway segment**. Figure 1-3: Caltrans Freeway Level of Service** illustrates the six LOS conditions for freeways and provides typical operating speeds and traffic flow descriptions. The *Transportation Concept Report* (Caltrans, June 2015) identifies LOS D as the Caltrans acceptable LOS for SR 57.

Table 1-1: Freeway LOS Criteria

LOS	Basic Freeway Segment Density (Pc/mi/ln)	Freeway Weaving Segment Density (Pc/mi/ln)
A	0 - 11	0 - 10
B	> 11 - 18	> 10 - 20
C	> 18 - 26	> 20 - 28
D	> 26 - 35	> 28 - 35
E	> 35 - 45	> 35 - 43
F	> 45	> 43

Notes: Pc/mi/ln = passenger cars per mile per lane
Source: TRB, HCM 2010.

Figure 1-3: Caltrans Freeway Level of Service



Source: Caltrans, Standard Environmental Reference (SER) 2017
http://www.dot.ca.gov/ser/.

Table 1-2: SR 57 Freeway Operations for Existing and No Build, presents existing and future freeway segment density and LOS for the northbound GP lanes of the SR 57 freeway segments for the project limits. Most freeway segments will continue to operate at an acceptable level of service in both the Opening (2025) and Design (2045) Years. However, there will be some segments that experience a slight degradation in LOS, including: Orangewood Avenue loop on-ramp to Orangewood Avenue direct on-ramp, Katella Avenue off-ramp to the limits of the proposed lane addition, and North of Katella Avenue direct on-ramp. In the Design Year, the Orangewood Avenue loop on-ramp to Orangewood direct on-ramp segment will operate at LOS E in the AM peak hour. The Katella Avenue off-ramp to the proposed lane addition will operate at LOS E during the AM peak hour in the Opening Year, and LOS F and E in the Design Year's AM and PM peak periods, respectively. The North of Katella Avenue direct on-ramp is expected to operate at LOS E during the AM peak hour in the Design Year.

Table 1-2: SR 57 Freeway Operations for Existing and No Build (Opening Year and Design Year)

Segment Location	Peak Hour	Existing (2016) Density[1] (pc/mi/ln)	Existing (2016) LOS	Opening Year (2025) Density[1] (pc/mi/ln)	Opening Year (2025) LOS	Design Year (2045) Density[1] (pc/mi/ln)	Design Year (2045) LOS
South of Chapman Avenue loop on-ramp	AM	25.2	C	27.2	D	30.4	D
	PM	19.2	C	19.9	C	21.6	C
Chapman Avenue loop on-ramp to Chapman Avenue direct on-ramp	AM	22.3	C	24	C	26.4	D
	PM	17.7	B	18.4	C	20.0	C
Chapman Avenue direct on-ramp to Orangewood Avenue off-ramp	AM	23.1	C	25.4	C	28.0	D
	PM	18.6	C	19.4	C	21.0	C
Orangewood Avenue off-ramp to lane drop	AM	21.6	C	23.7	C	26.0	C
	PM	18.0	C	18.7	C	20.3	C
Lane drop to Orangewood Avenue loop on-ramp	AM	26.4	D	29.5	D	33.3	D
	PM	21.6	C	22.5	C	24.6	C
Orangewood Avenue loop on-ramp to Orangewood Avenue direct on-ramp	AM	28.1	D	32.8	D	37.6	E
	PM	23.2	C	25.4	C	28.1	D
Katella Avenue off-ramp to lane addition	AM	33.1	D	38.9	E	46.3	F
	PM	29.1	D	33.1	D	38.0	E
Lane addition to Katella Avenue loop on-ramp	AM	24.7	C	27.6	D	31.0	D
	PM	22.4	C	24.6	C	27.2	D
Katella Avenue loop on-ramp to Katella Avenue direct on-ramp	AM	26.2	D	30.4	D	34.5	D
	PM	24.1	C	27.9	D	31.2	D
North of Katella Avenue direct on-ramp	AM	26.8	D	31.2	D	35.5	E
	PM	25.3	C	29.8	D	33.7	D

Notes: Density[1] = passenger car/mile/lane. Bolded cells = LOS "E" or "F," which are below the acceptable level.
Source: Draft Traffic Operations Analysis Report (TOAR) for the project Approval and Environmental Document, 2018.

Table 1-3: SR 57 Weaving Segment Analysis for Existing and No Build presents the weave segment analysis for the existing and future conditions. The weaving segment of Orangewood Avenue direct on-ramp to Katella Avenue off-ramp indicates that this segment would operate without the project at an unacceptable LOS E during the AM peak hour in the Opening Year 2025 and during the AM and PM peak hours in the Design Year 2045.

Table 1-3: SR 57 Weaving Segment Analysis for Existing and No Build (Opening Year and Design Year)

Segment Location	Peak Hour	Existing (2016) Density (pc/mi/ln)	Existing (2016) LOS	Opening Year (2025) Density (pc/mi/ln)	Opening Year (2025) LOS	Design Year (2045) V/C Ratio[1] Density (pc/mi/ln)	Design Year (2045) LOS
Orangewood Avenue direct on-ramp to Katella Avenue off-ramp	AM	33.2	D	37.7	E	1.035	F
	PM	28.7	D	31.9	D	35.3	E

Note: VC Ratio[1] = If volume over capacity is greater than 1 then LOS is F and no density numerical value is determined.
Source: TOAR 2018.

Regional Population and Traffic Forecast

The SR 57 Northbound Improvement Project corridor includes on- and off-ramps within the cities of Anaheim and Orange, both of which have plans for redevelopment at higher densities than currently exist. The larger of the two cities, the City of Anaheim, has just recently completed a new subarea plan for a large area west of the freeway corridor called *The Platinum Triangle Master Land Use Plan* (City of Anaheim, 2016). This plan outlines a vision to blend mixed uses for an 820-acre area that would have up to 9,500 dwelling units, 5 million square feet of office space, 2.2 million square feet of commercial uses, industrial development at a maximum floor area ratio of 0.50, and institutional development floor area ratio of 3.0. Three major projects listed on the City's February 2017 list of approved, but not constructed projects, will add 2,830 dwelling units, 647,600 square feet of commercial space and 77,000 square feet of office space in the near-term future. Similarly, the City of Orange has identified the Katella Avenue Corridor west of SR 57 as one of eight focus areas for future development. The Katella Avenue Corridor area just east of SR 57 would allow mixed uses including high-density residential development (Orange City General Plan, 2010).

According to the city and county population and employment data, the project area is forecast to continue its historic growth trends (see **Table 1-4: Population and Employment Trends, 2010-2045**). Both population and employment growth was relatively strong between 2010 and 2016 as the region recovered from the 2007-2009 Recession. Population growth in Orange County over the next two decades will be more moderate, with the ratio of population to employment forecasted to continue recent trends. **Table 1-4: Population and Employment Trends, 2010-2045** shows population and employment in the county is projected to increase through 2045 by over 202,710 and 160,266 respectively.

Table 1-4: Population and Employment Trends, 2010-2045

	2010	2016	2025	2045
POPULATION				
Anaheim	336,265	358,136	372,275	413,775
Orange	136,386	141,420	145,232	155,589
Orange County	3,010,232	3,183,371	3,347,741	3,550,451
EMPLOYMENT				
Anaheim	148,400	163,400	209,332	257,689
Orange	64,200	70,000	99,393	107,536
Orange County	1,387,400	1,538,000	1,855,034	2,015,300

Sources: America Labor Market Information System (ALMIS), Major Employers in Orange County 2017; Caltrans, California County Level Economic Forecast 2016-2050 2016a; California Department of Finance (DOF), Table E-4 Population Estimates for cities, counties, and the State 20122-2016 with 2010 Benchmark 2016, 2017; California Employment Development Department(CEDD), 2014-2024 Industry Employment Projections: Orange County 2016b; CEDD, 2014-2024 Industry Employment Projections: LA County 2016c; SCAG, 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy 2016.

Table 1-5: Existing and Future Freeway Traffic Volumes, 2016 and 2045 summarizes the existing 2016 and the forecasted Design Year 2045 average daily traffic (ADT) volumes for the proposed project northbound freeway segments. Existing study area freeway mainline volumes were collected from the Caltrans Freeway Performance Measurement System (PeMS) database. The existing traffic volume on the freeway northbound mainline within the project limits ranges from 110,200 ADT to 130,800 ADT.

Table 1-5: Existing and Future Freeway Traffic Volumes, 2016 and 2045

Segment	Existing (2016)	Horizon (2045)
South of Chapman Avenue loop on-ramp	110,200	126,340
Chapman Avenue loop on-ramp to Chapman Avenue direct on-ramp	118,000	133,190
Chapman Avenue direct on-ramp to Orangewood Avenue off-ramp	121,900	142,060
Orangewood Avenue off-ramp to lane drop	115,800	132,660
Lane drop to Orangewood Avenue loop on-ramp	121,300	142,320
Orangewood Avenue loop on-ramp to Orangewood Avenue direct on-ramp	124,000	146,080
Katella Avenue off-ramp to lane addition	110,600	128,960
Lane addition to Katella Avenue loop on-ramp		
Katella Avenue loop on-ramp to Katella Avenue direct on-ramp	115,900	139,200
North of Katella Avenue direct on-ramp	130,800	156,930

Source: TOAR 2018.

Growth factors from the Orange County Transportation Analysis Model (OCTAM) were applied to the existing traffic volumes for several freeway segments along the study area corridor to project 2045 traffic volumes. Due to forecasted increased land use density in the region as well as adjacent to the study area, traffic volumes are projected to range between 126,340 ADT and 156,930 ADT. This represents an increase that ranges between approximately 13 and 17 percent.

Accident Data

Preliminary accident data for the SR 57 freeway mainline and ramp facilities was obtained from Caltrans recent 3-year (2012-2015) accident data (see **Table 1-6: Existing Accident Data on Northbound SR 57, 2012-2015**). The data collected cover both the mainline segments of SR 57 in the corridor as well as the on- and off-ramps. The data includes actual numbers of accidents and accident rates for fatalities, fatalities plus injuries, and total injuries. **Table 1-6** also has statewide average accident rates for other freeways in the state with similar characteristics. The accident rates for fatalities, fatalities plus injuries, and total accidents for the SR 57 mainline segments were below the statewide average accident rates for the July 1, 2012 to June 30, 2015 period.

SR 57 freeway-to-arterial ramps accident rates are lower than state averages with three exceptions; the Chapman Avenue westbound on-ramp, the Katella Avenue northbound off-ramp and the Katella Avenue westbound on-ramp.

Table 1-6: Existing Accident Data on Northbound SR 57, 2012-2015

Segment	Actual Accident Rate			Statewide Average Accident Rate		
	F	F+I	Total	F	F+I	Total
Freeway Mainline Segments						
Chapman Ave EB loop on-ramp to Orangewood Ave EB loop on-ramp	0.000	0.13	0.33	0.003	0.27	0.88
Orangewood Ave EB loop on-ramp to Katella Ave EB loop on-ramp	0.000	0.19	0.50	0.003	0.28	0.91
Katella Ave EB loop on-ramp to Katella Ave WB on-ramp	0.000	0.25	0.78	0.004	0.32	1.04
Freeway-To-Arterial Ramps						
Chapman Ave EB loop on-ramp*	0.000	0.170	0.510	0.003	0.230	0.710
Chapman Avenue WB on-ramp*	0.000	**0.450**	**0.680**	0.003	0.190	0.560
Orangewood Ave NB off-ramp	0.000	0.280	0.280	0.004	0.320	0.920
Orangewood Ave EB loop on-ramp	0.000	0.000	0.610	0.003	0.230	0.710
Orangewood Ave WB on-ramp	0.000	0.000	0.000	0.003	0.190	0.560
Katella Ave NB off-ramp	0.000	**1.190**	**2.130**	0.004	0.320	0.920
Katella Ave EB loop on-ramp*	0.000	0.130	0.270	0.003	0.230	0.710
Katella Ave WB on-ramp*	0.000	**0.460**	0.460	0.003	0.190	0.560

Notes:
* = adjacent to study area
F = Fatal accidents, F+I = fatal accidents plus injury accidents, Total = total accident rates
Totals include property-damage-only (non-injury) accidents (which are not shown in this table)
Source: Caltrans, Traffic Accident Surveillance and Analysis Systems (TASAS) Table B and TASAS Selective Accident Retrieval (TSAR) for a 3-year period 2012-2015.
BOLD indicates a collision rate that is higher than the statewide average collision rate for similar facilities.

1.2.2.2 Roadway Design Features

Fifth General Purpose Lane Gap

The missing section of the fifth GP lane between Orangewood Avenue and Katella Avenue contributes to traffic congestion along the northbound SR 57 corridor. Within the project limits, the fifth GP lane exists in a section from south of the Orangewood Avenue loop on-ramp north to the diverge point for the Katella Avenue off-ramp, and then a section from just south of the Katella Avenue loop on-ramp to further north beyond the project limits. In between the two sections there is a 550-foot missing gap in the fifth GP lane.

The gap in the fifth GP lane acts as a bottleneck, as it causes the traffic to shift lanes into the adjacent fourth GP lane for the distance of the gap.

Center Median Widths

The design standard width for a center median is 22 feet. There are two sections along the SR 57 study area where the median width is nonstandard. One section is about 900 feet centered over the Orangewood Avenue undercrossing where the existing median width is about 8 feet. The second section is almost 1,200 feet centered over the railroad overhead, where the median width is about 16 feet.

Horizontal Curve Sight Distance

The horizontal curve sight distance is the distance a freeway motorist can see in front of their vehicle while driving on a curved section of the freeway. The design standard for a freeway mainline horizontal curve is 750 feet of stopping sight distance (SSD), which corresponds to a design speed of 70 miles per hour (mph). The existing curved portion of SR 57 as it crosses over Orangewood Avenue has only 474 feet of SSD, which corresponds with a design speed of only 52 mph. The horizontal curve sight distances of the on- and off-ramps also are nonstandard, which tends to cause traffic to slow when they should be accelerating to enter the freeway through lanes.

Weaving Length

The weaving length of a freeway is the distance allowed for motorists to safely increase vehicle speed and merge from the on-ramp auxiliary lane into the adjacent through freeway lane. The design standard for weaving length is 2,000 feet. For the SR 57 Orangewood Avenue on-ramp, the existing weave length is only 1,310 feet.

1.2.2.3 Transportation Planning and Legislation

The *Orange County SR-57 Final Report* (August 2010) comprehensively evaluated transportation issues along a 12-mile segment on SR 57 from the I-5/SR 55 Interchange north to the Los Angeles County Line. The report identified congestion northbound as substantially greater than southbound. The report identified the northbound segment between the I-5/SR 22 and Orangethorpe Avenue, including the Orangewood Avenue to Katella Avenue segment, as a bottleneck condition where traffic demand exceeds the effective carrying capacity of the roadway.

In 2006, Orange County voters passed a renewal of a two decades old sales tax measure to fund transportation improvement projects. This local funding program is referred to as Measure M2 (M2), which continues the half-cent sales tax to fund projects through 2041. The purpose of M2 Project G is to relieve congestion and improve operational nonstandard design features on SR 57. For planning, engineering, and funding management, Project G was divided into five segments for phased construction. At this time, three of the five project segments have been constructed – 1) Katella Avenue to Lincoln Avenue, 2) Orangethorpe Avenue to Yorba Linda Boulevard, and 3) Yorba Linda Boulevard to Lambert Road. The SR 57 Northbound Improvement Project is the

fourth segment of Project G improvements contained in the locally adopted M2 freeway improvement plan. The fifth Project G segment of SR 57 from Lambert Road to the Los Angeles County Line is in project development.

The OCTA Board approved the Measure M2 *Next 10 Plan* on November 16, 2016, to set priorities and funding commitments through 2026. Conceptual engineering and environmental review for the Orangewood Avenue to Katella Avenue segment of Project G is scheduled to be completed in early 2019.

1.2.2.4 Regional System Linkages

SR 57 is a major north-south regional freeway that extends from central Orange County approximately 25 miles to the north along the eastern portion of Los Angeles County. The freeway is about 30 miles east of Los Angeles and passes through the cities of Orange, Anaheim, Fullerton, Brea, Pomona, and San Dimas. The freeway starts at the Interstate (I) 5 and SR 22 interchange at the south end and travels north crossing SR 91, SR 60, I-10, ending at SR 210. Each of these freeways generally travel east-west connecting the cities of Lakewood, Downey, Los Angeles, and Pasadena to the west in Los Angeles County with the cities of Corona, Riverside, Fontana, and San Bernardino in the east in Riverside and San Bernardino counties. Thus, the freeway provides substantial inter-regional freeway connections and carries high volumes of vehicular, transit, and truck traffic.

The 1-mile section of SR 57 within the project study area provides access to land uses that include single family residential, commercial, and light industrial (freight shipping) that extend along Orangewood Avenue and north and east of SR 57. On the west side of the Santa Ana River located west of the freeway, there is commercial development and the Anaheim Regional Transportation Intermodal Center (ARTIC). No airports exist nearby. The freeway crosses over the Amtrak and Metrolink railroad tracks. The Angel Baseball Stadium surrounded by a very large parking lot is west of SR 57. Along Katella Avenue and to the north along both sides of the freeway, land uses are mixed commercial and office developments. The Honda Center ice rink and concert venue is northeast of the freeway. Older development tends to be 1-2 stories, whereas new residential and office complexes include buildings that are 4-6 stories in height. Traffic generators in the area include the following major employers: Kaiser Permanente, California Department of Media Relations, Orange County Children's Hospital, St. Joseph Hospital, UC Irvine Medical Center, and Disneyland.

1.2.3 Independent Utility and Logical Termini

The FHWA regulations (23 Code of Federal Regulations [CFR] 771.111 [f]) require that a proposed project (action) be evaluated for independent utility and logical termini. The following sections discuss these two issues.

1.2.3.1 Independent Utility

Independent utility is a project's ability to be usable and a reasonable expenditure, even if no additional transportation improvements are made nor additional related projects constructed in the area. Independent utility considers the action in relationship to local socioeconomics, environment, and transportation needs. By considering the 'whole' of a project, an action avoids the potential for unexpected outcomes that may require corrective actions and need for other projects, and segmentation (addressing a piece of a problem and considering a partial resolution) can be reduced. Regardless of other actions, the project must offer transportation benefits that "stand alone" and are not dependent upon the implementation of other projects. Additionally, to be considered of independent utility, a project must not preclude other potential transportation projects from being implemented in the future.

The proposed Build Alternatives would complete the missing gap in the fifth GP lane on SR 57 between Orangewood Avenue and Katella Avenue, provide a wider center median, improve sight distance on horizontal curves of the freeway, and would improve merge length between existing on- and off-ramps to improve weaving distance. These minimal improvements would increase freeway capacity and would substantially improve freeway operations and lessen peak period congestion that is currently below acceptable levels of service. Moreover, the project benefits would not require the completion of any other projects.

1.2.3.2 Logical Termini

Logical termini are required for project development to establish project boundaries that allow for a comprehensive response to a transportation deficiency. Rational end points are required for transportation improvements and the review of environmental impacts. In particular, the limits of a project should reasonably address the following three interrelated criteria:

1. Connect logical termini and be of sufficient length to address environmental matters on a broad scope;
2. Have independent utility or independent significance, i.e., be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made; and
3. Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements." [1]

Addressing these three criteria includes the appropriate consideration and selection of project limits. The end points of a project should fully encompass the proposed transportation improvements and their related environmental effects.

The proposed improvements focus on extending a fifth northbound GP lane on SR 57 between the Orangewood Avenue and Katella Avenue interchanges. The proposed Project in fact is the southernmost segment of a multi-phased project to improve overall operations of SR 57 between

[1] (http://www.environment.fhwa.dot.gov/projde/tdmtermin.asp; *The Development of Logical Project Termini*, FHWA, November 5, 1993)

Orangewood Avenue north to the Los Angeles County limits. The proposed improvements between Orangewood and Katella Avenues are consistent with the recently constructed freeway design improvements between Katella Avenue north to Lincoln Avenue. Furthermore, the fifth GP lane already exists in the freeway segment immediately south of Orangewood Avenue. The other elements of the proposed Project address key nonstandard design issues along this segment of SR 57 to additionally improve freeway operation and reduce congestion, particularly during peak periods. At about 1-mile in length, the proposed Project is of sufficient length to address environmental concerns. The proposed Project would be a reasonable expenditure that would provide substantial benefit without requiring additional improvements in the foreseeable future. The proposed Project would not restrict consideration of other transportation improvements in the future.

1.3 Project Description

This section describes the proposed action and the project alternatives developed to meet the purpose and need of the Project, while avoiding or minimizing environmental impacts. A total of four alternatives are evaluated in detail for the proposed Project. Three Build Alternatives and the No Build Alternative. The three Build Alternatives include Alternative 2 (Preferred Alternative), Alternative 2A, and Alternative 2B. The latter two Build Alternatives originated as options to Alternative 2 (Preferred Alternative) but are sufficiently different that they are evaluated as full alternatives. Alternative 1 is the No Build Alternative.

The Project is located in Orange County within the cities of Anaheim and Orange and extends 1 mile from 0.3 mile south of the Orangewood Avenue undercrossing (PM 11.5) to the Katella Avenue undercrossing (PM 12.5). At this location, the divided freeway has four to five GP lanes, an auxiliary lane, and a high-occupancy vehicle (HOV) lane. The outside and inside roadway shoulders vary in width from 4 feet to 20 feet. In this section, there are two on-ramps at Orangewood Avenue (one on-ramp, one loop on-ramp), one off-ramp at Orangewood Avenue, and one off-ramp at Katella Avenue.

The proposed Project would widen the SR 57 freeway within the existing right-of-way to minimize impacts to the adjacent land uses, though additional air rights would be required for widening the bridge structure over the Metrolink rail tracks. Proposed operational improvements would include construction of the missing section of the fifth GP lane, extension of the existing auxiliary lane from the Orangewood Avenue off-ramp to the Katella Avenue off-ramp to improve weave movements between the two ramps, adding to the length of the on- and off-ramps, and adding a second lane to the Katella Avenue off-ramp to provide additional storage capacity, and extension of the merge length between the existing freeway on-/off-ramps to improve weaving distance.

This project contains a number of standardized project measures which are employed on most, if not all, Caltrans projects and were not developed in response to any specific environmental

impact resulting from the proposed project. These measures are addressed in more detail in the Environmental Consequences sections found in Chapter 2.

The Project is consistent with City of Orange's and City of Anaheim's general plans. The proposed freeway improvements would remedy existing operational problems and nonstandard design features.

Project costs (includes construction and capital R/W costs only) for the Build Alternatives have been estimated ranging from approximately $38 to $43 million for current cost and $49 to $55 million for escalated cost. Construction is anticipated to last 24 months; beginning in January 2023 and concluding in January 2025.

1.3.1 Alternatives

1.3.1.1 Alternative 2 (Preferred Alternative), 2A, and 2B - Build Alternatives

All three Build Alternatives considered for this Project include design features which meet the purpose and need of this Project while avoiding and minimizing environmental impacts. All alternatives are discussed and compared in Section 1.3.3 Comparison of Alternatives.

Common Design Features

There are several design features that are common to the three Build Alternatives:

- Construct the missing section of the fifth GP lane between the Katella Avenue northbound off-ramp and the bridge structure over Katella Avenue (Katella Avenue UC Bridge);
- Widen and implement seismic retrofit by strengthening two SR 57 bridge structures: Orangewood Avenue UC Bridge (No. 55 0481) and the Santa Ana River Bridge (No. 55 0400);
- Restripe the northbound HOV lane and the mainline GP lanes from about 640 feet south of the Orangewood Avenue eastbound loop on-ramp to 600 feet south of the Katella Avenue UC Bridge;
- Modify the two existing eastbound Orangewood Avenue loop on-ramp turn lanes from free right turns to a newly configured 90-degree traffic controlled intersection located slightly east of the current location;
- Construct a full intersection at Orangewood Avenue and the NB SR 57 ramps;
- Increase the weave length between the Orangewood Avenue on-ramp(s) and the Katella Avenue off-ramp;
- Utilities within the project area will remain protected in place. Coordination with utility companies during final design as well as construction would be required to accommodate existing utilities and avoid conflicts.

- Add a second lane to the Katella Avenue off-ramp;
- Provide replacement landscaping and permanent irrigation with a three-year plant establishment period (PEP);
- Improve bridge deck surfaces and spot locations through pavement rehabilitation; and
- Coordinate metered on-ramps and the traffic signals on Orangewood Avenue to control congestion.
- Under all Build Alternatives a continuous Auxiliary Lane would be provided between Orangewood Avenue and Katella Avenue.
- During the Design and Construction Phases, a Traffic Management Plan (TMP) will be coordinated with Orange County Parks (OC Parks) and Orange County Flood Control District (OCFCD) for temporary construction-related impacts to the Santa Ana River Trail (SART) and bike path. The TMP will address safety for trail and bike path users, during and throughout construction, and will also be coordinated with the cities of Orange and Anaheim.
- Sidewalks, curbs, and gutters where impacted by the Project would be re-constructed to meet current ADA Standards (28 CFR 35.151) in order to maintain access for all community members. Existing curb ramps at all crosswalks within the project limits that are affected by the project will be reconstructed to Caltrans latest standards (2015 Revised Standard Plan RSP A88A).
- A TMP was prepared for the Project that includes strategies and measures to avoid and minimize disruption to local access, roadways, and bike and pedestrian facilities during construction.
- A Landscape Master Plan would be developed for the Project and would discuss measures to preserve existing plants, revegetation of disturbed areas with a three-year Plant Establishment Period, and corridor theming, including structure aesthetics and screening. During construction, every effort will be employed to maintain existing mature trees within the State's Right of Way (ROW). Vegetation removed during construction would be replaced in kind to maintain the Classified Landscaped Freeway designation. New landscaping will be consistent with existing landscaping.
- Context sensitive solutions will be considered to help reflect the unique character of the community, reduce the visual effects of the Project and provide compatibility with existing resources and features. Contextual elements such as retaining walls, bridge abutments, lighting, landscaping and slopes will be considered for application of the following solutions:
    - During construction, lighting would be shielded and/or focused on work areas to minimize ambient spillover into adjacent areas.

  - Grading cuts and fills would be contoured to visually blend with the surrounding landscape to the extent practical.
  - The color and aesthetic treatment of the highway and associated structures, such as retaining walls, medians, bridge abutments and columns would be applied consistently with other highway structures in the project vicinity.
  - The Project would retain as much existing vegetation as possible, particularly mature trees that are located between the highway and adjacent land uses.

- Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by.
- The project's contractors will comply with the South Coast Air Quality Management District (SCAQMD) rules and regulations during construction operations. This includes rules:
  - Rule 401 - Visible Emissions. Rule 401 states that no person shall discharge air contaminants of specified opacity for more than 3 minutes in 1 hour.
  - Rule 402 - Nuisance. Under Rule 402, no air contaminant shall be released into the atmosphere that causes a public nuisance. The rule prohibits discharge of air contaminants that could cause injury, detriment, nuisance, or annoyance to the public. An offensive odor can be considered a nuisance or annoyance.
  - Rule 403 – Fugitive Dust. The purpose of this Rule is to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce or mitigate fugitive dust emissions.
  - Rule 403.1 – Supplemental Fugitive Dust Control Requirements for Orange County Sources. The purpose of this rule is to reduce or prevent the amount of fine particulate matter (PM10) entrained in the ambient air from anthropogenic (man-made) fugitive dust sources.
  - Rule 404 – Particulate Matter – Concentration. Under Rule 404, a person shall not discharge into the atmosphere from any source, particulate matter in excess of the concentration at standard conditions, as specified in the rule.
  - Rule 405 – Solid Particulate Matter – Weight. Under Rule 405, a person shall not discharge into the atmosphere from any source, solid particulate matter including lead and lead compounds, in excess of the rates specified in the rule.

- The proposed Project is a Covered project under the OCTA Conservation Plan (i.e., Project G). The OCTA M2 Conservation Plan includes Streambed Program Guidelines (Conservation Plan Appendix E), which outline potential conditions and the process for submittal of a project-level Notifications of Lake or Streambed Alterations (NLSA) and the issuance for individual Lake or Streambed Alteration Agreements (LSAA) for this Project pursuant to California Fish and Game Code sections 1600–1616. The Streambed Program requires the evaluation of streambed avoidance options and specification of

minimization measures prior to compensatory mitigation and ensures adequate mitigation based on habitat and type of aquatic resource to address state regulatory obligations.

- Similar to the OCTA Conservation Plan, OCTA and Caltrans have worked with the US Army Corps of Engineers (USACE) to define a Programmatic Individual Permit for the 13 M2 freeway projects which establishes Letter of Permission (LOP) procedures. This Permit (SPL-201200830-VCL) streamlines the individual project level Section 404 permitting for the M2 freeway projects. On a parallel process, the State Water Resource Control Board (SWRCB) has committed to following the same process established for the Section 404 permitting. In order for the USACE to issue the 404 Programmatic Permit, the SWRCB must first issue a General 401 Certification. Advanced mitigation is being provided for the General 401 Certification and is consistent with the compensatory mitigation credits required for the USACE Permit.
- Once the Project design is approved and concurrence is received regarding the mitigation statement, LOPs and the project-level 401 Certification would then authorize the discharge of dredged or fill material associated with the specific project designs, include any special conditions, and indicate the amount of mitigation acreage to be deducted from the appropriate site. This step is anticipated to be completed during the design phase of this Project. Project level applications will be processed through the SWRCB. The SWRCB will coordinate with the specific Regional Water Quality Control Board as necessary.
- To address seismic requirements, bridge strengthening (seismic retrofit) will be included for the three existing bridges being widened within the project limits (PM 11.5-12.5). These are the Orange Avenue UC Bridge (No. 55 0481), the Santa Ana River Bridge (No. 55 0400), and the Stadium OH Bridge (No. 55 0399). Seismic retrofit would be limited to strengthening the existing bridge structures. It is expected that the retrofit work would occur within the bridge superstructure (‘inside’ the bridge) and along the abutments. Retrofit could include some column work, but no pile or foundation improvement work is expected.

Other Project Elements

Each project alternative includes the following standardized measures that are included as part of the project description. Standardized measures (such as Best Management Practices [BMPs]) are those measures that are generally applied to most or all Department projects. These standardized or pre-existing measures allow little discretion regarding their implementation and are not specific to the circumstances of a particular project. More information on each measure can be found in the applicable sections of Chapter 2.

Community

- Caltrans Standard Specification 5-1.31: Requires that the job site be neatly maintained in areas visible to the public.
- Caltrans Standard Specification 7-1.03: Apply a dust palliative for the prevention or alleviation of dust nuisance.
- Caltrans Standard Specifications Section 5-1.39: Before Contract acceptance, restore damaged work to the same state of completion as before the damage.
- Caltrans Standard Specifications Section 7-1.03: Construction activities must not inconvenience the public or abutting property owners. Schedule and conduct work to avoid unnecessary inconvenience to the public and abutting property owners.
- Caltrans Standard Specifications Section 7-1.04: Do not construct a temporary facility that interferes with the safe passage of traffic. Control dust resulting from the work, inside and outside the right-of-way. Move workers, equipment, and materials without endangering traffic. Whenever your activities create a condition hazardous to the public, furnish, erect and maintain those fences, temporary railing, barricades, lights, signs, and other devices and take any other necessary protective measures to prevent damage or injury to the public. Provide flaggers whenever necessary to ensure that the public is given safe guidance through the work zone.

Cultural

- Caltrans Standard Specification 14-2.03A: If cultural materials are discovered during construction, all earthmoving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.
- Public Resources Code 7050.5: If human remains are discovered, further disturbance and activities shall cease in any area or nearby area suspected to overlie remains and the County Coroner shall be contacted.
- Public Resources Code 5097.98: If discovered human remains are thought to be Native American, the Coroner will notify the Native American Heritage Commission (NAHC), which will then notify the Most Likely Descendant (MLD).

Geology/Soil/Seismicity/Topography

- The Project will be constructed and designed in accordance with Caltrans Standard Specifications 19 regarding avoidance of damaging groundwater utilities or structures during excavations associated with the project constructions. In areas where compacted fill will be placed, the soil, dry or saturated soil, and otherwise unsuitable materials, will be removed prior to fill placement. Fill placed on sloping ground will be properly keyed

and benched into existing ground and placed as specified in the Caltrans Standard Specifications.

Paleontology

- Caltrans Standard Specification 14-7.03: If unanticipated paleontological resources are discovered all work within 60-feet of the discovery must cease and the construction resident engineer must be notified. Work cannot continue near the discovery until authorized.

Hazardous Waste and Materials

- Caltrans Standard Specification Section 13-4.03G: Controls dewatering work and discharge activities associated with dewatering.

Air Quality

- The construction contractor must comply with the Department's Standard Specifications in Section 14-9 (2015) to minimize impacts to Air Quality.
- Section 14-9.02 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.
- Section 14-9.03 is directed at controlling dust. If dust palliative materials other than water are to be used, material specifications are described in Section 18.

Noise

- Caltrans Standard Specifications Section 14.8-02: Control and monitor noise resulting from work activities. Do not exceed 86 dBA L_{max} at 50 feet from the job site from 9 p.m. to 6 a.m.

Biology

- In compliance with the Executive Order on Invasive Species, EO 13112, invasive species would be removed from the Project and controlled during construction. The Project includes construction methods and measures to reduce the potential for the spread of invasive species including, removal of invasive species in ground disturbed areas and equipment inspections to reduce the transport of invasive species.

Unique Design Features

The following discussion addresses the unique features of each Build Alternative as they relate to implementation of the Project.

Alternative 2 (Preferred Alternative): Modify Orangewood Avenue On-Ramp, Widen Katella Avenue Off-Ramp (Widen 3 Bridges)

Major construction under Alternative 2, the Preferred Alternative, would widen three bridges; the Orangewood Avenue UC Bridge (No. 55 0481), the Santa Ana River Bridge (No. 55 0400), and the Stadium OH Bridge (No. 55 0399). Widening the Orangewood Avenue UC would allow the on-ramp merge point with the through traffic to be extended several hundred feet to the north. Extending the merge point would allow merging traffic to have a longer distance to gain speed to match the speed of mainline traffic. Widening the Santa Ana River Bridge allows for an adjustment of the overall mainline alignment to address the nonstandard design features (i.e. median width and stopping sight distance on horizontal curves). Widening the Stadium OH Bridge would accommodate the fifth GP lane. Refer to **Figure 1-4: Alternative 2 (Preferred Alternative) - Modify Orangewood Avenue On-Ramp, Widen Katella Avenue Off-Ramp (**Widen 3 Bridges)

Right-of-Way

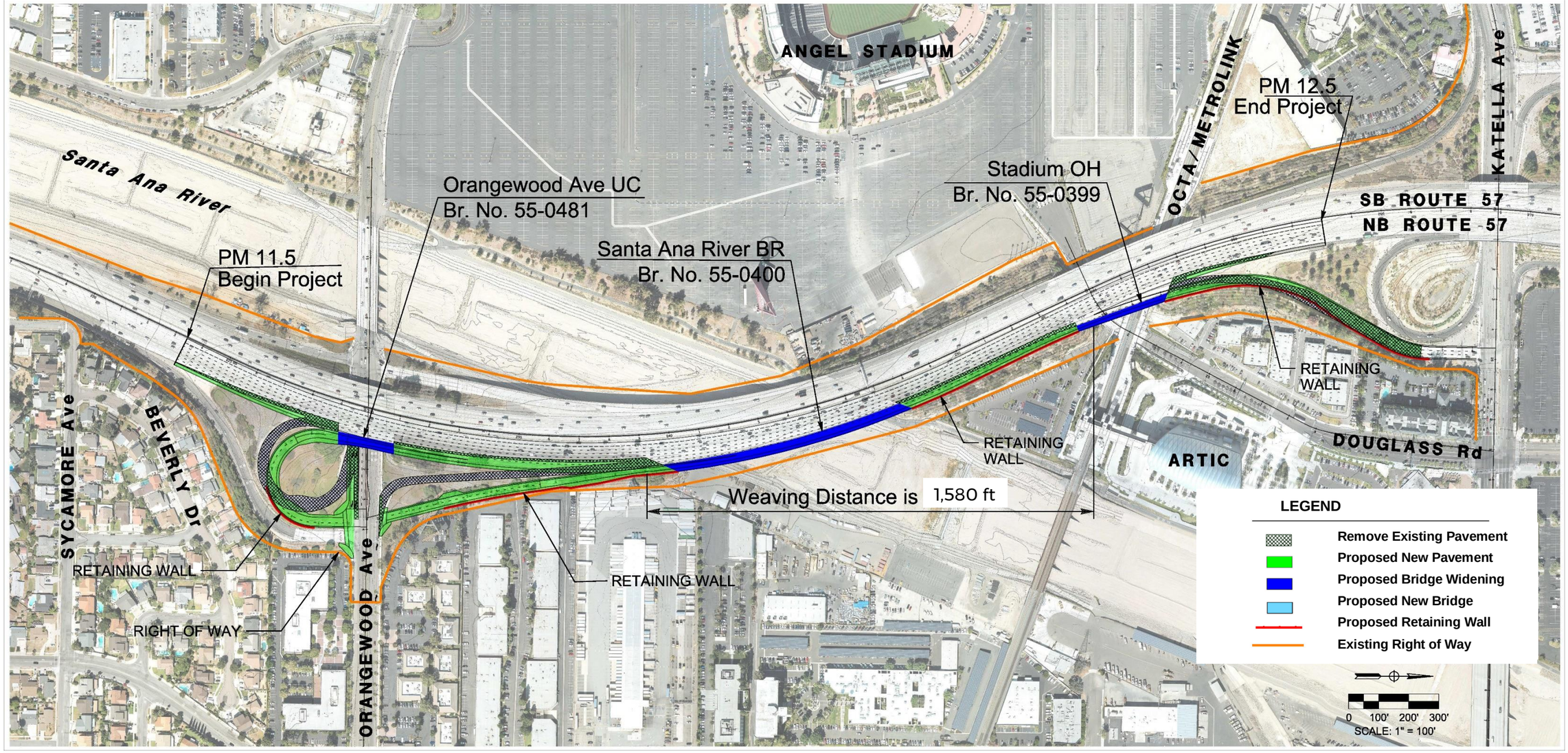
Widening and strengthening the Santa Ana River Bridge would require modifying the existing pier walls beneath the bridge within the existing highway easement. To gain access to the pier walls construction vehicles would have to enter the riverbed via an existing maintenance road located at the toe of slope along the NB SR 57 embankment. The maintenance road is within Caltrans right of way and leads to a gate on the west levee of the Santa Ana River Trail/Bike Path with access down into the riverbed. Access to the maintenance road would require crossing a small parcel that is within Caltrans access control, but the underlying fee owner is the City of Anaheim (ARTIC parking lot driveway off Douglas Road). The parcel leads to the maintenance road. At this time, an agreement exists between Caltrans and the City of Anaheim for maintenance of the freeway. A 1,803 square foot TCE (access only) from the City of Anaheim would be required to gain access to the existing maintenance road.

Likewise, work within the river would require use of a parcel owned by the Orange County Flood Control District (OCFCD). Portions of the affected parcel are within Caltrans existing highway easement. A 78,800-square foot TCE from OCFCD (in addition to the area already included in the existing highway easement) would be required to work within the river.

Widening and strengthening the Stadium OH Bridge would require a revised highway easement over the existing railroad (RR) tracks from OCTA (property owner) to the Caltrans (freeway owner). The 1,359-square foot expansion of the highway easement would provide Caltrans the same rights to the expanded area as exist for the area that is currently covered by the existing highway easement.

Additionally, authority to modify an existing public rail crossing must be granted by the California Public Utilities Commission (CPUC) through a formal application process that results in a *General Order No. 88-B* issued by the Commission. This project will need to apply for approval by the CPUC.

Figure 1-4: Alternative 2 (Preferred Alternative) - Modify Orangewood Avenue On-Ramp, Widen Katella Avenue Off-Ramp (Widen 3 Bridges)



Source: Project Report Plans. Prepared for the SR 57 NB Improvement Project, 2018.

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Access Modifications

Under the Preferred Alternative, both existing Orangewood Avenue on-ramps would be retained, but widened to two lanes. The Orangewood Avenue westbound on-ramp to northbound SR 57 would be reconfigured to a signalized intersection with Orangewood Avenue. The westbound turn lane would direct traffic to the widened two-lane on-ramp. The ramp would also be moved east of its current location to reduce the curvature of the on-ramp. Similarly, the eastbound loop on-ramp would be relocated eastward opposite the new location of the on-ramp access. Both eastbound and westbound traffic currently enter the freeway via the loop and on-ramps without entering the intersection. This would be revised such that traffic accessing both on-ramps would be controlled by the intersection signal. The Orangewood Avenue on-ramps would merge with the auxiliary lane from Chapman Avenue and continue north to the Katella Avenue off-ramp. The proposed modifications would improve the weaving length between the westbound Orangewood Avenue on-ramp and the Katella Avenue off-ramp from 1,310 feet to 1,580 feet; however, the length would remain nonstandard (standard length is 2,000 feet in urban areas). Construction of a full intersection on Orangewood Avenue would also enhance pedestrian and bicycle safety.

Alternative 2A: Eliminate Orangewood Avenue On-Ramp, Construct Katella Avenue Off-Ramp (Widen 2 Bridges, Construct New Stadium OH Bridge)

Similar to the Preferred Alternative, major construction under Alternative 2A would widen the Orangewood Avenue UC Bridge (No. 55 0481) and the Santa Ana River Bridge (No. 55 0400), but also would construct a new bridge. The freeway HOV and GP lanes would be restriped to establish a continuous fifth GP lane and to address nonstandard design features (i.e. median width and sight distance on horizontal curves). The alternative would maintain the auxiliary lane configuration from the Orangewood Avenue interchange north to the Katella Avenue off-ramp. See **Figure 1-5: Alternative 2A - Eliminate Orangewood Avenue On-Ramp, Construct Katella Avenue Off-Ramp (Widen 2 Bridges, Construct New Stadium OH Bridge).**

Right-of-Way

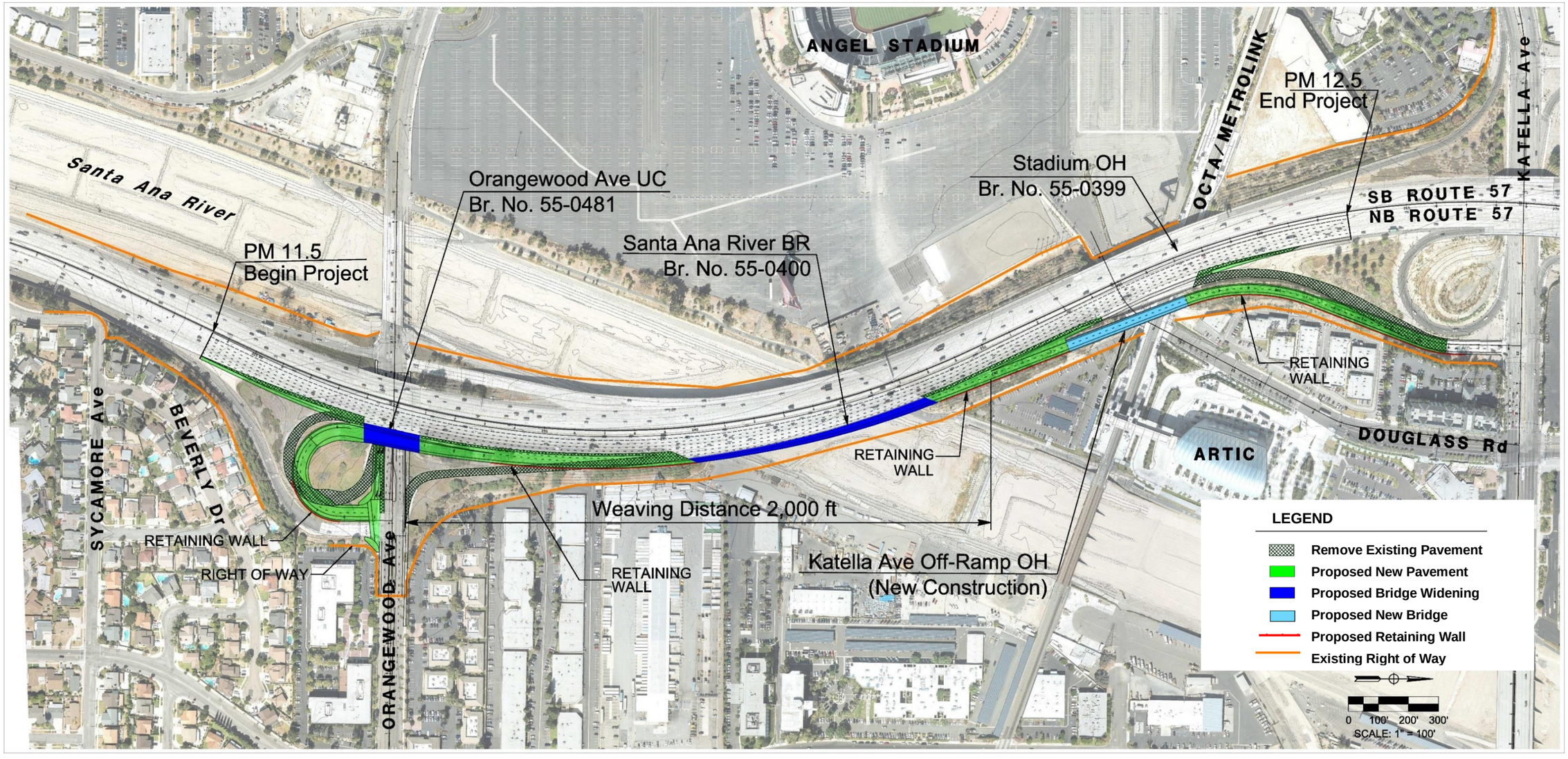
Widening and strengthening the Sana Ana River Bridge would require the same access to the Santa Ana River via the maintenance road described under the Preferred Alternative resulting in an 1,803-square foot TCE (access only) from the City of Anaheim and a 78,800-square foot TCE from OCFCD.

Instead of widening the Stadium OH Bridge (No. 55 0399), Alternative 2A would construct a new bridge structure adjacent to the existing freeway to carry the Katella Avenue off-ramp traffic. The off-ramp would have two lanes transitioning to three lanes at the Katella Avenue intersection. It would be longer to increase ramp storage capacity. The existing Stadium OH Bridge would continue to carry the mainline traffic. The new bridge structure would require a 3,290-square foot (0.08 acre) revised highway easement over the existing railroad.

Access Modifications

Under Alternative 2A the existing Orangewood Avenue westbound on-ramp would be eliminated, improving the weaving distance between the Orangewood Avenue on-ramp and the Katella Avenue off-ramp from 1,310 feet to 2,000 feet meeting current design standard requirements. A fully signalized intersection on Orangewood Avenue would be constructed to control both eastbound and westbound vehicular access to the modified Orangewood Avenue loop on-ramp. A third lane would be constructed for the loop on-ramp to accommodate an HOV bypass lane. Ramp storage per the Ramp Meter Design Manual cannot be provided due to the constraints of the site; however, queued vehicles are forecast to be stored in the turn lanes so as not to impact the through lanes on Orangewood Avenue. The lanes would be restriped to accommodate two westbound left-turn lanes and revised medians on Orangewood Avenue.

Figure 1-5: Alternative 2A - Eliminate Orangewood Avenue On-Ramp, Construct Katella Avenue Off-Ramp (Widen 2 Bridges, Construct New Stadium OH Bridge)



Source: Project Report Plans. Prepared for the SR 57 NB Improvement Project, 2018.

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Alternative 2B: Eliminate Orangewood Avenue On-Ramp, Widen Katella Avenue Off-Ramp (Widen 3 Bridges)

Like the Preferred Alternative, major construction under Alternative 2B would widen three bridges; the Orangewood Avenue UC Bridge (No. 55 0481), the Santa Ana River Bridge (No. 55 0400), and the Stadium OH Bridge (No. 55 0399). All other features noted under Alternative 2 related to the widening and restriping of the freeway to address nonstandard design issues would be the same under Alternative 2B. See **Figure 1-6: Alternative 2B - Eliminate Orangewood Avenue On-Ramp, Widen Katella Avenue Off-Ramp (Widen 3 Bridges)**

Right-of-Way

Widening and strengthening the Sana Ana River Bridge would require the same access to the Santa Ana River via the maintenance road described under the Preferred Alternative resulting in an 1,803-square foot TCE (access only) from the City of Anaheim and a 78,800-square foot TCE from OCFCD.

Widening the Stadium OH Bridge would require the same 1,359 square foot (0.03 acre) revised highway easement over the existing SCRRA RR tracks as under the Preferred Alternative.

Access Modifications

Like Alternative 2A, Alternative 2B would eliminate the Orangewood Avenue westbound on-ramp, which would improve the freeway mainline weave length between the Orangewood loop on-ramp and Katella Avenue off-ramp from 1,310 feet to 2,475 feet, which exceeds the current design standard requirements. Improvements to the Orangewood Avenue loop on-ramp and intersection to control eastbound and westbound vehicular access to the on-ramps would be the same as described under Alternative 2A.

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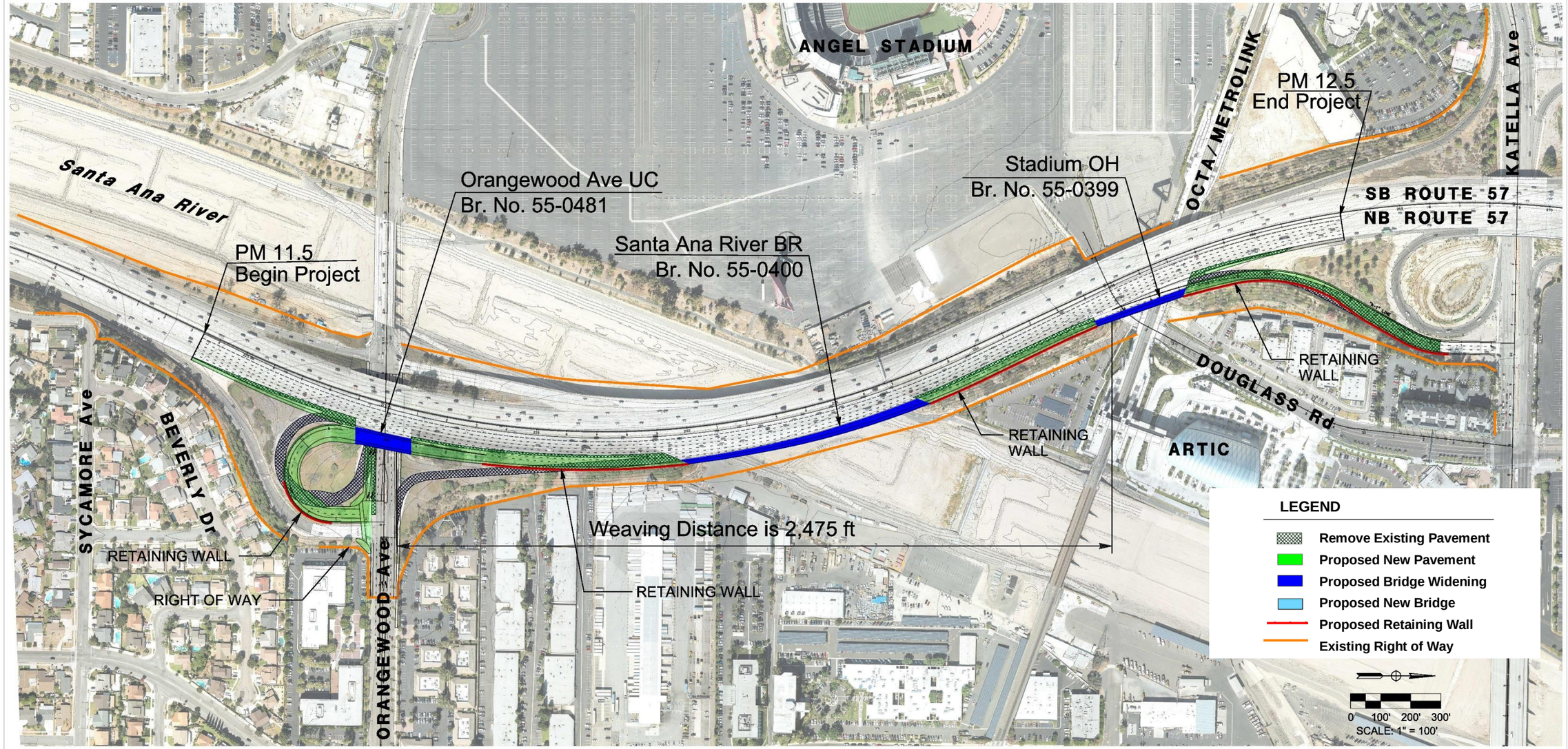
Figure 1-6: Alternative 2B - Eliminate Orangewood Avenue On-Ramp, Widen Katella Avenue Off-Ramp (Widen 3 Bridges)



Source: Project Report Plans. Prepared for the SR 57 NB Improvement Project, 2018.

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Construction

Construction Staging

All Build Alternatives would be constructed in three stages:

Stage 1:

- Close the outside shoulder of the NB SR 57 mainline from the Orangewood Avenue NB loop on-ramp to Katella Avenue and construct the NB SR 57/Orangewood Avenue Bridge widening and the Santa Ana River Bridge widening for all three alternatives.
- For Alternative 2A, construct the new Katella Avenue off-ramp Bridge over Douglass Road, the OCTA railroad right of way and the ARTIC station platforms.
- For Alternatives 2 (Preferred Alternative) and 2B, construct the NB SR 57/Stadium Overhead Bridge widening.

Stage 2:

- For all Build Alternatives, construct mainline approach widening of the additional general purpose lane and new shoulders from just south of the NB SR 57/Orangewood Avenue Bridge to NB SR 57/Katella Avenue Bridge.
- For all Build Alternatives, construct the new NB SR 57/Orangewood Avenue loop on-ramp, construct right side of NB SR 57/Katella Avenue off-ramp and construct embankment slopes and retaining walls, where applicable.
- For Alternatives 2A and 2B, remove and regrade the NB SR 57/Orangewood Avenue on-ramp and NB SR 57/Orangewood Avenue loop on-ramp.
- For the Preferred Alternative only, construct the new NB SR 57/Orangewood Avenue on-ramp at new alignment.

Stage 3A:

- For all alternatives, during a 55-hour weekend closure, complete ramp construction for a portion of the NB SR 57/Orangewood Avenue loop on-ramp.
- For the Preferred Alternative only, switch traffic to new NB SR 57 direct ramp.
- For Alternatives 2A and 2B, restripe the outside widened lanes and shoulder where the NB SR 57/Orangewood Avenue on-ramp join to the mainline was removed.
- For all Build Alternatives set temporary Katella Avenue off-ramp configuration and construct left side of the NB SR 57/Katella Avenue exit-ramp.

Stage 3B:

- For all Build alternatives, remove existing NB SR 57 loop on-ramp and finish approach work.

- For Alternative 2B only, remove existing NB SR 57 direct ramp and regrade area between new ramp, mainline and Orangewood Avenue.
- For all Build alternatives, complete construction of the right shoulder and embankment for the Katella Avenue off-ramp, and restripe mainline to ultimate configuration.

Construction Closures

Certain construction activities such as setting up and taking down falsework for structures, may require full nighttime closure of both the local streets passing under the freeway or particular freeway on- or off-ramps. Affected local arterials include Orangewood and Katella Avenues, and Douglass Road. Construction activities are anticipated to require a weekend closure of the Orangewood Avenue loop on-ramp. Temporary closure of traffic lanes or freeway on- or off-ramps would be closely coordinated with the City of Anaheim to address event traffic associated with both Angel Stadium and the Honda Center.

Access to adjacent private property would be maintained throughout the construction period. No full-freeway closures on SR 57 are anticipated. All changes or restrictions in use of the freeway or local streets would be communicated to the public.

1.3.1.2 Alternative 1 – No Build

Under the No-Build Alternative, no improvements are proposed and the freeway geometry would remain the same as existing conditions. The No-Build Alternative is considered a baseline condition to measure and compare the proposed Build Alternative improvement concepts. In addition, the No-Build Alternative describes the context for evaluating potential environmental impacts under the National Environmental Policy Act (NEPA). Existing and projected future increases in traffic congestion would not be addressed and the level of service on the freeway would continue to decline in the future. The No-Build Alternative would require no capital expenditure. No improvements beyond normal maintenance and operation activities are expected.

In the No-Build Alternative (baseline), the freeway will consist of the existing four to five GP lanes, a high-occupancy vehicle (HOV) lane, and one auxiliary lane. The auxiliary lane will still merge with the fifth GP lane between the Orangewood Avenue off-ramp and the Orangewood Avenue loop on-ramp, as it is currently configured. A 0.75 mile section on the mainline will remain with only four GP lanes and one auxiliary lane. The auxiliary lane will exit at the Katella Avenue off-ramp leaving only four GP lanes.

Additionally, there will be several non-standard features remaining within the project area. There will be two sections of the freeway within the project area where the left shoulder is non-standard and does not provide standard stopping sight distance. Similarly, the horizontal curve sight distances of the on- and off-ramps will also remain nonstandard. An additional non-

standard feature that will remain is the weaving length between the Orangewood Avenue on-ramp and the Katella Avenue off-ramp.

1.3.2 Comparison of Alternatives

In this section, the attributes of the three Build Alternatives are compared and contrasted against each other as well as to the No-Build Alternative. The Alternative 2 calls for the reconfiguration and widening of the Orangewood Avenue loop on-ramp and on-ramp as well as widening of the Katella Avenue off-ramp. Alternative 2A would reconfigure and widen the Orangewood Avenue loop on-ramp, eliminate the Orangewood Avenue on-ramp, and construct a new longer and wider Katella Avenue off-ramp. Alternative 2B would reconfigure the Orangewood Avenue loop on-ramp, eliminate the Orangewood Avenue on-ramp, and widen the existing Katella Avenue off-ramp. With proposed changes for the Katella Avenue off-ramp, all three of the Build Alternatives would re-stripe the freeway and allow for continuation of an auxiliary lane and complete the gap in the fifth GP lane between the Katella Avenue off-ramp and the Katella Avenue loop on-ramp. **Table 1-7: Comparison of Build Alternatives** presents a comparison of the Build Alternatives with the comparison criteria listed from south to north along the freeway corridor.

After comparing and weighing the benefits and impacts of all feasible alternatives, such as site and weave distance as listed in **Table 1-7**, the Project Development Team (PDT) has identified Alternative 2 as the Preferred Alternative. Under the California Environmental Quality Act (CEQA), since no unmitigable significant adverse impacts were identified, the Department has prepared a Mitigated Negative Declaration (MND). Similarly, the Department, as assigned by the Federal Highway Administration (FHWA), determined the National Environmental Policy Act (NEPA) action does not significantly impact the environment, hence the Department has issued a Finding of No Significant Impact (FONSI).

Table 1-7: Comparison of Build Alternatives

Criteria	Alternative 1 No-Build	Alternative 2 (Preferred Alternative) Modified Orangewood Avenue On-Ramp, Widened Katella Avenue Off-Ramp	Alternative 2A Eliminated Orangewood Avenue On-Ramp, New Katella Avenue Off-Ramp	Alternative 2B Eliminated Orangewood Avenue On-Ramp, Widened Katella Avenue Off-Ramp
Construction of missing fifth GP lane	Fifth GP lane is not continuous, missing 550 ft. gap between Katella Ave off-ramp and loop on-ramp	Widening Katella Ave off-ramp allows for continuous fifth GP lane	Construction of new Katella Ave off-ramp west of the existing structure allows for continuous fifth GP lane	Same as Alternative 2
Center median width at Orangewood Ave	Remains as existing at 8 ft. Design standard is 22 ft.	Widened to be 8-22 ft. Design standard is 22 ft.	Same as Alternative 2	Same as Alternative 2
Sight Distance on horizontal curve at Orangewood Ave	Remains as existing at 474 ft. Design standard is 750 ft.	Lengthened to 635 ft. Design standard is 750 ft.	Same as Alternative 2	Same as Alternative 2
Orangewood Ave EB loop on-ramp	No change to loop on-ramp	Loop on-ramp entrance shifted eastward, widened to two lanes transitioning to one lane with extended merge point	Loop on-ramp entrance shifted eastward, widened to three lanes transitioning to two lanes with extended merge point	Same as Alternative 2A
Orangewood Ave WB on-ramp	No change to on-ramp	On-ramp shifted east, adds one lane to on-ramp, ramp is upgraded and lengthened to extend merge point with through traffic	Eliminates on-ramp.	Same as Alternative 2A

Table 1-7: Comparison of Build Alternatives (continued)

Criteria	Alternative 1 No-Build Alternative	Alternative 2 (Preferred Alternative) Modified Orangewood Avenue On-Ramp, Widened Katella Avenue Off-Ramp	Alternative 2A Eliminated Orangewood Avenue On-Ramp, New Katella Avenue Off-Ramp	Alternative 2B Eliminated Orangewood Avenue On-Ramp, Widened Katella Avenue Off-Ramp
Modifications to Orangewood Ave arterial intersection	No change. Orangewood Ave EB has two right lanes to access loop on-ramp and two through-lanes; Orangewood Ave WB has one right lane to access on-ramp and two through-lanes.	Extends existing EB right-turn lanes to new 90-degree intersection. Shifts ramp east to new 90-degree intersection. Signal controlled access for both loop and on-ramps.	Extends existing EB right-turn lanes to new 90-degree intersection. Adds second WB left-turn lane. Signal controlled access for eastbound and westbound lanes to loop on-ramp.	Same as Alternative 2A
Auxiliary lane between Chapman Ave and Orangewood Ave	No change. Auxiliary lane ends at Orangewood Avenue off-ramp	Extends auxiliary lane through the Orangewood Avenue interchange to the Katella Avenue off-ramp	Same as alternative A	Same as alternative A
Weaving distance between Orangewood Ave on-ramp and Katella Ave off-ramp	No change to existing weave length of 1,310 ft. Design standard is 2,000 ft.	Weave length increased to 1,580 ft. Design standard is 2,000 ft.	Weave length increased to 2,000 ft. Meets standard.	Weave length increased to 2,475 ft. Exceeds standard.
Sight distance on horizontal curve northbound	Non-standard at 423 ft. Standard is 750 ft.	Improved to design standard at 750 ft.	Same as Alternative 2	Same as Alternative 2
Katella Ave off-ramp	No change to existing. Off-ramp is one lane changing to three lanes mid-way to the intersection with Katella Ave	Existing structure widened from one lane to two lanes changing to three lanes to meet intersection with Katella Ave	New longer two-lane bridge structure adjacent to existing bridge changing to three lanes to meet existing intersection with Katella Ave	Same as Alternative 2

1.3.3 Identification of the Preferred Alternative

Consistent with the California Department of Transportation (Caltrans) Process Manual, the Project Development Team (PDT) is tasked with selecting between the No Build Alternative and three Build Alternatives (Alternatives 2 [Preferred Alternative], 2A and 2B) as the Preferred Alternative (PA) to move forward into the Design Phase. A public hearing (open house format) was held on October 25, 2018. All comments received from circulation of the Draft Environmental Document (DED) and the public hearing have been reviewed and considered in the context of identifying a PA.

The following needs were described and included in the DED:

- SR 57 is currently congested during peak periods, and the future northbound SR 57 mainline between the Orangewood Avenue and Katella Avenue interchanges is forecast to lack sufficient capacity, which will result in poor mobility;
- The existing northbound SR 57 mainline lacks continuity in the fifth general purpose lane from the Orangewood Avenue northbound on-ramp to 550 feet immediately north of the Katella Avenue northbound off-ramp.
- Several existing nonstandard design features, including weaving and merging issues, adversely affect freeway operations.

The project was initiated to implement the fifth general purpose lane to close the gap and provide capacity within the project area.

The PDT met on December 13, 2018 to discuss the merits of all the alternatives. The proposed project addresses the existing gap in the fifth general purpose lane, as well as several nonstandard design issues representing the most critical features adversely affecting freeway mainline operations in this segment of SR-57. Alternative 2 modifies both existing on-ramps to northbound SR 57 at Orangewood Avenue. Alternatives 2A and 2B eliminate the slip/tangent on-ramp from westbound Orangewood Avenue to northbound SR 57 and diverts the westbound traffic to make a left turn onto the modified loop on-ramp instead. Alternative 2 has greater ramp storage than Alternative 2A and 2B. The weave section between the Orangewood Avenue on-ramp and the Katella Avenue off-ramp operates at the lowest density (best operation) in Alternative 2. Alternatives 2A and 2B operate at a density approximately 10% higher (worse) than Alternative 2.

The PDT reviewed the evaluation criteria and the comparative data for the No Build Alternative and the three Build Alternatives. Based on the above reasons, the PDT recommends that Alternative 2 be selected as the PA to move forward into the Design Phase.

1.3.4 Alternatives Considered but Eliminated from Further Discussion prior to the "Draft" Initial Study/Environmental Assessment (IS/EA)

Several project alternatives were considered during project development, but were eliminated from detailed environmental review. The following discussion describes these alternatives that were considered, but were eliminated before the preparation of this draft environmental document.

1.3.4.1 Alternative 2C - New Katella Avenue Off-Ramp, Retains Orangewood Avenue On-Ramp

Alternative 2C included all the design elements of the Preferred Alternative plus elements of Alternative 2A. The alternative would complete the missing gap in the fifth GP lane, would re-construct a longer westbound Orangewood Avenue on-ramp like the Preferred Alternative, and would construct a new Stadium Bridge structure to accommodate the new longer Katella Avenue two-lane off-ramp like Alternative 2A. This alternative creates two major design concerns:

1. The spacing between the two interchanges at Orangewood and Katella would be reduced to less than current conditions reducing the weave length to only 882 feet, which is less than the existing weave length and the current design standard.
2. At the Orangewood Avenue on-ramp, the sight distance at the vertical crest curve would be only 335 feet, which would require traffic to drive below 50 mph (450 feet minimum for travel at 50 mph), which is less than the current design standard.

During the January 2017 Project Development Team (PDT) meeting, Caltrans design unit indicated that the 882-foot weave length was a fatal flaw and therefore, Alternative 2C was an infeasible solution and could not be presented to the public. The absolute minimum weave length distance that would be acceptable to Caltrans is the existing condition. The preferred design approach is to improve nonstandard design elements, here the weave length distance, to meet standard allowances to ensure the granting of a design deviation would be defensible. Based on additional design analysis as an effort to mitigate the nonstandard design issue, the PDT determined that the three proposed Build Alternatives presented in this environmental document provided the more viable options that more fully addressed the project's purpose and need. Therefore, Alternative 2C was eliminated from further discussion.

1.3.4.2 Alternative 3 – New Stadium Bridge, Modified Auxiliary to Eastbound Orangewood Avenue On-ramp

Alternative 3 represented a modified version of the Preferred Alternative that was evaluated during the Project Study Report-Project Development Support (PSR/PDS) phase of the Project. The alternative included all the improvements proposed under the Preferred Alternative including the modified Orangewood Avenue loop on-ramp and the new longer and wider Katella Avenue off-ramp. The alternative also included a proposed auxiliary lane that extended from the Orangewood Avenue loop on-ramp north and then becoming the second lane exiting at the Katella

Avenue off-ramp. The purpose of the auxiliary lane was to provide additional space for vehicle weaving when the weaving length did not meet current design standards. The design resulted in a gap in the existing auxiliary lane that currently terminates to the south of the Orangewood Avenue loop on-ramp.

Alternative 3 was eliminated as it does not address the existing freeway merge located just beyond the northbound Orangewood Avenue off-ramp. Here, the auxiliary lane terminates and does not continue through the Orangewood Avenue interchange. The PDT Team's evaluation of this alternative concluded that it failed to meet a critical nonstandard design issue included in the project purpose. The PDT decision was to eliminate Alternative 3 presented in the PSR-PDS phase of the Project and to drop it from further study in the Project Approval and Environmental Document (PA&ED) phase.

1.3.4.3 Alternative 4 – New Stadium Bridge, Modified Auxiliary to Westbound Orangewood On-ramp

Alternative 4 was also a modified version of the Preferred Alternative that was evaluated during the PSR/PDS phase of the Project. Alternative 4 included improvements proposed under the Preferred Alternative including the modified Orangewood Avenue loop on-ramp, a new longer Orangewood Avenue on-ramp, a new stadium bridge that is longer and wider Katella Avenue off-ramp. The alternative also included a proposed auxiliary lane that extended from the westbound Orangewood Avenue on-ramp north to become the existing second lane for the Katella Avenue off-ramp. The design resulted in a gap in the existing auxiliary lane that currently terminates to the south of the Orangewood Avenue loop on-ramp.

Alternative 4 was eliminated from further discussion as it also did not address the existing freeway merge located just beyond the northbound Orangewood Avenue off-ramp as the auxiliary lane is not continued through the Orangewood interchange. Like Alternative 3, the PDT Team's evaluation of this alternative concluded that it failed to meet a critical nonstandard design issue included in the project purpose. The PDT decision was to eliminate Alternative 4 presented in the PSR-PDS phase of the Project and to drop it from further study in the Project Approval and Environmental Document (PA&ED) phase.

1.3.4.4 Project Transportation System Management (TSM) and Transportation Demand Management (TDM) Alternatives

Traffic Demand Management (TDM) and Traffic System Management (TSM) strategies are designed to increase freeway capacity without physically widening the freeway. TDM focuses on means of reducing the number of vehicle trips and vehicle miles traveled, and increasing vehicle occupancy. Typical activities would be promoting ride sharing programs and expanding mass transit. TSM strategies implement actions that improve the capacity of a transportation facility without increasing the number of through lanes. Examples of these strategies are ramp metering and auxiliary lanes. TSM strategies can also provide options for mass transit and ridesharing such as express lane on-ramps for mass transit and carpools. TDM and TSM strategies, however,

would not meet the project purposes to: establish lane continuity, improve operations due to nonstandard design issues, and relieve congestion due to lane capacity constraints.

Although TDM and TSM measures alone could not satisfy the purpose and need of the project, the following TSM measures have been incorporated in the proposed Build Alternatives for this Project:

- At the Orangewood Avenue loop on-ramp, the existing single lane on-ramp would be modified to two lanes under the Preferred Alternative or three lanes under Alternatives 2A and 2B and these on-ramp lanes would be metered.
- On Orangewood Avenue, the two existing eastbound turn lanes to the loop on-ramp would be extended further east and controlled by a traffic signal at a newly configured 90-degree intersection.
- On Orangewood Avenue, under the Preferred Alternative, the single westbound turn lane on Orangewood Avenue would direct traffic to the widened two-lane on-ramp. Under Alternatives 2A and 2B a second westbound left-turn lane would be added to allow westbound traffic to access the wider three-lane loop on-ramp.
- Under all Build Alternatives the traffic signals on Orangewood Avenue and the metered on-ramps would be coordinated to control congestion.
- Under all Build Alternatives a continuous Auxiliary Lane would be provided between Orangewood Avenue and Katella Avenue.

The proposal to have signal-controlled turning movements from Orangewood Avenue to the on-ramps would be new and would allow for coordination of the Orangewood Avenue intersection and the on-ramp metering. This signal coordination would be an improvement over existing conditions, which allows vehicles to turn directly onto the on-ramps without entering an intersection.

1.3.4.5 Reversible Lanes

Assembly Bill 2542 amended California Streets and Highways code, effective January 1, 2017, and requires that Caltrans or a regional transportation planning agency demonstrate that reversible lanes were considered when submitting a capacity-increasing project or a major street or highway lane realignment project to the California Transportation Commission for approval (California Streets and Highways Code, Section 100.015). For projects that do not meet the criteria (capacity increasing or a major street or highway lane realignment), this determination can be documented in the Project Initiation Document. Projects that do meet this criteria must be evaluated by District Traffic Operations to determine the feasibility of including reversible lanes in the project scope. This requirement applies to projects newly approved for programming after January 1, 2017.

Consideration was given to the reversible lanes configuration and it was determined that it is not feasible. It therefore was rejected as a build alternative for the Project and was not considered in the environmental review. The following is a discussion of the reasons for rejecting this alternative:

Geometric Feasibility of Reversible Lanes

Within the project limits, SR 57 is generally an eight to ten-lane divided, controlled-access freeway with four or five general purpose lanes in each direction and auxiliary lanes along portions of the freeway. The existing median width varies from 6 feet to 22 feet.

Freeway reversible lanes facilities must be separated by concrete barriers on both sides in a high-speed roadway setting. They are typically constructed in the median of freeway facilities and may be one, two or more lanes wide. Shoulders are required on both sides of the reversible lane(s) to accommodate travel in both directions. Additional shoulders are required outside the reversible lane envelope adjacent to the GP lanes creating a very wide typical section for the reversible lane facility. The amount of widening necessary for this reversible lane facility would be greater than Alternatives 2 (Perferred Alternative), 2A and 2B.

Proposing reversible lanes within the one-mile long project area would be inconsistent with the existing roadway operational condition north and south of the Project.

Traffic Demand and Analysis of Reversible Lanes

Reversible lanes add capacity to the peak direction by borrowing capacity from the off-peak direction. Traffic characteristics for successful implementation of reversible lanes consist of facilities that experience large directional traffic imbalances and congestion during peak periods and are forecast to do so in perpetuity. To warrant reversible lanes, peak-period traffic volumes should forecast substantial directional imbalance. A directional split of 70/30 percent is commonly used as a threshold for the level of traffic imbalance needed to warrant a reversible facility. The majority of SR 57 within the project limits has a directional split of approximately 55/45 percent.

Reversible lanes would not fulfill the purpose and need of the proposed Project in that they would not extend the northbound SR 57 fifth general purpose lane between Orangewood Avenue and Katella Avenue to establish lane continuity, nor would reversible lanes improve weave length between interchanges.

1.3.4.6 Intersection Control Evaluation (ICE)

The following alternative intersection control options at the SR 57/Orangewood Avenue intersections were considered and analyzed for the ICE:

- Yield-Control (Roundabout): This option would convert the existing configuration at the NB SR 57/Orangewood Ave off-ramp from a left turn, shared left and right turn, and a right turn into a yield-control (roundabout) intersection.
- Yield-Control (Roundabout) – SR 57 SB Intersection: This option would consider a roundabout at the intersection west of SR 57 SB Ramps and Orangewood Ave.

The roundabout options for the NB and SB SR 57/Orangewood Avenue intersection were found to have negligible operational benefits when compared to the existing signalized intersection. There would also be considerably high capital costs, right-of-way requirements, and environmental impacts.

- Diverging Diamond: This option would convert the existing diamond/partial cloverleaf interchange to an at-grade diverging diamond interchange (DDI).

The DDI is considered flawed in that the nonstandard weave on the NB 57 mainline (same as the Preferred Alternative) would remain, however the left turn queueing would be eliminated. Compared to the signalized intersection though, the DDI will not work with Alternatives 2A and 2B, which do eliminate the nonstandard weave on the NB 57 mainline. Queuing on the NB on ramp with the DDI could be as bad as the conventional signalized intersections with Alternatives 2A or 2B. Also, the traveling public's unfamiliarity with the DDI configuration, especially with the event traffic at Angel Stadium, could be problematic.

- Stop Control: This option would downgrade the existing NB SR 57/Orangewood Avenue intersection from signalized to stop-control.

Stop control is not a viable option because it would increase queuing on the ramps and Orangewood Avenue, increase driver frustration and could potentially impact pedestrian and cyclist safety.

1.4 Permits and Approvals Needed

Construction and operation of the Project would require permits and approvals from federal, state, and local government agencies.

Table 1-8: Permits and Approvals

Agency	Permit/Approval	Status
FEDERAL		
US Army Corps of Engineers	• Clean Water Act Section 404 Permit for filling or dredging waters of the US • Rivers and Harbors Act, Section 408 for work in flood control channel	Applications to be submitted after Project Report and Final IS/EA approval. Permits will be obtained prior to the start of construction.
FHWA	• Air Quality Conformity Determination	The Air Quality Conformity Report was submitted to FHWA after circulation of the Draft IS/EA, and concurrence was obtained on February 11, 2019.
STATE		
California Department of Fish and Wildlife	• California Fish and Game Code, Section 1602 Agreement for Streambed Alteration • Certificate of Inclusion in OCTA M2 NCCP/HCP	• All coordination will be completed during final design. Application to be submitted after Project Report and Final IS/EA approval. Permits will be obtained prior to the start of construction. • On March 26, 2019 a Cerificate of Inclusion (COI) was received from the USFWS.
California Public Utilities Commission (CPUC) Southern California Regional Rail Authority (SCRRA)	• Construction and maintenance agreements	A Construction and Maintenance Agreement between the State and railroad is required for any alternative that involves railroad bridge modification. In addition, California Public Utilities Commission (CPUC) approval is required for any alternative that involves railroad bridge modification. Authority to modify an existing public rail crossing must be granted by the California Public Utilities Commission (CPUC) through a formal application process that results in a *General Order No. 88-B* issued by the Commission. This project will need to apply for approval by the CPUC.

Table 1-8: Permits and Approvals (continued)

Agency	Permit/Approval	Status
REGIONAL		
Santa Ana Regional Water Quality Control Board	• CWA Section 401 Certification	Application to be submitted after Project Report and Final IS/EA approval. Permits will be obtained prior to the start of construction.
	• Dewatering Permit	Will be obtained prior to the start of construction
Local and Other		
City of Orange	• Freeway Agreement	Freeway agreement with Caltrans will be completed after adoption of the preferred alternative
City of Anaheim	• Freeway Agreement	Freeway agreement with Caltrans will be completed after adoption of the preferred alternative
Orange County Parks (OC Parks)	• Concurrence from official with jurisdiction for De minimis Finding for use of Santa Ana River Trail	• On February 7, 2019 a letter of concurrence was received from OC Parks.
Orange County Flood Control District (OCFCD)	• Highway Easement	• During final Design

Source: WQAR 2018; AQAR 2018; Delineation of Waters and Wetlands 2018; NES 2018.