

**RTIP ID# 2M0735A (ORA-131303)**

**TCWG Consideration Date**

January 23, 2018

**Project Description**

The SR 57 Northbound Improvement Project (Project) would widen the northbound side of the State Route (SR) 57 freeway from 0.3 mile south of the Orangewood Avenue undercrossing (postmile [PM] 11.5) north to the Katella Avenue undercrossing (PM 12.5), about one mile. The proposed improvements also 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 and sight distances, and reconfiguration of the existing on- and off-ramps to improve operation between the Orangewood Avenue interchange and the Katella Avenue interchange.

Four alternatives are being evaluated for the proposed Project. These alternatives include the No-Build Alternative (Alternative 1) and three Build Alternatives referred to as Alternative 2, Alternative 2A, and Alternative 2B. The latter two alternatives originated as options to Alternative 2, but are sufficiently different that they are evaluated as full alternatives in the environmental documentation.

**Alternative 1: No-Build Alternative**

Under the No-Build Alternative, no improvements are proposed and the freeway geometry would remain the same as existing conditions. The No-Build Alternative would require no capital expenditure.

**Common Design Features of the 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, the Katella Avenue UC Bridge;
- Widen 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 eastbound Orangewood Avenue loop on-ramp from a free right turn to a signalized right turn;
- Construct a full intersection at Orangewood Avenue and the freeway ramp(s);
- Increase the weave length between the Orangewood Avenue on-ramp(s) and the Katella Avenue off-ramp;
- Add a second lane to the Katella Avenue off-ramp.
- Provide replacement landscaping and permanent irrigation with plant establishment period (PEP).

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

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). Restripe HOV and GP lanes to establish a continuous fifth GP lane and to address nonstandard design features (i.e. median width and sight distance on horizontal curves). Maintain the auxiliary lane configuration from the Orangewood Avenue interchange north to the Katella Avenue off-ramp. Modify the Orangewood Avenue westbound slip on-ramp to northbound SR 57 to a 90-degree angle intersection with Orangewood Avenue. Move the ramp east of its current location to reduce curvature. Move the eastbound loop on-ramp eastward opposite the new access location for the slip on-ramp. Construct full intersection on Orangewood for signal controlled on-ramps and enhanced pedestrian and bicycle safety.

<p><b>Alternative 2A: Eliminate Orangewood Avenue Slip On-Ramp, Construct Katella Avenue Off-Ramp (Widen 2 Bridges, Construct New Stadium OH Bridge)</b></p> <p>Widen the Orangewood Avenue UC Bridge (No. 55 0481) and the Santa Ana River Bridge (No. 55 0400). Construct new bridge adjacent to the existing Stadium OH Bridge (No. 55 0399) to carry the Katella Avenue off-ramp traffic. Restripe HOV and GP lanes to establish a continuous fifth GP lane and to address nonstandard design features (i.e. median width and sight distance on horizontal curves). Maintain the auxiliary lane configuration from the Orangewood Avenue interchange north to the Katella Avenue off-ramp. Eliminate the existing Orangewood Avenue slip on-ramp to increase weave distance from 1,310 to 2,000 to meet current design standard. Construct third lane for loop on-ramp to accommodate redirected traffic volumes. Construct full intersection on Orangewood for signal controlled on-ramps and enhanced pedestrian and bicycle safety.</p>																			
<p><b>Alternative 2B: Eliminate Orangewood Avenue Slip On-Ramp, Widen Katella Avenue Off-Ramp (Widen 3 Bridges)</b></p> <p>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). Restripe HOV and GP lanes to establish a continuous fifth GP lane and to address nonstandard design features (i.e. median width and sight distance on horizontal curves). Maintain the auxiliary lane configuration from the Orangewood Avenue interchange north to the Katella Avenue off-ramp. Eliminate the existing Orangewood Avenue slip on-ramp to increase weave distance from 1,310 to 2,475 thus exceeding current design standard. Construct third lane for loop on-ramp to accommodate redirected traffic volumes. Construct full intersection on Orangewood for signal controlled on-ramps and enhanced pedestrian and bicycle safety.</p>																			
<p><b>Type of Project</b> (use Table 1 on instruction sheet) Change to existing state highway.</p>																			
<p><b>County</b> Orange</p>	<p><b>Narrative Location/Route &amp; Postmiles</b> – Northbound side of the State Route (SR) 57 freeway from 0.3 mile south of the Orangewood Avenue undercrossing (postmile [PM] 11.5) north to the Katella Avenue undercrossing (PM 12.5), about one mile. 12-ORG-SR57-P.M. 11.5 to 12.5</p> <p><b>Caltrans Projects – EA#</b> 0M9700</p>																		
<p><b>Lead Agency:</b> Orange County Transportation Authority (OCTA)</p>																			
<p><b>Contact Person</b> Arman Behtash</p>	<p><b>Phone#</b> 657-328-4163</p>	<p><b>Fax#</b></p>	<p><b>Email</b> <a href="mailto:arman.behtash@dot.ca.gov">arman.behtash@dot.ca.gov</a></p>																
<p><b>Hot Spot Pollutant of Concern</b> (check one or both)    <b>PM2.5 X</b>        <b>PM10 X</b></p>																			
<p><b>Federal Action for which Project-Level PM Conformity is Needed</b> (check appropriate box)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%; text-align: center;"> <p><b>Categorical Exclusion (NEPA)</b></p> </td> <td style="width: 10%; text-align: center;"> <p>X</p> </td> <td style="width: 20%; text-align: center;"> <p><b>EA or Draft EIS</b></p> </td> <td style="width: 10%; text-align: center;"> <p>X</p> </td> <td style="width: 20%; text-align: center;"> <p><b>FONSI or Final EIS</b></p> </td> <td style="width: 10%;"></td> <td style="width: 10%; text-align: center;"> <p><b>PS&amp;E or Construction</b></p> </td> <td style="width: 10%;"></td> <td style="width: 10%; text-align: center;"> <p><b>Other</b></p> </td> </tr> </table>					<p><b>Categorical Exclusion (NEPA)</b></p>	<p>X</p>	<p><b>EA or Draft EIS</b></p>	<p>X</p>	<p><b>FONSI or Final EIS</b></p>		<p><b>PS&amp;E or Construction</b></p>		<p><b>Other</b></p>						
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**Project Purpose and Need (Summary):** *(attach additional sheets as necessary)*

The purpose of the proposed project is to:

- To relieve existing and future SR 57 freeway congestion to improve traffic flow on the regional transportation system.
- To help achieve the goals of the Orange County Transportation Authority *2014 Long Range Transportation Plan* (September 12, 2014) and the objectives of the current version of the Measure M2 freeway improvement plan called the *Next 10 Delivery Plan 2017-2-26* (November 14, 2016).
- To extend the northbound SR-57 fifth general purpose (GP) lane between Orangewood Avenue and Katella Avenue to establish lane continuity.
- To improve SR 57 freeway operations by eliminating and reducing existing nonstandard design deficiencies.

The project is intended to address the following needs:

- SR 57 is a regionally important freeway that 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 SR 57 Northbound Improvement Project is the last of the funded four-phased Project G contained in the locally adopted M2 freeway improvement plan.
- The existing northbound SR-57 mainline lacks a continuous fifth general purpose lane for 550 feet immediately north of the Katella Avenue off-ramp.
- Several existing nonstandard design deficiencies adversely affect freeway operations.

**Surrounding Land Use/Traffic Generators** *(especially effect on diesel traffic)*

At the south end of the project, there are single family residential land uses located east of SR 57 and south of Orangewood Avenue. The Santa Ana River is west of the freeway. Commercial and light industrial (freight shipping) land uses are north of Orangewood Avenue and east of SR 57. SR 57 crosses over the Santa Ana River and land uses, which include commercial development and the Anaheim Regional Transportation Intermodal Center (ARTIC), are located east of the freeway and west of the Santa Ana River. North of the Santa Ana River, the freeway passes over the Amtrak and Metrolink tracks. The Anaheim Stadium and an expansive parking lot is located west of SR 57 in this area. Along Katella Avenue and to the north along both sides of the freeway, land uses are mixed commercial/office developments, including the city of Anaheim's Honda Center ice rink and concert venue.

Major 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, Disneyland and the Walt Disney Resort. The city of Anaheim and Orange general plans have identified areas adjacent to the project corridor for redevelopment of mixed-land uses at substantially higher densities than currently exist.

The section of the northbound (NB) SR 57 freeway located between Orangewood Avenue and Katella Avenue is above grade of the adjacent land uses throughout the project segment. The posted speed limit in this segment of SR-57 is 65 miles per hour. There are currently five general purpose lanes northbound and four general purpose lanes southbound, with one high-occupancy vehicle lane in each direction.

Major local arterials include Katella Avenue, Orangewood Avenue and Chapman Avenue.

**Opening Year: Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility**

**TABLE 1 – Existing & Opening Year LOS Freeway Weaving Segment**

Segment	Existing (2016)		2025 No Build		2025 Build Alternative 2		2025 Build Alternatives 2A & 2B	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Orangewood Ave direct on-ramp to Katella Ave off-ramp	D	D	E	D	D	C	D	D

**TABLE 2 – Existing & Opening Year LOS Freeway Merge/Diverge Segments**

Junction	Merge/Diverge	Existing (2016)		2025 No Build		2025 Build Alternative 2		2025 Build Alternatives 2A & 2B	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Chapman Ave loop on-ramp	Merge	C	B	C	B	C	B	C	B
Chapman Ave direct on-ramp	Merge	C	B	C	B	C	B	C	B
Orangewood Ave off-ramp	Diverge	D	C	D	C	D	C	D	C
Orangewood Ave loop on-ramp	Merge	C	C	D	C	C	C	-	-
Katella Ave loop on-ramp	Merge	C	C	C	C	C	C	C	C
Katella Ave direct on-ramp	Merge	C	C	C	C	C	C	C	C

**TABLE 3 – Existing & Opening Year AADT and Truck Percentages**

Segment	Existing (2016)			2025 No Build			2025 Build Alternative 2			2025 Build Alternatives 2A & 2B		
	AADT Total	AADT Trucks	Truck %	AADT Total	AADT Trucks	Truck %	AADT Total	AADT Trucks	Truck %	AADT Total	AADT Trucks	Truck %
Northbound State Route 57 (Chapman Ave loop on-ramp to Orangewood Ave loop on-ramp)	121,900	8,533	7.0%	130,650	9,146	7.0%	132,610	9,283	7.0%	132,610	9,283	7.0%
Northbound State Route 57 (Orangewood Ave loop on-ramp to Katella Ave loop on-ramp)	124,000	8,680	7.0%	134,650	9,425	7.0%	136,580	9,561	7.0%	136,580	9,561	7.0%
Note: Truck Percentage of 7% is consistent with worksheets included in the Draft Operations Analysis Appendices for the Project Approval & Environmental Document												

This project includes the complete reconfiguration of the signalized intersection at the SR-57 northbound on/off-ramps and Orangewood Avenue. The intersection is forecast to operate at an improved LOS and delay as compared to no build. The total entering volume of this intersection increases by 28% as a result of the project, which is attributed to a shift in traffic from the existing eastbound Orangewood Avenue direct on-ramp from a free right turn to a signalized right turn.

**RTP Horizon Year / Design Year: Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility**

**TABLE 4 – 2045 LOS Freeway Weaving Segment**

Segment	No Build		Build Alternative 2		Build Alternatives 2A & 2B	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Orangewood Ave direct on-ramp to Katella Ave off-ramp	E	E	D	D	E	D

**TABLE 5 – 2045 LOS Freeway Merge/Diverge Segments**

Junction	Merge/Diverge	No Build		Build Alternative 2		Build Alternatives 2A & 2B	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Chapman Ave loop on-ramp	Merge	C	C	C	C	C	C
Chapman Ave direct on-ramp	Merge	C	C	C	C	C	C
Orangewood Ave off-ramp	Diverge	D	C	D	C	D	C
Orangewood Ave loop on-ramp	Merge	D	D	D	C	-	-
Katella Ave loop on-ramp	Merge	D	D	D	D	D	D
Katella Ave direct on-ramp	Merge	D	D	D	D	D	D

**TABLE 6 – 2045 AADT and Truck Percentages**

Segment	No Build			Build Alternative 2			Build Alternatives 2A & 2B		
	AADT Total	AADT Trucks	Truck %	AADT Total	AADT Trucks	Truck %	AADT Total	AADT Trucks	Truck %
Northbound State Route 57 (Chapman Ave loop on-ramp to Orangewood Ave loop on-ramp)	142,060	9,944	7.0%	144,190	10,093	7.0%	144,190	10,093	7.0%
Northbound State Route 57 (Orangewood Ave loop on-ramp to Katella Ave loop on-ramp)	146,080	10,226	7.0%	148,500	10,395	7.0%	148,500	10,395	7.0%
Note: Truck Percentage of 7% is consistent with worksheets included in the Draft Operations Analysis Appendices for the Project Approval & Environmental Document									

This project includes the complete reconfiguration of the signalized intersection at the SR-57 northbound on/off-ramps and Orangewood Avenue. The intersection is forecast to operate at an improved LOS and delay as compared to no build. The total entering volume of this intersection increases by 28% as a result of the project, which is attributed to a shift in traffic from the existing eastbound Orangewood Avenue direct on-ramp from a free right turn to a signalized right turn.

**Opening Year: If facility is an interchange(s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT**

Facility is not an interchange or intersection.

**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**

Facility is not an interchange or intersection.

**Describe potential traffic redistribution effects of congestion relief (impact on other facilities)**

The limited nature and type of proposed improvements (gap closure and operational improvements) are not expected to result in a redistribution of traffic from the mainline or arterials to other facilities.

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

The proposed improvements include the construction of a missing section of the fifth general purpose lane in the northbound direction of State Route 57 between the Katella Avenue northbound off-ramp and the bridge structure over Katella Avenue. Currently, the northbound fifth general purpose lane starts south of the Orangewood Avenue Interchange at the I-5/SR22/SR57 Interchange. When the fifth general purpose lane reaches the Katella Avenue interchange, it transitions into an auxiliary lane that exits at the Katella Avenue off-ramp leaving a gap of 550 feet. The loss of both the auxiliary lane and the fifth general purpose lane within this 1-mile segment of the freeway results in excessive lane changes and congestion. To provide the fifth general purpose lane, the freeway needs to be widened in several places in the northbound direction. Following widening of the freeway the HOV and general purpose lanes would be restriped, which would remedy nonstandard design features related to median width and horizontal curve sight distance. Project alternatives also make changes to existing on- and off-ramps and the existing auxiliary lane to enhance operation and safety. Closure of the gap in the fifth general purpose lane will not substantially affect AADT or truck percentages in the project area. Truck percentages on the northbound SR 57 are below those in EPA's examples of projects that may require PM hot spot analyses, as defined in Appendix B of *the Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas*. The project does not involve any other facilities with significant numbers of diesel vehicles.