

RTIP ID# <i>(required)</i> ORA131304			
TCWG Consideration Date August 23, 2016			
Project Description <i>(clearly describe project)</i>			
<p>The California Department of Transportation (Caltrans) District 12 in cooperation with Orange County Transportation Authority (OCTA) proposes to add one or two general purpose (GP) and auxiliary freeway lanes through an 8.5-mile segment of Interstate 405 (I-405) between Interstate 5 (I-5) and State Route 55 (SR-55). The approximately 8.5-mile-long project corridor is located primarily in the City of Irvine in Orange County, as well as a small portion of unincorporated Orange County and the City of Costa Mesa at the northern end of the proposed project. The project limits extend from I-5 (Postmile [PM] 0.2) to SR-55 (PM 8.7). The regional location is shown in Figure 1. The project alternatives are described below and shown in Figures 2 through 4.</p>			
Alternative 1 – No Build Alternative			
<p>Alternative 1 would not result in any proposed project improvements, but it assumes the completion of projects that are currently programmed by Caltrans in the State Highway Operations and Protection Program, State Transportation Improvement Program, or Corridor Mobility Improvement Account. These include the construction of a southbound (SB) auxiliary lane between State Route 133 (SR-133) and the Sand Canyon Avenue on-ramp, another between Sand Canyon Avenue off-ramp and the University Drive on-ramp, and the extension of one SB lane between the University Drive off-ramp and the Culver Drive off-ramp.</p>			
Alternative 2 Add One General Purpose Lane			
<p>The No Build Alternative includes 4 or more GP lanes in each direction. Alternative 2 would add a single GP lane in the northbound (NB) direction of I-405 between SR-133 and Culver Drive and a single GP in the SB direction between Irvine Center Drive and University Drive/Jeffrey Road. Adding GP lanes to these segments would provide a fifth continuous GP lane from SR-133 to SR-55 in the NB direction and from Bake Parkway to SR-55 in the SB direction. Additionally, auxiliary lanes would be provided at locations where required based on traffic merge, diverge and weaving operational analysis and geometric conditions. This alternative would include widening the existing bridge over San Diego Creek on the SB side.</p>			
Alternative 3 Add Two General Purpose Lanes			
<p>Alternative 3 includes the new GP lanes from Alternative 2 and would add a second GP lane in the NB direction of I-405 between SR-133 and Jamboree Road and in the SB direction between SR-133 and Culver Drive. This would provide a sixth continuous GP lane from SR-133 to Jamboree Road in the NB direction and from SR-133 to MacArthur Boulevard in the SB direction. Additionally, auxiliary lanes would be provided at locations where required based on traffic merge, diverge and weaving operational analysis and geometric conditions. This alternative would include widening the existing bridge over San Diego Creek Bridge on the SB side.</p>			
Type of Project <i>(use Table 1 on instruction sheet)</i>			
Change to existing state highway.			
County Orange	Narrative Location/Route & Postmiles I-405 PM 0.2 to PM 8.7		
	Caltrans Projects – EA# 12-0K710K		
Lead Agency: Caltrans			
Contact Person Reza Aurasteh	Phone# (949) 724-2738	Fax# (949) 724-2591)	Email Reza.Aurasteh@dot.ca.gov
Hot Spot Pollutant of Concern <i>(check one or both)</i> PM_{2.5} X PM₁₀ X			

Federal Action for which Project-Level PM Conformity is Needed <i>(check appropriate box)</i>				
Categorical Exclusion (NEPA)	X EA or Draft EIS	FONSI or Final EIS	PS&E or Construction	Other
Scheduled Date of Federal Action: August 7, 2017				
NEPA Assignment – Project Type <i>(check appropriate box)</i>				
Exempt	Section 326 – Categorical Exemption	X	Section 327 – Non-Categorical Exemption	
Current Programming Dates <i>(as appropriate)</i>				
	PE/Environmental	ENG	ROW	CON
Start	January 2015	January 2025	January 2027	June 2027
End	March 2018	January 2027	June 2027	June 2030
Project Purpose and Need (Summary): <i>(attach additional sheets as necessary)</i>				
Purpose				
<p>The purpose of the proposed project is to address existing and future traffic demand and provide future mobility while minimizing environmental and economic impacts. The project would address congestion and enhance freeway operations within the project limits along I-405 as follows:</p> <ul style="list-style-type: none"> • Add mainline capacity to reduce corridor congestion and improve mobility/people throughout. • Improve the capacity of the ramps within the project limits along the I-405 corridor. • Improve freeway operations including weaving, merging and diverging, and Intelligent Transportation System (ITS) elements within the project limits along the I-405 corridor. • Enhance safety. 				
Need				
<p>Currently, this portion of the I-405 corridor within the project limits is experiencing congestion and long traffic delays during morning and evening peak hours due to demand exceeding capacity, resulting from local, regional, and interregional traffic demand. In addition, forecasted local and regional traffic demand is expected to increase, resulting in traffic volumes along the corridor ranging between 280,000 to 355,000 vehicles per day by the year 2050. Improvements are needed within the project limits due to the following conditions:</p> <ul style="list-style-type: none"> • High level of congestion during weekdays, especially during peak periods due to the insufficient existing mainline capacity. • Congestion at interchange on-ramps and off-ramps due to high demand, limited storage capacity, and operational deficiencies. • Inadequate ITS infrastructure along I-405 and at interchanges. <p>This corridor has current and future operational deficiencies, including existing geometric deficiencies on the GP and HOV lanes. Further, the GP and HOV lanes are operating under degraded and congested conditions. This corridor also experiences congestion at the ramps and freeway-to-freeway interchanges due to high traffic volumes and weaving, merging and diverging issues.</p>				
Surrounding Land Use/Traffic Generators <i>(especially effect on diesel traffic)</i>				
<p>Through the project limits, I-405 serves the communities of southern Orange County, including the Cities of Irvine and Costa Mesa. It is used for commuting and intraregional travel along with direct and indirect access to employment centers, recreational attractions, shopping malls, medical centers, universities, airports, and other land uses. The proposed project is immediately surrounded by residential, commercial, and institutional uses. In the No Build Alternative, trucks represent 3.5 to 4.5 percent of the total traffic volumes within the project limits.</p>				

Opening Year: Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility											
Table 1 Directional Freeway Mainline Daily Traffic – Opening Year (2030)											
Segment Location	Alt 1 No Build Opening Year (2030)			Alt 2 Build Opening Year (2030)				Alt 3 Build Opening Year (2030)			
	Total AADT	Truck AADT	% Trucks	Total AADT	Truck AADT	% Trucks	Truck Volume Change	Total AADT	Truck AADT	% Trucks	Truck Volume Change
I-405 Northbound											
Irvine Center Dr to SR-133	129,130	4,513	3.5%	134,770	4,572	3.4%	59	135,510	4,581	3.4%	68
SR-133 to Sand Canyon Ave	138,920	5,046	3.6%	148,510	5,214	3.5%	168	150,300	5,215	3.5%	169
Sand Canyon Ave to Jeffrey Rd	147,240	5,758	3.9%	154,720	5,906	3.8%	148	157,740	5,954	3.8%	196
Jeffrey Rd to Culver Dr	145,900	6,475	4.4%	155,830	6,754	4.3%	279	160,520	6,844	4.3%	369
Culver Dr to Jamboree Rd	149,060	6,143	4.1%	153,630	6,249	4.1%	106	157,380	6,307	4.0%	164
Jamboree Rd to MacArthur Blvd	158,860	6,501	4.1%	162,200	6,579	4.1%	78	164,570	6,620	4.0%	119
MacArthur Blvd to SR-55	158,430	6,713	4.2%	161,410	6,791	4.2%	78	163,350	6,829	4.2%	116
I-405 Southbound											
Irvine Center Dr to SR-133	124,990	4,585	3.7%	129,010	4,679	3.6%	94	130,110	4,705	3.6%	120
SR-133 to Sand Canyon Ave	139,940	5,354	3.8%	145,240	5,451	3.8%	97	148,070	5,501	3.7%	147
Sand Canyon Ave to Jeffrey Rd	150,950	6,156	4.1%	156,200	6,256	4.0%	100	159,690	6,331	4.0%	175
Jeffrey Rd to Culver Dr	143,480	6,201	4.3%	147,860	6,319	4.3%	118	150,750	6,399	4.2%	198
Culver Dr to Jamboree Rd	147,500	6,341	4.3%	150,020	6,419	4.3%	78	152,900	6,487	4.2%	146
Jamboree Rd to MacArthur Blvd	160,930	6,306	3.9%	162,760	6,359	3.9%	53	164,670	6,395	3.9%	89
MacArthur Blvd to SR-55	169,630	6,487	3.8%	171,310	6,535	3.8%	48	172,890	6,564	3.8%	77

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

Table 2 Bi-Directional (Northbound and Southbound) Freeway Mainline Average Daily Traffic – Opening Year (2030)

I-405 Freeway Segment Location	Alt 1 No Build Opening Year (2030)			Alt 2 Build Opening Year (2030)				Alt 3 Build Opening Year (2030)			
	Total ADT	Truck ADT	% Trucks	Total ADT	Truck ADT	% Trucks	Truck Volume Change	Total ADT	Truck ADT	% Trucks	Truck Volume Change
Irvine Center Dr to SR-133	254,120	9,098	3.6%	263,780	9,251	3.5%	153	265,620	9,286	3.5%	188
SR-133 to Sand Canyon Ave	278,860	10,400	3.7%	293,750	10,665	3.6%	265	298,370	10,716	3.6%	316
Sand Canyon Ave to Jeffrey Rd	298,190	11,914	4.0%	310,920	12,162	3.9%	248	317,430	12,285	3.9%	371
Jeffrey Rd to Culver Dr	289,380	12,676	4.4%	303,690	13,073	4.3%	397	311,270	13,243	4.3%	567
Culver Dr to Jamboree Rd	296,560	12,484	4.2%	303,650	12,668	4.2%	184	310,280	12,794	4.1%	310
Jamboree Rd to MacArthur Blvd	319,790	12,807	4.0%	324,960	12,938	4.0%	131	329,240	13,015	4.0%	208
MacArthur Blvd to SR-55	328,060	13,200	4.0%	332,720	13,326	4.0%	126	336,240	13,393	4.0%	193

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

Table 3 General Purpose and HOV Level-of-Service Summary – Opening Year (2030)

I-405 Freeway Segment Location	2030 Alt 1 No Build				2030 Alt 2 Build				2030 Alt 3 Build			
	AM		PM		AM		PM		AM		PM	
	HOV	GP	HOV	GP	HOV	GP	HOV	GP	HOV	GP	HOV	GP
I-405 Northbound												
Irvine Center Dr to SR-133	C	C	B	C	C	C	B	C	C	D	B	C
SR-133 and Sand Canyon Ave	C	F	B	F	C	D	B	C	C	C	B	C
Sand Canyon Ave to Jeffrey Rd	D	F	C	E	C	D	C	C	C	C	C	C
Jeffrey Rd to Culver Dr	C	F	C	E	C	D	C	C	C	D	C	C
Culver Dr to Jamboree Rd	B	E	C	D	B	D	C	C	B	E	C	C
Jamboree Rd to MacArthur Blvd	B	F	C	E	B	E	C	E	B	E	C	E
MacArthur Blvd to SR-55	B	F	C	F	B	F	C	F	B	F	C	F
I-405 Southbound												
Irvine Center Dr to SR-133	B	C	B	D	B	B	B	B	B	B	B	C
SR-133 to Sand Canyon Ave	B	D	C	D	B	D	C	D	B	C	C	C
Sand Canyon Ave to Jeffrey Rd	B	E	C	D	B	E	C	C	B	D	C	C
Jeffrey Rd to Culver Dr	C	D	C	C	C	C	C	C	B	C	C	C
Culver Dr to Jamboree Rd	C	C	C	C	C	C	C	C	C	C	C	C
Jamboree Rd to MacArthur Blvd	C	D	C	C	C	D	C	C	C	D	C	C
MacArthur Blvd to SR-55	C	F	B	F	C	F	B	F	C	F	B	F

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

Table 4 Directional Freeway Mainline Daily Traffic – Design Year (2050)*

Freeway Segment Location	Alt 1 No Build Design Year (2050)			Alt 2 Build Design Year (2050)				Alt 3 Build Design Year (2050)			
	Total ADT	Truck ADT	% Trucks	Total ADT	Truck ADT	% Trucks	Truck Volume Change	Total ADT	Truck ADT	% Trucks	Truck Volume Change
I-405 Northbound											
Irvine Center Dr to SR-133	136,220	4,780	3.5%	142,190	4,843	3.4%	63	142,990	4,854	3.4%	74
SR-133 to Sand Canyon Ave	146,280	5,331	3.6%	156,540	5,511	3.5%	180	158,480	5,517	3.5%	186
Sand Canyon Ave to Jeffrey Rd	155,530	6,105	3.9%	163,540	6,261	3.8%	156	166,810	6,319	3.8%	214
Jeffrey Rd to Culver Dr	154,090	6,860	4.5%	164,690	7,155	4.3%	295	169,720	7,260	4.3%	400
Culver Dr to Jamboree Rd	156,760	6,474	4.1%	161,610	6,585	4.1%	111	165,610	6,655	4.0%	181
Jamboree Rd to MacArthur Blvd	166,860	6,836	4.1%	170,420	6,918	4.1%	82	172,960	6,967	4.0%	131
MacArthur Blvd to SR-55	166,040	7,037	4.2%	169,220	7,119	4.2%	82	171,300	7,163	4.2%	126
I-405 Southbound											
Irvine Center Dr to SR-133	133,260	4,909	3.7%	137,500	5,006	3.6%	97	138,610	5,030	3.6%	121
SR-133 to Sand Canyon Ave	149,650	5,737	3.8%	155,290	5,845	3.8%	108	158,280	5,898	3.7%	161
Sand Canyon Ave to Jeffrey Rd	161,540	6,614	4.1%	167,120	6,718	4.0%	104	170,820	6,796	4.0%	182
Jeffrey Rd to Culver Dr	153,490	6,662	4.3%	158,170	6,787	4.3%	125	161,260	6,872	4.3%	210
Culver Dr to Jamboree Rd	157,090	6,777	4.3%	159,770	6,859	4.3%	82	162,840	6,931	4.3%	154
Jamboree Rd to MacArthur Blvd	170,980	6,716	3.9%	172,920	6,772	3.9%	56	174,950	6,810	3.9%	94
MacArthur Blvd to SR-55	180,030	6,899	3.8%	181,810	6,949	3.8%	50	183,500	6,980	3.8%	81

*Design Year 2050 traffic forecast volumes were extrapolated from 2035 Orange County Transportation Analysis Model post-processed output using an overall annualized growth factor developed from socio-economic forecasts. The forecasts were obtained from the 2014 Orange County Projections (OCP) from California State University, Fullerton, which are the official forecasts from Orange County used in the SCAG RTP. OCP projections were only available to year 2040, so the same annualized growth rate between 2035 and 2040 (0.24%) was assumed between 2040 and 2050.

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

Table 5 Bi-Directional (Northbound and Southbound) Freeway Mainline Average Daily Traffic – Design Year (2050)*

I-405 Freeway Segment Location	Alt 1 No Build Design Year (2050)			Alt 2 Build Design Year (2050)				Alt 3 Build Design Year (2050)			
	Total ADT	Truck ADT	% Trucks	Total ADT	Truck ADT	% Trucks	Truck Volume Change	Total ADT	Truck ADT	% Trucks	Truck Volume Change
Irvine Center Dr to SR-133	269,480	9,689	3.6%	279,690	9,849	3.5%	160	281,600	9,884	3.5%	195
SR-133 and S to Canyon Ave	295,930	11,068	3.7%	311,830	11,356	3.6%	288	316,760	11,415	3.6%	347
Sand Canyon Ave to Jeffrey Rd	317,070	12,719	4.0%	330,660	12,979	3.9%	260	337,630	13,115	3.9%	396
Jeffrey Rd to Culver Dr	307,580	13,522	4.4%	322,860	13,942	4.3%	420	330,980	14,132	4.3%	610
Culver Dr to Jamboree Rd	313,850	13,251	4.2%	321,380	13,444	4.2%	193	328,450	13,586	4.1%	335
Jamboree Rd to MacArthur Blvd	337,840	13,552	4.0%	343,340	13,690	4.0%	138	347,910	13,777	4.0%	225
MacArthur Blvd to SR-55	346,070	13,936	4.0%	351,030	14,068	4.0%	132	354,800	14,143	4.0%	207

*Design Year 2050 traffic forecast volumes were extrapolated from 2035 Orange County Transportation Analysis Model post-processed output using an overall annualized growth factor developed from socio-economic forecasts. The forecasts were obtained from the 2014 Orange County Projections (OCP) from California State University, Fullerton, which are the official forecasts from Orange County used in the SCAG RTP. OCP projections were only available to year 2040, so the same annualized growth rate between 2035 and 2040 (0.24%) was assumed between 2040 and 2050.

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

Table 6 General Purpose and HOV Level-of-Service Summary – Design Year (2050)

I-405 Freeway Segment Location	2050 Alt 1 No Build				2050 Alt 2 Build				2050 Alt 3 Build			
	AM		PM		AM		PM		AM		PM	
	HOV	GP	HOV	GP	HOV	GP	HOV	GP	HOV	GP	HOV	GP
I-405 Northbound												
Irvine Center Dr to SR-133	C	C	B	C	C	D	B	D	C	D	B	D
SR-133 to Sand Canyon Ave	C	F	B	F	C	D	B	C	C	D	B	C
Sand Canyon Ave to Jeffrey Rd	D	F	C	E	D	D	C	C	D	D	C	C
Jeffrey Rd to Culver Dr	D	F	C	E	D	D	C	C	D	E	C	D
Culver Dr to Jamboree Rd	B	F	C	D	B	E	C	C	B	E	C	D
Jamboree Rd to MacArthur Blvd	B	F	C	F	B	F	C	E	B	F	C	E
MacArthur Blvd to SR-55	B	F	C	F	B	F	C	F	B	F	C	F
I-405 Southbound												
Irvine Center Dr to SR-133	B	D	B	D	B	C	B	C	B	C	B	C
SR-133 to Sand Canyon Ave	B	D	C	D	B	D	C	D	B	D	C	D
Sand Canyon Ave to Jeffrey Rd	B	F	C	D	B	E	C	D	B	D	C	C
Jeffrey Rd to Culver Dr	C	D	C	C	C	C	C	C	C	D	C	C
Culver Dr to Jamboree Rd	C	C	C	C	C	C	C	C	C	C	C	C
Jamboree Rd to MacArthur Blvd	C	E	C	C	C	E	C	C	C	E	C	D
MacArthur Blvd to SR-55	C	F	C	F	C	F	C	F	C	F	C	F

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

The proposed project is not an interchange or intersection, and therefore these data are not applicable.

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

The proposed project is not an interchange or intersection, and therefore these data are not applicable.

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

The proposed project would improve overall performance, reduce congestion, increase ramp and mainline capacity, and improve operational deficiencies at merge and diverge locations within the project limits. The proposed project would not divert traffic to other routes, and the travel demand volume is not predicted to vary substantially between the build and no-build conditions, as shown in the tables above. Thus, local traffic is not anticipated to be redistributed.

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

Under 40 CFR 93.123(b)—PM₁₀ and PM_{2.5} Hot Spots—the following criteria are utilized to determine the potential for a proposed project to qualify as a Project of Air Quality Concern.

- (i) *New highway projects that have a significant number of diesel vehicles, and expanded highway projects that have a significant increase in the number of diesel vehicles;*

As shown in the tables above, the proposed project is an expanded highway project that would not result in a significant increase in the number of diesel vehicles along the 8.5-mile-long I-405 corridor. The average increase in average daily trucks along the corridor is 331 additional trucks in the design year of 2050. Therefore, the proposed project would not result in a significant increase in the number of diesel vehicles and would not be considered a Project of Air Quality Concern under this criterion.

- (ii) *Projects affecting intersections that are at Level-of-Service D, E, or F with a significant number of diesel vehicles, or those that will change to Level-of-Service D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;*

The proposed project is along the freeway mainline and not at an intersection. Similar to the mainline analysis presented above, the proposed project would not add a significant number of diesel vehicles to an intersection. Therefore, the proposed project would not be considered a Project of Air Quality Concern under this criterion.

- (iii) *New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;*

The proposed project would not implement a new bus or retail terminal or transfer point. Therefore, the proposed project would not be considered a Project of Air Quality Concern under this criterion.

- (iv) *Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; and*

The proposed project does not involve expansion of a bus or rail terminal or transfer point. Therefore, the proposed project would not be considered a Project of Air Quality Concern under this criterion.

- (v) *Projects in or affecting locations, areas, or categories of sites which are identified in the PM10 or PM2.5 applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.*

The proposed project is not in or affecting a site of PM₁₀ or PM_{2.5} air quality standard violation. Therefore, the proposed project would not be considered a Project of Air Quality Concern under this criterion.