

RTIP ID# LA0F030			
TCWG Consideration Date : January 2010			
Project Description <i>(clearly describe project)</i>			
<p>The Build Alternative proposes the following improvements to the C Street interchange. Please refer to the attached figures for project location, project vicinity and the build alternative showing the proposed lane configuration (Figure 1, Figure 2, Figure 3 and Figure 4).</p> <ul style="list-style-type: none"> • Replace the two existing intersections (one at C Street/Figueroa Street and the other at John S. Gibson Boulevard/Harry Bridges Boulevard/Figueroa Street) with one new intersection that would align Harry Bridges Boulevard and John S. Gibson Boulevard with the C Street interchange; • Permanently close access to Figueroa Street from C Street and provide a standard cul-de-sac at the existing intersection; • Remove the existing northbound I-110 off-ramp and provide a new, more direct off-ramp to eastbound Harry Bridges Boulevard. This would involve widening the Union Oil undercrossing and constructing a new separation structure over John S. Gibson Boulevard; • Provide a dedicated right-turn lane from the I-110 southbound off-ramp to southbound John S. Gibson Boulevard; • Provide a dedicated right-turn lane from northbound John S. Gibson Boulevard to eastbound Harry Bridges Boulevard; • Widen the new intersection to accommodate dual left-turn pockets from westbound Harry Bridges Boulevard to southbound John S. Gibson Boulevard; and • Use the parcel bounded by I-110, Figueroa Street, and John S. Gibson Boulevard (assessor's parcel number [APN] 7417-001-900) as a construction staging area. 			
Type of Project <i>(use Table 1 on instruction sheet)</i>			
Reconfigure existing interchange			
County Los Angeles	Narrative Location/Route & Postmiles The proposed project is located in the community of Wilmington, City of Los Angeles, Los Angeles County, California. The proposed project's construction limits extend north to C Street, south to the D Street undercrossing of the I-110, west to I-110, and east to approximately King Street (Figure 2).		
Caltrans Projects – EA 246800			
Lead Agency: California Department of Transportation, District 7			
Contact Person Andrew Yoon	Phone# 213-897-6117	Fax# 213-897-1634	Email andrew.yoon@dot.ca.gov
Hot Spot Pollutant of Concern <i>(check one or both)</i> PM2.5 X		PM10 X	
Federal Action for which Project-Level PM Conformity is Needed <i>(check appropriate box)</i>			
Categorical Exclusion (NEPA)	<input checked="" type="checkbox"/> EA or Draft EIS	<input type="checkbox"/> FONSI or Final EIS	<input type="checkbox"/> PS&E or Construction
<input type="checkbox"/> Other			
Scheduled Date of Federal Action:			
NEPA Delegation – Project Type <i>(check appropriate box)</i>			
<input type="checkbox"/> Excluded	<input type="checkbox"/> Section 6004 – NEPA Categorical Exclusions (CEs)	<input checked="" type="checkbox"/>	<input type="checkbox"/> Section 6005 – All NEPA document types (i.e. CEs, EAs, EIS)
Current Programming Dates <i>(as appropriate)</i>			

	PE/Environmental	ENG	ROW	CON
Start	07/01/2008	07/01/2008	N/A	03/01/2012
End	08/30/2009	03/31/2011	N/A	02/28/2015

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

The purpose of the proposed project is to accomplish the following objectives:

- To improve traffic operations at the C Street/Figueroa Street intersection and reduce vehicular delays, and
- To meet the Department's goal of maximizing the performance and accessibility of transportation systems.

The proposed project is needed to improve the existing intersection Level Of Service (LOS), non-standard weaving distance, and traffic circulation within the area. The need for this project is based on an assessment of transportation demand based on current and projected traffic modeling.

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

The proposed project is primarily surrounded by Port of Los Angeles (POLA) related uses. There are residences located to the east and north of the project area. Refer to Figure 5, which is attached for the project area and surrounding land uses.

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

The project traffic engineer, Iteris, Inc., provided only northbound ADT along I-110 for all project alternatives and analysis years. According to the project traffic engineers, ADT would not change between the no-build and build alternatives (Iteris 2009a).

Southbound traffic volumes, corresponding to the northbound segments along I-110 analyzed by the project traffic engineers, for existing conditions (2009) were assumed to be the same as 2008 AADT volumes provided by the Caltrans' Traffic Data Branch. This assumption was based on guidance received at the May 7, 2009 Project Development Team (PDT) meeting from Kirk Patel of Caltrans, District 7. In order to obtain southbound I-110 segment AADT, directional splits data from Caltrans' *Peak Hour Volume Data* document was used (California Department of Transportation n.d.). It was assumed that southbound traffic accounted for 41.78 percent of total AADT¹. Southbound ramp volumes were obtained from Caltrans' Ramp Volumes data (California Department of Transportation n.d.). To obtain southbound AADT for open-to-traffic year (2014) and future design year (2035), growth factors were applied to the extrapolated data. The percentage rate of growth for southbound AADT was assumed to be the same as the percentage rate of growth for the northbound ADT provided by the project traffic engineers. Tables 1 to 6 summarize the growth factors, mainline ADT, on-/off-ramp ADT, mainline truck percentages, on-/off-ramp truck percentages, and LOS for opening-year (2014), respectively.

Table 1. 2014 I-110 Growth Factors

Segment	2008-2014 Growth Percentages
I-110 South of C St Off-Ramp	14.81%
I-110 Off-Ramp to C St	35.39%
I-110 Between C St Off & On Ramps	13.10%
I-110 On-Ramp from C St	8.86%

¹ In the Caltrans' document *Peak Hour Volume Data*, "Dir" indicates the direction of travel for peak volume and "D" stands for D factor, which is the percentage of traffic in the peak direction during the peak hour. 2008 data for I-110 at Post Mile 2.771 was used to determine directional splits. This data indicates that the direction of travel for peak volume is north. The D factor for the a.m. peak hour is 57.57%, and the D factor for the p.m. peak hour is 58.86%. To determine the percentage of southbound traffic, the average of the two D factors was taken. The average (58.22%) was then subtracted from 100% to determine the percentage of southbound traffic (41.78%).

I-110 Between C St On Ramp & Anaheim Off-Ramp	12.54%
Adapted from: Iteris 2009a	

Table 2. 2014 Mainline ADT on I-110

Segment	2014 ^a	Truck ADT ^b
I-110 South of C St Off-Ramp	90,775	15,432
I-110 Between C St Off & On Ramps	86,178	14,650
I-110 Between C St On Ramp & Anaheim Off-Ramp	92,967	18,593

Notes:
Mainline AADT was calculated by summing southbound and northbound AADT for each segment.
^a According to the project traffic engineers, Iteris, Inc., AADT volumes are the same for the build and no-build conditions.
^b Truck ADT was calculated by multiplying the mainline ADT by the truck percentages in Table 4.
Adapted from: Iteris 2009a; Caltrans 2009n.d.

Table 3. 2014 I-110 On-/Off-Ramp ADT

Ramp	2014 ^a	Truck ADT ^b
I-110 Off-Ramp to C St	8,240	1,071
I-110 On-Ramp from C St	8,811	2,996

^a AADT volumes are the same for the build and no-build conditions.
^b Truck ADT was calculated by multiplying the ramp ADT by the truck percentages in Table 5.
Adapted from: Iteris 2009a; Caltrans 2009n.d.

Table 4. 2014 Mainline Truck Percentages

Segment	2014 ^a
I-110 South of C St Off-Ramp	17%
I-110 Between C St Off & On Ramps	17%
I-110 Between C St On Ramp & Anaheim Off-Ramp	20%

Note:
Truck percentages for southbound traffic were assumed to be the same as truck percentages for northbound traffic.
^a Truck percentages are the same for the build and no-build conditions.
Adapted from: Iteris 2009a

Table 5. 2014 I-110 On-/Off-Ramp Truck Percentages

Ramp	2014 ^a
I-110 Off-Ramp to C St	13%
I-110 On-Ramp from C St	34%

^a Truck percentages are the same for the build and no-build conditions.
Adapted from: Iteris 2009a

Table 6. 2014 LOS for Build and No Build Project Conditions

2014 No Build				
Intersection	AM Peak Hour		PM Peak Hour	
	LOS	Delay ^a	LOS	Delay ^a
Figueroa St & I-110 Ramps/C St	F	122.5	F	243.6
Figueroa St/POLA & John S. Gibson Blvd/Harry Bridges Blvd	B	17.9	B	19.0
Average Delay ^b	NA	70.2	NA	131.3
2014 Build				
Intersection	AM Peak Hour		PM Peak Hour	
	LOS	Delay ^a	LOS	Delay ^a
Figueroa St/John S. Gibson Blvd & Harry Bridges Blvd/I-110 Ramps	B	18.5	C	20.4

Note: The intersections analyzed for build and no-build conditions are not the same because the proposed project would replace the two existing intersections (one at C Street/Figueroa Street and the other at John S. Gibson Boulevard/Harry Bridges Boulevard/Figueroa Street) with one new intersection that would align Harry Bridges Boulevard and John S. Gibson Boulevard with the C Street interchange.

^a Delay = Average Vehicle Delay in Seconds

^b Averaging the delay associated with the two no-build intersections to compare the delay with the one build intersection was recommended by the project traffic engineer, Iteris, Inc.

Adapted from: Iteris 2009a; Akkinepally pers. comm.

As shown in Table 6, the two no-build alternative intersections (Figueroa St & I-110 Ramps/C St and Figueroa St/POLA & John S. Gibson Blvd/Harry Bridges Blvd) are represented as one intersection (Figueroa St/John S. Gibson Blvd & Harry Bridges Blvd/I-110 Ramps) under the build alternative. A comparison of intersection delay between the no-build and build alternatives indicates that implementation of the proposed project would result in a substantial improvement in delay at the Figueroa St & I-110 Ramps/C St intersection (122.5 seconds [LOS F] to 18.5 seconds [LOS B] under the AM peak hour and 243.6 seconds [LOS F] to 20.4 seconds [LOS C] under the PM peak hour). At the Figueroa St/POLA & John S. Gibson Blvd/Harry Bridges Blvd intersection, implementation of the proposed project would result in a slight degradation in delay (17.9 seconds [LOS B] to 18.5 seconds [LOS B] under the AM peak hour and 19.0 seconds [LOS B] to 20.4 seconds [LOS C] under the PM peak hour). However, the slight degradation in delay at the Figueroa St/POLA & John S. Gibson Blvd/Harry Bridges Blvd intersection is considered minor when compared to the substantial improvement in delay that would result at the Figueroa St & I-110 Ramps/C St intersection. In addition, when delay is averaged at the two intersections that exist under the no-build alternative and compared to the no-build alternative, the a.m. peak hour delay is reduced from approximately 70.2 seconds to 18.5 seconds, a reduction of 51.7 seconds. Delay for the p.m. peak hour is reduced from approximately 131.3 seconds to 20.4 seconds, a reduction of 110.9 seconds.

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

Please refer to the discussion for opening-year above for data extrapolation methods. Tables 7 through 12 summarize the growth factors, mainline ADT, I-110 On-/Off-Ramp ADT, mainline truck percentages, on-/off-ramp truck percentages, and LOS for design year (2035), respectively.

Table 7. 2035 I-110 Growth Factors

Segment	2008-2035 Growth Percentages
I-110 South of C St Off-Ramp	44.15%
I-110 Off-Ramp to C St	55.20%
I-110 Between C St Off & On Ramps	43.23%
I-110 On-Ramp from C St	8.61%

I-110 Between C St On Ramp & Anaheim Off-Ramp	38.67%
Adapted from: Iteris 2009a	

Table 8. 2035 Mainline ADT on I-110

Segment	2035 ^a	Truck ADT
I-110 South of C St Off-Ramp	113,975	19,376
I-110 Between C St Off & On Ramps	109,139	19,645
I-110 Between C St On Ramp & Anaheim Off-Ramp	114,552	21,765

Notes:
Mainline AADT was calculated by summing southbound and northbound AADT for each segment.
^a According to the project traffic engineers, AADT volumes are the same for the build and no-build conditions.
^b Truck ADT was calculated by multiplying the mainline ADT by the truck percentages in Table 10.
Adapted from: Iteris 2009a; Caltrans 2009n.d.

Table 9. 2035 I-110 On-/Off-Ramp ADT

Ramp	2035 ^a	Truck ADT
I-110 Off-Ramp to C St	9,446	945
I-110 On-Ramp from C St	8,791	3,077

^a AADT volumes are the same for the build and no-build conditions.
^b Truck ADT was calculated by multiplying the ramp ADT by the truck percentages in Table 11.
^c Adapted from: Iteris 2009a

Table 10. 2035 Mainline Truck Percentages

Segment	2035 ^a
I-110 South of C St Off-Ramp	17%
I-110 Between C St Off & On Ramps	18%
I-110 Between C St On Ramp & Anaheim Off-Ramp	19%

Note:
Truck percentages for southbound traffic were assumed to be the same as truck percentages for northbound traffic.
^a Truck percentages are the same for the build and no-build conditions.
Adapted from: Iteris 2009a

Table 11. 2035 I-110 On-/Off-Ramp Truck Percentages

Ramp	2035 ^a
I-110 Off-Ramp to C St	10%
I-110 On-Ramp from C St	35%

^a Truck percentages are the same for the build and no-build conditions.
Adapted from: Iteris 2009a

Table 12. 2035 LOS for Build and No Build Project Conditions

2035 No Build				
Intersection	AM Peak Hour		PM Peak Hour	
	LOS	Delay ^a	LOS	Delay ^a
Figueroa St & I-110 Ramps/C St	F	165.1	F	280.0
Figueroa St/POLA & John S. Gibson Blvd/Harry Bridges Blvd	B	21.5	C	22.8
Average Delay ^b	NA	93.3	NA	151.4
2035 Build				
Intersection	AM Peak Hour		PM Peak Hour	
	LOS	Delay ^a	LOS	Delay ^a
Figueroa St/John S. Gibson Blvd & Harry Bridges Blvd/I-110 Ramps	C	20.5	C	24.4

Note: The intersections analyzed for build and no-build conditions are not the same because the proposed project would replace the two existing intersections (one at C Street/Figueroa Street and the other at John S. Gibson Boulevard/Harry Bridges Boulevard/Figueroa Street) with one new intersection that would align Harry Bridges Boulevard and John S. Gibson Boulevard with the C Street interchange

^a Delay = Average Vehicle Delay in Seconds

^b Averaging the delay associated with the two no-build intersections to compare the delay with the one build intersection was recommended by the project traffic engineer, Iteris, Inc.

Adapted from: Iteris 2009a; Akkinepally pers. comm.

As shown in Table 12, the two no-build alternative intersections (Figueroa St & I-110 Ramps/C St and Figueroa St/POLA & John S. Gibson Blvd/Harry Bridges Blvd) are represented as one intersection (Figueroa St/John S. Gibson Blvd & Harry Bridges Blvd/I-110 Ramps) under the build alternative. A comparison of intersection delay between the no-build and build alternatives indicates that implementation of the proposed project would result in a substantial improvement in delay at the Figueroa St & I-110 Ramps/C St intersection (165.1 seconds [LOS F] to 20.5 seconds [LOS C] under the AM peak hour and 280.0 seconds [LOS F] to 24.4 seconds [LOS C] under the PM peak hour). At the Figueroa St/POLA & John S. Gibson Blvd/Harry Bridges Blvd intersection, implementation of the proposed project would result in a slight degradation in delay (21.5 seconds [LOS B] to 20.5 seconds [LOS C] under the AM peak hour and 22.8 seconds [LOS C] to 24.4 seconds [LOS C] under the PM peak hour). However, the slight degradation in delay at the Figueroa St/POLA & John S. Gibson Blvd/Harry Bridges Blvd intersection is considered minor when compared to the substantial improvement in delay that would result at the Figueroa St & I-110 Ramps/C St intersection. In addition, when delay is averaged at the two intersections that exist under the no-build alternative and compared to the no-build alternative, the a.m. peak hour, delay is reduced from approximately 93.3 seconds to 20.5 seconds, a reduction of 72.8 seconds. Delay for the p.m. peak hour is reduced from approximately 151.4 seconds to 24.4 seconds, a reduction of 127.0 seconds.

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

Table 13. 2014 Cross-Street AADT, Percent Trucks, and Truck AADT

Roadway Segment	AADT ^a	% Trucks ^b	Truck AADT ^c
C St East of Figueroa St	0	0%	0
Figueroa St North of I-110 Ramps	9,701	13%	1,261
John S. Gibson Blvd South of I-110 Ramps	14,177	28%	3,970
Harry Bridges Blvd East of Fig St/JSG Blvd	20,074	33%	6,624

^a According to the project traffic engineers, AADT volumes are the same for the build and no-build conditions.

^b According to the project traffic engineers, the percentage of trucks is the same for the build and no-build conditions.

^c Truck AADT was obtained by multiplying total AADT by the percent trucks.

Source: Iteris 2009b

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

Table 14. 2035 Cross-Street AADT, Percent Trucks, and Truck AADT

Roadway Segment	AAADT ^a	% Trucks ^b	Truck AADT ^c
C St East of Figueroa St	0	0%	0
Figueroa St North of I-110 Ramps	13,069	12%	1,568
John S. Gibson Blvd South of I-110 Ramps	20,066	29%	5,819
Harry Bridges Blvd East of Fig St/JSG Blvd	22,046	31%	6,834

^a According to the project traffic engineers, AADT volumes are the same for the build and no-build conditions.

^b According to the project traffic engineers, the percentage of trucks is the same for the build and no-build conditions.

^c Truck AADT was obtained by multiplying total AADT by the percent trucks.

Source: Iteris 2009b

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

As indicated in Tables 2, 8, 13, and 14, neither mainline nor cross-street AADT is anticipated to change with implementation of the proposed project, as indicated by the project traffic engineers, Iteris, Inc. (Iteris a,b). Although AADT is not anticipated to change, implementation of the proposed project is anticipated to result in a significant reduction in delays at project intersections (Tables 6 and 12).

As indicated in Table 6, implementation of the proposed project would result in a substantial improvement in delay at the Figueroa St & I-110 Ramps/C St intersection (122.5 seconds [LOS F] to 18.5 seconds [LOS B] under the AM peak hour and 243.6 seconds [LOS F] to 20.4 seconds [LOS C] under the PM peak hour). At the Figueroa St/POLA & John S. Gibson Blvd/Harry Bridges Blvd intersection, implementation of the proposed project would result in a slight degradation in delay (17.9 seconds [LOS B] to 18.5 seconds [LOS B] under the AM peak hour and 19.0 seconds [LOS B] to 20.4 seconds [LOS C] under the PM peak hour). However, the slight degradation in delay at the Figueroa St/POLA & John S. Gibson Blvd/Harry Bridges Blvd intersection is considered minor when compared to the substantial improvement in delay that would result at the Figueroa St & I-110 Ramps/C St intersection. In addition, when delay is averaged at the two intersections that exist under the no-build alternative and compared to the no-build alternative, delay for the a.m. peak hour in 2014 is reduced from approximately 70.2 seconds to 18.5 seconds with implementation of the proposed project, a reduction of 51.7 seconds. Delay for the p.m. peak hour in 2014 is reduced from approximately 131.3 seconds to 20.4 seconds with implementation of the proposed project, a reduction of 110.9 seconds.

As indicated in Table 12, the two no-build alternative intersections (Figueroa St & I-110 Ramps/C St and Figueroa St/POLA & John S. Gibson Blvd/Harry Bridges Blvd) are represented as one intersection (Figueroa St/John S. Gibson Blvd & Harry Bridges Blvd/I-110 Ramps) under the build alternative. A comparison of intersection delay between the no-build and build alternatives indicates that implementation of the proposed project would result in a substantial improvement in delay at the Figueroa St & I-110 Ramps/C St intersection (165.1 seconds [LOS F] to 20.5 seconds [LOS C] under the AM peak hour and 280.0 seconds [LOS F] to 24.4 seconds [LOS C] under the PM peak hour). At the Figueroa St/POLA & John S. Gibson Blvd/Harry Bridges Blvd intersection, implementation of the proposed project would result in a slight degradation in delay (21.5 seconds [LOS B] to 20.5 seconds [LOS C] under the AM peak hour and 22.8 seconds [LOS C] to 24.4 seconds [LOS C] under the PM peak hour). However, the slight degradation in delay at the Figueroa St/POLA & John S. Gibson Blvd/Harry Bridges Blvd intersection is considered minor when compared to the substantial improvement in delay that would result at the Figueroa St & I-110 Ramps/C St intersection. In addition, when delay is averaged at the two intersections that exist under the no-build alternative and compared to the no-build alternative, delay for the a.m. peak hour in 2035 is reduced from approximately 93.3 seconds to 20.5 seconds with implementation of the proposed project, a reduction of 72.8 seconds. Delay for the p.m. peak hour in 2035 is reduced from approximately 151.4 seconds to 24.4 seconds with implementation of the

proposed project, a reduction of 127.0 seconds.

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

As shown in Tables 2 and 8, ADT on I-110 is anticipated to exceed the FHWA and EPA's POAQC threshold of 10,000 diesel truck ADT (diesel truck traffic of 8% or more for roadways with 125,000 ADT or more).

However, Tables 4 and 10, which summarize mainline truck percentages for opening- and design-year conditions, respectively, indicate that implementation of the proposed project would not affect diesel truck traffic volumes or percentages between no build and build conditions. Consequently, the build alternative is not considered a POAQC for PM10 and PM2.5 because it would not have an effect on roadway diesel truck traffic volumes or percentages (i.e., effects to truck percentages are below 5% between the no-build and build alternatives). Because the project is not considered a POAQC, the CAA and 40 CFR 93.116 requirements were met without a hot-spot analysis. The build alternatives have been found to not be of air quality concern under 40 CFR 93.123(b)(1).

References:

Printed References:

California Department of Transportation. n.d. *Welcome to the Traffic Data Branch*. Traffic Volumes: 2008, Ramp Volumes: 2008, Peak Hour Volume Data Report. Available: <<http://www.dot.ca.gov/hq/traffops/saferestr/trafdata/index.htm>>. Accessed: September 23, 2009.

Federal Highway Administration and U.S. Environmental Protection Agency. 2006. Transportation conformity guidance for qualitative hot-spot analyses in PM2.5 and PM10 nonattainment and maintenance areas. Washington, D.C.

Iteris. 2009a. *I-110 NB/C Street Interchange Improvement Project*. Segment and Intersection Data. Ontario, CA. July 21.

Iteris. 2009b. *Additional Data C_CST_120809*. Cross-Street ADT Data. Ontario, CA. December 8.

Personal Communications:

Akkinepally, Vamshi. Transportation Engineer. Iteris, Inc., Ontario, CA. December 9, 2009—E-mail transmitting Iteris' responses to Caltrans' comments to ICF International.