

Air Quality Conformity Analysis

Highway 111 Widening and Improvement Project
City of Indio, Riverside County, California

08-Riv-111
STPLN-5275(027)
May 2015

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Section 1. Introduction and Project Description

This Air Quality Conformity Analysis contains the information that is required to make a project-level air quality conformity determination for the Highway 111 Widening and Improvement Project. This analysis has been prepared to be consistent with information published by FHWA related to Project-Level Conformity Analysis, the Standard Environmental Reference (SER) Air Quality Conformity Findings Checklist (included as Appendix A), applicable U.S. EPA project-level analysis guidance, the Transportation Conformity Regulations at 40 CFR 93 Subpart A, and Section 176(c) of the Federal Clean Air Act (42 USC 7506(c)).

This analysis only addresses the conformity requirements of the Federal Clean Air Act. It does not address general air quality analysis or studies conducted for the National Environmental Policy Act (NEPA) or the California Environmental Quality Act (CEQA), and only addresses pollutants for which the project area is designated nonattainment, or attainment with an approved Maintenance SIP, by the U.S. EPA.

This report is intended to provide all information needed by FHWA to make a project-level conformity determination for a project that falls under 23 USC 327 NEPA Assignment to Caltrans; or to support a full project-level conformity determination by Caltrans under 23 CFR 326 NEPA Assignment for projects that require a project-level conformity determination (including regionally significant projects as defined in 40 CFR 93.101), and are categorically excluded from NEPA analysis under 23 CFR 771.117(c)(22) or 23 CFR 771.117(c)(23).

1.1. Project Description

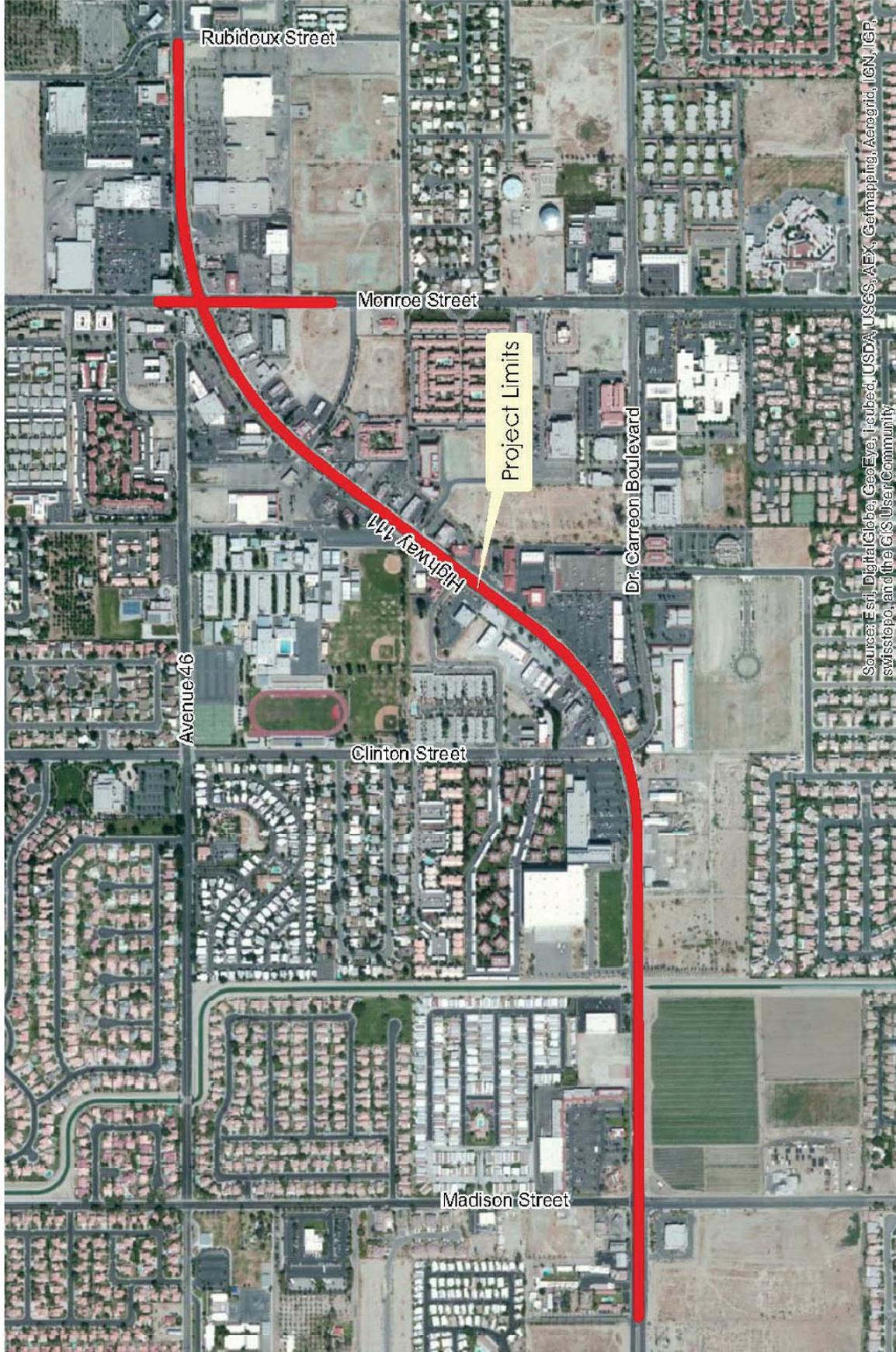
The regional location of the project is shown on Figure 1 and the specific project footprint and construction phasing is shown on Figure 2. The project area extends west from Rubidoux Street to a point approximately 760 feet west of Madison Street. The portion of Highway 111 under evaluation is a widely traveled arterial and according to the Coachella Valley Association of Governments (CVAG) the average daily traffic is expected to double to 55,000 vehicles along this segment by 2035. Currently, the collision rate for Highway 111 between Rubidoux Street and 760 feet west of Madison Street is 46 percent higher than the average collision rate experienced on similar divided highways in urban areas in California. Upon completion of the project, the collision rate is expected to be reduced to 1.85 collisions per million vehicle miles, a reduction of 27 percent.

The proposed project is the preferred alternative. The purpose of the proposed project is to increase the capacity of Highway 111, to improve traffic operations and traffic safety, and achieve the goals of existing local planning documents. Highway 111 is currently a 6-lane

arterial just west of Madison Street and a 6-lane arterial between Monroe Street and Rubidoux Street. By widening the four (4) lane segment to six (6) lanes between Madison Street and Monroe Street, this project will effectively close the gap in traffic circulation and remove the current bottleneck, which will allow for a more efficient flow of traffic. A center median will be installed on the east side of Highway 111 and Madison Street. The improvements will include updates to all traffic signals and all sidewalks, ramps and driveways to current ADA standards. The project will not be a source of increased traffic volumes.

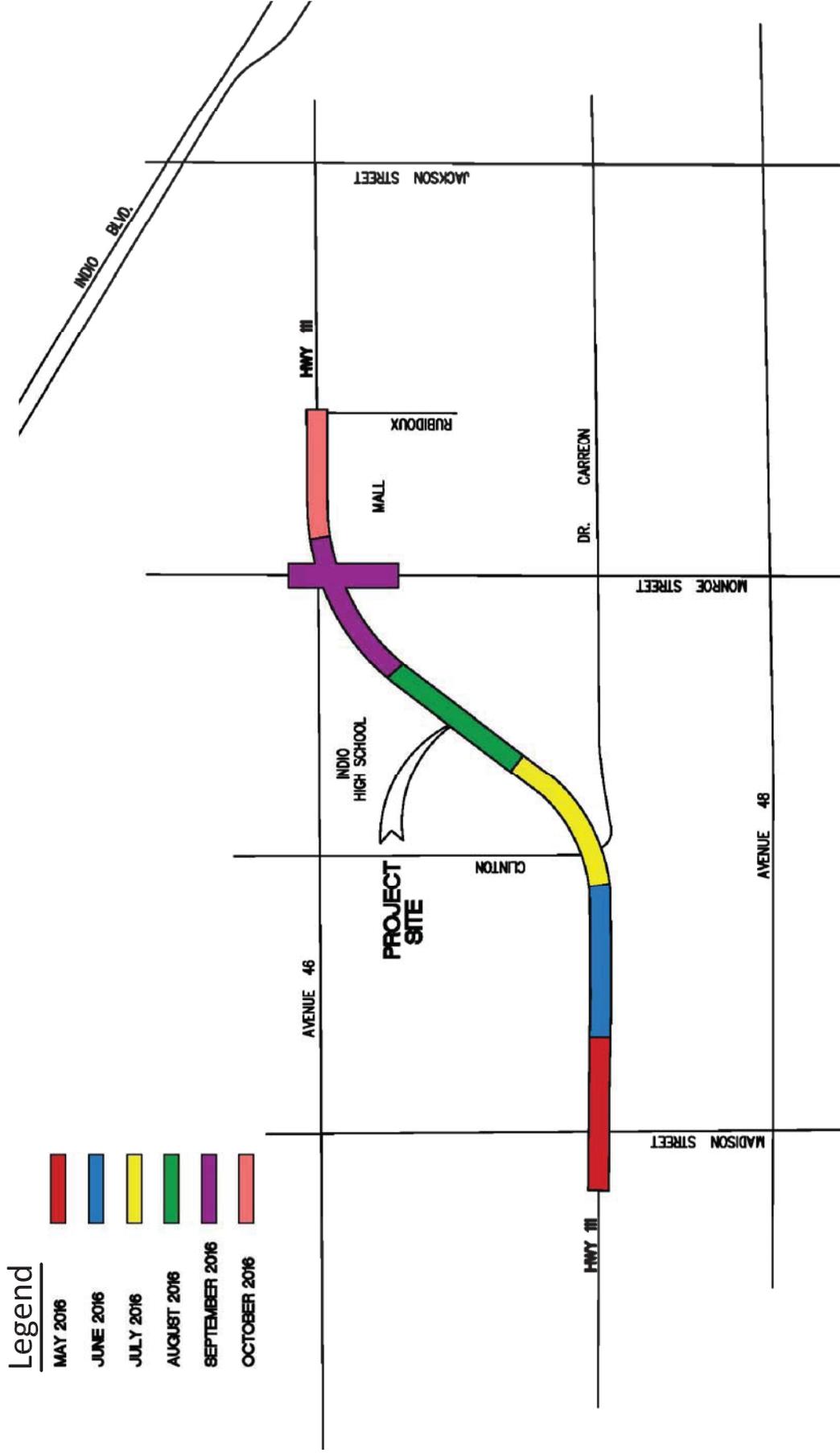
The project will be divided up into six, sequential phases that will not overlap. The entire project will take six months to complete and each phase of the project will last approximately one month. The largest phase of the project is the segment of Highway 111 at Monroe Street, as at this location, the project involves construction along approximately 1,500 feet of Highway 111 and also 400 feet to the north and 400 feet to the south of Highway 111, along Monroe Street. The construction activities for the proposed project include site preparation (removal and processing of the existing paving and construction of drywells and catch basins), paving (overlying of new asphalt paving, sidewalks and driveway rehabilitation), and re-striping of the street (architectural coating). The first phase of the project construction begins at the western end of the improvement alignment (west of Madison Street) and is anticipated to start no earlier than May 2016. The project should be completed by November 2016.

Figure 1
Project Location Map



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Figure 2
Project Footprint and Phasing



1.2. Air Quality Regulatory Framework

Table 1 shows that the proposed project is located in an area that is nonattainment for ozone and particulate matter (PM10) and attainment-maintenance for nitrogen dioxide (NO₂), carbon monoxide (CO) and particulate matter (PM2.5). This analysis focuses on these criteria pollutant(s). The conformity process does not address pollutants for which the area is attainment/unclassified, mobile source air toxics, other toxic air contaminants or hazardous air pollutants, or greenhouse gases.

Table 1. Project Area Attainment Status

Criteria Pollutant	Federal Attainment Status
Ozone (O ₃)	Nonattainment (Severe 15)
Nitrogen Dioxide (NO ₂)	Attainment-Unclassified
Carbon Monoxide (CO)	Attainment-Unclassified
Particulate Matter (PM10)	Nonattainment; (Serious)
Particulate Matter (PM2.5)	Attainment-Unclassified

The project is located in the Riverside portion of the Salton Sea Air Basin (SSAB) which falls under the purview of the South Coast Air Quality Management District (SCAQMD). The SSAB and the Coachella Valley have technically met the PM10 NAAQS and redesignation for attainment for the federal PM10 standard has been requested for both. These requests are still pending with U.S. EPA at this time¹.

1.3. Public Review Comments Related to Air Quality Conformity

Circulation for public comment was not required because the NEPA determination for this project is a Categorical Exclusion.

Section 2. Regional Conformity

The Highway 111 Widening and Improvement Project was included in the regional emissions analysis conducted by Southern California Association of Governments (SCAG) for the conforming 2012-2035 Regional Transportation Plan/ Sustainable Communities Strategy (RTP/SCS): Towards a Sustainable Future. The project's design concept and scope have not changed significantly from what was analyzed in the regional emission analysis. This analysis found that the plan, which takes into account regionally significant projects and financial constraint, will conform to the state implementation plan(s) (SIP(s)) for attaining and/or

¹ Source SCAQMD 2012 AQMP: U.S. EPA has requested additional PM10 monitoring in the southeastern Coachella Valley for a 1-year period to further assess windblown dust in that area. This project is currently ongoing.

maintaining the National Ambient Air Quality Standards (NAAQS) as provided in Section 176(c) of the Clean Air Act. FHWA determined that the RTP conforms to the SIP on July 15, 2013. Additional documentation related to the regional emissions analysis is contained in Appendix B.

The Highway 111 Widening and Improvement Project is also included in the federal 2013 Federal Transportation Improvement Program. The project's open-to-traffic year is consistent with (within the same regional emission analysis period as) the construction completion date identified in the federal TIP and/or RTP. The federal TIP gives priority to eligible Transportation Control Measures (TCMs) identified in the SIP and provides sufficient funds to provide for their implementation. FHWA determined that the TIP conforms to the SIP in December 2014. Documentation related to the public and interagency consultation process conducted to develop the TIP is contained in Appendix B.

Section 3. Localized Impact (Hot-Spot) Conformity

3.1. Carbon Monoxide Hot-Spot Analysis

This project is located in an area that is designated attainment-unclassified for carbon monoxide (CO). Therefore, no project-level conformity analysis is necessary for CO.

3.2. PM2.5/PM10 Hot-Spot Analysis

This project is located in an area that is designated attainment-unclassified for particulate matter (PM2.5). Therefore, no project-level conformity analysis is necessary for PM2.5.

The proposed project is not considered a project of air quality concern (POAQC) for PM10 because it does not meet the definition of a POAQC as defined in U.S. EPA's Transportation Conformity Guidance.

According to the U.S. EPA Transportation Conformity Guidance (Final Rule), March 10 2006 (which did not change in the 2010 guidance), the following types of projects are considered POAQC:

- 1) New or expanded highway projects that have a significant number of or significant increase in diesel vehicles (significant number is defined as greater than 125,000 Annual Average Daily Traffic (AADT) **and** 8% or more of such AADT is diesel truck traffic, or in practice 10,000 truck AADT or more regardless of total AADT; significant increase is defined in practice as a 10% increase in heavy duty truck traffic);

The project is located on Highway 111. According to the Riverside County General Plan Circulation Element, the LOS C design volume for a six-lane arterial is 43,100 ADT. Analysis for the project-related Noise Report shows that automobiles compose 96 percent of the traffic, medium trucks make up three percent and heavy trucks make up one percent. Therefore, as diesel emissions are sourced primarily from heavy trucks, the project will not involve a significant increase in diesel vehicles and as the road design volume is far less than 125,000 ADT, the project would not be considered to be a POAQC.

- 2) Projects affecting intersections that are at a Level of Service D, E, F, with a significant number of diesel vehicles, or that 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;

According to the Highway 111 Street Widening Project Operational Evaluation (2013 Albert Grover & Associates), with project improvements, the intersection of Madison Street at Highway 111 would operate at an LOS of D from 2 pm to 4 pm; the intersection of Monroe Street at Highway 111 would also operate at an LOS of D from 2 pm to 4 pm. The existing LOS was not given in the traffic report from Albert Grover & Associates. However, as stated above, the project will not have a significant amount of diesel vehicles (less than eight percent). Therefore, the project will not affect intersections that are at a Level of Service D, E, F, with a significant number of diesel vehicles, or that 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 and the project would not be considered to be a POAQC.

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

The project does not involve the construction or operation of new and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location. Therefore, the project would not be considered to be a POAQC.

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

The project does not involve the expansion of bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location. Therefore, the project would not be considered to be a POAQC.

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

As stated above, the Basin and the Coachella Valley have technically met the PM10 NAAQS and redesignation for attainment for the federal PM10 standard has been requested for both. These requests are still pending with U.S. EPA at this time. The project location is not identified in the PM10 implementation plan as a site of possible violation. Therefore, the project would not be considered to be a POAQC.

The project does not meet any of the criteria for being considered a POAQC. Therefore, a PM hot-spot analysis is not required. Supporting documentation can be found in Appendix C.

The approved South Coast Air Quality Management District Final 2003 Coachella Valley PM10 State Implementation Plan (SIP) has no control measures applicable to the proposed project. Therefore, a written commitment to implement control measures is not required.

The approved RTP and TIP for the project area has no PM mitigation or control measures that relate to the project's construction or operation. Therefore, a written commitment to implement PM control measures is not required.

3.3. Construction-Related Hot-Spot Emissions

40 CFR 93.123(c)(5) states that: "CO, PM10 , and PM2.5 hot-spot analyses are not required to consider construction-related activities which cause temporary increases in emissions. Each site which is affected by construction-related activities shall be considered separately, using established 'Guideline' methods. Temporary increases are defined as those which occur only during the construction phase and last five years or less at any individual site."

Because construction of the project is expected to last less than five years, construction-related emissions related to it are not considered in the project-level or regional conformity analysis.

Appendix A. Standard Environmental Reference (SER) Air Quality Conformity Findings Checklist

Transportation Air Quality Conformity Findings Checklist

Project Name:	Highway 111 Widening and Improvement Project		
Dist-Co-Rte-PM:	08-Riv-111	EA:	#####
Federal-Aid No.:	STPLN-5275(027)		
Document Type:	<input type="checkbox"/> 23 USC 326 CE	<input checked="" type="checkbox"/> 23 USC 327 CE	<input type="checkbox"/> EA <input type="checkbox"/> EIS

Step 1. Is the project located in a nonattainment or maintenance area for ozone, nitrogen dioxide, carbon monoxide (CO), PM2.5, or PM10 per EPA's [Green Book](#) listing of non-attainment areas?

If no, go to Step 17. **Transportation conformity does not apply to the project.**

If yes, go to Step 2.

Step 2. Is the project exempt from conformity per [40 CFR 93.126](#) or [40 CFR 93.128](#)?

If yes, go to Step 17. **The project is exempt from all project-level conformity requirements (40 CFR 93.126 or 128)** (check one box below and identify the project type, if applicable).

40 CFR 93.126 Project type: _____

40 CFR 93.128

If no, go to Step 3.

Step 3. Is the project exempt from regional conformity per [40 CFR 93.127](#)?

If yes, go to Step 8. **The project is exempt from regional conformity requirements (40 CFR 93.127)** (identify the project type). Project type: _____

If no, go to Step 4.

Step 4. Is the project located in a region with a currently conforming RTP and TIP?

If yes, **the project is included in a currently conforming RTP and TIP per 40 CFR 93.115. The project's design and scope have not changed significantly from what was assumed in RTP conformity analysis (40 CFR 93.115[b])** Go to Step 8.

If no and the project is located in an isolated rural area, go to Step 5.

If no and the project is not located in an isolated rural area, STOP and do not proceed until a conforming RTP and TIP are adopted.

Step 5. For isolated rural areas, is the project regionally significant per 40 CFR 93.101, based on review by Interagency Consultation?

If yes, go to Step 6.

If no, go to Step 8. **The project, located in an isolated rural area, is not regionally significant and does not require a regional emissions analysis (40 CFR 93.101 and 93.109[!]).**

Step 6. Is the project included in another regional conformity analysis that meets the isolated rural area analysis requirements per 40 CFR 93.109, including Interagency Consultation and public involvement?

If yes, go to Step 8. **The project, located in an isolated rural area, has met its regional analysis requirements through inclusion in a previously-approved regional conformity analysis that meets current requirements (40 CFR 93.109[!]).**

If no, go to Step 7.

Step 7. The project, located in an isolated rural area, requires a separate regional emissions analysis.

Regional emissions analysis for regionally significant project, located in an isolated rural area, is complete. Regional conformity analysis was conducted that includes the project and reasonably foreseeable regionally significant projects for at least 20 years. Interagency Consultation and public participation were conducted. Based on the analysis, the interim or emission budget conformity tests applicable to the area are met (40 CFR 93.109[!] and 95.105).¹ Go to Step 8.

Step 8. Is the project located in a CO nonattainment or maintenance area?

If no, go to Step 9. **CO conformity analysis is not required.**

If yes, **hot-spot analysis requirements for CO per the [CO Protocol](#) (or per EPA's modeling guidance, CAL3QHCR can be used with EMFAC emission factors²) have been met. Project will not cause or contribute to a new localized CO violation (40 CFR 93.116 and 93.123)³.** Go to Step 9.

¹ The analysis must support this conclusion before going to the next step.

² Use of the CO Protocol is strongly recommended due to its use of screening methods to minimize the need for modeling. When modeling is needed, the Protocol simplifies the modeling approach. Use of CAL3QHCR must follow U.S. EPA's latest CO hot spot guidance, using EMFAC instead of MOVES; see: <http://www.epa.gov/otaq/stateresources/transconf/projectlevel-hotspot.htm#co-hotspot>.

³ As of October 1, 2007, there are no CO nonattainment areas in California. Therefore, the requirements to not worsen existing violations and to reduce/eliminate existing violations do not apply.

<p>Step 9. Is the project located in a PM10 and/or a PM2.5 nonattainment or maintenance area?</p> <p><input type="checkbox"/> If no, go to Step 13. PM2.5/PM10 conformity analysis is not required.</p> <p><input checked="" type="checkbox"/> If yes, go to Step 10.</p>
<p>Step 10. Is the project considered to be a Project of Air Quality Concern (POAQC), as described in EPA's Transportation Conformity Guidance for PM 10 and PM 2.5?</p> <p><input checked="" type="checkbox"/> If no, the project is not a project of concern for PM10 and/or PM2.5 hot-spot analysis based on 40 CFR 93.116 and 93.123 and EPA's Hot-Spot Analysis Guidance. The project is designed to improve traffic flow and vehicle speeds, and does not involve any increases in idling. Thus, the project would be expected to have a neutral or positive influence on PM emissions. Interagency Consultation concurred with this determination on <u>none requested on PES.</u> Go to Step 12.</p> <p><input type="checkbox"/> If yes, go to Step 11.</p>
<p>Step 11. The project is a POAQC.</p> <p><input type="checkbox"/> The project is a project of concern for PM10 and/or PM2.5 hot-spot analysis based on 40 CFR 93.116 and 93.123, and EPA's Hot-Spot Guidance. Interagency Consultation concurred with this determination on [REDACTED]. Detailed PM hot-spot analysis, consistent with 40 CFR 93.116 and 93.123 and EPA's Hot-Spot Guidance, shows that the project would not cause or contribute to, or worsen, any new localized violation of PM10 and/or PM2.5 standards. Go to Step 12.</p>
<p>Step 12. Does the approved PM SIP include any PM10 and/or PM2.5 control measures that apply to the project, and has a written commitment been made as part of the air quality analysis to implement the identified SIP control measures?</p> <p><input checked="" type="checkbox"/> If yes, a written commitment is made to implement the identified SIP control measures for PM10 and/or PM2.5 through construction or operation of this project (40 CFR 93.117).</p> <p><input type="checkbox"/> If no, go to Step 13.</p>
<p>Step 13a. Have project-level mitigation or control measures for CO, PM10, and/or PM2.5, included as part of the project's design concept and scope, been identified as a condition of the RTP or TIP conformity determination? AND/OR</p> <p>Step 13b. Are project-level mitigation or control measures for CO, PM10, and/or PM2.5 included in the project's NEPA document?</p> <p>AND</p> <p>Step 13c (applies only if Step 13a and/or 13b are answered "yes"). Has a written commitment been made as part of the air quality analysis to implement the identified measures?</p> <p><input type="checkbox"/> If yes to 13a and/or 13b and 13c, a written commitment is made to implement the identified mitigation or control measures for CO, PM10, and/or PM2.5 through construction or operation of this project. These mitigation or control measures are identified in the project's NEPA document and/or as conditions of the RTP or TIP conformity determination.¹ (40 CFR 93.125(a))</p> <p><input type="checkbox"/> If no, go to Step 14</p>
<p>Step 14. Does the project qualify for a 771.117(c)(22) or 771.117(c)(23) Categorical Exclusion pursuant to 23 USC 326 and is an Air Quality Conformity Analysis required to document any analysis required by Steps 1 through 13 of this form?</p> <p><input type="checkbox"/> If yes, then Caltrans prepares the Air Quality Conformity Analysis and makes the conformity determination. No FHWA involvement is required. See the AQCA Annotated Outline. Go to Step 17.</p> <p><input type="checkbox"/> If no, go to Step 15.</p>
<p>Step 15. Does the project qualify for any other Categorical Exclusion pursuant to 23 USC 326 (but NOT 771.117(c)(22) or 771.117(c)(23))?</p> <p><input type="checkbox"/> If yes, then no FHWA involvement is required and Caltrans makes the conformity determination through its signature on the CE form. An Air Quality Conformity Analysis (AQCA) is not needed. Go to Step 17.</p> <p><input type="checkbox"/> If no, go to Step 16.</p>
<p>Step 16. Does the project require preparation of a Categorical Exclusion, EA, or EIS pursuant to 23 USC 327?</p> <p><input type="checkbox"/> If yes, then Caltrans submits a conformity determination to FHWA for FHWA's conformity determination. An AQCA is needed. See the AQCA Annotated Outline.</p> <p>Date of FHWA air quality conformity determination: #####</p> <p>Go to Step 17.</p>
<p>Step 17. STOP as all air quality conformity requirements have been met.</p>
<p>Signature: _____</p> <p>Printed Name: ##### _____ Date: ##### _____</p> <p>Title: ##### _____</p>

Appendix B. Documentation Related to Regional Conformity

Regional Emissions Analysis Conducted for Conforming RTP

The regional emissions analysis found that regional emissions will not exceed the SIP's emission budgets for mobile sources in the build year, a horizon year at least 20 years from when conformity analysis started, and additional years meeting conformity regulation requirements for periodic analysis. The regional emissions analysis was based on the latest population and employment projections for the Coachella Valley that were adopted by the SCAG at the time the conformity analysis was started in 2011. These assumptions are less than five years old. The modeling was conducted using current and future population, employment, traffic, and congestion estimates. The traffic data, including the fleet mix data, were based on the most recently available vehicle registration data included in the EMFAC model. EMFAC 2007 was used, which was the most recent version of the model developed by the California Air Resources Board and approved for use in California by the U.S. EPA at the time of the analysis.

Public and Interagency Consultation Process for TIP

The federal TIP was developed in accordance with SCAG's policies for community input and interagency consultation procedures. These procedures ensure that the public has adequate opportunity to be informed of the federal TIP development process and encourages public participation and comment.



U.S. Department
of Transportation
**Federal Highway
Administration**

California Division

July 15, 2013

650 Capitol Mall, Suite 4-100
Sacramento, CA 95814
(916) 498-5001
(916) 498-5008 (fax)

In Reply Refer To:
HDA-CA

Mr. Hasan Ikhtrata
Executive Director
Southern California Association of Governments
818 West 7th Street, 12th Floor
Los Angeles, CA 90017

SUBJECT: Conformity Determination for SCAG's 2012-2035 RTP/ SCS through
Amendment No. 1 and the 2013 FTIP through Amendment No. 13-04

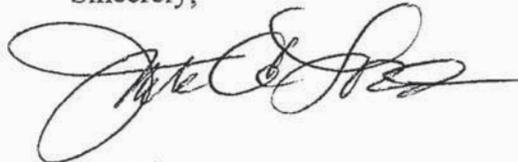
Dear Mr. Ikhtrata:

The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have completed our review of the conformity determination for Southern California Association of Governments' (SCAG's) 2012-2035 Regional Transportation Plan (RTP)/ Sustainable Communities Strategy (SCS) through Amendment No. 1 and the 2013 Federal Transportation Improvement Program (FTIP) through Amendment No. 13-04. A FHWA/FTA air quality conformity determination is required pursuant to the Environmental Protection Agency's (EPA) *Transportation Conformity Rule*, 40 CFR Parts 51 and 93, and the United States Department of Transportation's *Metropolitan Planning Rule*, 23 CFR Part 450.

On June 6, 2013, SCAG adopted Amendment No. 1 to the 2012-2035 RTP/ SCS, Amendment No. 13-04 to the 2013 FTIP, and the corresponding conformity determination. The conformity analysis submitted by SCAG indicates that all air quality conformity requirements have been met. Based on our review, we find that Amendment No. 1 to the 2012-2035 RTP/ SCS and Amendment No. 13-04 to the 2013 FTIP conform to the applicable state implementation plan in accordance with the provisions of 40 CFR Parts 51 and 93. In accordance with the July 15, 2004, *Memorandum of Understanding (MOU) between the Federal Highway Administration, California Division and the Federal Transit Administration, Region IX*, FTA has concurred with this conformity determination. Additionally, this conformity determination was made after consultation with the EPA Region 9 office.

If you have questions or need additional information concerning this conformity determination, please contact Mr. Stew Sonnenberg of the FHWA California Division office at (916) 498-5889 or by email at Stew.Sonnenberg@dot.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Vincent P. Mammano". The signature is fluid and cursive, with a large initial "V" and "M".

/s/ Leslie T. Rodgers

Leslie T. Rogers
Regional Administrator
Federal Transit Administration

For: Vincent P. Mammano
Division Administrator
Federal Highway Administration

Appendix C. Particulate Matter (PM10 and PM2.5) Conformity Assessment – Project is not a Project of Air Quality Concern (POAQC)

1.1 Summary

This project is located in Indio, Riverside County, on Highway 111 and the Salton Sea Air Basin (SSAB). The SSAB is designated as nonattainment for PM10 National Ambient Air Quality Standards (NAAQS). However, the SSAB and the Coachella Valley have technically met the PM10 NAAQS and redesignation for attainment for the federal PM10 standard has been requested for both. These requests are still pending with U.S. EPA at this time. The proposed Highway 111 Widening and Improvement Project is primarily surrounded by commercial uses. Details on surrounding land uses are given below:

Land uses from East to West

Rubidoux Street to Monroe Street

With the exception of the vacant property on the southeast corner of Highway 111 and Rubidoux Street, all land uses are commercial in nature and include the Indio Fiesta Mall, sit-down and fast food restaurants, a gasoline fueling station, banking institution, grocery store, drugstore, etc. The vacant lot previously mentioned has approximately 155 linear feet of street frontage onto Highway 111.

Monroe Street to Clinton Street

Land uses vary from commercial retail to medical professional offices, fast food and sit-down restaurants, banking institutions, a large commercial center, specialty shops, and a parking lot for Indio High School.

Clinton Street to Coachella branch of the All American Canal

A large furniture store, a parking lot and a grassy lot comprise almost entirely the north side of Highway 111. The south side includes three businesses related to flooring and landscaping; with the majority composed of vacant land.

Coachella branch of the All-American Canal to Madison Street

The north side of Highway 111 includes automobile related uses, a banking institution, and commercial retail center. Approximately 310 linear feet of a vacant lot abuts Highway 111 between the Pep Boys Auto Parts and Service and the commercial center. The south side is entirely agricultural use, classified as Prime Farmland (approximately 1,212 linear feet abutting Highway 111), by the California Department of Conservation, Division of Land Resource Protection. Madison Street Produce, which operates seasonally, is a member of the Riverside County Ag Trail. The proposed street improvements will not alter or affect the properties and they are both designated Mixed Use Land Use on the 2007 General Plan Map.

Madison Street to 760 feet west

This area is almost completely comprised of automobile related, hospitality, and commercial uses. There is a residential use, Bermuda Palms, a 55+ manufactured home community, just to the northwest of western terminus of the highway improvement alignment. The south side of the highway includes a vacant lot and a drugstore. The south side of Highway 111, west of Madison Street will receive the least amount of street improvement upgrades.

According to the U.S. EPA's 2006 and 2010 Guidance documents, PM hot-spot analysis is required only for projects of local air quality concern ("Projects of Air Quality Concern" or POAQC) in nonattainment and maintenance areas for PM10 and/or PM2.5. Projects that are exempt from conformity requirements (listed in 40 CFR 93.126 or 128) do not need any hot-spot analysis for project-level conformity purposes. Based on the information provided below, this non-exempt project is not a project of local air quality concern (POAQC) because it does not meet U.S. EPA criteria; therefore, a detailed hot-spot analysis for PM10 or PM2.5 is not required.

1.2 Background

Section 93.116(a) of 40 Code of Federal Regulations (CFR) states that an FHWA/FTA project must not cause or contribute to any new localized PM_{2.5} violations or increase the frequency or severity of any existing PM10 and PM2.5 violations in nonattainment or maintenance areas. The regulations further state that projects may satisfy this requirement without an analysis of their potential to create PM hot-spots provided that they do not meet the criteria set forth in Section 93.123 (b) for POAQC. Projects that are not a POAQC do not require detailed hot-spot analysis because, generally, they would not substantially affect high-priority PM10 or PM2.5 (as applicable) concentrations and are unlikely to cause or contribute to new or continued localized violation of the NAAQS.

With regard to local air quality impacts analysis, a project may be considered to have one of three types of status: (1) exempt; (2) not exempt but not a POAQC based on the specific parameters established in the U.S. EPA regulations; and (3) a POAQC, which requires that a qualitative hot-spot analysis be conducted. The Highway 111 Widening and Improvement Project does not meet the definition of an exempt project under Sections 93.126 or 93.128.

The U.S. EPA Transportation Conformity Rule defines projects of localized air quality concern (POAQC), requiring detailed PM10 and PM2.5 hot-spot analysis, in 40 CFR 93.123(b)(1) as:

- (i) New or expanded highway projects that have a significant number of or significant increase in diesel vehicles;
- (ii) Projects affecting intersections that are at LOS D, E, or F with a significant number of diesel vehicles, or those that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;
- (iii) New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;
- (iv) Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; and

- (v) Projects in or affecting locations, areas, or categories of sites that are identified in the PM_{2.5} and PM₁₀ applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

1.3 Project is Not a Project of Local Air Quality Concern (POAQC)

The Highway 111 Widening and Improvement Project does not fall within any of the above five categories of projects considered to be POAQCs, as explained below.

- i. *The proposed project is not a new or expanded highway project and is not considered to significantly affect diesel truck traffic on Highway 111.* The proposed project is a safety and improvements project that does not increase the volume of traffic along Highway 111. This type of project improves highway operations by reducing traffic congestion at existing interchanges or intersections and improving merge operations. Based on the Highway 111 Street Widening Project Operational Evaluation report (2013 Albert Grover & Associates) and the Riverside County General Plan Circulation Element, the traffic volumes along Highway 111] would not approach or exceed the 125,000 AADT criterion for a POAQC. In addition, the total truck volume would remain below the 10,000 AADT criterion (8% of 125,000 AADT) for POAQC. According to the Riverside County General Plan, the LOS C design volumes on Highway 111 will be 43,100 ADT. As analyzed in Caltrans Noise Study Report (NSR) for this project, automobiles compose 96 percent of the traffic, medium trucks make up three percent and heavy trucks make up one percent. Therefore, as diesel emissions are sourced primarily from heavy trucks, the project will not involve a significant increase in diesel vehicles and as the road design volume is far less than 125,000 ADT, the project would not be considered to be a POAQC.
- ii. *The proposed project does not affect intersections that are at level of service (LOS) D, E, or F with a significant number of diesel vehicles.* According to the Highway 111 Street Widening Project Operational Evaluation (2013 Albert Grover & Associates), with project improvements, the intersection of Madison Street at Highway 111 would operate at an LOS of D from 2 pm to 4 pm; the intersection of Monroe Street at Highway 111 would also operate at an LOS of D from 2 pm to 4 pm. The existing LOS was not given in the traffic report from Albert Grover & Associates; however, the project would not be a source of vehicular traffic. Furthermore, as stated above, the project will not have a significant amount of diesel vehicles (less than eight percent). Therefore, the project will not affect intersections that are at a Level of Service D, E, F, with a significant number of diesel vehicles, or that 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 and the project would not be considered to be a POAQC.
- iii. *The proposed project does not include the construction of a new bus or rail terminal.*
- iv. *The proposed project does not expand an existing bus or rail terminal.*
- v. *The proposed project is not in or affecting locations, areas, or categories of sites that are identified in the PM₁₀ and PM_{2.5} applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.*

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

Conclusion:

There is no reason to believe that this project would create a new violation or worsen an existing violation of the PM10 & PM2.5 National Ambient Air Quality Standards (NAAQS). This project does not meet the U.S. EPA criteria for being a Project of Local Air Quality Concern (POAQC).

1.4 Public Involvement Process:

This project was categorically excluded from NEPA requirements. Therefore no public circulation of this hot-spot review or an updated conformity determination is required.

**HIGHWAY 111
STREET WIDENING PROJECT
(PROJECT NO. ST1305)**

OPERATIONAL EVALUATION

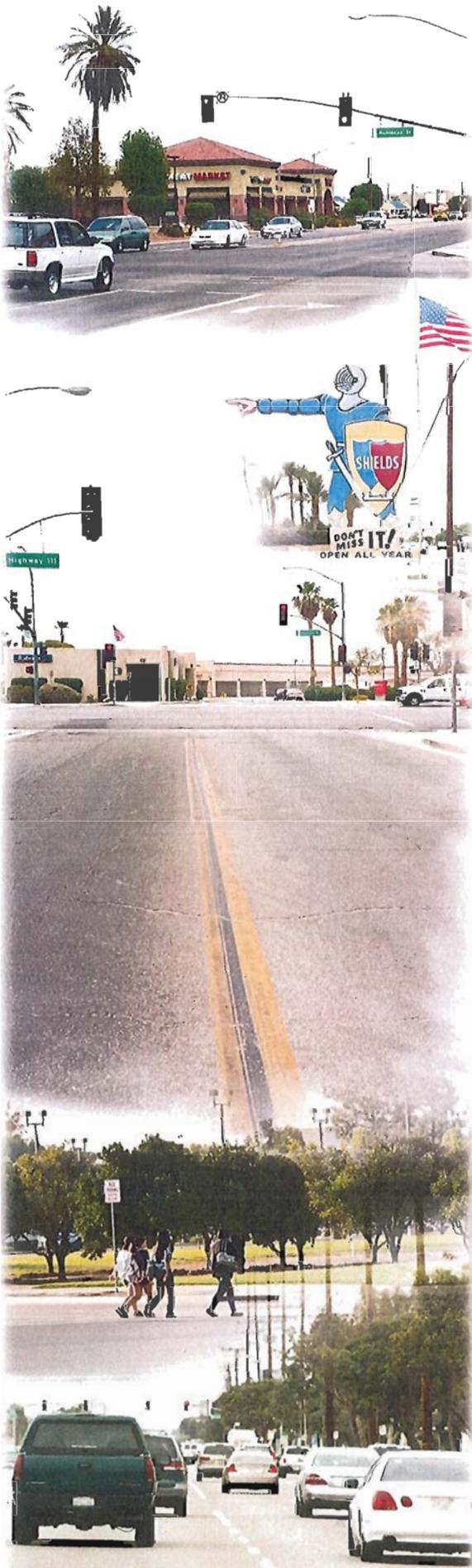
SUBMITTED TO

CITY OF INДИО
PUBLIC WORKS DEPARTMENT

OCTOBER 23, 2013

SUBMITTED BY

**ALBERT
GROVER &
ASSOCIATES**





October 23, 2013

Mr. Tom Brohard
City Traffic Engineer
City of Indio
100 Civic Center Mall
Indio, California 92201

RE: Highway 111 Street Widening Project Operational Evaluation

Dear Mr. Brohard:

Albert Grover & Associates (AGA) is pleased to present the following letter report which summarizes the operational evaluation findings and recommendations for the Highway 111 Street Widening Project. The Highway 111 Widening Project is a City of Indio project that proposes to widen Highway 111 to a six lane arterial between Madison Street to the West and Rubidoux Street to the East. The following six signalized intersections along Highway 111 are analyzed in this report:

- Madison Street
- Clinton Street/Dr. Carreon Boulevard
- Las Palmas Road
- Monroe Street
- Fashion Mall/Cardenas Center
- Rubidoux Street

EVALUATION METHODOLOGIES

Recommendations are based on discussions with City staff, field review/observations, traffic flow patterns, pedestrian/bicycle activity, peak hour turning movement counts collected during the AM (6:30 to 7:30 am), Midday (11am to 1pm), after school dismissal (2 to 4 pm) and PM (4 to 6 pm) time period and engineering expertise. Vehicle turning movement, pedestrian and bicycle counts were collected on September 10, 2013 (after school resumed). The counts are provided in Attachment A. To account for peaks in traffic demand the peak hour factors were utilized, so that design is based on the highest 15 minute volume within the peak period. A 10% growth rate was also applied to existing traffic volumes to account for future traffic demand. WEBSTER Software was utilized for intersection analysis, and our extensive engineering expertise and experience was used to establish the most efficient design cycle length to determine appropriate lane usage, turn storage length requirements, and intersection signal phasing.

The engineering approach to this project was to determine what traffic flow operational changes should be made in conjunction with the street widening project in order to create the most efficiently coordinated arterial upon completion of construction. To do so, various existing

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operational issues needed to be mitigated. Those issues include the following:

- Eastbound lane drop east of Madison Street at Highway 111
- Lack of northbound left turn capacity at the intersection of Clinton Street/Dr. Carreon Boulevard and Highway 111
- Las Palmas Road at Highway 111 congestion due to inefficient split phase operation
- Lack of eastbound left turn capacity at the intersection of Monroe Street at Highway 111
- Extensive unsafe jaywalking, especially between Clinton Street/Dr. Carreon Boulevard and Rubidoux Street

These issues are not necessarily independent of each other; for example, it is known that pedestrians are more inclined to jaywalk when the wait time is long at designated crosswalks. A long cycle length to coordinate inefficient signals, combined with split phase operation at Las Palmas Road, can result in extended pedestrian wait time, hence jaywalking. Therefore, the goal was to mitigate existing problems to achieve the shortest viable system cycle length of 90 seconds to serve vehicle, pedestrians and bicyclists. This required the addition of left turn lanes, removal of split phasing at Las Palmas Road, removal of some crosswalks, and the prohibition of left turns by bicyclists at two intersections. Crosswalks were only removed where pedestrian usage was low and bicycle left turn prohibition was due to extremely low bicycle use in the area. The resulting system will minimize pollution and vehicle delay while providing adequate bicycle and pedestrian access and timing. Required adequate bicycle timing for the through movements will be provided on all approaches.

PROPOSED GEOMETRICS

Madison Street at Highway 111: Improvements at this intersection include the addition of a third westbound through turn lane, and the continuation of the eastbound through curb lane, thereby removing the existing lane drop directly east of the intersection. The improvements also include the narrowing of the raised median to only allow for single eastbound and westbound left turn pockets. The raised median on the east leg will be extended to restrict access to right turn only (no left turn) into the west Stater Brothers shopping center driveway on Highway 111 (full access will continue to be provided at the easterly shopping center driveway).

Clinton Street/Dr. Carreon Boulevard at Highway 111: The turning movement counts at this intersection show that the eastbound right turn volumes are over 300 vehicles per hour (vph), and are equal to approximately 50% of the eastbound thru volumes; therefore the proposed mitigations include the addition of a dedicated eastbound right turn only lane with a right turn overlap (the eastbound right turn overlap will operate in conjunction with the northbound left turn movement, resulting in No U-Turns permitted from the northbound left turn lane). Further improvements include the addition of a third westbound through lane and restriping the northbound lanes to dual left turn lanes and a shared through/right turn lane. The dual northbound left turn lanes are recommended to accommodate the approximate 300 vph demand for that movement. Because northbound drivers are used to two lanes, additional signing and striping will be used on Dr. Carreon to provide enhanced warning to drivers about the lane modification. In order to satisfy the vehicle demand, and reduce delay (caused by pedestrian crossing) for the northbound shared through/right turn lane, it is recommended that the east leg

crosswalk be removed. The pedestrian counts collected show that the pedestrian usage of the east crosswalk is minimal. The recommended improvements at the intersection of Highway 111 at Clinton Street/Dr. Carreon Boulevard are shown on Figure 1. As part of this project, signal timing will be updated to include bicycle clearance timing. However, for safety reasons and to provide an optimized coordination cycle length, bicycle timing will not be implemented for any left turn phases at this intersection. Bicyclists will be restricted from turning left from any left turn pockets at this intersection. The following modified R13b(CA) signs will be added for all left turn approaches.



Las Palmas Road at Highway 111: The improvements at this intersection include the removal of the existing split phase operation for the northbound and southbound movements. By removing split phasing, the northbound and southbound movements will occur concurrently, thereby reducing the delay and time required to satisfy each movement. It is recommended that the northbound and southbound operate with Flashing Yellow Protected Permissive Left Turn (FYPPLT) phasing to reduce the excessive queuing and delay that was observed at the north leg of this intersection. FYPPLT has the programming capabilities of having the north/south left turn phasing operate in Protected Only mode (no permissive left turn) during morning and afternoon school activity or other critical periods of the day. This capability provides enhanced safety during the peak pedestrian periods. Warning flags and signing will be provided to inform motorist of the change in signal operation. The north and south legs of the intersection will need to be restriped to provide proper alignment. The southbound movement striping will include a left turn lane and a shared through/right turn lane. The additional southbound lane and the FYPPLT phasing reduces the queuing, and results in less congestion. Also, to help prevent the inbound lane of the north leg of the intersection from being blocked, STOP control is recommended for the vehicles approaching from the Bank of America Parking lot (or cut through traffic from Avenue 46). Pedestrian activity is minimal for the east leg crosswalk; therefore, the removal of this crosswalk is recommended in order to provide more efficient operation at this intersection. Project improvements also include the addition of a third eastbound and westbound through lane. Proposed geometrics for this intersection are detailed on Figure 2.

Monroe Street at Highway 111: Geometric improvements at Monroe Street and Highway 111 include the addition of a second eastbound left turn lane and the striping of a third westbound through lane. Similar to the intersection of Clinton Street/Dr. Carreon Boulevard at Highway 111, all left turn movements will be restricted for bicyclists at this intersection.

Fashion Mall/Cardenas Center at Highway 111 and Rubidoux Street at Highway 111: The intersections of Fashion Mall/Cardenas Entrance/Highway 111 and Rubidoux Street/Highway 111 do not require geometric improvements.

LEVEL OF SERVICE

Table 1 summarizes Level of Service (LOS) results with the proposed project improvements. WEBSTER analysis worksheets are provided in Attachment B.

Table 1		
LOS, Delay & V/C With Mitigation		
	Delay	Delay LOS
Madison Street at Highway 111		
AM	34	C
Midday	33	C
PM 2-4	36	D
PM 4-6	34	C
Clinton Street/Dr. Carreon Blvd at Highway 111		
AM	30	C
Midday	31	C
PM 2-4	33	C
PM 4-6	33	C
Las Palmas Road at Highway 111		
AM	31	C
Midday	24	C
PM 2-4	28	C
PM 4-6	26	C
Monroe Street at Highway 111		
AM	33	C
Midday	34	C
PM 2-4	36	D
PM 4-6	33	C
Fashion Mall/Cardenas Center at Highway 111		
AM	16	B
Midday	20	B
PM 2-4	19	B
PM 4-6	18	B
Rubidoux Street at Highway 111		
AM	19	B
Midday	20	B
PM 2-4	20	B
PM 4-6	20	B

QUEUING ANALYSIS

A length of 25 feet per vehicle was used in the queuing analyses. To avoid vehicle overflow in the turn pockets, the design queue of one and a half times the average queue was used in determining required turn pocket storage. The storage requirements take into consideration the queue of the through movement to allow the turning vehicle to access the turn pocket. Table 2 provides the recommended storage for the left and right turn pockets.

Table 2 Recommended Left and Right Turn Storage (feet) Per Lane								
	Eastbound		Westbound		Northbound		Southbound	
	Left	Right	Left	Right	Left	Right	Left	Right
Madison Street at Highway 111								
	275	200	350		300*		225*	
Clinton Street/Dr. Carreon Blvd at Highway 111								
	250	200	275*		275		200	
Las Palmas Road at Highway 111								
	275		275		225		50	
Monroe Street at Highway 111								
	225		250	160	**		200	
Fashion Mall/Cardenas Center at Highway 111								
	225		150		**		**	
Rubidoux Street at Highway 111								
	200	225	150		**		**	

 Shared Through/Right Lane

* The beginning of the left turn pocket is currently striped as a two-way left turn lane which provides for the required storage.

** No Change from existing

SIGNAL SYSTEM HARDWARE

Field review/inventory of existing traffic signal control system hardware at the project intersections determined that the existing old conduit will be impacted with the proposed widening improvements. As a result, wireless communication is proposed to be utilized and existing hardware interconnect will be abandoned. Existing detector loops will also be abandoned

and replaced with video detection systems. Traffic signal equipment such as existing controllers, traffic signal coordination equipment, battery backups, pedestrian heads, vehicle heads, overhead street name signs, wiring and conduits, push buttons, signal poles and mast arms will also be upgraded to satisfy current standards. All existing traffic signal poles will need to be replaced to satisfy 100mph wind load requirements (per the current Caltrans Standard Plans) with the exception of the northeast and southwest poles at the intersection of Madison Street/Highway 111. During updates of the California Manual on Uniform Traffic Control Devices (CA MUTCD), there was much discussion on the number of signal head required, with the final requirements provided in Table 4D-1 (page 934). For a three lane roadway three primary heads are required. The requirements can be satisfied by two signal heads overhead on the mast arm, and one far right signal head on the mast arm pole, resulting in three primary heads. Supplemental nearside heads will only be used at wide/large intersections.

CONCLUSIONS

The recommended mitigations, in conjunction with an optimized signal timing cycle length will improve intersection capacity, reduce delay and travel time, and provide progression along Highway 111. Optimizing signal coordination at a lower cycle length will not only reduce vehicle delay, but also reduce the wait time of pedestrians wanting to utilize various crosswalks along Highway 111. Less wait time at the intersections could possibly encourage pedestrians to use the crosswalks and potentially reduce the existing "jaywalking" problem on Highway 111. In addition, the City may want to consider modifying median landscaping east of Monroe Street to include decorative fencing to restrict jaywalking in the area.

Please contact me if you have any questions or concerns.

Respectfully Submitted,

ALBERT GROVER & ASSOCIATES



Natali Eid
Senior Associate