SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

RTP

2008 REGIONAL TRANSPORTATION PLAN

Making the Connections

Amendment #3

and 2008 Regional Transportation Improvement Program (RTIP) Amendment #08-34

ADOPTED

APRIL 2010

SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

REGIONAL TRANSPORTATION PLAN AMENDMENT #3

2008

REGIONAL TRANSPORTATION IMPROVEMENT PROGRAM AMENDMENT #08-34

OUR VISION

An international and regional planning forum trusted for its leadership and inclusiveness in developing plans and policies for a sustainable Southern California.

OUR MISSION

Under the guidance of the Regional Council and in collaboration with our partners, our mission is to facilitate a forum to develop and foster the realization of regional plans that improve the quality of life for Southern Californians.

Funding: The preparation of this document was financed in part through funds from the Federal Highway Administration and Federal Transit Administration. Additional financial assistance was provided by the California State Department of Transportation.

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RESOLUTION NO. 10-518-01

RESOLUTION OF THE SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS APPROVING FINAL AMENDMENT NO. 3 TO THE 2008 REGIONAL TRANSPORTATION PLAN (2008 RTP), FINAL AMENDMENT NO. 08-34 TO THE 2008 REGIONAL TRANSPORTATION IMPROVEMENT PROGRAM (2008 RTIP), AND THE CORRESPONDING ADDENDUM TO THE 2008 RTP PROGRAM ENVIRONMENTAL IMPACT REPORT AND CONFORMITY DETERMINATION

WHEREAS, the Southern California Association of Governments (SCAG) is a Joint Powers Agency established pursuant to Section 6500 et seq. of the California Government Code;

WHEREAS, SCAG is the designated Metropolitan Planning Organization (MPO) pursuant to 23 U.S.C. §134(d) for the Counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura, and as such, is responsible for preparing the Regional Transportation Plan (RTP) and the Regional Transportation Improvement Program (RTIP) pursuant to 23 U.S.C. §134 et seq., 49 U.S.C. §5303 et seq., and 23 C.F.R. §450.312;

WHEREAS, SCAG is the designated Regional Transportation Planning Agency (RTPA) under state law, and as such is responsible for preparing, adopting, and updating the RTP pursuant to Government Sections 65080 et seq.;

WHEREAS, also pursuant to Section 130004 of the California Public Utilities Code, SCAG is the designated Regional Transportation Planning Agency and, as such, is responsible for preparation of both the RTP and RTIP under California Government Code §§ 65080 and 65082 respectively;

WHEREAS, 23 U.S.C. §134(h)(3)(C) and 23 C.F.R. §450.324(f)(2) requires the 2008 RTIP to be consistent with the 2008 RTP;

WHEREAS, 23 U.S.C. §134(a), 49 U.S.C. §5301 et seq., 23 CFR §450.312, and 49 CFR §613.100 require SCAG, as the designated MPO, to maintain a continuing, cooperative, and comprehensive transportation planning process in its development of the RTP and RTIP;

WHEREAS, pursuant to 23 C.F.R. §450.316(b)(1)(iv), SCAG must provide adequate public notice of public involvement activities and time for public review and comment at key decision points, including approval of plans and transportation improvement programs (the applicable comment period shall be at least 30 days for the plan, transportation improvement program and major amendment(s));

WHEREAS, on May 8, 2008, SCAG approved and adopted the 2008 RTP, and on June 5, 2008, the federal agencies found that the 2008 RTP conforms to the applicable State Implementation Plan (SIP);

WHEREAS, on July 17, 2008, SCAG approved and adopted the 2008 RTIP, and on November 17, 2008, the federal agencies found that the 2008 RTIP conforms to the applicable SIP;

WHEREAS, on December 4, 2008, SCAG approved Amendment #1 to the 2008 RTP incorporating additional project changes to the plan;

WHEREAS, on December 3, 2009, SCAG approved Amendment #2 to the 2008 RTP incorporating additional project changes to the plan;

WHEREAS, SCAG has received requests from the local county transportation commissions (CTCs) and California Department of Transportation (Caltrans) for additional project additions or modifications to the 2008 RTP and 2008 RTIP;

WHEREAS, on October 27, 2009, December 1, 2009, and January 26, 2010, the proposed 2008 RTP and 2008 RTIP amendments to address the CTC actions and local requests were discussed at the Transportation Conformity Working Group, SCAG's forum to support interagency coordination to help improve air quality and maintain transportation conformity in Southern California;

WHEREAS, on or about February 17, 2010, SCAG staff prepared the "Draft Amendment #3 to the 2008 RTP" and the "Draft Amendment #08-34 to the 2008 RTIP" (collectively referred to herein as the "Draft 2008 RTP/RTIP Amendments"), including staff findings, in order to address the local requests;

WHEREAS, the conformity findings included in the "Draft Amendment #3 to the RTP" are also applicable to the "Draft Amendment #08-34 to the 2008 RTIP";

WHEREAS, on February 4, 2010, SCAG's Transportation Committee (TC) approved the release of the Draft 2008 RTP/RTIP Amendments for a 30-day public review and comment period;

WHEREAS, a Notice of Availability and Public Hearing was posted on the SCAG website at www.scag.ca.gov on February 17, 2010, and published in major newspapers in the six-county region, the Draft 2008 RTP/RTIP Amendments were made available on the SCAG website, and copies were provided for review at SCAG and at public libraries throughout the region;

WHEREAS, a public hearing for the Draft 2008 RTP/RTIP Amendments was held at the SCAG Main Office in Los Angeles on March 16, 2010;

WHEREAS, to the extent that SCAG has received any written comments on the Draft 2008 RTP/RTIP Amendments, those comments have been responded to, and those comments along with responses are summarized in the final versions of the 2008 RTP/RTIP Amendments (also referred to herein as the final Amendment #3 to the 2008 RTP and final Amendment #08-34 to the 2008 RTIP Amendment);

WHEREAS, amendments to the RTP must be consistent with the December 2007 RTP Guidelines and 2008 Addendum to the RTP Guidelines prepared by the California Transportation Commission;

WHEREAS, SCAG has complied with all applicable federal and state requirements in developing the RTP/RTIP Amendments, including, but not limited to:

(1) SAFETEA-LU (23 U.S.C. §134 et seq.)

(2) The metropolitan planning regulations at 23 C.F.R. §450 et seq.;

(3) California Government Code §65080 et seq.;

(4) §§174 and 176(c) and (d) of the Federal Clean Air Act [42 U.S.C. §§7504 and 7506(c) and (d)];

(5) The Environmental Protection Agency (EPA) Transportation Conformity Rule at 40 CFR Parts 51 and 93 and all associated courts rulings and federal guidance.

(6) Title VI of the Civil Rights Acts of 1964 and the Title VI assurance executed by the State pursuant to 23 U.S.C. §324 and 29 U.S.C. §794;

(7) Title II of the American with Disabilities Act of 1990 (42 U.S.C. §120001 et seq.) and U.S. DOT regulations "Transportation for Individuals with Disabilities" (49 CFR Parts 27, 37, and 38); and

(8) The Department of Transportation's Final Environmental Justice Order, enacted pursuant to Executive Order 12898, which seeks to avoid disproportionately high and adverse impacts on minority and low-income populations with respect to human health and the environment and requirements set forth in U.S.D.O.T. Order 5610.2, FHWA Order 6640.23 and 23 C.F.R. § 450.316(b)(ii).

WHEREAS, pursuant to Section 176(c) of the Federal Clean Air Act (42 U.S.C. §7506(c)), no project may receive Federal funding unless it comes from an RTP which has been found to conform to the applicable SIP;

WHEREAS, as required by 23 C.F.R. §450.322(d), in nonattainment and maintenance areas for transportation-related pollutants, SCAG, the FHWA, and the FTA must make a conformity determination regarding any RTP or RTIP update or amendment in accordance with the requirements of the Federal Clean Air Act (42 U.S.C. §7401 et seq.) and the Environmental Protection Agency (EPA) conformity regulations found at 40 C.F.R. Part 51;

WHEREAS, with approval of the 2008 RTP/RTIP Amendments proposed herein do not revise or otherwise alter any Transportation Control Measure (TCM) in the 2008 RTP; as such, the funding priority of TCM projects in the South Coast Air Basin and Ventura County portion of the South Central Coast Air Basin in the federally approved conforming 2008 RTP and 2008 RTIP remain unchanged, and the projects remain on schedule for timely implementation;

WHEREAS, the 2008 RTP and 2008 RTIP remain

financially constrained for all fiscal years with the project additions and revisions described in the 2008 RTP/RTIP Amendments herein;

WHEREAS, SCAG is required to comply with the California Environmental Quality Act ("CEQA") [Cal. Pub. Res. Code §21000 et seq.] in amending the RTP;

WHEREAS, SCAG adopted and certified the Program Environmental Impact Report (PEIR) to the 2008 RTP in May 2008 (herein referred to the "2008 RTP PEIR");

WHEREAS, when an EIR has been certified and the project is modified or otherwise changed after certification, then additional CEQA review may be necessary;

WHEREAS, an Addendum may be prepared by the Lead Agency that prepared the original EIR if some changes or additions are necessary, but none of the conditions have occurred requiring preparation of a Subsequent EIR (CEQA Guidelines Section 15164(a), Cal. Administrative Code, Title 14);

WHEREAS, for the reasons set forth in the Addendum to the 2008 RTP PEIR, SCAG determined that an Addendum to the 2008 RTP PEIR is the appropriate CEQA document because the proposed changes to the 2008 RTP as described herein do not meet the conditions of CEQA Guidelines Section 15162(a) for preparation of a Subsequent EIR;

WHEREAS, SCAG prepared an Addendum to the 2008 RTP PEIR, which is included in Amendment #3 to the 2008 RTP, in order to address the modifications to the 2008 RTP due to the requests from the local agencies; and

WHEREAS, SCAG determined that adoption of the proposed Amendment #3 to the 2008 RTP would not result in either new environmental significant effects or a substantial increase in the severity of previously identified significant effects.

NOW, THEREFORE BE IT RESOLVED THAT:

1. The Southern California Association of Governments finds and adopts as follows:
   a. That Amendment #3 to the 2008 RTP and Amendment #08-34 to the 2008 RTIP comply with all applicable federal and state requirements, including the federally approved SIPs;
   b. Upon approval of the 2008 RTP/RTIP Amendments described herein do not revise or alter any Transportation Control Measure (TCM) in the 2008 RTP; as such, the funding priority of TCM projects in the South Coast Air Basin and Ventura County portion of the South Central Coast Air Basin in the federally approved conforming 2008 RTP and 2008 RTIP remain unchanged, and the projects remain on schedule for timely implementation;
   c. The 2008 RTP and 2008 RTIP as amended herein have been found to conform to the applicable SIP in accordance with the Clean Air Act and EPA conformity regulations; and
   d Proposed changes to the 2008 RTP as expressed in Amendment #3 to the 2008 RTP are not substantial changes which would require major revisions to the 2008 RTP PEIR, and the Addendum to the 2008 RTP PEIR relative to the project additions and revisions to the 2008 RTP as described herein fulfills SCAG's requirements for CEQA compliance, thus, no further CEQA document is required.
2. Incorporating all the foregoing recitals and findings in the resolution, the Regional Council hereby approves and adopts Amendment #3 to the 2008 RTP and Consistency Amendment #08-34 to the 2008 RTIP in their final form, including the related 2008 RTP PEIR Addendum and conformity analysis.
3. SCAG's Executive Director or his designee is authorized to transmit the RTP/RTIP Amendments and associated conformity finding to the Federal Transit Administration and the Federal Highway Administration to make the final conformity determination in accordance with the Federal Clean Air Act and EPA Transportation Conformity Rule at 40 C.F.R. Parts 51 and 93.

Approved at a regular meeting of the Regional Council of the Southern California Association of Governments on this 1st day of April 2010.

JON A. EDNEY
President
Councilmember, City of El Centro

Attested by:

HASAN IKHRATA
Executive Director

Approved as to Form:

JOANNA AFRICA
Chief Counsel

CONTENTS

REGIONAL COUNCIL v

I. INTRODUCTION 2

II. PROJECT DESCRIPTIONS 4
- Los Angeles County 5
- Orange County 48
- Riverside County 54
- San Bernardino County 64
- Ventura County 89
- Regional Projects 93

III. FISCAL IMPACT 98
- Los Angeles County 99
- Orange County 100
- Riverside County 100
- San Bernardino County 100
- Ventura County 100
- SCAG Regional Sources and Uses Summary 101

IV. TRANSPORTATION CONFORMITY 104
- Conformity Findings 105
- Regional Emissions Analysis 106

V. ADDENDUM #3 TO THE 2008 RTP PROGRAM ENVIRONMENTAL IMPACT REPORT 112
- Introduction 113
- Analysis of Impacts 116

VI. PUBLIC REVIEW AND COMMENT 122

VII. CONCLUSION 130

VIII. ATTACHMENTS: COMMENT LETTERS 132

I. INTRODUCTION

The Southern California Association of Governments (SCAG) is the federally designated metropolitan planning organization (MPO) for the six counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. As the MPO, SCAG develops the Regional Transportation Plan (RTP or Plan) and updates it every four years through a continuous, comprehensive, and cooperative process. The RTP presents a transportation vision for the region at least 20 years into the future, and provides a long-term investment framework for addressing the region's transportation and related challenges. SCAG also develops the Regional Transportation Improvement Program (RTIP) and updates it every two years through a continuous, comprehensive, and cooperative process. The RTIP is a short-term capital listing of all transportation projects in the region proposed over a six-year period, and implements the programs and projects in the RTP.

SCAG adopted the current operating 2008 RTP on May 8, 2008 (Resolution No. 08-497-2), and the current operating 2008 RTIP on July 17, 2008 (Resolution No. 08-498-1). Both documents contain thousands of individual transportation projects.

On December 4, 2008, SCAG adopted Amendment #1 to the 2008 RTP and corresponding Amendment #08-01 to the 2008 RTIP (Resolution No. 08-504-1). Since that time, the scopes of a relatively few projects in the 2008 RTP and RTIP have evolved. While some affected projects are time sensitive, all projects require amendment to the RTP and RTIP.

On December 3, 2009, SCAG adopted Amendment #2 to the 2008 RTP and corresponding Amendment #08-24 to the 2008 RTIP (Resolution No. 09-514-03). Since that time, the scopes of a relatively few projects in the 2008 RTP and RTIP have evolved. While some affected projects are time sensitive, all projects require amendment to the RTP and RTIP.

The purpose of this document is to identify the specific details of Amendment #3 to the 2008 RTP and corresponding Amendment #08-34 to the 2008 RTIP, and to ensure that the proposed changes are consistent with federal and state requirements, including the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) planning requirements and the Transportation Conformity Rule. All associated analyses for the Amendments are incorporated into this document. It is also important to note that the conformity findings included in this document are applicable for both Amendment #3 to the 2008 RTP as well as Amendment #08-34 the 2008 RTIP.

Finally, an Addendum #3 to the 2008 RTP Program Environmental Impact Report (PEIR) has been prepared to evaluate the potential environmental impacts associated with the changes to the 2008 RTP Project List as detailed herein. The PEIR Addendum #3 concludes that the proposed changes would not result in either new significant environmental effects or a substantial increase in the severity of any previously identified effect, and that the changes are not substantial in the context of the region analyzed in the 2008 PEIR.

II. PROJECT DESCRIPTIONS

The project changes proposed under this Amendment are presented in this chapter and are located in Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties. The reason for amending each of these projects can be broadly categorized as follows:

- Project is **new** and currently not in the 2008 RTP
- Project currently exists in the 2008 RTP, but:
  - has a **revised description**,
  - has a **revised schedule**,
  - has a **change in total cost**, or
  - includes **any combination of the above changes**.

Descriptions of major projects in each of the counties are provided to highlight the general scope of this Amendment. The locations of projects are depicted in Exhibits 2.1-2.5.

Project Summary Tables are organized to provide a complete list of the projects for each county and to document the details of the changes from the current Plan as last amended. In addition, the summary tables are also intended to illustrate a before-and-after scenario for each of the projects. All "existing" information for RTIP projects contained in the project descriptions in this Amendment is based on the adopted 2008 RTIP and its associated regional emissions analysis. For modeled projects, the "Project Completion By" year represents the Plan network year for which the project was analyzed for modeling and regional emissions analysis.

For more specific individual project information as part of the RTP modeling and regional emissions analysis, refer to the Amendment's modeled projects list available at http://www.scag.ca.gov/rtp2008 .

Los Angeles County

MAJOR REGIONAL PROJECTS

METRO WESTSIDE SUBWAY EXTENSIONS

Revised Description, Schedule, and Cost

RTP/RTIP Project No. (existing) UT101
Estimated Project Cost (existing): $1.4 billion
Project Completion By (existing): 2020
Description (existing):
This project will provide for the Westside Extension - Purple Line from Wilshire/Western to La Cienega.

RTP/RTIP Project Nos. (revised) UT101, 1TR1002, 1TR1003
Estimated Project Cost (revised): $6 billion
Project Completion By (revised): Between 2020-2035
Description (revised):
These projects will provide for Westside Subway Extensions to Westwood.

METRO GOLD LINE EASTSIDE TRANSIT CORRIDOR PHASE 2

New Project

RTP/RTIP Project No. 1TR1004
Estimated Project Cost: $2.5 billion
Project Completion By: 2035

This project will provide for an extension of the Metro Gold Line beyond its existing terminus at Atlantic Station in East Los Angeles farther east.

REGIONAL CONNECTOR

Revised Schedule and Cost

RTP/RTIP Project No. 1TR0404
Estimated Project Cost (existing): $4.2 billion
Estimated Project Cost (revised): $1.1 billion
Project Completion By (existing): 2035
Project Completion By (revised): 2020

This project will provide an almost 2-mile transit link between the Metro Gold and Metro Blue Lines through downtown Los Angeles.

METRO GOLD LINE FOOTHILL EXTENSION

Revised Description, Schedule, and Cost

RTP/RTIP Project No. LA29212XY
Estimated Project Cost (existing): $720.5 million
Estimated Project Cost (revised): $851.1 million
Project Completion By (existing): 2014
Project Completion By (revised): 2020

Description (existing):
This project will provide an extension of the Metro Gold Line from its existing terminus in Pasadena to Montclair.

Description (revised):
This project will provide an extension of the Metro Gold Line from its existing terminus in Pasadena to Glendora.

METRO GREEN LINE SOUTH BAY EXTENSION

New Project

RTP/RTIP Project No. 1TR1001
Estimated Project Cost: $555 million
Project Completion By: 2035

This project will provide an extension of the Metro Green Line along the Harbor Subdivision to the proposed Redondo Beach Transit Center.

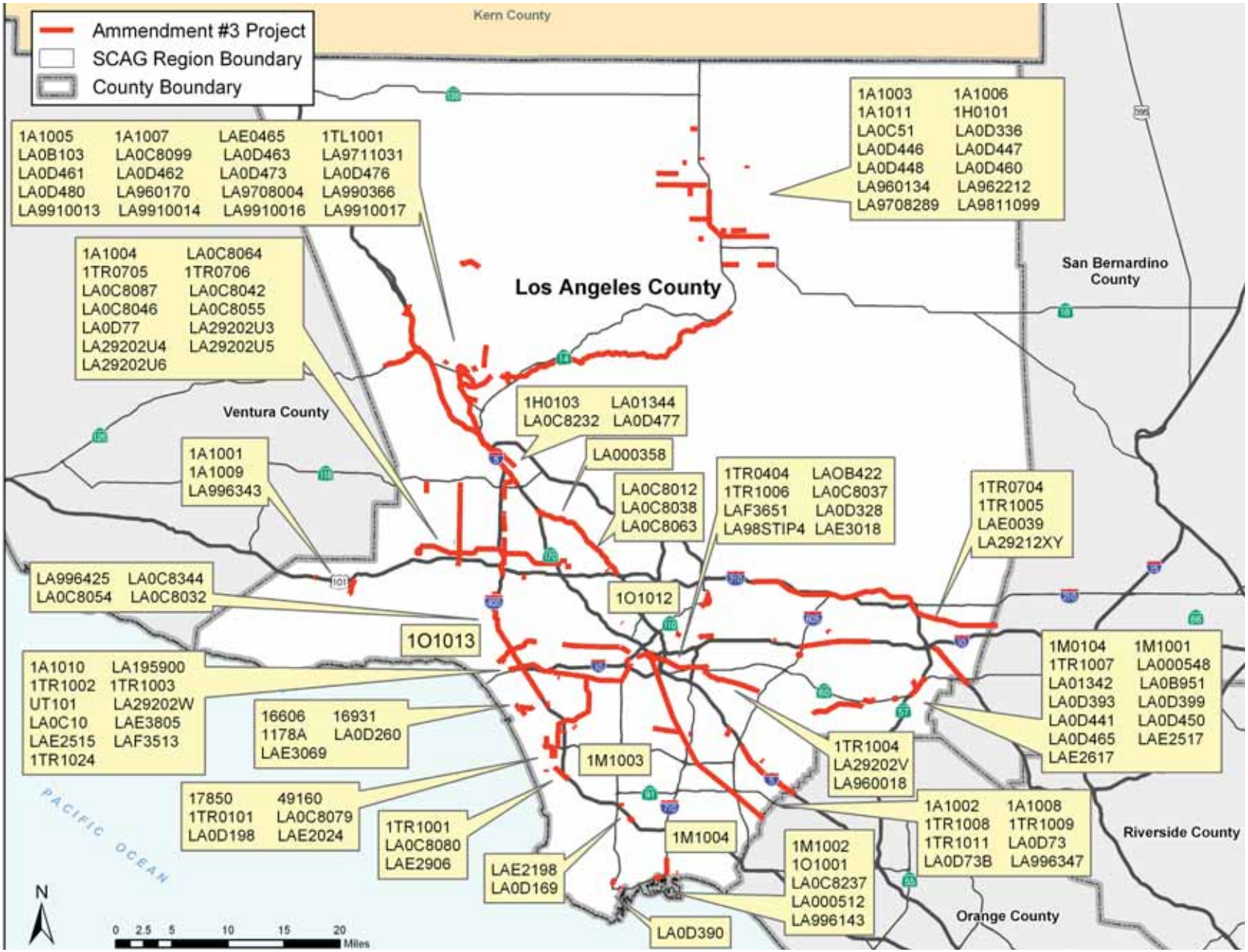
SR-57/SR-60 INTERCHANGE IMPROVEMENT

Revised Cost

RTP/RTIP Project No. 1M0104
Estimated Project Cost (existing): $735 million
Estimated Project Cost (revised): $475 million
Project Completion By: 2030

Description:
This project will provide an improved interchange at SR-57 and SR-60.

EXHIBIT 2.1 LOS ANGELES COUNTY PROJECT LOCATIONS



Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatlas

TABLE 2.1 LOS ANGELES COUNTY PROJECTS

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
LA	Arterial	0	1A1001	U.S. 101 FREEWAY AND PALO COMADO CANYON ROAD BRIDGE-AT CHESEBRO ROAD (PM 33.0/34.4). WIDENING OF BRIDGE FROM 2-LANES TO 4-LANES, CONSTRUCTION OF SIDEWALKS AND BIKE LANES, MODIFICATION OF ON/OFF RAMPS, AND MODIFICATION OF VARIOUS INTERSECTIONS.	2014	$1,500	COST COVERED BY CITY FUNDS	New project	
LA	Arterial	0	1A1002	LAKEWOOD BOULEVARD PHASE 3 IMPROVE-MENTS. WIDEN TO PROVIDE 3 LANES IN EACH DIRECTION & 50' CURB RETURNS AT INTERSECTIONS, RECONS INFRASTRUCTURE TO EXTEND LIFE BY 50 YEARS, REPLACE LANDSCAPING, LIGHTING, & TRAFFIC SIGNALS.	2020	$7,778	COST COVERED BY PC25 AND CITY FUNDS	New project	
LA	Arterial	0	1A1003	AVENUE L WIDENING: 15TH TO 30TH STREET WEST. CONSTRUCT CAPACITY IMPROVE-MENTS ALONG AVENUE L BY WIDENING EXIST-ING ROADWAY TO AVAILABLE ROW EXTENTS & CLOSING ANY MIXED FLOW LANE GAPS, & PROVIDE IMPROVED CIRCULATION TO SR-14.	2014	$3,273	COST COVERED BY PC25 AND CITY FUNDS	New project	
LA	Arterial	0	1A1004	DE SOTO AVE WIDENING: RONALD REAGAN FWY TO DEVONSHIRE ST. WIDEN DE SOTO AVE FROM SR-118 TO DEVONSHIRE ST TO PRO-VIDE 3 LANES IN EACH DIRECTION & UNIFORM ROADWAY WIDTH. EXISTING ASPHALT BERMS TO BE REPLACED WITH CURB, GUTTER, & 10' SIDEWALK.	2020	$11,536	COST COVERED BY CMAQ AND CITY FUNDS	New project	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
LA	Arterial	0	1A1005	THE OLD ROAD FROM MAGIC MOUNTAIN PARKWAY TO TURNBERRY LANE. WIDEN THE OLD ROAD FROM NORTH OF MAGIC MOUNTAIN PKWY TO TURNBERRY LN & HENRY MAYO DR TO 1200 FEET WEST OF THE OLD ROAD. THE PROPOSED PROJECT IS LOCATED ON THE OLD ROAD FROM APPROXIMATELY 700 FEET NORTH OF MAGIC MOUNTAIN PARKWAY TO TURNBERRY LANE, HENRY MAYO DRIVE FROM THE OLD ROAD TO THE STATE ROUTE 126 HOOK RAMPS, AND RYE CANYON ROAD BETWEEN THE OLD ROAD AND AVENUE STANFORD.	2020	$47,453	COST COVERED BY STPL-R AND CITY FUNDS	New project	
LA	Arterial	0	1A1006	AVENUE S WIDENING PHASE II. PROVIDE A 6 LANE ROADWAY, SIDEWALK, CURB AND GUTTER, CLASS 1 BIKEWAY, TRAFFIC SIGNALS, AND ENHANCEMENTS.	2020	$11,023	COST COVERED BY PC25 AND CITY FUNDS	New project	
LA	Arterial	0	1A1007	MCBEAN PARKWAY WIDENING/GAP CLO-SURE OVER SANTA CLARA RIVER. WIDEN MCBEAN PARKWAY BRIDGE TO 8 LANES AND CONSTRUCT CLASS I PATH CONNECTION BETWEEN MCBEAN PARKWAY AND SANTA CLARA RIVER TRAIL.	2020	$6,864	COST COVERED BY PC25 AND CITY FUNDS	New project	
LA	Arterial	0	1A1008	FIRESTONE BOULEVARD CAPACITY IMPROVE-MENTS. INCREASE THE NUMBER OF LANES FROM 4 TO 6 ON FIRESTONE BLVD WITHIN THE ROW, RAISED LS MEDIANS, SIDEWALKS, BUS SHELTERS & PULLOUTS, C&G, STREET LIGHTING, & UTILITY RELOCATION.	2020	$14,721	COST COVERED BY PC25 AND CITY FUNDS	New project	
LA	Arterial	0	1A1009	CONVERT LAS VIRGENES RD FROM 2 LANE ROAD TO 4 LANE ROAD; 2 LANES IN EACH DIRECTION PLUS TURNING POCKETS. (ENG/ ENV ONLY)	2012	$25	COST COVERED BY CITY FUNDS	New project	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
LA	Arterial	0	1A1010	BRIDGE NO. 53C0876, HIGUERA ST, OVER BALLONA CR. BETWEEN EASTHAM DRIVE AND JEFFERSON BLVD. REPLACE 3 LANE BRIDGE WITH A NEW 4 LANE BRIDGE.	2020	$7,594	COST COVERED BY HBBR- BRIDGE FUNDS AND CITY FUNDS	New project	
LA	Arterial	0	1A1011	WIDENING OF 30TH ST WEST FROM AVENUE M TO AVENUE L (APPROX. 1 MILE) FROM 2 VEHICULAR TRAVEL LANES TO 4 LANES. 8 FOOT CLASS II BIKE LANES WILL BE STRIPED ON BOTH SIDES OF THE STREET.	2012	$1,140	COST COVERED BY CITY FUNDS	New project	
LA	Arterial	0	LA000512	Existing: GERALD DESMOND BRIDGE REPLACEMENT (SAFETEA-LU PNRS #14 - SEC 1301B)RE-PLACE EXISTING 5 LANE GERALD DESMOND BRIDGE WITH NEW 6 LANE BRIDGE. OCEAN BLVD. OVER ENTRANCE CHANNEL, UP RR, 1.0 MI E STATE ROUTE 47. REPLACE EXISTING 5 LANE GERALD DESMOND BRIDGE WITH Revised: GERALD DESMOND BRIDGE REPLACEMENT (SAFETEA-LU PNRS #14 - SEC 1301B)RE-PLACE EXISTING 5 LANE GERALD DESMOND BRIDGE WITH NEW 6 LANE BRIDGE. OCEAN BLVD. OVER ENTRANCE CHANNEL, UP RR, 1.0 MI E STATE ROUTE 47. REPLACE EXISTING 5 LANE GERALD DESMOND BRIDGE WITH NEW 6 LANE BRIDGE (BRIDGE #53C0065)(CFP #LAF3126)	2020	$1,125,200	N/A; NO COST INCREASE	Revised description	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
LA	Arterial	0	LA0B103	CONSTRUCT GOLDEN VALLEY ROAD FROM SOLEDAD CANYON TO NEWHALL RANCH ROAD.0 TO 6 LANES. LESS THAN 0.5 MILES-INCLUDES TWO SEPERATE PARALLEL BRIDGE STRUCTURES IDENTIFIED AS BRIDGES 4009 AND 4022 OVER THE SANTA CLARA RIVER, EACH STRUCTURE WILL HAVE 3 LANES.	Existing: 2010 Revised: 2012	$32,300	N/A; NO COST INCREASE	Revised schedule	
LA	Arterial	0	LA0C51	Existing: Rancho Vista Boulevard/Avenue P Widening - Fairway Drive to 20th Street East - up to 6 thru lanes (from current 4 thru lanes) with related intersection improvements on the primary street and the approach streets, including right/left-turn lanes, traffic s Revised: Rancho Vista Boulevard/Avenue P Widening - Fairway Drive to 20th Street East - up to 6 thru lanes (from current 4 thru lanes) with related intersection improvements on the primary street and the approach streets, including right/left-turn lanes, traffic signal modifications, bicycle/pedestrian accommodations, related pavement widening transitions and related drainage improvements.	Existing: 2010 Revised: 2020	$893	N/A; NO COST INCREASE	Revised description and schedule	
LA	Arterial	0	LA0C8032	SEPULVEDA BL TUNNEL UNDR MULHOLLAND DR WIDENING. WIDEN TUNNEL STRCTURE FRM 3 TO 4 LNS -MATCH RDWY APROACH, INC VERTICAL CLEARANCE & ADD BIKE LNS EACH DIRCTN- FEASIBILITY STUDY ONLY	Existing: 2010 Revised: 2012	$930	N/A; NO COST INCREASE	Revised schedule	

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LA	Arterial	0	LA0C8037	Existing: SOTO ST BRIDGE OVER MISSION RD & HUNTINGTON DR DEMOLITION PROJECT WILL REALIGN THE STREET TO INCREASE TRAFFIC FLOW ADDING A BIKE LANE. PPNO 3093 3380 (BRIDGE #53C0013)	Existing: 2020	$10,542	N/A; NO COST INCREASE	Revised description and schedule	
				Revised: SOTO ST BRIDGE OVER MISSION RD & HUNTINGTON DR WILL DEMOLISH EXISTING BRIDGE AND REALIGN THE STREET TO IN-CREASE TRAFFIC FLOW ADDING A BIKE LANE. PPNO 3093 3380 (BRIDGE #53C0013)	Revised: 2014				
LA	Arterial	0	LA0C8038	Existing: LAUREL CANYON BLVD BRDGE OVER TUJUNGA WASH WIDENING. PROJECT WILL WIDEN LAU-REL CANYON BRDGE FROM 4 TO 6 LANES TO IMPROVE LOS. ADD SHOULDERS & 6 FT BIKE LNES. PPNO 3094 3379 AB 3090	Existing: 2010	$3,700	N/A; NO COST INCREASE	Revised description and schedule	
				Revised: LAUREL CANYON BLVD BRDGE OVER TUJUNGA WASH WIDENING (BRIDGE #53C-1233)- REHA-BILITATE 4-LANE BRIDGE AND WIDEN TO ADD SHOULDERS, UPGRADE BRIDGE RAILINGS. PPNO 3094 3379 AB 3090	Revised: 2012				
LA	Arterial	0	LA0C8042	VANOWEN ST BRDGE WIDENING & REHAB. PRJCT WILL WIDEN EXISTING BRIDGE TO MATCH THE STREET IT WILL ALLOW INC TRAF-FIC FLOW AND SAFETY. CONSTRUCT BIKE PATH UNDER. PPNO 3095 3378 AB 3090	Existing: 2009	$14,917	N/A; NO COST INCREASE	Revised schedule	
					Revised: 2012				

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LA	Arterial	0	LA0C8046	Existing: BURBANK BLVD WIDENING-LANKERSHIM BLVD TO CLEON AVE. FROM VARYING ROADWAY WIDTH TO FULL SECONDARY HIGHWAY STANDARDS. FROM 1 LN TO 2 LNS IN EACH DIRECTION. PPNO 3097. Revised: BURBANK BLVD WIDENING-LANKERSHIM BLVD TO CLEON AVE. FROM VARYING ROADWAY WIDTH TO FULL MAJOR HIGHWAY STAN-DARDS. FROM 1 LN TO 2 LNS IN EACH DIRECTION. PPNO 3097.	2014	$15,417	N/A; NO COST INCREASE	Revised description	
LA	Arterial	0	LA0C8054	SKIRBALL CENTER DR WIDENING - I-405 FWY TO MULHOLLAND DR, WIDEN AND RESTRIPE SKIRBALL CENTER DR TO PROVIDE AN AD-DITIONAL S/B LANE. (PPNO 3132).	Existing: 2008 Revised: 2010	$2,200	N/A; NO COST INCREASE	Revised schedule	
LA	Arterial	0	LA0C8055	Existing: MOORPARK St WIDENING - WOODMAN AVE TO MURIETTA AVE.- EXISTING 1 LN EA. DIR. ADD 1 LANE IN EA. DIR. & UPGRADE HIGHWAY TO SECONDARY HWY STANDARDS. PPNO 3103. Revised: MOORPARK St WIDENING - WOODMAN AVE TO MURIETTA AVE.- WIDEN EXISTING ROADWAY FROM VARYING WIDTH TO 70 FTEET TO PROVIDE ON ADDTL TRAFFIC LANE IN EA DIR & UPGRADE HIGHWAY TO SECONDARY HWY STANDARDS. THIS PROJECT IMPROVES 2080 LF OF MOORPARK AVE. PPNO 3103.	2012	$6,788	N/A; NO COST INCREASE	Revised description	

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LA	Arterial	0	LA0C8063	Existing: RIVERSIDE DR. VIADUCT REPLACEMENT. REPLACEMENT OF EXISTING 2-LANE BRIDGE WITH A 4 LANE FLARE NEW ROUNDABOUT & BIKE PATH - WILL RESULT IN INCR. CIRCULA-TION. PPNO 3105 (53C0160) Revised: RIVERSIDE DR. VIADUCT REPLACEMENT. REPLACEMENT OF EXISTING 2-LANE BRIDGE WITH 2 THROUGH LANES BRIDGE FLARING 4 LANES AT SAN FERNANDO ROAD WITH NEW ROUNDABOUT. BIKE LANE ADDED COMBINED WITH 53C-1932 - WILL RESULT IN INCR. CIRCULATION. PPNO 3105 (53C-0160)	2020	$18,000	N/A; NO COST INCREASE	Revised description	
LA	Arterial	0	LA0C8064	SAN FERNANDO MISSION BLVD WIDENING BET SEPULVEDA BLVD & I-5 FWY. FROM 1 LANE TO 2 LANES IN EACH DIRECTION.PPNO 3106.	Existing: 2010 Revised: 2012	$2,471	N/A; NO COST INCREASE	Revised schedule	
LA	Arterial	0	LA0C8079	NASH ST/DOUGLAS ST ONE-WAY TO TWO-WAY CONVERSION. CONVERT ONE-WAY COUPLET SYSTEM TO A TWO-WAY STREET.	Existing: 2010 Revised: 2009	$5,000	N/A; NO COST INCREASE	Revised schedule	
LA	Arterial	0	LA0C8087	MAGNOLIA BLVD WIDENING-CAHUENGA BLVD TO VINELAND AVE. FROM THE EXISTING ROADWY STANDARD TO SECONDARY HWY STANDARD. FROM 1 LANE TO 2 LANES IN EACH DIRECTION. (PPNO 3110).	Existing: 2010 Revised: 2012	$4,030	N/A; NO COST INCREASE	Revised schedule	

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LA	Arterial	0	LA0D169	Existing: BROADWAY IMPROVEMENTS FROM MAIN ST TO GRIFFITH ST. CONSTRUCT RAISED CONCRETE MEDIANS W/ LANDSCAPE, HARDSCAPE,CURB & GUTTER & SIDEWALK. ADD 1 LANE EA DIR. FOR 2 EA. DIR. Revised: BROADWAY IMPROVEMENTS FROM MAIN ST TO GRIFFITH ST. Construction of missing curb & gutter and reconstruction of Existing Pavement and undergrounding the overhead power lines.	2010	$1,203	N/A; NO COST INCREASE	Revised description	
LA	Arterial	0	LA0D260	Existing: STATE ROUTE 90 CONNECTOR ROAD TO ADMIRALTY WAY/ ADMIRALTY WAY WIDENTHE ROAD TO 5-LANES (NORTHBOUND) FROM VIA MARINA TO BALI WAY (8,000 FEET), WIDEN THE ROAD TO 6-LANES (Revised: STATE ROUTE 90 CONNECTOR ROAD TO AD-MIRALTY WAY. THIS PROJECT WILL IMPROVE THE SR-90/SR-1 INTERSECTION INCLUDING THE ADDITION OF A LANE IN EACH DIRECTION AND CONSTRUCTION OF A DIRECT ROAD BETWEEN ADMIRALTY WAY AND SR-90	Existing: 2010 Revised: 2014	$6,000	N/A; NO COST INCREASE	Revised description and schedule	
LA	Arterial	0	LA0D336	Route 14: SR14/AVENUE K INTERCHANGE IMPROVEMENTS. WIDEN NORTHBOUND OF-FRAMP AND 15TH STREET WEST. WIDEN N/B OFFRAMP FROM 3 TO 4 LANES AT AVE K/15TH ST-W.	Existing: 2010 Revised: 2030	$8,600	N/A; NO COST INCREASE	Revised schedule	

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LA	Arterial	0	LA0D393	Existing: GRAND AVENUE/SR 57/60 INTERCHANGE RECONSTRUCTION MODIFY GRAND AVENUE TO ADD ADDITIONAL LANES FOR NH AND SB TRAFFIC, WIDEN THE EXISTING GRAND AVE OVERPASS	Existing: 2009	$33,000	N/A; NO COST INCREASE	Revised description and schedule	
				Revised: GRAND AVENUE/SR 57/60 INTERCHANGE MODIFICATION: RESTRIPE THE EXISTING GRAND AVE, ADD WB ON-RAMP AND ADD WB AUX LANE, ADD SECOND SB LFT TURN LN AT EB RAMP (09 CFP 3137)	Revised: 2014				
LA	Arterial	0	LA0D441	RECONFIGURATION OF VALLEY BLVD ON-AND-OFF-RAMPS TO THE 605 FREEWAY TO IM-PROVE MOBILITY, CIRCULATION, AND RELIEVE THE CURRENT CONGESTION AT VALLEY BLVD.	Existing: 2010	$28,012	N/A; NO COST INCREASE	Revised schedule	
					Revised: 2020				
LA	Arterial	0	LA0D446	Existing: AVENUE K GAP CLOSURE FROM 60TH STREET WEST TO SR14. WIDEN GAPS FROM 1 TO 2 LANES OR 3 LANES.	Existing: 2012	$7,390	N/A; NO COST INCREASE	Revised description and schedule	
				Revised: Avenue K Gap Closure From 40TH Street West to 60th Street West. Widen Gaps to add an additional lane in each direction (4 lanes total) within the City jurisdiction.	Revised: 2014				

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LA	Arterial	0	LA0D447	Existing: AVENUE L GAP CLOSURE FROM 60TH STREET WEST TO SR14, WIDEN GAPS FROM 1 TO 2 LANES TO 3 LANES	2014	$6,690	N/A; NO COST INCREASE	Revised description	
				Revised: AVENUE L GAP CLOSURE FROM 60TH STREET WEST TO 30th West, Adding an additional lane in each direction, including a median (within City Jurisdiction)					
LA	Arterial	0	LA0D448	Existing: MAJOR ARTERIAL GAP CLOSURES. AVENUE J, 36TH TO 32ND WEST. 20TH WEST, LANCAST-ER BLVD TO NEWGROVE ST. 20TH STREET EAST, AVENUE J-4 OT J-8	Existing: 2012	$2,902	N/A; NO COST INCREASE	Revised description and schedule	
				Revised: Major arterial gap closures citywide. Avenue J from 36th St West to 32nd St West, 20th St West from Lancaster Blvd to Newgrove St, 20th St East from Avenue J-4 to Avenue J-8	Revised: 2020				

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LA	Arterial	0	LA0D450	Existing: Route 60: GRAND AV/SR 57/60 INTERCHANGE RECONSTRUCTION- WIDEN GRAND AV WB RAMP:SB ADD 1 RT & 1 THROUGH LN (2 EXSTNG) & 2 LT (2 EXSTNG); NB ADD 1 LT,1 THROUGH LN (2 EXSTNG) & 1 RT (1 EXSTNG)	2014	$200,000	N/A; NO COST INCREASE	Revised description	
				Revised: RECONSTRUCT SR 60/GRAND AV INTER-CHANGE - WIDEN GRAND AV: SB ADD 1THRU LN (2 EXSTNG); NB ADD 1 THRU LN (3 EX-STNG), REPLACE GRAND AV OC, ADD EB LOOP ON-RAMP, ADD TWO BYPASS RAMP CONNEC-TORS, ADD AUX LNS EB AND WB FROM EAST TO WEST JUNCTION OF THE CONFLUENCE					
LA	Arterial	0	LA0D460	AV. O -- 30TH ST WEST TO 10TH ST WEST-RECONSTRUCT & WIDEN, INCLUDING EXIST BRIDGE WIDEN 1 TO 2 ; ADD 12' RT ONLY POCKETS @ INTERSECTION AV. O & 20TH ST WEST & 12' 2-WAY LTL ONLY	Existing: 2010	$2,520	N/A; NO COST INCREASE	Revised schedule	
					Revised: 2014				
LA	Arterial	0	LA0D461	Existing: RECONSTRUCT- THE OLD ROAD FROM HILLCREST PARKWAY TO LAKE HUGHES RD & WIDEN FROM 40' TO 68', 2 LANES & A 5' CLASS II BIKELANE IN EA DIR & STRIPPED MEDIAN (FROM 2 TO 4 LNS 2 EA DIR)	Existing: 2010	$10,700	N/A; NO COST INCREASE	Revised description and schedule	
				Revised: RECONSTRUCT- THE OLD ROAD FROM HILLCREST PARKWAY TO LAKE HUGHES RD & WIDEN FROM 40' TO 68', 2 VEH. LANES and a 5' CLASS II BIKELANE IN EA DIR & STRIPPED MEDIAN (FROM 2 TO 4 LNS 2 EA DIR)	Revised: 2014				

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LA	Arterial	0	LA0D465	COLIMA RD- HALIBURTON RD/ CITY OF DIAMOND BAR CB ROAD WIDENING: RESTRIPE FOR 3ED THROUGH LANE ON EB APPROACH (HACIENDA BLVD- FULLERTON RD) & WB AP-PROACH (FULLERTON- CAMINO DEL SUR)	Existing: 2010 Revised: 2014	$600	N/A; NO COST INCREASE	Revised schedule	
LA	Arterial	0	LA0D473	DOCKWEILER DR EXTENSION FROM LYONS AV TO EXISTING DOCKWEILER DR: CONSTRUCT A 4-LANE FACILITY (2 LANES IN EACH DIREC-TION), OUTSIDE CURB & GUTTER, AND DRAIN-AGE IMPROVEMENTS	Existing: 2012 Revised: 2014	$11,126	N/A; NO COST INCREASE	Revised schedule	
LA	Arterial	0	LA0D476	VIA PRINCESSA EXTENSION FROM MAGIC MOUNTAIN PKWY TO GOLDEN VALLEY RD: CONSTRUCT APPROXMTLY A 1-MILE FACILITY (3 LANES IN EACH DIRECTION), OUTSIDE CURB & GUTTER, & DRAINAGE IMPRVMT	Existing: 2010 Revised: 2020	$22,602	N/A; NO COST INCREASE	Revised schedule	
LA	Arterial	0	LA0D477	CONSTRUCT IMPROVEMENTS FOR SR-14 INTERCHANGE AT GOLDEN VALLEY ROAD. DIAMOND CONFIRGURATION, TWO RAMPS, IMPROVEMENTS INCLUDE WIDENING OF BRIDGE OVERCROSSING, NEW SIGNALS, RAMP MOD.	Existing: 2009 Revised: 2014	$7,370	N/A; NO COST INCREASE	Revised schedule	
LA	Arterial	0	LA960018	BEVERLY BOULEVARD MONTEBELLO BLVD TO W/O REA DRIVE RECONSTRUCT & WIDEN WIDEN FROM 4 TO 6 LANES	Existing: 2010 Revised: 2014	$3,650	N/A; NO COST INCREASE	Revised schedule	
LA	Arterial	0	LA960134	AVENUE S HIGHWAY 14/DOWNING ST WIDEN-ING. WIDEN AVENUE S FROM STATE HIGHWAY 14 TO DOWNING ST (FROM 4 TO 6 LANES) 3 LANES IN EA. DIR.).	Existing: 2018 Revised: 2008	$7,200	N/A; NO COST INCREASE	Revised schedule	

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LA	Arterial	0	LA960170	MAGIC MOUNTAIN PARKWAY EXTENSION FROM SAN FERNANDO RD TO VIA PRINCESSA: CONSTRUCT A NEW ROAD WITH 3 LANES IN EACH DIRECTION	Existing: 2010 Revised: 2014	$21,101	N/A; NO COST INCREASE	Revised schedule	
LA	Arterial	0	LA9708004	SANTA CLARITA PARKWAY FROM BOUQUET CYN RD/SOLEDAD CYN INSTALL NEW ROAD-WAY (0 TO 4 LANES) (2.5 MILE)	Existing: 2010 Revised: 2020	$17,550	N/A; NO COST INCREASE	Revised schedule	
LA	Arterial	0	LA9708289	AVE G, FROM RT 14 TO 25TH ST WEST WIDEN FROM 2 TO 6 LANES (0.2 MIME) (TOTAL 6 LANES BOTH DIR). INCLUDES INTER CHANGE IMPROVEMENTS.	Existing: 2014 Revised: 2020	$10,800	N/A; NO COST INCREASE	Revised schedule	
LA	Arterial	0	LA9711031	CASTAIC CUTOFF FROM LAKE HUGHES RD TO SAN FRANCISQUITO CANYON RD CONTRUCT NEW ROAD 4 12-FOOT LANES AND 10-FOOT SHOULDERS	Existing: 2010 Revised: 2012	$7,600	N/A; NO COST INCREASE	Revised schedule	
LA	Arterial	0	LA9811099	20TH STREET WEST FROM AVENUE P-8 TO ELIZABETH LAKE ROAD 1 MILE STREET EX-TENSION AND WIDENING FROM 0 TO 4 LANES	Existing: 2010 Revised: 2014	$6,600	N/A; NO COST INCREASE	Revised schedule	
LA	Arterial	0	LA9910013	VIA PRINCESSA EXTENSION FROM GOLDEN VALLEY ROAD TO APPROXIMATELY 350M WEST OF RAINBOW GLEN DRIVE, EAST OF ISABELLA PKWY	Existing: 2014 Revised: 2020	$46,935	N/A; NO COST INCREASE	Revised schedule	
LA	Arterial	0	LA9910014	VIA PRINCESSA FROM OAKRIDGE DRIVE TO MAGIC MTN PRKWAY. FROM 0 - 6 LANES; LESS THAN ONE MILE.	Existing: 2012 Revised: 2020	$11,650	N/A; NO COST INCREASE	Revised schedule	

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LA	Arterial	0	LA9910016	SANTA CLARITA PKWY FROM SOLEDAD CYN RD TO VIA PRINCESSA (1.6 MILES); FROM 0 TO 6 LANES.	Existing: 2009 Revised: 2020	$13,100	N/A; NO COST INCREASE	Revised schedule	
LA	Arterial	0	LA9910017	SANTA CLARITA PKWY FROM VIA PRINCESSA TO STATE HWY 14 (1 MILE) FROM 0 TO 6 LANES.	Existing: 2012 Revised: 2020	$11,100	N/A; NO COST INCREASE	Revised schedule	
LA	Arterial	0	LA996425	INSTALL REVERSIBLE LANE ON SEPULVEDA BL THROUGH TUNNEL AT MULHOLLAND DR, INSTALL BIKE FACILITIES FROM SKIRBALL CENTER DR TO BEL AIR CREST RD, IMPLE-MENT INTERSECTION IMPROVEMENTS AT SKIRBALL CENTER DR, I-405 FWY SB ON-RAMP, MORAGA DR, WILSHIRE BL	Existing: 2009 Revised: 2012	$8,301	N/A; NO COST INCREASE	Revised schedule	
LA	Arterial	0	LAE2024	Existing: REALIGNMENT LA BREA AV TO REDUCE CONGESTION: IMPROVEMENTS AT INTERSEC-TION WITH HILLCREST BLVD (6-LEG TO 4-LEG/ SIGNALIZED) & WITH TAMARACK AV (ADD SIGNAL) - 2007 Metro Call funds (PC25) only apply to realignment of the La Brea Avenue between Hillcrest Bl a	Existing: 2010	$9,970	N/A; NO COST INCREASE	Revised description and schedule	
				Revised: REALIGNMENT LA BREA AV TO REDUCE CONGESTION: IMPROVEMENTS AT INTERSEC-TION WITH HILLCREST BLVD (6-LEG TO 4-LEG/ SIGNALIZED) & WITH TAMARACK AV (ADD SIGNAL) - 2007 Metro Call funds (PC25) only apply to realignment of the La Brea Avenue between Hillcrest Bl and Spruce Ave/Market Street intersections.	Revised: 2012				

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LA	Arterial	0	LAE2515	WIDEN BUNDY DR. BETWEEN WILSHIRE AND SANTA MONICA BLVD - WIDEN FROM 2 LANES TO 4 LANES.	Existing: 2012 Revised: 2014	$4,250	N/A; NO COST INCREASE	Revised schedule	
LA	Arterial	0	LAE2517	WIDEN MAINE AVE. IN BALDWIN PARK ADD 1 THRU LN & 1 RIGHT TURN AND 1 LEFT TURN ONLY LANE (SAFETEA-LU Demo ID #2517)	Existing: 2010 Revised: 2014	$360	N/A; NO COST INCREASE	Revised schedule	
LA	Arterial	0	LAE2617	GALE AVENUE --FROM FULLERTON ROAD TO NOGALES ST, WIDEN FROM 4 TO 6 LANES AND NOGALES ST INTERSECTION WIDENING AT GALE AVE. TO ADD LEFT TURN LANE.	Existing: 2010 Revised: 2014	$600	N/A; NO COST INCREASE	Revised schedule	
LA	Arterial	0	LAE2906	Inglewood Ave/Marine Ave intersection improvement. Purchase ROW for widening; add 1 thru NB lane Inglewood Ave (2 lane existing) & 1 thru WB lane Marine Ave (1 lane existing); Add lighting, signals, sidewalk.	Existing: 2014 Revised: 2012	$4,515	N/A; NO COST INCREASE	Revised schedule	
LA	Arterial	0	LAE3018	VALLEY BLVD CAPACITY IMPROVEMENTS BETWEEN 710 AND MARGUERITA. INVOLVES TRAFFIC FLOW AND CAPACITY IMPROVEMENTS INCLUDING RAISED MEDIANS.	Existing: 2010 Revised: 2012	$3,724	N/A; NO COST INCREASE	Revised schedule	

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LA	Arterial	0	LAE3069	Existing: SEPULVEDA BOULEVARD WIDENING PROJECT TO ADD A THIRD SOUTHBOUND LANE ON SEPULVEDA BOULEVARD WITHIN THE EXIST-ING RIGHT OF WAY BETWEEN JEFFERSON BL/ PLAYA STREET TO GREEN VALLEY CIRCLE. CULVER BLVD REALIGNMENT IMPROVEMENT BETWEEN COMMONWEALTH AND ELENDA AS A	2012	$6,174	N/A; NO COST INCREASE	Revised description	
				Revised: SEPULVEDA BOULEVARD WIDENING PROJECT TO ADD A THIRD SOUTHBOUND LANE ON SEPULVEDA BOULEVARD WITHIN THE EXIST-ING RIGHT OF WAY BETWEEN JEFFERSON BL/ PLAYA STREET TO GREEN VALLEY CIRCLE.					
LA	Arterial	0	LAE3805	PLANNING, DESIGN AND PRELIMINARY ENGINEERING OF ON/OFF RAMP SYSTEM AT INTERSECTION OF I-10 AND ROBERTSON/ NATIONAL BLVD.	Existing: 2015	$2,500	N/A; NO COST INCREASE	Revised schedule	
					Revised: 2014				
LA	Arterial	1	16606	Route 1: NEAR MARINA REY ON LINCOLN BL FRM JEFFERSON BI TO FIJI WAY - WIDEN FROM 3 TO 4 THRU LNES IN EA. DIR. & RPLCE CULVER BL OC &CNSTRCT NEW BRDG OVR BALLONA CREK (EA 1661C, PPNO 0027P).	Existing: 2008	$3,232	N/A; NO COST INCREASE	Revised schedule	
					Revised: 2020				

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LA	Arterial	1	LA0C8080	Existing: Route 1: MANHATTAN BEACH: ON ROUTE 1 BETWEEN 33RD STREET & ROSECRANS AV; ADD ONE THROUGH LN TO NORTH BOUND SEPULVEDA BLVD. TO WIDEN EXISTING STRUCTURE FROM 6 TO 7 THROUGH LANES PPNO 2947	Existing: 2012	$13,464	N/A; NO COST INCREASE	Revised description and schedule	
				Revised: Route 1: MANHATTAN BEACH: ON ROUTE 1 BETWEEN 33RD STREET & ROSECRANS AV; ADD ONE THROUGH LN TO NORTH BOUND SEPULVEDA BLVD. TO WIDEN EXISTING STRUCTURE FROM 6 TO 7 THROUGH LANES PPNO 2947; Received $6,813,325 RSTP$ from MTA 2009 CFP (Proj Num F3139).	Revised: 2014				
LA	Arterial	126	LA0D480	Route 126: SR-126 IMPROVEMENTS - LOS ANGELES COUNTY LINE TO CASTAIC CREEK BRIDGE: IMPROVE 5 INTERSECTIONS ADD LT & RT LANES, ADD 1 SB AUX LANE FROM LONG CANYON RD TO WOLCOTT WAY	Existing: 2010	$35,500	N/A; NO COST INCREASE	Revised schedule	
					Revised: 2014				
LA	Arterial	138	LA0D451	Existing: Route 138: ROUTE 138 FROM AVE. T TO ROUTE 18-WIDEN 2 TO 4 THRU LANES WITH MEDIAN TURN LANE. EA# 12721,12722,12723,12724,12725,12728. PPNO# 3325,3326,3327,3328,3329,3331	Existing: 2014	Existing: $48,247	COST INCREASE COVERED BY RSTP, RIP, IIP, MEASURE R, PROP C25, FORMULA, AND STATE PROG. FUNDS	Revised description, schedule, and cost	
				Revised: ROUTE 138 FROM AVE. T TO ROUTE 18-WIDEN 2 TO 4 THRU LANES WITH MEDIAN TURN LANE. TO BE OPENED IN SEGMENTS. EA# 12721,12722,12723,12724,12725,12728. PPNO# 3325,3326,3327,3328,3329,3331	Revised: 2020	Revised: $542,100			

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
LA	Arterial	138	LA962212	Existing: Route 138: IN PALMDALE @ AVENUE P-8 FROM ROUTE 14 TO 50TH STREET - ACQUISI-TION OF ROW FOR FUTURE RTE 138 (TIER 2 ENV) (CFP 2212 $3540 2001 CFP 8021)(EA# 116720,PPNO 0393F)	Existing: 2018	$88,970	N/A; NO COST INCREASE	Revised description and schedule	
				Revised: Route 138: IN PALMDALE @ AVENUE P-8 FROM ROUTE 14 TO 100TH STREET - ACQUI-SITION OF ROW FOR FUTURE RTE 138 (TIER 2 ENV) (CFP 2212 $3540 2001 CFP 8021)(EA# 116720,PPNO 0393F)	Revised: 2019				
LA	Auxiliary	110	LA0D328	Route 110: IN LOS ANGELES FROM 8TH STREET ON RAMP TO I-110/I-10 CONNECTOR, CONSTRUCT NB & SB AUXILIARY LANES AND MODIFY RAMPS (EA 2411U, PPNO 3343)	Existing: 2012	$54,932	N/A; NO COST INCREASE	Revised description	
				Revised: Route 110: IN LOS ANGELES FROM 8TH STREET ON RAMP TO I-110/I-10 CONNEC-TOR, CONSTRUCT NB & SB AUXILIARY LANES AND MODIFY RAMPS (EA 2411U, PPNO 3343) CONVERT EXIST'G SB AUX LANE TO OPTIONAL LANE & MODIFY RAMPS; NB HARBOR FWY, FROM NORTH END OF 12TH ST UC TO NORTH END OF THE 7TH ST UC, ADD STORAGE LANE ON THE MAINLINE & RECONSTRUCT RAMP					
LA	Goods Movement	0	101001	Port Truck Traffic Reduction Program: West Basin Railyard. Intermodal railyard connecting Port of LA with Alameda Corridor to accom-modate increased loading of trains at the Port, thereby reducing truck trips to off-dock railyards..	2014	$108,827	COST COVERED BY STPL-R, TCIF, AND PORT FUNDS	New project	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
LA	HOV	5	LA000358	Route 5: --- FROM ROUTE 134 TO ROUTE 170 HOV LANES (8 TO 10 LANES) (CFP 346)(2001 CFP 8355). (EA# 12180, 12181,12182,12183,12184, 13350 PPNO 0142F,151E,3985,3986,3987) SAFETEA LU # 570. CONSTRUCT MODIFIED IC @ I-5 EMPIRE AVE, AUX LNS NB & SB BETWEEN BURB	Existing: 2012 Revised: 2014	Existing: $609,539 Revised: $699,700	COST INCREASE COVERED BY CMAQ, CMIA, RIP, IIP, PROP C25 FUNDS	Revised schedule and cost	
LA	HOV	5	LA01344	Route 5: RT 5 FROM RT 118 TO RT 14 FROM 10 TO 12 LANES HOV LANES. EA# 122001, PPNO 0162P. GARVEE project.	Existing: 2008 Revised: 2009	Existing: $26,560 Revised: $134,000	COST INCREASE COVERED BY PROP C25, GARVEE, TCRP, CMAQ, RSTP, AND RIP FUNDS	Revised schedule and cost	
LA	HOV	10	LA000548	Existing: Route 10: FROM PUENTE TO CITRUS HOV LANES FROM 8 TO 10 LANES (C-ISTEA 77720) (EA# 117080, PPNO# 0309N) Revised: Route 10: FROM PUENTE TO CITRUS HOV LANES FROM 8 TO 10 LANES & SOUND-WALLS (C-ISTEA 77720, 95 STIP-IIP) (EA# 117080,11172, 1170U, PPNO# 0309N, 0309S)	2020	Existing: $173,657 Revised: $184,522	COST INCREASE COVERED BY CMAQ, TCRP, RIP, IIP FUNDS	Revised description and cost	
LA	HOV	10	LA01342	Route 10: RT 10 FROM RT 605 TO PUENTE AVE HOV LANES (8+0 TO 8+2) (EA# 117070, PPNO 0306H) PPNO 3333 3382 AB 3090 REP (TCRP #40)	Existing: 2012 Revised: 2014	$200,064	N/A; NO COST INCREASE	Revised schedule	
LA	HOV	14	1H0101	Add 1 HOV lane each direction on the SR-14 from Ave. P-8 to Ave. L	2030	Existing: $151,943 Revised: $120,000	N/A; COST DE-CREASE	Revised cost	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
LA	HOV	405	1178A	Route 405: IN LOS ANGELES AND CULVER CITY FROM ROUTE 90 TO ROUTE 10 - HOV LANES (SB 5+0 TO 5+1; NB 5+0 TO 5+1 HOV) (2206LK CFP) OBLIGATED 6207 (034)	Existing: 2008	Existing: $167,228	COST INCREASE COVERED BY COM-BINATION OF FUNDS, INCLUDING PROP C25, CMAQ, RSTP, RIP FUNDS	Revised schedule and cost	
					Revised: 2010	Revised: $169,500			
LA	HOV	405	LA0C8344	Existing: Route 405: EXTENSION OF N/B I-405 HOV LANE-TO EXTEND THE HOV LANE ON N/B I-405 FROM SOUTH OF VENTURA BL TO SO. BURBANK BLVD WHERE IT WILL JOIN THE EXISTING HOV LANE. (EA# 199620, PPNO# 2788).	2008	$6,611	N/A; NO COST INCREASE	Revised description	
				Revised: Route 405: EXTENSION OF N/B I-405 HOV LANE-TO EXTEND THE HOV LANE ON N/B I-405 FROM GREENLEAF ST TO BURBANK BLVD WHERE IT WILL JOIN THE EXISTING HOV LANE. (EA# 199620, PPNO# 2788).					
LA	HOV	405	LA195900	Existing: Route 405: RTE. 405 - WATERFORD AVE. TO RTE 10 - AUX LANE: LOS ANGELES - WATER-FORD AV. TO RTE 10 - CONSTRUCT S/B AUX LANE & S/B HOV LN (2001 CFP 8354) (EA# 195900 ,PPNO 2333). GARV 12/03	Existing: 2009	Existing: $16,671	COST INCREASE COVERED BY PROP C25, GARVEE, TCRP, IIP FUNDS	Revised description, schedule, and cost	
				Revised: Route 405: RTE. 405 - WATERFORD AVE. TO RTE 10 - AUX LANE: LOS ANGELES - WATER-FORD AV. TO RTE 10 - CONSTRUCT ONE HOV LN IN EACH DIRECTION (2001 CFP 8354) (EA# 195900 ,PPNO 2333). GARV 12/03	Revised: 2008	Revised: $50,000			

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
LA	HOV	5/405	1H0103	I-5/I-405 Carpool Lane Partial Connector (South to North)	2030	Existing: $503,008 Revised: $330,000	N/A; COST DE-CREASE	Revised cost	
LA	HOV & Truck Climbing	5	Existing: LAE0465	Existing: Route 5: PHASE 1 OF 3-- IN L.A./SANTA CLARITA ON RTE 5 FROM SR14 TO PARKER RD, HOV & TRUCK LANE, AND AUXILIARY LANE IMPROVEMENTS(EA 23320,2332E,2332A,2332C, PPNO 3189, 3189A, 3189B) SAFETEA LU #465 [Phase 1 Limits 46.3 to 50.0 from Calgrove to Rte 14:	Existing: 2020	Existing: $410,000	SEE BELOW	Project split; revised schedule and cost	
			Revised: LAE0465	Revised: IN L.A./SANTA CLARITA ON RTE 5 FROM SR14 TO PICO CANYON, HOV, TRUCK LANE, AND AUXILIARY LANE IMPROVEMENTS	Revised: 2014	Revised: $164,000	COST COVERED BY FORMULA FUNDS, HPP/PNS, MET. MOBILITY FREIGHT PROG., STATE PROG., ADD. SHOPP, MEA-SURE R, AND TOLLS/ PPP FUNDS		
			Revised: 1TL1001	Revised: IN L.A./SANTA CLARITA ON RTE 5 FROM PICO CANYON TO PARKER RD, HOV AND AUXILIARY LANE IMPROVEMENTS	Revised: 2030	Revised: $390,000	COST COVERED BY FORMULA FUNDS, HPP/PNS, MET. MOBILITY FREIGHT PROG., STATE PROG., ADD. SHOPP, MEA-SURE R, AND TOLLS/ PPP FUNDS		

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
LA	IC/Ramps	0	LA0C8012	Existing: Route 5: I-5 WESTERN AVENUE I/C PHASE I -REALIGNMENT OF I-5 NB OFF & ON RAMPS @ WESTERN. NB EXIT RAMP BEGINS AS 2 AND WIDENS TO 4 LANES AT FLOWER ST. (EA# 1786A0, PPNO 2120)	Existing: 2012	$33,615	N/A; COST DE-CREASE	Revised description and schedule	
				Revised: Route 005: I-5 WESTERN AVENUE I/C PHASE I -REALIGNMENT OF I-5 NB OFF & ON RAMPS @ WESTERN. NB EXIT RAMP BEGINS AS 2 AND WIDENS TO 4 LANES AT FLOWER ST. (EA# 1786A, PPNO 2120)	Revised: 2014				
LA	IC/Ramps	0	LA0D390	Existing: THE PROJECT IMPROVES THE INTERSEC-TION AND I-110 ON/OFF-RAMPS AT JOHN S. GIBSON; AND ENHANCES THE OPERATION AND SAFETY OF THE I-110/SR 47/HARBOR BLVD INTERCHANGE CONNECTOR(SAFETEA-LU HPP # 2885. Addition of left and right turn lanes. Length of project - 1	Existing: 2012	Existing: $67,800	N/A; COST DE-CREASE	Revise description, schedule, and cost	✓
				Revised: IMPROVE THE INTERSTATE 110 NORTHBOUND AT JOHN S. GIBSON BOULEVARD AND THE NORTHBOUND SR-47/I- 110 CONNECTOR	Revised: 2014	Revised: $34,551			
LA	IC/Ramps	0	LA0D462	Route 5: I-5 PARKER RD INTERSECTION IM-PROVEMENTS INCLUDING BRIDGE WIDENING AND LANE ADDITIONS	Existing: 2010 Revised: 2014	$500	N/A; NO COST INCREASE	Revised schedule	
LA	IC/Ramps	0	LA0D463	Route 5: I-5 LAKE HUGHES RD- INTERSECTION IMPROVEMENTS & WIDENING TO PROVIDE ADDITIONAL LANES ON EASTBOUND AND WESTBOUND APPROACHES	Existing: 2010 Revised: 2014	$500	N/A; NO COST INCREASE	Revised schedule	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
LA	IC/Ramps	0	LA98STIP4	Route 101: RT. 101 S- BOUND IMPRVMNTS FRM L.A. ST TO CENTER ST ELMNATE HEWITT ST ON /OFF RAMPS & VIGNES OFF RAMP.ADD NEW ON RAMP AT GAREY ST.EA 199U1,119911,PPNO 0567P (AB3090REP $22599)	2008	Existing: $26,865 Revised: $40,900	COST INCREASE COVERED BY A COMBINATION OF FUNDS, INCLUDING PROP C25 AND RIP FUNDS	Revised cost	
LA	IC/Ramps	0	LAE2198	Existing: AVALON BLVD INTERCHANGE MODIFICATION AT I-405 IMPROVING AVALON/I-405 INTER-CHANGE BY CONSTRUCTING A NEW SOUTH-BOUND ON-RAMP, WIDENING NORTHBOUND OFF-RAMP AND ON-RAMP, PROVIDING ACCES Revised: AVALON BLVD INTERCHANGE MODIFICATION AT I-405 IMPROVING AVALON/I-405 INTER-CHANGE BY CONSTRUCTING A NEW SOUTH-BOUND ON-RAMP, WIDENING NORTHBOUND OFF-RAMP AND ON-RAMP, Widening Avalon Blvd northbound.	Existing: 2012 Revised: 2014	$21,150	N/A; NO COST INCREASE	Revised description and schedule	
LA	IC/Ramps	5	LA0D73B	Route 5: IN NORWALK: FROM ORANGE COUNTY LINE TO ROUTE 605: CARMENITA INTERCHANGE IMPROVEMENT (EA 2159C0, PPNO 2808A) (TCRP 42.3, & 43)	Existing: 2014 Revised: 2020	$379,730	N/A; NO COST INCREASE	Revised schedule	
LA	IC/Ramps	5	LA990366	WIDEN/IMPROVE I-5/SR-126 IC	2010	$72,200	COST COVERED BY PROP C25, LOCAL AGENCY, RIP, AND IIP FUNDS	New project	
LA	IC/Ramps	60	LA0D399	Route 60: CONSTRUCTION OF NEW PARTIAL DIAMOND INTERCHANGE FOR STATE ROUTE 60 (SR-60) AT LEMON AVE (SAFETEA-LU # 587).	Existing: 2012 Revised: 2014	$19,000	N/A; NO COST INCREASE	Revised schedule	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
LA	IC/Ramps	90	16931	Route 90: IN MAR VISTA FROM MINDANAO WAY TO CULVER BOULEVARD - CONSTRUCT UNDER- CROSSING, WIDEN CULVER BOU-LEVARD FROM 6 TO 8 LANES, AND MODIFY RAMPS (DREAMWORKS) (EA# 1693C, PPNO 2012A) 3543	2008	Existing: $19,562 Revised: $20,000	COST INCREASE COVERED BY PROP C25	Revised cost	
LA	IC/Ramps	101	LA996343	U.S. 101 FWY/KANAN RD. INTERCHANGE IM-PROVEMENTS - ADD 1 LANE TO NB OFF RAMP (1 TO 2). SAFETEA-LU # 3099	Existing: 2010 Revised: 2012	$24,460		Revised schedule	
LA	IC/Ramps	105	17850	Route 105: LOS ANGELES - SEPULVEDA BLVD TO NASH STREET - WIDEN N/B OFF-RAMP @ SEPULVEDA BL FROM W/B RTE 105. FROM 1 LANE TO 2 LANES. (PPNO# 2119, EA# 17850K) (IIP $7,394)	Existing: 2009 Revised: 2010	$27,211	N/A; NO COST INCREASE	Revised schedule	
LA	IC/Ramps	110	LA0B422	FAIR OAKS AV & SR-110 IMPROVEMENT PROJECT (ROGAN FUNDS, HR5394)	Existing: 2010 Revised: 2020	$9,418	N/A; NO COST INCREASE	Revised schedule	
LA	IC/Ramps	126	LA0C8099	Route 126: SR-126/COMMERCE CTR DR NEW IC. CONSTRUCT A PARTIAL CLOVERLEAF, GRADE SEPARATED IC AND WIDEN ST 126 FROM .76 KM EAST OF IC TO .85 KM WEST 4-6 LANES. (2001 CFP 8099) (PPNO 3118)	Existing: 2010 Revised: 2014	$37,600	N/A; NO COST INCREASE	Revised schedule	
LA	IC/Ramps	405	49160	Route 405: IN INGLEWOOD AT ARBOR VITAE AVENUE-CONSTRUCT SOUTH HALF OF INTER-CHANGE. EA# 491601, PPNO 0831)	Existing: 2014 Revised: 2020	$53,080	N/A; NO COST INCREASE	Revised schedule	
LA	IC/Ramps	405	LA0D77	Route 405: CITY OF L.A.-AT ROUTE 405 & US 101 INTERCHANGE. CONSTRUCT FREEWAY CONNECTOR FROM SB RTE 405 TO NB&SB US 101 & ADD AUX LANE FROM BURBANK TO NB 101 CONNECTOR (EA# 199610, PPNO 2787)	Existing: 2020 Revised: 2008	Existing: $246,180 Revised: $45,700	N/A; COST DE-CREASE	Revised schedule and cost	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
LA	IC/Ramps	605	1M1004	I-605 Corridor "Hot Spot" Interchanges in Gateway Cities	2025	$3,200,000	COST COVERED BY FEDERAL FORMULA FUNDS, FEDERAL HPP/PNS EARMARKS, METROPOLITAN MO-BILITY AND ACCESS PROGRAM, FREIGHT PROGRAM, SHOPP, AND MEASURE R FUNDS	New project	
LA	IC/Ramps	710	LA996347	Existing: I-710/FIRESTONE BLVD.IC, PHASE IV (FIRES-TONE BLVD. BRIDGE WIDENG OVER L.A RIVER) PROJECT NO. HP21L-5257 (016) (HBRR: 53C1972) WIDEN FROM 4.7M TO 6.4M, ON-RAMP MOD. Revised: I-710/FIRESTONE BLVD.IC, PHASE IV (FIRESTONE BLVD. BRIDGE WIDENING OVER L.A RIVER) PROJECT NO. HP21L-5257 (016) (HBRR: 53C1972) WIDEN FROM 4.7M TO 6.4M, ON-RAMP MOD. REHABILITATE 5-LANE BRIDGE TO 6 LANE, ADD SHOULDERS, UP-GRADE BRIDGE RAILINGS.	2020	$19,000	N/A; NO COST INCREASE	Revised description	
LA	IC/Ramps	57/60	1M0104	SR-57/SR-60 Interchange improvement	2030	Existing: $735,341 Revised: $475,000	N/A; COST DE-CREASE	Revised cost	
LA	IC/Ramps	91, 105, 110, 405	1M1003	I-405, I-110, I-105 and SR-91 Ramp and Interchange Improvements (South Bay)	2014	$1,265,200	COST COVERED BY MEASURE R FUNDS	New project	
LA	Mixed Flow	710	1M1002	I-710 Early Action Projects	2022	$687,000	COST COVERED BY HPP AND MEASURE R FUNDS	New project	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
LA	Mixed Flow & HOV	5	LA0D73	Existing: Route 5: LA MIRADA, NORWALK & SANTA FE SPRINGS-ORANGE CO LINE TO RTE 605 JUNCTION. WIDEN FOR HOV & MIXED FLOW LNS, RECONSTRUCT VALLEY VIEW (EA 2159A0, PPNO 2808). TCRP#42.2&42.1	2020	$1,240,524	N/A; NO COST INCREASE	Revised description	
				Revised: Route 005: LA MIRADA, NORWALK & SANTA FE SPRINGS-ORANGE CO LINE TO RTE 605 JUNCTION. WIDEN FOR HOV & MIXED FLOW LNS, RECONSTRUCT VALLEY VIEW (EA 2159A=EA 21591, 21592, 21593, 21594, 21595; PPNO 4153, 2808, 4154, 4155, 4156). TCRP#42.2&42.1					
LA	Mixed Flow & HOV	71	Existing: LA0B951	Existing: Route 71: ROUTE 10 TO ROUTE 60 - EXPRESSWAY TO FREEWAY CONVERSION - ADD 1 HOV LANE AND 1 MIXED FLOW LANE . (2001 CFP 8349, TCRP #50) (EA# 210600, PPNO 2741) (TCRP #50)	Existing: 2020	Existing: $445,000	N/A; NO OVERALL COST INCREASE	Project split; revised schedule	
			Revised: LA0B951	Revised: Route 71: ROUTE 10 TO MISSION BLVD - EXPRESSWAY TO FREEWAY CONVERSION - ADD 1 HOV LANE AND 1 MIXED FLOW LANE . (2001 CFP 8349, TCRP #50) (EA# 210600, PPNO 2741) (TCRP #50)	Revised: 2030	Revised: $115,000			
			Revised: 1M1001	Revised: Route 71: MISSION BLVD TO SR-60 - EXPRESSWAY TO FREEWAY CONVERSION - ADD 1 HOV LANE AND 1 MIXED FLOW LANE	Revised: 2030	Revised: $330,000			

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
LA	Non-mo-torized	0	101007	Call for Projects Bicycle Mode	2030	$287,200	COST COVERED BY A COMBINATION OF SOURCES, INCLUD-ING PROP C, SLPP, TE, CMAQ, RSTP, AND RIP FUNDS	New project	
LA	Non-mo-torized	0	101008	Call for Projects Pedestrian Mode	2030	$287,200	COST COVERED BY A COMBINATION OF SOURCES, INCLUD-ING PROP C, SLPP, TE, CMAQ, RSTP, AND RIP FUNDS	New project	
LA	O&M	0	101003	Rail rehabilitation and replacement (Capital costs only)	2035	$6,538,500	COST COVERED BY SEC 5309, STA - POP, TDA, PROP C25, AND PROP A35 FUNDS	Revised budget	
LA	Opera-tional	0	100703	Freeway Service Patrol	Existing: 2030 Revised: 2035	Existing: $955,620 Revised: $836,900	N/A; COST DE-CREASE	Revised schedule and cost	
LA	Other	0	100702	Existing: Retrofit Soundwall Program Revised: Countywide Soundwalls (Metro Regional Lines and Monterey Park/SR-60)	Existing: 2030 Revised: 2035	Existing: $1,150,640 Revised: $2,149,900	COST COVERED BY RIP, STATE PROG., PROP C25, AND MEASURE R FUNDS	Revised description, schedule, and cost	
LA	Other	0	100704	Existing: SAFE CALL BOXES Revised: SAFE	Existing: 2030 Revised: 2035	Existing: $341,238 Revised: $253,700	N/A; COST DE-CREASE	Revised description, schedule, and cost	
LA	Other	0	101002	Safety Net (Immediate Needs) Program	2035	$253,700	COST COVERED BY PROP C40 FUNDS	New project	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
LA	Other	0	101004	Call for Projects RSTI Mode	2030	$753,900	COST COVERED BY A COMBINATION OF SOURCES, INCLUD-ING PROP C, SLPP, TE, CMAQ, RSTP, AND RIP FUNDS	New project	
LA	Other	0	101005	Call for Projects Goods Movement Mode	2030	$682,100	COST COVERED BY A COMBINATION OF SOURCES, INCLUD-ING PROP C, SLPP, TE, CMAQ, RSTP, AND RIP FUNDS	New project	
LA	Other	0	101006	Call for Projects Signal Synchronization Mode	2030	$861,600	COST COVERED BY A COMBINATION OF SOURCES, INCLUD-ING PROP C, SLPP, TE, CMAQ, RSTP, AND RIP FUNDS	New project	
LA	Other	0	101009	Call for Projects Transportation Enhancement Activities (TEA) Mode	2030	$71,800	COST COVERED BY A COMBINATION OF SOURCES, INCLUD-ING PROP C, SLPP, TE, CMAQ, RSTP, AND RIP FUNDS	New project	
LA	Other	0	101010	Call for Projects Reserve	2030	$93,300	COST COVERED BY A COMBINATION OF SOURCES, INCLUD-ING PROP C, SLPP, TE, CMAQ, RSTP, AND RIP FUNDS	New project	
LA	Other	0	101012	Highway Operational Improvements in Arroyo Verdugo Subregion	2014	$260,000	COST COVERED BY MEASURE R	New project	
LA	Other	0	101013	Highway Operational Improvements in Las Virgenes/Malibu Subregion	2014	$253,000	COST COVERED BY MEASURE R	New project	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
LA	Other	710	LA996143	Route 710: RTE 710 PCH TO DOWNTOWN L.B., PAVEMENT RECON, MEDIAN, LAND-SCAPING IMPROVE (EA 2203U, 23640, PPNO: 2945,3248)	Existing: 2012 Revised: 2009	$7,496	N/A; NO COST INCREASE	Revised schedule	
LA	TDM	0	1TR1023	Call for Projects TDM Mode	2030	$158,000	COST COVERED BY A COMBINATION OF SOURCES, INCLUD-ING PROP C, SLPP, TE, CMAQ, RSTP, AND RIP FUNDS	New project	
LA	Transit - BRT	0	1TR0705	SAN FERNANDO VALLEY NORTH/SOUTH BRT PHASE I (EXTENSION OF METRO ORANGE LINE ALONG CANOGA RAIL ROW, BRT OR LRT, TECHNOLOGY TBD)	Existing: 2020 Revised: 2014	Existing: $212,123 Revised: $221,000	COST INCREASE COVERED BY PROP 1B, TCRP, PROP C25, AND MEASURE R FUNDS	Revised schedule and cost	
LA	Transit - BRT	0	1TR0706	SAN FERNANDO VALLEY NORTH/SOUTH BRT PHASE II (METRO RAPID SERVICE IMPROVE-MENTS ON MAJOR NORTH/SOUTH ARTERIALS IN SFV)	Existing: 2030 Revised: 2018	$157,464	N/A; NO COST INCREASE	Revised schedule	
LA	Transit - BRT	0	1TR1024	MID -CITY TRANSIT CORRIDOR/WILSHIRE BOULEVARD BUS RAPID TRANSIT PHASE II: THE PROPOSED PROJECT INCLUDES ENHANCED STATION AREAS WITH SHELTERS AND LANDSCAPING; STREET REPAIR AND RE-CONSTRUCTION; CONCRETE BUS STOP PADS; AND PARKING FACILITIES. THE PROJECT IS FUNDED IN THE LONG RANGE TRANSPORTA-TION PLAN.	2015	$124,000	COST COVERED BY PROP C, PROP 1B, TCRP, AND REGIONAL IMPROVEMENT FUNDS	New project	
LA	Transit - BRT	0	LA29202U3	SAN FERNANDO VALLEY NORTH/SOUTH BRT EXTENSION PHASE I: METRO RAPID SERVICE ALONG RESEDA BLVD. AND SEPULVEDA BLVD. SAFETEA-LU # 183	Existing: 2009 2020	$11,702	N/A; NO COST INCREASE	Revised schedule	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
LA	Transit - BRT	0	LA29202U4	SAN FERNANDO VALLEY NORTH/ SOUTH BRT EXTENSION PHASE II: BUS SPEED IMPROVE-MENTS ALONG METRO RAPID CORRIDORS AND EXPANSION OF EXISTING PARK & RIDE FACILITY.	Existing: 2010 Revised: 2020	$29,046	N/A; NO COST INCREASE	Revised schedule	
LA	Transit - BRT	0	LA29202U5	SAN FERNANDO VALLEY NORTH/ SOUTH BRT EXTENSION PHASE III: STATION ACCES-SIBILITY AND PEDESTRIAN ENHANCEMENTS ON RESEDA BLVD., SEPULVEDA BLVD., AND LANKERSHIM BLVD.	Existing: 2010 Revised: 2018	$88,000	N/A; NO COST INCREASE	Revised schedule	
LA	Transit - BRT	0	LA29202U6	SAN FERNANDO VALLEY NORTH/ SOUTH BRT EXTENSION PHASE IV: COMPLETION OF A NORTHBOUND BUS ONLY LANE ON A PORTION OF SEPULVEDA BLVD. AND OTHER IMPROVE-MENTS.	Existing: 2010 Revised: 2020	$90,000	N/A; NO COST INCREASE	Revised schedule	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
LA	Transit - BRT	0	LA29202W	Existing: MID -CITY TRANSIT CORRIDOR: WILSHIRE BLVD. FROM VERMONT TO SANTA MONICA DOWNTOWN- MID-CITY WILSHIRE BRT INCL. DIV. EXPANSION AND BUS ONLY LANE	2012	Existing: $54,811	N/A; COST DE-CREASE	Revised description and cost	
				Revised: MID -CITY TRANSIT CORRIDOR/WILSHIRE BOULEVARD BUS RAPID TRANSIT PHASE I: THIS 12.5-MILE CORRIDOR PROJECT IN-CLUDES A 9.6-MILE PEAK PERIOD BUS LANE ON WILSHIRE BLVD. FROM VALENCIA STREET TO THE CITY OF SANTA MONICA, EXCLUDING THE CITY OF BEVERLY HILLS. THE PROJECT CONSISTS OF SELECTIVE STREET WIDENING, CURB LANE REPAVING/RECONSTRUCTING, IMPROVING TRAFFIC SIGNAL TIMING, AND IMPROVING BUS SIGNAL PRIORITY. THE PROJ-ECT IS FUNDED IN THE FEDERAL VERY SMALL STARTS PROGRAM.		Revised: $31,500			

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
LA	Transit - Bus	0	Existing: 1TL104	Existing: COUNTYWIDE BUS SYSTEM IMPROVEMENT	Existing: 2030	Existing: $15,071,170	SEE BELOW	Project split; revised description, sched-ule, and cost	
			Revised: 1TL104	Revised: COUNTYWIDE BUS SYSTEM IMPROVEMENT--METRO FLEET	Revised: 2035	Revised: $8,161,742	COST COVERED BY ARRA, CMAQ, RSTP, SEC 5309, SEC 5307, SCAQMD, STA - REV, TCRP, PROP 1B, RIP, PROP C40, TDA, LEASE REV., LONP REIMB., AND MEA-SURE R FUNDS		
			Revised: 1TR1010	Revised: COUNTYWIDE BUS SYSTEM IMPROVEMENT--MUNI FLEET	Revised: 2035	Revised: $6,467,613	COST COVERED BY ARRA, SEC 5309, SEC 5307, SEC 5340, PROP 1B, PROP C20, PROP A25, PROP C40, TDA, AND MEA-SURE R FUNDS		

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
LA	Transit - Bus	0	1TR1007	RAMONA CORRIDOR TRANSIT CENTER ACCESS PROJECT. CONSTRUCT A NEW UNDERPASS STRUCTURE (APPROXIMATELY ONE MILE) ON RAMONA BLVD UNDER SANTA ANITA AVE TO PROVIDE DIRECT ACCESS TO LOWER LEVEL OF NEW EL MONTE TRAN-SIT CENTER. THE PROPOSED BUS TUNNEL RAMPS WILL BEGIN EAST OF THE SANTA ANITA AVENUE AND RAMONA BOULEVARD INTERSECTION ON RAMONA BOULEVARD AND THE TUNNEL WILL CONTINUE UNDER SANTA ANITA AVENUE (ALONG ROMONA BOULEVARD) TO THE LOWER LEVEL OF THE EL MONTE TRANSIT CENTER. THE TUNNEL WILL HAVE TWO "BUS ONLY" LANES OF TRAVEL-ONE IN EACH DIRECTION.	2020	$15,302	COST COVERED BY CMAQ AND CITY FUNDS	New project	
LA	Transit - Bus	0	1TR1016	Union bus division (Capital costs only)	2012	$90,100	COST COVERED BY PROP 1B AND PROP C40 FUNDS	New project	
LA	Transit - Bus	0	1TR1020	New airport bus division (Capital costs only)	2022	$155,500	COST COVERED BY SEC 5308 AND PROP C40 FUNDS	New project	
LA	Transit - Bus	0	1TR1021	Metro and Municipal Regional Clean Fuel Bus Capital--Facilities and Rolling Stock (Metro's share to be used for clean fuel buses) (Capital costs only)	2035	$150,000	COST COVERED BY MEASURE R FUNDS	Revised budget	
LA	Transit - Commuter Rail	0	1TR1015	Metrolink-subsidy (Includes operations, rehabilitation and capital; does not include Metrolink fares and other non-Metro funds)	2035	$5,640,200	COST COVERED BY ARRA, CMAQ, RIP, IIP, PROP 1B, PROP C10, AND MEASURE R FUNDS	Revised budget	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
LA	Transit - Heavy Rail	0	Existing: UT101	Existing: WESTSIDE EXTENSION - PURPLE LINE FROM WILSHIRE/WESTERN TO LA CIENEGA	Existing: 2020	Existing: $1,448,263	SEE BELOW	Project split; revised description, sched-ule, and cost	
			Revised: UT101	Revised: METRO PURPLE LINE WESTSIDE SUBWAY EXTENSION SEGMENT 1 - WILSHIRE/WESTERN TO FAIRFAX	Revised: 2020	Revised: 1,950,000	COST INCREASE COVERED BY LONP REIMBURSEMENT, LTF GENERAL REVENUES, LOCAL AGENCY, TDA, MEA-SURE R, REGIONAL IMPROVEMENT FUNDS – TRANSIT, AND NEW STARTS FUNDS		
			Revised: 1TR1002	Revised: METRO WESTSIDE SUBWAY EXTENSION SEG-MENT 2 (FAIRFAX TO CENTURY CITY)	Revised: 2030	Revised: $2,450,000	COST COVERED BY NEW STARTS, RIP, LONP REIMBURSE-MENT, LTF, LOCAL CONT, TDA, AND MEASURE R FUNDS		
			Revised: 1TR1003	Revised: METRO WESTSIDE SUBWAY EXTENSION SEG-MENT 3 (CENTURY CITY TO WESTWOOD)	Revised: 2035	Revised: $1,615,000	COST COVERED BY NEW STARTS, RIP, LONP REIMBURSE-MENT, LTF, LOCAL CONT, TDA, AND MEASURE R FUNDS		
LA	Transit - Intermodal	0	1TR1005	CONSTRUCT REGIONAL AZUSA INTERMODAL TRANSIT CENTER TO ACCOMMODATE EXIST-ING AND FUTURE PARKING DEMAND AND SUPPORT EFFECTIVE TRANSIT USE.	2020	$7,832	COST COVERED BY DEMOSTL, PC25, AND CITY FUNDS	New project	✓

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
LA	Transit - Intermodal	0	1TR1006	SUNSET JUNCTION PHASE 2, SUNSET BLVD FROM SANTA MONICA BLVD TO MANZANITA ST. CREATE A MULTI-MODAL TRANSIT PLAZA TO INTEGRATE PUBLIC TRANSPORTATION, PEDESTRIAN & BICYCLE IMPROVEMENTS THAT WOULD RESULT IN REGIONAL & LOCAL BENEFITS.	2020	$4,733	COST COVERED BY CMAQ AND CITY FUNDS	New project	
LA	Transit - Intermodal	0	1TR1008	NORWALK/SANTA FE SPRINGS TRANSPORTA-TION CTR PHASE II PARKING. CONSTRUCT A TOTAL OF APPROX. 150 PARKING SPACES ON A SITE ADJACENT TO THE METROLINK STATION.	2014	$2,819	COST COVERED BY PC10 AND CITY FUNDS	New project	
LA	Transit - Intermodal	0	1TR1009	CONSTRUCT TRANSIT CENTER AND PARK-AND-RIDE LOT FOR CONNECTION TO THE METRO GREEN LINE AT LAKEWOOD STA-TION. A TOTAL OF 230 PARKING SPACES ARE PROPOSED.	2020	$5,100	COST COVERED BY PC25 AND CITY FUNDS	New project	
LA	Transit - Intermodal	0	LAF3513	Design and construct 3.85 mile bikeway along future Exposition light rail corridor between Venice/Robertson Blvds. and Santa Monica City limits at Centinela. Class I and Class II bikeways.	2015	$10,000	COST COVERED BY CMAQ FUNDS	New project	
LA	Transit - Intermodal	0	LAF3651	Eastside Light Rail Pedestrian Linkages, Phase II. Enhance multi-modal access to the Mariachi & Soto Gold Line Stations, focusing on 1st Street.	2013	$30,000	COST COVERED BY MEASURE R FUNDS	New project	
LA	Transit - Light Rail	0	1TR0101	METRO RAIL GREEN LINE EXTENSION FROM MARIPOSA & NASH TO CENTURY & SEPULVE-DA-LAX TERMINAL: PEOPLE MOVER OR LIGHT RAIL	Existing: 2025 Revised: 2030	Existing: $401,497 Revised: $330,000	N/A; COST DE-CREASE	Revised schedule and cost	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
LA	Transit - Light Rail	0	1TR0404	Regional Connector - Light Rail in Tunnel allowing through movements of trains (Blue, Gold, Expo Lines)	Existing: 2035 Revised: 2020	Existing: $4,246,141 Revised: $1,073,000	N/A; COST DE-CREASE	Revised schedule and cost	
LA	Transit - Light Rail	0	1TR0704	Existing: METRO RAIL GOLD LINE EXTENSION-SEGMENT 2 AZUSA-CITRUS TO MONTCLAIR STATION LRT EXTENSION. Revised: GOLD LINE FOOTHILL LIGHT RAIL EXTENSION SEGMENT 2- GLENDORA TO MONTCLAIR	2020	$1,250,761	N/A; NO COST INCREASE	Revised description	
LA	Transit - Light Rail	0	1TR1001	GREEN LINE EXTENSION ALONG HARBOR SUBDIVISION TO THE PROPOSED REDONDO BEACH TRANSIT CENTER	2035	$555,000	COST COVERED BY MEASURE R, LONP REIMB, AND LOCAL CONT FUNDS	New project	
LA	Transit - Light Rail	0	1TR1004	GOLD LINE EASTSIDE TRANSIT CORRIDOR PHASE 2	2035	$2,490,000	COST COVERED BY PROP A35, MEASURE R, AND LOCAL CONT FUNDS	New project	
LA	Transit - Light Rail	0	LA0C10	Existing: MID-CITY/EXPOSITION CORRIDOR LIGHT RAIL TRANSIT PROJECT PHASE I TO VENICE-ROBERTSON STATION. E200-BUSP-095, La Cienega Intermodal Center) Revised: EXPOSITION LINE LIGHT RAIL TRANSIT PROJ-ECT PHASE I TO VENICE-ROBERTSON STATION	Existing: 2010 Revised: 2012	Existing: $862,353 Revised: $862,000	N/A; COST DE-CREASE	Revised description, schedule, and cost	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
LA	Transit - Light Rail	0	LA0D198	Existing: CRENSHAW TRANSIT CORRIDOR (SAFETEA-LU #140): ROW ANALYSIS, ALTERNATIVES ANALYSIS, ENV. DOCUMENTATION, PE	Existing: 2030	Existing: $1,057,000	COST INCREASE COVERED BY SEC 5309, CMAQ, OTHER FEDERAL, RIP, PROP C25, MEASURE R, AND LOCAL CONT. FUNDS	Revised description, schedule, and cost	
				Revised: CRENSHAW CORRIDOR (SAFETEA- LU #140): PE & SHORT TERM CATEGORICALLY EXEMPT IMPROVEMENTS (SHELTERS, AMENITIES, ETC)	Revised: 2020	Revised: $1,715,000			
LA	Transit - Light Rail	0	LA29202V	Existing: EASTSIDE TRANSIT CORRIDOR - UNION STA-TION TO ATLANTIC VIA 1ST ST. TO LORENA, THEN 3RD ST. VIA 3RD/BEVERLY BLVD. TO ATLANTIC (EASTSIDE LRT PPNO 3358)	Existing: 2010	$899,000	COST INCREASE COVERED BY A COMBINATION OF FUNDS, INCLUDING NEW STARTS, SEC 5309, CMAQ, TCRP, RIP, PROP A35, PROP C25, AND LEASE REV. FUNDS	Revised description and schedule	
				Revised: GOLD LINE EASTSIDE LIGHT RAIL TRANSIT - UNION STATION TO ATLANTIC VIA 1ST ST. TO LORENA, THEN 3RD ST. VIA 3RD/BEVERLY BLVD. TO ATLANTIC (EASTSIDE LRT PPNO 3358)	Revised: 2009				
LA	Transit - Light Rail	0	LA29212XY	Existing: METRO RAIL GOLD LINE EXTENSION- PASA-DENA TO MONTCLAIR 24- MILE, 12- STATION LRT EXTENSION. SAFETEA-LU # 285 LEAD AGENCY WILL CHANGE TO METRO GOLD LINE	Existing: 2014	Existing: $720,464	COST INCREASE COVERED BY SEC 5309, PROP C25, MEASURE R, AND LOCAL CONT. FUNDS	Revised description, schedule, and cost	
				Revised: GOLD LINE FOOTHILL LIGHT RAIL EXTENSION SEGMENT 1- PASADENA TO GLENDORA	Revised: 2020	Revised: $851,100			

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
LA	Transit - Other	0	1TR1011	West Santa Ana Branch ROW Corridor - Provides for the development of a grade-separated transit corridor - Phase from LA County line toward downtown LA	2027	$649,000	COST COVERED BY MEASURE R, PROP C25, AND LOCAL CONT. FUNDS	New project	
LA	Transit - Other	0	1TR1014	Access Services Incorporated (paratransit) - Metro subsidy	2035	$4,210,300	COST COVERED BY RSTP AND PROP C40 FUNDS	Revised budget	
LA	Transit - Other	0	1TR1017	Planning for Transit Projects	2028	$25,500	COST COVERED BY RIP, PROP C40, AND PROP A35 FUNDS	New project	
LA	Transit - Other	0	1TR1018	Transit contingency/new rail yards/additional rail cars (Capital costs only)	2012	$225,000	COST COVERED BY PROP A35 FUNDS	Revised budget	
LA	Transit - Other	0	1TR1019	Rail System Improvements (Capital costs only)	2035	$636,900	COST COVERED BY ARRA, CMAQ, MEASURE R, AND PROP A35 FUNDS	Revised budget	
LA	Transit - Other	0	1TR1022	Call for Projects Transit Capital Mode	2030	$394,900	COST COVERED BY A COMBINATION OF SOURCES, INCLUDING PROP C, SLPP, TE, CMAQ, RSTP, AND RIP FUNDS	New project	
LA	Transit - Other	0	LA0B311	PARK AND RIDE FACILITY TRANSIT ORIENTED NEIGHBORHOOD PROGRAM SAFETEA-LU # 341 (E-2006-BUSP-092) (E-2006-BUSP-173)	Existing: 2010 Revised: 2012	$17,711	N/A; NO COST INCREASE	Revised schedule	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
LA	Transit - Other	0	LA0C8232	ANTELOPE VALLEY LINE CHANGES AT SANTA CLARITA-ALIGNMENT CHANGES WILL PERMIT HIGHER SPEEDS OF OPERATION AND REDUCE MAINTENANCE COST- (SCRRA). (PPNO 3202).	Existing: 2010 Revised: 2020	$3,693	N/A; NO COST INCREASE	Revised schedule	
LA	Transit - Other	0	LA0C8237	Existing: FIRST ST PARKING STRUCTURE-LONG BEACH REDEVELOPMENT AGENCY. BUILD A PARKING STRUCTURE NEAR SOUTHERLY TERMINUS OF THE LONG BEACH BLUE LINE IN DOWNTOWN LONG BEACH. Revised: THIRD ST/PROMENADE PARKING STRUCTURE-LONG BEACH REDEVELOPMENT AGENCY. EXPANSION OF EXISTING GARAGE TO AC-COMMODATE 100 - 125 TRANSIT ORIENTED PARKING SPACES	Existing: 2009 Revised: 2014	$3,902	N/A; NO COST INCREASE	Revised description and schedule	
LA	Transit - Other	0	LA0D299	ACQUISITION OF (6) ALTER FUEL TRANSIT/ PARATRANSIT VEHICLES NOT TO EXCEED 35' SAFETEA-LU TRANSIT Demo ID #251	Existing: 2010 Revised: 2012	$2,601	N/A; NO COST INCREASE	Revised schedule	
LA	Transit - Other	0	LA0D307	PURCHASE FIVE (5) ALTERNATIVE FUEL BUSES FOR SERVICE EXPANSION. PART OF SAFETEA-LU TRANSIT PROJECT #260 ALONG WITH LA000507, LA0D340, AND LA0D308	Existing: 2012 Revised: 2009	$2,875	N/A; NO COST INCREASE	Revised schedule	
LA	Transit - Other	0	LA0D363	SANTA CLARITA TRANSIT PHASE 2 - EXPAN-SION BUSES - 2 OVER THE ROAD COMMUTER BUSES.	Existing: 2009 Revised: 2012	$1,018	N/A; NO COST INCREASE	Revised schedule	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
LA	Transit - Other	0	LAE0039	TRANSIT VILLAGE - PROVIDE A TRANS. FACIL-ITY FOR SATELLITE PARKING FOR SIERRA MADRE VILLA GOLD LINE STA, P-N-R FOR COMMUTERS, A FOOTHILL TRANSIT STORE.	Existing: 2010 Revised: 2012	$3,026	N/A; NO COST INCREASE	Revised schedule	
LA	Transit - Other	0	LAE0119	Existing: CNG TRANSIT VEHICLES PURCHASE FOR LO-CAL TRANSIT NETWORK EXPANSION Revised: CNG REPLACEMENT TRANSIT VEHICLES PUR-CHASE FOR LOCAL TRANSIT NETWORK	2012	$640	N/A; NO COST INCREASE	Revised description	
LA	Transit - Other	0	LAE0127	PROCUREMENT OF 3 CNG TRANSIT VEHICLES AND RELATED INFRASTRCTURE EQUIPMENT FOR FIXED ROUTE PUBLIC TRANSPORTATION.	Existing: 2010 Revised: 2012	$3,178	N/A; NO COST INCREASE	Revised schedule	

** For modeled projects, represents the Plan network year for which the project was analyzed for modeling and regional emissions analysis*

Orange County

MAJOR REGIONAL PROJECTS

SR-241 WIDENING

Revised Cost

RTP/RTIP Project No. ORA051
Estimated Project Cost (existing): $55.1 million
Estimated Project Cost (revised): $143.5 million
Project Completion By: 2020

Description:
This project will provide two new mixed-flow lanes in each direction on SR-241 from Oso Parkway to the Eastern Transportation Corridor, climbing and auxiliary lanes, and ramp improvements. This project will also provide a third mixed-flow lane from Bake Parkway to Santa Margarita Parkway, and add a northbound auxiliary lane.

I-5 HOV TRANSITWAY/GENE AUTRY WAY IMPROVEMENTS

Revised Schedule

RTP/RTIP Project No. ORA000100
Estimated Project Cost: $66.6 million
Project Completion By (existing): 2009
Project Completion By (revised): 2012

Description:
This project will provide an overcrossing on I-5 and extend Gene Autry Way west from I-5 to Haster with three lanes in each direction.

SR-55/MEATS AVE INTERCHANGE

Revised Cost and Schedule

RTP/RTIP Project No. ORA000146
Estimated Project Cost (existing): $200,000
Estimated Project Cost (revised): $60 million
Project Completion By (existing): 2008
Project Completion By (revised): 2020

Description:
This project will provide on- and off-ramps at SR-55 and Meats Ave.

SAND CANYON RD WIDENING

Revised Schedule

RTP/RTIP Project No. ORA000118
Estimated Project Cost: $54.6 million
Project Completion By (existing): 2009
Project Completion By (revised): 2014

Description:
This project will widen Sand Canyon Road from 4 to 6 lanes from Burt Rd to Laguna Canyon/Oak Canyon and provide a railroad grade separation.

EXHIBIT 2.2 ORANGE COUNTY PROJECT LOCATIONS

Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatlas

TABLE 2.2 ORANGE COUNTY PROJECTS

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMEND-MENT #08-34
OR	Arterial	0	2A1001	RANCHO PARKWAY EXTENSION FROM ITS EXISTING TERMINUS AT HERMANA CIRCLE TO PORTOLA PARKWAY	2014	$2,056	COST COVERED BY MEASURE M	New project	
OR	Arterial	0	2A1002	EXTEND ALTON PARKWAY AS A FOUR-LANE DIVIDED HIGHWAY BETWEEN COMMERCENTRE DRIVE AND TOWNE CENTRE DRIVE	2014	$6,400	COST COVERED BY MEASURE M	New project	
OR	Arterial	0	2A1003	SEAL BEACH BLVD WIDENING FROM OLD RANCH PKWY TO ST. CLOUD FROM 5 TO 6 LANES	2012	$1,443	COST COVERED BY MEASURE M AND FEES	New project	
OR	Arterial	0	2A1004	ADD A THIRD NORTHBOUND LEFT TURN LANE ON AVENIDA EMPRESA AT SANTA MARGARITA PARKWAY AND WIDEN SANTA MARGARITA PARKWAY AT THE INTERSECTION.	2010	$366	COST COVERED BY STATE LOCAL PARTNERSHIP AND PROP 1B FUNDS	New project	
OR	Arterial	0	ORA000118	SAND CYN RD @ SCRRA TRACKS (BURT RD TO LAGUNA CANYON/OAK CANYON) - RAILROAD GRADE SEPARATION. WIDENS FROM 4 TO 6 LANES.	Existing: 2009 Revised: 2014	$54,604	N/A; NO COST INCREASE	Revised schedule	
OR	Arterial	0	ORA040606	YORBA LINDA - WEIR CANYON RD WIDENING ADD 1 NB LANE (FROM SR91 TO LA PALMA)	Existing: 2012 Revised: 2009	$1,532	N/A; NO COST INCREASE	Revised schedule	
OR	Arterial	0	ORA120505	ORANGE COUNTY - ALTON PARKWAY EXTEN-SION (IRVINE) (IRVINE BLVD TO CMMERCENTER DR; FRM 0 TO 6 LNS)	2010	Existing: $40,000 Revised: $29,659	N/A; COST DECREASE	Revised cost	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMEND-MENT #08-34
OR	Arterial	0	ORA120521	SANTA ANA - FIRST STREET WIDENING (FRM SUSAN TO FAIRVIEW; FRM 4 TO 6 LNS)	Existing: 2009 Revised: 2012	$5,751	N/A; NO COST INCREASE	Revised schedule	
OR	Arterial	0	ORA120523	Existing: PLACENTIA - RITCHFIELD AVE WIDENING (FRM ORANGETHORPE TO SCL; FRM 2 TO 4 LNS) Revised: PLACENTIA - RITCHFIELD AVE - ATWOOD CHANNEL BRIDGE WIDENING FROM 3 TO 4 LANES	2010	$347	N/A; NO COST INCREASE	Revised description	
OR	Arterial	0	ORA55244	Existing: TUSTIN RANCH RD (WALNUT AVE TO EDINGER AVE) NEW 6 LANE MAJOR ARTERIAL WITH NEW GRADE SEPARATION AT EDINGER AVE. (1/2 MILE GAP) Revised: TUSTIN RANCH RD (WALNUT AVE TO VALENCIA AVE) NEW 6 LANE MAJOR ARTERIAL WITH NEW GRADE SEPARATION AT OCTA/SCRRA RAILWAY AND EDINGER AVE.	Existing: 2008 Revised: 2012	$24,728	N/A; NO COST INCREASE	Revised description and schedule	
OR	Arterial	5	ORA000100	GENE AUTRY WAY WEST @ I-5 (I-5 HOV TRANSITWAY TO HASTER) ADD OVERCROSSING ON I-5 (S)/MANCHESTER AND EXTEND GENE AUTRY WAY WEST FROM I-5 TO HASTER (3 LANES IN EA DIR.)	Existing: 2009 Revised: 2012	$66,574	N/A; NO COST INCREASE	Revised schedule	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMEND-MENT #08-34
OR	Arterial	74	ORA000152	ORTEGA HWY (RANCHO VIEJO RD TO JUST EAST OF I-5/SR-74 INTERCHAGE) RDWAY WIDEN ADD RT TRN LNE TO CAPAC & REDUCE QUE ON WB SR-74 TO NB I-5 TRN. N/B FRM 2T03 & S/B 2T03 .	Existing: 2007 Revised: 2014	$2,550	N/A; NO COST INCREASE	Revised schedule	
OR	Arterial	74	ORA120507	Existing: WIDEN ROUTE 74 FROM 2 TO 4 LANES - COUNTY SEGMENT (ON ROUTE 74 FROM CITY/COUNTY LINE TO ANTONIO PARKWAY / LA PATA AVE. WIDEN FROM 2 LANES TO 4 LANES) PPNO 4110A EA 08691 SPLIT FROM ORA120507 Revised: ORANGE COUNTY - ORTEGA HWY - WIDEN FRM 2 TO 4 LNS; SAN JUAN CAPISTRANO TO LA PATA/ORTEGA	2012	$40,905	N/A; NO COST INCREASE	Revised description	
OR	Grade Separation	0	ORA48	Existing: JEFFERY RD (IRVINE CENTER DR TO WALNUT) RAILROAD GRADE SEPARATION. FROM 4 TO 6 LANES. DUAL LEAD OCTA IRVINE Revised: JEFFERY RD (IRVINE CENTER DR TO WALNUT) RAILROAD GRADE SEPARATION. FROM 4 TO 6 LANES.	Existing: 2008 Revised: 2012	Existing: $44,649 Revised: $46,449	COST INCREASE COVERED BY CMAQ FUNDS	Revised descrip-tion, schedule, and cost	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMEND-MENT #08-34
OR	IC/Ramps	55	ORA000146	MEATS AVE @ SR55 INTERCHANGE. CON-STRUCT ON-RAMP/OFF-RAMPS. PART OF SR-55 ENHANCEMENT PROJECTS.(0 TO 2 LANES)	Existing: 2008 Revised: 2020	Existing: $200 Revised: $60,000	COST INCREASE COVERED BY LOCAL CITY FUNDS, MEA-SURE M2, AND FEDERAL STP FUNDS	Revised schedule and cost	
OR	IC/Ramps	55	ORA016	PAULARINO AVE (SR-55 NB FRONTAGE ROAD @ PAULARINO AVE) IN COSTA MESA INTER-SECTION IMPROVEMENT. ADDING A N/B RAMP AND W/B RIGHT-TURN-LANE.	Existing: 2012 Revised: 2020	$505	N/A; NO COST INCREASE	Revised schedule	
OR	IC/Ramps	405	2M1001	ADD A NB THRU LANE AT THE SEAL BEACH BLVD/I-405 SB OFF-RAMP INTERSECTION, AND WIDEN THE SB OFF-RAMP	2012	$1,443	COST COVERED BY MEASURE M AND FEES	New project	
OR	IC/Ramps	91	2M1002	WIDEN SR-91 EASTBOUND ON-RAMP AT BEACH BL FROM 1 TO 2 LANES, INCLUDING THE ADDITION OF A RAMP METER	2010	$1,260	COST COVERED BY STATE LOCAL PARTNERSHIP AND PROP 1B FUNDS	New project	
OR	Toll	241	ORA051	(FTC-N) (OSO PKWY TO ETC) (13MI) EXISTING 2 MF IN EA. DIR, 2 ADDITIONAL M/F LANES, PLS CLMBNG & AUX LANS AS REQ BY 2015 PER SCAG/TCA MOU 4/05/01.	2020	Existing: $55,120 Revised: $143,517	COST INCREASE COVERED BY PRIVATE INVES-TORS	Revised cost	

** For modeled projects, represents the Plan network year for which the project was analyzed for modeling and regional emissions analysis*

Riverside County

MAJOR REGIONAL PROJECTS

I-10/JEFFERSON ST INTERCHANGE IMPROVEMENTS

Revised Description and Cost

RTP/RTIP Project No. 47520
Estimated Project Cost: $75.5 million
Project Completion By: 2014

Description (existing):
This project will reconstruct, realign, and widen the I-10/Jefferson St interchange from 2 to 6 lanes (between Sun City Blvd and the Union Pacific railroad) to provide widened ramps, new entry ramps, including ramp metering, dedicated right-turn lanes, and relocate & widen Varner Rd.

Description (revised):
This project will reconstruct, realign, and widen the I-10/Jefferson St interchange from 2 to 6 lanes (between Sun City Blvd and the Union Pacific railroad) to provide widened ramps, new entry ramps, including ramp metering, dedicated right-turn lanes, and widen Varner Rd from 2 to 4 lanes east of Jefferson St.

NEW I-10/PORTOLA AVE INTERCHANGE

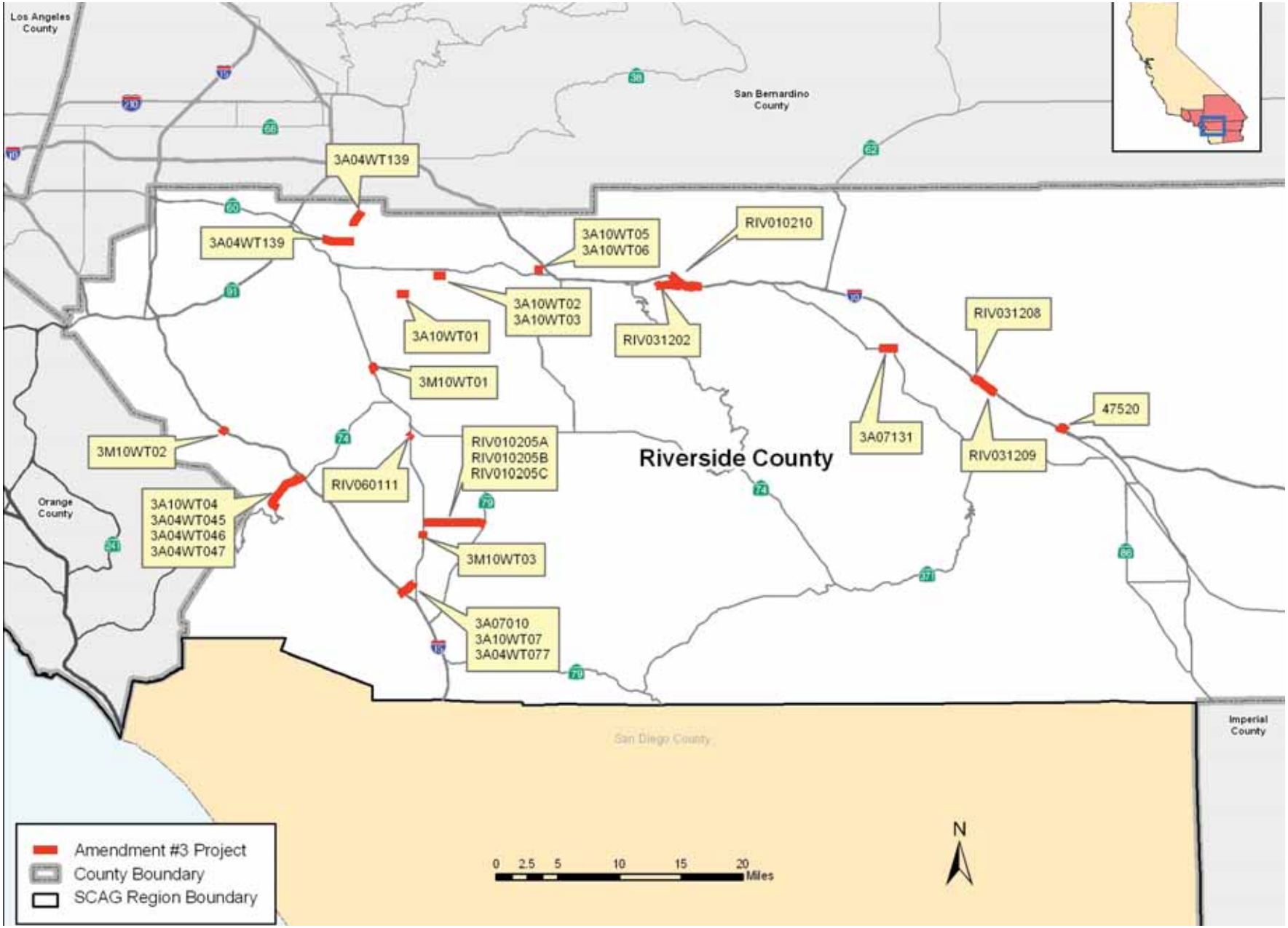
Revised Description and Schedule

RTP/RTIP Project No. RIV031209
Estimated Project Cost: $72.0 million
Project Completion By (existing): 2014
Project Completion By (revised): 2020

Description (existing):
This project will construct a new six-lane I-10/Portola Ave interchange between the Monterey Ave and Cook St interchanges.

Description (revised):
This project will construct a new six-lane I-10/Portola Ave interchange between the Monterey Ave and Cook St interchanges, relocate and widen Varner from 2 to 4 lns, add eastbound and westbound auxiliary lanes from Monterey to Portola and Portola to Cook, and extend the westbound fourth lane starting at the existing Cook St entry ramp and terminating just beyond the Portola Ave exit ramp.

EXHIBIT 2.3 RIVERSIDE COUNTY PROJECT LOCATIONS



Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatlas

TABLE 2.3 RIVERSIDE COUNTY PROJECTS

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJ-ECT COM-PLETION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMEND-MENT	INCLUDED IN RTIP AMENDMENT #08-34
RV	Arterial	0	3A01WT045	Existing: SR-74 (Grand Ave) from Riverside Dr (SR-74) to Ortega Hwy (SR-74): WIDEN FROM 2 TO 6 LANES	2030	Existing: $10,855	N/A; COST DECREASE	Revised description and cost	✓ (TIP ID RIV091007)
				Revised: SR-74 (Grand Ave) from Riverside Dr (SR-74) to Ortega Hwy (SR-74): Widen from 4 to 6 lanes		Revised: $3,250			
RV	Arterial	0	3A04WT046	Existing: SR-74 (Riverside Dr) from Lakeshore Dr to Grand Ave: WIDEN FROM 2 TO 6 LANES	2020	Existing: $18,915	N/A; COST DECREASE	Revised description and cost	✓ (TIP ID RIV091007)
				Revised: SR-74 (Riverside Dr) from Lakeshore Dr to Grand Ave: Widen from 4 to 6 lanes		Revised: $4,750			
RV	Arterial	0	3A04WT047	Existing: SR-74 (Riverside Dr/Collier Ave) from I-15 to Lakeshore Dr: WIDEN FROM 2 TO 6 LANES	Existing: 2010	Existing: $17,518	N/A; COST DECREASE	Revised description, schedule, and cost	✓ (TIP ID RIV091007)
				Revised: SR-74 (Riverside Dr/Collier Ave) from I-15 to Lakeshore Dr: Widen from 4 to 6 lanes	Revised: 2020	Revised: $3,500			
RV	Arterial	0	3A04WT077	Existing: Los Alamos Rd from Jefferson Ave to I-215: WIDEN FROM 2 TO 4 LANES	Existing: 2020	$16,049	N/A; NO COST INCREASE	Revised description and schedule	
				Revised: Los Alamos Rd from Jefferson Ave to I-15: Widen from 2 to 4 lanes	Revised: 2008				

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJ-ECT COM-PLETION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMEND-MENT	INCLUDED IN RTIP AMENDMENT #08-34
RV	Arterial	0	3A04WT139	Existing: Cantarini Rd from Reche Canyon Rd to Pigeon Pass Rd: CONSTRUCT 2 LANE ARTERIAL	Existing: 2030	Existing: $14,529	COST INCREASE COVERED BY WRVTUMF/ COUNTY FUNDS	Revised description, schedule, and cost	
				Revised: Pigeon Pass Rd from Mt. Vernon Ave to Hidden Springs Rd: Construct a new 4-lane facility including signals and medians	Revised: 2020	Revised: $33,327			
RV	Arterial	0	3A07010	Existing: Los Alamos Rd from I-15 to I-215: Widen from 2 to 4 lanes	Existing: 2020 Revised: 2010	$67,488	N/A; NO COST INCREASE	Revised schedule	
RV	Arterial	0	3A07131	Existing: Vista Chino from Gene Autry Trail to Whitewater Rvr: WIDEN FROM 4 TO 6 LANES	Existing: 2030	Existing: $5,822	COST INCREASE COVERED BY MEASURE A FUNDS	Revised description, schedule, and cost	
				Revised: VISTA CHINO: WIDEN FROM 5 TO 6 LNS FROM SUNRISE TO VOLTURNO AND FROM 4 TO 6 LANES FROM VOLTURNO TO EAST CITY LIMITS	Revised: 2020	Revised: $17,000			
RV	Arterial	0	3A10WT01	In Western Riverside County in the City of Moreno Valley, widen Cactus Avenue from two to four through lanes (2 in ea dir), from Lasselle St. to Nason St.	2012	$6,350	COST COVERED BY DEVELOPER FEES	New project	
RV	Arterial	0	3A10WT02	In Western Riverside County in the City of Moreno Valley, construct Eucalyptus Avenue Extension as 3 through lanes (2 lanes WB & 1 lane EB) between Redlands Blvd and Theodore St.	2012	$6,266	COST COVERED BY DEVELOPER FEES	New project	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJ-ECT COM-PLETION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMEND-MENT	INCLUDED IN RTIP AMENDMENT #08-34
RV	Arterial	0	3A10WT03	Eucalyptus Ave from Redlands Blvd to Theodore St: In Western Riverside County in the City of Moreno Valley, construct 4th through lane on Eucalyptus Ave in the eastern direction to Redlands Blvd, with a signalized intersection.	2014	$3,550	COST COVERED BY DEVELOPER IMPACT FEES	New project	
RV	Arterial	0	3A10WT04	In Mid-Western Riverside County in the City of Lake Elsinore, widen SR-74 from 2 to 4 through lanes west of I-15 (Hunco Way) to the Ortega Hwy (SR-74).	2020	$5,200	COST COVERED BY CITY/WRV-TUMF FUNDS	New project	
RV	Arterial	0	3A10WT05	In Western Riverside County in the City of Beaumont, construct SR-79 Bypass Extension North Ph I as a new 3-lane arterial segment, extending Potrero Blvd from future SR60/Potrero Fwy IC to Oak Valley Pkwy in the city of Beaumont.	2012	$11,154	COST COVERED BY CITY/DEVEL-OPER FEES	New project	
RV	Arterial	0	3A10WT06	In Western Riverside County in the City of Beaumont, construct a 3-lane pre-fabricated bridge on the eastside of the Phase I Potrero Bridge SR79 Bypass Extension North, extending Potrero Blvd. 0.675 miles north from future SR60/Potrero Fwy IC , to connect to the Oak Valley Pkwy in the City of Beaumont.	2020	$21,846	COST COVERED BY CITY/DEVEL-OPER FEES	New project	
RV	Arterial	0	3A10WT07	Los Alamos Rd. OC @ I-15, from Monroe Ave to Madison Ave: In SW Riverside County, replace two-lane Los Alamos Rd bridge over I-15 with four-lane overcrossing.	2012	$11,440	COST COVERED BY CITY/TUMF FUNDS	New project	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJ-ECT COM-PLETION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMEND-MENT	INCLUDED IN RTIP AMENDMENT #08-34
RV	Arterial	0	Existing: RIV010205	Existing: IN RIVERSIDE COUNTY NEAR MURRIETA RECON-STRUCT AND WIDEN SCOTT ROAD FROM 2 TO 6 LANES BETWEEN I-215 AND SR79 (WIN-CHESTER ROAD)	Existing: 2009	Existing: $26,100	COST INCREASE COVERED BY TUMF AND COUNTY FUNDS	Project split	
			Revised: RIV010205A	IN RIVERSIDE COUNTY NEAR MURRIETA RECON-STRUCT AND WIDEN SCOTT ROAD FROM 2 TO 4 LANES BETWEEN I-215 AND EL CENTRO	Revised: 2008	Revised: $26,100			
			Revised: RIV010205B	IN RIVERSIDE COUNTY WIDEN SCOTT ROAD FROM 4 TO 6 LANES BETWEEN I-215 AND EL CENTRO	Revised: 2030	Revised: $8,500			
			Revised: RIV010205C	IN RIVERSIDE COUNTY NEAR MURRIETA RE-CONSTRUCT AND WIDEN SCOTT ROAD FROM 2 TO 6 LANES BETWEEN EL CENTRO AND SR79 (WINCHESTER RD)	Revised: 2030	Revised: $16,500			
RV	Arterial		RIV031202	Existing: IN THE CITY OF BANNING - CONSTRUCT 4 THROUGH LANE (2 LANES EACH DIR.) RAMSEY STREET EXTENSION FROM HATHAWAY STREET TO FIELDS ROAD (APPROX 2.2 MILES) (DEMO ID#: 213, APPN CODE: 4260)	Existing: 2012	Existing: $9,500	COST INCREASE COVERED BY COUNTY/MEA-SURE A/WRV-TUMF FUNDS	Revised description, schedule, and cost	✓
				Revised: I-10 BYPASS SOUTH: CONSTRUCT TWO LANES OF ROADWAY TO PROVIDE A BY-PASS/NET-WORK FACILITY FOR THE I-10, APPROX. 1/2 MILE S/O I-10 BETWEEN THE EASTERN END OF THE CITY OF BANNING AND APACHE TRAIL IN CABAZON. OTHER IMPROVEMENTS INCLUDE THE CONSTRUCTION OF SEVERAL LOW-WATER CROSSINGS AT SMITH CREEK AND SAN GORGO-NIO RIVER.	Revised: 2020	Revised: $17,970			

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJ-ECT COM-PLETION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMEND-MENT	INCLUDED IN RTIP AMENDMENT #08-34
RV	IC/Ramps	10	47520	Existing: AT I-10/JEFFERSON ST IC: RECONSTRUCT, REALIGN, & WIDEN IC 2 TO 6 LANES (SUN CITY BLVD TO UPRR), WIDEN RAMPS, ADD NEW ENTRY RAMPS, INCLUDING RAMP METERING (NO HOV PREFERENTIAL LANE INCLUDED), ADD DEDICATED RIGHT-TURN LANES PLUS RELOCATE & WIDEN VARNER RD	2014	Existing: $75,507	COST INCREASE COVERED BY AGENCY FUNDS	Revised description and cost	✓
				Revised: AT I-10/JEFFERSON ST. IC: RECONSTRUCT, REALIGN, & WIDEN IC 2 TO 6 LANES (SUN CITY BLVD TO UPRR), WIDEN RAMPS, ADD NEW ENTRY RAMPS, INCLUDING RAMP METERING (NO HOV PREFERENTIAL LANE INCLUDED), ADD DEDICATED RIGHT-TURN LANES PLUS WIDEN VARNER RD. 2 TO 4 LANES E/O JEFFERSON ST (EA: 47520)		Revised: $78,717			
RV	IC/Ramps	10	RIV010210	I-10/MORONGO PKWY IC - CONSTRUCT NEW MORONGO PKWY OC (4 THROUGH LANES) AND RAMPS BETWEEN SEMINOLE DR AND MAIN ST. ADDITIONAL IMPROVEMENTS TO EXISTING APACHE TRAIL IC (R17.657) AND MAIN ST IC (R19.398) INCLUDE THE ADDITION OF EB/WB AUX LANES (APACHE TR IC	Existing: 2020	$40,000	N/A; NO COST INCREASE	Revised schedule	
					Revised: 2030				
RV	IC/Ramps	10	RIV031208	AT I-10/MONTEREY AVE IC - RECONFIGURE IC: CONSTRUCT NEW WB ENTRY RAMP AND REALIGN/RELOCATE WB EXIT RAMP (EA: 0F050)	Existing: 2010	Existing: $11,206	COST INCREASE COVERED BY CITY AND RIV-ERSIDE COUNTY SALES TAX, AND STP-ENHANCE-RIP-TEA	Revised sched-ule and cost	
					Revised: 2012	Revised: $11,774			

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJ-ECT COM-PLETION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMEND-MENT	INCLUDED IN RTIP AMENDMENT #08-34
RV	IC/Ramps	10	RIV031209	Existing: AT I-10/PORTOLA AVE (BTWN MONTEREY AVE IC & COOK ST IC): CONSTRUCT NEW 6 THROUGH LANE PORTOLA AVE IC FROM DINAH SHORE DR TO VARNER RD & RAMPS (EB & WB EXIT 3 LNS, EB ENTRY 2 LNS, WB ENTRY 2 LNS, EB ENTRY LOOP RAMP (2 LNS), ENTRY RAMPS INCLUDE HOV LN, WI	Existing: 2014	$71,993	N/A; NO COST INCREASE	Revised description and schedule	✓
				Revised: AT I-10/PORTOLA AVE (BTWN MONTEREY AVE IC & COOK ST. IC): CONSTRUCT NEW 6 THROUGH LANE PORTOLA AVE. IC FROM DINAH SHORE DR. TO VARNER RD. & RAMPS (EB & WB EXIT 3 LNS, EB ENTRY 2 LNS, WB ENTRY 2 LNS, EB ENTRY LOOP RAMP (2 LNS), ENTRY RAMPS INCLUDE HOV LN, WIDENING INCLUDES BRIDGE OVER UPRR & RELOCATE/WIDEN VARNER 2 TO 4 LNS, & ADD EB/WB AUX LNS (MONTEREY TO PORTOLA AND PORTOLA TO COOK), AND EXTENSION OF WB 4TH LANE STARTING AT EXISTING COOK ST ENTRY RAMP AND TERMINATING JUST BEYOND PORTOLA AVE EXIT RAMP (EA: 0F120K)	Revised: 2020				
RV	IC/Ramps	15	3M10WT02	In Western Riverside County, widen Indian Truck Trail at I-15 from 2 to 4 lanes, widen the SB exit ramp from 1 to 2 lanes, and widen the NB exit ramp and entry ramp from 1 to 2 lanes.	2012	$13,600	COST COVERED BY COUNTY FUNDS	New project	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJ-ECT COM-PLETION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMEND-MENT	INCLUDED IN RTIP AMENDMENT #08-34
RV	IC/Ramps	215	3M10WT01	In Mid-Western Riverside County in the City of Perris, construct IC at I-215/Placentia Ave; widen Placentia Ave. from 4 to 6 through lanes (3 lns EB & 3 lns WB, and construct NB/SB ramps.	2020	$15,000	COST COVERED BY CITY/MEA-SURE A/TUMF FUNDS	New project	
RV	IC/Ramps	215	3M10WT03	In SW Riverside County, replace two-lane I-215/ Keller Rd underpass with four-lane IC, including left turn lanes in each direction, auxiliary lanes at the NB on-ramp and the SB off-ramp, 1-ln NB off ramp, 2-ln NB on-ramp w/HOV, 1-ln SB off ramp, and 2-ln SB on-ramp w/HOV.	2020	$15,432	COST COVERED BY CITY FUNDS	New project	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJ-ECT COM-PLETION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMEND-MENT	INCLUDED IN RTIP AMENDMENT #08-34
RV	Other	215	RIV060111	Existing: AT I-215/ETHANAC RD IC IN PERRIS: RECON-STRUCT/MODIFY IC FROM 2 TO 4 LANES, MODIFY/REALIGN RAMPS, ADD SIGNALS, PLUS SAFETY/CHANNELIZATION IMPROVEMENTS (PA&ED/PRE-DESIGN)	Existing: 2012	$500	N/A; NO COST INCREASE	Revised description and schedule	
				Revised: IN MID WESTERN-RIVERSIDE COUNTY IN THE CITY OF PERRIS - I-215/ETHANAC RD. IC IMPROVEMENTS: IMPLEMENT IC OPERATIONAL IMPROVEMENTS AT I-215/ETHANAC RD., CONSISTING OF WIDENING OF THE ON AND OFF RAMPS TO PROVIDE LEFT AND RIGHT TURN POCKETS, UPGRADING OF THE TRAFFIC SIGNAL AT THE RAMP TERMINI TO FACILITATE THE AD-DITIONAL LANES, AND THE RE-STRIPING OF THE OC TO HAVE MORE LANE OF TRAFFIC. PROJECT LIMITS ARE NORTH AND SOUTHBOUND OFF RAMPS @ I-215 & ETHANAC; ETHANAC RD. ON EITHER SIDE OF I-215 FOR UP TO 1,200 FT.	Revised: 2014				

** For modeled projects, represents the Plan network year for which the project was analyzed for modeling and regional emissions analysis*

San Bernardino County

MAJOR REGIONAL PROJECTS

I-10 HOV LANES

Revised Description

RTP/RTIP Project No.: 4H01001
Estimated Project Cost: $1.1 billion
Project Completion By: 2020

Description (existing):
This project will provide the addition of 1 HOV lane in each direction on I-10 from Haven to Ford (PM 8.2 to 33.43), including widened undercrossings, replaced overcrossings, and realigned ramps.

Description (revised):
This project will provide the addition of 1 HOV lane in each direction on I-10 from Haven to Ford (PM 8.0 to 33.8), including widened undercrossings, replaced overcrossings, and realigned ramps.

HIGH DESERT CORRIDOR

Revised Description and Schedule

RTP/RTIP Project No. 20020144
Estimated Project Cost: $421.9 million
Project Completion By (existing): 2015
Project Completion By (revised): 2015

Description (existing):
This project will provide for the realignment of SR-18 from US-395 in Adelanto to SR-18 east of Apple Valley. This project will involve the construction of a 4-6 lane freeway/expressway, a new interchange at I-15 with auxiliary lanes north and south of the new interchange, and a new intersection at US-395 with turn pockets.

Description (revised):
This project will provide for the realignment of SR-18 from US-395 in Adelanto to SR-18/Bear Valley Rd. This project will involve the construction of a 4-6 lane freeway/expressway, a new interchange at I-15 with auxiliary lanes north and south of the new interchange, and a new intersection at US-395 with added lanes north and south on US-395.

ROUTE 58 WIDENING

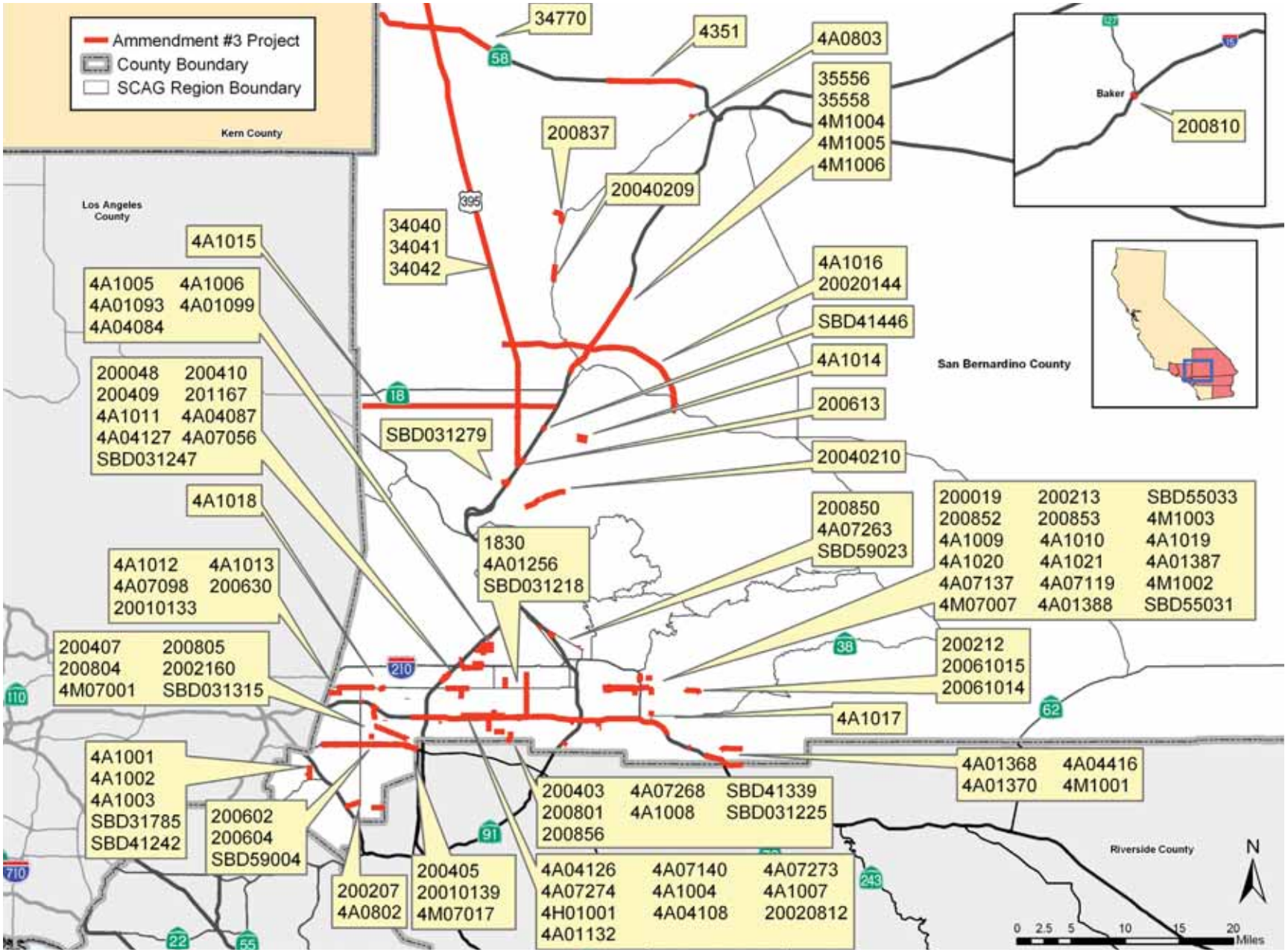
Revised Description

RTP/RTIP Project No.: 4351
Estimated Project Cost: $216.4 million
Project Completion By: 2020

Description (existing):
This project will provide a realigned and widened Route 58 to a 4-lane expressway near Hinkley from 2.8 miles west of Hidden River Rd. to 0.7 miles east of Lenwood Rd. (Phase 2)

Description (revised):
This project will provide a realigned and widened Route 58 to a 4-lane expressway near Hinkley from 2.8 miles west of Hidden River Rd to 0.7 miles east of Lenwood Rd with new interchanges at Hinkley Rd and Lenwood Rd. (Phase 2)

EXHIBIT 2.4 SAN BERNARDINO COUNTY PROJECT LOCATIONS



Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatlas

TABLE 2.4 SAN BERNARDINO PROJECTS

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLETION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMEND-MENT	INCLUDED IN RTIP AMENDMENT #08-34
SB	Arterial	0	200207	IN CHINO - ON PINE AVE EXTENSION FROM SR 71 TO EUCLID IN THE CITY OF CHINO - WIDEN BRIDGE FROM 2-4 LANES	Existing: 2014	Existing: $25,000	N/A; COST DECREASE	Revised sched-ule and cost	
					Revised: 2020	Revised: $24,631			
SB	Arterial	0	200212	Existing: GREENSPOT ROAD BRIDGE AT SANTA ANA RIVER - GREENSPOT RD.CONSTRUCT NEW 4 LANE BRIDGE (STRIPING FOR 2 LANES) AT SAR W/ CHANNEL IMPROVMENTS-REALIGN APPROX 2400' OF 2 LANE RD.	Existing: 2010	$18,435	N/A; NO COST INCREASE	Revised description and schedule	
				Revised: ON GREENSPOT RD. BRIDGE OVER SANTA ANA RIVER (.045)-CONSTRUCT NEW 4 LN BRIDGE AT SANTA ANA RVR- REALIGN "S" CURVE & WIDEN 2-4 LNS ON GREENSPOT RD FROM ST PAULA-E, CITY LIMITS W/CHANNEL IMPR	Revised: 2012				
SB	Arterial	0	200213	Existing: ON 3RD ST. FROM PALM AVE. TO 5TH ST. WIDEN 3RD ST. OF E/O PALM AVE. FROM 2 TO 4 LANES AND EXTEND 3RD ST. EASTERLY TO CONNECT 5TH ST.	2012	$280	N/A; NO COST INCREASE	Revised description	
				Revised: ON 3RD ST. FROM PALM AVE. TO 5TH ST. WIDEN 3RD ST. OF E/O PALM AVE. FROM 2 TO 3 LANES AND EXTEND 3RD ST. EASTERLY TO CONNECT 5TH ST.					

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLETION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMEND-MENT	INCLUDED IN RTIP AMENDMENT #08-34
SB	Arterial	0	200403	Existing: EVANS STREET FROM REDLANDS BLVD TO N/O UPRR TRACKS W/EAST-WEST CONNECTOR AT EVANS TO ANDERSON-4 LANES ON NORTH-SOUTH ARTERIAL (FED DEMO # 1001)(	2020	Existing: $9,153	N/A; COST DECREASE	Revised description and cost	
				Revised: CONSTRUCT 4 NEW LANES; A NORTH-SOUTH ARTERIAL ROADWAY FROM REDLANDS BLVD TO BARTON RD, JUST WEST OF ANDERSON ST		Revised: $9,000			
SB	Arterial	0	200407	Existing: FLAMINGO HEIGHTS LANDERS ROAD IMPROVEMTS-SH 247 PIPES WASH NORTH TO JOHNSON VALLEY-WIDEN TO ACCOMMODATE PASSING LANES WITH TURN POCKETS	2012	$8,500	N/A; NO COST INCREASE	Revised description	
				Revised: FLAMINGO HEIGHTS LANDERS ROAD IMPROVEMTS-SH 247 PIPES WASH NORTH TO JOHNSON VALLEY-SHOULDER WIDENING TO ACCOMMODATE TURN POCKETS AT FOUR INTERSECTIONS					
SB	Arterial	0	200409	CHERRY AVE. AT SCRRA RR CROSSING - WIDEN BRIDGE FROM 4-6 LANES ON CHERRY OVER RR CROSSING (FROM MERRILL TO WHITTRAM)	Existing: 2012	$8,829	N/A; NO COST INCREASE	Revised schedule	
					Revised: 2020				
SB	Arterial	0	200410	Existing: CHERRY AVE. WIDENING FROM WHITTRAM TO FOOTHILL BLVD. -WIDEN 2-4 LANES	2012	$2,791	N/A; NO COST INCREASE	Revised description	
				Revised: CHERRY AVE. WIDENING FROM WHITTRAM TO FOOTHILL BLVD. -WIDEN 4-6 LANES					

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLETION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMEND-MENT	INCLUDED IN RTIP AMENDMENT #08-34
SB	Arterial	0	200630	ARROW ROUTE WIDENING FROM LOS ANGELES COUNTY LINE TO BENSON AVENUE - WIDEN FROM 2 TO 4 LANES 1 IN EA DIR. (1.1MILE)	2012	Existing: $4,500 Revised: $3,420	N/A; COST DECREASE	Revised cost	
SB	Arterial	0	200801	Stewart Street Widening from Anderson to Campus widening from 2-4 lanes	Existing: 2012 Revised: 2014	Existing: $2,850 Revised: $650	N/A; COST DECREASE	Revised schedule and cost	
SB	Arterial	0	200810	BAKER BLVD. BRIDGE- 150' E/O MOJAVE FLOOD CHANNEL-REPLACING EXISTING BRIDGE WITH 2 LANE TO 4 LANES	Existing: 2012 Revised: 2020	Existing: $6,500 Revised: $6,900	MINOR COST INCREASE OF $400. NO MATERIAL FISCAL IMPACT.	Revised schedule and cost	
SB	Arterial	0	200837	VISTA ROAD GRADE SEPARATION-WIDEN 2-4 LANES AND CONSTRUCT GRADE SEPARATION	2014	Existing: $19,000 Revised: $23,000	COST INCREASE CONSTRAINED BY FUNDING FOR RTP ID 4G0167	Revised cost	
SB	Arterial	0	200850	Existing: PALM AVE. GRADE SEPARATION , 1000' EAST OF AT-GRADE ON PALM AVE. 1000' N&S OF GRADE ON CAJON BLVD.- WIDEN FROM 2-4 LANES (REFER TO MODELING COMMENTS) Revised: PALM AVE. GRADE SEPARATION , PALM AVE. APPROX 530' S/O I-215/PALM AVE. INTERCHANGE TO APPROX. 1450' S/O CAJON BLVD - WIDEN FROM 2-4 LANES	2014	$30,000	N/A; NO COST INCREASE	Revised description	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLETION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMEND-MENT	INCLUDED IN RTIP AMENDMENT #08-34
SB	Arterial	0	200852	Existing: ON 3RD & 5TH STS. FROM VICTORIA TO TIPPE-CANOE AVE. - WIDEN FROM 2-4 LANES AND IMPROVMENT ON DEL ROSA, FROM 3RD TO 6TH STS; STERLING AND TIPPECANOE FROM 3RD TO 5TH ST.	Existing: 2014	Existing: $13,404	N/A; COST DECREASE	Revised description, schedule, and cost	
				Revised: DEL ROSA DRIVE FROM 3RD TO 6TH ST-WIDEN FROM 2-4 LANES	Revised: 2020	Revised: $1,400			
SB	Arterial	0	200853	Existing: GREENSPOT FROM BOULDER AVE. SR30 - WIDEN FROM 4-6 LANES (0.80)	Existing: 2009	$7,000	N/A; NO COST INCREASE	Revised description and schedule	
				Revised: Greenspot Road from Boulder Ave to SR 210-Widen from 4 to 6 Lanes	Revised: 2012				
SB	Arterial	0	200856	MT. VERNON BRIDGE OVER UPRR -ON MT. VERNON AVE. FROM "M" ST. TO I-10 ON RAMP. WIDENING BRIDGE FROM 2-4 LANES	Existing: 2020	$50,000	N/A; NO COST INCREASE	Revised schedule	
					Revised: 2014				
SB	Arterial	0	20040209	NATL TRAILS HIWAY FROM BRYMAN RD S/O MORNING GLORY ST. TO BRYMAN TO N O MARI-GOLD- WIDEN EXISTG 2 LN RD FOR PASSING LNS - 1 IN EA DIRECT., INCL TRANSITIONS Y (CO W/#200106)	Existing: 2010	$2,154	N/A; NO COST INCREASE	Revised schedule	
					Revised: 2014				
SB	Arterial	0	20040210	SUMMIT VALLEY ROAD - FROM SH138 TO HES-PERIA CITY LIMITS-PSE ONLY - FOR REALIGN-MENT OF SUMMIT VALLEY RD, 2 LANES IN EACH DIRECTION	Existing: 2010	$2,325	N/A; NO COST INCREASE	Revised schedule	
					Revised: 2020				
SB	Arterial	0	20061014	IN HIGHLAND ON GREENSPOT ROAD --ORIGINAL-LY PART OF 200212-GREENSPOT RD. FROM SAN-TA PAULA TO APPROX.2,600' SOUTH OF SANTA ANA RIVER-WIDEN 2-4 LANES WITH MEDIAN	Existing: 2014	$22,530	N/A; NO COST INCREASE	Revised schedule	
					Revised: 2020				

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SB	Arterial	0	20061015	GREENSPOT ROAD BRIDGE AT SANTA ANA RIVER - GREENSPOT RD.CONSTRUCT NEW 4 LANE BRIDGE (STRIPING FOR 2 LANES) AT SAR W/ CHANNEL IMPROVMENTS-REALIGN APPROX 2400' OF 2 LANE RD.	Existing: 2010 Revised: 2012	$18,435	N/A; NO COST INCREASE	Revised schedule	
SB	Arterial	0	4A01093	CITRUS AV FROM I-15 TO SUMMIT AV: WIDEN FROM 1 TO 2 LANES EACH DIR	2020	Existing: $7,468 Revised: $2,625	N/A; COST DECREASE	Revised cost	
SB	Arterial	0	4A01099	DUNCAN CANYON RD FROM CITRUS AV TO SIERRA AV: NEW ROAD, 2 LANES EACH DIR	Existing: 2020 Revised: 2014	Existing: $5,601 Revised: $5,250	N/A; COST DECREASE	Revised sched-ule and cost	
SB	Arterial	0	4A01132	Existing: SLOVER AV FROM ETIWANDA AV TO MULBERRY AV: WIDEN FROM 1 TO 2 LANES EACH DIR Revised: Slover Av from Etiwanda Av to 800 ft east of Etiwanda Av: Widen from 1 to 2 lanes each dir	2014	Existing: $1,946 Revised: $2,095	COST INCREASE CONSTRAINED BY RTP ARTE-RIAL LUMP SUM (PROJECT ID# 4AL04)	Revised description and cost	
SB	Arterial	0	4A01256	Existing: CACTUS AV FROM VIRGINIA TO BASELINE RD: WIDEN FROM 1 TO 2 LANES EACH DIR Revised: CACTUS AV FROM VALLEY AV TO WALNUT AV: WIDEN FROM 2 TO 6 LANES (3 LANES EACH DIR)	Existing: 2020 Revised: 2010	Existing: $465 Revised: $2,236	COST INCREASE COVERED BY PROP 1B AND LOCAL STIMU-LUS FUNDS	Revised description, schedule, and cost	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLETION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMEND-MENT	INCLUDED IN RTIP AMENDMENT #08-34
SB	Arterial	0	4A01368	CALIMESA BL FROM OAK LEN RD TO COUNTY LINE RD: WIDEN FROM 1 TO 2 LANES EACH DIR	Existing: 2010	Existing: $2,296	COST INCREASE CONSTRAINED BY RTP ARTE-RIAL LUMP SUM (PROJECT ID# 4AL04)	Revised sched-ule and cost	
					Revised: 2020	Revised: $2,820			
SB	Arterial	0	4A01370	COUNTY LINE RD FROM I-10 TO BRYANT ST: WIDEN FROM 1 TO 2 LANES EACH DIR	Existing: 2010	Existing: $2,348	COST INCREASE CONSTRAINED BY RTP ARTE-RIAL LUMP SUM (PROJECT ID# 4AL04)	Revised sched-ule and cost	
					Revised: 2020	Revised: $2,720			
SB	Arterial	0	4A01387	Existing: 5TH ST FROM VICTORIA AV TO PALM AV: WIDEN FROM 2 TO 4 LANES	Existing: 2008	Existing: $6,638	COST INCREASE COVERED BY RDA, MEASURE I, AND IVDA FUNDS	Revised description, schedule, and cost	
				Revised: 5th St from Victoria Av to SR-210: Widen from 2 to 4 lanes	Revised: 2012	Revised: $10,146			
SB	Arterial	0	4A01388	Existing: 5th St from Tippecanoe to Shirley: Widen from 2 to 4 lanes	Existing: 2008	Existing: $4,634	COST INCREASE COVERED BY CITY FUNDS	Revised description, schedule, and cost	
				Revised: 5TH ST FROM TIPPECANOE TO VICTORIA: WIDEN FROM 2 TO 4 LANES	Revised: 2020	Revised: $5,800			
SB	Arterial	0	4A04084	CASA GRANDE AV FROM LYTLE CREEK KNOX TO SIERRA AV: NEW ROAD, 2 LANES EACH DIR	Existing: 2010	Existing: $5,205	COST INCREASE CONSTRAINED BY RTP ARTE-RIAL LUMP SUM (PROJECT ID# 4AL04)	Revised sched-ule, and cost	
					Revised: 2020	Revised: $10,500			
SB	Arterial	0	4A04087	CHERRY AV FROM HIGHLAND TO I-15: WIDEN FROM 1 TO 3 LANES EACH DIR	Existing: 2012	Existing: $3,101	N/A; COST DECREASE	Revised sched-ule and cost	
					Revised: 2014	Revised: $2,625			

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLETION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMEND-MENT	INCLUDED IN RTIP AMENDMENT #08-34
SB	Arterial	0	4A04108	JURUPA AV FROM TAMARIND TO ALDER AV: WIDEN FROM 1 TO 2 LANES EACH DIR	Existing: 2020	Existing: $1,242	N/A; COST DECREASE	Revised sched-ule and cost	
					Revised: 2014	Revised: $958			
SB	Arterial	0	4A04126	SIERRA AV FROM VALLEY BL TO SAN BERNARDI-NO AV: WIDEN FROM 2 TO 3 LANES EACH DIR	Existing: 2014	Existing: $4,423	N/A; COST DECREASE	Revised sched-ule and cost	
					Revised: 2012	Revised: $2,823			
SB	Arterial	0	4A04127	SIERRA LAKES PKWY FROM BEECH TO CITRUS: WIDEN FROM 1 TO 2 LANES EACH DIR	Existing: 2020	Existing: $9,162	N/A; COST DECREASE	Revised sched-ule and cost	
					Revised: 2014	Revised: $4,290			
SB	Arterial	0	4A04416	AVE E FROM 8TH ST TO BRYANT ST: WIDEN FROM 1 TO 2 LANES EACH DIR	2020	Existing: $17,723	COST INCREASE CONSTRAINED BY RTP ARTE-RIAL LUMP SUM (PROJECT ID# 4AL04)	Revised cost	
						Revised: $17,800			
SB	Arterial	0	4A07056	Existing: SO. HIGHLAND AVE FROM CHERRY AVE TO CIT-RUS AVE WIDEN FROM 2 TO 4 LANES	Existing: 2020	Existing: $7,468	N/A; COST DECREASE	Revised description, schedule, and cost	
				Revised: So. Highland Ave from Cherry Ave to Citrus Ave Widen from 2 to 4 lanes	Revised: 2014	Revised: $5,250			
SB	Arterial	0	4A07098	Existing: WIDEN FOOTHILL FROM COUNTY LINE TO CEN-TRAL FROM 2 TO 6 LANES	Existing: 2030	Existing: $9,500	N/A; COST DECREASE	Revised description, schedule, and cost	
				Revised: FOOTHILL FROM 500' WEST OF MONTE VISTA AVE TO CENTRAL: WIDENING TO ULITMATE WIDTH (FROM 2 TO 6 LANES) AND TO PROVIDE DUAL LEFT-TURN LANES	Revised: 2020	Revised: $2,270			

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SB	Arterial	0	4A07119	WIDEN 5TH ST FROM SHIRLEY TO VICTORIA FROM 2 TO 4 LANES	Existing: 2012	Existing: $3,655	COST INCREASE CONSTRAINED BY RTP ARTE-RIAL LUMP SUM (PROJECT ID# 4AL04)	Revised sched-ule and cost	
					Revised: 2020	Revised: $5,800			
SB	Arterial	0	4A07137	Existing: WIDEN 3RD ST FROM TIPPECANOE AVE TO 200' E/O SHIRLEY AVE FROM 2 TO 6 LANES	Existing: 2009	Existing: $3,026	COST COVERED BY LOCAL FUNDS (SAN BERNARDINO)	Revised description, schedule, and cost	
				Revised: 3RD ST FROM VICTORIA AVE TO LELAND/NORTON WIDEN FROM 2 TO 4 LANES AND FROM LELAND/ NORTON TO TIPPECANOE WIDEN FROM 4 TO 6 LANES	Revised: 2020	Revised: $3,200			
SB	Arterial	0	4A07140	Existing: VALLEY BLVD FROM JUNIPER AVE TO TAMARIND AVE WIDEN FROM 4 TO 6 LANES	2020	Existing: $3,734	N/A; COST DECREASE	Revised description and cost	
				Revised: Valley Blvd from Sierra to Alder Widen from 4 to 6 lanes		Revised: $2,418			
SB	Arterial	0	4A07263	WIDEN "H" ST FROM KENDALL DR TO 40TH ST FROM 2 TO 4 LANES	Existing: 2030	Existing: $2,222	N/A; COST DECREASE	Revised sched-ule and cost	
					Revised: 2014	Revised: $918			
SB	Arterial	0	4A07268	WIDEN MICHIGAN ST FROM COMMERCE WY TO DEBERRY ST FROM 2 LANES TO 4 LANES.	Existing: 2010	Existing: $823	COST INCREASE CONSTRAINED BY RTP ARTE-RIAL LUMP SUM (PROJECT ID# 4AL04)	Revised sched-ule and cost	
					Revised: 2012	Revised: $1,041			

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SB	Arterial	0	4A07273	VALLEY BLVD FROM HEMLOCK AVE TO BEECH AVE WIDEN FROM 4 TO 6 LANES	Existing: 2020 Revised: 2014	Existing: $934 Revised: $2,418	COST INCREASE CONSTRAINED BY RTP ARTE-RIAL LUMP SUM (PROJECT ID# 4AL04)	Revised sched-ule and cost	
SB	Arterial	0	4A07274	Existing: VALLEY BLVD FROM POPLAR AVE TO CATAWBA AVE WIDEN FROM 4 TO 6 LANES Revised: Valley Blvd from Beech Ave to Citrus Ave Widen from 4 to 6 lanes	Existing: 2020 Revised: 2014	Existing: $934 Revised: $2,418	COST INCREASE CONSTRAINED BY RTP ARTE-RIAL LUMP SUM (PROJECT ID# 4AL04)	Revised description, schedule, and cost	
SB	Arterial	0	4A0802	Existing: CHINO-CORONARD FROM HELLMAN AV TO CHINO-CORONA RD N/S: WIDEN TO 2 LANES IN EACH DIRECTION, PLUS BUILDING NEW BRIDGE OVER MILLCREEK AND DRAINAGE Revised: CHINO-CORONA RD E-W FROM HELLMAN AV TO CHINO-CORONA RD N-S: WIDEN TO 2 LANES IN EACH DIRECTION, PLUS BUILDING NEW BRIDGE OVER MILLCREEK AND DRAINAGE	Existing: 2012 Revised: 2014	$6,659	N/A; NO COST INCREASE	Revised description and schedule	
SB	Arterial	0	4A0803	LENWOOD RD FROM 400 FT NORTH OF BNSF RR TO 600 FT SOUTH OF BNSF RR: WIDEN FROM 4 LANES TO 6 LANES (3 EA DIR)	Existing: 2014 Revised: 2020	$34,288	N/A; NO COST INCREASE	Revised schedule	
SB	Arterial	0	4A1004	Cypress Avenue from Slover Avenue to Jurupa Avenue. Widen from 2 lanes to 4 lanes.	2012	$2,498	COST COVERED BY CITY FUNDS	New project	
SB	Arterial	0	4A1005	Cypress Avenue from Duncan Canyon Road to Frontage Road (I-15)	2020	$3,200	COST COVERED BY CITY FUNDS	New project	

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SB	Arterial	0	4A1006	Duncan Canyon Road from I-15 to Citrus Avenue. Construct 4 new lanes.	2012	$1,312	COST COVERED BY CITY FUNDS	New project	
SB	Arterial	0	4A1007	VALLEY BLVD FROM CITRUS TO SIERRA WIDEN FROM 4 TO 6 LANES	2020	$2,418	COST COVERED BY CITY FUNDS	New project	
SB	Arterial	0	4A1008	EXTEND COMMERCE WAY FROM MICHIGAN AVENUE TO BARTON ROAD AT VIVIENDA AVENUE. (4 LANES)	2012	$1,066	COST COVERED BY CITY FUNDS	New project	
SB	Arterial	0	4A1009	GREENSPOT ROAD BETWEEN SR 210 RAMPS - WIDEN FROM 4 TO 6 LANES	2014	$3,000	COST COVERED BY DIF AND MEASURE I FUNDS	New project	
SB	Arterial	0	4A1010	STERLING AVE FROM 3RD ST TO 5TH ST: WIDEN FROM 2 TO 4 LANES	2020	$400	COST COVERED BY LOCAL FUNDS (SAN BERNARDINO)	New project	
SB	Arterial	0	4A1011	YOUNGS CANYON RD FROM SAN SEVAINE RD TO CHERRY AV: CONSTRUCT NEW 4 LANE DIVIDED STREET	2014	$3,400	COST COVERED BY CITY FUNDS	New project	
SB	Arterial	0	4A1012	FOOTHILL BL FROM WEST CITY LIMITS TO EAST CITY LIMITS: WIDEN FROM 2 TO 6 LANES (3 EACH DIR)	2010	$8,705	COST COVERED BY FUND 223	New project	
SB	Arterial	0	4A1013	FOOTHILL BOULEVARD BOTTLENECK AND SAFETY IMPROVEMENT (CENTRAL AV TO GROVE AV)	2015	$5,300	COST COVERED BY CITY FUNDS	New project	

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SB	Arterial	0	4A1014	NEW RAILROAD UNDERCROSSING AT LEMON STREET/MAUNA LOA STREET THAT INCLUDES CONSTRUCTION OF A NEW OVERCROSSING BRIDGE AND REALIGNMENT AND RECONSTRUC-TION OF LEMON AND MAUNA LOA STREETS FROM 3RD AVE. TO JUST WEST OF E AVE.	2015	$47,900	COST COVERED BY DEVELOPER FEES	New project	
SB	Arterial	0	4A1015	INSTALLATION OF VARIOUS TRAFFIC SIGNALS ALONG LA MESA ROAD	2012	$70,500	COST COVERED BY CITY FUNDS	New project	
SB	Arterial	0	4A1016	REPLACE EXISTING RAILING TO MEET CURRENT STANDARDS	2012	$1,375	COST COVERED BY CITY FUNDS	New project	
SB	Arterial	0	4A1017	ORANGE FROM LUGONIA AVE TO SAN BER-NARDINO AVE: WIDEN THE EAST SIDE OF THE STREET TO RE-MOVE A RESTRICTION IN THE ROADWAY TRAVEL AREA. PROJECT INCLUDES ROAD PAVING, CURB AND GUTTER, SIDEWALK, STREET LIGHTING, STRIPING AND MARKING, AND LANDSCAPE IMPROVEMENTS. THE PROJECT WILL IMPROVE PEDESTRIAN AND VEHI	2016	$540	COST COVERED BY CITY FUNDS	New project	
SB	Arterial	0	4A1018	ETIWANDA AVE FROM ARROW RTE TO 6TH ST: PROJECT REPLACES AN AT-GRADE RAILROAD CROSSING AT THE INTERSECTION OF HAVEN AVENUE AND THE SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY (SCRRA) RAILROAD TRACKS WITH AN OVERHEAD ROADWAY/AT GRADE RAILRAOD TRACK GRADE SEPARATION	2017	$54,050	COST COVERED BY CITY FUNDS	New project	

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SB	Arterial	0	4A1019	3RD STREET FROM PALM AVE TO VICTORIA AVE-SHOULDER IMPROVEMENTS (NO WIDENING)	2015	$1,592	COST COVERED BY CITY FUNDS	New project	
SB	Arterial	0	4A1020	PALM AVENUE FROM 3RD ST TO 5TH ST-SHOULDER IMPROVEMENTS-NO WIDENING	2011	$818	COST COVERED BY RDA, MEASURE I, AND IVDA FUNDS	New project	
SB	Arterial	0	4A1021	VICTORIA AVENUE FROM 3RD ST TO 6TH ST-SHOULDER IMPROVEMENTS (NO WIDENING)	2011	$3,195	COST COVERED BY RDA, MEASURE I, AND IVDA FUNDS	New project	
SB	Arterial	0	SBD031218	ALDER AVENUE BASELINE TO FOOTHILL BOULEVARD WIDEN 2 LANES TO 4 LANES W/TURN LANES	Existing: 2012 Revised: 2014	$1,500	N/A; NO COST INCREASE	Revised schedule	
SB	Arterial	0	SBD031225	LOCUST AVENUE RIVERSIDE COUNTY LINE TO JURUPA AVENUE WIDEN FROM 2 LANES TO 4 LANES	Existing: 2012 Revised: 2014	$2,500	N/A; NO COST INCREASE	Revised schedule	
SB	Arterial	0	SBD031315	MISSION BOULEVARD GROVE TO HAVEN WIDEN FROM 4 LANES TO 6 LANES ,LANDSCAPED MEDIAN AND STORM DRAIN(3.3 MI) (T21-#60) SEG.1 ARCHIBALD TO HAVEN AND SEG.2- GROVE TO ARCHIBALD	2014	Existing: $18,570 Revised: $50,000	COST INCREASE COVERED BY DEMO AND LOCAL FEES	Revised cost	
SB	Arterial	0	SBD31785	Existing: EUCALYPTUS AVENUE PEYTON DRIVE TO GALLOPING HILLS RD. CONSTRUCT 2 LANE ROAD Revised: EUCALYPTUS AVENUE CHINO HILLS COMM PARK TO GALLOPING HILLS RD. CONSTRUCT 2 LANE ROAD	Existing: 2009 Revised: 2008	$6,020	N/A; NO COST INCREASE	Revised description and schedule	

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SB	Arterial	0	4A1003	EUCALYPTUS AVE. FROM PEYTON DRIVE TO CHINO HILLS COMM. PARK ENTRANCE- CON-STRUCT 2 LANE ROAD	2012	$3,209	COST INCREASE CONSTRAINED BY RTP ARTE-RIAL LUMP SUM (PROJECT ID# 4AL04)	New project (as follow-up project of SBD31785)	✓
SB	Arterial	0	Existing: SBD41242	Existing: PEYTON DRIVEFROM GRAND AVE TO EUCALYPTUS;WIDEN PEYTON FROM 2 TO 6 LNS W/ MARKED BIKE LNS IN EA.DIRECT;AND FROM EUCALYPTUS TO 142 WIDEN 2-4 LANES W/ MARKED BIKE LNS IN EA DIRECT	Existing: 2008	Existing: $15,840	N/A; OVER-ALL COST DECREASE	Project split; revised sched-ule and cost	✓
			Revised: SBD41242	Revised: PEYTON DRIVEFROM GRAND AVE TO ENGLISH RD;WIDEN PEYTON FROM 2 TO 6 LNS W/ MARKED BIKE LNS IN EA.DIRECT	Revised: 2008	Revised: $5,282			
			Revised: 4A1001	Revised: PEYTON DRIVEFROM ENGLISH RD TO EUCALYPTUS;WIDEN PEYTON FROM 4 TO 6 LNS W/ MARKED BIKE LNS IN EA.DIRECT	Revised: 2012	Revised: $1,500			
			Revised: 4A1002	Revised: PEYTON DRIVEFROM EUCALYPTUS TO SR-142;WIDEN PEYTON FROM 2 TO 4 LNS W/ MARKED BIKE LNS	Revised: 2012	Revised: $8,058			

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SB	Arterial	0	SBD55031	Existing: ALABAMA STREET FROM 3RD STREET TO SOUTH CITY LIMITS - WIDEN FROM 2 TO 4 LANES (0.25 MILES)	Existing: 2014	$270	N/A; NO COST INCREASE	Revised description and schedule	
				Revised: ALABAMA STREET FROM 3RD STREET TO SOUTH CITY LIMITS - WIDEN FROM 2 TO 3 LANES (0.25 MILES)	Revised: 2020				
SB	Arterial	0	SBD55033	Existing: BOULDER AVE. FROM 5TH ST. TO SOUTH CITY LIMITS - WIDEN FROM 2-4 LANES (0.60 MILES)	Existing: 2014	$330	N/A; NO COST INCREASE	Revised description and schedule	
				Revised: BOULDER AVE. FROM GREENSPOT RD. TO SOUTH CITY LIMITS - WIDEN FROM 2-4 LANES (0.60 MILES)	Revised: 2020				
SB	Arterial	0	SBD59004	FRANCIS ST. FROM BON VIEW AVE TO GROVE WIDENING 2 TO 4 LANES (STORM DRAIN FROM BON VIEW TO PARCO)	Existing: 2012	$12,631	N/A; NO COST INCREASE	Revised schedule	
					Revised: 2020				
SB	Arterial	0	SBD59023	CAMPUS PKWY-PEPPER/LINDEN DRIVE EXTENSION FROM KENDALL TO I-215 FWY - CONSTRUCT (4) LANE ROADWAY - BETWEEN KENDALL DRIVE AND I-215, PARTIAL DIAMOND INTERCHANGE FOR N/B (2,000 FT)	Existing: 2014	Existing: $22,000	COST INCREASE COVERED BY CITY FUNDS	Revised sched-ule and cost	
					Revised: 2020	Revised: $40,000			

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SB	Arterial	15	200613	I-15 & MUSCATEL STREET CONSTRUCT 6 LANE INTERCHANGE WITH LEFT AND RIGHT TURN LANES, INCLUDING 1300 FT.AUX LANE PRIOR TO N/B OFF RAMP AND 3100 FT. AUX LANE TO SB LOOP ON RAMP	Existing: 2014 Revised: 2020	Existing: $22,500 Revised: $71,000	COST INCREASE COVERED BY CITY FUNDS	Revised sched-ule and cost	
SB	Arterial	58	4351	Existing: NEAR HINKLEY FROM 2.8 MILES WEST OF HID-DEN RIVER RD. TO 0.7 MILES EAST OF LEN-WOOD ROAD -- REALIGN AND WIDEN TO 4 LANE EXPRESSWAY (2-4 LANES) (PHASE 2) Revised: NEAR HINKLEY FROM 2.8 MILES WEST OF HIDDEN RIVER ROAD TO 0.7 MILES EAST OF LENWOOD ROAD -- REALIGN AND WIDEN TO 4 LANE EXPRESSWAY (2-4 LANES) AND BUILD NEW INTERCHANGES AT HINKLEY ROAD & LENWOOD ROAD. (PHASE 2)	2020	$216,352	N/A; NO COST INCREASE	Revised description	✓
SB	Arterial	58	34770	Existing: KERN CO LINE TO 7.5 MI EAST OF JCT RTE 395 - CONSTRUCT 4 LANE EXPRESS WAY ON NEW ALIGNMENT Revised: KERN CO LINE TO 7.5 MI EAST OF JCT RTE 395 - CONSTRUCT 4 LANE EXPRESS WAY ON NEW ALIGNMENT AND BUILD NEW INTERCHANGE AT SR 58/US395 (PM 5.4)	2020	$190,779	N/A; NO COST INCREASE	Revised description	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLETION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMEND-MENT	INCLUDED IN RTIP AMENDMENT #08-34
SB	Arterial	66	20010133	Existing: ON FOOTHILL BOULEVARD FROM GROVE TO VINEYARD- WIDEN FROM 4-6 LANES,MEDIAN IS-LAND, TRAFFIC SIGNS,STORM DRAIN AND BIKE/ PED BRIDGE, LANDSCAPING - REMOVING EAST UPLAND UNDERPASS BRIDGE (PACIFIC ELECTRIC RR)A NEW PUBLIC TRAIL WILL BE BUILT ALONG THE ALIGNMENT(	2010	Existing: $15,023	N/A; NO COST INCREASE	Revised description and cost	
				Revised: WIDEN FOOTHILL BOULEVARD (OLD STATE ROUTE 66) BETWEEN SAN BERNARDINO ROAD AND VINEYARD- WIDEN FROM 4-6 LANES REMOVE THE EAST UPLAND UNDERPASS BRIDGE ALSO KNOWN AS THE PACIFIC ELECTRIC RAILROAD BRIDGE, CONSTRCT A NEW PUBLIC TRAIL BRIDGE ALONG THE RAILROAD ALIGNMENT AND ADD A RAISED MEDIAN, STREET LIGHTING, SIDEWALKS AND LANDSCAPING.		Revised: $10,632			

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLETION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMEND-MENT	INCLUDED IN RTIP AMENDMENT #08-34
SB	Arterial	66	Existing: SBD031247	Existing: IN FONTANA FROM EAST AVENUE TO HEMLOCK AVE -WIDEN FROM 4 TO 6 LANES WIDEN TO STATE STANDARDS FOR 6 LANE	Existing: 2010	Existing: $3,200	N/A; NO COST INCREASE	Project split; revised sched-ule and cost	
			Revised: SBD031247	Revised: SR-66 (FOOTHILL BL): IN FONTANA FROM EAST AVENUE TO CHERRY AVE -WIDEN FROM 4 TO 6 LANES WIDEN TO STATE STANDARDS FOR 6 LANE	Revised: 2009	Revised: $3,200			
			Revised: 201167	Revised: ON FOOTHILL BOULEVARD FROM CHERRY TO HEMLOCK WIDEN FROM 4 TO 6 LANES	Revised: 2012	Revised: $5,500	COST COVERED BY MEASURE I AND LOCAL FUNDS		
SB	Auxiliary & I/C/Ramps	10	1830	I-10 AT CEDAR AVE. BETWEEN SLOVER AND VAL-LEY- RECONSTRUCT I/C-WIDEN FROM 4-6 LANES WITH LEFT AND RIGHT TURN LANES. ADD AUX LANE ON E/B ON AND OFF RAMPS	Existing: 2010	$56,948	N/A; NO COST INCREASE	Revised schedule	
					Revised: 2014				
SB	Auxiliary & I/C/Ramps	15	200048	I-15 AT BASELINE INTERCHANGE - ON I-15 FROM 1,800 FT N/O BASELINE RD TO 2,400 FT S/O BASELINE RD; ON BASELINE RD FROM 1,800 FT W/O I-15 TO 1,500 FT E/O I-15	2014	Existing: $55,000	N/A; COST DECREASE	Revised cost	
						Revised: $43,100			

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLETION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMEND-MENT	INCLUDED IN RTIP AMENDMENT #08-34
SB	GRADE SEPARA-TION	0	200405	S. MILLIKEN AVE. GRADE SEPARATION - ON MILLIKEN FROM UPR TO NORTH OF MISSION BLVD. RR GRADE SEP-CONSTRUCT O/C/U/C AT RR-REALIGNMENT OF STS TO MEET O/CROSSING & INTERSTN IMPROVMTS	Existing: 2010 Revised: 2014	Existing: $16,001 Revised: $80,468	COST INCREASE COVERED BY LOCAL FUNDS, DEVELOPER FEES, TRAFFIC IMPACT FEES, STATE PUC, AND TRAFFIC CON-GESTION RELIEF FUNDS	Revised sched-ule and cost	
SB	GRADE SEPARA-TION	0	200804	SOUTH ARCHIBALD AVE. GRADE SEPARATION (AT MISSION BLVD) CONSTRUCT A HIGHWAY AND RR GRADE SEPARTION AT EXISTING AT-GRADE CROSSING SOUTH OF ARCHIBALD AND THE UPPR LA LINE-PROJECT TO BUILD NEW FLY-OVER BRIDGE FOR RR - WIDENING FROM 2-6 LANES LANES IN EACH DIRECTION AND LEFT AND RIGHT TURN LANES;DRAINAGE IMPROVMENTS	2014	Existing: $30,505 Revised: $57,182	COST INCREASE COVERED BY DEVELOPER FEES AND MEA-SURE I FUNDS	Revised cost	
SB	GRADE SEPARA-TION	0	200805	NORTH VINEYARD AVE. GRADE SEPARATION - BETWEEN HOLT BLVD AND AIRPORT DR. BUILD-ING RR BRIDGE FLYOVER-NO LANES ADDED TO ARTERIALS. THE GRADE SEP. IS AT THE UP RR ALHAMBRA LINE	2014	Existing: $22,650 Revised: $56,088	COST INCREASE COVERED BY DEVELOPER FEES, MEASURE I, AND TRAFFIC CONGESTION RELIEF FUNDS	Revised cost	
SB	GRADE SEPARA-TION	0	20010139	IN ONTARIO: ON MILLIKEN AT UNION PACIFIC RAILROAD - GRADE SEPARATION - PART OF ALAMEDA CORRIDOR STUDY - TCRP #55.2	Existing: 2009 Revised: 2012	$73,983	N/A; COST DECREASE	Revised schedule	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLETION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMEND-MENT	INCLUDED IN RTIP AMENDMENT #08-34
SB	HOV	10	4H01001	Existing: ADD 1 HOV LANE EACH DIRECTION, WIDEN UC'S, REPLACE OC'S, REALIGN RAMPS (HAVEN TO FORD) (PM 8.2 TO 33.43)	2020	$1,090,012	N/A; NO COST INCREASE	Revised description	
				Revised: ADD 1 HOV LANE EACH DIRECTION, WIDEN UC'S, REPLACE OC'S, REALIGN RAMPS (HAVEN TO FORD) (PM 8.0 TO 33.8)					
SB	IC/Ramps	10	2002160	I-10 AT GROVE INTERCHANGE AND GROVE AVE. CORRIDOR - RELOCATE I/10 & 4TH ST. I/C TO GROVE AVE. AND WIDEN GROVE AVE BETWEEN I-10 TO HOLT (WIDEN 4-6 LANES)	Existing: 2014	Existing: $98,800	COST INCREASE COVERED BY DEMO SAFETEA-LU AND LOCAL FUNDS	Revised sched-ule and cost	
					Revised: 2020	Revised: $156,000			
SB	IC/Ramps	10	20020812	Existing: I-10/CHERRY AVENUE INTERCHANGE - INTER-CHANGE RECONSTRUCT -WIDEN I/C FROM SLOVER TO VALLEY FROM 4-6 LANES AND 1 AUX LN IN EA. DIR. WITH DOUBLE LEFT TURNS TO RAMPS	2014	$78,143	N/A; NO COST INCREASE	Revised description	✓
				Revised: I-10/CHERRY AVENUE INTERCHANGE - INTER-CHANGE RECONSTRUCT - REPLACE OC, WIDEN OH AND I/C FROM SLOVER TO VALLEY FROM 4-6 LANES WITH DOUBLE LEFT TURNS TO RAMPS					
SB	IC/Ramps	10	4M07001	Existing: In Ontario on I-10 at Euclid Avenue - Widen East-bound/Westbound Ramps (PM 3.0-4.0)	Existing: 2030	Existing: $13,914	N/A; COST DECREASE	Revised description, schedule, and cost	
				Revised: IN ONTARIO ON I-10 AT EUCLID AVENUE - WIDEN THE EXIT RAMP FROM 2-3 LANES	Revised: 2012	Revised: $1,000			

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLETION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMEND-MENT	INCLUDED IN RTIP AMENDMENT #08-34
SB	IC/Ramps	10	4M1001	YUCAIPA BLVD @ I-10 FWY - IMPROVE THE WB ON-RAMP FROM 1-2 LANES AND MODIFY TRAF-FIC SIGNAL	2012	$1,700	COST COVERED BY CITY FUNDS AND DEVEL-OPER FEES	New project	
SB	IC/Ramps	10	SBD41339	PEPPER AVE. AT I-10 MODIFICATION OF PEPPER AVE. INTERCHANGE WIDEN BRIDGE FROM 5-7 LANES AND ADD AUXILIARY LANES TO FREEWAY (POST MILES KILOMETERS -32.5-34.4) (T21-#499)	Existing: 2010 Revised: 2014	$33,000	N/A; NO COST INCREASE	Revised schedule	
SB	IC/Ramps	15	4M1004	I-15 AT STODDARED WELLS NORTH RECON-STRUCT INTERCHANGE L-8 PSR Only	2011	$500	COST COVERED BY CITY FUNDS	New project	
SB	IC/Ramps	15	4M1005	I-15 BETWEEN STODDARD WELLS NORTH AND BOULDER RD NEW INTERCHANGE -L-1 Diamond PSR Only	2011	$500	COST COVERED BY CITY FUNDS	New project	
SB	IC/Ramps	15	4M1006	I-15 AT BOULDER ROAD/ DALE EVANS PKWY RECONSTRUCT INTERCHANGE-L-1 Diamond-PSR Only	2011	$500	COST COVERED BY CITY FUNDS	New project	
SB	IC/Ramps	15	SBD031279	IN HESPERIA AT I-15 AND RANCHERO ROAD - CONSTRUCT 6 LANE INTERCHANGE WITH LEFT AND RIGHT TURN LANES, INCLUDING 1300 FT. AUX LANE PRIOR TO N/B OFF RAMP AND 3200 FT. AUX LANE FROM TO S/B LOOP ON RAMP	Existing: 2014 Revised: 2012	Existing: $98,207 Revised: $80,125	N/A; COST DECREASE	Revised sched-ule and cost	✓
SB	IC/Ramps	15	SBD41446	EUCALYPTUS AT I-15 CONSTRUCT INTERCHANGE 3 LANES IN EA DIR STANDARD I/C CONFIG.(JOINT PROJECT BETWEEN VICTORVILLE AND HESPERIA)	Existing: 2014 Revised: 2020	$25,000	N/A; NO COST INCREASE	Revised schedule	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLETION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMEND-MENT	INCLUDED IN RTIP AMENDMENT #08-34
SB	IC/Ramps	60	200602	SR 60 AND VINEYARD AVE. INTERCHANGE RECONSTRUCTION-LENGTHEN BRIDGE TO ACOMMODATE VINEYARD AVE WIDENING AND RAMP WIDENING 4-6 LANES	Existing: 2014 Revised: 2020	$44,520	N/A; NO COST INCREASE	Revised schedule	
SB	IC/Ramps	60	200604	SR60 AT GROVE AVENUE INTERCHANGE RECON-STRUCTION AND GROVE AVE. +/-300 FT. N/S OF SR 60-WIDEN FROM 4-6 LANES	Existing: 2014 Revised: 2020	Existing: $44,520 Revised: $50,810	COST INCREASE COVERED BY DEVEL-OPER FEES AND OTHER LOCAL FUNDS	Revised sched-ule and cost	
SB	IC/Ramps	60	4M07017	Existing: IN ONTARIO ON SR-60 AT ARCHIBALD AVENUE - WIDEN OFF RAMPS FROM 2 TO 3 LANES (PM R7.6-7.8) Revised: IN ONTARIO ON SR-60 AT ARCHIBALD AVENUE - WIDEN ON AND OFF RAMPS FROM 2 TO 3 LANES (PM R7.6-7.8)	Existing: 2030 Revised: 2020	$10,457 $7,900	N/A; COST DECREASE	Revised description, schedule, and cost	
SB	IC/Ramps	210	4M07007	Existing: In Highland on SR-30 (SR-210) at Base Line - Interchange Improvements Revised: BASE LINE BETWEEN SR 210 RAMPS-WIDEN 4 TO 6 LANES AND BASE LINE (COMPLETE BY 2013)-RAMP WIDENING-EXTEND LANES (COM-PLETE BY 2018)	2020	Existing: $10,135 Revised: $4,722	N/A; COST DECREASE	Revised description and cost	
SB	IC/Ramps	210	4M1002	SR 210 S/B ON-RAMP AT 5TH ST-ADD 1 LANE	2020	$2,000	COST COVERED BY IVDA FUNDS	New project	

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLETION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMEND-MENT	INCLUDED IN RTIP AMENDMENT #08-34
SB	IC/Ramps	210	4M1003	SR 210 AT 5TH ST/GREENSPOT RD-RAMP WIDENING-ADD LANES. N/B OFF RAMP FROM 2 TO 4 LANES, AND N/B OFF RAMP AND S/B ON AND OFF-RAMPS FROM 2 TO 3 LANES	2020	$400	COST COVERED BY CITY FUNDS	New project	
SB	Mixed Flow	15	35556	IN VICTORVILLE BETWEEN MOJAVE DRIVE AND 1.6 KM N/O STODDARD WELLS RD. O/C PHASE 2 RECONSTRUCT D ST. AND E ST. I/C AND STOD-DARD WELLS I/C (REFER TO MODELING DETAILS)	Existing: 2014 Revised: 2020	$146,676	N/A; COST DECREASE	Revised schedule	
SB	Mixed Flow	395	Existing: 34040	Existing: WIDEN & CONSTRUCT IC'S: FROM I-15 TO SR-18 REALIGN & WIDEN TO 3 MF (FWY) EACH DIR (& IC AT I-15); FROM SR-18 TO PURPLE SAGE WIDEN TO 2 MF (FWY) EACH DIR (& IC AT SR-18); FROM PURPLE SAGE TO FARMINGTON WIDEN TO 2 MF (EXPWY) EACH DIR (& FWY IC AT FUTURE REALIGNED SR-58)	Existing: 2020	Existing: $14,000	N/A; NO OVER-ALL PROJECT INCREASE	Project split; revised schedule	
			Revised: 34041	Revised: NEW ALIGNMENT 6-LANE FREEWAY FROM JCT I-15 TO SR-18, 4-LANE FREEWAY FROM SR-18 TO PURPLE SAGE RD (PA&ED)	Revised: 2030	Revised: $7,270			
			Revised: 34042	Revised: NEW ALIGNMENT 4-LANE EXPRESSWAY FROM PURPLE SAGE RD TO 0.5 MI S/O FARMINGTON RD (PA&ED)	Revised: 2020	Revised: $6,730			

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLETION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMEND-MENT	INCLUDED IN RTIP AMENDMENT #08-34
SB	Mixed Flow	18T	20020144	Existing: HI- DESERT CORR. PHASE 1, SR-18 REALIGN-MENT FROM US 395 IN ADELANTO TO SR-18 E/O APPLE VALLEY. COONSTRUCT 4-6 LANE FREEWAY/EXPRESSWAY. CONSTRUCT NEW IC @I-15 W/AUX LANES NORTH AND SOUTH OF NEW IC. CONSTRUCT INTERSECTION @US 395 W/TURN POCKETS TO NORTH A	Existing: 2015	$421,943	N/A; NO COST INCREASE	Revised description and schedule	
				Revised: HIGH DESERT CORRIDOR SR 18 REALIGNMENT FROM US 395 TO SR 18/BEAR VALLEY RD. CONSTRUCT 4-6 LANE FREEWAY/ EXPRESSWAY. CONSTRUCT NEW INTERCANGE AT I-15 W/AUX LANES NORTH AND SOUTH OF I-15. CONSTRUCT NEW I/C AT US 395 WITH ADDED LANES NORTH AND SOUTH ON US-395	Revised: 2020				
SB	Other	0	200019	BASELINE ACROSS CITY CREEK - FROM 600' W TO 600' EAST OF CITY CREEK RECONSTRUCT EXISTING BRIDGE TO INCREASE HYDRAULIC CA-PACITY (NO ADDTL LANES - STILL 4) REPLACING LOW WATER XING	Existing: 2011	$22,522	N/A; NO COST INCREASE	Revised schedule	
					Revised: 2013				
SB	Other	15	35558	IN SAN BERNARDINO CO. - GATEWAY EN-HANCEMENTS ON I-15 FROM MOJAVE DR. IN VICTORVILLE TO STODDARD WELLS RD. IN BARSTOW-RETENTION WALL ENHANCMENTS AND LANDSCAPING(PPNO0175N)	Existing: 2013	$2,446	N/A; NO COST INCREASE	Revised schedule	
					Revised: 2017				

** For modeled projects, represents the Plan network year for which the project was analyzed for modeling and regional emissions analysis*

Ventura County

MAJOR REGIONAL PROJECTS

US-101/CENTRAL AVE INTERCHANGE

Revised Schedule

RTP/RTIP Project No. VEN051210
Estimated Project Cost: $37.9 million
Project Completion By (existing): 2014
Project Completion By (revised): 2020

Description:
This project will provide a reconfigured US-101/Central Ave interchange and widen the Central Ave bridge over US-101 from 1 to 2 lanes in each direction.

US-101/CALIFORNIA ST INTERCHANGE

Revised Schedule

RTP/RTIP Project No. VEN010202
Estimated Project Cost: $24 million
Project Completion By (existing): 2011
Project Completion By (revised): 2014

This project will provide a reconfigured US-101/California St interchange with a northbound off-ramp to California St terminating at Oaks St.

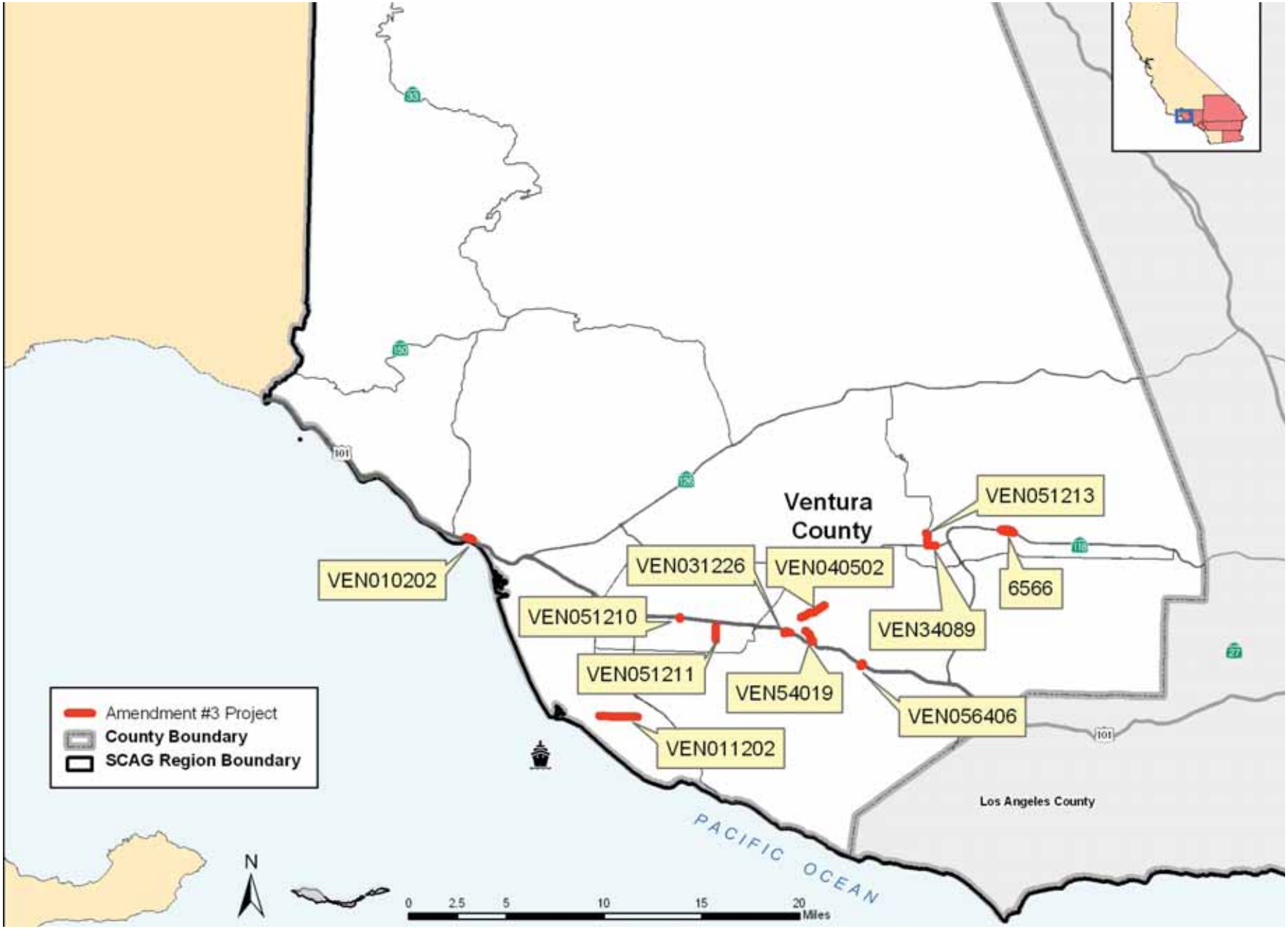
US-101/WENDY DR INTERCHANGE

Revised Schedule

RTP/RTIP Project No. VEN056406
Estimated Project Cost: $12.6 million
Project Completion By (existing): 2012
Project Completion By (revised): 2014

This project will provide a reconfigured US-101/Wendy Dr interchange with a one-lane northbound off-ramp flaring to 3 lanes at Wendy Dr, a two-lane southbound on-ramp tapering to 1 lane entering US-101, and a widening of the Wendy Dr bridge over US-101 from 4 to 6 lanes.

EXHIBIT 2.5 VENTURA COUNTY PROJECT LOCATIONS



Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatlas

TABLE 2.5 VENTURA COUNTY PROJECTS

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
VE	Arterial	0	VEN011202	HUENEME RD FROM OXNARD CITY LIMITS TO RICE RD - WIDEN FROM 2 TO 4 LANES	Existing: 2014 Revised: 2020	$6,953	N/A; NO COST CHANGE	Revised schedule	
VE	Arterial	0	VEN040502	SANTA ROSA ROAD FROM UPLAND ROAD TO WOODCREEK ROAD WIDEN FROM TWO TO FOUR LANES AND ADD BIKE LANES	Existing: 2010 Revised: 2012	Existing: $2,113 Revised: $1,838	N/A; COST DE-CREASE	Revised schedule and cost	
VE	Arterial	0	VEN051211	LAS POSAS ROAD FROM VENTURA BLVD TO PLEASANT VALLEY ROAD WIDEN FROM 2 TO 6 LANES	Existing: 2014 Revised: 2020	$4,417	N/A; NO COST CHANGE	Revised schedule	
VE	Arterial	0	VEN54019	IN CAMARILLO ADOLFO RD EXTENSION EXTEND ROAD EASTERLY TO CAMARIL-LO SPRINGS RD/US 101 (TWO-LANE UNDIVIDED ROAD)	Existing: 2014 Revised: 2020	$11,358	N/A; NO COST CHANGE	Revised schedule	
VE	Arterial	23	VEN051213	Existing: IN MOORPARK RTE 23 MOORPARK AVE FROM THIRD ST TO HIGH ST WIDEN FROM 2 LANES TO 1 LANE NB AND 2 LANES SB. REALIGN FIRST ST/POIND-EXTER INTERSECTION AND UPGRADE RAIL CROSSING	Existing: 2010	$1,895	N/A; NO COST CHANGE	Revised description and schedule	
				Existing: IN MOORPARK RTE 23 MOORPARK AVE FROM THIRD ST TO CASEY ST WIDEN FROM 2 LANES TO 1 LANE NB AND 2 LANES SB. REALIGN FIRST ST/POIND-EXTER INTERSECTION AND UPGRADE RAIL CROSSING	Revised: 2014				

COUNTY	CAT-EGORY	ROUTE	RTP/RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
VE	Arterial	118	VEN34089	IN MOORPARK L.A. AVE FROM ROUTE 23 (MOORPARK AVE) TO E/O SPRING CONSTRUCT SIDEWALKS, REALIGN ROADWAY AND WIDEN FROM 4 TO 6 LANES	Existing: 2009 Revised: 2012	$1,158	N/A; NO COST CHANGE	Revised schedule	
VE	IC/Ramps	101	VEN010202	RECONFIGURE N/B CALIFORNIA ST OF-FRAMP (RECONFIGURE RAMP TO TER-MINATE AT OAKS ST INSTEAD OF THE CURRENT CALIFORNIA ST LOCATION)	Existing: 2012 Revised: 2014	$23,970	N/A; NO COST CHANGE	Revised schedule	
VE	IC/Ramps	101	` VEN031226	IN CAMARILLO ROUTE 101 AT PLEAS-ANT VALLEY ROAD IMPROVE INTER-SECTION WITH SOUTHBOUND RAMPS - WIDEN ONRAMP ENTRANCE FROM 1 TO 2 LANES AND ADD TURN LANES	Existing: 2009 Revised: 2020	$1,053	N/A; NO COST CHANGE	Revised schedule	
VE	IC/Ramps	101	VEN051210	IN CAMARILLO RECONFIGURE CENTRAL AVENUE / ROUTE 101 INTERCHANGE	Existing: 2014 Revised: 2020	$37,861	N/A; NO COST CHANGE	Revised schedule	
VE	IC/Ramps	101	VEN056406	ROUTE 101 AT WENDY INTERCHANGE IMPROVEMENTS INCLUDING WENDY DRIV BRIDGE WIDENING ACROSS ROUTE 101; NB AND SB RAMP IMPROVE-MENTS; INTERSECTION IMPROVE-MENTS; SIGNAL MOD	Existing: 2012 Revised: 2014	$12,647	N/A; NO COST CHANGE	Revised schedule	
VE	IC/Ramps	118	6566	NEAR SIMI VALLEY AT ALAMOS CYN RD ADD RAMPS	Existing: 2012 Revised: 2020	$2,560	N/A; NO COST CHANGE	Revised schedule	

** For modeled projects, represents the Plan network year for which the project was analyzed for modeling and regional emissions analysis*

Regional Projects

MAJOR REGIONAL PROJECTS

I-710 CORRIDOR IMPROVEMENTS

Revised Schedule and Cost

RTP/RTIP Project No. 1C0401
Estimated Project Cost (existing): $8.2 billion
Estimated Project Cost (revised): $6.3 billion
Project Completion By (existing): 2020
Project Completion By (revised): 2030

Description:
This project will provide a widened I-710 to 5 mixed-flow and 2 dedicated lanes for clean technology trucks in each direction as well as interchange improvements, from Ocean Blvd in Long Beach to the intermodal railroad yards in Commerce/Vernon.

HIGH DESERT CORRIDOR

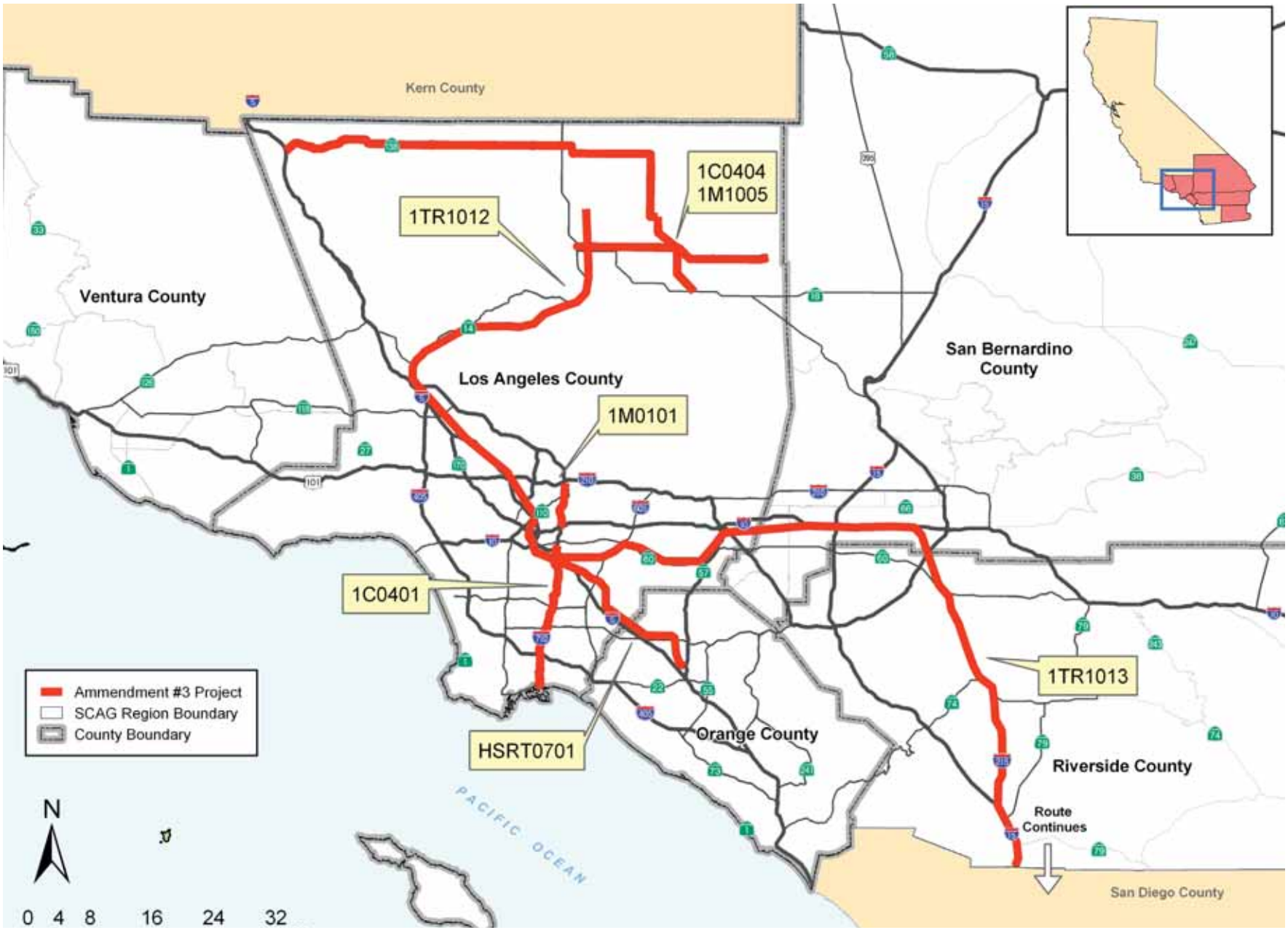
Project Split, Revised Schedule

EXISTING:
RTP/RTIP Project No. 1C0404
Estimated Project Cost: $7.0 billion
Project Completion By: 2030
Description:
This project will provide a new 4-6 lane facility: east-west from I-14 to US-395 (connecting at San Bernardino Project #20020144), east-west from I-5 to SR-14, north-south from SR-14 to SR-138.

REVISED:
RTP/RTIP Project No. 1C0404
Estimated Project Cost: $6.9 billion
Project Completion By: 2020
Description:
This project will provide a new 4-6 lane facility: east-west from I-14 to US-395 (connecting at San Bernardino Project #20020144), east-west from I-5 to SR-14, north-south from SR-14 to SR-138.

REVISED:
RTP/RTIP Project No. 1M1005
Estimated Project Cost: $33 million
Project Completion By: 2014
Description:
This project will provide for environmental work on the High Desert Corridor.

EXHIBIT 2.6 REGIONAL PROJECT LOCATIONS



Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatlas

TABLE 2.6 REGIONAL PROJECTS

COUNTY	CATEGORY	ROUTE	RTP/ RTIP PROJECT ID	DESCRIPTION	PROJECT COMPLETION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMENDMENT #08-34
REG	HSRT - Passenger	0	HSRT0701	HIGH-SPEED REGIONAL TRANSPORT (HSRT): (California High-Speed Rail Authority) - Anaheim to Union Station	2020	Existing: $4,009,021 Revised: $4,005,000	N/A; COST DECREASE	Revised cost	
REG	Transit - HSRT	0	1TR1012	Los Angeles/Palmdale corridor (High Speed Rail) (ENV/PE)	2012	$80,000	COST COVERED BY ARRA HSIPR TRACK 2 AND PROP 1A FUNDS	New project	
REG	Transit - HSRT	0	1TR1013	San Diego/Los Angeles corridor (via Inland Empire up the 15/215 to the 60/10 corridor) (High Speed Rail) (ENV/PE)	2012	$85,000	COST COVERED BY ARRA HSIPR TRACK 2 AND PROP 1A FUNDS	New project	
REG	MIXED FLOW AND TOLL	TBD	Existing: 1C0404	Existing: HIGH DESERT CORRIDOR, CONSTRUCT NEW 4-6 LANE FACILITY: E-W I-14 TO US-395 (CONNECTING AT SB CO #20020144), E-W I-5 TO SR-14, N-S SR-14 TO SR-138.	Existing: 2030	Existing: $6,958,029	N/A; NO OVERALL COST INCREASE	Project split; revised schedule	
			Revised: 1C0404	Revised: HIGH DESERT CORRIDOR, CONSTRUCT NEW 4-6 LANE FACILITY: E-W I-14 TO US-395 (CONNECTING AT SB CO #20020144), E-W I-5 TO SR-14, N-S SR-14 TO SR-138.	Revised: 2020	Revised: $6,925,029			
			Revised: 1M1005	Revised: High Desert Corridor (environmental)	Revised: 2014	Revised: $33,000			

COUN-TY	CAT-EGORY	ROUTE	RTP/ RTIP PROJ-ECT ID	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)	FISCAL IMPACT	REASON FOR AMENDMENT	INCLUDED IN RTIP AMEND-MENT #08-34
REG	MIXED FLOW AND TRUCK TOLL LANES	710	1C0401	I-710 CORRIDOR USER-FEE BACKED CAPACITY ENHANCE-MENT - WIDEN TO 5 MIXED FLOW + 2 DEDICATED LANES FOR CLEAN TECHNOLOGY TRUCKS (EACH DIRECTION) AND INTERCHANGE IMPROVE-MENTS, FROM OCEAN BLVD IN LONG BEACH TO THE INTER-MODAL RAILROAD YARDS IN COMMERCE/VERNON	Existing: 2020	Existing: $8,239,161	N/A; COST DECREASE	Revised schedule and cost	
					Revised: 2030	Revised: $6,264,000			
REG	Toll	710	1M0101	CONSTRUCT 4 TOLL LANES IN EACH DIRECTION IN TUN-NEL TO COMPLETE THE 710 FREEWAY	Existing: 2020	Existing: $4,616,060	COST INCREASE COV-ERED BY EARMARKS, FORMULA FUNDS, HPP/ PNS, MET. MOBILITY, RIP, IIP, STATE PROG., MEASURE R, TOLLS/PPP FUNDS	Revised schedule and cost	
					Revised: 2030	Revised: $5,636,000			

** For modeled projects, represents the Plan network year for which the project was analyzed for modeling and regional emissions analysis*

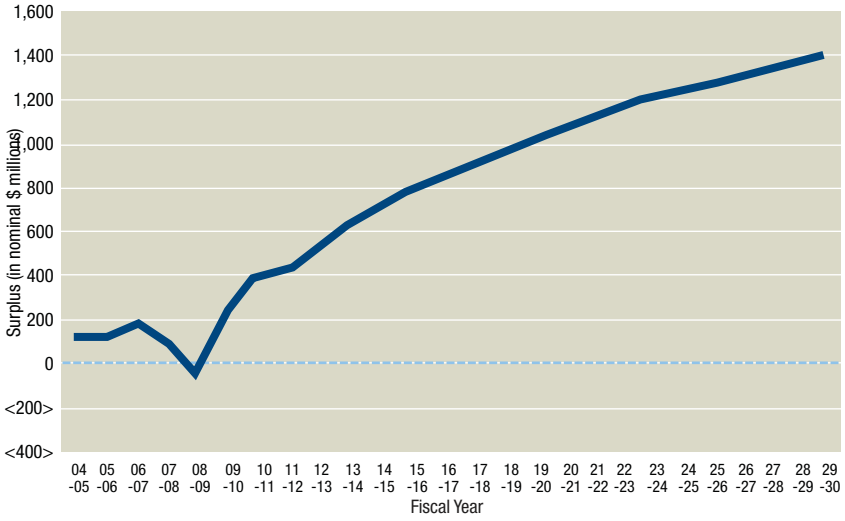
III. FISCAL IMPACT

Amendment #3 to the 2008 Regional Transportation Plan (RTP) includes changes to existing projects, the deletion of projects, and the addition of new projects. Financial impacts associated with these modifications are minimal for each of the counties of Orange, Riverside, San Bernardino, and Ventura. Imperial County is not impacted by Amendment #3. The most significant change in Amendment #3 includes a reassessment of Los Angeles County's resources reflecting the recent passage of Measure R, which imposes an additional ½-percent sales tax for 30 years.

Los Angeles County

The adopted 2008 RTP did not foresee the passage of Los Angeles County's Measure R, which is expected to generate substantial funding for transportation projects. Beginning in 2009-10, $38.3 billion is expected to be generated through 2038-2039. Despite recent volatility in sales tax receipts, Exhibit 3.1 shows how Measure R provides additional resources compared to the adopted 2008 RTP forecast of sales tax and TDA revenues. Figures in the exhibit are in year-of-expenditure (YOE), or nominal dollars.

EXHIBIT 3.1 RECENT LOS ANGELES COUNTY SALES TAX REVENUE FORECASTS COMPARED TO 2008 RTP FORECASTS PROPOSITIONS A AND C PLUS TDA AND MEASURE R (MILLIONS, NOMINAL DOLLARS)



Amendment #3 also incorporates Los Angeles County Metropolitan Transportation Authority's (Metro) recent update to its Long Range Transportation Plan as adopted in October of 2009. Substantial project cost modifications as well as project additions as may be appropriate, are accounted for with this update. The countywide sources and uses in Table 3.1 provide a summary of the updated financial forecast for Los Angeles County. Project-specific resources are further identified in Chapter 2 of this document.

TABLE 3.1 LOS ANGELES COUNTY SOURCES AND USES, FY2005-FY2040 (BILLIONS, NOMINAL DOLLARS)

SUMMARY OF REVENUE SOURCES	
Local	$ 168
State	$ 50
Federal	$ 41
Measure R	$ 38
REVENUE TOTAL	**$ 298**

SUMMARY OF RTP PROJECT COSTS	
Rail & Transitway Capital	$ 39
Countywide Bus Capital	$ 19
Countywide Rail Operations	$ 23
Countywide Bus Operations	$ 83
Highways, Streets, Roads, Multimodal	$ 94
Debt Service/Other	$ 32
Unallocated	$ 7
COST TOTAL	**$ 298**

Orange County

Adjustments to Orange County projects reflect a slight increase in total costs due to the addition of several projects, which are offset by mostly local sources including local sales tax funding. Project-specific resources are identified in Chapter 2 of this document.

Riverside County

For Riverside County, recent adjustments reflect mostly an overall decrease in total project costs, particularly for arterial investments. Modifications for Riverside County also include the addition of new interchange projects offset by mostly local resources including local sales tax funding, city/county sources, and local developer mitigation fee revenue.

San Bernardino County

San Bernardino County projects also reflect a slight increase in total costs due to the addition of projects, which are offset by a combination of mostly local sales tax resources and local developer mitigation funds. Project-specific resources for San Bernardino County projects are also identified in Chapter 2 of this document.

Ventura County

For Ventura County, recent adjustments reflect an overall decrease in total project costs for arterial investments.

Table 3.2 summarizes the net effect of overall cost reductions by county due to recent trends in construction costs as well as the deletion of some previously planned projects, offset by the addition of select new projects as may be applicable. Where net increase in total costs are shown (typically resulting from the addition of new projects), specific resources (primarily local sales tax revenues) have been identified to ensure fiscal constraint.

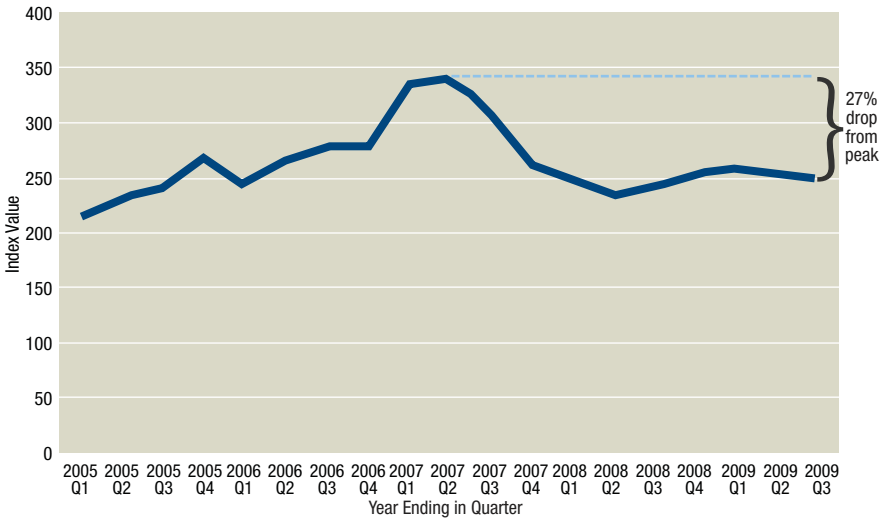
TABLE 3.2 SUMMARY OF RTP AMENDMENT #3 COST CHANGES BY COUNTY (THOUSANDS, NOMINAL DOLLARS)

COUNTY	NET PROJECT COST CHANGES*
Imperial	N/A
Los Angeles	See Table 3.1
Orange	$ 152,624
Riverside	$ (28,160)
San Bernardino	$ 366,582
Ventura	$ 273

* Note: Figures in this table indicate project cost changes by county, while Table 3.1 indicates total project costs (for Los Angeles County).

Overall, cost estimates for a number of highway projects have been adjusted downward to reflect more recent cost trends. California construction costs have dropped dramatically since the Adopted 2008 RTP. Exhibit 3.2 shows the period since 2005 in detail. Construction costs have dropped 27 percent since their peak in 2007 Q2 and have remained relatively steady since the 2008 RTP financial forecasts were developed. In contrast, the adopted 2008 RTP Financial Plan assumed that project construction costs would increase 5.3 percent in YOE (nominal) dollars. Accordingly, sales tax revenues have become more valuable relative to construction costs.

EXHIBIT 3.2 CALIFORNIA HIGHWAY CONSTRUCTION COST INDEX (1972 TO 2009 Q3)



Source: California Department of Transportation, Office Engineer, Price Index for Selected Highway Construction Items, Summary, Third Quarter Ending September 30, 2009.

SCAG Regional Sources and Uses Summary

With Amendment #3, the regional sources and uses summary have been adjusted to reflect recent modifications. As shown in Table 3.3, regional revenues total $587 billion and expenditures total $584 billion through the duration of the RTP horizon—remaining a fiscally-constrained RTP.

TABLE 3.3 2008 RTP TOTAL REVENUE SOURCES AND USES SUMMARY (INCLUDING AMENDMENT #3) (BILLIONS, NOMINAL DOLLARS)

REVENUE SOURCES	Imperial	Los Angeles	Orange	Riverside	San Bernardino	Ventura	Regional	TOTAL
Local	$ 1	$ 168	$ 49	$ 46	$ 28	$ 5	$ -	$ 297
State	$ 2	$ 50	$ 12	$ 7	$ 14	$ 3	$ -	$ 88
Federal	$ 0	$ 41	$ 7	$ 3	$ 4	$ 1	$ -	$ 56
Innovative Financing Sources/New Revenues (1)	$ 1	$ 38	$ 3	$ 1	$ 1	$ 1	$ 102	$ 147
TOTAL	**$ 4**	**$ 298**	**$ 70**	**$ 58**	**$ 46**	**$ 10**	**$ 102**	**$ 587**

RTP PROJECT COSTS	Imperial	Los Angeles	Orange	Riverside	San Bernardino	Ventura	Regional	TOTAL
TOTAL	**$ 3**	**$ 298**	**$ 70**	**$ 55**	**$ 46**	**$ 10**	**$ 102**	**$ 584**

1) Includes Measure R revenues for Los Angeles county and new sources identified in adopted 2008 RTP (e.g., Private Equity Participation and Highway Tolls including bond proceeds).
2) Amendment #3 applicable only to Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties

IV. TRANSPORTATION CONFORMITY

Transportation conformity is required under the federal Clean Air Act to ensure that federally supported highway and transit project activities conform to the purpose of the State Implementation Plan (SIP). Conformity to the purpose of the SIP means that transportation activities will not cause new air quality violations, worsen existing violations, or delay timely attainment of the relevant National Ambient Air Quality Standards. Conformity applies to non-attainment and maintenance areas for the following transportation-related criteria pollutants: ozone, particulate matter (PM2.5 and PM10), carbon monoxide (CO), and nitrogen dioxide (NO2).

Under the U.S. DOT Metropolitan Planning Regulations and EPA's Transportation Conformity Regulations, Amendment #3 to the 2008 Regional Transportation Plan (RTP) and the associated Amendment #08-34 to the 2008 Regional Transportation Improvement Program (RTIP) (collectively referred to herein as the "2008 RTP and RTIP Amendments") need to pass five tests: consistency with the adopted 2008 RTP as previously amended, regional emissions analysis, timely implementation of transportation control measures (TCMs), financial constraint, and interagency consultation and public involvement.

The findings of the conformity determination for the 2008 RTP and RTIP Amendments are presented below. Details of the regional emissions analysis follow the findings.

Conformity Findings

SCAG's findings for the approval of the 2008 RTP and RTIP Amendments are as follows:

- **Consistency with 2008 RTP Test**
  Inclusion of the amended projects in the 2008 RTP and RTIP would not change any other policies, programs or projects in the federally approved 2008 RTP as previously amended.

  Finding: The 2008 RTP and RTIP Amendments are consistent with the federally approved 2008 RTP as previously amended, and meets all federal and state requirements and regulations.

- **Regional Emissions Tests**
  Finding: The regional emissions analyses for the 2008 RTP and RTIP Amendments update the regional emissions analyses for the federally approved 2008 RTIP and 2008 RTP as previously amended.

  Finding: The 2008 RTP and RTIP Amendments regional emissions analysis for PM2.5 and its precursors meet all applicable emission budget tests for all milestone, attainment, and planning horizon years in the South Coast Air Basin (SCAB).

  Finding: The 2008 RTP and RTIP Amendments regional emissions for ozone precursors meet all applicable emission budget tests for all milestone, attainment, and planning horizon years for the SCAB, South Central Coast Air Basin ([SCCAB], Ventura County portion), Western Mojave Desert Air Basin ([MDAB], Los Angeles County Antelope Valley portion and San Bernardino County western portion of MDAB), and the Salton Sea Air Basin ([SSAB], Riverside County Coachella Valley and Imperial County portions).

  Finding: The 2008 RTP and RTIP Amendments regional emissions for NO2 meet all applicable emission budget tests for all milestone, attainment, and planning horizon years in the SCAB.

  Finding: The 2008 RTP and RTIP Amendments regional emissions for CO meet all applicable emission budget tests for all milestone, attainment, and planning horizon years in SCAB.

  Finding: The 2008 RTP and RTIP Amendments regional emissions for PM10 and its precursors meet all applicable emission budget tests for all milestone, attainment, and planning horizon years in SCAB and the SSAB (Riverside County Coachella Valley portion).

Finding: The 2008 RTP and RTIP Amendments regional emissions for PM10 meet the interim emission test (build/no-build test) for all milestone, attainment and planning horizon years for the MDAB (San Bernardino County portion excluding Searles Valley portion) and Searles Valley portion of San Bernardino County) and for the SSAB (Imperial County portion).

- **Timely Implementation of TCMs Test**
  Finding: The 2008 RTP and RTIP Amendments do not revise or otherwise alter the scope, schedule, funding priority, or implementation of any TCM.
- **Financial Constraint Test**
  Finding: All projects listed in the 2008 RTP and 2008 RTIP, including all previously approved amendments and the Amendments, are financially constrained for all fiscal years. Fiscal constraint is analyzed in the Fiscal Impact chapter of this report.
- **Interagency Consultation and Public Involvement Test**
  Finding: The 2008 RTP and RTIP Amendments comply with all federal and state requirements for interagency consultation and public involvement. The Amendments were discussed at the Transportation Conformity Working Group (TCWG), which includes representatives from the respective air quality and transportation planning agencies, on three occasions (October 27, 2009, December 1, 2009, and January 26, 2010). The draft conformity analysis has been provided to the TCWG. No comments on conformity were received by the close of the public comment period.

Regional Emissions Analysis

The following tables summarize the required regional emission analyses for each of the non-attainment areas within SCAG's jurisdiction. For those areas which require budget tests, the emissions values in the tables below utilize the rounding convention used by California Air Resources Board to set the budgets (i.e., any fraction rounded up to the nearest ton), and are the basis of the conformity findings for these areas.

SOUTH CENTRAL COAST AIR BASIN – VENTURA COUNTY PORTION

TABLE 4.1 8-HOUR OZONE (SUMMER PLANNING EMISSIONS [TONS/DAY])

Pollutant		2010	2020	2030	2035
ROG	Budget	13	13	13	13
	Plan	11	7	6	5
	Budget - Plan	**2**	**6**	**7**	**8**
NOx	Budget	19	19	19	19
	Plan	17	9	6	6
	Budget - Plan	**2**	**10**	**13**	**13**

SOUTH COAST AIR BASIN

TABLE 4.2 8-HOUR OZONE (SUMMER PLANNING EMISSIONS [TONS/DAY])

Pollutant		2011	2014	2017	2020	2030	2035
ROG	Budget	176	150	131	116	116	116
	Plan	167[a]	141	125[b]	110	84	76
	Budget - Plan	**9**	**9**	**6**	**6**	**32**	**40**
NOx	Budget	354	287	232	190	190	190
	Plan	326[a]	258	210[b]	162	120	112
Budget - Plan		**28**	**29**	**22**	**28**	**70**	**78**

[a] *2011 interpolated between 2010 and 2012*

[b] *2017 interpolated between 2014 and 2020*

TABLE 4.3 PM2.5 (ANNUAL EMISSIONS [TONS/DAY])

Pollutant		2012	2020	2030	2035
ROG	Budget	163	163	163	163
	Plan	154	107	81	73
	Budget - Plan	**9**	**56**	**82**	**90**
NOx	Budget	337	337	337	337
	Plan	308	176	122	114
	Budget - Plan	**29**	**161**	**215**	**223**
PM2.5	Budget	38	38	38	38
	Plan	36	36	37	38
	Budget - Plan	**2**	**2**	**1**	**0**

TABLE 4.4 PM10 (24-HOUR EMISSIONS [TONS/DAY])

Pollutant		2010	2020	2030	2035
ROG	Budget	251	251	251	251
	Plan	173	107	81	73
	Budget - Plan	**78**	**144**	**170**	**178**
NOx	Budget	549	549	549	549
	Plan	372	176	122	114
	Budget - Plan	**177**	**373**	**427**	**435**
PM10	Budget	166	166	166	166
	Plan	157	153	152	155
	Budget - Plan	**9**	**13**	**14**	**11**

TABLE 4.5 CO (WINTER EMISSIONS [TONS/DAY])

Pollutant		2010	2015	2020	2030	2035
CO	Budget	2,137	2,137	2,137	2,137	2,137
	Plan	1,671	1,222[a]	910	624	569
	Budget - Plan	**466**	**915**	**1,227**	**1,513**	**1,568**

[a] *2015 interpolated between 2014 and 2020*

TABLE 4.6 NO2 (WINTER EMISSIONS [TONS/DAY])

Pollutant		2010	2020	2030	2035
NO2	Budget[a]	680	680	680	680
	Plan	398	187	129	119
	Budget - Plan	**282**	**493**	**551**	**561**

[a] *The motor vehicle emissions budgets in the nitrogen dioxide (NO2) maintenance plan portion of the 2007 South Coast SIP, as submitted by the California Air Resource Board (CARB) on May 1, 2009, were found adequate by EPA on November 29, 2009.*

WESTERN MOJAVE DESERT AIR BASIN – LOS ANGELES COUNTY (ANTELOPE VALLEY PORTION) AND SAN BERNARDINO COUNTY (WESTERN PORTION OF MDAB)

TABLE 4.7 8-HOUR OZONE (SUMMER PLANNING EMISSIONS [TONS/DAY])

Pollutant		2010	2020	2030	2035
ROG	Budget	22	22	22	22
	Plan	20	12	10	10
	Budget - Plan	**2**	**10**	**12**	**12**
NOx	Budget	77	77	77	77
	Plan	74	33	26	27
	Budget - Plan	**3**	**44**	**51**	**50**

MOJAVE DESERT AIR BASIN – SAN BERNARDINO COUNTY PORTION EXCLUDING SEARLES VALLEY

TABLE 4.8 PM10 (24-HOUR EMISSIONS [TONS/DAY])

		2010	2020	2030	2035
PM10	No Build	9.3	8.6	9.5	10.3
	Build	8.3	7.9	9.0	9.8
	No Build - Build	**1.0**	**0.7**	**0.5**	**0.5**

MOJAVE DESERT AIR BASIN – SEARLES VALLEY PORTION OF SAN BERNARDINO COUNTY

TABLE 4.9 PM10 (24-HOUR EMISSIONS [TONS/DAY])

		2010	2020	2030	2035
PM10	No Build	0.1	0.1	0.1	0.1
	Build	0.1	0.1	0.1	0.1
	No Build - Build	**0.0**	**0.0**	**0.0**	**0.0**

SALTON SEA AIR BASIN – RIVERSIDE COUNTY COACHELLA VALLEY PORTION

TABLE 4.10 8-HOUR OZONE (SUMMER PLANNING EMISSIONS [TONS/DAY])

Pollutant		2012	2020	2030	2035
ROG	Budget	7	7	7	7
	Plan	7	5	4	4
	Budget - Plan	**0**	**2**	**3**	**3**
NOx	Budget	26	26	26	26
	Plan	25	14	11	12
	Budget - Plan	**1**	**12**	**15**	**14**

TABLE 4.11 PM10 (24-HOUR EMISSIONS [TONS/DAY])

		2010	2020	2030	2035
PM10	Budget[a]	10.9	10.9	10.9	10.9
	Plan	8.5	8.0	8.2	8.6
	Budget - Plan	**2.4**	**2.9**	**2.7**	**2.3**

[a] *Budget set to one decimal place by 2003 Coachella SIP.*

SALTON SEA AIR BASIN – IMPERIAL COUNTY PORTION

TABLE 4.12 OZONE (SUMMER PLANNING EMISSIONS [TONS/DAY])

Pollutant		2010	2020	2030	2035
ROG	Budget	7	7	7	7
	Plan	6	5	4	5
Budget - Plan		**1**	**2**	**3**	**2**
NOx	Budget	17	17	17	17
	Plan	16	10	9	10
Budget - Plan		**1**	**7**	**8**	**7**

TABLE 4.13 PM10 (24-HOUR EMISSIONS [TONS/DAY])

Pollutant		2010	2020	2030	2035
PM10	No Build	4.2	6.5	8.0	8.6
	Build	4.1	6.3	7.6	8.2
No Build - Build		**0.1**	**0.2**	**0.4**	**0.4**

V. ADDENDUM #3 TO THE 2008 RTP PROGRAM ENVIRONMENTAL IMPACT REPORT

Introduction

The Southern California Association of Governments (SCAG) proposes to amend the 2008 RTP (2008 RTP Amendment #3) to reflect updates and additional revisions to projects contained in the project list attached to the Final 2008 RTP (2008 RTP or Plan) as amended in December 2009.

The 2008 RTP is a long-range program that addresses the transportation needs for the six-county SCAG Region through 2035. It includes both specific projects and strategies that address transportation goals and policies and potential growth patterns. The 2008 RTP Program Environmental Impact Report (2008 EIR) analyzes the projects and programs on a broad regional scale, not at the site-specific level of analysis; site-specific analysis will occur as each project is defined and goes through individual project review.

Projects included in the 2008 PEIR include highway improvements such as mixed flow lanes, interchanges, ramps, high occupancy vehicle (HOV) lanes, toll lanes, and arterials; transit improvements such as bus, bus rapid transit (BRT) and various rail upgrades; high speed regional transport (HSRT); and goods movement strategies. Although the 2008 RTP has a long-term time horizon under which projects are planned and proposed to be implemented, federal and state mandates ensure that the Plan is both flexible and responsive in the near term. Therefore, the 2008 RTP is regarded as both a long-term regional transportation blueprint and as a dynamic planning tool subject to ongoing refinement and modification.

The 2008 PEIR was certified on May 8, 2008;[1] minor revisions to the 2008 RTP were made in two prior Amendments and reviewed in two prior PEIR Addenda (October 2008 and December 2009). This Addendum to the 2008 RTP PEIR (Addendum #3) has been prepared to address additional updates and revisions to the 2008 RTP project list.

As the Lead Agency under the California Environmental Quality Act (CEQA, Cal. Pub. Res. Code Section 21000 et seq.), SCAG prepared the Final RTP PEIR for the 2008 RTP to evaluate the potential environmental impacts associated with implementation of the 2008 RTP and to identify practical and feasible mitigation measures. The 2008 PEIR identifies the potentially significant environmental impacts associated with the implementation of the projects, operations, programs, and policies included in the 2008 RTP. The 2008 PEIR serves as the informational document to inform decision-makers, agencies and the public of the potential environmental consequences of approving the 2008 RTP. As is appropriate for a program EIR, the 2008 PEIR focuses on the broad policy alternatives and program-wide mitigation measures (CEQA Guidelines Section 15168(b)(4))[2]. The 2008 PEIR is a first tier environmental document that serves as a regional-scale environmental analysis and planning tool that can be used to support subsequent, site-specific project-level CEQA analyses.

Section 15152 of the CEQA Guidelines indicates that subsequent environmental analyses for separate, but related, future projects may tier off the analysis contained in the PEIR. The CEQA Guidelines do not require a Program EIR to specifically list all subsequent activities that may be within its scope. For large scale planning approvals (such as the RTP), where site-specific EIRs or negative declarations will subsequently be prepared for specific projects broadly identified within a Program EIR, the site-specific analysis can be deferred until the project level environmental document is prepared (Sections 15168 and 15152) provided deferral does not prevent adequate identification of significant effects of the planning approval at hand.

Basis for the Addendum

An Addendum to the 2008 RTP PEIR is appropriate to address proposed changes to the 2008 RTP contained in the 2008 RTP Amendment #3. The 2008 RTP Amendment #3 contains a list of all currently proposed changes to the 2008

1 The Final 2008 Regional Transportation Plan Program Environmental Impact Report (SCH No. 2007061126) ("Final PEIR" or "2008 PEIR") is incorporated herein by this reference and an electronic version is available at http://scag.ca.gov/RTPpeir2008/final/addendum.htm.

2 Unless otherwise indicated, all citations by section number are to the CEQA Guidelines (Cal. Administrative Code, tit. 14, Section 15000 et seq.)

RTP project list. The changes now proposed to the 2008 RTP project list generally consist of the following:

- Changes in completion year of project already included in the 2008 RTP.
- Changes in estimated costs of project already included in the 2008 RTP.
- Changes in description of projects already included in the 2008 RTP.
- New projects to be included in the 2008 RTP.

The types of projects affected generally consist of the following:

- HOV and Mixed Flow Lane projects, including lane widening projects, intersection construction and reconfigurations, and arterial projects.
- High speed rail projects (environmental and preliminary engineering only).
- New transit projects in LA County.

Further detail on the proposed 2008 RTP Amendment #3 is provided below under the subheading "Project Description."

When an EIR has been certified and the project is modified or otherwise changed after certification, additional CEQA review may be necessary. The key considerations in determining the need for the appropriate type of additional CEQA review are outlined in Section 21166 of the Public Resources Code (CEQA) and CEQA Guidelines Sections 15162, 15163 and 15164.

Specifically, CEQA Guidelines Section 15162(a) provides that a Subsequent EIR is not required unless the following occurs:

1. Substantial changes are proposed in the project which will require major revisions in the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.
2. Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.
3. New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence, at the time the previous EIR was certified as complete or the negative declaration was adopted, shows any of the following:

   a. The project will have one or more significant effects not discussed in the previous EIR;

   b. Significant effects previously examined will be substantially more severe than shown in the previous EIR;

   c. Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or

   d. Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

An Addendum to an EIR may be prepared by the Lead Agency that prepared the original EIR if some changes or additions are necessary, but none of the conditions have occurred requiring preparation of a Subsequent EIR (Section 15164(a)). An Addendum must include a brief explanation of the agency's decision not to prepare a Subsequent EIR and be supported by substantial evidence in the record as a whole (Section 15164(e)). The Addendum to the EIR need not be circulated for public review but it may be included in or attached to the Final EIR (Section 15164(c)). The decision-making body must consider the Addendum to the EIR prior to making a decision on the project (15164(d)).

For the reasons set forth in this Addendum, SCAG has determined that an Addendum to the 2008 PEIR is the appropriate CEQA document because the

proposed revisions to the 2008 RTP project list do not meet the conditions of Section 15162(a) for preparation of a Subsequent EIR.

While the proposed changes to the RTP project list may represent *"New information of substantial importance…"* at the local level, these changes are not substantial at the regional scale analyzed in the 2008 PEIR and as stated in 15162(a)(3), the proposed changes to the 2008 RTP project list would not result in one or more significant effects (at the regional level) not discussed in the 2008 PEIR, nor result in impacts that are substantially more severe than shown in the 2008 PEIR. Moreover, no changes to the mitigation measures contained in the 2008 PEIR are being proposed that could trigger additional review regarding such measures. Furthermore, as discussed in the 2008 RTP PEIR, the level of detail for individual projects on the RTP project list is generally insufficient to be able to reliably analyze local effects. Such analysis is more appropriately undertaken in Tier 2, project-specific environmental documents undertaken by the individual agencies proposing each project. Proposed changes to the 2008 RTP project list, contained in the 2008 RTP Amendment #3 do not result in any of the conditions described in CEQA section 15162(a).

As indicated in the 2008 RTP Amendment #3 (and summarized above), no substantial changes are proposed to this regional scale project (the 2008 RTP); the 2008 RTP PEIR was certified approximately 22 months ago, and since that time, economic conditions have resulted in slowed growth which in general has lead to limited changes occurring with respect to the circumstances under which the 2008 RTP (as amended) is to be undertaken.

SCAG has assessed the modified and additional projects at the programmatic level, and finds that the projects identified in this Amendment are consistent with the analysis, mitigation measures, and Findings of Fact contained in the 2008 PEIR. Further, SCAG finds that the proposed changes to the 2008 RTP project list identified in 2008 RTP Amendment #3 would not result in a substantial change to the region-wide impacts programmatically addressed in the 2008 PEIR.

Project Description

As noted previously, the 2008 RTP Amendment #3 includes changes to the project list contained in the 2008 RTP as amended by Amendments #1 and #2.

There are generally two types of projects included in the 2008 RTP Amendment #3:

(1) Revisions to Projects – These projects appear in the existing 2008 RTP. Project changes in the 2008 RTP Amendment #3 include the following:

- revisions to project scopes (such as adding additional lanes and arterial widening projects, revisions to interchanges and intersections, and updating project descriptions to reflect slight modifications and the latest project development details, including revised post miles);
- revisions to schedules (revised completion years, mostly within ten years of the completion year indicated in the 2008 RTP);
- revisions and/or changes in project costs (usually consisting of increases to previously estimated costs); or
- revisions to projects that have been split into multiple projects.

(2) New Projects – These projects were not included in the 2008 RTP project list and are being added to the existing 2008 RTP. New projects represent technical additions to existing infrastructure that were included in the regional level analysis conducted in the 2008 PEIR. These projects consist of lane widening at existing arterials and new carpool and truck lanes. In addition, the Metropolitan Transportation Authority of Los Angeles County (Metro) is adding a number of high speed rail segments (funding for environmental and preliminary engineering only) as well as new transit projects including the Green Line South Bay Extension to the proposed Redondo Beach Transit Center and the Gold Line Eastside Extension to Whittier. In addition, the Purple Line Extension, which the 2008 RTP shows as going to La Cienega, is now being extended to Westwood.

In total, approximately 300 projects are being modified or added in RTP Amendment #3, including approximately 60 projects that are new capital projects which represent less than 2% of the total 2008 RTP planned expenditures. The 2008 RTP Amendment #3 contains a list of all proposed changes (i.e., project revisions and added projects) to the 2008 RTP project list.

Most of the modifications to the 2008 RTP project list are minor in nature, including modifications to projects submitted by Metro that are already in the 2008 RTP. Changes to some of the larger projects contained in Amendment #3, listed by county, are as follows:

- Los Angeles County: Various highway and transit project additions and changes identified in Metro's recently adopted 2009 Long Range Transportation Plan.
- Orange County: Cost change to Foothill Transportation Corridor-North mixed-flow, climbing, and auxiliary lanes from Oso Parkway to Eastern Transportation Corridor project.
- Riverside County: Description, cost, and completion year change to I-10/Jefferson Street reconstruction project.
- San Bernardino County: Description, cost, and completion year change to High Desert Corridor project.
- Ventura County: Completion year change to US-101/Central Avenue interchange reconfiguration project.

The revised 2008 RTP project list can be found in Chapter 2 of the 2008 RTP Amendment #3.

Analysis of Impacts

The changes described above to the 2008 RTP project list identified in the 2008 RTP Amendment #3 would not result in a substantial change to the region-wide impacts programmatically addressed in the 2008 PEIR. The 2008 PEIR broadly identifies a number of region-wide significant impacts that would result from the numerous transportation policies and projects encompassed by the 2008 RTP.

The 2008 PEIR presents analysis at the programmatic level of various types of projects, including both modifications to the existing system as well as new systems such as new facilities, goods movement roadway facilities, rail corridors, flyovers, interchanges, and High-Speed Regional Transport.

Although the new projects identified in the 2008 RTP Amendment #3 were not identified in the 2008 PEIR, SCAG has assessed these additional projects at the programmatic level and finds that they are consistent with the scope, goals, and policies contained in the 2008 RTP and with the analysis and conclusions presented in the 2008 PEIR. Further, each project will be fully assessed at the project-level by the implementing agency in accordance with CEQA, NEPA, and all other applicable regulations.

No changes to the mitigation measures contained in the 2008 PEIR are proposed. SCAG has determined that the changes and additions identified above would result in impacts that would fall within the range of impacts identified in the 2008 PEIR. Therefore, no substantial physical impacts to the environment beyond those already anticipated and documented in the 2008 PEIR are anticipated to result from the changes and additions identified in the 2008 RTP Amendment #3.

AESTHETICS AND VIEWS

The proposed changes to the 2008 RTP project list identified in the 2008 RTP Amendment #3 are not expected to cause significant adverse impacts to aes-

thetics or views beyond those already described in the 2008 PEIR. Significant impacts anticipated in the 2008 PEIR would be the obstruction of scenic views and resources, altering areas along state designated scenic highways and vista points, creating significant contrasts with the scale, form, line, color and overall visual character of the existing landscape, and adding visual urban elements to rural areas (2008 PEIR pp. 3.1-10 – 3.1-22).

The revised project list included in 2008 RTP Amendment #3 would not result in a substantial change to the region-wide impacts programmatically addressed in the 2008 PEIR.

AIR QUALITY

The proposed changes to the 2008 RTP project list identified in the 2008 RTP Amendment #3 are not expected to cause additional significant air quality impacts beyond those already identified in the 2008 PEIR. The 2008 PEIR identified significant and unavoidable impacts to regional air quality, cancer risk increases, and short-term air emissions from implementation of the RTP (2008 PEIR pp 3.2-22 – 3.2-43). The conformity analysis prepared for the 2008 RTP and RTP Amendment #3 demonstrated a positive conformity finding, showing that clean air requirements have been met.

Based on the conformity analysis undertaken for the 2008 RTP Amendment #3, the proposed changes to the 2008 RTP project list meet the regional emissions test and all other federally required conformity tests for all non-attainment and maintenance areas in the SCAG region.

Thus, incorporation of the projects identified in the 2008 RTP Amendment #3 would not result in a substantial change to the air quality impacts programmatically addressed in the 2008 PEIR.

BIOLOGICAL RESOURCES

The proposed changes to the 2008 RTP project list identified in the 2008 RTP Amendment #3 are consistent with the findings of the 2008 PEIR analysis of biological resources. The 2008 PEIR concluded that implementation of the RTP would adversely affect biological resources and result in habitat loss, fragmentation and degradation, direct fatalities to wild-life, encroachment of non-native species, water diversion and degradation, displacement of riparian, wetland, or other sensitive habitats, and other human activities, such as litter, light pollution, trampling, off-road vehicle activity and increasing access to previously inaccessible and undisturbed areas (2008 PEIR pp 3.3-22 – 3.3-57).

Detailed project-level analysis, including project level mitigation measures, will be conducted by each implementing agency for each individual project. The analysis in the 2008 PEIR adequately addresses the range of impacts that could result from the proposed projects (as revised by the 2008 RTP Amendments #1, #2 and #3) at the program level.

The incorporation of the projects identified in the 2008 RTP Amendment #3 would not result in a substantial change to the region-wide impacts programmatically addressed in the 2008 PEIR.

CULTURAL RESOURCES

The proposed changes to the 2008 RTP project list identified in the 2008 RTP Amendment #3 would result in impacts consistent with the findings of the 2008 PEIR on cultural resources. The 2008 PEIR determined that the development of new transportation facilities may affect archaeological and paleontological resources, primarily through the disturbance of buried resources. Additionally, the development of new transportation facilities may affect historic architectural resources (structures 50 years or older), either through direct affects to buildings within the proposed project area, or through indirect affects to the area surrounding a resource if it creates a visually incompatible structure adjacent to a historic structure (2008 PEIR pp. 3.4-19 - 3.4-29).

The incorporation of the projects identified in the 2008 RTP Amendment #3 would not result in a substantial change to the region-wide impacts programmatically addressed in the 2008 PEIR.

ENERGY

The proposed changes to the 2008 RTP project list identified in the 2008 RTP Amendment #3 are not expected to cause significant energy impacts beyond those identified in the 2008 PEIR. The 2008 PEIR concluded that significant impacts would result from an increase in transportation-related energy demands. Impacts that would occur upon implementation of the 2008 RTP include the substantial increase in consumption of electricity, natural gas, gasoline, diesel, and other non-renewable energy types and the potential inability to meet greenhouse gas reduction levels identified in AB32 (2008 PEIR pp. 3.5-32 – 3.5-46).

The analysis in the 2008 PEIR adequately addresses the range of impacts that could result from these projects at the program level. Thus, incorporation of the projects identified in the 2008 RTP Amendment #3 would not result in a substantial change to the region-wide impacts programmatically addressed in the 2008 PEIR.

GEOLOGY, SOILS, AND SEISMICITY

Potential impacts on geology, soils, and seismicity resulting from the proposed changes to the 2008 RTP project list identified in the 2008 RTP Amendment #3 would be consistent with the findings of the 2008 PEIR. The 2008 PEIR identified that damage to transportation infrastructure can result from geologic and seismic activity, such as surface rupture, ground shaking, subsidence, liquefaction, soil expansion and land-sliding. In addition work associated with implementation of the 2008 RTP could cause impacts such as soil erosion and ground instability. However, incorporation of mitigation measures identified in the 2008 PEIR would alleviate significant impacts associated with geological safety (2008 PEIR pp. 3.6-17 – 3.6-25).

Detailed project level analysis, including project level mitigation measures, will be conducted by the implementing agency of each project. Thus, incorporation of the projects identified in 2008 RTP Amendment #3 would not result in a substantial change to the region-wide impacts programmatically addressed in the 2008 PEIR.

HAZARDOUS MATERIALS

Potential impacts on hazardous materials from the proposed changes to the 2008 RTP project list identified in the 2008 RTP Amendment #3 would be consistent with the findings of the 2008 PEIR. The 2008 PEIR concluded that the RTP would facilitate the movement of goods, including hazardous materials, through the region. The potential significant impacts include potential hazards created due to the disturbance of contaminated property during implementation of the 2008 RTP and risk of accidental releases due to an increase in the transportation of hazardous materials and the potential for such releases to reach schools within one-quarter mile of transportation facilities affected by the 2008 RTP (2008 PEIR pp. 3.7-12 – 3.7-18).

The analysis in the 2008 PEIR adequately addresses impacts at the program level that could result from the projects identified in the 2008 RTP Amendment #3. Thus, incorporation of the proposed changes to the 2008 RTP project list would not result in any additional significant impacts beyond those identified in the 2008 PEIR.

LAND USE

Potential impacts to land use that could result from the proposed changes to the 2008 RTP project list contained in the 2008 RTP Amendment #3 are anticipated to result in impacts consistent with the findings of the 2008 PEIR. The 2008 PEIR analyzed potential impacts of the 2008 RTP on land use consistency and compatibility. The 2008 PEIR concluded that the RTP would result in significant impacts that could disrupt and divide established communities or cause inconsistencies with general plans or other adopted local land use policies and plans (2008 PEIR pp. 3.8-10 – 3.8-17).

The analysis in the 2008 PEIR adequately addresses impacts at the program level that could result from the projects identified in the 2008 RTP Amend-

ment #3. Thus, incorporation of the proposed changes to the 2008 RTP project list would not result in any additional significant impacts beyond those identified in the 2008 PEIR.

NOISE

Potential noise impacts from the proposed changes to the 2008 RTP project list identified in the 2008 RTP Amendment #3 are anticipated to be consistent with the findings of the 2008 PEIR for noise. The projects could potentially cause temporary or permanent increases in ambient noise levels and expose noise-sensitive land uses to noise increases in excess of acceptable levels. However, the assessment in the 2008 PEIR Noise Chapter adequately evaluates these impacts at the programmatic level and includes mitigation measures to be implemented at the project level (2008 PEIR pp. 3.9-13 – 3.9-32). Impacts from the proposed project identified in this Amendment would be expected to fall within the range of impacts previously identified in the 2008 PEIR.

The analysis in the 2008 PEIR adequately addresses impacts at the program level that could result from the projects identified in 2008 RTP Amendment #3. Thus, incorporation of the proposed changes to the 2008 RTP project list would not result in any additional significant impacts beyond those identified in the 2008 PEIR.

OPEN SPACE

Potential impacts to open space resources from the proposed changes to the 2008 RTP project list identified in the 2008 RTP Amendment #3 are anticipated to be consistent with the findings of the 2008 PEIR for open space. The 2008 PEIR concluded that the RTP would result in significant impacts such as the loss and disturbance of agricultural lands, the loss and disturbance of natural open space and/or recreational lands, and the deterioration and decreased performance of recreational facilities through increased use by a growing population (2008 PEIR pp. 3.10-20 – 3.10-33).

The analysis in the 2008 PEIR adequately addresses impacts at the program level that could result from the projects identified in 2008 RTP Amendment #3. Thus, incorporation of the proposed changes to the 2008 RTP project list would not result in any additional significant impacts beyond those identified in the 2008 PEIR.

POPULATION, HOUSING AND EMPLOYMENT

Potential impacts to population, housing, and employment from the proposed changes to the 2008 RTP project list identified in the 2008 RTP Amendment #3 are anticipated to be consistent with the findings for the 2008 PEIR. The 2008 PEIR analyzed potential impacts to population growth and current residential and business land uses that could occur upon implementation of the 2008 RTP. The 2008 PEIR concluded that the RTP would result in significant impacts to population growth and the displacement of a number of existing homes and businesses (2008 PEIR pp. 3.11-9 – 3.11-14).

These impacts are within the range of impacts assessed at the programmatic level in the 2008 PEIR. Therefore, inclusion of the projects identified in the 2008 RTP Amendment #3 would not result in a substantial change to the region-wide impacts programmatically addressed in the 2008 PEIR.

PUBLIC SERVICES AND UTILITIES

The potential impacts from the proposed changes to the 2008 RTP project list identified in the 2008 RTP Amendment #3 are anticipated to be within the range of, and consistent with the findings of the 2008 PEIR for public services and utilities of the 2008 PEIR. Anticipated significant cumulative impacts include demand for more police, fire, emergency personnel and facilities; demand for more school facilities and teachers; demand for additional solid waste services, and increased potential of encountering and severing utility lines during implementation of the 2008 RTP (2008 PEIR pp. 3.12-14 – 3.12-25).

The analysis in the 2008 PEIR adequately addresses impacts at the program level that could result from the proposed changes to the 2008 RTP project list identified in the 2008 RTP Amendment #3. Thus, incorporation of the proposed changes to the 2008 RTP project list would not result in any additional significant impacts beyond those identified in the 2008 PEIR.

SECURITY AND EMERGENCY PREPAREDNESS

Potential impacts to security and emergency preparedness from the proposed changes to the 2008 RTP project list identified in the 2008 RTP Amendment #3 are anticipated to be consistent with the findings for the 2008 PEIR. The 2008 PEIR determined that implementation of the 2008 RTP could impair transportation safety, security, and reliability; inhibit response and recovery from major human-caused or natural disaster events, and increase the number of households in areas subject to wildfires (2008 PEIR pp. 3.13-14 – 3.13-22).

The analysis in the 2008 PEIR adequately addresses impacts at the program level that could result from the projects identified in the 2008 RTP Amendment #3. Thus, incorporation of the proposed changes to the 2008 RTP project list would not result in any additional significant impacts beyond those identified in the 2008 PEIR.

TRANSPORTATION

Proposed changes to the 2008 RTP project list identified in the 2008 RTP Amendment #3 are not expected to cause significant adverse impacts on region-wide transportation beyond what was analyzed in the 2008 PEIR. The 2008 PEIR utilized data from the 2035 transportation model output to present a regional analysis for the impacts of the 2008 RTP on transportation. The 2008 PEIR identifies the following significant impacts from implementation of the 2008 RTP: increased Vehicle Miles Traveled (VMT); increased vehicle hours traveled (VHT); increased average daily VHT in delay for heavy-duty truck trips; increased percentage of work opportunities within a 45 minute travel time; and decreased system-wide fatality accident rate and injury accident rate in the SCAG region (2008 PEIR pp. 3.14-21 – 3.3-28).

Analysis in the 2008 PEIR adequately addressed impacts that could result from the 2008 RTP Amendment #3 at the program level. Therefore, inclusion of the projects identified in the 2008 RTP Amendment #3 would not result in a substantial change to the region-wide impacts programmatically addressed in the 2008 PEIR.

WATER RESOURCES

The potential impacts from the proposed changes to the 2008 RTP project list identified in the 2008 RTP Amendment #3 are anticipated to be within the range of, and consistent with the findings of the 2008 PEIR on water resources. The 2008 PEIR identified decreased surface water quality, the potential for substantial erosion and/or siltation due to altered drainage patterns, decreased stormwater infiltration and groundwater recharge, and an increase in impervious surfaces and potential flooding hazards as a significant adverse impact (2008 PEIR pp. 3.15-35 – 3.15-54).

The analysis in the 2008 PEIR adequately addresses region-wide impacts at the program level that could result from the 2008 RTP with the addition of projects identified in the 2008 RTP Amendment #3. Thus, incorporation of the proposed changes to the 2008 RTP project list would not result in any additional significant impacts beyond those identified in the 2008 PEIR.

COMPARISON OF ALTERNATIVES

The proposed changes to the 2008 RTP project list identified in the 2008 RTP Amendment #3 would not significantly affect the comparison of alternatives in the 2008 PEIR. Amendment #3 to the 2008 RTP is within the scope of the programmatic-level comparison among the alternatives considered in the 2008 PEIR: 1) No Project; 2) Modified 2004 RTP Alternative; and 3) The Envision Alternative. The analysis in the Comparison of Alternatives chapter of the 2008 PEIR would not be significantly affected by the inclusion of the projects identified in the 2008 RTP Amendment #3. Therefore, no further comparison is required at the programmatic level.

LONG TERM EFFECTS

The changes to the 2008 RTP project list identified in the 2008 RTP Amendment #3 would result in impacts within the scope of the discussion presented in the long-term effects chapter of the 2008 PEIR, which includes an assessment of programmatic level unavoidable impacts, irreversible impacts, growth inducing impacts, and cumulative impacts (2008 PEIR pp. 5-1 – 5-10). Unavoidable and irreversible impacts from the inclusion of the proposed changes to the 2008 RTP project list identified in the 2008 RTP Amendment #3 are reasonably covered by the unavoidable and irreversible impacts previously discussed in the certified 2008 PEIR.

Any growth inducing impacts are expected to be approximately equivalent to those previously disclosed in the 2008 PEIR (2008 PEIR pp. 5-1 – 5-10). Overall, the proposed changes to the 2008 RTP project list presented in the 2008 RTP Amendment #3, are within the scope of the broad, programmatic-level impacts identified and disclosed in the 2008 PEIR. Thus, the 2008 RTP Amendment #3 would result in impacts consistent with the findings on long-term effects analysis contained in the 2008 PEIR.

CONCLUSION

After completing a programmatic environmental assessment of the proposed changes described herein to the 2008 RTP project list, SCAG finds that adoption of the proposed project list identified in the 2008 RTP Amendment #3 would not result in either new significant environmental effects or a substantial increase in the severity of any previously identified significant effect. The proposed changes, while individually potentially substantial at the local level, are not substantial changes in the context of the region analyzed in the 2008 PEIR. The proposed changes to the RTP project list do not require revisions to the programmatic, region-wide analysis presented in the 2008 PEIR.

Further, SCAG finds that the proposed changes to the 2008 RTP project list identified in the 2008 RTP Amendment #3 do not significantly affect the comparison of regional alternatives or the potential significant impacts previously disclosed in the 2008 PEIR. As such, SCAG has assessed the proposed changes to the 2008 RTP project list included in Chapter 2 of RTP Amendment #3 at the programmatic level, and finds that inclusion of the proposed changes would be consistent with the analysis and mitigation measures contained in the 2008 PEIR, as well as the Findings of Fact and Statement of Overriding Considerations made in connection with the 2008 RTP. Therefore, a subsequent or supplemental EIR is not required and SCAG concludes that this Addendum #3 to the 2008 PEIR fulfills the requirements of CEQA.

VI. PUBLIC REVIEW AND COMMENT

SCAG is required to provide a 30-day public review and comment period for the Draft Amendments. A Notice of Availability and Public Hearing is posted on the SCAG website at www.scag.ca.gov and was published in major newspapers in the six-county region. The Draft Amendments were made available on the SCAG website and hard copies were made available for review at SCAG offices and public libraries throughout the region. Written comments were accepted until 5:00pm on Friday, March 19, 2010, via snail mail or email to:

Southern California Association of Governments
Attention: Ryan Kuo
818 West Seventh Street, 12th Floor
Los Angeles, CA 90017

or to kuo@scag.ca.gov

A public hearing was also held at SCAG's Main Office in Los Angeles on Tuesday, March 16, 2010, at 11:00am and was videoconferenced to SCAG's regional offices throughout the region.

SCAG has fully coordinated this Amendment with the region's stakeholders through SCAG's committee and task force structure. Specifically, staff provided periodic reports regarding this Amendment to the Transportation Committee (TC), Plans & Programs Technical Advisory Committee (P&P TAC), and Transportation Conformity Working Group (TCWG).

TABLE 6.1 COMMENTS AND RESPONSES

DATE	NAME	AFFILIATION	FORMAT	COMMENT SUMMARY	RESPONSE TO COMMENT
2/23/10	Fagan, Paul	Caltrans District 8	E-mail	As part of the comment period for the RTP Amendment #3 and RTIP Amendment #34, we request a minor technical correction to the SBd-138 project description that appears in the current 2008 RTIP/FTIP Amendment #34 under RTIP ID 34011 : Corrected RTIP description for ID 34011 should read : NEAR WRIGHTWOOD FROM PHELAN RD TO I-15 WIDEN FROM 2-4 LANES By deleting from the current RTIP description the 2 Wildlife Crossings and 1 additional lane EB from Phelan Road to Beekley Road the corrected RTIP description will match the current regionally modeled description carried in the 2008 RTP and in Amendment #1-3 to the 2008 RTP. I have attached a pdf file of the 2008 RTIP SBd-138 RTIP ID 34011 description below showing the requested technical correction/deletions.	Thank you for your comments. As the San Bernardino Associated Governments (SANBAG) had not requested a revision to Project # 34011 to this Amendment, the requested revisions did not appear in the Draft Amendment document that was made available for public review. Since the public has not had an opportunity to comment on this requested change, we are unable to add this change to this Amendment at this time. SANBAG will have further opportunities to request such a project revision in future TIP amendments.
3/1/10	Stack, Douglas S.	City of Tustin Public Works/ Engineering	Letter	Thank you for the opportunity to comment on the Draft Amendment #3 to the 2008 Regional Transportation Plan (RTP) and associated Draft Amendment #08-34 to the Regional Transportation Improvement Plan. Both amendments affect the Tustin Ranch Road (Walnut Avenue to Valencia Avenue) Project; project No. ORA55244 within the City of Tustin. Changes to the project include a revised project description and schedule. The City has reviewed both of the proposed amendments and concurs with the changes. We appreciate the opportunity to review and comment on the document and request that you forward any additional amendments to the City for review.	Thank you for your comments.

DATE	NAME	AFFILIATION	FORMAT	COMMENT SUMMARY	RESPONSE TO COMMENT
3/16/10	McAllester, Brad	Los Angeles County Metropolitan Transportation Authority	Letter	Los Angeles County Metropolitan Transportation Authority (MTA) appreciates the opportunity to comment on the Draft Amendment #3 to the 2008 Regional Transportation Plan (RTP). We are grateful to you and the other SCAG staff members who have diligently worked with our staff to ensure that MTA's 2009 Long Range Transportation Plan (LRTP) projects and programs are accurately included into the RTP. The following are the minor corrections to MTA's projects and programs, that we have shared with you verbally: 1) Add the SR-138 project, as described in MTA's submittal to SCAG on November 23, 2009, to the project list. 2) Correct the cost of the I-710 Early Action Projects to $687 million. 3) It appears that the correct cost of the Soundwall program is $2.149 billion when the years before the base year, and the years of funding after the RTP horizon year, are subtracted from the total cost listed in the MTA financial model. (The years to delete are FY04-05, FY05-06, FY36-37, FY37-38, FY38-39, and FY39-40.) 4) Use RTP project # 100702 for the Countywide Soundwalls Project (Metro Reginoal Lines and Monterey Park/SR-60) instead of assigning a new RTP number. 5) Revise the Project "Completion By date" to 2014 for Highway Operational Improvements in Las Virgenes/Malibu Subregion, to be consistent with the LRTP. 6) On the modeling list, project # 1M1001 - SR-71: Mission Blvd to SR-60 does not have the SR-60 project listed in the "to" column; please add it. Should you have any questions or need clarification, please call Lori Abrishami at (213) 922-4210 for the transit projects, and Stacy Alameida at (213) 922-7414 for the highway projects. Thank you again for all of your diligent work for the Amendment #3 to the 2008 RTP; MTA truly appreciates it.	Thank you for your comments. All requested corrections have been made in this final Amendment document and final Modeled Projects List. We truly appreciate all of the time and effort that you and your staff have spent working with SCAG staff throughout this entire process, and look forward to continuing to work with you in the future.

DATE	NAME	AFFILIATION	FORMAT	COMMENT SUMMARY	RESPONSE TO COMMENT
3/18/10	Chang, Elaine	South Coast Air Quality Management District	Letter	Thank you for the opportunity to comment on the Southern California Association of Governments (SCAG) 2008 RTP Amendment #3 and the corresponding 2008 RTIP Amendment #08-34. SCAG continues to put forth valuable efforts that provide the public, stakeholders and other interested parties an opportunity to comment and give input during the development and update of regional plans and programs. The South Coast Air Quality Management District staff has reviewed the Amendment documents and has specific comments on the I-710 Project. In light of the air quality needs and more stringent air quality standards being proposed by the U.S. Environmental Protection Agency, we strongly encourage SCAG to modify its proposal to (1) leave open the possibility of zero-emission technology other than trucks, since this is left open by I-710 EIR alternatives and since the port Zero Emission Transportation Technology system to ICTF has not yet been defined and may be suitable for extension up I-710; (2) clarify that "clean technology" could be electric or other zero emission technology, and (3) ensure that system ends, BOTH at the 60 Fwy. AND downtown railyards where many containers are destined. For your consideration, specific language reflecting our recommendation to amend the I-710 Project description for ID 1C0401 on page 97 of the RTP Amendment #3 is as follows: I-710 CORRIDOR USER-FEE BACKED CAPACITY ENHANCEMENT – WIDEN TO 5 MIXED-FLOW + 2 DEDICATED LANES (EACH DIRECTION) FOR CLEAN TECHNOLOGY TRUCKS ~~(EACH DIRECTION)~~ (E.G. ELECTRIC POWERED OR OTHER ZERO-EMISSION TECHNOLOGY) OR OTHER CLEAN TECHNOLOGY TRANSPORT, AND INTERCHANGE IMPROVEMENTS, FROM THE PORTS OF LOS ANGELES & LONG BEACH TO SR-60 AND TO INTERMODAL RAILROAD YARDS IN COMMERCE/VERNON. We look forward to working with you on the on-going progress of our region towards meeting state and federal air quality standards.	Thank you for your comments. This final Amendment contains the I-710 project description from the adopted 2008 RTP, which was developed based on the I-710 EIR alternatives and through a collaborative process with various stakeholders. The next RTP update cycle will provide an opportunity to revisit the assumed technologies for this project.

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<tr><th>DATE</th><th>NAME</th><th>AFFILIATION</th><th>FORMAT</th><th>COMMENT SUMMARY</th><th>RESPONSE TO COMMENT</th></tr>
<tr>
<td>3/19/10</td>
<td>Martinez, Adriano</td>
<td>Natural Resources Defense Council</td>
<td>Letter</td>
<td>
On behalf of the Natural Resources Defense Council, I write to comment on Amendment #3 of the Regional Transportation Plan (“RTP”). We are very familiar with the daunting challenges SCAG faces in planning for the region’s transportation needs. In these comments, we are seeking to provide input into how the RTP could be improved. We appreciate your consideration of these comments.

Appended to this letter as Appendix A are detailed comments on the proposed amendments to the RTP and the Programmatic Environmental Impact Report.

Also Appended to this letter as Appendix B is an NRDC-commissioned study of the demographics of those residing in close proximity to the I-710 corridor. This study raises serious equity concerns about the I-710 projects. The following table provides a summary of the relevant information.
<table>
<tr><th>CENSUS DESIGNATION</th><th>1000 METERS</th><th>500 METERS</th><th>300 METERS</th></tr>
<tr><td>White</td><td>89,174</td><td>35,224</td><td>18,396</td></tr>
<tr><td>Black</td><td>26,621</td><td>1,660</td><td>6,485</td></tr>
<tr><td>Hispanic</td><td>184,623</td><td>74,114</td><td>38,745</td></tr>
<tr><td>Asian</td><td>14,501</td><td>6,040</td><td>3,253</td></tr>
<tr><td>Pacific Islander</td><td>2,440</td><td>1,059</td><td>568</td></tr>
<tr><td>Total</td><td>317,359</td><td>118,097</td><td>67,807</td></tr>
</table>
As can be discerned from the table above, the impacts from the I-710 project are felt by a high percentage of non-white residents in the region. We remind SCAG of the following provision of its environmental justice policy—

When disproportionately high and adverse impacts on minority or low income populations are identified, SCAG will take steps to propose mitigation measures or consider alternative approaches.

Accordingly, we request that SCAG follow its policy to explore mitigation measures and consider alternative approaches for the I-710 project in compliance with its environmental justice policy.

[All attachments are included in the “Attachments” section of this document.]
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<td>
Thank you for your comments. The RTP Amendment # 3 is not adding the I-710 corridor project to the RTP, as the I-710 project was included in the 2008 RTP (and has been in the RTP since at least 1998). RTP Amendment # 3 makes minor changes to the schedule and cost of the I-710 project. These minor changes would not result in any significant changes to the traffic and air quality modeling in the RTP Amendment # 3 or in the 2008 RTP PEIR analysis.

The RTP (and associated PEIR) programmatically analyzed region-wide impacts of the RTP as a whole. The 2008 RTP and PEIR do not include site specific analysis of any project nor geographic area contained in the 2008 RTP. The long range planning horizon of more than 25 years necessitates that many of the highway, arterial, goods movement, and transit projects (including the I-710 project) contained within the 2008 RTP and Amendments are identified at the conceptual level. The RTP PEIR (and Addendum) addresses environmental impacts to the level that they can be assessed without undue speculation. Development at the ports, airports and in other areas of the region, as well as projects contained within the 2008 RTP and Amendments requires site specific environmental analysis to assess impacts at the appropriate level. Therefore, as with all projects considered at a programmatic level in the RTP PEIR, the I-710 project will go through project level environmental review that will include project-level analysis of impacts, identification of mitigation measures as well as identification and evaluation of alternatives that reduce identified impacts.

The 2008 RTP addresses Environmental Justice in Chapter V (Plan Performance) (starting on p. 174) as well as in the Environmental Justice Report (the 2008 RTP PEIR does not address Environmental Justice as it is not a topic required to be addressed in CEQA documents). The Environmental Justice analysis presented in the 2008 RTP shows that, regionally, PM10 and CO
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DATE	NAME	AFFILIATION	FORMAT	COMMENT SUMMARY	RESPONSE TO COMMENT
					would decrease substantially for the income and the ethnic/racial categories in 2035 compared to the RTP Baseline. [The RTP Base Year is 2003, and the RTP Baseline for purposes of comparison of impacts in the RTP is 2035 without the project (i.e. the No Plan condition if the RTP were not adopted), which is the same baseline as that used in NEPA documents; however, as required by CEQA the 2008 RTP PEIR baseline for comparison of impacts is existing conditions (2008).] In addition, the 2008 RTP PEIR included an assessment of increased cancer risk at representative locations around the region, and the I-710 is one of the freeways analyzed (see Table 3.2-9 on page 3.2-32 of the PEIR). This analysis shows that the excess cancer risk would be reduced by more than half compared to today and that the conditions in the Plan would be somewhat better than the "No Plan" condition. The RTP PEIR presents a reasonable range of alternatives to the RTP, and not to each and every one of the thousands of projects contained within the RTP. The I-710 is one project within a complex RTP program. Specific evaluation of alternatives to the I-710 project (including alternative technologies) will be included in the project specific environmental document. Finally, a Major Investment Study (MIS) was completed for the I-710 project in 2005, and is available at http://www.mta.net/projects/i710_corridor/feasibility-assessment.

Original comment letters are attached at the end of this document.

VII. CONCLUSION

This Amendment maintains the integrity of the transportation conformity as well as the fiscal constraints of the existing 2008 RTP. Furthermore, the PEIR Addendum associated with this Amendment concludes that the proposed project changes would not result in either new significant environmental effects or a substantial increase in the severity of previously identified significant effects. Appropriate and adequate procedures have been followed in ensuring coordination of this Amendment allowing all concerned parties, stakeholders, and the public ample opportunities to voice concern and provide input. In conclusion, this Amendment #3 to the 2008 RTP complies with all applicable federal and state requirements, including the Transportation Conformity Rule.

VIII. ATTACHMENTS: COMMENT LETTERS

Ryan Kuo

From: Pablo Gutierrez
Sent: Wednesday, February 24, 2010 5:45 PM
To: Ryan Kuo
Subject: FW: 2008 RTP Amend #3. RTIP Amend #34 : SBd-138, RTP/RTIP ID 34011
Attachments: SBd_138_RTIP_ID_34011_Technical_Correction_Feb_23_2010_pbf.pdf

FYI:

Pablo Gutierrez
Senior Regional Planner
Transportation Planning
Southern California Association of Governments gutierre@scag.ca.gov
(213) 236-1929

Don't miss the SCAG Regional Conference and General Assembly, May 5 – 7, 2010, at the La Quinta Resort & Club! Register now at www.scag.ca.gov.

-----Original Message-----
From: Paul Fagan [mailto:paul_fagan@dot.ca.gov]
Sent: Tuesday, February 23, 2010 11:11 AM
To: Rosemary Ayala; John Asuncion
Cc: lpoe@sanbag.ca.gov; Wendy Li; Pablo Gutierrez; Bryce Johnston; Tony Louka; Chris Benz-Blumberg; James Shankel; Maisoon Afaneh; Robert So; Aaron Burton; Edison Jaffery; Abhijit Bagde; paul_fagan@dot.ca.gov; paul_fagan@dot.ca.gov
Subject: 2008 RTP Amend #3. RTIP Amend #34 : SBd-138, RTP/RTIP ID 34011

Paul B. Fagan, Ph.D., M.Sc.(Economics)
Senior Transportation Planner
District 8 RTIP/FTIP Coordinator
Program Management, MS 1231
Division of Program/Project Management
California Department of Transportation District 8
464 West Fourth Street, 6th Floor
San Bernardino CA 92401-1400
E-mail paul_fagan@dot.ca.gov
Public (909) 383-5902
Cell (909) 553-3871

Fax (909) 383-6938

Rosemary and John :

John, we spoke on the telephone this morning.

As part of the comment period for the RTP Amendment #3 and RTIP Amendment #34, we request a minor technical correction to the SBd-138 project description that appears in the current 2008 RTIP/FTIP Amendment #34 under RTIP ID 34011 :

Corrected RTIP description for ID 34011 should read :

NEAR WRIGHTWOOD FROM PHELAN RD TO I-15 WIDEN FROM 2-4 LANES

By deleting from the current RTIP description the 2 Wildlife Crossings and
1 additional lane EB from Phelan Road to Beekley Road the corrected RTIP description will match the current regionally modeled description carried in the 2008 RTP and in Amendment #1-3 to the 2008 RTP.

I have attached a pdf file of the 2008 RTIP SBd-138 RTIP ID 34011 description below showing the requested technical correction/deletions.

(See attached file:
SBd_138_RTIP_ID_34011_Technical_Correction_Feb_23_2010_pbf.pdf)

If you have any questions please do not hesitate to call or e-mail me.

All the best. Dr. Paul

ProjectID	County	Air Basin	RTP ID	Program	Route	Begin	End	System	Conformity Category	Amend
34011	San Bernardino	SCAB	34011	CAX63	138	2.9	15.2	S	NON-EXEMPT	1

RETAIN

PTC 85,497 Agency CALTRANS

DELETE

NEAR WRIGHTWOOD FROM PHELAN RD TO I-15 WIDEN FROM 2 TO 4 LANES ~~FROM BEEKLEY ROAD TO JCT 15; CONST 2 WILDLIFE CROSSINGS & 1 ADD'L LN EB FROM PHELAN RD TO BEEKLEY ROAD~~

Fund	ENG	R/W	CON	Total	Prior	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014	Total
NATIONAL HWY SYSTEM - IIP	11,459			11,459	11,459							11,459
STATE CASH - IIP		10,633	47,955	58,588			10,633		47,955			58,588
STATE CASH - RIP			15,450	15,450					15,450			15,450
34011 Total	11,459	10,633	63,405	85,497	11,459		10,633		63,405			85,497

See SBD-138, RTIP ID 34011 above.

Dr. Paul B. Fagan
Caltrans District 8 RTIP/FTIP Coordinator.

February 23, 2010

Public Works / Engineering

March 1, 2010

Mr. Ryan Kuo
Southern California Association of Governments
818 West Seventh Street, 12th Floor
Los Angeles, CA 90017-3435

Dear Mr. Kuo:

Subject: Amendment #3 to the Regional Transportation Plan

Thank you for the opportunity to comment on the Draft Amendment #3 to the 2008 Regional Transportation Plan (RTP) and associated Draft Amendment #08-34 to the Regional Transportation Improvement Plan. Both amendments affect the Tustin Ranch Road (Walnut Avenue to Valencia Avenue) Project; project No.ORA55244 within the City of Tustin. Changes to the project include a revised project description and schedule.

The City has reviewed both of the proposed amendments and concurs with the changes. We appreciate the opportunity to review and comment on the document and request that you forward any additional amendments to the City for review.

Sincerely,

Douglas S. Stack, P.E.
Acting Public Works Director/City Engineer

C: Elizabeth A. Binsack
Scott Reekstin
Dana Kasdan
Doug Anderson

300 Centennial Way, Tustin, CA 92780 • P: (714) 573-3150 • F: (714) 734-8991 • www.tustinca.org

Los Angeles County
Metropolitan Transportation Authority

One Gateway Plaza
Los Angeles, CA 90012-2952

213.922.2000 Tel
metro.net

Metro

March 16, 2010

Ryan Kuo
Southern California Association of Governments
818 W. Seventh Street, 12th floor
Los Angeles, CA 90017

Dear Mr. Kuo:

Los Angeles County Metropolitan Transportation Authority (MTA) appreciates the opportunity to comment on the Draft Amendment #3 to the 2008 Regional Transportation Plan (RTP). We are grateful to you and the other SCAG staff members who have diligently worked with our staff to ensure that MTA's 2009 Long Range Transportation Plan (LRTP) projects and programs are accurately included into the RTP. The following are the minor corrections to MTA's projects and programs, that we have shared with you verbally:

1) Add the SR-138 project, as described in MTA's submittal to SCAG on November 23, 2009, to the project list.

2) Correct the cost of the I-710 Early Action Projects to $687 million.

3) It appears that the correct cost of the Soundwall program is $2.149 billion when the years before the base year, and the years of funding after the RTP horizon year, are subtracted from the total cost listed in the MTA financial model. (The years to delete are FY04-05, FY05-06, FY36-37, FY37-38, FY38-39 and FY39-40.)

4) Use RTP project # 1O0702 for the Countywide Soundwalls Project (Metro Regional Lines and Monterey Park/SR-60) instead of assigning a new RTP number.

5) Revise the Project "Completion By date" to 2014 for Highway Operational Improvements in Las Virgenes/Malibu Subregion, to be consistent with the LRTP.

6) On the modeling list, project # 1M1001 - SR-71: Mission Blvd to SR-60 does not have the SR-60 project listed in the "to" column; please add it.

Should you have any questions or need clarification, please call Lori Abrishami at (213) 922-4210 for the transit projects, and Stacy Alameida at (213) 922-7414 for the highway projects.

Thank you again for all of your diligent work for the Amendment #3 to the 2008 RTP; MTA truly appreciates it.

Sincerely,

Brad McAllester

Brad McAllester
Executive Officer
Long Range Planning and Coordination

NATURAL RESOURCES DEFENSE COUNCIL

March19, 2010

Via Electronic Mail

Southern California Association of Governments
Attention: Ryan Kuo
818 West Seventh Street, 12th Floor
Los Angeles, CA 90017

Re: Draft Amendment #3 to the 2008 Regional Transportation Plan and Draft Amendment #08-34 to the 2008 Regional Transportation Improvement Program.

Dear Mr. Kuo:

On behalf of the Natural Resources Defense Council, I write to comment on Amendment #3 of the Regional Transportation Plan ("RTP"). We are very familiar with the daunting challenges SCAG faces in planning for the region's transportation needs. In these comments, we are seeking to provide input into how the RTP could be improved. We appreciate your consideration of these comments.

Appended to this letter as Appendix A are detailed comments on the proposed amendments to the RTP and the Programmatic Environmental Impact Report.

Also Appended to this letter as Appendix B is an NRDC-commissioned study of the demographics of those residing in close proximity to the I-710 corridor. This study raises serious equity concerns about the I-710 projects. The following table provides a summary of the relevant information.

Census Designation	1000 Meters	500 Meters	300 Meters
White	89,174	35,224	18,396
Black	26,621	1,660	6,485
Hispanic	184,623	74,114	38,745
Asian	14,501	6,040	3,253
Pacific Islander	2,440	1,059	568
Total	317,359	118,097	67,807

As can be discerned from the table above, the impacts from the I-710 project are felt by a high percentage of non-white residents in the region. We remind SCAG of this following provision of its environmental justice policy—

www.nrdc.org
1314 Second Street
Santa Monica, CA 90401
TEL 310-434-2300 FAX 310-434-2399
NEW YORK · WASHINGTON D.C. · SAN FRANCISCO · BEIJING · CHICAGO

> *When disproportionately high and adverse impacts on minority or low income populations are identified, SCAG will take steps to propose mitigation measures or consider alternative approaches.*

Accordingly, we request that SCAG follow its policy to explore mitigation measures and consider alternative approaches for the I-710 project in compliance with its environmental justice policy.

Please do not hesitate to contact me if you have any questions.

Sincerely,

Adriano Martinez
Project Attorney

Attachments

NRDC COMMENTS ON THE PROPOSED REVISION OF THE I-710 FOR THE FISCALLY CONSTRAINED REGIONAL TRANSPORTATION PLAN

By
Adrian Martinez and Robert E. Yuhnke

NRDC, on behalf of itself and its members, opposes the addition of the proposed I-710 expansion project to the regional transportation plan for the Southern California transportation planning region for the reasons explained in the following comments.

EXECUTIVE SUMMARY.

The proposed addition of the I-710 highway project to the regional transportation plan (RTP) for the SCAG planning region is objectionable on numerous grounds. First, it will contribute to additional adverse climate impacts from the SCAG region's transportation network by promoting VMT growth and fossil fuel consumption that could be avoided if the expected transport of freight by diesel truck travel between the Ports of Los Angeles and Long Beach were accomplished by a combination of electrified rail, mag-lev technology and electrified trucks. Second, increased diesel truck traffic in the corridor will maintain or increase the emission of fine particles, NO2 and toxic air pollutants from the highway at levels that are hazardous to the health of residents living near the highway. The alternative options for transporting freight from the Ports using electricity as the power source would virtually eliminate the health risk to nearby residents.

A representative on the Technology Advisory Committee for the I-710 South Corridor Project has requested that these electric power technologies be analyzed as an alternative to expanding the use of diesel vehicles. NRDC requests that these alternatives be analyzed before the project is added to the RTP. Such analysis of alternatives that can mitigate the climate and health effects of diesel traffic in the corridor is required to comply with applicable transportation planning requirements in effect pursuant to the Federal Aid Highway Act.

The alternatives to the use of diesel trucks operating through densely populated urban neighborhoods where exposure to diesel exhaust has been shown to cause significant adverse health risks must also be evaluated pursuant to CEQA as part of the transportation planning process before the project may be lawfully added to the RTP and RTIP. In view of SCAG's failure to perform any such alternatives analysis or consideration of mitigation measures either as a step in the development of the project, or as part of the development of the RTP, this

analysis must be performed prior to any further revision of the RTP and before the project is advanced to the RTIP.

Projects that promote VMT growth, and in turn increase the use of fossil fuels and emissions of air pollutants, are not consistent with the national objectives for the transportation planning process established by Congress because they fail to minimize fuel consumption and minimize air pollution. Projects that fail to "accomplish" the national objectives, when alternatives are available that will accomplish the national objectives, may not be added to the RTP.

In addition the SAFETEA-LU amendments to the Federal Aid Highway Act require consideration of mitigation measures. The proposed plan amendment does not assess the adverse climate or the adverse public health impacts of the project, or include consideration of mitigation strategies designed to offset these impacts as required by the 2005 amendments to the planning requirements of the Federal Aid Highway Act (FAHA).

The process established by Congress for consideration of these impacts before a project may be added to the regional transportation plan by an MPO has not been followed in this case. In TEA-21, the 1998 amendments to FAHA, Congress directed the Federal Highway Administration (FHWA) to integrate the requirements for the preparation of a major investment study (MIS) with the requirements for an EIS under NEPA. The MIS required by the 1993 transportation planning rules established the procedures for evaluating a project before a decision is made to add the project to the RTP. This evaluation includes characterization of the adverse impacts of proposed projects, consideration of alternatives and mitigation, and the process for determining before the regional plan is amended whether the regional transportation plan will implement the federal planning objectives in 23 USC § 134(a) if a proposed project is added to the plan. In its revision to the federal transportation planning rules in 2007, FHWA did not implement this requirement of the Act. Instead, FHWA unlawfully repealed the requirement that MIS procedures be used to make these determinations.

SCAG may avoid the consequences of FHWA's unlawful decision to make these procedures discretionary by undertaking the analyses required for an MIS, but the I-710 may not be lawfully added to the RTP without 1) evaluating and finding the RTP, if amended, will accomplish the national planning objectives in 23 USC § 134(a), and 2) evaluating the adverse impacts the project is likely to have on other important values such as public health and climate, considering alternatives that will avoid or minimize these impacts, identifying mitigation necessary to prevent these adverse impacts, and then providing a rational explanation for a decision to require the mitigation or not.

The NRDC requests that the SCAG board not take action to add the I-710 expansion project to the RTP until information is provided to show that the

regional plan minimizes fuel consumption and air pollution as required by 23 USC § 134(a), and that the numerous adverse impacts associated with the project are fully evaluated, alternatives considered, and necessary mitigation required.

I. ACCOMPLISHING THE NATIONAL PLANNING OBJECTIVES

Sections 134(c) and 135(a) require the development of transportation plans for metropolitan areas adopted by Metropolitan Planning Organizations (MPOs), and statewide transportation plans adopted by the States that will "accomplish the objectives" defined in section 134(a)(1). Despite these statutory provisions making the accomplishment of the statutory objectives a requirement of the planning process, the proposed revision of the SCAG RTP neither mentions these objectives, nor how the RTP as revised, if the I-710 is added to the plan, demonstrates compliance with the statutory directive. Indeed, this is the most glaring omission in the proposed plan revision.

The statutory language directing each MPO to adopt a regional plan that "accomplish the objectives" of the planning process requires analysis and a determination that these objectives will be accomplished by the revised RTP. Section 134 of the Federal Aid Highway Act has included language since ISTEA establishing general objectives for the planning process, and requiring consideration of projects and strategies that will achieve more detailed planning factors. These objectives have been retained in section 134 as amended by SAFETEA-LU:

> *(a) Policy.--It is in the national interest to--*
> *(1) encourage and promote the safe and efficient management, operation, and development of surface transportation systems that will serve the mobility needs of people and freight and foster economic growth and development within and between States and urbanized areas, while minimizing transportation-related fuel consumption and air pollution through metropolitan and statewide transportation planning processes identified in this chapter; and*
> *(2) encourage the continued improvement and evolution of the metropolitan and statewide transportation planning processes by metropolitan planning organizations, State departments of transportation, and public transit operators as guided by the planning factors identified in subsection (h) and section 135(d).*

In the Title 23, section 134(c), as amended in 2005, the Act requires that an MPO adopt a transportation plan that "accomplish" these national "objectives."

> *1) Development of long-range plans and TIPs.-- To accomplish the objectives in subsection (a), metropolitan planning organizations designated under subsection (d), in cooperation with the State and public*

transportation operators, shall develop long-range transportation plans and transportation improvement programs for metropolitan planning areas of the State.

Similar language in amended section 135(a)(1) requires that the Statewide Transportation plan also "accomplish the objectives stated in section 134(a)."

This language on its face establishes a duty for the MPO to craft an RTP that will accomplish each of the national objectives in subsection 134(a)(1). These planning objectives establish four broad criteria to be achieved by the MPO transportation plan:

1) improve mobility,
2) foster economic growth and development,
3) minimize fuel consumption, and
4) minimize air pollution.

These objectives allow discretion for determining how they are to be achieved, but do not allow the planning agencies discretion to adopt plans that fail to achieve progress with respect to one or more of the four objectives.

The national planning objectives in § 134(a)(1) establish the statutory criteria for evaluating the sufficiency of an MPO plan. Section 134(c) also refers to the planning factors in §§ 134(h)(1) and 135(d) which were first enacted in ISTEA, but have been modified by both TEA-21 and SAFETEA-LU. But paragraph § 134(a)(2) only requires "consideration of projects and strategies" that will achieve these objectives. Unlike the national planning objectives in (a)(1), (a)(2) only requires transportation planning agencies to consider various projects and strategy options that could achieve the policy objectives listed in § 134(h)(1). But the discretion to consider various project and strategy options must be viewed in the context of the overall obligation to actually accomplish the statutory objectives in (a)(1). The consideration of project and strategy options must be geared toward identifying and selecting the options that will achieve the more specific planning factors in (a)(2), and that when combined into a regional or statewide plan can best accomplish the statutory objectives in (a)(1).

Compliance with these statutory planning procedures should be reflected in the underlying evaluation of the proposed I-710 that is presented to the public and the MPO board for consideration before action is taken to revise the RTP. But there is no independent analysis by the MPO staff of the impact that the proposed addition of the I-710 to the SCAG RTP will have on accomplishing any of the national planning objectives in § 134(a)(1), or the planning factors listed in § 134(h).

The Act requires that an MPO RTP demonstrate improvements in all four objectives, and not improvements in one or two at the expense of one or another. For example, a plan that fosters economic development, but does not improve mobility or minimize both fuel consumption and air emissions, cannot be

determined to meet the statutory objectives. The analysis of the proposed RTP revision should show improvements in each of the four objectives with respect to the current baseline condition, and not only an improvement with respect to a projected worst case condition in a future horizon year. Otherwise the RTP will simply accommodate predicted deterioration in system performance, fuel consumption and air pollution, while demonstrating minor improvements compared to a future deteriorated condition. SAFETEA-LU does not call for plans that continue current practices that merely accommodate the deteriorating performance of transportation systems. Where projects and strategies are available that can achieve improvements in system performance with regard to each objective compared to current conditions, the benefits of those projects and strategies must be presented to decision-making boards and the public with a description of improvements that can be accomplished compared to current conditions and future conditions that would result from adoption of the proposed I-710 project.

Requiring that the transportation plan minimize fuel consumption and air pollution requires more than merely demonstrating reductions slightly below the current baseline based upon taking credit for federally mandated pollution control rules or corporate average fuel efficiency standards that on their own may ensure some emissions reductions or improved fuel efficiency due solely to motor vehicle fleet turnover. To satisfy the requirement to minimize these impacts, an assessment must be made of the potential reductions in both parameters that may be achieved by a plan that optimizes projects, facilities, services and strategies known to contribute to reductions in fuel use and emissions.

Based on the traffic volume data developed by the project proponents, it appears that the project will increase VMT in the corridor.[1]

II. MITIGATION OF ADVERSE EFFECTS OF THE RTP, AS REVISED.

The SAFETEA-LU amendments added statutory criteria for evaluating plans and TIPs (in addition to the four planning objectives) that require explicit discussion of adverse impacts of the plan and mitigation of these impacts. These include --: § 134(i)(2)(B)(i) which requires –

> *"discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan;" and (B)(ii) requires that this discussion "shall be developed in consultation with Federal,*

[1] I-710 EIR/EIS Traffic Forecasting Methodology and Results Overview, August 17, 2009, *available at* http://www.metro.net/projects_studies/I710/images/Traffic_Forecasting_Overview_Presnted_to_TSWG_-_August_2009.pdf.

State, and tribal wildlife, land management, and regulatory agencies."

§ 134(i)(4)(A) which requires that --

> *"the metropolitan planning organization shall consult, as appropriate, with State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation concerning the development of a long-range transportation plan."*

§ 134(i)(4)(B) requires that the consultation include comparison of the transportation plan with conservation plans or maps.

Counterparts to each of these requirements also appear in the amendments to the requirements for "Statewide transportation plans." See –

- §135(f)(2)(D) [identical duty to consult]; and
- § 135(f)(4)(A) and (B) [identical duty to discuss mitigation measures].

The revised metropolitan planning rules implement these provisions. 23 C.F.R. § 450.322(f)(7). The regulation requires that the RTP include "a discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain
the environmental functions affected by the metropolitan transportation plan."

"Environmental mitigation activities means strategies, policies, programs, actions, and activities that, over time, will serve to avoid, minimize, or compensate for (by replacing or providing substitute resources) the impacts to or disruption of elements of the human and natural environment associated with the implementation of a long-range statewide transportation plan or metropolitan transportation plan."

A. **Discussion of Mitigation Activities.**

This provision raises the same questions that NEPA did at the outset:

1. what kinds of impacts need to be included in the discussion?
2. what kind and magnitude of mitigation needs to be considered?
3. what obligation is there to implement the mitigation measures?

The FHWA/FTA planning rules issued in 2007 do not provide guidance for how to answer these questions under the relevant provisions of FAHA. In the absence of a definitive agency interpretation, NEPA and 23 USC § 109(h) demonstrate how these questions are to be answered.

1. Considering Mitigation for the Purpose of Satisfying 23 USC § 109(h).

Section 109(h) of the Federal Aid Highway Act requires that highway projects be reviewed for their adverse environmental, social and economic impacts, and that mitigation strategies be identified to "eliminate or minimize" such "adverse" impacts. 23 USC § 109(h). The FHWA regulation implementing this section requires that an EIS prepared under NEPA also address the social and economic impacts required to be considered under § 109(h). 23 CFR §771.105. In addition, the metropolitan planning rule issued to implement ISTEA required that MPOs address the criteria required by § 109(h) in the transportation plan. 23 CFR §450.316(a)(13)(1993). The revised federal planning rule does not retain this requirement, but this requirement must be addressed at some stage of the process. To the extent that mitigation must be considered as part of the planning process, section 109(h) provides guidance to define the parameters of that consideration in the MPO planning process.

2. Scope of Impacts to be Included in Discussion of Mitigation to Satisfy FAHA Requirements.

The consideration of mitigation measures required by §§ 134(i)(2)(B)(i) and 135(f)(4)(A) and (B) must be at least as broad as NEPA because NEPA limits the obligation to consider mitigation for only those impacts that "significantly affect the human environment," whereas 23 U.S.C. §§ 134(i)(2)(B), 135(f)(4)(A) and (B), and 109(h) do not limit consideration only to "significant" impacts on the human environment. Since Congress decided not to limit mitigation under FAHA to "significant" impacts, then at least those impacts found to be significant for NEPA purposes must be included. Other impacts may also be relevant, but in the case of the I-710 the climate and public health impacts of concern would be considered "significant" for NEPA purposes. See 40 C.F.R. § 1508.27. Accordingly, they must also be addressed at the RTP stage.

In addition to NEPA, the provisions of § 109(h) provide further guidance regarding the scope of mitigation under the closely parallel provisions in sections 134 and 135 of FAHA. Section 109(h) of the Federal-Aid Highway Act, enacted on December 30, 1970 by the same Congress that enacted NEPA (January 1, 1970), supplemented the requirements of NEPA for highway projects by defining a more specific analytical process. Section 109(h) requires a three-step evaluation of impacts and mitigation measures to ensure that "final decisions on the project are made in the best overall public interest." 23 U.S.C. § 109(h) (2004). The first step is to determine the "possible adverse economic, social and environmental effects relating to any proposed project." Id. The second step is to determine "the costs of eliminating or minimizing such adverse effects …." Id. The third step is to consider "the costs of eliminating or minimizing such adverse effects" together with "the need for fast, safe and efficient transportation" to make a final decision on the project "in the best overall public interest." Id.

In the national planning objectives in § 134(a)(1), Congress defined the minimum criteria for determining whether a proposed project is "in the best overall public interest." Since the MPO must at least determine that the RTP will "accomplish" these objectives if the proposed project is added to the plan, the analytical steps prescribed by § 109(h) should be performed to evaluate the mitigation appropriate for any new project proposed for addition to an RTP that would interfere with or defeat progress toward accomplishing the objectives of minimizing fuel consumption and air pollution.

FHWA's implementing regulation further requires that any measures necessary to mitigate adverse effects be incorporated into the project. 23 C.F.R. § 771.105(d). Therefore, the mitigation identified in the planning process needs to be incorporated into the project, which means that the costs of mitigation must be accounted for in the fiscally constrained plan as part of the overall project cost.

The rule text allows the MPO to discuss mitigation measures that "focus on policies, programs, or strategies, rather than at the project level." But these mitigation measures must nonetheless "serve to avoid, minimize, or compensate for (by replacing or providing substitute resources) the impacts to or disruption of elements of the human and natural environment associated with the implementation of a long-range statewide transportation plan or metropolitan transportation plan." To the extent that the impacts are associated with increased truck VMT in the corridors that link the ports to rail yards, transfer points and distribution centers, the mitigation strategies considered in the plan must at least be corridor-based or effective at avoiding or minimizing the adverse impacts in the I-710 corridor.

None of these steps have been performed for the I-710.

3. The kind and magnitude of mitigation needs to be considered to Satisfy §§ 134(i)(2)(B) and 135(f)(4)(A) and (B).

Both NEPA, CEQA and § 109(h) provide helpful interpretative guidance to understand the extent of mitigation required to be considered under §§ 134(i)(2)(B) and 135(f)(4)(A) and (B). The NEPA rules require that mitigation be identified as part of the environmental review. 40 CFR § 1502.16(h). Mitigation is defined to include –

(a) avoid the impact altogether;
(b) minimize impacts by limiting the degree or magnitude of the action;
(c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
(d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action;
(e) compensating for the impact by replacing or providing substitute resources or environments.

40 CFR § 1508.20.

CEQA provides further guidance on the scope of mitigation by requiring "feasible measures which could minimize significant adverse impacts, including where relevant, inefficient and unnecessary consumption of energy." CEQA Guidelines, 15126.4(a)(1).

Section 109(h) of the Federal-Aid Highway Act also requires a determination of the "possible adverse economic, social and environmental effects relating to any proposed project," and "the costs of eliminating or minimizing such adverse effects" to be used in weighing "the costs of eliminating or minimizing such adverse effects" together with "the need for fast, safe and efficient transportation" to make a final decision on the project that is "in the best overall public interest." Id.

Using both NEPA and § 109(h) as the reference point for defining the scope of the duty to discuss mitigation under §§ 134(i)(2)(B) and 135(f)(4) calls for the identification of measures that include "eliminating" or "avoiding" the impact, as well as measures that may be less protective of the environment. Furthermore, § 109(h) also requires that the cost of mitigation be weighed against the benefits of improved mobility likely to result from the project. Thus the scope of the duty must include identifying all "possible adverse" impacts, the identification of effective mitigation capable of eliminating or avoiding the adverse impact as well as options that minimize the impact, and also the quantification of the costs of the various mitigation options to be weighed against the benefits of the mobility improvements so that the planning agency has the kinds of information to make an informed determination regarding the option that is in "the best overall public interest."

Thus defined, the adverse impacts of individual projects as well as the aggregate impacts of all the projects in a regional plan would need to be discussed in the long-range plan. A major advantage of addressing these considerations at the regional planning stage is to include consideration of mitigation measures that may only be implemented at the regional level, such as the alternative technologies proposed for evaluation by members of the I-710 technical advisory committee, more comprehensive transit services, pricing, fuel quality, zone SOV travel limitations, and other measures that would not be available or relevant at the corridor scale in a project EIS.

Emerging case law interpreting the obligation under NEPA to consider the cumulative impacts of federally funded highway projects, make clear that if the analyses of cumulative impacts are not performed by the MPO as part of the development of the long-range plan, they will nonetheless have to be considered by the implementing agencies as part of project EISs. See 40 CFR §§ 1502.14, 1502.16, 1508.7; Carmel-by-the-Sea v. U.S. DOT, 123 F3d. 1142 (9th Cir.1997);

W. N.C. Alliance v. N.C. Dep't of Transp., 312 F. Supp. 2d 765, 778 (E.D. N.C. 2003). Developing information regarding the mitigation of regional impacts that will result from the program of projects planned for the region will be much less useful if prepared by the implementing agencies outside the regional planning process. The NRDC therefore believes that MPOs must identify and consider mitigation for all impacts, at the regional, corridor and local scales, and develop cost estimates as part of the planning process.

B. Mitigation Analyses to Be Performed for Impacts of Regionally Significant Projects.

Based on the evidence of the impacts of emissions from the transportation sector on public health and climate change, the NRDC believes that these are significant impacts for which mitigation must be considered in the planning process under §§ 134(i)(2)(B) and 135(f)(4)(A) and (B) and § 109(h).

(i). Public Health Impacts.

Reviews of recent health effects research conducted by the Health Effects Institute and others[2] demonstrate that emissions from highways have a significant impact on human health. These studies include studies of the undifferentiated effects of all highway emissions without distinguishing the effects of particular pollutants, and other studies that attempt to identify the effects of individual pollutants, or limited combinations of pollutants. Some of these are criteria pollutants (i.e., pollutants for which a NAAQS has been adopted under § 109 of the Clean Air Act), and some are pollutants listed as a hazardous air pollutant under § 112 and/or listed as a mobile source air toxic ("MSAT") pollutant under § 202(l) of the CAA. EPA has proposed to revise the NAAQS for nitrogen oxides to protect against the adverse health effects associated with NOx emissions from motor vehicles, 74 Fed. Reg. 34403 (July 15, 2009), and has also updated its initial assessment of the health risks associated with exposure to motor vehicle emissions as part of its recent MSAT rulemaking. 71 Fed. Reg. 15804 (March 29, 2006). See also 66 Fed. Reg. 17229 (March 29, 2001); and 64 Fed. Reg. 38705 (July 19, 1999)(National Integrated Air Toxic's Strategy). This evidence demonstrates that the adverse health impacts of highway emissions will be significant in every metropolitan planning area, and that mitigation of these impacts must be considered.

Together the health risk assessments performed by EPA, and the methodologies used by FHWA in preparing the study of the health costs of air pollution[3] provide

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[2] Traffic-Related Air Pollution (HEI pre-print, May 2009) [Attached as Exhibit A-1]; Addendum to the 1997 Federal Highway Cost Allocation Study, Final Report (U.S. Department of Transportation, Federal Highway Administration, May 2000) [Attached as Exhibit A-1a].

[3] Addendum to the 1997 Federal Highway Cost Allocation Study Final Report, U.S. Department of Transportation, Federal Highway Administration (May 2000).

examples of the tools available to MPOs and state DOTs to estimate the magnitude of adverse health outcomes associated with exposure to air pollution in a metropolitan area. These tools can provide estimates that, even if they suffer from a range of uncertainty with respect to exact numbers of adverse health outcomes in the exposed population, are useful in comparing the expected health consequences of different emission scenarios associated with differing project, mode, land use and economic incentive strategies.

Several environmental and community groups submitted comments on April 28, 2008 related to the conformity determination for the 2008 RTP.[4] The comments provided significant details and information related to the impacts of highway pollution for those living closest to the source. Since that time, there has been a new report that is appended to this comment. This new report provides substantial evidence of harm posed by highway pollution on those residing in close proximity to highways. [5]

(ii). Impacts of Greenhouse Gas Emissions.

The adverse impacts of CO2 and other air pollutants emitted from the transportation sector have been recognized by the United States and the United Nations. The ultimate goal of the United Nations Framework Convention on Climate Change (UNFCCC) is to stabilize atmospheric concentrations of greenhouse gases at levels that would prevent dangerous human interference with the climate system.[6] The United States ratified the UNFCCC in 1992, and the Bush Administration officially endorsed the scientific consensus on the threat posed by climate change with its submission to the United Nations (U.N.) of Climate Action Report 2002.[7] The U.S. Environmental Protection Agency has now issued its finding under the Clean Air Act that greenhouse gas emissions endanger the health and welfare of the American people. The U.S. Department of Energy also acknowledged that drastic reductions in total greenhouse gas emissions are needed to stabilize atmospheric concentrations,[8] and has funded

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[4] Letter from coalition for clean air et al. To scag, april 28, 2008. [Attached as Exhibit A-2].

[5] Estimating Contributions of On-Road Emissions to Near Highway PM2.5 Concentrations (April 16, 2009). [ATTACHED AS EXHIBIT A-3].

[6] For a general description of UNFCCC provisions, obligations, and implementation measures, see United Nations (U.N.) Climate Change Secretariat, A Guide to the Climate Change Convention Process (2002), available at http://unfccc.int/resource/process/guideprocess-p.pdf.

[7] See U.S. Climate Action Report 2002, Third National Communication of the United States of America Under the United Nations Framework Convention on Climate Change [hereinafter Climate Action Report 2002]. Chapter 6 of Climate Action Report 2002 spells out the adverse impacts on the United States, including temperature and sea level rises, increase in severe weather events, and loss of sensitive ecosystems.

[8] See U.S. Department of Energy (DOE), Notice of Intent to Prepare a Programmatic Environmental Impact Statement for Implementation of the Carbon Sequestration Program, 69 Fed. Reg. 21514, 21515 (Apr. 21, 2004) ("even modest stabilization

technological developments toward this end. Measurement of increasing CO2 concentrations in the atmosphere provides compelling evidence that comprehensive programs to reduce CO2 emissions are needed to meet climate change goals. EPA's inventories of carbon emissions from major sectors of the US economy demonstrate that emissions from the transport sector account for the fastest growth of GHG emissions from the United States.[9] Significant reductions in GHG emissions from the U.S. cannot be achieved without at least stopping the growth in GHG emissions from the transportation sector.

Congress has nonetheless required that the transportation planning process produce transportation plans that "minimize fuel consumption" and "air pollution." 23 USC §§ 134(a) and (c), 135(a). Implementation of this national policy can accomplish significant reductions in CO2 emissions from the transportation sector. Given that the United States has already acknowledged the potential harm to the human environment from GHG emissions and expected climate change, and the congressional directive to develop metropolitan and statewide transportation plans that "minimize" fuel consumption and air pollution, it is clear that these impacts are significant in every state and metropolitan planning area for the purpose of triggering an obligation to consider mitigation in the transportation planning process designed to minimize these impacts.

In addition, other significant adverse environmental impacts are identified in the letter to the Secretary of Interior asking that a comprehensive EIS be prepared to analyze impacts, consider alternatives and require mitigation.

In the environmental review of highway projects in EISs prepared by FHWA, the U.S. Department of Transportation, has agreed that the climate impacts of transportation are significant and that mitigation measures should be addressed. For example, in response to comments asking that FHWA assess under NEPA the mitigation of GHG emissions as part of the environmental review of the 6 lane, 18 mile long Inter-County Connector linking I-95 with I-270 through the Maryland suburbs of the Washington metropolitan area, FHWA agreed that "[t]he issue of global climate change is an important national and global concern." However, the Department has insisted that the assessment of alternatives and measures to mitigate the impacts of transportation should be undertaken at the regional, state and national levels.[10]

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scenarios would eventually require a reduction in worldwide greenhouse gas emissions of 50 to 90[%] below current levels").

[9] *See* Yuhnke, B, Salisbury, M. *Colorado Transportation Blueprint for the New Energy Economy* (Southwest Energy Efficiency Project, July, 2009) *available at* *http://www.swenergy.org/publications/documents/Colorado_Transportation_Blueprint.pd*

[10] FHWA does not believe it is informative at this point to consider greenhouse gas emissions as part of the project-level planning and development process. Greenhouse gases are quantitatively and qualitatively different from other motor vehicle emissions, and their magnitude and breadth appear to require a different approach to address their potential climate impacts. * * * From a NEPA perspective, it is

III. Project May Not Be Added to Plan Until Compliance with National Planning Objectives and Mitigation is Considered under Appropriate Procedures.

In light of the extensive impacts the I-710 would likely have on VMT, fuel consumption and GHG emissions, the performance of the transportation system serving the ports, land use and regional development, and other significant socioeconomic values and natural resources, the NRDC requests that SCAG prepare an MIS for the I-710 before deciding whether to add the project to the RTP.

A. Federal Law Requires SCAG to Prepare an MIS or Equivalent Assessment.

Since 1993, federal regulations have required that, before a metropolitan planning organization (MPO) may add a project to an RTP or TIP, it must analyze the project and potential alternatives to determine the cost-effectiveness of the project and its effects on system performance and the national transportation planning objectives prescribed in 23 U.S.C. § 134(a)(1). 23 C.F.R..§ 450.318 (1994). As explained below, this requirement – known as the MIS rule – remains in effect despite recent regulatory amendments by US DOT.

US DOT amended the federal transportation planning rules, 23 C.F.R. pt. 450, in February 2007. 72 Fed. Reg. 7224 (Feb. 14, 2007). Upon adopting the amendments, US DOT stated that --

> [s]ection 1308 of the TEA-21 required the Secretary to eliminate the [MIS] set forth in [23 C.F.R. § 450.318], as a separate requirement, and promulgate regulations to integrate such requirement, as appropriate, as part of the analysis required to be undertaken pursuant to the planning provisions of title 23 U.S.C. and title 49 U.S.C. Chapter 53 and the National Environmental Policy Act of 1969 (NEPA) for Federal-aid highway and transit projects.[11] [As amended, the] purpose of [23 C.F.R. §

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analytically problematic to conduct a project level cumulative effects analysis of greenhouse gas emissions on a global-scale problem. [D]ue to the interactions between elements of the transportation system as a whole, project-level emissions analyses would be less informative than ones conducted at regional, state, or national levels." ICC, Record of Responses, Chapter IV.H. Air Quality, #409. *See also,* Final Environmental Impact Statement for the Grand Parkway Project, Houston, TX.

[11] Section 1308 of the 1998 TEA-21 amendments reads in full:

> The Secretary shall eliminate the major investment study set forth in section 450.318 of title 23, Code of Federal Regulations, as a separate

> 450.318 (Transportation planning studies and project development)] is to implement this requirement of Section 1308 of the TEA-21 and eliminate the MIS as a stand-alone requirement.

72 Fed Reg. at 7241. US DOT thus adopted a regulation that purports to integrate the MIS requirement with NEPA and the planning process required by 23 U.S.C. § 134 (metropolitan planning) and 23 U.S.C. § 135 (state transportation planning). *Id.* But the revised rule makes the MIS a voluntary undertaking by MPOs, whereas the 1993 MIS rule provided that MPOs "shall" prepare a MIS before adding a project to an RTP or TIP. Unlike the 1993 MIS rule, the amended regulation falls short of congressional directive enacted in section 1308 of TEA-21, Pub. L. No. 105-178 (1998).

The 1993 MIS rule required MPOs to satisfy 23 C.F.R. § 450.322(b)(7) before adding a major project to a RTP or TIP. 23 C.F.R. § 450.322(b)(7) requires a RTP or TIP to "[r]eflect a multimodal evaluation of the transportation, socioeconomic, environmental, and financial impact of the overall plan, including all major transportation investments in accordance with § 450.318." At the time it adopted the 1993 MIS rule, US DOT explained that "[s]uch investment studies should occur before a particular investment is ultimately defined in an area's approved plan . . . . After a corridor/subarea study is completed, the plan would be revised to reflect the specific decision resulting from the study." 58 Fed. Reg. 58040, 58056 (Oct. 28, 1993). Together, 23 C.F.R. §§ 450.322 and 450.318 define the MIS requirement that was preserved by the 1998 amendment to 23 U.S.C. § 134 by requiring the MPO to demonstrate in an MIS the factual basis supporting its determination to add a project to a RTP or TIP. Section 450.322 (1993) required the MPO to evaluate the "impact of the overall plan," and section 450.318 required individual investments and strategies to be evaluated for their impacts on "local, State and national goals and objectives" before the MPO adds one of the alternatives to the RTP or TIP.

Although TEA-21 instructed the Secretary of Transportation to eliminate the "separate" MIS requirement, it also directed the Secretary to "integrate such requirement, as appropriate," into the planning provisions of Title 23, Title 49, and NEPA. Pub. L. No. 105-178, at § 1308. US DOT explained its understanding that "[t]he technical structure of the law is such that this action requires a two step process: (1) Eliminating and (2) proposing an approach for

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> requirement, and promulgate regulations to integrate such requirement, as appropriate, as part of the analyses required to be undertaken pursuant to the planning provisions of title 23, United States Code, and chapter 53 of title 49, United States Code, and the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) for Federal-aid highway and transit projects. The scope of the applicability of such regulations shall be no broader than the scope of such section.

integrating what remains." 67 Fed. Reg. 59219, 59223 (Sept. 20, 2002). US DOT thus understood that Congress intended for it to integrate into the planning process "what remains" of the required "approach" that is not otherwise required by NEPA or titles 23 or and 49 of the U.S. Code. In short, the MIS regulation remains in effect under 23 U.S.C. § 134 until US DOT replaces the original 23 C.F.R. § 450.318 with a regulation that fulfills the mandate to "integrate such [MIS] requirement" into the planning process.

Prior to amending its planning regulations in 2007, US DOT acknowledged that the existing regulation remained a "placeholder" to meet Congress's integration requirement. *Id.* at 59223. The MIS rule remains in effect because (1) Congress did not repeal the MIS requirement reflected in 23 C.F.R. § 450.318, (2) the MIS rule remained consistent with 23 U.S.C. § 134 after the TEA-21 revisions and enforceable, and (3) the US DOT has not lawfully revoked the 1993 regulation because it has not promulgated a rule that satisfies the mandate to "integrate such [MIS] requirement" into the planning process.

1. TEA-21 Retained the MIS Requirement

The 1998 TEA-21 amendments did not repeal or eliminate the MIS requirement, but rather clarified a latent ambiguity as to whether an MIS must be prepared separately or as part of the NEPA process. The MIS regulation left this issue to be determined on a case-by-case basis. 23 C.F.R. § 450.318(f). Because MPOs had no obligation to satisfy NEPA as part of their planning processes, MPOs often did not include within the MIS a treatment of alternatives that met the comprehensive requirement of NEPA. Accordingly, after a project was added to a RTP or TIP, US DOT would prepare a separate, but largely duplicative, environmental impact statement (EIS) to satisfy NEPA. Participants often viewed this as a make-weight, paper-shuffling task to meet the letter of the law that had little to do with the final selection of a project. *See, e.g.,* 144 Cong. Rec. S6399, S6402 (June 16, 1998) (S.J.R. 15). Indeed, as a practical matter, US DOT usually would not select a different alternative identified in the NEPA process because such an alternative was not in the RTP or TIP, and thus could not be funded without a revision to the RTP.

TEA-21 sought to avoid this duplication by ensuring that the MIS would satisfy NEPA. Congress did not intend to eliminate the MIS requirement.[12] S. Rep.

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[12] 144 Cong. Rec. S1723, S1735 (daily ed. Mar. 11, 1998) (Sen. Warner) ("This amendment . . . eliminates the redundant provisions of the law by integrating the so-called major investment study, MIS, requirement into the overall transportation planning process. . . . This amendment would eliminate only those elements of the MIS that are duplicative of other transportation planning requirements."); 144 Cong. Rec. S2002, S2038 (daily ed. Mar. 16, 1998); 144 Cong. Rec. H1888 (daily ed. Apr. 1, 1998) (Rep. Petri) (recognizing that the 1998 TEA-21 amendments were designed to reduce red tape by coordinating project reviews); 144 Cong. Rec. H1913 (daily ed. Apr. 1, 1998) (Rep. Costello) (same); David M. Bearden and Linda G. Luther, Cong. Res. Serv.,

106-47, at 5 (1999) ("TEA-21 deletes the Major Investment Study as a stand-alone requirement and integrates it into the planning process."); H.R. Rep. 105-831, at 29 (1998) ("The project review process is reformed by deleting the Major Investment Study as a stand-alone requirement and integrating it into the planning process."); 144 Cong. Rec. H10479, H10502 (daily ed. Oct. 10, 1998) (same). It is no wonder, then, that the mandate to integrate the MIS requirement is found within the section titled "Program Streamlining and Flexibility." Pub. L. No. 105-178, § 1308, 112 Stat. 107 (June 9, 1998). An MPO satisfies the MIS requirement when it demonstrates how the MIS affected its decision to add a project to the RTP or TIP. *See Clairton Sportsmen's Club v. Pa. Turnpike Comm'n*, 882 F. Supp. 455, 481 (W.D. Pa. (1995) (concluding, before the 1998 TEA-21 amendments, that the Federal Highway Administration [FHWA] did not abuse its discretion by permitting the agencies to comply with the MIS regulation by incorporating a section regarding MIS compliance into the environmental impact statement). *See also* FHWA, Notice of Intent, 67 Fed. Reg. 50504, 50504 (Aug. 2, 2002) ("As directed by the Transportation Efficiency [sic] Act for the 21st Century (TEA-21), the Major Investment Study (MIS) will be integrated with the [environmental impact statement (EIS)].").

2. US DOT Has Not Lawfully Replaced the MIS Rule

Because TEA-21 did not eliminate the MIS requirement, the MIS rule remains in effect until US DOT replaces it with a rule that complies with the statutory directive. The February 2007 rule amendment fails to retain the MIS as a requirement, and fails to substitute any other procedure that achieves a comparable result. By adopting a rule that merely authorizes an MPO to prepare an MIS at its discretion, US DOT has not integrated the 1993 MIS *requirement* into the planning process as required by law. Accordingly, the 1993 MIS rule has not been lawfully superseded and therefore remains in effect.

US DOT's explanation for the 1993 MIS rule describes the requirement that TEA-21 intended to retain and integrate into the planning process: "[T]he intent of the requirement is to integrate planning and environmental requirements at the planning stage so that alternative courses of action, their costs and environmental effects as well as transportation demand are considered at this point." 58 Fed. Reg. at 58056. The 2007 amendments to the MPO and statewide planning rules do not preserve these requirements because they purport to allow MPOs the discretion not to integrate these factors into the planning decision. Revisions to an MPO plan that are not based on these factors do not fulfill the statutory mandate.

Environmental Streamlining Provisions in the Transportation Equity Act for the 21st Century: Status of Implementation 4 (May 30, 2003), *available at* http://www.ncseonline.org/nle/crsreports/03Jun/ RS20841.pdf.

In contrast to the 1993 MIS requirement, the amended MIS regulation makes the preparation of an MIS discretionary. 23 C.F.R. §§ 450.212(a) ("a State, MPO, or public transportation operator may undertake a multimodal, systems-level corridor or subarea planning study as part of the statewide transportation planning process."), 450.318(a) ("MPO(s), State(s), or public transportation operator(s) may undertake a multimodal, systems-level corridor or subarea planning study as part of the metropolitan transportation planning process."). The regulations are thus inconsistent with statutory mandate in TEA-21, which directs US DOT to "integrate such *requirement*" into existing planning processes.

In sum, because US DOT has not replaced the 1993 MIS rule with a rule that satisfies the statutory MIS mandate, the MIS rule has not been lawfully repealed or amended, and remains in effect. Thus, the proposed I-710 is a "major metropolitan transportation investment" within the meaning of 23 C.F.R. § 450.318 (as in effect prior to July 1, 2007), *see* 23 C.F.R. § 450.104 (defining "major metropolitan transportation investment"), for which SCAG is authorized under the revised rule to complete an MIS under the 1993 regulatory requirements for an MIS. 23 CFR § 450.318 (as in effect beginning July 1, 2007). If SCAG elects not to prepare an MIS, or similar assessment of impacts, alternatives, mitigation of adverse impacts, and compliance with the national planning objectives, its decision will not comply with the statutory requirement.

III. Compliance with CEQA.

This amendment to the RTP purports to comply with CEQA through the prior Program Environmental Impact Report that was used for the underlying 2008 RTP. NRDC does not believe this document comports with CEQA and cannot provide the necessary compliance with state law to allow this amendment to move forward. There are several deficiencies with the PEIR as it relates to amendment 3.

First, as mentioned above, several mitigation measures for a host of pollutants have remained unanalyzed or implemented. CEQA requires that an "EIR must demonstrate that the significant environmental impacts of the proposed project were *adequately investigated and discussed* and it must permit the significant effects to be considered in the *full environmental context*."[13]

Moreover, many of the mitigation measures included in the PEIR are unenforceable, which also violates CEQA. In addition, SCAG has not complied with several of its already-existing mitigation measures, including the use of advanced technologies.

Second, the PEIR has failed to examine alternatives to the proposed inclusion of the I-710 project in the RTP. The analysis of alternatives to the proposed project

[13] CEQA Guidelines, § 15125(c), (emphasis added).

lies at "[t]he core of an EIR."[14] In this analysis, the PEIR must consider a reasonable range of alternatives that would avoid or substantially lessen this impact while feasibly attaining most of the Project's basic objectives.[15] If the EIR refuses to consider a reasonable range of alternatives or fails to support its analysis with substantial evidence, the purposes of CEQA are subverted and the PEIR is legally inadequate.[16] If a feasible alternative exists that will meet the project's objectives while reducing or avoiding its significant environmental impacts, the project may not be approved.[17] As articulated above, there were several alternatives suggested by technical advisors on the I-710 expansion process that have not been adequately analyzed in the PEIR. This failure amounts to a serious flaw in the document that must be remedied.

CONCLUSION.

SCAG may not add the project to the RTP without determining how the project will affect compliance of the RTP with the national planning objectives.

With respect to the I-710 proposal, no mitigation of the public health or climate impacts associated with increased VMT and increased GHG emissions has been performed or presented for public comment. Nor has any evidence been provided to show that SCAG staff have consulted with the relevant resource management agencies regarding these impacts. The adoption of the I-710 into the RTP without complying with these requirements of FAHA and applicable regulations is unlawful.

The procedures for evaluating impacts, considering alternatives and mitigation, and determining whether a project, when added to an RTP, is consistent with national, state and local objectives are provided in the 1993 MIS rule. These procedures should be applied here to ensure there is an opportunity for public involvement and adequate consideration of alternatives before the project is added to the RTP.

Respectfully submitted,

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[14] *Citizens of Goleta Valley II*, 52 Cal. 3d at 564; *see also* Pub. Res. Code § 21002.1(a) ("The purpose of an environmental impact report is . . . . to identify alternatives to the project . . . .").
[15] *See* § 21100(b)(4); CEQA Guidelines § 15126.6(a).
[16] *San Joaquin Raptor*, 27 Cal. App. 4th at 735-38; *Kings County Farm Bureau*, 221 Cal. App. 3d at 736-37.
[17] Pub. Res. Code § 21002.

HEI

SPECIAL REPORT 17

January 2010

Traffic-Related Air Pollution: A Critical Review of the Literature on Emissions, Exposure, and Health Effects

A Special Report of the HEI Panel on the Health Effects of Traffic-Related Air Pollution

EXECUTIVE SUMMARY

ABOUT HEI

The Health Effects Institute is a nonprofit corporation chartered in 1980 as an independent research organization to provide high-quality, impartial, and relevant science on the effects of air pollution on health. To accomplish its mission, the institute

- Identifies the highest-priority areas for health effects research;
- Competitively funds and oversees research projects;
- Provides intensive independent review of HEI-supported studies and related research;
- Integrates HEI's research results with those of other institutions into broader evaluations; and
- Communicates the results of HEI research and analyses to public and private decision makers.

HEI receives half of its core funds from the U.S. Environmental Protection Agency and half from the worldwide motor vehicle industry. Frequently, other public and private organizations in the United States and around the world also support major projects or certain research programs. Additional work for this report was funded by the U. S. Federal Highway Administration.

HEI has funded more than 280 research projects in North America, Europe, Asia, and Latin America, the results of which have informed decisions regarding carbon monoxide, air toxics, nitrogen oxides, diesel exhaust, ozone, particulate matter, and other pollutants. These results have appeared in the peer-reviewed literature and in more than 200 comprehensive reports published by HEI.

HEI's independent Board of Directors consists of leaders in science and policy who are committed to fostering the public–private partnership that is central to the organization. The Health Research Committee solicits input from HEI sponsors and other stakeholders and works with scientific staff to develop a Five-Year Strategic Plan, select research projects for funding, and oversee their conduct. The Health Review Committee, which has no role in selecting or overseeing studies, works with staff to evaluate and interpret the results of funded studies and related research.

All project results and accompanying comments by the Health Review Committee are widely disseminated through HEI's Web site (*www.healtheffects.org*) printed reports, newsletters, and other publications, annual conferences, and presentations to legislative bodies and public agencies.

EXECUTIVE SUMMARY

Traffic-Related Air Pollution: A Critical Review of the Literature on Emissions, Exposure, and Health Effects

INTRODUCTION

Motor vehicles are a significant source of urban air pollution and are increasingly important contributors of anthropogenic carbon dioxide and other greenhouse gases. As awareness of the potential health effects of air pollutants has grown, many countries have implemented more stringent emissions controls and made steady progress in reducing the emissions from motor vehicles and improving air quality. However, the rapid growth of the world's motor-vehicle fleet due to population growth and economic improvement, the expansion of metropolitan areas, and the increasing dependence on motor vehicles because of changes in land use has resulted in an increase in the fraction of the population living and working in close proximity to busy highways and roads — counteracting to some extent the expected benefits of pollution-control regulations and technologies.

This Special Report, developed by the Health Effects Institute (HEI) Panel on the Health Effects of Traffic-Related Air Pollution, summarizes and synthesizes information linking emissions from, exposures to, and health effects of traffic sources (i.e., motor vehicles). The term *traffic-related exposure* is used in this report to refer to exposure to primary emissions from motor vehicles, not to the more broadly dispersed secondary pollutants such as ozone (O_3) that are derived from these emissions. The report focuses on specific scenarios with a high aggregation of motor vehicles and people — that is, urban settings and residences in proximity to busy roadways.

EMISSIONS FROM MOTOR VEHICLES

Motor vehicles emit large quantities of carbon dioxide (CO_2), carbon monoxide (CO), hydrocarbons (HC), nitrogen oxides (NO_X), particulate matter (PM), and substances known as mobile-source air toxics (MSATs), such as benzene, formaldehyde, acetaldehyde, 1,3-butadiene, and lead (where leaded gasoline is still in use). Each of these, along with secondary by-products, such as ozone and secondary aerosols (e.g., nitrates and inorganic and organic acids), can cause adverse effects on health and the environment. Pollutants from vehicle emissions are related to vehicle type (e.g., light- or heavy-duty vehicles) and age, operating and maintenance conditions, exhaust treatment, type and quality of fuel, wear of parts (e.g., tires and brakes), and engine lubricants used. Concerns about the health effects of motor-vehicle combustion emissions have led to the introduction of regulations and innovative pollution-control approaches throughout the world that have resulted in a considerable reduction of exhaust emissions, particularly in developed countries. These reductions have been achieved through a comprehensive strategy that typically involves emissions standards, cleaner fuels, and vehicle-inspection programs. Recognizing the likely continued growth in the vehicle fleet and the remaining problems in traffic-related air quality, the United States, European countries, Japan, and other countries are continuing to push for even stricter emissions controls in coming years.

Resuspended road dust, tire wear, and brake wear are sources of noncombustion PM emissions from motor vehicles. As emissions controls for exhaust PM become more widespread, emissions from noncombustion sources will make up a larger proportion of vehicle emissions. Noncombustion emissions contain chemical compounds, such as trace metals and organics, that might contribute to human health effects. However, current estimates of these emissions are highly uncertain. Thus, although they are not regulated in the way exhaust emissions are, noncombustion emissions will need to be considered more closely in future assessments of the impact of motor vehicles on human health.

The quantification of motor-vehicle emissions is critical in estimating their impact on local air quality and traffic-related exposures and requires the collection of travel-activity data over space and time and the development of emissions inventories. Emissions inventories are developed based on complex emissions models (of which the U.S. Environmental Protection Agency's MOBILE6 has been the most widely used) that provide exhaust and evaporative emissions rates for total HC, CO, NO_x, PM, sulfur dioxide (SO_2), ammonia (NH_3), selected air toxics, and green house gases (GHGs) for specific vehicle types and fuels. The quality of the travel-activity data (such as vehicle-miles traveled, number of trips, and types of vehicles) and the complex algorithms used to derive the emissions factors suggest the presence of substantial uncertainties and limitations in the resulting emissions estimates (NARSTO 2005). It should be noted that estimates of PM emissions have had very limited field valuation and verification.

The actual measurement of motor-vehicle emissions is critically important for validating the emissions models. Studies that have sampled the exhaust of moving vehicles in real-world situations (specifically, in tunnels or on roadways) have contributed very useful information about the emissions rates of the current motor-vehicle fleet and also have allowed the evaluation of the impact of new emission-control technologies and fuels on emissions.

This Executive Summary is excerpted from HEI Special Report 17, *Traffic-Related Air Pollution: A Critical Review of the Literature on Emissions, Exposure, and Health Effects*, by the Institute's Panel on the Health Effects of Traffic-Related Air Pollution. The entire report is available at *www.healtheffects.org* or from HEI.

This document was produced with partial funding by the United States Environmental Protection Agency under Assistance Award CR–83234701 to the Health Effects Institute; however, it has not been subjected to the Agency's peer and administrative review and therefore may not necessarily reflect the views of the Agency, and no official endorsement by it should be inferred. The contents of this document also have not been reviewed by private party institutions, including those that support the Health Effects Institute; therefore, it may not reflect the views or policies of these parties, and no endorsement by them should be inferred.

Receptor models have been used to estimate the contributions of various types of sources, including motor vehicles, to ambient air pollution. Some of the models (those defined as *chemical mass balance models*) require the knowledge of the chemical profile of both the emissions of all the area sources and the air at the receptor (that is, the impacted location). Other models (referred to as *principal components and factors analyses*) do not require a priori knowledge of the source profiles. The application of these models has yielded a wide range of results on the contribution of motor vehicles to ambient pollution, depending on the model, the location of the monitoring sites, and the other sources present. In U.S. cities, the results show that motor-vehicle contributions range from 5% in Pittsburgh, Pa., under conditions with very high secondary aerosol, to 49% in Phoenix, Ariz., and 55% in Los Angeles, Calif. Outside the United States, estimates of the motor-vehicle contribution to $PM_{2.5}$ ($PM \leq 2.5$ µm in aerodynamic diameter) range from 6% in Beijing, China, to 53% in Barcelona, Spain.

Ultimately, an important goal of emissions-characterization studies is to improve our ability to quantify human exposure to emissions from motor vehicles, especially in locations with high concentrations of vehicles and people. Such characterization requires improving emissions inventories and a more complete understanding of the chemical and physical transformations on and near roadways that can produce toxic gaseous, semivolatile, and particle-phase chemical constituents.

ASSESSMENT OF EXPOSURE TO TRAFFIC-RELATED AIR POLLUTION

Traffic-related emissions contribute to primary and secondary local, urban, and regional (background) pollutant concentrations against a background of similar contaminants emitted from other sources. Traffic emissions are the principal source of intra-urban variation in the concentrations of air pollutants in many cities; thus, population-oriented central monitors cannot by themselves capture this spatial variability. Studies that have examined gradients in pollutants as a function of distance from busy roadways have indicated exposure zones for traffic-related air pollution in the range of 50 to 1500 m from highways and major roads, depending on the pollutant and the meteorologic conditions.

Because it is not practical or feasible to measure all the components of the traffic-pollutant mix, surrogates of traffic-related pollution have been used as a reasonable compromise for assessing the contribution of traffic emissions to ambient air pollution and for estimating traffic exposure. Surrogates can also help in the assessment of spatial and temporal distributions of ambient pollution related to motor vehicles and of traffic-mitigation control strategies.

Two broad categories of surrogates have been used in epidemiology studies to estimate traffic exposure: (1) measured or modeled concentrations of pollutant surrogates and (2) direct measures of traffic itself (such as proximity, or distance, of the residence to the nearest road and traffic volume within buffers). The most commonly used traffic-pollutant surrogates include CO, NO_2, elemental carbon (EC; or black carbon [BC] or black smoke [BS]), PM, benzene, and ultrafine particles (UFP). Exposure models include geostatistical interpolation, land-use regression, dispersion, and hybrid models (the latter combine time–activity data, personal measurements, and models). They incorporate numerous parameters (such as meteorologic variables, data on land use, traffic data, and monitoring data or emissions rates depending on the model) and can improve the spatial representation of the local impact of traffic against a background of regional and urban concentrations. However, the accuracy of the inputs is critical to the usefulness of any given model.

None of the pollutant surrogates considered in the report met all the criteria for an ideal surrogate. Data are not available to assess the ratios of the surrogates to emissions from all sources over time. CO, benzene, and NO_x (in this case NO_2), found in on-road vehicle emissions, are components of emissions from all sources, making it difficult to disentangle the contributions from motor vehicles from other sources (including some in indoor environments). Primary, on-road vehicle emissions of PM ($PM_{2.5}$ or PM_{10} [$PM \leq 10$ µm in aerodynamic diameter]) represent only a small contribution to emissions from all sources, typically around 3%. EC has been used as a surrogate, primarily for diesel exhaust, although it is not a specific marker, unless other sources are ruled out. UFP concentrations are very high in vehicle-exhaust plumes but decrease rapidly with distance from the source, which poses a significant challenge for characterization of the spatial and temporal concentration gradients of UFP from roadway traffic.

With regard to exposure models, the Panel noted that, although proximity models (direct measures of traffic) are the easiest to implement, they are error prone because they ignore the parameters that affect the dispersion and physicochemical activity of the pollutants. Moreover, estimates based on proximity can be confounded by factors such as socioeconomic status and noise. Geostatistical interpolation models are best implemented in conjunction with dense, well-distributed monitoring networks; their chief limitations are the size of the network and the number of measurements needed over time to estimate the spatial distribution of pollution surrogates accurately. Land-use regression is appealing in that it can account for the diversity of sources that contribute to a surrogate; however, the true contribution (in terms of associated variance) of traffic to the regression is not always known or reported. Dispersion models utilize motor-vehicle–emissions and air-quality data and incorporate meteorologic data, but must be calibrated correctly to realize their advantages. These models are very data- and computation-intensive and depend on the validity of the model assumptions. Hybrid models that combine measurements of personal exposure to traffic surrogates or time–activity data with exposure models come closest to a logistically feasible "best" estimate of human exposure.

Factors influencing ambient concentrations of a traffic-pollutant surrogate are related to time–activity patterns, meteorologic conditions, vehicle volume and type, driving patterns, land-use patterns, the rate at which chemical transformations take place, and the degree to which the temporal and spatial distribution of the surrogate reflects the traffic source.

To improve assessment of exposure to traffic-related pollution, a potential solution is the deployment of a large number of monitors in places where concentrations of air pollutants are expected to be highly variable and the population density is high. The use of models that incorporate numerous spatial factors in order to estimate exposures that are more relevant to the individual's exposure situation can also be helpful.

The Panel concluded that the impact of vehicle emissions extends beyond the local scale to the urban and regional scales. What people are exposed to is influenced by their proximity to the sources, the presence of other ambient or microenvironmental sources, and time–activity patterns. If, as the evidence suggests, groups of lower socioeconomic status experience higher exposures than groups of higher socioeconomic status, this merits consideration in the interpretation of epidemiologic findings and in future regulatory actions.

Based on a synthesis of the best available evidence, the Panel identified an exposure zone within a range of up to 300 to 500 m from a highway or a major road as the area most highly affected by traffic emissions (the range reflects the variable influence of background pollution concentrations, meteorologic conditions, and season) and estimated that 30% to 45% of people living in large North American cities live within such zones.

HEALTH EFFECTS OF TRAFFIC-RELATED AIR POLLUTION: EPIDEMIOLOGY AND TOXICOLOGY

In reviewing the epidemiologic literature on the association between exposure to traffic-related air pollution and health outcomes, the Panel developed criteria for the inclusion of studies based on the characterization of traffic exposure. The Panel decided to include only studies that investigated associations between primary emissions from traffic and human health and that provided specific documentation of a traffic source and estimates of exposure on a local scale. Thus, studies that relied exclusively on measurements from a central monitoring site were not included unless the site was in proximity to traffic. The Panel also developed criteria for inferring whether associations between exposure and health outcome were causal by adapting the criteria used by the U.S. Surgeon General in the report *The Health Consequences of Smoking: A Report of the Surgeon General* (U.S. Department of Health and Human Services 2004). In order to deem the evidence sufficient to conclude that association between a metric of traffic exposure and an outcome was causal, it was necessary for the magnitude and direction of the effect estimates to be consistent across different populations and times and to rule out with reasonable confidence chance, bias in subject selection, and confounding (in particular, socioeconomic status). The four inference criteria applied to this review are listed in Table 1. To these criteria the Panel added a traffic-specific coherence criterion (also included in Table 1) to account for the degree of validity of the traffic-specific exposure metrics. As noted earlier, the Panel concluded that not all traffic-exposure measures have equivalent validity and considered simple measures of proximity to roads or road length and of pollutant surrogates without specific traffic data to be the least specific. The proximity measures are also likely to introduce confounding.

Modeled estimates of exposure to traffic pollution were thought to be, a priori, more valid than traffic density estimates alone because they account for other factors that affect the exposure, such as geography, land use, and meteorology, when making estimates for particular locations. In addition, the validity of estimates can be enhanced by modeling strategies that separately estimate the contribution of traffic and background pollution to personal exposure.

The Panel developed qualitative and quantitative summaries (in tables and figures) for the estimates of the associations between traffic-related exposure and various health outcomes for the studies reviewed, but did not derive meta-analytic summaries by pooling associations estimates because of the lack of equivalence among the exposure measures and populations studied.

The Panel also reviewed the literature on the toxicology of traffic-related pollution. This included studies of direct exposures to traffic emissions (though there were very few in this category), studies that utilized laboratory atmospheres that replicate aspects of the traffic mix (such as concentrated ambient particles, or gasoline or diesel exhaust), and studies of specific components of emissions from motor vehicles. The aim was to identify possible mechanisms by which exposure to traffic pollutants may cause effects and provide an understanding of the role of traffic emissions in the effects being observed in epidemiology studies. While toxicology studies are limited in their ability to capture the full complexity of human exposure — because of the small number of subjects and, in animal studies, the relevance of the results to humans — they offer the opportunity to explore hypotheses on specific pathophysiologic mechanisms of action.

The Panel evaluated whether oxidative stress might be the underlying mechanism of action by which exposure to pollutants from traffic may lead to adverse health effects. Oxidative stress results from events occurring in any tissue in the body when the prooxidant–antioxidant balance is disturbed. This imbalance can happen when the generation of reactive oxygen species, or *free radicals*, exceeds the available antioxidant defenses and is characterized by the presence of increased cellular concentrations of oxidized lipids, proteins, and DNA. Oxidative stress can trigger inflammatory reactions, which lead to an increased production of oxidants by activated phagocytes recruited to the airways, perpetuating the cycle of oxidative injury.

The Panel concluded that, although the evidence supported the hypothesis that oxidative stress is an important determinant of health effects associated with ambient air pollution in general,

Executive Summary Table 1. Criteria for Assessing the Presence or Absence of Causal Associations in Studies of the Health Effects of Traffic-Related Air Pollution[a,b]

A. *Sufficient Evidence to Infer the Presence of a Causal Association*

The evidence was deemed sufficient to conclude that an association observed between a metric of traffic exposure and a disease (or biomarker of disease) risk was causal in studies where chance, bias, and confounding could be ruled out with reasonable confidence, and the effect estimates were consistent in magnitude and direction.

Traffic-specific criterion. Classification A was applied:

When all studies were of the appropriate quality, at least one study measured traffic density or modeled traffic exposure[c], measures of socioeconomic status were taken into account in distance-only studies, and the studies' results were consistent.

B. *Suggestive but Not Sufficient Evidence to Infer the Presence of a Causal Association*

The evidence was deemed suggestive but not sufficient to conclude that an association between a metric of traffic exposure and a specific disease (or biomarker of disease) risk was causal in studies where chance, bias, and confounding could not be ruled out with reasonable confidence.

Traffic-specific criterion. Classification B was applied:

When all the criteria for Classification A were met except that only studies that used distance-based metrics were available

OR

When all the criteria for Classification A were met except that not all the studies that used distance-only metrics took into account measures of socioeconomic status or the studies took into account measures of socioeconomic status but the results were not consistent.

C. *Inadequate and Insufficient Evidence to Infer the Presence or Absence of a Causal Association*

The evidence was deemed inadequate and insufficient when the available studies were of insufficient quality, consistency, or statistical power to conclude whether a causal association was present or absent.

Traffic-specific criterion. Classification C was applied:

When the results from studies that used distance-only metrics were not consistent

OR

When the results of all studies using distance-only metrics were consistent but all those studies failed to include measures of socioeconomic status

OR

When the results from at least one study based on traffic density or modeled traffic exposure were inconsistent with those from distance-only studies

OR

When the number of distance-only studies was too small.

D. *Evidence Suggestive of No Causal Association*

The evidence was deemed suggestive of no causal association when there were several adequate studies, covering the full range of human exposure levels, that were consistent in not showing a positive association, at any level of exposure, between exposure to a metric of traffic exposure and a disease outcome. (Of course, a conclusion of "no association" is inevitably limited to the conditions, level of exposure, and length of observation covered by the available studies. In addition, the possibility of a very small elevation in risk at the levels of exposure studied cannot be excluded.)

Traffic-specific criterion. Classification D was applied:

When studies were of adequate quality (using distance-only metrics or at least some measures of traffic density or modeled traffic exposure) and were consistent in failing to find an association.

[a] The Panel did not use exposure–response gradations as a criterion because, in virtually all epidemiologic studies, it is difficult to infer meaningful exposure–response gradations from the types of exposure metrics used or the forms of data presented.

[b] This table was adapted from Tables 4.2a and 4.2.b in Chapter 4.

[c] In some cases, this criterion was met when modeling or source-apportionment data were cited to show that a pollution surrogate in the study was reasonably accurate in representing the traffic sources in the study area.

the extent to which primary traffic-related pollutants contribute to the burden of reactive oxygen species experienced by humans near roadways remains undefined.

The Panel's main conclusions regarding the epidemiologic associations between exposure to traffic-related air pollution and health outcomes and the toxicologic evidence (when available) are presented below for each health outcome. A discussion of the extent to which toxicology studies do or do not provide general mechanistic support for the observations and inferences contributed by epidemiology studies is also provided.

ALL-CAUSE AND CARDIOVASCULAR MORTALITY

Epidemiology

Very few studies of all-cause mortality or cardiovascular mortality and long-term exposure met the criteria for inclusion in the report. Mostly because of the small number of studies, the evidence for an association of all-cause mortality with long-term exposure was classified as "suggestive but not sufficient" to infer a causal association. Additional factors that led to this classification were the substantial differences among populations, time periods, and confounders across studies.

Only four time-series studies of all-cause mortality associated with short-term exposure met the Panel's criteria; these, too, were classified as "suggestive but not sufficient," largely on the strength of one well-done study (Maynard et al. 2007). Two time-series studies based on source-apportionment models were found to have a number of limitations that prevented a stronger statement about inferred causality.

Many of the issues that applied to studies of all-cause mortality applied as well to studies of cardiovascular mortality associated with long-term exposure and led, similarly, to a classification of "suggestive but not sufficient." Only two time-series studies of cardiovascular mortality met the inclusion criteria, and although they both show positive associations, the Panel concluded that, given the overall paucity of studies, the evidence for effects of short-term exposure was "inadequate and insufficient."

CARDIOVASCULAR MORBIDITY

Epidemiology

Studies that documented changes in cardiac physiology (such as heart-rate variability) after short-term exposure to traffic-related pollution (which was assessed using surrogates, source apportionment, or pseudo-personal monitoring) provided strong evidence for a causal association with the exposure. However, the failure of some studies to consider stress and noise as potential confounders led the Panel to classify them as "suggestive but not sufficient" to infer a casual association. Among the studies that evaluated cardiovascular morbidity, two well-executed studies on hospitalization for acute myocardial infarction were identified (Rosenlund et al. 2006; Tonne et al. 2007). In addition, a prospective study in a German cohort reported an association between living near a major road and coronary-artery calcification as well as higher prevalence of coronary heart disease (Hoffmann et al. 2006, 2007). Collectively, these studies made a very strong case for an association between exposure to traffic-related pollutants and atherosclerosis. However, because of the small number of studies, the Panel classified them as "suggestive but not sufficient" to infer a causal association.

Toxicology

There have been a few toxicology studies that examined the cardiovascular effects of traffic emissions specifically. However, the Panel concluded that the recent toxicology literature provides suggestive evidence that exposure to pollutants that are components of traffic emissions, including ambient and laboratory-generated PM and exhaust from diesel and gasoline-fueled engines, alters cardiovascular function. There is also evidence, albeit inconsistent, for acute effects on vascular homeostasis and suggestive evidence in animal models that repeated exposures to ambient PM in general enhance the development of atherosclerosis. Some studies support the involvement of oxidative stress. Although the evidence from toxicology studies in isolation is not sufficient in terms of a causal association between traffic emissions and the incidence or progression of cardiovascular disease, when viewed together with the epidemiologic evidence, a stronger case could be made for a potential causal role for traffic-related pollutants in cardiovascular-disease morbidity and mortality. The extent to which these associations apply to individuals without underlying cardiovascular disease cannot be determined from the evidence available at this time.

ASTHMA AND RESPIRATORY SYMPTOMS

Asthma is an inflammatory disease of the lung airways characterized by episodic obstruction of the airways, which can lead to chronic obstructive lung disease. The most prevalent form of asthma in children and young adults is allergic asthma, which develops as an immune response to inhaled allergens. Individuals with asthma and other allergic conditions who have an increased tendency to develop immediate and localized reactions to allergens (such as pollens) that are mediated by immunoglobulin E (IgE) are referred to as "atopic."

Epidemiology

In epidemiology studies, asthma is most frequently identified by means of responses to questionnaires that do not make use of a single, universally accepted set of questions, alone or in combination with other criteria. This is further complicated by the challenges of distinguishing factors that affect its onset from those (often the same factors) that lead to its episodic worsening. A history of asthma symptoms (such a wheezing) often is used in epidemiology studies as part of the definition both of asthma's onset (incidence) and of its prevalence and exacerbation.

Respiratory Health Problems in Children: Asthma Incidence and Prevalence Seven studies conducted in four separate

cohorts and one case-control study qualified as studies of asthma incidence in children. Eleven studies qualified as studies of asthma prevalence in children. From these studies, the Panel concluded that living close to busy roads appears to be an independent risk factor for the onset of childhood asthma. The Panel considered the evidence for a causal relation to be in a gray zone between "sufficient" and "suggestive but not sufficient." The results found across the studies followed a pattern that would be expected under the plausible assumption that the pollutants really are causally associated with asthma development, if only among a subset of children with some accompanying pattern of endogenous or exogenous susceptibility factors. The conditions that underlie an increased risk for asthma development among children exposed to traffic-related pollutants are not known.

Exacerbation of Symptoms in Children with and without Asthma and Health-Care Utilization for Respiratory Problems Among the more than 20 cohort and cross-sectional studies reviewed that examined the association between exposure to traffic-related pollution and wheezing (an important symptom in the expression and diagnosis of asthma) in children, there was a high degree of consistency in finding positive associations, many of which reached statistical significance (i.e., had reasonably precise point estimates of associations). This was true particularly for the large majority of studies that used models to assign estimates of local concentrations of pollutants, such as NO_2 or soot (the carbonaceous component of PM), to the place of residence of the study participants. Studies based on proximity or traffic density also indicated an association between exposure and wheezing. In addition, exacerbation of other asthma-related symptoms, such as cough or dry cough, was consistently associated with exposure across a variety of exposure measures. Although most studies were not restricted to children with asthma, all these symptoms were more prevalent among those with asthma, and it is very likely that the observed associations were driven by exacerbations of asthma in mixed groups of participants. The Panel concluded that the evidence is "sufficient" to infer a causal association between traffic exposure and exacerbations of asthma but that it is "inadequate and insufficient" to infer a causal association between exposure and respiratory symptoms in children without asthma.

Nine studies assessed the association between exposure to traffic-related pollution and the use of health-care services to treat respiratory problems in children. Most of the studies reported positive associations between exposure and hospital-admission rates, but the majority had methodologic problems that hampered their interpretation. The panel concluded that there is "inadequate and insufficient" evidence to infer a causal association.

Respiratory Health Problems in Adults: Asthma Onset and Respiratory Symptoms The Panel noted that the evidence between exposure to traffic-related pollution and new adult asthma was "inadequate and insufficient" as this was investigated in only one study (Modig et al. 2006). The Panel reviewed 17 studies on respiratory symptoms, of which all but one relied on proximity to roads or traffic-density measures, and concluded that the evidence for a causal association is "suggestive but not sufficient."

Toxicology

The few human studies in which subjects were exposed to realistic traffic conditions (a road tunnel or busy street) are supportive of the possibility that persons with asthma may be more susceptible to adverse health effects (such as decrements in lung function and enhanced responses to allergens) related to such exposure. The Panel's evaluation of the toxicologic data on the respiratory system regarding the effects of components of traffic-related air pollution was that such exposures result in mild acute inflammatory responses in healthy individuals and enhanced allergic responses in allergic asthmatics and animal models.

When the epidemiologic and toxicologic data were viewed together, the Panel noted that a case could be made that there are likely to be causal associations related to exposure to traffic-related air pollution and asthma exacerbation and some other respiratory symptoms. However, given the lack of a large body of toxicologic data based on human and animal exposures to real-world traffic scenarios, the Panel noted that it was hazardous to conclude that causality has been established at this time for all respiratory symptoms at all ages.

LUNG FUNCTION AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE

Changes in lung function are considered reliable markers of health that reflect the effects of endogenous and cumulative exposure to exogenous factors that might have adverse health consequences. Reduced lung function is strongly associated with future morbidity from a variety of causes and is a predictor of life expectancy (Hole et al. 1996); however, the relevance to health of small, short-term changes has not been assessed. The Panel considered lung function and chronic obstructive pulmonary disease (COPD) together in this review, because the principal criterion for the diagnosis of COPD is based on lung-function measures.

Epidemiology

Lung Function in Children and Adults The studies reviewed were heterogeneous in their design, approach to exposure assessment, and lung-function measures. Given their limited comparability, the Panel concluded that the evidence is "suggestive but not sufficient" to infer a causal association between short- and long-term exposure to traffic-related pollution and decrements in lung function. However, in the case of long-term exposure, there was some coherence in the data, suggesting that (1) long-term exposure is associated with changes in lung function in adolescents and young adults; (2) lung-function measures are lower in people who live in more polluted areas; and (3) changing residence to a less-polluted area in one study is associated with improvements in lung function (Burr et al. 2004). The first and second points are consistent with longer-lasting effects on lung structure and/or function. The third point can be interpreted to indicate that some component of the apparent effects on lung function is reversible or is more the result of short-term exposure.

Chronic Obstructive Pulmonary Disease Because only two of the COPD studies fulfilled the criteria for inclusion in the review and their results were not consistent, the Panel concluded that there is "inadequate and insufficient" evidence for causal associations between exposure to traffic pollution and COPD.

Toxicology

A very limited database of controlled human exposure has shown short-term reductions in forced expiratory volume in 1 second (FEV_1) and increases in inflammation with exposure to traffic-related air pollution. However, the two end points have not been associated with each other. Virtually no data are available from animal models. There are no studies of traffic-related air pollution and COPD.

While the epidemiology studies do provide suggestive evidence for chronic exposure effects on lung function in adolescents and young adults, there are too few toxicologic data to indicate what mechanisms underlie these observations. The aggregate epidemiologic and toxicologic evidence on chronic exposure to traffic-related air pollution and altered lung function in older adults and the occurrence of COPD is too sparse to permit any inference with respect to causal association.

ALLERGY

Epidemiology

The 16 epidemiology studies on this outcome included in the review not only had to meet criteria for the quality of their exposure data but also had to report at least one of the following: (1) positive skin-prick testing for common aeroallergens; (2) serum-specific IgE to common aeroallergens; (3) a physician's diagnosis of eczema or allergic rhinitis; or (4) use of questionnaires on the history of symptoms of hay fever, seasonal runny nose, rhinitis or conjunctivitis, or itchy eyes. With a few inconsistent exceptions, results based on the skin-prick test reactivity or allergen-specific IgE failed to show associations with any of the traffic-exposure surrogates. Inconsistent results with self-reported symptoms were also noted. The Panel concluded that there is "inadequate and insufficient" evidence to infer a causal association, or even a noncausal association, between exposure to traffic-related pollution and IgE-mediated allergies. Overall, the lack of consistency across epidemiology studies might have reflected a failure to identify susceptible subgroups.

Toxicology

The Panel noted that the toxicology data provide strong mechanistic evidence with respect to the diesel particle component of traffic-generated pollution and IgE-mediated allergic reactions and some evidence for NO_2 and late-phase response to allergen. However, the epidemiology studies were inconsistent. The relevance of the toxicology studies (often by nasal instillation with diesel exhaust particles) to the actual manifestations of nonasthmatic allergic phenotypes (e.g., allergic rhinitis or conjunctivitis, eczema, serum-specific IgE, and evidence of sensitization to aeroallergens) could not be determined.

BIRTH OUTCOMES

Epidemiology

Although a considerable body of data from around the world has identified consistent associations between exposure to ambient air pollution in general and various birth-outcome measures (low birth weight, small for gestational age, and perinatal mortality), only four studies of exposure to traffic-related pollution met the criteria for inclusion in this review. The small number of studies and their limited geographic coverage led the Panel to conclude that there is "inadequate and insufficient" evidence to infer causality.

Toxicology

The toxicology studies reported effects on reproductive organs and sperm functionality in animals, but these outcomes were not evaluated in the epidemiology studies. Among the challenges in interpreting these results are the data limitations and the almost-universal use of very high exposure concentrations that have questionable relevance to actual ambient concentrations. Due to their lack of overlap, the epidemiology and toxicology studies on reproductive health and birth outcomes do not lend themselves to any overall synthesis.

CANCER

Epidemiology

The Panel focused on general-population exposure studies and did not review the extensive epidemiologic literature on cancer from occupational exposure to traffic emission constituents (e.g., benzene and diesel exhaust). Among the studies reviewed, five were of childhood cancers (mainly leukemias, lymphomas, and cancers of the central nervous system), and four of adult cancers (two of lung cancer, one of female breast cancer, and one of several cancers combined). Data on childhood cancers were inconclusive in terms of overall consistency and of specific cancers. Too few data were available in adults. Overall the Panel concluded that the evidence was "inadequate and insufficient" to make inferences for causality between exposure to traffic pollution and cancer.

Toxicology

The toxicologic research summarized included in vitro mutagenicity studies of exposure of cells to PM from traffic pollution, diesel or biodiesel exhaust, and organic components of some of these mixtures, as well as animal carcinogenicity studies after exposure to exhaust from diesel and gasoline-fueled engines. Although studies in cells demonstrating the capacity of DEP to induce DNA-strand breaks, base oxidation, and mutagenicity provide a possible mechanism for the induction of carcinogenicity by traffic-related pollution, the applicability of in vitro mutagenicity studies to human risk assessment has been questioned.

Animal studies have demonstrated the ability of high concentrations of exhaust components in both diesel and gasoline-fueled engines to cause tumors in animals. However, caution must be exercised in extrapolating these data to people exposed to much lower concentrations of pollutants, as seen in the epidemiology studies. Therefore, the Panel concluded that any statement that tries to relate the toxicologic to the epidemiologic data is premature at this time.

OVERALL CONCLUSIONS

Studies have shown that traffic-related emissions affect ambient air quality on a wide range of spatial scales, from local roadsides and urban scales to broadly regional background scales. Based on a synthesis of the best available evidence, the Panel identified an exposure zone within a range of up to 300 to 500 m from a major road as the area most highly affected by traffic emissions (the range reflects the variable influence of background pollution concentrations, meteorologic conditions, and season).

Surrogates for traffic-related exposure have played, and are likely to continue to play, a preeminent role in exposure assessments in epidemiology studies. The optimal selection of relevant surrogates (especially surrogates that are single chemicals) depends on accurate knowledge of the degree to which they represent the chemical and physical properties of the actual primary traffic-pollution mixtures to which humans are exposed, which, in turn, depends on accurate knowledge of motor-vehicle–emissions composition and near-source transformation and dispersion. The Panel concluded that none of the pollutant surrogates (CO, NO_2, UFP, EC, and benzene) is unique to emissions from motor vehicles. Among the surrogates based on traffic-exposure models, the question remains as to the extent to which the proximity model (i.e., the simple distance-to-road measures) should be employed in future epidemiology studies because it is particularly prone to yielding measures potentially containing extraneous information that can lead to the confounding of associations between health effects and exposure. In the Panel's view, the hybrid model is the current optimal method of assigning exposures to primary traffic-related pollution.

Many aspects of the epidemiologic and toxicologic evidence relating adverse human health effects to exposure to primary traffic-generated air pollution remain incomplete. However, the Panel concluded that the evidence is sufficient to support a causal relationship between exposure to traffic-related air pollution and exacerbation of asthma. It also found suggestive evidence of a causal relationship with onset of childhood asthma, nonasthma respiratory symptoms, impaired lung function, total and cardiovascular mortality, and cardiovascular morbidity, although the data are not sufficient to fully support causality. For a number of other health outcomes, there was limited evidence of associations, but the data were either inadequate or insufficient to draw firmer conclusions. The Panel's conclusions have to be considered in the context of the progress made to reduce emissions from motor vehicles. Since the epidemiology studies are based on past estimates of exposure from older vehicles, they may not provide an accurate guide to estimating health associations in the future.

In light of the large number of people residing within 300 to 500 m of major roads, the Panel concludes that the sufficient and suggestive evidence for these health outcomes indicates that exposures to traffic-related pollution are likely to be of public health concern and deserve public attention. Although policy recommendations based on these conclusions are beyond the scope of this report, the Panel has tried to organize, summarize, and discuss the primary evidence in ways that will facilitate its usefulness to policy makers in the years ahead.

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Addendum to the 1997 Federal Highway Cost Allocation Study Final Report U.S. Department of Transportation Federal Highway Administration May 2000

Introduction

When the 1997 Federal Highway Cost Allocation Study (HCAS) was sent to Congress in August 1997, estimates of air pollution-related costs of highway use were not included. Research by the Environmental Protection Agency (EPA) on social costs associated with air pollution was being completed and the Department of Transportation wanted estimates of air pollution costs attributable to highway use by motor vehicles to reflect the new EPA research. This addendum to the 1997 Federal HCAS presents estimates of air pollution-related costs of highway use and summarizes how these costs relate to other costs analyzed in the 1997 Federal HCAS. In this addendum, as in the 1997 HCAS report, costs of air pollution, congestion, and other impacts of highway use not borne by transportation agencies represent social and economic costs incurred by affected individuals, not engineering costs to comply with standards or to mitigate adverse impacts as the term "costs" is often used in the environmental literature.

Two changes relevant for highway cost allocation have occurred since the 1997 Federal HCAS was submitted to Congress. First, proceeds of 4.3 cents per gallon of motor fuel tax that had been dedicated for deficit reduction by the Omnibus Budget Reconciliation Act of 1993 (P.L. 103-66) were directed to the Federal Highway Trust Fund beginning October 1, 1997 by the Taxpayer Relief Act of 1997 (P.L. 105-34). This not only increased total highway user revenues available for highway and related improvements, but it also changed the relative shares of Federal user fees paid by different vehicle classes. Ratios of user fee payments to highway cost responsibility for different vehicles (so-called equity ratios) were affected by this change.

The second change was passage of the Transportation Equity Act for the 21st Century (TEA-21) (P.L. 105-178). While this watershed legislation builds upon initiatives established in the Intermodal Surface Transportation Assistance Act of 1991 (ISTEA) (P.L. 102-240), it significantly increases overall surface transportation funding levels and has new initiatives to meet challenges of improving safety, enhancing the natural and human environment, and advancing America's economic growth and competitiveness. Changes in authorization levels for different program areas have affected the relative cost responsibility of different vehicle classes and ratios of user fee payments to cost responsibility for different vehicles. These changes are analyzed in this report.

For ease of comparison, this report is organized similarly to the Summary Report of the 1997 Federal HCAS. The analysis year continues to be 2000, and the same vehicle classes, vehicle miles of travel, and other vehicle characteristics are used. This not only facilitates comparison with the earlier report, but is essential if results are to be directly useful for the Department's Comprehensive Truck Size and Weight (TS&W) Study which uses travel characteristics developed for the 1997 Federal HCAS in its base case.

Summary of Findings

Total social costs of air pollution associated with motor vehicle use are estimated to range from $30 billion to $349 billion per year.[1] Most of those costs are associated with premature death and illness caused by particulate matter, including both direct particulate emissions and the secondary formation of particulates from other emissions. The wide range of air pollution cost estimates is indicative of the many uncertainties surrounding costs of motor-vehicle-related air pollution.

The 1997 HCAS discussed four main costs of highway use not borne directly by transportation agencies -- crash costs, air pollution, congestion, and noise. Based on mid-range estimates, crash costs are the largest of those costs, accounting for about 75 percent of total costs for those four impacts. Congestion costs represent the next highest cost (14%), followed by air pollution (9%) and finally noise (1%). Most crash and congestion costs are borne directly by motorists, but impacts of air pollution and noise are not directly tied to an individual's use of the highway.

As noted above, the Omnibus Budget Reconciliation Act of 1993 imposed a 4.3 cents per gallon tax on transportation fuels to be used for deficit reduction. Proceeds of this tax were not considered to be highway user fees - they were deposited in the General Fund rather than the Highway Trust Fund, and were not available to finance highway, transit, or other transportation improvements. Since proceeds of the 4.3 cents per gallon deficit reduction tax were not highway user fees, they were not included in the 1997 Federal Highway Cost Allocation Study.

The Taxpayer Relief Act of 1997 directed that proceeds of the 4.3 cents per gallon tax on highway motor fuels that had been dedicated for deficit reduction should be deposited in the Highway Trust Fund beginning October 1, 1997 and be available for transportation purposes. This made the 4.3 cents per gallon tax a highway user fee which should be included with other fuel tax revenues in highway cost allocation. The change affects the relative equity of the Federal highway user fee structure. The share of total Federal highway user revenues paid by heavy trucks declines, thereby reducing the share of highway cost responsibility that heavy trucks pay through user fees.

In the 1997 HCAS combination trucks were found, on average, to pay 90 percent of their Federal highway cost responsibility through user fees, but with changes in the fuel tax they now pay only 80 percent of their cost responsibility. The heaviest combinations, those over 80,000 pounds, pay only half of their cost responsibility.

Programmatic changes enacted in the recent TEA-21 are anticipated to have virtually no effect on user fee equity.

The Department plans to update the 1997 HCAS before the next surface transportation reauthorization. Potential options to improve overall user fee equity will be examined in greater depth in that study.

Vehicle Travel Characteristics and Population by Different Vehicle Classes

Table 1 shows total 2000 vehicle miles of travel (VMT) by different groups of vehicles. Travel for single unit and combination truck classes is broken down by registered weight groups. Passenger vehicles account for about 93 percent of total VMT in the United States. Single unit trucks and combination trucks account for 3 and 4 percent of total travel, respectively. Over two-thirds of single unit truck travel is by vehicles registered below 25,000 pounds while among combination vehicles, 75 percent of travel is by vehicles registered between 75,000 and 80,000 pounds.

Table 1. Total 2000 Travel and Number of Vehicles by Class and Registered Weights

Vehicle Class/Registered Weight	Vehicle Miles of Travel (millions)		Number of Vehicles	
Passenger Vehicles	**Total**	**Percent**	**Total**	**Percent**
Autos	1,818,461	67.5%	167,697,897	70.0%
Pickups/Vans	669,198	24.8%	63,259,330	26.4%
Buses	7,397	0.2%	754,509	0.3%
Total	2,495,056	92.6%	231,711,736	96.7%
Single Unit Trucks				
>25,000 pounds	56,451	2.1%	4,126,241	1.7%
25,001 - 50,000 pounds	18,631	0.7%	1,352,441	0.6%

<50,000 pounds	8,018	0.3%	491,745	0.2%
Total	83,100	3.1%	5,970,431	2.5%
Combination Trucks				
>50,000 pounds	6,744	0.3%	253,022	0.1%
50,001 - 70,000 pounds	16,685	0.4%	225,347	0.1%
70,001 - 75,000 pounds	5,926	0.2%	94,509	0.0%
75,001 - 80,000 pounds	86,176	3.2%	1,295,973	0.5%
80,001 - 100,000 pounds	3,879	0.1%	64,365	0.0%
<100,001 pounds	2,279	0.1%	37,788	0.0%
Total	115,689	4.3%	1,971,004	0.8%

In Chapter II of the main 1997 HCAS report, VMT, operating weight, and registered weight distributions for 20 different vehicle classes were presented. Vehicle classes include automobiles, pickups and vans, buses, three types of single unit trucks, six types of single trailer combinations, three types of truck-trailer combinations, four types of twin-trailer combinations, and a triple trailer combination. Truck travel and operating weight distributions on each of 12 highway functional classes are also estimated for each vehicle configuration. Data needs of the Department's Comprehensive TS&W Study were important considerations in selecting configurations to be included in the 1997 Federal HCAS.

Figure 1 shows VMT for different vehicle classes in rural and urban areas. Almost two-thirds of total automobile travel is in urban areas, a much higher percentage than for other vehicle classes. Over half of the annual travel by pickups, vans, buses, and single unit trucks is in urban areas, but only 40 percent of combination truck travel is in urban areas.

Figure 1. Distribution of VMT in Rural and Urban Areas

Federal-aid Highway Program Costs

The distribution of Federal obligations by improvement type and highway functional class has a strong influence on the relative cost responsibility of different vehicle classes. Estimates of the 2000 distribution of Highway Trust Fund (HTF) obligations by improvement type in the 1997 HCAS were based on the actual distribution of obligations during the 1993 to 1995 base period. For analysis purposes total 2000 obligations were assumed to equal total revenues to the HTF in Calendar Year 2000 which were estimated to be $27,174 million including $3,380 million for the Mass Transit Account (MTA) of the HTF. As noted above two laws passed since the 1997 HCAS have affected the level and distribution of Federal obligations for highway-related purposes. First, the Taxpayer Relief Act of 1997 transferred proceeds of 4.3 cents per gallon of Federal motor fuel taxes that had been dedicated for deficit reduction to the HTF, thereby increasing overall funds available for highway-related purposes. Second, TEA-21 reauthorized surface transportation programs for six years, raising most program levels with some changes in the distribution of funds among the various programs. TEA-21 also guarantees that highway and transit

program funding will be aligned with actual and projected HTF receipts. The most recent estimate of calendar year 2000 HTF receipts, including proceeds of the 4.3 cents per gallon that previously had been dedicated for deficit reduction, is $33,233 million.

Table 2 compares the relative authorizations for major program areas under TEA-21 with those under ISTEA. In most cases the distribution of funds is quite similar. One notable exception is the elimination of a separate Interstate Construction program in TEA-21. All remaining work to complete the Interstate System was fully funded under prior legislation. Certain improvements to the Interstate System are eligible under the Interstate Maintenance program and Interstate System lane additions are eligible from National Highway System funds.

Table 2. Comparison of TEA-21 and Major ISTEA Program Authorizations

Program Area	TEA-21	ISTEA
Interstate Maintenance	13.8%	13.8%
Interstate Construction	0	5.9
National Highway System	16.5	17.1
Bridge	11.8	13.1
Surface Transportation Program	19.2	19.4
Congestion Mitigation and Air Quality	4.7	4.9
Minimum Allocation	13.7	9.3
Other	20.3	16.5
Total	100%	100%

Translating changes in authorization levels for different programs into changes in the distribution of obligations by improvement type and highway functional class is difficult. TEA-21, like ISTEA, provides States considerable flexibility to shift funds among program categories. In this analysis, the distribution of funds by improvement type for each program area in 2000 is assumed to be the same as the distribution for that program area in 1997.

Table 3 compares 2000 Federal obligations by improvement type estimated for the 1997 HCAS with revised estimates based on the TEA-21 program composition. Assuming that funds from each program area are spent in the same manner as they were in 1997, the TEA-21 program composition would be expected to have slightly more capacity expansion, and slightly less system preservation than was estimated for the 1997 HCAS based on the overall 1993-1995 distribution of obligations by improvement type.

Table 3. 2000 Distribution of Federal Highway Program Costs Estimated in 1997 HCAS and Under TEA-21 ($ Millions)

Category	Improvement Type	1997 HCAS		TEA-21	
		Amount	Percent	Amount	Percent
New Capacity	New Construction	$2,941	10.8%	$2,879	8.7%
	Reconstruction - Added Lanes	$937	3.4%	$2,864	8.6%
	Major Widening	$1,836	6.8%	$2,007	6.0%
	Total	$5,713	21.0%	$7,750	23.3%
System Preservation	3R Preservation	$7,250	26.7%	$7,934	23.9%
	Minor Widening	$484	1.8%	$651	2.0%
	Bridge Replacement	$2,114	7.8%	$2,480	7.5%
	Major Bridge Rehabilitation	$1,198	4.4%	$1,110	3.3%
	Minor Bridge Rehabilitation	$445	1.6%	$643	1.9%
	Total	$11,490	42.3%	$12,819	38.6%
System Enhancement	Safety/TSM	$2,542	9.4%	$3,112	9.4%
	Environmentally-Related	$530	2.0%	$1,064	3.2%
	Other Projects	$1,113	4.1%	$590	1.8%
	Total	$4,184	15.4%	$4,766	14.3%

MTA		$3,380	12.4%	$4,597	13.8%
Other		$2,407	8.9%	$3,302	9.9%
Total		$27,175	100.0%	$33,233	100.0%

Again, for analysis purposes, the distribution of obligations by highway functional class is assumed to be the same in 2000 as in the 1993-1995 base period. Two-thirds of Federal obligations are on urban highways and one-third on rural highways. In both urban and rural areas more Federal monies are obligated for improvements on higher order highway systems (Interstate and other principal arterial highways) than on lower order systems.

The distribution of program expenditures by highway type can significantly influence the relative cost responsibilities of different vehicle classes. The distribution of travel on different types of highways varies substantially by vehicle class, and other physical and operational characteristics of highways that can affect cost responsibility also vary by highway type.

Allocation of 2000 Federal Highway Program Costs

In this analysis, procedures for allocating various highway improvement costs among vehicle classes are the same as used in the 1997 HCAS. Table 4 summarizes the cost responsibility of different vehicles for anticipated obligations under the TEA-21 program structure, assuming that funds for each program element under TEA-21 are obligated in the same way they were obligated under ISTEA.

Table 4. 2000 Federal Cost Responsibility by Vehicle Class Under TEA-21 Program Structure ($ Millions)

Vehicle Class/ Registered Weight	**Total Program Costs**	**Cents per Mile**	**Shares of Total**
Autos	$14,501	0.80	43.6%
Pickups/Vans	$5,103	0.76	15.4%
Buses	$237	3.20	0.7%
All Passenger Vehicles	$19,841	0.80	59.7%
Single Unit Trucks			
≤25,000 pounds	$1,245	2.20	3.7%
25,001 - 50,000 pounds	$1,049	5.46	3.2%
>50,000 pounds	$1,344	18.12	4.0%
All Single Units	$3,638	4.38	10.9%
Combination Trucks			
≤50,000 pounds	$231	3.43	0.7%
50,001 - 70,000 pounds	$557	5.21	1.7%
70,001 - 75,000 pounds	$452	7.62	1.4%
75,001 - 80,000 pounds	$7,458	8.65	22.4%
80,001 - 100,000 pounds	$594	15.32	1.8%
>100,001 pounds	$462	20.28	1.4%
All Combinations	$9,754	8.43	29.4%
All Trucks	$13,392	6.74	40.3%
All Revenues	$33,233	1.23	100.0%

Figure 2 compares shares of cost responsibility under the TEA-21 program structure with cost responsibility estimated in the 1997 HCAS based upon the distribution of program costs during the 1994-1995 period. The small differences in program structure between TEA-21 and ISTEA are not large enough to substantially affect the relative cost responsibilities of different vehicle classes. Passenger vehicles have a slightly higher share of cost responsibility under TEA-21 while combinations have a slightly lower share.

Figure 2. Shares of Highway Cost Responsibility
Under TEA-21 Program Structure Compared to 1997
HCAS Shares
Source: FHWA Estimate

Highway User Fee Payments

Highway user charges are fees upon owners and operators of motor vehicles for their use of public highways.

Historically, the primary purpose for imposing highway user fees at both the Federal and State levels has been to raise revenues to finance highway improvement programs. This direct relationship between highway user fees and highway program funding is highlighted by the fact that the Federal Government and many States deposit large parts of their highway user fees in dedicated highway or transportation trust funds rather than in the general fund. The linkage between highway user fees and highway program financing is central to HCASs which seek to determine whether fees paid by each vehicle class cover costs occasioned by those vehicles.

Current Federal highway user fees and rates are shown in Table 5. Federal highway user taxes include taxes on various highway fuels, an excise tax on the sale of heavy trucks, a tax on tires weighing over 40 pounds, and a heavy vehicle use tax (HVUT) on trucks with registered weights over 55,000 pounds. Each of these taxes has been in place for many years, although rates and the specific equipment that is taxed have changed from time to time.

Table 5. Current Federal Highway User Tax Rates

Current Tax	**Tax Rate Under Current Law**
Fuel	
Gasoline	18.3 cents per gallon [1]
Diesel	24.3 cents per gallon [1]
Alternative Fuels	0 - 18.3 cents per gallon [1]
Vehicle Excise Tax	
Heavy Trucks >33,000 pounds, trailers >26,000pounds GVW	12 percent of retail sales for new vehicles (trucks, tractors, or trailers)
Tire Tax	
41 to 70 pounds	15 cents per pound over 40 pounds
71 to 90 pounds	$4.50 plus 30 cents per pound over 70 pounds
Over 90 pounds	$10.50 plus 50 cents per pound over 90 pounds
HVUT	
Annual tax on vehicles 55,000 pounds gross weight or more	$100 plus $22 per 1,000 pounds over 55,000 with an annual cap of $550

[1] excludes 0.1 ¢ per gallon to Leaking Underground Storage Tank Fund

Federal User Fee Payments by Vehicle Class

When the 1997 HCAS was conducted, 4.3 cents per gallon of Federal fuel tax was dedicated for deficit reduction and was not considered a highway user fee. Proceeds of the 4.3 cents per gallon are now deposited in the HTF to be used for purposes eligible under TEA-21, and are now considered highway user fees. This change affects the relative shares of highway user fees paid by different vehicle classes. Table 6 shows Federal highway user revenues (HURs) projected to be paid by different vehicle classes in 2000 under the current user fee structure. Passenger vehicles, which account for 93 percent of total highway travel, pay 68 percent of total Federal highway user fees. Combination trucks, on the other hand, pay 23 percent of total highway user fees even though they travel less than 5 percent of total mileage. Among the truck classes, user fees vary substantially by vehicle weight. Single unit trucks registered at 50,000 pounds or more pay 2.2 times as much per mile in Federal user fees as single unit trucks registered at 25,000 pounds or less. User fees paid by combination trucks do not vary as much with weight as for single unit trucks, but the variation is still substantial.

Table 6. 2000 Federal User Fee Payments by Vehicle Class Under the Current Federal User Charge Structure ($ Millions)			
Vehicle Class/ Registered Weight	**Total User Fee Payments**	**Cents per Mile**	**Shares of Total**
Autos	$14,819	0.81	44.6%
Pickups/Vans	$7,416	1.11	22.3%
Buses	$50	0.67	0.1%
All Passenger Vehicles	$22,285	0.89	67.1%
Single Unit Trucks			
≤25,000 pounds	$1,853	3.28	5.6%
25,001 - 50,000 pounds	$746	3.88	2.2%
>50,000 pounds	$543	7.32	1.6%
All Single Units	$3,142	3.78	9.5%
Combination Trucks			
≤50,000 pounds	$332	4.92	1.0%
50,001 - 70,000 pounds	$561	5.25	1.6%
70,001 - 75,000 pounds	$402	6.78	1.2%
75,001 - 80,000 pounds	$6,006	6.97	18.1%
80,001 - 100,000 pounds	$300	7.74	0.9%
>100,001 pounds	$205	9.01	0.6%
All Combinations	$7,806	6.75	23.5%
All Trucks	$10,948	5.51	32.9%
All Revenues	$33,233	1.23	100.0%

Figure 3 summarizes the average Federal user fees paid per mile of travel by different vehicle classes.

Figure 3.

Figure 4 compares shares of Federal highway user fees paid by passenger vehicles, single unit trucks, and combination trucks under the current user fee structure with shares estimated in the 1997 HCAS when proceeds of the 4.3 cents per gallon were dedicated for deficit reduction and not considered highway user fees. The share of Federal user fees estimated to be contributed by passenger vehicles in 2000 has increased by almost 4 percentage points while the share of total user fees paid by combination vehicles decreased by almost the same amount. This difference arises because combination vehicles also pay other Federal user charges that have not changed since 1997 except for a minor technical change in the taxation of tires on new vehicles. The higher fuel taxes thus have a relatively smaller effect on total user fees paid by combination vehicles than they have on total fees paid by passenger vehicles.

Figure 4. Shares of User fees for Different Vehicle Classes Under Current and 1997 User Fee Structures
Source: FHWA Estimates

2000 Federal Highway User Fee Equity Ratios

The equity of highway user charges typically is measured in HCASs as the ratio of the shares of revenues contributed by each vehicle class to the shares of highway costs that vehicle class occasions. This ratio is often called a revenue/cost ratio or an "equity ratio." As discussed in the 1997 HCAS, highway agency costs are different from the economic costs associated with the operation of different vehicle classes. Analyses of economic costs occasioned by each vehicle class, which include environmental, safety, and delay costs imposed on others as well as pavement, bridge, and other infrastructure costs, are important in considering the economic efficiency of highway user fees. However, HCASs traditionally have focused primarily on the equity of highway user fees as measured by the extent to which each vehicle class pays the share of highway agency costs for which it is responsible. Agency costs considered in HCASs do not reflect what transportation agencies should spend in various areas, but are estimates of how obligations actually are being distributed. The Department's Surface Transportation Conditions and Performance report provides overall estimates of investment requirements to meet system performance and condition objectives, although it does not suggest how much of those costs should be borne by Federal, State, and local transportation agencies.

Table 7 shows estimated Federal equity ratios in 2000 under the current highway user charge structure and the TEA-21 program structure. Equity ratios estimated in the 1997 HCAS are shown for comparison. As a class, automobiles continue to pay about the same share of Federal highway user fees as their share of highway costs, and pickups and vans continue to pay substantially more than their share of highway costs. Differences in equity ratios between automobiles and other passenger vehicles are primarily attributable to the automobiles' better fuel economy (higher miles per gallon) which means they pay less fuel tax per mile of travel than pickups and vans.

Table 7. Ratios of 2000 Federal User Charges to Allocated Costs by Vehicle Class

Vehicle Class/Registered Weight	1997 HCAS Ratios	Updated Ratios
Autos	1.0	1.0
Pickups/Vans	1.4	1.5
Buses	0.1	0.2
Passenger Vehicles	1.1	1.1
Single Unit Trucks		
≤25,000 pounds	1.5	1.5
25,001 - 50,000 pounds	0.7	0.7
> 50,001 pounds	0.5	0.4
Total Single Unit	0.9	0.9
Combination Trucks		
≤50,000 pounds	1.6	1.4
50,001 - 70,000 pounds	1.1	1.0
70,001 - 75,000 pounds	1.0	0.9
75,001 - 80,000 pounds	0.9	0.8
80,001 - 100,000 pounds	0.6	0.5
>100,001 pounds	0.5	0.4
Total Combinations	0.9	0.8
Total All Vehicles	1.0	1.0

User fee equity for single unit and combination trucks is highly dependent on the weight of the vehicles. As a class single units continue to pay about 90 percent of their Federal highway cost responsibility under the new user fee and TEA-21 program structure. In the 1997 HCAS combination trucks as a group were estimated to pay 90 percent of their highway cost responsibility in 2000, but under the new user fee and

program structure, combinations will pay only about 80 percent of their cost responsibility. This reduction in the equity ratio for combination trucks primarily arises because combination trucks will pay a smaller share of Federal user fees under the new user fee structure than they did under the former fee structure while their share of cost responsibility remains virtually the same. For both single unit and combination trucks, there continue to be large differences in equity ratios for vehicles in different weight groups.

Other Highway-Related Costs

The 1997 HCAS included extensive discussions of highway-related costs that are not borne by transportation agencies, but by motorists or society at large. These costs include environmental, safety, congestion, and other costs associated with highway use. While transportation agencies do not bear these costs directly, their concern about such costs is evidenced by a broad range of regulatory and programmatic initiatives to reduce crashes, emissions, and other consequences of highway use that create costs for society. Significant progress has been made in reducing many of these social costs of highway use, but substantial costs remain. As discussed in the 1997 HCAS, crashes, congestion, air pollution, and noise are generally acknowledged to be the most significant social costs that can be quantified.

As noted in the Introduction to this Addendum, the 1997 HCAS did not include estimates of air pollution costs. Work on a major EPA study on Benefits and Costs of the Clean Air Act was still underway which was relevant to estimates of air pollution costs associated with motor vehicle use. The Department postponed estimating highway-related air pollution costs until that work was completed and the same methods could be used for the Department's highway cost allocation study.

One point emphasized in the 1997 HCAS is the uncertainty surrounding estimates of most social costs of highway use. Differences between high and low cost estimates may vary by one or more orders of magnitude. Many factors contribute to this uncertainty including (1) the difficulty in isolating effects of highway-related factors from other factors that contribute to health and other social costs; (2) the site-specific nature of many social costs of highways; and (3) uncertainties in valuing costs of premature deaths attributable to highway crashes and motor vehicle emissions.

Highway-Related Air Pollution Costs

Motor vehicles produce emissions that in sufficient pollutant concentrations can cause a variety of health and other impacts including shortness of breath, respiratory and other disease, death, structural deterioration, crop damage, and decreased visibility. Since 1970, the Federal Clean Air Act (CAA) and 1977 and 1990 Clean Air Act Amendments (CAAA) have provided a framework for nationwide efforts to reduce motor vehicle and other sources of air pollution. Important provisions of those laws include establishment of National Ambient Air Quality Standards for key pollutants, requirements that States develop implementation plans for attaining those standards, and limits on allowable motor vehicle tailpipe emissions. The ISTEA and TEA-21 complement the CAA by providing funding to implement balanced transportation programs that will reduce emissions.

In 1997, EPA developed a report, The Benefits and Costs of the Clean Air Act, 1970-1990. This report reflects EPA's findings and not necessarily those of other agencies in the Administration. Other agency's concerns included, among other things, the methods used to estimate the number of premature deaths and illnesses avoided due to the CAA, and the methods used to value non-health related benefits. Part of these concerns arise from the no-control baseline EPA uses to estimate reductions that have been achieved in emissions since passage of the CAA. Mindful of other agencies concerns, this Addendum uses EPA's estimates as an illustrative bounding case example of the impact of motor vehicle emissions. Table 8, based on data in EPA's 1998 report, shows the estimated contribution of on-highway motor vehicles to total emissions for key air pollutants in 1990. The EPA estimates that in 1990 motor vehicles accounted for only 2 percent of total sulfur dioxide emissions and 11 percent of total suspended particulate emissions. Conversely, motor vehicles accounted for 70 percent of total carbon monoxide and 2/3 of lead emissions.

Table 8. Major Highway-Related Air Pollutants

Pollutant	Percent of Total 1990 Emissions from Highway Motor Vehicles
Total Suspended Particulates	11.1%
Sulfur Dioxide	2.4%

Nitrous Oxides	36.0%
Volatile Organic Compounds	37.1%
Carbon Monoxide	70.4%
Lead	66.7%

Despite the progress that has been made to date in reducing harmful motor vehicle emissions, air pollution remains a concern in many parts of the country. In its report, The Benefits and Costs of the Clean Air Act, 1970 - 1990, EPA estimates the economic benefits of air pollution reductions achieved under the CAA. Methods used by EPA in its 1998 study are the primary bases of air pollution cost estimates in this report. As noted in the Introduction, costs of air pollution estimated in this Addendum are social and economic costs of air pollution, not the engineering costs to comply with standards or to mitigate adverse impacts as the term "costs" is often used in the environmental literature.

Table 9 shows estimates of economic costs associated with highway-related air pollution based upon data and methods used by EPA in its study. Almost all costs are attributable to mortality, chronic bronchitis, and other respiratory and heart diseases caused by inhalation of particulate matter, but some costs also arise from ozone, sulfur dioxide, nitrogen dioxide, and carbon monoxide. Other effects of air pollution including infant mortality, changes in pulmonary function, lung inflammation, and reduced crop yields are known to arise from air pollution but are not included in these costs because researchers have not yet quantified those effects. Future research should allow a more complete accounting of air pollution costs arising from motor vehicles and other sources.

Table 9. Estimated Economic Costs of Motor Vehicle-Related Air Pollution in 2000 [1]

Pollutant	**Impact**	**Costs of Rural Motor Vehicle Travel $1990 (millions)**	**Costs of Urban Motor Vehicle Travel $1990 (millions)**	**Costs of All Motor Vehicle Travel $1990 (millions)**
Particulate Matter	Mortality[2]	12,695	21,558	31,162
Particulate Matter	Non-fatal Illness	3,683	6,232	9,183
Sulfur dioxide, nitrogen dioxide, carbon monoxide	Non-fatal Illness	0	51	51
Ozone	Non-fatal Illness	28	16	47 [3]
Total		16,406	27,857	40,443 [4]

[1]Costs for "criteria" pollutants only (does not include toxic pollutant costs). Excludes certain health-related costs and costs of reduced visibility, crop damage, and material damage not quantified by EPA.
[2]Mortality costs based on DOT's $2.7 million estimated cost of a premature death.
[3] Does not include ozone mortality costs, which are highly uncertain.
[4] Comparable estimate using EPA's value of life is $64,681.
Source: Abt Associates, 1998, pages 9-11.

Even costs quantified in Table 9 are highly uncertain due to data and methodological limitations and should be viewed as indicative only of the order of magnitude of costs. Chemical processes that transform emissions into ozone, particulate matter, and other pollutants are very complex, as is the transport of pollutants from their source to where they ultimately affect human health. Sources of some pollutant types are not well understood, nor are some aspects of the health impacts due to motor vehicle emissions. Scientific data on relationships between air pollution and premature death also are weak in many cases. This Addendum does not fully discuss these limitations and uncertainties. Technical reports by Systems Applications International[(2)] and Abt Associates,[(3)] from which air pollution cost estimates shown in Table 9 and subsequent tables are derived, discuss many of those factors and indicate areas where further research is needed. They also discuss the various empirical studies that have attempted to estimate economic costs for different pollutants and issues involved in extrapolating results of those case-specific studies to nationwide cost estimates.

There is considerable debate about valuing economic costs of premature deaths associated with air pollution. This debate is important because costs associated with premature deaths from particulate matter account for over three-quarters of total air pollution-related costs.

In policy and regulatory analyses, EPA uses a value of $4.8 million to represent the cost of a premature death. This value is the mean of estimates from 26 studies dating back to the mid 1970s that have attempted to place a value on the cost of premature deaths. Estimates from those studies range from $0.6 million to $13.5 million, reflecting the large uncertainties in trying to estimate the public's willingness to pay to avoid premature death.

The Department of Transportation has adopted a value of $2.7 million per premature death, based on a comprehensive 1991 study by the Urban Institute. While that study focused on the costs of premature deaths associated with highway crashes, it drew upon many of the same studies that EPA used, and the results apply to premature deaths attributable to factors other than highway crashes. Both DOT and EPA have devoted significant efforts in developing these cost estimates, and while their costs differ somewhat, they fall within a much broader range of costs that have been estimated by others.

The EPA's study, The Benefits and Costs of the Clean Air Act, notes that the Science Advisory Board charged with reviewing the study recommended comparing cost estimates based upon EPA's traditional value of life estimates with costs using an alternative approach for valuing costs of air pollution-related deaths. That approach explicitly considers the number of years by which lives may be shortened as a result of exposure to air pollution. Under this life-years lost approach, costs of premature death are estimated to be about 55 percent of EPA's value of $4.8 million per premature death. This translates into an average value of about $2.6 million per premature death, which coincidentally, is very close to the value DOT uses for the cost of premature deaths. The EPA has additional research underway in this area.y

Figure 5 compares total motor vehicle-related air pollution costs estimated using DOT's cost of premature death with costs estimated using EPA's value. As noted above, preliminary estimates using an alternative life-years lost approach would be slightly less than costs using the DOT cost estimates, but more work needs to be done to develop a consensus on the advisability and applicability of a life-years approach to valuing costs of premature death associated with air pollution and to refine those cost estimates. It is also important to note that data and methods used by EPA that were the basis for these cost estimates

continue to be improved.

Figure 5. Comparison of Social Costs of Highway Related Air Pollution in 2000 Based on DOT and EPA Costs of Premature Death
Source: Abt Associates for EPA and FHWA.

Air pollution costs attributable to motor vehicles were estimated by comparing levels of air pollution when all sources of pollution were present with air pollution when motor vehicle emissions were eliminated. Costs attributable to rural motor vehicle travel were estimated by eliminating all urban motor vehicle travel, and urban costs were estimated by eliminating rural travel. These methods were necessary to eliminate interactions between emissions in rural and urban areas that would make it impossible to estimate whether there are significant differences in costs associated with travel in rural and urban areas.

About two-thirds of motor vehicle-related air pollution costs are attributable to urban travel and one-third to rural travel. As can be seen in Table 9, the sum of these costs for urban and rural travel individually is slightly greater than costs for all motor vehicle travel. This is explained by regional transport of both precursor emissions and air pollutants and the complex chemistry leading to the production of ozone and particulate matter.

Figure 6 shows overall average air pollution costs per mile of travel in rural and urban areas. Average costs for rural travel are about 1.5 cents per mile compared to 1.75 cents per mile for urban travel. Average costs for all motor vehicle travel are about 1.5 cents per mile. Costs for all travel are lower than would be expected based on costs for urban and rural travel alone because, as noted above, total costs for all motor vehicle travel are less than the sum of costs of rural and urban travel when those costs are estimated individually.

Figure 6. Average Air Pollution Costs per Mile in Rural and Urban Areas
Source: FHWA estimates based on SAI and Abt Associates data.

The average costs shown in Figure 6 mask large differences in highway-related air pollution costs in various parts of the country. They also do not reflect differences in costs associated with travel by different vehicle classes.

While the uncertainty of cost estimates was emphasized in technical reports submitted by consultants for this study, no explicit range of high, medium, and low estimates of motor vehicle-related air pollution costs was developed. A recent study of air pollution costs attributable to motor vehicles by Mark Delucchi and Donald McCubbin estimated that costs range from 0.9 to 14 cents per mile.[(4)] This is a wide range, but it is consistent with ranges estimated for other social costs of highway use.

A major source of variation in estimates of air pollution costs attributable to motor vehicles is whether or not road dust is included. The EPA does not classify road dust as a pollutant attributable to motor vehicles, but others have included road dust in cost estimates.

Table 10 shows high, medium, and low estimates of the costs of air pollution attributable to motor vehicle use along with the costs of crashes, congestion, and noise that were included in the 1997 HCAS. The mid-range air pollution cost estimate is taken from costs shown in Table 9. The EPA did not develop ranges of motor-vehicle-related air pollution costs; high and low cost estimates shown in Table 10 are taken from McCubbin and Delucchi's estimates of total social costs of motor vehicle use. None of the air pollution cost estimates include costs associated with road dust stirred up by the passage of motor vehicles.

Table 10. 2000 High, Mid-Range, and Low Estimates for Social Costs of Motor Vehicle Use ($ Millions)

	High	Mid-Range	Low

Congestion	$181,635	$61,761	$16,352
Crash Costs	$839,463	$339,886	$120,580
Air Pollution	$349,100	$40,443	$30,300
Noise	$11,446	$4,336	$1,214
Total	$1,533,344	$446,319	$170,246

Crash costs represent the largest social cost of motor vehicle use shown in Table 10 across all cost ranges. The high estimate of air pollution costs ranks second among high cost estimates, but mid-range estimates of congestion costs are 50 percent higher than corresponding estimates of air pollution costs. For each of the impact areas shown in Table 10 the mid-range estimate is closer to the low than to the high estimate. This is another reflection of uncertainties surrounding economic costs of highway use. The high cost estimates often include costs which some analysts do not believe should be attributed to highway use, costs that are difficult to quantify, or costs for which only limited evidence exists. Also, the high range costs generally include the highest values that have been estimated for key cost components from among the various studies that have been done whereas mid-range costs typically use values that approximately reflect mean values estimated in other studies. Mid-range cost estimates rely on the soundest evidence available to date for each impact area, but are subject to change over time as new research results become available.

Figure 7 compares highway agency costs with social costs of highway use. Social costs are broken into costs borne by highway users (congestion costs and most crash costs) and costs borne by non-users (air pollution, noise, and a small share of crash costs). While most social costs of highways included in Figure 7 are borne by highway users, the $90 billion borne by society in general is significant.

Figure 7. Total 2000 Highway Program Costs and Social Costs Borne by Users and Non-Users
Source: FHWA estimates.

Air Pollution Costs Attributable to Different Vehicle Classes

Table 11 shows percentages of different types of emissions attributable to the vehicle classes included in EPA models. These vehicle classes do not correspond well with vehicle classes used by the Department for highway cost allocation and truck size and weight analyses. In particular, most of the trucks with three or more axles are all grouped in the EPA class of heavy duty diesel vehicles. Thus, it is difficult to directly use the EPA models to estimate air pollution costs attributable to the different highway cost allocation study vehicle classes.

Table 11. Distribution of Various Emissions by Vehicle Class

	LD Gas Vehicles	LD Gas Trucks 1	LD Gas Trucks 2	HD Gas Vehicles	LD Diesel Vehicles	LD Diesel Trucks	HD Diesel Vehicles	Motor-cycles	Total
SOA	51%	15%	10%	5%	0%	0%	17%	1%	99%
SOx	45%	15%	8%	3%	0%	0%	29%	0%	100%
NOx	42%	29%	0%	4%	0%	0%	25%	0%	100%
VOC	60%	30%	0%	5%	0%	0%	5%	0%	100%
PM10	26%	7%	4%	3%	0%	0%	59%	0%	99%
PM, coarse	47%	12%	7%	4%	0%	0%	29%	0%	99%
PM2.5	19%	6%	3%	3%	0%	0%	68%	0%	99%
Group 1	50%	29%	0%	4%	0%	0%	16%	0%	99%
Group 2	50%	28%	0%	4%	0%	0%	17%	0%	100%
Group 3	50%	28%	1%	4%	0%	0%	17%	0%	100%

LD Gas Vehicle - gas-powered automobile

LD Gas Truck 1 - gas-powered trucks weighing 6,000 pounds or less (pickups, vans, etc.)

LD Gas Truck 2 - gas powered trucks weighing between 6,001 and 8,500 pounds

HD Gas Vehicles - gas powered trucks and buses weighing more than 8,500 pounds

LD Diesel Vehicle - Diesel-powered automobiles

LD Diesel Trucks - diesel-powered trucks weighing 8,500 pounds or less

HD Diesel Vehicles - diesel-powered vehicles weighing more than 8,500

SOA - secondary organic aerosols

SOx - sulfur dioxide

NOx - nitrogen oxide

VOC - Volatile organic compounds

PM10 - directly emitted particulate matter less than 10 microns

PM, coarse - directly emitted particulate matter between 10 and 2.5 microns

PM2.5 - directly emitted particulate matter less than 2.5 microns

Group 1 - VOC and NOX, the primary precursor emissions for ozone

Group 2 - Group 1 plus PM2.5, SOx, and SOA, precursors for both ozone and PM formation

Group 3 - Group 2 plus ammonia, a precursor for both ozone and PM formation

Except for PM_{10} and $PM_{2.5}$, automobiles account for the largest share of various motor vehicle emissions. Because of the complex chemical processes by which emissions are transformed into particulate matter, ozone, and other secondary pollutants, and variations in the transport of pollutants in different regions of the country, relative emissions attributable to different vehicle classes cannot be directly translated into relative air pollution costs without detailed air quality modeling that was beyond the scope of this project. For instance, while heavy trucks account for a large share of particulate emissions, they account for a smaller share of costs because significant portions of particulate matter are formed through chemical reactions involving other compounds emitted predominantly by light trucks and passenger vehicles.

Four vehicle classes are responsible for 99 percent of all emissions: automobiles; pickups, vans, and sport utility vehicles; heavy duty gas vehicles; and heavy duty diesel vehicles. Other vehicle classes have much less VMT, and thus their total emissions are lower, although emissions per mile of travel would be comparable. The emissions modeling approach used in this study did not differentiate emissions more finely than the eight vehicle classes shown in Table 11. While the relative emissions shown in Table 11 do not directly correspond to the relative contribution to pollution and pollution-related costs for different vehicle classes, they do indicate the relative order of magnitude of the contribution by different vehicle classes. Further work is underway to improve estimates of emissions by different vehicle classes under a

variety of operating conditions. This work should improve the ability to estimate the relative contribution to air pollution costs by different vehicle classes.

Table 12 uses the percentages from Table 11 to estimate total costs attributable to the four EPA vehicle classes that account for the majority of costs along with the average costs per mile of travel for each vehicle class. Costs are estimated by taking proportions of total precursor emissions for each vehicle class, based upon the Group 3 set of emissions shown in Table 11, and multiplying by total air pollution costs. Costs per mile are estimated by dividing total costs for each vehicle class by the VMT for that class. Passenger vehicles (automobiles, pickups and vans) account for about three-quarters of total estimated costs. Costs per mile for pickups and vans are closer to those of trucks than they are to costs per mile for automobiles because pickups and vans are not subject to the same tailpipe emissions standards as automobiles and because they get poorer fuel economy than automobiles.

Table 12. Air Pollution Costs Attributable to Different Vehicle Classes

Vehicle Class	Total Estimated Cost ($1990 millions)	Cents Per Mile of Travel
Automobiles	$20,343	1.1
Pickups, Vans	$11,324	2.6
Gasoline Vehicles > 8,500 pounds	$1,699	3.0
Diesel Vehicles > 8,500 pounds	$6,794	3.9
Overall	$40,443	1.5

Marginal Costs of Highway Use

Marginal costs of highway use reflect changes in total costs associated with an additional increment of travel. Marginal costs include incremental costs to the highway user (e.g., added vehicle operating cost and travel time), costs to public agencies (added use-related rehabilitation and maintenance costs), and external costs such as air pollution and congestion costs imposed on others. Many marginal costs vary by either location of travel or time-of-day. For instance, incremental pavement deterioration associated with an extra mile of travel by particular vehicle classes depends on the design and condition of the pavement upon which they travel, temperature, and other local characteristics. Congestion costs associated with an additional mile of travel on low-volume rural Interstate highways are negligible, but costs on urban Interstate highways may be high, particularly during peak periods when traffic volumes are greatest.

With the exception of their own travel time, vehicle operating costs, and perhaps risks of having a crash, highway users normally do not consider many of these marginal costs when deciding whether to make a trip. In general, economic efficiency would be enhanced if users had to pay those marginal costs they do not consider in trip-making decisions.

Since many marginal costs vary according to when or where a trip is made, charges based on average costs will not necessarily promote improved economic efficiency. To achieve the greatest degree of efficiency, fees reflecting the marginal costs of trips made in various locations at various times of the day should be charged. Then, only trips whose benefits equal or exceed the full cost of the trip would be made.

Table 13 shows estimates of marginal pavement, congestion, crash, air pollution, and noise costs in 2000 for selected vehicles operating under different conditions. Costs reflect typical or average conditions; in certain locations, costs could be expected to vary from values shown. The relative costs of pavement damage, congestion, crashes, air pollution, and noise for different vehicle classes operating in rural and urban areas are as important as the individual costs themselves.

Table 13. 2000 Pavement, Congestion, Crash, Air Pollution, and Noise Costs for Illustrative Vehicles Under Specific Conditions

Vehicle Class/Highway Class	Cents per Mile					
	Pavement	Congestion	Crash	Air Pollution	Noise	Total
Autos/Rural Interstate	0	0.78	0.98	1.14	0.01	2.91
Autos/Urban Interstate	0.1	7.70	1.19	1.33	0.09	10.41

40 kip 4-axle S.U. Truck/Rural Interstate	1.0	2.45	0.47	3.85	0.09	7.86
40 kip 4-axle S.U. Truck/Urban Interstate	3.1	24.48	0.86	4.49	1.50	34.43
60 kip 4-axle S.U. Truck/Rural Interstate	5.6	3.27	0.47	3.85	0.11	13.3
60 kip 4-axle S.U. Truck/Urban Interstate	18.1	32.64	0.86	4.49	1.68	57.77
60 kip 5-axle Comb/Rural Interstate	3.3	1.88	0.88	3.85	0.17	10.08
60 kip 5-axle Comb/Urban Interstate	10.5	18.39	1.15	4.49	2.75	37.28
80 kip 5-axle Comb/Rural Interstate	12.7	2.23	0.88	3.85	0.19	19.85
80 kip 5-axle Comb/Urban Interstate	40.9	20.06	1.15	4.49	3.04	69.64
NOTE: S.U. = Single Unit, Comb. = Combination; Air pollution costs are averages of costs of travel on all rural and urban highway classes, not just Interstate. Available data do not allow differences in air pollution costs for heavy truck classes to be distinguished.						

Pavement costs represent the contribution of a mile of travel by different vehicles to pavement deterioration and the costs of repairing the damage. Congestion costs reflect the value of added travel time due to additional small increments of traffic. Crash costs include medical costs, property damage, lost productivity, pain and suffering, and other costs associated with highway crashes. Air pollution costs are measured in terms of the cost of premature death, illness, and other effects of various highway-related emissions. Noise costs reflect changes in the value of adjacent properties caused by motor vehicle-related noise.

Marginal air pollution costs are particularly difficult to estimate because they are influenced by other sources of pollution in an area, climatic and atmospheric conditions, the complex chemistry of secondary pollutant formation, and other factors that vary over time and location. Not only do emissions per mile of travel vary depending on local conditions, but more importantly, contributions of those emissions to changes in pollutant concentrations and to health and other air pollution-related costs vary widely.

Marginal air pollution costs were estimated for this study by first estimating differences in air pollution concentrations with and without highway traffic. Costs of the air pollution attributable to motor vehicle use were then estimated based on marginal costs of changes in pollutant concentrations estimated in other recent studies and used by EPA in its study, The Benefits and Costs of the Clean Air Act, 1970 - 1990.

Finally, per-mile costs were estimated by dividing total costs by VMT. While strictly speaking these are average rather than marginal costs with respect to VMT, they are derived from estimates of the marginal costs of changes in air pollution concentrations. Furthermore changes in air pollution concentrations with and without motor vehicle emissions were less than 10 percent at most locations where changes were estimated. Since resource constraints did not allow direct estimation of marginal air pollution costs of motor vehicle use, the average cost estimates are used to approximate marginal costs.

Separate estimates were made of costs of rural and urban travel but those estimates do not show the large variations that occur in specific rural or urban locations. No separate estimates were made for travel on different highway functional classes. Costs for different vehicle classes are estimated simply on the basis of relative emissions. Considerable work remains to improve estimates of marginal air pollution costs by different vehicle classes.

While marginal pavement, safety, congestion, and noise costs more closely represent true marginal costs than do marginal air pollution costs, they all represent average or typical marginal costs estimated for a

broad cross section of Interstate highways. Costs at specific locations could vary considerably from costs shown, especially for noise costs which, like air pollution costs, are subject to many external factors. Variations in marginal costs among vehicles and locations are not uniform; they are highly dependent on the type of cost being considered. Pavement, congestion, air pollution, and noise costs are higher in urban areas than rural areas, but marginal crash costs are higher in rural areas, reflecting the higher fatality rates for travel in rural areas. Cost differences among vehicle classes also vary widely. The 80,000 pound 5-axle combination truck operating in urban areas, has marginal costs many times greater than those of autos operating in rural areas, but marginal costs for 60,000 pound combination trucks operating in rural areas are less than marginal costs of automobiles operating on congested urban Interstate highways.

Figure 8 shows high and low ranges of air pollution, noise, congestion, and crash cost estimates along with best estimates (middle range) of those costs based upon the best research in each area. The large uncertainty surrounding these estimates suggests that caution should be exercised in making decisions that could significantly influence either user costs or highway investment based upon these social costs.

Figure 8. 2000 Estimated Ranges of Marginal Costs of Highway Travel

Highway marginal costs cannot directly be separated into Federal and non-Federal costs. Costs result from travel on all highways and to one extent or another affect all segments of society and all geographic areas. All units of government working together have joint responsibilities to take appropriate steps to reduce these costs. These steps may include mitigating costs through regulatory means, making investment decisions that contribute toward reducing highway marginal costs, or using pricing mechanisms to more nearly reflect marginal costs in the prices that motorists pay for highway transportation.

While highway marginal costs cannot be assigned to one level of government or another, there is an interest in how close current Federal user fees are to efficient fees. To compare cost allocations based on efficiency criteria with Federal user fee payments by different vehicles, marginal costs must be distributed among different levels of government. The 1982 Federal HCAS distributed marginal costs in proportion to the shares of total highway user revenues produced at each level of government on the grounds that this would leave the relative roles of each level of government for financing and charging for highways unchanged. The same approach is used in this study.

Table 14 compares the estimated Federal shares of marginal costs from Table 13 to Federal highway cost responsibility estimated in the equity analysis and to Federal user fees paid by different vehicle classes. Comparing Federal user fees with the Federal share of marginal costs reflects the efficiency of the user fee structure while comparing user fees to program cost responsibility is a measure of equity.

Marginal costs and program costs are estimated by different methods for completely different purposes and cannot be added together.

Table 14. 2000 Comparison of Assumed Federal Share of Marginal Highway Costs to Federal Agency Costs and Federal User Fees
(cents per mile)

Vehicle Class/Highway Class	Marginal Costs	Federal Program Costs	Federal User Fees
Autos/Rural Interstate	0.9	0.4	0.8
Autos/Urban Interstate	3.1	1.8	0.8
40 kip 4-axle S.U. Truck/Rural Interstate	2.4	2.1	12.4
40 kip 4-axle S.U. Truck/Urban Interstate	10.3	4.6	12.4
60 kip 4-axle S.U. Truck/Rural Interstate	4.0	8.6	14.0
60 kip 4-axle S.U. Truck/Urban Interstate	17.3	15.3	14.0
60 kip 5-axle Comb*/Rural Interstate	3.0	3.3	6.9
60 kip 5-axle Comb*/Urban Interstate	11.2	8.1	6.9
80 kip 5-axle Comb*/Rural Interstate	5.9	9.5	7.4
80 kip 5-axle Comb*/Urban Interstate	20.9	21.2	7.4

Federal program costs are greater than the estimated Federal share of marginal costs for rural travel by heavy single unit trucks and combinations, but less than marginal costs for automobiles and light single unit trucks. Marginal costs of congestion, noise, and safety are relatively low in rural areas, and overall agency cost responsibility in rural areas exceeds marginal costs for all but the lightest vehicle classes. In urban areas the opposite is true. Not only are costs of congestion, air pollution, and noise higher in urban than rural areas, but marginal pavement costs also are higher, reflecting among other things the higher construction costs in urban areas and the delay incurred by users when pavements are being rehabilitated. Federal user fees per mile of travel exceed marginal costs of rural travel for all vehicle classes except automobiles. Marginal costs of urban travel exceed Federal user fees per mile for all vehicle classes except the light single unit truck.

There currently are no Federal, State, or local user fees imposed that directly reflect congestion, air pollution, noise, or other external costs of highway use. There is interest, however, among some State and local agencies in exploring the feasibility of variable or time-of-day pricing to help manage highway travel in certain corridors. For instance on State Route 91 in California, four additional lanes were constructed with private funds on which tolls are charged that vary by time of day. A project is underway in San Diego under the Value Pricing Pilot Program that has tolls which vary according to the level of congestion.

Fees on "gross emitters," the most polluting of vehicles that are responsible for large percentages of total pollutants, have been suggested as a way to charge the worst polluters for air pollution costs they impose, and general increases in fuel taxes have also been suggested to address air pollution costs. A gross emitter tax could directly reflect air pollution costs, but questions of equity and other implementation issues have prevented such a tax from being implemented to date. General fuel tax increases implemented at the local level would not be as sensitive to factors affecting air pollution as the gross emitter tax, but could reflect regional differences in air pollution costs.

While there are opportunities at the local level to develop user fees that could reflect congestion, air pollution, and other external costs, implementing charges that could reflect the locational and temporal variability or most such costs would be difficult.

Summary and Conclusions

Since the 1997 HCAS was completed, several changes affecting conclusions about the equity and economic efficiency of Federal highway user fees have occurred. First and most importantly, proceeds of

4.3 cents per gallon of Federal fuel taxes have been shifted from the General Fund where they were dedicated to deficit reduction to the Highway Trust Fund where they may be used for highway-related purposes under the new TEA-21 legislation. Second, TEA-21 significantly increased total authorizations for highway, transit and related purposes and shifted the distribution of funding among different program areas. Third, additional information has been developed concerning air pollution-related costs of highway use which fills a large gap in estimates of social and marginal costs of highway travel.

From an equity perspective, the most significant change is an increased spread in ratios of user fee payments to highway cost responsibility between lighter vehicles and heavier vehicles. Table 7 showed that equity ratios for the heaviest single unit trucks and all the weight groups of combination trucks went down. Now only the very lightest combination trucks pay their share of Federal highway cost responsibility. The most common combination vehicles, those registered at weights between 75,000 and 80,000 pounds, now pay only 80 percent of their share of Federal highway costs and combinations registered between 80,000 and 100,000 pounds pay only half their share of Federal highway costs. Any future increase in Federal fuel taxes without corresponding increases in taxes on the heaviest trucks will further exacerbate the underpayment of Federal user fees by heavy trucks.

Changes in program composition and funding levels between ISTEA and TEA-21 did not have a large effect on the relative cost responsibility of different vehicle classes. Much larger changes in relative program funding levels would be required to substantially affect cost responsibility, and the flexibility for States to shift funds from one program to another would temper even large changes in program composition.

Economic costs of motor vehicle-related air pollution remain large, even though substantial progress has been made in abating emissions through a variety of initiatives. While average air pollution costs per mile of travel in rural areas are not much lower than average costs of urban travel - 1.5 cents per mile in rural areas compared to 1.75 cents per mile in urban areas - care must be exercised in interpreting these results because they mask real differences in air pollution-related costs of motor vehicle use in different areas. Air pollution costs of travel in very rural areas away from population centers would be lower than the average rural costs shown in this report, and likewise, costs of travel in urban areas with the highest ambient air pollution levels would be higher than average costs of urban travel shown in this report. Air pollution is one of the most difficult social costs of highway use to evaluate from a policy perspective because effects vary geographically and spill over to other areas in ways that vary from region to region. More research will be needed to further refine estimates of marginal air pollution costs in various locations.

The Department plans to update the 1997 HCAS before the next surface transportation reauthorization. Potential options to improve overall user fee equity will be examined in greater depth in that study and additional research to improve estimates of air pollution and other social costs of highway travel will be conducted.

Footnotes

1. McCubbin, Donald and Delucchi, Mark, "The Annualized Social Cost of Motor-Vehicle Use in the U.S., 1990-91: Summary of Theory, Data, Methods, and Results." Institute of Transportation Studies, University of California, Davis. UCD-ITS-RR-96-3 (1), 1998, p.55.
2. Douglas, Sharon G., et. al., Air-Pollution-Related Social Costs of On-Highway Motor Vehicles, Part 1: Air Quality Modeling, Systems Applications International, June 1998.
3. Abt Associates, Air-Pollution-Related Social Costs of On-Highway Motor Vehicles, Part 2: Physical and Economic Valuation Modeling, June 1998.
4. McCubbin and Delucchi, 1997.

DRAFT COMMENTS ON PROPOSED INTERIM MOTOR VEHICLE EMISSIONS BUDGETS FOR SOUTH COAST AIR BASIN

The Coalition for Clean Air, Coalition for a Safe Environment, Endangered Habitats League, Environmental Defense Fund, East Yard Communities for Environmental Justice, Coalition for a Safe Environment, and the Natural Resources Defense Council submit these comments on the proposal by the California Air Resources Board ("CARB") to adopt motor vehicle emissions budgets (MVEBs) as part of the Air Quality Management Plans (AQMP) for Ozone and PM2.5 that have been submitted to EPA as part of the State Implementation Plan (SIP) for the South Coast Air Basin ("SCAB"). The proposed budgets are currently under consideration by EPA to determine if they meet the criteria for an adequate budget that can be used for conformity purposes prior to EPA's approval of the attainment demonstration and implementing measures. For the reasons described below, the proposed interim budgets for PM2.5 do not meet the federal requirements for adequacy and should not be approved by EPA until California submits a complete attainment demonstration for all portions of the SCAB and adopts additional measures as needed to achieve the emission reductions required by the Clean Air Act to achieve reasonable further progress prior to the attainment deadline, and to attain the NAAQS by the attainment deadline.

Executive Summary.

Commenters object to EPA's approval of the submitted interim budgets for PM2.5 based on two broad concerns:

I) The failure of the attainment demonstration to –

A) Identify the elevated concentrations of PM2.5 in the near-highway environment that have been shown by numerous studies to significantly exceed concentrations recorded at regional monitors, and

B) Estimate the emissions reductions needed to attain the NAAQS in the near-highway environment and include a control strategy designed to reduce these elevated near-highway concentrations to the level of the NAAQS; and

II) The reliance in the AQMP on measures that may not be implemented in the relevant horizon year (or at all), for the purpose of demonstrating attainment and reasonable further progress (RFP), including but not limited to, emissions reductions expected from the marine vessel fuel rule recently set aside by the United States Court of Appeal for the Ninth Circuit, emissions reductions attributed to EPA's locomotive rule which are not projected to be achieved by 2014, and emission reductions from non-road engines assumed in the AQMP, but that may not be mandatory. Further, CARB has failed to include several strategies aimed at reducing emissions rail.

Until the emissions reductions needed to attain the annual and 24-hour NAAQS for PM2.5 in the near-highway environment are known, the emissions reductions needed to meet the RFP targets in the milestone years cannot be determined. Unlike ozone, where the RFP targets require a fixed annual reduction in emissions at the rate of 3% of the baseline emissions inventory, the RFP

targets for PM2.5 are based on the annual reductions needed to achieve the overall reduction target required for attainment. The adopted AQMP contains emission reductions that will achieve the regional reductions shown by the modeling to be necessary for attainment at monitors that do not reflect the incremental impact of highway emissions in the near-highway environment. The attainment demonstration in the AQMP fails to estimate the reductions in particulate emissions from highways needed to attain in the near-highway environment where approximately 1.5 million citizens in the South Coast Air Basin ("SCAB") within 300 meters of major freeways carrying more than 125,000 vehicles a day will be exposed daily to continuing NAAQS violations. The RFP targets that will be needed to attain the NAAQS in all communities in the Basin cannot be determined from the adopted AQMP. All that can be said is that the overall reductions in the adopted AQMP are not sufficient to eliminate the NAAQS violations in the near-highway environment, and therefore the RFP targets based on that plan cannot be adequate to achieve the percentage reductions that will be needed for an adequate attainment demonstration. For this reason, the proposed emissions budgets cannot be adequate for conformity purposes, and do not meet EPA's requirements for adequate emission budgets. 40 CFR § 93.118(e)(4).

In addition, EPA requires that emissions budgets be based upon emissions reductions that can be expected from adopted measures. 40 CFR § 93.118(e)(4)(v). The proposed budgets for both ozone and PM2.5 are based, in part, on emission reductions expected from measures identified in the AQMP that may not be achieved, and will not be achieved because they are not based on any currently adopted, legally enforceable obligation.

Until an attainment demonstration for PM2.5 is adopted that provides for attainment in the near-highway environment, and the measures needed to achieve the reductions required to attain are identified, it is premature to establish any emission budgets for PM2.5 emissions from motor vehicles. In addition, until the measures needed to achieve reasonable further progress for ozone are adopted, proposed RFP budgets for ozone cannot be adequate. We therefore ask EPA to postpone action on the submitted interim budgets until these deficiencies in the AQMP are remedied.

I. MOTOR VEHICLE EMISSION BUDGETS MUST BE ADEQUATE TO PROVIDE FOR ATTAINMENT AND REASONABLE FURTHER PROGRESS.

To satisfy the Act's conformity requirements (id., §7606(c)) the SIP, including its MVEB, must ensure that "emissions expected from the implementation of [transportation] plans and programs are consistent with ... necessary emissions reductions" from the SIP. Id., §7506(c)(2)(A). EPA has interpreted the necessary emission reductions to be those reductions needed to attain the NAAQS and the interim emission reduction milestones required for reasonable further progress. EPA's conformity rule requires that "when considered together with all other emissions sources, [the MVEB must be] consistent with applicable requirements for . . . attainment" and be "consistent with and clearly related to the emissions inventory and control measures" in the SIP. 40 C.F.R. Part 93.118(e)(4)(iv-v). The adopted AQMP is facially inadequate, admitting insufficient control measures to accomplish the daily emissions reductions necessary to attain the PM2.5 and ozone standards. These shortfalls are relevant to the adequacy of the MVEBs, since motor vehicles are the

largest single source of ozone precursors and the primary emitter of elemental carbon, one of the 6 critical species of PM2.5 in the South Coast air Basin.

EPA defines and describes the role of MVEBs in the SIP as follows:

> "Motor Vehicle Emissions Budget is that portion of the total allowable emissions defined in the [SIP] … for the purpose of … demonstrating attainment … of the NAAQS … allocated to highway and transit vehicle use and emissions." 40 C.F.R. Part 93.101.

> "Motor vehicle emissions budgets are the . . . motor vehicle-related portions of the projected emissions inventory used to demonstrate . . . attainment . . . for a particular year specified in the SIP. The motor vehicle emissions budget establishes a cap on emissions which cannot be exceeded by predicted highway and transit vehicle emissions." 58 Fed. Reg. 62,194 (November 24, 1993).

The MVEBs adopted in the SIP for a nonattainment area are implemented through the transportation planning process by the adoption of a long range Regional Transportation Plan ("RTP") and short range Transportation Improvement Program ("TIP") that "shall implement the transportation provisions of any [SIP] applicable to all or part of the area covered by such transportation plan or program." 42 U.S.C. §7506(c)(2). The RTP defines the future regional transportation system envisioned for a 20-year horizon, and the TIP prioritizes the projects to be funded in the next three years. 23 U.S.C. §134(g), (h). The RTP and TIP are required to be adopted by the metropolitan planning organization ("MPO"). Id. To ensure that the RTP and TIP do not cause emissions that exceed the MVEBs, "[n]o [MPO] shall give its approval to any project, program or plan which does not conform to an implementation plan approved or promulgated under section 7410 of this title." 42 U.S.C. §7506(c)(1). Further, "no [RTP or TIP] may be adopted by a metropolitan planning organization … until a final determination has been made that such plans and programs are consistent with the estimates of emissions from motor vehicle and necessary emissions reductions contained in the applicable implementation plan". Id., §7506(c)(2)(A)(emphasis added). Conforming to a SIP requires a determination that RTPs, TIPs and projects conform to a SIP's purpose of expeditious attainment of the ambient air quality standards, §7506(c)(1)(A), and that such transportation plans, programs and projects will not:

> (i) cause or contribute to any new violation of any standard in any area;
> (ii) increase the frequency or severity of any existing violation of any standard in any area; or
> (iii) delay timely attainment of any standard or any required interim emission reductions or other milestone in any area. Id., §7506(c)(1)(B).

In addition to establishing obligations that the MPO must satisfy, the Act also requires that "[n]o federal agency may approve, accept or fund any transportation plan, program or project unless such plan, program or project has been found to conform to any applicable implementation plan in effect under this chapter." Id., §7506(c)(2). The U.S. Department of Transportation ("US DOT") may not "approve[], accept[] or fund[]" a project unless it comes from a conforming regional plan and TIP. Id., §7506(c)(2)(C).

MVEBs thus set limits on motor vehicle emissions that must be achieved by the RTP and TIP adopted by the regional transportation agencies and approved by US DOT. If the MVEBs are set too high and transportation projects are constructed that, through their design, generate more air pollution than is consistent with expeditious attainment of the ambient air quality standard, the Act's conformity requirements are thwarted.

A. MVEBs From SIPs That Do Not Attain Must be Disapproved.

The Ninth Circuit Court of Appeals has consistently held that a SIP that fails to require emissions reductions needed for attainment may not be approved. Delaney v. EPA, 898 F.2d 998 (9th Cir.), cert.denied, 111 S.Ct. 556 (1990), Arizona v. Thomas, 294 F.2d 834 (9th Cir. 1987), Hall v. EPA, 263 F.3d at 937. Concluding that the basic criteria for SIP review adopted by the Supreme Court in 1975 continue to apply to the 1990 Amendments, this Court recently reiterated that "[t]he objective of the EPA's analysis is to determine whether 'the ultimate effect of a State's choice of emission limitations is compliance with [NAAQS].' Train, 421 U.S. at 79." Hall v. EPA, 263 F.3d at 937. "EPA must determine the extent of pollution reductions that are required and determine whether the emissions reductions effected by the proposed revisions will be adequate to the task." Id., at 938. If the emission limitations are not sufficient to attain, "the EPA should disapprove a plan revision if 'the plan as so revised would no longer insure timely attainment of the national standards.' Id. at 90. See also id. at 93 (stating that a revision would be disapproved if it 'caused a plan to fail to insure maintenance of those standards')." Id., 936.

Here, EPA's obligation is to disapprove the attainment demonstration in the submitted PM2.5 SIP for the SCAB because the demonstration fails to assess the reductions of primary PM2.5 emissions from highways that are needed to demonstrate attainment in the near-highway environment, and fails to include control measures needed for attainment. The control measures needed for some of the emissions reductions have not been identified, adopted or submitted to EPA. *A fortiori*, the MVEB from this SIP also fails to provide for attainment because the allowed motor vehicle emissions, when considered together with other measures in the SIP, do not provide for attainment. A MVEB that does not provide for attainment, does not provide the "necessary emissions reductions" required by §7506(c)(2)(A), or the emissions reductions necessary to ensure that the transportation plan and program for the region "will not cause or contribute to any new violation, [or] delay timely attainment" as required by §7506(c)(1)(B)(iii). Accordingly, such budgets may not be approved as a partial SIP under the Act, or found adequate for transportation conformity purposes under EPA's conformity rule.

There is no dispute that the AQMP does not contain enough enforceable control measures or even identified and committed measures to provide for attainment of either the PM2.5 or ozone NAAQS as required by §7502(c)(1) and (6) and EPA rules governing the requirements for an approvable SIP.[1]

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[1] "Each plan must demonstrate that the measures, rules, and regulations contained in it are adequate to provide for the timely attainment and maintenance of the national standard that it implements." 40 C.F.R. Part 51.112(a).

Indeed, the SIP does not even identify proposed or candidate control measures that might be conditionally approved under section 7410(k)(4). Under these facts where EPA acknowledges that the SIP does not provide for attainment, it is unlawful to nonetheless approve that part of the SIP that will be used to determine the maximum allowable emissions from the regional transportation system for the next 20 years. EPA's decision cannot be upheld because "the EPA's analysis [has not] 'rationally connected' its approval of particular plan revisions before it to its assessment of an area's prospects for meeting current attainment requirements." Hall, 263 F.3d at 939. Without further emissions reductions, EPA's approval of the MVEBs in the submitted plan gives the regional transportation planning agencies a green light to use inflated emissions budgets for the design of the future regional transportation system and in approving TIPs and transportation projects. EPA may not make lawful a level of emissions from the transportation system that will perpetuate existing nonattainment.

This result is expressly prohibited by the conformity rule EPA promulgated in 1997 to govern the determination whether MVEBs in a SIP may be found adequate for the purpose of implementing the conformity requirements of §7506(c):

> EPA will not find a motor vehicle emissions budget in a submitted control strategy implementation plan revision … to be adequate for transportation conformity purposes unless … : (iv) the motor vehicle emissions budget(s), when considered together with all other emissions sources, is consistent with applicable requirements for … attainment... 40 C.F.R. Part 93.118(e)(4).

In the preamble to its conformity rule, EPA explained that this rule required MVEBs to be part of a SIP that provides for attainment. "When considered with point, area and mobile sources, the emissions budget(s) must be consistent with applicable requirements for … attainment." 62 Fed. Reg. 43,781 (Aug. 15, 1997). In that rulemaking, EPA expressly rejected arguments that MVEBs in SIP submittals that failed to include emissions reductions sufficient to provide for attainment should nonetheless be allowed to be used for RTP and TIP conformity determinations until adequate emissions control measures were submitted by the State:

> [I]f a SIP does not identify enough emissions reductions and the motor vehicle budget does not provide for … attainment, then there is no basis to claim that a transportation activity conforms.
>
> * * *
>
> EPA believes it is not possible to find new projects to conform if the SIP does not identify enough emissions reductions and the motor vehicle budget does not provide for … attainment. Clean Air Act section 176(c)[(1)(B)(i)-(iii)] requires that projects must not worsen violations or delay attainment, and there is no basis to make this claim if the SIP has been disapproved. Additional transportation projects may worsen existing violations. Transportation Conformity Rule Amendments, EPA Response to Comments Document, at 34, 35 (June 23, 1997) (emphasis added).

EPA expressly interpreted §7506(c) and Part 93.118(e)(4)(iv) to bar the use of budgets to determine the conformity of new transportation projects when the SIP does not contain sufficient emissions reductions to provide for attainment.

In its review of EPA's conformity rule, the U.S. Court of Appeals for the District of Columbia also interpreted the Act to bar use of a MVEB for conformity purposes if the SIP from which it came failed to require enough emissions reductions to provide for attainment. EDF v. EPA, 167 F.3d 641, 650 (D.C. Cir. 1999). EPA originally adopted a rule allowing submitted budgets to be used for transportation conformity purposes without any EPA review or approval of the SIP. The D.C. Circuit rejected the use of submitted budgets by transportation agencies for making conformity determinations before EPA found them adequate precisely because there was no basis for determining that RTPs and TIPs designed to meet the emissions levels in submitted budgets would satisfy the three statutory conformity criteria contained in §7506(c)(1)(B)(i)-(iii). As the Court explained, when EPA failed to:

> determin[e] that [the SIP revision] contains adequate measures to reduce emissions to statutorily required levels, … there is no reason to believe that transportation plans and programs conforming to the submitted budgets "will not—(i) cause or contribute to any new violation of any standard in any area; (ii) increase the frequency or severity of any existing violation of any standard in any area; or (iii) delay timely attainment of any standard…. 42 U.S.C. §7506(c)(1)(B). EDF v. EPA, 167 F.3d at 650.

If a rule that allowed conformity determinations to be based on submitted budgets in SIPs is inconsistent with §7506(c) because EPA had not yet determined that the SIP provided sufficient emissions reductions to attain, then, *a fortiori*, a MVEB must not be lawful for conformity purposes where the State has affirmatively acknowledged that the SIP does NOT reduce emissions to the levels required for attainment. EPA would need to perpetuate the unlawful policy struck down by the D.C. Circuit in order to find adequate the MVEBs from a SIP that does not contain the emissions reductions needed for attainment, or for RFP. If EPA concludes that the SIP fails to contain sufficient emissions reductions for attainment or RFP, the legal result must be the same as when EPA had made no findings at all: there is no basis for determining that transportation plans and programs conforming to the submitted budgets will not violate the statutory criteria for conformity.

Here the State seeks to circumvent these limitations on EPA's ability to approve the submitted budgets by relying on the measures listed in ARB Resolution 07-28 Attachment B. But these measures are not committed to be adopted within the 1 year period allowed by § 110(k)(4) of the Clean Air Act.

B. EPA Action on the MVEBs Requires Notice and Comment.

It is well-settled that EPA action on a SIP revision is governed by notice and comment procedures required by the APA. "The APA requires an agency to: (1) publish a general notice of proposed rulemaking; (2) give interested parties an opportunity to participate in the rulemaking

through submission of data, views, and arguments; and (3) adopt a rule after consideration of the relevant matter presented." Hall v. EPA, 263 F.3d at 941, citing Ober v. EPA, 84 F.3d at 312.

EPA cannot act to give legal effect to the submitted MVEBs without first publishing notice of proposed rulemaking and providing an opportunity for public comment in response to a proposed action. Here, EPA has merely posted a notice on a website stating that the SIP had been received. No specific action has been proposed. Public comment cannot focus on a proposed action.

EPA's determination of the adequacy of a MVEB as part of the SIP would be final agency action because it would establish obligations with legal consequences. Bennett v. Spear, 520 U.S. 154, 177-78 (1997). EPA's decision determines the rights of the public in the implementation of one of the most critical part of the Basin's air pollution control strategy, and the duties of the region's transportation agencies to implement that strategy. 42 U.S.C. §7506(c)(2). Once the MVEBs are found adequate by EPA, they become the limits on motor vehicle emissions that must be met as the condition required for adoption and approval of transportation plans, programs and projects. 40 C.F.R. Part 93.118(e)(1).[2] "In order for each transportation plan, program and FHWA/FTA project to be found to conform, the MPO and DOT must demonstrate that the applicable criteria and procedures in this subpart are satisfied…." 40 C.F.R. Part 93.109(a). The finding of conformity includes a demonstration that motor vehicle emissions will be equal to or less than the approved MVEB. 40 C.F.R. Part 93.118(a). Thus the MVEBs impose important legal obligations on transportation agencies that must be satisfied before transportation plans and programs may be approved. Individual transportation projects may not be approved or funded unless they come from a currently conforming plan and TIP. 42 U.S.C. §7506(c)(2)(C); EDF v. EPA, 167 F.3d at 645-650. Once approved, the MVEBs in the South Coast SIP establish requirements that must be satisfied as a condition for the allocation and expenditure of billions in federal and state transportation funds annually.

EPA cannot lawfully give legal effect to the submitted budgets without first publishing a notice of proposed rulemaking with a statement of basis and purpose that would apprise interested parties of the action the Agency intends to take and the reasons supporting the action. To date, interested parties have been given no notice of whether EPA considers the SIP and attainment demonstration approvable under § 110, and why the submitted MVEBs are approvable as part of the attainment SIP. Nor has the Agency identified the criteria that are applicable and relevant for making that determination. Without some notice of the Agency's intention and the reasons supporting the proposal, commenters are being denied the procedures guaranteed by the APA that protect our opportunity to submit meaningful comments relevant to the basis for Agency action. Commenters therefore request that EPA not take action to give legal effect to these submitted budgets without first providing an opportunity for notice and comment pursuant to 5 USC § 553.

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[2] Although commenters disagree that action on a budget may preclude effective judicial relief, EPA contends that once an RTP, TIP or project has been found to conform on a MVEB adequate at the time, the finding cannot be subsequently cancelled. 40 CFR § 93.118(e)(3). Not only is EPA's MVEB adequacy determination binding on transportation agencies, the determination is allegedly irreversible thereby making it binding on the Courts and precluding judicial reversal of an unlawful action after judicial review. This unquestionably defines the adequacy determination as final agency action escalating the APA significance of the adequacy determination.

II. ATTAINMENT DEMONSTRATION DOES NOT PROVIDE FOR ATTAINMENT IN COMMUNITIES ADJACENT TO HEAVILY TRAVELED FREEWAYS.

The attainment demonstration in the adopted AQMP does not estimate the emissions reductions that will be needed to attain either the annual or the 24-hour NAAQS for PM2.5 in the near-highway environment where primary particles emitted from motor vehicles and re-entrained dust cause or contribute to concentrations well-above those used to determine the design value for the region and the regional attainment demonstration. Emissions from heavily traveled freeways have been shown to add from 1 to 14 μg/m3 of elemental carbon, a major component PM2.5, to concentrations measured at regional monitors more than 300 to 500 meters distant from major highways. In the South Coast Air Basin, commenters estimate that approximately 1.5 million people live within this near-highway environment where elevated concentrations of PM2.5 are expected.

A. Reliable Scientific Evidence Shows Elevated PM2.5 in the Near-Highway Environment.

The evidence that highway emissions have a significant impact on air quality in the near-highway environment is not new. MATES-II first identified the importance of highway emissions in 2000. [Attached as Exhibit A]. Although MATES-II was focused on the significance of diesel particulate as the largest source of cancer risk in the air basin, it also provided important findings that demonstrated that higher levels of diesel pollution occur near highways. The Report found the greatest exposure to diesel PM at locations where "the dominance of mobile sources is even greater than at other sites." It also found that "model results, which are more complete in describing risk levels…than is possible with the monitored data, show that the higher risk levels occur… near freeways." "Results show that the higher pollutant concentrations generally occur near their emission sources." These findings provided evidence that neighborhoods near highways would experience higher concentrations than the regional averages. Based on these observations, MATES-II concluded that "[f]or mobile source compounds such as benzene, 1-3 butadiene, and particulates associated with diesel fuels, higher concentration levels are seen along freeways and freeway junctions." This work identified the near-highway environment as a high risk environment where elevated levels of PM would be expected because of emissions from diesel vehicles.

This triggered further research in the region. A team from USC conducted seminal studies to measure the concentrations of highway pollutants as a function of distance from the I-710 and I-405 freeways. [Attached as Exhibit B] Both studies included measurements of concentrations of CO and black carbon (BC) at increasing distances from the freeway. CO and BC were intentionally selected because their ambient concentrations are strongly related to vehicle emissions. Black carbon, also measured as elemental carbon (EC) in the monitoring reported in MATES-II and MATES-III [Attached as Exhibit C], is a species of PM2.5 that was used in the MATES-II study as a measure of diesel PM in the Air Basin. The MATES-III study reported more recent investigations showing that elemental carbon is an inadequate measure of diesel PM, and that other methods show that total diesel PM is at least 72% greater than elemental carbon. MATES-III, p. 2-9. The AQMP relies on the MATES-III data to identify elemental carbon as one of the six major species of PM2.5 in the South Coast air shed that contribute significantly to PM2.5 nonattainment.

The freeway studies show the dramatic increase in BC/EC in the near-highway environment. The studies measured concentrations at five distances downwind from the freeway and upwind from the freeways. By comparing the upwind measurements which provide a good estimate of regional carbon loadings in the Air Basin with the downwind measurements, these studies provide a good estimate of the increase in concentrations of primary carbon particles emitted from highways in the vicinity of major highways compared to regional concentrations measured in the urban air shed.

The BC measurements from each of the freeway studies are summarized separately below along with measured upper and lower limits, and the observed difference between the comparable upwind and downwind BC concentrations:

Measured Average (and Upper and Lower Limit) BC Concentrations at Increasing Distances from the 405 Freeway

Downwind Distance (m)	BC (µg/m3)	BC (µg/m3) Downwind-Upwind Average Concentration
30	5.4 (3.4-10.0)	4.75
60	3.2 (3.0-3.5)	2.55
90	2.5 (2.4-2.6)	1.85
150	1.6 (1.1-2.0)	0.95
300	1.3 (1.1-1.5)	0.65

Measured Average (and Upper and Lower Limit) BC Concentrations at Increasing Distances from the 710 Freeway

Downwind Distance (m)	BC (µg/m3)	BC (µg/m3) Downwind-Upwind Average Concentration
200 m (upwind)	4.6 (3.1-5.9)	
17 m	21.7 (20.3-24.8)	17.1
20	19.4 (16.5-21.6)	14.8
30	17.1 (12.6-19.3)	12.5
90	7.8 (4.5-9.3)	3.2
150	6.5 (3.9-9.2)	1.9
300	5.5 (3.5-7.7)	0.9

Notice the large increase in the near-highway concentrations of BC downwind of the I-710 compared to the I-405. The Interstate 710 study was conducted in part because the freeway has a much higher percentage of heavy-duty diesel truck travel than the Interstate 405 freeway. Average traffic flow during sampling periods was 12,180 vehicles per hour with more than 25 percent of vehicles being heavy-duty diesel trucks. This is perhaps the highest density of diesel truck traffic anywhere in the U.S. Measurements were taken at 17, 20, 30, 90, 150 and 300 meters downwind

and 200 meters upwind from the center of the freeway. As with the 405 freeway study, relative concentrations of CO and BC downwind from the freeway were found to be many micrograms per cubic meter greater than upwind concentrations and tracked each other well as one moves away from the freeway.

These studies show that in the impact zone downwind of a heavily traveled freeway in the Air Basin with average truck traffic (I-405), emissions of BC from the freeway will add 4.75 μg/m3 to PM2.5 at 30 meters from the freeway dropping off to 0.65 μg/m3 greater than the regional concentration at 300 meters, and that a freeway with heavy truck traffic will add 12.5 μg/m3 at 30 meters dropping off a 1.9 μg/m3 increase above the regional levels at 300 meters.

The incremental effect of highway emissions downwind from the I-710 have been confirmed in recent weeks by data released as part of the deployment of Mobile Monitoring Platform Results in the I-710 corridor. See Mobile Monitoring Platform Update and Results reported by CARB, April17, 2008, at the HCMS Community Meeting, Wilmington Senior Center. [Attached as Exhibit D]. These results include BC concentrations within the so-called buffer zone 500 feet from the freeway compared with results measured beyond the 500 feet buffer. Concentrations measured in West Long Beach residential area on the morning of July 17, 2007, show nearly a four-fold greater BC level within 500 feet from the 710 freeway compared to the same neighborhood outside the 500 feet zone (18 vs 5 μg/m3). This difference of 13 μg/m3 is highly consistent with the upwind/downwind results reported in the original 710 study.

These results were supported by measurements made in other regions. A study in Seattle, WA (Curtis, Gilroy, and Harper, 2004) measured the relationship between BC levels at an urban near-roadway monitoring site, and a heavily traveled freeway. [Attached as Exhibit E] This study showed that there were frequently peak evening rush hour BC levels of 5 μg/m3 or above near I-5. The BC data was obtained from the Olive Street monitoring site located at the EPA-designated microscale within the I-5 traffic corridor. The traffic volumes and BC readings correlate well, supporting the hypothesis that traffic is a major contributor to PM2.5 at the site, given that BC originates from motor vehicle exhausts as ultrafine or fine particles. The Olive Street air monitoring site is about 20 meters west of the southbound lane of I-5 in the CBD. This area of I-5 contains express lanes along with several high use overpasses which all contribute to the area traffic. Daily volumes along this section of I-5 average 284,700 vehicles per day (in 2003). Light-duty traffic has peak weekday flows above 10,000 vehicles per hour, with diesel traffic of about 1,000 vehicles per hour (10%). BC tends to peak during weekdays with high traffic volumes, and is sharply lower on weekends. This reduction parallels the significantly lower weekend diesel traffic volumes. Peak BC measurements occur during the afternoon rush hour (4-6 pm). Correlations between light-duty vehicle volumes and BC peaks (readings above 5 μg/m3) are better than those between diesel truck volumes and BC peaks. This may occur because light-duty volumes overwhelm diesel truck volumes during this peak period (93 percent of the traffic volume is from light-duty vehicles).

The Seattle study also measured BC at a Beacon Hill site about 600 meters from a major freeway, which is used as the urban background for Seattle. Hourly BC readings during the study period stayed within the range of 0 to 2 μg/m3, with readings mostly below 1.0 μg/m3. Comparing these sites demonstrates results similar to the data obtained from the I-405 study with BC

concentrations in the near-highway environment being about 4 µg/m3 greater than the urban regional concentration.

The East Bay (California) Children's Respiratory Health study (Kim et al., 2004), conducted with support from Cal EPA's Office of Environmental Health Hazard Assessment, obtained measurements of PM2.5 concentrations at monitors located in the schoolyards of 10 middle schools in communities across the East Bay. [Attached as Exhibit F] This study reported the distance of each monitor from major freeways, the traffic density on the nearest freeway, and whether the school was located downwind of the traffic source. The PM2.5 measured at the school closest to (60 meters), and downwind from a major freeway, was 15 µg/m3 which was 3 µg/m3 greater than the 12 µg/m3 PM2.5 concentrations reported at the regional air district network monitor located about 1 mile from major traffic sources.

The recently released West Oakland Health Risk Assessment conducted by the ARB provides similar results from a modeling study that shows highly elevated concentrations of diesel PM in a neighborhood downwind of the Port of Oakland and surrounded by heavily traveled major freeways. [Attached as Exhibit G—but appendicies A through E not attached and available at http://www.arb.ca.gov/ch/communities/ra/westoakland/westoakland.htm]. The risk assessment showed that despite the significant contribution of emissions from ocean going vessels, local watercraft, railyard and port activities, the emissions from non-port related on-road truck operations accounted for 80% of the diesel PM in West Oakland.

These and other studies provide credible evidence that PM2.5 concentrations in the near-highway environment are expected to range from 3 µg/m3 to as much as 13 µg/m3 greater than concentrations measured at regional monitors located outside the high impact zone of heavily traveled freeways.

Data from these highway studies were expressly relied upon by US EPA to decide that it must establish a transportation conformity program to review the localized impacts of PM2.5 emissions from highways. See Transportation "hot spot" rule, 71 Fed.Reg. 12468, 12494 (March 10, 2006). EPA concluded that the evidence of localized impacts from highways was sufficiently compelling to require that "it is essential that a quantitative PM2.5 or PM10 hot-spot analysis be performed for all projects of air quality concern." *Id.* If the evidence of localized impacts was sufficient to justify a national regulatory program to protect against NAAQS violations caused by new highways, it is also compelling enough to require a quantitative analysis to ensure that the SIP will protect against existing localized NAAQS violations caused by highway emissions.

B. Exposed Population in Near-Highway Environment is Significant.

To determine the public health significance of human exposures to the elevated concentrations occurring in the near-highway environment, Environmental Defense performed an exposure analysis that plotted all limited access highway links in the South Coast air Basin with

annual average daily traffic (AADT) greater than 125,000, and then used available 2000 census data to estimate the population within 300 meters of these highway links.[3] The 125,000 AADT threshold was selected based upon EPA's determination that this is an appropriate traffic threshold for identifying highway "projects of air quality concern" as a trigger for performing a transportation "hot spot" analysis for PM2.5. See 71 Fed. Reg. 12,468. The 300 meter impact zone is based on the evidence discussed above showing that the elevated BC and PM2.5 concentrations associated with highway emissions is significant at 300 meters from highways. This analysis shows that approximately 1.5 million citizens within the SCAB reside within the 300 meter high impact zone adjacent to major freeways.

C. Attainment Demonstration Fails to Protect Against Elevated PM2.5 in the Near-Highway Environment.

The PM2.5 concentrations expected in the near-highway environment are not reflected in the adopted attainment demonstration because neither the monitored concentrations of PM2.5 used to select the design value for the attainment demonstration, nor the modeling analysis used to demonstrate future attainment account for the increased PM2.5 concentrations in the near-roadside environment.

1. Monitors Not Located to Measure PM2.5 In Near-Highway Environment.

The monitors selected to determine the design value for the South Coast air basin are not located in the near-highway environment.

The highest annual and 24-hour design values among the network sites is recorded at Rubidoux in Riverside County. For this reason, the measurements at this site play an important role in the development of the attainment demonstration. But this site is not located in a near-highway environment. The Site Survey Report for the monitor describes the location as residential, with residential traffic of only 10,000 vehicles per day within 25 meters. Based on this description of the site, it is apparent that the design value does not reflect the incremental impact of primary aerosols emitted from a nearby heavily traveled highway.

Another site with a high design value is Fontana/Arrow Highway. The Site Report for this location describes the monitor as being 85 meters from an arterial roadway carrying 28500 vehicles per day. This is not a major highway.

The Wilmington site is in the neighborhood west of the I-710, but it too is more than 300 meters from the freeway and not located in the high impact area where vehicle emissions would be expected to contribute to higher PM2.5 concentrations.

These site locations are not in close proximity to major freeways, and do not detect the incremental impact of highway emissions. A control strategy that is adequate to reduce the

[3] The methodology used and software applied to perform this analysis is explained in Exhibit H hereto.

concentrations at these sites to attain the NAAQS cannot be shown to reduce the higher concentrations in the near-highway environment to the level of the NAAQS.

2. Modeling Does Not Predict Impact of Reductions in Highway Emissions.

The modeling analysis performed for the attainment demonstration uses the CAMx model, which is the same model applied to demonstrate ozone attainment. This is a regional airshed model that aggregates emissions and estimates ambient concentrations for a grid that is made up of cells 5 km on a side. AQMP, Appendix V, p. 2-15. But for the purpose of comparing modeling results with monitoring station measurements, the results are averaged over nine grid squares. "The CAMx modeling results are presented based on a nearest nine-grid-cell average basis. Performance evaluations at each station are based on this average concentration." *Id.*, p.2-24.

This approach may be suitable for the purpose of estimating concentrations of secondary species that are formed after primary pollutants are cooked in the chemical soup of the Air Basin, but this large scale averaging provides no useful information regarding the dispersion of primary pollutants emitted from large sources such as highways.

Unlike secondary particulate species which become particles downwind from their point of emission as gases, the elemental carbon and aerosol VOCs emitted from tailpipes, road dust, tire and brake pad particles are emitted directly from highways to the atmosphere, and are most highly concentrated at the source. The regional grid modeling analysis performed by CAMx aggregates these emissions and averages them over large regions, rather than recognizing them as being most highly concentrated at the point of origin. EPA explained in its guidance regarding PM attainment demonstrations that "[d]ispersion models are better able to capture the influence of primary PM sources where large concentration gradients may exist. Grid models spread out the PM emissions to the size of the grid (typically 4 or 12 km). This makes it difficult to judge the benefits of control strategies that may affect primary PM sources." 72 Fed. Reg. 20607-08. The large-scale regional modeling analysis performed for the SCAB cannot, and does not, predict concentrations of the primary species in the near-highway environment. Given the limitations of this large scale tool for predicting the impact of primary PM emissions from sources on local ambient concentrations, the attainment demonstration in the adopted AQMP cannot be approved as adequate to demonstrate attainment in the near-highway environment.

3. Modeling Tools Are Available.

EPA's modeling guidance identifies the problem we identify here, and suggests suitable models for assessing the expected ambient impacts of primary PM emissions on locations that are not represented by the monitoring network.

The modeling guidance warns specifically of the possibility that high concentration locations affected by emissions of primary PM will be missed:

4. Focusing the modeled attainment test only at monitoring sites could result in control targets which are too low if the monitoring network is limited or poorly designed.

We recommend a test which includes a review of the strategy's impact at locations without monitors. This exercise provides a supplemental test to determine whether there is a need for further action despite passing the modeled attainment test at all monitoring sites.

"Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for Ozone, PM2.5, and Regional Haze," p.19 [Attached as Exhibit I]. In the situation where highways are the most significant source of primary carbonaceous PM2.5, and a monitoring network that does not include any monitors located within the high concentration zone representing the exposure of populations adjacent to highways, an additional investigation is clearly required.

III. CONTROL MEASURES NOT AVAILABLE TO DEMONSTRATE THAT EMISSION REDUCTIONS WILL BE ACHIEVED.

On March 13, 2008, the Coalition for Clean Air, NRDC, and Earthjustice submitted comments expressing concerns related to the original emissions budgets submitted by CARB to EPA. [Attached as Exhibit J]. We continue to remain concerned about the comments raised in the March 13, 2008 letter, and for this reason have resubmitted these comments with this submission.

As previously articulated in that letter, longstanding USEPA policy governing the standards for SIP approval requires that each control measure in the SIP contain six basic elements necessary to provide minimum assurance that it will result in the emissions reductions credited to it. These elements include:

1. evidence of adoption of the measures in legally enforceable form or a binding schedule for adoption;[4]
2. a description of each measure with "detail and clarity," identifying which entity is responsible for implementation and what "actions are to be taken";[5]
3. a "thorough demonstrate[ion] that the measures are capable of achieving the estimated emission reduction benefits."[6]
4. an emission reduction estimate for each measure;[7]
5. provisions for monitoring and reporting on implementation and effectiveness;[8]
6. an "identification of and commitment to the financial and manpower resources necessary to carry out the plan."[9]

Many of the measures in California's SIP submittal do not meet these requirements. We are particularly concerned that CARB in its pursuit of flexibility has crafted the form of the commitments made throughout the SIP in such a way that it prevents enforcement by USEPA or anyone else seeking to enforce this SIP. Furthermore we are very concerned that many of the

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[4] *See* 43 Fed. Reg. 21,673-75 (May 19, 1978)
[5] 55 Fed. Reg. 36456, 36487 (Sept. 5, 1990).
[6] *Id.*
[7] *Id.*
[8] 55 Fed. Reg. at 36487.
[9] *Id.*

measures in the SIP lack sufficient specificity to be implemented, monitored for progress, and enforced.

The current submission also does not comply with section 110(k)(4) of the Act, which notes that EPA "may approve a plan revision based on a commitment of the State to adopt specific enforceable measures by a date certain, but not later than 1 year after the date of approval of the plan revision." There must be a commitment by CARB and/or the SCAQMD to adopt enforceable measures within 1 year of a conditional approval by EPA. Since additional enforceable commitments are necessary to reach attainment and one or more RFP milestones, EPA cannot at this time conditionally approve the plan.

Moreover, additional emissions reductions are not solely necessary to meet attainment after the last milestone year, but rather are required to meet one or more RFP milestones. There are four additional comments worth referencing at this time.

First, given that the Pacific Merchant Shipping Association succeeded in PMSA v. Goldstene, No. 07-16695 (9th Cir. 2008), which challenged CARB's Auxiliary Engine Rule, it is unclear whether the associated emissions reductions should be included in the emissions budgets for the South Coast. Moreover, the United States Court of Appeals for the Ninth Circuit recently denied a petition for re-hearing. It is our understanding that under both sets of budgets submitted by CARB reductions associated with the Auxiliary Engine regulation are assumed because this regulation was adopted prior to October of 2006. Since the emissions reduction associated with this regulation are tenuous, CARB cannot take credit for them.

Second, in Table 4, there is an assumption that 10 tpd of NOx in 2014 will come from federal reductions, namely reduction in pollution from locomotives. It is unclear whether the USEPA will achieve these reductions, and if not, the budgets cannot assume these emissions reductions.

Third, the South Coast Air Quality Management District ("SCAQMD") is set to vote on the Surplus Off-Road Opt-In for NOx Program and Adopt Proposed Rule 2449 – Control of Oxides of Nitrogen Emissions from Off-Road Diesel Vehicles on May 2nd, 2008. Currently, there is an option to have this program be mandatory or voluntary. If the SCAQMD Governing Board decides to implement a voluntary program, the 12 tpd of NOx emissions reductions assumed within the SIP cannot be assumed within the budgets.

Fourth, since the submission of the March 13th letter, we have identified a deficiency in the SIP and associated budgets related to failure to include additional commitments on rail pollution. CARB's own 2007 and 2008 risk assessment for California railyards shows significantly increased air toxic cancer and non-cancer health risks. Extensive criteria emissions also are documented. For example, CARB's April 16, 2008 draft health risk assessment for residential cancer risks adjacent to the San Bernardino BNSF railyard showed cancer risk as high as 2030 in one million. CARB's models also show high levels of criteria and greenhouse pollutants emitted by California railyards. In the South Coast and San Joaquin Air Basins, CARB estimates baseline NOx emissions from

locomotive engines alone of 31 tons per day ("tpd") and 22 tpd respectively. These estimates do not include the numerous and extensive non-locomotive emissions at railyards including yard equipment and indirect sources such as heavy duty on-road diesel trucks. In fact, CARB's 2007 State Implementation Plan strategy documents admit that the severity of the region's PM2.5 problem and the attainment deadline make it necessary to further mitigate locomotive emissions in 2014."

USEPA preemption of railyard sources generally is limited to new engines and engine remanufacture and USEPA's analysis in support of its new locomotive regulations admits that the Act does not, for example, preempt switcher locomotive rules which "may be subject to regulation by California and other states." See 72 Fed. Reg. 15971. According to CARB's own models, switchers are responsible for 11% of the total PM emissions from the four Commerce Railyards.

Appropriately tailored measures to address the localized environmental justice and criteria pollutant impacts that should be considered in CARB's regulatory program include:

1. CARB enaction of South Coast AQMD Rules 3501-3503 for idling limits, recordkeeping and modeling rules for all interstate and intrastate locomotives;
2. Rules that limit switcher locomotive to 15 minute idling, as well as rules that require the retrofit of switcher locomotives for the purpose of emission reduction
3. Idling and plug-in rules for refrigerated units while not in transit
4. In-use testing for compliance with federal standards
5. Remote sensing for compliance with federal standards
6. Diesel particulate filters on all interstate and intrastate locomotives
7. Idling regulations for locomotive maintenance facilities and /or stationary emission control device regulations (such as hood technology)
8. Stepped-up enforcement with more rigorous standards than the 2005 MOU
9. Regulatory measure that requires the development and implementation of emissions reduction plan for each Railyard with components that address proximity to sensitive receptors
10. Electric rail-mounted container gantry cranes

CONCLUSION.

As the comments above denote, until CARB submits and attainment demonstration for PM2.5 that provides for attainment in the near-highway environment, and the measures needed to achieve the reductions required to attain are identified, it is premature to establish any emission budgets for PM2.5 emissions from motor vehicles. In addition, until the measures needed to achieve reasonable further progress for ozone are adopted, proposed RFP budgets for ozone cannot be

adequate. We therefore ask EPA to postpone action on the submitted interim budgets until these deficiencies in the AQMP are remedied.

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ESTIMATING CONTRIBUTIONS OF ON-ROAD EMISSIONS TO NEAR HIGHWAY $PM_{2.5}$ CONCENTRATIONS

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INTRODUCTION

Significant populations may be exposed to concentrations of particulate matter with an aerodynamic diameter of 2.5 microns or less ($PM_{2.5}$) that are above the 2006 24-hour National Ambient Air Quality Standard (NAAQS) level of 35 μg/ m^3 as a result of emissions from vehicles on heavily-traveled highways. EPA has made preliminary designations of $PM_{2.5}$ nonattainment areas that do not account for elevated near roadway $PM_{2.5}$ concentrations (73 FR 51259-51260). Populations exposed to elevated $PM_{2.5}$ concentrations near major highways need to be accounted for and protected when EPA makes its final nonattainment designations for the 2006 24-hour $PM_{2.5}$ NAAQS, and when the design value is determined for the development of the control strategy for each area designated nonattainment. The purpose of this document is to provide an assessment of available data that shows the magnitude of the impact of emissions from highway vehicles on the concentrations of ambient air in the near-roadway environment. The data and analyses summarized in this report illustrate various methods of estimating likely concentrations of $PM_{2.5}$ in areas near highways for the purposes of implementing the NAAQS for $PM_{2.5}$. These data demonstrate that emissions from on-road vehicles cause a significant increment in ambient PM2.5 concentrations near highways that are not accounted for in areas where air quality monitors have not been sited in the impact zone near highways. For counties containing large highways with annual average daily traffic above the level of air quality concern that EPA identified in the transportation conformity "hot spot" rule for PM2.5, and where no air quality monitors for PM2..5 are located in the high pollution zone near highways, modeling analyses should be performed to:

1. determine whether a county is in attainment or nonattainment of the $PM_{2.5}$ NAAQS,
2. determine the design values that will be used to develop the control strategies needed to demonstrate attainment in the $PM_{2.5}$ State Implementation Plans (SIPs) submitted to EPA, and
3. make hot spot determinations for determining conformity of proposed highway projects.

EXECUTIVE SUMMARY

On September 21, 2006, EPA revised the NAAQS for fine particle pollution. 71 Fed. Reg. 61143. This rule strengthens the short-term (24 hour) NAAQS for $PM_{2.5}$ by lowering the 24-hour primary standard (98th percentile form) from 65 μg/m^3 to 35 μg/m^3. The annual mean standard for $PM_{2.5}$ was maintained at a level of 15 μg/m^3. The importance of these revisions is that 24-hour average $PM_{2.5}$ concentrations near highways will now exceed the 24-hour NAAQS rather than reaching levels that are only 55 percent of the NAAQS, and more rigorous analyses of the potential 24-hour average $PM_{2.5}$ concentration increments associated with emissions from major highways are needed to implement the CAA.

Under guidance adopted for implementation of the 1997 NAAQS for $PM_{2.5}$, EPA allows States to submit $PM_{2.5}$ SIPs based on regional monitored concentration data. This requirement underestimates the significantly higher $PM_{2.5}$ concentrations that populations in the vicinity of major roadways are exposed to. Exclusive reliance upon air quality data from $PM_{2.5}$ monitors not located within the zone near highways where $PM_{2.5}$ concentrations are elevated above regional

averages will not provide a credible analytical basis for demonstrating attainment of the revised 24-hour NAAQS near highways.

This paper presents evidence of elevated concentrations of $PM_{2.5}$ near highways due to emissions from on-road vehicles based on a variety of sources: research reported in the literature; ambient monitoring data; source apportionment studies; and dispersion modeling data. We find that the results obtained from these multiple data sources provide consistent, robust and coherent evidence that concentrations of $PM_{2.5}$ are significantly higher in the atmosphere near major highways compared to concentrations measured at.monitors outside the zone of significant impact. The evidence demonstrates that concentrations are highest next to the highway and diminish with distance from the right-of-way. Significantly higher concentrations are measured within 300 meters of the highway right-of-way, but few currently available data sources suggest that significantly elevated incremental concentrations attributable to emissions from on-road vehicles occur beyond 300 meters. These data demonstrate that design values calculated from monitored concentrations outside the high pollution zone more than 300 meters from a major highway are not relevant to determine the magnitude of emissions reductions needed to demonstrate attainment within the 300 meter zone.

The exposed population within the 300 meter zone is significant. Based upon EPA's estimate that 35 million Americans live within 100 meters of major highways, it is likely that between 50 and 100 million Americans live within the 300 meter zone near major highways. This does not include the additional exposures that result from children attending school within the high pollution zone for 220 to 240 days per year, children and adults who work, recreate or obtain in-patient medical care within the 300 meter zone.

The incremental concentrations of $PM_{2.5}$ near highways are more directly linked to the implementation of the 24-hour NAAQS than the annual NAAQS. The revision of the 24-hour NAAQS calls for greater attention to the ambient impacts of highway emissions because the revised NAAQS (35 μg/m3) is violated in many areas with highways whereas the 1997 NAAQS (65 μg/m3) was violated only in areas affected by emissions from major industrial sources.

When the focus was on implementation of the annual NAAQS for $PM_{2.5}$, EPA placed little emphasis on monitoring sources of primary particles, also defined as "direct particles" in the regulations governing implementation of the 1997 NAAQS.[1] Monitoring strategies developed immediately following adoption of the 1997 NAAQS were partly motivated by the emphasis on obtaining measurements of regional concentrations for comparison with the annual NAAQS rather than the 24-hour NAAQS. EPA considered the annual NAAQS to be the controlling standard based upon evidence of health effects associated with regional exposures to mixtures of primary and secondary fine particles. The 24-hour NAAQS was intended to protect against the localized impacts of major sources, including sources of primary particles. The difference in health protection objectives between the annual and 24-hour standards was reflected in the

[1] *See* 40 CFR Part Z, § 51. 1001 ("Direct PM2.5 emissions means solid particles emitted directly from an air emissions source or activity, or gaseous emissions or liquid droplets from an air emissions source or activity which condense to form particulate matter at ambient temperatures. Direct PM2.5 emissions include elemental carbon, directly emitted organic carbon, directly emitted sulfate, directly emitted nitrate, and other inorganic particles (including but not limited to crustal material, metals, and sea salt)."

distance that a monitor could be located from a source and be used to determine whether the NAAQS was attained. Air quality concentrations were required to be measured at the "neighborhood scale" to be compared with the annual NAAQS, whereas monitors located at the micro- and middle-scale could only be compared with the 24-hour NAAQS.[2]
EPA recommends that "microscale" monitors be used to "typify areas such as downtown street canyons and traffic corridors where the general public would be exposed to maximum concentrations from mobile sources." 40 C.F.R. Part 58, Appendix D, ¶ 4.7.1. (c)(1). The studies and reports discussed in this report provide the data available to characterize the impact of emissions from on-road vehicles on concentrations of $PM_{2.5}$ within the "microscale"[3] distance from major highways.

POPULATIONS AT RISK OF SERIOUS ADVERSE HEALTH EFFECTS FROM EXPOSURE TO $PM_{2.5}$ EMISSIONS FROM MAJOR HIGHWAYS ARE LARGE

EPA's December 2005 *Draft National Ambient Air Monitoring Strategy* (EPA, 2005) recognizes that its current monitoring network design does not capture near roadway impacts, and that there is an urgent need to do so. It acknowledges that "research monitoring efforts to characterize the impacts of mobile sources near roadways are emerging as a key area for ambient monitoring development." EPA concludes that --:

> "An estimated 35 million Americans live near four-lane roads, and EPA and others will need to investigate how to incorporate near roadway conditions and exposures into NAAQS attainment monitoring. To date, ambient monitoring in these areas consists of targeted research efforts.
>
> Over 1,000 compounds have been identified in exhaust and evaporative emissions from motor vehicles. These compounds include criteria pollutants and air toxics. Motor vehicle emissions significantly impact air quality and contribute to national emission inventories for criteria and air toxic pollutants. Mobile sources account for over 75 percent of national carbon monoxide (CO) emissions, over 50 percent of national oxides of

[2] 40 C.F.R. § 58.30. *See* 71 FR 61264 (Oct 17, 2006) ("States and EPA may agree as part of the annual monitoring plan submission by the State and approval by the Regional Administrator that in specific cases placement of new or relocated monitors into microenvironment or middle scale locations is warranted and consistent with the intended level of protection of the 24-hour PM2.5 NAAQS. States may also propose, and EPA would be inclined to approve, the placement of PM2.5 monitors in populated areas too small to be subject to the requirements regarding minimum numbers of monitors, if there is reason to believe PM2.5 concentrations are of concern. Of particular interest may be smaller cities and towns which presently lack any PM2.5 monitor but which experience emission patterns such as use of wood stoves and/or weather conditions such as inversions which can create high short-term concentrations of PM2.5. States also remain free to place SPM at any location, without need for EPA review or approval.\18

\18\ The possible additional monitoring discussed in the text above could be compared solely to the 24-hour PM2.5 NAAQS. As mentioned earlier, the 1997 rules provide that monitors that are sited in relatively unique population-oriented microscale areas, localized hot spots, or unique population-oriented middle-scale areas, may not be compared to the annual PM2.5 NAAQS.

[3] "Microscale--Defines the concentrations in air volumes associated with area dimensions ranging from several meters up to about 100 meters." 40 C.F.R. § 58, Appendix D, ¶ 1.2.(b)(1).

nitrogen (NO_x) emissions, and over 25 percent of national $PM_{2.5}$ emissions. For air toxics, mobile sources significantly contribute to air pollutant concentrations of gaseous and particulate phase compounds. For example, mobile sources emit over 50 percent of the nation's benzene, toluene, and acetaldehyde. PM air toxic emissions include metals, ions, and semi-volatile organic compounds.

Given that an estimated 35 million people live within 100 meters of a four-lane roadway, near roadway exposure from these mobile source emissions is an important concern. It cannot properly be thought of as either a *hotspot* issue affecting relatively few areas in a city or a broader component of PM NAAQS attainment issues. Near roadway exposure may, in fact, emerge as one of the dominant urban air quality issues. Air quality measurements collected near roads often identify elevated pollutant concentrations at these locations, as well as pollutant composition and characteristics that differ from those measured at a distance from roadways.

Elevated pollutant concentrations near roadways may lead to elevated exposures for populations working or residing near these roads. In addition, these populations may experience exposures to differing physical and chemical compositions of certain pollutants. The location of schools near major roads may also result in elevated exposures for children due to potentially increased concentrations indoors, increased exposures during outdoor activities, or increased exposures while commuting to school (e.g., walking along roads or riding in a school bus or passenger vehicle). Mobile sources influence temporal and spatial patterns of regulated gases, air toxics, and PM concentrations within urban areas. Since motor vehicle emissions generally occur near the breathing zone, near roadway populations may be exposed to *fresh* combustion emissions as well as combustion pollutants *aged* in the atmosphere.

Results from emissions and exposure studies suggest that simple methods of estimating the contribution of motor vehicle exhaust to exposure likely do not capture the substantial variability in the chemical and physical characteristics of motor vehicle exhaust that may be leading to adverse health effects. Comprehensive assessments of exposure will be a critical factor in identifying which compounds are leading to adverse health effects in the near roadway environment.

With this background, EPA's strategy currently involves (1) recognition of the importance of near roadway exposures and (2) the need for further exploration of what these exposures mean for both urban NAAQS-oriented monitoring networks and air toxics networks. EPA anticipates discussing these issues both internally and with partners and other stakeholders over the coming months, and then continuing to develop

> specific elements of a near roadway monitoring strategy that can be adopted into this overall strategy document."

An investigation in the South Coast Air Basin (Los Angeles, Orange, San Bernardino and Riverside Counties, CA) found that 1.5 million people reside within 300 meters of major freeways.[4] Data reported by New York found that a large portion of the population within rural areas reside within 300 meters of highways.

A recent study assessing carbonaceous $PM_{2.5}$ in New York included an analysis of the population of residents living within 150 m and 300 m of major roadways (NYSERDA, 2008). This analysis included three urban counties in New York City, two suburban counties, and three rural counties. The analysis found that significant portions of the population live within 150 m or 300 m of major primary or secondary roads, even in the rural areas. In the rural counties, 13-22 percent of the population live within 150 m of a major roadway; 43 percent of the suburban residents live within 150 of a major roadway; and 28-95 percent of the urban area population live within 150 m of a major roadway. In the urban areas, the study found that 88-100 percent of the population live within 300 m of a major roadway. The study also found that the population density of residents living within 150 m of a major roadway in the suburban and rural counties was greater than the overall county population density. This was also true in all but one of the urban counties. A detailed analysis of average annual daily traffic (AADT) data for two of the urban counties and two of the suburban counties was also performed. All of the major primary and secondary roadways had an average AADT of at least 10,000 vehicles per day, with the average for primary roadways all at or above 100,000 vehicles per day. The maximum AADT on all of the primary roads in all four counties were at or above 1,000,000 vehicles per day. While this study acknowledges that it does not account for populations using facilities (such as hospitals, day care, or schools) near major roadways, it does indicate that the populations living within the range of elevated $PM_{2.5}$ concentrations from motor vehicles traveling on major roadways may be much higher than previously thought, and that suburban and rural populations may also be at risk.

State Implementation plans that fail to account for the incremental concentrations of $PM_{2.5}$ near highways will not attain the NAAQS in the neighborhoods where these large populations are exposed.

LITERATURE REVIEW OF MEASURED FINE PARTICLE CONCENTRATIONS NEAR HIGHWAYS

There is limited information in the literature about the contributions of emissions of fine particles from on-road vehicles to ambient $PM_{2.5}$ levels. This information is limited in part because of the recent emphasis in EPA's $PM_{2.5}$ monitoring programs to avoid establishing monitors at locations likely to have elevated $PM_{2.5}$ concentrations in communities adjacent to highways and other local sources of primary particles. However, it is important to consider the research that has been

[4] Black, Peter, "Estimate of population within 300 meters of freeways carrying more than 125,000 vehicles per day." (submitted to US EPA, April 25, 2008).

conducted and to use that information to assist in evaluating the likely concentrations of $PM_{2.5}$ that occur near heavily trafficked highways.

Among the published studies, the best experimental design for providing useful information regarding the incremental ambient air quality impact of highway emissions involves comparisons of concentrations measured upwind and downwind of the highway. Zhu et al., conducted two monitoring studies that present results of measured concentrations upwind and downwind from the Interstate 405 freeway and the Interstate 710 freeway in the South Coast Air Basin. These two studies allow for a comparison of results from a heavily traveled highway (I-405) with traffic dominated by light duty vehicles compared to trucks, and a highway (I-710 which provides access to the ports of Los Angeles and Long Beach) with among the highest truck traffic of any highway in the U.S. Average traffic flow on the I-405 during the sampling periods was 13,900 vehicles per hour. Traffic primarily was dominated by gasoline-powered cars and light trucks, and less than 5 percent of vehicles observed were heavy-duty diesel trucks. In contrast, sampling on the I-710 freeway indicated that more than 25 percent of the vehicles on that road were heavy-duty diesel trucks during the sampling periods, with an average traffic flow of 12,180 vehicles per hour.

The Interstate 405 study included measurements of concentrations of carbon monoxide (CO), black carbon (BC), undifferentiated particulate matter (PM) and particle number at increasing downwind distances from the freeway. These measurements demonstrate the peak concentrations of emissions near the roadside and the effects of dispersion in the atmosphere with distance from the source. CO and BC were intentionally selected because their ambient concentrations are related closely to vehicle emissions. Relative concentrations of CO and BC near the freeway tracked each other well as distance from the freeway increased. (BC originates as ultrafine or fine particles from primary sources during incomplete combustion of carbon-based fuels, for example, diesel engines, wood burning, and poorly maintained industrial and residential heating.) The authors concluded that this "result confirmed the common assumption that vehicular exhaust is the major source of CO, BC, and ultrafine particles near a busy freeway" (Zhu et al., 2002a). Particle number concentration (6-220 nm) decreased exponentially with downwind distance from the freeway. The Interstate 405 study shows that particle number concentration near the freeway was about 25 times greater than that at background locations, and that the concentration of ultrafine particles drops to background levels within 300 meters downwind of the freeway. Data showed that both atmospheric dispersion and coagulation contributed to the rapid decrease in particle number concentration and change in particle size distribution with increasing distance from the freeway.

Averaged concentrations at five distances from the freeway are summarized in Table 1 along with measured upper and lower limits.

Table 1. BC Concentrations at Increasing Distances from the 405 Freeway, and Incremental Contribution of Highway Emissions to Regional Background Concentrations

Distance from highway (m)	Measured Average (and Upper and Lower Limit) BC (µg/m^3)	Downwind Minus Upwind Average Concentration BC (µg/ m^3)

30	5.4 (3.4-10.0)	4.36
60	3.2 (3.0-3.5)	2.16
90	2.5 (2.4-2.6)	1.46
150	1.6 (1.1-2.0)	0.56
300	1.3 (1.1-1.5)	0.26

Upwind concentrations of the same pollutants were used to determine the *background* concentration in the urban airshed not directly affected by highway emissions. By subtracting these upwind concentrations from the concentrations measured at the downwind monitors, the incremental contribution of emissions from the highway could be determined. The incremental contributions of BC from the highway range from 4.36 (µg/ m^3) at 30 meters to 0.26 (µg/ m^3) at 300 meters.

The Interstate 710 study was conducted in part because the freeway has a much higher percentage of heavy-duty diesel truck travel than the Interstate 405 freeway. Measurements were taken at 17, 20, 30, 90, 150 and 300 meters downwind and 200 meters upwind from the center of the freeway. As with the 405 freeway study, relative concentrations of CO, BC, and particle number downwind from the freeway were found to be many micrograms per cubic meter greater than upwind concentrations and tracked each other well as one moves away from the freeway. These measured average BC concentrations at increasing distances from the 710 Freeway are shown in the Table 2 below. Both atmospheric dispersion and coagulation appear to contribute to the rapid decrease in particle number concentration and change in particle size distribution with increasing distance from the freeway.

Table 2. BC Concentrations at Increasing Distances from the 710 Freeway and Incremental Contribution of Highway Emissions to Regional Background Concentrations

Distance from highway (m)	Measured Average (and Upper and Lower Limit) BC (µg/m^3)	Downwind Minus Upwind Average Concentration BC (µg/m_3)
200 m (upwind)	4.6 (3.1-5.9)	
17 m (downwind)	21.7 (20.3-24.8)	17.1
20	19.4 (16.5-21.6)	14.8
30	17.1 (12.6-19.3)	12.5
90	7.8 (4.5-9.3)	3.2
150	6.5 (3.9-9.2)	1.9
300	5.5 (3.5-7.7)	0.9

A study in Seattle, Washington (Curtis, Gilroy, and Harper, 2004) studied the relationship between BC levels at an urban near roadway monitoring site, and a heavily traveled freeway. This study showed that there were frequently peak evening rush hour BC levels of 5 micrograms per cubic meter (µg/m^3) or above near I-5. The I-5 traffic corridor is a microscale monitoring site represented by the Olive Street BC data. The traffic volumes and BC readings correlate well, supporting the hypothesis that traffic is a major contributor to $PM_{2.5}$ at the site, given that BC originates as ultrafine or fine particles. The Olive Street air monitoring site is about 20 meters west of the southbound lane of I-5. This area of I-5 contains express lanes along several high use overpasses which all contribute to the area traffic. Daily volumes along this section of

I-5 average 284,700 vehicles per day (in 2003). Light-duty traffic has peak weekday flows above 10,000 vehicles per hour, with diesel traffic of about 1,000 vehicles per hour. BC tends to peak during weekdays with high traffic volumes, and is sharply lower on weekends. This reduction parallels the significantly lower weekend diesel traffic volumes.

Peak BC measurements occur during the afternoon rush hour (4-6 pm). Correlations between light-duty vehicle volumes and BC peaks (readings above 5 $\mu g/m^3$) are better than those between diesel truck volumes and BC peaks. This may occur because light-duty volumes overwhelm diesel truck volumes during this period (93 percent of the traffic volume is from light-duty vehicles).

The Seattle study also provides BC measurements for a Beacon Hill site, which is used as the urban background for Seattle. Hourly BC readings during the week of July 21-27, 2003 stayed within the range of 0 to 2 $\mu g/m^3$, with readings mostly below 1.0 $\mu g/m^3$.

An East Bay (California) children's respiratory health study (Kim et al., 2004) provides measurements of BC concentrations taken at schoolyards in the area around Oakland, California. This study evaluated nearby traffic sources and average pollutant concentrations at ten schools. BC concentrations were found to be between 0.7 and 0.8 $\mu g/m^3$ at schools without nearby major traffic sources. Schools within 60 to 360 meters of major traffic sources (90,000 to 210,000 annual average daily traffic) were found to have BC concentrations between 0.8 and 1.1 $\mu g/m^3$. Notably, BC concentrations are above the study average (0.8 $\mu g/m^3$) only for those schools that are near and downwind of heavily traveled freeways. The highest BC concentration of 1.1 $\mu g/m^3$ was measured at the school 60 meters from a freeway. This East Bay study helps to define the lower bound of the range of BC contributions from highways.

From monitoring conducted by the Baltimore traffic study (deCastro et al., 2008) over 12 months at 5 minute intervals, background neighborhood BC exposure was estimated to be 905 ng/m^3, with additional exposure from traffic at a rate of 6 ng/m^3 per 100 vehicles every 5 minutes. Meteorological and temporal conditions, including atmospheric transport processes, were important modifiers of exposure. The quantitative characterization of the determinants of BC exposure from this Baltimore research study may be relevant to traffic-related pollutant exposures in other urban environments with similar fleet composition. This model could be applied in other urbanized areas to estimate roadway contributions to BC concentrations as an increment to the monitored $PM_{2.5}$ concentration at current $PM_{2.5}$ monitoring network sites.

The above research studies provide evidence through measurements of BC downwind of heavily traveled freeways of the likely contribution of a highway to ambient $PM_{2.5}$ levels (BC is a direct particle component of $PM_{2.5}$ and the BC measured in these studies is emitted directly as fine or ultrafine particles—less than 2.5 microns). Thus, these data show based on similar vehicle mixes and traffic volumes what the range of $PM_{2.5}$ contributions is likely to be at different downwind distances from highways of comparable traffic loads in the South Coast Air Basin. In addition, given the levels of observed BC concentrations measured downwind of heavily trafficked highways, baseline $PM_{2.5}$ ambient concentrations measured at urban or non-urban sites not within the impact zone of heavily traveled highways are not likely to represent ambient levels near the highway. Data from multiple studies are consistent with the evidence from the I-405 and

I-710 studies showing that significantly elevated concentrations of primary particles emitted from highways are found within 300 meters of the highway. But these studies provide no evidence that incremental concentrations attributable to on-road emissions are detected by monitors located beyond the 300 meter high pollution zone.

It should be noted that BC and elemental carbon (EC) are terms that describe carbonaceous material in atmospheric particles. These terms as well as soot and graphitic carbon sometimes are used interchangeably. BC and EC are often used to indicate optical and thermal measurement methods, respectively. The results obtained from the two methods correlate well but in terms of methodology, they are significantly different. BC is measured with an instrument called an aetholometer that provides information in near real time at the measurement site, whereas EC is measured with Thermal/Optical Reflectance (TOR) that can only be applied in the lab using a machine to analyze the particles captured on a filter. BC originates as ultrafine or fine primary particles emitted directly from sources during incomplete combustion of carbon-based fuels—for example, diesel engines, wood burning, and poorly maintained industrial and residential heating. Although BC and EC are terms that are often used interchangeably, BC is found in the ultra fine and accumulation modes of PM, but not the coarse (2.5 to 10 um) mode (Turner and Allen, 2008). Thus emissions of BC will contribute primarily to ambient concentrations of $PM_{2.5}$.

Several important studies are currently underway or recently completed that should assist in better understanding near-highway pollutant concentrations. The California Air Resources Board, with the Bay Area Air Quality Management District, recently completed a modeling study to estimate the health risks from diesel exhaust in West Oakland (ARB, 2008). This study included diesel PM emissions from the Port of Oakland and related vessels and equipment, the Union Pacific Railyard and locomotive movement, the roadways within the study area, construction, and stationary sources. The final report concludes that "Trucking operations are the largest single source of health risk to the West Oakland community, even though they are not the largest source of emissions in the modeling domain." This is due to a combination of the magnitude of these emissions and the location of the emissions relative to the West Oakland populations. The study shows that trucking emissions account for about 71% of the population-weighted potential cancer risks in West Oakland. (ARB, 2008). The study also concludes that "the West Oakland community is exposed to diesel PM ambient concentrations that are almost three times that average background diesel PM ambient concentrations" in the air quality district (ARB, 2008). This includes elevated PM emissions from trucks, rail, and port operations in the area. The final report, however, does not appear to directly report actual or modeled PM concentration levels, so the additional PM concentration increments resulting from the activities in the West Oakland area cannot be compared with the findings from other studies reported here.

EPA and FHWA, in conjunction with several other study sponsors, are in the early stages of a Near-Road Mobile Source Air Toxic (MSAT) study. This study is part of a settlement agreement resulting from a suit over FHWA and Nevada Department of Transportation's environmental assessment related to a highway improvement project for US 95. This project will include one-year monitoring studies, most likely in Las Vegas (2008), Southeastern Michigan (2009), and Raleigh, North Carolina (2010). Measurements to be taken include continuous fine particle ($PM_{2.5}$), integrated PM, and continuous BC monitoring (in addition to toxics sampling) at 10 meters from the roadway, 100 and 300 meters downwind, and at 100

meters upwind. Meteorology and traffic data will also be monitored. Testing is also ongoing in the Syracuse, NY area. Pollution concentrations are being measured at several locations near the intersection of I-81 and I-690. The testing is designed to determine the impacts of both temporal and seasonal variations and traffic counts are also being monitored simultaneously (Wang et al., 2008).

Several recent studies on near-road pollution impacts have been performed in the Los Angeles area using a mobile platform with real-time instruments (Hu et al., 2009 and Kozawa et al., 2009). The first study, performed in 2007, centered around the I-710 and Pacific Coast Highway areas near the Port of Long Beach (Kozawa et al., 2009). This study found diesel-related pollutant concentrations within 150 m of the freeway were often 2 to 5 times greater than concentrations outside of this zone. While elevated impacts could generally be directly related to the wind direction, steady and consistent winds were not required to produce high impacts, suggesting that people living or working near busy roadways can be exposed to pollutant concentrations several times higher than would be predicted by ambient measurements outside of the impact zone (Kozawa et al., 2009). Impacts were generally found to be higher during the summer than the winter. Traffic volumes on the I-710 freeway average over 1,100 diesel trucks per hour with peak hours as high as 2,200 to 2,600 diesel vehicles per hour (Kozawa et al., 2009). Another study, performed in 2008, found that the impact zones from highway traffic may be much greater than previously estimated in the pre-sunrise hours (Hu et al., 2009). This study was performed along the I-10 freeway in west Los Angeles and found that ultrafine particle (UFP) concentrations were as high as 95,000/cm^3 in the winter pre-sunrise hours immediately downwind of the freeway. More surprising, though, was that downwind UFP concentrations of as high as 40,000/cm^3 occurred 1,200 m from the freeway and that background levels of about 15,000/cm^3 did not occur until a distance of about 2,600 m from the freeway (Hu et al., 2009). When the researchers traveled the same route during daytime hours, the downwind UFP concentrations decreased to background levels within about 300 m, as found in previous studies. These results were attributed to the more stable meteorological conditions that occurred in the pre-sunrise hours compared to the rest of the day. If similar results are shown to occur in other areas, the effects could have significant exposure implications, as this pre-sunrise impact zone covers a much broader geographic area at a time when most people are in their homes during the pre-sunrise hours.

AMBIENT MONITORING

A qualitative estimate of the contribution of highway vehicles to ambient $PM_{2.5}$ concentrations can be undertaken based on monitors that have been sited in accordance with the criteria described in Appendix W, section 10.2.2.(b) for measuring near roadway concentrations. Table 3 presents measured ambient $PM_{2.5}$ concentrations in the Washington metropolitan area by monitor. Inspection of the annual means for the 1999-2005 time period shown in the table indicates that the median $PM_{2.5}$ annual mean for the area monitors is as high in 2005 as it was in 1999, 2001 and 2002.

The 3-year average 24-hour or annual average $PM_{2.5}$ concentrations are needed for comparison with the relevant ambient air quality standards, based on federal reference monitors in an EPA-approved network with 3 complete years of data. We reviewed the monitoring site

characteristics in the Washington, DC-Maryland-Virginia area with respect to the likelihood that they represent a well developed and heavily traveled nearby roadway network. The two monitoring sites that best meet these conditions are the near highway monitors at River Terrace/RFK (site ID 110010041) and Park Services/Ohio Drive (site ID 110010042), which are both in the District of Columbia. Both of these sites are near heavily traveled roadways/freeways. The River Terrace/RFK site is about 150 meters from both I-295 and Benning Road. The Park Services/Ohio Drive site is 115 meters from I-395 near where it crosses the Potomac River. Both monitors are located within the neighborhood scale which allows comparison with both the annual and 24-hour NAAQS. Therefore, the analyses performed in this study use the monitoring data from these two near roadway sites for an evaluation of the potential contribution of highway vehicles to ambient $PM_{2.5}$ concentrations.

Inspection of the annual means for the 1999-2005 time period shown in the table does not indicate that there is a downward trend in these values. In fact, the median $PM_{2.5}$ annual mean for the area monitors is as high in 2005 as it was in 1999, 2001 and 2002. Note that the detectability and quantifiability of trends in ambient pollutant concentrations depend upon the magnitude of emission reductions or increases, the quality and length of record of the monitoring data, and the relative magnitudes of the emission-related (signal) and weather-driven (noise) variations in ambient pollutant concentrations. For a signal-to-noise ratio of 1:1, about two to four years of monthly data are typically needed to detect a linear trend with high probability (90 percent) at a 95 percent confidence level, whereas 10 to 20 years of data are generally needed when the signal to noise ratio falls to 0.1:1 (Weatherhead et al., 1998). The latter, low signal-to-noise ratio is usually characteristic of ambient pollutant measurements.

Table 3. Washington, DC-Maryland-Virginia Nonattainment Area Annual Average $PM_{2.5}$ Concentrations (1999-2005) ($\mu g/m^3$)

Site ID	Monitor	1999	2000	2001	2002	2003	2004	2005
110010041	River Terrace	15.9	18.9	16.9	16.3	14.9	14.9	14.8
110010042	Park Services	15.3	15.3	15.0	15.6	13.4	14.5	15.8
110010043	McMillan Reservoir	18.1	15.7	16.1	15.6	14.3	14.4	14.5
240313001	Rockville	13.5	14.3	12.8	13.0	11.9	12.6	13.6
	Bladensburg	19.3	18.3	17.1	18.4			
	Greenbelt				12.1	11.5	9.8	
240330030	Beltsville						12.6	13.4
	Suitland	15.2	14.4	13.5				
240338003	PG Equestrian Center				15.4	12.6	13.3	13.8
	Arlington	13.8	14.9	14.7	14.9	14.1	14.5	15.2
510590030	Franconia	13.4	14.1	14.3	13.1	13.2	13.9	13.4
	Seven Corners	14.5	15.3	13.9				
510591005	Annandale				13.7	13.2	13.7	14.3
510595001	Lewinsville	14.3	15.1	14.5	14.1	13.6	14.0	14.7
511071005	Ashburn	12.8	13.8	14.1	13.5	13.1	14.1	14.5
	Highest	*19.3*	*18.9*	*17.1*	*18.4*	*14.9*	*14.9*	*15.8*
	Lowest	*12.8*	*13.8*	*12.8*	*12.1*	*11.5*	*9.8*	*13.4*
	Median	*14.5*	*15.1*	*14.5*	*14.5*	*13.2*	*14.0*	*14.5*

NOTE: Blank data indicates the monitor has not been installed or has been removed.

SOURCE: MWCOG. The 2005 data have been added to the original MWCOG table. The 2005 annual average $PM_{2.5}$ concentrations are taken from Appendix A of the MDOT-SHA analysis.

SOURCE APPORTIONMENT

Information from source apportionment studies show the complexity of $PM_{2.5}$ formation and the different source contributions to observed $PM_{2.5}$ levels in an area. Source apportionment methods for airborne PM are required to understand the relationship between human exposure and source emissions. The purpose of a source apportionment analysis is to determine the contributions of various pollution sources at a specific location or monitor. Positive matrix factorization (PMF) is a powerful receptor model for airborne PM and has been used to assess ambient PM source contributions. PMF has been developed as an improvement in source apportionment modeling techniques, using a multivariate modeling technique that simultaneously identifies factors and their contributions to a receptor sample. PM concentrations are then regressed against the PMF factors to determine contributions of specific sources. An advantage of this technique over previous methods, such as Chemical Mass Balance (CMB) modeling, is that this technique does not need source compositions as inputs to the analysis.

A research paper by Kim and Hopke (2005) examines the use of carbon fractions in source apportionment studies to identify ambient $PM_{2.5}$ sources for monitoring areas in the eastern United States, using PMF techniques. $PM_{2.5}$ samples were collected monitoring sites in Washington, DC and Atlanta. A total of 718 samples collected between August 1988 and December 1997 were used for the Washington, DC study; and 529 samples collected from 1998 through 2000 were used for the Atlanta site. In this study, using the PMF-resolved carbon fractions, gasoline emissions were shown to result in relatively high OC3 and OC4 concentrations while diesel emissions showed high EC1 fractions.

Although both of these monitoring sites are in urban areas, the Washington site is in close proximity to a major interstate, while the Atlanta site is approximately 1.25 miles from the nearest interstate. The Washington monitoring site is located near the Potomac River, 2 kilometers southeast of the Lincoln Memorial, 3 kilometers northeast of Ronald Reagan Washington National Airport. A major highway (I-395) is closely situated to the north and west of the site (Kim and Hopke, 2004. As indicated above, at its closest point, the IMPROVE monitoring site is about 115 meters from I-395, within the expected range of potential impacts of the highway. The Atlanta site is located in close proximity to several sources of diesel exhaust including a Greyhound repair terminal and industrial combustion sources, and is surrounded by railroad tracks. However, the Atlanta site is much further from major roadways. Based on Google Earth maps, the nearest major roadway to the Atlanta site is about 440 m away to the east and south of the site (Route 78/278) and over 2 km to the nearest interstate (I-75/85) which is to the east of the site. The rail line is closer at approximately 270 m to the north and east of the site. In addition, several industrial sites are closer to the monitor than the major roadways. Thus, it would not be expected that emissions from the roadways are significantly impacting the Atlanta site.

The average contribution of each source type to the area's $PM_{2.5}$ concentrations at each site is shown in Table 4. The fraction of mass contributions from gasoline and diesel emissions in Washington, DC is 23 percent and 17 percent in Atlanta. High weekday-to-weekend ratios for

diesel emissions from data collected at the Washington site demonstrate that diesel emissions are mostly from vehicles operating primarily on weekdays.

While these monitoring sites may not be fully representative of the near-roadway $PM_{2.5}$ concentrations, these results provide a reasonable representation of the motor vehicle source contributions to observed $PM_{2.5}$ levels in these areas, and should be considered in developing $PM_{2.5}$ nonattainment designations, SIPs, and PM hot spot analyses. Given the low sulfur dioxide emissions within the Washington, DC-Maryland-Virginia area, it is likely that the sulfate contribution observed in this research will be found at consistent levels at monitors throughout the region because it results from long-range transport and not local sources. Therefore, site-to-site variations in $PM_{2.5}$ levels in the Washington region most likely result from variations in vehicle emissions strengths.

Table 5 shows the average seasonal mass contributions of diesel and gasoline exhaust to the concentration of $PM_{2.5}$ measurements at the Washington and Atlanta sites. Seasonal variability occurs due to secondary formation of PM. Summertime conditions are conducive to the secondary formation of organic matter when abundant VOC exists and photochemical reactions are active. In contrast, during wintertime, primary emissions of PM are generally greater contributors to total PM, including PM from gasoline exhaust. Diesel exhaust is less subject to secondary PM formation, and shows less variation between summer and winter. (Zheng, et al., 2007)

As shown in Tables 4 and 5, both the percentage contribution of $PM_{2.5}$ from gasoline exhaust compared to all sources, measured as the mass contribution of $PM_{2.5}$, are significantly greater at the Washington site than at the Atlanta site. This evidence supports the conclusion that the closer proximity of the Washington site to the large traffic volume of gasoline vehicles on a major interstate is the primary factor in explaining this greater contribution. In contrast, the Atlanta site shows a greater percentage and a greater mass contribution from diesel exhaust. In this case, the Atlanta site is much closer to other sources of diesel exhaust, whereas the traffic on the interstate near the Washington site has relatively low diesel truck volumes.

The gasoline contribution relative to the diesel contribution at the Washington site contrasts not only with the Atlanta data, but also with data from Pasadena and West Los Angeles. The ratio of the average contribution from diesel emissions relative to gasoline vehicle emissions is about 0.09 in Washington, compared with 3.2 in Pasadena, 3.0 in West Los Angeles, and 2.3 in Atlanta (Kim and Hopke, 2004). These results point to the limited diesel traffic relative to gasoline vehicle traffic near the Washington site. As shown in Table 4, the combined effect of diesel and gasoline vehicles is relatively similar in Washington and Atlanta.

Table 4. Comparison of Average Source Contributions (%) to $PM_{2.5}$ Mass Concentrations Among PMF Studies with Eight Carbon Fractions

	Average Source Contribution	
Variable	**Washington, DC**	**Atlanta, GA**
Secondary Sulfate Aerosol (summer and winter))		49.7 %
Secondary Sulfate Aerosol (summer-high)	42.8 %	
Secondary Sulfate Aerosol (winter-high)	6.0 %	
Secondary Sulfate Aerosol (carbon-rich)	10.6 %	5.9 %
Diesel Emissions	1.8 %	10.5 %
Gasoline Vehicle	21.0 %	6.4 %
Secondary Nitrate Aerosol	8.4 %	8.5 %
Airborne Soil	1.9 %	2.8 %
Incinerator	3.7 %	
Aged Sea Salt	2.2 %	
Oil Combustion	1.5 %	
Sea Salt		
Wood Smoke		6.5 %
Metal Processing		3.4 %
Railroad Traffic		2.5 %
Cement Kiln/Carbon Rich		2.0 %
Bus Maintenance facility/highway traffic		1.8 %

SOURCE: Kim and Hopke, 2005

Table 5. Comparison of Seasonal Mobile Source Exhaust Contribution to $PM_{2.5}$ From Motor Vehicles in Washington and Atlanta (ug/m3)

	Washington, DC	Atlanta
Gasoline-Summer	3.0	0.38
Gasoline-Winter	4.8	2.4
Diesel-Summer	0.25	0.96
Diesel-Winter	0.30	0.82

SOURCES: Washington, DC data: Kim and Hopke, 2004; Atlanta data: Zheng, et al., 2007

Based on this information, it is expected that the contribution of highway vehicles, both gasoline and diesel, to ambient PM2.5 concentrations varies from 3.25 $\mu g/m^3$ in the summer to about 5.1 $\mu g/m^3$ in the winter. This is consistent with the range of concentrations expected based on other measurement methods and from other areas, considering the volume of traffic that passes over this highway on a daily basis.

DISPERSION MODELING

Dispersion modeling is an important tool that can be used to determine whether populations located within the 300 meter impact zone near existing highways or proposed highway projects would be exposed to concentrations of $PM_{2.5}$ that might exceed the 24-hour $PM_{2.5}$ NAAQS. EPA's announcement in the March 10, 2006 Hot Spot rule states that the MOBILE6.2 emissions model for $PM_{2.5}$ is not currently appropriate for project level conformity determinations. However, EPA has just released its draft version of a new emissions model, MOVES, in April 2009. The final version is expected to be released by the end of 2009. The final version of MOVES will eventually be required for SIP development purposes, and could also be used to identify counties that should be designated nonattainment because of the ambient impact of emissions from on-road vehicles. EPA does not dispute that modeling tools are available to replicate the dispersion of emissions from highways in the atmosphere for the purpose of estimating ambient concentrations. Possible data and methods that could be used to perform such an analysis are described below.

Models

EPA's Guideline for Air Quality Models suggests modeling techniques that are appropriate for evaluating the effects of line sources, such as roadways. CALINE-3 and CAL3QHC/CAL3QHCR are listed by EPA as preferred/recommended dispersion models. CALINE-3 is a steady state Gaussian dispersion model designed to determine air pollution concentrations at receptor locations downwind of highways located in relatively uncomplicated terrain. CALINE-3 is designed to predict air pollutant concentrations near highways and arterial streets due to motor vehicles operating under free flow conditions. The CALINE-3 algorithms are incorporated into the more refined CAL3QHC and CAL3QHCR models. CAL3QHC is a CALINE-3 based CO and PM model with queuing and hot spot calculations and with a traffic model to calculate delays and queues that occur at signalized intersections; CAL3QHCR is a more refined version based on CAL3QHC that requires local meteorological data and can determine daily or annual concentrations of PM. The resources needed to develop the input files required by CAL3QHCR and for analyzing the output results are relatively modest. The primary inputs that would be needed to run CAL3QHCR to determine near roadway $PM_{2.5}$ concentrations are described below. More complex dispersion models are also available, but the inputs required for CAL3QHCR are fairly simple and obtainable, and only a relatively small level of effort is needed to learn to run this model.

Road Network

The dispersion modeling should be focused on areas of the roadway with the heaviest expected traffic volumes, and/or the largest truck share of traffic. Interstates, freeways, and major arterials in the selected area should be included in the road network to be modeled. For input to CAL3QHCR, roadway links need to be coded with x and y coordinates at the beginning and end of each link. This can be done fairly simply using some of the detailed project engineering maps, or from existing link coordinates previously used for modeling regional emissions for conformity and air quality modeling in the area. These links should be designed to capture the

approximate alignment of the existing network highways and major arterials, and any additional facilities expected to be in service before the attainment deadline.

Receptor Network

A receptor matrix should be designed to determine the maximum $PM_{2.5}$ concentrations likely to be experienced by people residing close to the roadway or by those using facilities such as schools, parks, and day and in-patient care centers located near the network highways. One approach that could be used to determine the extent of the $PM_{2.5}$ dispersion would be to first design a receptor matrix with receptors located at the closest distances where the public will have access, about 50 meters on either side of the project and at increments of 50 meters beyond that to 300 meters from the road. Rows of these receptors should be spaced parallel to the roadway in increments of about 50 to 100 meters. Results of this sensitivity analysis could then be used to determine how far away from the highway the dispersion is significant. Using this as a guideline along with detailed maps of the area, receptor locations could be selected within the range of the expected dispersion that includes residential and public facilities.

Traffic Volumes

For the portions of roads to be included in the road network, daily traffic volumes by hour are needed. Projected daily traffic volumes for the project should be adjusted by hour using local hourly traffic allocations, such as those used by Metropolitan Planning Organizations (MPOs) in emission modeling of the area for transportation conformity and SIP purposes. CAL3QHCR provides the availability to model each day of the week using different hourly traffic volumes. At a minimum, daily traffic adjustment factors to distinguish weekday traffic patterns from weekend traffic patterns should be applied. Annual average daily traffic should not be used because it will mask the peak daily emissions by averaging daily and weekend travel patterns.

Emission Factors

To determine typical emission factors on the proposed roadway and surrounding roadways, MOBILE6.2 could be modeled using local conditions to provide a conservative estimate of $PM_{2.5}$ emission factors from onroad vehicles. EPA has concluded that MOBILE6.2 is expected to provide reasonable estimates of $PM_{2.5}$ emission factors on a regional basis. However, on the microscale level, MOBILE6.2 does not account for variations in inputs such as temperature, speed, and driving cycle (e.g., acceleration, deceleration, cruise) in determining the $PM_{2.5}$ emission factors. Generally, each of these variables will add to the emissions estimated without taking these factors into account. If violations are predicted using MOBILE6.2 as a screening tool, it can be concluded that the area should be designated nonattainment, and that more sophisticated modeling tools will be needed to estimate the design value and to design and test the air quality benefits of potential control strategies.

An important local characteristic that should be captured in performing MOBILE6.2 emission factor modeling is the fraction of vehicle miles traveled (VMT) from heavy-duty diesel vehicles (HDDVs) and the distribution of vehicles by age (particularly the heavy-duty vehicles). $PM_{2.5}$ emission factors from HDDVs are generally an order of magnitude greater than $PM_{2.5}$ emission

factors from light-duty vehicles, as well as from heavy-duty gasoline vehicles. Thus, the distribution of activity by vehicle type is important to capture. If the fraction of VMT from HDDVs is expected to differ on the proposed roadway from that on the connecting roads, then emission factors should be developed separately for each highway link with a distinct HDDV VMT fraction. In addition, as more stringent vehicle control requirements are phased in, $PM_{2.5}$ emission factors from horizon years with PM controls fully phased in will be significantly lower than emission factors from older vehicles subject to less stringent standards. Thus, the local registration data used in performing conformity and SIP analyses for the area should also be used in these analyses.

Emission Factor Updates

Recent chassis dynamometer testing by EPA of heavy-duty diesel vehicles shows that the $PM_{2.5}$ emission factors in MOBILE6.2 are underestimated. EPA found that for heavy-duty diesel vehicles in Classes 6 through 8 (greater than 19,500 pounds gross vehicle weight rating), PM emissions were approximately 2.3 times greater than those predicted by MOBILE6.2 (EPA, 2006a). EPA is currently performing additional testing and analysis of these emission rates, and it is likely that in MOVES (the next-generation mobile source emission calculation model that will replace MOBILE6), these heavy-duty PM emission factors may be even greater than 2.3 times the MOBILE6.2 emission factors. As a result, dispersion model analyses based on unadjusted MOBILE6.2 PM emission rates will generally underestimate the emissions from heavy-duty diesel vehicles.

In addition, EPA has recently determined that MOBILE6.2 has underestimated $PM_{2.5}$ emission factors from light-duty gasoline vehicles and trucks. EPA is currently reviewing data from a study conducted in Kansas City from 2004 to 2005. This study included emission testing of nearly 500 light-duty cars and trucks from model years 1968 through 2005. From this work, EPA determined the effects of temperature and deterioration on PM exhaust emissions from light-duty cars and trucks. MOBILE6.2 does not include temperature or deterioration effects for PM on light-duty vehicles and trucks. From this testing, EPA has found that, at a national level, $PM_{2.5}$ emissions from light-duty gasoline vehicles and trucks are about 1.6 times greater than emissions predicted using MOBILE6.2 (EPA, 2008). The temperature effect found in this analysis is significant—with a 20°F decrease in ambient temperature, PM emissions doubled. Regional differences from this national estimate could be significant. While highway PM emissions are generally dominated by heavy-duty diesel vehicles, this increase in light-duty PM emission rates could be significant in areas with large volumes of light-duty traffic, or with monitored ambient concentrations that demonstrate marginal attainment. Additionally, these higher PM emission rates could be causing more $PM_{2.5}$ violations or more severe violations, particularly in colder northern areas and in winter months, that had not been identified in the past.

Meteorological Data

To perform dispersion modeling using CAL3QHCR, a meteorological data set including the wind flow vector, wind speed, and ambient temperature, by hour for each day of the year is needed for a year's worth of data. For a base year modeling run, the meteorology should

correspond to the year being studied. For a projection year, an historical year with fairly typical meteorology should be selected. Such data can be obtained from the National Climatic Data Center.

Atmospheric Chemistry

It should be noted that the current set of line source dispersion models do not simulate some of the particle formation mechanisms – condensation of condensable fractions after cooling to ambient temperatures, evaporation of volatile aerosols and coagulation – that will influence $PM_{2.5}$ levels as the vehicle emissions disperse from the near roadway environment. However, EPA concluded in the hot spot rule that because the residence time within the 300 meter zone for vehicle emissions is very short (on the order of 5 minutes or less), the conversion of emissions in the atmosphere is not expected to be a significant factor.

Analysis Using Dispersion Modeling

A dispersion model analysis was performed to estimate the near highway $PM_{2.5}$ impacts of the Intercounty Connector (ICC) Project in Maryland. The ICC is a proposed six-lane, 18-mile highway that would link I-95 and US 1 at its eastern terminus with I-270 at its western terminus and it is within the Washington, DC-Maryland-Virginia nonattainment area for $PM_{2.5}$. Therefore, the project is required to meet transportation conformity requirements found in 40 CFR Part 93 as amended (EPA, 2006b). The Project is expected to add an additional 12,235 daily vehicle trips to current annual average daily travel of 175,575 on the segment of I-95 that connects with the Project, and 13,200 additional vehicle trips on the segment connecting with I-370. Traffic during the peak hour at the most heavily traveled intersection is about 12,000 vehicles per hour.

Using the dispersion modeling techniques discussed above, MOBILE6.2 and CAL3QHCR were used to estimate vehicle emissions and predict concentrations of $PM_{2.5}$ caused directly by emissions from vehicles traveling on the ICC in Maryland. To account for the heavy-duty diesel vehicle emissions not captured by MOBILE6.2, the Class 6 through 8 heavy-duty diesel vehicle emission factors reported by MOBILE6.2 were multiplied by a factor of 2.3. The resulting $PM_{2.5}$ concentrations for the **Build** scenario in 2012 that includes the additional traffic volumes from the ICC are shown in Table 6 for receptors located from 15 m to 160 m from the most-heavily traveled intersection of this project. The traffic volumes at this intersection are comparable to those from the 405 Freeway study, presented in Table 1.

Project emissions have a significant impact within 300 meters or less, but no modeled increases are shown at the nearest air quality monitor 1.6 miles away. Thus, accounting for these near highway emissions would likely lead to more severe and more frequent violations of the 24-hour $PM_{2.5}$ NAAQS than would currently be detected with monitors outside the zone of influence.

Table 6. Range of Incremental $PM_{2.5}$ Concentration from Highway Vehicles at Receptors Nearest Highest Expected ICC Traffic Volumes

Receptor Distance from Highway	Range of $PM_{2.5}$ Increments ($\mu g/m^3$)

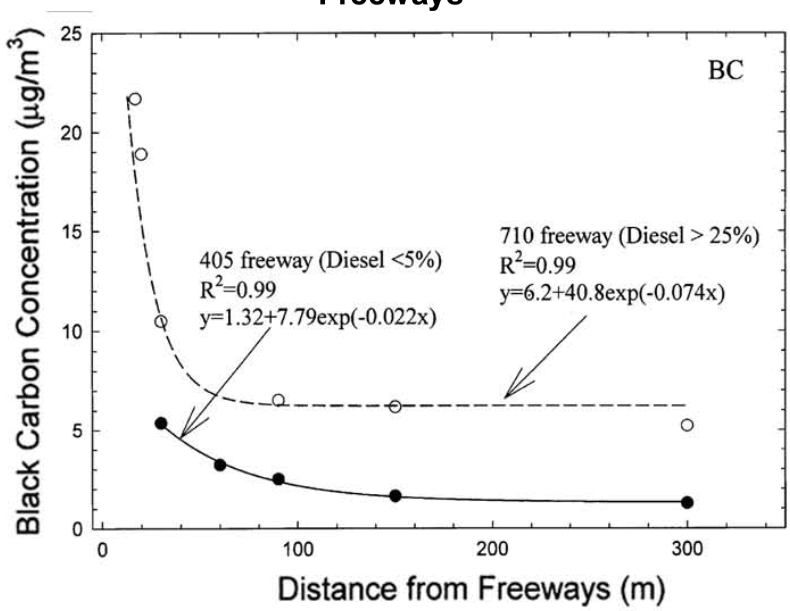
15 m	2.9-4.3
40 m	2.3-3.1
80 m	1.8-2.5
120 m	1.5-1.8
160 m	1.3-1.5

SUMMARY

This analysis provides evidence of the incremental contribution of $PM_{2.5}$ emitted from vehicles traveling on major highways to measured regional ambient $PM_{2.5}$ concentrations not within the zone significantly affected by such emissions. Three different types of information are available for evaluating near roadway concentrations: (1) near roadway ambient monitoring studies, (2) dispersion models able to model line sources, and (3) source apportionment studies.

These data demonstrate that highway emissions add from 1 to 17 µg/m3 to regional monitored concentrations, depending on the traffic load (AADT), the share of daily traffic contributed by diesel trucks, the distance from the highway, and local factors affecting dispersion from the highway into the atmosphere. The relationships between distance from the highway, AADT, truck share, and $PM_{2.5}$ concentrations are best described by Zhu et al. (2002 a; b) from sites near two freeways in Southern California (I-405 and I-710). Concentrations are significantly higher when large numbers of diesel trucks are present, and BC concentrations declined with increasing distance from the freeway as shown in Figure 1.

Figure 1. Concentrations of BC versus Distance from the I-405 and I-710 Freeways



In the companion I-710 study, BC concentration levels were substantially more elevated than those in the I-405 study because this is an area substantially affected by heavy-duty diesel traffic. Again, Figure 1 shows the relationship between freeway distance and BC concentration. In the I-710 study, with 25 percent or more of the vehicles being heavy-duty diesel trucks, the BC

concentrations at 30 meters are 12.5 μg/m3 above regional background concentrations, and at 300 m from the freeway are still about 1 $\mu g/m^3$ greater than regional background. A control strategy designed to reduce regional average concentrations to the level of the NAAQS will not reduce these elevated concentrations near the highway to the level of the NAAQS. The incremental contribution of highway emissions must be accounted for when determining the design value for the nonattainment area to ensure that the SIP will provide for attainment.

Using monitoring studies to estimate concentrations near highways is preferred to dispersion modeling when the monitoring studies are representative of the roadway configuration, time period, and vehicle mix for the site of interest. Dispersion modeling is an effective alternative tool for estimating the incremental $PM_{2.5}$ concentrations added by emissions from on-road vehicles to regional concentrations measured beyond the near-highway high pollution zone, as indicated by the ICC project dispersion modeling results discussed above. Comparing results from this study with those from the I-405 study indicates that dispersion modeling can be used as a reasonable predictor of expected $PM_{2.5}$ concentrations resulting from highway emissions. It is expected that when EPA issues quantitative guidance for $PM_{2.5}$ hot spot analyses, that dispersion modeling will be an important component of this guidance. As a practical matter, highway-level ambient air analyses may rely on dispersion models if the State and EPA agree that monitoring at locations near highways is not available, and the incremental contribution from highway emissions can be effectively predicted without monitors. Right now, an appropriate approach for modeling $PM_{2.5}$ concentrations near highways is to use CAL3QHC or the equivalent and MOVES PM emission factors (use MOVES when released, or MOBILE6.2 PM emission factors with published adjustments for light- and heavy-duty vehicles) to simulate near roadway concentrations. Otherwise, dispersion modeling should provide adequate and conservative estimates of the incremental contribution that highway emissions will add to regional $PM_{2.5}$ levels for situations where monitor data do not reflect the human exposure to $PM_{2.5}$ in the microscale near highways.

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Estimation of Population Within 1 Kilometer of Interstate 710 in between the Port of Los Angeles and SR-60.

Peter Black
Principal, Far West Geographic Services

.
March 10th, 2010

The estimate of population and ethnic demographics within 300,500, and 1000 meters of the portion of interstate 710 between the Port of Los Angeles and SR-60.

The following data sources were used and these procedures were applied:

Data Sources:
Major Highway data downloaded from the USGS's seamless server: http://seamless.usgs.gov. I710 was isolated and then edited to include only the study area portion.

Census Block Group data comes bundled with ArcGIS software, year 2005 (with 2004
population estimates): http://www.esri.com/data/data-maps/overview.html , and contains detailed population information for distinct enthicities.

Procedures:
Arcview 3.3 Theme buffer wizard to compute each buffer of freeway centerline. Saved as separate shapefiles: 300 meter buffer, 500 meter buffer, 1000 meter buffer.

Kevin O'Malley's Two Theme Analyst Extension:
http://arcscripts.esri.com/details.asp?dbid=10653

Used Area Percentage tool to compute overlap. Base Theme = Tracts. Field = "FIPS".
Source Theme = buffer theme.
Resulting .dbf file joined "Fips" to Census Block Group attribute table. Retained "pct" field as a multiplier in each instance.

Created new fields to hold calculations of population estimates.

Multiplied "pop2004" field with "pct" to populate given population estimate field.

Calculated summary field statistic to arrive at final estimate of population inside each buffer zone..

Here are the totals:

1000 meters

Total: 317,359

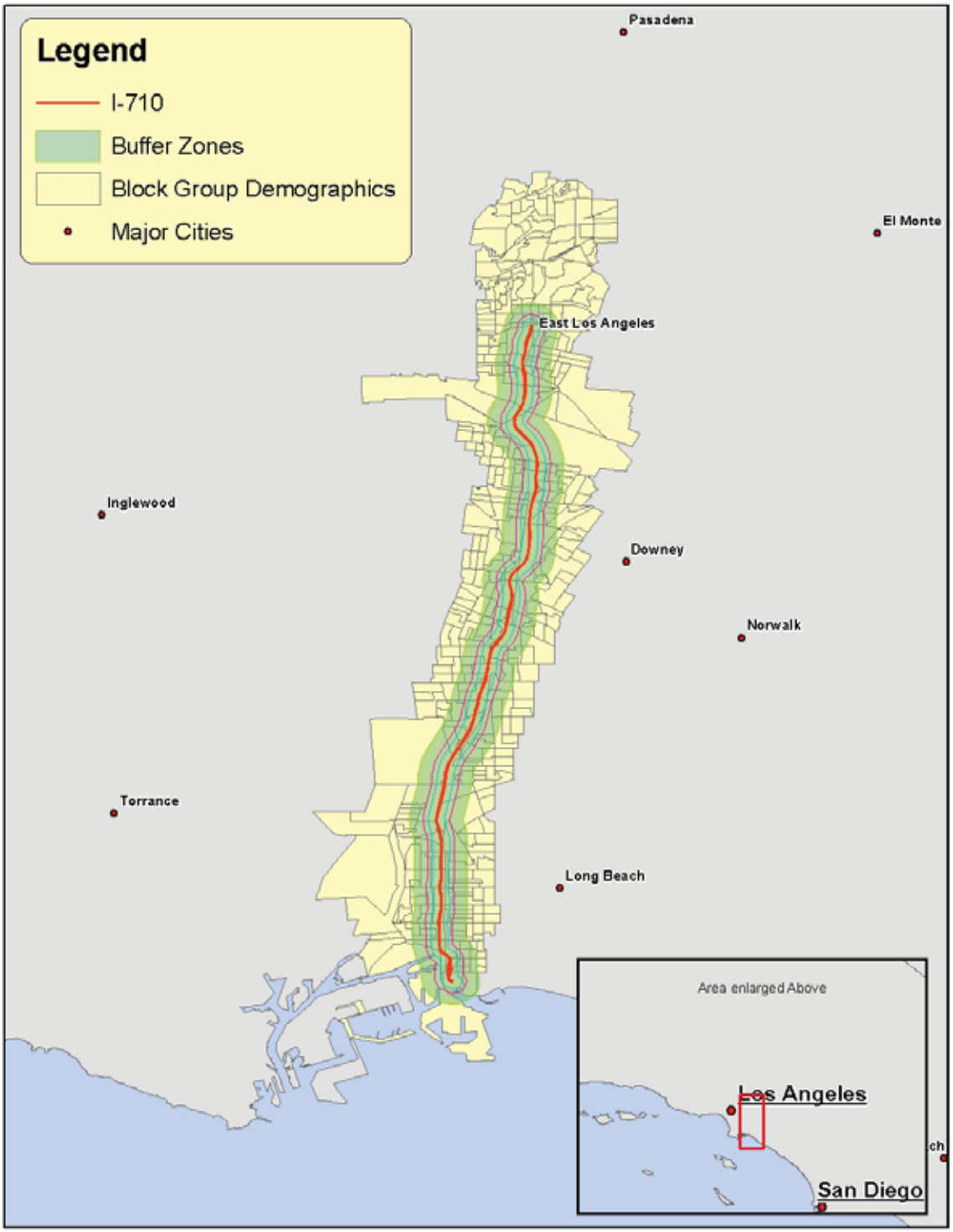
White: 89,174
Black: 26, 621
Hispanic: 184,623
Asian: 14,501
Pacific Islander: 2,440

500 meters

Total: 118,097
White: 35,224
Black: 1,660
Hispanic: 74,114
Asian: 6,040
Pacific Islander: 1,059

300 meters

Total: 67,807
White: 18,396
Black: 6,485
Hispanic: 38,745
Asian: 3,253
Pacific Islander: 568


Legend
I-710
Buffer Zones
Block Group Demographics
Major Cities
Pasadena
El Monte
East Los Angeles
Inglewood
Downey
Norwalk
Torrance
Long Beach
Area enlarged Above
Los Angeles
San Diego

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 · www.aqmd.gov

March 18, 2010

Mr. Hasan Ikhrata
Executive Director
Southern California Association of Governments
818 W. 7th Street
Los Angeles, CA 90012

SUBJECT: Comments to the 2008 Regional Transportation Plan (RTP) Amendment #3 and 2008 Regional Transportation Implementation Plan (RTIP) Amendment # 08-34

Dear Mr. Ikhrata:

Thank you for the opportunity to comment on the Southern California Association of Governments (SCAG) 2008 RTP Amendment #3 and the corresponding 2008 RTIP Amendment #08-34. SCAG continues to put forth valuable efforts that provide the public, stakeholders and other interested parties an opportunity to comment and give input during the development and update of regional plans and programs.

The South Coast Air Quality Management District staff has reviewed the Amendment documents and has specific comments on the I-710 Project. In light of the air quality needs and more stringent air quality standards being proposed by the U.S. Environmental Protection Agency, we strongly encourage SCAG to modify its proposal to (1) leave open the possibility of zero-emission technology other than trucks, since this is left open by I-710 EIR alternatives and since the port Zero Emission Transport Technology system to ICTF has not yet been defined and may be suitable for extension up I-710; (2) clarify that "clean technology" could be electric or other zero emission technology, and (3) ensure that system ends, BOTH at the 60 Fwy. AND downtown railyards where many containers are destined.

For your consideration, specific language reflecting our recommendation to amend the I-710 Project description for ID 1C0401 on page 97 of the RTP Amendment #3 is as follows:

> I-710 CORRIDOR USER-FEE BACKED CAPACITY ENHANCEMENT – WIDEN TO 5 MIXED-FLOW + 2 DEDICATED LANES (EACH DIRECTION) FOR CLEAN TECHNOLOGY TRUCKS ~~(EACH DIRECTION)~~ (E.G. ELECTRIC POWERED OR OTHER ZERO-EMISSION TECHNOLOGY) OR OTHER CLEAN TECHNOLOGY TRANSPORT. AND INTERCHANGE IMPROVEMENTS, FROM THE PORTS OF LOS ANGELES & LONG BEACH TO SR-60 AND TO INTERMODAL RAILROAD YARDS IN COMMERCE/VERNON.

We look forward to working with you on the on-going progress of our region towards meeting state and federal air quality standards.

Sincerely,

Elaine Chang, DrPH
Deputy Executive Officer
Planning, Rule Development & Area Sources

EC:KH

cc: Rich Macias, SCAG
Barry Wallerstein, SCAQMD
Peter Greenwald, SCAQMD
Carol Gomez, SCAQMD

2008
RTP
REGIONAL TRANSPORTATION PLAN
Making the Connections

Amendment #3

and 2008

Regional Transportation Improvement Program (RTIP)

Amendment #08-34

SOUTHERN CALIFORNIA
ASSOCIATION of GOVERNMENTS

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