

**CONFORMITY ANALYSIS**

FOR THE

**AMENDMENT #3 TO THE  
2009 INTERIM FEDERAL TRANSPORTATION IMPROVEMENT  
PROGRAM**

AND

**2007 REGIONAL TRANSPORTATION PLAN AMENDMENT #2**

Adopted January 15, 2009

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## TABLE OF CONTENTS

EXECUTIVE SUMMARY .....	1
1 FEDERAL AND STATE REGULATORY REQUIREMENTS .....	5
Federal and State Conformity Regulations .....	5
Conformity Regulation Requirements .....	7
Air Quality Designations Applicable to the San Joaquin Valley.....	9
Conformity Test Requirements .....	10
Analysis Years .....	14
2 LATEST PLANNING ASSUMPTIONS AND TRANSPORTATION MODELING...16	
Latest Planning Assumptions.....	16
Socioeconomic Data .....	18
Transportation Modeling.....	18
Traffic Estimates.....	22
Vehicle Registrations .....	22
State Implementation Plan Measures .....	22
3 AIR QUALITY MODELING.....	24
EMFAC2007 .....	24
Additional PM-10 Estimates .....	25
PM2.5 Approach.....	26
Summary of Procedures for Regional Emissions Estimates.....	28
4 TRANSPORTATION CONTROL MEASURES .....	29
Transportation Conformity Rule Requirements for TCMs.....	29
Applicable Air Quality Implementation Plans.....	31
Identification of 2002 RACM that Require Timely Implementation Documentation.....	32
TCM Findings for the TIP and Regional Transportation Plan .....	34
RTP Control Measure Analysis in Support of 2003 PM-10 Plan.....	34
5 INTERAGENCY CONSULTATION .....	35
Interagency Consultation .....	35
Public Consultation.....	37
6 TIP AND RTP CONFORMITY .....	38
REFERENCES .....	41

## **APPENDICES**

- A Conformity Checklist
- B Transportation Project Listing
- C Conformity Analysis Documentation
- D PM2.5 Conformity Results Summary for Each MPO in the San Joaquin Valley Nonattainment Area
- E Timely Implementation Documentation for Transportation Control Measures
- F Public Meeting Process Documentation
- G Response to Public Comments

## **TABLES**

- 1-1: On-Road Motor Vehicle CO Emissions Budgets
- 1-2: Budgets from the 2007 Ozone Plan
- 1-3: On-Road Motor Vehicle PM-10 Emissions Budgets
- 1-4: On-Road Motor Vehicle PM<sub>2.5</sub> Emissions Budgets
- 1-5: San Joaquin Valley Conformity Analysis Years
- 2-1: Summary of Latest Planning Assumptions for the MCAG Conformity Analysis
- 2-2: Traffic Network Comparison for Horizon Years Evaluated in Conformity Analysis
- 2-3: 2007 Ozone Plan Measures Assumed in the Conformity Analysis
- 2-4: 2007 PM-10 Maintenance Plan Measures Assumed in the Conformity Analysis
- 6-1: Conformity Results Summary

## **EXECUTIVE SUMMARY**

This report presents the Conformity Analysis for Amendment #3 to the 2009 Interim Federal Transportation Improvement Program (2009 Interim FTIP) and the 2007 Regional Transportation Plan (2007 RTP), Amendment #2. The Merced County Association of Governments (MCAG) is the designated Metropolitan Planning Organization (MPO) in Merced County, California, and is responsible for regional transportation planning.

The Clean Air Act Section 176(c) (42 U.S.C. 7506(c)) and U.S. Environmental Protection Agency (EPA) transportation conformity regulations (40 CFR 93 Subpart A) require that each new regional transportation plan (RTP) and transportation improvement program (TIP) be demonstrated to conform to the State Implementation Plan (SIP) before the RTP and TIP are approved by the MPO or accepted by the U.S. Department of Transportation (DOT). This analysis demonstrates that the criteria specified in the transportation conformity regulations for a conformity determination are satisfied by Amendment #3 to the 2009 Interim FTIP and 2007 RTP Amendment #2; a finding of conformity is therefore supported. Amendment #3 to the 2009 Interim FTIP and 2007 RTP Amendment #2 and Corresponding Conformity Analysis were approved by the Merced County Association of Governments Policy Board on January 15, 2009. FHWA/FTA last issued a finding of conformity for the 2007 TIP and 2007 RTP, including amendments, on June 29, 2007.

Amendment #3 to the 2009 Interim FTIP and 2007 RTP, Amendment #2 have been financially constrained in accordance with the requirements of 40 CFR 93.108 and consistent with the U.S. DOT metropolitan planning regulations (23 CFR Part 450). A discussion of financial constraint and funding sources is included in the appropriate documents.

The applicable Federal criteria or requirements for conformity determinations, the conformity tests applied, the results of the conformity assessment, and an overview of the organization of this report are summarized below.

## **CONFORMITY REQUIREMENTS**

The Federal transportation conformity regulations (40 Code of Federal Regulations Parts 51 and 93) specify criteria and procedures for conformity determinations for transportation plans, programs, and projects and their respective amendments. The Federal transportation conformity regulation was first promulgated in 1993 by the U.S. EPA, following the passage of amendments to the Federal Clean Air Act in 1990. The Federal transportation conformity regulation has been revised several times since its initial release to reflect both EPA rule changes and court opinions. The transportation conformity regulation is summarized in Chapter 1.

The conformity regulation applies nationwide to “all nonattainment and maintenance areas for transportation-related criteria pollutants for which the area is designated nonattainment or has a maintenance plan” (40 CFR 93.102). Currently, the San Joaquin Valley (or portions thereof) is designated as nonattainment with respect to Federal air quality standards for ozone, and particulate matter under 2.5 microns in diameter (PM<sub>2.5</sub>); and has a maintenance plan for

particulate matter under 10 microns in diameter (PM-10), as well as a maintenance plan for carbon monoxide (CO) for the urbanized/metropolitan areas of Kern, Fresno, Stanislaus and San Joaquin Counties. Therefore, transportation plans and programs for the nonattainment areas for the Merced County area must satisfy the requirements of the Federal transportation conformity regulation.

Under the transportation conformity regulation, the principal criteria for a determination of conformity for transportation plans and programs are:

- (1) the TIP and RTP must pass an emissions budget test using a budget that has been found to be adequate by EPA for transportation conformity purposes, or an interim emission test;
- (2) the latest planning assumptions and emission models specified for use in conformity determinations must be employed;
- (3) the TIP and RTP must provide for the timely implementation of transportation control measures (TCMs) specified in the applicable air quality implementation plans; and,
- (4) interagency and public consultation.

On-going interagency consultation is conducted through the San Joaquin Valley Model Coordinating Committee to ensure Valley-wide coordination, communication and compliance with Federal and California Clean Air Act requirements. Each of the eight Valley Metropolitan Planning Organizations (MPOs) and the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) are represented. The Federal Highway Administration (FHWA), Federal Transit Administration (FTA), the U.S. EPA, the California Air Resources Board (ARB) and Caltrans are also represented on the committee. The final determination of conformity for the TIP and RTP is the responsibility of the Federal Highway Administration and the Federal Transit Administration within the U.S. DOT.

FHWA has developed a Conformity Checklist (included in Appendix A) that contains the required items to complete a conformity determination. Appropriate references to these items are noted on the checklist.

## **CONFORMITY TESTS**

The conformity tests specified in the Federal transportation conformity regulation are: (1) the emissions budget test, and (2) the interim emission test. For the emissions budget test, predicted emissions for the TIP/RTP must be less than or equal to the motor vehicle emissions budget specified in the approved air quality implementation plan or the emissions budget found to be adequate for transportation conformity purposes. If there is no approved air quality plan for a pollutant for which the region is in nonattainment or no emission budget has been found to be adequate for transportation conformity purposes, the interim emission test applies. Chapter 1

summarizes the applicable air quality implementation plans and conformity tests for carbon monoxide, ozone, PM-10, and PM2.5.

## **RESULTS OF THE CONFORMITY ANALYSIS**

A regional emissions analysis was conducted for the years 2010, 2011, 2014, 2017, 2020, 2023 and 2030 for each applicable pollutant. All analyses were conducted using the latest planning assumptions and emissions models. The major conclusions of the MCAG Conformity Analysis are:

- For ozone, the total regional on-road vehicle-related emissions (ROG and NO<sub>x</sub>) associated with implementation of the Amendment #3 to the 2009 Interim FTIP and the 2007 RTP Amendment #2 for all years tested are projected to be less than the adequate emissions budgets specified in the *2007 Ozone Plan*. The conformity tests for ozone are therefore satisfied.
- For PM-10, the total regional vehicle-related emissions (PM-10 and NO<sub>x</sub>) associated with implementation of the Amendment #3 to the 2009 Interim FTIP and the 2007 RTP Amendment #2 for all years tested are either (1) projected to be less than the approved emissions budgets, or (2) less than the emission budgets using the approved PM-10 and NO<sub>x</sub> trading mechanism for transportation conformity purposes from the *2007 PM-10 Maintenance Plan*. The conformity tests for PM-10 are therefore satisfied.
- For PM2.5, areas violating both the annual and 24-hour standards for PM2.5 must address both standards in the conformity determination. The San Joaquin Valley currently violates both standards, and the conformity determination includes both analyses. Before an adequate or approved SIP budget is available, conformity is generally demonstrated with interim emission tests. Conformity may be demonstrated if the emissions from the proposed transportation system are either less than or no greater than the 2002 motor vehicle emissions in a given area (see Section 93.119). The San Joaquin Valley chooses to use the “no-greater-than-2002 emissions test”. The modeling results for all analysis years indicated that the “Build” scenarios are less than the 2002 Base Year emissions estimates for both the 24-hour and annual standards. The Amendment #3 to the 2009 Interim FTIP and the 2007 RTP Amendment #2 therefore satisfies the conformity emissions tests for PM2.5.
- The Amendment #3 to the 2009 Interim FTIP and the 2007 RTP Amendment #2 will not impede and will support timely implementation of the TCMs that have been adopted as part of applicable air quality implementation plans. The current status of TCM implementation is documented in Chapter 4 of this report.
- Since the local SJV procedures (e.g., SJVUAPCD Rule 9120 Transportation Conformity) have not been approved by EPA, consultation has been conducted in accordance with Federal requirements.

## **REPORT ORGANIZATION**

The report is organized into six chapters. Chapter 1 provides an overview of the applicable Federal and State conformity regulations and requirements, air quality implementation plans, and conformity test requirements. Chapter 2 contains a discussion of the latest planning assumptions and transportation modeling. Chapter 3 describes the air quality modeling used to estimate emission factors and mobile source emissions. Chapter 4 contains the documentation required under the Federal transportation conformity regulation for transportation control measures. Chapter 5 provides an overview of the interagency requirements and the general approach to compliance used by the San Joaquin Valley Metropolitan Planning Organizations. The results of the conformity analysis for the TIP/RTP are provided in Chapter 6.

Appendix F includes public meeting documentation conducted on Amendment #3 to the 2009 Interim FTIP and 2007 RTP Amendment #2 and Corresponding Conformity Analysis on December 18, 2008. Comments received on the conformity analysis and responses made as part of the public involvement process are included in Appendix G.

## **CHAPTER 1 FEDERAL AND STATE REGULATORY REQUIREMENTS**

The criteria for determining conformity of transportation programs and plans under the Federal transportation conformity regulation (40 CFR Parts 51 and 93) and the applicable conformity tests for the San Joaquin Valley nonattainment areas are summarized in this section. The Conformity Analysis for Amendment #3 to the 2009 Interim Federal Transportation Improvement Program (2009 Interim TIP) and the 2007 Regional Transportation Plans (RTP) Amendment #2 was prepared based on these criteria and tests. Presented first is a review of the development of the applicable conformity regulation and guidance procedures, followed by summaries of conformity regulation requirements, air quality designation status, conformity test requirements, and analysis years for the Conformity Analysis.

Merced County Association of Governments is the designated Metropolitan Planning Organization (MPO) for Merced County in the San Joaquin Valley. As a result of this designation, MCAG prepares the TIP, RTP, and associated conformity analyses. The TIP serves as a detailed four-year programming document for the preservation, expansion, and management of the transportation system. The 2007 RTP has a 2030 horizon that provides the long term direction for the continued implementation of the freeway/expressway plan, as well as improvements to arterial streets, transit, and travel demand management programs. The TIP and RTP include capacity enhancements to the freeway/expressway system commensurate with available funding.

### **FEDERAL AND STATE CONFORMITY REGULATIONS**

#### **CLEAN AIR ACT AMENDMENTS**

Section 176(c) of the Clean Air Act (CAA, 1990) requires that Federal agencies and MPOs not approve any transportation plan, program, or project that does not conform to the approved State Implementation Plan (SIP). The 1990 amendments to the Clean Air Act expanded Section 176(c) to more explicitly define conformity to an implementation plan to mean:

“Conformity to the plan's purpose of eliminating or reducing the severity and number of violations of the national ambient air quality standards and achieving expeditious attainment of such standards; and that such activities 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 milestones in any area.”

Section 176(c) also provides conditions for the approval of transportation plans, programs, and projects, and requirements that the Environmental Protection Agency (EPA) promulgate conformity determination criteria and procedures no later than November 15, 1991.

## FEDERAL RULE

The initial November 15, 1991 deadline for conformity criteria and procedures was partially completed through the issuance of supplemental interim conformity guidance issued on June 7, 1991 (EPA/DOT, 1991a and 1991b) for carbon monoxide, ozone, and particulate matter ten microns or less in diameter (PM-10). EPA subsequently promulgated the Conformity Final Rule in the November 24, 1993 *Federal Register* (EPA, 1993). The 1993 Rule became effective on December 27, 1993. The Federal Transportation Conformity Final Rule has been amended several times from 1993 to 2002. These amendments have addressed a number of items related to conformity lapses, grace periods, and other related issues to streamline the conformity process.

On July 1, 2004 EPA published the final rule, Transportation Conformity Rule Amendments for the New 8-hour Ozone and PM2.5 National Ambient Air Quality Standards and Miscellaneous Revisions for Existing Areas; Transportation Conformity Rule Amendments – Response to Court Decision and Additional Rule Changes (EPA, 2004).

EPA issued a final rule on May 6, 2005 to add the following PM2.5 precursors to the transportation conformity rule: nitrogen oxides (NOx), volatile organic compounds (VOCs), sulfur oxides (SOx), and ammonia (NH3) (EPA, 2005). The rule specifies when each of these precursors must be considered in PM2.5 nonattainment areas, before and after PM2.5 SIPs are submitted.

In late March 2006, EPA and FHWA published “Transportation Conformity Guidance for Qualitative Hot-Spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas”. This guidance affects Federal project-level approvals for “projects of air quality concern” in PM2.5 and PM10 nonattainment areas on or after April 5, 2006.

EPA issued a final rule on January 24, 2008 regarding changes to make the rule consistent with the Clean Air Act as amended by the most recent transportation funding legislation, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). Comments were due June 1, 2007 and the final rule has not been published as of November 2007. The “Transportation Conformity Rule Amendments to Implement Provisions Contained in SAFETEA-LU does not have any impact on the San Joaquin Valley process and/or methodology contained in this document since the changes were already in place under the Joint EPA-DOT Interim Guidance for Implementing SAFETEA-LU’s Conformity Provisions, published in February 2006.

## MULTI-JURISDICTIONAL GUIDANCE

EPA issued “multi-jurisdictional” guidance on July 21, 2004 to clarify how nonattainment areas with multiple agencies should conduct conformity determinations based on the changes to the Conformity Rule (EPA, 2004b). This guidance applies to the San Joaquin Valley since there are multiple MPOs within a single nonattainment area. The main principle of the guidance is that one regional emissions analysis is required for the entire nonattainment area. However, separate modeling and conformity documents may be developed by each MPO.

Part 2 of the guidance applies to nonattainment areas that do not have conformity budgets for an air quality standard that can be used for conformity. This Part currently applies to the San Joaquin Valley for PM<sub>2.5</sub>. As a result, the individual modeling and conformity results are compiled into one regional emissions analysis for the entire nonattainment area that accompanies each plan/TIP conformity determination (see Appendix D). DOT will then issue its conformity determination on the TIPs/RTPs at the same time.

Part 3 of the guidance applies to nonattainment areas that have adequate or approved conformity budgets addressing a particular air quality standard. This Part currently applies to the San Joaquin Valley for carbon monoxide, ozone and PM-10. The guidance allows MPOs to make independent conformity determinations for their plans and TIPs as long as all of the other subareas in the nonattainment area have conforming transportation plans and TIPs in place at the time of each MPO and DOT conformity determination.

### DISTRICT RULE

The San Joaquin Valley Unified Air Pollution Control District adopted Rule 9120 Transportation Conformity on January 19, 1995 in response to requirements in Section 176(c)(4)(c) of the 1990 Clean Air Act Amendments. Rule 9120 contains the Transportation Conformity Rule promulgated November 24, 1993 verbatim. The Rule provides guidance for the development of consultation procedures and processes at the local level. As required by the Transportation Conformity Rule, Rule 9120 was submitted to EPA on January 24, 1995 as a revision to the State SIP. The rule becomes effective on the date EPA promulgates interim, partial, or final approval in the Federal Register.

To date, the Rule has not received approval by EPA. Section 51.390(b) of the Transportation Conformity Rule states: "Following EPA approval of the State conformity provisions (or a portion thereof) in a revision to the applicable implementation plan, conformity determinations would be governed by the approved (or approved portion of the) State criteria and procedures." It should also be noted that EPA has changed 40 CFR 51.390 to streamline the requirements for State conformity SIPs. Since a transportation conformity SIP has not been approved for the SJV, the Federal transportation conformity rule still governs.

### **CONFORMITY REGULATION REQUIREMENTS**

The Federal regulations identify general criteria and procedures that apply to all transportation conformity determinations, regardless of pollutant and implementation plan status. These include:

- 1) *Conformity Tests* — Sections 93.118 and 93.119 specify emissions tests (budget and interim emissions) that the TIP/RTP must satisfy in order for a determination of conformity to be found. The final transportation conformity regulation issued on July 1, 2004 requires a submitted SIP motor vehicle emissions budget to be found adequate or

approved by EPA prior to use for making conformity determinations. The budget must be used on or after the effective date of EPA's adequacy finding or approval.

2) *Methods / Modeling:*

*Latest Planning Assumptions* — Section 93.110 specifies that conformity determinations must be based upon the most recent planning assumptions in force at the time the conformity analysis begins. This is defined as “the point at which the MPO begins to model the impact of the proposed transportation plan or TIP on travel and/or emissions. New data that becomes available after an analysis begins is required to be used in the conformity determination only if a significant delay in the analysis has occurred, as determined through interagency consultation” (EPA, 2004a). All analyses for the Conformity Analysis were conducted using the latest planning assumptions and emissions models in force at the time the conformity analysis started in January 2007 (see Chapter 2).

*Latest Emissions Models* — Section 93.111 requires that the latest emission estimation models specified for use in SIPs must be used for the conformity analysis. EMFAC2007 was used in the Conformity Analysis and is documented in Chapter 3.

3) *Timely Implementation of TCMs* — Section 93.113 provides a detailed description of the steps necessary to demonstrate that the new TIP/RTP are providing for the timely implementation of TCMs, as well as demonstrate that the plan and/or program is not interfering with this implementation. TCM documentation is included in Chapter 4 of the Conformity Analysis.

4) *Consultation* — Section 93.105 requires that the conformity determination be made in accordance with the consultation procedures outlined in the Federal regulations. These include:

- MPOs are required to provide reasonable opportunity for consultation with State air agencies, local air quality and transportation agencies, the USDOT and EPA (Section 93.105(a)(1)).
- MPOs are required to establish a proactive public involvement process, which provides opportunity for public review and comment prior to taking formal action on a conformity determination (Section 93.105(e)).

The TIP, RTP, and corresponding conformity determinations are prepared by each MPO. Copies of the Draft documents are provided to member agencies and others, including the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), EPA, Caltrans, CARB, and the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) for review. Both the TIP and RTP are required to be publicly available and an opportunity for public review and comment is provided. The consultation process for the conformity analysis includes a 30-day comment period followed by a public meeting.

## **AIR QUALITY DESIGNATIONS APPLICABLE TO THE SAN JOAQUIN VALLEY**

The conformity regulation (section 93.102) requires documentation of the applicable pollutants and precursors for which EPA has designated the area nonattainment or maintenance. In addition, the nonattainment or maintenance area and its boundaries should be described.

MCAG is located in the federally designated San Joaquin Valley Air Basin. The borders of the basin are defined by mountain and foothill ranges to the east and west. The northern border is consistent with the county line between San Joaquin and Sacramento Counties. The southern border is less defined, but is roughly bounded by the Tehachapi Mountains and, to some extent, the Sierra Nevada range. Conformity for Amendment #3 to the 2009 Interim FTIP and the 2007 RTP Amendment #2 includes analysis of existing and future air quality impacts for each applicable pollutant.

The San Joaquin Valley is currently designated as nonattainment for the National Ambient Air Quality Standards (NAAQS) for 8-hour ozone, and particulate matter under 2.5 microns in diameter (PM<sub>2.5</sub>); and has a maintenance plan for particulate matter under 10 microns in diameter (PM-10), as well as a maintenance for carbon monoxide (CO) for the urbanized/metropolitan areas of Kern, Fresno, Stanislaus and San Joaquin Counties. State Implementation Plans have been prepared to address carbon monoxide, ozone, and PM-10:

- The 2004 Revision to the California State Implementation Plan for Carbon Monoxide was approved by EPA on November 30, 2005 (effective January 30, 2006).
- EPA is anticipated to publish a budget adequacy determination for the 2011, 2014, and 2017 conformity budgets contained in the 2007 Ozone Plan in January 2009.
- The 2007 PM-10 Maintenance Plan, which included revisions to the attainment plan, was approved by EPA on November 12, 2008.

EPA also designated the San Joaquin Valley as nonattainment for the 1997 PM<sub>2.5</sub> standards. A State Implementation Plan has been developed to address the 1997 PM<sub>2.5</sub> standards; however, EPA has not issued an adequacy determination on the conformity budgets nor approved the Plan. It should be noted that EPA issued a final rule establishing revisions to the 24-hour and annual PM<sub>2.5</sub> national ambient air quality standard on October 17, 2006. EPA subsequently issued a guidance memo addressing how transportation conformity will be implemented under the revised 24-hour PM<sub>2.5</sub> standard. In summary, transportation conformity is unaffected because there has been no change to the nonattainment designations.

**CONFORMITY TEST REQUIREMENTS**

The conformity (Section 93.109(c)–(k)) rule requires that either a table or text description be provided that details, for each pollutant and precursor, whether the interim emissions tests and/or the budget test apply for conformity. In addition, documentation regarding which emissions budgets have been found adequate by EPA, and which budgets are currently applicable for what analysis years is required.

Specific conformity test requirements established for the San Joaquin Valley nonattainment areas for carbon monoxide, ozone, and particulate matter are summarized below.

Section 93.124(d) of the 1997 Final Transportation Conformity regulation allows for conformity determinations for subregional emission budgets by MPOs if the applicable implementation plans (or implementation plan submission) explicitly indicates an intent to create such subregional budgets for the purpose of conformity. In addition, Section 93.124(e) of the 1997 rules states: "...if a nonattainment area includes more than one MPO, the implementation plan may establish motor vehicle emission budgets for each MPO, or else the MPOs must collectively make a conformity determination for the entire nonattainment area." Each applicable implementation plan and estimate of baseline emissions in the San Joaquin Valley provides motor vehicle emission budgets by county, to facilitate county-level conformity findings.

**CARBON MONOXIDE**

The urbanized/metropolitan areas of Kern, Fresno, Stanislaus and San Joaquin Counties are classified maintenance for carbon monoxide (CO). The motor vehicle emission budgets for carbon monoxide are specified in the *2004 Revision to the California State Implementation Plan for Carbon Monoxide* in tons per average winter day. EPA published a direct final rulemaking approving the plan on November 30, 2005, effective January 30, 2006.

For carbon monoxide, the Federal transportation conformity regulation requires that the TIP and RTP must pass an emissions budget test with a budget that has been approved by EPA for transportation conformity purposes. New conformity budgets have been approved for 2003, 2010 and 2018 for portions of the San Joaquin Valley as provided in the following table.

**Table 1-1  
On-Road Motor Vehicle CO Emissions Budgets**

<b>County</b>	<b>2003 Emissions (winter tons/day)</b>	<b>2010 Emissions (winter tons/day)</b>	<b>2018 Emissions (winter tons/day)</b>
Fresno	240	240	240
Kern	180	180	180
San Joaquin	170	170	170
Stanislaus	130	130	130

OZONE

Under the existing conformity regulation, regional emissions analyses for ozone areas must address nitrogen oxides (NOx) and volatile organic compounds (VOC) precursors. It is important to note that in California, reactive organic gases (ROG) are considered equivalent to and are used in place of volatile organic compounds (VOC). The motor vehicle emission budgets for ozone are specified in the 2007 Ozone Plan in tons per average summer day. EPA is anticipated to publish the notice of adequacy determination for the 2011, 2014, and 2017 budgets in the Federal Register in January 2009.

The SJV has been classified as a Serious nonattainment area for the 8-hour ozone standard. However, the 2007 Ozone Plan requests an Extreme nonattainment classification and attainment date of 2023, and includes the corresponding additional RFP years. The SIP has identified subarea budgets for each MPO in the nonattainment area. For this Conformity Analysis, the SJV will continue to conduct determinations for subarea emission budgets as established in the applicable implementation plan.

The conformity budgets from Table 9.3 of the Plan are provided in the table below; it is anticipated that EPA will publish a budget adequacy determination for the 2011, 2014, and 2017 conformity budgets contained in the 2007 Ozone Plan in January 2009. These budgets have been used to compare to emissions resulting from Amendment #3 to the 2009 Interim FTIP and 2007 RTP Amendment #2. ARB subsequently updated Madera County and San Joaquin County budgets; these updates are reflected in the table below.

**Table 1-2**  
**Budgets from the 2007 Ozone Plan**  
 (summer tons/day)

County	2008		2011		2014		2017		2020		2023	
	ROG	NOx	ROG	NOx	ROG	NOx	ROG	NOx	ROG	NOx	ROG	NOx
Fresno	18.6	58.5	15.5	47.9	12.9	37.2	11.1	29.1	8.0	16.9	7.8	15.7
Kern (SJV)	18.1	93.9	15.7	79.4	13.5	64.1	11.6	49.5	8.5	28.4	8.1	24.8
Kings	3.9	18.3	3.4	15.9	2.8	12.3	2.3	9.4	1.7	5.3	1.6	4.7
Madera	4.4	14.6	3.7	12.2	3.1	9.7	2.6	7.7	1.9	4.8	1.9	4.5
Merced	7.4	35.5	6.2	28.8	5.1	22.3	4.2	17.1	2.9	9.9	2.8	9.0
San Joaquin	13.9	40.0	12.1	34.7	10.1	27.8	8.6	21.3	6.3	12.7	6.3	11.9
Stanislaus	10.5	26.7	9.0	22.3	7.5	17.2	6.5	13.4	4.9	8.0	4.6	7.1
Tulare	10.5	23.4	9.2	20.9	7.7	16.6	6.7	13.1	5.2	8.4	4.8	7.4

PM-10

The 2007 PM-10 Maintenance Plan was approved by EPA on November 12, 2008, which contains motor vehicle emission budgets for PM-10 and NOx, as well as a trading mechanism. Motor vehicle emission budgets are established based on average annual daily emissions. The motor vehicle emissions budget for PM-10 includes regional reentrained dust from travel on paved roads, vehicular exhaust, travel on unpaved roads, and road construction.

The conformity budgets from Tables 6 and 7 of the Plan are provided below (including the minor technical corrections) and have been used to compare emissions for each analysis year. ARB subsequently updated the 2005 attainment budgets; these updates are reflected in the table below.

**Table 1-3**  
**On-Road Motor Vehicle PM-10 Emissions Budgets**  
 (tons per average annual day)

County	2005		2020	
	PM-10	NOx	PM-10	NOx
<b>Fresno</b>	13.5	59.2	16.1	23.2
<b>Kern(a)</b>	12.1	88.3	14.7	39.5
<b>Kings</b>	3.1	16.7	3.6	6.8
<b>Madera</b>	3.6	13.9	4.7	6.5
<b>Merced</b>	6.2	39.4	6.4	12.9
<b>San Joaquin</b>	9.1	42.6	10.6	17.0
<b>Stanislaus</b>	5.6	29.7	6.7	10.8
<b>Tulare</b>	7.3	25.1	9.4	10.9

(1) Kern County subarea includes only the portion of Kern County within the San Joaquin Valley Air Basin

The PM-10 SIP allows trading from the motor vehicle emissions budget for the PM-10 precursor NOx to the motor vehicle emissions budget for primary PM-10 using a 1.5 to 1 ratio. The trading mechanism allows the agencies responsible for demonstrating transportation conformity in the San Joaquin Valley to supplement the 2005 budget for PM-10 with a portion of the 2005 budget for NOx, and use these adjusted motor vehicle emissions budgets for PM-10 and NOx to demonstrate transportation conformity with the PM-10 SIP for analysis years after 2005. As noted above, EPA approved the 2007 PM-10 Maintenance Plan on November 12, 2008, which includes continued approval of the trading mechanism.

The trading mechanism will be used only for conformity analyses for analysis years after 2005. To ensure that the trading mechanism does not impact the ability to meet the NOx budget, the NOx emission reductions available to supplement the PM-10 budget shall only be those remaining after the NOx budget has been met.

PM2.5

EPA and FHWA have indicated that areas violating both the annual and 24-hour standards for PM2.5 must address both standards in the conformity determination. The San Joaquin Valley currently violates both standards, and the conformity determination includes both analyses. Before an adequate or approved SIP budget is available, conformity is generally demonstrated with interim emission tests.

Conformity may be demonstrated if the emissions from the proposed transportation system are either less than or no greater than the 2002 motor vehicle emissions in a given area (see Section

93.119). The 2002 baseline year emissions level must be based on the latest planning assumptions available for the year 2002, the latest emissions model, and appropriate methods for estimating travel and speeds as required by the conformity regulation. PM2.5 nonattainment areas may also elect to use the “build-no-greater-than-no-build test”. Conformity is demonstrated if the emissions from the proposed transportation system (“build” scenario) are less than or equal to emissions from the existing transportation system (“no-build” scenario).

The rule allows PM2.5 nonattainment areas to choose between the two interim emissions test each time that they determine conformity before adequate or approved PM2.5 SIP budgets are established. However, the same test must be used for each analysis year in a given conformity determination. The San Joaquin Valley chooses to use the “no-greater-than-2002 emissions test”. The regional emissions analyses in PM2.5 nonattainment areas must consider directly emitted PM2.5 motor vehicle emissions from tailpipe, brake wear, and tire wear. In California, areas will use EMFAC2007.

Prior to adequate or approved PM2.5 SIP budgets, re-entrained road dust and construction-related fugitive dust from highway or transit projects will only be included in the regional emissions analyses if EPA or ARB has determined that it is a “significant contributor” to the PM2.5 regional air quality problem. Until a significance finding is made, PM2.5 areas can presume that re-entrained road dust is not a significant contributor and not include road dust in the PM2.5 transportation conformity analysis prior to the SIP. In addition, construction-related dust emissions are not to be included in any PM2.5 conformity analyses before adequate or approved PM2.5 SIP budgets are established. As a result, the SJV PM2.5 conformity analysis will not include re-entrained road dust or construction-related fugitive dust from transportation projects. It is important to note that the San Joaquin Valley 2008 PM2.5 Plan has been developed and submitted to EPA. This plan indicates that re-entrained road dust and construction-related dust emissions are not significant. However, EPA has not acted on the budgets at this time.

In addition, prior to the submission of a SIP, NOx emissions must be considered, unless both ARB and EPA make a finding the NOx is not a “significant contributor” to the PM2.5 air quality problem. Conversely, VOC, SOx, and ammonia emissions do not have to be considered in conformity, unless either ARB or EPA makes a finding that onroad emissions of any of these precursors is a “significant contributor” to the area’s PM2.5 air quality issues. It is important to note that the San Joaquin Valley 2008 PM2.5 Plan has been developed and submitted to EPA. This plan indicates that VOC, Sox, and ammonia emissions are not significant. However, EPA has not acted on the budgets at this time. As a result, the SJV PM2.5 conformity analysis will only address the precursor NOx.

Table 1-4 summarizes PM2.5 and NOx emission estimates for the 2002 base year by sub-area, as documented in the Final PM2.5 Conformity Analysis. These emission estimates were calculated by running EMFAC2007 for the 2002 base year using default vehicle population, VMT, and speed fraction data; the result is then rounded up to the next tenths place (consistent with ARB policy). The 24-hour estimate is multiplied by 365 to yield an annual estimate (rounded to the whole ton).

**Table 1-4  
On-Road Motor Vehicle PM2.5 Emissions Budgets**

County	2002 24-Hour (average annual tons per day)		2002 Annual (average annual tons per year)	
	PM2.5	NOx	PM2.5	NOx
<b>Fresno</b>	2.2	63.4	803	23141
<b>Kern</b>	3.7	94.1	1351	34347
<b>Kings</b>	0.8	18.5	292	6753
<b>Madera</b>	0.5	13.7	183	5001
<b>Merced</b>	1.5	37.1	548	13542
<b>San Joaquin</b>	1.5	43.4	548	15841
<b>Stanislaus</b>	1.0	30.2	365	11023
<b>Tulare</b>	0.8	26.4	292	9636

**ANALYSIS YEARS**

The conformity regulation (Section 93.118 b and d) requires documentation of the years for which consistency with motor vehicle emission budgets must be shown. In addition, any interpolation performed to meet tests for years in which specific analysis is not required need to be documented.

For the selection of the horizon years, the conformity regulation requires: (1) that if the attainment year is in the time span of the transportation plan, it must be modeled; (2) the last year forecast in the transportation plan must be a horizon year; and (3) horizon years may not be more than ten years apart. In addition, the conformity regulation requires that conformity must be demonstrated for each year for which the applicable implementation plan specifically establishes motor vehicle emission budgets.

Section 93.118(b)(2) clarifies that when a maintenance plan has been submitted, conformity must be demonstrated for the last year of the maintenance plan and any other years for which the maintenance plan establishes budgets in the time frame of the transportation plan. Section 93.118(d)(2) indicates that a regional emissions analysis may be performed for any years, the attainment year, and the last year of the plan’s forecast. Other years may be determined by interpolating between the years for which the regional emissions analysis is performed.

On March 8, 2005, EPA issued Guidance for Determining the “Attainment Year” for Transportation Conformity in new 8-hour ozone and PM2.5 Nonattainment Areas (EPA, 2005b). Per CAA section 172(a)(2), all PM2.5 nonattainment areas will have an initial maximum statutory attainment date of April 5, 2010.

Nonattainment areas that do not have any adequate or approved budgets are not required to demonstrate conformity and perform a regional emissions analysis for their attainment year. For the SJV, this applies to PM2.5. It is important to note that the San Joaquin Valley 2008 PM2.5

Plan has been developed and submitted to EPA. However, EPA has not acted on the budgets at this time. Under Section 93.119(g)(1) of the conformity regulation, nonattainment areas using interim emission tests are required to perform a regional emissions analysis for the following years:

- A year no more than 5 years beyond the year in which the conformity determination is made (e.g., 2010);
- The last year of the transportation plan’s forecast period (e.g., 2030); and
- Any additional years within the time frame of the transportation plan so that analysis years are no more than 10 years apart (e.g., 2020).

A summary of the analysis years resulting from the above described rules and guidance for the Conformity Analysis is provided below.

**Table 1-5  
San Joaquin Valley Conformity Analysis Years**

Pollutant	Budget Years <sup>1</sup>	Attainment/Maintenance Year	Intermediate Years	RTP Horizon Year
CO	2010	2018	2020	2030
Ozone	2011/2014/2017	2023 <sup>2</sup>	2020	2030
PM-10	NA	2020	2010	2030
PM2.5	NA	2010	2020	2030

Section 93.118 (d)(2) indicates that the regional emissions analysis may be performed for any years in the time frame of the transportation plan provided they are not more than ten years apart and provided the analysis is performed for the attainment year (if it is in the time frame of the transportation plan) and the last year of the plan’s forecast period. Emissions in years for which consistency with motor vehicle emissions budgets must be demonstrated, as required in paragraph (b) of this section (i.e., each budget year), may be determined by interpolating between the years for which the regional emissions analysis is performed. For CO, the analysis year 2018 will be interpolated from 2010 and 2020.

<sup>1</sup> Budget years that are not in the time frame of the transportation plan are not included as analysis years (e.g., CO 2003, Ozone 2008, and PM-10 2005), although they may be used to demonstrate conformity.

<sup>2</sup> The attainment year for Serious 8-hour Ozone areas is 2013; however, the 2007 Ozone Plan requests reclassification to Extreme which has an attainment year of 2023.

## **CHAPTER 2 LATEST PLANNING ASSUMPTIONS AND TRANSPORTATION MODELING**

### **LATEST PLANNING ASSUMPTIONS**

The Clean Air Act states that “the determination of conformity shall be based on the most recent estimates of emissions, and such estimates shall be determined from the most recent population, employment, travel, and congestion estimates as determined by the MPO or other agency authorized to make such estimates.” On January 18, 2001, the USDOT issued guidance developed jointly with EPA to provide additional clarification concerning the use of latest planning assumptions in conformity determinations (USDOT, 2001).

According to the conformity regulation, the time the conformity analysis begins is “the point at which the MPO or other designated agency begins to model the impact of the proposed transportation plan or FTIP on travel and/or emissions.” The conformity analysis and initial modeling began in January 2007. A summary of transportation model updates and latest planning assumptions was transmitted to the Model Coordinating Committee (MCC) for interagency consultation. The summary was discussed on the October 11, 2007 MCC conference call. Both EPA and FHWA subsequently indicated that there were no comments or concerns regarding the summary.

Key elements of the latest planning assumption guidance include:

- Areas are strongly encouraged to review and strive towards regular five-year updates of planning assumptions, especially population, employment and vehicle registration assumptions.
- The latest planning assumptions must be derived from the population, employment, travel and congestion estimates that have been most recently developed by the MPO (or other agency authorized to make such estimates) and approved by the MPO.
- Conformity determinations that are based on information that is older than five years should include written justification for not using more recent information. For areas where updates are appropriate, the conformity determination should include an anticipated schedule for updating assumptions.
- The conformity determination must use the latest existing information regarding the effectiveness of the transportation control measures (TCMs) and other implementation plan measures that have already been implemented.

The Merced County Association of Governments uses the TP+/VIPER transportation model. The model was validated in 2003 for the 2000 base year. The latest planning assumptions used in the transportation model validation and Conformity Analysis is summarized in Table 2-1.

**Table 2-1  
Summary of Latest Planning Assumptions for the MCAG Conformity Analysis**

<b>Assumption</b>	<b>Year and Source of Data (MPO action)</b>	<b>Modeling</b>	<b>Next Scheduled Update</b>
Population	Base Year: Census 2000 Projections: based on DOF 2004. Approved by by MCAG in March 2004 and re-approved April 2007.	This data is disaggregated to the TAZ level for input into the TP+/VIPER for the base year validation.	Next update to land use forecasts is anticipated to be in 2009.
Employment	Base Year: EDD 2001. Projections: based on Caltrans 2003 Approved by by MCAG in March 2004 and re-approved April 2007.	This data is disaggregated to the TAZ level for input into the TP+/VIPER for the base year validation.	Next update to employment forecast is anticipated to be in 2009.
Traffic Counts	The transportation model was validated to the base year using year 2000 traffic counts collected by Caltrans, local jurisdictions, and MCAG.	TP+/VIPER was validated using these traffic counts.	Traffic counts are updated every five to ten years, if funds are available.
Vehicle Miles of Travel	The transportation model was validated in 2003 to the 2000 base year.	TP+/VIPER is the transportation model used to estimate VMT in Merced County	VMT is an output of the transportation model; VMT is affected by the TIP/RTP project updates and is included in each new conformity analysis
Speeds	Posted speeds are used in the Merced County model. The model is validated using free flow speeds and common practice speed flow curves.  Speed distributions were updated in EMFAC 2007, using methodology approved by ARB and with information from the transportation model.	TP+/VIPER EMFAC 2007	Posted speed limits will be updated in the next transportation model validation. A feedback loop may be considered if warranted in the future.
Vehicle Registrations	EMFAC 2007 is the most recent model for use in California conformity analyses. Vehicle registration data is included by ARB in the model and cannot be updated by the user.	EMFAC 2007	ARB has committed to update the fleet information in EMFAC on a 3-year cycle (see 1/31/06 letter to EPA and FHWA). The next update is scheduled to occur in 2010.
State Implementation Plan Measures	Latest implementation status of commitments in prior SIPs.	Emission reduction credits consistent with the SIPs are post-processed via spreadsheets as documented in Ch. 4.	Updated for every conformity analysis.

## **SOCIOECONOMIC DATA**

### **POPULATION, EMPLOYMENT AND LAND USE**

The conformity regulation requires documentation of base case and projected population, employment, and land use used in the transportation modeling. USDOT/EPA guidance indicates that if the data is more than five years old, written justification for the use of older data must be provided. In addition, documentation is required for how land use development scenarios are consistent with future transportation system alternatives, and the reasonable distribution of employment and residences for each alternative.

#### *Supporting Documentation:*

Population and Employment were forecasted in consultation with local planners using a “top-down” approach whereby a county-level forecast was based on the latest available state forecasts, then sub-allocated down to lower geographic boundaries and traffic analysis zones based on adopted local general plans. MCAG used the Department of Finance’s county-level projections, published in 2001, as the basis for the population forecast. The DOF projections were adjusted upward to include UC Merced-related growth, which was not assumed in their projections. The county-wide employment projections were based on the California Department of Transportation’s Economic Forecast published in December 2003.

The latest forecast was adopted by the MCAG Governing Board in March 2004 and the next update is anticipated to be in 2009.

## **TRANSPORTATION MODELING**

The San Joaquin Valley Metropolitan Planning Organizations (MPOs) utilize the TP+/Viper traffic modeling software. The Valley TPA regional traffic models consist of traditional four-step traffic forecasting models. They use land use, socioeconomic, and road network data to estimate facility-specific roadway traffic volumes. Each TPA model covers the appropriate county area, which is then divided into hundreds or thousands of individual traffic analysis zones (TAZs). In addition the model roadway networks include thousands of nodes and links. Link types include freeway, freeway ramp, other State route, expressway, arterial, collector, and local collector. Current and future-year road networks were developed considering local agency circulation elements of their general plans, traffic impact studies, capital improvement programs, and the State Transportation Improvement Program. The models use equilibrium, a capacity sensitive assignment methodology, and the data from the model for the emission estimates differentiates between peak and off-peak volumes and speeds. In addition, the model is reasonably sensitive to changes in time and other factors affecting travel choices. The results from model validation/calibration were analyzed for reasonableness and compared to historical trends.

Specific transportation modeling requirements in the conformity regulation are summarized below, followed by a description of how the Merced County Association of Governments transportation modeling methodology meets those requirements.

The transportation conformity rule (section 93.122(b)) requires the use of network-based transportation models for serious, severe and extreme ozone nonattainment areas if their metropolitan planning region contains an urbanized population of more than 200,000. Merced County does not contain an urbanized area of that size. However, MCAG has used a network-based model since 1991. The model software is TP+/Viper. It covers the County of Merced, has 526 Traffic Analysis Zones (TAZs), and does not include a mode-choice model, feedback component, or peak-hour component.

### TRAFFIC COUNTS

The conformity regulation requires documentation that a network-based travel model is in use that is validated against observed counts for a base year no more than 10 years before the date of the conformity determination. Document that the model results have been analyzed for reasonableness and compared to historical trends and explain any significant differences between past trends and forecasts (for per capita vehicle-trips, VMT, trip lengths mode shares, time of day, etc.).

#### *Supporting Documentation:*

The transportation model was validated to the 2000 base year using 150 traffic counts from the year 2000, collected by Caltrans, local jurisdictions, and MCAG.

### SPEEDS

The conformity regulation requires documentation of the use of capacity sensitive assignment methodology and emissions estimates based on a methodology that differentiates between peak and off-peak volumes and speeds, and bases speeds on final assigned volumes. In addition, documentation of the use of zone-to-zone travel impedances to distribute trips in reasonable agreement with the travel times estimated from final assigned traffic volumes. Where transit is a significant factor, document that zone-to-zone travel impedances used to distribute trips are used to model mode split. Finally, document that reasonable methods were used to estimate traffic speeds and delays in a manner sensitive to the estimated volume of travel on each roadway segment represented in the travel model.

#### *Supporting Documentation:*

Posted speeds are used in the Merced County model. The model is validated using free flow speeds and common practice speed flow curves.

Speed distributions were updated in EMFAC 2007, using methodology approved by ARB and with information from the transportation model.

### TRANSIT

The conformity regulation requires documentation of any changes in transit operating policies and assumed ridership levels since the previous conformity determination. Document the use of the latest transit fares and road and bridge tolls.

*Supporting Documentation:*

Transit mode share is less than 1% of the total travel in Merced County. Given the relatively low population and rural character of the county, transit usage is not expected to rise above 2% even by 2030, the horizon year of the Regional Transportation Plan and this analysis. There is no transit component in the MCAG travel demand model. Therefore, while there are air quality benefits from the transit service and they can be expected to increase, they are not quantified as part of this analysis.

VALIDATION/CALIBRATION

The conformity regulation requires documentation that the model results have been analyzed for reasonableness and compared to historical trends and explain any significant differences between past trends and forecasts (for per capita vehicle-trips, VMT, trip lengths mode shares, time of day, etc.). In addition, documentation of how travel models are reasonably sensitive to changes in time, cost, and other factors affecting travel choices is required. The use of HPMS, or a locally developed count-based program or procedures that have been chosen to reconcile and calibrate the network-based travel model estimates of VMT must be documented.

*Supporting Documentation:*

The model was validated by comparing its estimates of base year traffic conditions with base year traffic counts. The base year validations meet standard criteria for replicating total traffic volumes on various road types and for percent error on links. The base year validation also meets standard criteria for percent error relative to traffic counts on groups of roads (screenlines) throughout each county.

For Serious and above nonattainment areas, transportation conformity guidance, Section 93.122(b)(3) of the conformity rule states:

Highway Performance Monitoring System (HPMS) estimates of vehicle miles traveled (VMT) shall be considered the primary measure of VMT within the portion of the nonattainment or maintenance area and for the functional classes of roadways included in HPMS, for urban areas which are sampled on a separate urban area basis. For areas with network-based travel models, a factor (or factors) may be developed to reconcile and calibrate the network-based travel model estimates of VMT in the base year of its validation to the HPMS estimates for the same period. These factors may then be applied to model estimates of future VMT. In this factoring process, consideration will be given to differences between HPMS and network-based travel models, such as differences in the facility coverage of the HPMS and the modeling network description. Locally developed count-based programs and other departures from these procedures are permitted subject to the interagency consultation procedures.

## FUTURE NETWORKS

The conformity regulation requires that a listing of regionally significant projects and federally-funded non-regionally significant projects assumed in the regional emissions analysis be provided in the conformity documentation. In addition, all projects that are exempt must also be documented.

§93.106(a)(2)ii and §93.122(a)(1) requires that regionally significant additions or modifications to the existing transportation network that are expected to be open to traffic in each analysis year be documented for both Federally funded and non-federally funded projects (see Appendix B).

§93.122(a)(1) requires that VMT for non-regionally significant Federal projects is accounted for in the regional emissions analysis. It is assumed that all SJV MPOs include these projects in the transportation network (see Appendix B).

§93.126, §93.127, §93.128 require that all projects in the TIP/RTP that are exempt from conformity requirements or exempt from the regional emissions analysis be documented. In addition, the reason for the exemption (Table 2, Table 3, traffic signal synchronization) must also be documented (see Appendix B). It is important to note that the CTIPs exemption code is provided in response to FHWA direction.

### *Supporting Documentation:*

The build highway networks include qualifying projects based on Amendment #3 to the 2009 Interim Federal Transportation Improvement Program and the 2007 Regional Transportation Plan Amendment #2. Not all of the street and freeway projects included in the FTIP/RTP qualify for inclusion in the highway network. Projects that call for study, design, right-of-way acquisition, or non-capacity improvements are not included in the networks. When these projects result in actual facility construction projects, the associated capacity changes are coded into the network as appropriate. Since the networks define capacity in terms of number of through traffic lanes, only construction projects that increase the lane-miles of through traffic are included.

Generally, Valley TPA highway networks include all roadways included in the county or cities classified system. These links typically include all freeways plus expressways, arterials, collectors and local collectors. Highway networks also include regionally significant planned local improvements from Transportation Impact Fee Programs and developer funded improvements required to mitigate the impact of a new development.

Small-scale local street improvements contained in the TIP/RTP are not coded on the highway network. Although not explicitly coded, traffic on collector and local streets is simulated in the models by use of abstract links called “centroid connectors”. These represent local streets and driveways which connect a neighborhood to a regionally-significant roadway. Model estimates of centroid connector travel are reconciled against HPMS estimates of collector and local street travel.

**TRAFFIC ESTIMATES**

A summary of the population, employment, and travel characteristics for the Merced County Association of Governments transportation modeling area for each scenario in the Conformity Analysis is presented in Table 2-2.

**Table 2-2  
Traffic Network Comparison for Horizon Years Evaluated in Conformity Analysis**

<b>Horizon Year</b>	<b>Total Population (thousands)</b>	<b>Employment (thousands)</b>	<b>Average Weekday VMT (millions)</b>	<b>Total Lane Miles</b>
<b>2010</b>	276	95	8.47	2,663
<b>2011</b>	282	97	8.72	Not applicable
<b>2014</b>	301	103	9.40	Not applicable
<b>2017</b>	320	109	10.15	Not applicable
<b>2020</b>	340	116	10.87	2,706
<b>2023</b>	363	122	11.93	Not applicable
<b>2030</b>	417	137	14.42	2,706

**VEHICLE REGISTRATIONS**

Merced County Association of Governments does not estimate vehicle registrations, age distributions or fleet mix. Rather, current forecasted estimates for these data are developed by CARB and included in the EMFAC2007 model. EMFAC2007 is the most recent model for use in California conformity analyses. Vehicle registrations, age distribution and fleet mix are developed and included in the model by CARB and cannot be updated by the user.

**STATE IMPLEMENTATION PLAN MEASURES**

The air quality modeling procedures and associated spreadsheets contained in Chapter 3 Air Quality Modeling assume emission reductions consistent with the applicable air quality plans. The emission reductions assumed for these committed measures reflect the latest implementation status of these measures. Committed control measures in the applicable air quality plans that reduce mobile source emissions and are used in conformity, are summarized below.

OZONE

Committed control measures in the 2007 Ozone Plan that reduce mobile source emissions and are included in the conformity demonstration are shown in Table 2-3.

**Table 2-3  
2007 Ozone Plan Measures Assumed in the Conformity Analysis**

<b>Measure Description</b>	<b>Pollutants</b>
District Existing Indirect Source Mitigation and School Bus Fleets rules	Summer NOx
ARB existing Reflash, Idling, and Moyer	Summer ROG Summer NOx
District Proposed Employee Trip Reduction	Summer ROG Summer NOx

NOTE: While the ARB Proposed passenger and truck measures included in the Draft State Strategy were included in the 2007 Ozone Plan and conformity budgets, they are not included in the conformity analysis. EPA has indicated that these measures cannot be included, since there is no written commitment to the specific control measures contained in the SIP.

PM-10

Committed control measures in the EPA approved 2007 PM-10 Maintenance Plan that reduce mobile source emissions and are included in conformity demonstration are shown in Table 2-4.

**Table 2-4  
2007 PM-10 Maintenance Plan Measures Assumed in the Conformity Analysis**

<b>Measure Description</b>	<b>Pollutants</b>
ARB existing Reflash, Idling, and Moyer	PM-10 annual exhaust NOx annual exhaust
District Rule 8061	PM-10 paved road dust PM-10 unpaved road dust
District Rule 8021 Controls	PM-10 road construction dust

PM2.5

Committed control measures in the EPA approved 2007 PM-10 Maintenance Plan that reduce mobile source emissions (exhaust only) are shown in the table above. It is important to note that the PM-10 exhaust reductions are reduced by the ARB size fraction for diesel exhaust to yield a PM2.5 exhaust reduction.

The ARB size fraction data can be accessed at <http://www.arb.ca.gov/ei/speciate/speciate.htm>. The PMSIZE link (under speciation profiles) opens a spreadsheet that contains size fractions. Row 75 of the spreadsheet specifies that the diesel exhaust fraction of PM-10 that represents PM2.5 or smaller is 0.92. This fraction was used because the approved ARB control measure in the EPA approved Amended 2003 PM-10 Plan only affects diesel vehicle exhaust.

The PM-10 diesel exhaust emission reductions are reduced by the ARB size fraction for diesel vehicle exhaust to yield a PM2.5 diesel exhaust emission reduction. This is documented in the spreadsheet EMFAC explanation tab. The PM2.5 fraction is calculated by multiplying the PM-10 diesel exhaust fraction by the ARB size fraction 0.92.

### **CHAPTER 3 AIR QUALITY MODELING**

The model used to estimate vehicle exhaust emissions for carbon monoxide, ozone precursors, and particulate matter is EMFAC2007. ARB emission factors for PM-10 have been used to calculate reentrained paved and unpaved road dust, and fugitive dust associated with road construction. For the Conformity Analysis, model inputs not dependent on the Transportation Improvement Program or Regional Transportation Plan (RTP) are consistent with the applicable SIPs, which include:

- The 2004 Revision to the California State Implementation Plan for Carbon Monoxide was approved by EPA on November 30, 2005 (effective January 30, 2006).
- EPA is anticipated to publish an adequacy determination for the 2011, 2014, and 2017 conformity budgets contained in the 2007 Ozone Plan in January 2009.
- The 2007 PM-10 Maintenance Plan was approved by EPA on November 12, 2008.

It is important to note that the San Joaquin Valley 2008 PM<sub>2.5</sub> Plan has been developed and submitted to EPA. However, EPA has not acted on the budget at this time; therefore, the PM<sub>2.5</sub> Plan is not an applicable SIP.

Regional emissions have been estimated for the horizon years 2010, 2020, 2023 and 2030; other analysis years are interpolated per conformity regulation. The conformity regulation requirements for the selection of the horizon years are summarized in Chapter 1.

#### **EMFAC2007**

The EMFAC model (short for EMISSION FACTOR) is a computer model that can estimate emission rates for motor vehicles for calendar years from 1970 to 2040 operating in California. Pollutant emissions for hydrocarbons, carbon monoxide, nitrogen oxides, particulate matter, lead, sulfur oxides, and carbon dioxide are output from the model. Emissions are calculated for passenger cars, eight different classes of trucks, motorcycles, urban and school buses and motor homes.

EMFAC is used to calculate current and future inventories of motor vehicle emissions at the state, county, air district, air basin, or county within air basin level. EMFAC contains default vehicle activity data that can be used to estimate a motor vehicle emission inventory in tons/day for a specific day, month, or season, and as a function of ambient temperature, relative humidity, vehicle population, mileage accrual, miles of travel and speeds.

Section 93.111 of the conformity regulation requires the use of the latest emission estimation model in the development of conformity determinations. EMFAC2007 is the latest update to the EMFAC model for use by California State and local governments to meet Clean Air Act (CAA, 1990) requirements. On January 18, 2008 EPA announced the availability of this latest version

of the California EMFAC model for use in State Implementation Plan (SIP) development in California.

Since the transportation conformity regulation (40 CFR 93.110) requires areas to use the latest information for estimating vehicle activity, EPA approved the CARB methodology for updating the default vehicle activity data in EMFAC2002 in April 2003. CARB's methodology, "Recommended Methods for Use of EMFAC2002 to Develop Motor Vehicle Emission Budgets and Assess Conformity," explains how vehicle activity data should be updated. This methodology has not been updated for EMFAC2007, but remains applicable. The methodology explains how each parameter associated with vehicle activity was originally developed in EMFAC, how each parameter is related, and how each can be updated when new data becomes available. These relationships are important when adjusting vehicle trips or VMT (vehicle miles traveled). For example, VMT in EMFAC2007 is directly related to vehicle population and mileage accrual rate. Similarly, start and evaporative vehicle emissions are also related to vehicle population levels. If new VMT data is available, CARB suggests modifying the input vehicle population levels, instead of directly inputting new VMT data, so that start and evaporative emissions are revised appropriately. Updated vehicle activity data can also be input to EMFAC using the WIS interface.

A transportation data template has been prepared to summarize the transportation model output for use in EMFAC 2007. The template includes allocating VMT by speed bin by modeling period, as well as creating a 24-hour VMT percentage by speed bin array for input into EMFAC 2007.

EMFAC was used to estimate exhaust emissions for CO, ozone, PM-10, and PM2.5 conformity demonstrations consistent with the applicable air quality plan. These estimates are further reduced by SIP measures as documented in Chapter 2.

### **ADDITIONAL PM-10 ESTIMATES**

PM-10 emissions for reentrained dust from travel on paved and unpaved roads will be calculated separately from roadway construction emissions. It is important to note that with the final approval of the 2007 PM-10 Maintenance Plan, EPA approved a methodology to calculate PM-10 emissions from paved and unpaved roads in future San Joaquin Valley conformity determinations. The Conformity Analysis uses these methodologies and estimates construction-related PM-10 emissions consistent with the 2007 PM-10 Maintenance Plan. The National Ambient Air Quality Standards for PM-10 consists of a 24-hour standard, which is represented by the motor vehicle emissions budgets established in the 2007 PM-10 Maintenance Plan. It is important to note that EPA revoked the annual PM-10 Standard on October 17, 2006. The PM-10 emissions calculated for the conformity analysis represent emissions on an annual average day and are used to satisfy the budget test.

### CALCULATION OF REENTRAINED DUST FROM PAVED ROAD TRAVEL

The core methodology for estimating paved road dust emissions is based on the algorithm published in the 5th Edition of AP-42 (U.S. EPA) (<http://www.epa.gov/ttn/chief/ap42/ch13/>). ARB default assumptions for roadway silt loading by roadway class, rainfall correction factor average vehicle weight remain unchanged. Emissions are estimated for five roadway classes including freeways, arterials, collectors, local roads, and rural roads. Countywide vehicle miles traveled (VMT) information is used for each road class to prepare the emission estimates.

### CALCULATION OF REENTRAINED DUST FROM UNPAVED ROAD TRAVEL

The base methodology for estimating unpaved road dust emissions is based on an ARB methodology in which the miles of unpaved road are multiplied by the assumed vehicle miles traveled (VMT) and an emission factor. In the 2007 PM-10 Maintenance Plan, it is assumed that all non-agricultural unpaved roads within the SJV receive 10 vehicle passes per day. An emission factor of 2.0 lbs PM-10/VMT is used for the unpaved road dust emission estimates. Emissions are estimated for city/county maintained roads.

### CALCULATION OF PM-10 FROM ROADWAY CONSTRUCTION

Section 93.122(e) of the Transportation Conformity regulation requires that PM-10 from construction-related fugitive dust be included in the regional PM-10 emissions analysis, if it is identified as a contributor to the nonattainment problem in the PM-10 implementation plan. The emission estimates are based on an ARB methodology in which the miles of new road built are converted to acres disturbed, which is then multiplied by a generic project duration (i.e., 18 months) and an emission rate. Emission factors are unchanged from the previous estimates at 0.11 tons PM-10/acre-month of activity. The emission factor includes the effects of typical control measures, such as watering, which is assumed to reduce emissions by about 50%. Updated activity data (i.e., new lane miles of roadway built) is estimated based on the highway and transit construction projects in the TIP/RTP.

### PM-10 TRADING MECHANISM

The PM-10 SIP allows trading from the motor vehicle emissions budget for the PM-10 precursor NO<sub>x</sub> to the motor vehicle emissions budget for primary PM-10 using a 1.5 to 1 ratio. The trading mechanism will be used only for conformity analyses for analysis years after 2005.

### **PM2.5 APPROACH**

EPA issued guidance for creating annual on-road mobile source emission inventories for PM<sub>2.5</sub> in August 2005 (EPA, 2005c). The guidance indicates that all areas currently designated nonattainment for PM<sub>2.5</sub> are violating the annual standard for the pollutant. Therefore, in order to be consistent with the standard, PM<sub>2.5</sub> nonattainment areas must develop annual emission inventories for the purpose of developing SIP budgets and demonstrating transportation conformity.

EMFAC2007 includes data for temperature, relative humidity, and characteristics for gasoline fuel sold that vary by geographic area, calendar year, and month and season. The annual average represents an average of all the monthly inventories. As a result, EMFAC will be run to estimate direct PM<sub>2.5</sub> and NO<sub>x</sub> from motor vehicles for an annual average day that will provide the information for both the annual and 24-hour PM<sub>2.5</sub> standards.

EPA guidance indicates that State and local agencies need to consider whether vehicle miles traveled (VMT) varies during the year enough to affect PM<sub>2.5</sub> annual emission estimates. The availability of seasonal or monthly VMT data and the corresponding variability of that data need to be evaluated.

PM<sub>2.5</sub> areas that are currently using network based travel models must continue to use them when calculating annual emission inventories. The guidance indicates that the interagency consultation process should be used to determine the appropriate approach to produce accurate annual inventories for a given nonattainment area. Whichever approach is chosen, that approach should be used consistently throughout the analysis for a given pollutant or precursor. The interagency consultation process should also be used to determine whether significant seasonal variations in the output of network based travel models are expected and whether these variations would have a significant impact on PM<sub>2.5</sub> emission estimates.

The SJV MPOs all use network based travel models. However, the models only estimate average weekday VMT. The San Joaquin Valley MPOs do not have the data or ability to estimate seasonal variation at this time. Data collection and analysis for some studies are in the preliminary phases and cannot be relied upon for other analyses. Some statewide data for the seasonal variation of VMT on freeways does exist. However, traffic patterns on freeways do not necessary represent the typical traffic pattern for local streets and arterials.

In many cases, traffic counts are sponsored by the MPOs and conducted by local jurisdictions. While some local jurisdictions may collect weekend or seasonal data, typical urban traffic counts occur on weekdays (Tuesday through Thursday). Data collection must be more consistent in order to begin estimation of daily or seasonal variation.

The San Joaquin Valley MPOs believe that the average annual day calculated from the current traffic models and EMFAC2007 represent the most accurate data available. The MPOs will continue to discuss and research options that look at how VMT varies by month and season according to the local traffic models.

It is important to note that the guidance indicates that EPA expects the most thorough analysis for developing annual inventories will occur during the development of the SIP, taking into account the needs and capabilities of air quality modeling tools and the limitations of available data. Prior to the development of the SIP, State and local air quality and transportation agencies may decide to use simplified methods for regional conformity analyses.

It is important to note that the San Joaquin Valley 2008 PM<sub>2.5</sub> Plan has been developed and submitted to EPA. The annual inventory methodology contained in the plan and used to establish emissions budgets is consistent with the methodology used herein. However, EPA has not acted on the budget at this time.

Whatever approach is selected, the latest planning assumptions, latest emissions model, and appropriate methods for estimating travel and speeds must be used as required by the conformity regulation. In addition, the selected interim emissions tests should be used consistently when completing a conformity test. That is the regional conformity analysis for the baseline year test should be based on the same approach that was used to develop the baseline inventory for conformity purposes.

The regional emissions analyses in PM<sub>2.5</sub> nonattainment areas must consider directly emitted PM<sub>2.5</sub> motor vehicle emissions from tailpipe, brake wear, and tire wear. In California, areas will use EMFAC2007. As indicated under the Conformity Test Requirements, re-entrained road dust and construction-related fugitive dust from highway or transit projects is not included at this time. In addition, NO<sub>x</sub> emissions are included; however, VOC, SO<sub>x</sub>, and ammonia emissions are not.

## **SUMMARY OF PROCEDURES FOR REGIONAL EMISSIONS ESTIMATES**

Step-by-step air quality modeling procedures, including instructions, references and controls, for the Conformity Analysis are available on the Fresno COG website at [<http://www.fresnocog.org/>]. In addition, documentation of the conformity analysis is provided in Appendix C, including:

- 2009 adjust\_vmt Spreadsheet
- 2009 Conformity EMFAC Spreadsheet
- 2009 Conformity Paved Road Spreadsheet
- 2009 Conformity Unpaved Road Dust Spreadsheet
- 2009 Conformity Construction Spreadsheet
- 2009 Conformity Trading Spreadsheet
- 2009 Conformity Totals Spreadsheet

## **CHAPTER 4 TRANSPORTATION CONTROL MEASURES**

This chapter provides an update of the current status of transportation control measures identified in applicable implementation plans. Requirements of the Transportation Conformity regulation relating to transportation control measures (TCMs) are presented first, followed by a review of the applicable air quality implementation plans and TCM findings for the TIP/RTP.

### **TRANSPORTATION CONFORMITY REGULATION REQUIREMENTS FOR TCMs**

The Transportation Conformity regulation requires that the TIP/RTP “must provide for the timely implementation of TCMs in the applicable implementation plan.” The Federal definition for the term “transportation control measure” is provided in 40 CFR 93.101:

“any measure that is specifically identified and committed to in the applicable implementation plan that is either one of the types listed in Section 108 of the CAA [Clean Air Act], or any other measure for the purpose of reducing emissions or concentrations of air pollutants from transportation sources by reducing vehicle use or changing traffic flow or congestion conditions. Notwithstanding the first sentence of this definition, vehicle technology based, fuel-based, and maintenance-based measures which control the emissions from vehicles under fixed traffic conditions are not TCMs for the purposes of this subpart.”

In the Transportation Conformity regulation, the definition provided for the term “applicable implementation plan” is:

“Applicable implementation plan is defined in section 302(q) of the CAA and means the portion (or portions) of the implementation plan, or most recent revision thereof, which has been approved under section 110, or promulgated under section 110(c), or promulgated or approved pursuant to regulations promulgated under section 301(d) and which implements the relevant requirements of the CAA.”

Section 108(f)(1) of the Clean Air Act as amended in 1990 lists the following transportation control measures and technology-based measures:

- (i) programs for improved public transit;
- (ii) restriction of certain roads or lanes to, or construction of such roads or lanes for use by, passenger buses or high occupancy vehicles;
- (iii) employer-based transportation management plans, including incentives;
- (iv) trip-reduction ordinances;
- (v) traffic flow improvement programs that achieve emission reductions;
- (vi) fringe and transportation corridor parking facilities serving multiple occupancy vehicle programs or transit service;
- (vii) programs to limit or restrict vehicle use in downtown areas or other areas of emission concentration particularly during periods of peak use;

- (viii) programs for the provision of all forms of high-occupancy, shared-ride services;
- (ix) programs to limit portions of road surfaces or certain sections of the metropolitan area to the use of non-motorized vehicles or pedestrian use, both as to time and place;
- (x) programs for secure bicycle storage facilities and other facilities, including bicycle lanes, for the convenience and protection of bicyclists, in both public and private areas;
- (xi) programs to control extended idling of vehicles;
- (xii) programs to reduce motor vehicle emissions, consistent with title II, which are caused by extreme cold start conditions;
- (xiii) employer-sponsored programs to permit flexible work schedules;
- (xiv) programs and ordinances to facilitate non-automobile travel, provision and utilization of mass transit, and to generally reduce the need for single occupant vehicle travel, as part of transportation planning and development efforts of a locality, including programs and ordinances applicable to new shopping centers, special events, and other centers of vehicle activity;
- (xv) programs for new construction and major reconstructions of paths, tracks or areas solely for the use by pedestrian or other non-motorized means of transportation when economically feasible and in the public interest. For purposes of this clause, the Administrator shall also consult with the Secretary of the Interior; and
- (xvi) program to encourage the voluntary removal from use and the marketplace of pre-1980 model year light duty vehicles and pre-1980 model light duty trucks.

#### TCM REQUIREMENTS FOR A TRANSPORTATION PLAN

The EPA regulations in 40 CFR 93.113(b) indicate that transportation control measure requirements for transportation plans are satisfied if two criteria are met:

“(1) The transportation plan, in describing the envisioned future transportation system, provides for the timely completion or implementation of all TCMs in the applicable implementation plan which are eligible for funding under Title 23 U.S.C. or the Federal Transit Laws, consistent with schedules included in the applicable implementation plan.

(2) Nothing in the transportation plan interferes with the implementation of any TCM in the applicable implementation plan.”

#### TCM REQUIREMENTS FOR A TRANSPORTATION IMPROVEMENT PROGRAM

Similarly, in 40 CFR Section 93.113(c), EPA specifies three TCM criteria applicable to a transportation improvement program:

“(1) An examination of the specific steps and funding source(s) needed to fully implement each TCM indicates that TCMs which are eligible for funding under title 23 U.S.C. or the Federal Transit Laws are on or ahead of the schedule established in the

applicable implementation plan, or, if such TCMs are behind the schedule established in the applicable implementation plan, the MPO and DOT have determined that past obstacles to implementation of the TCMs have been identified and have been or are being overcome, and that all State and local agencies with influence over approvals or funding for TCMs are giving maximum priority to approval or funding of TCMs over other projects within their control, including projects in locations outside the nonattainment or maintenance area;

(2) If TCMs in the applicable implementation plan have previously been programmed for Federal funding but the funds have not been obligated and the TCMs are behind the schedule in the implementation plan, then the TIP cannot be found to conform:

- if the funds intended for those TCMs are reallocated to projects in the TIP other than TCMs, or
- if there are no other TCMs in the TIP, if the funds are reallocated to projects in the TIP other than projects which are eligible for Federal funding intended for air quality improvement projects, e.g., the Congestion Mitigation and Air Quality Improvement Program;

(3) Nothing in the TIP may interfere with the implementation of any TCM in the applicable implementation plan.”

## **APPLICABLE AIR QUALITY IMPLEMENTATION PLANS**

Only transportation control measures from applicable implementation plans for the San Joaquin Valley region are required to be updated for this analysis. For the Conformity Analysis, the applicable implementation plans, according to the definition provided at the start of this chapter, are summarized below.

### APPLICABLE IMPLEMENTATION PLAN FOR OZONE

The only applicable ozone plan is the *1994 Ozone Attainment Demonstration Plan* and the *Revised 1996 Rate of Progress Plan*.

The transportation control measures contained in the *1994 Ozone Attainment Demonstration* are not clearly delineated. Both transportation control measures and mobile source measures are discussed under the heading of transportation control measures. The Attainment Demonstration specifically includes Rule 9001 – Commute Based Trip Reduction; however, this rule was never approved by EPA as part of the SIP. In addition, the Revised 1996 Rate of Progress Plan specifically identifies TCMs committed for implementation from 1990 through 1996. The commitments are listed within the following TCM categories:

TCM1 – Traffic Flow Improvements

- TCM2 – Public Transit
- TCM3 – Rideshare Programs (Rule 9001)
- TCM4 – Bicycle Programs
- TCM5 – Alternative Fuels Program

Most of the TCMs in the plans were implemented in the short term, and have been fully implemented. As a result, any resulting creditable emission reduction benefits have been incorporated into the traffic forecasts for the region. However, the TIP/RTP provides continued funding for transportation projects that support TCM programs (e.g., traffic flow improvements, public transit, rideshare programs, and bicycle programs). In addition, voluntary implementation of Rule 9001 (Employee Commute Options) is ongoing even though the Rule was not approved by EPA and cannot be implemented as a mandatory program under SB437.

#### APPLICABLE IMPLEMENTATION PLAN FOR PM-10

The 2007 PM-10 Maintenance Plan was approved by EPA on November 12, 2008. No new local agency control measures were included in the Plan.

The Amended 2003 PM-10 Plan was approved by EPA on April 28, 2004 (effective June 25, 2004). A local government control measure assessment was completed for this plan. The analysis focused on transportation-related fugitive dust emissions, which are not TCMs by definition. The local government commitments are included in the *Regional Transportation Planning Agency Commitments for Implementation Document, April 2003*.

However, the *Amended 2002 and 2005 Ozone Rate of Progress Plan* contains commitments that reduce ozone related emissions; these measures are documented in the *Regional Transportation Planning Agency Commitments for Implementation Document, April 2002*. These commitments are included by reference in the Amended 2003 PM-10 Plan to provide emission reductions for precursor gases and help to address the secondary particulate problem. Since these commitments are included in the Plan by reference, the commitments were approved by EPA as TCMs. Accordingly, they will be tracked for timely implementation through 2010.

#### **IDENTIFICATION OF 2002 RACM THAT REQUIRE TIMELY IMPLEMENTATION DOCUMENTATION**

As part of the 2004 Conformity Determination, FHWA requested that each SIP (Reasonably Available Control Measure - RACM) commitment containing Federal transportation funding and a transportation project and schedule be addressed more specifically. FHWA verbally requested documentation that the funds were obligated and the project was implemented as committed to in the SIP.

The RTPA Commitment Documents, Volumes One and Two, dated April 2002 (Ozone RACM) were reviewed, using a “Summary of Commitments” table. Commitments that contain specific Federal funding/transportation projects/schedules were identified for further documentation. In some cases, local jurisdictions used the same Federal funding/transportation projects/schedules

for various measures; these were identified as combined with (“comb w/”) reference as appropriate. A not applicable (“NA”) was noted where federally-funded project is vehicle technology based, fuel based, and maintenance based measures (e.g., LEV program, retrofit programs, clean fuels - CNG buses, etc.).

In addition, the RTPA Commitment Document, Volume Three, dated April 2003 (PM-10 BACM) was reviewed, using the Summary of Commitments table. Commitments that contain specific CMAQ funding for the purchase and/or operation of street sweeping equipment have been identified. Only one commitment (Fresno - City of Reedley) was identified.

The Project TID Table was developed to provide implementation documentation necessary for the measures identified. Detailed information is summarized in the first five columns, including the commitment number, agency, description, funding and schedule (if applicable).

For each project listed, the TIP in which the project was programmed, as well as the project ID and description have been provided. In addition, the current implementation status of the project has been included (e.g., complete, under construction, etc.). MPO staff determined this information in consultation with the appropriate local jurisdiction. Any projects not implemented according to schedule or project changes are explained in the project status column. These explanations are consistent with the guidance and regulations provided in the Transportation Conformity regulation.

Supplemental documentation was provided to FHWA in August and September 2004 in response to requests for information on timely implementation of TCMs in the San Joaquin Valley. The supplemental documentation included the approach, summary of interagency consultation correspondence, and three tables completed by each of the eight MPOs. The Supplemental Documentation was subsequently approved by FHWA as part of the 2004 Conformity Determination.

The Project TID table that was prepared at the request of FHWA for the 2004 Conformity Analysis has been updated in each subsequent conformity analysis (e.g., 8-hour, PM2.5, 2007 TIP). This documentation has been updated as part of this Conformity Analysis. A summary of this information is provided in Appendix E.

In March 2005, the SJV MPOs began interagency consultation with FHWA and EPA to address outstanding RACM/TCM issues. In general, criteria were developed to identify commitments that require timely implementation documentation. The criteria was applied to the 2002 RACM Commitments approved by reference as part of the Amended 2003 PM-10 Plan. In April 2006, EPA transmitted final tables that identified the approved RACM commitments that require timely implementation documentation for the Conformity Analysis. Subsequently, an approach to provide timely implementation documentation was developed in consultation with FHWA.

A new 2002 RACM TID Table was prepared in 2006 to address the more general RACM commitments that require additional timely implementation documentation per EPA. A brief summary of the commitment, including finite end dates if applicable, is included for each

measure. The MPOs provided a status update regarding implementation in consultation with their member jurisdictions. If a specific project has been implemented, it is included in the Project TID Table under “Additional Projects Identified”. This documentation was included in the Conformity Analysis for the 2007 TIP and 2004 RTP (as amended) that was approved by FHWA in October 2006. The 2002 RACM TID Table has been updated part of this Conformity Analysis. A summary of this information is provided in Appendix E.

### **TCM FINDINGS FOR THE TIP AND REGIONAL TRANSPORTATION PLAN**

Based on a review of the transportation control measures contained in the applicable air quality plans, as documented in the two tables contained in Appendix E, the required TCM conformity findings are made below:

The TIP/RTP provide for the timely completion or implementation of the TCMs in the applicable air quality plans. In addition, nothing in the TIP or RTP interferes with the implementation of any TCM in the applicable implementation plan, and priority is given to TCMs.

### **RTP CONTROL MEASURE ANALYSIS IN SUPPORT OF 2003 PM-10 PLAN**

In May 2003, the San Joaquin Valley COG Directors committed to conduct feasibility analyses as part of each new RTP in support of the 2003 PM-10 Plan. While this commitment was retained in the 2007 PM-10 Maintenance Plan, it is important to note that there is no new RTP development with Amendment #3 to the 2009 Interim FTIP. As a result, there is no update to the 2007 conformity analysis with respect to inclusion of additional long-range local government control measures.

## **CHAPTER 5 INTERAGENCY CONSULTATION**

The requirements for consultation procedures are listed in the Transportation Conformity Regulations under section 93.105. Consultation is necessary to ensure communication and coordination among air and transportation agencies at the local, State and Federal levels on issues that would affect the conformity analysis such as the underlying assumptions and methodologies used to prepare the analysis. Section 93.105 of the conformity regulation notes that there is a requirement to develop a conformity SIP that includes procedures for interagency consultation, resolution of conflicts, and public consultation as described in paragraphs (a) through (e). Section 93.105(a)(2) states that prior to EPA approval of the conformity SIP, “MPOs and State departments of transportation must provide reasonable opportunity for consultation with State air agencies, local air quality and transportation agencies, DOT and EPA, including consultation on the issues described in paragraph (c)(1) of this section, before making conformity determinations.” The SJVUAPCD adopted Rule 9120 Transportation Conformity on January 19, 1995 in response to requirements in Section 176(c)(4)(c) of the Clean Air Act as amended in 1990. Since EPA has not approved Rule 9120 (the conformity SIP), the conformity regulation requires compliance with 40 CFR 93.105 (a)(2) and (e) and 23 CFR 450.

Section 93.112 of the conformity regulation requires documentation of the interagency and public consultation requirements according to Section 93.105. A summary of the interagency consultation and public consultation conducted to comply with these requirements is provided below. Appendix F includes the public hearing process documentation. The response to comments received as part of the public comment process are included in Appendix G.

### **INTERAGENCY CONSULTATION**

Consultation is generally conducted through the San Joaquin Valley Model Coordinating Committee. The San Joaquin Valley Model Coordinating Committee (MCC) has been established by the Valley Transportation Planning Agency's Director's Association to provide a coordinated approach to valley air quality, conformity and transportation modeling issues. The committee's goal is to ensure Valley wide coordination, communication and compliance with Federal and California Clean Air Act requirements. Each of the eight Valley Metropolitan Planning Organizations (MPOs) and the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) are represented. In addition, the Federal Highway Administration, Federal Transit Administration, the Environmental Protection Agency, the California Air Resources Board and Caltrans are all represented on the committee. The MCC meets approximately monthly; agendas, minutes, and other air quality related items are posted on the Fresno COG website at <http://www.fresnocog.org>

The interagency consultation process for the 2009 TIP Conformity Analysis began on the October 11, 2007 MCC conference call with a discussion of the timeline and approach, as well as a review of the latest planning assumptions to be used. A comment period was provided for the summary of latest planning assumptions and both FHWA and EPA responded that they had no comments. Interagency consultation was conducted on the proposed processes, instructions for

regional emission estimates, and draft boilerplate documentation in March 2008. All documentation is contained on the 2009 Conformity web-page on Fresno COG website (see information located at <http://www.fresnocog.org>)

Due to uncertainty with EPA's PM10 Maintenance Plan approval schedule, each MPO prepared both the 2009 FTIP/Conformity Analysis and an Interim TIP (which would allow some, but not all projects to move forward) for public review.

The 2007 PM-10 Maintenance Plan and Request for Redesignation was submitted to EPA on November 16, 2007. EPA proposed approval of the Plan and conformity budgets on April 25, 2008. In early April, EPA indicated that final action on the plan could be available by late June 2008. On May 15, 2008, EPA provided a signed Federal Register notice for the technical corrections to the motor vehicle budgets which included an extension of the public comment period to June 10, 2008. EPA then indicated that final action on the plan could be available by late July 2008.

In early June 2008, EPA indicated that they would be unable to issue final action on the PM-10 Maintenance Plan (thus providing conformity budgets needed for the 2009 FTIP) by July 31, 2008 due to two exceedances of the standard monitored in late-May. Consequently, the 2009 Interim FTIPs were then adopted in July 2008 by each of the SJV MPOs and submitted to Caltrans by August 1, 2008 for inclusion in the 2009 FSTIP. There was no action taken on the Draft 2009 TIP, corresponding Conformity Analysis, or Draft 2007 RTP Amendments. In summary, there are approximately 100 projects with \$2.4 billion in funding that are not included in the Interim TIP four year element (FY 08/09 through FY 11/12).

In July, 2008, EPA indicated that the anticipated date of final action on the Maintenance Plan was September 2008. However, it was unclear what impact the current and/or future exceedances of the PM-10 standard have on meeting this schedule. Consequently, both FHWA and Caltrans requested that the SJV MPOs process a first off-cycle amendment to the 2009 Interim FTIP that relies on a previous emissions analysis. In response, the SJV MPOs drafted Amendment #2 and released for public review in September, with Board adoption scheduled for October. This amendment included approximately 75 (of the 100) projects that were determined to be eligible to rely on a previous emissions analysis and be added to the Interim TIPs.

On September 24, 2008, EPA signed the approval notice for the San Joaquin Valley 2007 PM-10 Maintenance Plan, including motor vehicle emissions budgets for conformity. These budgets replace the previously approved budgets and invalidates Amendment #2 that Relies on a Previous Emissions Analysis. Consequently, each MPO has withdrawn Amendment #2 from public review and Board consideration in October.

At least three MPOs need to process Type #2 and/or Type #3 amendments (no conformity analysis required) prior to this conformity analysis. These amendments are being labeled #2 to the 2009 Interim FTIP and will be processed in accordance with the applicable Public Participation Plan.

The SJV MPOs began drafting Amendment #3 to the 2009 Interim FITP to add project phases and/or projects that were not included in the 2009 Interim TIPs in October. A new conformity determination and new regional emissions analysis is required for Amendment #3. Amendment #3 was released for public review in November, with public hearings to be conducted in December, followed by Board adoption in January 2009. Federal approval of Amendment #3 and the corresponding Conformity Analysis is anticipated in March 2009.

Interagency consultation also includes the local transportation providers in the MPO region (e.g., cities, transit districts). The cities, county and transit district include representative on the Technical Planning Committee (TPC). The RTP and FTIP are developed in concert with the TPC which then makes advisory recommendations to the Technical Review Board (TRB) consisting of the city managers and the county administrative officer. Finally, action is taken by the MCAG Governing Board, which consists of elected representatives from the county and each of the six cities

## **PUBLIC CONSULTATION**

In general, agencies making conformity determinations shall establish a proactive public involvement process that provides opportunity for public review and comment on a conformity determination for TIPs/RTPs. In addition, all public comments must be addressed in writing.

All MPOs in the San Joaquin Valley have standard public involvement procedures. In general the TIP/RTP and corresponding conformity analysis the subject of a public notice and 30 day review period prior to adoption. A public meeting is also conducted prior to adoption and all public comments are responded to in writing. The Appendices contain corresponding documentation supporting the public involvement procedures.

## **CHAPTER 6 TIP AND RTP CONFORMITY**

The principal requirements of the transportation conformity regulation for TIP/RTP assessments are: (1) the TIP and RTP must pass an emissions budget test with a budget that has been found to be adequate by EPA for transportation conformity purposes, or an interim emission test; (2) the latest planning assumptions and emission models must be employed; (3) the TIP and RTP must provide for the timely implementation of transportation control measures (TCMs) specified in the applicable air quality implementation plans; and (4) consultation. The final determination of conformity for the TIP/RTP is the responsibility of the Federal Highway Administration and the Federal Transit Administration.

The previous chapters and the appendices present the documentation for all of the requirements listed above for conformity determinations except for the conformity test results. Prior chapters have also addressed the updated documentation required under the transportation conformity regulation for the latest planning assumptions and the implementation of transportation control measures specified in the applicable air quality implementation plans.

This chapter presents the results of the conformity tests, satisfying the remaining requirement of the transportation conformity regulation. Separate tests were conducted for 8-hour ozone (ROG and NO<sub>x</sub>), particulate matter under ten and 2.5 microns in diameter (PM-10 and PM<sub>2.5</sub>). The applicable conformity tests were reviewed in Chapter 1. For each test, the required emissions estimates were developed using the transportation and emission modeling approaches required under the transportation conformity regulation and summarized in Chapters 2 and 3. The results are summarized below, followed by a more detailed discussion of the findings for each pollutant. Table 6-1 presents results for ozone (ROG/NO<sub>x</sub>), PM-10 (PM-10/NO<sub>x</sub>), and PM<sub>2.5</sub> (PM<sub>2.5</sub>/NO<sub>x</sub>) respectively, in tons per day for each of the horizon years tested.

For ozone, the applicable conformity test is the emissions budget test, using the 2007 Ozone Plan budgets established for ROG and NO<sub>x</sub> for an average summer (ozone) season day. EPA is anticipated to publish the notice of adequacy determination for the 2011, 2014, and 2017 conformity budgets in the Federal Register in January 2009. The modeling results for all analysis years indicate that the on-road vehicle ROG and NO<sub>x</sub> emissions predicted for each of the “Build” scenarios are less than the emissions budgets. The TIP/RTP therefore satisfy the conformity emissions test for volatile organic compounds and nitrogen oxides.

For PM-10, the applicable conformity test is the emissions budget test, using the 2007 PM-10 Maintenance Plan budgets for PM-10 and NO<sub>x</sub>. This Plan was approved by EPA on November 12, 2008. The modeling results for all analysis years indicate that the PM-10 emissions predicted for the “Build” scenarios are less than the emissions budgets for 2005 and 2020. The TIP/RTP therefore satisfy the conformity emissions tests for PM-10.

For PM<sub>2.5</sub>, areas violating both the annual and 24-hour standards for PM<sub>2.5</sub> must address both standards in the conformity determination. The San Joaquin Valley currently violates both standards, and the conformity determination includes both analyses. Before an adequate or

approved SIP budget is available, conformity is generally demonstrated with interim emission tests. Conformity may be demonstrated if the emissions from the proposed transportation system are either less than or no greater than the 2002 motor vehicle emissions in a given area (see Section 93.119). The San Joaquin Valley chose to use the “no-greater-than-2002 emissions test”. The modeling results for all analysis years indicated that the “Build” scenarios are less than the 2002 Base Year emissions estimates for both the 24-hour and annual standards. The TIP/RTP therefore satisfy the conformity emissions tests for PM2.5.

As all requirements of the Transportation Conformity regulation have been satisfied, a finding of conformity for Amendment #3 to the 2009 Interim Federal Transportation Improvement Program and the 2007 Regional Transportation Plan, Amendment #2 is supported.

**Table 6-1  
Conformity Results Summary**

Ozone		ROG (tons/day)	NOx (tons/day)	ROG	NOx
	2011 Budget	6.2	28.8		
	2011	5.9	27.3	YES	YES
	2014 Budget	5.1	22.3		
	2014	4.7	20.9	YES	YES
	2017 Budget	4.2	17.1		
	2017	3.9	15.9	YES	YES
	2020	3.4	12.7	YES	YES
	2023	3.1	10.9	YES	YES
	2030	2.9	9.9	YES	YES

PM-10		PM-10 (tons/day)	NOx (tons/day)	PM-10	NOx
	Adjusted 2005 Budget	6.2	39.4		
	2010	6.2	30.4	YES	YES
	Adjusted 2020 Budget	6.3	13.1		
	2020	6.3	12.8	YES	YES
	Adjusted 2030 Budget	7.5	11.3		
	2030	7.5	10.0	YES	YES

PM2.5 24-Hour Standard		PM2.5 (tons/day)	NOx (tons/day)	PM2.5	NOx
	2002 Base Year	1.5	37.1		
	2010	1.3	30.4	YES	YES
	2020	0.7	12.8	YES	YES
	2030	0.7	10.0	YES	YES

PM2.5 Annual Standard		PM2.5 (tons/year)	NOx (tons/year)	PM2.5	NOx
	2002 Base Year	548	13542		
	2010	475	11096	YES	YES
	2020	256	4672	YES	YES
	2030	256	3650	YES	YES

## REFERENCES

- CAA. 1990. *Clean Air Act*, as amended November 15, 1990. (42 U. S. C. Section 7401et seq.) November 15, 1990.
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**APPENDIX A**

**CONFORMITY CHECKLIST**

## Conformity Analysis Documentation

### FHWA Checklist for MPO TIPs/RTPs

(checklist version: June 27, 2005)

40 CFR	Criteria	Page(s)	Comments
§93.102	Document the applicable pollutants and precursors for which EPA designates the area as nonattainment or maintenance. Describe the nonattainment or maintenance area and its boundaries.	9	
§93.104 (b, c)	Document the date that the MPO officially adopted, accepted or approved the TIP/RTP and made a conformity determination. Include a copy of the MPO resolution. Include the date of the last prior conformity finding.	1	
§93.104 (e)	If the conformity determination is being made to meet the timelines included in this section, document when the new motor vehicle emissions budget was approved or found adequate.	N/A	
§93.106 (a)(2)ii	Describe the regionally significant additions or modifications to the existing transportation network that are expected to be open to traffic in each analysis year. Document that the design concept and scope of projects allows adequate model representation to determine intersections with regionally significant facilities, route options, travel times, transit ridership and land use.	App. B, 18-21	
§93.108	Document that the TIP/RTP is financially constrained (23 CFR 450).	1	
§93.109 (a, b)	Document that the TIP/RTP complies with any applicable conformity requirements of air quality implementation plans (SIPs) and court orders.	Chs. 1-6	
§93.109 (c-k)	Provide either a table or text description that details, for each pollutant and precursor, whether the interim emissions tests and/or the budget test apply for conformity. Indicate which emissions budgets have been found adequate by EPA, and which budgets are currently applicable for what analysis years.	10-15	
§93.110 (a, b)	Document the use of latest planning assumptions (source and year) at the "time the conformity analysis begins," including current and future population, employment, travel and congestion. Document the use of the most recent available vehicle registration data. Document the date upon which the conformity analysis was begun.	16-21	
USDOT/ EPA guidance	Document the use of planning assumptions less than five years old. If unable, include written justification for the use of older data. (1/18/02)	16-21	
§93.110 (c,d,e,f)	Document any changes in transit operating policies and assumed ridership levels since the previous conformity determination. Document the use of the latest transit fares and road and bridge tolls. Document the use of the latest information on the effectiveness of TCMs and other SIP measures that have been implemented. Document the key assumptions and show that they were agreed to through Interagency and public consultation.	20	
§93.111	Document the use of the latest emissions model approved by EPA.	24	
§93.112	Document fulfillment of the interagency and public consultation requirements outlined in a specific implementation plan according to §51.390 or, if a SIP revision has not been completed, according to §93.105 and 23 CFR 450. Include documentation of consultation on conformity tests and methodologies as well as responses to written comments.	35-37, App. G	
§93.113	Document timely implementation of all TCMs in approved SIPs. Document that implementation is consistent with schedules in the applicable SIP and document whether anything interferes with timely implementation. Document any delayed TCMs in the applicable SIP and describe the measures being	29-34	

	taken to overcome obstacles to implementation.		
§93.114	Document that the conformity analyses performed for the TIP is consistent with the analysis performed for the Plan, in accordance with 23 CFR 450.324(f)(2).	Covers both	
§93.118 (a, c, e)	For areas with SIP budgets: Document that emissions from the transportation network for each applicable pollutant and precursor, including projects in any associated donut area that are in the Statewide TIP and regionally significant non-Federal projects, are consistent with any adequate or approved motor vehicle emissions budget for all pollutants and precursors in applicable SIPs.	38-39	
§93.118 (b)	Document for which years consistency with motor vehicle emissions budgets must be shown.	10-15	
§93.118 (d)	Document the use of the appropriate analysis years in the regional emissions analysis for areas with SIP budgets, and the analysis results for these years. Document any interpolation performed to meet tests for years in which specific analysis is not required.	38-40	
§93.119 <sup>1</sup>	For areas without applicable SIP budgets: Document that emissions from the transportation network for each applicable pollutant and precursor, including projects in any associated donut area that are in the Statewide TIP and regionally significant non-Federal projects, are consistent with the requirements of the "Action/Baseline", "Action/1990" and/or "Action/2002" interim emissions tests as applicable.	38-40	
§93.119 (g)	Document the use of the appropriate analysis years in the regional emissions analysis for areas without applicable SIP budgets.	10-15	
§93.119 (h,i)	Document how the baseline and action scenarios are defined for each analysis year.	24-28	
§93.122 (a)(1)	Document that all regionally significant federal and non-Federal projects in the nonattainment/maintenance area are explicitly modeled in the regional emissions analysis. For each project, identify by which analysis it will be open to traffic. Document that VMT for non-regionally significant Federal projects is accounted for in the regional emissions analysis	21, App B	
§93.122 (a)(2, 3)	Document that only emission reduction credits from TCMs on schedule have been included, or that partial credit has been taken for partially implemented TCMs. Document that the regional emissions analysis only includes emissions credit for projects, programs, or activities that require regulatory action if: the regulatory action has been adopted; the project, program, activity or a written commitment is included in the SIP; EPA has approved an opt-in to the program, EPA has promulgated the program, or the Clean Air Act requires the program (indicate applicable date). Discuss the implementation status of these programs and the associated emissions credit for each analysis year.	22-24	
§93.122 (a)(4,5,6)	For nonregulatory measures that are not included in the STIP, include written commitments from appropriate agencies. Document that assumptions for measures outside the transportation system (e.g. fuels measures) are the same for baseline and action scenarios. Document that factors such as ambient temperature are consistent with those used in the SIP unless modified through interagency consultation.	N/A	
§93.122 (b)(1)(i) <sup>2</sup>	Document that a network-based travel model is in use that is validated against observed counts for a base year no more than 10 years before the date of the conformity determination. Document that the model results have been analyzed for reasonableness and compared to historical trends and explain any significant differences between past trends and forecasts (for per capita vehicle-trips, VMT, trip lengths mode shares, time of day, etc.).	N/A <sup>2</sup>	
§93.122	Document the land use, population, employment, and other network-based	N/A <sup>2</sup>	

(b)(1)(ii) <sup>2</sup>	travel model assumptions.		
§93.122 (b)(1)(iii) <sup>2</sup>	Document how land use development scenarios are consistent with future transportation system alternatives, and the reasonable distribution of employment and residences for each alternative.	N/A <sup>2</sup>	
§93.122 (b)(1)(iv) <sup>2</sup>	Document use of capacity sensitive assignment methodology and emissions estimates based on a methodology that differentiates between peak and off-peak volumes and speeds, and bases speeds on final assigned volumes.	N/A <sup>2</sup>	
§93.122 (b)(1)(v) <sup>2</sup>	Document the use of zone-to-zone travel impedances to distribute trips in reasonable agreement with the travel times estimated from final assigned traffic volumes. Where transit is a significant factor, document that zone-to-zone travel impedances used to distribute trips are used to model mode split.	N/A <sup>2</sup>	
§93.122 (b)(1)(vi) <sup>2</sup>	Document how travel models are reasonably sensitive to changes in time, cost, and other factors affecting travel choices.	N/A <sup>2</sup>	
§93.122 (b)(2) <sup>2</sup>	Document that reasonable methods were used to estimate traffic speeds and delays in a manner sensitive to the estimated volume of travel on each roadway segment represented in the travel model.	N/A <sup>2</sup>	
§93.122 (b)(3) <sup>2</sup>	Document the use of HPMS, or a locally developed count-based program or procedures that have been chosen through the consultation process, to reconcile and calibrate the network-based travel model estimates of VMT.	N/A <sup>2</sup>	
§93.122 (d)	In areas not subject to §93.122(b), document the continued use of modeling techniques or the use of appropriate alternative techniques to estimate vehicle miles traveled	16-22	
§93.122 (e, f)	Document, in areas where a SIP identifies construction-related PM10 or PM 2.5 as significant pollutants, the inclusion of PM10 and/or PM 2.5 construction emissions in the conformity analysis.	24-28	
§93.122(g)	If appropriate, document that the conformity determination relies on a previous regional emissions analysis and is consistent with that analysis.	N/A	
§93.126, §93.127, §93.128	Document all projects in the TIP/RTP that are exempt from conformity requirements or exempt from the regional emissions analysis. Indicate the reason for the exemption (Table 2, Table 3, traffic signal synchronization) and that the interagency consultation process found these projects to have no potentially adverse emissions impacts.	22-23, App B	

**Footnotes:**

1: Note that some areas are required to complete both interim emissions tests.

2: 40 CFR 93.122(b): “Regional emissions analysis in serious, severe, and extreme ozone nonattainment areas and serious CO nonattainment areas must meet the requirements of paragraphs (b) (1) through (3) of this section if their metropolitan planning area contains an urbanized area population over 200,000.”

**Disclaimers**

This checklist is intended solely as an informational guideline to be used in reviewing Transportation Plans and Transportation Improvement Programs for adequacy of their conformity documentation. It is in no way intended to replace or supersede the Transportation Conformity regulations of 40 CFR Parts 51 and 93, the Statewide and Metropolitan Planning Regulations of 23 CFR Part 450 or any other EPA, FHWA or FTA guidance pertaining to transportation conformity or statewide and metropolitan planning. This checklist is not intended for use in documenting transportation conformity for individual transportation projects in nonattainment or maintenance areas. 40 CFR Parts 51 and 93 contain additional criteria for project-level conformity determinations.

**APPENDIX B**

**TRANSPORTATION PROJECT LISTING**

1. Federally Funded Non-Regionally Significant Projects: NONE
2. Regionally Significant Projects: see next page
3. Exempt Projects: see following pages



Exempt Project Listing

Jurisdiction / Agency	TIP/RTP Project ID	CTIPs Project ID (if available)	Description	Estimated Cost	Exemption Code (per CTIPs - next sheet)
	n/a	205-0000-0098	Los Banos Class I Bike Trail - Continuation of Rail-to-Trail path from Place Road extending east of Ward Road	\$195,000	3.02
	n/a	205-0000-0025	Los Banos signal (Hwy 165 & B St) Installation of traffic control signal lights to include permanent metal fixture poles, control cabined, traffic control loops, and construction of right hand turn lane	\$275,000	5.01
	n/a	205-0000-0011	Los Banos Bike Lanes - Installation (paint striping) of 130,000 feet of Class II Bike lanes along both sides of various streets in Los Banos.	\$188,000	3.02
	n/a	205-0000-0096	Los Banos Bike/Ped Bridge - Purchase and installation of pedestrian/bicycle bridge on Monte Vista Drive near Los Banos High School	\$225,000	3.02
	n/a	205-0000-0139	Hilmar Bike/Ped Bridge	\$223,000	3.02
	n/a	205-0000-0042	TDM/Alternative Modes Program - Promotion, Outreach and Program Development to Commute Alternatives	\$255,000	3.01
	n/a	205-0000-0031	City of Los Banos - Westside Transit Transportation Center	\$927,000	2.11
	n/a	205-0000-0107	Merced County Transit - Purchase Paratransit buses	\$7,199,000	2.10
	n/a	205-0000-0130	Merced County Transit - Purchase CNG Buses (35 passenger)	\$10,957,000	2.10
	n/a	205-0000-0113	Merced County Transit - UC Merced Demonstration transit shuttle	\$849,000	2.01
	n/a	205-0000-0114	Merced County Transit - Fixed Route Tracking System	\$113,000	2.05
	n/a	205-0000-0115	Merced County Transit - Electronic Farebox Phase 2	\$310,000	2.05
	n/a	205-0000-0116	Merced County Transit - Route 5X and Route 15 (Urban) Demonstration	\$322,000	2.01
	n/a	205-0000-0117	Merced County Transit - Route 7X and Route 9X (Rural) Demonstration	\$226,000	2.01
	n/a	205-0000-0034	Merced County Transit - Purchase Bus Shelters	\$556,000	2.07
	n/a	205-0000-0118	Merced County Transit - Design and Construct a CNG Fueling facility at Merced County Transit site	\$1,542,000	2.11
	n/a	205-0000-0022	Merced County Transit - Operations and Maintenance	\$71,385,000	2.01
	n/a	205-0000-0123	Merced County Transit - Transit Marketing Plan	\$190,000	4.01
	n/a	205-0000-0124	Merced County Transit - Bus parking lot expansion - 880 Thornton Road, Merced	\$125,000	2.11
	n/a	205-0000-0125	Merced County Transit - Transit Modular office space for transit scheduling and storage	\$90,000	2.11

Exempt Project Listing

n/a	205-0000-0130	YARTS Public Outreach and Marketing	\$425,000	3.01
n/a	205-0000-0129	YARTS - Construct two park and ride lots to allow visitors to park and use the YARTS service to access the nation park, mitigating congestion	\$583,000	2.11
n/a	205-0000-0110	YARTS - FTA-5309( c ) Allocation for capital cost of constructing service	\$870,000	2.10
n/a	205-0000-0136	YARTS - FTA-5320 Paul S. Sarbanes Program grant for lease of vehicles (formerly known as the ATPPL program)	\$538,000	2.10
n/a	205-0000-0120	Mariposa, CA - Yosemite National Park - Capital purchase of CNG/Hydrogen transit buses and facilities	\$2,365,000	2.10
n/a	205-0000-0132	MediCab Mobile Ministries (5 vans, base station, radio)	\$334,000	2.02
n/a	205-0000-0035	SHOPP Emergency Repair Program	\$350,000	4.13
n/a	205-0000-0126	SHOPP Bridge Preservation Prog. Lump Sum	\$125,569,000	1.19
n/a	205-0000-0127	SHOPP Roadway Preservation Lump Sum	\$69,332,000	1.10
n/a	205-0000-0128	SHOPP Mobility Program Lump Sum	\$12,192,000	1.03
n/a	305-0000-0000	SHOPP Collision Reduction Program Lump Sum	\$22,531,000	1.06
n/a	205-0000-0023	SHOPP Minor Program Lump Sum	\$9,710,000	1.03
n/a	205-0000-0038	Local Hazard Safety Improvement Program (HSIP)	\$230,000	1.06
n/a	105-0000-0080	Mission Ave. Interchange landscaping	\$4,942,000	4.09
n/a	105-0000-0079	Livingston Stage II Freeway landscaping	\$1,147,000	4.09
n/a	105-0000-0077	Delhi Corridor Tree Planting	\$1,613,000	4.09
n/a	105-0000-0103	Atwater Overhead to Arena Way Landscaping	\$1,160,000	4.09
n/a	105-0000-0017	Planning, Programming, & Monitoring	\$3,016,000	4.01
n/a	205-0000-0135	Federal Safe Routes to Schools (SRTS) Program Lump Sum	\$1,579,000	1.06
n/a	205-0000-0138	G Street Railroad Undercrossing - HRSCA program	\$19,850,000	1.01
n/a	205-0000-0039	RSTP Apportionment - Exchange 100% for state dollars	\$23,530,000	1.10
n/a	205-0000-0111	PSR (Project Study Report -PE only) Highway 99 I/C between SR 165 & Bradbury Road	\$1,337,000	4.01
n/a	205-0000-0109	Merced County - Atwater Federal Penitentiary Access Road-Rehab/Reconst Franklin Road from Santa Fe to Bellevue & Fox Road from Bellevue to Ladino; Close Fox Road at Santa Fe	\$917,000	1.10

- 
- 1.01 Railroad/highway crossing.
  - 1.03 Safer non-Federal-aid system roads.
  - 1.04 Shoulder Improvements.
  - 1.05 Increasing Sight Distance.
  - 1.06 Safety Improvement Program.
  - 1.07 Traffic control devices and operating assistance other than signalization projects.
  - 1.08 Railroad/highway crossing warning devices.
  - 1.09 Guardrails, median barriers, crash cushions.
  - 1.10 Pavement resurfacing and/or rehabilitation.
  - 1.11 Pavement marking demonstration.
  - 1.12 Emergency Relief (23 U.S.C. 125).
  - 1.13 Fencing.
  - 1.14 Skid treatments.
  - 1.15 Safety roadside rest areas.
  - 1.16 Adding medians.
  - 1.17 Truck climbing lanes outside the urbanized area.
  - 1.18 Lighting improvements.
  - 1.19 Widening narrow pavements or reconstructing bridges (no additional travel lanes).
  - 1.20 Emergency truck pullovers.
  - 2.01 Operating assistance to transit agencies.
  - 2.02 Purchase of support vehicles.
  - 2.03 Rehabilitation of transit vehicles.
  - 2.04 Purchase of office, shop, and operating equipment for existing facilities.
  - 2.05 Purchase of operating equipment for vehicles (e.g. radios, fareboxes, lifts, etc.).
  - 2.06 Construction or renovation of power, signal, and communications systems.
  - 2.07 Construction of small passenger shelters and information kiosks.
  - 2.08 Reconstruction or renovation of transit buildings and structures.
  - 2.09 Rehabilitation or reconstruction of track structures, track, and trackbed in existing right of way.
  - 2.10 Purchase of new buses and rail cars to replace existing vehicles or for minor expansions of the fleet.
  - 2.11 Construction of new bus or rail storage/maintenance facilities categorically excluded in 23 CFR 771.
  - 3.01 Continuation of ride-sharing and van-pooling promotion activities at current levels
  - 3.02 Bicycle and pedestrian facilities.
  - 4.01 Non Construction related activities.
  - 4.05 Engineering studies
  - 4.06 Noise attenuation.
  - 4.07 Advance land acquisitions
  - 4.08 Acquisition of scenic easements.
  - 4.09 Plantings, landscaping, etc.
  - 4.10 Sign removal.
  - 4.11 Directional and informational signs.
  - 4.12 Transportation enhancement activities
  - 4.13 Repair of damage caused by natural disasters, civil unrest, or terrorist actgs, except projects involving substantial functional, locational or capaci
  - 5.01 Intersection channelization projects.
  - 5.02 Intersection signalization projects at individual intersections.
  - 5.03 Changes in vertical and horizontal alignment.
  - 5.04 Interchange reconfiguration projects.
  - 5.05 Truck size and weight inspection stations.
  - 5.06 Bus terminals and transfer points.
  - 5.07 Traffic signal synchronization projects.
-



**APPENDIX C**

**CONFORMITY ANALYSIS DOCUMENTATION**

## Merced CAG 2009 Conformity

Variable	Source	Analysis Year							
		2010	2011	2014	2017	2020	2023	2030	
EDP	EMFAC 2007	175,960	179,984	192,618	206,144	220,626	240,471	294,006	
EVMT	EMFAC 2007	8,915,380	9,129,685	9,941,659	10,788,661	11,582,005	12,708,265	15,526,116	
MVMT	TPA Model	8,467,888	8,721,833	9,395,824	10,146,466	10,865,822	11,930,878	14,416,007	
N	Calculated	167,128	171,944	182,043	193,873	206,983	225,761	272,985	

<=Enter Modeled Daily VMT Here

<= Read New Vehicle Population Here

N = New Population  
 EDP = EMFAC Default Population  
 MVMT = Modeled VMT  
 EVMT = EMFAC Default VMT

**EMFAC Emissions (tons/day)**

**MERCED**

<u>Pollutant</u>	<u>Source</u>	<u>Description</u>	2011	2014	2017	2020	2023	2030
Ozone	EMFAC 2007 (Summer Run)	ROG Total Exhaust (All Vehicles Total)	5.92	4.80	3.97	3.41	3.14	2.94
	District Existing Local Reductions	Indirect Source Mitigation and School Bus Fleet rules	0.00	0.00	0.00	0.00	0.00	0.00
	ARB Existing Local Reductions	Reflash, Idling, and Moyer	0.01	0.01	0.00	0.00	0.00	0.00
	District New/Proposed Local Reductions	Employee Trip Reduction	0.04	0.05	0.05	0.05	0.05	0.05
	ARB New/Proposed State Reductions	Passenger and Truck Measures included in the Draft State Strategy	0.00	0.00	0.00	0.00	0.00	0.00
		<b>Conformity Total</b>	5.97	4.74	3.92	3.36	3.09	2.89
Ozone	EMFAC 2007 (Summer Run)	NOx Total Exhaust (All Vehicles Total)	29.99	23.26	18.10	14.73	12.96	11.96
	District Existing Local Reductions	Indirect Source Mitigation and School Bus Fleet rules	0.12	0.07	0.11	0.11	0.10	0.10
	ARB Existing Local Reductions	Reflash, Idling, and Moyer	2.53	2.27	2.05	1.92	1.96	1.96
	District New/Proposed Local Reductions	Employee Trip Reduction	0.02	0.02	0.02	0.02	0.02	0.02
	ARB New/Proposed State Reductions	Passenger and Truck Measures included in the Draft State Strategy	0.00	0.00	0.00	0.00	0.00	0.00
		<b>Conformity Total</b>	27.32	20.90	15.92	12.68	10.88	9.88
PM-10	EMFAC 2007 (Annual Run)	PM-10 Total (All Vehicles Total) * includes tire & brake wear	1.53		0.99			1.06
	ARB	Existing Reflash, Idling, and Moyer (HDI, PFR, Moyer, AB1493, Reflash)	0.01		0.01			0.01
		<b>Conformity Total</b>	1.52		0.98			1.05
PM-10	EMFAC 2007 (Annual Run)	NOx Total Exhaust (All Vehicles Total)	32.12		14.75			11.93
	ARB	Existing Reflash, Idling, and Moyer (HDI, PFR, Moyer, AB1493, Reflash)	1.74		1.92			1.92
		<b>Conformity Total</b>	30.38		12.83			10.01
PM2.5	EMFAC 2007 (Annual Run)	PM2.5 Total Exhaust (All Vehicles Total) * includes tire & brake wear	1.26		0.73			0.72
	ARB	Existing Reflash, Idling, and Moyer (HDI, PFR, Moyer, AB1493, Reflash)	0.01		0.01			0.01
		<b>Conformity Total</b>	1.30		0.70			0.70
PM2.5	EMFAC 2007 (Annual Run)	NOx Total Exhaust (All Vehicles Total)	32.12		14.75			11.93
	ARB	Existing Reflash, Idling, and Moyer (HDI, PFR, Moyer, AB1493, Reflash)	1.74		1.92			1.92
		<b>Conformity Total</b>	30.40		12.80			10.00

Paved Road Dust Emissions (tons/day)

MERCED 2010

	Enter Freeway VMT ==>	Enter Arterial VMT ==>	Enter Collector VMT ==>	Enter Total of Urban and Rural Local VMT Here =>	VTM Daily	VTM (million/year)	Base Emissions (PM10 tpy)	Rain Adj. Emissions (PM10 tpy)	Rain Adj. Emissions (PM10 tons/day)	District Rule 806/ISR Control Rates	Control-Adjusted Emissions
Freeway	2,892,206	3,685,491	1,605,837	284,354	2,892,206	1,056	302,864	292,227	0.801	0.075	0.741
Arterial	4,987,209	2,131,167	112,983	8,467,888	4,987,209	1,345	565,249	535,749	1.468	0.282	1,054
Collector	1,605,837	92,131	34	1505,940	1,605,837	586	241,932	233,436	0.640	0.407	0.379
Urban	192,223	34	70	1453,063	192,223	34	58,492	56,438	0.155	0.324	0.105
Rural	348,714	348,714	348,714	3,981	348,714	70	347,402	335,202	0.918	0.090	0.836
Totals	8,467,888	3,091	1505,940	3,981	8,467,888	3,091	1505,940	1453,063	3.981		3,114

MERCED 2020

	Enter Freeway VMT ==>	Enter Arterial VMT ==>	Enter Collector VMT ==>	Enter Total of Urban and Rural Local VMT Here =>	VTM Daily	VTM (million/year)	Base Emissions (PM10 tpy)	Rain Adj. Emissions (PM10 tpy)	Rain Adj. Emissions (PM10 tons/day)	District Rule 806/ISR Control Rates	Control-Adjusted Emissions
Freeway	3,398,732	6,459,852	3,244,840	3,953	3,398,732	1,241	355,906	343,406	0.941	0.075	0.870
Arterial	4,987,209	2,131,167	112,983	10,865,822	4,987,209	1,820	751,364	724,976	1.986	0.282	1,428
Collector	1,605,837	92,131	34	1926,110	1,605,837	778	321,078	309,802	0.949	0.407	0.503
Urban	192,223	34	70	1858,467	192,223	41	71,732	69,212	0.190	0.324	0.128
Rural	348,714	348,714	348,714	5,092	348,714	86	426,032	411,070	1.126	0.090	1,025
Totals	10,865,822	3,966	1926,110	5,092	10,865,822	3,966	1926,110	1858,467	5.092		3,953

MERCED 2030

	Enter Freeway VMT ==>	Enter Arterial VMT ==>	Enter Collector VMT ==>	Enter Total of Urban and Rural Local VMT Here =>	VTM Daily	VTM (million/year)	Base Emissions (PM10 tpy)	Rain Adj. Emissions (PM10 tpy)	Rain Adj. Emissions (PM10 tons/day)	District Rule 806/ISR Control Rates	Control-Adjusted Emissions
Freeway	4,251,642	6,459,852	3,244,840	5,222	4,251,642	1,552	445,220	429,584	1.177	0.075	1,089
Arterial	4,987,209	2,131,167	112,983	14,416,007	4,987,209	2,358	973,229	939,050	2.573	0.282	1,847
Collector	1,605,837	92,131	34	2,563,460	1,605,837	1,184	488,862	471,683	1.292	0.407	0.766
Urban	192,223	34	70	2,473,434	192,223	54	94,556	91,235	0.250	0.324	0.189
Rural	348,714	348,714	348,714	6,777	348,714	113	561,593	541,871	1.485	0.090	1,351
Totals	14,416,007	5,262	2,563,460	6,777	14,416,007	5,262	2,563,460	2,473,434	6.777		5,222

DO NOT CHANGE ANY ITEMS BELOW THIS LINE

MERCED	January	February	March	April	May	June	July	August	September	October	November	December	Total/Average
HPMS Local Urban/Rural Percent	10.3	6.0	7.5	4.3	2.0	0.8	0	0	1.0	2.5	6.0	8.8	51.0
From 1998 Assembly of Statistical Reports - Caltrans	31	28	31	30	31	30	31	31	30	31	30	31	365
32.4% Urban	0.92	0.93	0.94	0.96	0.98	0.99	1.00	1.00	0.99	0.98	0.95	0.93	0.96
67.6% Rural													
100.0% Total													

Road Type	Base EF (lb PM10) / VMT
Freeway	0.000573793
Arterial	0.000825524
Collector	0.000825524
Local	0.003478828
Rural	0.009902924

MERCED

	January	February	March	April	May	June	July	August	September	October	November	December	Total/Average
Rain Days	10.3	6.0	7.5	4.3	2.0	0.8	0	0	1.0	2.5	6.0	8.8	51.0
Total Days	31	28	31	30	31	30	31	31	30	31	30	31	365
Rain Reduction Factor	0.92	0.93	0.94	0.96	0.98	0.99	1.00	1.00	0.99	0.98	0.95	0.93	0.96

**Unpaved Road Dust Emissions (tons/day)**

**MERCED 2010**

City/County	Miles	Vehicle Passes per Day	VMT (1000/year)	Base Emissions (PM10 tpy)	Rain Adj. Emissions (PM10 tpy)	Rain Adj. Emissions (PM10 tons/day)	District Rule 806/ISR Control Rates	Control-Adjusted Emissions
	222.0	10	810.3	810.300	696.472	1.908	0.333	1.273

**MERCED 2020**

City/County	Miles	Vehicle Passes per Day	VMT (1000/year)	Base Emissions (PM10 tpy)	Rain Adj. Emissions (PM10 tpy)	Rain Adj. Emissions (PM10 tons/day)	District Rule 806/ISR Control Rates	Control-Adjusted Emissions
	222.0	10	810.3	810.300	696.472	1.908	0.333	1.273

**MERCED 2030**

City/County	Miles	Vehicle Passes per Day	VMT (1000/year)	Base Emissions (PM10 tpy)	Rain Adj. Emissions (PM10 tpy)	Rain Adj. Emissions (PM10 tons/day)	District Rule 806/ISR Control Rates	Control-Adjusted Emissions
	222.0	10	810.3	810.300	696.472	1.908	0.333	1.273

DO NOT CHANGE ANY ITEMS BELOW THIS LINE

**MERCED**

January	February	March	April	May	June	July	August	September	October	November	December	Total/Average
10.3	8.0	7.5	4.3	2.0	0.8	0	0	1.0	2.5	6.0	8.8	51.0
31	28	31	30	31	30	31	31	30	31	30	31	365
0.67	0.71	0.76	0.86	0.94	0.86	1.00	1.00	0.97	0.92	0.80	0.72	0.86

Rain Days  
Total Days  
Rain Reduction Factor

### Road Construction Dust

**MERCED**

Description	2010		2020		2030	
	Year	Lane Miles	Year	Lane Miles	Year	Lane Miles
	Baseline	2005	2550	2010	2663	2020
Horizon	2010	2,663	2020	2,706	2030	2,706
Difference	5	113.000	10	43.000	10	0.000
Lane Miles per Year		22.600		4.300		0.000
Acres Disturbed		87.661		16.679		0.000
Acre-Months		1,577.891		300.218		0.000
Emissions (tons/year)		173.568		33.024		0.000
Annual Average Day Emissions (tons)		0.476		0.090		0.000
District Rule 8021 Control Rates		0.290		0.290		0.290
<b>Total Emissions (tons per day)</b>		<b>0.338</b>		<b>0.064</b>		<b>0.000</b>

**PM10 Emission Trading Worksheet**

**MERCED CONFORMITY ESTIMATES (tons/day)**

	2010		2020		2030	
	PM10	NOx	PM10	NOx	PM10	NOx
Total On-Road Exhaust	1.520	30.380	0.980	12.830	1.050	10.010
Paved Road Dust	3.114		3.953		5.222	
Unpaved Road Dust	1.273		1.273		1.273	
Road Construction Dust	0.338		0.064		0.000	
<b>Total</b>	<b>6.245</b>	<b>30.380</b>	<b>6.270</b>	<b>12.830</b>	<b>7.545</b>	<b>10.010</b>

**Difference (2005 Budget - 2010)**

	PM10	NOx
2005 Budgets	6.2	39.4
2010	6.2	30.4
<b>Difference</b>	<b>0.0</b>	<b>9.0</b>
* 1.5 (Adjustment to NOx Budget)	0.0	

**Difference (2020 Budget - 2020)**

	PM10	NOx
2020 Budgets	6.4	12.9
2020	6.3	12.8
<b>Difference</b>	<b>0.1</b>	<b>0.1</b>
* 1.5 (Adjustment to NOx Budget)	-0.2	

**Difference (2020 Budget - 2030)**

	PM10	NOx
2020 Budgets	6.4	12.9
2030	7.5	10.0
<b>Difference</b>	<b>-1.1</b>	<b>2.9</b>
* 1.5 (Adjustment to NOx Budget)	1.7	

**1:1.5 PM10 to NOx Trading**

	PM10	NOx
<b>2005 Budget</b>	<b>6.2</b>	<b>39.4</b>

<b>Adjusted 2005 Budget</b>	<b>6.2</b>	<b>39.4</b>
<b>2010 Conformity Total</b>	<b>6.2</b>	<b>30.4</b>
<b>Difference</b>	<b>0.0</b>	<b>9.0</b>

**NOTE: FINAL DIFFERENCE MUST BE POSITIVE**

	PM10	NOx
<b>2020 Budget</b>	<b>6.4</b>	<b>12.9</b>

<b>Adjusted 2020 Budget</b>	<b>6.3</b>	<b>13.1</b>
<b>2020 Conformity Total</b>	<b>6.3</b>	<b>12.8</b>
<b>Difference</b>	<b>0.0</b>	<b>0.3</b>

**NOTE: FINAL DIFFERENCE MUST BE POSITIVE**

<b>Adjusted 2020 Budget</b>	<b>7.5</b>	<b>11.3</b>
<b>2030 Conformity Total</b>	<b>7.5</b>	<b>10.0</b>
<b>Difference</b>	<b>0.0</b>	<b>1.3</b>

**NOTE: FINAL DIFFERENCE MUST BE POSITIVE**

**2009 Conformity Results Summary -- MERCED**

Ozone		ROG (tons/day)	NOx (tons/day)	ROG	NOx
	2011 Budget	6.2	28.8		
	2011	5.9	27.3	YES	YES
	2014 Budget	5.1	22.3		
	2014	4.7	20.9	YES	YES
	2017 Budget	4.2	17.1		
	2017	3.9	15.9	YES	YES
	2020	3.4	12.7	YES	YES
	2023	3.1	10.9	YES	YES
2030	2.9	9.9	YES	YES	

PM-10		PM-10 (tons/day)	NOx (tons/day)	PM-10	NOx
	Adjusted 2005 Budget	6.2	39.4		
	2010	6.2	30.4	YES	YES
	Adjusted 2020 Budget	6.3	13.1		
	2020	6.3	12.8	YES	YES
Adjusted 2030 Budget	7.5	11.3			
2030	7.5	10.0	YES	YES	

PM2.5 24-Hour Standard		PM2.5 (tons/day)	NOx (tons/day)	PM2.5	NOx
	2002 Base Year	1.5	37.1		
	2010	1.3	30.4	YES	YES
	2020	0.7	12.8	YES	YES
2030	0.7	10.0	YES	YES	

PM2.5 Annual Standard		PM2.5 (tons/year)	NOx (tons/year)	PM2.5	NOx
	2002 Base Year	548	13542		
	2010	475	11096	YES	YES
	2020	256	4672	YES	YES
2030	256	3650	YES	YES	

**APPENDIX D**

**PM2.5 CONFORMITY RESULTS SUMMARY FOR EACH MPO  
IN THE SAN JOAQUIN VALLEY NONATTAINMENT AREA**

**PM2.5 Conformity Results Summary – Fresno**

Pollutant	Scenario	Emissions Total		DID YOU PASS?	
		PM2.5 (tons/day)	NOx (tons/day)	PM2.5	NOx
PM2.5 24-Hour Standard	2002 Base Year	2.2	63.4		
	2010	2.0	52.7	YES	YES
	2020	1.3	23.0	YES	YES
	2030	1.2	15.5	YES	YES

Pollutant	Scenario	PM2.5 (tons/year)	Nox (tons/year)	PM2.5	NOx
PM2.5 Annual Standard	2002 Base Year	803	23141		
	2010	730	19236	YES	YES
	2020	475	8395	YES	YES
	2030	438	5658	YES	YES

**PM2.5 Conformity Results Summary – Kern**

Pollutant	Scenario	Emissions Total		DID YOU PASS?	
		PM2.5 (tons/day)	NOx (tons/day)	PM2.5	NOx
PM2.5 24-Hour Standard	2002 Base Year	3.7	94.1		
	2010	3.2	86.0	YES	YES
	2020	1.8	38.5	YES	YES
	2030	1.5	27.2	YES	YES

Pollutant	Scenario	PM2.5 (tons/year)	Nox (tons/year)	PM2.5	NOx
PM2.5 Annual Standard	2002 Base Year	1351	34347		
	2010	1168	31390	YES	YES
	2020	657	14053	YES	YES
	2030	548	9928	YES	YES

**PM2.5 Conformity Results Summary – Kings**

Pollutant	Scenario	Emissions Total		DID YOU PASS?	
		PM2.5 (tons/day)	NOx (tons/day)	PM2.5	NOx
PM2.5 24-Hour Standard	2002 Base Year	0.8	18.5		
	2010	0.6	16.1	YES	YES
	2020	0.3	6.7	YES	YES
	2030	0.3	4.7	YES	YES

Pollutant	Scenario	PM2.5 (tons/year)	Nox (tons/year)	PM2.5	NOx
		2002 Base Year	292	6753	
PM2.5 Annual Standard	2010	219	5877	YES	YES
	2020	110	2446	YES	YES
	2030	110	1716	YES	YES

**PM2.5 Conformity Results Summary – Madera**

Pollutant	Scenario	Emissions Total		DID YOU PASS?	
		PM2.5 (tons/day)	NOx (tons/day)	PM2.5	NOx
PM2.5 24-Hour Standard	2002 Base Year	0.5	13.7		
	2010	0.5	13.6	YES	YES
	2020	0.4	6.5	YES	YES
	2030	0.4	4.9	YES	YES

Pollutant	Scenario	PM2.5 (tons/year)	Nox (tons/year)	PM2.5	NOx
		2002 Base Year	183	5001	
PM2.5 Annual Standard	2010	183	4964	YES	YES
	2020	146	2373	YES	YES
	2030	146	1789	YES	YES

**PM2.5 Conformity Results Summary – Merced**

Pollutant	Scenario	Emissions Total		DID YOU PASS?	
		PM2.5 (tons/day)	NOx (tons/day)	PM2.5	NOx
PM2.5 24-Hour Standard	2002 Base Year	1.5	37.1		
	2010	1.3	30.4	YES	YES
	2020	0.7	12.8	YES	YES
	2030	0.7	10.0	YES	YES

Pollutant	Scenario	PM2.5 (tons/year)	Nox (tons/year)	PM2.5	NOx
		2002 Base Year	548	13542	
PM2.5 Annual Standard					
	2010	475	11096	YES	YES
	2020	256	4672	YES	YES
	2030	256	3650	YES	YES

**PM2.5 Conformity Results Summary – San Joaquin**

Pollutant	Scenario	Emissions Total		DID YOU PASS?	
		PM2.5 (tons/day)	NOx (tons/day)	PM2.5	NOx
PM2.5 24-Hour Standard	2002 Base Year	1.5	43.4		
	2010	1.5	37.7	YES	YES
	2020	1.0	16.8	YES	YES
	2030	1.1	12.3	YES	YES

Pollutant	Scenario	PM2.5 (tons/year)	Nox (tons/year)	PM2.5	NOx
		2002 Base Year	548	15841	
PM2.5 Annual Standard					
	2010	548	13761	YES	YES
	2020	365	6132	YES	YES
	2030	402	4490	YES	YES

**PM2.5 Conformity Results Summary – Stanislaus**

Pollutant	Scenario	Emissions Total		DID YOU PASS?	
		PM2.5 (tons/day)	NOx (tons/day)	PM2.5	NOx
PM2.5 24-Hour Standard	2002 Base Year	1.0	30.2		
	2010	0.9	24.8	YES	YES
	2020	0.6	10.1	YES	YES
	2030	0.6	7.0	YES	YES

Pollutant	Scenario	Emissions Total		DID YOU PASS?	
		PM2.5 (tons/year)	Nox (tons/year)	PM2.5	NOx
PM2.5 Annual Standard	2002 Base Year	365	11023		
	2010	329	9052	YES	YES
	2020	219	3687	YES	YES
	2030	219	2555	YES	YES

**PM2.5 Conformity Results Summary – Tulare**

Pollutant	Scenario	Emissions Total		DID YOU PASS?	
		PM2.5 (tons/day)	NOx (tons/day)	PM2.5	NOx
PM2.5 24-Hour Standard	2002 Base Year	0.8	26.4		
	2010	0.8	22.9	YES	YES
	2020	0.6	10.5	YES	YES
	2030	0.6	7.4	YES	YES

Pollutant	Scenario	Emissions Total		DID YOU PASS?	
		PM2.5 (tons/year)	Nox (tons/year)	PM2.5	NOx
PM2.5 Annual Standard	2002 Base Year	292	9636		
	2010	292	8359	YES	YES
	2020	219	3833	YES	YES
	2030	219	2701	YES	YES



**APPENDIX E**

**TIMELY IMPLEMENTATION DOCUMENTATION FOR  
TRANSPORTATION CONTROL MEASURES**

**Merced County Association of Governments (MCAG)  
Timely Implementation Documentation**

RACM Commitment	Agency	Commitment Description	Commitment Schedule	Commitment Funding	TIP	TIP Project ID	Project Description	Implementation Status (as of Jan. 2007)	2009 Conformity Update (as of Oct. 2008)
ME 3.1	MCAG	TDM / Commute Alternative	FY 2002 - 2003	\$79,950 CMAQ	2002 FTIP	20500000042	Transportation Demand Management	Completed	Completed
ME 1.5	Transit	Expansion & enhancement of "The Bus"	FY 2006 - 2007	CMAQ					
					2002 FTIP	20500000094	Transit - New Westside routes	Completed	Completed
					2002 FTIP July 04 amendment	20500000022	Operations and Maintenance - The Bus	Ongoing	Ongoing / On schedule
					2002 FTIP July 2004 amendment	20500000034	Purchase 10 bus shelters annually	Ongoing	Ongoing / On schedule
					2002 FTIP July 2004 amendment	20500000099	Increase frequency to 30-minutes on Merced City Routes 4 and 12	Completed	Completed
					2002 FTIP July 04 amendment	20500000015	Atwater Bus Pullout	Completed	Completed
					2002 FTIP July 2004 amendment	20500000102	Route Match Tracking System with Automated Vehicle Locator capability	Completed	Completed
					2002 FTIP July 2004 amendment	20500000103	Electronic Validating Farebox	Completed	Completed
					2002 FTIP July 2004 amendment	20500000104	Transit Fare Subsidy Program	2005, 2006, 2007 (Aug., Sept., & Oct.) <i>Spare the Air</i> programs competed.	Completed (3-year program)
<b>ADDITIONAL PROJECTS IDENTIFIED</b>									
ME5.7	Merced	One-Way Streets		SHOPP	n/a	n/a	13th and 14th Streets between R St. and V St.	Completed	Completed
ME3.9	Transit	Employer-based transit		Local	n/a	n/a	Outreach program focusing on large employment or retail centers	Employer-based transit Program implemented in 05-06, 06-07, 07-08 FY	Continues into FY 08-09

Merced County Association of Governments  
2002 RACM Timely Implementation Documentation

RACM Commitment	Agency	Measure Title	Measure Description (not verbatim)	Implementation Status (as of Jan. 2007)	2009 Conformity Update (as of Oct. 2008)
TCM3	MCAG	Rideshare Programs	Implement Rideshare Program through FY 2006-2007	Service provided via www.mercedrides.com. Work Program Element "TDM/Alternative Modes" (1550)	Service provided via www.mercedrides.com. Work Program Element "TDM/Alternative Modes" (1550)
ME5.3	Atwater	Reduce Traffic Congestion at Major Intersections	Improve intersections projected to experience congestion.	Intersections are evaluated using standard warrants. No improvement needs identified in 06-07.	Intersections are evaluated using standard warrants. No improvement needs identified in 07-08.
TCM1	Atwater	Traffic Flow Improvements	Evaluate traffic conditions and implement projects to provide free flowing traffic	Traffic conditions are determined by staff using traffic counts, traffic flow, and accident history. No need for traffic flow improvements identified in 06-07.	Traffic conditions are determined by staff using traffic counts, traffic flow, and accident history. No need for traffic flow improvements identified in 07-08.
ME5.3	Dos Palos	Reduce Traffic Congestion at Major Intersections	Improve intersections projected to experience congestion.	Intersections are evaluated using standard warrants. No improvement needs identified in 06-07.	Intersections are evaluated using standard warrants. No improvement needs identified in 07-08.
TCM1	Dos Palos	Traffic Flow Improvements	Evaluate traffic conditions and implement projects to provide free flowing traffic	Traffic conditions are determined by staff using traffic counts, traffic flow, and accident history. No need for traffic flow improvements identified in 06-07.	Traffic conditions are determined by staff using traffic counts, traffic flow, and accident history. No need for traffic flow improvements identified in 07-08.
ME5.3	Gustine	Reduce Traffic Congestion at Major Intersections	Improve intersections projected to experience congestion.	Intersections are evaluated using standard warrants. No improvement needs identified in 06-07.	Intersections are evaluated using standard warrants. No improvement needs identified in 07-08.
TCM1	Gustine	Traffic Flow Improvements	Evaluate traffic conditions and implement projects to provide free flowing traffic	Traffic conditions are determined by staff using traffic counts, traffic flow, and accident history. No need for traffic flow improvements identified in 06-07.	Traffic conditions are determined by staff using traffic counts, traffic flow, and accident history. No need for traffic flow improvements identified in 07-08.
ME5.3	Livingston	Reduce Traffic Congestion at Major Intersections	Improve intersections projected to experience congestion.	Intersections are evaluated using standard warrants. No improvement needs identified in 06-07.	Intersections are evaluated using standard warrants. No improvement needs identified in 07-08.
TCM1	Livingston	Traffic Flow Improvements	Evaluate traffic conditions and implement projects to provide free flowing traffic	Traffic conditions are determined by staff using traffic counts, traffic flow, and accident history. No need for traffic flow improvements identified in 06-07.	Traffic conditions are determined by staff using traffic counts, traffic flow, and accident history. No need for traffic flow improvements identified in 07-08.
ME5.3	Los Banos	Reduce Traffic Congestion at Major Intersections	Improve intersections projected to experience congestion.	Intersections are evaluated using standard warrants. No improvement needs identified in 06-07.	Intersections are evaluated using standard warrants. No improvement needs identified in 07-08.
TCM1	Los Banos	Traffic Flow Improvements	Evaluate traffic conditions and implement projects to provide free flowing traffic	Traffic conditions are determined by staff using traffic counts, traffic flow, and accident history. No need for traffic flow improvements identified in 06-07.	Traffic conditions are determined by staff using traffic counts, traffic flow, and accident history. No need for traffic flow improvements identified in 07-08.
ME5.3	Merced	Reduce Traffic Congestion at Major Intersections	Improve intersections projected to experience congestion.	Intersections are evaluated using standard warrants. No improvement needs identified in 06-07.	Intersections are evaluated using standard warrants. No improvement needs identified in 07-08.
ME5.7	Merced	One-Way Streets	Redesignate portions of some streets as one-way to improve traffic flow as appropriate	Project implemented (see Project TID Table). No additional need for one-way streets identified at this time.	Project implemented (see Project TID Table). No additional need for one-way streets identified at this time.
TCM1	Merced	Traffic Flow Improvements	Evaluate traffic conditions and implement projects to provide free flowing traffic	Traffic conditions are determined by staff using traffic counts, traffic flow, and accident history. No need for traffic flow improvements identified in 06-07.	Traffic conditions are determined by staff using traffic counts, traffic flow, and accident history. No need for traffic flow improvements identified in 07-08.

Merced County Association of Governments  
2002 RACM Timely Implementation Documentation

RACM Commitment	Agency	Measure Title	Measure Description (not verbatim)	Implementation Status (as of Jan. 2007)	2009 Conformity Update (as of Oct. 2008)
ME5.3	County of Merced	Reduce Traffic Congestion at Major Intersections	Improve intersections projected to experience congestion.	Intersections are evaluated using standard warrants. No improvement needs identified in 06-07.	Intersections are evaluated using standard warrants. No improvement needs identified in 07-08.
TCM1	County of Merced	Traffic Flow Improvements	Evaluate traffic conditions and implement projects to provide free flowing traffic	Traffic conditions are determined by staff using traffic counts, traffic flow, and accident history. No need for traffic flow improvements identified in 06-07.	Traffic conditions are determined by staff using traffic counts, traffic flow, and accident history. No need for traffic flow improvements identified in 07-08.
ME3.9	Transit JPA	Encourage merchants and employers to subsidize the cost of transit for employees	Outreach program focusing on large employment or retail centers	Project implemented (see Project TID Table)	Project implemented (see Project TID Table)
ME5.9	Transit JPA	Bus Pullouts in Curbs for Passenger Loading	Bus stop pullouts are planned and installed as traffic congestion points are identified through FY 2006-2007	Potential congestion points are determined by transit service staff and traffic counts. No need for pullouts has been identified in 06-07.	Potential congestion points are determined by transit service staff and traffic counts. No need for pullouts has been identified in 07-08.

**APPENDIX F**

**PUBLIC MEETING PROCESS DOCUMENTATION**

**NOTICE OF PUBLIC HEARING ON THE  
DRAFT AMENDMENT #3 TO THE 2009 INTERIM FEDERAL TRANSPORTATION  
IMPROVEMENT PROGRAM, RTP AMENDMENT #2 AND  
CORRESPONDING DRAFT CONFORMITY ANALYSIS**

NOTICE IS HEREBY GIVEN that the Merced County Association of Governments (MCAG) will hold a public hearing on December 18, 2008 at 3 PM at The City of Merced, City Hall, Council Chambers, 678 W 18<sup>th</sup> Street, Merced regarding the Draft Amendment #3 to the 2009 Interim Federal Transportation Improvement Program (FTIP), RTP Amendment #2, and the corresponding Draft Conformity Analysis. The purpose of the hearing is to receive public comments.

- The 2009 Interim FTIP is a listing of capital improvement and operational expenditures utilizing federal and state monies for transportation projects in Merced County during the next four years that are eligible to proceed without a conformity determination.
- The Draft Amendment #3 to the 2009 Interim FTIP contains project phases and/or projects that were not included in the 2009 Interim TIP.
- The Regional Transportation Plan is a long-term strategy to meet Merced County transportation needs out to the year 2030. It is also referred to as the 2007 RTP.
- No environmental supplement is necessary; Amendment #2 provides clarifying details on project segmenting and financial “year of expenditure” information. The proposed changes are consistent with the adopted EIR for the Merced County’s Regional Transportation Plan..
- The Draft Conformity Analysis contains the documentation to support a finding that the 2009 Interim FTIP and 2007 RTP as amended meet the air quality conformity requirements for, ozone and particulate matter.

Individuals with disabilities may call Robin Lamas at Merced County Association of Governments (209) 723-3153 (with 3-working-day advance notice) to request auxiliary aids necessary to participate in the public hearing. Translation services are available (with 3-working-day advance notice) to participants speaking any language with available professional translation services.

A concurrent 30-day public review and comment period will commence on November 26, 2008 and conclude December 26, 2008 at 5 PM. The draft documents are available for review at the MCAG office, located at 369 W. 18<sup>th</sup> Street, Merced, CA and on MCAG’s website at [www.mcagov.org](http://www.mcagov.org) .

Public comments are welcomed at the hearing, or may be submitted in writing by December 26, 2008 at 5 PM to Terri Lewis at the address below.

After considering the comments, the documents will be considered for adoption, by resolution, by the MCAG Governing Board at a regularly scheduled meeting to be held on January 15, 2008 in the City of Dos Palos, Council Chambers located at 1546 Golden Gate Avenue, Dos Palos, CA. The documents will then be submitted to state and federal agencies for approval.

Contact Person: Terri Lewis, Associate Planner  
369 W. 18<sup>th</sup> Street, Merced, CA 95340  
(209) 723-3153

[terri.lewis@mcagov.org](mailto:terri.lewis@mcagov.org)

**APPENDIX G**

**RESPONSE TO PUBLIC COMMENTS**

## **RESPONSE TO PUBLIC COMMENTS**

**All 8 MPOs in the San Joaquin Valley nonattainment area had a 30-day public review period and conducted a public hearing on their own Draft Amendment to the 2009 Interim TIP, 2007 RTP Amendment (if applicable) and corresponding Conformity Analyses. Revisions to this section may be added after a response is prepared for all 8 MPOs.**

It is important to note that no other verbal or written comments were received from the public or inter-agency consultation partners, including: the California Department of Transportation, California Air Resources Board, U.S. Environmental Protection Agency, and Federal Transit Administration.