# TRANSPORTATION-AIR QUALITY CONFORMITY ANALYSIS FOR PLAN BAY AREA 2040 AND AMENDED 2017 TRANSPORTATION IMPROVEMENT PROGRAM

# Plan BayArea 2040

## FINAL SUPPLEMENTAL REPORT

Metropolitan Transportation Commission

Association of Bay Area Governments

JULY 2017

# Metropolitan Transportation Commission

**Jake Mackenzie, Chair**
Sonoma County and Cities

**Scott Haggerty, Vice Chair**
Alameda County

**Alicia C. Aguirre**
Cities of San Mateo County

**Tom Azumbrado**
U.S. Department of Housing and Urban Development

**Jeannie Bruins**
Cities of Santa Clara County

**Damon Connolly**
Marin County and Cities

**Dave Cortese**
Santa Clara County

**Carol Dutra-Vernaci**
Cities of Alameda County

**Dorene M. Giacopini**
U.S. Department of Transportation

**Federal D. Glover**
Contra Costa County

**Anne W. Halsted**
San Francisco Bay Conservation and Development Commission

**Nick Josefowitz**
San Francisco Mayor's Appointee

**Jane Kim**
City and County of San Francisco

**Sam Liccardo**
San Jose Mayor's Appointee

**Alfredo Pedroza**
Napa County and Cities

**Julie Pierce**
Association of Bay Area Governments

**Bijan Sartipi**
California State Transportation Agency

**Libby Schaaf**
Oakland Mayor's Appointee

**Warren Slocum**
San Mateo County

**James P. Spering**
Solano County and Cities

**Amy R. Worth**
Cities of Contra Costa County

# Association of Bay Area Governments

**Councilmember Julie Pierce**
**ABAG President**
City of Clayton

**Supervisor David Rabbitt**
**ABAG Vice President**
County of Sonoma

## Representatives From Each County

**Supervisor Scott Haggerty**
Alameda

**Supervisor Nathan Miley**
Alameda

**Supervisor Candace Andersen**
Contra Costa

**Supervisor Karen Mitchoff**
Contra Costa

**Supervisor Dennis Rodoni**
Marin

**Supervisor Belia Ramos**
Napa

**Supervisor Norman Yee**
San Francisco

**Supervisor David Canepa**
San Mateo

**Supervisor Dave Pine**
San Mateo

**Supervisor Cindy Chavez**
Santa Clara

**Supervisor David Cortese**
Santa Clara

**Supervisor Erin Hannigan**
Solano

## Representatives From Cities in Each County

**Mayor Trish Spencer**
City of Alameda / Alameda

**Mayor Barbara Halliday**
City of Hayward / Alameda

**Vice Mayor Dave Hudson**
City of San Ramon / Contra Costa

**Councilmember Pat Eklund**
City of Novato / Marin

**Mayor Leon Garcia**
City of American Canyon / Napa

**Mayor Edwin Lee**
City and County of San Francisco

**John Rahaim, Planning Director**
City and County of San Francisco

**Todd Rufo, Director, Economic and Workforce Development, Office of the Mayor**
City and County of San Francisco

**Mayor Wayne Lee**
City of Millbrae / San Mateo

**Mayor Pradeep Gupta**
City of South San Francisco / San Mateo

**Mayor Liz Gibbons**
City of Campbell / Santa Clara

**Mayor Greg Scharff**
City of Palo Alto / Santa Clara

**Mayor Len Augustine**
City of Vacaville / Solano

**Mayor Jake Mackenzie**
City of Rohnert Park / Sonoma

**Councilmember Annie Campbell Washington**
City of Oakland / Alameda

**Councilmember Lynette Gibson McElhaney**
City of Oakland / Alameda

**Councilmember Abel Guillen**
City of Oakland / Alameda

**Councilmember Raul Peralez**
City of San Jose / Santa Clara

**Councilmember Sergio Jimenez**
City of San Jose / Santa Clara

**Councilmember Lan Diep**
City of San Jose / Santa Clara

## Advisory Members

**William Kissinger**
Regional Water Quality Control Board

# Final Transportation-Air Quality Conformity Analysis:

## Draft Plan Bay Area 2040 and Amended 2017 Transportation Improvement Program

July 2017


METROPOLITAN TRANSPORTATION COMMISSION

Association of Bay Area Governments

Bay Area Metro Center
375 Beale Street
San Francisco, CA 94105

| | | |
|---|---|---|
| (415) 778-6700 | *phone* | (415) 820-7900 |
| info@mtc.ca.gov | *e-mail* | info@abag.ca.gov |
| www.mtc.ca.gov | *web* | www.abag.ca.gov |

## Project Staff

Ken Kirkey, Director, Planning

Harold Brazil, Project Manager

# Table of Contents

# List of Tables

# List of Figures

# I. Introduction

The Metropolitan Transportation Commission (MTC) prepares a transportation air quality conformity analysis when MTC amends or updates its long-range regional transportation plan (RTP), and/or updates its Transportation Improvement Program (TIP) or adds or deletes regionally significant, non-exempt projects into the TIP.

The purpose of this conformity analysis is to conform Draft Plan Bay Area 2040 (RTP) and to conform the Amended 2017 TIP in accordance with the latest U.S. Environmental Protection Agency (EPA) transportation conformity regulations and the Bay Area Conformity State Implementation Plan (Conformity SIP), which is also known as the Bay Area Air Quality Conformity Protocol (MTC Resolution No. 3757). This conformity analysis addresses the 2008 national ambient air quality standard (NAAQS) for 8-hour ozone, the 8-hour national carbon monoxide standard, and the 2006 national 24-hour fine particulate matter ($PM_{2.5}$) standard.

This report explains the basis for the conformity analysis and provides the results used by MTC to make a positive conformity finding for Draft Plan Bay Area 2040 and the Amended 2017 TIP.

## Purpose of Conformity Analysis

The Federal Clean Air Act, as amended in 1990 (CAAA) outlines requirements for ensuring that federal transportation plans, programs, and projects are consistent with ("conform to") the purpose of the SIP. Conformity to the purpose of the SIP means that transportation activities will not cause new air quality violations, worsen existing violations, or delay timely attainment of the relevant national ambient air quality standards. A conformity finding demonstrates that the total emissions projected for a transportation plan ("RTP") or program ("TIP") are within the emissions limits ("budgets") established by the SIP, and that transportation control measures (TCMs) are implemented in a timely fashion.

Conformity requirements apply in all non-attainment and maintenance areas for transportation-related criteria pollutants and related precursor emissions. For the Bay Area, the criteria pollutants to be addressed are ground-level ozone, carbon monoxide, and $PM_{2.5}$; and the precursor pollutants to be addressed include volatile organic compounds (VOC) and oxides of nitrogen ($NO_X$) for ozone and for $PM_{2.5}$. EPA's most recent revisions to its transportation conformity regulations to implement the 1990 Federal Clean Air Act section 176 were published in the Federal Register on March 14, 2012[1].

Metropolitan Planning Organizations (MPOs) such as MTC are required to follow these regulations, and any other procedures and criteria contained in the EPA-approved Conformity SIP (Transportation Air Quality Conformity Protocol) for the Bay Area. In the Bay Area, procedures were first adopted in September 1994 to comply with the 1990 CAAA. Four subsequent amendments to the transportation conformity procedures in August 1995, November 1995, August 1997, and July 2006 have been adopted by the three co-lead agencies (MTC, Association of Bay Area Governments (ABAG), and Bay Area Air Quality Management District (BAAQMD)). MTC Resolution 3757 represents the latest San Francisco Bay Area Transportation Air Quality Conformity Protocol adopted by the three agencies in July 2006. Acting on behalf of the three agencies, the BAAQMD submitted this latest Protocol to California Air Resources Board (CARB) as a revision to the Bay Area Conformity SIP. CARB approved this proposed revision to the

[1] The current version of the regulations is available on EPA's Transportation Conformity website at https://www.epa.gov/state-and-local-transportation/current-law-regulations-and-guidance-state-and-local-transportation

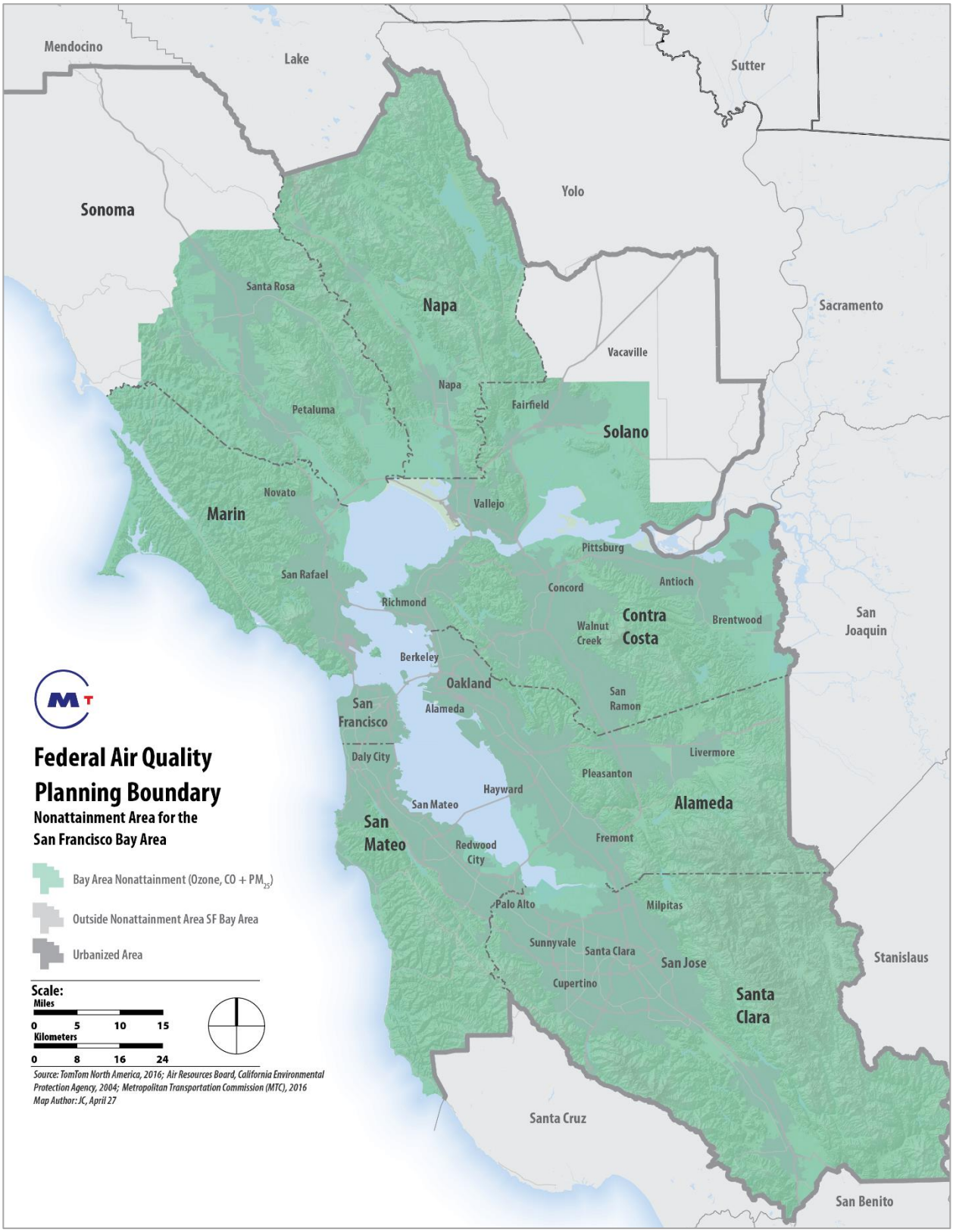


*Figure 1: Map of the Non-Attainment Area for the San Francisco Bay Area*

Bay Area's Conformity SIP in December 2006, and transmitted it to EPA for final action. EPA approved the Bay Area Conformity SIP in December 2007 (40 CFR Part 52).

These regulations and resolutions state in part that, MTC cannot approve any transportation plan, program, or project unless these activities conform to the purpose of the federal air quality plan. "Transportation plan" refers to the RTP. "Program" refers to the TIP, which is a financially realistic set of highway and transit projects to be funded over the next four years. A "transportation project" is any highway or transit improvement, which is included in the RTP and TIP and requires funding or approval from the Federal Highway Administration (FHWA) or the Federal Transit Administration (FTA). Conformity regulations also affect regionally significant non-federally funded projects which must be included in a conforming transportation plan ("RTP") and program ("TIP").

## Status of Regional Transportation Plan

A regional transportation plan, or RTP, is a long-range plan which includes both long-range and short-range strategies and actions that lead to the development of an integrated multimodal transportation system to facilitate the safe and efficient movement of people and goods in addressing current and future transportation demand. State law requires that RTP's include a Sustainable Communities Strategy (SCS) to identify a forecasted land use development pattern that when integrated with the future transportation system will meet the region's greenhouse gas reduction target set by CARB. As required by federal and state planning regulations, the RTP covers a minimum planning horizon of 20 years and is updated every four years in areas which do not meet federal air quality standards ("non-attainment"). The RTP is financially constrained to ensure project costs do not exceed regionally expected transportation revenues over the planning horizon. Once adopted, the RTP guides the development of the TIP for the region.

The San Francisco Bay Area's 2017 RTP/SCS is called Draft Plan Bay Area 2040 and is an update to Plan Bay Area. Draft Plan Bay Area 2040 represents a strategic investment strategy to maintain existing transportation infrastructure, service, and system performance for Bay Area travelers through horizon year 2040. It includes a regional transportation investment strategy and subsequent list of highway, transit, local roadway, bicycle, and pedestrian projects identified through regional and local transportation planning processes. In addition, Draft Plan Bay Area 2040 includes a focused growth land use pattern designed to reduce passenger vehicle travel in an effort to meet the region's greenhouse gas reduction target set by CARB. As required by federal and state planning regulations, Draft Plan Bay Area 2040 is financially constrained meaning the identified transportation project costs are within the $303 billion revenue forecast.

The Commission adopted Plan Bay Area on July 18th, 2013 (MTC Resolution No. 4111). In October 2015, the FHWA and FTA approved MTC's Final Amendment to Plan Bay Area (to include the Richmond-San Rafael Bridge Access Improvement Project), MTC Resolution No. 4198.

This conformity analysis serves to demonstrate that Draft Plan Bay Area 2040 conforms to the SIP. Refer to Appendix A for a detailed list of projects included in Draft Plan Bay Area 2040. See the Draft Plan Bay Area 2040 website for additional details[2].

[2] Additional information is available here: http://2040.planbayarea.org/

## Status of Transportation Improvement Program

The federally required transportation improvement program, or TIP, is a comprehensive listing of surface transportation projects for the San Francisco Bay Area that receive federal funds, are subject to a federally required action, or are regionally significant. MTC, as the federally designated MPO, prepares and adopts the TIP at least once every four years. The TIP covers a four-year period and must be financially constrained by year, meaning that the amount of dollars committed to the projects (also referred as "programmed") must not exceed the amount of dollars estimated to be available. As required by federal conformity regulations, MTC must demonstrate that the TIP is consistent with ("conforms to") the SIP and that all projects included in the TIP are consistent with the RTP, Draft Plan Bay Area 2040.

The current TIP (2017 TIP) received final federal approval on December 16, 2016, and includes projects programmed over four fiscal years from FY 2016-17 through FY 2019-20. The 2017 TIP has been revised multiple times since it was adopted, including through TIP Amendment 2017-14, which revises the 2017 TIP to ensure consistency with Draft Plan Bay Area 2040. The 2017 TIP, as revised through TIP Amendment 2017-14, contains approximately 780 projects totaling about $9 billion over the four-year period from fiscal year 2016-17 to 2019-20.

This conformity analysis serves to demonstrate that the 2017 TIP as revised through TIP amendment 2017-14, as well as Draft Plan Bay Area 2040, conforms to the SIP. Refer to Appendix B for a detailed list of projects included in the Amended 2017 TIP.

# II. Bay Area Air Pollutant Designations

## National 1-Hour Ozone Standard

The Bay Area was initially designated as nonattainment for ozone on March 3, 1978. On November 6, 1991, the EPA designated the Bay Area as a moderate ozone non-attainment area. Based on "clean" air monitoring data from 1990 to 1992, the co-lead agencies—BAAQMD, MTC, and ABAG— determined that the Bay Area was attaining the the 1-hour ozone standard and requested that CARB forward a re-designation request and an ozone maintenance plan to EPA.

On May 25, 1995, after evaluating 1990-1992 monitoring data and determining that the Bay Area had continued to attain the standard, the EPA redesignated the Bay Area as an ozone maintenance area. Shortly thereafter, the area began violating the standard again and on July 10, 1998, the EPA published a Notice of Final Rulemaking redesignating the Bay Area back to an ozone non-attainment area. This action became effective on August 10, 1998.

The redesignation to nonattainment triggered an obligation for the State to submit a SIP revision designed to provide for attainment of the 1-hour ozone NAAQS by November 15, 2000. This revision (the San Francisco Bay Area Ozone Attainment Plan for the 1-hour National Ozone Standard – June 1999 or "1999 Plan") was partially approved and partially disapproved by EPA on September 20, 2001 in conjunction with a determination that the area had failed to attain by the November 2000 deadline. The attainment demonstration and its associated motor vehicle emissions budgets were among the plan elements that were disapproved.

As a result of the EPA's finding of failure to attain and partial disapproval of the 1999 Plan, the State was required to submit a SIP revision for the Bay Area to EPA by September 20, 2002 that included an

updated volatile organic compounds (VOC) and nitrogen oxides (NOX) emissions inventory, new transportation conformity budgets, and provided for attainment of the 1-hour ozone standard no later than September 20, 2006. On November 1, 2001, CARB approved the San Francisco Bay Area 2001 Ozone Attainment Plan for the 1-Hour National Ozone Standard (2001 Plan) as a revision to the SIP. The BAAQMD and its co-lead agencies, MTC) and ABAG adopted the 2001 Plan on October 26, 2001.

The 2001 Plan contains a control strategy with seven stationary source measures, five transportation control measures (TCMs), and eleven further-study measures. In the 2001 Plan, the District also committed to strengthening the then existing Smog Check program by requesting the State Bureau of Automotive Repair to implement two VOC-reducing program elements. The new measures and on-going programs will provide 271 tons per day of combined VOC and NOX emission reductions between 2000 and 2006. The 2001 Plan also included an attainment assessment based on Bay Area data. The Bay Area co-lead agencies committed to reassess the attainment assessment in 2003 using data from the Central California Ozone Study and to submit a revised SIP to EPA in 2004 with any needed modifications to the control strategy.

On November 30, 2001, ARB submitted the 2001 Plan, which included VOC and NOx motor vehicle emissions budgets (164.0 tons per day (tpd) and 270.3 tpd, respectively) for the 2006 attainment year, to EPA for approval as a revision to the California SIP. To support the on-road motor vehicle emission inventory and transportation conformity budgets in the Plan, CARB also transmitted the San Francisco Bay Area-EMFAC2000 model to EPA for approval for the Bay Area ozone non-attainment area. On February 14, 2002, the EPA found the motor vehicle emissions budgets in the 2001 Plan adequate for transportation conformity purposes, based on its preliminary determination that the plan provided for timely attainment of the 1-hour ozone standard.

On April 22, 2004, based on air quality monitoring data from the 2001, 2002, and 2003 ozone season, EPA determined that Bay Area had attained the national 1-hour ozone standard. s. Because of this determination, requirements for some of the elements of the 2001 Ozone Attainment Plan, submitted to EPA to demonstrate attainment of the 1-hour standard, were suspended. The determination of attainment did not mean the Bay Area had been redesignated as an attainment area for the 1-hour standard. To be redesignated, the region would have had to submit a formal redesignation request to EPA, along with a maintenance plan showing how the region would continue to attain the standard for ten years. However, this redesignation request was no longer necessary upon the establishment of the new national 8-hour ozone standard.

## National 8-Hour Ozone Standard

In July 1997, EPA revised the ozone standard, setting it to 80 parts per billion (ppb) in concentration-based specifically on the 3-year average of the annual 4th highest daily maximum 8-hour ozone concentrations. In April 2004, EPA issued final designations for attainment and non-attainment areas. In June 2004, EPA formally designated the Bay Area as a non-attainment area for national 8-hour ozone, and classified the region as “marginal” based on five classes of non-attainment areas for ozone, ranging from marginal to extreme.

In March 2008, EPA lowered the national 8-hour ozone standard from 80 ppb to 75 ppb. On March 12, 2009, CARB submitted its recommendations for area designations for the revised national 8-hour ozone standard. These recommendations were based on ozone air quality data collected during 2006 through 2008. The CARB recommended that the Bay Area be designated as non-attainment for the national 8-

hour ozone standard. EPA had one year to review the recommendations and were to notify states by November 12, 2009, if they planned to modify the state-recommended areas. EPA issued final designations by March 12, 2010, based on more up to date monitoring data.

On October 1, 2015, EPA strengthened the NAAQS for ground-level ozone to 70 ppb, based on extensive scientific evidence about ozone's effects on public health and welfare. The updated standards will improve public health protection, particularly for at-risk groups including children, older adults, people of all ages who have lung diseases such as asthma, and people who are active outdoors, especially outdoor workers. They also will improve the health of trees, plants and ecosystems.

In addition, because marginal 8-hour ozone areas are not required to submit an attainment demonstration SIPs (containing on-road motor vehicle emission budgets required to demonstrate conformity), the conformity finding in this report is based on the approved 1-hour ozone on-road motor vehicle emission budgets contained in the Bay Area's 2001 Plan.

Proposed implementation rule for the 2015 ozone standard was published November 17, 2016 (81 FR 81276) and proposed a framework for nonattainment area classifications and SIP requirements. In addition, the proposed rule largely follows approach adopted for the previous Classifications Rule and SIP Requirements Rule (SRR) for the 2008 ozone NAAQS.

On June 21, 2017, the Administrator of the U.S. Environmental Protection Agency (EPA) extended the deadline for designating areas for the 2015 national ambient air quality standards (NAAQS) for ground-level ozone by 1 year. The new deadline for area designations is October 1, 2018.

## National $PM_{2.5}$ Standard

In 1987, The EPA established a standard for particle pollution equal to or smaller than 10 micrometers in diameter. A decade later, the 1997 revision to the standard set the stage for change, when a separate standard was set for fine particulate matter (particles that are 2.5 micrometers in diameter and smaller). Citing the link between serious health problems and premature death in people with heart or lung disease, the 1997 revision ultimately distinguished and set forth regulation on particle pollutants known as particulate matter 2.5 ($PM_{2.5}$) and particulate matter 10 ($PM_{10}$). Based on air quality monitoring data, the Bay Area was found to be attaining the 1997 $PM_{2.5}$ standards.

In 2006, the EPA revised the air quality standards for particle pollution. The 24-hour $PM_{2.5}$ standard was strengthened by lowering the level from 65 micrograms per cubic meter (µg/m³) to 35 µg/ m³. The annual fine particle standard at 15 µg/ m³ remained the same. Also in 2006, the EPA published a final rule that established transportation conformity criteria and procedures to determine transportation projects that required analysis for local air quality impacts for $PM_{2.5}$ in non-attainment and maintenance areas. The newly established criteria and procedures require that those areas designated as nonattainment areas must undergo a regional conformity analysis for $PM_{2.5}$. Furthermore, the procedures also mandate that areas designated as non-attainment must complete an additional project-level $PM_{2.5}$ hot-spot analysis of localized impacts for transportation projects of air quality concern.

On December 14, 2009, EPA designated the Bay Area as non-attainment for the national 24-hour $PM_{2.5}$ standard based upon violations of the standard over the three-year period from 2007 through 2009. Pursuant to the Clean Air Act, the Bay Area and MTC were subject to the requirement (beginning on December 14, 2010) to demonstrate that the RTP and TIP conformed to the SIP. In addition, beginning

on December 14, 2010, certain roadway and transit projects that involve significant levels of diesel vehicle traffic needed to prepare $PM_{2.5}$ hot-spot analyses.

## National 8-Hour Carbon Monoxide Standard

In April 1998, the Bay Area was re-designated to a "maintenance area" for the national 8-hour carbon monoxide (CO) standard, having demonstrated attainment of the standards. As a maintenance area, the region must assure continued attainment of the CO standard.

## Approved Motor Vehicle Emissions Budgets and Conformity Tests

The Bay Area has conformity requirements for national ozone, CO, and $PM_{2.5}$ standards. Under the ozone and CO standard, the Bay Area has to meet an on-road motor vehicle emission "budget" test. Because the Bay Area does not have on-road motor vehicle emission budgets for $PM_{2.5}$ that have been determined to be adequate by EPA, it has to meet an emission interim test for the $PM_{2.5}$ standard. To make a positive conformity finding for ozone and CO, MTC must demonstrate that the calculated on-road motor vehicle emissions in the region are lower than the approved budgets. To make a positive "interim" conformity finding for $PM_{2.5}$, MTC must meet "build not greater than no build" or "build not greater than baseline year" tests based on $PM_{2.5}$ exhaust, tire wear, and brake wear, and $NO_X$ as a $PM_{2.5}$ precursor, emissions.

On-road motor vehicle emissions budgets for VOC and $NO_X$, which are ozone precursors, were developed for the 2006 attainment year as part of the 2001 1-hour Ozone Attainment Plan. The VOC and $NO_X$ budgets were found to be adequate by EPA on February 14, 2002 (67 FR 8017), and were subsequently approved by EPA on April 22, 2004 (69 FR 21717). Note that under EPA's conformity rule for the national 8-hour ozone standard, the existing 1-hour on-road motor vehicle emission budgets are to be used for conformity analyses until they are replaced.

For CO, the applicable on-road motor vehicle emissions budget was developed for the 2004 Revisions to the California State Implementation Plan for Carbon Monoxide (herein referred to as the 2004 Carbon Monoxide Maintenance Plan).

The on-road motor vehicle emission budgets are listed below:

- VOC: 164 tons per day (2006 and beyond)
- $NO_X$: 270.3 tons per day (2006 and beyond)
- CO: 1,850 tons per day (2003 and 2018 and beyond)

For $PM_{2.5}$, initially the Bay Area was required to prepare a SIP by December 2012 to show how the region would attain the standard by December 2014. In addition, although the Bay Area was designated as non-attainment for the national 24-hour $PM_{2.5}$ standard based on monitoring data for the 2006-2008 period, the region exceeded the standard by only a slight margin.

Monitoring data shows that the Bay Area currently meets the national standards for both annual and 24-hour $PM_{2.5}$ levels. However, because the health effects of PM are serious and far-reaching, and no safe threshold of exposure to PM has yet been identified, it is important that we continue efforts to further reduce PM emissions and concentrations.[3]

[3] See BAAQMD's *2017 Clean Air Plan: Spare the Air, Cool the Climate* at: http://www.baaqmd.gov/plans-and-climate/air-quality-plans/current-plans

Under US EPA guidelines, a region with monitoring data showing that it currently attains an air quality standard can submit a "re-designation request" and a "maintenance plan" in lieu of a SIP attainment plan. However, the BAAQMD believes that it would be premature to submit a $PM_{2.5}$ re-designation request for the Bay Area at this time. Instead, the BAAQMD has pursued another option provided by US EPA guidelines for areas with monitoring data showing that they currently meet the $PM_{2.5}$ standard. In December 2011, CARB submitted a "clean data finding" request on behalf of the Bay Area. On January 9, 2013, EPA took final action and determined that the Bay Area attained the 2006 24-hour $PM_{2.5}$ standard. EPA's determination was based on complete, quality-assured, and certified ambient air monitoring data showing that the area monitored attainment based on the 2009-2011 monitoring period. Based on EPA's determination, the requirements for the Bay Area to submit an attainment demonstration, together with RACMs, an RFP plan, and contingency measures for failure to meet RFP and attainment deadlines are suspended for so long as the region continues to attain the 2006 24-hour $PM_{2.5}$ standard.

Since an approved on-road motor vehicle emissions budget for $PM_{2.5}$ is not available for use in this conformity analysis, MTC must complete one of the two interim emissions tests:

- the build-no-greater-than-no-build test ("build/no-build test") found at 40 CFR 93.119(e)(1), or
- the no-greater-than-baseline year emissions test ("baseline year test"), described at 40 CFR 93.119(e)(2).

Per the interagency consultation via the Air Quality Conformity Task Force meeting dated May 28, 2015, MTC elected to use the "baseline year test". In this test, conformity is demonstrated if in each analysis year, the RTP or TIP (the "build" scenarios) on-road motor vehicle emissions are less than or equal to emissions in the "baseline year" emission inventory. The "baseline year" for the 2006 24-hour $PM_{2.5}$ standard is the year 2008[4].

Under a determination of conformity, the following criteria are applied:

1. The latest planning assumptions and emission models are used.
   The transportation plan ("RTP") and program ("TIP") pass an emissions budget test using a budget that has been found adequate by EPA or an interim emissions test when budgets have not been
   established.
2. The transportation ("RTP") and program ("TIP") provide for the timely implementation of TCMs.
3. Interagency and public consultation is part of the process.

# III. Conformity Analysis & Results

## Approach to Conformity Analysis

The latest planning assumptions were used when preparing this conformity analysis. Regional estimates of future travel data were estimated using MTC's land use model (referred to as "*Bay Area UrbanSim*") and travel model (referred to as "*Travel Model One*"). This integrated model framework allows for analysis of how transportation projects affect the surrounding land use pattern, as well as how changes to residential and commercial activity affect transportation demand. *Travel Model One* (version 0.6)

[4] Additional information is available here: https://www.epa.gov/state-and-local-transportation/baseline-year-baseline-year-test-40-cfr-93119

released in July 2016, is calibrated to year 2000 conditions and validated against year 2000, year 2005, and year 2010 conditions. The model generates spatially- and temporally- specific estimates of travel data—roadway usage and speed. This travel data is input into CARB's latest EMission FACtors (EMFAC2014) model to estimate on-road motor vehicle emissions.

The EMFAC2014 model shows how California on-road motor vehicle emissions have changed over time and are projected to change in the future. This information helps CARB evaluate prospective control programs and determine the most effective, science-based proposals for protecting the environment. EMFAC2014 includes the latest data on California's car and truck fleets and travel activity. The model also reflects the emissions benefits of CARB's recent rulemakings, including on-road diesel fleet rules, Advanced Clean Car Standards, and the Smartway/Phase I Heavy Duty Vehicle Greenhouse Gas Regulation. The model includes updates to truck emission factors based on the latest test data. More details about the updates in emissions calculation methodologies and data are available in the EMFAC2014 Technical Support Document.[5]

*Bay Area UrbanSim*[6] and *Travel Model One* are responsive to numerous inputs, including demographic, pricing, travel behavior, and highway and transit network assumptions. For this conformity analysis, the two models use demographic and highway and transit network assumptions consistent with Draft Plan Bay Area 2040[7]. Highway and transit networks were updated for each analysis year to reflect investments in Draft Plan Bay Area 2040 (see Appendix A) and the Amended 2017 TIP (see Appendix B). Pricing assumptions applied in *Travel Model One* include projected parking prices, gasoline and non-gasoline auto operating costs, fuel economy, bridge tolls, transit fares, and express lanes. Travel behavior assumptions include trip peaking factors, vehicle occupancy factors, and estimates of interregional commuters. Refer to Appendix C for detailed travel modeling assumptions used in this conformity analysis.[8]

Regional vehicle miles traveled (VMT) and engine starts (which are needed for emission calculations) are forecasted using a combination of output from *Travel Model One* and base year (2010) EMFAC2014 default VMT information provided by the CARB. For conformity purposes, MTC continues to employ the agreed to protocol for estimating VMT with updated 2010 base year data.

A separate process was used to develop demographic assumptions for the $PM_{2.5}$ "baseline year" of 2008. *Bay Area UrbanSim* generates Transportation Analysis Zone (TAZ)-level data set in 5-year increments. The calculation of data for the interim year 2008 requires a multi-stop process. First, regional control totals for each attribute are calculated using straight-line extrapolations between the two adjacent 5-year increments (2005 and 2010). Next, each TAZ's share of the regional total is calculated by extrapolation of the two adjacent 5-year increments. Finally, individual TAZ totals are calculated by multiplying the interim year TAZ share of the regional total by the regional control total.

[5] Additional information is available here: http://www.arb.ca.gov/msei/categories.htm
[6] Additional information is available here: http://2040.planbayarea.org/sites/default/files/2017-03/Land_Use_Modeling_DPBA2040_Supplemental%20Report_3-2017_0.pdf
[7] Additional information is available here: http://www.planbayarea.org/2040-plan/final-preferred-scenario
[8] Additional information is available here: http://2040.planbayarea.org/sites/default/files/2017-03/Travel_Modeling_PBA2040_Supplemental%20Report_3-2017.pdf
This document is part of the new Draft Plan Bay Area 2040 scenario planning/development effort and the technical methods and assumptions used in this effort are consistent with what is applied in this conformity analysis.

## Analysis Years

The analysis years for the budget and baseline year tests are to be a year within five years from the date the analysis is done, the horizon year of the RTP and intermediate years as necessary so that analysis years are not more than ten years apart. For this conformity analysis, the analysis years 2020, 2030 and 2040 for the 2008 ozone and 2006 $PM_{2.5}$ standards. For CO, the analysis years are 2018, 2020, 2030 and 2040. Travel data for year 2018 were interpolated between forecasted 2015 and 2020 travel data. MTC used *Travel Model One* to forecast travel data for the 2020, 2030 and 2040 analysis years. The forecasted travel data for each analysis year were then input into the EMFAC2014 model to calculate on-road motor vehicle emissions.

## Consultation Process

MTC has consulted on the preparation of this conformity analysis and other conformity related issues with the Bay Area's Air Quality Conformity Task Force. The Conformity Task Force is composed of representatives of EPA, CARB, FHWA, FTA, Caltrans, MTC, BAAQMD, ABAG, the nine county Congestion Management Agencies, and Bay Area transit operators. The Conformity Task Force reviews the analysis assumptions, consults on TCM implementation issues, and reviews the results of the conformity analysis. The task force meetings are open to the public. Topics covered in past meetings of the Air Quality Conformity Task Force include the following:

**February 2017 through March 2017**

- $PM_{2.5}$ Project-Level Conformity Interagency Consultations
- Discussions on Projects with Regional Air Quality Conformity Concerns

**April 2017**

- $PM_{2.5}$ Project-Level Conformity Interagency Consultations
- Discussions on Projects with Regional Air Quality Conformity Concerns
- Approach to Conformity Analysis for Draft Plan Bay Area 2040 and the Amended 2017 TIP

**May and June 2017**

- $PM_{2.5}$ Project-Level Conformity Interagency Consultations
- Complete the Conformity Analysis for Draft Plan Bay Area 2040 and the Amended 2017 TIP and respond to public comments

## Comparison of Motor Vehicle Emissions to Budgets

As explained earlier, on-road motor vehicle emissions budgets are established in the SIP for VOCs, $NO_X$ and carbon monoxide (CO). To make a positive conformity finding, the regional on-road motor vehicle emissions must be equal to or less than these budgets. The results of the vehicle activity forecasts and on-road motor vehicle emission calculations are described in the following section.

## Ozone Motor Vehicle Emission Budgets

For VOC and $NO_X$, the on-road motor vehicle emission budget also reflects anticipated emission reductions from five Transportation Control Measures (TCMs) incorporated in the 2001 Ozone Attainment Plan (Table 1).

*Table 1: VOC and $NO_X$ Emissions Budgets from 2001 Ozone Attainment Plan (tons/day)*

| *VOC* | |
|---|---|
| 2006 On Road Motor Vehicle Emissions | 168.5 |
| 2006 Mobile Source Control Measure Benefits | (4.0) |
| 2006 TCM Benefits | (0.5) |
| 2006 Emissions Budget | 164.0 |

| *$NO_X$* | |
|---|---|
| 2006 On Road Motor Vehicle Emissions | 271.0 |
| 2006 TCM Benefits | (0.7) |
| 2006 Emissions Budget | 270.3 |

The vehicle activity forecasts by analysis year for Draft Plan Bay Area 2040 and the Amended 2017 TIP (the "build" scenarios) are shown in Table 2. Travel data (from MTC's *Travel Model One*) was input into CARB's EMFAC2014 emissions model, thereby generating regional vehicle activity and emissions estimates.

The analysis years for the budget and baseline year tests are to be a year within five years from the date the analysis is done, the horizon year of the RTP and intermediate years as necessary so that analysis years are not more than ten years apart. For this conformity analysis, the analysis years 2020, 2030 and 2040 for the 2008 ozone and 2006 $PM_{2.5}$ standards. For CO, the analysis years are 2018, 2020, 2030 and 2040. Travel data for year 2018 were interpolated between forecasted 2015 and 2020 travel data. Travel data for 2020, 2030 and 2040 were forecasted by *Travel Model One*. The forecasted travel data for each analysis year were then input into the EMFAC2014 model to calculate on-road motor vehicle emissions.

*Table 2: Vehicle Activity Forecasts*

| | *2020* | *2030* | *2040* |
|---|---|---|---|
| Vehicles in use | 4,693,975 | 5,503,129 | 6,230,199 |
| Daily VMT (1000s) | 167,203 | 182,504 | 195,595 |
| Daily Engine Starts | 29,276,669 | 34,101,782 | 38,509,838 |

## Carbon Monoxide Maintenance Plan Budget

The budget for carbon monoxide (CO) is derived from the 2004 Carbon Monoxide Maintenance Plan. The emission budget for the Bay Area is 1,850 tons per day. This budget applies to all subsequent analysis years as required by federal conformity regulation, including any interim year conformity analyses, the 2018 horizon year, and years beyond 2018.

## Comparison of Estimated Regional On-Road Motor Vehicle Emissions to the Ozone Precursor and CO Budgets

The vehicle activity forecasts for Draft Plan Bay Area 2040 and the Amended 2017 TIP, Table 2, are converted to emission estimates by MTC using EMFAC2014. Tables 3 and 4 compare the results of the

various analyses with the applicable budgets. The analyses indicate that the on-road motor vehicle emissions are substantially below the budget, due in large part to the effects of cleaner vehicles in the California fleet and the enhanced Smog Check program now in effect in the Bay Area and reflected in the EMFAC2014 model. With respect to the new Maintenance Plan on-road motor vehicle emission budget for CO, Table 4 shows that calculated emissions will be well below the new budget of 1,850 tons per day in 2018 as well.

*Table 3: Emissions Budget Comparisons for Ozone Precursors – Summertime Conditions (tons/day)*

| *Year* | *VOC Budget*[1] | *On-Road Motor Vehicles VOC* | *TCMs*[2] | *Net Emissions* |
|---|---|---|---|---|
| 2020 | 164.0 | 35.95 | (0.3) | 35.65 |
| 2030 | 164.0 | 24.04 | (0.3) | 23.74 |
| 2040 | 164.0 | 18.52 | (0.3) | 18.22 |
| | | | | |
| *Year* | *$NO_X$ Budget* | *On-Road Motor Vehicles $NO_X$* | *TCMs*[2] | *Net Emissions* |
| 2020 | 270.3 | 65.04 | (0.5) | 64.54 |
| 2030 | 270.3 | 32.87 | (0.5) | 32.37 |
| 2040 | 270.3 | 28.95 | (0.5) | 28.45 |

[1] 2001 Ozone Attainment Plan

[2] The transit services for TCM A Regional Express Bus Program were modeled. The emission benefits from TCM A are therefore included in the On-Road Motor Vehicles VOC and $NO_X$ emission inventories for 2006 and beyond.

*Table 4: Emissions Budget Comparisons for Carbon Monoxide – Wintertime Conditions (tons/day)*

| *Year* | *2004 CO Budget*[1] | *Estimated CO* |
|---|---|---|
| 2018 | 1,850 | 319.66[2] |
| 2020 | 1,850 | 252.10 |
| 2030 | 1,850 | 147.86 |
| 2040 | 1,850 | 118.69 |

[1] *2004 Revision to the California State Implementation Plan for Carbon Monoxide, Updated Maintenance Plan for 10 Federal Planning Areas*

[2] Estimated CO emissions for 2018 are extrapolated from the 2015 and 2020 analysis year data.

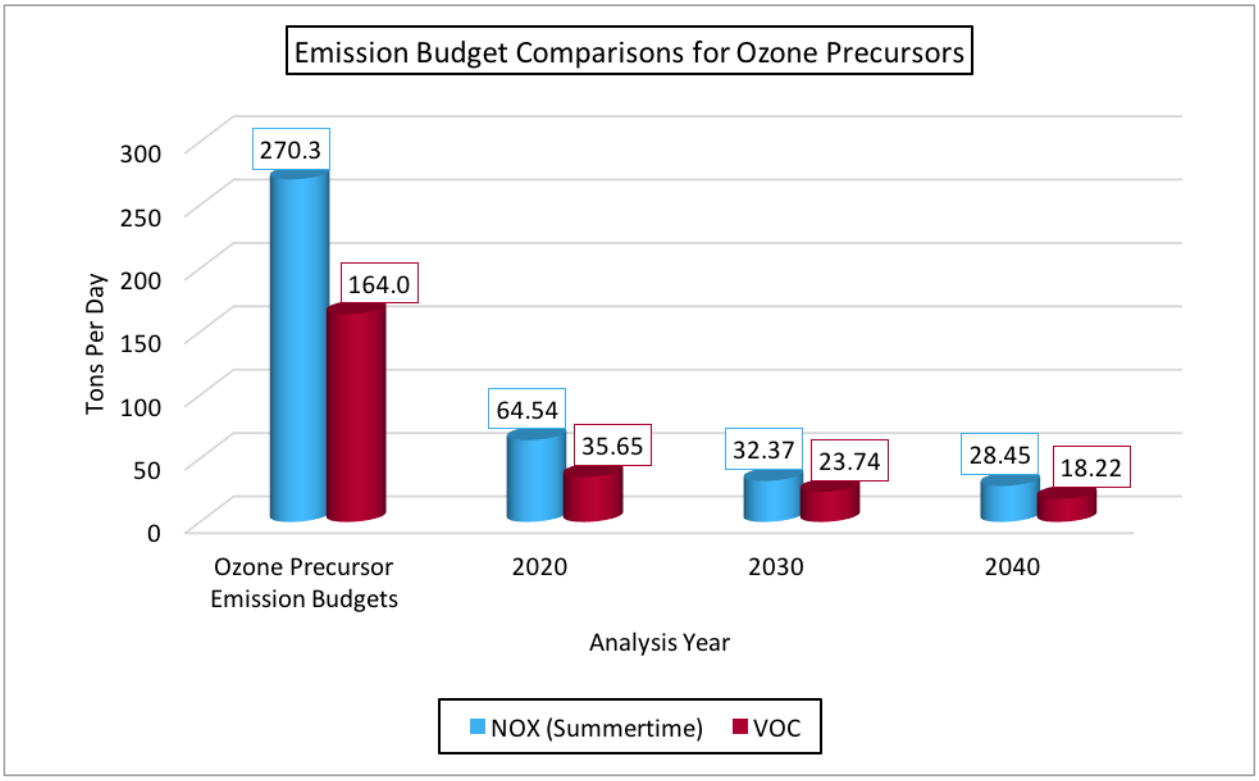


*Figure 2: Emissions Budget Comparisons for Ozone Precursors*

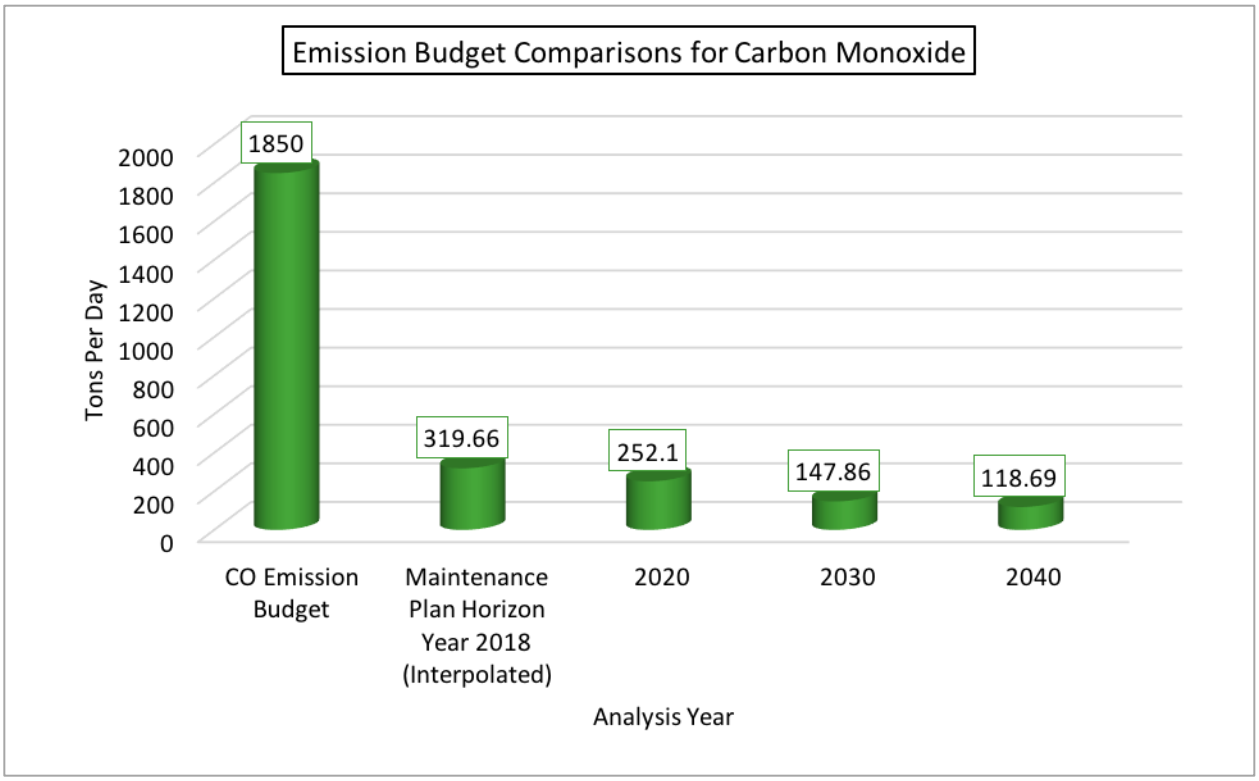


*Figure 3: Emissions Budget Comparison for Carbon Monoxide*

The estimated effectiveness of the various TCMs, given their current implementation status is shown in Table 5. TCMs A through E are fully implemented. They have achieved the required cumulative total emission reductions of 0.5 tons per day of VOC and 0.7 tons per day of $NO_X$ by 2006.

*Table 5: Emission Reductions for Transportation Control Measures A – E in State Implementation Plan (tons/day)*

| *TCM* | *VOC Emission Reductions through December 2006* | *$NO_X$ Emission Reductions through December 2006* |
|---|---|---|
| TCM A: Regional Express Bus Program | 0.20 | 0.20 |
| TCM B: Bicycle/Pedestrian Program | 0.04 | 0.03 |
| TCM C: Transportation for Livable Communities | 0.08 | 0.12 |
| TCM D: Expansion of Freeway Service Patrol | 0.10 | 0.25 |
| TCM E: Transit Access to Airports | 0.09 | 0.13 |
| **Total Reductions** | **0.5** | **0.7** |

## Baseline Year Emissions Test for $PM_{2.5}$

For the baseline year test, emissions for both directly emitted $PM_{2.5}$ and $NO_X$ (as the precursor to $PM_{2.5}$ emissions) were compared to the analysis years of 2015, 2020, 2030 and 2040. The analysis used inputs for the winter season, during which the Bay Area experiences its highest levels of $PM_{2.5}$ concentrations.

The vehicle activity forecasts by analysis year for Draft Plan Bay Area 2040 and the Amended 2017 TIP (the "build" scenarios) are shown in Table 6. Travel data (from MTC's *Travel Model One*) was input into CARB's EMFAC2014 emissions model, thereby generating regional vehicle activity and emissions estimates.

Table 7 presents the results of the Baseline Year test for the $PM_{2.5}$ emissions and the $NO_X$ precursor for the 2006 24-hour $PM_{2.5}$ standard. Regional conformity analyses must be completed for directly emitted $PM_{2.5}$ (40 CFR 93.102(b)(1)). Directly emitted $PM_{2.5}$ includes exhaust, brake and tire wear emissions.

*Table 6: Vehicle Activity Forecasts for the $PM_{2.5}$ Baseline Year Test*

| | *2008 Baseline Year* | *2020* | *2030* | *2040* |
|---|---|---|---|---|
| Vehicles In Use | 4,631,001 | 4,693,975 | 5,503,129 | 6,230,199 |
| Daily VMT (1000s) | 154,100 | 167,203 | 182,504 | 195,595 |
| Engine Starts | 29,299,933 | 29,276,669 | 34,101,782 | 38,509,838 |

*Table 7: Emissions Comparison for the $PM_{2.5}$ Baseline Year Test*

| | *2008 Baseline Year* | *2020* | *2030* | *2040* |
|---|---|---|---|---|
| $PM_{2.5}$ | 8.26 | 4.52 | 4.44 | 4.60 |
| $NO_X$ | 194.58 | 60.00 | 27.12 | 23.06 |

[1] Emissions for wintertime only

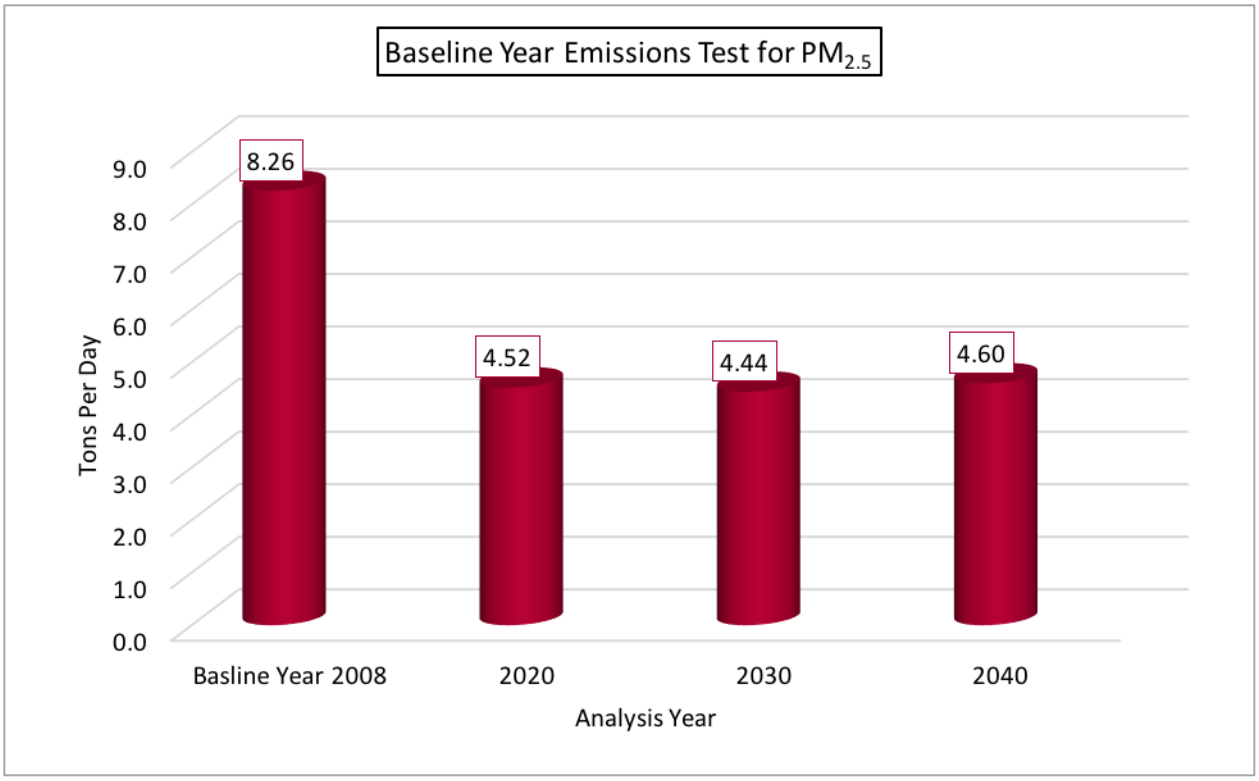


*Figure 4: Baseline Year Emissions Test for $PM_{2.5}$*

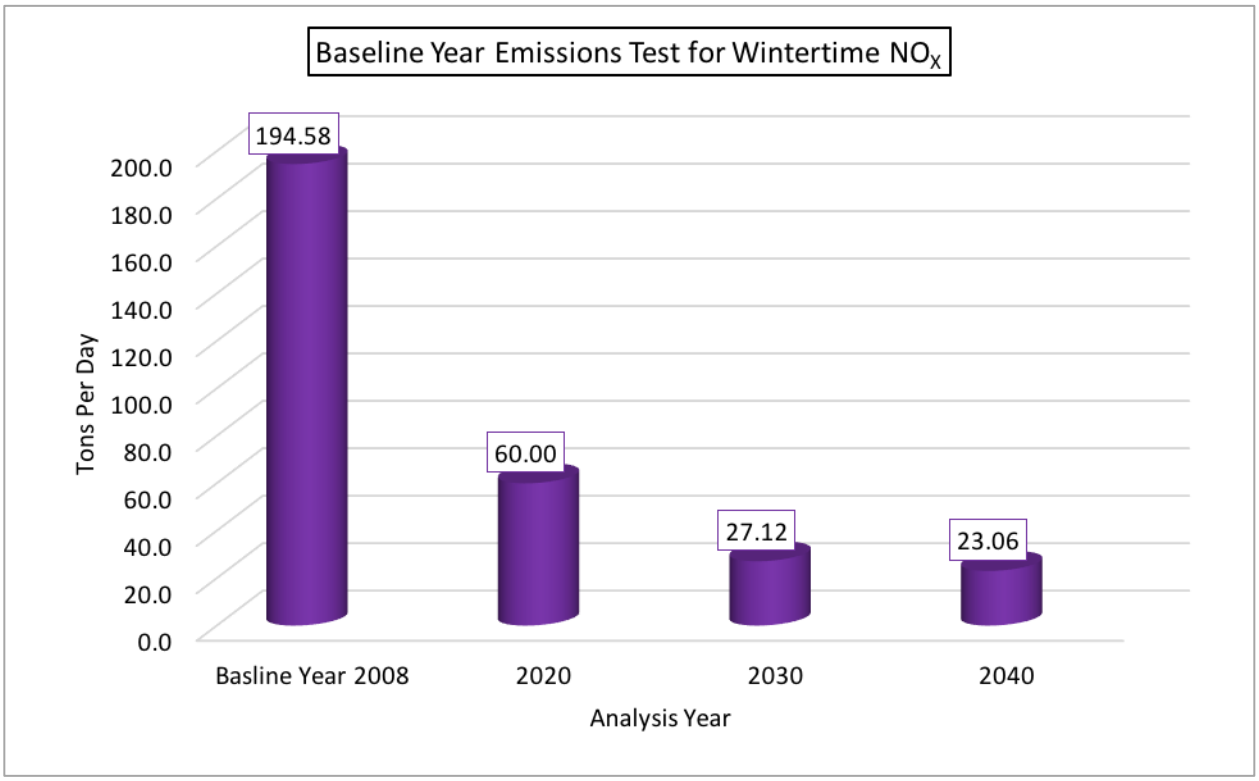


*Figure 5: Baseline Year Emissions Test for Wintertime $NO_X$*

# IV. Transportation Control Measures

## History of Transportation Control Measures

TCMs are strategies to reduce vehicle emissions. They include such strategies as improved transit service and transit coordination, ridesharing services and new carpool lanes, signal timing, freeway incident management, increased gas taxes and bridge tolls to encourage use of alternative modes, etc. The original set of TCMs plus the five most recent TCMs (A-E) have been fully implemented. The TCMs were added over successive revisions to the SIP (see Table 8). For more information on TCMs 1-28, which are completed, see the *Transportation Air Quality Conformity Analysis for the 2001 Regional Transportation Plan and FY 2001 Transportation Improvement Program Amendment 01-32 (February 2002)*. This report can be found in the MTC/ABAG Library.

- Twelve (12) ozone measures were originally listed in the 1982 Bay Area Air Quality Plan.
- In response to a 1990 lawsuit in the federal District Court, sixteen (16) additional TCMs were subsequently adopted by MTC in February 1990 as contingency measures to bring the region back on the "Reasonable Further Progress" (RFP) line. The Federal District order issued on May 11, 1992, found that these contingency TCMs were sufficient to bring the region back on the RFP track anticipated in the SIP. These measures became part of the SIP when EPA approved the 1994 Ozone Maintenance Plan.
- Two (2) transportation control measures from the 1982 Bay Area Air Quality Plan apply to Carbon Monoxide control strategies, for which the region is in attainment with the federal standard, and primarily targeted downtown San Jose (which had the most significant CO problem at that time.) MTC also adopted a set of TCM enhancements in November 1991 to eliminate a shortfall in regional carbon monoxide emissions identified in the District Court's April 19, 1991, order. Carbon monoxide standards have been achieved primarily through the use of oxygenated/reformulated fuels in cars and with improvements in the Smog Check program.
- As part of EPA's partial approval/partial disapproval of the 1999 Ozone Attainment Plan, four (4) TCMs were deleted from the ozone plan (but two of these remain in the Carbon Monoxide Maintenance Plan).
- Five (5) new TCMs were adopted as part of the new 2001 1-Hour Ozone Attainment Plan and were fully funded in the 2001 TIP and 2001 Regional Transportation Plan.

With respect to TCM 2 from the 1982 SIP, there was a protracted debate, leading to a citizens lawsuit in federal court, about the obligations associated with this TCM. On April 6, 2004, MTC prevailed in the U.S. Court of Appeals for the Ninth Circuit which concluded that TCM 2 does not impose any additional enforceable obligation on MTC to increase ridership on public transit ridership by 15% over 1982-83 levels by November 2006 (Bayview Hunters Point Community Advocates v. Metropolitan Transportation Com'n, (2004 WL 728247, 4 Cal. Daily Op. Serv. 2919, 2004 Daily Journal D.A.R. 4209, 9th Cir.(Cal.), Apr 06, 2004)). Thus TCM 2 has been resolved, and there are no further implementation issues to address in this TCM.

*Table 8: Transportation Control Measure in the State Implementation Plan*

| *TCM* | *Description* |
|---|---|
| ***Original TCMs from 1982 Bay Area Air Quality Plan*** | |
| TCM 1 | Reaffirm Commitment to 28 percent Transit Ridership Increase Between 1978 and 1983 |
| TCM 2 | Support Post-1983 Improvements in the Operators' Five-Year Plans and, After Consultation with the Operators, Adopt Ridership Increase Target for the Period 1983 through 1987 |
| TCM 3 | Seek to Expand and Improve Public Transit Beyond Committed Levels |
| TCM 4 | High Occupancy Vehicle (HOV) Lanes and Ramp Metering |
| TCM 5 | Support RIDES Efforts |
| TCM 6[1] | Continue Efforts to Obtain Funding to Support Long Range Transit Improvements |
| TCM 7 | Preferential Parking |
| TCM 8 | Shared Use Park and Ride Lots |
| TCM 9 | Expand Commute Alternatives Program |
| TCM 10 | Information Program for Local Governments |
| TCM 11[2] | Gasoline Conservation Awareness Program (GasCAP) |
| TCM 12[2] | Santa Clara County Commuter Transportation Program |
| ***Contingency Plan TCMs Adopted by MTC in February 1990 (MTC Resolution 2131)*** | |
| TCM 13 | Increase Bridge Tolls to $1.00 on All Bridges |
| TCM 14 | Bay Bridge Surcharge of $1.00 |
| TCM 15 | Increase State Gas Tax by 9 Cents |
| TCM 16[1] | Implement MTC Resolution 1876, Revised — New Rail Starts |
| TCM 17 | Continue Post-Earthquake Transit Services |
| TCM 18 | Sacramento-Bay Area Amtrak Service |
| TCM 19 | Upgrade Caltrain Service |
| TCM 20 | Regional HOV System Plan |
| TCM 21 | Regional Transit Coordination |
| TCM 22 | Expand Regional Transit Connection Ticket Distribution |
| TCM 23 | Employer Audits |
| TCM 24 | Expand Signal Timing Program to New Cities |
| TCM 25 | Maintain Existing Signal Timing Programs |
| TCM 26 | Incident Management on Bay Area Freeways |
| TCM 27 | Update MTC Guidance on Development of Local TSM Programs |
| TCM 28 | Local Transportation Systems Management (TSM) Initiatives |
| ***New TCMs in 2001 Ozone Attainment Plan*** | |
| TCM A | Regional Express Bus Program |
| TCM B | Bicycle/Pedestrian Program |
| TCM C | Transportation for Livable Communities |
| TCM D | Expansion of Freeway Service Patrol |
| TCM E | Transit Access to Airports |

[1] Deleted by EPA action from ozone plan

[2] Deleted by EPA action from ozone plan, but retained in Carbon Monoxide Maintenance Plan.

Source: Bay Area Air Quality Management District, Metropolitan Transportation Commission, 2001.

## Status of Transportation Control Measures

TCMs A-E were approved into the SIP as part of EPA's Finding of Attainment for the San Francisco Bay Area (April 2004). The conformity analysis must demonstrate that TCMs are being implemented on schedule (40 CFR 93.113). TCMs A-E have specific implementation steps which are used to determine progress in advancing these TCMs (see Table 9). TCMs A-E are now fully implemented.

*Table 9: Implementation Status of Federal Transportation Control Measures for Ozone (A – E)*

| # | TCM | Description | Ozone Attainment Plan Implementation Schedule | Implementation Status |
|---|---|---|---|---|
| A | Regional Express Bus Program | Program includes purchase of approximately 90 low emission buses to operate new or enhanced express bus services. Buses will meet all applicable CARB standards, and will include particulate traps or filters. MTC will approve $40 million in funding to various transit operators for bus acquisition. Program assumes transit operators can sustain service for a five-year period. Actual emission reductions will be determined based on routes selected by MTC. | FY 2003. Complete once $40 million in funding pursuant to Government Code Section 14556.40 is approved by the California Transportation Commission and obligated by bus operators | $40 million for this program was allocated by the CTC in August 2001. The participating transit operators have ordered and received a total of 94 buses. All buses are currently in operations.<br><br>TCM A is fully implemented. |
| B | Bicycle / Pedestrian Program | Fund high priority projects in countywide plans consistent with TDA funding availability. MTC would fund only projects that are exempt from CEQA, have no significant environmental impacts, or adequately mitigate any adverse environmental impacts. Actual emission reductions will be determined based on the projects funded. | FY 2004 – 2006. Complete once $15 million in TDA Article 3 is allocated by MTC. | MTC allocated over $20 million in TDA Article 3 funds during FY2004, FY2005, and FY2006.<br><br>TCM B is fully implemented. |
| C | Transportation for Livable Communities (TLC) | Program provides planning grants, technical assistance, and capital grants to help cities and nonprofit agencies link transportation projects with community plans. MTC would fund only projects that are exempt from CEQA, have no significant environmental impacts, or adequately mitigate any adverse environmental impacts. Actual emission | FY 2004 – 2006. Complete once $27 million in TLC grant funding is approved by MTC | In December 2003, the Commission reaffirmed its commitment of $27 million annually over 25 years for the TLC program as part of Phase 1 of the Transportation 2030 Plan.<br><br>MTC and the county Congestion Management Agencies (CMAs) have approved over $27 million in TLC grant funding by FY 2006. In November 2004, MTC approved $500,000 for regional TLC |

| | | | | |
|---|---|---|---|---|
| | | reductions will be based on the projects funded. | | Community Design Planning Program, and in December 2004, MTC approved $18.4 million in TLC funding for the regional TLC Capital program. As of December 2006, CMAs in Alameda, Marin and Sonoma counties approved an additional $12.4 million in their county-level TLC Capital programs for a regional total of $31.2 million.<br><br>TCM C is fully implemented. |
| D | Additional Freeway Service Patrol | Operation of 55 lane miles of new roving tow truck patrols beyond routes which existed in 2000. TCM commitment would be satisfied by any combination for routes adding 55 miles. Tow trucks used in service are new vehicles meeting all applicable CARB standards. | FY 2001. Complete by maintaining increase in FSP mileage through December 2006 | FSP continues to maintain the operation of the 55 lane miles of new roving tow truck coverage. This level of service was maintained through 2006. FSP continues to expand its service areas.<br><br>TCM D is fully implemented.<br>. |
| E | Transit Access to Airports | Take credit for emission reductions from air passengers who use BART to SFO, as these reductions are not included in the Baseline. | BART – SFO service to start in FY 2003. Complete by maintaining service through December 2006 | Service began June 2003. Service adjustments have been made since start of revenue service. The BART to SFO service has been maintained through 2006 and is continued.<br><br>TCM E is fully implemented. |

# V. Response to Public Comments

The following section identifies revisions to the Draft Transportation-Air Quality Conformity Analysis. The revisions are listed in the order of the appearance in which the text appears. These are minor changes that merely clarify, amplify, or make insignificant modifications to the Draft Transportation-Air Quality Conformity Analysis.

**Section II. Bay Area Air Pollutant Designations**

Page 4, paragraphs 1-2, under heading "National 1-Hour Ozone Standard" have been revised as follows:

The Bay Area was initially designated as nonattainment for ozone on March 3, 1978. On November 6, 1991, the EPA designated the Bay Area as a moderate ozone non-attainment area. Based on "clean" air monitoring data from 1990 to ~~1993~~1992, the co-lead agencies—BAAQMD, MTC, and ABAG—determined that ~~no~~the Bay Area was attaining the the 1-hour ozone ~~violations had occurred~~standard and requested that CARB ~~to~~ forward a re-designation request and an ozone maintenance plan to EPA. ¶

On May 25, 1995, after evaluating 1990-1992 monitoring data and determining that the Bay Area ~~was classified~~ had continued to attain the standard, the EPA redesignated the Bay Area as an ozone maintenance area~~, having attained~~. Shortly thereafter, the ~~1-hour national ozone~~area began violating the standard ~~for five years (1990-1994). However,~~again and on July 10, 1998, the EPA published a Notice of Final Rulemaking ~~re-designating~~redesignating the Bay Area back to an ozone non-attainment ~~(unclassified)~~ area. This action ~~was due to violations of the 1-hour standard that occurred during the summers of 1995 and 1996, and~~ became ~~final~~effective on August 10, 1998. ¶

Page 4, after paragraph 2, under heading "National 1-Hour Ozone Standard" has been revised to include:

The redesignation to nonattainment triggered an obligation for the State to submit a SIP revision designed to provide for attainment of the 1-hour ozone NAAQS by November 15, 2000. This revision (the San Francisco Bay Area Ozone Attainment Plan for the 1-hour National Ozone Standard—June 1999 or "1999 Plan") was partially approved and partially disapproved by EPA on September 20, 2001 in conjunction with a determination that the area had failed to attain by the November 2000 deadline. The attainment demonstration and its associated motor vehicle emissions budgets were among the plan elements that were disapproved. ¶

Page 4, paragraphs 3 and 4, under heading "National 1-Hour Ozone Standard" have been revised as follows:

As a result of the EPA's finding of failure to attain and partial disapproval of the 1999 Plan, the State was required to submit a SIP revision for the Bay Area to EPA by September 20, 2002 that included an updated volatile organic compounds (VOC) and nitrogen oxides (NOX) emissions inventory, new transportation conformity budgets, and provided for attainment of the 1-hour ozone standard no later than September 20, 2006. On November 1, 2001, CARB approved the San Francisco Bay Area 2001 Ozone Attainment Plan for the 1-Hour National Ozone Standard (2001 Plan) as a revision to the SIP. The BAAQMD and its co-lead agencies, MTC) and ABAG adopted the 2001 Plan on October 26, 2001. ¶

~~BAAQMD prepared the 2001 Plan because the Bay Area failed to attain the federal ozone standard by its 2000 deadline. As a result, EPA disapproved the Bay Area's 1999 Plan and required a new plan with an updated volatile organic compounds (VOC) and nitrogen oxides ($NO_x$) emissions inventory, new transportation conformity budgets, and that shows attainment of the federal ozone standard by 2006.~~ ¶

Page 5, paragraphs 2 and 3, under heading "National 1-Hour Ozone Standard" have been revised as follows:

On November 30, 2001, ARB submitted the 2001 Plan, which included VOC and NOx motor vehicle emissions budgets (164.0 tons per day (tpd) and 270.3 tpd, respectively) for the 2006 attainment year, to EPA for approval as a revision to the California SIP. To support the on-road motor vehicle emission inventory and transportation conformity budgets in the Plan, CARB also transmitted the San Francisco Bay Area-EMFAC2000 model to EPA for approval for the Bay Area ozone non-attainment area. On February 14, 2002, the EPA found the motor vehicle emissions budgets in the 2001 Plan adequate for transportation conformity purposes, based on its preliminary determination that the plan provided for timely attainment of the 1-hour ozone standard. ¶

On ~~October 31, 2003, EPA proposed a finding of attainment of the national 1-hour ozone standard for the Bay Area. The proposed finding was~~April 22, 2004, based on air quality monitoring data from the 2001, 2002, and 2003 ozone ~~seasons. In April 2004, EPA made a final finding~~season, EPA determined that ~~the~~ Bay Area had attained the national 1-hour ozone standard. s. Because of this ~~finding,~~determination, requirements for some of the elements of the 2001 Ozone Attainment Plan, submitted to EPA to demonstrate attainment of the 1-hour standard, were suspended. The ~~finding~~determination of attainment did not mean the Bay Area had been ~~reclassified~~redesignated as an attainment area for the 1-hour standard. To be ~~reclassified~~redesignated, the region would have had to submit a formal redesignation request to EPA, along with a maintenance plan showing how the region would continue to attain the standard for ten years. However, this redesignation request was no longer necessary upon the establishment of the new national 8-hour ozone standard. ¶

Page 5, paragraph 2, under heading "National 1-Hour Ozone Standard" has been revised as follows:

~~On April 15, 2004, EPA issued the first phase of the final implementation rule designating and classifying areas not meeting the federal 8-hour ozone standard. It also established a process for transitioning from implementing the 1-hour standard for ozone to implementing the more protective 8-hour ozone standard. The rule also established attainment dates for the 8-hour standard and the timing of emissions reductions needed for attainment. The 8-hour designations and classifications took effect on June 15, 2004; and one year following this effective date, EPA revoked the 1-hour standard. On July 1, 2004, EPA published a final rule amending the transportation conformity rule to address the new national 8-hour ozone standard. The amended rule stated that RTPs and TIPs in non-attainment areas must be found to conform against the new standard by one year after the effective date of designation which was June 15, 2005, for 8-hour ozone areas.~~ ¶

Page 6, paragraphs 2-5, under heading "National 8-Hour Ozone Standard" have been revised as follows:

~~Concurrent with this designation rule, EPA released an additional final rule that established the approach for classifying non-attainment areas, set attainment deadlines, granted reclassification for selected non-attainment areas in California, and revoked the 1997 ozone standard for transportation conformity purposes. The grace period for showing conformity to the 2008 $O_3$ standard was started by the May 21, 2012, (77 FR 30088) publication of designations for this standard. The grace period for completing these conformity analyses ended on July 20, 2013.~~ ¶

~~On February 13, 2015, EPA issued a final rule that addresses a range of implementation requirements for the 2008 National Ambient Air Quality Standards (NAAQS) for ground-level ozone. The EPA set the final primary and secondary standards at 75 ppb on March 12, 2008.~~ ¶

~~This final action specifically:~~ ¶

- ~~Establishes due dates for air agencies to submit state implementation plans (SIPs) demonstrating how areas designated as non-attainment for the 2008 ozone NAAQS will meet the standards by the appropriate attainment date;~~ ¶
- ~~Clarifies attainment dates for each non-attainment area according to its classification (established based on air quality thresholds);~~ ¶
- ~~Provides guidance on nearly all aspects of the attainment planning requirements for designated non-attainment areas;~~ ¶
- ~~Revokes the 1997 ozone NAAQS; and~~ ¶
- ~~Establishes anti-backsliding requirements for areas remaining non-attainment for the 1997 ozone NAAQS.~~ ¶

¶

~~This final rule addresses a range of non-attainment area SIP requirements for the 2008 ozone NAAQS, including requirements pertaining to attainment demonstrations, reasonable further progress (RFP), reasonably available control technology (RACT), reasonably available control measures (RACM), major new source review (NSR), emission inventories, and the timing of SIP submissions and of compliance with emission control measures in the SIP.~~ ¶

Page 6, paragraph 7, under heading "National 8-Hour Ozone Standard" has been revised as follows:

~~States made recommendations to EPA in October 2016, regarding whether their areas meet or do not meet the new NAAQS and EPA intends to issue final designations by October 1, 2017. Depending on the extent of the ozone problem, non-attainment areas would have from 2020 to 2037 to meet the health standard. Areas with longer to attain must meet increasing levels of stringency set forth in the Clean Air Act.~~ ¶

Page 6, after paragraph 8, under heading "National 8-Hour Ozone Standard" has been revised as:

Proposed implementation rule for the 2015 ozone standard was published November 17, 2016 (81 FR 81276) and proposed a framework for nonattainment area classifications and SIP requirements. In addition, the proposed rule largely follows approach adopted for the previous Classifications Rule and SIP Requirements Rule (SRR) for the 2008 ozone NAAQS. ¶

On June 21, 2017, the Administrator of the U.S. Environmental Protection Agency (EPA) extended the deadline for designating areas for the 2015 national ambient air quality standards (NAAQS) for ground-level ozone by 1 year. The new deadline for area designations is October 1, 2018. ¶

Page 7, paragraphs 1-2, under heading "National $PM_{2.5}$ Standard" have been revised as follows:

In 1987, The EPA established a standard for particle pollution equal to or smaller than 10 micrometers in diameter. A decade later, the 1997 revision to the standard set the stage for change, when a separate standard was set for fine particulate matter~~, which~~ (particles that are 2.5 micrometers in diameter and smaller~~.~~). Citing the link between serious health problems and premature death in people with heart or lung disease, the 1997 revision ultimately distinguished and set forth regulation on particle pollutants known as particulate matter 2.5 ($PM_{2.5}$) and particulate matter 10 ($PM_{10}$). Based on air quality monitoring data, the Bay Area was found to be attaining the 1997 $PM_{2.5}$ standards. ¶

In 2006, the EPA revised the air quality standards for particle pollution. ~~Regulations for $PM_{2.5}$ were tightened for~~ The 24-hour ~~fine particle~~ $PM_{2.5}$ standard~~, which lowered~~ was strengthened by lowering the level from 65 micrograms per cubic meter (µg/m³) to 35 µg/ m³. The annual fine particle standard at 15 µg/ m³ remained the same. ~~In that same year~~Also in 2006, the EPA published a final ~~ruling which~~rule that established transportation conformity criteria and procedures to determine transportation projects that required analysis for local air quality impacts for $PM_{2.5}$ in non-attainment and maintenance areas. ~~From the 2006 revision, EPA had to complete designations of non-attainment areas by December 2009 for national standard for $PM_{2.5}$.~~ The newly established criteria and procedures require that those areas designated as ~~non-attainment~~nonattainment areas must undergo a regional conformity analysis for $PM_{2.5}$. Furthermore, the procedures also mandate that areas designated as non-attainment must complete an additional project-level $PM_{2.5}$ hot-spot analysis of localized impacts for transportation projects of air quality concern. ¶

Appendix A, includes clerical revisions as follows:

| RTPID | 2020 | 2030 | 2040 |
|---|---|---|---|
| 17-10-0008 | ~~Yes~~ | Yes | Yes |
| 17-02-0046 | ~~Yes~~ | Yes | Yes |
| 17-05-0019 | ~~Yes~~ | Yes | Yes |
| 17-09-0010 | ~~Yes~~ | Yes | Yes |
| 17-02-0013 | ~~Yes~~ | Yes | Yes |
| 17-08-0010 | ~~Yes~~ | Yes | Yes |
| 17-07-0033 | ~~Yes~~ | Yes | Yes |

| | | | |
|---|---|---|---|
| 17-02-0010 | ~~Yes~~ | Yes | Yes |
| 17-02-0035 | ~~Yes~~ | Yes | Yes |
| 17-02-0016 | ~~Yes~~ | Yes | Yes |
| 17-07-0070 | ~~Yes~~ | Yes | Yes |
| 17-02-0033 | ~~Yes~~ | Yes | Yes |
| 17-02-0032 | ~~Yes~~ | Yes | Yes |
| 17-06-0040 | ~~Yes~~ | Yes | Yes |
| 17-05-0020 | ~~Yes~~ | Yes | Yes |
| 17-08-0012 | ~~Yes~~ | Yes | Yes |
| 17-02-0039 | ~~Yes~~ | Yes | Yes |
| 17-02-0026 | ~~Yes~~ | Yes | Yes |
| 17-01-0047 | ~~Yes~~ | Yes | Yes |
| 17-01-0041 | ~~Yes~~ | Yes | Yes |
| 17-02-0021 | ~~Yes~~ | Yes | Yes |
| 17-06-0023 | ~~Yes~~ | Yes | Yes |
| 17-03-0011 | ~~Yes~~ | Yes | Yes |
| 17-10-0049 | ~~Yes~~ | Yes | Yes |
| 17-10-0044 | ~~Yes~~ | Yes | Yes |
| 17-05-0030 | ~~Yes~~ | Yes | Yes |

# VI. Conformity Findings

Based on the analysis, the following conformity findings are made:

- This conformity assessment was conducted consistent with EPA's transportation conformity regulations and with the Bay Area Air Quality Conformity Protocol adopted by MTC as Resolution No. 4274.

- Plan Bay Area 2040 and the 2017 Transportation Improvement Program, as amended by Revisions Number 2017-14, provide for implementation of TCMs pursuant to the following federal regulation:

  *(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 given maximum priority to approval or funding to TCMs over other projects within their control, including projects in locations outside the non-attainment 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 improvements 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. (40 CFR Part 93.113(c)).*

- For the two ground-level ozone precursors (VOC and NOx), motor vehicle emissions in Plan Bay Area 2040 and the 2017 Transportation Improvement Program, as amended by Revisions Number 2017-14 are lower than the applicable motor vehicle emission budgets for the 2008 national 8- hour ozone standard.

- For carbon monoxide, motor vehicle emissions in Plan Bay Area 2040 and the 2017 Transportation Improvement Program, as amended by Revisions Number 2017-14 are lower than the transportation conformity budget in the SIP.

- For PM2.5 and NOx, the Baseline Year test shows that the motor vehicle emissions are lower under the Build scenario for the various analysis years when compared to the baseline year emissions scenario.

# Appendix A

# Appendix B

# Appendix C

# Appendix D

# Appendix E

# Appendix F