MEETING NOTICE
AND AGENDA

SAN DIEGO REGION CONFORMITY WORKING GROUP

The San Diego Region Conformity Working Group may take action on any item appearing on this agenda.

Wednesday, June 7, 2017

10:30 a.m. to 12 noon

SANDAG, Conference Room 7
401 B Street, Suite 800
San Diego, CA 92101

Please take the elevator to the 8th floor to access the meeting room.

Staff Contact: Rachel Kennedy
(619) 699-1929
rachel.kennedy@sandag.org

AGENDA HIGHLIGHTS

• EIGHT-HOUR OZONE ATTAINMENT PLAN UPDATE
• SAN DIEGO FORWARD: DEVELOPMENT OF THE 2019 REGIONAL PLAN

If you would like to participate via conference call, please call (888) 204-5987. The conference call passcode is 6838699#.

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Welcome to SANDAG. Members of the public may speak to the Working Group on any item at the time the Working Group is considering the item. Please complete a Speaker’s Slip, and then present the slip to the Clerk of the Working Group. Members of the public may address the Working Group on any issue under the agenda item entitled Public Comments/Communications/Member Comments. Public speakers are limited to three minutes or less per person unless otherwise directed by the Chair. The Working Group may take action on any item appearing on the agenda.

Public comments regarding the agenda can be sent to SANDAG via comment@sandag.org. Please include the agenda item, your name, and your organization. Email comments should be received no later than 12 noon, two working days prior to the meeting. Any handouts, presentations, or other materials from the public intended for distribution at the meeting should be received by the Clerk of the Working Group no later than 12 noon, two working days prior to the meeting.

In order to keep the public informed in an efficient manner and facilitate public participation, SANDAG also provides access to all agenda and meeting materials online at sandag.org/meetings. Additionally, interested persons can sign up for e-notifications via our e-distribution list at either the SANDAG website or by sending an email request to webmaster@sandag.org.

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Los materiales de la agenda de SANDAG están disponibles en otros idiomas. Para hacer una solicitud, llame al (619) 699-1900 al menos 72 horas antes de la reunión.

如有需要，我们可以把SANDAG议程材料翻译成其他语言。
请在会议前至少 72 小时打电话 (619) 699-1900 提出请求。
# SAN DIEGO REGION CONFORMITY WORKING GROUP

**Wednesday, June 7, 2017**

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>RECOMMENDATION</th>
</tr>
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<tbody>
<tr>
<td>1.</td>
<td>INTRODUCTIONS</td>
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<tr>
<td>+2.</td>
<td>NOVEMBER 2, 2016, MEETING MINUTES</td>
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The San Diego Region Conformity Working Group (CWG) is asked to review the November 2, 2016, meeting minutes.

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<tr>
<th>3.</th>
<th>PUBLIC COMMENTS/COMMUNICATIONS</th>
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Members of the public will have the opportunity to address the CWG during this time.

## REPORTS

| 4.       | EIGHT-HOUR OZONE ATTAINMENT PLAN UPDATE | INFORMATION |
|----------|----------------------------------------|

Nick Cormier, San Diego County Air Pollution Control District (APCD), will provide an update on the approval process of the Eight-Hour Ozone Attainment Plan. The APCD Board unanimously adopted the Eight-Hour Ozone Attainment Plan and Reasonably Available Control Technology Demonstration for the 2008 National Ozone Standard (75 parts per billion) on December 14, 2016. The documents were approved by the California Air Resources Board on March 23, 2017, and were subsequently submitted to the Environmental Protection Agency on April 12, 2017, for review and approval.

| +5.      | SAN DIEGO FORWARD: DEVELOPMENT OF THE 2019 REGIONAL PLAN | INFORMATION |
|----------|---------------------------------------------------------|

Staff will provide an overview of the update of San Diego Forward: The Regional Plan that is scheduled for adoption in 2019. Federal law requires that SANDAG prepare a long-range transportation plan and make an air quality conformity determination every four years.

| +6.      | EMFAC2017 DEVELOPMENT UPDATE | INFORMATION |
|----------|-------------------------------|

California Air Resources Board (ARB) staff will provide an update on the ARB’s progress in developing an updated version of EMFAC, EMFAC2017. A public webinar will be held on June 1, 2017, to discuss updates to the on-road component of the mobile source emission inventory.

| +7.      | TRANSPORTATION CONFORMITY GUIDE | INFORMATION |
|----------|---------------------------------|

In February 2017, the U.S. Department of Transportation and Federal Highway Administration published the Transportation Conformity: A Basic Guide for State and Local Officials. The updated guide provides information on federal transportation conformity practices and procedures.
8. ADJOURNMENT AND NEXT MEETING

The next meeting of the CWG is scheduled for Wednesday, July 5, 2017, at 10:30 a.m.

9. OTHER BUSINESS

+ next to an item indicates an attachment
NOVEMBER 2, 2016, MEETING MINUTES

Please note: An audio file of the meeting is available on the SANDAG website, sandag.org, on the San Diego Region Conformity Working Group (CWG) page.

The meeting of the CWG was called to order by Rachel Kennedy, Senior Regional Planner, at 10:33 a.m.

1. INTRODUCTIONS
Self-introductions were made. The attendance sheet for this meeting is included.

2. SEPTEMBER 7, 2016, MEETING MINUTES (INFORMATION)
Ms. Kennedy asked the CWG to review the minutes from the September 7, 2016, meeting. No comments or corrections were made.

3. PUBLIC COMMENTS/COMMUNICATIONS (DISCUSSION)
No public comments were made.

REPORTS

4. 2016 REGIONAL TRANSPORTATION IMPROVEMENT PROGRAM UPDATE (INFORMATION)
Michelle Smith, Senior Project Control Analyst, provided an update on the 2016 Regional Transportation Improvement Program (2016 RTIP). On July 22, 2016, the SANDAG Board of Directors released the Draft 2016 RTIP, including its Draft Air Quality Conformity Analysis and conformity redetermination of San Diego Forward: The Regional Plan, for a 30-day public review period. A public hearing was held on September 2, 2016, and the SANDAG Board of Directors adopted the 2016 RTIP on September 23, 2016. The 2016 RTIP was distributed for statewide public review which closed on October 31, 2016. No comments were received. Federal approval is anticipated in December 2016.
5. 2008 EIGHT-HOUR OZONE STATE IMPLEMENTATION PLAN DEVELOPMENT (DISCUSSION)

On June 3, 2016, the U.S. Environmental Protection Agency formally reclassified San Diego County as a Moderate nonattainment area for the national Eight-Hour Ozone Standard. The action also established a due date of January 1, 2017, by which states with newly reclassified Moderate areas must submit State Implementation Plan revisions to address Moderate nonattainment area requirements. The San Diego Air Pollution Control District (APCD) prepared a draft 2008 Eight-Hour Ozone Attainment Plan for San Diego County (Attainment Plan) for public comment, outlining all actions necessary to bring the area into attainment as expeditiously as practicable. The draft Attainment Plan was discussed at a public workshop held at the APCD on September 8, 2016.

Nick Cormier, APCD, highlighted revisions made to the draft Attainment Plan and 2008 Eight-Hour Ozone Reasonably Available Control Technology Demonstration for San Diego County. The APCD Board of Directors will be asked to adopt the Attainment Plan on December 14, 2016. If approved, the Attainment Plan will be considered at the January 26 to 27, 2017, California Air Resources Board meeting.

6. ADJOURNMENT AND NEXT MEETING (INFORMATION)

Ms. Kennedy reminded the group that the next meeting of the CWG is scheduled for Wednesday, December 7, 2016.

Ms. Kennedy adjourned the meeting at 10:51 a.m.
## SAN DIEGO REGION CONFORMITY WORKING GROUP
### MEETING ATTENDANCE FOR NOVEMBER 2, 2016

<table>
<thead>
<tr>
<th>Name</th>
<th>Agency</th>
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<tbody>
<tr>
<td>Dennis Wade (phone)</td>
<td>Air Resources Board</td>
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<td>Kevin Nguyendo (phone)</td>
<td>Caltrans</td>
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<td>Ilene Gallo (phone)</td>
<td>Caltrans District 11</td>
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<td>Melina Pereira (phone)</td>
<td>Caltrans District 11</td>
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<td>Michael Morris (phone)</td>
<td>Federal Highway Administration</td>
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<td>Nick Cormier (phone)</td>
<td>San Diego Air Pollution Control District</td>
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<td>Carla Walecka (phone)</td>
<td>Transportation Corridor Agencies</td>
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<td>John Kelly (phone)</td>
<td>U.S. Environmental Protection Agency</td>
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<td>Elisa Arias</td>
<td>SANDAG</td>
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<td>Sue Alpert</td>
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<td>Rachel Kennedy</td>
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<td>Michelle Smith</td>
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<td>Scott Strelecki</td>
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<td>Catherine Thibault</td>
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SAN DIEGO FORWARD: DEVELOPMENT OF THE 2019 REGIONAL PLAN

Introduction

The adoption of San Diego Forward: The Regional Plan in October 2015 represented a major milestone for the region by merging the updates of the Regional Comprehensive Plan and the Regional Transportation Plan. This planning effort was preceded by the adoption of the 2011 Regional Transportation Plan, which included the agency’s first Sustainable Communities Strategy (SCS) under California Senate Bill 375 (Steinberg, 2008) (SB 375) requirements. SANDAG is now embarking on the 2019 update to the Regional Plan (2019 Regional Plan), which includes the agency’s third SCS.

Staff has prepared a proposed work program and schedule describing key tasks and timeframes for developing the 2019 Regional Plan, which is anticipated for adoption in fall of 2019.

Discussion

Federal law requires that SANDAG prepare a long-range transportation plan and make an air quality conformity determination every four years. SANDAG staff has developed a work program and schedule for the 2019 Regional Plan that incorporates a variety of planning efforts. These include an update to the 2050 Regional Growth Forecast, a Regional Housing Needs Assessment that is required by the state to be updated every eight years, and an update to the transit strategy. A process to engage low-income and minority populations in disadvantaged areas through community-based organizations (CBOs) will be underway shortly and is anticipated to function similarly to the CBO outreach program that was implemented for the 2015 Regional Plan.

The proposed work program and schedule are included as Attachments 1 and 2, respectively. Attachment 3 outlines the roles and responsibilities of the working groups, Policy Advisory Committees, and the Board of Directors related to the development of the 2019 Regional Plan.

Environmental Impact Report

SANDAG, as the Lead Agency under the California Environmental Quality Act, will prepare a Program Environmental Impact Report (EIR) for the 2019 Regional Plan. The Notice of Preparation (NOP) for the EIR was released on November 14, 2016, for a 60-day comment period that closed on January 13, 2017. A public scoping meeting was held on December 8, 2016, at SANDAG. Because the NOP was released in 2016, physical conditions as they existed in 2016 will generally be used as the baseline for environmental impact analysis in the EIR. In total, SANDAG received 19 written comment letters during the public comment period as well as verbal comments during the public
scoping meeting. Comments on the scope and content of the EIR will be addressed in the Draft EIR, which staff anticipates releasing for a public review period in early 2019.

**Next Steps**

At future meetings, the Board of Directors will be asked to discuss the continuation and applicability of the 2015 Regional Plan's vision, goals and policy objectives for the 2019 Regional Plan. Input from the Board of Directors will be sought for the draft Public Involvement Plan, and discussions of future technology applications that would inform the transportation network also are anticipated over the next several months.

GARY L. GALLEGOS
Executive Director

2. 2019 San Diego Forward: The Regional Plan – Proposed Schedule

Key Staff Contact: Phil Trom, (619) 699-7330, phil.trom@sandag.org
1. **Update Regional Plan Work Program and Public Involvement Plan**
   - Assess progress made toward the implementation of near-term and continuing actions from the 2015 Regional Plan.
   - Incorporate 2017 California Transportation Commission Regional Transportation Plan Guidelines (as needed)
   - Incorporate federal transportation bill (Moving Ahead for Progress in the 21st Century, or MAP-21, and Fixing America’s Surface Transportation Act or FAST Act, requirements) (as needed)
   - Monitor and incorporate relevant state legislation, including Senate Bill 375 (Steinberg, 2008) (SB 375), Senate Bill 32 (Statutes of 2016) (SB 32) requiring further reduction of greenhouse gas (GHG) emissions to achieve at least a 40 percent reduction below 1990 GHG levels by 2030, and 2017 Climate Change Scoping Plan Update (as needed)
   - Develop Updated Public Involvement Plan

2. **Conduct Public Outreach and Involvement**
   - Implement Public Involvement Plan
   - Conduct two public hearings on Draft San Diego Forward: The Regional Plan (required by legislation)
   - Conduct a public workshop on Sustainable Communities Strategy (SCS) development (required by legislation)
   - Conduct an informational meeting with elected officials to obtain input on SCS (required by legislation)
   - Continue to maintain San Diego Forward: The Regional Plan website
   - Issue request for partners and contracts with community-based organizations to engage low income and minority populations in the planning process
   - Update Tribal Consultation Plan
   - Conduct subregional workshops on Draft San Diego Forward: The Regional Plan
   - Analyze ongoing feedback and respond to comments received by phone, e-mail, social media, online, etc.


4. **Prepare 2050 Regional Growth Forecast (Series 14) for Planning Purposes**
   - Collect land use inputs including general plan, zoning, and permitted projects (i.e., “scheduled development“)
• Develop regionwide growth projections (population, housing, jobs, and other economic and demographic variables)

• Generate new subregional Growth Forecast (population, housing, jobs)

• Review results with local jurisdictions and other land use authorities

• Finalize 2050 Regional Growth Forecast (Series 14) for planning purposes following SANDAG quality assurance processes

5. Prepare Draft Regional Housing Needs Assessment (RHNA) for the Sixth Housing Element Cycle

• Consult with California Department of Housing and Community Development on the RHNA determination (housing need by income category)

• Work with local jurisdictions and stakeholders to develop the RHNA methodology to allocate the determination

• Prepare draft allocation by jurisdiction using the RHNA methodology

• Prepare Draft RHNA for incorporation into the Draft Regional Plan

6. Develop and Evaluate Alternative Multimodal Transportation Network Scenarios

• Develop approach for the evaluation and inclusion of future technologies into the Regional Plan
  
  − Assess opportunities to evaluate the increasing use of shared mobility, including traditional forms of ridesharing and emerging mobility solutions such as carsharing, bikesharing, and ridesourcing (also known as Transportation Network Companies)
  
  − Evaluate implications of future technologies on freight and goods movement
  
  − Enhance modeling tools to refine Connected Vehicle/Automated Vehicle assumptions
  
  − Consider enhancements to technology assumptions surrounding current Transportation Demand Management (TDM) programs and services and propose reasonable assumptions for the deployment, uptake, and expansion of emerging mobility services and technologies
  
  − Update Intelligent Transportation Systems architecture and applications within the region

• Assess Recommendations from State/Regional/Corridor/Subregional Studies into Development of Transportation Networks

  − Studies include the California Transportation Plan, Intraregional Tribal Transportation Strategy, Impacts of Border Delays at California-Baja California Ports of Entry, Improving Bus Operations and Traffic Study, Regional Transit Oriented Development Strategy, Active Transportation Implementation Strategy (including Bike Early Action Program, Safe Routes to Transit, and Safe Routes to School), State Route 52 Corridor Study, TDM studies/strategies, Transportation Systems Management (TSM) studies/strategies, State Route 11 and Otay Mesa East Port of Entry Innovation Analysis, Truck Visualization Study, Interstate 8 Corridor Study, 2016 Freight Gateway Study Update, Coordinated
Plan (including Long-Term Specialized Transportation Strategy), San Diego Regional Connected Vehicle Program, etc.

- Develop Unconstrained Multimodal Transportation Network
  - Refine multimodal network in conjunction with SCS (transit, Managed Lanes, highway, rail grade separations, active transportation, TDM, TSM, and goods movement)

- Update Revenue and Cost Projections for Projects and Services
  - Develop or revise cost estimates for the Unconstrained Multimodal Transportation Network, including operations and maintenance, based on requirements from federal transportation bill
  - Incorporate revised cost estimates for local streets and roads projects provided by the local jurisdictions
  - Develop initial revenue projections for the various local, state, and federal revenue sources for the financial scenarios

- Update Transit Strategy

- Incorporate Board actions related to the TransNet ten-year review (as needed)

- Update Regional Arterial System (as needed)

- Update Airport Multimodal and Rail Planning
  - Incorporate recommendations from the Los Angeles-San Diego-San Luis Obispo (LOSSAN) Rail Corridor Agency Corridorwide Strategic Implementation Plan Update (2012) and the LOSSAN Infrastructure Development Plan for San Diego County (expected 2017)
  - Incorporate recommendations from the biennial California High-Speed Rail Program Revised Business Plan (2016)
  - Incorporate recommendations from the San Diego County Regional Airport Authority’s Airport Development Plan (timeframe TBD)

- Update Transportation Project Evaluation Criteria and Performance Measures
  - Re-evaluate and update project evaluation criteria (as needed)
  - Re-evaluate and streamline performance measures to be consistent with the San Diego Forward: The Regional Plan goals and policy objectives, including Environmental Justice/Social Equity, Economic, and Environmental indicators

- Apply Project Evaluation Criteria to the Unconstrained Transportation Network

7. Select Preferred Transportation Network

- Perform travel forecasts and evaluate overall performance, including economic analyses
- Develop and analyze financial scenarios
- Develop Draft Preferred Scenario for review, including phasing
8. *Perform Air Quality Analyses for Transportation Conformity*

9. *Produce Draft Regional Plan, RHNA, and Draft Environmental Impact Report (EIR)*
   - Release Draft San Diego Forward: The Regional Plan for public comment
   - Address public comments and prepare Proposed Final San Diego Forward: The Regional Plan
   - Include a System Performance Report in the Regional Plan to assess progress made toward the achievement of federal performance measures targets per MAP-21/FAST Act
   - Prepare Draft EIR
     - Prepare and circulate Notice of Preparation for EIR
     - Create EIR Alternatives
     - Produce Draft EIR
     - Release Draft EIR for public comment
     - Address public comments and prepare Final EIR

10. *Adopt Final Regional Plan, RHNA, Air Quality Conformity Determination, approve Regional Growth Forecast, and Certify Final EIR*
    - Air Quality Conformity Determination by U.S. Department of Transportation
    - Determination on the adopted SCS by Air Resources Board
### Major Tasks

<table>
<thead>
<tr>
<th>Major Task</th>
<th>FY 2017</th>
<th>FY 2018</th>
<th>FY 2019</th>
<th>FY 2020</th>
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<tr>
<td>Update Regional Plan Work Program and Public Involvement Plan</td>
<td>Q4 April - June 2017</td>
<td>Q1 July - Sept 2017</td>
<td>Q1 July - Sept 2018</td>
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<td>Conduct Public Outreach and Involvement</td>
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<td>Reaffirm San Diego Forward: The Regional Plan Vision, Goals and Policy Objectives</td>
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<td>Prepare 2050 Regional Growth Forecast (Series 14) for Planning Purposes</td>
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<td>Prepare Draft Regional Housing Needs Assessment (RHNA) for the Sixth Housing Element Cycle</td>
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<td>Develop and Evaluate Alternative Multimodal Transportation Network Scenarios</td>
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<td>Select Preferred Transportation Network</td>
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<td>Adopt Final Regional Plan, RHNA, Air Quality Conformity Determination, approve Regional Growth Forecast, and Certify Final EIR</td>
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**Legend:**
- **Major Task**
- **Milestone**

### Major Tasks

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<tr>
<th>Update Regional Plan Work Program and Public Involvement Plan</th>
<th>SANDAG Working Groups*</th>
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<tr>
<td>Conduct Public Outreach and Involvement</td>
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### Committees and Working Groups

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<td>Policy Advisory Committees</td>
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<td>Borders Committee (BC)</td>
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<td>Regional Planning Committee (RPC)</td>
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<td>Transportation Committee (TC)</td>
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<td>TransNet Independent Taxpayer Oversight Committee (ITOC)</td>
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<td>Cities/County Transportation Advisory Committee (CTAC)</td>
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<td>Regional Planning Technical Working Group (TWG)</td>
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<td>San Diego Region Conformity Working Group (CWG)</td>
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<td>Active Transportation Working Group (ATWG)</td>
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<td>Interagency Working Group on Tribal Transportation Issues (Tribal TWG)</td>
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<td>Military Working Group (MWG)</td>
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### Specific Tasks Will Be Presented to These Groups as Needed:

- Committee on Binational Regional Opportunities (COBRO)
- Environmental Mitigation Program Working Group (EMP)
- Freight Stakeholders Working Group
- Regional Energy Working Group
- San Diego Regional Traffic Engineers Council (SANTEC)
- Social Services Transportation Advisory Council (SSTAC)
- Community Based Organizations

* Working Groups will provide input that will be used in the staff recommendations to the Policy Advisory Committees and the Board of Directors
TO: All Interested Parties

DATE: May 25, 2017

SUBJECT: JUNE 1, 2017 PUBLIC WEBINAR WORKSHOP ON UPDATES TO ARB’S EMFAC2017 MODEL

The California Air Resources Board (ARB) invites you to participate in a webinar on Thursday, June 1, 2017 at 10am PDT to discuss updates to the on-road component of the mobile source emission inventory. At the webinar, staff will summarize updates that have been made to EMFAC and present updated methodologies from the upcoming EMFAC2017 model. This will be the first public workshop to discuss the development of the EMFAC2017 model.

This meeting will be conducted through the GoToWebinar online webinar system and questions from participants will be taken using the webinar software and email. This event will also be recorded and made available on the ARB web site.

How to Participate:

Please register for the EMFAC2017 Public Workshop Webinar June 1, 2017, 10am at:

https://attendee.gotowebinar.com/register/4895016254145872643

After registering, you will receive a confirmation email containing information about joining the webinar.

Tentative Agenda:

10:00am Introduction and Executive Summary
11:00am Fleet Characterizations
12:00pm Break (30 minutes)
12:30pm Updates to Emission Rates
2:00pm Updates to Vehicle Activity Profiles
3:00pm Greenhouse Gas Module
3:30pm VMT and New Sales Forecasting
4:00pm Closing Remarks and Final Q&A

The time allocated for each topic includes some time for questions from participants. All times listed above are approximate and will depend on the amount of questions and discussion.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: http://www.arb.ca.gov.

California Environmental Protection Agency
**Webinar Information and Background**

The past several decades have seen dramatic improvements in air quality as a result of regulations that have reduced emissions from stationary and mobile sources. However, substantial additional emissions reductions will be necessary to meet more stringent ozone air quality standards and California’s long-term greenhouse gas emissions reduction goals. ARB is expanding its mobile source analysis tools to support air quality planning focused on achieving these goals.

The EMFAC model is the primary tool ARB uses to assess emissions from on-road vehicles including cars, trucks, and buses. This public webinar workshop will discuss the development of the upcoming EMFAC2017 version of the model. At the webinar, staff will provide a description of the methodologies incorporated and updates made to the model. A subsequent workshop in the fall will cover model estimates and explain differences between the new estimates and those from the prior version of the model, EMFAC2014.

**Special Accommodations or Language Assistance**

If you require special accommodations or need this document in an alternative format (i.e., Braille, large print) or another language, please contact Mr. Stephen Zelinka at (916) 445-2199, or stephen.zelinka@arb.ca.gov as soon as possible, but no later than 10 business days before the scheduled workshop. TTY/TDD/Speech to Speech users may dial 711 for the California Relay Service.

If you did not receive this notice directly and would like to receive notices to stay informed of future updates to mobile source emissions inventory tools, please sign up for the "MSEI" listserv at: [http://www.arb.ca.gov/listserv/listserv_ind.php?listname=msei](http://www.arb.ca.gov/listserv/listserv_ind.php?listname=msei)

If you have any questions, please contact Mr. Stephen Zelinka at (916) 445-2199, or stephen.zelinka@arb.ca.gov

Sincerely,

/s/

Vernon Hughes
Chief, Mobile Source Analysis Branch
Air Quality Planning and Science Division
Cc: Stephen Zelinka  
Manager, On-Road Model Implementation Section  
Air Quality Planning and Science Division  

Sam Pournazeri, PhD., PE  
Manager, On-Road Model Development Section  
Air Quality Planning and Science Division
Quality Assurance Statement
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Executive Summary

State’s air quality implementation plan (SIP)
The concept of transportation conformity was introduced in the Clean Air Act (CAA) of 1977, which included a provision to ensure that transportation investments conform to a State implementation plan (SIP) for meeting the Federal air quality standards. Conformity requirements were made substantially more rigorous in the CAA Amendments of 1990. The transportation conformity regulations1 that detail implementation of the CAA requirements were first issued in November 1993, and have been amended several times. The regulations establish the criteria and procedures for transportation agencies to demonstrate that air pollutant emissions from metropolitan transportation plans, transportation improvement programs and projects are consistent with (“conform to”) the State’s air quality goals in the SIP. This document has been prepared for State and local officials who are involved in decision making on transportation investments.

What is Transportation Conformity?
Transportation conformity is required under CAA Section 176(c) to ensure that Federally-supported transportation activities are consistent with (“conform to”) the purpose of a State’s SIP. Transportation conformity establishes the framework for improving air quality to protect public health and the environment. Conformity to the purpose of the SIP means Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) funding and approvals are given to highway and transit activities that will not cause new air quality violations, worsen existing air quality violations, or delay timely attainment of the relevant air quality standard, or any interim milestone.

Where Does Transportation Conformity Apply?
Conformity requirements apply in areas that either do not meet or previously have not met national ambient air quality standards (NAAQS) for ozone (O₃), carbon monoxide (CO), particulate matter (PM₁₀ and PM₂.₅), or nitrogen dioxide (NO₂). These areas are known as “nonattainment areas” and “maintenance areas,” respectively.

What Actions Are Subject to Conformity?
In areas that are nonattainment or maintenance for one or more of the pollutants mentioned above, conformity applies to long-range metropolitan transportation plans, shorter-term metropolitan transportation improvement programs (TIPs), and transportation projects funded or approved by FHWA or FTA.

1Title 40 CFR Parts 51 and 93.
What is a Conformity Determination?
A conformity determination demonstrates that implementation of the metropolitan transportation plan, TIP, or project will not cause any new violations of the air quality standard, increase the frequency or severity of violations of the standard, or delay timely attainment of the standard or any interim milestone. For metropolitan transportation plan and TIP conformity, the determination shows that the total emissions from on-road travel on an area’s transportation system are consistent with goals for air quality found in the SIP. Before a SIP is available, other tests of conformity are used. For project-level conformity, the determination shows that the project is consistent with the regional conformity determination and that potential localized emissions impacts are addressed.

Who is Responsible for Making a Conformity Determination?
Conformity determinations are made by FHWA/FTA. Metropolitan planning organization (MPO) policy boards make initial conformity determinations for metropolitan transportation plans and TIPs in metropolitan areas, while State Departments of Transportation (DOTs) usually do so in areas without MPOs and typically conduct the analyses associated with project-level conformity. A formal interagency consultation process is required for developing SIPS, metropolitan transportation plans, TIPs, and making conformity determinations, and includes the Environmental Protection Agency (EPA), FHWA, FTA, and State and local transportation and air quality agencies.

How Frequently are Conformity Determinations Required?
Conformity determinations must be made at least every four years, but may occur more often if metropolitan transportation plans or TIPs are updated more frequently or amended with non-exempt projects. Also, conformity determinations must be made within 24 months after SIP motor vehicle emissions budgets (MVEB) are found adequate or approved, whichever is first. Project-level conformity must be determined prior to the first time a non-exempt Federal project is adopted, accepted, approved, or funded. In addition, conformity determinations must be made within 12 months of an area being designated by EPA as nonattainment for ozone, carbon monoxide, particulate matter, or nitrogen dioxide.

How is the Public Involved?
A conformity analysis is made available to the public as part of the MPO metropolitan transportation planning process. MPOs are required to make metropolitan transportation plans, TIPs, and conformity determinations available to the public, to accept and respond to public comment, and to provide adequate notice of relevant public meetings. Project sponsors must also provide an opportunity for public involvement during the project development process where otherwise required by law.

How is Metropolitan Transportation Plan/TIP Conformity Determined?
Regional emissions are estimated based on projected travel on existing and planned highway and public transportation facilities consistent with an area’s metropolitan transportation plan and TIP. Projected emissions must be based on the latest available information and the latest EPA-approved emissions estimation model. The projected emissions must meet the requirements of the budget test and/or interim emissions test depending on the area. Also, the MPO is required to demonstrate that Transportation Control Measures (TCMs) in approved SIPS are implemented in a timely fashion. In addition, interagency consultation is required on the conformity determination.

What is a State Implementation Plan (SIP)?
A SIP is the State air quality plan for meeting the National Ambient Air Quality Standards (“NAAQS” or “air quality standards”). It is a compilation of legally enforceable rules and regulations prepared by a State or local air quality agency and submitted by the State’s governor to EPA for approval. A SIP is designed to achieve better air quality by attaining, making progress toward attaining, or maintaining the NAAQS.

The SIP assigns emissions reductions for each pollutant or precursor for each source type (on-road motor vehicles, non-road equipment and vehicles, stationary, and area sources).

What are Motor Vehicle Emissions Budgets?
A motor vehicle emissions budget (MVEB) is that portion of the total allowable emissions in the SIP that is allocated to on-road mobile sources, such as cars, trucks, and buses. It is the level of on-road emissions that the area can have and still meet the SIP’s goals. Budgets are established in the applicable SIP as part of the air quality planning process by State air quality or environmental agencies, and approved by EPA.
Transportation agencies participate in this process in accordance with required interagency consultation procedures.

For transportation conformity, projected emissions from highway and public transportation use must be less than or equal to the budgets. In other words, the budget acts as a ceiling on emissions from the on-road transportation sector.

**What are Transportation Control Measures (TCMs)?**

TCMs are specific projects or programs designed to reduce emissions from transportation sources that are included in the approved SIP. Examples include programs for improving public transportation, developing high occupancy vehicle (HOV) lanes, and ordinances to promote non-motorized vehicle travel.

**What is Project-Level Conformity?**

All Federally-funded or approved highway and public transportation projects subject to conformity are required to meet project-level conformity requirements. To demonstrate project-level conformity, a project must come from a conforming metropolitan transportation plan and TIP; its design concept and scope must not have changed significantly from that in the metropolitan transportation plan and TIP; the analysis must have used the latest planning assumptions and latest emissions model; and in PM areas, there must be a demonstration of compliance with any control measures in the SIP. In carbon monoxide and particulate matter nonattainment and maintenance areas, additional analysis may be necessary to determine if a project has localized air quality impacts. This localized air analysis is referred to as a “hot-spot” analysis.

**What Happens if an MPO Cannot Make a Conformity Determination?**

When a conformity determination is not made according to schedule, areas have a one-year grace period to make the determination before there is a conformity lapse. During a lapse, only certain types of projects can proceed: (1) projects that are exempt from conformity; (2) TCMs in approved SIPs; and (3) projects or project phases that are already authorized. Also, during a lapse no new non-exempt projects can be amended into the metropolitan transportation plan/TIP and the use of Federal-aid funds is restricted. The one-year conformity lapse grace period does not apply to new nonattainment areas that must make a determination on their metropolitan transportation plans and TIPs within 12 months of final designation.

**What Options Do States and MPOs Have to Reduce Emissions?**

A variety of projects and programs can be implemented to reduce emissions. Options include traditional investments like public transportation, HOV lanes, and signal timing, as well as technology-based measures such as retrofitting, repowering, replacing heavy-duty diesel trucks or implementing idling reduction programs.
**Purpose of this Guide**

This Guide was prepared to help State and local officials understand transportation conformity and how conformity requirements relate to transportation investments in their communities. Specifically, the implications of conformity on metropolitan transportation plans, transportation improvement programs (TIPs), and transportation projects are discussed. The Guide provides overview information on the major elements of the conformity process and provides answers to basic questions. Several exhibits are included in the Guide to illustrate key elements of the conformity process. Appendices are also included that discuss the health effects of pollutants, options to reduce on-road mobile source emissions, and resource agency contacts.

**Introduction**

The air quality provisions of the Clean Air Act (CAA) and the metropolitan transportation planning provisions of Title 23 and Title 49 of the United States Code require a planning process that integrates air quality and metropolitan transportation planning such that transportation investments support clean air goals. This process is known as transportation conformity and is carried out in accordance with 40 CFR Parts 51 and 93. Exhibit 1 illustrates how conformity plays a central role as the link between transportation and air quality planning.

**EXHIBIT 1**

**Conformity Links Air Quality and Transportation Planning**

![CONFORMANCE Diagram](https://example.com/conformity_diagram.png)

**Transportation Conformity and Actions Subject to Conformity**

Transportation conformity is a process required by the CAA Section 176(c), which establishes the framework for improving air quality to protect public health and the environment. The goal of transportation conformity is to ensure that FHWA and FTA funding and approvals are given to highway and public transportation activities that are consistent with air quality goals.

The CAA requires that metropolitan transportation plans, TIPs, and Federal projects conform to the purpose of the SIP. Conformity to a SIP means that such activities will not cause or contribute to any new violations of the NAAQS; increase the frequency or severity of NAAQS violations; or delay timely attainment of the NAAQS or any required interim milestone. Conformity requirements apply in areas that either do not meet or previously have not met air quality standards for ozone, carbon monoxide, particulate matter, or nitrogen dioxide. These areas are known as “nonattainment areas” or “maintenance areas,” respectively. For a complete list of nonattainment and maintenance areas for these and other pollutants see 40 CFR Part 81 or [https://www.epa.gov/green-book](https://www.epa.gov/green-book).

**Pollutants that Come from On-Road Vehicles (e.g., Cars, Trucks, Buses)**

Transportation sources contribute to four of the six criteria pollutants for which EPA has established standards to protect public health and/or safety. The pollutants are: ozone (O₃), carbon monoxide (CO), particulate matter (PM₁₀ and PM₂.₅), and nitrogen dioxide (NO₂). Appendix A provides basic facts about health impacts of these pollutants. Exhibit 2 shows the proportion of PM₁₀, PM₂.₅, nitrogen oxides (NOₓ), volatile organic compounds (VOCs), and CO emissions from the various sources of pollution. Exhibit 3 shows the on-road percentage of total emissions by pollutant in 2011.

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2 Many additional documents and training materials are available at [www.fhwa.dot.gov/environment/air_quality/conformity/](https://www.fhwa.dot.gov/environment/air_quality/conformity/) and [https://www.epa.gov/state-and-local-transportation](https://www.epa.gov/state-and-local-transportation) that address the technical requirements of transportation conformity.

3 Title 23 and Title 49 of the United States Code (U.S.C.) codify the transportation laws including the Fixing America’s Surface Transportation Act (FAST Act). These include transportation planning provisions that govern the programs of the FHWA and the FTA.

4 The transportation conformity rule is available at [https://www.fhwa.dot.gov/environment/air_quality/conformity/laws_and_regs/](https://www.fhwa.dot.gov/environment/air_quality/conformity/laws_and_regs/).
EXHIBIT 2
Proportion of PM$_{10}$, PM$_{2.5}$, Nitrogen Oxides (NO$_x$), Volatile Organic Compounds (VOCs), and CO Emissions from the Various Sources of Pollution

**PM$_{10}$ Emissions 2013**
Source: U.S. Environmental Protection Agency, Clearinghouse for Inventories and Emissions Factors (CHIEF), Current Emission Trends Summaries

*Miscellaneous sources include prescribed fires and wildfires, dust from paved and unpaved roads, road construction, and agriculture operations.

**PM$_{2.5}$ Emissions 2013**
Source: U.S. Environmental Protection Agency, Clearinghouse for Inventories and Emissions Factors (CHIEF), Current Emission Trends Summaries

**NO$_x$ Emissions 2013**
Source: U.S. Environmental Protection Agency, Clearinghouse for Inventories and Emissions Factors (CHIEF), Current Emission Trends Summaries

**VOC Emissions 2013**
Source: U.S. Environmental Protection Agency, Clearinghouse for Inventories and Emissions Factors (CHIEF), Current Emission Trends Summaries

**CO Emissions 2013**
Source: U.S. Environmental Protection Agency, Clearinghouse for Inventories and Emissions Factors (CHIEF), Current Emission Trends Summaries

*Miscellaneous sources include prescribed fires and wildfires, dust from paved and unpaved roads, road construction, and agriculture operations.
Description of a Conformity Determination

For metropolitan transportation plan and TIP conformity, the determination shows that the total emissions from on-road travel on an area’s transportation system are consistent with goals for air quality found in the SIP. Before a SIP is available, other tests of conformity are used. For project-level conformity, a project must come from a conforming metropolitan transportation plan and TIP, its design concept and scope must not have changed significantly from that in the metropolitan transportation plan and TIP, and it addresses potential localized emissions impacts.

A conformity determination demonstrates that implementation of the metropolitan transportation plan, TIP, or project will not cause any new violations of the air quality standard, increase the frequency or severity of violations of the standard, or delay timely attainment of the standard or any interim milestone.

Responsibility for Making a Conformity Determination

The policy board of an MPO must formally make an initial conformity determination on its metropolitan transportation plans and TIPs prior to submitting them to FHWA/FTA for an independent review and conformity determination. The conformity process is done in accordance with the required interagency consultation process described in Exhibit 4. For individual projects including those in rural areas, the State DOT or project sponsor usually prepares the conformity analysis. FHWA or FTA must make a project-level conformity determination prior to project approval and/or funding. Exhibit 4 shows the typical roles and responsibilities of the various agencies.
## EXHIBIT 4
Roles and Responsibilities of Federal, State, and Local Transportation and Air Quality Agencies in Transportation Conformity and SIP Development Process

(Specific States and metropolitan areas may have negotiated different assignments of responsibility tailored to local conditions.)

<table>
<thead>
<tr>
<th>AGENCIES</th>
<th>ROLES AND RESPONSIBILITIES</th>
<th>WHEN</th>
</tr>
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</table>
| MPO                       | • Conduct analysis on metropolitan transportation plan/TIP  
• Incorporate latest emissions factors, planning assumptions, and emissions models  
• Circulate draft metropolitan transportation plan/TIP for interagency and public comment based on public involvement procedures adopted by the MPO  
• Ensure public involvement procedures are followed  
• Ensure timely implementation of TCMs  
• Respond to significant comments on TIP/metropolitan transportation plan conformity documents  
• Determine conformity on metropolitan transportation plan/TIP  
• Consult with agencies throughout the conformity determination process  
• Consult on the development of the SIP and MVEB  
• May elect to shorten conformity horizon after consultation with air agency and public comment  
• Participate in the TCM substitution process  
• Concur on TCM substitutions | • At least every 4 years or when a metropolitan transportation plan/TIP is updated or amended with non-exempt projects  
• 24 months after certain SIP actions  
• 12 months after new nonattainment designations become effective  
• As needed |
| State/Local Transportation Agency | • Consult with agencies throughout the conformity determination process  
• Conduct regional conformity analysis on projects not in metropolitan areas, based on interagency consultation  
• In CO and PM nonattainment and maintenance areas, conduct “hot-spot” analysis, if necessary as part of a project-level conformity determination  
• Provide for public involvement/respond to significant comments  
• Ensure timely implementation of TCMs  
• Review and approve regional and hot-spot analysis  
• Consult on the development of the SIP and MVEB  
• Participate in the TCM substitution process  
• Concur on TCM substitutions in isolated rural areas | • As needed |
| State/Local Air Quality/Environmental Agency | • Prepare SIP for each relevant pollutant  
• Ensure interagency involvement during SIP development (including the State DOT and MPO(s))  
• Hold public hearings prior to SIP adoption  
• Ensure SIPs are complete and control measures are enforceable under the 1990 CAA, prior to board approval action  
• Ensure latest emissions factors and planning assumptions are used for SIP development  
• Review and approve SIP, forward to EPA for Federal approval  
• Participate in the interagency consultation process for metropolitan transportation plan/TIP/project development and conformity determinations  
• Consult on shortened conformity horizon  
• Participate in the TCM substitution process and submit substitute TCM to EPA  
• Concur on TCM substitutions | • As needed |
| State Legislature          | • Adopt State legislation to develop and enforce applicable CAA provisions  
• Ensure funding available for implementation of programs and projects | • As needed |
| FHWA/FTA                  | • Make conformity determinations on metropolitan transportation plans/TIPs updates/amendments and projects  
• Participate in the interagency consultation process for metropolitan transportation plan/TIP development and conformity determinations  
• Ensure timely implementation of TCMs  
• Ensure MPOs allow for adequate public involvement  
• Ensure that all other conformity and metropolitan transportation planning requirements are met  
• Develop technical guidance on traffic demand and forecasting, and Federal aid program guidance  
• Consult on the development of the SIP and MVEB | • At least every 4 years or when a metropolitan transportation plan/TIP is updated or amended with non-exempt projects  
• 24 months after certain SIP actions  
• 12 months after new nonattainment designations become effective  
• As needed |
| EPA                       | • Develop conformity rules, regulations, and guidance documents  
• Consult on the development of the SIP and MVEB  
• Review submitted budgets for adequacy and implement adequacy process  
• Provide technical guidance on TCMs and SIP development  
• Review and comment on draft and submitted control strategy and maintenance SIPs  
• Review, comment, and approve SIPs  
• Participate in the interagency consultation process for metropolitan transportation plan/TIP/project development and conformity determinations  
• Review and comment on proposed conformity determinations  
• Designate approved emissions models for use in SIP development and conformity determinations  
• Designate “guideline” dispersion models for project-level emissions analysis  
• Participate in the TCM substitution process and codify substitute TCM into SIPs  
• Concur on TCM substitutions | • As needed |
Frequency Requirements for Transportation Conformity

Conformity determinations must be made at least every four years, but may occur more often if metropolitan transportation plans or TIPs are updated more frequently or amended with non-exempt projects. In addition, certain SIP actions relating to MVEBs may also require an updated conformity determination within 24 months. Also, conformity must be demonstrated within 12 months of EPA’s designation of an area as nonattainment for any transportation-related criteria pollutant. Project-level conformity must be determined prior to the first time a non-exempt Federal project is adopted, accepted, approved, or funded.

Key Elements of a Metropolitan Transportation Plan/TIP Conformity Determination

One way to understand transportation conformity is to know the key requirements and how they interact. The major components of a conformity determination include:

- Interagency Consultation
- Public Involvement
- Latest Planning Assumptions and Emissions Model
- Regional Emissions Analysis
  - Motor Vehicle Emissions Budget
- Timely Implementation of Transportation Control Measures
- Fiscal Constraint

Interagency Consultation

Experience has shown that ongoing coordination and communication between Federal, State, and local transportation and air quality agencies is vital to a smoothly running conformity process. In addition, a clear understanding of roles and responsibilities of participating agencies is essential.

The conformity rule requires that Federal, State, and local transportation and air quality agencies establish formal procedures to ensure interagency coordination on critical issues. Typical participants in interagency consultation include FHWA, FTA, EPA, State DOTs, MPOs and other local transportation agencies, and State and regional air quality agencies. In addition, public transportation operators are often active participants in interagency consultation. Interagency consultation is a forum for discussing key assumptions to be used in conformity analyses, strategies to reduce mobile source emissions, specific impacts of major projects, issues associated with travel demand and emissions modeling, and the development of MVEBs. The specific process that will be followed in each area must be adopted as part of the SIP and must be used to develop metropolitan transportation plans, TIPs, and the SIP. These adopted interagency consultation procedures are included in the “conformity SIP.”

Public Involvement

Good public involvement processes are proactive, easily accessible to the public, and keep the public informed on an ongoing basis.

MPOs are required to make metropolitan transportation plans, TIPs, and conformity determinations available for public review. MPOs must also respond to public comment and provide adequate notice of relevant meetings. Project sponsors must also provide an opportunity for public involvement during the project development process where otherwise required by law. The public involvement requirements for transportation planning must be met; there are no additional public involvement requirements for conformity.

Latest Planning Assumptions and Emissions Model

Conformity determinations must be based on the latest planning assumptions and the latest EPA-approved emissions estimation model at the time the conformity analysis begins. This requirement ensures that the latest planning, travel, vehicle age and fleet mix, demographic, and economic assumptions are reflected in conformity determinations.

The latest planning assumptions available at the time the conformity analysis begins include population, employment, travel needs, vehicle fleet composition (proportions of types of vehicles), land use, and economic development. The conformity rule requires that when metropolitan transportation plans and TIPs are developed or updated, the assumptions used to forecast future conditions must be based on the latest available information. Current motor vehicle fleet information is essential to good planning and forecasting and is one of the key planning assumptions in conformity. Likewise, the latest EPA-approved emissions estimation model must be used that reflects the latest science and policies regarding motor vehicle emissions and the emissions benefits of cleaner engine and fuel standards.
Regional Emissions Analysis
Regional emissions analysis is the key analytical component of a conformity determination. The analysis supports the demonstration that transportation investments are consistent with air quality goals.

Estimating regional emissions from on-road mobile sources traveling on the planned transportation system is essential to a conformity determination. The conformity rule requires that future emissions estimates include the entire horizon of the metropolitan transportation plan (at least 20 years) for the region. Note that MPOs have the option to shorten the time horizon for the conformity demonstration if certain requirements are met. The regional emissions that are forecast through models are compared to the MVEB (“budget”) from the SIP that sets a limit on emissions from on-road sources. This budget cannot be exceeded in order for an area to make a conformity determination. In the absence of an approved or adequate budget, areas must pass interim tests that basically compare emissions associated with the proposed transportation network (“build” scenario) with emissions from either a “no-build” scenario or baseline year, or both. The regional emissions analysis is based on motor vehicle travel across the entire current and planned transportation system and reflects the investments detailed in the metropolitan transportation plan and TIP.

Motor Vehicle Emissions Budget
The SIP accounts for emissions of each pollutant for each source type. There are four types of sources: on-road mobile, non-road mobile, stationary (e.g., refineries), and area (e.g., dry cleaners). The State air quality agency is responsible for the development of the entire SIP. The air quality agency identifies how pollution from all sources will be reduced sufficiently to achieve the purpose of the SIP. Required emissions reductions are calculated, and control measures are adopted to achieve needed reductions.

An MVEB is that portion of the total allowable emissions in the SIP that is allocated to on-road mobile sources, such as cars, trucks, and buses. It is the level of on-road emissions that the area can have and still meet the SIP’s goals. Budgets are established in the applicable SIP as part of the air quality planning process by State air quality or environmental agencies, and approved by EPA. Transportation agencies participate in this process in accordance with required interagency consultation procedures.

For transportation conformity, projected emissions from highway and public transportation use must be less than or equal to the budgets. In other words, the budget acts as a ceiling on emissions from the on-road mobile sector.

Timely Implementation of Transportation Control Measures (TCMs)
When an EPA-approved SIP includes TCMs, each time a conformity determination is made, the MPO must demonstrate that these measures are being implemented on schedule as called for in the SIP.

TCMs are measures included in an approved SIP to help reduce emissions from on-road mobile sources. Section 93.101 of the conformity regulations contains a definition of TCMs for conformity purposes. Some of these measures are specifically listed in the CAA, and transportation and air quality agencies often consider whether such measures are beneficial and needed to meet air quality requirements. TCMs are designed to reduce emissions from motor vehicles by reducing vehicle use, changing traffic flow, or changing congestion conditions. Examples include high-occupancy vehicle (HOV) lanes, improving public transportation, and vanpooling programs. If an EPA-approved SIP includes any of these measures, the MPO must show, as part of the conformity determination, that the measures are being implemented on schedule and given priority for Federal funding. Not all areas have these measures in their approved SIPs; nevertheless, these types of measures are often routinely implemented through the metropolitan transportation plan and TIP (e.g., public transportation services, telecommuting programs). If not included in an approved SIP, such measures are not TCMs for the purpose of conformity, and the MPO does not have to demonstrate their timely implementation.

If an MPO finds that a TCM has become delayed, the MPO may decide to replace the delayed TCM with a new TCM through a process called TCM substitution in order to meet its timely implementation requirement. Through this process, an MPO does not need to go through a full SIP revision in order to substitute the delayed TCM for a new TCM.

5 CAA Section 108(f)(1)(A)
Fiscal Constraint

Metropolitan transportation plans and TIPs in nonattainment or maintenance areas must be shown to meet the FHWA/FTA fiscal constraint requirements.

The FHWA/FTA transportation planning regulations require that metropolitan transportation plans and TIPs be based upon reasonable estimates about future revenues. In addition, in the first two years of the TIP, projects must be limited to those for which funds are known to be available or committed. This is known as fiscal constraint. The conformity rule requires that the fiscal constraint requirements of the planning regulations be met prior to determining conformity on a metropolitan transportation plan or TIP.

Project-Level Conformity and Hot-Spot Analysis

Project-level conformity determinations are required for Federal highway and transit projects in nonattainment and maintenance areas. The project must come from a conforming metropolitan transportation plan and TIP. Additionally, as part of these project-level determinations, in carbon monoxide and particulate matter nonattainment and maintenance areas, localized analysis requirements apply for certain Federally-funded or approved projects. This analysis is called “hot-spot” analysis.

Exhibit 5 shows a simplified version of the transportation conformity process for metropolitan transportation plans/TIPs and projects.
EXHIBIT 5
Transportation Conformity Process for Metropolitan Transportation Plans/TIPs and Projects

Transportation Conformity Process for Metropolitan Transportation Plans/TIPs

Plan/TIP conformity requiring a new regional emissions analysis

Ensure timely implementation of SIP TCMs, fiscal constraint, etc.

Conduct regional emissions analysis using latest planning assumptions and emissions model

Use budget test

Are there adequate approved SIP budgets?

Use interim emissions test(s)

Is conformity test met?

Meets all other requirements (e.g., public involvement)

Complete plan/TIP conformity determination

Transportation Conformity Process for Projects

Is project a non-exempt Federal project?

Revise plan/ TIP (or SIP budgets if applicable)

Does the project come from a conforming plan and TIP?*

Is the project in a CO and/or PM area?

Is hot-spot analysis required?

Are hot-spot requirements met?

Meet other project-level conformity requirements (e.g., compliance with control measures in PM areas)

Complete project-level conformity determination

Perform hot-spot analysis

Add mitigation, etc.

*Does not apply to donut or isolated rural areas

Denotes key interagency consultation points
Conformity Lapse and Lapse Grace Period

If a conformity determination is not made according to the required frequency requirements, areas have a one-year grace period after the missed deadline before a conformity lapse applies. (This one-year grace period does not apply to newly designated nonattainment areas.) During the 12-month grace period, only transportation projects in the most recent conforming metropolitan transportation plan and TIP can be funded or approved. Once an area is in a conformity lapse, the use of Federal transportation funds is restricted to certain kinds of projects and no new non-exempt projects can be amended into the metropolitan transportation plan/TIP. These include “exempt projects” such as safety projects and certain mass transit projects, TCMs from an approved SIP, and project phases that were authorized by FHWA/FTA prior to the lapse. The FHWA and FTA do not reduce the amount of funding a State receives if there is a lapse; however, use of Federal funds is restricted during the lapse.

Options to Resolve a Conformity Lapse

Often, a lapse may occur due to a missed deadline such as an expired metropolitan transportation plan, TIP, or conformity determination. In this case, the lapse may be resolved by completing the necessary steps to fulfill transportation or air quality planning requirements. There are two options to resolving a conformity lapse if emissions estimates exceed the MVEB: change the projects in the metropolitan transportation plan or TIP (either the mix or timing of projects), and/or revise the MVEB. In order to revise an MVEB, a SIP revision is required. Also, in order to revise a budget, the State air quality agency may need to identify additional control measures from on-road or other sources of pollution in order to increase the budget for on-road emissions.

Options for MPOs to Reduce Emissions

The MPO can adopt projects in the metropolitan transportation plan and TIP that help to reduce emissions. Examples include: HOV lanes, public transportation investments, signal timing, bicycle lanes, and coordinating land use planning with transportation planning. Other projects that can be implemented including retrofitting, repowering, or scrapping old trucks; supporting idling reduction at truck stops; or encouraging accelerated use of cleaner fuels, especially low sulfur diesel fuel. Appendix B includes a more detailed discussion of options to reduce emissions from on-road motor vehicles.
Appendix A: Health Effects of Pollutants

EPA has established standards for four transportation-related pollutants:

- ground level ozone formed by volatile organic compounds (VOCs) and oxides of nitrogen (NOx);
- carbon monoxide (CO);
- particulate matter (less than 10 microns (PM10) and less than 2.5 microns (PM2.5)); and,
- nitrogen dioxide (NO2).

The standards are based upon EPA’s assessment of the health risks associated with each of the pollutants on at-risk populations. These assessments are based upon short- and long-term scientific studies by noted health professionals and medical research institutions. At-risk groups include children, the elderly, persons with respiratory illnesses, and even healthy people who exercise outdoors.

Air pollution often involves a complex set of chemical reactions, including combinations of pollutants and other factors such as weather and geography. Each pollutant plays a different role in the overall air quality in any given geographic area. Below is a brief overview of the key transportation-related pollutants.

**Ozone**
Ozone often irritates the eyes, impairs the lungs, and aggravates respiratory problems. Ozone can cause chest pain, coughing, nausea, pulmonary congestion, and possible long-term lung damage. NOx and VOCs are precursors to ozone formation.

**Volatile Organic Compounds**
VOCs come from vehicle exhaust, paint thinners, solvents, and other petroleum-based products. VOCs and nitrogen oxides react in the presence of sunlight to form ozone. A number of exhaust VOCs are toxic, with the potential to cause cancer.

**Nitrogen Oxides**
Under the high pressure and temperature conditions in an engine, nitrogen and oxygen atoms in the air react to form various nitrogen oxides, collectively known as NOx. NOx, like hydrocarbons, is a precursor to the formation of ozone and also contributes to the formation of acid rain. NOx impacts the respiratory system, causing a high incidence of acute respiratory diseases. Pre-school children are especially at risk. NOx also degrades visibility due to its brownish color and the conversion to nitrate particles.

**Carbon Monoxide**
Carbon monoxide is a product of incomplete combustion and occurs when carbon in the fuel is partially oxidized rather than fully oxidized to carbon dioxide (CO2). Carbon monoxide reduces the flow of oxygen in the bloodstream and is particularly dangerous to persons with heart disease. Exposure to carbon monoxide can impair visual perception, manual dexterity, learning ability, and performance of complex tasks.

**Particulate Matter**
Particulate matter is tiny particles that can cause irritation and damage to the respiratory system, which can result in difficulty breathing, induce bronchitis, and aggravate existing respiratory disease. Exposure to particles may more dramatically impact individuals with chronic pulmonary or cardiovascular disease, people with influenza or asthma, and children and elderly persons. Particles may aggravate breathing difficulties, damage lung tissue, alter the body’s defense against foreign materials, and can lead to premature mortality. There are two PM standards: PM10 and PM2.5. PM10 refers to particles with a diameter of 10 microns (μm) or less, and PM2.5 refers to particles with a diameter of 2.5 μm or less. As a comparison, an average grain of table salt is 100 μm in diameter.

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1National Ambient Air Quality Standards (NAAQS)
Appendix B: Options to Reduce Emissions from On-Road Motor Vehicles

The CAA identifies actions (transportation control measures or TCMs) that may be taken to reduce emissions from mobile sources\(^9\). In addition, there are other measures such as vehicle controls, fuel-based standards, and inspection and maintenance programs that may also help areas reduce mobile source emissions. While some of the measures are not the responsibility of State and local transportation officials, it is beneficial for officials to be familiar with on-road motor vehicle control programs implemented by other public agencies (e.g., motor vehicle departments, environmental agencies), automobile manufacturers, and fuel suppliers. Having an understanding of the costs and benefits of all available options to achieve emissions reductions is useful to officials in advance of being asked to make decisions on specific strategies for implementation.

Transportation Control Measures

Options to control and reduce emissions from motor vehicles comes under the category of TCMs. Implementation of these measures is typically within the purview of transportation agencies, and TCMs are usually funded with FHWA/FTA or State and local transportation funds. The emissions reduction potential of conventional TCMs, such as ridesharing and bicycling programs, is not likely to be as substantial as the technology-based transportation measures discussed above. Nevertheless, TCMs can be useful in reducing congestion and may be needed in some areas in order to demonstrate attainment of the NAAQS. TCMs such as expanded transit services can also provide and enhance travel options and increase travel choices.

The CAA requires that in ozone nonattainment areas classified as severe or extreme, the State must identify and adopt specific transportation control strategies and TCMs to offset any projected growth in emissions from growth in vehicle miles traveled (VMT). States and MPOs should consider the CAA list of TCMs (Section 108(f)(1)(A)) for strategies they might include in the SIP. These 16 TCMs (with the exception of programs to encourage the removal of pre-1980 vehicles) are eligible for Congestion Mitigation and Air Quality Improvement (CMAQ) Program funding. Below is the list of TCMs included in the CAA. There is overlap between some of the measures, and the descriptions listed illustrate types of projects that might be considered in nonattainment areas to reduce mobile source emissions or to increase overall vehicle occupancy.

**CAA Section 108(f)(1)(A) Transportation Control Measures Include**

(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 (HOVs);
(iii) employer-based transportation management plans, including incentives;
(iv) trip-reduction ordinances;
(v) traffic flow improvement programs that achieve emissions 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 emissions 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) reducing emissions from 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;

\(^{9}\)CAA Section 108(f)
programs for new construction and major reconstruction of paths, tracks, or areas solely for 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;

(xvii) programs to encourage removal of pre-1980 vehicles.

**Market-Based Transportation Control Measures**

In addition to conventional TCMs, work is underway in nonattainment areas to reduce mobile source emissions using market-based TCMs such as road pricing, congestion pricing, VMT fees, and parking pricing. These mechanisms can be relatively cost-effective and can be designed to impact vehicles at either certain times of the day (e.g., peak-period pricing), or at all times. In addition, these measures in combination with traditional TCMs can address other public policy objectives such as congestion reduction and energy conservation.

In many areas, public acceptance of market-based TCMs has been slow due to practical and political considerations. For example, implementation of market-based measures may require State legislation (e.g., congestion pricing) or a voter referendum. Therefore, regardless of the potential merits and cost-effectiveness of these measures, the implementation of market-based TCMs is likely to occur gradually.
Appendix C: Resource Agencies and Other Helpful Contacts

State Departments of Transportation
American Association of State Highway Transportation Officials (AASHTO)
http://www.transportation.org/

Metropolitan Planning Organizations (MPOs) or Councils of Government
Association of Metropolitan Planning Organizations (AMPO)
http://www.ampo.org/
National Association of Regional Councils (NARC)
http://www.narc.org/

Public Transportation Agencies
American Public Transportation Association
http://www.apta.com/

State or Local Air Agencies
National Association of Clean Air Agencies (NACAA)
http://www.4cleanair.org/

Federal Highway Administration (FHWA)
Office of Natural Environment
http://www.fhwa.dot.gov/environment/air_quality/conformity/
Field Offices
http://www.fhwa.dot.gov/about/field.cfm
Resource Center

Federal Transit Administration (FTA)
Regional Offices
https://www.transit.dot.gov/about/regional-offices/regional-offices

Environmental Protection Agency (EPA)
EPA Office of Transportation and Air Quality (OTAQ)
https://www.epa.gov/aboutepa/about-office-air-and-radiation-oar#otaq
Regional Offices
https://www.epa.gov/aboutepa#pane-4
**Glossary**

**Area Source** Small stationary and non-transportation pollution sources that are too small and/or numerous to be included as point sources but may collectively contribute significantly to air pollution (e.g., dry cleaners).

**Attainment Area** An area considered to have air quality that meets or exceeds the U.S. EPA national ambient air quality standards, which EPA establishes according to the requirements of the Clean Air Act. An area may be an attainment area for one pollutant and a nonattainment area for others. Nonattainment areas are areas designated by EPA as not meeting a standard for a pollutant.

**Carbon Monoxide** (CO) A colorless, odorless, tasteless gas formed in large part by incomplete combustion of fuel. Human activities (e.g., transportation or industrial processes) are largely the source for CO contamination in ambient air.

**Congestion Management and Air Quality Improvement (CMAQ) Program** A categorical funding program under the Federal-aid Highway Program. CMAQ directs funding to projects that contribute to meeting or maintaining national ambient air quality standards in nonattainment and maintenance areas. CMAQ funds generally may not be used for projects that result in the construction of new capacity available to SOVs (single-occupant vehicles).

**Emissions Inventory** A complete list of sources and amounts of pollutant emissions within a specific area and time interval.

**Environmental Protection Agency (EPA)** The Federal regulatory agency responsible for administering and enforcing Federal environmental laws including the Clean Air Act, the Clean Water Act, the Endangered Species Act, and others.

**Federal Highway Administration (FHWA)** An agency of the U.S. Department of Transportation that provides financial and technical support for constructing, improving, and preserving America’s highway system.

**Federal Transit Administration (FTA)** An agency of the U.S. Department of Transportation that provides stewardship of combined formula and discretionary programs to support a variety of locally planned, constructed, and operated public transportation systems throughout the United States.

**High Occupancy Vehicles (HOVs)** Generally applied to vehicles carrying two or more people; freeways, expressways, and other large volume roads may have lanes designated for use by carpool, vanpool, and buses. The term HOV is also sometimes used to refer to high-occupancy vehicle lanes themselves.

**Highway** Term applies to roads, streets, and parkways, and also includes rights-of-way, bridges, railroad crossings, tunnels, drainage structures, signs, guardrails, and protective structures in connection with highways.

**Hydrocarbons (HC)** Colorless gaseous compounds originating from evaporation and the incomplete combustion of fossil fuels.

**Inspection and Maintenance Program (I/M)** An emissions testing and inspection program implemented to ensure that the catalytic or other emissions control devices on in-use vehicles are properly maintained over time.

**Land Use** Refers to the manner in which portions of land or the structures on them are used (i.e., commercial, residential, retail, industrial, etc.).

**Lapse** Means that the conformity determination for a metropolitan transportation plan or TIP has expired, and thus there is no currently conforming metropolitan transportation plan and TIP.

**Maintenance Area** Any geographic region of the United States previously designated nonattainment pursuant to the CAA Amendments of 1990 and subsequently re-designated to attainment subject to the requirement to develop a maintenance plan under Section 175A of the CAA, as amended.
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**Metropolitan Planning Organization (MPO)** The policy board of an organization created and designated to carry out the metropolitan transportation planning process.

**Metropolitan Transportation Plan** The official multimodal metropolitan transportation plan addressing no less than a 20-year planning horizon that is developed, adopted, and updated by the MPO through the metropolitan transportation planning process.

**Metropolitan Transportation Plan/TIP Amendment** A revision to a metropolitan transportation plan or TIP that involves a major change to a project included in a metropolitan transportation plan or TIP including the addition or deletion of a project or a major change in project cost, project/project phase initiation dates, or a major change in design concept or design scope (e.g., changing project termini or the number of through traffic lanes). Changes to projects that are included only for illustrative purposes do not require an amendment. An amendment is a revision that requires public review and comment, re-demonstration of fiscal constraint, or a conformity determination (for those involving “non-exempt” projects in nonattainment and maintenance areas).

**Metropolitan Transportation Plan/TIP Update** Making current a metropolitan transportation plan or TIP through a comprehensive review. Updates require public review and comment, a 20-year horizon year for the metropolitan transportation plan, a four-year program period for TIPs, demonstration of fiscal constraint, and a conformity determination (in nonattainment and maintenance areas).

**Mobile Sources** Include motor vehicles, aircraft, seagoing vessels, and other transportation modes. The mobile source related pollutants are carbon monoxide, hydrocarbons or volatile organic compounds, nitrogen oxides, and particulate matter.

**Mode** A form of transportation such as an automobile, bus, or bicycle.

**Motor Vehicle Emissions Budget (MVEB)** That portion of the total allowable emissions defined in the submitted or approved control strategy implementation plan revision or maintenance plan for a certain date for the purpose of meeting reasonable further progress milestones or demonstrating attainment or maintenance of the NAAQS, for any criteria pollutant or its precursors, allocated to highway and transit vehicle use and emissions.

**National Ambient Air Quality Standards (NAAQS)** Those standards established pursuant to Section 109 of the CAA. Conformity applies in areas that are nonattainment or maintenance for one or more of the NAAQS of the transportation-related pollutants: ozone, carbon monoxide, nitrogen dioxide, and particulate matter.

**National Environmental Policy Act (NEPA)** The National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.). It is the major legislation that requires Federal actions to address potential environmental impacts.

**Nitrogen Oxides (NOX)** A group of highly reactive gases that contain nitrogen and oxygen in varying amounts. Many of the nitrogen oxides are colorless and odorless. NOX is formed when the oxygen and nitrogen in the air react with each other during combustion. The primary sources of nitrogen oxides are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuels.

**Nonattainment Area** Geographic region of the United States that the EPA has designated as not meeting the NAAQS.

**Oxygenated Gasoline** Gasoline enriched with oxygen-bearing liquids to reduce CO production by permitting more complete combustion.

**Ozone (O3)** A pollutant that is not directly emitted from transportation sources. It is a secondary pollutant formed when HC and NOX combine in the presence of sunlight. Ozone is associated with smog or haze conditions. Although the ozone in the upper atmosphere protects us from harmful ultraviolet rays, ground-level ozone produces an unhealthy environment in which to live. Ozone is created by human and natural sources.
**Particulate Matter (PM, PM$_{2.5}$, PM$_{10}$)** Any material that exists as solid or liquid in the atmosphere. Particulate matter may be in the form of fly ash, soot, dust, fog, fumes, etc. Particulate matter can be of such a small size that it cannot be filtered by the nose and lungs. PM$_{10}$ is particulate matter that is less than 10 microns in size. PM$_{2.5}$ is particulate matter that is less than 2.5 microns in size. A micron is one millionth of a meter.

**Parts Per Million (PPM)** A measure of air pollutant concentrations.

**Public Participation** The active and meaningful involvement of the public in the development of metropolitan transportation plans and programs.

**Public Transportation** Generally refers to passenger service provided to the general public along established routes with fixed or variable schedules at published fares. Related terms include: public transit, mass transit, urban transit, and paratransit.

**Reformulated Gasoline (RFG)** Gasoline specifically developed to reduce undesirable combustion products.

**State Implementation Plan (SIP)** The State air quality plan for meeting the National Ambient Air Quality Standards (“NAAQS” or “air quality standards”). It is a compilation of legally enforceable rules and regulations prepared by a State or local air quality agency and submitted by the State’s governor to EPA for approval. A SIP is designed to achieve better air quality by attaining, making progress toward attaining, or maintaining the NAAQS.

**Stationary Source** Relatively large, fixed sources of emissions (e.g., chemical process industries, petroleum refining and petrochemical operations, or wood processing).

**Telecommuting** The substitution, either partially or completely, of transportation to a conventional office through the use of computer and telecommunications technologies (e.g., telephones, personal computers, modems, facsimile machines, electronic mail).

**Transportation Conformity** Process to assess the compliance of any metropolitan transportation plan, program, or project with air quality implementation plans. The conformity process is defined by the Clean Air Act and regulated by the conformity rule.

**Transportation Control Measures (TCMs)** Any measure that is specifically identified and committed to in the applicable implementation plan, including a substitute or additional TCM that is incorporated into the applicable SIP through the process established in the CAA Section 176(c)(8), that is either one of the types listed in Section 108 of the CAA, 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 that control the emissions from vehicles under fixed traffic conditions are not TCMs for the purposes of transportation conformity.

**Transportation Improvement Program (TIP)** A prioritized listing/program of transportation projects covering a period of four years that is developed and formally adopted by an MPO as part of the metropolitan transportation planning process, consistent with the metropolitan transportation plan, and required for projects to be eligible for funding under Title 23 USC and Title 49 USC Chapter 53.

**Vehicle Miles Traveled (VMT)** The sum of distances traveled by all motor vehicles in a specified region.

**Volatile Organic Compounds (VOCs)** VOCs come from vehicle exhaust, paint thinners, solvents, and other petroleum-based products. A number of exhaust VOCs are toxic, with the potential to cause cancer.