

Transportation Conformity 101

Session I: Course Overview

Welcome!

This course is designed to provide transportation and air quality planners and other stakeholders with an introduction to Transportation Conformity.

- An overview of the transportation and air quality planning processes, and their relationship
- A review of the major requirements of transportation conformity
- Highlights of certain aspects of the conformity process, such as interagency coordination

Course Learning Outcomes



Upon completion of this course, you should be able to:

- 1. Define Transportation Conformity and describe how it relates to transportation planning and air quality planning.**
- 2. Identify the frequency requirements and triggers for transportation conformity determinations.**
- 3. Identify and explain the different components of transportation conformity:**
 - ✓ Regional emissions analysis,
 - ✓ Interagency consultation,
 - ✓ Use of latest planning assumptions and emissions model, and
 - ✓ Timely implementation of transportation control measures.

Course Learning Outcomes (continued)



- 4. Describe the roles of various agencies in planning and conformity.**
- 5. Gain an appreciation for the different analytical modeling techniques and data requirements that are needed to support a conformity determination.**
- 6. Explain the consequences of an area's inability to achieve conformity.**

Course Overview

Part A: Introduction/Background

- Section 1: Course Overview
- Section 2: Overview of Transportation Planning
- Section 3: Overview of Air Quality & Air Quality Planning

Part B: Transportation Conformity

- Section 4: What is Transportation Conformity?
- Section 5: Applicability/Frequency of Conformity Requirements
- Section 6: Major Conformity Requirements: Regional Emissions Analysis and Assumptions/Data
- Section 7: Other Major Conformity Requirements: TCMs and Project-level Requirements

Course Overview (continued)

Part C: Features

- Section 8: Emissions Estimation and Modeling Basics
- Section 9: Consequences of Conformity Lapses and SIP Failures
- Section 10: Conformity Resources

Introductions

- Instructor(s)
- Participant introductions

What is your name?

For what agency/organization do you work?

What do you hope to get out of the course?

What are your main questions or concerns, if any?



Course Logistics

- Class Times
- Breaks and lunch
- Location of restrooms

Questions or Comments?



Transportation Conformity 101

Session 2: Overview of Transportation Planning

Objectives

- List and describe the major transportation planning products
- Describe the public involvement requirements for transportation planning
- Identify the roles and responsibilities of various agencies in the transportation planning process

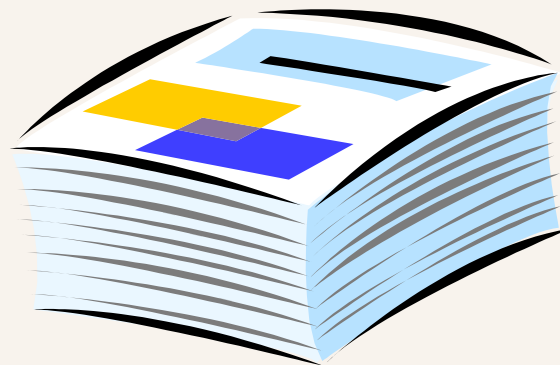
Major Transportation Planning Products

Transportation Plans

1. **Statewide**
2. **Metropolitan**

Transportation Improvement Programs

3. **Statewide (STIP)**
4. **Metropolitan (TIP)**



Transportation Plans - Overview

- A plan is multi-modal strategy for long term transportation investments (20 years)
- Plans are developed by states and MPOs
- Discusses projected future transportation demand
- Statewide plan usually policy oriented
- Metropolitan plan more project oriented



Statewide Transportation Plan

The State shall develop a long-range statewide transportation plan, with a minimum 20-year forecast period at the time of adoption, that provides for the development and implementation of the multimodal transportation system for the State.

23 CFR §450.214(a)



Statewide Transportation Plan Requirements

- Minimum 20-year horizon, updated periodically
- The plan should include:
 - Connections between modes (multi-modal)
 - Capital, operations, and management strategies
 - Studies that were relevant to the development of the plan
 - A safety element
 - A security element
 - Potential environmental mitigation activities and potential areas to carry out these activities
- A financial plan may be included, but is not required
- No conformity requirements

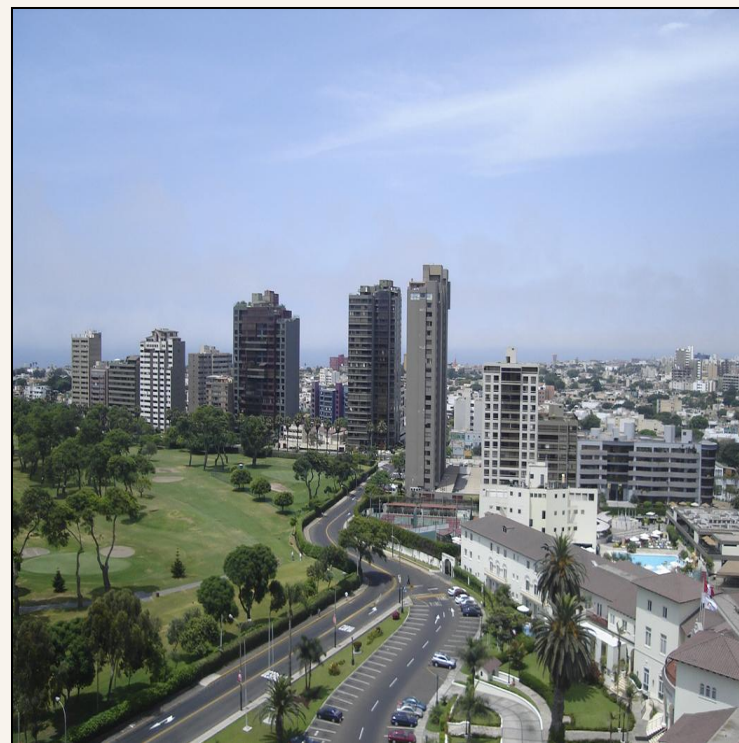
Metropolitan Transportation Plan

“means the official multimodal 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.”

23 CFR § 450.104

Metropolitan Transportation Plan Requirements

- Minimum 20-year planning horizon
- Update at least every four years in nonattainment and maintenance areas
- Update at least every five years in attainment areas
- Conformity applies in nonattainment and maintenance areas



Metropolitan Plan Content (All Areas)

- Projected transportation demand
- Existing and proposed transportation facilities
- Operational and management strategies
- Results of the congestion management process in TMAs
- Preserve the existing and future infrastructure
- Proposed improvements in sufficient detail to develop cost estimates
- Discussion of potential environmental mitigation activities
- Pedestrian walkway and bicycle transportation facilities
- Transportation and transit enhancement activities
- A safety element
- A financial plan

Additional Metropolitan Plan Inclusions (Nonattainment and Maintenance Areas)

- The identification of SOV projects that result from a congestion management process in TMAs that are nonattainment for ozone or carbon monoxide
- Design concept and design scope descriptions of all existing and proposed transportation facilities in sufficient detail to determine conformity
- Specific financial strategies to ensure the implementation of TCMs in the applicable SIP

Statewide Transportation Improvement Program (STIP)

- STIP is four-year listing of projects statewide
- Must be updated at least every four years
- STIP is reviewed and approved by DOT (FHWA/FTA)
- STIP is not subject to conformity



Statewide Transportation Improvement Program (STIP)

“...means a statewide prioritized listing/program of transportation projects covering a period of four years that is consistent with the long-range statewide transportation plan, metropolitan transportation plans, and TIPs, and required for projects to be eligible for funding under title 23 U.S.C and title 49 U.S.C. Chapter 53.”

49 CFR Part 613 § 23 CFR 450.104

Transportation Improvement Program (TIP)

- TIPs serve as a four-year priority list of projects for MPOs
- TIP must:
 - Include a description of projects
 - Be consistent with the transportation plan
 - Be fiscally constrained
- TIPs must be updated at least once every 4 years
- TIP expires when STIP approval expires

Transportation Improvement Program (TIP)

“...means 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 planning process, consistent with the metropolitan transportation plan, and required for projects to be eligible for funding under title 23 U.S.C. and title 49 U.S.C. Chapter 53.”

23 CFR §450.104

TIP Requirements: Projects

Must include:

- All regionally significant projects requiring an action by FHWA/FTA
- Capital and non-capital surface transportation projects (or phases of projects) within the boundaries of MPO planning area
- For public information and conformity purposes, all regional significant projects regardless of funding source

TIP Requirements: Projects

Descriptions of projects and project phases must be complete including

- Estimated total project cost
- Amount of federal funds to be obligated during each program year for the project or project phase
- Identification of agency responsible for implementing the project or phase

Projects may be grouped by function, work type, or geographic area

TIP Requirements: Others

- Financial plan that demonstrates how the approved TIP can be implemented
- Opportunity for public comment



Specific TIP Requirements in Nonattainment and Maintenance Areas

Fiscal Constraint:

Projects included in the first 2 years of the TIP limited to those with “available” or “committed” funds



Specific TIP Requirements in Nonattainment and Maintenance Areas

Projects and Grouping of projects:

- Projects specified in sufficient design detail for air quality analysis
- Projects in the TIP are allowed to be grouped into classifications that are consistent with the “exempt projects” in the conformity rule

Specific TIP Requirements in Nonattainment and Maintenance Areas

Transportation Control Measures (TCMs):

- TCMs in an approved SIP must be identified in the TIP
- TIP provides priority funding for timely implementation of TCMs and describes the progress in implementation

49 CFR Part 613

23 CFR 450.324(e)(5), 324(i)
and 450.330(e)

Specific TIP Requirements in Nonattainment and Maintenance Areas

Public Participation/Hearing:

Nonattainment TMAs – at least one formal public meeting during TIP development

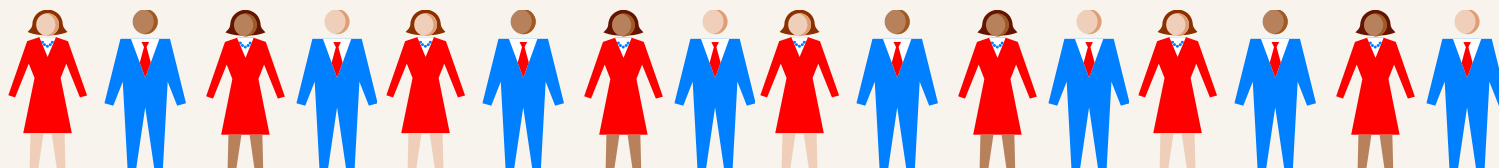


Relationship Between the TIP and the STIP

- All TIPs incorporated into the STIP
 - Federal conformity finding is required before nonattainment or maintenance area TIP can be included in the STIP
- TIP expires when STIP approval expires
- Projects in a “donut” area must be included in the regional emissions analysis that support the TIP conformity determination before added to the STIP

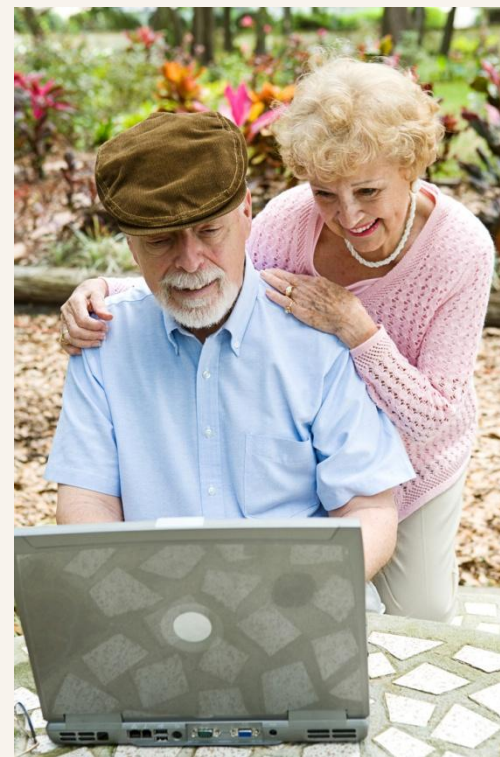
Transportation Planning Requirements: Public Involvement

- **Provide opportunity for public review and comment**
- **Involve the public in transportation planning – “early and often”**
- **Periodically review their public involvement efforts (states and MPOs)**
- **Develop a “Participation Plan” that provides opportunity for interested parties to comment on metropolitan plans and TIPs (MPOs)**



Public Involvement Requirements (Nonattainment and Maintenance Areas)

- Establish a proactive public involvement process
- Providing reasonable public access to technical and policy information at the beginning of the public comment period
- Public Involvement must occur prior to taking formal action on a conformity determination



Sample Roles and Responsibilities in Transportation Planning

MPOs	Prepare metropolitan plans and TIPs • Develop/maintain travel data/models & socioeconomic data
State DOTs	Develop statewide plans and STIPs • Assist in data management and modeling
State Air Agencies	Coordinate with MPOs on TCMs
US DOT (FTA/FHWA)	Obligate and release federal funds • Perform MPO planning certification reviews
Transit Operators	Sponsor projects in the plan and TIP • Designated recipient for federal transit funds • May be voting member of MPO
Local Gov't	Participate as MPO members • Sponsor projects in the plan and TIP
Regional Authorities	Sponsor projects in the plan and TIP • May be voting member of MPO

Summary – Transportation Plans

- Transportation plans have at least a 20-year horizon
- Metropolitan plans in nonattainment and maintenance areas must be updated at least every 4 years and require a new conformity determination.
- Non-exempt projects amendments to metropolitan plans in nonattainment and maintenance areas require a new conformity determination
- A conformity determination is not required for statewide plans.
- For more information, see the Conformity Reference Guide Chapter 1:

http://www.fhwa.dot.gov/environment/conformity/ref_guid/chap1.htm

Summary – Transportation Improvement Programs

- TIP is a four-year document and must be updated at least every four years
- In nonattainment and maintenance areas:
 - TIP conformity determination is required every four years, for TIP updates, and for TIP amendments of non-exempt projects
 - TCMs in an approved SIP must be identified in the TIP with priority funding
 - Project descriptions must be sufficient to analyze emissions impacts
 - Projects included in the first 2 years are limited to those with “available” or “committed” funds
- No conformity required for STIPs
- For more information, see the Conformity Reference Guide Chapter 1:

http://www.fhwa.dot.gov/environment/conformity/ref_guid/chap1.htm

Questions



Transportation Conformity 101

Session 3: Overview of Air Quality and Air Quality Planning

Overview

Section A: Air Quality

Section B: Air Quality Planning – State Implementation Plans

Air Quality – Session Objectives

- List the categories of emissions sources
- Describe the NAAQS and designations
- List precursor pollutants

Categorizing Emissions Sources

- Point (e.g., electric utilities, refineries, etc.)
- Area (e.g., dry cleaners, paints, solvents, etc.)
- Mobile (e.g., cars, trucks, buses, etc.)
 - On-Road (Cars, trucks, buses)
 - Non-Road (Airplanes, trains, construction equipment)
- Biogenic (e.g., trees, vegetation, soils)



Air Quality – Regulatory Framework

The Clean Air Act (CAA)

- sets the framework and goals for improving air quality to protect public health
- sets forth provisions for the attainment and maintenance of NAAQSs (Title 1)
- ensures that the SIP achieves its goals to protect human health, coordinates transportation and air quality planning processes, and improves data and planning assumptions.



Air Quality – Regulatory Framework

- National Ambient Air Quality Standards (NAAQS) (*40 CFR 50*)
 - NAAQS are set for “criteria” pollutants - those that adversely affect human health and safety
 - NAAQS are set at levels to ensure adequate protection of the public



What are the NAAQS?



[Air & Radiation Home](#)

[Six Common Air Pollutants Home](#)

[Ozone](#)

[Particulate Matter](#)

[Carbon Monoxide](#)

[Nitrogen Oxides](#)

[Sulfur Dioxide](#)

[Lead](#)

[Designations](#)

U.S. Environmental Protection Agency

Six Common Air Pollutants

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[EPA Home](#) > [Air & Radiation](#) > [Basic Information](#) > Six Common Air Pollutants

What Are the Six Common Air Pollutants?

EPA has set national air quality standards for six common pollutants (also referred to as "criteria" pollutants). Click on one of the pollutants below for information on sources of the pollutant, why the pollutant is of concern, health and environmental effects, efforts underway to help reduce the pollutant, and other helpful resources.



Ozone



Particulate Matter



Carbon Monoxide



Nitrogen Dioxide



Sulfur Dioxide



Lead

Background

The Clean Air Act established two types of [National Ambient Air Quality Standards](#).

What are the NAAQS? (continued)

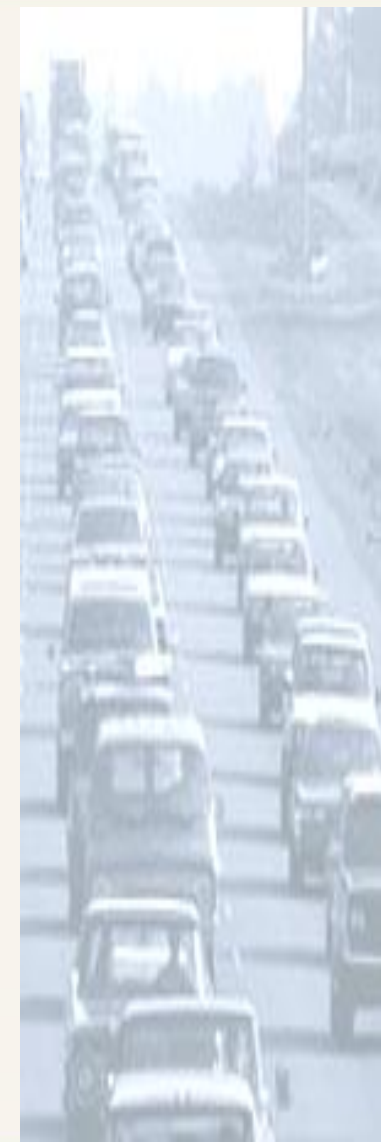
- For a summary description of each of the criteria pollutants, visit <http://www.epa.gov/oar/oaqps/greenbk/o3co.html>.
- For a list of the standards and explanation of how each is achieved, visit <http://www.epa.gov/air/criteria.html>.

Transportation-Related Pollutants

Pollutant	Concentration	Type of Average
Carbon Monoxide	10 mg/m ³ (9 ppm) 40 mg/m ³ (35 ppm)	8-hour (with one exceedance per year) 1-hour (with one exceedance per year)
Ozone	.070-.060 ppm (proposed 2010 std) .075 ppm ('08) std 0.08 ppm ('97) std	8-hour Average
Particulate Matter PM-2.5	15 µg/m ³ 35 µg/m ³	Annual Average 24-hour
Particulate Matter PM-10	150 µg/m ³	24-hour

Nitrogen Dioxide is also a transportation-related pollutant.

- Los Angeles is a maintenance area
- The Proposed revision to the NAAQs could require near roadway monitor. The final rule will be final January 22, 2010.



Designations

- Made individually for each NAAQS pollutant
- Plans must be created to bring the area back into attainment
- When an area achieves attainment of the NAAQS:
 - Areas can request redesignation as a “Maintenance Area”
 - Maintenance areas are required to have a plan to maintain the standard for 20 years

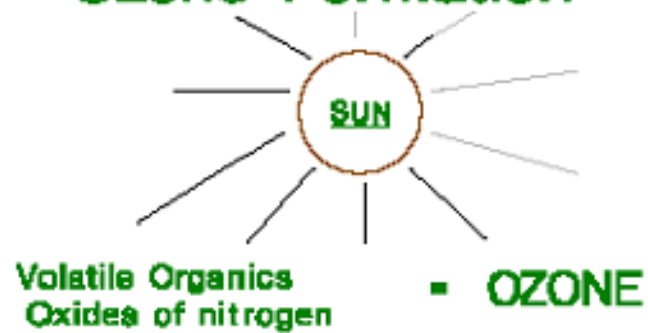
Precursor Pollutants

Criteria pollutants

P
R
E
C
U
R
S
O
R

	Ozone (O3)	PM10	PM2.5	NO2
NOx	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Ammonia (NH3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
VOC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sulfur oxides (SOx)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Ozone Formation





Air Quality Review



1. List the major categories of emissions sources; what is an example of each?
2. What is a NAAQS? What are the criteria pollutants? (list)
3. What is a designation? For what pollutants do we make designations? Who makes them?
4. What are the precursor pollutants for ozone? For PM_{2.5}?

Section B: Air Quality Planning – State Implementation Plans

Section B Objectives

- Describe a State Implementation Plan and its mobile source-related elements
 - Emissions inventories
 - Motor Vehicle Emissions Budgets (MVEBs)
- List types of SIPs
- Discuss SIP failures, sanctions, and time clocks
- Describe roles and responsibilities in developing SIPs

State Implementation Plan (SIP) - Description

- The SIP is an air quality plan that shows how an area will meet the NAAQS
- SIPs are...
 - Required by the CAA for nonattainment or maintenance areas of one or more NAAQS
 - Prepared by the state and approved by EPA
 - Prepared within 3 years after the effective date of a nonattainment designation
- SIPs provide for the implementation and enforcement of emission control measures from all source categories

Elements of a SIP - Inventory

Inventories are detailed accounting of all emissions and emissions sources

- Helps define the emissions problem
- Used as the basis for:
 - Establishing emissions reductions targets to enable the area to attain the NAAQS
 - Setting caps on emissions

Elements of a SIP - Inventory (Continued)

Inputs to on-road emission inventory include:

- Number and types of vehicles in the region
- Age of vehicles
- Rate of fleet turnover
- Seasonal temperatures
- Vehicle miles traveled (VMT)
- Transportation network



Example of NOx Emissions Inventory

2002 Controlled Emissions: Washington DC-MD-VA Non-attainment Area

**Summary of NOx Emissions (tons/day)
Washington DC-MD-VA Nonattainment Area**

	1990 Base Case Emissions	Projected Uncontrolled Emissions	Projected Emission Reductions	Projected Controlled Emissions
Point	334.8	346.1	175.0	171.1
Area	47.3	55.7	1.4	54.3
Non-Road	85.0	99.4	6.3	93.1
On-Road	261.7	261.8	65.0	196.8
Total	728.8	763.0	247.7	515.3

Source: Original Phase II Plan, April 10, 1998

Elements of a SIP - Emissions Budgets

- Emissions inventory used to establish an emissions “budget” for on-road sources for each pollutant
 - Not all nonattainment / maintenance areas are required to have budgets
 - Budget must be determined “adequate” or approved by EPA
- Motor vehicle emissions budgets serve as a regulatory limit for on-road mobile source emissions
- SIP control measures / strategies are identified to reduce emissions as necessary to attain or maintain standard

Elements of a SIP - Emissions Budgets (con't)

- Conformity is demonstrated using the motor vehicle emissions budgets
- Conformity is the link between the SIP and the transportation plan/TIP
 - Projected emissions from the transportation plan and TIP must be at or below the SIP budgets
 - Planning assumptions used to develop SIP budgets must be the latest available information (e.g., vehicle types, VMT, population, etc.)

Elements of a SIP - Emissions Budgets (con't)

- Planning assumptions used to develop SIP budgets must be based on the latest available information (e.g., vehicle types, VMT, population, etc.)
- The latest emissions model must be used when developing SIP budgets
- Different types of SIPs can have budgets:
 - Reasonable Further Progress or Attainment SIPs (aka control strategy SIPs)
 - Maintenance SIPs

Emissions Budget Years

Budgets are established for:

- Milestone years (e.g., rate of progress plans)
- Attainment year (e.g., attainment demonstration)
- The last year of the maintenance plan (each maintenance plan covers a 10-year period; the second is submitted 8 years after the first)

What is an Adequate Budget? *(40 CFR 93.118(e)(4))*

EPA must determine that an emissions budget is adequate (or approved) prior to use for conformity determinations

- An adequacy finding is separate from a completeness finding on a SIP
- A positive adequacy finding does not guarantee approval of a SIP

Adequacy Process *(40 CFR 93.118(f))*

- Approximately 90-days
- State submits SIP to EPA
- EPA announces receipt of SIP on website
 - 30-day public comment period started
- EPA makes an adequacy / inadequacy finding
- Finding is effective 15 days after Federal Register Notice publication (in most cases)

Types of SIPs

There are several types of SIPs:

- Control strategy SIPs, include
 - Attainment
 - Rate of progress
- Maintenance Plans
- Conformity SIPs

Different SIPs may contain MVEBs (except Conformity SIPs)

Requirements depend on pollutant and classification

Attainment SIPs

- Certain areas that are designated nonattainment for a given pollutant are required to demonstrate attainment using air quality modeling
- Demonstration includes specific reductions to attain NAAQS by attainment dates
- Attainment dates are generally determined by the pollutant and an area's classification

Rate of Progress SIPs

- Rate of Progress (ROP) SIPs are required in some ozone nonattainment areas
- Types of Rate of Progress (ROP) SIPs
 - 15% ROP SIP for first 6 years
 - 9% ROP SIP for every 3 years after this until attainment

Maintenance Plans

- Maintenance plans are developed once an area qualifies for redesignation as a maintenance area
 - Approved plan is required for redesignation
 - Plan assures that an area will maintain the standards for 20 years after an attainment designation
- Maintenance plans are developed for two 10-year periods
 - When 8-years have elapsed in the first 10-year period the second 10-year plan must be submitted
 - Contains, at a minimum, motor vehicle emissions budgets for the last year of the 10-year plan period

Conformity SIPs

- A Conformity SIP lays out how a state will meet the requirements of the Conformity Rule
- Conformity SIPs are different from control strategy SIPs or maintenance plans, as they only include state conformity procedures and not motor vehicle emissions budgets or air quality demonstrations
- At a minimum, the conformity SIP must include three requirements of the conformity rule:
 - Consultation procedures (40 CFR 93.105)
 - Written commitments to control measures (40 CFR 93.122(a)(4)(ii))
 - Written commitments to mitigation measures 40 CFR 93.125(c))

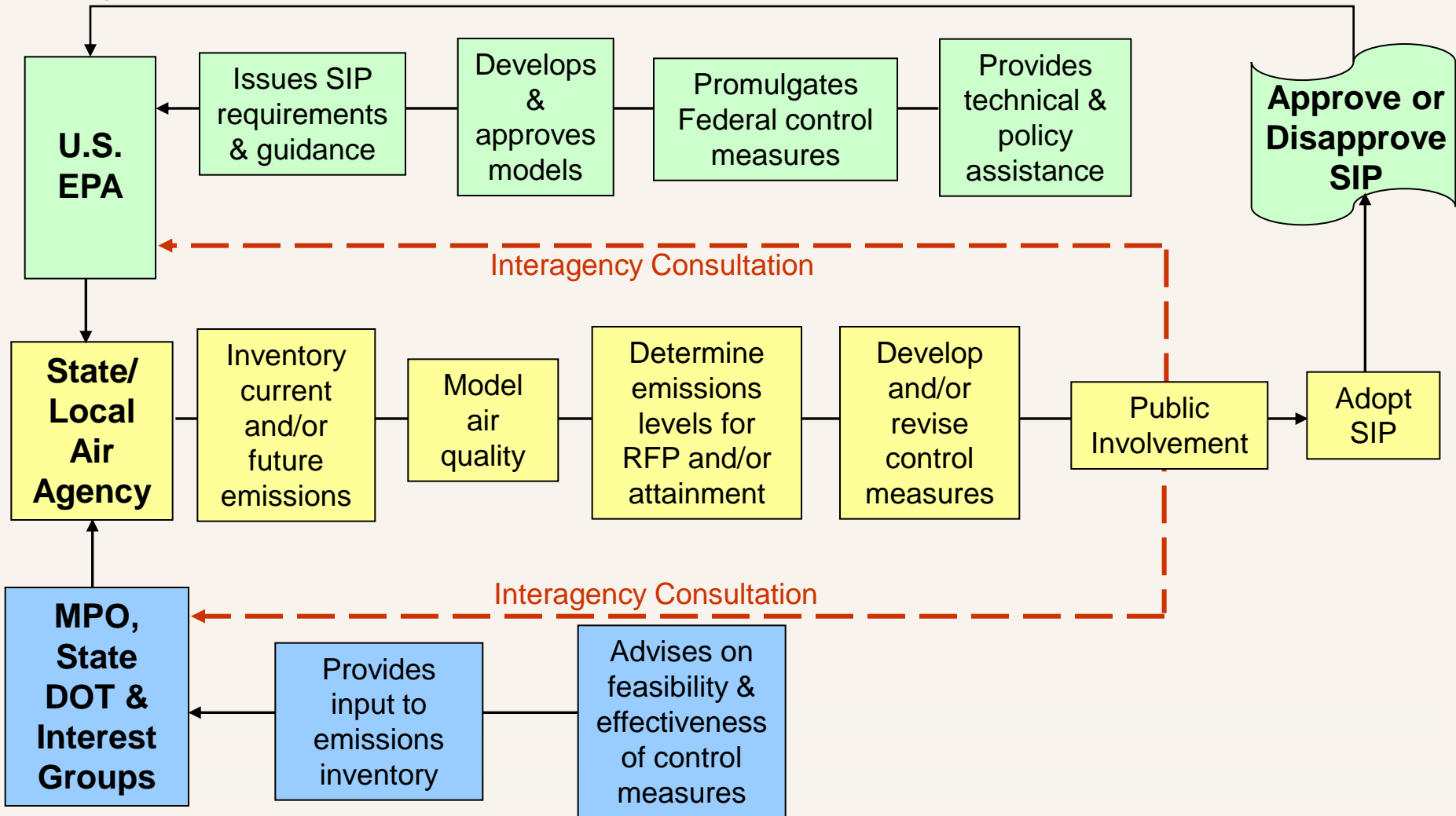
Conformity SIPs (con't)

- SAFETEA-LU streamlined Conformity SIP requirements to only cover certain portions of the rule.
 - Consultation procedures (40 CFR 93.105)
 - Written commitments to control measures (40 CFR 93.122(a)(4)(ii))
 - Written commitments to mitigation measures in project-level conformity determinations (40 CFR 93.125(c))
- Revisions
 - States are required to submit a conformity SIP revision due to any future rulemaking that substantially changes any of the above-listed provisions.
 - Revisions would be due one year from publication date of the federal rule.

Example of Roles and Responsibilities in SIP Development

MPOs	Provides technical, policy, strategic advice to state air agency; conducts/assists with travel demand/mobile modeling
State DOTs	Provide technical, policy, strategic advice to state air agency
State Air Agencies	Conducts modeling; determines attainment targets; assembles emissions inventory; develops control measures; conducts public hearings; adopts SIP
US DOT (FTA/FHWA)	Comments on major issues and measures through interagency consultation process
US EPA	Issues guidelines/requirements; assists in SIP preparation; adopts federal control strategies; makes adequacy determination on MVEBs; approves/disapproves SIP

Typical SIP Development Process



Summary

- A SIP is an air quality plan that shows how to attain or maintain the NAAQS.
- Conformity is the link between SIPs, transportation plans and TIPs.
- The motor vehicle emissions budget from the SIP is the “control” over motor vehicle emissions.
- Different types of SIPs have different purposes and requirements.
- Participation in SIP development, especially motor vehicle emissions budgets and TCMs, is essential.

Questions?



Transportation Conformity 101

Session 4: What is Transportation Conformity?

Objectives

- Define transportation conformity
- Describe the relationship between transportation conformity and transportation and air quality planning
- Identify roles/responsibilities in the transportation conformity process

What is Transportation Conformity?

Transportation conformity is a process where...

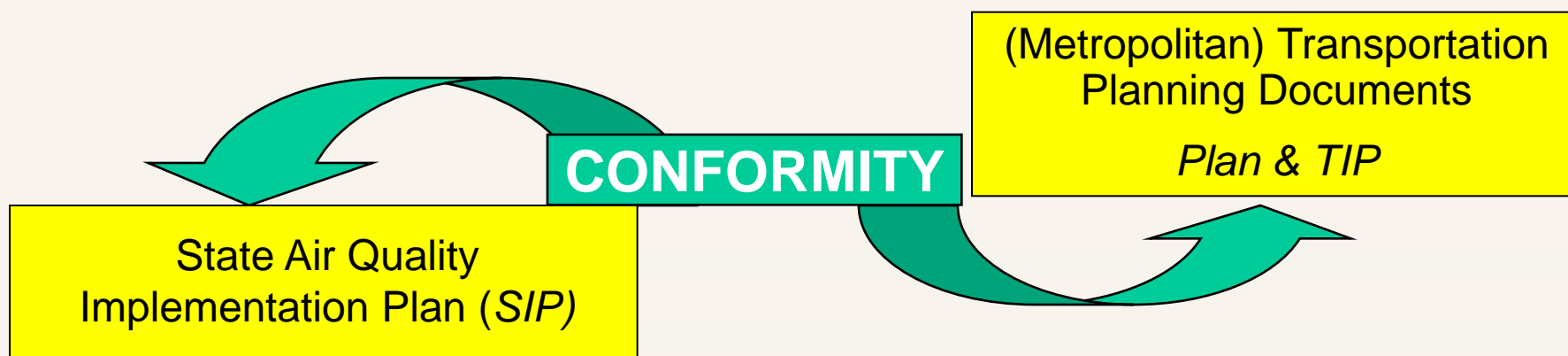
- Transportation plans, programs, and projects are demonstrated to be consistent with the transportation-related elements of a SIP
 - Ensures that Federal funding and approval are given to activities that are consistent with air quality goals

What is Transportation Conformity?

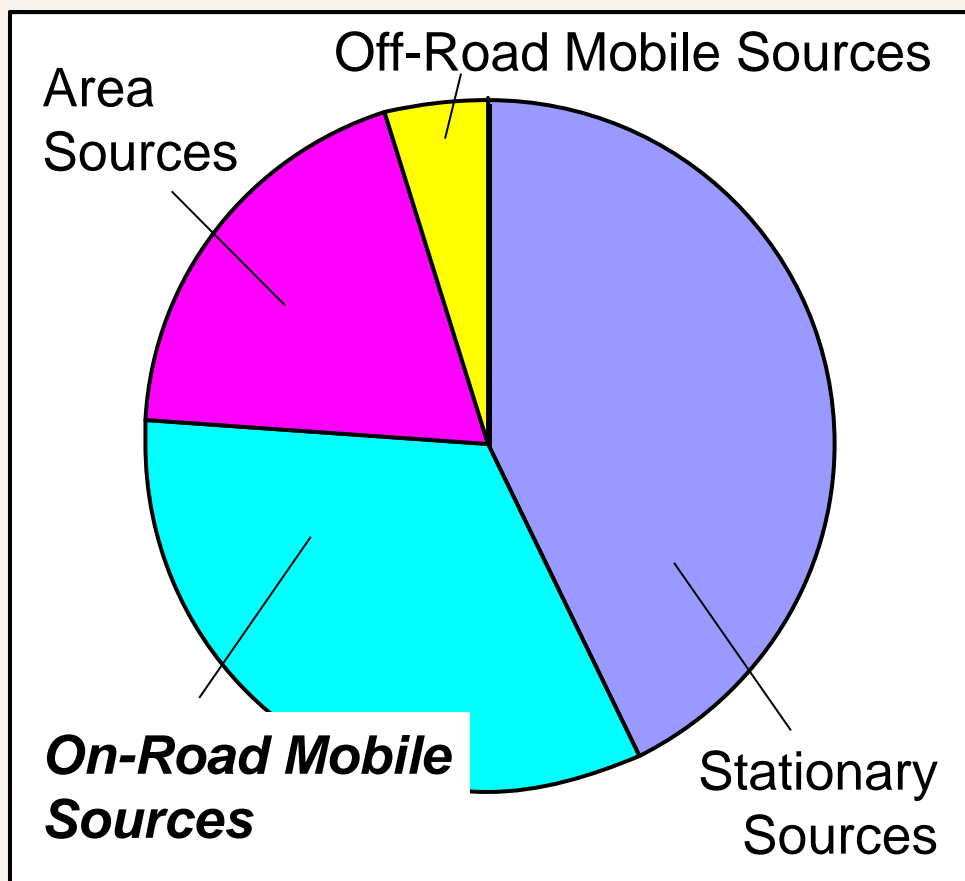
- **Requires evaluation of emissions from transportation plans, programs, and projects BEFORE any element may be implemented**
- **Applies in geographic areas where transportation-related pollutants:**
 - Violate national air quality standards
 - Have violated national air quality standards in the past
- **Method to meet Clean Air Act requirements:**
 - Transportation plans, programs and projects do not:
 1. Create new violations of the NAAQS
 2. Increase the frequency or severity of NAAQS violations
 3. Delay timely attainment of the NAAQS

Transportation Conformity: The Link Between Air Quality and Transportation Planning

- 1990 CAA amendments added specificity to the relationship between air quality planning and transportation planning
- *Reason:* Controlling mobile sources is critically important to meeting the NAAQS
- Transportation conformity is intended to help the SIP achieve its goal which is to attain the NAAQS



Transportation Conformity: Address One Piece of the Emissions Pie



- ◆ Transportation conformity addresses emissions from on-road mobile sources.
- ◆ On-road mobile sources are emissions created by cars, trucks, buses, etc...
- ◆ Transportation conformity covers just one piece of the emissions pie...

Purpose of Transportation Conformity

- Ensures that Federal funding and approval are given to activities that are consistent with air quality goals
- Ensures that transportation control measures in approved SIPs are given priority for federal funding
- Ensures that air agencies and transportation agencies communicate on a continuing basis
- Ensures that the public has the opportunity to review transportation conformity determinations prior to approval by MPO policy boards.

Who Is Responsible for Conformity?

- U.S. DOT (FHWA and FTA)
- Metropolitan Planning Organizations
- State DOT
 - Projects outside MPO boundaries
- State Air Agency
 - Consultation role or otherwise defined in conformity SIP
- EPA - consultation role

Transportation Conformity 101

Session 5: Applicability/Frequency of Conformity Requirements

Session Objectives

- Describe under what criteria conformity applies
- List the transportation planning documents that receive a conformity determination
- Describe when/how often transportation conformity must be completed

Applicability – Pollutants

Criteria: Conformity applies in all nonattainment / maintenance areas for:

- Ozone (O_3)
- Carbon monoxide (CO)
- Nitrogen dioxide (NO_2)
- Particulate matter less than 10 micrometers (PM10)
- Particulate matter less than 2.5 micrometers (PM2.5)

Applicability – Pollutants

Criteria: Conformity applies to emissions from both direct pollutants and precursor pollutants

- Ozone areas
 - Direct: none; Precursors: VOCs and NO_x
- CO areas
 - Direct: CO; Precursors: none
- NO₂ areas
 - Direct: none; Precursor: NO_x

Applicability – Pollutants (con't)

Criteria: Conformity applies to emissions from both direct and precursor pollutants

- PM-10 areas
 - VOC and/or NOx
 - » If transportation-related emissions of one or both of these significantly contribute to PM10
 - » If the SIP has budgets for such emissions
- PM2.5 precursors before SIPs developed
 - » NOx (unless found insignificant)
 - » VOCs (if found significant)
 - » sulfur dioxide (SO₂) (if found significant)
 - » ammonia (NH₃)(if found significant)
- PM2.5 precursors after SIP developed
 - If SIP has budget(s) for such emissions

Applicability – Pollutants (con't)

Criteria: Conformity applies to re-entrained road dust

- In all PM10 areas
- In PM2.5 areas -- *only* if found to be a significant contributor or if a budget in the PM2.5 SIP

Applicability

Criteria: Conformity applies for new nonattainment areas

- Applies one year after the effective date of designation
 - FHWA/FTA conformity determination for metropolitan plan and TIP must be completed
- Grace period before a conformity lapse takes effect does not apply to this one-year deadline
- Project level conformity required for FHWA/FTA projects adopted, accepted, approved or funded after the one-year deadline

Applicability

In areas where conformity applies, the following transportation planning elements must have a conformity determination:

- Metropolitan Transportation Plan
- Metropolitan Transportation Improvement Program (TIP)
- Federal Transportation Projects

What are Exempt Projects?

There are three groups of exempt projects in the conformity rule:

- Projects exempt from all conformity requirements (93.126) (e.g., safety, mass transit (with limitations), air quality projects)
- Projects exempt from regional emissions analysis (93.127) (e.g., Intersection channelization, Interchange reconfiguration)
- Traffic Signalization projects (93.128)

Conformity Frequency Requirements

Frequency requirements ensure that the conformity analysis:

- Appropriately reflects the current system
- Incorporates new information (e.g., planning assumptions and modeling)
- Utilizes new budgets consistent with attainment goals

Frequency: When is Conformity Required?

Conformity must be determined:

- At least every 4-years in nonattainment and maintenance areas
- Prior to approval / acceptance of a transportation plan, a TIP, and plan / TIP amendments
- Prior to approval of federal projects
 - Federal projects involving FHWA/FTA approval or funding
 - Projects must be included in a conforming plan and TIP
- 24-months after certain SIP actions
- 12-months after new nonattainment designation becomes effective

Frequency: 4-Year Clock

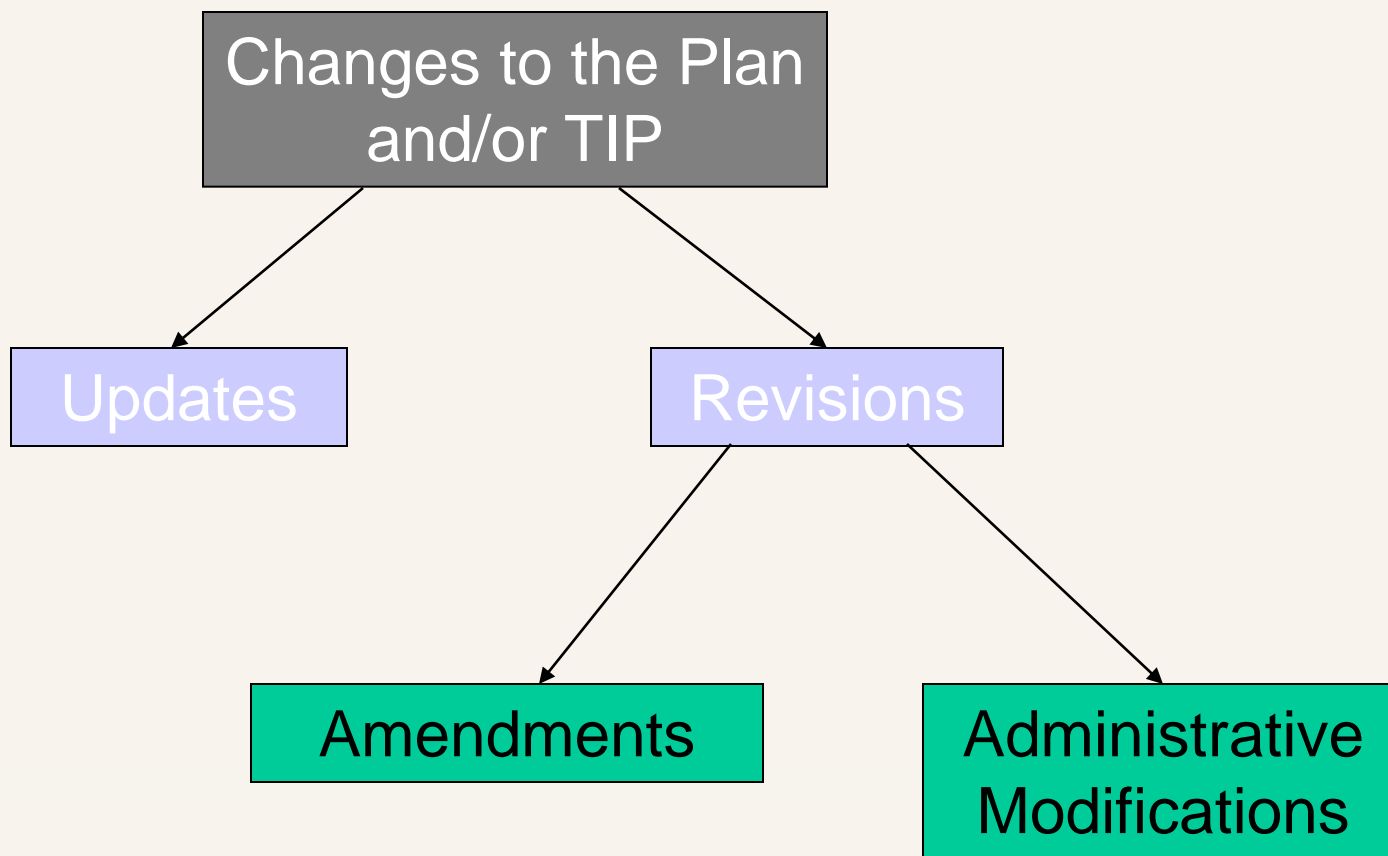
When does the 4-year clock start?

- When FHWA/FTA makes a conformity determination
- Not when an MPO submits a plan to FHWA/FTA

Existing conformity determination will expire if:

- More than 4 years pass after the last transportation conformity determination

Changes to the Metropolitan Plan and TIP



Changes to the Metropolitan Plan and Conformity

Updates

- New conformity determination

Revisions -- Administrative modifications

- No conformity determination

Revisions -- Amendments

- Impact on exempt projects ~ No conformity determination
- Impact on non-exempt project ~ New conformity determinations

Changes to the TIP and Conformity

Updates

- New conformity determination

Revisions – Administrative modifications

- No conformity determination

Revisions – Amendments

- Impact on exempt projects ~ No conformity determination
- Impact on non-exempt project ~ New conformity determinations

If TIP is an exact subset of plan, a separate regional emissions analysis not required on TIP but conformity determination for TIP required

Frequency: When is Conformity Required for Projects?

- A project level conformity determination is required for all non-exempt federal projects before approval
- Redetermination required for non-exempt federal projects that have not advanced in three years
- Redetermination required if a project's design concept and scope have changed significantly
- Redetermination required if a supplemental environmental document has been initiated for air quality purposes

Frequency: Changes to the SIP

Conformity must be redetermined within 24 months of EPA actions:

- EPA makes adequacy finding on the motor vehicle emissions budget in an initial SIP submission
- EPA approves SIP that creates or revises a budget unless budget already adequate & previously used
- EPA promulgates a Federal Implementation Plan which creates or revises a budget

Summary

- Conformity requirements apply in nonattainment and maintenance areas for ozone (NO_x and VOCs), PM_{2.5}, PM₁₀, CO, NO₂
- Transportation plans, TIPs, and projects are subject to conformity requirements
- Conformity of the plan and TIP must be determined at least every 4 years
- Project level conformity is required before non-exempt federal project approval and may need to be redetermined

Transportation Conformity 101

Session 6: Major Requirements –
Regional Emissions Analysis & Assumptions/Model

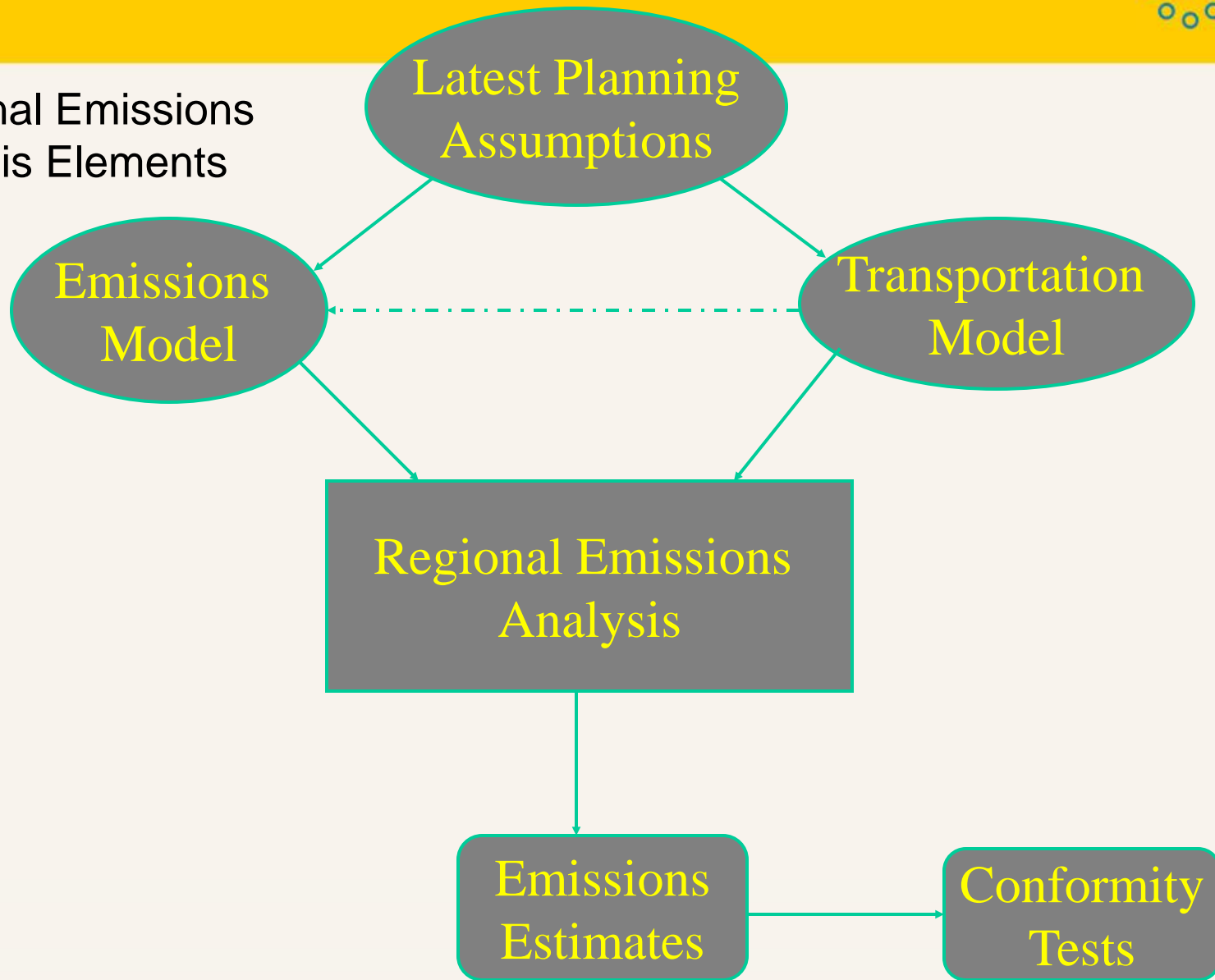
Objectives

- Describe the basic requirements of regional emissions analysis.
- Define the tests needed as part of the regional emissions analysis.
- Assess what projects must be included in the regional emissions analysis and how exceptions fit into the process.
- Explain the latest planning assumptions requirement

What is a regional emissions analysis?

- Estimates of emissions of planned transportation system
- Must include
 - all “regionally significant projects”
 - all Federal (FHWA/FTA) projects
- Only include emissions reduction credit from TCMs and other control measures if specific requirements are met

Regional Emissions Analysis Elements



Regional Emissions Analysis Requirements

- Based on latest planning assumptions
 - Required the use of latest emissions model
 - Required to meet specific modeling requirements for some areas
- Regional emissions estimates are basis for plan/TIP conformity determinations

Regional Emissions Analysis: General Requirements

- For pollutants/precursors that apply (93.102), emissions from the planned transportation system must be estimated (93.122):
 - must include all “regionally significant projects” (see definition in 93.101)
 - must estimate VMT from all FHWA/FTA projects (non-regionally significant FHWA/FTA projects must be estimated through reasonable professional practice, 93.122(a)(1))
 - must cover the transportation planning horizon (generally 20 years) unless the planning horizon is shortened

Regional Emissions Analysis Not Required for...

- Exempt projects (93.126)
- Projects exempt from regional emissions analysis (93.127)
- Areas with limited maintenance plan (93.109(j))
- Areas with insignificant motor vehicle emissions (93.109(k))

When is a **NEW** regional analysis not required?

Areas can rely on the previous analysis for a conformity determination if:

- no regionally significant projects are added or changed
- no significant changes are made to the design concept and scope of regionally significant projects
- no additional years are being added to the plan or TIP
- the previous 20-year analysis is no more than 4 years old

Regional Emissions Analysis Elements

Latest Planning Assumptions

- Estimates of current and future population, employment, travel, and congestion.
- Vehicle fleet data

Transportation Models

- Transportation models to develop VMT and speeds for the transportation network.

Emissions Model

- Emissions models (e.g., MOBILE6) are used to develop emissions rates based on the fleet characteristics and other programs (e.g., I/M)

Regional Emissions Estimates Basics

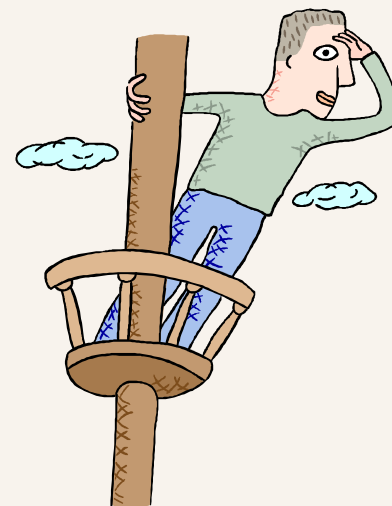
Total Emissions = Vehicle Miles Traveled (VMT) x Emissions Factors

Emissions factor is a function of:

- Basic emissions rates (BER)
 - Vehicle fleet characteristics (age, type, etc.)
 - Speed
 - Vehicle operating characteristics
 - VMT by facility type and by hour
 - Emissions standards and controls
 - Other programs (I/M; fuel, etc.)
 - Other adjustments (temperature, humidity, etc.)
- } *From transportation model*

Conformity Horizon

- Final year of plan OR
- At the election of the MPO and after consultation with air agency and public comment, the longest of:
 - The first 10-year period of the plan
 - The latest year the SIP has a budget
 - The year after completion of a regionally-significant project if in the TIP, or project requires approval before subsequent determination

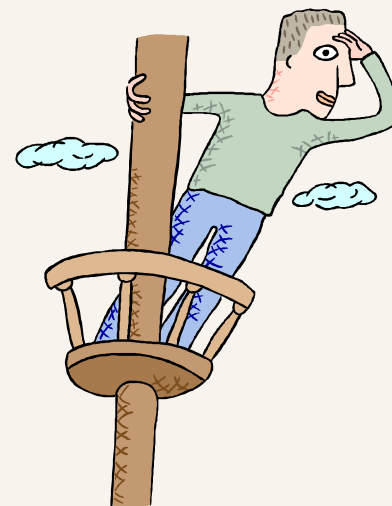


Conformity Horizon (con't)

Conformity determination must be accompanied by a regional emissions analysis for:

- The last year of the transportation plan
- Any year shown to exceed emission budgets by a prior analysis

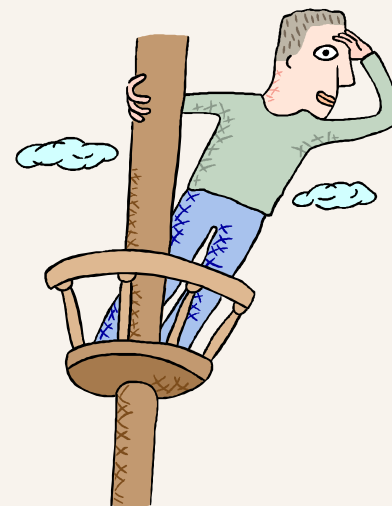
This analysis is for informational purposes only.



Conformity Horizon (con't)

Conformity determination is required to extend only through the last year of the maintenance period when:

- Budgets are found adequate or approved for the second 10-year maintenance plan
- At the election of the MPO after consultation with the air agency and consideration of public comment.



Conformity Tests - Overview

- **Conformity is determined by applying the applicable test in conducting the regional emissions analysis**
 - Budget test
 - Interim emissions test(s)
 - Both the budget and interim emissions test(s)

Conformity Tests – Selection

Based on SIP budget status:

- If SIP is approved or emissions budget is found adequate
 - Budget test
- If SIP has been submitted but not approved or found adequate
 - Budget test using an existing, adequate budget if one exists
 - Interim emissions test(s) for areas without adequate or approved budget
- If SIP has not been submitted
 - Interim emission test(s) if no existing, adequate or approved budget

Budget Test

- **Conformity is demonstrated using the motor vehicle emissions budgets from the SIP**
- **Projected emissions from the transportation plan and TIP must be at or below the SIP budgets**
- **Budgets for conformity can be found in different SIPs:**
 - Reasonable Further Progress or Attainment SIPs (*aka*, control strategy SIPs)
 - Maintenance Plans

Budget Test: Which Years?

- **A comparison of the estimated transportation emissions with the budget must be made for:**
 - ✓ The attainment year, if in the timeframe of the transportation plan
 - ✓ Any years where a budget is established in the SIP
 - ✓ The last year of the transportation plan
 - ✓ An intermediate year so that analysis years are no more than 10 years apart

Conformity Tests – Interim Emissions Tests

1. Build/No-build Test

2. Baseline Test

- For 8-hour ozone and PM_{2.5}, 2002 is the baseline year
- For all other pollutants, including 1-hour ozone, 1990 is the baseline year

Interim Emissions Tests – by Pollutant

- **Ozone (moderate and above), and CO (moderate* and serious):**
 - **Build < no-build test AND**
 - **Less-than baseline test**
- **PM10, NO2, PM2.5, other ozone and CO areas:**
 - **Build ≤ no-build, OR**
 - **No-greater-than-2002 test**
- **The above tests only apply until budgets are found adequate or approved by EPA**

Interim Emission Tests: Which Years?

Emissions from the planned transportation system must be estimated for:

- ✓ A year no more than 5 years in the future from the date of the conformity determination
- ✓ The last year of the transportation plan
- ✓ Intermediate years so that analysis years are no more than 10 years apart

Requirements for Latest Planning Assumptions and Emissions Model

Conformity determinations must be based on:

- The latest planning assumptions
- The latest EPA-approved emissions factor model

Latest Planning Assumptions

Latest planning assumptions are those in force at the *“time the conformity analysis begins”*

- When MPO models impact of the proposed plan or TIP on travel and congestion (such as VMT and speeds) and/or emissions
- Determined through interagency consultation
- Should be consistent for future conformity determinations
- Should be documented

Note: If the analysis is significantly delayed, new data that becomes available will be required to be used

- Determined through interagency consultation

Latest Planning Assumptions: Summary

The following assumptions must be addressed:

1. Current and future population, employment, land use, vehicle age and fleet mix
2. Transit operating policies (including fares and service levels) and ridership levels
3. Transit service, increases in transit fares, and road and bridge tolls
4. Effectiveness of TCMs and other measures already implemented

Latest Emissions Model

- EPA must approve an emissions model (and its updates) before it can be used in conformity
- Conformity determinations must use the latest approved version of the model
- Current Model:
 - All states except California use one model (historically the MOBILE model series)
 - California uses the latest version of EMFAC

Latest Emissions Model

The conformity rule provides for a 3 to 24-month grace period before a new model must be used

- EPA consults with DOT to establish the appropriate grace period
- Emissions analyses begun during the grace period can continue with the previous version
- Once new budgets using the new model are found adequate or approved, they must be used for conformity determinations

Latest Emissions Model

Note: Requirement to use a new model for conformity does not trigger a requirement to update the motor vehicle emissions budgets in the SIP

- States can *choose* to update the motor vehicle emissions budgets to be consistent

Summary

- Conformity determinations must be based on the latest planning assumptions
- Areas are encouraged to strive to update planning assumptions, such as population, employment, speeds, and vehicle mix, at regular five year intervals
- Conformity determination should address changes in transit operating policies and service, such as ridership.
- Conformity determination should address effectiveness of TCMs or other implemented measures
- Conformity determination must use the latest, EPA-approved emissions model

Transportation Conformity 101

Session 7: Other Major Requirements – TCMs and Project-level Requirements

Session Overview and Objectives

Transportation Control Measures

- Define TCM
- Identify types of TCMs

Project-level Conformity Requirements

- Describe project-level requirements

What is a TCM?

Conformity rule (40 CFR 93.101) defines TCMs as:

- Emissions control measures listed in Clean Air Act Section 108(f)(1)(a), (42 USC 7408(f)(1))
- Any other measure that reduces emissions or concentrations of air pollutants from transportation sources by reducing vehicle use or changing traffic flow or congestion conditions

Conformity rule excludes vehicle or fuel technologies (e.g., I & M, RFG) from the definition of TCMs

What is a TCM?

Clean Air Act Section 108(f)(1)(a)

- (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 (HOV);
- (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;

What is a TCM?

List continued from the previous slide....

- (viii) Programs for the provision of all forms of high-occupancy, shared-rides;
- (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;

What is a TCM?

List continued from the previous slide....

- (xiv) Programs and ordinances to facilitate non-automobile travel, provision and utilization of mass transit, and to generally reduce the need for single-occupant vehicle travel, as part of transportation planning and development efforts of a locality, including programs and ordinances applicable to new shopping centers, special events, and other centers of vehicle activity;
- (xv) Programs for new construction and major 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; and
- (xvi) Programs to encourage removal of pre-1980 vehicles.

Including TCMs in SIPs

- TCMs can be included as a SIP control measure or contingency measure
- Timely implementation of TCMs in approved SIPs must be shown as part of conformity determination

Section 108 Examples

San Francisco, CA

- HOV lanes and ramps
- Shared use park and ride lots

Washington, DC

- MARC rail expansion coaches
- 35 miles of bike lanes in DC
- External bike racks on WMATA buses

Nontraditional Examples

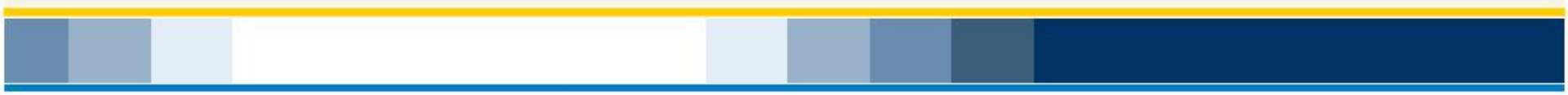
Atlanta, GA

- **Atlantic Station (In-fill, bridge, interchange)**

Houston, TX

- **Speed Control (Speed limit enforcement)**

Project-Level Transportation Conformity Requirements



Project Level Conformity – General

- The Clean Air Act prohibits the Federal government from providing financial assistance to any activity which does not conform to an implementation plan.
- Therefore, that transportation projects may only be approved, accepted, or funded by US DOT if the project meets certain requirements.

Project Level Requirements

A transportation project may be found in conformity if:

- ✓ The project comes from a conforming plan and TIP
- ✓ The design concept and scope have not changed significantly since the conformity finding regarding the plan and program from which the project derived
- ✓ The design concept and scope of such project at the time of the conformity determination for the program was adequate to determine emissions
- ✓ For FHWA/FTA projects, less than three years have elapsed since the most recent major step to advance the project
- ✓ Written commitments for emissions mitigation exist, if part of the project design concept and scope

Project Level Conformity and Hot-Spot Analyses

- Hot-spot analyses requirements apply as part of project level conformity for FHWA/FTA projects in CO, PM10 and PM2.5 nonattainment and maintenance areas.
- Demonstrates that a transportation project meets Clean Air Act conformity requirements:
 - Does not create a new air quality violation or
 - Worsen an existing violation

Localized Violations

In CO, PM-10, and PM2.5 nonattainment and maintenance areas, must demonstrate:

- No new local violations
- Severity/number of existing violations not increased

In CO nonattainment areas also must demonstrate:

- Existing violations will be eliminated or reduced in the area substantially affected by the project as a result of the project

Projects & NEPA

NEPA does not greatly affect the conformity process:

- Project details assumed in the modeling process do not preclude the consideration of other options as a result of the NEPA process
- If the NEPA process significantly changes a project, the project must meet certain conformity rule criteria prior to NEPA process completion

Transportation Conformity 101

Session 8: Emissions Estimation & Modeling Basics

Session Objective

- Describe emissions estimation process and requirements.

What is the Emissions Estimation Requirement?

- All nonattainment and maintenance areas must estimate all vehicle miles of travel (VMT) for the regional emissions analysis
 - VMT is estimated based upon the existing system and any new projects
 - Some elements must be modeled
 - Other elements are estimated without modeling
 - Non regionally significant projects and TCMs
 - Use reasonable professional practice
- ☒ No projects are exempt from VMT estimates

Relationship of VMT to Conformity

- VMT and speeds are the important variables for determining transportation conformity
- VMT estimating and forecasting procedures are important topics for interagency coordination.
- VMT estimates are used in each:
 - Emissions inventory
 - Emissions budget
 - Regional emissions analysis

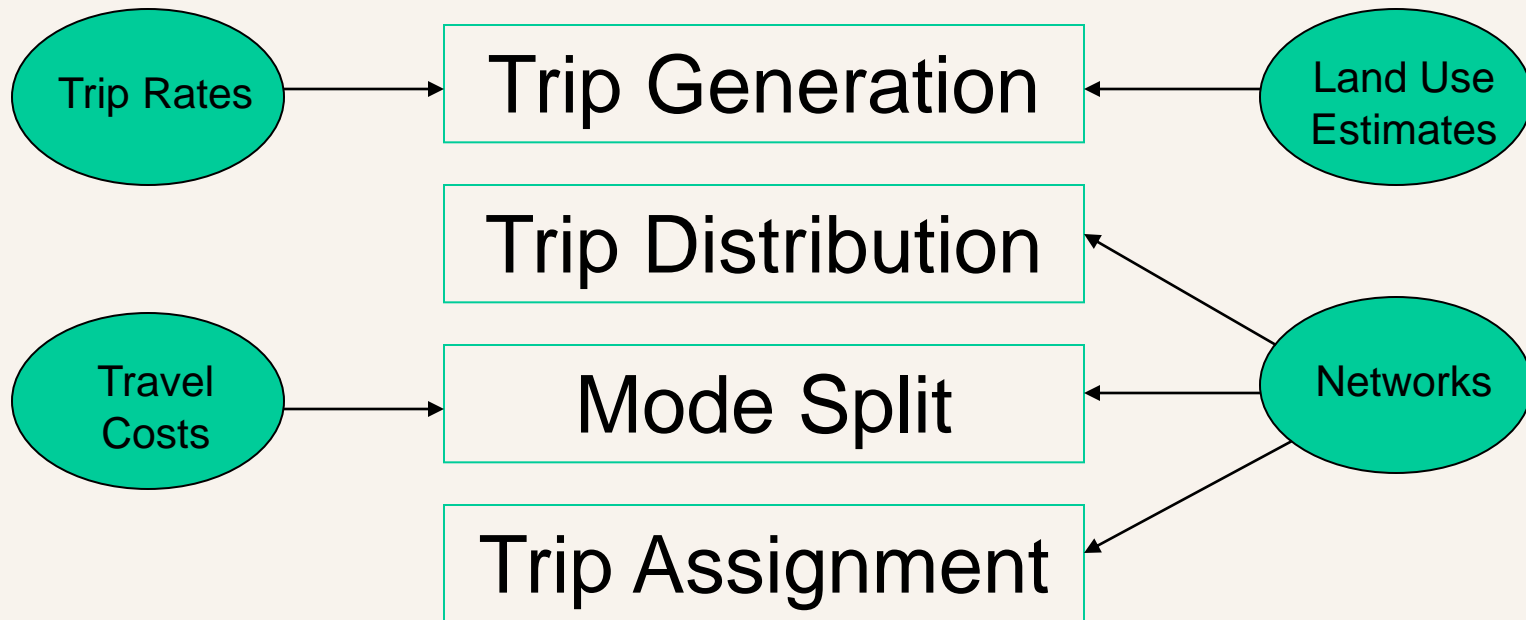
Methods of VMT Estimation

- Travel demand modeling
- Traffic count programs
- HPMS data (Highway Performance Monitoring System)
 - Interstate system
 - Arterials, collectors, and rural areas (more limited data)

Travel Demand Model: What is it?

- Series of mathematical equations, parameters, and data that are used to represent how choices are made when people travel
 - How, when, and where?
 - Travel characteristics
 - Transportation system characteristics
- Transportation Network: a mathematical representation of an area's transportation facilities

Travel Demand Model (con't)



Non-modeling VMT Estimation

- **Traffic Count Programs**
 - County government
 - ITS programs
 - Traffic control centers
 - State DOT
- **HPMS**
 - Nationally-collected
 - Statewide accuracy
 - All facilities except local

Emissions Estimation: Requirement

- Conformity determinations (and SIPs) must use the latest emissions model
 - **MOVES2010a** (Motor Vehicle Emissions Simulator):
 - Latest approved EPA model
 - **MOBILE6.2** (all states except CA)
 - Ozone, CO, PM2.5, and PM10 areas
 - **AP- 42** (December 2003 version)
 - PM2.5 and PM10 areas that include fugitive dust (construction-related or road) in conformity analyses
 - **EMissions FACtor Model (EMFAC 2007)**
 - California only

General modeling requirements for all areas

- Network-based modeling requirements for specific areas
 - Serious and above ozone areas and serious CO areas with greater than 200,000 population
 - Areas already using network models must continue to do so
- Others use best professional practice

General Modeling Requirements for All Areas

- Regional analysis must include all travel (93.122(a)(1))
- Regional analysis must be consistent with SIP for temperatures and similar factors (93.122(a)(6))
- PM-10 and PM2.5 construction emissions must be included in regional analysis if identified in the SIP as contributor (93.122(e)) and (93.122(f))

Network-Based Modeling Requirements

Serious and above ozone and CO areas with urbanized populations greater than 200,000

- 6 specific modeling criteria (92.122(b))
- 2 years grace period for certain areas
- Traffic speed and delays estimated post-processed using reasonable professional practice
- VMT must be calibrated to HPMS; local counts or other procedures allowed subject to interagency consultation

Areas not subject to network-based modeling requirements

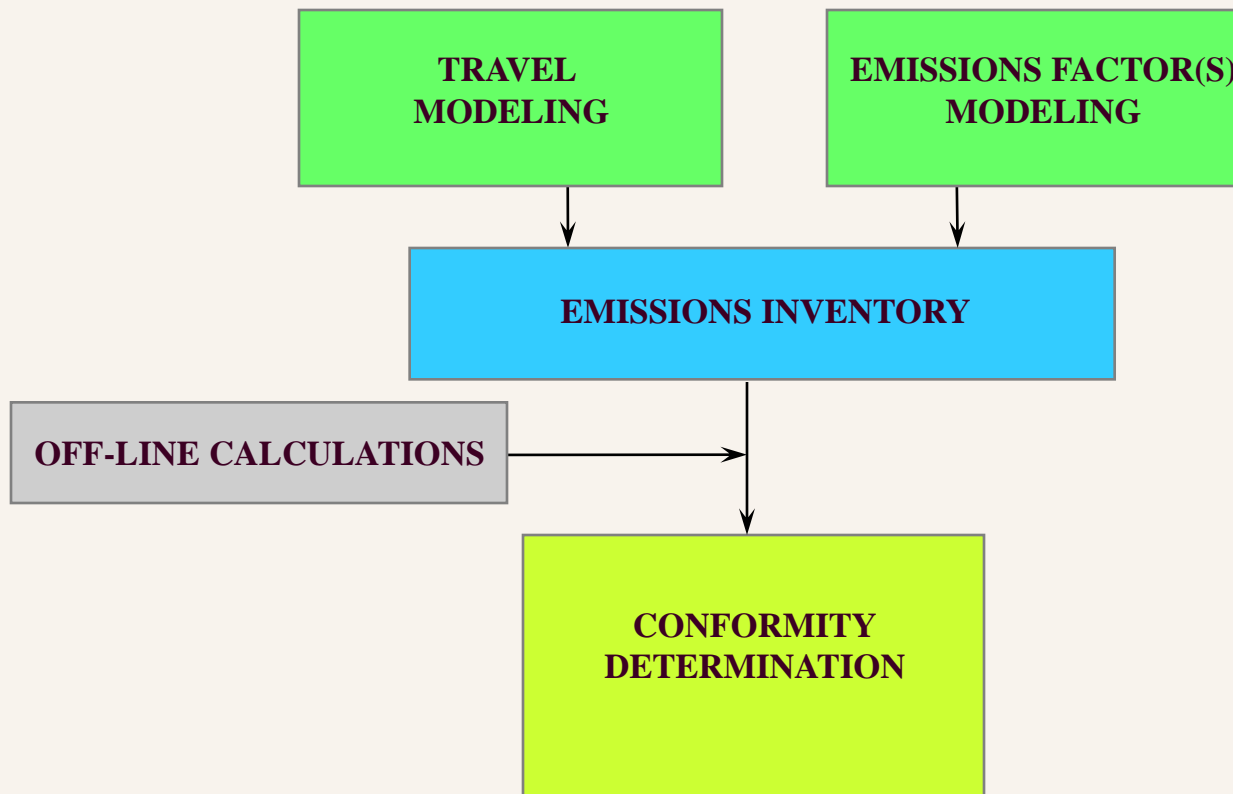
Best professional practices including:

- Extrapolating historical VMT
- Using any appropriate methods
- Projecting VMT by considering population growth and trends in per capita VMT
- Consider future economic activity, transit alternatives, and transportation system policies

FHWA research summarizes methods for regional emissions analysis in small urban and rural areas.

- <http://www.fhwa.dot.gov/environment/conformity/emission/index.htm>

Overview of the Emissions Modeling Process



Emissions Modeling

Emissions modeling is used for many purposes, including:

- State Implementation Plan emissions inventories
- Analysis of control strategy effectiveness
- Analysis of regional transportation plans for transportation conformity
- Analysis of project-specific air quality impacts for conformity or NEPA

Emissions Modeling

Vehicle emissions estimates are generally expressed in terms of either:

- Emissions rates or emissions factors
 - Units of grams per mile, grams per hour
- Emissions inventories (total emissions for a given geographic area and time period)
 - Units of pounds per day, tons per year, etc.

Emissions Modeling

Total emissions from vehicles are a function of

- 1) emissions rates from individual vehicle types, and
- 2) activity factors

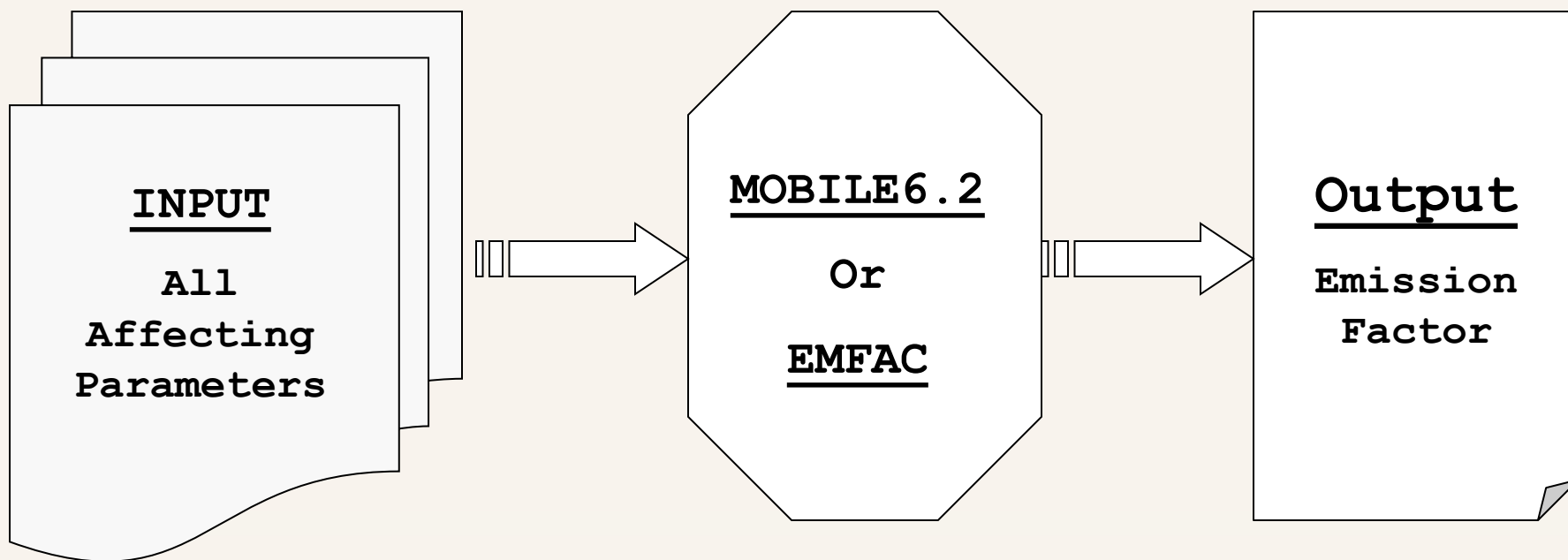
Simple example: $\text{grams/mile} * \text{miles/day} = \text{grams/day}$

What is an Emissions Factor Model?

MOBILE6.2

- Both MOBILE6.2 and EMFAC2002 are computer models that estimates motor vehicle emission factors for a vehicle fleet for different calendar years under a range of conditions.
- An emission factor is a quantitative amount of pollutant e.g., NO_x, CO et cetera.) emitted by vehicles for every mile vehicles travel or every hour vehicles idle.

How Does the Emission Factor Model Work?



Factors Affecting Vehicle Emissions Estimates

Inputs

- Geographic area
- Calendar year
- External Conditions (Roadway Type, temp, humidity, etc.)
- Emissions factor (gm/mi or gm/hr or gm/start)
- Vehicle activity (starts/miles/speed/soaks)
- Vehicle fleet characteristics (class/fuel/age/technology)
- Pollutant Choice
(VOC/CO/NO_x/PM/Pb/SO_x/CO₂/HC/SO₂)

MOVES

- MOVES = MOtor Vehicle Emissions Simulator
 - Replacement for MOBILE6.2
 - Released March 2, 2010
 - 2 year grace period
 - Must be used starting March 2, 2012, or earlier if a SIP has been revised/developed using MOVES and SIP MVEBs have been approved or found adequate by EPA

MOBILE6.2 vs MOVES

MOBILE6.2

- Fortran based (obsolete)
- No GUI
- Obsolete Drive cycles
- No Alt. Fuel Capability
- Regional Scale Only

MOVES

- Java™, MySql based
- GUI
- Sec. by Sec. accel data
- Fuel Capability
- Incorporates Nonroad Model
- Complete Inventory
- Multi-Scale Results

```
example9.in - Notepad
File Edit Format View Help
MOBILE6 INPUT FILE
PARTICULATES
AIR TOXICS
POLLUTANTS      : HC CO NOX
SPREADSHEET
RUN DATA

>Example Run - Tests All M6.2 Pollutant Types
EXPRESS HC AS VOC :
EXPAND EVAP      :
SCENARIO REC    : Example Input File
CALENDAR YEAR   : 2002
SULFUR CONTENT  : 30.0      84.0
MIN/MAX TEMP    : 68.0
FUEL RVP        : 7.0
PARTICLE SIZE   : 10.0
PARTICULATE EF : PMGZML.CSV PMGDRI.CSV PMGDR2.CSV PMDZML.CSV PMDDR1.CSV PMDDR2.CSV
DIESEL SULFUR   : 500.0

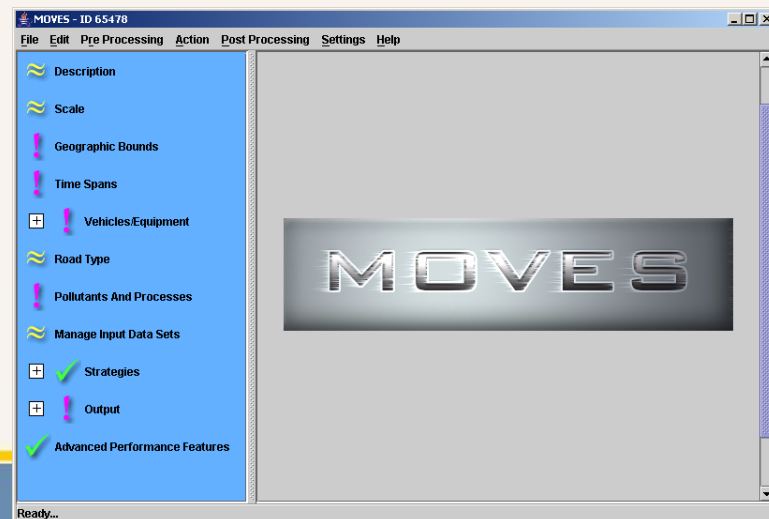
GAS AROMATICS% : 25.0
GAS OLEFINS%   : 15.0
GAS BENZENES%  : 1.5
E200           : 50.0
E300           : 85.0
OXYGENATE      : MTBE 15.1 0.50
                ETBE 17.6 0.05
                ETH 10.0 0.45
                TAME 6.0 0.00
ADDITIONAL HAPS : HAP_BASE.CSV
END OF RUN
```

```
EXAMPLE9 - Notepad
File Edit Format View Help
Calendar year: 2002
Month: Jan
Altitude: Low
Minimum Temperature: 68.0 (F)
Maximum Temperature: 84.0 (F)
Absolute Humidity: 75. grains/lb
Nominal Fuel RVP: 7.0 psi
Weathered RVP: 7.0 psi
Fuel Sulfur Content: 279. ppm
Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: NA (See Air Toxics Output)

Ether Blend Market share: 0.550 Alcohol Blend Market share: 0.450
Ether Blend Oxygen Content: 0.027 Alcohol Blend Oxygen Content: 0.035
Alcohol Blend RVP waiver: No

Vehicle type: LDGV LDGT12 LDGT34 LDGT HDGV LDVV LDOT HDDV MC All veh
QWR: -6000 -6000 (A17) 0.0337 0.0008 0.0017 0.0827 0.0060 1.0000
WT Distribution: -----
Composite Emission Factors (g/mi):
Composite VOC : 1.196 1.580 2.531 2.115 0.727 0.983 0.710 2.14 1.534
Composite CO : 14.10 17.32 25.48 19.39 19.82 1.713 1.704 3.687 11.77 15.568
Composite NOx : 1.172 1.352 1.745 1.452 1.137 1.650 1.699 46.061 1.23 2.661

Non-Exhaust emissions (g/mi):
Hot Soak Loss: 0.157 0.119 0.193 0.138 0.212 0.000 0.000 0.000 0.109 0.138
Drivetrain Loss: 0.019 0.028 0.031 0.022 0.036 0.000 0.000 0.000 0.006 0.019
Resting Loss: 0.128 0.119 0.206 0.141 0.256 0.000 0.000 0.000 0.379 0.128
Running Loss: 0.762 0.210 0.275 0.226 0.294 0.000 0.000 0.000 0.000 0.224
Crankcase Loss: 0.008 0.010 0.012 0.011 0.012 0.000 0.000 0.000 0.000 0.009
Refueling Loss: 0.091 0.137 0.222 0.174 0.338 0.000 0.000 0.000 0.000 0.126
Total Non-Exhaust: 0.667 0.634 0.938 0.714 1.148 0.000 0.000 0.000 0.494 0.643
```



Summary

- Regional emissions analysis is essential for all conformity determinations
- VMTs from all Federal non-exempt projects and non-Federal regionally significant projects must be included
- Certain areas are subject to specific network-based modeling requirements - serious and above ozone areas and CO nonattainment areas with urban population greater than 200,000
- Areas that historically have used models must continue to do so
- All other areas must use best professional practices
- Interagency consultation is key to determine methodologies and assumptions

- Conformity reference guide:
http://www.fhwa.dot.gov/environment/conformity/ref_guid/chap5.htm

Transportation Conformity 101

Session 9: Consequences of Conformity Lapses and SIP Failures

Session Objectives

- Define a conformity lapse
- Describe the lapse grace period
- Explain the consequences of a lapse
- Discuss how SIP issues can cause a lapse
- List the types of SIP failures
- Discuss the impacts of a SIP failure on conformity
- Describe a conformity freeze

Definition of a Conformity Lapse

“...Lapse means that the conformity determination for a transportation plan or TIP has expired, and thus there is no currently conforming transportation plan/ TIP.”



Conformity Lapse Grace Period

- A 12-month grace period before a conformity lapse occurs
- Allows the MPO time to correct a conformity deficiency prior to going into a lapse
- The 12-month grace period starts on the date an applicable conformity deadline is missed
- Does not apply to DOT's planning regulations
- Lapse occurs if unable to demonstrate Plan and TIP conformity at the end of lapse grace period
- Areas must have a valid TIP in place to operate in a lapse grace period

Conformity Applicable Deadlines



- Requirement to determine conformity of a plan or TIP every 4 years
- Requirement to determine transportation conformity within 2 years of an EPA action establishing new emission budgets

Conformity Applicable Deadlines (con't)

- Requirement prior to approval of Plans, TIPs, projects and Plan/TIP amendments.

*Does not apply to deadline for newly designated nonattainment area

- Conformity determinations on Plan and TIP required 12-months after effective designation date

Lapse Grace Period

- Applies to metropolitan and donut areas
- Does not affect isolated rural areas
- Does not apply to planning update requirements under DOT's planning regulations
- Conformity lapse grace periods cannot accumulate
 - only one 12-month grace period running from the date of the first missed deadline

Advancing Projects During a Lapse Grace Period

- Must meet all planning and other requirements
- Must have a valid STIP/TIP in place.
- Project–level conformity can be determined and final environmental documents can be approved during the conformity lapse grace period
 - Projects must come from previously conforming plan/TIP
- Regionally significant non-federal projects can be approved during grace period, if they were included in the previous regional emissions analysis

Advancing Projects During a Lapse Grace Period

Scenario 1: If the plan has expired, but the STIP/TIP are still in effect:

- Can continue to authorize projects in STIP/TIP
- Cannot amend TIP or affected portion of STIP

Scenario 2: If the plan is still in effect, but the STIP/TIP have expired:

- Cannot authorize projects until a new STIP/TIP developed consistent with plan

Scenario 3: If the plan and STIP/TIP have expired:

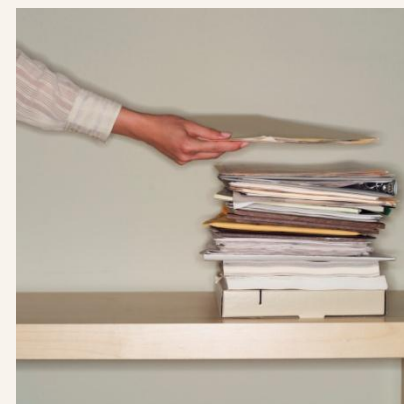
- Cannot authorize projects

Advancing Projects During a Lapse

- Exempt projects
 - Transportation control measures (TCMs) in an approved SIP
 - FHWA/FTA project phases approved before lapse
 - Regionally significant non-Federal project with all approvals prior to lapse
 - Non-regionally significant non-Federal projects
- ✓ Projects advanced during lapse must meet planning requirements

Interim Plan and TIP

- MPO can prepare an Interim Plan and TIP to advance eligible projects during a lapse
- Eligible projects from or consistent with most recent conforming plan and TIP may proceed, subject to interagency consultation
- New eligible projects must meet all planning requirements



SIP Failures

Types of control strategy SIP failures:

- Disapproval
 - With a protective finding
 - Without a protective finding
- Failure to submit
- Incompleteness

What is a Protective Finding?

If EPA disapproves a control strategy SIP i.e. 15%, RFP, or Attainment Demonstration

- EPA would give a protective finding where a submitted plan contains adopted control measures or written commitments to adopt enforceable control measures that fully satisfy the emissions requirements relevant to the statutory provision for which the implementation plan revision was submitted, such as reasonable further progress or attainment

What is a Protective Finding? (con't)

If SIP is disapproved with a protective finding:

- Budgets can still be used if found adequate for conformity purposes
- Lapse may still occur
- Lapse begins when highway sanctions are imposed
- Effective 2 years after EPA disapproval

Consequences of SIP Disapproval without a Protective Finding

- A SIP disapproval without a protective finding results in a “conformity freeze” on the effective date of EPA’s final disapproval

Conformity Freeze

- Only projects in the first 4 years of the currently conforming plan and TIP can proceed
- No new plan or TIP conformity can be made
- Conformity lapse grace applies if plan/TIP expires during conformity freeze
- Conformity lapse occurs at (whichever comes first)
 - end of lapse grace period
 - When highway sanctions apply

Impacts on Projects during freeze

- During a freeze all new transportation plans / TIPs or projects are affected
 - Projects that are included in the first four years of the transportation plan / TIP may go forward
 - Including all subsequent phases if included in the plan/TIP conformity analysis and meet project-level criteria
 - No new plans, TIPs, or plan / TIP amendments
- Exempt projects can proceed at any time as long as all planning requirements are met

Consequences of Failure to Submit and Incompleteness findings

EPA determines that the State has failed to submit a control strategy SIP or the submission is incomplete

- Starts CAA sanction process

Sanctions

- Once an area is officially notified (Federal Register), the sanction's clock is triggered
 - Eighteen months later – offset sanction on stationary sources imposed
 - Six months after offset sanctions, highway sanctions will be imposed and conformity on the Plan/TIP lapses
- Sanctions are not imposed for maintenance plan failures
- Corrective Action
 - Submit a complete SIP

Federal Implementation Plans (FIPs)

- If EPA promulgates a FIP that contains motor vehicle emissions budget(s) as a result of a SIP failure, the conformity lapse imposed because of that failure is removed

Summary – Conformity Lapses

- 12-month lapse grace period applies to specific applicable deadlines
- Ability to advance projects during a lapse grace period will depend on the status of the plan and TIP/STIP
- Project level conformity determinations can proceed during a lapse grace period
- Only certain types of projects can proceed during a lapse
- Conformity lapse grace period could apply during conformity freeze
- Reference Guide Chapter 4:
http://www.fhwa.dot.gov/environment/conformity/ref_guid/chap4.htm

Summary – SIP Failures

- SIP disapprovals with and without a protective finding have difference consequences
- A conformity freeze is rare and limits projects to those in the first four years of a conforming TIP and Plan
- Highway sanctions are tied to SIP failures and occur 24 months after a SIP failure if not remedied by that time

Transportation Conformity Resources

Session 10:

Resources/References

FHWA & EPA Transportation Conformity Homepages

Other Relevant Websites

Rules

Guidance Documents

References

Outreach

Training Opportunities

Contacts

FHWA Conformity Homepage



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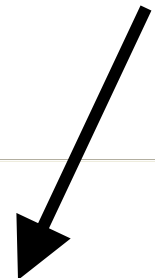
- [Transportation Conformity Highlights](#)
 - [Transportation Conformity Highlights August 2008](#)
- [Laws and Regulations](#)
- [Policy and Guidance](#)
- [Basic Guide and Reference Guide](#)
- [Frequently Asked Questions:](#)
 - [Transportation Conformity and the New Air Quality Standards](#)
 - [PM2.5 Project-Level Conformity and Hot-Spot Analyses](#)
- [Research](#)
- [Training](#)
- [Contacts](#)
- [Transportation Conformity Community of Practice](#)
- [Special Topics:](#)
 - [Air Quality Planning and State Implementation Plans](#)
 - [Areas in Conformity Lapse/Lapse Grace Period](#)
 - [Emissions Modeling](#)
 - [Land Use](#)
 - [Latest Planning Assumptions](#)
 - [Multi-jurisdictional \(Complex\) Areas](#)
 - [National Ambient Air Quality Standards \(NAAQS\) and Nonattainment Designations](#)
 - [Project-level Conformity](#)
 - [Regional Emissions Analysis](#)
 - [Rural Areas](#)
 - [Transportation Control Measures \(TCMs\)](#)

- [Transportation Conformity Rule](#)
- [Examples of Transportation Conformity Practices](#) **New 9/25/2008**
- [Transportation Conformity Reference Guide](#)
- [EPA Transportation Conformity Site](#)
- [Particulate Matter \(PM2.5\) Nonattainment Area Maps](#)
- [8-hour Ozone Nonattainment Area Maps](#)

To provide Feedback, Suggestions or Comments for this page contact Cecilia Ho at cecilia.ho@dot.gov

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<http://www.fhwa.dot.gov/environment/conform.htm>



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Transportation Conformity

This site provides access to information on EPA's transportation conformity program. Transportation conformity is a Clean Air Act requirement that serves as a bridge to connect air quality and transportation planning activities. Use the links below to access relevant rulemakings, policy guidance, reports, and general information about the conformity program.



- [General Information](#)
- [Policy Guidance](#)
- [Training Materials](#)
- [Regulations](#)
- [Adequacy Review of SIP Submissions](#)
- [Regional Contacts](#)
- [Transportation Conformity Status](#) [EXIT disclaimer](#)
Federal Highway Administration web page that tracks transportation conformity lapse status.

For further information or assistance regarding this section of the Web site, contact [Meg Patulski](mailto:patulski.meg@epa.gov), phone: (734) 214-4842, email: patulski.meg@epa.gov

<http://www.epa.gov/otaq/stateresources/transconf/index.htm>

Internet

Guidance Documents

Complete Listing:

- http://www.fhwa.dot.gov/environment/conformity/con_pol.htm

EPA's Companion Guidance for the July 1, 2004, Final Transportation Conformity Rule: Conformity Implementation in Multi-jurisdictional Nonattainment and Maintenance Areas for Existing and New Air Quality Standards

- <http://www.epa.gov/otaq/stateresources/transconf/policy/420b04012.pdf>

Transportation Conformity Practices Clearinghouse

- <http://www.fhwa.dot.gov/environment/conformity/practices/index/cfm>

EPA's Greenbook for Nonattainment Areas

- <http://www.epa.gov/air/oaqps/greenbk/>

FHWA's Transportation Conformity Reference Guide

- http://www.fhwa.dot.gov/environment/conformity/ref_guid/index.htm

Air Quality Planning for Transportation Officials

- <http://www.fhwa.dot.gov/environment/aqplan/index.htm>

EPA & FHWA conformity workshop materials

- <http://www.fhwa.dot.gov/environment/conformity/outreach.htm>

Transportation Conformity Practices in Complex Areas

- www.fhwa.dot.gov/environment/conformity/complex/index.htm

Other Training Opportunities

What Is Conformity?

- 30 minute self-directed web course on the basics
- https://admin.na3.acrobat.com/_a55098539/whatisconformity/

National Transit Institute

- Introduction to Transportation/Air Quality Conformity
- 3 days, <http://www.ntionline.com>

National Highway Institute <http://www.nhi.fhwa.dot.gov/home.aspx>

- CMAQ Program: Purpose and Practice
- Implications of Air Quality Planning for Transportation
- Estimating Regional Mobile Source Emissions

FHWA Resource Center Training Opportunities

- <http://www.fhwa.dot.gov/resourcecenter/teams/airquality/courses.cfm>

Contacts

Transportation Conformity Contact Listings

- http://www.fhwa.dot.gov/environment/conformity/con_contact.htm

FHWA Division Offices

- <http://www.fhwa.dot.gov/field.html#fieldsites>

EPA Regional Conformity Representatives

- <http://www.epa.gov/otaq/stateresources/transconf/contacts.htm>

FHWA Resource Center Air Quality Technical Services Team

<http://www.fhwa.dot.gov/resourcecenter/teams/airquality/index.cfm>

