
Conformity 101: Overview of State Implementation Plans (SIPs) with Respect to Transportation Conformity

Northern Transportation and Air Quality Summit

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- Transportation Conformity: A Link Between Air Quality and Transportation Planning
 - Clean Air Act (CAA) section 176(c) requires federal actions to conform to the SIP's purpose.
 - Eliminates/reduces violations of the NAAQS
 - Expeditious attainment of the NAAQS and interim milestones

Let's start with the NAAQSs.

The NAAQS

- The CAA requires EPA to set National Ambient Air Quality Standards (NAAQS) for criteria air pollutants considered harmful to public health and the environment.
- The CAA also requires EPA to review these standards every five years, with advice from the Clean Air Scientific Advisory Committee (CASAC).
- The CAA provides EPA the authority to promulgate two types of national air quality standards

The NAAQS (continued)

- Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly.
- Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.
 - » Many species of plant and animal life are greatly impacted by air pollution.

Criteria Pollutants

Criteria pollutants = Those pollutants for which EPA has promulgated NAAQS.

- **Ozone (O₃)**
- **Particulate Matter (PM₁₀ and PM_{2.5})**
- Sulfur Dioxide (SO₂)
- **Nitrogen Dioxide (NO₂)**
- **Carbon Monoxide (CO)**
- Lead (Pb)

Transportation-related pollutants are indicated in red text.

<http://epa.gov/air/criteria.html>

National Ambient Air Quality Standards

Pollutant	Primary Standards		Secondary Standards	
	Level	Averaging Time	Level	Averaging Time
Carbon Monoxide	9 ppm (10 mg/m ³)	8-hour (1)	None	
	35 ppm (40 mg/m ³)	1-hour (1)		
Lead	0.15 µg/m ³ (2)	Rolling 3-Month Average	Same as Primary	
	1.5 µg/m ³	Quarterly Average	Same as Primary	
Nitrogen Dioxide	53 ppb (3)	Annual (Arithmetic Average)	Same as Primary	
	100 ppb	1-hour (4)	None	
Particulate Matter (PM₁₀)	150 µg/m ³	24-hour (5)	Same as Primary	
Particulate Matter (PM_{2.5})	15.0 µg/m ³	Annual (6) (Arithmetic Average)	Same as Primary	
	35 µg/m ³	24-hour (7)	Same as Primary	
Ozone	0.075 ppm (2008 std)	8-hour (8)	Same as Primary	
	0.08 ppm (1997 std)	8-hour (9)	Same as Primary	
	0.12 ppm	1-hour (10)	Same as Primary	
Sulfur Dioxide	0.03 ppm	Annual (Arithmetic Average)	0.5 ppm	3-hour (1)
	0.14 ppm	24-hour (1)		
	75 ppb (11)	1-hour	None	

Foot Notes to NAAQS Table

- (1) Not to be exceeded more than once per year.
- (2) Final rule signed October 15, 2008.
- (3) The official level of the annual NO₂ standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of clearer comparison to the 1-hour standard
- (4) To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 100 ppb (effective January 22, 2010).
- (5) Not to be exceeded more than once per year on average over 3 years.
- (6) To attain this standard, the 3-year average of the weighted annual mean PM_{2.5} concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m³.
- (7) To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m³ (effective December 17, 2006).
- (8) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm. (effective May 27, 2008)
- (9) (a) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.
(b) The 1997 standard—and the implementation rules for that standard—will remain in place for implementation purposes as EPA undertakes rulemaking to address the transition from the 1997 ozone standard to the 2008 ozone standard.
(c) EPA is in the process of reconsidering these standards (set in March 2008).
- (10) (a) EPA revoked the 1-hour ozone standard in all areas, although some areas have continuing obligations under that standard ("anti-backsliding").
(b) The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is ≤ 1.
- (11) (a) Final rule signed June 2, 2010. To attain this standard, the 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 75 ppb.

Designation Process

- EPA sets or revises a NAAQS.
- State reviews air quality monitoring data and recommends designations to EPA.
 - » CAA generally allows up to 2 years for EPA to make designations for a new or revised NAAQS, but can be extended to 3 years if more data is needed.
- EPA evaluates recommendations --- advises States where it intends to modify State recommendations.
- States have 120 days to interact with EPA to present additional, supporting information.
- EPA publishes final area designations with an effective date.

Implementation of New NAAQS

- In general, CAA requires attainment or other SIPs for a new NAAQS to be submitted to EPA within 3 years of designations.
- Transportation conformity applies for a new NAAQS one year from the effective date of EPA's designations.
- Other CAA requirements can apply depending upon the pollutant, nonattainment classification, sources involved, etc.

State Implementation Plans (SIPs)

- Under the CAA, as amended in 1990, each state must develop a plan describing how it will attain and maintain the NAAQS.
- The SIP is a state's plan to improve the air quality in nonattainment areas such that those areas will attain the primary NAAQS by a statutory deadline.
- The SIP is also the state's plan to ensure that attainment areas continue to meet the NAAQS.

What is a SIP?

- Legally enforceable plan for how state/area will achieve better air quality
- Addresses specific CAA requirements and deadlines
- Prepared by state or local air quality agency, submitted by Governor
- Interagency consultation (including transportation agencies) and public participation required in preparation

SIP Elements

- Inventory of emissions estimates for each sector (stationary, area, mobile)
- Air quality modeling
- Demonstration of SIP's purpose
- Specific list of controls
- Contingency measures (maintenance areas)

How does the SIP process work?

**CAA or court case mandates plan submittal ,
or State/Local decides to revise its own SIP**

State/Local prepares and adopts plan after public hearing

State submits SIP to EPA Regional office

EPA reviews SIP for completeness ... if complete ... propose in FR

EPA approves/disapproves plan after considering public comments

After SIP approval, the plan becomes Federally enforceable

If SIP Federally mandated and disapproved ... then FIP promulgated

Types of EPA Approval Actions

- Full approval
- Partial approval/partial disapproval
- Conditional approval
- Interim approval
- Disapproval

Types of SIPs

- **Control strategy SIPs:**
 - » Reasonable further progress (RFP) SIPs
 - » Attainment demonstrations
- **Maintenance plans**
 - » Limited maintenance plans
- SIPs for individual control measures (e.g., I/M SIPs, NSR SIPs)
- There are other types of SIPs as well

Motor Vehicle Emissions Budgets

- Control strategy SIPs and maintenance plans include contain motor vehicle emissions budgets (“budgets”)
- SIP budgets are based on the on-road mobile portion of the total emissions inventory defined in the SIP for a certain date for the purpose of meeting RFP, attainment, or maintenance
- Budgets important for conformity because used MPOs in regional emissions analysis
- Budget test: emissions from planned transportation system \leq budget
 - » budget = ceiling on emissions of that pollutant / precursor

RFP SIPs

- RFP SIPs include:
 - » 15% SIPs for certain ozone areas
 - » Rate of Progress (ROP) Plans.
 - » Early progress SIPs (voluntary)
- These plans take into account the creditable reductions and “demonstrate” attainment, RFP or Maintenance.
- They all have motor vehicle emissions budgets for transportation-related pollutants.

Attainment SIPs

- Usually due three years after an area is designated nonattainment.
- Specifics for what Part D¹ elements are required and their deadlines is usually in the Implementation Rule.
- Contain a full inventory for the “Attainment Year” including a motor vehicle emission budget.
- If an area’s air quality attains the NAAQS before the SIP is due a Clean Data Determination is possible.

¹ Title 1 of the CAA Part D - Plan Requirements for Nonattainment Areas

A Clean Data Determination

- Would be based on the requisite number of years of clean data – 3 years for most pollutants
- Relieves (suspends) the State from the ROP Plan and Attainment Demonstration
- Area still designated nonattainment
- State may request or EPA may initiate, requires rulemaking by EPA
- While not a SIP revision, language is codified in the State State's subpart of Part 52 – not Part 81

Maintenance Plans

- At the time of redesignation to attainment, the State must submit a SIP demonstrating continued attainment of the NAAQS for an initial 10-year maintenance period.
 - » 10-year future timeframe must exist at time of EPA's approval of maintenance plan, which occurs after EPA's review of submission.
 - E.g., If a state submits a maintenance plan in 2010, the last year of such plan should be 2022.
- Eight years after redesignation the State must submit a second maintenance plan SIP for the second ten-year period.
 - » Continuing the above example, the 2nd maintenance plan would be submitted in 2020 and the last year of such plan would be 2032.
- These SIPs must contain a MVEB for the last year of each maintenance period.

Limited Maintenance Plans (LMPs)

- If the area meets the criteria listed in EPA's LMP Policy for a given pollutant and NAAQS the State may submit a streamlined maintenance plan.
- In the case LMP areas there is no reason to expect that these areas will experience so much growth that a violation of the NAAQS would result.
- Transportation conformity determinations continue to be required for a given pollutant and NAAQS in LMP areas, and no new regional emissions analysis is required for the timeframe covered by the LMP.
- All aspects of transportation conformity (with the exception of satisfying the emission budget test) will still be required for what is covered under LMP.
- All transportation conformity requirements, including a regional emissions analysis, would be required if area is also designated for another pollutant/NAAQS not covered by the LMP.

Emission Inventories

- Stationary Sources (point sources)
- Mobile sources – On-Road
- Mobile sources – Non-Road
 - » Construction equipment, lawn garden equipment, personal watercraft, locomotives, marine vessels airplanes, . . .
- Area sources (nonpoint sources)
 - » Dry cleaners, residential wood heating, auto body painting, consumer solvent use, . . .
- Biogenics (non non-anthropogenic emissions)

Precursors too

Adequacy Review of Budgets

- SIP budgets must be adequate before used for conformity
- Conformity rule (93.118(e)(4)) describes adequacy criteria
 - » Not new; these criteria already required for SIP approval
- Adequacy separate from completeness review
- Positive adequacy finding does not guarantee approvability of SIP

Adequacy Criteria

- Governor Endorsement
- Public Hearing
- Interagency consultation and full documentation
- EPA concerns addressed
- Control measures achieve air quality goals (RFP, attainment, maintenance)

Adequacy Criteria (cont.)

- Emissions budget(s) clearly identified and precisely quantified in the SIP
- Budget is consistent with emissions inventory/control measures
- Revisions to previously submitted SIPs are explained
- EPA will review public comment from state's public hearing

Adequacy Process

- Approximately 90-day process
- State submits SIP to EPA
- EPA announces receipt of SIP on website, 30-day public comment period started
- EPA makes adequacy/inadequacy finding
 - Respond to any comments
 - Send letter to state
 - Post finding on web
 - Issue a Federal Register notice (FRN)
- Finding effective 15 Days after FRN in most cases
- Adequacy can also be done as part of a proposed SIP action

MVEBs Approved into the SIP

- The MVEB are approved in the SIP approval process.
- Through a rulemaking process, EPA approves the SIP which is reflected in 40 CFR part 52.
- In general, a SIP-approved MVEB can only be modified or replaced through another SIP-approval rulemaking.
- In certain cases, a state can request EPA to approve a current budget now, but allow a future budget to supersede it upon EPA's positive adequacy finding
 - » E.g., a state requests EPA to approve a MOBILE6.2-based budget now, and have a future MOVES-based budget supersede it in the future if found adequate.

Federal Implementation Plans

- EPA national rulemaking to serve as a FIP, (e.g. To reduce interstate transport of fine particulate matter and ozone).
- When State fails to submit a required SIP, EPA prepares implementation plan to fulfill requirements, (doesn't happen often).
- Federal Regulations/Programs promulgated and directly enforced by EPA until a SIP is approved (or a State takes delegation for a FIP in an attainment area).
- There can be partial FIPs where a state has satisfied some but not all required components of the SIP.

Transportation Control Measures in SIPs

- TCMs that are subject to timely implementation are TCMs included in an approved SIP that are eligible for funding under title 23 U.S.C. or Federal Transit Laws
- Conformity rule defines TCMs in approved SIPs (93.101) as:
 - » one of the types listed in CAA section 108, or
 - » any measure focused on reducing on-road vehicle use or traffic/congestion
- TCMs are not vehicle or fuel technologies (e.g., I/M, RFG) for conformity purposes
- Important for TCMs to be well defined

Other Important Topics & Facts

- Findings, Sanctions and FIPs – “the clocks”
- Types of Actions and Rulemaking Procedures EPA May Use to Take Actions on SIPs.
- E-Docketing.
- The Administrative Procedures Act (APA) governs EPA EPA’s rulemaking process for actions on SIPs NOT s Section 301(d) of the CAA which governs the rulemaking process for national rules promulgated by EPA.
- Unlike legal challenges to nationally promulgated rules, challenges to SIP actions are filed/heard in the Court of Appeals.

Web Sites

EPA's Transportation Conformity Site, including conformity regulations, control measures guidance, and adequacy reviews:
<http://www.epa.gov/otaq/stateresources/transconf/>

EPA OTAQ's state and local resources page:
<http://www.epa.gov/otaq/stateresources/index.htm>

The Green Book Nonattainment Areas for Criteria Pollutants:
<http://www.epa.gov/oar/oaqps/greenbk/>

State Implementation Plan Status and Information:
<http://www.epa.gov/air/urbanair/sipstatus/>

Online State Implementation Plan Processing Manual (enter by clicking on "[Proceed to the Table of Contents](http://www.epa.gov/air/urbanair/sipstatus/)"):
<http://icode.pes.com/sipman/>

Appendix

Clean Data Determinations

40 CFR 51.918 Can any SIP planning requirements be suspended in 8-hour ozone nonattainment areas that have air quality data that meets the NAAQS?

Upon a determination by EPA that an area designated nonattainment for the 8-hour ozone NAAQS has attained the standard, the requirements for such area to submit attainment demonstrations and associated reasonably available control measures, reasonable further progress plans, contingency measures, and other planning SIPs related to attainment of the 8-hour ozone NAAQS shall be suspended until such time as: the area is redesignated to attainment, at which time the requirements no longer apply; or EPA determines that the area has violated the 8-hour ozone NAAQS. [11/29/05; 70 FR 71702]

Redesignation SIPs

- State submits a request satisfying requirements in Section 107 of CAA (on next slide).
- A final approval redesignates an area from nonattainment to attainment.
- Requires rulemaking and is codified in both Part 52 (the maintenance plan SIP revision) and in Part 81 (the change in an area area's designation from nonattainment to attainment).

Requirements for Redesignations

- Area has attained the NAAQS, (monitoring data).
- Fully approved 110 SIP (Infrastructure SIP elements).
- Part D SIP Requirements due to date both submitted and approved.
- Improvement in air quality from enforceable reductions (versus weather or economic downturn).
- Approved maintenance plan (10 years) including contingency measures.

Tribal Implementation Plans

- The CAA allows tribes to obtain the authority to run CAA programs for the regulation of air resources within its boundaries.
- Tribes may be treated in the same manner as States (TAS) for virtually all CAA programs.
- Tribal Authority Rule (TAR), outlines the eligibility criteria. (63 FR 7253 – 7274; February, 12, 1998; Final Rule, Indian Tribes: Air Quality Planning and Management; 40 CFR Parts 35, 49, 50 and 81).
- Tribes are not required to comply with implementation plan submittal deadlines (one of several exemptions under 40 CFR Part 49).

Tribal plans do not apply for transportation conformity.