

Transportation Conformity Overview Training

Prepared for the Texas Department of Transportation

Updated March 2016

Introduction

This presentation and supplementary material are prepared as the basis for a Texas-specific practitioner training session on the basics of transportation air quality and conformity. The intended audience includes Texas Department of Transportation and Metropolitan Planning Organization staff.

Topics covered in this presentation include the following:

- **Section 1 - Federal Air Quality Regulations**
 - Clean Air Act and the National Ambient Air Quality Standards (NAAQS)
 - Criteria pollutants, air toxics, and greenhouse gases.
 - Sources of emissions, including on-road mobile source emissions
 - Air quality monitoring
 - Process of designating nonattainment areas
 - Texas nonattainment areas and status
- **Section 2 - State Implementation Plan**
 - Overview of the State Implementation Plan (SIP) – requirements and types
 - Significance of SIP to transportation
 - Conformity and the Motor Vehicle Emissions Budget (MVEB)
 - Control Strategies and Transportation Control Measures (TCMs)
- **Section 3 - Transportation Conformity**
 - Transportation conformity and relationship to the SIP
 - Conformity demonstration process and regional emissions analysis
 - Project-level conformity
 - Interagency consultation
 - Conformity determination triggers
 - Conformity lapses
 - Transportation Control Measures (TCMs) and conformity
 - Congestion Mitigation and Air Quality (CMAQ) program

Supplementary Information for Selected Slides

Where the content of the slides is not self-explanatory, this document contains further elaboration of the information contained, along with links to the reference material and source material. This document can be used as a reference for speaker notes, and also distributed to training participants as an additional resource.

Slide 3: Overview of the Problem: Transportation, Air Quality & Public Health

Air quality is a concern from a human health perspective – research has shown that bad air quality adversely affects public health. Transportation is a major contributor of pollutant emissions and therefore plays an important role.

As noted on the slides, Oxides of nitrogen (NO_x) and Volatile Organic Compounds (VOCs) have adverse health impacts in themselves. They are also “Ozone Precursors” that form Ozone in the presence of heat and sunlight. Ozone also causes adverse respiratory effects. Other transportation-related pollutants of relevance include Carbon Monoxide (CO) and Particulate Matter (PM).

Relevant Links and Sources:

- MIT Laboratory for Aviation and the Environment <http://lae.mit.edu/air-pollution-causes-200000-early-deaths-each-year-in-the-u-s/>
- EPA Air Quality Trends: <http://www.epa.gov/airtrends/aqtrends.html#comparison>
- EPA Exposure and Health Effects of Mixtures of Air Pollutants <http://www2.epa.gov/air-research/exposure-and-health-effects-mixtures-air-pollutants>

Slide 7: Clean Air Act

The Clean Air Act of 1970 established the National Ambient Air Quality Standards (NAAQS) for criteria pollutants to protect public health and to regulate the emissions of hazardous air pollutants of stationary and mobile sources. Later CAA amendments in 1977 introduced requirements for areas that were not meeting the air quality standards (termed as non-attainment areas) and established the review process of transportation conformity. In 1990, further amendments to the CAA expanded transportation conformity provisions. It identified actions states and MPOs must take, and established a 5-year review period for the NAAQS - periodic review of the science upon which the standards are based and the standards themselves. The CAA requires EPA to review and, if appropriate, revise the NAAQS every five years.

Relevant Links and Sources:

EPA History of the Clean Air Act <http://www.epa.gov/air/caa/amendments.html>

Slides 8-10: National Ambient Air Quality Standards and Criteria Pollutants

The NAAQS were established for six criteria pollutants and areas are then designated based on their attainment of NAAQS. Primary standards are meant to provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. Usually, the primary and secondary standards are the same for most pollutants.

Ground Level Ozone is created by chemical reactions between oxides of nitrogen (NO_x) and volatile organic compounds (VOC) in the presence of sunlight. NO_x and VOCs are termed as ozone precursors. Among the criteria pollutants, the transportation sector contributes to emissions of ozone precursors, Nitrogen Dioxide (NO₂), Carbon Monoxide (CO), and Particulate Matter (PM). PM₁₀ and PM_{2.5} refer to particulate matter of under 10 and 2.5 micrometers, respectively, and there are different NAAQS for each.

The current NAAQS for the various criteria pollutants are as shown in the table, along with details such as whether it is a primary or secondary standard, averaging time, level, and the form of the standard. Depending on the pollutants, the units of measure for the standards are parts per million (ppm) by volume, parts per billion (ppb) by volume, and micrograms per cubic meter of air (µg/m³). As mentioned previously, the NAAQS are subject to periodic review and update.

Relevant Links and Sources:

EPA National Ambient Air Quality Standards <https://www3.epa.gov/ttn/naaqs/criteria.html>

The Transportation Planning Process: Briefing Book

http://www.fhwa.dot.gov/planning/publications/briefing_book/fhwahep15048.pdf

Slide 11: Mobile Source Air Toxics (MSATs)

Ambient levels of air toxics are suspected as human carcinogens. They also lead to non-cancer health effects due to exposures to air toxics, which includes neurological, cardiovascular, liver, kidney, and respiratory effects as well as effects on the immune and reproductive systems. Mobile sources are responsible for direct emissions of air toxics and contribute to precursor emissions which react to form secondary pollutants.

MSATs are primarily considered a transportation issue, and are regulated through FHWA's interim guidance on analysis of air toxics as part of the NEPA process.

Relevant Links and Sources:

EPA Mobile Source Air Toxics <http://www.epa.gov/otag/toxics.htm>

FHWA Air Toxics http://www.fhwa.dot.gov/environment/air_quality/air_toxics/

Slide 12: Greenhouse Gases

In 2013, GHG emissions from transportation accounted for 27% of total U.S. GHG emissions, making it the second largest contributor. The majority of GHG emissions from transportation are CO₂ emissions resulting from the combustion of fossil fuels. The largest sources of transportation-related greenhouse gas emissions include passenger cars and light-duty trucks, including sport utility vehicles, pickup trucks, and minivans. These sources account for over 50% of the emissions from the sector. The remainder

comes from other modes of transportation, including freight trucks, commercial aircraft, ships, boats, and trains as well as pipelines and lubricants.

Relevant Links and Sources:

EPA Sources of Greenhouse Gas Emissions

<http://www.epa.gov/climatechange/ghgemissions/sources.html>

Slide 13: Emissions Sources

The overall emissions inventory is divided between on-road mobile sources (motor vehicles) and various other sources. As discussed further in the section on the State Implementation Plan (SIP), the portion of the inventory from on-road mobile sources is the component relevant to the transportation sector.

Relevant Links and Sources:

Texas Commission on Environmental Quality – Sources of Air Emissions

https://www.tceq.texas.gov/airquality/areasource/Sources_of_Air_Pollution.html

Slide 14: Air Quality Monitoring

CAA requires every state to establish a network of air monitoring stations for criteria pollutants. The collected air quality data must be representative of the spatial area being monitored.

States are required to submit Annual Monitoring Network Plans to EPA. Air quality data collected by monitoring network can be used to determine:

- Highest concentrations expected to occur in the areas
- Typical concentrations in high population areas
- Impact on pollutions of significant sources/categories
- General background concentration levels
- Extent of regional pollutant transport
- Impacts on visibility, vegetation damage, etc.

The air monitoring data from specific regulatory monitors provides concentrations that can be used to establish design values, which can be compared to NAAQS.

In Texas as of 2004, there are around 254 air monitors within 50 TX counties. Not all monitors are used for measuring compliance with NAAQS (“design value monitors”). Monitors Types include:

- State and Local Air Monitoring Stations (SLAMS)
- Photochemical Assessment Monitoring Stations (PAMS)

- Chemical Speciation Network (CSN)
- National Air Toxics Trends Stations (NATTS)
- National Core (NCore),
- Special Purpose Monitors (SPM)

Additionally, transportation practitioners may have heard about the “near-road” monitoring requirements – per 40CFR Part 58, Appendix D, Section 4.3.2, micro-scale near road monitors are required in areas with populations of 500,000 or more, and these are to be phased in between now and 2017.

Relevant Links and Sources:

EPA Air Pollution Monitoring: <http://www.epa.gov/airquality/montring.html>

TCEQ 2015 Annual Monitoring Network Plan

http://www.tceq.state.tx.us/assets/public/compliance/monops/air/annual_review/2015-TCEQ-AMNP.pdf

TCEQ Air Monitoring Operations <https://www.tceq.texas.gov/airquality/monops>

Slides 15-20: Air Quality Area Designations and Nonattainment Areas

The EPA uses the term designation to describe the air quality in a given area for any of the six criteria pollutants. The designation is determined from air quality data collected by TCEQ air monitoring stations. Once nonattainment designations take effect, the state and local governments have 3 years to develop implementation plans to reduce air pollutant emissions.

While per federal regulations areas are classified only as nonattainment, maintenance, or attainment, the term *near-nonattainment* is also sometimes used to describe areas that are currently in attainment, but are in the danger of going into nonattainment in the future. In Texas, the term near-nonattainment is used in this context. The TCEQ also provides Rider 8/Rider 7 funding for air quality improvement to these areas. Some of these areas in Texas also participate in EPA’s Ozone Advance and PM Advance programs, which are programs for agencies who want to proactively avoid going into nonattainment.

The designation for a specific pollutant depends on how the NAAQS were defined. For example, for ozone, the EPA designation is based on the 4th highest design value over 3 years. For nonattainment areas, there are different classifications for the pollutant based on the exceedance of the NAAQS.

The severity of the designation determines the time deadline an area has to meet the standards. Specific designation levels apply for each pollutant. For example ozone has five: marginal, moderate, serious, severe, and extreme. CO and PM₁₀ only have moderate and serious levels. In addition to attainment and nonattainment areas, there is a classification of “attainment -maintenance” assigned to areas that were in nonattainment in the past but are currently in attainment. Maintenance areas retain that

classification for up to 20 years after they are designated as attainment (the status is reviewed after 10 years, and may be extended for another 10).

As discussed in the next section, transportation conformity requirements apply to nonattainment and maintenance areas. In most cases this requires a State Implementation Plan (SIP) and an associated Motor Vehicle Emissions Budget (MVEB). An exception is the case of marginal ozone nonattainment areas, where a SIP is not required. National-level controls are considered to be sufficient to bring the area into attainment. A motor vehicle emissions budget also may not be established in such cases.

When any of the NAAQS are revised, states and EPA must undertake specific obligations to ensure the new/revised NAAQS are met. Requirements include new area designations within 2 years, submission of SIP within 3 years, and nonattainment area SIPs may be due 18-36 months after designations.

Texas meets federal air quality standards with the following exceptions: (1) particulate matter in El Paso; and (2) eight-hour ground-level ozone in Houston-Galveston-Brazoria and Dallas-Fort Worth. A portion of El Paso County is also in attainment-maintenance for CO. Collin County (Frisco) is also in nonattainment for lead, but this is not relevant as it is not a transportation related pollutant.

The 2015 Ozone NAAQS were issued in October 2015 and set at 0.070 ppm (reduced from the 2008 standard of 0.075 ppm). Proposed designations under the new standard are due October 2016. Currently, TCEQ has identified 21 Texas counties in four areas as exceeding the 2015 NAAQS as part of the state ozone designation recommendations (which are currently in the public comment period).

Relevant Links and Sources:

EPA Process of Reviewing the NAAQS <http://www.epa.gov/ttn/naqs/review.html>

EPA Green Book <http://www.epa.gov/airquality/greenbook/define.html>

EPA General Conformity Training – Background

https://www3.epa.gov/airquality/genconform/training/01_mod_1_Sec_1-3.html

EPA SIP Development Process <http://www.epa.gov/oaqps001/urbanair/sipstatus/process.html>

EPA Interactive Map Showing Violations of Proposed new Ozone NAAQS based on Regulatory Monitor Data

<http://epa.maps.arcgis.com/apps/StorytellingSwipe/index.html?appid=a3c9f378699045749a85e9c04728fc79&webmap=3b3e0960060141c7828fc93b14e3d4d2>

EPA 2015 Ozone NAAQS <http://www.epa.gov/ozone-pollution/2015-national-ambient-air-quality-standards-naqs-ozone>

TCEQ Air Monitor Data for Compliance with 8-Hour Ozone Standard

http://www.tceq.state.tx.us/cgi-bin/compliance/monops/8hr_attainment.pl

TCEQ State Ozone Designation Recommendation

<https://www.tceq.texas.gov/airquality/sip/eighthour.html>

Slide 23: Outline for Section 2

It is to be noted that in discussing basic concepts related to the State Implementation Plan (SIP), this section also introduces aspects of transportation conformity to describe transportation's role and significant. The conformity-related elements are then explored in further detail in Section 3.

Slides 24 and 25: Overview of State Implementation Plan

A SIP is the CAA-required state air quality plan for meeting federal air quality standards and covers each nonattainment area in the state. SIP provides for implementation, maintenance, and enforcement of the NAAQS in each state. In Texas, the TCEQ responsible for developing the SIP, and as noted it is legally enforceable, adopted by the state and approved by the EPA, and covers all emissions sources, not just mobile sources.

One point to note is that while only one SIP exists for each state, the components of the SIP relating to specific areas in the state are also sometimes similarly referred to as SIPs for the individual area (for example, the Houston-Galveston-Brazoria SIP or the Dallas-Fort Worth SIP). In reality, these are elements of the SIP for Texas. Similarly, revisions made to address changes in a specific region are sometimes referred to as a new SIP, while they are actually only SIP revisions. Texas' SIP document was initially approved in May 1972, with a series of revisions made to it over the years, as recorded by TCEQ.

Relevant Links and Sources:

EPA SIP Status and Information Website <https://www3.epa.gov/airquality/urbanair/sipstatus/>

TCEQ SIP website <https://www.tceq.texas.gov/airquality/sip/sipintro.html>

Slide 26: SIP Types and Requirements

SIP types and requirements vary based on pollutant type and nonattainment classification, i.e. the level of severity of nonattainment. In general, the contents of a SIP include (as applicable) information about monitoring, an emissions inventory, modeling, control strategies, and the establishment of a motor vehicle emissions budget. There is detailed federal guidance outlining the SIP requirements in each case.

The types of SIPs relevant to transportation and conformity include control strategy SIPs, which include Reasonable Further Progress SIPs and attainment demonstration SIPs, as well as maintenance plans and conformity SIPs.

Reasonable further progress SIPs are only required for certain severity levels of ozone nonattainment areas. This SIP document must show the plans and controls required to demonstrate that total emissions in the nonattainment area will decrease at least by 15 percent in the first six years and by nine percent every three years after that until the area attains the standard. Attainment SIPs outline all of the

control strategies required to demonstrate the nonattainment area will meet the new standard by a certain date, known as the attainment date. Maintenance plans apply to attainment maintenance areas and must demonstrate how the area will continue to maintain compliance with the standard for 10 years after attainment has been reached. A conformity SIP includes a state's specific criteria and procedures for certain aspects of the transportation conformity process. Where EPA has approved a state's conformity SIP, the approved conformity SIP governs conformity determinations instead of the federal transportation conformity regulations (or conformity rule), for those aspects of the rule that it addresses and that are applicable.

Relevant Links and Sources:

FHWA Air Quality Planning for Transportation Officials – SIPs

http://www.fhwa.dot.gov/environment/air_quality/publications/air_quality_planning/aqplan04.cfm

EPA Nonattainment Area and Ozone Transport Region SIP Requirements

<https://www3.epa.gov/airquality/urbanair/sipstatus/nonattainment.html>

EPA Guidance for developing transportation conformity SIPs:

<http://www.epa.gov/oms/stateresources/transconf/policy/420b09001.pdf>

Missouri Department of Natural Resources – State Implementation Plan Information

<http://www.dnr.mo.gov/env/apcp/sips.htm>

TCEQ SIP website <https://www.tceq.texas.gov/airquality/sip/sipintro.html>

Slides 27 and 28: SIP, Transportation Conformity and the MVEB

Simply put, transportation conformity is the process by which it is ensured that transportation plans, programs and projects are in compliance with air quality plans, i.e the SIP.

In most cases (with the exception of marginal ozone nonattainment areas), one of the major transportation conformity requirements deals with the establishment of the motor vehicle emissions budget (MVEB). As discussed in Section 3, several other requirements also apply for transportation conformity.

The MVEB can be viewed as the “limit” placed on on-road mobile source emissions for a specific analysis year for a nonattainment area. The regional emissions of the specific pollutant for a transportation plan or program should not exceed this amount.

The definition of MVEB per the Code of Federal Regulations is as follows: “Portion of the total allowable emissions defined in the submitted or approved control strategy SIP 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.”

Relevant Links and Sources:

FHWA Air Quality Planning for Transportation Officials – Glossary

http://www.fhwa.dot.gov/environment/air_quality/conformity/guide/guide15.cfm

Electronic Code of Federal Regulations – Title 40 Chapter 1 Subchapter C Part 93 Subpart A Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Transit Laws http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&rgn=div6&view=text&node=40:20.0.1.1.7.1&idno=40#se40.20.93_1101

Slide 29: Establishment of the MVEB

The establishment of the MVEB is a complex process that is based on emissions inventory projections, but also takes into other factors such as balancing transportation emissions with emissions from point and area sources, as well as addressing the regional dispersion of the pollutant emissions (through photochemical modeling) and ensuring that the NAAQS are not exceeded after taking all factors into consideration.

Relevant Links and Sources:

FHWA Air Quality Planning for Transportation Officials – Motor Vehicle Emissions Budget

http://www.fhwa.dot.gov/environment/air_quality/publications/air_quality_planning/aqplan09.cfm

TCEQ Transportation Conformity

<https://www.tceq.texas.gov/airquality/mobilesource/apr2003transconf.html>

Slide 30: SIP Control Strategies and TCMs

SIPs contain several control strategies that are committed to as means to reduce emissions from all sources. Of these, Transportation Control Measures (TCMs) refer to strategies in the SIP that reduce transportation emissions by reducing vehicle use or improving traffic flow. TCMs are discussed in further detail in Section 3. The Clean Air Act Section 108 provides examples of TCMs. Other control strategies/ measures that can affect transportation but are not TCMs are aspects such as improve vehicle technologies, inspection and maintenance programs (I/M), etc.

Relevant Links and Sources:

FHWA Air Quality and Conformity Research Pages – Definition of TCMs

http://www.fhwa.dot.gov/Environment/air_quality/conformity/research/transportation_control_measures/

TCEQ Transportation Control Measures <https://www.tceq.texas.gov/airquality/mobilesource/tcm.html>

Slide 31: SIP Revisions

As noted previously, the SIP is a single document for an entire state, with revisions in the form of a narrative made as needed. SIP revisions are most commonly needed due to revisions of the NAAQS or introduction of new NAAQS. Revisions may also be needed to address changes in an area's attainment status, or when new data become available or new modeling techniques are introduced.

Relevant Links and Sources:

Texas SIP Revisions, TCEQ <https://www.tceq.texas.gov/airquality/sip/siplans.html>

Slide 32: Section 2 Conclusions

Another important point of note is the difference between “attainment” and “conformity” from a transportation perspective. The attainment status of a region is determined on the basis of air monitoring results as compared to the NAAQS. This in turn drives the SIP requirements which include transportation conformity provisions and the establishment of the MVEB (except in marginal ozone NA areas). Other emissions sources are regulated differently (such as through air permits, etc). The conformity check for a transportation plan or program against the MVEB is for a “slice in time” for on-road mobile source emissions only.

Slides 35 and 36: Transportation Conformity

As introduced in Part 1 and Part 2, transportation conformity is the process of ensuring that federally-funded transportation plans, programs and projects are consistent with the SIP. Transportation conformity can therefore be viewed as linking air quality planning and transportation planning. In Texas, air quality planning is administered by the Texas Commission on Environmental Quality (TCEQ) through development of the SIP.

Transportation conformity is commonly associated with the regional emissions analysis conducted for plans and programs against the motor vehicle emissions budget (MVEB). However, as seen in the remainder of this section, transportation conformity is a much broader, and also includes project-level conformity requirements, interagency consultation procedures, etc. As listed below, there are also several resources and guidebooks that provide detailed information regarding transportation conformity requirements.

Relevant Links and Sources:

FHWA Transportation conformity: A Basic Guide for State and Local Officials
http://www.fhwa.dot.gov/environment/air_quality/conformity/guide/

FHWA Air Quality Planning for Transportation Officials
http://www.fhwa.dot.gov/environment/air_quality/publications/air_quality_planning/index.cfm

Project Consistency with Transportation Plans and Air Quality Conformity Workshops (TTI Project for TxDOT) <http://tti.tamu.edu/publications/catalog/record/?id=41322>

Slides 37 and 38: Transportation Conformity Process

There are many elements to the transportation conformity process, and understanding them can be quite complicated.

- Slide 36 – contains a simplified representation of the steps involved in the transportation conformity process.
- Slide 37 – contains a more detailed representation of this process, taken from FHWA’s transportation conformity guidebook.

Before discussing the various aspects of transportation conformity, it is also relevant to note that conformity includes both transportation conformity requirements (applicable to FHWA and FTA projects), as well as general conformity (applicable to other federal agency projects). However, EPA’s general conformity rules state that actions subject to transportation conformity are excluded from general conformity, and these are therefore not applicable to the transportation sector.

Within transportation conformity:

- Regional conformity applies to transportation plans and programs – this includes the Metropolitan Transportation Plan (MTP) and Transportation Improvement Program (TIP) for nonattainment or maintenance areas, as well as to the Statewide Transportation Improvement Program (STIP).
- Project-level conformity is required for non-exempt federal projects in nonattainment and maintenance areas. At a minimum, this requires that projects come from a conforming TIP and MTP. Additionally, in the case of CO and PM nonattainment areas, hot-spot analyses may be required for projects of air quality concern. Currently, this is only applicable to El Paso in Texas.

Slide 39: Transportation Conformity Process – Summary

This slide summarizes the various actions and steps taken in the conformity process and also lists the key players or responsible entities. As noted previously, all of these steps do not necessarily apply exactly as stated in all cases. For example, in the case of areas in marginal nonattainment for Ozone, elements such as a regional conformity analysis against a motor vehicle emissions budget may not be required, and other tests may be used instead.

Relevant Links and Sources:

EPA Transportation Conformity Guidance for 2008 Ozone Nonattainment Areas
<http://www.epa.gov/otaq/stateresources/transconf/regs/420b12045.pdf>

Slide 40: Conformity Determination

Conformity determination is the final finding that shows that the implementation of a specific plan or project is consistent with the air quality goals on the SIP. The term conformity demonstration is sometimes used to describe the entire set of actions and the process conducted that culminates in the final finding (i.e. the conformity determination). Additional facts about conformity determination include:

- Conformity determinations are made by FHWA/FTA
- MPOs make initial conformity determinations for MTP/TIPs in metropolitan areas, while State DOTs usually do so in areas without MPOs and conduct the analyses associated with project-level conformity.
- An interagency consultation process is required for developing SIPs, MTP, TIPs, and making conformity determinations.

Slide 41: Conformity Determination Triggers

Conformity determination triggers refers to instances when a new conformity determinations is required.

- Conformity determinations must be made at least every 4 years, but may occur more often if MTP or TIPs are updated more frequently or amended with non-exempt projects.
- Conformity determinations must be made within 24 months after SIP or MVEB is 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.
- Conformity determinations must be made within 12 months of an area being designated by EPA as nonattainment areas.
- When TCMs in the SIP are changed outside of the substitution rule (explained in further detail in later slides).

Slide 42: Exempt Projects

Exempt projects are those for which conformity requirements do not apply – as outlined in the CFR, there are exemptions for some projects from all requirements, others from regional emissions analysis, as well as exemptions for traffic signal synchronization projects. As discussed in later slides, exempt projects can proceed even when transportation conformity requirements such as a conforming TIP or MTP are not met.

Relevant Links and Sources:

- Electronic Code of Federal Regulations – Part 93 – Determining Conformity of Federal Actions to State or Federal Implementation Plans (See 93.126-128 regarding exempt projects)

<http://www.ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=c78074512f86a936a26879fab766f0d9&mc=true&n=sp40.20.93.a&r=SUBPART&ty=HTML>

Slide 43: Conformity Lapse

A conformity lapse implies that the conformity determination for a transportation plan or program has expired, and thus there is no current conforming TIP/MTP.

During a conformity lapse, only certain projects (exempt projects, TCMs approved in SIP, and projects approved prior to the lapse) can move forward. All other federally funded projects and regionally significant projects without all approvals in place cannot move forward. However, there is a 1-year grace period before these consequences of conformity lapse apply, during which time projects in an approved TIP/MTP may proceed.

A conformity freeze is different from a conformity lapse, in that it occurs when the EPA disapproves a control strategy SIP without a protective finding for the MVEB in that SIP. Therefore, new conformity determinations cannot move forward. This implies that while initially projects in a conforming TIP and MTP can be advanced (projects in the first four years), there is a danger of the conformity freeze turning into a conformity lapse if the SIP disapproval is not resolved.

Relevant Links and Sources:

FHWA Conformity Lapse Grace Period FAQs

http://www.fhwa.dot.gov/environment/air_quality/conformity/reference/faqs/lapsegrace.cfm

Slide 44: Major Components of a Conformity Determination

This slide lists the major components of a conformity determination from the perspective of regional conformity (i.e. for a TIP or MTP). The following slides in the presentation then explain these components in further detail.

Slide 45: Interagency Consultation and Public Involvement

Interagency consultation (with federal, state and local partners) and the involvement of the public are required in the development of SIPs, MTPs, TIPs, and for conformity determination. Consultation procedures are to be adopted in the SIP. The main purpose of the consultation process is to discuss 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 MVEB. Typical participants include FHWA, FTA, EPA, State DOTs, MPOs and other local transportation agencies, State and regional air quality agencies and public transportation operators. In terms of the public involvement processes – MPOs are responsible for arranging public meetings and responding to public comment.

In Texas, there is also a statewide coordination group, the Technical Working Group on Mobile Source Emissions (TWG) that was established in the 1990s, and meets to discuss strategies for modeling mobile source emissions as well as broader emissions, regulatory and policy issues. The TWG is facilitated by TTI on behalf of TxDOT. Participants at TWG meetings include TxDOT, MPOs, TTI, EPA, FHWA, FTA, TCEQ, and transit agencies in nonattainment and near nonattainment areas, and local air quality agencies in nonattainment and near nonattainment areas.

Slides 47 and 48: Regional Emissions Analysis

The regional emissions analysis is the main analytical part of the conformity determination.

- As noted on Slide 46 – the analysis is used to estimate transportation network emissions in the area of interest, and should take into account all projects apart from exempt projects. The aim of the analysis is to demonstrate that the TIP/MTP conforms to the SIP, in most cases through comparison with the MVEB.
- Slide 47 – shows the process of the emissions analysis –It involves aggregating emissions rates and traffic activity. The MOVES model serves as the platform for this. At its most basic, the procedure is the calculation of hourly emissions for a summer weekday, with day-of-week-specific VMT and emissions factors (g/mi) for each hour, for each of the 22 vehicle types, for each of four road types, by direction, by speed, for each link in the network.

Additional details on the process used by TTI in conducting conformity analyses for TxDOT and its partner agencies:

- Hourly Link Emissions: Emissions factors are generated for each hour, road type (drive cycle), vehicle type, and speed. VMT mix (by time period, day-of-week, and roadway functional classification group) is multiplied by VMT to produce link-VMT estimates for the 22 vehicle types. Emissions factors are then multiplied by appropriate link-level VMT (freeway factors to freeway links, arterial factors to non-freeway links), based on vehicle category and speed (intermediate values interpolated).
- Day-of-Week Hourly and 24-hour Emissions Summaries: For each analysis day, the link-emissions estimates are summed for each hour. Hourly emissions are summed for each day. The resulting composite emissions estimates and associated activity measures (e.g., VMT, VHT and speed) are summarized by road type and vehicle type.
- Post Processing Refinements: Various post process adjustments can be made for various applications. For example, MOVES does not provide for TxLED program impacts. These adjustments are linked to off-network activity and must be made afterwards.
- Using MOVES, summer weekday emissions factor look-up tables are produced by source type, fuel type, road type and speed

- MOVES is equipped with default values for a wide range of conditions. Local values for factors such as external conditions (e.g., temperatures, humidity, and sunrise/sunset), vehicle fleet characteristics (e.g., vehicle age distribution and diesel fractions) , activity (e.g., VMT mix and hourly VMT) and VMT fractions attributable to individual vehicle classes, state programs such as I/M, etc are also used in the analysis.

Slide 49: Timely Implementation of TCMs

As discussed previously, a TCM is a control strategy included in the SIP to reduce transportation emissions by reducing vehicle use or traffic flow. TCMs receive the highest priority for federal funding and are considered exempt projects (i.e. transportation conformity does not apply).

However, when TCMs included in the SIP are approved by the EPA, they become subject to timely implementation – i.e. transportation conformity regulations require that the MPOs in an affected area shows timely implementation by incorporating the TCMs into the area’s MTP and TIP with sufficient, dedicated funding. Therefore, it is very important for TCMs to be implemented once committed to in a SIP.

The TCM substitution rule provides a mechanism to allow an area to substitute TCMs without the requirement of a SIP revision, as long as the substitute TCM has equivalent or greater emissions reductions than the TCM to be replaced, and the implementation is done in the time frame established for the original TCM in the SIP. It also requires that the substituted measures do not interfere with any applicable requirement for reasonable further progress or timely attainment of any NAAQS.

Relevant Links and Sources:

TCEQ, Transportation Control Measures <https://www.tceq.texas.gov/airquality/mobilesource/tcm.html>

Texas Administrative Code TCM Rule, Available At:

http://www.nctcog.org/trans/air/sip/previous/tcm/tceq_tcm_substitution_rule_114.pdf

EPA Guidance for implementing the CAA Transportation Control Measure Substitution and Addition Provision <http://www.epa.gov/otaq/stateresources/transconf/policy/420b09002.pdf>

Slide 50: Fiscal Constraint

The concept of fiscal constraint is important for transportation planning and programming in general. It makes sure that a given program or project can reasonably expect to receive funding within the time allotted for its implementation. There are several planning requirements related to fiscal constraint. However, in nonattainment and maintenance areas, some fiscal constraint requirements are a bit more stringent. Firstly, conformity determinations must be done on fiscally constrained TIPs and MTPs. It is also required that projects be included in the first two years of the TIP and STIP only if funds are “available” or “committed.” This implies that for example, a new or planned source of funding, such as such as a proposed tax increase or bond cannot be used unless it has been legislatively enacted.

Relevant Links and Sources:

FHWA Financial Planning and Fiscal Constraint for Transportation Plans and Programs

http://www.fhwa.dot.gov/planning/guidfinconstr_ga.cfm

Slide 51: Project-Level Transportation Conformity

Unlike the other aspects of conformity that dealt more with the TIP/MTP (planning/programming level), project-level conformity requirements apply to non-exempt projects (FHWA/FTA funded or regionally significant) in Nonattainment/Maintenance areas for Ozone, CO, NO₂, or PM. Due to the applicability at the project level, in Texas, the Environmental Affairs Division of TxDOT coordinates a majority of project-level conformity issues, while the Transportation Planning and Programming Division is the main coordinator of regional conformity activities.

At a minimum, project-level conformity requires that the project comes from a conforming MTP/TIP, and that its scope and design have not changed significantly from the plan/program.

Additionally, in the case of carbon monoxide and PM nonattainment and maintenance areas, additional analysis may be necessary to determine if a project has localized air quality impacts, for projects of air quality concern. This localized air analysis is referred to as a hot-spot analysis. In Texas, currently, this only applies to El Paso.

FHWA or FTA need to issue the final conformity determination for project-level conformity. As applicable, project level conformity determination can be pursued concurrently with approvals required as part of project-level National Environmental Policy Act (NEPA) requirements. In the case of a project where NEPA review responsibilities have been assigned to TxDOT, the project-level conformity determination is required prior to the NEPA decision.

(Note – material for this slide adapted from TxDOT-ENVs “Addressing Air Quality in Transportation Projects” primer).

Slide 52: Congestion Mitigation and Air Quality Improvement (CMAQ) Program

While not directly related to conformity, the CMAQ program is an important source of funding in nonattainment areas. Projects that conform to the SIP and demonstrate emissions reduction are eligible for CMAQ funding. The FHWA also recently conducted a CMAQ program outcomes assessment study that describes the program and its history in great detail.

Relevant Links and Sources:

FHWA CMAQ Program http://www.fhwa.dot.gov/environment/air_quality/cmaq/

FHWA CMAQ Outcomes Assessment Study

http://www.fhwa.dot.gov/environment/air_quality/cmaq/research/outcomes_assessment/brochure/index.cfm