

7.0 Transportation Conformity Process and Motor Vehicle Emission Budgets

Transportation conformity is a CAA requirement that serves as a bridge to connect air quality and transportation planning activities. Transportation conformity is required under the CAA to ensure that highway and transit project activities receiving federal funds are consistent with (“conform to”) the purpose of the SIP. Conformity to a SIP is achieved if transportation programs or transit project activities do not cause or contribute to any new air quality violations, do not worsen existing violations, and do not delay timely attainment of the relevant NAAQS.

Transportation conformity currently applies to areas that are designated nonattainment for the following transportation-related criteria pollutants: ozone, particulate matter (PM_{2.5} and PM₁₀), carbon monoxide (CO), and nitrogen oxides (NO_x). Transportation conformity also applies to “maintenance areas,” *i.e.*, areas that have been redesignated to attainment after 1990. Figure 7.1 is a flowchart depicting the transportation conformity process and how the elements of a conformity determination interact.

7.1 Overview of Transportation Conformity

Transportation conformity addresses air pollution from on-road mobile sources such as cars, trucks, motorcycles, and buses. There are also significant emissions from off-road mobile sources, area sources, and stationary sources that are not addressed by transportation conformity. Transportation conformity budgets are developed by the lead air quality agency (e.g., CTDEP) as part of the attainment planning process, with a goal of ensuring that emissions from the transportation sector are balanced with those from the other source sectors such that NAAQS attainment and maintenance requirements are met in a timely fashion.

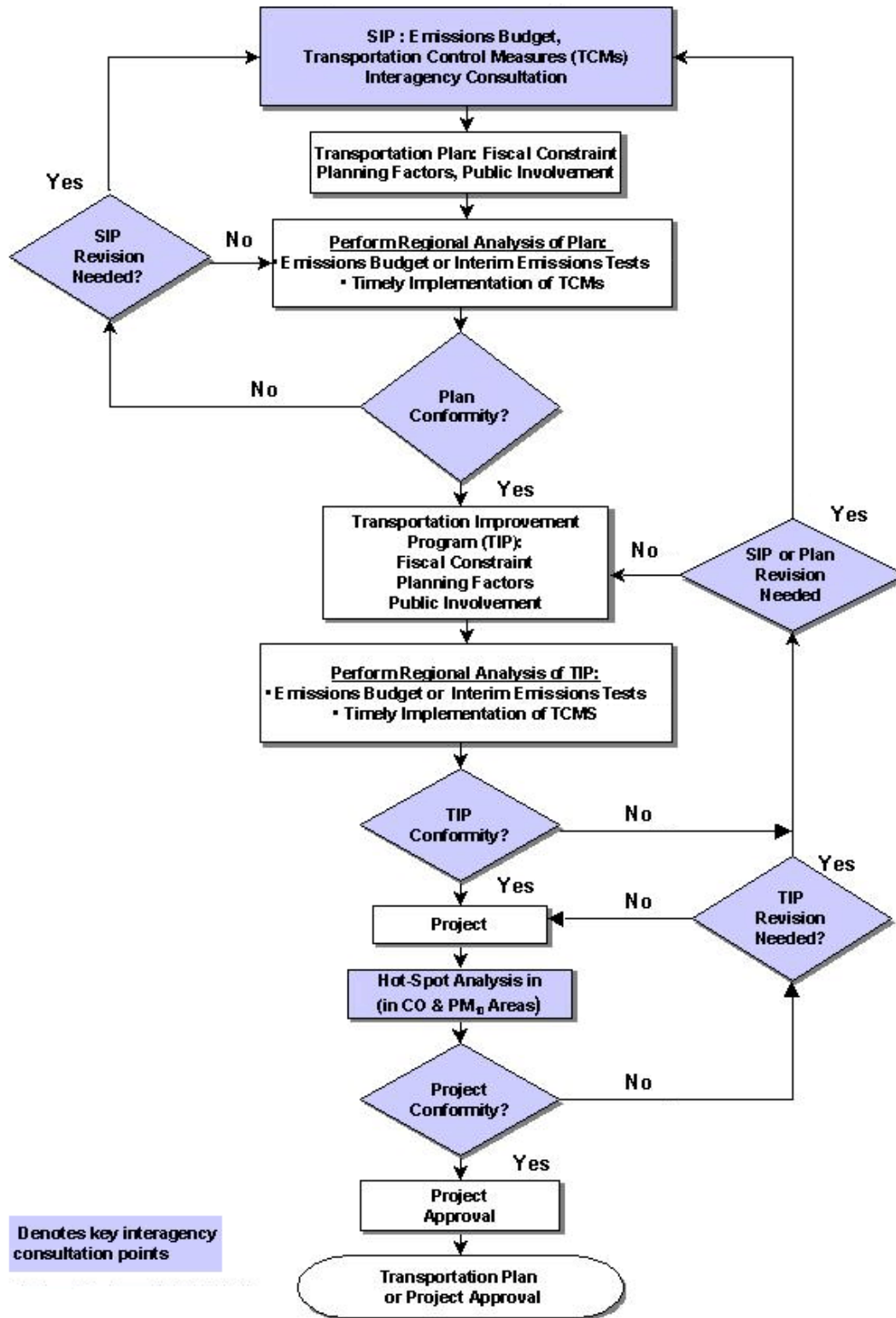
The State of Connecticut Department of Transportation (CTDOT) and the metropolitan planning organizations (MPOs) in Connecticut must demonstrate conformity with transportation conformity budgets for all transportation plans and transportation improvement programs (TIPs), including any federally supported highway and transit projects.

Conformity determinations are developed by CTDOT and the MPOs in consultation with CTDEP and EPA. The Federal Transit Administration (FTA) and the Federal Highway Administration (FHWA) agencies of the United States Department of Transportation (US DOT) review the CTDOT/MPOs submittals and make a conformity determination. It is customary that EPA’s regional office provides US DOT with a letter of comment regarding the Connecticut air quality conformity report submittal.

Conformity determinations consist of the following components:

- Regional emissions analysis;
- Transportation modeling requirements;
- Latest planning assumptions and emissions model;
- Timely implementation of transportation control measures (TCMs);
- Interagency consultation;
- Public participation (consistent with US DOT regulations); and
- Fiscal constraint (consistent with US DOT regulations).

Figure 7-1. Transportation Conformity Process¹



¹ Source: Federal Highway Administration, http://www.fhwa.dot.gov/environment/conformity/ref_guid/sectiona.htm

The regional emissions analysis is the primary component, which incorporates either a “budget” test for areas or states with approved SIP budgets, or an interim emissions test for areas with no adequate or approved SIP budgets. Budgets are developed using various transportation and emissions models. Local modeling inputs are cooperatively developed by CTDEP and CTDOT, using EPA recommended methods where applicable. Generally, CTDOT’s estimated air emissions from transportation plans and TIPs must not exceed transportation conformity budgets established by the CTDEP’s Bureau of Air Management as part of the SIP development process.

7.2 Requirements

The federal CAA and federal transportation reauthorization legislation passed in the 1990s established an interrelationship of clean air and transportation planning. In order to receive federal transportation funds, CTDOT and the MPOs in Connecticut must cooperatively work to develop and endorse an Air Quality Conformity Statement, which certifies to the federal government that the Statewide Transportation Improvement Program (STIP), which incorporates all TIPs, conforms to the requirements of the CAA.

On August 15, 1997, EPA published the Final Conformity Rule.² Subsequently, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)³ revised the CAA conformity SIP requirements in order to use state and local resources more efficiently.

CTDOT regularly updates the STIP in accordance with the terms and provisions of SAFETEA-LU and the CAA and all regulations⁴ issued pursuant thereto. As part of the STIP development process, CTDOT and the MPO’s conduct air quality assessments and prepare conformity reports. EPA, CTDEP, and other stakeholders have the opportunity to evaluate the STIP and conformity report prior to the determination of conformity by the US DOT.

7.3 Initial PM_{2.5} Conformity Determinations

PM_{2.5} nonattainment areas were required to initially address transportation conformity requirements by April 2006. In accordance with the conformity regulations⁵ and guidance, nonattainment areas were provided a choice of interim tests that could be used to demonstrate conformity of transportation plans during the period prior to the establishment of transportation conformity budgets that are required as part of the PM_{2.5} attainment demonstration. Alternative interim tests include:

- (1) Demonstrating that planned build scenarios for key years of transportation plans do not result in increased emissions when compared to the corresponding no-build scenario for each year;
- (2) Comparing area wide on-road emission estimates for key years in transportation plans to the 2002 base year emission levels to ensure transportation plans do not increase emissions; or

² 62 FR 43780.

³ PL 109-59, August 10, 2005; (Section 6011).

⁴ 70 FR 71950, Nov. 30, 2005.

⁵ 69 FR 40028; July 1, 2004.

- (3) Establishing state and/or local “early” conformity budgets at a level consistent with progress toward attainment and demonstrating that transportation plans do not exceed those budgets.

In April 2006, affected transportation and air quality agencies in the NY-NJ-CT PM_{2.5} nonattainment area met the initial one year deadline for demonstrating conformity through a complex multi-state interagency consultation process that showed future year transportation-related emissions throughout the area would not exceed base year emission levels from 2002 using the second alternative interim test. The States of New Jersey and Connecticut subsequently proposed local early conformity budgets that were approved by EPA in July 2006 and August 2007,⁶ respectively, for use in each state’s future conformity determinations. The early budgets, set at emission levels below those of the base year (i.e., 2002), provide assurance of continued progress toward attainment during the period when the PM_{2.5} attainment demonstration is being developed and undergoing review by EPA.

7.4. Transportation Conformity Budgets

As noted above, CTDEP proposed early PM_{2.5} transportation conformity budgets in April 2007 that were determined by EPA in June 2007 to be adequate for transportation conformity purposes and fully approved by EPA in August 2007. Budgets were established for direct PM_{2.5} emissions and for NO_x, a PM_{2.5} precursor pollutant, for the required attainment year of 2009. The 2009 budgets, which are summarized in Table 7-1, represent on-road emissions in the Connecticut portion of the NY-NJ-CT PM_{2.5} nonattainment area (i.e., Fairfield and New Haven Counties).

Table 7-1. 2009 Transportation Conformity Budgets for the Connecticut Portion of the NY-NJ-CT PM_{2.5} Nonattainment Area⁷

Annual Direct PM _{2.5} Emissions (tons per year)	Annual NO _x Emissions (tons per year)
360	18,279

The 2009 budgets were determined using EPA’s MOBILE6.2 emissions model, as documented in a technical support document (TSD) included with the April 2007 early budget SIP submittal. The early budget TSD is included here as Appendix 7A. Vehicle activity levels (e.g., speed, vehicle miles traveled) are based on CTDOT’s Series 28 travel model runs.

The early PM_{2.5} budgets account for the effects of the PM_{2.5} mobile source control programs that were discussed previously in Section 5.2.1 and are included in the attainment demonstration modeling. Based on analyses of precursor emissions and PM_{2.5} speciation data (see Section 3 and 5), CTDEP has concluded that NO_x is the only precursor species from on-road motor vehicles that warrants consideration as a potential significant contributor to peak PM_{2.5} levels in the nonattainment area. Re-entrained road dust and highway/transit construction dust in Connecticut are judged to be insignificant contributors, especially since violating levels of annual PM_{2.5} in the nonattainment area have only been measured in New York City and northern

⁶ The August 30, 2007 Federal Register (72 FR 50059) included EPA’s direct final approval of Connecticut’s early conformity budgets. The rulemaking became effective on October 29, 2007.

⁷ Connecticut’s portion of the nonattainment area is comprised of Fairfield and New Haven Counties.

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New Jersey. As a result, CTDEP has determined that the previously approved early PM_{2.5} budgets, which include all of the mobile source control strategies incorporated into the CMAQ modeling exercise, should be retained as part of the PM_{2.5} attainment demonstration SIP.