

# REFERENCE SERIES: Transportation in Connecticut

## ARTICLE NO. 09 Transportation Air Quality Conformity

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## **Introduction**

This simple guide provides insight on the Transportation Air Quality Conformity process in Connecticut pursuant to the requirements of the federal Clean Air Act (CAA). The article focuses on conformity relating to on-road mobile sources of air pollution, including the process followed by metropolitan planning organizations (MPOs) and the Connecticut Department of Transportation (CT DOT) to remain eligible for federal funds.

For more information on the air quality conformity process and related topics, the following resources may be helpful:

- Clean Air Act (CAA) - U.S. Code Title 42 Chapter 85 [www.epa.gov/air/caa](http://www.epa.gov/air/caa);
- State Implementation Plans (SIP) - [www.epa.gov/ne/topics/air/sips.html](http://www.epa.gov/ne/topics/air/sips.html);
- National Ambient Air Quality Standards (NAAQS) - 40 CFR Part 50 [www.epa.gov/air/criteria.html](http://www.epa.gov/air/criteria.html);
- Connecticut Department of Energy and Environmental Protection and air quality conformity in Connecticut — navigate to Environmental Protection > Air, Land and Water > Air from [www.ct.gov/deep](http://www.ct.gov/deep); and
- Connecticut Department of Transportation and transportation air quality conformity in Connecticut — navigate to Publications > Plans, Projects and Studies > Plans > Air Quality Conformity from the Department’s website at [www.ct.gov/dot](http://www.ct.gov/dot).

## Sources

The quality of air has a direct effect on human health as well as the environment. The federal government through the U.S. Environmental Protection Agency (EPA) has established allowable concentrations and exposure limits for certain pollutants called National Ambient Air Quality Standards (NAAQS) in order to ensure that the air will be healthy.

Air Pollution is generated from several sources:

- Mobile - on road (cars, trucks and buses) and non-road (construction and farm equipment, airplanes, boats and trains);
- Stationary - factory and power plants ;
- Area - smaller dispersed sources such as dry cleaners or, painting operations; and
- Naturally occurring - windblown dunes, wildfires, and volcanic eruptions.

Transportation contributes to four of the six criteria pollutants: ozone, carbon monoxide (CO), particulate matter (PM) and nitrogen oxides (NO<sub>x</sub>). Lead and sulfur dioxide are not transportation related pollutants.

## Transportation Conformity

Transportation conformity is a Clean Air Act (CAA) requirement that serves as a bridge to connect air quality and transportation planning activities.

The National Environmental Policy Act (NEPA) also requires documentation and procedures to ensure protection of the environment, including air quality.

Transportation conformity ensures that highway and transit project activities receiving federal funds are consistent with (“conform to”) the purpose of the State Implementation Plan (SIP).

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. Mobile Vehicle Emission Budgets (MVEBs) are developed by the lead air quality agency, the CT DEEP, in cooperation with the CT DOT, as part of the transportation conformity planning process. The goal is to ensure 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.

Transportation conformity currently applies to areas designated as nonattainment or maintenance for the following transportation-related criteria pollutants: ozone, particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>), carbon monoxide (CO), and nitrogen oxides (NO<sub>x</sub>).

## **Relationship to Federal Funding**

The Clean Air Act Amendments of 1990 (CAAA) were enacted with the power to penalize states by taking federal transportation monies away from projects if air quality standards are not met. The CT DOT (acting on behalf of the state's MPOs) must demonstrate conformity for all federally funded projects in Long Range Transportation Plans (LRTPs) and Transportation Improvement Programs (TIPs) located in either nonattainment or maintenance areas. For an overview of TIPs and MPOs, refer to Article No. 01 of the *Reference Series: Transportation in Connecticut*.

Certain federally funded transportation projects listed under 40 CFR 92.127 (refer to [Regional Emissions Analysis](#) discussion in this article) may require a "hot-spot" analysis to determine the local effects of CO, PM<sub>2.5</sub> or PM<sub>10</sub> prior to preparation of a project level conformity determination.

Additional criteria must also be met for federally funded projects as listed under 40 CFR 93.123(b)(1) for PM<sub>2.5</sub> and PM<sub>10</sub>.

In order to receive federal transportation funds, the CT DOT and the metropolitan planning organizations (MPOs) in Connecticut must cooperatively work to develop and endorse an Air Quality Conformity Report, which certifies to the federal government that all TIPs and regional long range transportation plans within the State of Connecticut collectively conform to the requirements of the CAA. The MPOs and CT DOT regularly update the individual regional TIPs in accordance with the terms and provisions of the current federal transportation bill, the CAA and all regulations issued pursuant thereto. As part of the transportation plan and TIP development process, CT DOT conducts air quality assessments and prepares conformity reports.

## Our State's Levels

The State of Connecticut is currently designated as

- nonattainment for ozone, which includes ozone precursors, volatile organic compounds (VOC) and nitrogen oxides (NO<sub>x</sub>);
- in maintenance for CO and PM<sub>10</sub>; and
- attainment/maintenance for PM 2.5.

Maps of the conformity area designations are provided on the Department's website at [www.ct.gov/dot/maps](http://www.ct.gov/dot/maps).

Air quality emission levels are measured by the Connecticut Department of Energy and Environmental Protection (CT DEEP) with monitors located at various sites throughout the state.

CT DOT utilizes complex computer models mandated by the U.S. EPA to analyze and determine if implementing a transportation project(s) would exceed established mobile vehicle emissions budgets (MVEBs).

## Conformity Determinations

The State must formulate, implement and conform to a SIP to deal with the goal of obtaining NAAQS. Transportation projects must conform to the submitted and approved 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.

Conformity Determinations are developed by CT DOT (acting on behalf of the state's MPOs), in consultation with the CT DEEP and the US EPA. The Federal Transit Administration (FTA) and the Federal Highway Administration (FHWA) agencies of the United States Department of Transportation (US DOT) review the CT DOT – analysis and report submittals and make a Conformity Determination.

A flowchart depicting the transportation conformity process and how the elements of a Conformity Determination interact as well as mapping of relevant non-attainment, attainment and maintenance areas is included in the procedural policy document entitled "Air Quality Conformity Interagency Consultation Process", updated December 2013, on the Department's website. Additionally, copies of the latest regional conformity reports are provided on the website.

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) approved in the SIP;
- Interagency consultation;

- Public participation (consistent with US DOT regulations);
- Fiscal constraint (consistent with US DOT regulations); and
- Determination of exempt projects and projects exempt from the air quality analysis.

Stakeholders have the opportunity to evaluate the transportation planning documents and regional conformity report prior to the determination of conformity by the US DOT. It is customary that US EPA's regional office provides US DOT with a letter of comment regarding the Connecticut air quality conformity report submittal.

## **Regional Emissions Analysis**

The CT DOT's Bureau of Policy and Planning Travel Demand/Air Quality Modeling Unit is responsible for preparing the air quality regional emissions analysis for conformity determinations. Reports are prepared to document the emissions analysis. The following project types are typically considered exempt from air quality conformity determinations.

### **Exempt Projects under 40 CFR 93.126 - (X6)**

#### ***Safety***

- Railroad/highway crossing
- Projects that correct, improve, or eliminate a hazardous location or feature
- Safer non-Federal-aid system roads
- Shoulder improvements
- Increasing sight distance
- Highway Safety Improvement Program implementation
- Traffic control devices and operating assistance other than signalization projects
- Railroad/highway crossing warning devices
- Guardrails, median barriers, crash cushions
- Pavement resurfacing and/or rehabilitation
- Pavement marking
- Emergency relief (23 U.S.C. 125)
- Fencing
- Skid treatments
- Safety roadside rest areas
- Adding medians
- Truck climbing lanes outside the urbanized area
- Lighting improvements
- Widening narrow pavements or reconstructing bridges (no additional travel lanes)
- Emergency truck pullovers

### ***Air Quality***

- Continuation of ride-sharing and van-pooling promotion activities at current levels
- Bicycle and pedestrian facilities

### ***Mass Transit***

- Operating assistance to transit agencies
- Purchase of support vehicles
- Rehabilitation of transit vehicles\*
- Purchase of office, shop and operating equipment for existing facilities
- Purchase of operating equipment for vehicles (e.g. radios, fareboxes, lifts, etc.)
- Construction or renovation of power, signal and communications systems
- Construction of small passenger shelters and information kiosks
- Reconstruction or renovation of transit buildings and structures (e.g. rail or bus buildings, storage and maintenance facilities, stations, terminals and ancillary structures)
- Rehabilitation or reconstructions of track structures, track and trackbed in existing rights-of-way
- Purchase of new buses and rail cars to replace existing vehicles or for minor expansions of the fleet\*
- Construction of new bus or rail storage/maintenance facilities, categorically excluded in 23 CFR part 771

\* In PM10 and PM 2.5 nonattainment or maintenance areas, such projects are exempt only if they are in compliance with control measures in the applicable implementation plan.

### ***Other***

- Specific activities which do not involve or lead directly to construction, such as:
  - Planning and technical studies
  - Grants for training and research programs
  - Planning activities conducted pursuant to titles 23 and 49 U.S.C.
  - Federal-aid systems revisions
- Engineering to assess social, economic and environmental effects of the proposed action or alternatives to that action
- Noise attenuation
- Emergency or hardship advance land acquisition (23 CFR 710.503)
- Acquisition of scenic easements
- Plantings, landscaping, etc.

- Sign removal
- Directional and informational signs
- Transportation enhancement activities (except rehabilitation and operation of historic transportation buildings, structures, or facilities)
- Repair of damage caused by natural disasters, civil unrest, or terrorist acts, except projects involving substantial functional, locational or capacity changes

**Projects Exempt From Regional Emissions Analyses\*\* 40 CFR 93.127 - (X7)**

- Intersection channelization projects
- Intersection signalization projects at individual intersections
- Interchange reconfiguration projects
- Changes in vertical and horizontal alignment
- Truck size and weight inspection stations
- Bus terminals and transfer points

\*\*Action in this category are not exempt from regional emissions analysis if the MPO in consultation with other agencies and the FHWA or the FTA concur that it has potential regional impacts for any reason. 40 CFR 93.127

**Traffic Signal Synchronization Projects \*\*\* 40 CFR 93.128 - (X8)**

Traffic signal synchronization projects may be approved, funded, and implemented without satisfying the requirements of this subpart. However, all subsequent regional emissions analyses required by §§93.118 and 93.119 for transportation plans, TIPs, or projects not from a conforming plan and TIP must include such regionally significant traffic signal synchronization projects.

\*\*\*40 CFR 93.128

## Other Notes and Resources

The *Reference Series: Transportation in Connecticut* is comprised of short articles on transportation topics pertinent to Connecticut. The series is provided as a first step in understanding the transportation planning, development, design and implementation process.

Many article topics focus on elements particularly relevant to locally administered transportation projects. These simple guides are the product of coordination between the Federal Highway Administration, the University of Connecticut's CTI-Technology Transfer Center and the State of Connecticut Department of Transportation.

The full detail of transportation programs and processes, particularly rules of eligibility, special provisions, requirements, or constraints is not within the purview of these reference documents. It is imperative that municipal staff contact their RPO early in the process for guidance. In addition to the CT DOT website, [www.ct.gov/dot](http://www.ct.gov/dot), the Local Project Administration website, [www.t2center.uconn.edu](http://www.t2center.uconn.edu), of the University of Connecticut's CTI-Technology Transfer Center provides many resources for municipal staff and managers of local projects.

**Find more articles on transportation topics specific to Connecticut at [www.ct.gov/dot/pamphlets](http://www.ct.gov/dot/pamphlets).**

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