



# Ozone and PM<sub>2.5</sub> Air Quality Conformity Determination

of the 2023-2050 Metropolitan Transportation Plans  
and the 2027-2030 Transportation Improvement Programs

## Table of Contents

1. [Executive Summary](#) 3
2. [What is Transportation Conformity?](#) 5
3. [Nonattainment and Maintenance Areas in Connecticut](#) 5
  - a. [Ozone Nonattainment Areas](#) 5
  - b. [PM2.5 Nonattainment Areas](#) 8
  - c. [Carbon Monoxide Nonattainment Areas](#) 9
  - d. [PM10 Attainment Area – Limited Maintenance](#) 9
  - e. [State of Connecticut Nonattainment/Attainment Maps](#) 11
4. [How Does Connecticut Demonstrate Conformity?](#) 14
  - a. [State Planning and Research Program](#) 14
  - b. [Interagency Consultation](#) 14
  - c. [Public Consultation](#) 14
  - d. [Scenario Years](#) 14
  - e. [Other Planning Documents](#) 15
5. [Latest Planning Assumptions and Emissions Model](#) 15
  - a. [VMT](#) 15
  - b. [Emissions Model](#) 17
6. [Conformity Tests and Air Quality Emissions Results](#) 18
7. [Conclusions](#) 20
8. [Contact Information](#) 20
9. Appendices
  - a. [Appendix A](#) 22
  - b. [Appendix B](#) 25
  - c. [Appendix C](#) 32
  - d. [Appendix D](#) 37
  - e. [Appendix E](#) 40

# 1. Executive Summary

This report documents the air quality conformity analysis of the 2023-2050 Metropolitan Transportation Plans (MTPs) and the 2027-2030 Transportation Improvement Programs (TIPs), carried out under the regulations contained in the United States Environmental Protection Agency's (EPA) final rule, published in the November 24, 1993 Federal Register, with subsequent amendments and additional federal guidance published by EPA, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). This process involved consultation with affected agencies such as EPA, FHWA, FTA, the Connecticut Department of Energy and Environmental Protection (CTDEEP), and the Metropolitan Planning Organizations (MPOs) within the State of Connecticut. The air quality emissions analysis is a responsibility of the Connecticut Department of Transportation (CTDOT), acting as the MPO for this task.

"Conformity" is a requirement of the Federal Clean Air Act Amendments (CAAA) Section 176(c) (42 U.S.C.7506(c)) and EPA conformity regulations (40 CFR 93 Subpart A). These regulations require that each new MTP and TIP demonstrate conformance to the State Implementation Plan (SIP) before the MTPs and TIPs are approved by the MPO or accepted by the United States Department of Transportation (USDOT). This ensures that the MTPs and TIPs are consistent with air quality goals, and that progress is being made towards achieving and maintaining Federal air quality standards. A conformity determination is undertaken to estimate emissions that will result from an area's transportation system. The analysis must demonstrate that those emissions are within the budgets outlined in the state Air Quality Implementation Plans.

Under the transportation conformity regulation, the principal criteria for a determination of conformity for transportation plans and programs are:

- The TIPs and MTPs must pass an emissions budget test using a motor vehicle emissions budget (MVEB) that has been found to be adequate by EPA for transportation conformity purposes, or an interim emissions test;
- The latest planning assumptions and emissions models specified for use in conformity determinations must be employed;
- The TIPs and MTPs must provide for the timely implementation of the transportation control measures (TCMs) specified in the applicable air quality implementation plans; and
- Interagency and public consultation.

As the federal air quality districts for ozone and PM<sub>2.5</sub> include several counties and various planning regions, the emissions analysis must be coordinated to include the TIPs and MTPs of several regions.

The CTDOT performs this coordination role. Each region submits its draft TIP and MTP and the CTDOT combines the TIPs and MTPs for all appropriate regions and conducts the analysis on each pollutant's impact for each air quality district in relation to the established MVEBs.

For the 2023–2050 MTPs and the 2027–2030 TIPs, typical summer day emissions estimates for ozone precursors – volatile organic compounds (VOCs) and oxides of nitrogen (NOx) – were developed for 2026, 2030, 2035, 2045, and 2055. Emissions estimates for particulate matter 2.5 microns or smaller (PM2.5) precursors – break and tire wear, engine exhaust and NOx – were run for annual average weekday and developed for the same years as the ozone runs. These emissions estimates were calculated using EPA’s Motor Vehicle Emissions Simulator (MOVES5).

The results of this analysis, illustrated in Tables 1 and 2 below, show that the 2023–2050 MTP and the 2027–2030 TIPs mobile emissions are within the MVEBs for all forecast years for both pollutants. This analysis provides the basis for the conformity determination for the 2023–2050 MTPs and the 2027–2030 TIPs.

**Table 1: Ozone Conformity – NOx and VOC Emissions Budget Test Results for the 2008 Ozone NAAQS**

Year	Ozone Area	U.S. Tons per day					
		Cube Series 3		Budgets		Difference	
		VOC	NOx	VOC	NOx	VOC	NOx
2026	CT Portion of NY-NJ-CT Area	11.31	11.61	17.6	23.3	-6.29	-11.69
	Greater CT Area	10.27	10.80	15.9	22.2	-5.63	-11.4
2030	CT Portion of NY-NJ-CT Area	9.88	7.97	17.6	23.3	-7.72	-15.33
	Greater CT Area	8.94	7.37	15.9	22.2	-6.96	-14.83
2035	CT Portion of NY-NJ-CT Area	8.31	4.97	17.6	23.3	-9.29	-18.33
	Greater CT Area	7.52	4.6	15.9	22.2	-8.38	-17.6
2045	CT Portion of NY-NJ-CT Area	5.01	2.37	17.6	23.3	-12.59	-20.93
	Greater CT Area	4.54	2.22	15.9	22.2	-11.36	-19.98
2055	CT Portion of NY-NJ-CT Area	3.8	1.94	17.6	23.3	-13.8	-11.86
	Greater CT Area	3.5	1.84	15.9	22.2	-12.4	-20.36

**Table 2: PM2.5 Conformity – Direct PM2.5 and NOx Emission Budget Test Results**

Year	PM2.5 Area	U.S. Tons per year					
		Cube Series 3		Budgets		Difference	
		Direct PM <sub>2.5</sub>	NOx	Direct PM <sub>2.5</sub>	NOx	Direct PM <sub>2.5</sub>	NOx
2026	CT Portion of NY-NJ-CT Area	202.01	3,770.09	575.8	12,791.80	-373.79	-9,021.71
2030	CT Portion of NY-NJ-CT Area	174.31	2,623.95	516.0	9,728.10	-341.69	-7,104.15
2035	CT Portion of NY-NJ-CT Area	141.32	1,682.11	516.0	9,728.10	-374.68	-8,045.99
2045	CT Portion of NY-NJ-CT Area	97.42	858.61	516.0	9,728.10	-418.58	-8,869.49
2055	CT Portion of NY-NJ-CT Area	84.45	719.82	516.0	9,728.10	-431.55	-9,008.28

## 2. What is Transportation Conformity?

Transportation conformity is a planning process required by the CAA Section 176(c), which establishes the framework for improving air quality to protect public health and the environment. The goal of transportation conformity is to ensure that FHWA and FTA funding and approvals are given to highway and public transportation activities that are consistent with air quality goals.

The CAA requires that MTPs, TIPs, and Federal projects conform to the purpose of the SIP. Conformity to a SIP means that transportation planning activities or projects will not cause or contribute to any new violations of the National Ambient Air Quality Standards (NAAQS); increase the frequency or severity of NAAQS violations; delay timely attainment of the NAAQS or any required interim milestone. Conformity requirements apply in areas that either do not meet or previously have not met air quality standards for ozone, carbon monoxide, particulate matter, or nitrogen dioxide. These areas are known as “nonattainment areas” or “maintenance areas”, respectively.

Connecticut contains nonattainment areas for ozone (O<sub>3</sub>), and maintenance areas for carbon monoxide (CO) and PM<sub>2.5</sub>.

For MTP and TIP conformity, the determination must show that the total emissions from on-road travel on an area’s transportation system are consistent with the MVEBs and air quality goals found in the state’s SIP. A conformity determination demonstrates that implementation of the MTPs or TIPs will not cause any new violations of the air quality standard, increase the frequency or severity of violations of the standard, or delay timely attainment of the standard or any interim milestone.

This document was developed by CTDOT to demonstrate that the MTPs and TIPs comply with the MVEBs for the nonattainment and maintenance areas that fall within the state’s planning boundaries. In accordance with EPA regulation 40 CFR 93 Subpart A, this conformity determination is being issued in response to the adoption of the 2027-2030 TIP.

In addition, this conformity determination demonstrates compliance with the congestion management process in transportation management areas (23 CFR §450.322), development and content of the MTP (23 CFR §450.324), and fiscal constraints for MTPs and TIPs (40 CFR §93.108-119).

## 3. Nonattainment and Maintenance Areas in Connecticut

### a. Ozone Nonattainment Areas

Ozone is an extremely reactive, colorless gas comprised of three atoms of oxygen. Ozone exists naturally in the layer of the earth’s upper atmosphere known as the stratosphere, where it shields the earth from the sun’s harmful ultraviolet rays. However, ozone found close to the earth’s surface, called ground-level ozone, is a component of smog and a harmful pollutant. Ground-

level ozone is produced by a complex chemical reaction between VOCs and NO<sub>x</sub> in the presence of sunlight.

Mobile source NO<sub>x</sub> emissions form when nitrogen and oxygen atoms chemically react inside the high pressure and temperature conditions in an engine. VOC emissions are a product of partial fuel combustion, fuel evaporation and refueling losses caused by spillage and vapor leakage.

Exposure to ozone has been linked to several respiratory health effects, including significant decreases in lung function, inflammation of airways, increased symptoms such as cough and pain when breathing deeply. High concentrations of ozone can also contribute to reductions in agricultural crop production and forest yields, as well as increased susceptibility of plants to disease, pests and other environmental stresses such as harsh weather. This pollutant alone contributes to most of the unhealthy air quality days in Connecticut, as measured by the Air Quality Index (AQI).

EPA revised the NAAQS for ozone in 2008 and again in 2015. The 2008 Ozone NAAQs was established at 75 ppb and the 2015 Ozone NAAQS revised the standard to 70 ppb. States, and portions of states, are then subsequently classified as attainment (meeting the standard), or one of the following classifications of nonattainment: marginal, moderate, serious, severe and extreme. The classifications that indicate the severity of exceedance are defined in rules that proceed a newly promulgated NAAQS. Areas of Connecticut are designated as nonattainment for both standards and as such, Connecticut must contend with the subsequent nonattainment requirements. The southwest portion of the state, known as the New York-Northern New Jersey-Long Island (NY-NJ-CT) ozone nonattainment area, is currently classified as severe for the 2008 standard and as serious for the 2015 standard. The rest of the state, known as the Greater Connecticut ozone nonattainment area, is designated as attainment for the 2008 standard and serious nonattainment for the 2015 standard.

To review Connecticut's ozone reclassification history: Connecticut's nonattainment areas did not attain the 2008 NAAQS by the initial July 20, 2015, attainment date. Therefore, on April 11, 2016, EPA finalized a rule that reclassified Greater Connecticut and Southwest Connecticut from marginal to moderate nonattainment. This reclassification, published in the Federal Register on May 4, 2016, established a new attainment deadline of July 20, 2018, which required measured attainment with the 2008 NAAQS by the end of the 2017 ozone season.

CTDEEP submitted a revised implementation plan for Greater Connecticut in January 2017, which indicated that Greater Connecticut had attained the 2008 NAAQS<sup>1</sup>; it was subsequently reclassified as attainment on November 7, 2022.

CTDEEP also submitted a revised implementation plan for Southwest Connecticut in August 2017, which indicated that Southwest Connecticut was fully compliant for the revoked 1997 NAAQS. However, Southwest Connecticut did not attain the 2008 standard as required and was therefore

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<sup>1</sup> 85 FR 41924, July 13, 2020; Clean Data Determination acknowledging that Greater Connecticut had been measuring attainment with the 2008 NAAQS since 2016.

reclassified from moderate to serious nonattainment on September 23, 2019. This reclassification established a new attainment date for Southwest Connecticut of July 20, 2021, for the 2008 NAAQS, which Southwest Connecticut still failed to meet. Thus, Southwest Connecticut was reclassified from serious to severe nonattainment on November 7, 2022, with a new attainment date of July 20, 2027.

When EPA revised the ozone standard in 2015, Greater Connecticut was initially designated as marginal nonattainment and Southwest Connecticut was designated as moderate nonattainment. Attainment dates for the 2015 NAAQS were set to August 3, 2021, for Greater Connecticut and August 3, 2024, for Southwest Connecticut. Failing to meet the attainment deadline, Greater Connecticut was reclassified to moderate nonattainment for the 2015 NAAQS on November 7, 2022 (83 FR 62998). Because Southwest CT was already designated moderate nonattainment, the entire state was required to attain the 2015 NAAQS by August 3, 2024.

On June 13, 2024, Connecticut requested under CAA section 181(b)(3) to reclassify Southwest Connecticut to Serious non-attainment and made a conditional request to reclassify the Greater Connecticut non-attainment area to Serious non-attainment for the 2015 Ozone NAAQS<sup>2</sup>. The conditions to avoid reclassification outlined in CTDEEP's June 13, 2024, letter to EPA were not met prior to the attainment date and EPA reclassified the Southwest Connecticut non-attainment area and the Greater Connecticut non-attainment area to Serious non-attainment on July 25, 2024 (89 FR 60314), and July 29, 2024 (89 FR 80827), respectively.

On March 20, 2017, CTDEEP was notified that EPA had determined the 2008 NAAQS MVEBs for the Greater Connecticut ozone nonattainment area, which were submitted as a SIP revision to EPA on January 17, 2017, to be adequate for transportation conformity. On May 31, 2017, EPA published its adequacy finding in the Federal Register (82 FR 24859) and the MVEBs were officially incorporated into the SIP effective June 15, 2017.

On April 1, 2025, EPA published its adequacy findings for the 2008 NAAQS MVEBs for Southwest Connecticut in the Federal Register (90 FR 14341), with adequacy details in associated Proposed Rule 89 FR 92079, published on November 21, 2024. These MVEBs were incorporated into the SIP effective May 1, 2025.

Conformity determinations are based on the MVEBs that have most recently been approved or deemed adequate for an Ozone NAAQS by EPA. This analysis demonstrates conformity to the 2008 NAAQS MVEBs, depicted in Table 3.

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<sup>2</sup> See: [connecticutozonereclassificationrequest6132024.pdf](#)

**Table 3: Approved Motor Vehicle Emissions Budgets for the 2008 NAAQS – Ozone**

Year	Area	VOC (tons/summer day)	NOx (tons/summer day)
2020	Connecticut portion of the New York-Northern New Jersey-Long Island, NY-NJ-CT Ozone Area	17.6	23.3
2017	Greater Connecticut Ozone Area	15.9	22.2

### **b. PM2.5 Maintenance Area**

Fine particulate matter, also called PM2.5, is a mixture of microscopic solids and liquid droplets suspended in air, where the size of the particles is equal to or less than 2.5 micrometers (about one-thirtieth the diameter of a strand of human hair). Fine particles can be emitted directly (such as smoke from a fire, or as a component of automobile exhaust), or formed indirectly in the air from power plant, industrial and mobile source emissions of gases, such as sulfur dioxide and nitrogen oxides.

Scientific studies have shown significant associations between elevated fine particle levels and premature death. Effects associated with fine particle exposure include aggravation of respiratory and cardiovascular disease (as indicated by increased hospital admissions, emergency room visits, absences from school or work, and restricted activity days), lung disease, decreased lung function, asthma attacks, and certain cardiovascular problems such as heart attacks and cardiac arrhythmia. While fine particles are unhealthy for anyone to breathe, people with heart or lung disease, asthmatics, older adults, and children are especially at risk.

CTDEEP initially submitted a redesignation request and maintenance plan for the Connecticut portion of the NY-NJ-CT area on June 22, 2012. The submittal demonstrated that Fairfield and New Haven County’s air quality met both the 1997 annual and the 2006 24-hour PM2.5 NAAQS due to national, regional, and local emissions control measures; the submittal also included a maintenance plan that ensured continued attainment through 2025. EPA approved the redesignation request and maintenance plan, effective October 24, 2013, redesignating the Connecticut portion of the NY-NJ-CT area to attainment-maintenance for these standards. On February 20, 2013, EPA found the associated 2017 and 2025 MVEBs adequate and effective for transportation conformity purposes. Table 4 summarizes Connecticut’s current PM2.5 MVEBs.

Consistent with CAA section 175A(a), the initial maintenance plan was required to demonstrate continued attainment for at least 10 years after redesignation. To meet the statutory requirement for a second maintenance period, CTDEEP submitted a second 10-year limited maintenance plan for the Connecticut portion of the NY-NJ-CT area on May 9, 2023, with supplemental information provided on February 21, 2024. EPA approved this plan on November 14, 2025, extending the maintenance period through 2033 in accordance with CAA requirements.

In addition to maintenance planning under older standards, EPA promulgated a revised annual PM<sub>2.5</sub> NAAQS on February 7, 2024, strengthening the level of the standard from 12.0 ug/m<sup>3</sup> to 9.0 ug/m<sup>3</sup> (effective May 6, 2024). CTDEEP formally submitted a request on February 7, 2025, to designate the entire state as attainment/unclassifiable for the 2024 annual PM<sub>2.5</sub> standard and is currently awaiting approval from EPA.

**Table 4: Approved Motor Vehicle Emissions Budgets – PM<sub>2.5</sub>**

Year	Area	Direct PM <sub>2.5</sub> (tons/year)	NOx (tons/year)
2017	Connecticut portion of the New York-Northern New Jersey-Long Island, NY-NJ-CT PM <sub>2.5</sub> Area	575.8	12,791.8
2025	Connecticut portion of the New York-Northern New Jersey-Long Island, NY-NJ-CT PM <sub>2.5</sub> Area	516.0	9,728.1

### c. Carbon Monoxide Attainment Areas

Carbon monoxide (CO) is produced by the incomplete burning of carbon in fuels, including gasoline. High concentrations of CO occur along roadsides in heavy traffic, particularly at major intersections and in enclosed areas such as garages and poorly ventilated tunnels. Peak concentrations occur during the colder months of the year when CO vehicular emissions are greater and meteorological inversion conditions occur more frequently, trapping pollutants near the ground.

There were formally three CO nonattainment areas in the state: the Southwest portion of Connecticut, the New Haven–Meriden–Waterbury area, and the Hartford–New Britain–Middletown area. Attainment was achieved in each nonattainment area and, subsequently, each was designated a full maintenance area. On September 13, 2004, EPA approved a CTDEEP submittal for a SIP revision regarding the re-designation of these areas to limited maintenance plan status, thus eliminating the need for budget testing. Hartford–New Britain–Middletown completed its maintenance period effective January 2, 2016; New Haven–Meriden–Waterbury completed its maintenance period effective December 4, 2018; Southwestern Connecticut completed its maintenance period May 10, 2019. Since the entirety of Connecticut is in attainment for CO, “hot-spot” analyses are no longer needed to satisfy project-level conformity determinations.

### d. PM<sub>10</sub> Attainment Area – Limited Maintenance

EPA previously designated the City of New Haven as nonattainment with respect to the NAAQS for particulate matter with a nominal diameter of ten microns or less (PM<sub>10</sub>). The PM<sub>10</sub> nonattainment status in New Haven was a local problem stemming from the activities of several businesses located in the Stiles Street section of the city. Numerous violations in the late 1980’s and early 1990’s of CTDEEP regulations, Section 22a-174-18 (Fugitive Dust), led to a nonattainment

designation (CTDEEP, 1994: Narrative Connecticut Department of Energy and Environmental Protection, State Implementation Plan Revision, For PM10, March 1994). Corrective actions were subsequently identified in the SIP and implemented, with no violations of the PM10 NAAQS since the mid-1990s.

On October 13, 2005, EPA published in the Federal Register (70 FR 59690) approval of a request by CTDEEP for a limited maintenance plan and the re-designation of the New Haven nonattainment area to attainment for the PM10 NAAQS. This final rule became effective on December 12, 2005.

All construction activities undertaken in the City of New Haven are required to be performed in compliance with Section 22a-174-18 (Control of Particulate "Emissions") of CTDEEP regulations. All reasonable available control measures must be implemented during construction to mitigate particulate matter emissions, which include wind-blown fugitive dust, mud and dirt carry out, and re-entrained fugitive emissions from mobile equipment.

As with limited maintenance plans for other pollutants, emissions budgets are considered to satisfy regional transportation conformity's "budget test". However, future project-level conformity determinations may require "hot spot" PM10 analyses for new transportation projects with significant diesel traffic in accordance with EPA's Final Rule for "PM2.5 and PM10 Hot-Spot Analyses in Project-level Transportation Conformity Rule PM2.5 and PM10 Amendments; Final Rule (75 FR 4260, March 24, 2010) which became effective on April 23, 2010.

## e. State of Connecticut Nonattainment/Attainment Maps

Figure 1: Connecticut Ozone Nonattainment Areas

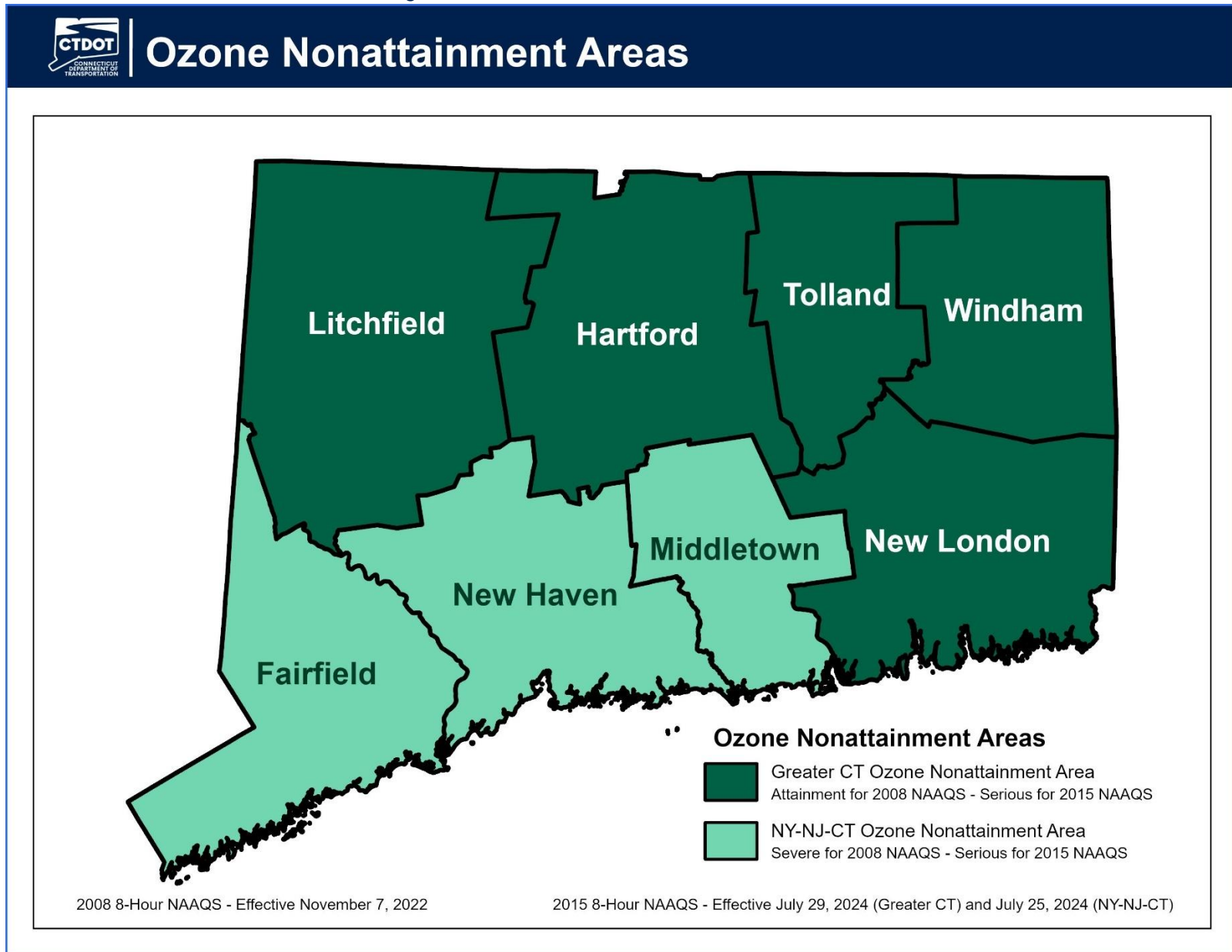
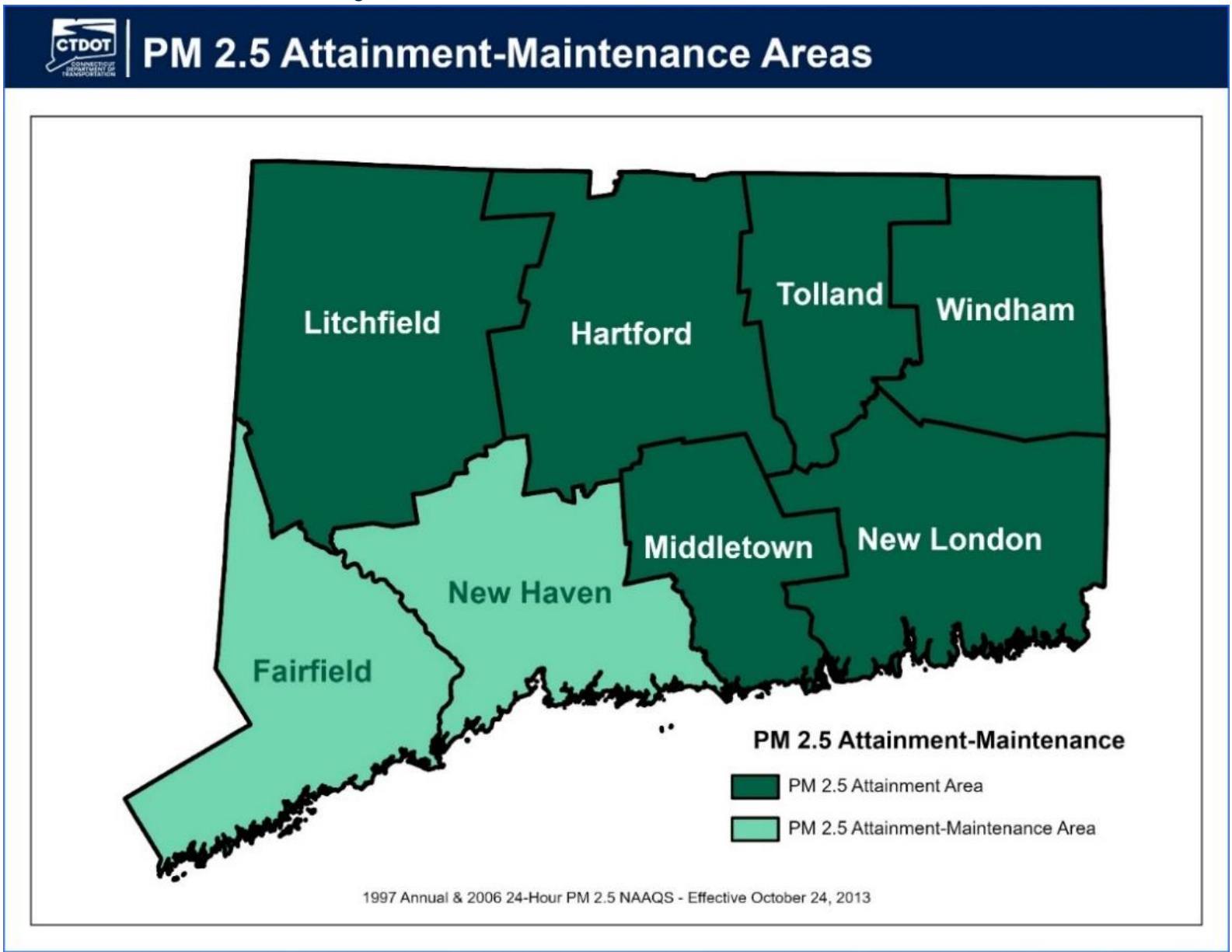


Figure 2: Connecticut PM2.5 Attainment/Maintenance Area





## 4. How Does Connecticut Demonstrate Conformity?

### a. State Planning and Research Program

The State Planning and Research Program contains detailed descriptions of all planning efforts to be sponsored or undertaken with federal assistance. This program includes several tasks directly related to CTDOT's responsibilities under the Air Quality SIP. Additional tasks, such as those that support the preparation of project level conformity analyses, are funded through project-related tasks. This work program is available via CTDOT for review.

### b. Interagency Consultation

The rules for conformity require Federal, State and local transportation and air quality agencies to establish formal procedures ensuring interagency coordination on issues critical to the conformity process. Interagency consultation provides a forum for effective state and local planning and decision-making.

Key organizations included in the interagency consultation are FHWA, FTA, EPA, CTDOT, CTDEEP and the MPOs.

Some goals of interagency consultation are to:

- Ensure all agencies meet regularly and share information;
- Identify key issues early in the process;
- Enable well-coordinated schedules for TIP/MTP conformity determinations and SIP development; and
- Allow collaborative decision-making on methodologies, assumptions, and conformity test selections.

A list of attendees and call-in participants of the Interagency Consultation Meeting is included in Appendix C, along with a copy of the minutes from the meeting.

### c. Public Consultation

The transportation conformity process must also include public consultation on the emissions analysis and conformity determination. This includes posting of relevant documentation and analysis on a "clearinghouse" webpage maintained through the interagency consultation process. All MPOs in the affected nonattainment or maintenance areas must provide thirty-day public comment periods and address any comments received. For this transportation conformity determination, all Connecticut MPOs will hold a thirty-day public comment period. If any public comments are received, they will be attached and found in Appendix E.

### d. Scenario Years

The "Action Scenario" is the future transportation system that will result from full implementation of the TIPs and MTPs.

The ozone analyses for VOC/NOx emissions were conducted for typical summer weekday conditions for the following years:

- 2026 (Near-term analysis year for both Greater CT and the CT portion of the NY-NJ-CT nonattainment areas under the 2008 and 2015 Ozone NAAQS)
- 2030 (Interim modeling year)
- 2035 (Interim modeling year)
- 2045 (Interim modeling year)
- 2055 (Metropolitan Transportation Plan horizon year)

The PM2.5 emissions analyses were conducted for average annual conditions for the following years:

- 2026 (Near-term analysis year)
- 2030 (Interim modeling year)
- 2035 (Interim modeling year)
- 2045 (interim modeling year)
- 2055 (Metropolitan Transportation Plan horizon year)

## **e. Other Planning Documents**

The enacting of Section 81 of Connecticut Public Act 13-277 repealed Section 13b-15 of the Connecticut General Statutes, no longer mandating a biennial Master Transportation Plan, effective July 1, 2013. The Department's Capital Plan has been expanded to include much of the project information that was formerly included in the Master Transportation Plan.

## **5. Latest Planning Assumptions and Emissions Model**

### **a. VMT**

Vehicle miles of travel (VMT) estimates were developed from CTDOT's statewide network-based travel demand model, Cube Series 3. The 2023 highway network, to the extent practical, represents all manner of roads, including state highways, expressways, major and minor arterials, etc.; it also includes roads that are not owned by the state. The 2023 transit network includes the local rail, bus, and express bus systems that currently exist. Future highway and transit networks for 2026, 2030, 2035, 2040, 2045, 2050 and 2055 were created by adding TIP projects (set to be complete after 2023) to the 2023 network year, which serves as an input to the travel demand model. The outputs from the travel demand model serve as inputs to the air quality model, which was used to conduct emissions analyses for 2026, 2030, 2035, 2045, and 2055. Projects that required changes to the highway and transit networks are listed in Appendix B.

It should be noted that any TIP projects that have a negligible impact on trip distribution and/or highway capacity are not incorporated into the network. These include, but are not limited to, reconfigurations of existing interchanges, acceleration lanes under the length of one mile,

replacement of bus or rail equipment, and traffic signal replacements. Project types that reduce the number of vehicle trips and/or VMT may not be included in the travel demand model due to technological limitations. These include the addition of bicycle and pedestrian facilities, specific telecommuting and ridesharing programs, or other actions of this nature. Programs such as these, while not explicitly accounted for in the travel demand model, will continue to reduce emissions throughout Connecticut.

The network-based travel model used for this analysis is the model CTDOT utilizes for transportation planning, programming, and design requests. The base year demographics and land use assumptions were created from 2023 American Community Survey (ACS) population data at the block group level; specifically, the five-year average for Table B01003. Base year employment was created using 2023 town level CTDOLE data, supplemented with 2022 LEHD Origin-Destination Employment Statistics (LODES). Population and employment projections were developed by Cambridge Systematics, using the Woods & Poole Complete Economic and Demographic Data Source (CEDDS®) dataset.

The model uses a capacity constrained, multi-class equilibrium approach to allocate trips along the highway network. The model was calibrated using 2023 ground counts and 2023 Highway Performance Monitoring System (HPMS) VMT data.

Peak hour directional traffic volumes were estimated as a percentage of the Average Daily Traffic (ADT) on a link-by-link basis. Based on automatic traffic recorder data, 9.0 percent, 8.5 percent, 8.0 percent and 7.5 percent of the ADT occurs during the four highest hours of the day. A 55:45 directional split was assumed. Hourly volumes were then converted to Service Flow Levels (SFL) and Volume to Capacity (V/C) ratios calculated as follows:

$$SFL = DHV / PHF * N$$

$$VC = SFL / C$$

where: DHV = Directional Hourly Volume

PHF = Peak Hour Factor = 0.9

N = Number of lanes

C = Capacity of lane

Peak period speeds and capacities were developed using guidance from the latest Highway Capacity Manual. They were estimated based on design speed, facility and area type, and calculated V/C ratio. For off-peak hours, traffic volume is not the controlling factor for vehicle speed. Off-peak link speeds for the travel demand model were based on the latest Highway Capacity Manual free-flow speeds as a function of facility and area type.

The Hartford Rail Line, New Haven Rail Line, Shore Line East, and its branch schedules were updated to reflect the 2023 headways and routes. Rail station boardings were then calibrated to the actual 2023 counts for AM peak, midday off-peak, and total daily boardings along all Connecticut rail lines.

Two special cases exist in the travel demand modeling process. These are centroid connectors and intrazonal trips:

- Centroid connectors represent local roads used to gain access to the model network from centers of activity (centroids) in each traffic analysis zone (TAZ). A speed of 25 mph is utilized for these links;
- Intrazonal trips are trips that are too short to load onto the model network. VMT for intrazonal trips is calculated based on the size of each individual TAZ. A speed of 20 to 24 mph is utilized for peak periods, and a speed of 25 to 29 mph is utilized for off-peak.

The Daily Vehicle Miles of Travel (DVMT) are calculated using a methodology based on disaggregate speed and are summarized by inventory area, functional classification, and speed. The annual VMT and speed profiles developed by this process are then combined with the emissions factors from the MOVES5 model to produce emissions estimates for each scenario and time frame.

## **b. Emissions Model**

For this transportation conformity analysis, MOVES5 was used to estimate on-road vehicle emissions for the action scenarios. MOVES is a state-of-the-science emissions modeling system developed by EPA that estimates emissions for mobile sources at the national, county, and project level for criteria air pollutants, greenhouse gases, and air toxics.

MOVES estimates exhaust and evaporative emissions, as well as brake and tire wear emissions, that originate from all types of on-road vehicles. It also uses a vehicle classification system that is based on FHWA's Highway Performance Monitoring System (HPMS). Other parameters include VMT by vehicle and road type, vehicle hours traveled (VHT) by vehicle and road type, the total number of each vehicle type in the fleet, vehicle age distribution, model year, travel speed, roadway type, fuel information, meteorological data such as ambient temperature and humidity, and applicable control measures such as reformulated gasoline (RFG) and inspection and maintenance (I/M) programs. Where applicable, local inputs were cooperatively developed by CTDEEP and CTDOT, using EPA recommended methods.

The HPMS Vehicle Mix file was updated to reflect the average vehicle mix for the 2022-2024 timeframe. A three-year average was determined to be a more accurate representation of actual vehicle mix than the previous one-year counts, as CTDOT rotates traffic and vehicle counts on a three-year basis.

CTDEEP used local data from 2023 Connecticut registration data for 11 Motorcycle, 43 School Bus, and 54 Motor Home source types. Data from an EPA-sponsored decode of 2023 state vehicle registration data was used for 21 Passenger Car, 31 Passenger Truck, 32 Light Commercial Truck, 41 Intercity Bus, 42 Transit Bus, 51 Refuse Truck, 52 Single Unit Short-Haul Truck, 53 Single Unit Long-Haul truck, 61 Combination Short-Haul Truck, and 62 Combination Long-Haul Truck source

types. These data sets were scaled to the project base year using the growth in MOVES Default VMT for the relevant time periods.

For the ozone analyses, MOVES was run to obtain VOC and NOx emissions for a typical summer weekday, which were then compared to the ton/year summer weekday ozone MVEBs. For the PM2.5 analyses, an annual emissions run was conducted for both PM2.5 and NOx and compared to the ton/year PM2.5 MVEBs. All runs included the National Low Emission (NLEV) Program, which is adopted on a state-by-state basis and creates a regulatory framework that allows for the implementation of stricter vehicle emissions standards. This program is designed to reduce air pollution and improve public health through the production and sale of vehicles that emit fewer pollutants.

## **6. Conformity Tests and Air Quality Emissions Results**

In November 2012, EPA confirmed via telephone to CTDEEP that conformity determinations that utilize newer versions of MOVES are allowed to be compared to MVEBs that were developed utilizing older versions of MOVES. As new MVEBs for each area are determined by EPA to be adequate, they will then be used in conformity determinations.

For the NY-NJ-CT ozone nonattainment area (also referred to as “Southwest Connecticut” throughout this document), VOC and NOx motor vehicle emissions from the Action Scenarios must be less than the 2020 MVEBs if the analysis year is 2020 or later.

For the Greater Connecticut Ozone nonattainment area, VOC and NOx motor vehicle emissions from the Action Scenarios must be less than the 2017 MVEBs if the analysis year is 2017 or later.

For the NY-NJ-CT PM2.5 maintenance area, PM2.5 and NOx motor vehicle emissions from the Action Scenarios must be less than the 2025 MVEBs if the analysis year is 2025 or later.

No emissions tests are required for CO because the initial CO nonattainment areas achieved maintenance status and completed their subsequent Limited Maintenance Plans; Connecticut is now in attainment for CO.

The following tables illustrate the modeled MOVES5 emissions for both ozone and PM2.5 nonattainment areas compared to the MVEBs (for both the 2008 and 2015 NAAQS) for each pollutant. In all cases, the MPO’s TIPs meet the required conformity budgets.

**Table 5: Ozone Conformity – NOx and VOC Emissions Budget Test Results for 2008 Ozone NAAQS**

Year	Ozone Area	U.S. Tons per day					
		Cube Series 3		Budgets		Difference	
		VOC	NOx	VOC	NOx	VOC	NOx
2026	CT Portion of NY-NJ-CT Area	11.31	11.61	17.6	23.3	-6.29	-11.69
	Greater CT Area	10.27	10.80	15.9	22.2	-5.63	-11.4
2030	CT Portion of NY-NJ-CT Area	9.88	7.97	17.6	23.3	-7.72	-15.33
	Greater CT Area	8.94	7.37	15.9	22.2	-6.96	-14.83
2035	CT Portion of NY-NJ-CT Area	8.31	4.97	17.6	23.3	-9.29	-18.33
	Greater CT Area	7.52	4.6	15.9	22.2	-8.38	-17.6
2045	CT Portion of NY-NJ-CT Area	5.01	2.37	17.6	23.3	-12.59	-20.93
	Greater CT Area	4.54	2.22	15.9	22.2	-11.36	-19.98
2055	CT Portion of NY-NJ-CT Area	3.8	1.94	17.6	23.3	-13.8	-11.86
	Greater CT Area	3.5	1.84	15.9	22.2	-12.4	-20.36

**Table 6: Ozone Conformity – NOx and VOC Emissions Budget Test Results for 2015 Ozone NAAQS**

Year	Ozone Area	U.S. Tons per day					
		Cube Series 3		Budgets		Difference	
		VOC	NOx	VOC	NOx	VOC	NOx
2026	CT Portion of NY-NJ-CT Area	11.31	11.61	15.2	17.6	-3.89	-5.99
	Greater CT Area	10.27	10.80	13.6	15.5	-3.33	-4.7
2030	CT Portion of NY-NJ-CT Area	9.88	7.97	15.2	17.6	-5.32	-9.63
	Greater CT Area	8.94	7.37	13.6	15.5	-4.66	-8.13
2035	CT Portion of NY-NJ-CT Area	8.31	4.97	15.2	17.6	-6.89	-12.63
	Greater CT Area	7.52	4.6	13.6	15.5	-6.08	-10.9
2045	CT Portion of NY-NJ-CT Area	5.01	2.37	15.2	17.6	-10.19	-15.23
	Greater CT Area	4.54	2.22	13.6	15.5	-9.06	-13.28
2055	CT Portion of NY-NJ-CT Area	3.8	1.94	15.2	17.6	-11.4	-15.66
	Greater CT Area	3.5	1.84	13.6	15.5	-10.1	-13.66

**Table 7: PM2.5 Conformity – Direct PM2.5 and NOx Emission Budget Test Results**

Year	PM2.5 Area	U.S. Tons per year					
		Cube Series 3		Budgets		Difference	
		Direct PM <sub>2.5</sub>	NOx	Direct PM <sub>2.5</sub>	NOx	Direct PM <sub>2.5</sub>	NOx
2026	CT Portion of NY-NJ-CT Area	202.01	3,770.09	575.8	12,791.80	-373.79	-9,021.71
2030	CT Portion of NY-NJ-CT Area	174.31	2,623.95	516.0	9,728.10	-341.69	-7,104.15
2035	CT Portion of NY-NJ-CT Area	141.32	1,682.11	516.0	9,728.10	-374.68	-8,045.99
2045	CT Portion of NY-NJ-CT Area	97.42	858.61	516.0	9,728.10	-418.58	-8,869.49
2055	CT Portion of NY-NJ-CT Area	84.45	719.82	516.0	9,728.10	-431.55	-9,008.28

Emission Summary Tables can be found in Appendix D.

The network-based modeling process is only capable of assessing the impacts of major changes to the highway and transit networks, and therefore does not reflect the full benefit in air quality that may result from all projects in the MPO's MTPs and TIPs. For instance, the modeling process does not reflect the impact of categorically excluded projects under 40 CFR 93.126, 93.127 and 93.128. These project types include simple intersection reconfigurations, which can allow traffic to flow more efficiently and thus reduce delay, fuel usage, and emissions. Other project types not reflected in this analysis are projects to maintain existing rail and bus systems, which aid in keeping them operating at a high level of service and efficiency; maintaining these standards helps to maintain existing patrons and attract new riders, which continues to reduce the number of single-occupant vehicles on the road.

It should be noted that changes to the transportation system will not produce significant emissions reductions due to the massive highway, rail and bus systems already in place. The dramatic decline in transportation emissions demonstrated in this analysis, which are expected to continue, are primarily due to programs such as, but not limited to, federal heavy-duty vehicle standards, reformulated fuels, enhanced inspection and maintenance programs, and Connecticut's Low Emissions Vehicle (LEV) program.

## 7. Conclusions

CTDOT has assessed its compliance with the applicable conformity criteria requirements of the 1990 CAAA. Based upon this analysis, it is concluded that all elements of the 2027-2030 TIPs and the 2023-2050 Metropolitan Transportation Plans conform to applicable SIP and 1990 CAAA Conformity Guidance criteria and the approved transportation conformity budgets.

## 8. Contact Information

Please direct any questions you may have on the air quality emissions analysis to:

Connecticut Department of Transportation  
Bureau of Policy and Planning  
Division of Program Development and Forecasting  
Travel Demand / Air Quality Modeling Unit  
2800 Berlin Turnpike  
Newington, CT. 06111  
Email: [DOT.AQUnit@ct.gov](mailto:DOT.AQUnit@ct.gov)

All MOVES modeling files and run specifications are available for review upon request. The files will remain available during the 30-day public review period.

## 9. Appendices

In addition to the information required for a conformity determination, the following is attached:

- Appendix A: Acronyms
- Appendix B: List of Projects Included in Conformity Analysis by Network Year
- Appendix C: Interagency Consultation Meeting
- Appendix D: Emissions Summary Tables
- Appendix E: Comments Received During Public Review Period

# **Appendix A**

## **Acronyms**

Acronym	Meaning
ACS	American Community Survey
ADT	Average Daily Traffic
AQI	Air Quality Index
CAAA	Clean Air Act Amendments (1990)
CEDDS	Complete Economic and Demographic Data Source
CFR	Code of Federal Regulations
CMAQ	Congestion Mitigation and Air Quality Improvement Program
CO	Carbon Monoxide
CTDEEP	Connecticut Department of Energy and Environmental Protection
CTDOL	Connecticut Department of Labor
CTDOT	Connecticut Department of Transportation
DHV	Design Hourly Volume
DVMT	Daily Vehicle Miles of Travel
ECO	Employee Commute Option
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
FR	Federal Register
FTA	Federal Transit Administration
HPMS	Highway Performance Monitoring System
I/M	Inspection Maintenance Program
LEV	Low Emission Vehicle
LODES	LEHD Origin-Destination Employment Statistics
MOVES	Mobile Vehicle Emission Simulator
MPO	Metropolitan Planning Organization
MTP	Metropolitan Transportation Plan
MVEB	Motor Vehicle Emission Budget
NAAQS	National Ambient Air Quality Standards
NLEV	National Low Emission Vehicle
NOx	Nitrogen Oxides
NY-NJ-CT	New York-New Jersey-Long Island
O3	Ozone
PHF	Peak Hour Factor
PM <sub>2.5</sub>	Fine Particulate Matter less than 2.5 micrometers
PM <sub>10</sub>	Fine Particulate Matter less than 10 micrometers
PPB	Parts Per Billion
RFG	Reformulated Gasoline
SFL	Service Flow Levels
SIP	State Implementation Plan
(S)TIP	(Statewide) Transportation Improvement Program
TAZ	Traffic Analysis Zone
TCM	Transportation Control Measure
USDOT	United States Department of Transportation

Acronym	Meaning
V/C	Volume to Capacity
VHT	Vehicle Hours Traveled
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound

**Appendix B**

**Lists of Projects Included in Conformity Analysis by  
Network Year**

## 2027-2030 Transportation Improvement Programs

COG	Project Number	Town	Route/Street Number	Project Description	Network Year
CRCOG	0131-0190	Southington	Rte10/Rte 322	NHS – Remove Br 00518 & Recon Rte 10/Rte 322, Replace Br 00646 & 05753	2025
RiverCOG	0082-0316	Middletown	Rte 17/Rte 9	Reconfigure Rte 17 On-Ramp to Rte 9 NB	2025
SCCOG	0085-0146	Montville/Salem	Rte 85	Corridor Improvements South of Rte 82	2025
SCRCOG	0079-0246	Meriden	I-91/I-691/Rte 15	Interchange Improvements – NB & NB to WB (B/O from 79-240)	2025
SCRCOG	0106-0108	Orange	US 1	Operational Lane from Milford TL to Lambert Rd	2025
SCRCOG	0402-0034CN	New Haven	MOVE NH BRT	MOVE New Haven On-Street BRT System – Construction	2025
CRCOG	0063-0742	Hartford	I-84	GHMP – Ramp Closures and Traffic Signal Upgrades	2028
RiverCOG	0082-0318	Middletown	Rte 9	Removal of Traffic Signals on Rte 9	2028
SCRCOG	0092-0689	New Haven/Woodbridge	Rte 15	Interchange 59/Rte 69 Improvements (Phase 2)	2028
WestCOG	0102-0358	Norwalk	US 7/Rte 15	Complete the Rtes 15 & 7 Interchange	2028
CRCOG	DOT03200008CN	West Hartford	Hartford Line	Hartford Line Double Track Phase 3b	2030
MetroCOG	0015-BUILDFY25	Bridgeport	Congress St	Congress St Bridge Replacement	2030
CRCOG	0042-0333	East Hartford/Hartford	Rte 2	GHMP – Extend Rte 2 to I-91 Via New Bridge o/ CT River	2035
WestCOG	0135-xxx1	Stamford	I-95	Realign I-95 & Replace Br 00032	2035
SCRCOG/RiverCOG	0079-0240	Meriden-Middletown	I-91/I-691/Rte 15	Interchange Improvements – SB & EB to SB	2045
WestCOG	0034-0349	Danbury	I-84	Reconstruction between Exits 3 & 8 (PE)	2045

## 2023–2050 Metropolitan Transportation Plan

MPO	Project Number	Town(s)	Route/Street/Sys	Brief Project Description	Network Year
GBVMPO	0036-0179	Derby	Rte 8	Reconstruct interchanges 16 & 17; extend Pershing Dr & construct local roads. Preliminary design completed.	2023
GBVMPO	0036-0184	Derby	Rte 34	Reconstruct and widen Main St from Bridge St to Ausonio Dr to 4 travel lanes	2023
CNVMPPO	TBD	Waterbury	CTtransit Waterbury	Add Route	2025
CNVMPPO	TBD	Various	WBL	Expand Service	2025
CNVMPPO	TBD	CTtransit-Bristol	Various	Realign Service	2025
CRCOG	320-0005PE (Station) / 320-0008PE (Track)	Newington (HL)		320-0013CN - The Hartford Line Newington Station	2025
CRCOG	320-0005PE (Station) / 320-0008PE (Track)	West Hartford (HL)		320-0014CN - The Hartford Line West Hartford Station	2025
CRCOG	320-0005PE (Station) / 320-0008PE (Track)	Windsor (HL)		320-0015CN - The Hartford Line Windsor Station	2025
CRCOG	320-0005PE (Station) / 320-0008PE (Track)	Enfield (HL)		320-0017CN - The Hartford Line Enfield Station	2025
CRCOG	320-0005PE (Station) / 320-0008PE (Track)	Enfield (HL)		320-0024CN - The Hartford Line Enfield Station - Short High Level	2025
CRCOG	TBD	Hartford	Albany Av/Blue Hills Av	Transit Priority Treatments	2025
CRCOG	TBD	Hartford/West Hartford	Farmington Av	Transit Priority Treatments	2025
CRCOG	TBD	Hartford	Franklin Av	Transit Priority Treatments	2025
CRCOG	TBD	Hartford	Main St	Transit Priority Treatments	2025
CRCOG	TBD	Hartford	Park St	Transit Priority Treatments	2025
CRCOG	TBD	East Hartford	Burnside Av/Main St	Transit Priority Treatments	2025

MPO	Project Number	Town(s)	Route/Street/Sys	Brief Project Description	Network Year
GBVMPO		Various	WBL	Operation Expansions	2025
GBVMPO		Seymour	WBL	Seymour Station Relocation	2025
GBVMPO		Fairfield	Rte 58 - Black Rock Tpke, Moritz Pl and Whitewood Dr	Improvement	2025
GBVMPO		Monroe	Rte 25	Improvement at Pond View Plaza/Judd Rd/Purdy Hill Rd intersection	2025
GBVMPO		Fairfield	Rte 58	Improvement from Fairfield Woods Rd to Brookside Dr	2025
GBVMPO		Fairfield	Rte 58	Improvement	2025
GBVMPO		Seymour	New Road	Rte 42 & Rte 67 Connector	2025
RiverCOG		RiverCOG		Bus route 581 alignment	2025
RiverCOG		RiverCOG		Bus route 582 alignment	2025
RiverCOG		RiverCOG		Bus route 583 alignment	2025
RiverCOG		RiverCOG		Bus route 584 alignment	2025
RiverCOG		RiverCOG		Bus route 585 alignment	2025
RiverCOG		RiverCOG		Bus route 586 alignment	2025
RiverCOG		RiverCOG		Bus route 587 new	2025
RiverCOG		RiverCOG		Bus route 590 alignment	2025
RiverCOG		RiverCOG		Bus route 640 new	2025
RiverCOG		RiverCOG		Bus route 641 alignment	2025
RiverCOG		RiverCOG		Bus route 642 alignment	2025
RiverCOG		RiverCOG		Bus route 643 alignment	2025
RiverCOG		RiverCOG		Bus route 644 alignment	2025
RiverCOG		RiverCOG		Bus route 645 alignment	2025
RiverCOG		MTD		Add a second Meriden to Middletown run to provide 30 minute service vs. 60 minute	2025
RiverCOG		ETD		Bradley Airport Service – Semi-express service to Bradley from Old Saybrook with stops at park and ride lots and the Middletown bus terminal	2025
RiverCOG		MTD		Express bus service from Middletown to CT Fastrack in New Britain	2025
RiverCOG		ETD		Rte 80 Service – Old Saybrook to North Branford service through Ivoryton, Winthrop, Killingworth, Madison, and Guilford with CTtransit New Haven connection	2025
RiverCOG		RiverCOG		Service frequency changes	2025
RiverCOG		RiverCOG		Service frequency changes	2025
RiverCOG		RiverCOG		Service frequency changes	2025

MPO	Project Number	Town(s)	Route/Street/Sys	Brief Project Description	Network Year
RiverCOG		RiverCOG		Service span changes	2025
RiverCOG		RiverCOG		Shuttles new	2025
RiverCOG		RiverCOG		Systemwide changes	2025
RiverCOG		RiverCOG		Systemwide changes	2025
RiverCOG		RiverCOG		Systemwide changes	2025
RiverCOG		RiverCOG		Xtra mile new	2025
RiverCOG		RiverCOG		Xtra mile new	2025
RiverCOG		RiverCOG		Xtra mile new	2025
RiverCOG		RiverCOG		Xtra mile new	2025
SCCOG		Colchester	Rte 2	Interchange improvements at Exit 17, add eastbound on-ramp, westbound off-ramp	2025
SCRCOG	0079-0245	Meriden	I-91 / I-691 / Rte 15	I-91 / I-691 / Rte 15 - Interchange Improvs - EB to NB (B/O from 79-240) - (Design-Build)	2025
SCRCOG	0079-0240	Meriden	I-91 / I-691 / Rte 15	WAS: I-91 / I-691 / Rte 15 Operational Improvements NOW: Added lines for 2 other projects and corrected cost	2025
SCRCOG	0079-0245	Meriden	I-91 / I-691 / Rte 15	I-91 / I-691 / Rte 15 - Interchange Improvs - EB to NB (B/O from 79-240) - (Design-Build)	2025
SCRCOG	320-0005PE (Station) / 320-0008PE (Track)	North Haven (HL)		320-0012CN - The Hartford Line North Haven Station	2025
CNVMPPO	TBD	Bristol	CTtransit Bristol/New Britain	Add Route	2028
CRCOG	TBD	Manchester	I-84	Auxiliary lanes between Exits 62 and 63	2028
CRCOG	TBD	Manchester	I-84	Auxiliary lanes between Exits 63 and 64/65	2028
CRCOG	TBD	Windsor Locks	Northern Bradley Connector	Bradley Airport-Northern Bradley Connector	2028
CRCOG	TBD	Bolton	US 6	US 6 Corridor Study-Bolton Crossroads - Phase 1: US 6-US 44 Connector	2028
MULTIPLE	0084-0114	Oxford/Monroe	Rte 34	Bridge Replacement	2028
CNVMPPO		Naugatuck	Rte 8	Interchange 27 Improvements	2030
CNVMPPO		Naugatuck	Rte 8	Interchange 28/29 Improvements	2030
CNVMPPO		Oxford	Rte 34	Bridge Relocation	2030
CNVMPPO		Waterbury	Huntingdon Av	Roadway Improvements	2030
CNVMPPO		Waterbury	Rte 69	Roadway Improvements	2030
GBVMPO		Bridgeport	Railroad Station	Improvement	2030

MPO	Project Number	Town(s)	Route/Street/Sys	Brief Project Description	Network Year
GBVMPO		Fairfield	Rte 58 - Black Rock Tpke and Burroughs Dr	Improvement	2030
GBVMPO		Fairfield	Rte 58 - Burroughs Dr and Katona Dr	Improvement	2030
GBVMPO		Fairfield	Rte 58	Improvement from Shoprite to Stillson Rd	2030
GBVMPO		Fairfield	Rte 58	Improvement from Old Navy to Fairfield Woods Rd	2030
GBVMPO		Shelton	Constitution Blvd	Extend Constitution Blvd	2030
GBVMPO		Bridgeport	I-95	Improvement	2030
GBVMPO		Bridgeport	Rte 8 and Rte 25	Improvement	2030
GBVMPO		Shelton	SR 714	Widening of Bridgeport Av to provide a consistent 4-lane cross section with turn lanes from Trumbull town line to Constitution Blvd; includes advance traffic signal system & access management	2030
HVMPO	TBD	Danbury	Sandpit Rd Corridor	Sandpit Rd Corridor Improvements	2030
HVMPO	TBD	Danbury	West St Corridor	West St Corridor Improvements	2030
SCCOG		Preston	Rte 2A	New Parallel 2-lane Rte 2A Bridge (Add Second Span to Mohegan Pequot Bridge, alternative F of the 2005 EIS, estimated at 119M(cost escalated 2%/25 years)	2030
SWRMPO	TBD	Norwalk	Various	Transit Service Connecting Wall St and SONO	2030
SWRMPO		Stamford	US 1	US 1 BRT Implementation	2030
SWRMPO		Stamford		Stamford Trolley Bus and Network Upgrades	2030
CRCOG	TBD	Windsor Locks	Bradley Park Rd	Bradley Airport-East Granby - Bradley Park Rd Improvements	2035
CRCOG	TBD	Manchester	Redstone Rd Extension	Buckland: Redstone Rd Extension	2035
CRCOG	TBD	Rocky Hill	Elm Street	Elm Street Connector Roadway	2035
GBVMPO		Monroe	Rte 25	Improvement	2035
GBVMPO		Stratford	I-95	Improvement	2035
GBVMPO		Trumbull	Rte 25	Improvement from Rte 111 (Trumbull) to the Monroe-Newtown town line	2035
HVMPO	TBD	Danbury, Bethel, Newtown	I-84	I-84 Strategic Congestion Relief Projects	2035
SWRMPO	TBD	Norwalk	US 1 (Cross St)	Widening last remaining section of US 1 from two lane to four lane cross-section.	2035

MPO	Project Number	Town(s)	Route/Street/Sys	Brief Project Description	Network Year
SWRMPO	TBD	Stamford	Canal St	Canal St MNRR Bridge Replacement and Complete Street Enhancements	2035
SWRMPO	TBD	Stamford	Elm St	Elm St MNRR Bridge Replacement and Complete Street Enhancements	2035
SWRMPO	TBD	Stamford	Greenwich Av	Greenwich Av MNRR Bridge Replacement and Complete Street Enhancements	2035
SCCOG	TBD	Norwich	New road	New Arterial Road Connecting Lawler La, Canterbury Tpke and Rte 97	2035
HVMPO	TBD	Danbury	HARTransit	Intermodal Hub	2040
HVMPO	TBD	Various	Danbury Branch Line	Track improvements and extension	2040
SWRMPO	TBD	Norwalk	NTD	Intermodal Hub	2040
CRCOG	TBD	Farmington	Monteith Dr	New Bridge Crossing of the Farmington River	2045
GBVMPO		Trumbull	Rte 25	Improvement	2045
GBVMPO		Bridgeport	Rte 130	Improvement	2045
GBVMPO		Fairfield	Rte 130	Improvement from Kings Hwy to Shoreham Village Dr	2045
GBVMPO		Bridgeport, Fairfield	I-95	Major	2045
GBVMPO		Bridgeport, Fairfield	I-95	Major	2045
GBVMPO		Ansonia	Rte 334	Relocate Rte 334 to a new alignment	2045
HVMPO	0034-0349	Danbury	I-84	WAS: I-84 Widening from Danbury Exit 3 to Exit 8 Ramp Improvements NOW: I-84/Rte 7 Improvements (PEL Recommendations)	2045
RiverCOG		RiverCOG/Old Lyme	I-95	Widening from the Baldwin Bridge to the Rocky Neck Connector	2045
RiverCOG		RiverCOG/Cromwell	Rte 9 Exit 19 SB and Rte 372	Roadway improvements	2045
SCCOG		New London	I-95	Close exit 84-E to Williams St	2045
SCRCOG	TBD	Wallingford	Rte 5	Additional lane	2045
SCRCOG	TBD	Branford	I-95 Exit 53	Interchange reconstruction	2045
SWRMPO	TBD	Norwalk	US 7	Was: US 7 Reconstruction from Grist Mill Rd to Rte 33 Now: US 7 Improvements from Grist Mill Rd to Rte 33	2045

**Appendix C**  
**Interagency Consultation Meeting**

**Interagency Consultation Meeting  
2023 -2050 Metropolitan Transportation Plans  
2027-2030 Transportation Improvement Programs  
Connecticut Department of Transportation  
November 4, 2025 Virtual Meeting**

**Attendees:**

<b>Name</b>	<b>Organization</b>		<b>Name</b>	<b>Organization</b>
Rob Aloise	CRCOG		Grayson Wright	CTDOT
Cara Radzins	CRCOG		Ariel Garcia	EPA
Louis Corsino	CTDEEP		Ayla Martinelli	EPA
Paul Kritzler	CTDEEP		Jennifer Brady	FHWA
Steven Potter	CTDEEP		David Williams	FHWA
Richard Rodrigue	CTDEEP		Brandon Burns	FTA
Kristin Salimeno	CTDEEP		Devin Clarke	METROCOG
Sam Weinberg	CTDEEP		Matt Fulda	METROCOG
Kiernan Wholean	CTDEEP		Meghan Sloan	METROCOG
Matthew Abbott	CTDOT		Nicolas Dostal	METROCOG
Anthony Alasso	CTDOT		Patrick Carleton	METROCOG
Blake Bauer	CTDOT		Jim Larkin	NECCOG
Kyle Brangan	CTDOT		Erik Shortell	Northwest Hills COG
Tyson Byrne	CTDOT		Richard Donovan	NVCOG
Thomas Doyle	CTDOT		Robert Haramut	RIVERCOG
Rose Etuka	CTDOT		Sam Gold	RIVERCOG
Steven Giannitti	CTDOT		Kellie Kingston	SCRCOG
Nathaniel Howard	CTDOT		Laura Francis	SCRCOG
Kimberly Lesay	CTDOT		Amanda Kennedy	SECCOG
Jennifer Pacacha	CTDOT		David Cook	SECCOG
Taylor Reed	CTDOT		Kate Rattan	SECCOG
Ly'Nette Rios	CTDOT		Amal Malik	WESTCOG
Michael Salter	CTDOT		Francis Pickering	WESTCOG
Zachary Taylor	CTDOT		Kristin Hadjstylianos	WESTCOG
James Vincenzo	CTDOT			

The Interagency Consultation Meeting was held to review projects submitted for the MPO's MTPs.

The Conformity Documents will be electronically distributed to the MPOs, FHWA, FTA, EPA and CTDEEP. The MPOs will need to hold a 30-day public review and comment period. At the end of this review period, the MPO will hold a Policy Board meeting to endorse the Air Quality Conformity determination.

There was also a brief discussion on the planning assumptions in the travel demand model and emissions modeling software.

The schedule for the Transportation Improvement Programs Conformity Determination Analysis is as follows:

- MPOs transmit signed and dated Concurrence Form to [mailto: DOT.AQUnit@ct.gov](mailto:DOT.AQUnit@ct.gov)
- CTDOT Travel Demand and Air Quality Modeling Unit performs the air quality analysis and sends the Air Quality Conformity Determination Report via the STIP unit electronically to all MPOs
- MPOs advertise and hold a 30-day public review and comment period for the Air Quality Conformity
- MPOs hold a Policy Board meeting approving and endorsing the Air Quality Conformity and transmit resolutions to [DOT.AQUnit@ct.gov](mailto:DOT.AQUnit@ct.gov) after Policy Board meeting.

It is important that all MPOs follow this schedule to ensure that the Conformity Determinations for the MPO's TIPs move forward on schedule.

## PLANNING ASSUMPTIONS

**Ozone and PM<sub>2.5</sub>**  
**2023 –2050 Metropolitan Transportation Plans**  
**2027–2030 Transportation Improvement Programs**  
**November 4, 2025**

Planning Assumptions for Review	Frequency of Review <sup>1</sup>	Responsible Agency	Date of Last Review
Socioeconomic Data	At least every 5 years	CTDOT	2023 and 2024 ACS Data
DMV Vehicle Registration Data	At least every 5 years	CTDEEP	2024
State Vehicle Inspection and Maintenance Program	Each conformity round	CTDEEP	Same as currently approved I&M SIP
State Low Emission Vehicle Program	Each conformity round following approval into the SIP	CTDEEP	Same as SIP
VMT Mix Data	At least every 5 years	CTDEEP	2023 <sup>2</sup>
Analysis Years – Ozone	Each conformity round	CTDOT/CTDEEP	2026, 2030, 2035, 2045, and 2055
Analysis Years – PM <sub>2.5</sub>	Each conformity round	CTDOT/CTDEEP	2026, 2030, 2035, 2045, and 2055
Emission Budget – PM <sub>2.5</sub>	As SIP revised/updated	CTDEEP	<b>2017:</b> PM <sub>2.5</sub> 575.8 NOx 12,791.8 <b>2025:</b> <sup>3</sup> PM <sub>2.5</sub> 516.0 NOx 9,728.1
Emission Budget – Ozone	As SIP revised/updated	CTDEEP	<b>2008:</b> <sup>4</sup> NY Area: VOC 17.6 NOx 23.3 Gr. CT: VOC 15.9 NOx 22.2
Temperatures and Humidity	As SIP revised/updated	CTDEEP	X

Control Strategies	Each conformity round	CTDEEP	X
HPMS VMT	Each conformity round	CTDOT	2024

<sup>1</sup> Review of Planning Assumptions does not necessarily preclude an update or calibration of the travel demand model.

<sup>2</sup> Data based on a three-year average (2022-2024) in order to represent a more accurate depiction of actual traffic.

<sup>3</sup> In 2013, EPA formally approved Connecticut's request to re-designate the Connecticut portion of the NY-NJ-CT area to attainment/maintenance. The end of the maintenance period was established as 2033, consistent with the CAA section 175A (a) requirement that the SIP provide for maintenance of the NAAQS for at least 20 years after EPA formally approves the re-designation request. All future air quality emissions analyses, through 2033, will continue to adhere to the 2025 established budgets, as there is currently no plan to submit another PM2.5 SIP.

<sup>4</sup> Per EPA: Since budgets have not been found adequate, nor been approved for the 2015 Ozone NAAQS, this Conformity will be run using the 2008 Ozone NAAQS.

**Appendix D**  
**Emissions Summary Tables**

Pollutants		2026 Emission Quantities (Tons/Day)										Statewide
		NY-NJ-CT Nonattainment Area				Greater CT Nonattainment Area						
ID	Name	Fairfield	Middlesex	New Haven	Subtotal	Hartford	Litchfield	New London	Tolland	Windham	Subtotal	
1	Hydrocarbons	5.42338	1.17855	5.10717	<b>11.70909</b>	5.69294	1.37965	1.75799	1.01802	0.75672	<b>10.60533</b>	<b>22.31442</b>
3	Nox	5.12354	1.23671	5.25198	<b>11.61223</b>	5.90690	1.29693	1.70293	1.17833	0.66440	<b>10.74950</b>	<b>22.36172</b>
79	NM Hydrocarbons	4.95377	1.06757	4.64619	<b>10.66753</b>	5.16542	1.26311	1.60603	0.91726	0.69865	<b>9.65047</b>	<b>20.31800</b>
87	VOC	5.25393	1.13158	4.92599	<b>11.31150</b>	5.47434	1.33893	1.70444	0.97219	0.74224	<b>10.23214</b>	<b>21.54364</b>

Pollutants		2030 Emission Quantities (Tons/Day)										Statewide
		NY-NJ-CT Nonattainment Area				Greater CT Nonattainment Area						
ID	Name	Fairfield	Middlesex	New Haven	Subtotal	Hartford	Litchfield	New London	Tolland	Windham	Subtotal	
1	Hydrocarbons	4.77485	1.03883	4.49558	<b>10.30927</b>	5.01436	1.21355	1.54903	0.89929	0.66723	<b>9.34346</b>	<b>19.65273</b>
3	NOx	3.53345	0.84353	3.59731	<b>7.97429</b>	4.05801	0.89381	1.15940	0.79856	0.45827	<b>7.36806</b>	<b>15.34234</b>
79	NM Hydrocarbons	4.32926	0.93305	4.05477	<b>9.31707</b>	4.50802	1.10433	1.40431	0.80160	0.61254	<b>8.43080</b>	<b>17.74787</b>
87	VOC	4.59297	0.98925	4.30020	<b>9.88242</b>	4.77875	1.17096	1.49067	0.84970	0.65085	<b>8.94093</b>	<b>18.82335</b>

Pollutants		2035 Emission Quantities (Tons/Day)										Statewide
		NY-NJ-CT Nonattainment Area				Greater CT Nonattainment Area						
ID	Name	Fairfield	Middlesex	New Haven	Subtotal	Hartford	Litchfield	New London	Tolland	Windham	Subtotal	
1	Hydrocarbons	4.04177	0.88157	3.79286	<b>8.71620</b>	4.22593	1.02906	1.31108	0.76595	0.56600	<b>7.89801</b>	<b>16.61420</b>
3	NOx	2.20730	0.52502	2.23561	<b>4.96793</b>	2.52468	0.56060	0.72430	0.49872	0.29138	<b>4.59968</b>	<b>9.56761</b>
79	NM Hydrocarbons	3.64475	0.78662	3.39735	<b>7.82872</b>	3.77081	0.93298	1.18088	0.67648	0.51746	<b>7.07862</b>	<b>14.90734</b>
87	VOC	3.87121	0.83497	3.60713	<b>8.31331</b>	4.00174	0.99041	1.25476	0.71782	0.55030	<b>7.51504</b>	<b>15.82835</b>

Pollutants		2045 Emission Quantities (Tons/Day)										Statewide
		NY-NJ-CT Nonattainment Area				Greater CT Nonattainment Area						
ID	Name	Fairfield	Middlesex	New Haven	Subtotal	Hartford	Litchfield	New London	Tolland	Windham	Subtotal	
1	Hydrocarbons	2.54860	0.56216	2.35619	<b>5.46695</b>	2.63739	0.66071	0.82322	0.49669	0.35953	<b>4.97755</b>	<b>10.44450</b>
3	NOx	1.05901	0.25187	1.06035	<b>2.37123</b>	1.21252	0.27369	0.34740	0.24363	0.14665	<b>2.22388</b>	<b>4.59511</b>
79	NM Hydrocarbons	2.21644	0.48173	2.02392	<b>4.72209</b>	2.25252	0.58160	0.71353	0.41842	0.31888	<b>4.28495</b>	<b>9.00704</b>
87	VOC	2.35053	0.51051	2.14497	<b>5.00601</b>	2.38581	0.61643	0.75675	0.44316	0.33846	<b>4.54061</b>	<b>9.54662</b>

Pollutants		2055 Emission Quantities (Tons/Day)										Statewide
		NY-NJ-CT Nonattainment Area				Greater CT Nonattainment Area						
ID	Name	Fairfield	Middlesex	New Haven	Subtotal	Hartford	Litchfield	New London	Tolland	Windham	Subtotal	
1	Hydrocarbons	2.10414	0.47337	1.96581	<b>4.54333</b>	2.21743	0.55041	0.68948	0.42910	0.30178	<b>4.18820</b>	<b>8.73152</b>
3	Nox	0.86586	0.20695	0.86432	<b>1.93713</b>	0.99807	0.22552	0.28625	0.20265	0.12294	<b>1.83542</b>	<b>3.77255</b>
79	NM Hydrocarbons	1.68303	0.37107	1.54180	<b>3.59590</b>	1.72559	0.45170	0.55025	0.32730	0.25000	<b>3.30485</b>	<b>6.90075</b>
87	VOC	1.78154	0.39249	1.63083	<b>3.80487</b>	1.82387	0.47794	0.58255	0.34593	0.26495	<b>3.49525</b>	<b>7.30012</b>

County	Total Energy Consumption 91 (Joules/Year)	2026 Pollutant Emission Quantities (Tons/Year)				
		NOx	PM 2.5			County Total
		3 Oxides of Nitrogen	110 Engine Exhaust	116 Brakewear	117 Tirewear	
Fairfield	3.81E+16	1861.37419	51.33469	37.88227	11.71734	100.93429
New Haven	3.99E+16	1908.71221	50.32461	38.39926	12.35361	101.07749
<b>Totals</b>	<b>7.81E+16</b>	<b>3770.08640</b>	<b>101.65930</b>	<b>76.28153</b>	<b>24.07095</b>	<b>202.01178</b>

County	Total Energy Consumption 91 (Joules/Year)	2030 Pollutant Emission Quantities (Tons/Year)				
		NOx	PM 2.5			County Total
		3 Oxides of Nitrogen	110 Engine Exhaust	116 Brakewear	117 Tirewear	
Fairfield	3.39E+16	1300.49910	38.43805	36.99284	11.88268	87.31357
New Haven	3.55E+16	1323.44862	37.00511	37.47331	12.51391	86.99233
<b>Totals</b>	<b>6.94E+16</b>	<b>2623.94772</b>	<b>75.44317</b>	<b>74.46615</b>	<b>24.39659</b>	<b>174.30590</b>

County	Total Energy Consumption 91 (Joules/Year)	2035 Pollutant Emission Quantities (Tons/Year)				
		NOx	PM 2.5			County Total
		3 Oxides of Nitrogen	110 Engine Exhaust	116 Brakewear	117 Tirewear	
Fairfield	2.77E+16	835.84409	26.00230	32.66883	11.89061	70.56175
New Haven	2.89E+16	846.27076	24.61652	33.57200	12.57233	70.76086
<b>Totals</b>	<b>5.66E+16</b>	<b>1682.11485</b>	<b>50.61883</b>	<b>66.24083</b>	<b>24.46294</b>	<b>141.32260</b>

County	Total Energy Consumption 91 (Joules/Year)	2045 Pollutant Emission Quantities (Tons/Year)				
		Nox	PM 2.5			County Total
		3 Oxides of Nitrogen	110 Engine Exhaust	116 Brakewear	117 Tirewear	
Fairfield	2.08E+16	429.05570	9.20636	27.39421	11.83373	48.43430
New Haven	2.17E+16	429.55273	8.52465	27.98398	12.47217	48.98080
<b>Totals</b>	<b>4.25E+16</b>	<b>858.60843</b>	<b>17.73102</b>	<b>55.37819</b>	<b>24.30590</b>	<b>97.41510</b>

County	Total Energy Consumption 91 (Joules/Year)	2055 Pollutant Emission Quantities (Tons/Year)				
		NOx	PM 2.5			County Total
		3 Oxides of Nitrogen	110 Engine Exhaust	116 Brakewear	117 Tirewear	
Fairfield	1.92E+16	360.23960	3.73373	26.24632	11.90049	41.88054
New Haven	1.99E+16	359.58521	3.56147	26.55138	12.45189	42.56474
<b>Totals</b>	<b>3.91E+16</b>	<b>719.82481</b>	<b>7.29520</b>	<b>52.79770</b>	<b>24.35238</b>	<b>84.44528</b>

**Appendix E**  
**Comments Received During Public Review Period**

