Connecticut 2025 Ambient Air Monitoring

5-Year Network Assessment

Connecticut Department of Energy and Environmental Protection
Bureau of Air Management
July 2025

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Acronyms and Abbreviations

AQI – Air Quality Index
CAA – Clean Air Act
CASTNet – Clean Air Status and Trends Network
CBSA – core-based statistical area
CFR – Code of Federal Regulations
CO – carbon monoxide
CSA – combined statistical area
CSN – Chemical Speciation Network
DEEP – Connecticut Department of Energy and Environmental Protection
DV – design value
ED-XRF – energy dispersive x-ray fluorescence
EPA – Environmental Protection Agency
FEM – Federal Equivalent Method
FRM – Federal Reference Method
GC – gas chromatography
HAP – hazardous air pollutant
IMPROVE – Interagency Monitoring of Protected Visual Environments
LC – local conditions of temperature and pressure (air volumes)
LCS- low-cost sensor
LMP – limited maintenance plan
$\mu g/m^3$ – micrograms per cubic meter
mm Hg – millimeters of mercury (unit of pressure)
MSA – metropolitan statistical area
NAAQS – National Ambient Air Quality Standards
NCore – National Core Monitoring Station
NEI – National Emission Inventory
NO – nitrogen oxide
NO_2 – nitrogen dioxide
NOx – oxides of nitrogen
NOy – total reactive oxides of nitrogen
NSIM – non-regulatory supplemental and informational monitoring
PAMS – Photochemical Assessment Monitoring Stations
$PM_{2.5}$ – fine particulate matter (<2.5 microns)
PM_{10} – respirable particulate matter (<10 microns)
$PM_{10-2.5}$ – coarse particulate matter (between 2.5 and 10 microns)
PMSA – primary metropolitan statistical area
ppm – parts per million
ppb – parts per billion
PWEI – population-weighted emission index
r^2 – Pearson correlation coefficient
RH – relative humidity
SIP – State Implementation Plan
SLAMS – state and local monitoring stations
SO_2 – sulfur dioxide
SPM – special purpose monitoring station
STN – Speciation Trends Network
STP – standard conditions of temperature and pressure (air volumes at 25°C, 760 mm Hg)
tpy – tons per year
TSP – total suspended particulate
UA – urban area
VOC – volatile organic compound
XRF – X-ray fluorescence

Background

Introduction

The Connecticut Department of Energy and Environmental Protection (DEEP) performs monitoring of pollution in the ambient air to support efforts to improve air quality and protect public health and the environment. Monitoring data is crucial to determining compliance with the primary and secondary National Ambient Air Quality Standards (NAAQS) adopted by the U.S. Environmental Protection Agency (EPA) and gauging the efficacy of regulatory programs. Monitoring data is also used to inform EPA's air quality reporting index (Air Quality Index or AQI) and in issuing air quality forecasts, long-term health assessments, and tracking long-term air quality both to gauge effectiveness of emission reduction strategies and to improve the accuracy of air quality and photochemical grid models.

The Connecticut 2025 Ambient Air Monitoring Five Year Network Assessment (Assessment) is developed in accordance with the requirements of 40 CFR §58.10(d), which states:

> *"The State, or where applicable local, agency shall perform and submit to the EPA Regional Administrator an assessment of the air quality surveillance system every 5 years to determine, at a minimum, if the network meets the monitoring objectives defined in appendix D to this part, whether new sites are needed, whether existing sites are no longer needed and can be terminated, and where new technologies are appropriate for incorporation in the ambient air monitoring network. The network assessment must consider the ability of existing and proposed sites to support air quality characterization for areas with relatively high populations of susceptible individuals (e.g., children with asthma), and, for any sites that are being proposed for discontinuance, the effect on data users other than the agency itself, such as nearby States and Tribes or health effects studies. For $PM_{2.5}$, the assessment also must identify needed changes to population-oriented sites. The State, or where applicable local, agency must submit a copy of this 5-year assessment, along with a revised annual network plan to the Regional Administrator. The first assessment is due July 1, 2010."*

The primary purpose of this Assessment is to determine the extent to which the current air monitoring network in Connecticut meets federal requirements cited above. This assessment does not propose any changes to the air monitoring network but rather determines whether each parameter at each site is of critical, credible or marginal value in meeting the regulatory objectives. Any changes to the network indicated by the assessment will be proposed in a future Annual Air Monitoring Network Plan after careful consideration of EPA's monitoring requirements, Connecticut's air quality data needs, and available resources. Each year by July 1, the Annual Network Plan is made available to the public review and comment and then subsequently submitted to EPA Region I for review and approval.

Network Overview

DEEP operates 14 pollutant monitoring stations. Figure 1 below shows the EPA-approved DEEP ambient air monitoring site network map as of 2025. A current and projected listing of the parameters monitored at each site is given in Table 1. Continued operation of the monitoring network as indicated in this Assessment is contingent on the continuation of federal funding at current levels.

In October 2006, EPA established a network of core multi-pollutant monitoring sites. These sites are known collectively as the National Core (NCore) network, the primary purpose of which is to consolidate monitoring of multiple pollutants at fewer sites for efficiency and cost savings. In addition, the NCore sites provide a comprehensive suite of high-resolution pollutant data for NAAQS compliance assessment, research studies and long-term trends analysis. There are two sites located in Connecticut designated and approved by EPA as part of the NCore network: Criscuolo Park in New Haven and Mohawk Mountain in Cornwall.

Figure 1: DEEP Ambient Air Monitoring Stations

Table 1: DEEP Ambient Air Monitoring Network Summary (as of July 2025)

Town	Site	PM2.5 (FRM)	PM2.5 (FRM, collocated)	PM2.5 (continuous FEM)	PM2.5 (continuous FEM, secondary)	PM10/PM10-2.5 (FRM)	PM10/PM10-2.5 (FRM, collocated)	PM10/PM-10.2.5 (continuous FEM)	PM10/PM10-2.5 (cont. FEM, secondary)	PM Speciation (CSN)	PM Speciation (IMPROVE)	PM2.5 Carbon (BC/UVC, continuous)	Ozone	SO2	CO	NO_2	NO/ NO_X*	NO/NOy	Total Column NO_2/HCHO (Pandora Program)	Traffic Count	Wind Speed	Wind Direction	Temperature	Dew Point / Rel. Humidity	Barometric Pressure	Solar Radiation	Mixing Height
Bridgeport	Roosevelt School		1/6	X				X						X							P	P	X				
Cornwall	Mohawk Mountain	1/3		X				X			1/3	X	X	X	X			X	X		X	X	X	X	X	X	
Danbury	Western Connecticut State University	1/6		X				X				X	X								X	X	X		X		
East Hartford	McAuliffe Park			X				X				X	X			X	P				X	X	X	X	X		
Greenwich	Point Park												X								X	X	X				
Groton	Fort Griswold			X				X					X								P	P	X				
Hartford	Huntley Place	1/6		X				X				X			X	X	P			X	X	X	X		X		
Madison	Hammonasset State Park												X						X		X	X	X				
Middletown	Connecticut Valley Hospital												X								X	X	X		X		
New Haven	Criscuolo Park	1/3	1/6	X	X	1/3	1/6	X	X	1/3		X	X	X	X	X	P	T	X		X	X	X	X	X	X	X
Stafford	Shenipsit State Forest												X								X	X	X				
Stratford	Stratford Lighthouse												X										X				
Waterbury	Meadow & Bank Street			X				X													X	X	X				
Westport	Sherwood Island State Park												X			X	P		X		X	X	X		X		X

X=Existing P = Planned for 2025/2026 T = Proposed to be terminated in 2025/2026

* NO/NO_x data collection using Teledyne-API Model N500 CAPS NO_x analyzer

Air Quality Summary/Air Quality Index

DEEP provides near real-time hourly pollutant and meteorological data and daily air quality index (AQI) forecasts to EPA for the state of Connecticut. Ambient data is available to agencies through the AirNow Tech website, and forecasts are accessible on the AirNow[1] and DEEP[2] websites, DEEP call-in telephone lines (800-249-1234 or 860-424-4167) and daily email reports. In addition, interested persons may sign up for daily email Connecticut AQI forecasts on the DEEP air quality list server (https://portal.ct.gov/DEEP/Air/Forecasting/AQI/Air-Quality-Information-Listservs) or for email air quality alerts through AirNow Enviroflash (http://www.enviroflash.info/).

The AQI indicates air quality levels on a scale with six defined categories (*Good, Moderate, Unhealthy for Sensitive Groups, Unhealthy, Very Unhealthy,* and *Hazardous*)[3]. An AQI greater than 100, which is a category of *Unhealthy for Sensitive Groups (USG)* or worse, is equivalent to ambient air concentrations that exceed the NAAQS. Table 2 below displays the number of days in 2024 in which air quality exceeded 100 on the AQI (e.g., the number of NAAQS exceedances by site). Compliance with the 2015 ozone NAAQS of 70 ppb is determined by the 3-year average of the annual fourth highest daily maximum 8-hour average. The annual average NAAQS for $PM_{2.5}$ is currently 9.0 µg/m^3(micrograms per cubic meter) and the 24-hour average NAAQS is 35 µg/m^3. Compliance with the annual fine particulate matter NAAQS is determined by the 3-year average of the weighted annual mean and compliance with the 24-hour standard is determined by the 3-year average of the 98th high percentile value.

Table 2: CT AQI Exceedances in 2024

Pollutant	Location of monitors exceeding the applicable NAAQS	Days above 100 on the AQI in 2024
Ozone	Cornwall, Danbury, East Hartford, Greenwich, Groton, Madison, Middletown, New Haven, Stafford, Stratford, Westport, Pomfret	23
$PM_{2.5}$	None	0
PM_{10}	None	0
SO_2	None	0
CO	None	0
NO_2	None	0

The overall trends of ozone and $PM_{2.5}$ exceedances are downward since 2000, as shown in Figure 2. All ozone exceedances are based on the 2015 8-hour standard of 0.070 ppm, and the $PM_{2.5}$ exceedances are based on the 2012 daily standard of 35 µg/m^3.

From the mid-1990s to 2015, Connecticut ozone levels have decreased significantly, in large part due to regional NO_x controls. However, data from the last ten years show ozone trends have largely flattened, indicating a reduction in progress towards attainment. Across the thirteen Northeast and MidAtlantic states that comprise the Ozone Transport Region, Connecticut sites continue to have the highest 2022-24 ozone design values, with six sites

[1] AirNow.gov (https://www.airnow.gov/)

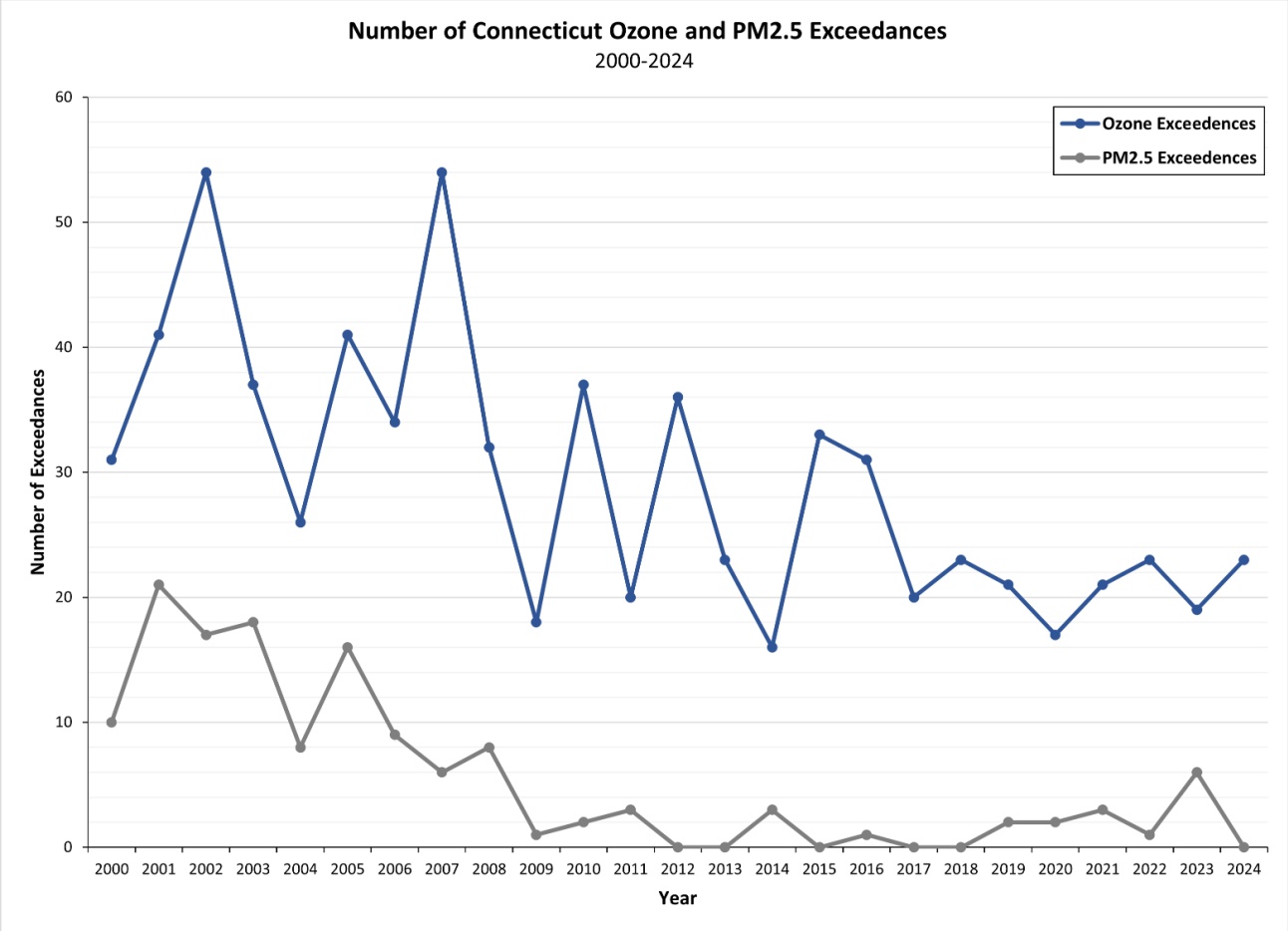
[2] Air Quality Index (https://portal.ct.gov/deep/air/forecasting/aqi/air-quality-index)

[3] AQI Basics | AirNow.gov

showing design values higher than those in nearby states[4]. In this region, 21 sites across six states have ozone design values greater than 70 ppb, nine of which are in Connecticut. Additionally, Connecticut leads exceedance day counts for all states in EPA Region 1 by a significant margin[5]. These trends illustrate the effects that regional transport of ozone and ozone precursors have on Connecticut air quality. Additional information is provided in the Ozone Enhanced Monitoring Plan section.

The trend of $PM_{2.5}$ daily exceedances has decreased significantly since the early 2000s, with zero exceedances reported in 2024. The multiple exceedances in 2023 were the result of transported woodsmoke from summer wildfires in Canada.

Figure 2: Connecticut Ozone and $PM_{2.5}$ Exceedance Trends



[4] Air Quality Design Values | US EPA

[5] Historical Exceedance Days in New England | US EPA

National Ambient Air Quality Standards (NAAQS)

The EPA has set, and periodically updates, NAAQS for six principal pollutants, known as the criteria air pollutants. Table 3 summarizes the current NAAQS compliance requirements for the criteria pollutants.

Table 3: National Ambient Air Quality Standards

Pollutant [links to historical tables of NAAQS reviews]		Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)		primary	8 hours	9 ppm	Not to be exceeded more than once per year
			1 hour	35 ppm	
Lead (Pb)		primary and secondary	Rolling 3 month average	0.15 µg/m^3 [a]	Not to be exceeded
Nitrogen Dioxide (NO_2)		primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		primary and secondary	1 year	53 ppb [b]	Annual Mean
Ozone (O_3)		primary and secondary	8 hours	0.070 ppm [c]	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution (PM)	$PM_{2.5}$	primary	1 year	9.0 µg/m^3	annual mean, averaged over 3 years
		secondary	1 year	15.0 µg/m^3	annual mean, averaged over 3 years
		primary and secondary	24 hours	35 µg/m^3	98th percentile, averaged over 3 years
	PM_{10}	primary and secondary	24 hours	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO_2)		primary	1 hour	75 ppb [d]	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	1 year	10 ppb	annual mean, averaged over 3 years

Notes for Table 3:

[a] In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg/m3 as a calendar quarter average) also remain in effect.

[b] The level of the annual NO_2 standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.

[c] Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O3 standards additionally remain in effect in some areas. Revocation of the previous (2008) O3 standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.

[d] The previous SO_2 standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2)any area for which implementation plans providing for attainment of the current (2010) standard have not been submitted and approved and which is designated nonattainment under the previous SO_2 standards or is not meeting the requirements of a SIP call under the previous SO_2 standards (40 CFR 50.4(3)), A SIP call is an EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.

Network Design Analysis

The design of Connecticut's ambient air monitoring network is based on EPA regulatory requirements for National Core (NCore) sites, pollutant-specific state and local air monitoring stations (SLAMS), and Photochemical Assessment Monitoring Station (PAMS) and enhanced ozone monitoring. This section includes an assessment of the network relative to these requirements.

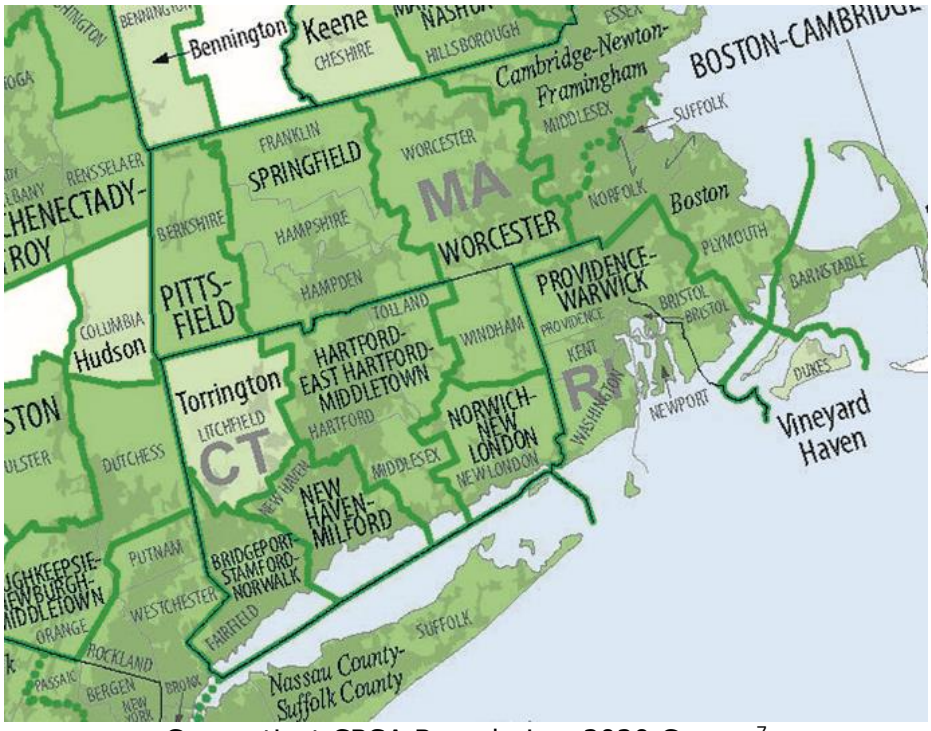
Population

Several of EPA's monitoring requirements are based on definitions of metropolitan areas developed by the US Office of Management and Budget and the US Census Bureau; these are: metropolitan statistical areas (MSA), micropolitan statistical areas, core-based statistical areas (CBSA), and combined statistical areas (CSA). Both MSAs and micropolitan statistical areas are CBSAs, defined as having an urbanized cluster with a population of at least 50,000 or 10,000, respectively. A CSA consists of two or more adjacent CBSAs, which, although highly integrated, may cross state or other political boundaries. A map showing CBSA delineations is given in Figure 3. Table 4 lists the Connecticut MSAs and 2023 U.S. Census Bureau population estimates.

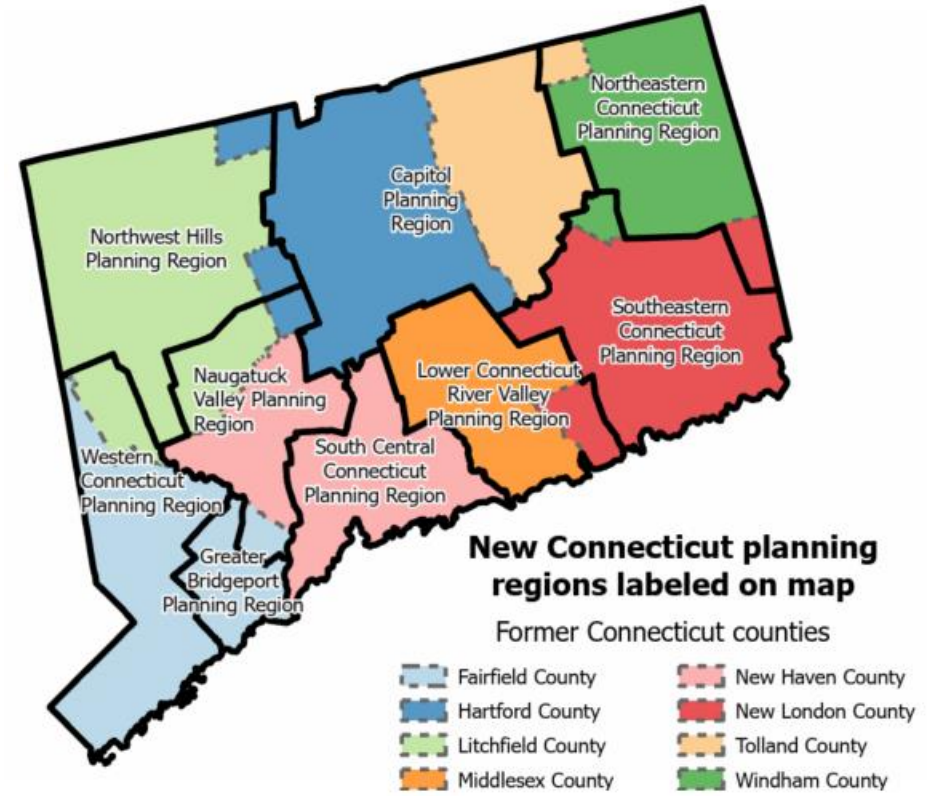
Connecticut was previously divided into eight counties to include all towns and cities, as referenced in previous Network Assessments. In 2022, the Connecticut Office of Policy and Management (OPM) formally requested to modify these designations into nine planning regions as county-equivalent geographic units. The US Office of Management and Budget (OMB) updated the delineations of CBSAs, metropolitan divisions, and CSAs in July 2023 to reflect these changes[6]. This change did not affect the CBSAs as used to determine monitor requirements, but there is no direct mapping between the old counties and new county equivalents, which vary in included towns and cities. Therefore, data based on counties cannot directly be applied to overlapping county-equivalents. For the scope of this assessment, CBSAs are discussed in terms of the previous county structure that was contemporary with the period over which data were collected.

[6] 87 FR 34235, 2022-12063

Figure 3: Connecticut CBSA Boundaries and Updated County-Equivalents



Connecticut CBSA Boundaries, 2020 Census[7]



Relationship between former counties and updated planning regions[8]

[7] Metropolitan and Micropolitan Statistical Areas Map (March 2020)

[8] Changes to county-equivalents for Connecticut | County Health Rankings & Roadmaps

Table 4: Population of Connecticut Core-based Statistical Areas

CBSA Code	CBSA Name	Counties included in CBSA	Population (2023 Estimates)*,**
14860	Bridgeport-Stamford-Norwalk	Fairfield	963,780
25540	Hartford- East Hartford-Middletown	Hartford, Middlesex, Tolland	1,215,494
35300	New Haven-Milford	New Haven	865,717
35980	Norwich-New London	New London	268,518
49340	Worcester	Worcester, MA; Windham, CT	983,982
45860	Torrington (micropolitan statistical area)	Litchfield	186,551

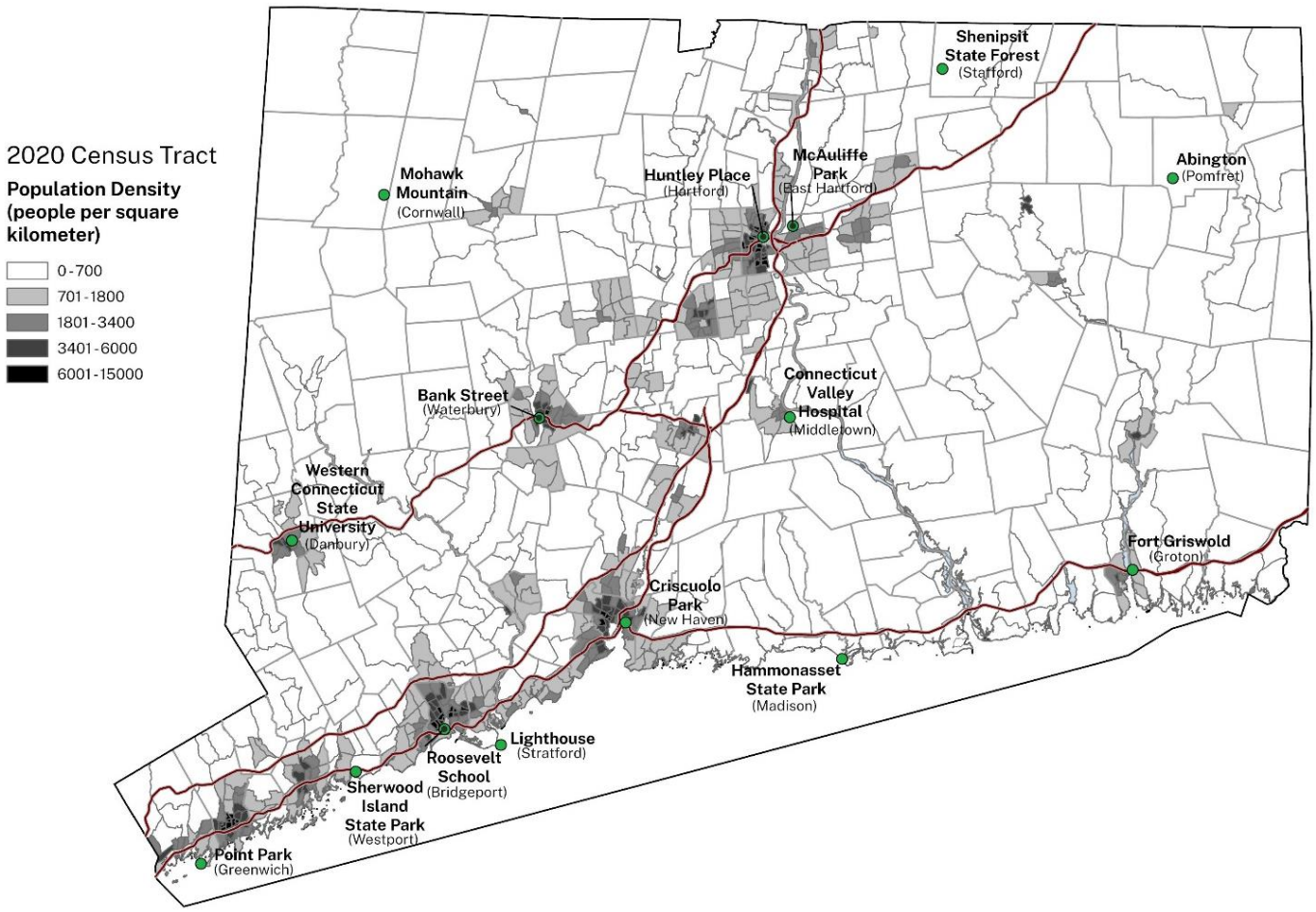
*2023 Estimates from of Connecticut's population from the Census Bureau's Population Estimates Program (PEP) and the official population estimates for the state of Connecticut certified by the Connecticut Department of Public Health (DPH).
**2023 population estimates for Worcester County, Massachusetts obtained from Census Bureau's PEP

Population Distribution and Susceptible and Vulnerable Communities

The majority of the monitors in the network are sited to assess the potential exposure of populations to maximum levels of air pollution. In locating these monitors, the spatial distributions of population density, susceptible and vulnerable populations, and low-income communities are considered to ensure that air pollution mitigation strategies fairly address exposures of these groups. Siting monitors within areas with the highest densities of such populations helps to best characterize the impacts of ambient air pollution on human health. While monitoring in densely populated areas would be more protective than in a sparsely populated areas, it is also critical to take into account areas where there might be higher impacts on susceptible populations, such as children and the elderly, as well as on underserved and low-income citizens who have born disproportionate burdens from the negative health effects of air pollution or may have inherent barriers in access to health care.

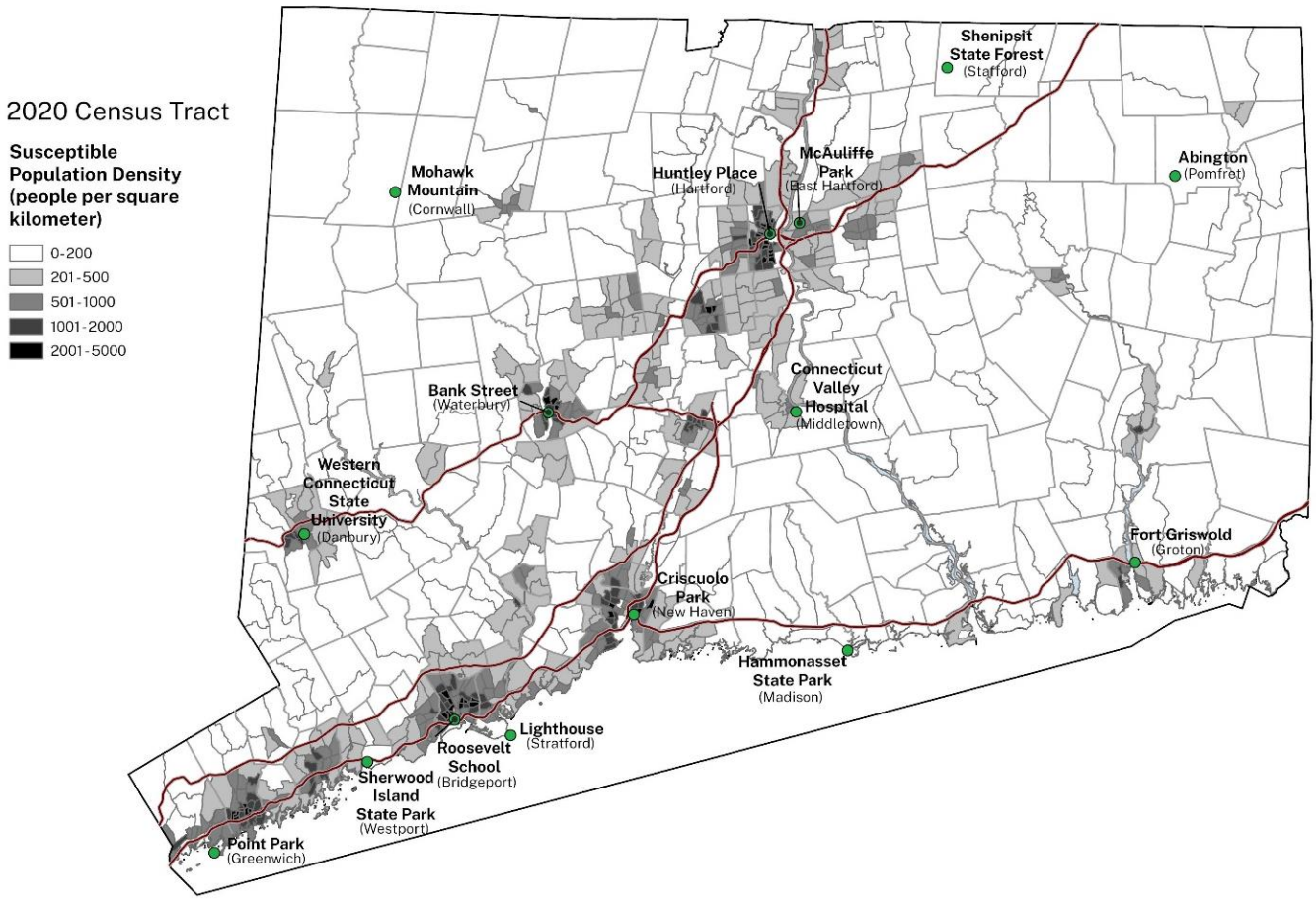
Generally, higher density population areas in Connecticut are clustered along busy interstate transportation corridors, which are sources of transportation-related emissions such as fine and coarse particulates, carbon monoxide, and oxides of nitrogen. Additionally, more densely populated areas are increasingly likely to be in proximity of industrial sources of air pollution. Figure 4, which shows state population density by census block area, indicates that most of Connecticut's monitoring sites are located within the highest density blocks.

Figure 4: Population Density by Census Tract and Air Quality Monitors



People who are particularly susceptible to air pollution are more likely to suffer adverse effects at lower concentrations. Examples of susceptible groups include children, the elderly, and individuals with compromised physiological or medical conditions such as asthma or other pulmonary disorders and heart disease. Figure 5 shows the distribution of the population below 18 and above 65 years of age for 2020 census tracts, which generally follows the overall population profile.

Figure 5: Susceptible Population Density by Census Tract and Air Quality Monitors



DEEP recognizes the importance of collaboration in addressing issues of environmental quality in overburdened communities. Connecticut Executive Order 21-3 established the Connecticut Equity and Environmental Justice Advisory Council (CEEJAC) to advise DEEP on integrating environmental justice considerations into programs and policies, provide mechanisms for environmental justice communities to participate in decision making, and develop a framework for community engagement and outreach[9].

According to a 2024 study, two such areas served by air monitoring stations are Hartford and Bridgeport, which ranked #36 and #58, respectively, among the 100 most populated U.S. metropolitan areas where it is most challenging to live with asthma[10]. Another such area served by an air monitoring station is New Haven, which ranked #10 in asthma control medicine use among the 100 most populated U.S. metropolitan areas[4].

Environmental justice communities in Connecticut are defined as U.S. census block groups, as determined by the most recent US census, in which 30% or greater of the population have an income below 200% of the federal poverty level, or as distressed municipalities as defined by

[9] EO 21-3, December 16, 2021

[10] AAFA Asthma Capitals 2024

Connecticut Department of Economic and Community Development state statute CGS 32-9p[11]. The 2024 list of distressed municipalities with rankings is given in Table 5.

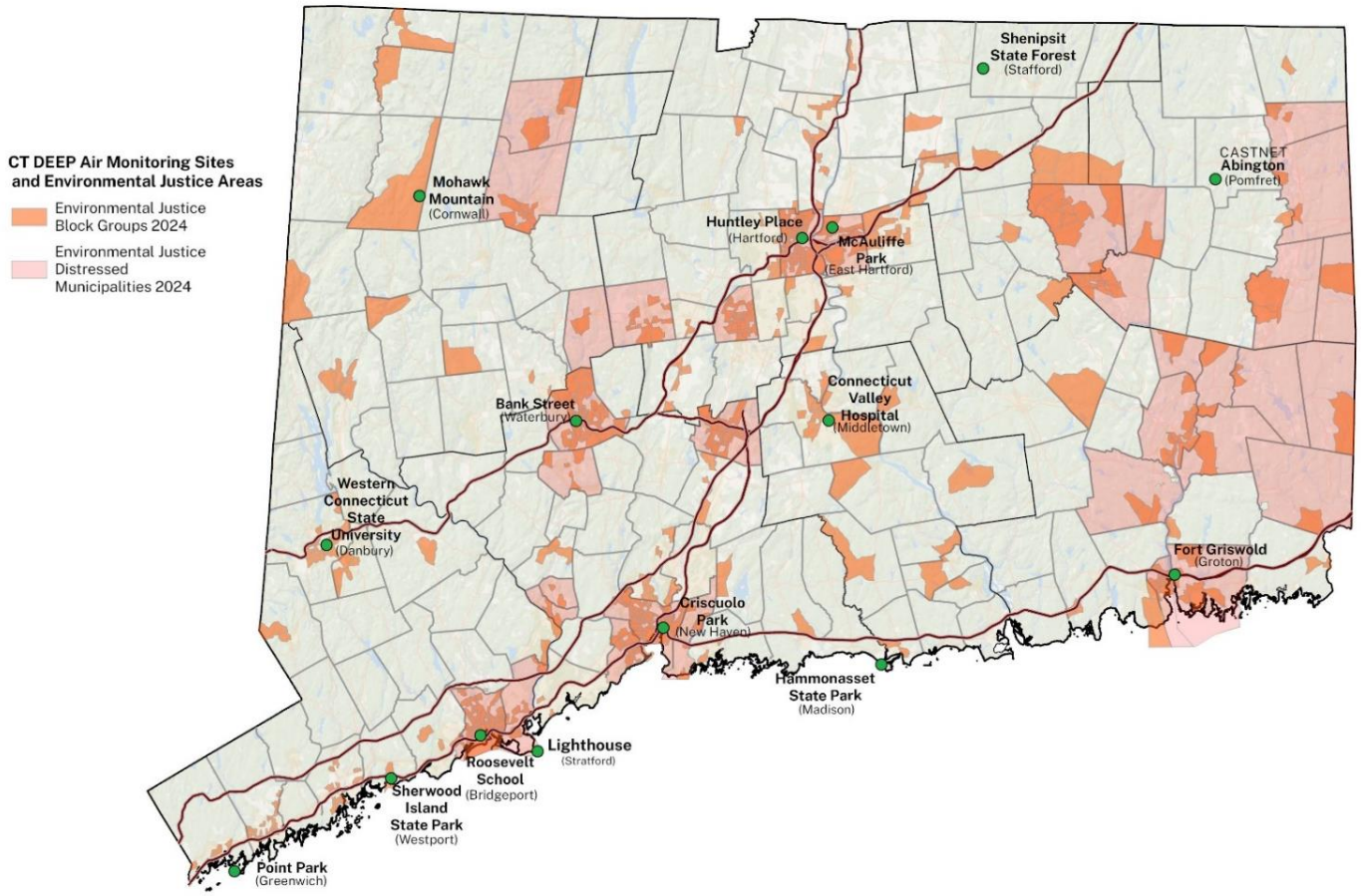
Figure 6 below displays the areas that fall under the definition of environmental justice communities along with DEEP's ambient air monitoring stations. Most of the environmental justice areas located in areas with higher emissions, such as industrial/commercial zones or high motor vehicle traffic areas, are served by ambient air monitors.

Table 5: List of Connecticut Distressed Municipalities

Town	Rank	Town	Rank	Town	Rank
Torrington	1	Griswold	10	Plainfield	19
Windham	2	Winchester	11	Lisbon	20
Norwich	3	Plymouth	12	Meriden	21
New London	4	Derby	13	Montville	22
Waterbury	5	Mansfield	14	Putnam	23
Hartford	6	New Britain	15	Naugatuck	24
East Hartford	7	Bridgeport	16	West Haven	25
Sterling	8	Chaplin	17		
Sprague	9	Ansonia	18		

[11] Chapter 578 - Department of Economic and Community Development

Figure 6: Connecticut Environmental Justice Areas and Air Quality Monitors



Community-Based Monitoring and Community Outreach Efforts

Over the past decade, the development and proliferated use of low-cost sensors (LCS) has enabled a new approach to air monitoring. LCS tend to be significantly more affordable and easier to operate than traditional air monitoring equipment and generally provide near real-time data. While air sensors do not have federal reference or equivalent method designations and do not provide data for regulatory purposes, there are many non-regulatory supplemental and informational monitoring (NSIM) applications. Examples of NSIM uses are in hotspot detection, tracking pollutant trends, and community education. Given the lower financial and technical barriers to LCS operation, air sensors have become a popular tool with community groups, individuals, and organizations seeking to independently evaluate air quality at local scales.

In response to the proliferation of LCS, DEEP created a framework to advise and assist existing and prospective community-led air monitoring projects. This includes the development of an air sensor loan program, educational workshops, EPA Air Quality Flag Program participation guidance, monitoring-related grant support, and technical assistance.

The DEEP air sensor loan program offers low-cost air quality sensors and project support to community groups, educators, and public entities. At this time, over 60 DEEP-owned PurpleAir sensors have been provided to program partners. DEEP additionally maintains PurpleAir sensors at each regulatory air monitoring station, and has deployed sensors in response to environmental events such as the 2024 Hawthorne fire Berlin, CT and the 2025 silo fire in Franklin, CT. The wide network of PurpleAir sensors contributes real-time data to public

interfaces such as the AirNow Fire and Smoke Map, contextualizes data from individual sensors, and assists in characterizing air quality in many different regions of the state.

In response to the relatively quick expansion of the air sensor market, DEEP began conducting collocation studies at the East Hartford McAuliffe Park monitoring station in 2022 to compare the performance of leading manufacturers' low-cost sensors against regulatory instruments and to broaden LCS technology knowledge. Preliminary sensor evaluations can be found via the DEEP Air Monitoring GitHub webpage (CT-DEEP-Air-Monitoring repositories · GitHub). Staff have shared these reports with other air monitoring agencies to help contribute to collective understanding of air sensor performance and limitations.

Utilizing this experience, DEEP is a partner on two current projects (City of Stamford Health and Human Services "Enhanced Air Quality Monitoring in Stamford's South End and West Side Neighborhoods" and CT Department of Public Health "Partnering with local organizations to develop health-relevant air monitoring resources for distressed communities in Connecticut") funded by American Rescue Plan (ARP) grants to provide technical assistance, project guidance, and community education support.

DEEP continues to collaborate, learn, and broaden the capacity of community-based monitoring efforts through participation in work groups and training hosted by EPA, the Georgetown Climate Center Air Quality Monitoring Workgroup of Northeast and Mid-Atlantic States & DC, the Mid-Atlantic Regional Air Management Association (MARAMA) and the National Association of Clean Air Agencies (NACAA).

Connecticut Major Emission Sources

Data from process emission point sources, plus non-point sources for total SO_2 Population Weighted Emissions Index (PWEI), are presented in sections of this Assessment where needed to identify minimum monitoring requirements. In this section, major process emission source locations for selected pollutant groups are presented as a reference for consideration of the siting of monitors within the network. Figures 7 - 10 shows process emission source 2020 National Emission Inventory[12] (NEI) levels and locations for SO_2, NO_X, $PM_{2.5}$ and VOCs in Connecticut.

[12] EPA, 2020 National Emissions Inventory

Figure 7: Connecticut NOx Point Source Emissions (tons/year)

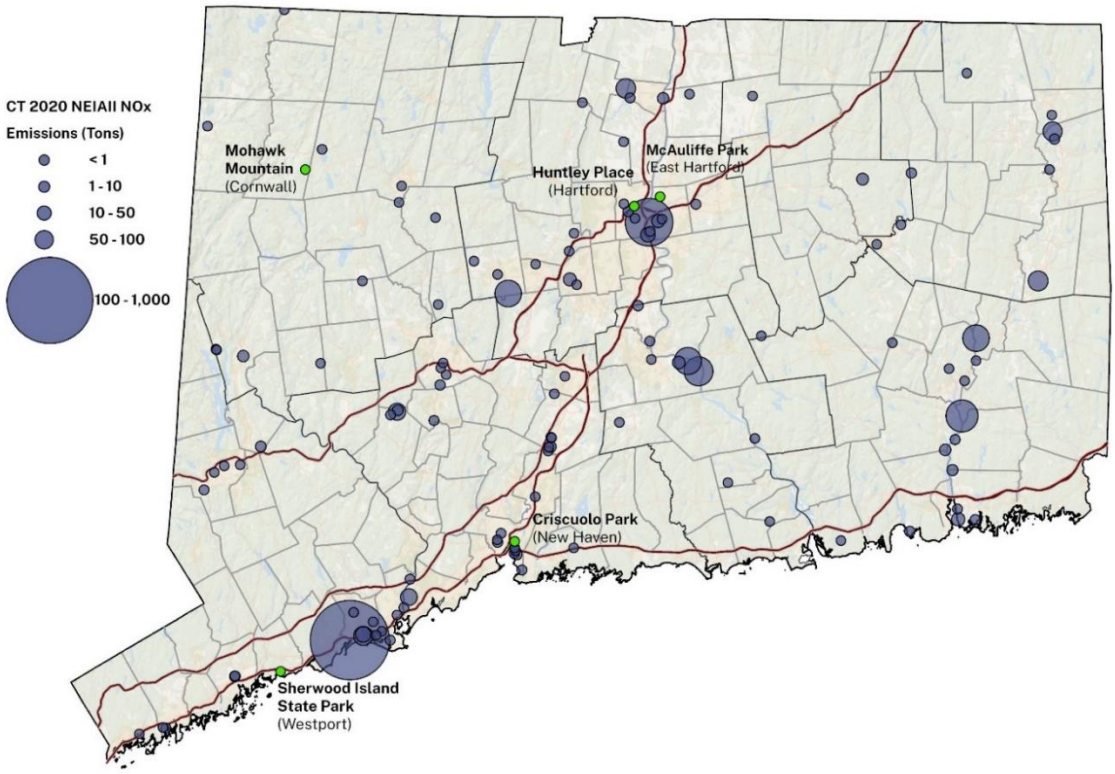


Figure 8: Connecticut PM2.5 Point Source Emissions (tons/year)

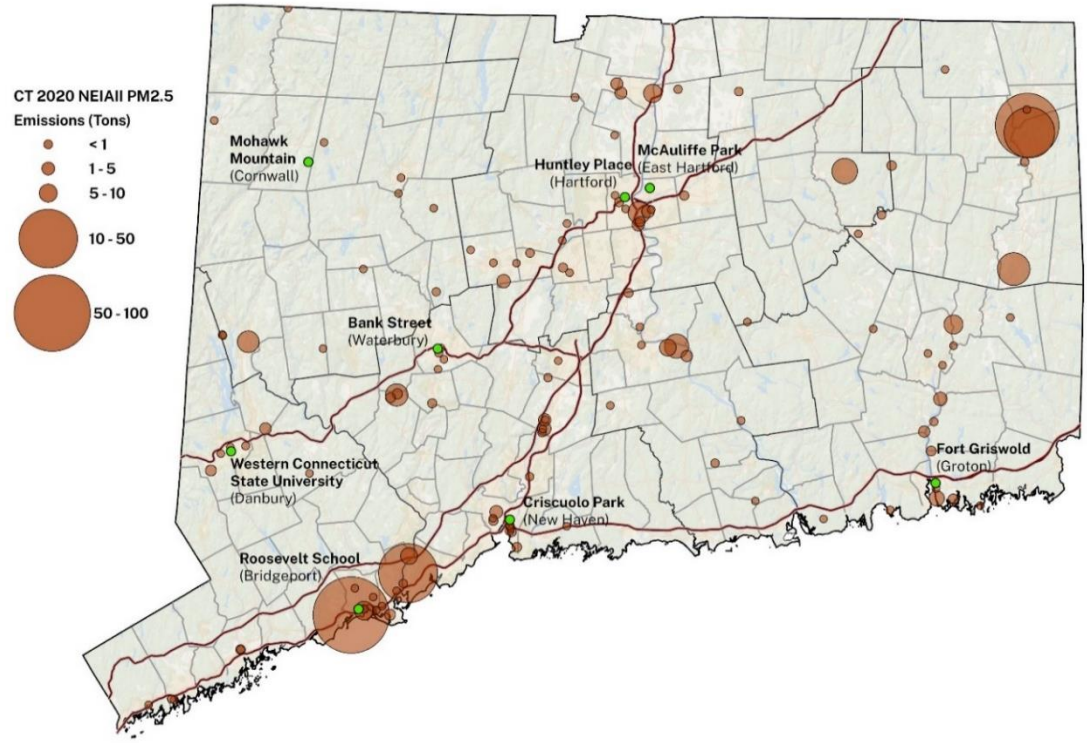


Figure 9: Connecticut SO2 Point Source Emissions (tons/year)

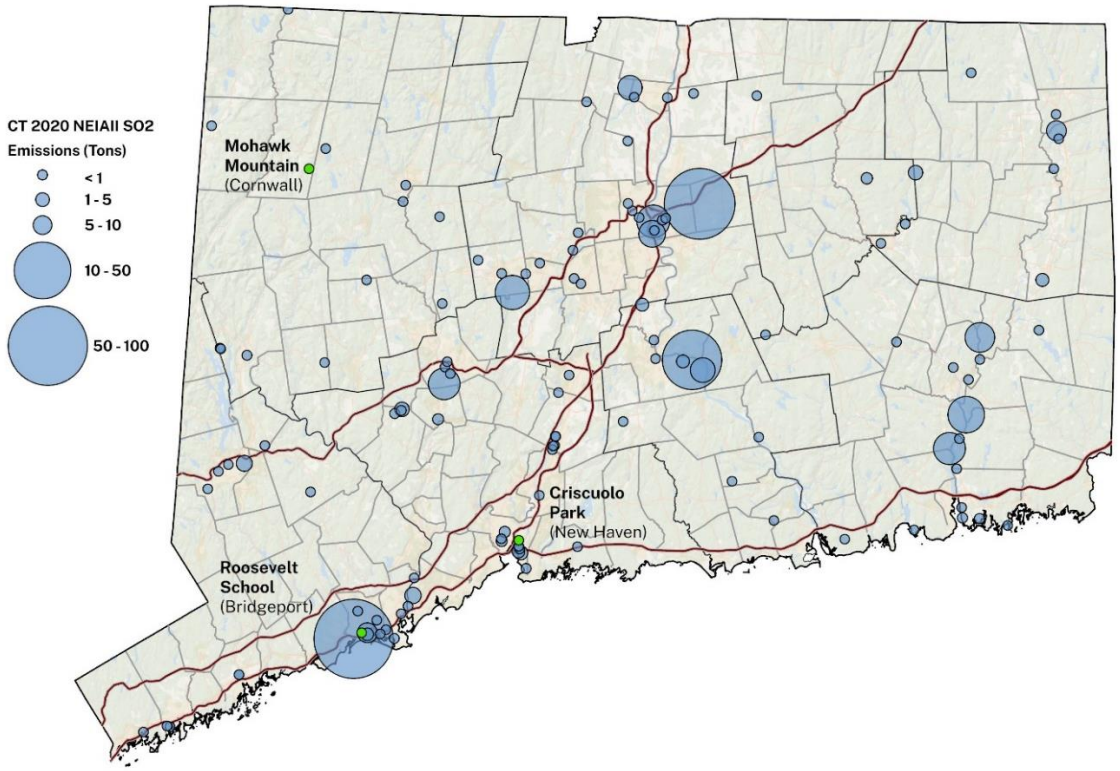
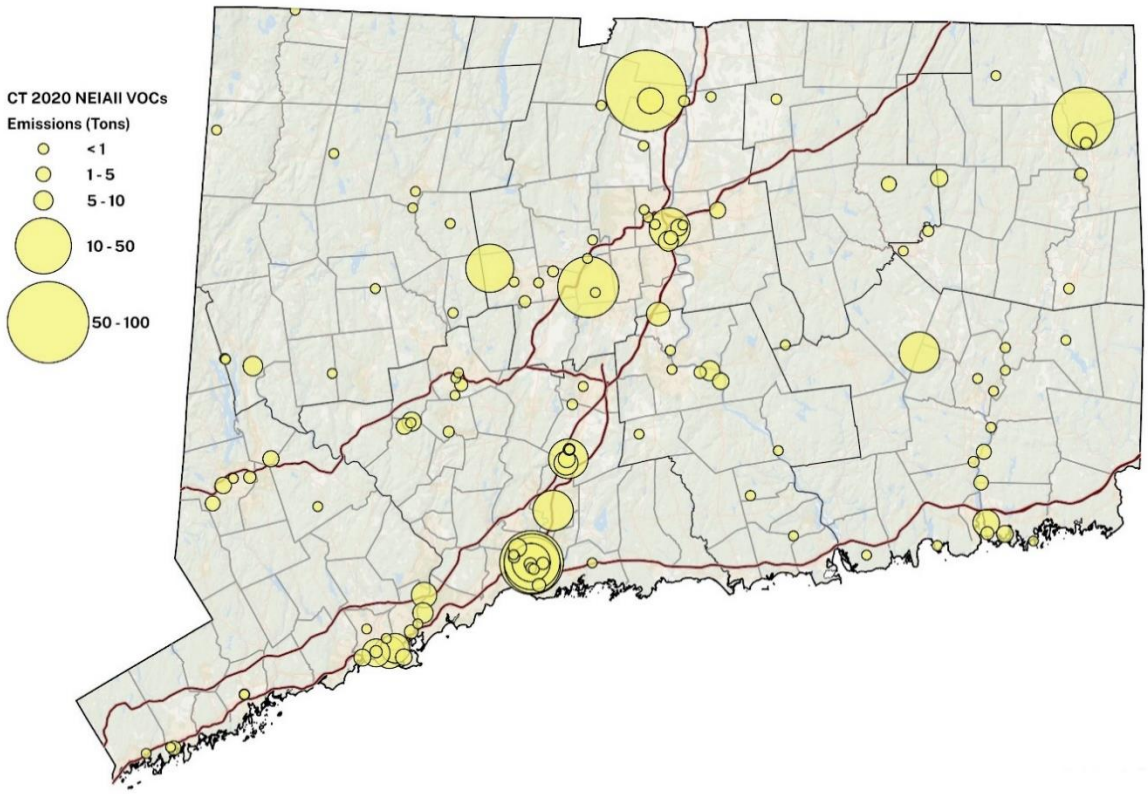


Figure 10: Connecticut VOC Point Source Emissions (tons/year)



State Topography and Potential Air Quality Issues

Connecticut's topography includes mountainous areas in the northwest, coastal plains to the south, numerous river valleys, including the broad Connecticut River valley, and hilly terrain throughout the state. While most of these features have the potential to impact local air quality, narrow, steep-sided valleys have a higher tendency for more severe impacts under certain conditions. These conditions include cooler ambient temperatures and significant overnight radiative cooling enhanced by clear skies, such as are more typically found in late fall, winter, and early spring. These conditions can set up local inversions that can trap pollutants generated from local sources, causing elevated concentrations, typically of combustion by-products such as nitrogen oxides and fine particulate matter. Additionally, Connecticut experiences episodes of woodsmoke from long range atmospheric transport of fine particulate matter from wildfires in the western US and Canada. With the prevalence of wildfire fires and the impact on Connecticut air quality increasing, it is important to investigate the role of topography in amplifying air quality concerns.

EPA Region 1 developed a topographic tool (Valley ID Tool) for identifying areas that may be most impacted by these conditions[13]. DEEP investigated the valley areas in Connecticut that were identified by the tool for the 2020 Network Assessment. The tool creates elevation cross sections of transects selected by the user. Areas with potential valley air quality issues identified in Connecticut include West Cornwall, Gaylordsville, Torrington and New Milford.

DEEP developed a pilot Air Sensor Loan program as part of the Community-Based Air Quality Monitoring initiative to provide community organizations, schools, and public entities with air sensors to monitor local fine particulate levels. While data from air sensors are not used to meet regulatory monitoring requirements, increased air sensor coverage has provided hyperlocal air quality data for educational and screening purposes. Several DEEP air sensors are deployed by community partners in areas of interest identified by the Valley ID Tool: Danbury, Middlebury, Middletown, New Milford, Salisbury, Sherman, Washington, Waterbury, and Woodbury. This air sensor network provides a complimentary data stream of fine particulate measurements in local valleys to augment the regulatory $PM_{2.5}$ network. DEEP staff routinely monitor these sensors for elevated particulate levels and sensor performance, and data from DEEP air sensors can be viewed publicly on the AirNow Fire and Smoke Map[14] alongside regulatory monitors. DEEP plans to continue this effort and locate additional air sensors in valleys across Connecticut as community partnerships develop.

[13] Region 1 GIS Valley Identification Tool | Science Inventory | US EPA

[14] AirNow Fire and Smoke Map

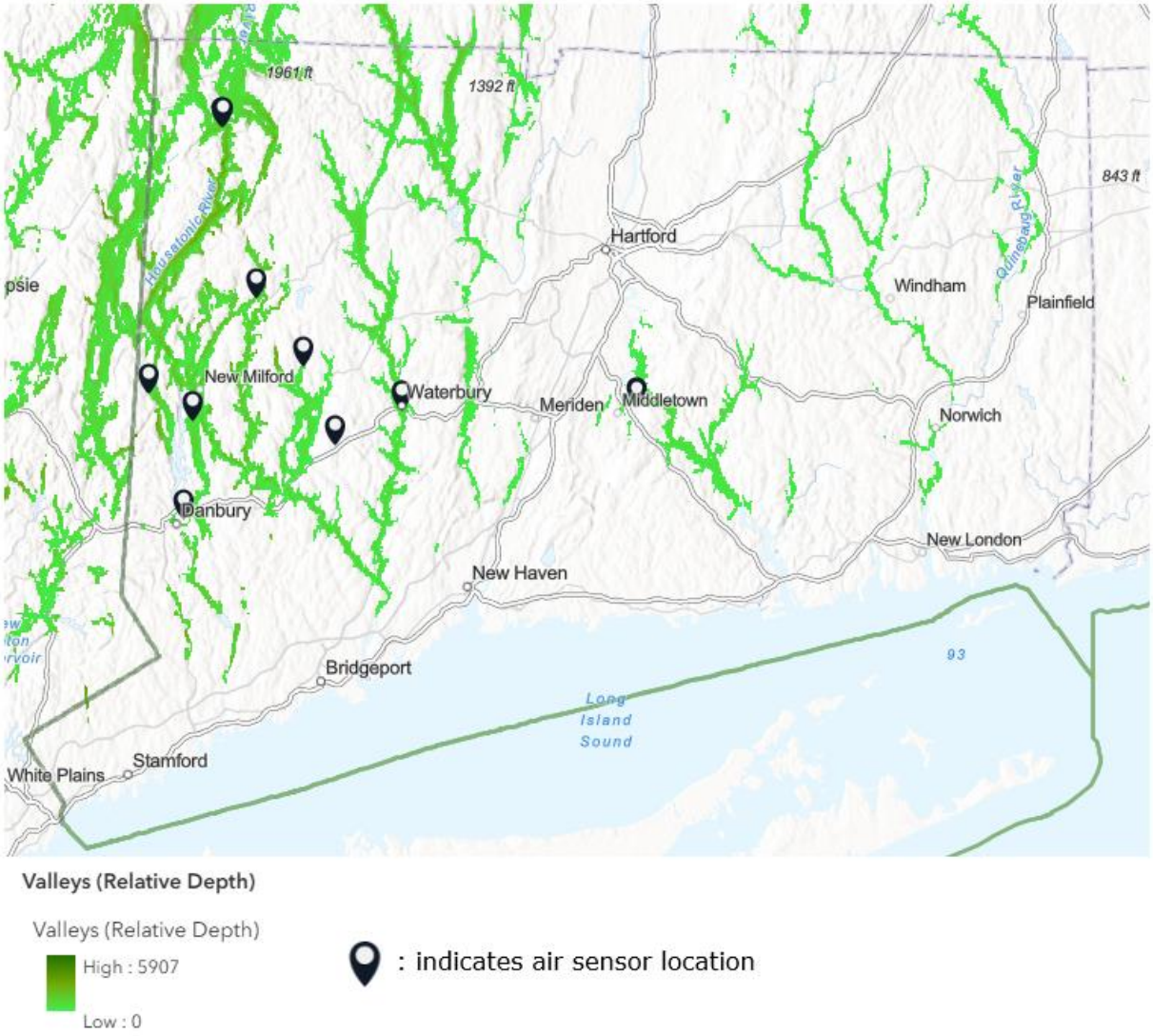


Figure 11: Relevant Connecticut air sensor locations relative to valleys on EPA Valley Identification Tool Web Map (2024)[15]. Valley depth is reported in feet.

Monitoring Objectives and Spatial Scales

The objectives of an ambient air monitoring network operated in accordance with SLAMS requirements[16] are to: (a) provide air pollution data to the public in a timely manner, (b) support compliance with ambient air quality standards and pollution control strategies, and (c) support air pollution research studies.

To support Connecticut's and EPA's air monitoring objectives, the monitoring network includes a variety of sites that provide information on peak air pollution levels, typical air pollution levels, air pollution transport, and air pollution levels near significant sources. EPA has identified the following six general site types:

- Sites located to determine the highest concentrations expected to occur in the area covered by the network.

[15] US EPA Valley Identification Tool Web Map (EPA 2024)

[16] 40 CFR 58

- Sites located to measure typical concentrations in areas of high population density.
- Sites located to determine the impact of significant sources or source categories.
- Sites located to determine general background levels.
- Sites located to determine the extent of regional pollutant transport among populated areas.
- Sites located to measure air pollution impacts on visibility, vegetation, or other welfare-based impacts.

Monitoring sites are spatially positioned relative to pollutant sources and receptors to characterize air quality impacts, taking into account aspects of the sources and pollutants, as well as the local terrain, meteorology, population, and public welfare-related receptors. For example, although ozone typically has concentrations that are similar over areas with dimensions of 10 or more kilometers, an ozone monitor located near high NO_X sources would likely represent lower levels over a smaller area due to chemical reactions between these pollutants. A spatial scale of representativeness, defined as a dimension indicating the extent of an area impacted with similar concentrations throughout by a source or type of source, is identified for each monitor. The scales of representativeness of most interest for the above monitoring site types are as follows:

- Microscale—Defines concentrations in air volumes associated with area dimensions ranging from several meters up to about 100 meters.
- Middle scale—Defines concentration typical of areas up to several city blocks in size with dimensions ranging from about 100 meters to 0.5 kilometer.
- Neighborhood scale—Defines concentrations within some extended area of the city that has relatively uniform land use with dimensions in the 0.5 to 4.0 kilometers range. The neighborhood and urban scales listed below have the potential to overlap in applications that concern secondarily formed or homogeneously distributed air pollutants.
- Urban scale—Defines concentrations within an area of city-like dimensions, on the order of 4 to 50 kilometers. Within a city, the geographic placement of sources may result in there being no single site that can be said to represent air quality on an urban scale.
- Regional scale—Defines usually a rural area of reasonably homogeneous geography without large sources, and extends from tens to hundreds of kilometers.
- National and global scales—Represent concentrations characterizing the nation and the globe as a whole.

Value Assignment to Sites and Monitors

To assist in the network planning process, qualitative values of *critical*, *credible* or *marginal* are assigned to the monitors to assess their relative importance to monitoring objectives. Criteria used to apply these value assignments are:

Critical Sites and Monitors – These sites are of high value and should be retained.

- Sites specified to meet minimum monitoring requirements for areas within range or above 85 percent of the NAAQS. These may include monitors at levels that health studies have indicated may be considered for future NAAQS, such as $PM_{2.5}$.
- Long-term multi-pollutant sites used by multiple data users for trends and model evaluation (i.e., SIP development and tracking). Note: often these are the design value or other important sites that perform additional complimentary measurements.
- Dedicated sites for health or atmospheric study, or to inform policy options for state or local agency (often collocated with above; however, if not, a sunset date should be associated with the site).

Credible Sites and Monitors – These sites are the locations that are expected to continue but may not be the design value location at or above the NAAQS. Sites in this category are expected to be retained and can be used to satisfy minimum monitoring requirements but

could be moved after careful consideration to provide the optimum spatial coverage in a network. Examples include:

- Monitors that are used to satisfy minimum monitoring requirements for specific parameters or networks (i.e., NCore, near-road)[17] with design values significantly beneath the NAAQS. This group includes monitors for multiple criteria pollutants: CO, SO_2, NO_2, and PM_{10}
- Ozone monitors that are required by DEEP's Enhanced Monitoring Plan. These monitors may capture NAAQS exceedances but often correlate with the rest of the ozone network and are rarely the only monitor in the region to report an exceedance.
- $PM_{2.5}$ monitors that are beyond the minimum requirements but offer increased network coverage to better characterize population exposure and occasionally capture localized events.
- Sites that provide the spatial richness of a network to identify exposures and support AQI forecasting and reporting.
- Sites that, while not the design value location, are occasionally the highest across the metropolitan area due to seasonal meteorology or unique winds (e.g., winds are normally from the Southwest, but occasionally come from the East which puts the area downwind of a much larger metropolitan area).
- Sites that are design value locations, but with levels relatively low compared to the NAAQS. These might include source-oriented monitors that are required but are below the NAAQS.
- Sites that may be useful for NAAQS now in review.
- Meteorological parameters at SLAMS and NCore sites that provide additional value for contextualizing measured pollutants at those sites.

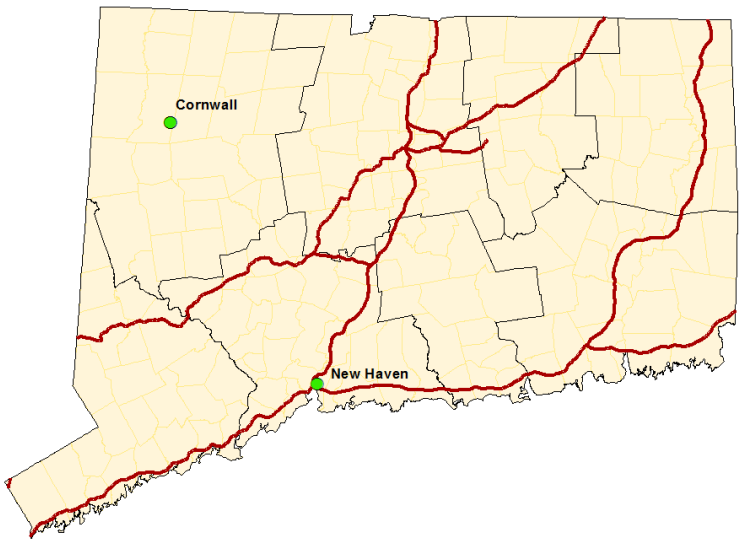
Marginal Sites and Monitors – These sites and monitors are candidates for removal or movement. This category includes:

- Sites that have outlived their intended purpose.
- Sites that have measurements that are of low value relative to the NAAQS and are not counted towards minimum network monitoring requirements.
- Sites that are not candidates for continued investment due to problems with siting criteria which cannot be resolved.
- Special Purpose Monitors (SPMs) – If a monitor remains at a site for more than two years it is strongly encouraged that the site become a SLAMS and would fit into the critical or credible category, otherwise it is assumed that the SPM has fulfilled its objective and can be moved to another location to characterize the measurement of interest.
- Sites that correlate well (i.e., are not unique) with a nearby site(s), but which measure low levels than the nearby site.

The specific objectives and spatial scales for each of the monitors in the DEEP network are described in the Pollutant Network and Monitor and Site Summary sections following.

[17] 40 CFR 58 Appendix D

NCore Network Requirements



Nationally, NCore monitoring stations include a range of pollutant monitors and are sited primarily to characterize urban area-wide pollutant levels, although a smaller number of NCore stations are in rural locations. As such, they should be sited away from direct emission sources. Each state is required to have a minimum of one NCore site, located in an MSA (states with multiple large air sheds may be required to have two or three NCore sites). Connecticut has two NCore sites, one urban and one rural, located in New Haven (Criscuolo Park) and Cornwall (Mohawk Mountain), respectively. Both of DEEP's NCore sites meet and exceed EPA's NCore monitoring requirements shown in Table 6. Monitors at NCore sites may also be utilized to satisfy non-NCore requirements as discussed in the subsections below.

Table 6: Minimum Required NCore Monitoring Parameters

Required Parameter	Description
$PM_{2.5}$ speciation	organic and elemental carbon, major ions and trace metals (24-hour average; every 3rd day); IMPROVE or CSN; continuous $PM_{2.5}$ black carbon/organic carbon
$PM_{2.5}$ FRM mass	24 hr. average at least every 3rd day
continuous $PM_{2.5}$ mass	1 hour reporting interval; FEM or pre-FEM monitors
$PM_{(10-2.5)}$ mass	Filter-based or continuous
ozone (O_3)	all gases through continuous monitors
carbon monoxide (CO)	capable of trace levels (low ppm and below) where needed
sulfur dioxide (SO_2)	capable of trace levels (low ppb and below) where needed
nitrogen oxide (NO)	capable of trace levels (low ppb and below) where needed
total reactive nitrogen (NO_Y)	capable of trace levels (low ppb and below) where needed
surface meteorology	wind speed and direction (reported as "resultant"), temperature, relative humidity

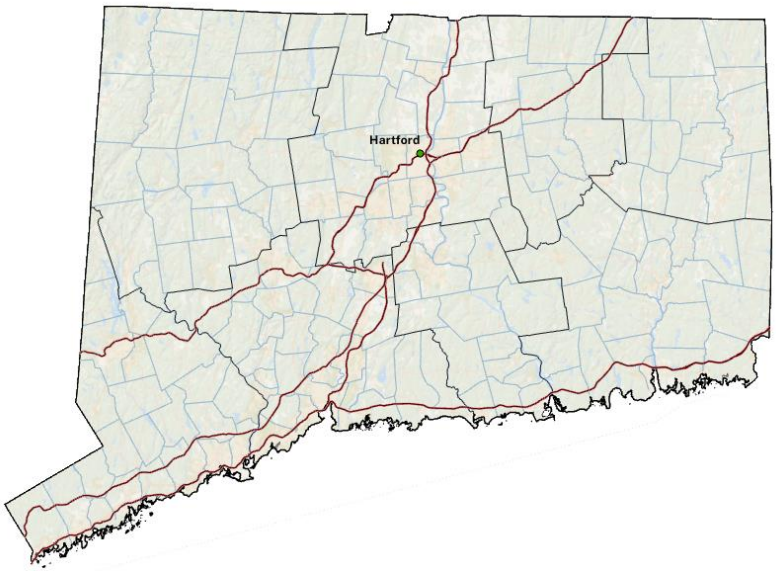
In addition to the minimum requirements in Table 6, the two NCore sites monitor several additional parameters as shown in Table 7.

Table 7: Additional Parameters Monitored at NCore Sites

NCore Site	Additional Parameters Monitored Beyond Minimum NCore Requirements
Cornwall-Mohawk Mountain	Total column NO_2/HCNO, barometric pressure, dew point, solar radiation.
New Haven-Criscuolo Park	Collocated FRM $PM_{2.5}$, collocated FRM PM_{10}, collocated FRM $PM_{10-2.5}$, continuous $PM_{2.5}$, continuous PM_{10} LC, continuous $PM_{10-2.5}$, NO_2, total column NO_2/HCHO, mixing height, barometric pressure, dew point, solar radiation.

Near-road Network Requirements

Near-road monitors are intended to assess vehicle traffic-related exposure to multiple pollutants and include requirements for monitoring NO_2, $PM_{2.5}$, and CO. For CBSAs with a population of 1,000,000 or more persons, a near-road NO_2 FRM/FEM monitor is required at a location of expected maximum hourly concentrations near a major road with high annual average daily traffic (AADT) counts[18]. For CBSAs of 2,500,000 persons or more, an additional near-road NO_2 monitor is required. An additional NO_2 monitor is also required in CBSAs with populations of 1,000,000 or more that have one or more roadway segments if AADT counts of 250,00 or greater.



At least one FRM/FEM $PM_{2.5}$ monitor is required to be collocated at a near-road NO_2 station. Additionally, one FRM/FEM CO monitor is required to be collocated with the near-road NO_2 monitor. If a CBSA has more than one near-road site, only one CO monitor is required to be collocated for that CBSA.

Table 8: Near-road Monitoring Site Requirements

CBSA Population	Required Parameter	Description
1,000,000 or more	NO_2	One monitor, additional monitor required if two or more road segments with > 250,000 AADT
	CO	Collocated with NO_2 monitor
	$PM_{2.5}$	Collocated with NO_2 monitor
2,500,000 or more	NO_2	Two near-road monitoring stations
	CO	At least one monitor collocated with near-road NO_2 monitor
	$PM_{2.5}$	At least one monitor collocated with NO_2 monitor

DEEP operates one site with collocated near-road NO_2, $PM_{2.5}$, and CO monitors at Hartford Huntley Place. The Hartford-East Hartford-Middletown CBSA is the only CBSA with a population of 1,000,000 people or greater in Connecticut, and therefore the only CBSA where near-road monitoring is currently required. Analysis of AADT counts on I-84 and I-91, the two major roadways through this CBSA, shows all roadway segments are below 250,000 average daily traffic counts[19]

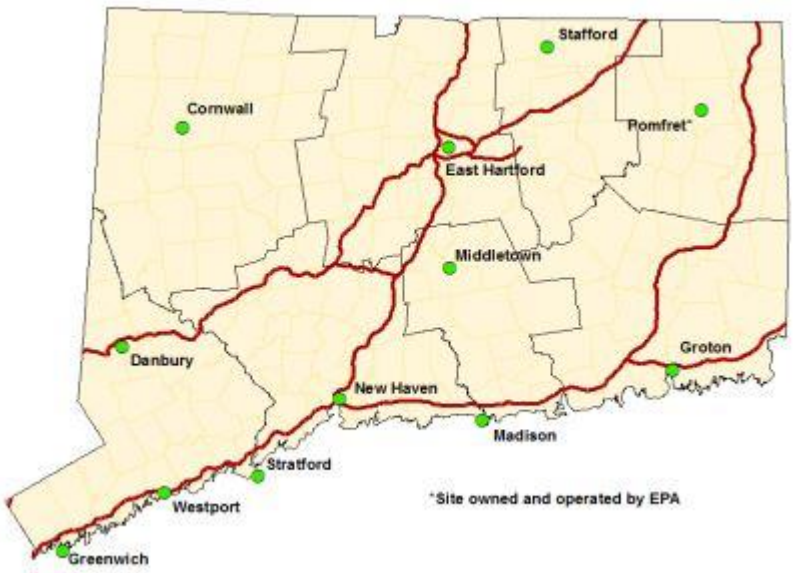
[18] 40 CFR 58 Appendix D 4.3.2

[19] Annual Average Daily Traffic | CTDOT Open Data

Ozone Network

Ozone Monitoring Overview

The DEEP ozone network consists of eleven sites distributed over seven of Connecticut's eight counties, as shown in the map to the right. In addition, EPA operates an ozone monitor in Abington village in the town of Pomfret, as part of EPA's Clean Air Status and Trends Network (CASTNET) program. The Greenwich, Westport, Stratford[20] and Madison sites, situated on the state's southern coast, are upwind background/regional transport sites for ozone, as the prevailing wind direction during higher ozone episodes is generally southwesterly. The principal monitoring objective for all interior sites, with the exception of Cornwall, is population exposure. Due to its location at high elevation in the rural northwestern hills of the state, the Cornwall ozone monitor objective is General/Background. All ozone sites operate from March 1 through September 30, per 40 CFR Part 58 App D, except for the New Haven and Cornwall NCore sites, and the East Hartford McAuliffe Park site, which operate year-round.



NAAQS compliance ozone monitoring in the DEEP network is conducted using Teledyne-API Model N400 UV photometric ozone analyzers (method EQOA-0992-087). In 2024 DEEP replaced the aging network of Teledyne-API Model T400 UV photometric ozone analyzers with Teledyne N400 analyzers.

In 2023, EPA released a revised Technical Assistance Document (TAD) titled *Transfer Standards for Calibration of Air Monitoring Analyzers for Ozone (*EPA-454/B-22-003), which includes updated procedures for establishing and maintaining traceability of ozone measurements for air monitoring agencies[21]. Among these procedures, EPA now requires that ozone transfer standards used for calibrations and quality assurance checks include independently verifiable photometers.

To comply with the current EPA transfer standard directive, all ozone analyzers are paired with Teledyne-API Model T700U trace-level dilution calibrators at sites measuring multiple gaseous pollutants, or with Teledyne-API Model T703 photometric ozone calibrators at ozone-only sites. These calibrators utilize internal photometers to ensure data quality control and compliance with the TAD. Beginning in 2025 DEEP began conducting field calibrations using Teledyne-API Model T753U portable trace-level ozone calibrators with internal photometer feedback, in alignment with the TAD. DEEP has used photometer-equipped T753U calibrators to perform annual ozone performance evaluations since 2023.

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[20] The Stratford Lighthouse property, housing DEEP's ozone monitor, is currently for sale. As such, the future of continued monitoring at or near this location is uncertain at this time.

[21] Transfer Standards for Calibration of Air Monitoring Analyzers for Ozone-Technical Assistance Document

Ozone NAAQS Attainment

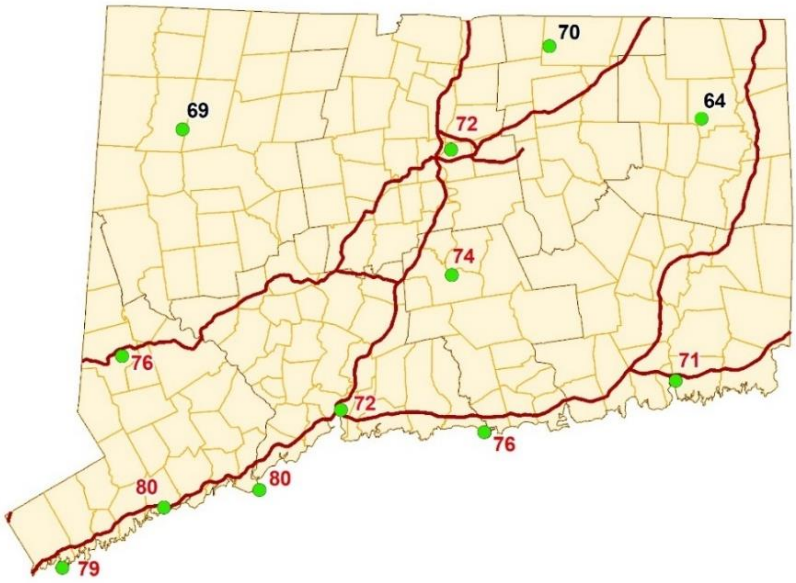
Connecticut contains two nonattainment areas: Greater Connecticut (Hartford, Litchfield, New London, Tolland, and Windham counties) and New York- Northern New Jersey-Long Island, NY-NJ-CT area (Fairfield, New Haven and Middlesex counties). Under the 2008 8-hour ozone NAAQS (75 ppb), Greater Connecticut is classified as serious nonattainment, and NY-NJ-CT is classified as severe-15 nonattainment. For the 2015 8-hour ozone NAAQS (70 ppb), both nonattainment areas are currently classified as serious.

The 2024 ozone 8-hour design values for the 2015 NAAQS are given in the figure below. Ozone design values are derived by averaging three consecutive annual fourth highest daily maximum 8-hour ozone values. Nine out of twelve sites indicate nonattainment, shown in red font in Figure 12, with either the 2008 ozone standard (75 ppb) or the more stringent 2015 ozone standard (70 ppb).

Figure 12: Connecticut 2024 Ozone Design Values

Ozone Network Design

Site	Design Value (ppb)
Abington	64
Cornwall	69
Danbury	76
East Hartford	72
Greenwich	79
Groton	71
Madison	76
Middletown	74
New Haven	72
Stafford	70
Stratford	80
Westport	80
NAAQS	70



The ozone monitoring network design requirements are primarily based on MSA population and ozone design value levels. Table 9 gives the minimum number of ozone sites per area in accordance with EPA requirements.

The 2024 8-hr ozone design values are above eighty-five percent of the 2015 ozone NAAQS at all DEEP monitoring sites. As such, most locations are considered to have monitoring value assessments of "critical" in the network."

Table 9 below is a summary of the ozone network design criteria for each Core-Based Statistical Area (CBSA) that is located partially or totally within Connecticut. These consist of five Metropolitan Statistical Areas (MSAs), with populations greater than or equal to 250,000, and one Micropolitan Statistical Area, with a population of less than 250,000. The CBSA population values are from the 2023 U.S. Census Bureau population estimates using the 2020 census as the base year.

Table 9: SLAMS Minimum Ozone Monitoring Requirements

MSA Population	DV≥85% NAAQS	DV<85% NAAQS
>10 million	4	2
4 - 10 million	3	1
350,000 - <4 million	2	1
50,000 - <350,000	1	0

As indicated in Table 10, the number of ozone monitors in the network exceeds EPA's minimum number by 2 in the Bridgeport-Stamford-Norwalk MSA and by 1 in the Hartford-East Hartford-Middletown MSA. As shown in the Network Assessment Analysis section below, these additional monitors provide the spatial coverage necessary to characterize ozone concentrations during exceedance events, during which there may be significant differences in peak concentrations over distances of 20 to 40 kilometers. While the Worcester MSA has 3 ozone monitors, one more than required, DEEP does not operate any of these monitors, and most of the area lies outside of Connecticut.

Table 11 provides the measurement scales, monitoring objectives and value assignments for the ozone network. In each MSA, at least one site is designated for monitoring the maximum concentrations for the area, per network design requirements. However, other sites within these areas may record the highest levels during particular ozone events.

Table 10: Summary of Ozone Network Minimum Monitoring Requirements

Core-Based Statistical Area	Population (2023 Census)	Design Values > 85% Ozone NAAQS?	No. Monitors	Minimum No. Monitors Required
Bridgeport-Stamford-Norwalk	963,780	Y	4	2
Hartford-East Hartford-Middletown	1,215,494	Y	3	2
New Haven-Milford	865,717	Y	2	2
Norwich-New London	268,518	Y	1	1
Worcester (includes Windham County)	983,982	Y	3	2
Torrington (non-MSA)	186,551	Y	1	NA[1]

[1] Not applicable per MSA requirements, but one monitor is required at the Cornwall NCore site located within the Torrington micropolitan statistical area.

Table 11: Ozone Network Measurement Scales, Monitoring Objectives and Value Assignments

Town	Site	Measurement Scale	Monitoring Objective	Value Assignment	Monitor Type
Pomfret	Abington	Regional	General background	N/A[1]	CASTNET
Cornwall	Mohawk Mountain	Regional	Regional transport	Critical	NCORE
Danbury	Western Connecticut State University	Urban	Population exposure	Credible	SLAMS
East Hartford	McAuliffe Park	Urban	Population exposure	Critical	PAMS
Greenwich	Point Park	Regional	Regional transport, population exposure	Credible	SLAMS
Groton	Fort Griswold	Urban	Population exposure	Critical	SLAMS
Madison	Hammonasset State Park	Regional	Population exposure, highest concentration	Critical	SLAMS
Middletown	Connecticut Valley Hospital	Urban	Population exposure, highest concentration	Critical	SLAMS
New Haven	Criscuolo Park	Neighborhood	Population exposure	Critical	NCORE
Stafford	Shenipsit State Forest	Regional	Population exposure, general background	Credible	SLAMS
Stratford	Stratford Lighthouse	Regional	Population exposure, highest conc., regional transport	Critical	SLAMS
Westport	Sherwood Island State Park	Regional	Population exposure, highest conc., regional transport	Critical	SLAMS

[1] Not a SLAMS monitor, operated by US government under the CASTNET program

Network Assessment Analysis

DEEP's analysis of the correlations between pairs of adjacent ozone sites indicates that the existing monitors provide unique critical data in assessing ozone population exposure and fate and transport patterns. DEEP compared 8-hour daily maximum values, greater than 60 parts per billion (ppb), to focus on the most critical concentrations for exposure assessment and NAAQS compliance. The results of this analysis are summarized in Table 12 below. Plots of the correlations are given in Appendix B. There is reasonable correlation between nearby coastal sites, with the exception of New Haven, which is the most heavily urban-influenced, where ozone would more likely be scavenged by higher NO_x concentrations. However, the variability in the values in the exceedance range has the potential to alter the occurrence of ozone violation days. The data suggest that the higher-concentration portions of ozone and precursor plumes approaching the Connecticut coast from the southwest are often localized to the extent that adjacent monitors may have significantly different maximum concentrations. Marine inversions mitigating the diffusion effect of ozone and precursor plumes could contribute to such localized events. Given the ozone plume coverage afforded by the current network configuration, DEEP supports the continued operation of the existing ozone network. As such, the enhanced monitoring plan for ozone (EMP), discussed elsewhere in this assessment, specifies two additional ozone monitors in the Bridgeport-Stamford-Norwalk CBSA and one additional ozone monitor in the Hartford-East Hartford-Middletown CBSA.

Analysis of 8-hour maximums between nearby sites from the previous (2024) ozone season shows three instances where exceedances of the O_3 NAAQS (70 ppb) were captured by only one monitor statewide: Greenwich, Danbury, and Cornwall all recorded maximums in the USG

category when other DEEP monitors displayed "Good" and "Moderate"[22]. Under DEEP's Ozone EMP, two additional O_3 monitors are operated in the Bridgeport-Stamford-Norwalk CBSA, for a total of four in the region. Of those monitors, there were 10 occurrences in the 2024 ozone season where exceedances were captured by only one monitor in the CBSA out of 21 total exceedance days in the CBSA. All but two of these exceedances were captured by other DEEP monitors beyond that CBSA. DEEP operates one additional O_3 monitor in the Hartford-East Hartford-Middletown CBSA. Of those monitors, there were three recorded exceedances in the CBSA that were not captured by the other two stations (out of nine total exceedances in the CBSA). All these exceedances were reported by other monitors in the network. The data indicate that while ozone is typically regional in distribution, a more extensive monitoring network enhances our capacity to track plume movement, capture highest concentrations, and improve the precision of forecasting and public health alerts.

Table 12: Summary of Ozone Near-Sites Correlations

Site comparison	Dis-tance (km)	Correl-ation (r^2)	Linear reg. slope	Linear reg. int.	Count	Avg diff. (ppb)	Stnd. Dev. (ppb)
Danbury vs. Greenwich	45.5	0.0218	0.1358	58.145	105	4	9.82
Greenwich vs. Westport	24.1	0.5661	0.7763	15.971	99	0	8.06
Westport vs. Stratford	19.8	0.5507	0.6996	19.283	111	1	8.40
Stratford vs. New Haven	23.3	0.4181	0.7959	4.7538	94	7	9.46
New Haven vs. Madison	29.9	0.0327	0.1271	58.018	79	4	9.23
Madison vs. Groton	40.7	0.6147	0.9190	0.6848	74	5	7.41
Middletown vs. East Hartford	26.4	0.3415	0.7165	16.155	69	3	8.84
Middletown vs. New Haven	35.2	0.1876	0.5009	31.149	68	2	8.93
Cornwall vs. Stafford	77.4	0.2091	0.5527	25.956	58	3	7.84
Stafford vs. Abington	34.8	0.3636	0.5316	25.292	45	6	7.54

[22] Note: This refers to Connecticut monitors only. Other monitors in operated by the New York Department of Environmental Conservation in the region reported exceedances on these days. However, Greenwich Point Park on August 6th, 2024 was the only exceedance in Connecticut not reported by any other monitors in the region.

$PM_{2.5}$ Network

$PM_{2.5}$ Monitoring Overview

The DEEP $PM_{2.5}$ network consists of Thermo Partisol®-Plus 2025i sequential FRM air samplers with BGI VSCC (RFPS-0498-118/EQPM-020-145) and Teledyne API T640X continuous air samplers (EQPM-0516-238) for NAAQS compliance at eight air monitoring stations. The distribution of $PM_{2.5}$ monitors in the network and their applicability to NAAQS attainment are shown in Table 13. All valid data from designated primary monitors is used in the derivation of NAAQS design values. Additionally, valid data from collocated and supplemental monitors, respectively, are used to fill in any missing or invalidated scheduled or nonscheduled days for the primary monitor data used for computing the design values

The $PM_{2.5}$ Teledyne API T640X continuous air samplers (EQPM-0516-238) data is also used for air quality index (AQI) forecasting.

During 2023, Teledyne API made available a firmware update for the T640/T640X analyzers, which was developed in conjunction with EPA, to provide closer alignment with data from reference grade (FRM) samplers. DEEP installed and enabled the data alignment firmware during July-August 2023. For T640X data collected prior to the data alignment implementation, EPA developed and applied a data correction algorithm to address a consistent bias between FEM and FRM data.[23] In accordance with EPA policy, and with DEEP concurrence, the corrected data was used to compute the preliminary $PM_{2.5}$ design values shown in this assessment. Unadjusted continuous data from DEEP Teledyne T640x are available in AQS delineated by method code 238.

Table 13: Current $PM_{2.5}$ Network Configuration

Site	Primary	Collocated	Supplemental
Bridgeport-Roosevelt Sch.	Continuous FEM	1-in-6 FRM	
Cornwall-Mohawk Mt.	1-in-3 FRM		Continuous FEM
Danbury-WCSU	1-in-6 FRM		Continuous FEM
East Hartford-McAuliffe Pk.	Continuous FEM		
Groton-Ft. Griswold	Continuous FEM		
Hartford-Huntley Pl.	1-in-6 FRM		Continuous FEM
New Haven-Criscuolo Pk.	1-in-3 FRM	1-in-6 FRM	2 Continuous FEMs
Waterbury-Bank St.	Continuous FEM		

[23] 89 FR 42874

$PM_{2.5}$ Design Values

On February 7, 2024, the EPA revised the NAAQS for fine particulate matter ($PM_{2.5}$) to decrease the primary annual $PM_{2.5}$ standard from 12 µg/m^3 to 9.0 µg/m^3 to enhance public health protection. The 24-hour $PM_{2.5}$ standard of 35 µg/m^3 was retained, as well as the primary and secondary standards for PM_{10}. The final rule was published in the Federal Register on March 6th, 2024 and became effective May 6th, 2024[24]. The $PM_{2.5}$ analysis and design values in this Network Assessment are compared to the updated NAAQS.

The $PM_{2.5}$ design values for 2021 through 2024 are listed in Table 14, and the spatial distribution of the 2024 design values are shown in Figure 13 below. Each $PM_{2.5}$ design value is defined as the average of the yearly metrics from three successive years, where the *annual* metric is annual weighted mean and the *24-hour* metric is the 98th percentile value. All Connecticut sites have attained the updated annual and the 24-hour $PM_{2.5}$ NAAQS. No sites exceed the 85 percent of NAAQS threshold, which would necessitate more intensive monitoring per 40 CFR Part 58 App D Table D-5, summarized in Table 15 of this assessment.

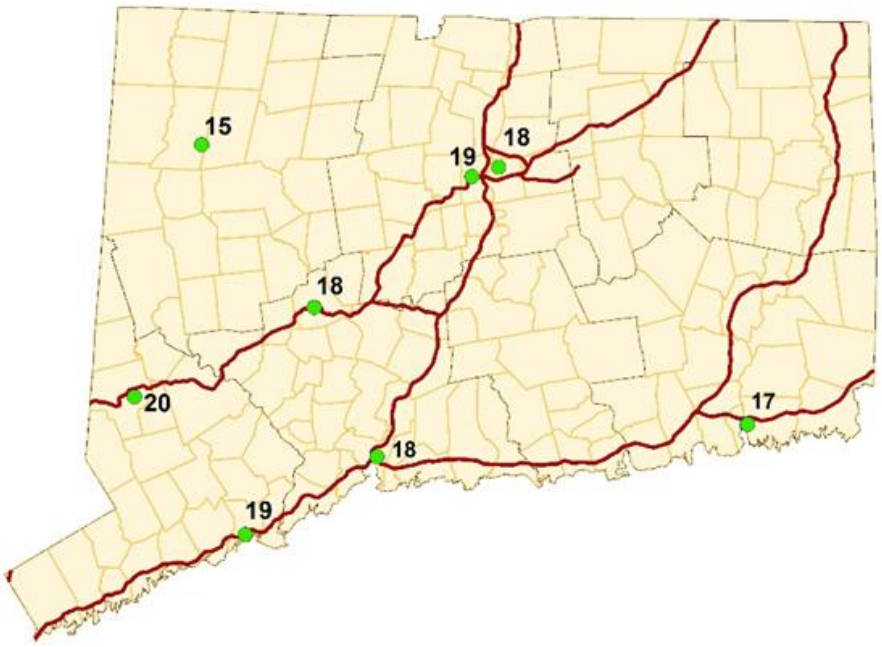
Table 14: Connecticut Recent $PM_{2.5}$ Design Values (µg/m3)

		2024-2022		2023-2021		2022-2020	
Town	Site Description	Annual	24-Hour	Annual	24-Hour	Annual	24-Hour
Bridgeport	Roosevelt School	7.0	19	7.4	21	6.9	19
Cornwall	Mohawk Mt	4.7	15	4.9	16	4.5	12
Danbury	WCSU	6.9	20	7	21	6.7	20
East Hartford	McAuliffe Park	6.4	18	6.7	19	6.4	17
Groton	Fort Griswold	6.1	17	6.3	17	5.9	14
Hartford	Huntley Place	6.9	19	7.0	19	6.5	17
New Haven	Criscuolo Park	6.9	18	7.2	20	6.7	19
Waterbury	Meadow & Bank St	6.9	18	7.4	20	7.1	19

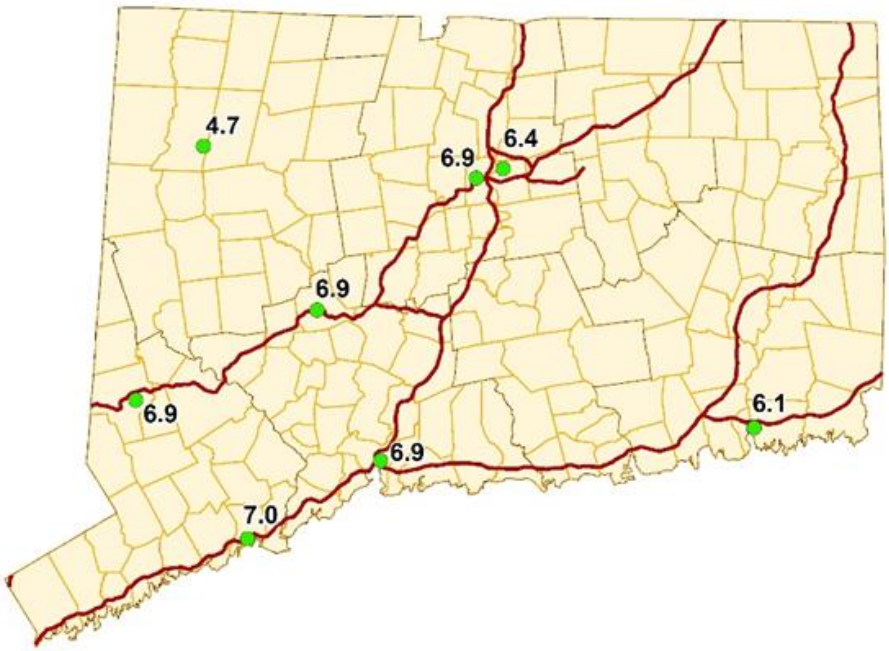
The annual $PM_{2.5}$ NAAQS is 9.0 µg/m3
The 24-hour $PM_{2.5}$ NAAQS is 35 µg/m3

[24] 89 FR 16202

Figure 13: Connecticut 2024 $PM_{2.5}$ Design Values (µg/m³)



$PM_{2.5}$ 2024 Daily Design Values



$PM_{2.5}$ 2024 Annual Design Values

$PM_{2.5}$ Monitoring Network Design

General $PM_{2.5}$ network requirements: The minimum $PM_{2.5}$ monitoring requirements for each MSA, which is based on populations and design values, are in Table 15:

Table 15: EPA General Requirements for $PM_{2.5}$ Monitoring

MSA population[1] [2]	Most recent 3-year design value ≥85% of any $PM_{2.5}$ NAAQS[3]	Most recent 3-year design value <85% of any $PM_{2.5}$ NAAQS[3] [4]
>1,000,000	3	2
500,000-1,000,000	2	1
50,000-<500,000[5]	1	0

[1]Minimum monitoring requirements apply to the Metropolitan statistical area (MSA).
[2]Population based on latest available census figures.
[3]The $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS) levels and forms are defined in 40 CFR part 50.
[4]These minimum monitoring requirements apply in the absence of a design value.
[5]Metropolitan statistical areas (MSA) must contain an urbanized area of 50,000 or more population.

Connecticut currently meets the minimum $PM_{2.5}$ monitoring requirements based on MSA population and observed concentrations relative to the NAAQS as shown in Table 16 below. The maximum 2024 design values in each MSA and in the Torrington micropolitan statistical area are below 85 percent of the daily and annual NAAQS levels. However, because the 2023 $PM_{2.5}$ levels in the Worcester, MA-CT core-based statistical area (CBSA), which includes Windham County, CT, were within 15 percent of the new annual standard, this area is required to deploy an additional $PM_{2.5}$ monitor[25]. The Massachusetts Department of Environmental Protection agreed to deploy and operate the additional $PM_{2.5}$ monitor, which is located at their existing monitoring site in Uxbridge, MA and began reporting data in 2025[26]. The other $PM_{2.5}$ monitor in the Worcester, MA-CT CBSA is located at Worcester Summer Street. There are no $PM_{2.5}$ monitors within the Connecticut portion of the MSA.

Table 16: Specific $PM_{2.5}$ Network Minimum Monitoring Requirements

Core-Based Statistical Area	Population (2023 Census)	Design Values[1] > 85% $PM_{2.5}$ NAAQS?[2]	No. Monitors	Minimum No. Monitors Required
Bridgeport-Stamford-Norwalk	963,780	N	2	1
Hartford- East Hartford-Middletown	1,215,494	N	2	2
New Haven-Milford	865,717	N	2	1
Norwich-New London	268,518	N	1	0
Worcester-Connecticut	983,982	Y[3]	2[4]	2
Torrington (non-MSA)	186,551	N	1	0

[1]*2024 design value, based on 2022-2024 data
[2]85% of the 9.0 µg/m^3 $PM_{2.5}$ NAAQS is calculated at 7.6 µg/m^3
[3]The 2023 DV for Worcester Summer Street is 8.2 ug/m^3
[4]Monitors located in Worcester County, Massachusetts. Additional monitor added to Uxbridge, MA, station in 2024.

[25] 40 CFR 58 Appendix D 4.7

[26] Massachusetts DEP Draft 2025 Air Monitoring Network Plan, pg. 14-15

Specific $PM_{2.5}$ network requirements: In addition to the minimum required number of monitors in each MSA discussed above, the $PM_{2.5}$ network must fulfill the following specific design requirements:

Monitors implemented under the minimum monitoring requirements must be sited to represent area-wide concentrations. Under EPA guidance, monitors representing area-wide concentrations are typically at neighborhood or urban spatial scales. All of DEEP's $PM_{2.5}$ monitors, except the Cornwall NCore monitor, are sited to represent neighborhood or urban spatial scales.

For CBSAs with populations of at least 1,000,000, a $PM_{2.5}$ monitor must be co-located at the NO_2 near road station. While this requirement is effective January 1, 2017, DEEP has been operating a $PM_{2.5}$ monitor at Hartford Huntley Place near road station since March 2014. At least one monitor must be sited at neighborhood or larger scale in an area of expected maximum concentrations. The Bridgeport Roosevelt School monitor meets this criterion. For areas with additional required monitors, a monitoring station is to be sited in an area of "poor air quality." The DEEP network has several monitors located in areas where high air pollutant concentrations are expected, (i.e.: in close proximity to highways with high motor vehicle traffic and in areas having high densities of industrial emission sources). These include Bridgeport Roosevelt School, New Haven Criscuolo Park, Hartford Huntley Place and Waterbury Meadow Street.

Requirement for continuous $PM_{2.5}$ monitoring: Continuous $PM_{2.5}$ monitors must be located at a minimum of ½ of the sites required to have $PM_{2.5}$ monitoring under the general requirements described and summarized in Table 15 above. DEEP has exceeded this requirement by locating continuous $PM_{2.5}$ FEMs at all $PM_{2.5}$ sites.

Requirement for background and transport $PM_{2.5}$ sites: Each state must have at least one site to monitor for regional background and one site to monitor for regional transport. The Cornwall Mohawk Mountain NCore site is appropriate for monitoring long-range transport from southwestern trajectories. Speciated particulate data collected at Cornwall is used to identify contributing source types. The East Hartford McAuliffe Park $PM_{2.5}$ monitor is representative of general/background levels, being located in a suburban neighborhood away from large industrial sources and high traffic roadways.

Requirement for $PM_{2.5}$ chemical speciation: Each state must have a $PM_{2.5}$ chemical speciation monitor as part of the Chemical Speciation Network (CSN). DEEP operates a CSN sampler at the New Haven NCore site. In addition, there is speciation monitoring at the Cornwall NCore site, and continuous black carbon/ultraviolet carbon (BC/UVC) (aethalometer) monitoring at Cornwall, Danbury, East Hartford, Hartford and New Haven. Further information is provided in the PM speciation section below.

$PM_{2.5}$ network spatial scales, monitoring objectives and value assignments: $PM_{2.5}$ network site characteristics are summarized in Table 17. Most sites are in locations that represent neighborhood/ urban spatial scale concentrations, except for Cornwall, which is in a remote rural area and is a general/background site. The Bridgeport Roosevelt School and Hartford Huntley Place monitoring objectives are representative of the highest concentrations in their respective CBSAs, due to their proximity to major interstate highways with high traffic counts and patterns of traffic congestion.

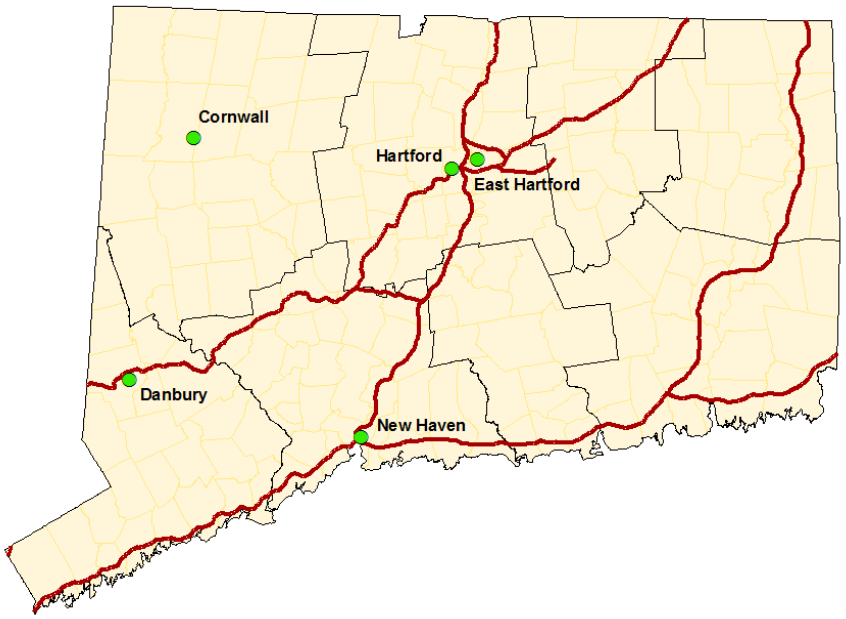
Connecticut currently meets and exceeds the minimum number of required monitors for each intra-CT CBSA as required in 40 CFR Part 58 Appendix D. As a direct consequence of the updated annual $PM_{2.5}$ standard, the Worcester, MA-CT CBSA, which includes Windham County, CT, is required to deploy an additional $PM_{2.5}$ monitor because the $PM_{2.5}$ levels in this area are within 15 percent of the new annual standard. In December 2024, Massachusetts Department of Environmental Protection deployed and continues to operate the additional $PM_{2.5}$ monitor in Uxbridge, MA. Although there are no monitors in Windham County, which is the Connecticut

part of the Worcester, MA-CT CBSA, the low population density (no urban areas with population greater than 50,000) and the absence of high vehicle traffic areas indicates a low probability of exceeding the $PM_{2.5}$ NAAQS.

Table 17: $PM_{2.5}$ Network Measurement Scales, Monitoring Objectives and Value Assignments

Town	Site	Measurement Scale	Monitoring Objective	Value Assignment	Site Type
Bridgeport	Roosevelt School	Neighborhood	Highest concentration	Critical	SLAMS
Cornwall	Mohawk Mountain	Regional	Regional transport; general/background	Credible	NCORE
Danbury	Western Connecticut State University	Neighborhood	Population exposure	Critical	SLAMS
East Hartford	McAuliffe Park	Neighborhood	Population exposure; general/background	Critical	SLAMS
Groton	Fort Griswold	Urban	Population exposure	Credible	SLAMS
Hartford	Huntley Place	Neighborhood	Highest concentration	Critical	SLAMS, Near-road
New Haven	Criscuolo Park	Neighborhood	Population exposure	Critical	NCORE
Waterbury	Bank Street	Neighborhood	Population exposure; highest concentration	Critical	SLAMS

PM Speciation Monitoring Overview



$PM_{2.5}$ chemical speciation measurements are being obtained at five sites in the DEEP air monitoring network. The IMPROVE (Interagency Monitoring of Protected Visual Environments) site is located at the Cornwall site and the EPA CSN (Chemical Speciation Network) site is at the New Haven Criscuolo Park site. Both sites are operated on the EPA designated 1-in-3 day PM sample schedule and provide 24-hour integrated filter-base measurements. Aethalometers, which are used to provide continuous measurements of black carbon and ultra-violet channel carbon (BC/UVC) $PM_{2.5,}$ are in operation at the New Haven, Cornwall, Danbury, Hartford, and East Hartford sites. BC and UVC data are submitted in both standard (STP) condition of temperature and pressure and in local

conditions (LC). A summary of $PM_{2.5}$ speciation monitoring siting characteristics is provided in Table 18.

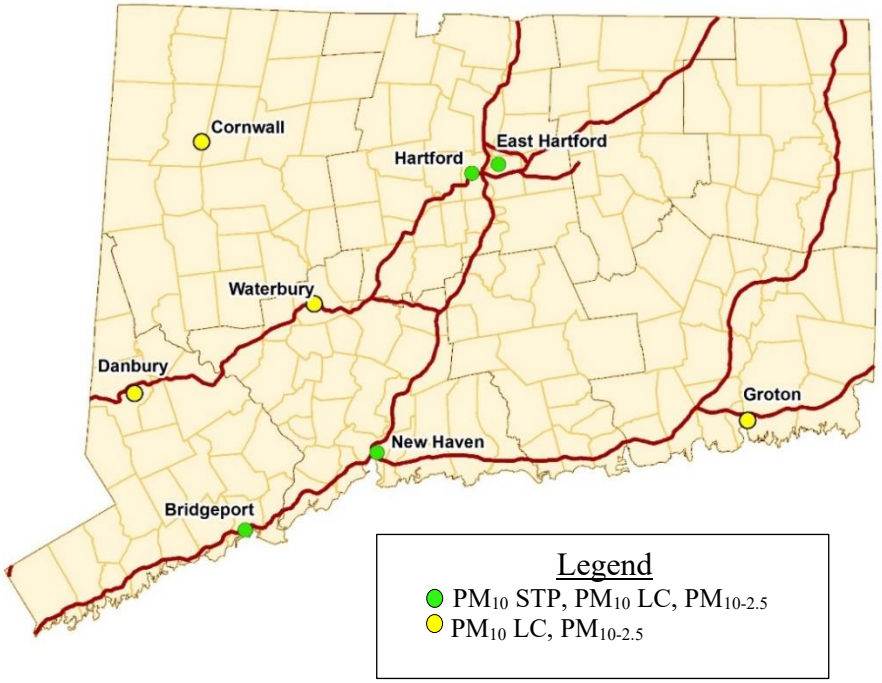
Table 18: $PM_{2.5}$ Speciation Network Measurement Scales, Monitoring Objectives and Value Assignments

Town	Site	Measurement Scale	Monitoring Objective	Value Assignment	Site Type
Cornwall	Mohawk Mountain	Regional Scale	General/background	Credible	NCore/IMPROVE
Danbury	WCSU	Neighborhood	Population exposure	Credible	SLAMS
East Hartford	McAuliffe Park	Neighborhood	Population exposure	Credible	SLAMS
Hartford	Huntley Place	Neighborhood	Population exposure	Credible	SLAMS/Near-road
New Haven	Criscuolo Park	Neighborhood	Population exposure	Credible	NCore/CSN

$PM_{10}/PM_{10\text{-}2.5}$ Network

$PM_{10}/PM_{10\text{-}2.5}$ Network Overview

DEEP operates one $PM_{10}/PM_{10\text{-}2.5}$ FRM site in the air monitoring network using Thermo Partisol-Plus 2025i sequential air samplers (RFPS-1298-127). The New Haven NCore PM_{10} primary monitor operates on a 1-in-3 day sample schedule. The New Haven site has a collocated PM_{10} FRM sampler operating on a 1-in-6 day sample schedule. The New Haven primary and collocated PM_{10} FRM samplers are paired with primary and collocated $PM_{2.5}$ FRM samplers for primary and collocated coarse PM ($PM_{10\text{-}2.5}$). The New Haven collocated $PM_{10\text{-}2.5}$ FRM monitors were requested by EPA as part of a national network of $PM_{10\text{-}2.5}$ collocated sites for pooled data quality assessment.



In addition to the FRM PM_{10} monitors, 8 sites have FEM Teledyne API T640X continuous PM mass monitors for FEM PM_{10} (EQPM-0516-239) and FEM $PM_{10\text{-}2.5}$ (EQPM-0516-240). The current PM_{10} network configuration is shown in Table 19. The T640X analyzers produce 1-minute and 60-minute average $PM_{2.5}$, PM_{10} (at local (LC) and standard (STP) conditions of temperature and pressure) and $PM_{10\text{-}2.5}$ (coarse PM). Coarse PM is defined as thoracic PM having particle aerodynamic diameters between 2.5 and 10 microns, operationally defined as the difference PM_{10} minus $PM_{2.5}$.

Monitors used to fulfill minimum monitoring requirements report PM_{10} mass concentrations corrected to STP[27]. DEEP received approval to discontinue reporting of PM_{10} at STP (parameter code 81102) for all monitors not utilized to meet minimum network design criteria for PM_{10} as delineated in 40 CFR 58 Appendix D (§4.6), which sites are indicated by yellow symbols in the above network map. DEEP will continue reporting PM_{10} at LC (parameter code 85101) and $PM_{10\text{-}2.5}$ (parameter code 86101) for all current PM_{10} monitors in the network. The monitors that were discontinued for PM_{10} STP reporting as of January 1, 2023 are the continuous FEM monitors at the following sites, with associated EPA Air Quality System (AQS) IDs:

Site	AQS ID:
Cornwall Mohawk Mountain	09-005-0005
Danbury WCSU	09-001-1123
Groton Fort Griswold St Park	09-011-0124
New Haven Criscuolo Park	09-009-0027
Waterbury Bank Street	09-006-2123

The sites that have retained regulatory PM_{10} STP reporting include New Haven Criscuolo Park (FRM, primary and collocated), Bridgeport Roosevelt School (FEM), Hartford Huntley Place (FEM) and East Hartford McAuliffe Park (FEM).

Table 19: Current $PM_{10}/PM_{10\text{-}2.5}$ Network Configuration

Site	Primary	Collocated	Supplemental
Bridgeport-Roosevelt Sch.	Continuous FEM		
Cornwall-Mohawk Mt.	Continuous FEM		
Danbury-WCSU	Continuous FEM		
East Hartford-McAuliffe Pk.	Continuous FEM		
Groton-Ft. Griswold	Continuous FEM		
Hartford-Huntley Pl.	Continuous FEM		
New Haven-Criscuolo Pk.	1-in-3 FRM	1-in-6 FRM	2 Continuous FEMs
Waterbury-Bank St.	Continuous FEM		

Monitoring data indicate that PM_{10} levels in Connecticut are well below the 24-hour NAAQS of 150 $\mu g/m^3$, where the standard is based on a 3-year average of the annual number of expected exceedances that is less than or equal to 1. Figure 14 shows annual maximum 24-hour PM_{10} trends in Connecticut from 2005-2024. One exceedance was recorded at Bridgeport Roosevelt School during the 2023 summer Canadian wildfire events. This event was primarily driven by $PM_{2.5}$, which is included in PM_{10}.

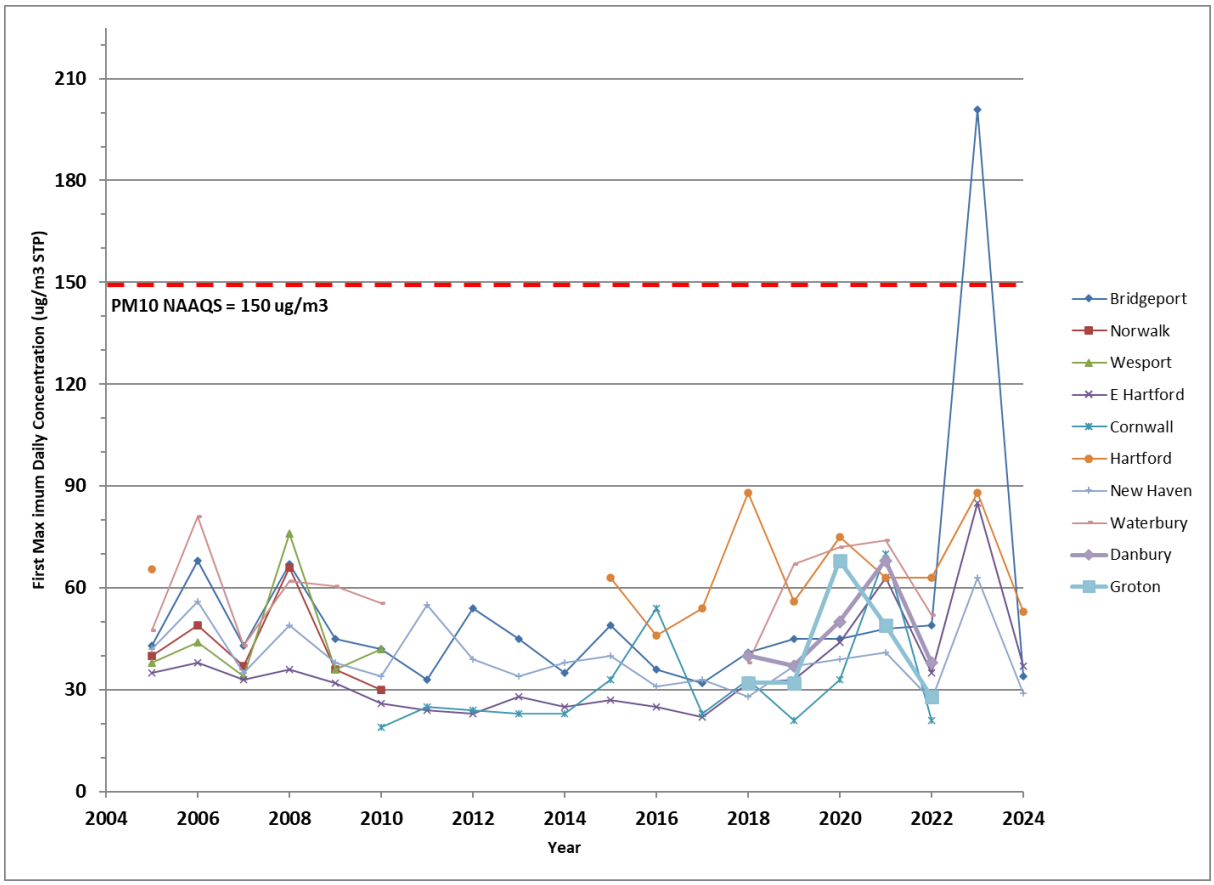
Table 20: Connecticut Recent PM_{10} Design Values (µg/m3)

Site	Daily "Desing Value" (ug/m^3 STP)*	Average Estimated No. of Exceedances
Bridgeport	91	0.3
East Hartford	63	0
Hartford	65	0
New Haven	29	0
NAAQS	150	1.0

[27] 40 CFR 50 Appendix J 2.2

*Daily "design values" given are the fourth high daily concentrations over three years (2022-2024), presented here for comparison to the standard. The actual PM10 design value form is the expected number of exceedance days per year, averaged over three years, which should be less than or equal to one.

Figure 14: PM_{10} Daily First High Value Trends in Connecticut MSAs



PM_{10} Monitoring Network Requirements

Population-based PM_{10} monitoring requirements: The requirements for PM_{10} monitoring stations are based on MSA populations and ambient PM_{10} levels, as shown in Table 21. All of Connecticut's stations have PM_{10} levels less than 80 percent of NAAQS, which put them in the "low concentration" category of the table. Table 22 shows compliance of the PM_{10} monitoring network with EPA requirements for the CBSAs that are within or intersecting Connecticut. All primary monitors indicated are FEMS, except for the New Haven Criscuolo Park monitor in the New Haven-Milford CBSA, which is a FRM monitor. Massachusetts DEP operates PM_{10} monitors at two stations in the Worcester, MA-CT CBSA (Uxbridge and Summer Street)[28]. DEEP does not operate any PM_{10} monitors in the Connecticut portion of the CBSA (Windham County).

Coarse PM monitoring requirements: Coarse PM, designated $PM_{10-2.5}$ or PM_C, is defined as the mass of particles with aerodynamic diameters between 2.5 and 10 microns, which can be derived by taking the difference in concentrations between paired, co-located $PM_{2.5}$ and PM_{10} samplers. The network design requirement for $PM_{10-2.5}$ is that monitors be located at all NCore stations. DEEP has both paired FRMs and paired FEMs for discreet and continuous PM_C measurements at the New Haven NCore site, while the Cornwall NCore site has continuous FEM

[28] Massachusetts DEP Draft 2025 Air Monitoring Network Plan, pg. 13-14

coarse PM monitoring. While not required, DEEP reports $PM_{10-2.5}$ at SLAMS where continuous $PM_{2.5}$ and PM_{10} (LC) are collected.

PM_{10}/PM_C Measurement Scales, Monitoring Objectives and Value Assignments: The PM_{10} network measurements scales, monitoring objectives and value assignments are given in Table 23. All sites have value assignments of "credible," as they are counted towards minimum monitoring requirements but do not indicate potential for violation of the NAAQS.

Table 21: EPA PM_{10} Minimum Monitoring Requirements

Population category	High concentration[2]	Medium concentration[3]	Low concentration[4 5]
>1,000,000	6-10	4-8	2-4
500,000-1,000,000	4-8	2-4	1-2
250,000-500,000	3-4	1-2	0-1
100,000-250,000	1-2	0-1	0

[1]Selection of urban areas and actual numbers of stations per area will be jointly determined by EPA and the State agency.
[2]High concentration areas are those for which ambient PM_{10} data show ambient concentrations exceeding the PM_{10} NAAQS by 20 percent or more.
[3]Medium concentration areas are those for which ambient PM_{10} data show ambient concentrations exceeding 80 percent of the PM_{10} NAAQS.
[4]Low concentration areas are those for which ambient PM_{10} data show ambient concentrations less than 80 percent of the PM_{10} NAAQS.
[5]These minimum monitoring requirements apply in the absence of a design value.

Table 22: Connecticut PM_{10} Minimum Monitoring Compliance

Core-Based Statistical Area	Population (2023 Census)	PM10 Concentration levels1	No. Monitors	Minimum No. Monitors Required1
Bridgeport-Stamford-Norwalk	963,780	Low	1	1-2
Hartford- East Hartford-Middletown	1,215,494	Low	2	2-4
New Haven-Milford	865,717	Low	1	1-2
Norwich-New London	268,518	Low	0	0-1
Worcester	983,982	Low	2[2]	1-2
Torrington (non-MSA)	186,551	Low	0	0

[1] Per Table D-4 of 40 CFR 58 Appendix D
[2] Operated by the Massachusetts DEP at Uxbridge and Worcester Summer Street stations

Table 23: PM_{10} Network Measurement Scales, Monitoring Objectives and Value Assignments

Town	Site	Measurement Scale	Monitoring Objective	Value Assignment	Site Type
Bridgeport	Roosevelt	Neighborhood	Highest concentration	Credible	SLAMS
East Hartford	McAuliffe Park	Urban	Population exposure	Credible	SLAMS
Hartford	Huntley Place	Neighborhood	Highest concentration	Credible	SLAMS
New Haven	Criscuolo Park	Neighborhood	Population exposure	Credible	NCORE

Table 24: $PM_{10-2.5}$ Network Measurement Scales, Monitoring Objectives and Value Assignments

Town	Site	Measurement Scale	Monitoring Objective	Value Assignment	Site Type
Bridgeport	Roosevelt	Neighborhood	Highest concentration	Credible	SLAMS
Cornwall	Mohawk Mountain	Regional	General background	Credible	NCore
Danbury	WCSU	Neighborhood	Population exposure	Credible	SLAMS
East Hartford	McAuliffe Park	Urban	Population exposure	Credible	SLAMS
Groton	Fort Griswald	Urban	Population exposure	Credible	SLAMS
Hartford	Huntley Place	Neighborhood	Highest concentration	Credible	SLAMS
New Haven	Criscuolo Park	Neighborhood	Population exposure	Credible	NCore
Waterbury	Meadow and Bank	Neighborhood	Population exposure	Credible	SLAMS

PAMS Network

DEEP formerly operated three Photochemical Assessment Monitoring Stations (PAMS) sites in the air monitoring network at the New Haven Criscuolo Park, Westport Sherwood Island, and East Hartford McAuliffe Park sites. However, the 2015 ozone NAAQS rule[29] requires PAMS measurements at NCore sites that are located in CBSAs with populations of 1,000,000 or more. Since Connecticut's NCore sites are both in CBSAs with populations less than one million, PAMs monitoring is not required. As a result of the NAAQS rule, Connecticut ended PAMS monitoring in January 2016. However, the rule requires that states located within the Ozone Transport Region (OTR) and/or states with O_3 nonattainment areas classified moderate and above develop and implement Enhanced Monitoring Plans (EMPs) proposing additional O_3, O_3 precursor, and/or meteorological monitoring activities. Connecticut's EMP is addressed in the following section.

Ozone Enhanced Monitoring Plan

[29] 80 FR 65292; October 26, 2015

This section consists of the Enhanced Monitoring Plan (EMP) for Connecticut pursuant to 40 CFR sections 58.10 (a) (11) and 58 App D 5(h). These federal regulations, revised under the 2015 National Ambient Air Quality Standards (NAAQS) for ozone[30], require that any state with any area designated moderate nonattainment or above, or any state within the Ozone Transport Region (OTR), submit an Enhanced Monitoring Plan for ozone (EMP) to the regional office of the Environmental Protection Agency (EPA) no later than October 1, 2019.

Background

Recent ozone (O_3) levels in Connecticut are often the highest in the eastern U.S., placing all regions of the state in serious nonattainment for the 2015 ozone NAAQS. Connecticut contains two nonattainment areas: Greater Connecticut (Hartford, Litchfield, New London, Tolland, and Windham counties) and New York- Northern New Jersey-Long Island, NY-NJ-CT area (Fairfield, New Haven and Middlesex counties). For the 2015 8-hour ozone NAAQS (70 ppb), both nonattainment areas are currently classified as serious. Under the 2008 8-hour ozone NAAQS (75 ppb), Greater Connecticut is classified as serious nonattainment, and NY-NJ-CT is classified as severe-15 nonattainment. These levels largely result from transport of ozone precursors into Connecticut from the south-west direction along the northeast urban corridor. Modeling and other analyses have shown significant contributions to ozone levels in Connecticut from sources both inside and outside of the greater New York and greater Connecticut nonattainment areas[31].

DEEP has documented through numerous public comment submissions, communications, and litigation that EPA[32] must fully implement in a timely manner the Clean Air Act "good neighbor" provisions designed to address interstate air pollution before Connecticut can reasonably expect to attain either the 2008 or 2015 ozone NAAQS in the Connecticut portion of the Northern New Jersey-New York-Connecticut nonattainment area. Nonetheless, EPA continues to fail to adopt sufficiently stringent national measures to control ozone precursor emissions or enforce the tools EPA claims the states possess (CAA section 176A or 126 petitions). DEEP will continue to develop and implement monitoring activities under this EMP to increase the scientific knowledge and understanding of the fate and transport mechanisms of ozone and related ozone precursor pollutants in this region, with specific attention to impacts of the water-land boundary. DEEP expects the data from these enhanced monitoring activities will further clarify the critical role that interstate air pollution transport plays in the Northern New Jersey-New York-Connecticut and Greater Connecticut nonattainment areas and further inform the development and implementation of meaningful national programs, including especially national mobile source control programs, that will protect public health and the environment.

The 2015 O_3 NAAQS amended monitoring requirements for the PAMS network. Previously, Connecticut operated PAMS volatile organic compounds (VOC) monitors at three sites: East Hartford McAuliffe Park, New Haven Criscuolo Park and Westport Sherwood Island State Park. The revised rule[33] requires VOC monitoring at all NCore monitoring sites in CBSAs having populations greater than one million. In addition, areas with moderate or higher levels of O_3 nonattainment, as well as all areas within the Ozone Transport Region (OTR), are required to develop Enhanced Monitoring Plans (EMPs). EMPs are required to provide for additional monitoring beyond the minimum requirements for State and Local Air Monitoring Stations (SLAMS) that would be beneficial in identifying pollutant levels, sources, transport and progress towards attainment. The EMP mandate is intended to provide state and environmental agencies with an opportunity to implement additional monitoring beyond SLAMS

[30] ibid

[31] FR 82 1733, January 6, 2017

[32] Greater CT Ozone Attainment Demonstration for the 2008 NAAQS

[33] 80 FR 65292; October 26, 2015

that addresses the needs of nonattainment areas not explicitly covered under the revised PAMS network.

Strategic Approach and Objectives

State and local environmental agencies have conducted considerable surface monitoring of O_3, O_3 precursors [e.g.: nitrogen oxides (NO, NO_2, NO_X, NO_Y), VOCs] and meteorological parameters as part SLAMS and PAMS networks. Current strategies for analyzing O_3 production and transport are typically based on computer modeling with source emissions and meteorological inputs, where high resolution speciated VOC data have limited usefulness in model development or validation.

PAMS monitoring programs include, in addition to VOCs, three carbonyls that are more typically abundant: formaldehyde, acetaldehyde and acetone. The most significant of these, formaldehyde (HCHO), has been used extensively as a proxy for VOC free radical formation in research and analyses on tropospheric ozone[34]. Given the understanding that O_3 formation may be sensitive to changes in either VOCs (VOC limited regime) or NO_X (NO_X limited regime), as demonstrated with photochemical numeric computer models, the ratio of HCHO to NO_2 from ambient air monitoring during high O_3 events can be key in the validation of computer modeling approaches.

In addition to monitoring strategies aimed at understanding aspects of the regional O_3 chemistry, collecting data that clearly show the spatial variability of surface O_3 concentrations is critical to developing approaches to effectively address non-attainment in Connecticut. DEEP maintains an extensive network of O_3 monitoring sites, particularly along its prevailing upwind (south-southwestern) border to effectively track ozone plumes transported into the state, and these sites consistently show the highest ozone concentrations in Connecticut.

Proposed Enhanced Monitoring Activities

Contingent on the availability of federal funding, DEEP conducts/ conducted the following activities and resource commitments to meet the objectives for enhanced monitoring under this EMP.

- Continued operation of two additional O_3 monitors beyond those minimally required for the State and Local Air Monitoring Station (SLAMS) in the Bridgeport-Stamford-Norwalk Core-Based Statistical Area (CBSA).
- Continued operation of one additional ozone monitor beyond those minimally required in the Hartford-West Hartford-East Hartford CBSA.

Figure 15: Map of EMP-Related Monitoring Locations

[34] Jin, X et. al, 2017, Evaluating a Space-Based Indicator of Surface Ozone-NOx-VOC Sensitivity Over Midlatitude Source Regions and Application to Decadal Trends, J. of Geophysical Research, 122 (19) 10,439-10,461

- Continued operation of one additional NO_2 monitor, located at the Westport Sherwood Island State Park site.
- Installation and operation of a compact O_3 monitor with GPS tracking on the Bridgeport, CT – Port Jefferson, NY ferry crossing the Long Island Sound during the 2018 and 2023 ozone seasons.
- Assessment of continuous HCHO methods. Contingent on the availability of an instrument that is capable of operation with demonstrable and acceptable quality assurance criteria, DEEP would procure and potentially deploy to a coastal ozone site.
- Continued operation of two ceilometers, at Westport and New Haven, for atmospheric mixing height (boundary layer depth).
- Provision of site access for on-site technical support for EPA's Pandora spectrophotometers, which continuously monitor total column NO_2 and HCHO, at four monitoring sites (Cornwall Mohawk Mountain, Westport Sherwood Island, New Haven Criscuolo Park and Madison Hammonasset State Park).
- Provision of technical and/or financial support for select scientific or engineering research projects that have the potential to further develop understanding of the mechanisms of ozone production and transport impacting Connecticut. This includes DEEP's participation in and support of the 2018-19 Long Island Sound Tropospheric Ozone Study (LISTOS)[35]. More recently DEEP participated in the 2023-24 LISTOS campaign, where DEEP operated a mobile O_3 FEM monitor on the Bridgeport, CT- Port Jefferson, NY ferry crossing, assisted EPA ORD with radiosonde deployments monitoring HCHO from Westport Sherwood Island, hosted a WindCube for LiDAR wind measurements at Stratford Lighthouse, and provided collaborators at Yale University with instruments for PM and SO_2 monitoring.

DEEP has participated as a joint effort with multiple state and federal agencies, academic researchers, non-governmental organizations and private businesses in the development, planning and implementation of these activities. In addition to meeting the requirements of 40 CFR 58, DEEP believes these actions will assist ongoing efforts toward assessing and understanding ozone nonattainment in Connecticut:

NOx / NOy Network

NO_2 and NO/NO_Y Monitoring

DEEP monitors nitrogen dioxide (NO_2) at four sites in the monitoring network using Teledyne-API Model N500 (EQNA-0320-256), which measure NO_2-NO_x-NO using cavity attenuated phase shift (CAPS) spectroscopy methodology. The NO_2 monitors are maintained at Hartford Huntley Place, East Hartford McAuliffe Park, New Haven Criscuolo Park and Westport Sherwood Island State Park for regulatory compliance. In late 2024 and early 2025, DEEP replaced Teledyne-API Model T500U CAPS monitors (EQNA-0514-212) that had been approaching ten years of

[35] Long Island Sound Tropospheric Ozone Study — NESCAUM

service with Teledyne-API Model N500 CAPS instruments. With each N500 installation, DEEP plans to concurrently collect ambient NO and NO_x data alongside direct NO_2 measurements.

DEEP also operates two nitrogen oxide/total reactive oxides of nitrogen (NO/NO_Y) TAPI model T200U/501Y monitors, at Cornwall Mohawk Mountain and New Haven Criscuolo Park, to comply with NCore requirements. NO_Y is defined as $NO+NO_2+NO_Z$, where NO_Z represents higher oxides of nitrogen. The major components of NO_Z include nitrous acids [nitric acid (HNO_3), and nitrous acid (HONO)], organic nitrates [peroxyl acetyl nitrate (PAN), methyl peroxyl acetyl nitrate (MPAN), and peroxyl propionyl nitrate, (PPN)], and particulate nitrates.

The NO_2 and NO/NO_Y networks fulfill requirements for NCore and SLAMS monitoring of these parameters. These requirements include near road and area wide NO_2 monitoring in a core-based statistical area (CBSA) with a population greater than 1,000,000 (Hartford and East Hartford sites, respectively); nationwide NO_2 monitoring for susceptible and vulnerable populations at site selected by EPA (New Haven) and NCore NO/NO_Y monitoring (Cornwall and New Haven). The Westport NO_2 monitor is operated as part of Connecticut's EMP to provide data for analysis and research of regional ozone fate and transport.

On January 22, 2010, EPA finalized a revision to the 1-Hour NO_2 NAAQS[36] at 100 ppb, retaining the annual average NO_2 standard at a level of 53 ppb. The 1-hour NO_2 NAAQS is an annual 3-year average of the 98th percentile of the highest daily maximum concentration in each year. The 98th percentiles of Connecticut's daily highs are approximately 50% of the standard, as shown in Table 25 for 2024.

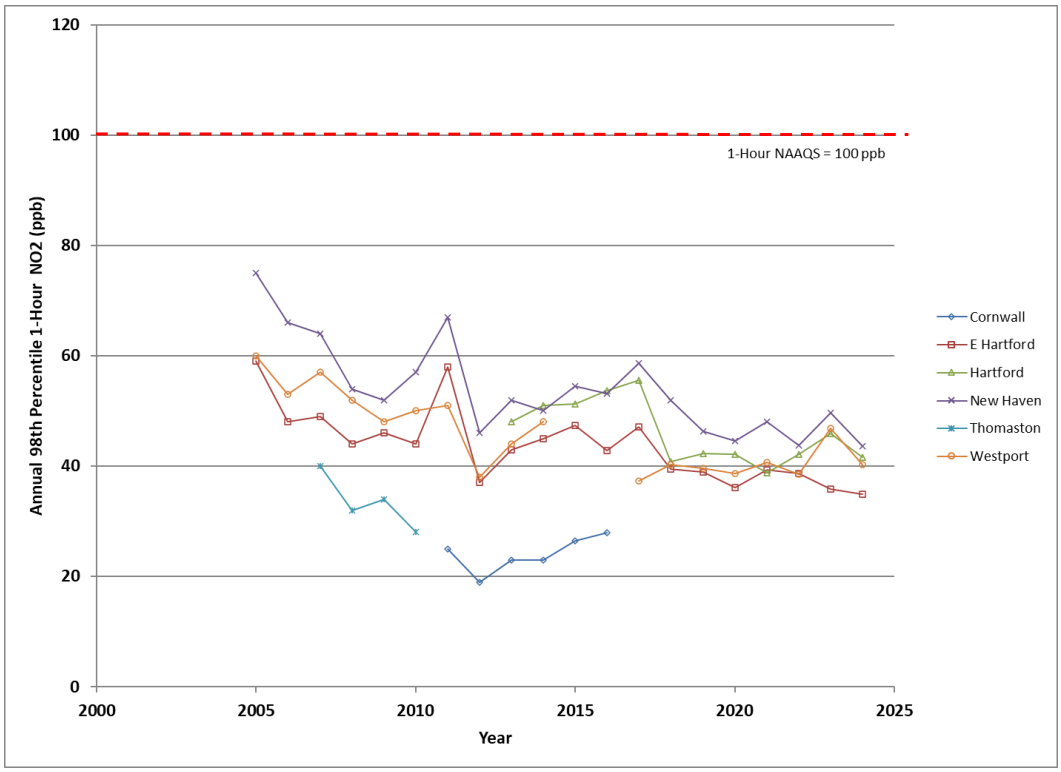
Table 25: NO_2 2024 NAAQS Design Values

Site	1-Hr Design Value (ppb)	Annual Design Value (ppb)
East Hartford	36	7
Hartford	43	13
New Haven	46	11
Westport*	42	8
NAAQS	**100**	**53**

[36] 75 FR 6474-6537, January 22, 2010

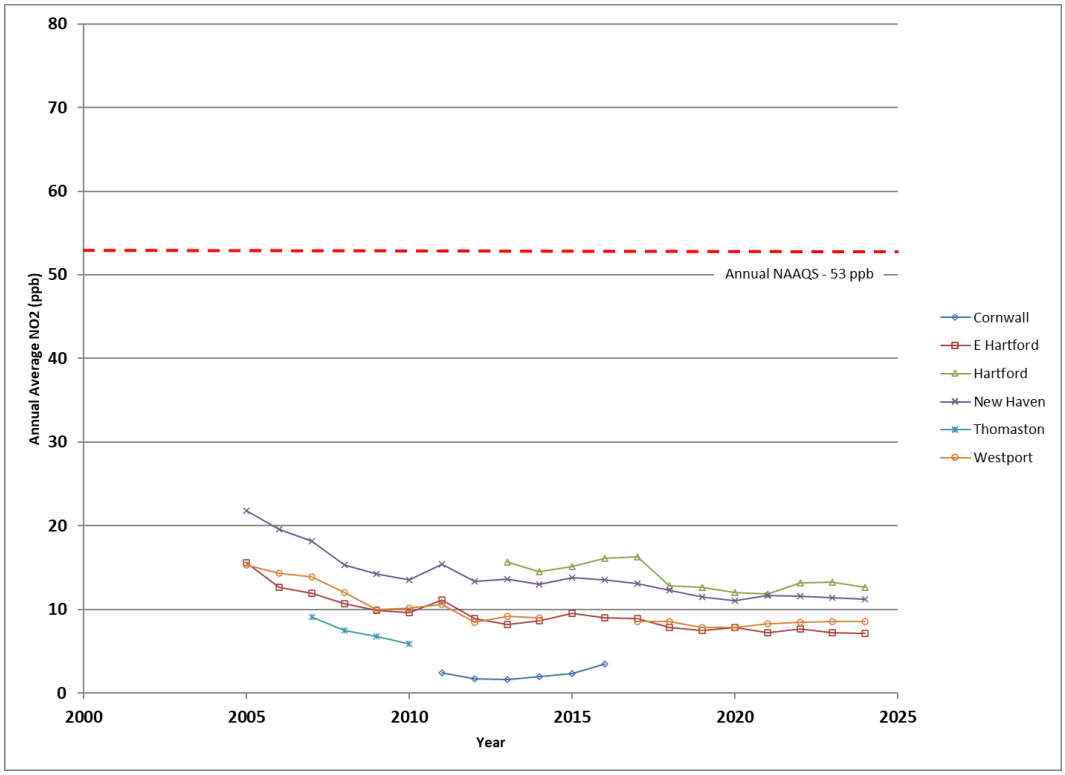
The annual 1-hour 98th percentile daily maximum and annual average NO_2 values are shown in comparison to NAAQS levels in Figures 16 and 17 below. There has been a slight decreasing NO_2 trend since 2005.

Figure 16: Connecticut 1-Hour NO2 Trends, daily maximum 1-hour 98th percentile values



†

Figure 17: Connecticut Annual Average NO2 Trends



NO_2 Network Design

NO_2 network design requirements include those for near road, area-wide, and Regional Administrator. These specific requirements are discussed below. All sites have value assignments of "credible," as they are counted towards minimum monitoring requirements but do not indicate potential for violation of the NAAQS.

Near Road Monitoring Requirements: In accordance with the 2010 NO_2 NAAQS rule, DEEP must site and operate a near-road monitor in each CBSA having a population greater than 500,000. This monitor must be located along a road segment with expected maximum hourly NO_2 concentrations as determined by analysis of annual average daily traffic (AADT) counts, traffic patterns, topography, roadway and other structures and meteorological considerations. Specific near road requirements are given in 40 CFR 58 Appendix D 4.3.2.

Subsequent NO_2 monitoring rules[37],[38] revised the implementation requirements for near road monitors to require monitors in areas with 1,000,000 or more persons, with a second monitor required in areas with populations of at least 2,500,000 or in areas with 1,000,000 or more persons and one or more roadways with greater than 250,000 AADT counts. As Connecticut has one CBSA with a population greater than 1,000,000 and no areas greater than 2,500,000, one near road monitor is required. Connecticut has operated its near road monitor at Hartford Huntley Place since April 2013.

Area-wide Monitoring Requirements: For CBSAs with populations of at least 1,000,000, there must be an NO_2 monitor in a location of expected highest concentrations representing neighborhood or larger spatial scales. Within the Hartford-East Hartford –Middletown CBSA, the East Hartford McAuliffe Park NO_2 monitor is designated as the area-wide monitor.

Regional Administrator Monitoring Requirements: The 2010 NO_2 rule requires a minimum of 40 additional NO_2 monitors nationwide above the minimum monitoring requirements. These additional monitors should be sited in locations that may be approaching or exceeding the NAAQS but are not covered by minimum monitoring requirements, or in areas where area-wide required monitors are not sufficient to meet monitoring objectives. The NO_2 monitor at New Haven Criscuolo Park has been identified as part of this additional monitoring requirement. Table 26 presents a summary of the NO_2 network scales, objectives and value assignments.

Table 26: NO_2 Network Measurement Scales, Monitoring Objectives and Value Assignments

Town	Site	Measurement Scale	Monitoring Objective	Value Assignment	Site Type
East Hartford	McAuliffe Park	Neighborhood	Population exposure	Credible	SLAMS/Area-Wide
Hartford	Huntley Place	Neighborhood	Highest concentration, population exposure	Credible	SLAMS/Near Road
New Haven	Criscuolo Park	Neighborhood	Population exposure	Credible	Regional Administrator
Westport	Sherwood Island State Park	Regional	Population exposure	Credible	SLAMS/EMP

[37] 78 FR 16184-16188, March 14, 2013

[38] 81 FR 96381-96388, December 30, 2016

NO_Y Network Design

NO/NO_Y monitoring is required at all NCore sites, as well as in the PAMS program. Table 27 is a summary of the DEEP NO/NO_Y network design.

Table 27: NO/NO_Y Network Measurement Scales, Monitoring Objectives, and Value Assignments

Town	Site	Measurement Scale	Monitoring Objective	Value Assignment	Site Type
Cornwall	Mohawk Mountain	Regional Scale	General/background, regional transport	Credible	NCORE
New Haven	Criscuolo Park	Neighborhood	Population exposure	Credible	NCORE

SO_2 Network

SO_2 Monitoring Overview

The DEEP operates three sulfur dioxide (SO_2) sites in the air monitoring network. All SO_2 samplers are operated year-round. SO_2 monitoring is conducted at the Cornwall Mohawk Mountain, New Haven Criscuolo Park, and Bridgeport Roosevelt School.

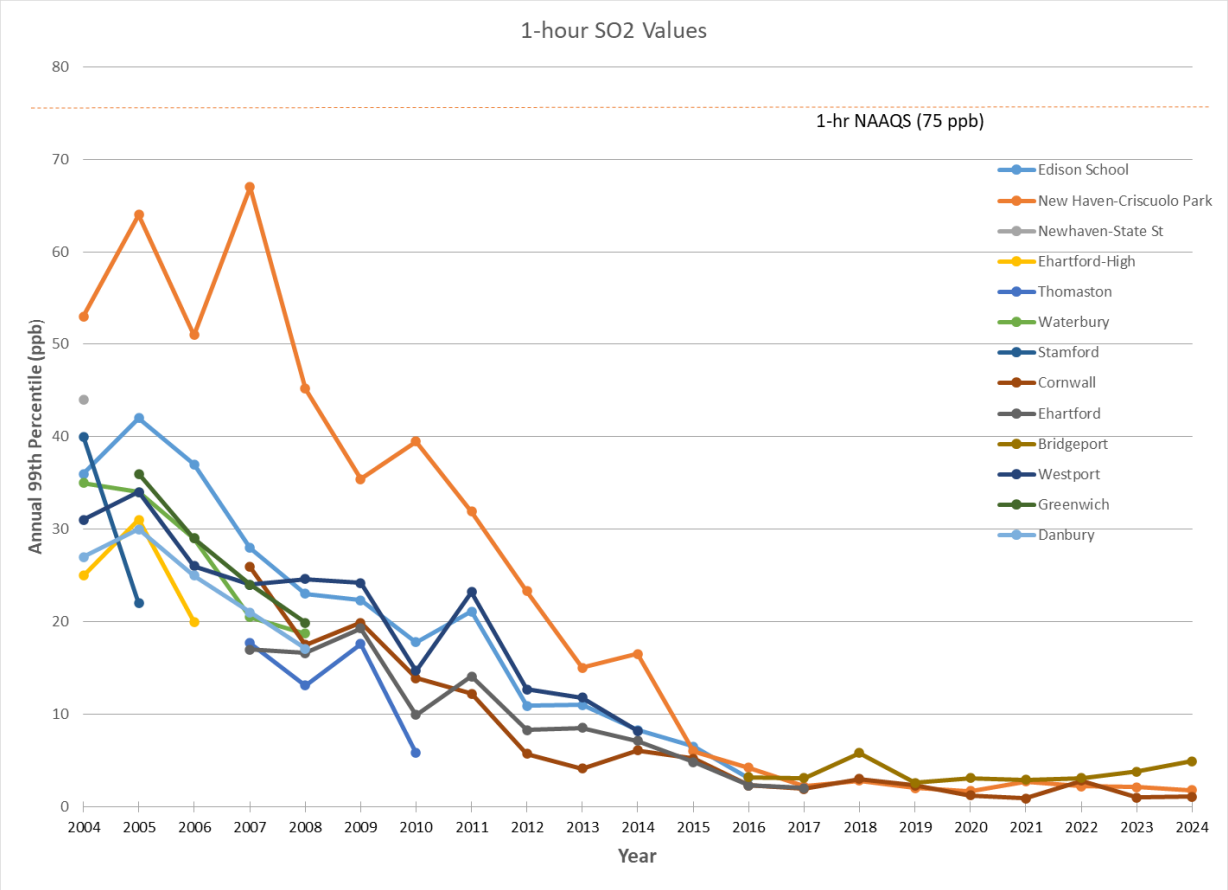
All samplers are TEI 43iQ-TL SO_2 analyzers (EQSA-0486-060). Both 1-hour average and 5-minute block average SO_2 data are validated and reported to EPA.

Current SO_2 monitoring indicates that concentrations are well below the primary (1-hour) and secondary (3-hour) standards of 75 ppb and 50 ppb, respectively. Figure 18 shows recent downward trends in the annual 99th percentile metrics, which are used to compute the 3-year design values. Table 28 shows the 2024 SO_2 design values for Connecticut.

Table 28: 2024 SO_2 Design Values

Site	1-Hr Design Value (ppb)
Bridgeport	4
Cornwall	2
New Haven	2
NAAQS	**75**

Figure 18: Connecticut Annual 99th Percentile Daily Maximum 1-hour SO_2 Values, 2004-2024



SO_2 Network Design

EPA requirements for SO_2 network monitors include those for NCore sites, population weighted emission index (PWEI) sites and any additional monitors that may be required by the Regional Administrator.

NCore monitoring: Trace-level SO_2 measurements are included within the NCore multi-pollutant site requirements. These are used to characterize trends and assist in understanding transport. SO_2 monitors at NCore sites within CBSAs with minimum monitoring based on the PWEI may count toward meeting those requirements. DEEP operates SO_2 monitors at the two NCore stations in Connecticut, New Haven Criscuolo Park and Cornwall Mohawk Mountain.

Population Weighted Emission Index (PWEI) monitoring: PWEI values are defined in the regulations for a CBSA as product of the population (millions of people) and the total SO_2 emissions (tons). Table 29 below gives the minimum number of monitors required based on PWEI values. The PWEI is given in million person-tons per year.

Table 29: PWEI CBSA Monitoring Requirements

PWEI value (M-person-t)	Minimum number of monitors per CBSA
≥ 1,000,000	3
≥100,000 and <1,000,000	2
≥5,000 and < 100,000	1
<5,000	0

Table 30 shows the PWEI values for CBSAs that are within or intersecting Connecticut, based on the 2020 National Emissions Inventory and US Census Bureau 2023 county population estimates. The SO_2 NAAQS monitoring requirements based on PWEI values state that a monitor is required in areas having PWEI values greater than or equal to 5,000 M-person-tons/yr. Therefore, no PWEI SO_2 monitors are currently required in the state. In addition, the EPA has not indicated any additional SO_2 monitors in areas having the potential to violate the NAAQS, areas where vulnerable or sensitive populations may be impacted, or near large sources not conducive to modeling. We also note that the SO_2 primary design values, as provided in an earlier section of this Network Plan, range from 2 to 4 ppb, and are well below the 1-hour NAAQS of 75 ppb.

Although not covered by PWEI requirements, DEEP intends to continue SO_2 monitoring at Bridgeport Roosevelt School at this time, given that it is located in an area of relatively higher concentrations, and vulnerable and sensitive populations. Previously the main source was Bridgeport Harbor Station coal-burning power plant. However, this plant was decommissioned in May 2021 and remediation began in Nov 2024. The Bridgeport Roosevelt School monitor is being used to assess the impacts of the plant shutdown. Wheelabrator, a solid waste incinerating and electrical generating facility, is now the largest source in this area (according to 2020 emissions report).

Table 30: Population Weighted Emissions Index (PWEI) Values for Connecticut CBSAs

Core-Based Statistical Area (CBSA)	SO_2 (tons/yr)	Population (2023 estim.)	PWEI (M-person-tons/yr)	No. of PWEI Required Monitors
Bridgeport-Stamford-Norwalk	97.8	963,780	94	0
Hartford-East Hartford-Middletown	152.5	1,215,494	185	0
Torrington	0.8	186,551	0	0
New Haven-Milford	54.9	865,717	48	0
Norwich-New London	78.2	268,518	21	0
Worcester MA-CT	21.4	983,982	21	0

Regional Administrator required monitoring: The Regional Administrator may require additional SO_2 monitors beyond the minimum network described above in areas where there is a potential to violate or contribute to a violation of the NAAQS, there are impacts from sources not conducive to modeling, or there are impacts to susceptible or vulnerable populations. At this time, the Regional Administrator has not requested any additional SO_2 monitoring in Connecticut.

SO_2 monitoring objectives, spatial scales and value assignments: Both the New Haven and Bridgeport monitors represent neighborhood scale areas that are principally impacted by nearby sources. The New Haven Criscuolo Park site is within close proximity to marine shipping

terminals in New Haven harbors, while the Bridgeport Roosevelt School site is located approximately two kilometers from the state's largest SO_2 point source, Wheelabrator, an electric generating facility (via combustion of municipal waste) Cornwall is remotely located away from urban and industrial sources, and thus represents a regional measurement scale for general, background and long range transport objectives. Table 31 summarizes objectives, scales and value assignments.

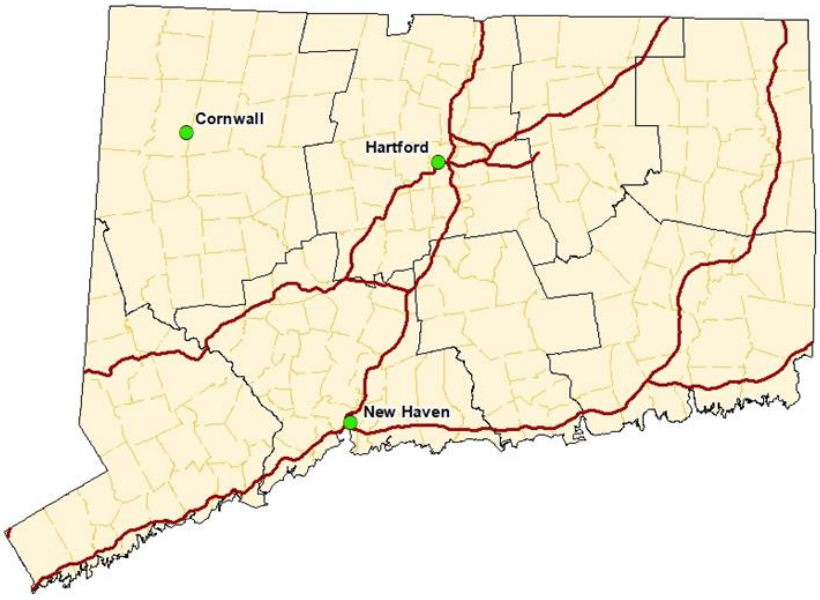
Cornwall and New Haven have SO_2 values assignments of "credible," as they are required to satisfy minimum NCore monitoring requirements as indicated in Table 31. The Bridgeport site also has a value assignment of "credible" as it is not used to meet a current specific requirement but was used as a source-oriented monitor near Bridgeport Harbor Station coal-fired energy facility until the plant's decommission. It is now operated to assess the impacts of the shutdown, as well as to serve in an area of relatively higher concentrations, and vulnerable and sensitive populations

Table 31: SO_2 Network Monitoring Objectives, Spatial Scales and Value Assignments

Town	Site	Measurement Scale	Monitoring Objective	Value Assignment	Site Type
Bridgeport	Roosevelt School	Neighborhood	Source impact, highest concentration, population exposure	Credible	SLAMS
Cornwall	Mohawk Mountain	Regional	General background, regional transport	Credible	NCORE
New Haven	Criscuolo Park	Neighborhood	Population exposure	Credible	NCORE

CO Network

CO Monitoring Overview



DEEP operates three carbon monoxide (CO) sites in the air monitoring network, as shown on the map at right. All CO monitors are operated year-round. DEEP transitioned from TEI 48i- TLE analyzers (RFCA-0981-054) to T300U (RFCA-1093-093) analyzers in 2024-2025 in an effort to improve data quality. Of the 3 sites, New Haven and Cornwall satisfy the requirement for CO monitoring at NCore sites and Hartford fulfills requirements for co-location with an NO_2 near road monitor in a CBSA having a population greater than 1 million.[39] The EPA Regional Administrator has not indicated

[39] 76 FR 54294; August 31, 2011

any locations in the state for additional CO monitoring aimed at susceptible and vulnerable populations

Table 32 shows the CO NAAQS design values for the two forms of the standard, 1-hour and 8-hour, where the standards are not to be exceeded more than once per year. As such, the design values are the 2nd maximum 1-hour and 8-hour values, respectively.

Figures 19 and 20 show trends in CO design values since 2005, indicating CO levels are generally less than 15 percent of the NAAQS values.

Table 32: Connecticut 2024 CO Design Values

Site	1-Hr Design Value (ppm)	8-Hr Design Value (ppm)
Cornwall	3.2	0.8
Hartford	2.7	1.1
New Haven	2.2	1.3
NAAQS	**35**	**9**

Figure 19: 1-Hour CO Design Value Trends, 2005-2024

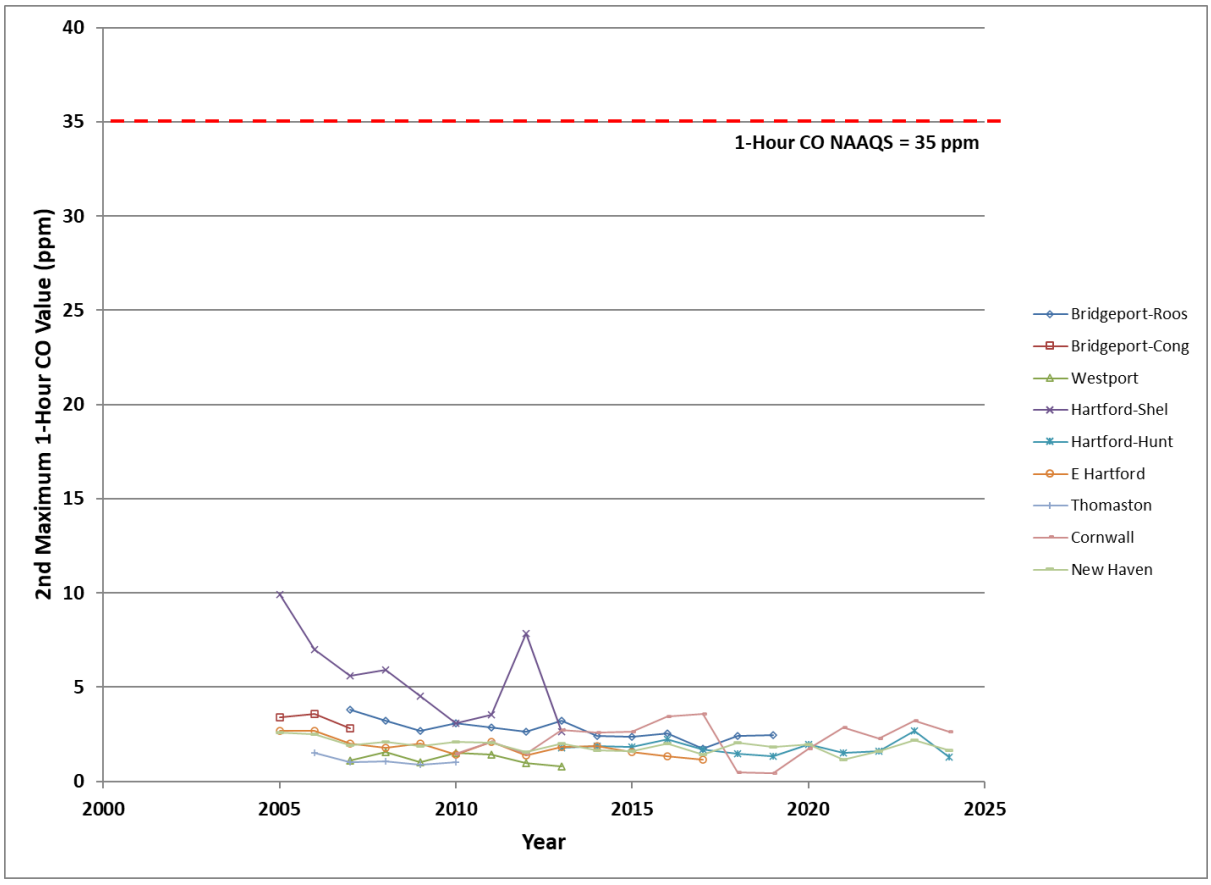
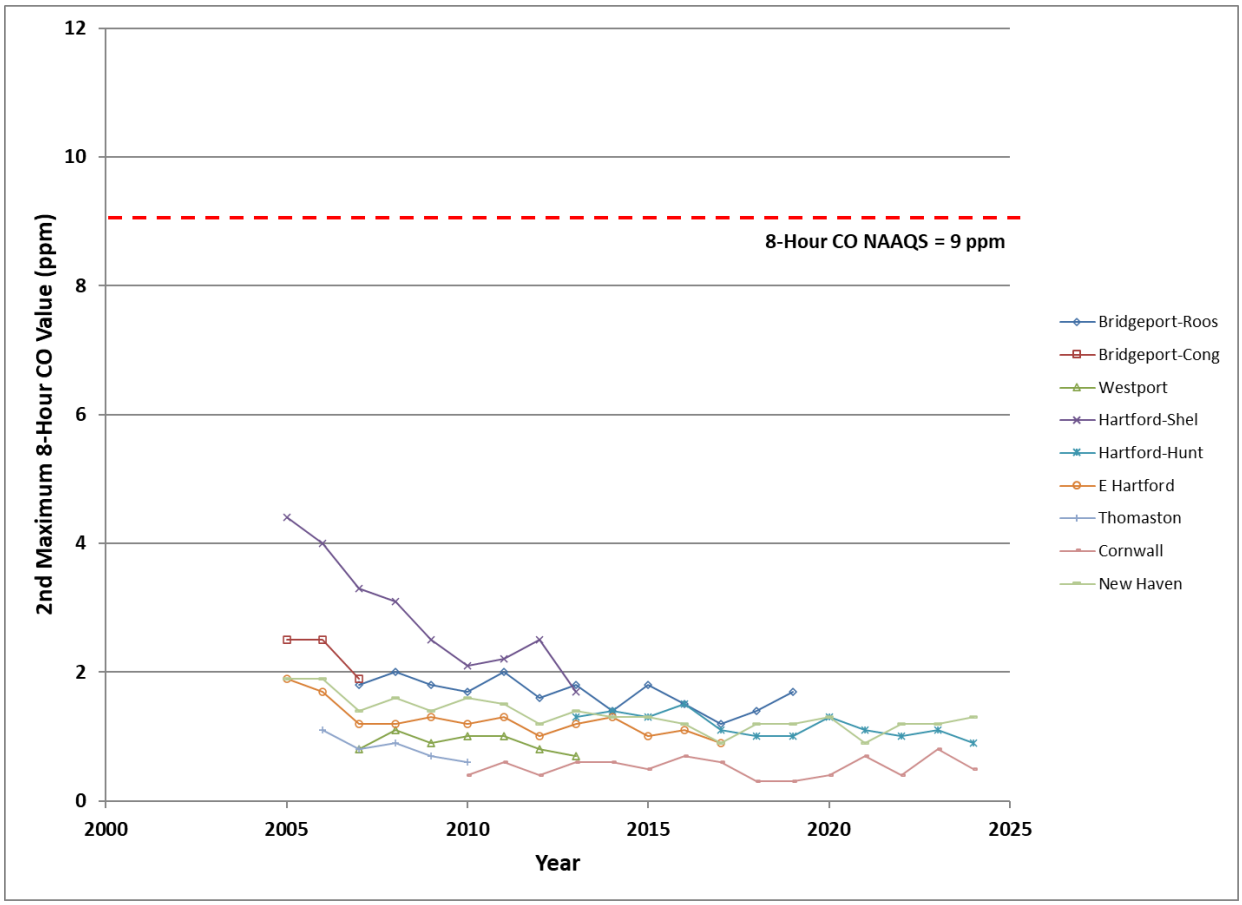


Figure 20: 8-Hour CO Design Value Trends, 2005-2024



CO Network Design

The current CO network is designed to meet general, NCORE and Regional Administrator network requirements, as well as satisfy the state's limited maintenance plans. CO is monitored at NCORE sites as a useful co-pollutant that can aid in source determination.

General requirements: Effective January 1, 2017, in any CBSA having a population of at least 1,000,000, a CO monitor must be co-located with the area's required near-road NO_2 monitor, unless another location where the highest CO levels are expected within the area is approved by the Regional Administrator. The Hartford near-road CO monitor at the Huntley Place site has been in operation since January 1, 2013.

NCore requirements: CO measurements are included within the NCore multi-pollutant site requirements. DEEP operates CO monitors at the two NCore stations in Connecticut, New Haven Criscuolo Park and Cornwall Mohawk Mountain.

Regional Administrator required monitoring: The Regional Administrator may require additional CO monitors beyond the minimum network described above in areas where there is a potential to violate or contribute to a violation of the NAAQS, there are potentially significant impacts from stationary sources, in downtown areas or street canyons or in areas subject to high ground levels due to or enhanced by topographical or meteorological characteristics. At this time, the Regional Administrator has not requested any additional CO monitoring.

Limited Maintenance Plan requirements: CO monitors must be located and operated in accordance with Connecticut's limited maintenance plan (LMP). This monitoring allows for the measurement and tracking of CO concentrations in areas that were previously in non-

attainment. If appropriate, and with Regional Administrator approval, LMP-required monitors by may also be counted towards compliance with other minimum monitoring requirements noted above. Connecticut's CO LMP covers the greater Hartford, greater New Haven and the Connecticut portion of the greater New York maintenance areas. Currently, LMP area CO monitoring is required at least through the end of each area's second ten-year maintenance period. The CO monitor operating in compliance with the LMP is at the New Haven Criscuolo Park. As the second 10-year LMP period for the Connecticut portion of the greater New York maintenance area has expired, the Bridgeport CO monitor was discontinued at the end of 2019.

Table 33 lists the measurement scales, monitoring objectives and value assignments for the DEEP CO network. All sites have value assignments of "credible" as they each fulfill explicit monitoring requirements but do not indicate a potential for air quality violations.

Table 33: CO Network Measurement Scales, Monitoring Objectives and Value Assignments

Town	Site	Measurement Scale	Monitoring Objective	Value Assignment	Site Type
Cornwall	Mohawk Mountain	Regional	Regional transport	Credible	NCORE
Hartford	Huntley Place	Neighborhood	Highest concentration, population exposure	Credible	SLAMS/ Near road
New Haven	Criscuolo Park	Neighborhood	Population exposure	Credible	NCORE

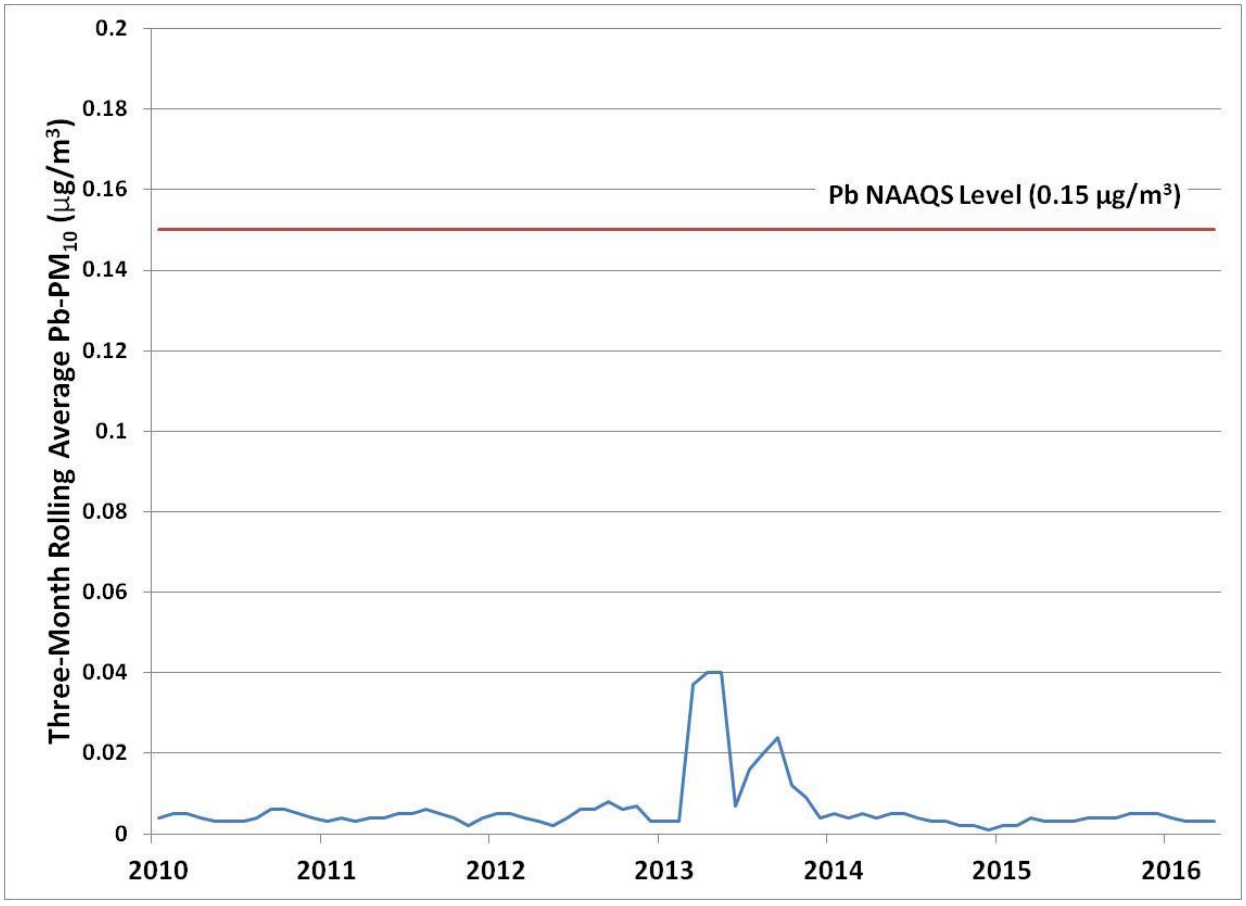
Lead Network

Lead (Pb) Monitoring

The DEEP lead (Pb) monitoring network, which consisted of primary 1-in-6 day and collocated 1-in-12 day sampling at the New Haven Criscuolo Park urban NCore site, was discontinued on June 30, 2016 under provisions of EPA's March 2016 Monitoring Rule,[40] which removed the requirement for urban NCore Pb monitoring (existing monitors with three years of data could be removed with EPA concurrence). No additional Pb monitors are required in Connecticut for stationary source or airport monitoring as required by the 2010 Pb NAAQS rule.[41]

Lead measurements were obtained from Energy Dispersive X-Ray Fluorescence (XRF) analysis of the 47 mm Teflon filter samples collected using a low-volume (lo-vol) FRM R&P Partisol Plus 2025 PM_{10} Sequential Air Samplers. Although the Pb NAAQS is defined as 0.15 µg/m^3 lead in total suspended particulates (TSP), Pb monitoring regulations allow surrogate monitoring of Pb in PM_{10} (Pb-PM_{10}), providing that design values are below two-thirds of the NAAQS, or below 0.10 µg/m^3. New Haven Pb-PM_{10} values remained well below this threshold, with a 2015 design value of 0.04 µg/m^3, while most monthly averages are in the range of 0.00-0.01 µg/m^3 (Figure 21).

Figure 21: Pb-PM10 Monitored Levels, Jan 2010 – Jun 2016



[40] 81 FR 17248; March 28, 2016

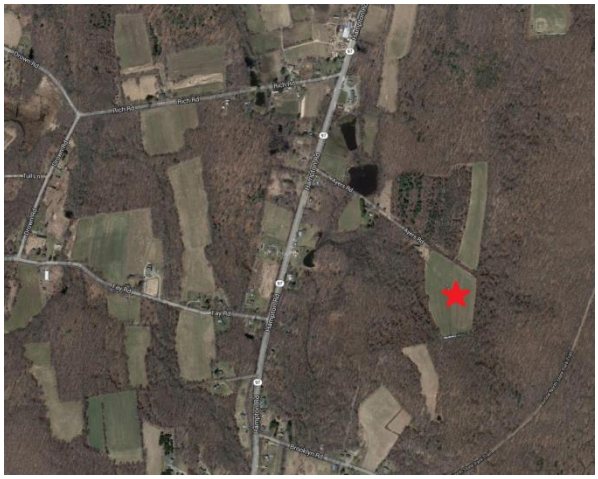
[41] 75 FR 81126; December 27, 2010

Detailed Site Information

The following section presents detailed information for each monitoring site: identification code, location, history, monitored parameters, monitoring objectives, history and descriptive information.

Town – Site: **Pomfret – Abington**

County:	**Windham**	Latitude:	**41.84046°**
Address:	**80 Ayers Road**	Longitude:	**-72.010368°**
AQS Site ID:	**09-015-9991**	Elevation:	**209 m (686 ft)**
Spatial Scale:	**Regional**	Year Established:	**1993**
Statistical Area:	**CBSA Willimantic, CT**		



PM2.5 (FRM)	PM2.5 (FRM, Collocated)	PM2.5 (Continuous - FEM)	PM2.5 (Continuous – non-FEM)	PM10/PM-Coarse (FRM)	PM10/PM-Coarse (FRM, Collocated)	PM10/PM-Coarse (Continuous)	Lead-PM10	Lead-PM10 (Collocated)	PM Speciation (CSN)	PM Speciation (IMPROVE)	PM2.5 Carbon (BC/UVC, Continuous)	Ozone	SO2	CO	NO_2	NO/NOy	HCHO	Traffic Count	Wind Speed	Wind Direction	Temperature	Dew Point / Rel. Humidity	Barometric Pressure	Solar Radiation
												X												

X=Existing, P =Proposed, T = Planned to terminate

*Note: Site operated by EPA contractor under CASTNET program; scale and objective from 2024

Parameter	Measurement Scale*	Monitoring Objective[1]	Assigned Value from Assessment	Plan for Network Optimization
O_3	**Regional**	**Welfare-related impacts; regional transport**	**N/A**	**N/A**

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Town – Site: **Bridgeport – Roosevelt School**

County:	**Fairfield**	Latitude:	**41.17086°**
Address:	**Park Avenue**	Longitude:	**-73.19476°**
AQS Site ID:	**09-001-0010**	Elevation:	**7 m (23 ft)**
Spatial Scale:	**Neighborhood**	Year Established:	**1982**
Statistical Area:	**CSA (New York-Newark-Bridgeport)**		

PM2.5 (FRM)	PM2.5 (FRM, Collocated)	PM2.5 (Continuous - FEM)	PM2.5 (Continuous – non-FEM)	PM10/PM-Coarse (FRM)	PM10/PM-Coarse (FRM, Collocated)	PM10/PM-Coarse (Continuous FEM)	Lead-PM10	Lead-PM10 (Collocated)	PM Speciation (CSN)	PM Speciation (IMPROVE)	PM2.5 Carbon (BC/UVC, Continuous)	Ozone	SO2	CO	Direct NO_2	NO/NOy	HCHO	Traffic Count	Wind Speed	Wind Direction	Temperature	Dew Point / Rel. Humidity	Barometric Pressure	Solar Radiation
1/6		X				X							X						P	P	X			

X=Existing, P = Planned in 2025/2026, T = Planned to terminate

Parameter	Measurement Scale	Monitoring Objective	Assigned Value from Assessment	Plan for Network Optimization
$PM_{2.5}$ FRM	**Neighborhood**	**Highest concentration**	**Critical**	**Keep**
$PM_{2.5}$ Continuous	**Neighborhood**	**Highest concentration**	**Critical**	**Keep**
PM_{10} FEM (STP/LC)/ PM-Coarse continuous	**Neighborhood**	**Highest concentration**	**Credible**	**Keep**
SO2	**Neighborhood**	**Source impact, highest concentration, population exposure**	**Credible**	**Keep**
Temperature			**Credible**	**Keep**

Town – Site: **Cornwall – Mohawk Mountain**

County:	**Litchfield**	Latitude:	**41.82140°**
Address:	**Mohawk Mountain**	Longitude:	**-73.29733°**
AQS Site ID:	**09-005-0005**	Elevation:	**505 m (1656 ft)**
Spatial Scale:	**Regional**	Year Established:	**1988**
Statistical Area:	**CSA (New York-Newark-Bridgeport)**		

PM2.5 (FRM)	PM2.5 (FRM, Collocated)	PM2.5 (Continuous - FEM)	PM2.5 (Continuous – non-FEM)	PM10/PM-Coarse (FRM)	PM10/PM-Coarse (FRM, Collocated)	PM10/PM-Coarse (Continuous FEM)	Lead-PM10	Lead-PM10 (Collocated)	PM Speciation (CSN)	PM Speciation (IMPROVE)	PM2.5 Carbon (BC/UVC, Continuous)	Ozone	SO2	CO	Direct NO_2	NO/NOy	Total Column NO_2/HCHO (Pandora)	Wind Speed	Wind Direction	Temperature	Dew Point / Rel. Humidity	Barometric Pressure	Solar Radiation
1/3		X				X				1/3	X	X	X	X		X	X	X	X	X	X	X	X

X=Existing, P =Proposed, T = Planned to terminate

Parameter	Measurement Scale	Monitoring Objective	Assigned Value from Assessment	Plan for Network Optimization
$PM_{2.5}$ FRM	**Regional**	**General/ background, regional transport**	**Credible**	**Keep**
$PM_{2.5}$ Continuous	**Regional**	**General/ background, regional transport**	**Credible**	**Keep**
PM_{10} FEM (LC)/ PM-Coarse continuous	**Regional**	**General background**	**Credible**	**Keep**
IMPROVE	**Regional**	**Regional transport**	**Credible**	**Keep**

BC/UVC	**Regional**	**General background**	**Credible**	**Keep**
Ozone	**Regional**	**Regional transport**	**Critical**	**Keep-** required year-round operation
SO_2	**Regional**	**General background, regional transport**	**Credible**	**Keep**
CO	**Regional**	**Regional transport**	**Credible**	**Keep**
NO/NOy	**Regional**	**General background, regional transport**	**Credible**	**Keep**
Total Column NO_2/HCHO			**Credible**	**Keep**
Wind Speed			**Credible**	**Keep**
Wind Direction			**Credible**	**Keep**
Temperature			**Credible**	**Keep**
Dew Point/ Rel. Humidity			**Credible**	**Keep**
Barometric Pressure			**Credible**	**Keep**
Solar Radiation			**Credible**	**Keep**

Town – Site: **Danbury – Western Connecticut State University**

County:	**Fairfield**	Latitude:	**41.398692°**
Address:	**White Street**	Longitude:	**-73.443148°**
AQS Site ID:	**09-001-1123**	Elevation:	**116 m (380 ft)**
Spatial Scale:	**Neighborhood**	Year Established:	**1974**
Statistical Area:	**CSA (New York-Newark-Bridgeport)**		

PM2.5 (FRM)	PM2.5 (FRM, Collocated)	PM2.5 (Continuous - FEM)	PM2.5 (Continuous – non-FEM)	PM10/PM-Coarse (FRM)	PM10/PM-Coarse (FRM, Collocated)	PM10/PM-Coarse (Continuous FEM)	Lead-PM10	Lead-PM10 (Collocated)	PM Speciation (CSN)	PM Speciation (IMPROVE)	PM2.5 Carbon (BC/UVC, Continuous)	Ozone	SO2	CO	Direct NO_2	NO/NOy	Total Column NO_2/HCHO (Pandora)	Traffic Count	Wind Speed	Wind Direction	Temperature	Dew Point / Rel. Humidity	Barometric Pressure	Solar Radiation
1/6		X				X					X	X							X	X	X		X	

X=Existing, P = Proposed, T = Planned to terminate

Parameter	Measurement Scale	Monitoring Objective	Assigned Value from Assessment	Plan for Network Optimization
$PM_{2.5}$ FRM	**Neighborhood**	**Population exposure**	**Credible**	**Keep**
$PM_{2.5}$ Continuous	**Neighborhood**	**Population exposure**	**Critical**	**Keep**
PM_{10} FEM (LC)/ PM-Coarse continuous	**Neighborhood**	**Population exposure**	**Credible**	**Keep**
Ozone	**Urban**	**Population exposure**	**Credible**	**Keep**
BC/ UVC	**Neighborhood**	**Population exposure**	**Credible**	**Keep**
Wind Speed			**Credible**	**Keep**
Wind Direction			**Credible**	**Keep**
Temperature			**Credible**	**Keep**

Town – Site: **East Hartford – McAuliffe Park**

County:	**Hartford**	Latitude:	**41.78471°**
Address:	**McAuliffe Park**	Longitude:	**-72.63158°**
AQS Site ID:	**09-003-1003**	Elevation:	**15 m (50 ft)**
Spatial Scale:	**Neighborhood**	Year Established:	**1981**
Statistical Area:	**CSA (Hartford-West Hartford-Willimantic)**		

PM2.5 (FRM)	PM2.5 (FRM, Collocated)	PM2.5 (Continuous - FEM)	PM10/PM-Coarse (FRM)	PM10/PM-Coarse (FRM, Collocated)	PM10/PM-Coarse (Continuous FEM)	Lead-PM10	Lead-PM10 (Collocated)	PM Speciation (CSN)	PM Speciation (IMPROVE)	PM2.5 Carbon (BC/UVC, Continuous)	Ozone	SO2	CO	Direct NO_2	NO/NOx	NO/NOy	Total Column NO_2/HCHO (Pandora)	Traffic Count	Wind Speed	Wind Direction	Temperature	Dew Point / Rel. Humidity	Barometric Pressure	Solar Radiation
		X			X					X	X			X	P				X	X	X	X	X	

X=Existing, P = Planned in 2025/2026, T = Planned to terminate

Parameter	Measurement Scale	Monitoring Objective	Assigned Value from Assessment	Plan for Network Optimization
$PM_{2.5}$ Continuous FEM	**Neighborhood**	**Population exposure, general background**	**Critical**	**Keep**
PM_{10} FEM (STP/LC)/ PM-Coarse continuous	**Urban**	**Population exposure**	**Credible**	**Keep**
BC/UVC	**Neighborhood**	**Population exposure**	**Credible**	**Keep**
Ozone	**Urban**	**Population exposure**	**Critical**	**Keep-** year-round operation

Direct NO_2	**Neighborhood**	**Population exposure**	**Credible**	**Keep**
Wind Speed			**Credible**	**Keep**
Wind Direction			**Credible**	**Keep**
Temperature			**Credible**	**Keep**
Dew Point/ Rel. Humidity			**Credible**	**Keep**

Town – Site:	**Greenwich – Point Park**		
County:	**Fairfield**	Latitude:	**41.005047°**
Address:	**Point Park**	Longitude:	**-73.58382°**
AQS Site ID:	**09-001-0017**	Elevation:	**3 m (10 ft)**
Spatial Scale:	**Urban**	Year Established:	**1978**
Statistical Area:	**CSA (New York-Newark-Bridgeport)**		

PM2.5 (FRM)	PM2.5 (FRM, Collocated)	PM2.5 (Continuous - FEM)	PM2.5 (Continuous – non-FEM)	PM10/PM-Coarse (FRM)	PM10/PM-Coarse (FRM, Collocated)	PM10/PM-Coarse (Continuous FEM)	Lead-PM10	Lead-PM10 (Collocated)	PM Speciation (CSN)	PM Speciation (IMPROVE)	PM2.5 Carbon (BC/UVC, Continuous)	Ozone	SO2	CO	Direct NO_2	NO/NOy	Total Column NO_2/HCHO (Pandora)	Traffic Count	Wind Speed	Wind Direction	Temperature	Dew Point / Rel. Humidity	Barometric Pressure	Solar Radiation
												X							X	X	X			

X=Existing, P =Proposed, T = Planned to terminate

Parameter	Measurement Scale	Monitoring Objective	Assigned Value from Assessment	Plan for Network Optimization
Ozone	**Regional**	**Population exposure, regional transport**	**Credible**	**Keep**
Wind Speed			**Credible**	**Keep**
Wind Direction			**Credible**	**Keep**
Temperature			**Credible**	**Keep**
Rain Fall			**Credible**	**Keep**

Town – Site:	**Groton – Fort Griswold**		
County:	**New London**	Latitude:	**41.35362°**
Address:	**141 Smith Street**	Longitude:	**-72.07882°**
AQS Site ID:	**09-011-0124**	Elevation:	**37 m (120 ft)**
Spatial Scale:	**Neighborhood**	Year Established:	**2007**
Statistical Area:	**MSA (Norwich-New London)**		

PM2.5 (FRM)	PM2.5 (FRM, Collocated)	PM2.5 (Continuous - FEM)	PM2.5 (Continuous – non-FEM)	PM10/PM-Coarse (FRM)	PM10/PM-Coarse (FRM, Collocated)	PM10/PM-Coarse (Continuous FEM)	Lead-PM10	Lead-PM10 (Collocated)	PM Speciation (CSN)	PM Speciation (IMPROVE)	PM2.5 Carbon (BC/UVC, Continuous)	Ozone	SO2	CO	Direct NO_2	NO/NOy	Total Column NO_2/HCHO (Pandora)	Traffic Count	Wind Speed	Wind Direction	Temperature	Dew Point / Rel. Humidity	Barometric Pressure	Solar Radiation
		X				X						X							P	P	X			

X=Existing, P =Planned in 2025/2026, T = Planned to terminate

Parameter	Measurement Scale	Monitoring Objective	Assigned Value from Assessment	Plan for Network Optimization
$PM_{2.5}$ Continuous	**Urban**	**Population exposure**	**Credible**	**Keep**
PM_{10} FEM (LC)/ PM-Coarse continuous	**Urban**	**Population exposure**	**Credible**	**Keep**
Ozone	**Urban**	**Population exposure**	**Critical**	**Keep**
Temperature			**Credible**	**Keep**

Town – Site: **Hartford – Huntley Place**

County:	**Hartford**	Latitude:	**41.771444°**
Address:	**10 Huntley Place**	Longitude:	**-72.679923°**
AQS Site ID:	**09-003-0025**	Elevation:	**57.2 m (187.7 ft)**
Spatial Scale:	**Near Road**	Year Established:	**2013**
Statistical Area:	**CSA (Hartford-West Hartford-Willimantic)**		

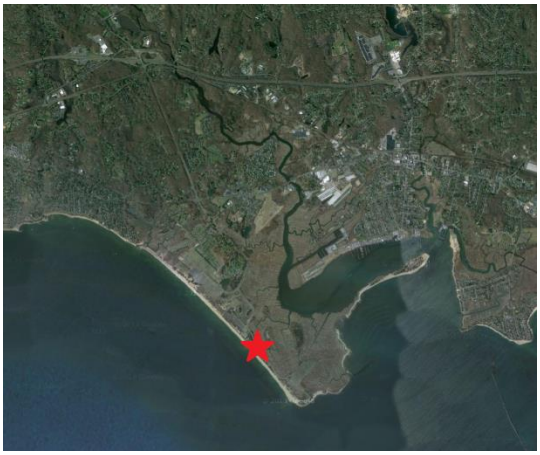
PM2.5 (FRM)	PM2.5 (FRM, Collocated)	PM2.5 (Continuous - FEM)	PM2.5 (Continuous – non-FEM)	PM10/PM-Coarse (FRM)	PM10/PM-Coarse (FRM, Collocated)	PM10/PM-Coarse (Continuous FEM)	Lead-PM10	Lead-PM10 (Collocated)	PM Speciation (CSN)	PM Speciation (IMPROVE)	PM2.5 Carbon (BC/UVC, Continuous)	Ozone	SO2	CO	Direct NO_2	NO/NOx	NO/NOy	Traffic Count	Wind Speed	Wind Direction	Temperature	Dew Point / Rel. Humidity	Barometric Pressure	Solar Radiation
1/6		X				X					X			X	X	P		X	X	X	X		X	

X=Existing, P =Planned in 2025/2026, T = Planned to terminate

Parameter	Measurement Scale	Monitoring Objective	Assigned Value from Assessment	Plan for Network Optimization
$PM_{2.5}$ FRM	**Neighborhood**	**Highest concentration**	**Credible**	**Keep**
$PM_{2.5}$ Continuous	**Neighborhood**	**Highest concentration**	**Critical**	**Keep**
PM_{10} FEM (STP/LC)/ PM-Coarse continuous	**Neighborhood**	**Highest concentration**	**Credible**	**Keep**
Direct NO_2	**Neighborhood**	**Population exposure, highest concentration**	**Credible**	**Keep**
CO	**Neighborhood**	**Highest concentration,**	**Credible**	**Keep**

		population exposure		
BC/ UVC	**Neighborhood**	**Population exposure**	**Credible**	**Keep**
Wind Speed			**Credible**	**Keep**
Wind Direction			**Credible**	**Keep**
Temperature			**Credible**	**Keep**
Traffic Count			**Credible**	**Keep**

Town – Site:	**Madison – Hammonasset State Park**		
County:	**New Haven**	Latitude:	**41.25984°**
Address:	**Hammonasset SP**	Longitude:	**-72.55018°**
AQS Site ID:	**09-009-9002**	Elevation:	**3 m (10 ft)**
Spatial Scale:	**Regional**	Year Established:	**1981**
Statistical Area:	**CSA (New York-Newark-Bridgeport)**		



PM2.5 (FRM)	PM2.5 (FRM, Collocated)	PM2.5 (Continuous - FEM)	PM2.5 (Continuous – non-FEM)	PM10/PM-Coarse (FRM)	PM10/PM-Coarse (FRM, Collocated)	PM10/PM-Coarse (Continuous FEM)	Lead-PM10	Lead-PM10 (Collocated)	PM Speciation (CSN)	PM Speciation (IMPROVE)	PM2.5 Carbon (BC/UVC, Continuous)	Ozone	SO2	CO	Direct NO_2	NO/NOy	Total Column NO_2/HCHO	Wind Speed	Wind Direction	Temperature	Dew Point / Rel. Humidity	Barometric Pressure	Solar Radiation
												X					X	X	X	X			

X=Existing, P =Proposed, T = Planned to terminate

Parameter	Measurement Scale	Monitoring Objective	Assigned Value from Assessment	Plan for Network Optimization
Ozone	**Regional**	**Population exposure, maximum ozone concentration**	**Critical**	**Keep**
Total Column NO_2, HCHO			**Credible**	**Keep**
Wind Speed			**Credible**	**Keep**
Wind Direction			**Credible**	**Keep**
Temperature			**Credible**	**Keep**

Town – Site: **Middletown – Central Valley Hospital**

County:	**Middlesex**	Latitude:	**41.55224°**
Address:	**Shew Hall**	Longitude:	**-72.63004°**
AQS Site ID:	**09-007-0007**	Elevation:	**58 m (190 ft)**
Spatial Scale:	**Neighborhood**	Year Established:	**1980**
Statistical Area:	**CSA (Hartford-West Hartford-Willimantic)**		

PM2.5 (FRM)	PM2.5 (FRM, Collocated)	PM2.5 (Continuous - FEM)	PM2.5 (Continuous – non-FEM)	PM10/PM-Coarse (FRM)	PM10/PM-Coarse (FRM, Collocated)	PM10/PM-Coarse (Continuous FEM)	Lead-PM10	Lead-PM10 (Collocated)	PM Speciation (CSN)	PM Speciation (IMPROVE)	PM2.5 Carbon (BC/UVC, Continuous)	Ozone	SO2	CO	Direct NO_2	NO/NOy	VOCs (PAMS)	Traffic Count	Wind Speed	Wind Direction	Temperature	Dew Point / Rel. Humidity	Barometric Pressure	Solar Radiation
												X							X	X	X		X	

X=Existing, P =Proposed, T = Planned to terminate

Parameter	Measurement Scale	Monitoring Objective	Assigned Value from Assessment	Plan for Network Optimization
Ozone	**Urban**	**Population exposure, maximum concentration**	**Critical**	**Keep**
Wind Speed			**Credible**	**Keep**
Wind Direction			**Credible**	**Keep**
Temperature			**Credible**	**Keep**
Rain Fall			**Credible**	**Keep**
Barometric Pressure			**Credible**	**Keep**

Town – Site:	**New Haven – Criscuolo Park**		
County:	**New Haven**	Latitude:	**41.30117°**
Address:	**1 James Street**	Longitude:	**-72.90288°**
AQS Site ID:	**09-009-0027**	Elevation:	**3 m (10 ft)**
Spatial Scale:	**Neighborhood**	Year Established:	**2004**
Statistical Area:	**CSA (New York-Newark-Bridgeport)**		

PM2.5 (FRM)	PM2.5 (FRM, Collocated)	PM2.5 (Continuous - FEM)	PM10/PM-Coarse (FRM)	PM10/PM-Coarse (FRM, Collocated)	PM10/PM-Coarse (FEM, Continuous)	PM2.5 (FEM, Continuous, Secondary)	PM10/PM-Coarse (FEM, Continuous, Secondary)	PM Speciation (CSN)	PM Speciation (IMPROVE)	PM2.5 Carbon (BC/UVC, Continuous)	Ozone	SO_2	CO	Direct NO_2	NO/NO_x	NO/NO_y	Total Column NO_2/HCHO	Wind Speed	Wind Direction	Temperature	Dew Point / Rel. Humidity	Barometric Pressure	Solar Radiation	Mixing Height
1/3	1/6	X	1/3	1/6	X	X	X	1/3		X	X	X	X	X	P	T	X	X	X	X	X	X	X	X

X=Existing, P = Planned in 2025/2026, T = Planned to terminate in 2025/2026

Parameter	Measurement Scale	Monitoring Objective	Assigned Value from Assessment	Plan for Network Optimization
$PM_{2.5}$ FRM	**Neighborhood**	**Population exposure**	**Critical**	**Keep**
$PM_{2.5}$ Continuous FEM	**Neighborhood**	**Population exposure**	**Critical**	**Keep**
PM_{10} FEM (STP/LC)/ PM-Coarse continuous	**Neighborhood**	**Population exposure**	**Credible**	**Keep**
PM_{10} FRM	**Neighborhood**	**Population exposure**	**Credible**	**Keep**
$PM_{2.5}$ Speciation	**Neighborhood**	**Population exposure**	**Credible**	**Keep**

BC/UVC	**Neighborhood**	**Population exposure**	**Credible**	**Keep**
Ozone	**Neighborhood**	**Population exposure**	**Critical**	**Keep** – required year-round operation.
SO_2	**Neighborhood**	**Population exposure**	**Credible**	**Keep**
CO	**Neighborhood**	**Population exposure**	**Credible**	**Keep**
Direct NO_2	**Neighborhood**	**Population exposure**	**Credible**	**Keep**
NO/NOy	**Neighborhood**	**Population exposure**	**Credible**	**Proposed to terminate,** replace with NO/NO_x in 2025 Network Plan
Total Column NO_2, HCHO			**Credible**	**Keep**
Mixing height			**Credible**	**Keep**
Wind Speed			**Credible**	**Keep**
Wind Direction			**Credible**	**Keep**
Temperature			**Credible**	**Keep**
Dew Point/ Rel. Humidity			**Credible**	**Keep**
Barometric Pressure			**Credible**	**Keep**
Solar Radiation			**Credible**	**Keep**

Town – Site:	**Stafford – Shenipsit State Forest**		
County:	**Tolland**	Latitude:	**41.97568°**
Address:	**Route 190**	Longitude:	**-72.38674°**
AQS Site ID:	**09-013-1001**	Elevation:	**265 m (869 ft)**
Spatial Scale:	**Regional**	Year Established:	**1980**
Statistical Area:	**CBSA (Hartford-West Hartford-Willimantic)**		

PM2.5 (FRM)	PM2.5 (FRM, Collocated)	PM2.5 (Continuous - FEM)	PM2.5 (Continuous – non-FEM)	PM10/PM-Coarse (FRM)	PM10/PM-Coarse (FRM, Collocated)	PM10/PM-Coarse (Continuous)	Lead-PM10	Lead-PM10 (Collocated)	PM Speciation (CSN)	PM Speciation (IMPROVE)	PM2.5 Carbon (BC/UVC, Continuous)	Ozone	SO2	CO	Direct NO_2	NO/NOy	Total Column NO_2/HCHO (Pandora)	Traffic Count	Wind Speed	Wind Direction	Temperature	Dew Point / Rel. Humidity	Barometric Pressure	Solar Radiation
												X							X	X	X			

X=Existing, P =Proposed, T = Planned to terminate

Parameter	Measurement Scale	Monitoring Objective	Assigned Value from Assessment	Plan for Network Optimization
Ozone	**Regional**	**Population exposure, general background**	**Credible**	**Keep**
Wind Speed			**Credible**	**Keep**
Wind Direction			**Credible**	**Keep**
Temperature			**Credible**	**Keep**

Town – Site:	**Stratford – Lighthouse**		
County:	**Fairfield**	Latitude:	**41.15181°**
Address:	**Prospect Drive**	Longitude:	**-73.10334°**
AQS Site ID:	**09-001-3007**	Elevation:	**3 m (10 ft)**
Spatial Scale:	**Regional**	Year Established:	**1980**
Statistical Area:	**CSA (New York-Newark-Bridgeport)**		

PM2.5 (FRM)	PM2.5 (FRM, Collocated)	PM2.5 (Continuous - FEM)	PM2.5 (Continuous – non-FEM)	PM10/PM-Coarse (FRM)	PM10/PM-Coarse (FRM, Collocated)	PM10/PM-Coarse (Continuous)	Lead-PM10	Lead-PM10 (Collocated)	PM Speciation (CSN)	PM Speciation (IMPROVE)	PM2.5 Carbon (BC/UVC, Continuous)	Ozone	SO_2	CO	Direct NO_2	NO/NO_y	Total Column NO_2/HCHO (Pandora)	Traffic Count	Wind Speed	Wind Direction	Temperature	Dew Point / Rel. Humidity	Barometric Pressure	Solar Radiation
												X									X			

X=Existing, P =Proposed, T = Planned to terminate

Parameter	Measurement Scale	Monitoring Objective	Assigned Value from Assessment	Plan for Network Optimization
Ozone	**Regional**	**Regional transport, highest concentration, population exposure**	**Critical**	**Keep**
Temperature			**Credible**	**Keep**

Town – Site:	**Waterbury – Meadow & Bank Street**		
County:	**New Haven**	Latitude:	**41.55046°**
Address:	**Meadow & Bank**	Longitude:	**-73.043650°**
AQS Site ID:	**09-009-2123**	Elevation:	**80 m (269 ft)**
Spatial Scale:	**Neighborhood**	Year Established:	**1975**
Statistical Area:	**CSA (New York-Newark-Bridgeport)**		

PM2.5 (FRM)	PM2.5 (FRM, Collocated)	PM2.5 (Continuous - FEM)	PM2.5 (Continuous – non-FEM)	PM10/PM-Coarse (FRM)	PM10/PM-Coarse (FRM, Collocated)	PM10/PM-Coarse (Continuous FEM)	Lead-PM10	Lead-PM10 (Collocated)	PM Speciation (CSN)	PM Speciation (IMPROVE)	PM2.5 Carbon (BC/UVC, Continuous)	Ozone	SO2	CO	Direct NO_2	NO/NOy	Total Column NO_2/HCHO (Pandora)	Traffic Count	Wind Speed	Wind Direction	Temperature	Dew Point / Rel. Humidity	Barometric Pressure	Solar Radiation
		X				X													X	X	X			

X=Existing, P =Proposed, T = Planned to terminate

Parameter	Measurement Scale	Monitoring Objective	Assigned Value from Assessment	Plan for Network Optimization
$PM_{2.5}$ Continuous FEM	**Neighborhood**	**Population exposure, highest concentration**	**Critical**	**Keep**
PM_{10} FEM (LC)/ PM-Coarse continuous	**Neighborhood**	**Population exposure**	**Credible**	**Keep**
Wind Speed	**Neighborhood**	**Population exposure**	**Credible**	**Keep**
Wind Direction	**Neighborhood**	**Population exposure**	**Credible**	**Keep**
Temperature	**Neighborhood**	**Population exposure**	**Credible**	**Keep**

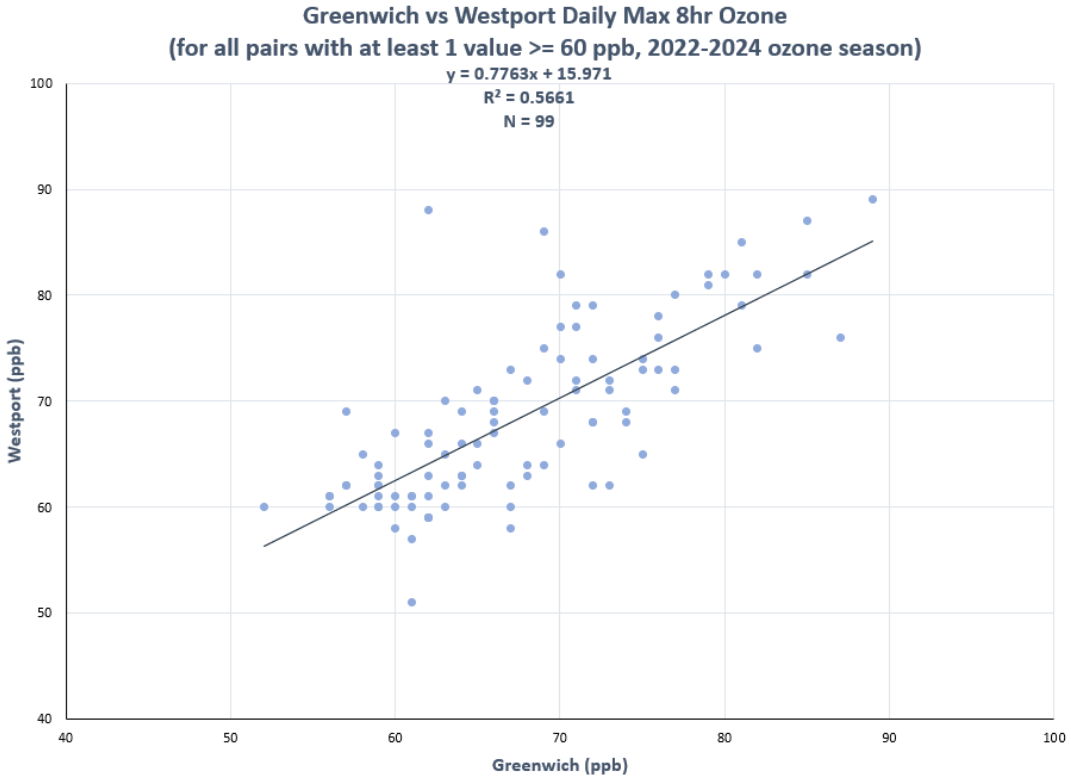
Town – Site:	**Westport – Sherwood Island State Park**		
County:	**Fairfield**	Latitude:	**41.11822°**
Address:	**Sherwood Island SP**	Longitude:	**-73.33681°**
AQS Site ID:	**09-001-9003**	Elevation:	**4 m (13 ft)**
Spatial Scale:	**Regional**	Year Established:	**1996**
Statistical Area:	**CSA (New York-Newark-Bridgeport)**		

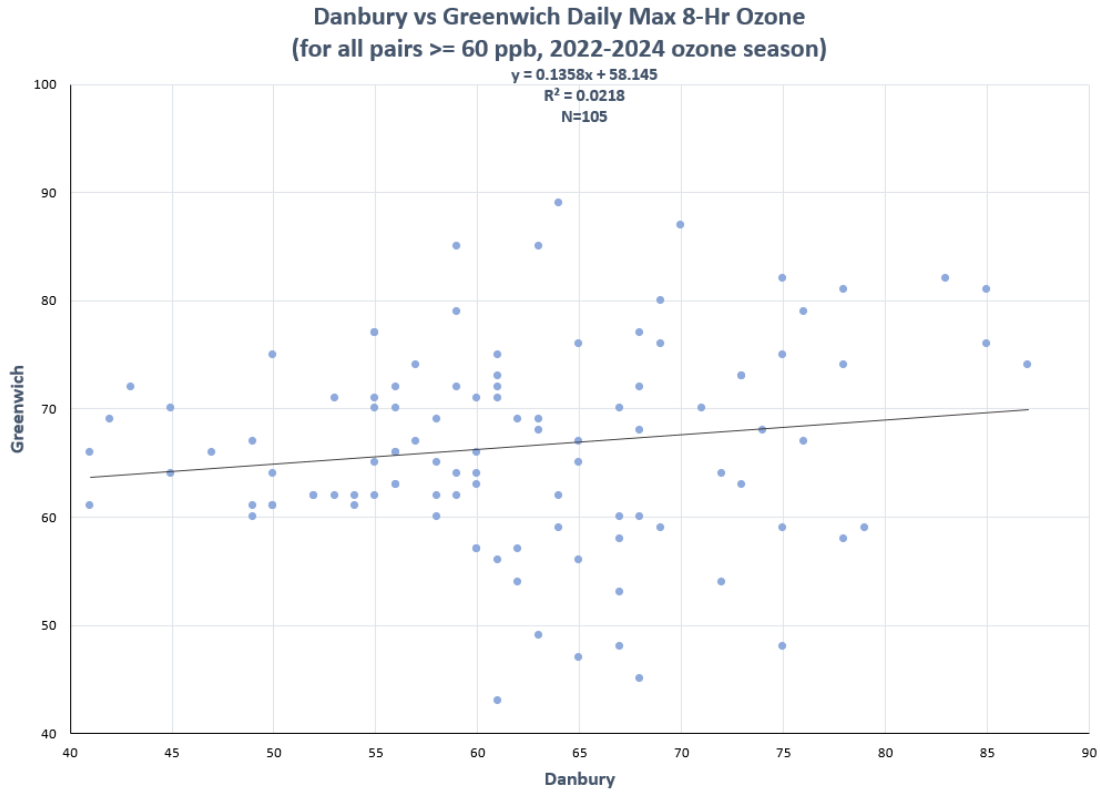
PM2.5 (FRM)	PM2.5 (FRM, Collocated)	PM2.5 (Continuous - FEM)	PM2.5 (Continuous – non-FEM)	PM10/PM-Coarse (FRM)	PM10/PM-Coarse (FRM, Collocated)	PM10/PM-Coarse (Continuous FEM)	Lead-PM10	Lead-PM10 (Collocated)	PM Speciation (CSN)	PM Speciation (IMPROVE)	PM2.5 Carbon (BC/UVC, Continuous)	Ozone	SO2	CO	Direct NO_2	NO/NO_x	NO/NO_y	Total Column NO_2/HCOC	Wind Speed	Wind Direction	Temperature	Dew Point / Rel. Humidity	Barometric Pressure	Solar Radiation	Mixing Height
												X			X	P		X	X	X	X				X

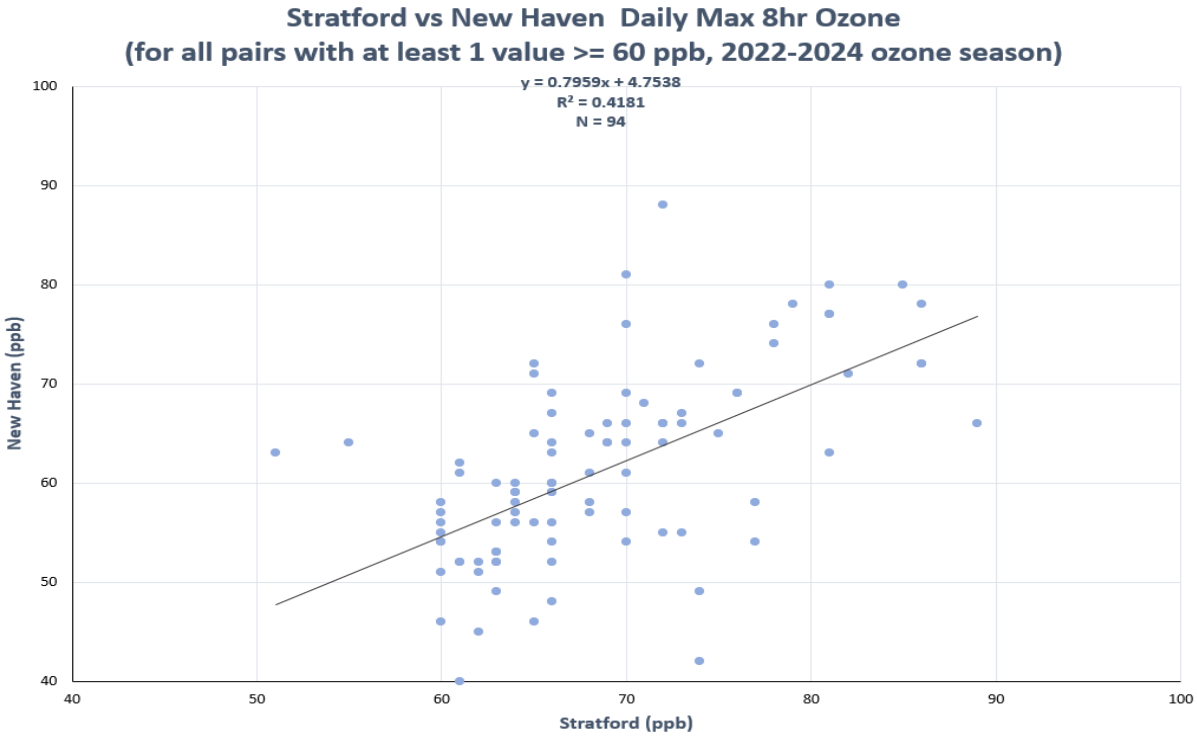
X=Existing, P =Planned in 2025/2026, T = Planned to terminate

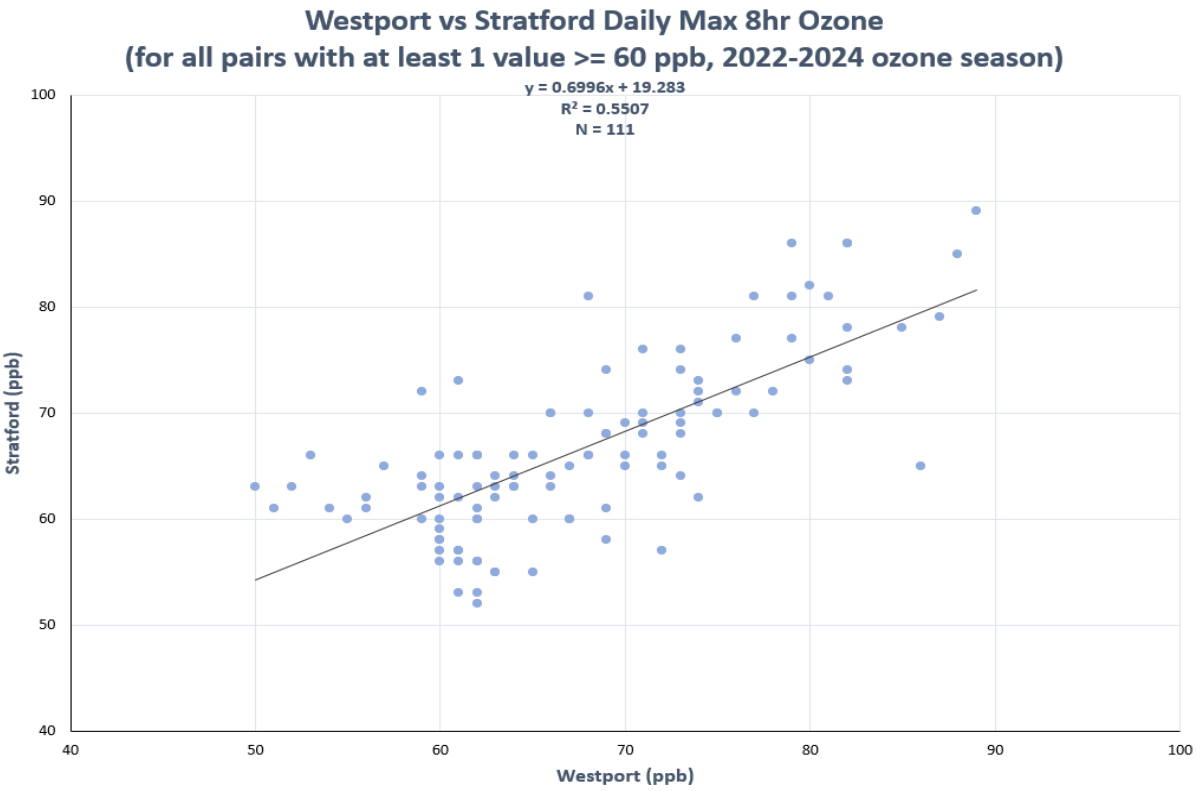
Parameter	Measurement Scale	Monitoring Objective	Assigned Value from Assessment	Plan for Network Optimization
Ozone	**Regional**	**Maximum concentration, regional transport, population exposure**	**Critical**	**Keep**
Direct NO_2	**Regional**	**Population exposure**	**Credible**	**Keep**
Total Column NO_2, HCHO			**Credible**	**Keep**
Wind speed			**Credible**	**Keep**
Wind direction			**Credible**	**Keep**
Temperature			**Credible**	**Keep**
Mixing Height			**Credible**	**Keep**

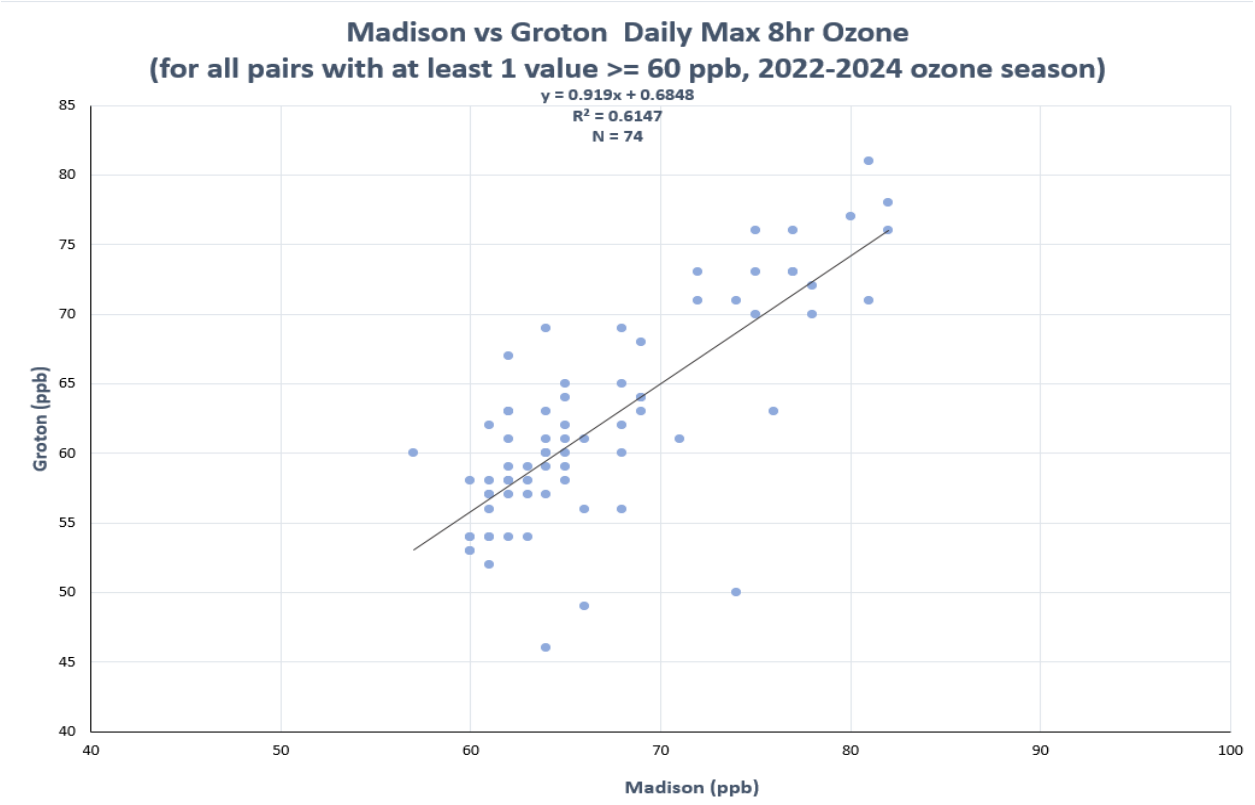
Appendix A Ozone Adjacent Site Correlation Plots

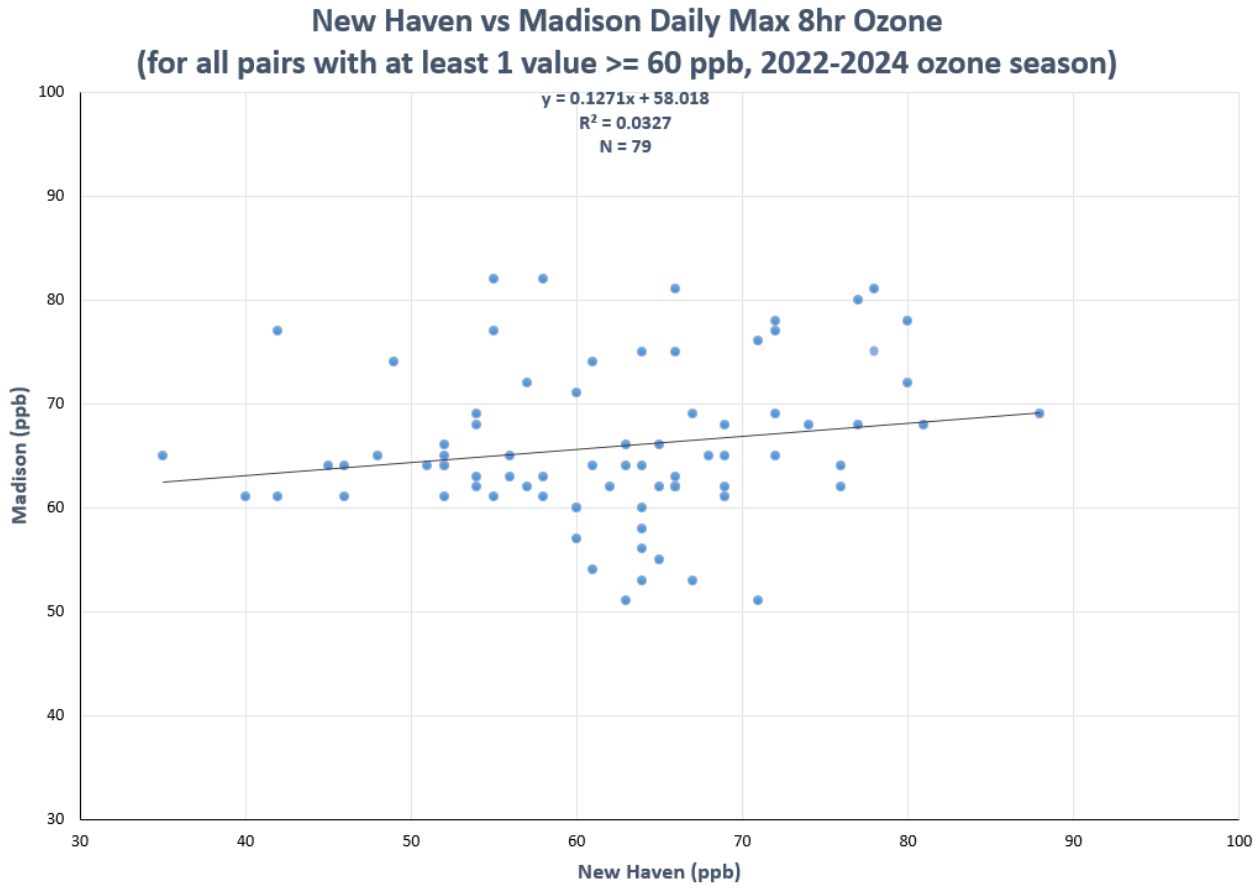




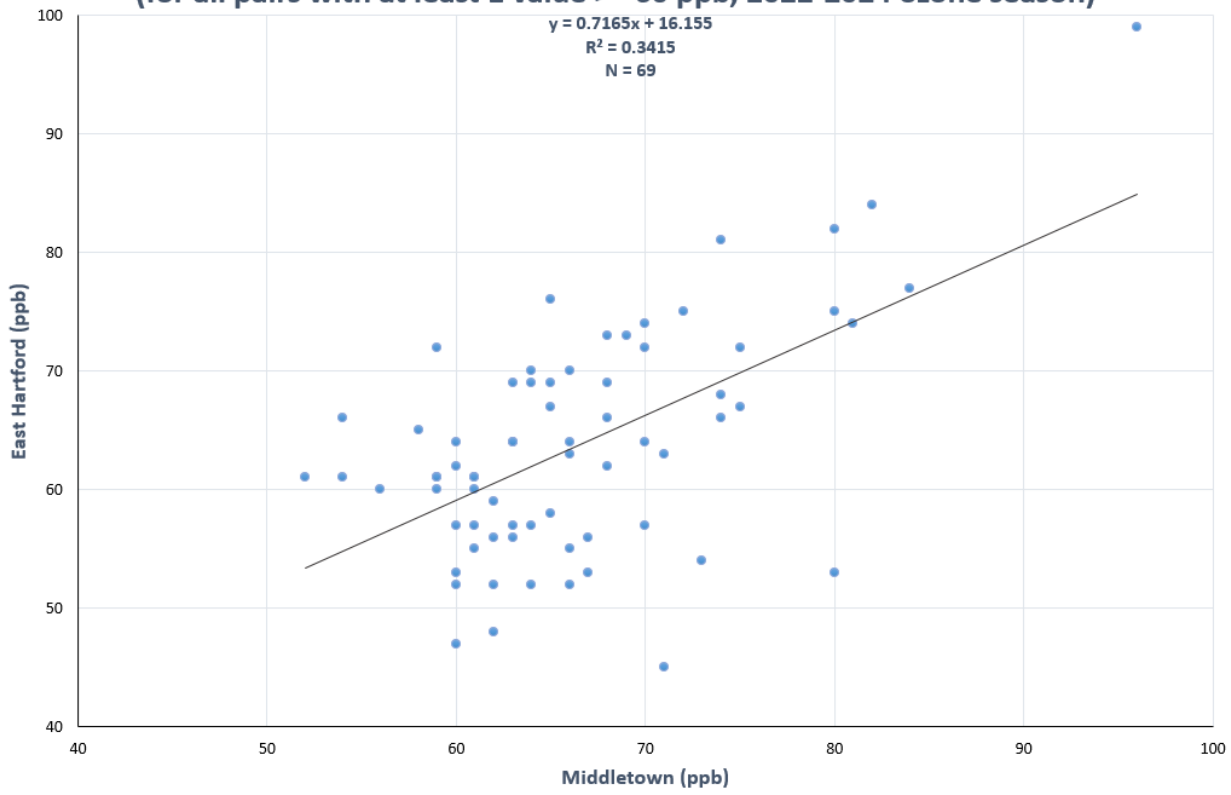

Stratford vs New Haven Daily Max 8hr Ozone
(for all pairs with at least 1 value >= 60 ppb, 2022-2024 ozone season)
y = 0.7959x + 4.7538
R² = 0.4181
N = 94
New Haven (ppb)
Stratford (ppb)
100
90
80
70
60
50
40
40
50
60
70
80
90
100


Westport vs Stratford Daily Max 8hr Ozone
(for all pairs with at least 1 value >= 60 ppb, 2022-2024 ozone season)
y = 0.6996x + 19.283
R² = 0.5507
N = 111
Stratford (ppb)
Westport (ppb)
100
90
80
70
60
50
40
40
50
60
70
80
90
100

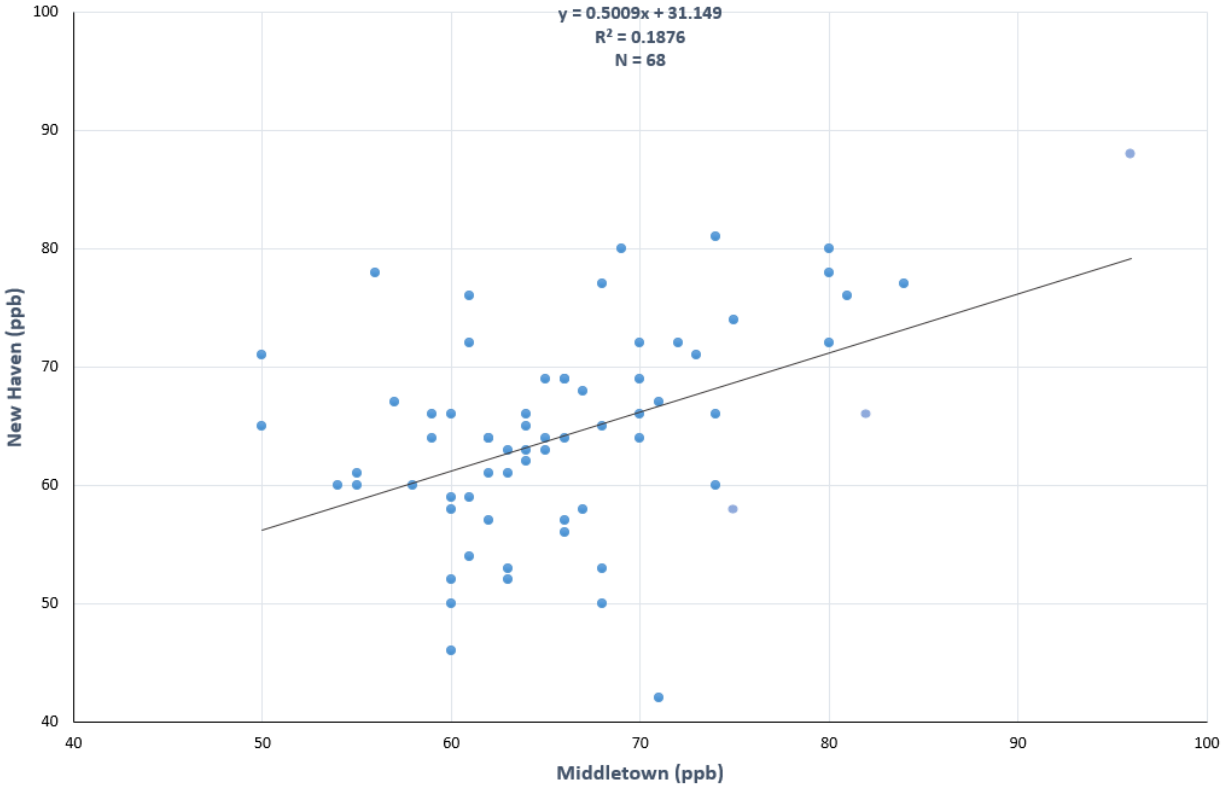

Madison vs Groton Daily Max 8hr Ozone
(for all pairs with at least 1 value >= 60 ppb, 2022-2024 ozone season)
y = 0.919x + 0.6848
R² = 0.6147
N = 74
Groton (ppb)
Madison (ppb)
85
80
75
70
65
60
55
50
45
40
40
50
60
70
80
90
100

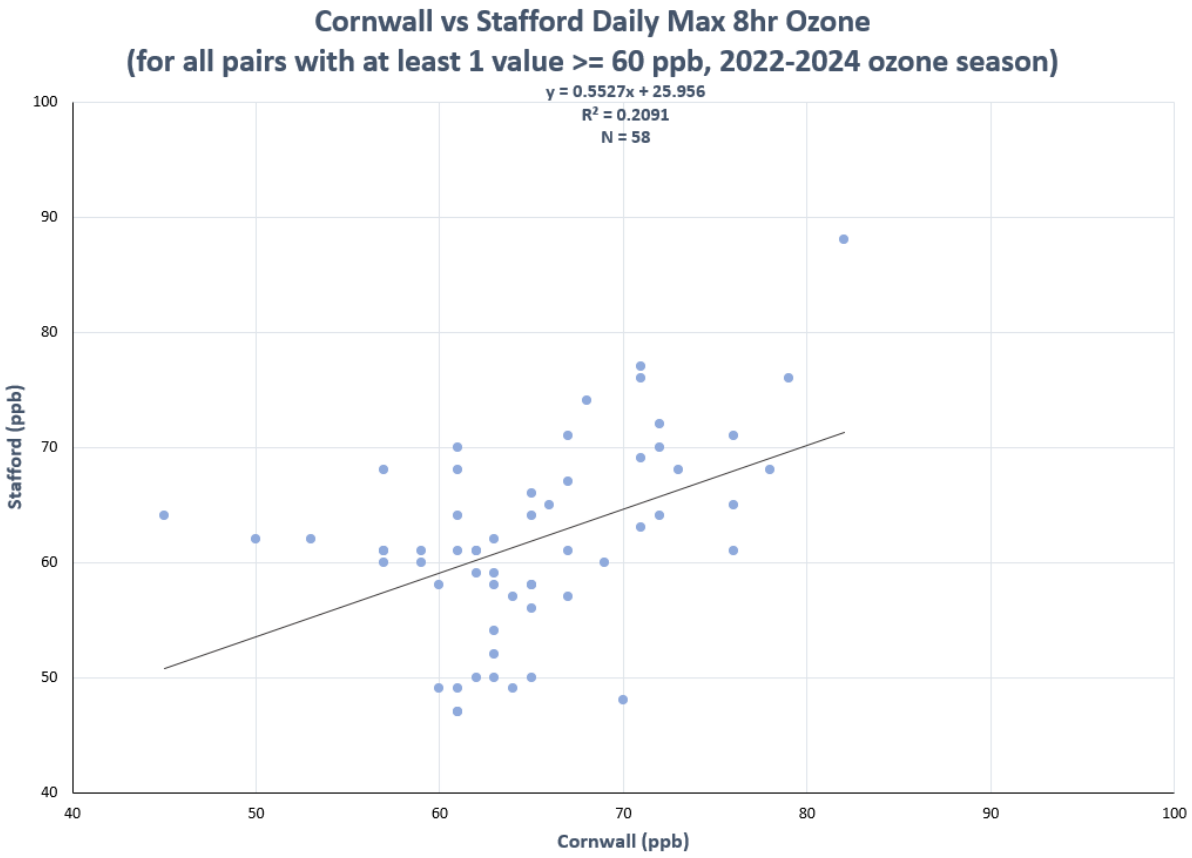

New Haven vs Madison Daily Max 8hr Ozone
(for all pairs with at least 1 value >= 60 ppb, 2022-2024 ozone season)
y = 0.1271x + 58.018
R² = 0.0327
N = 79
Madison (ppb)
New Haven (ppb)
100
90
80
70
60
50
40
30
30
40
50
60
70
80
90
100

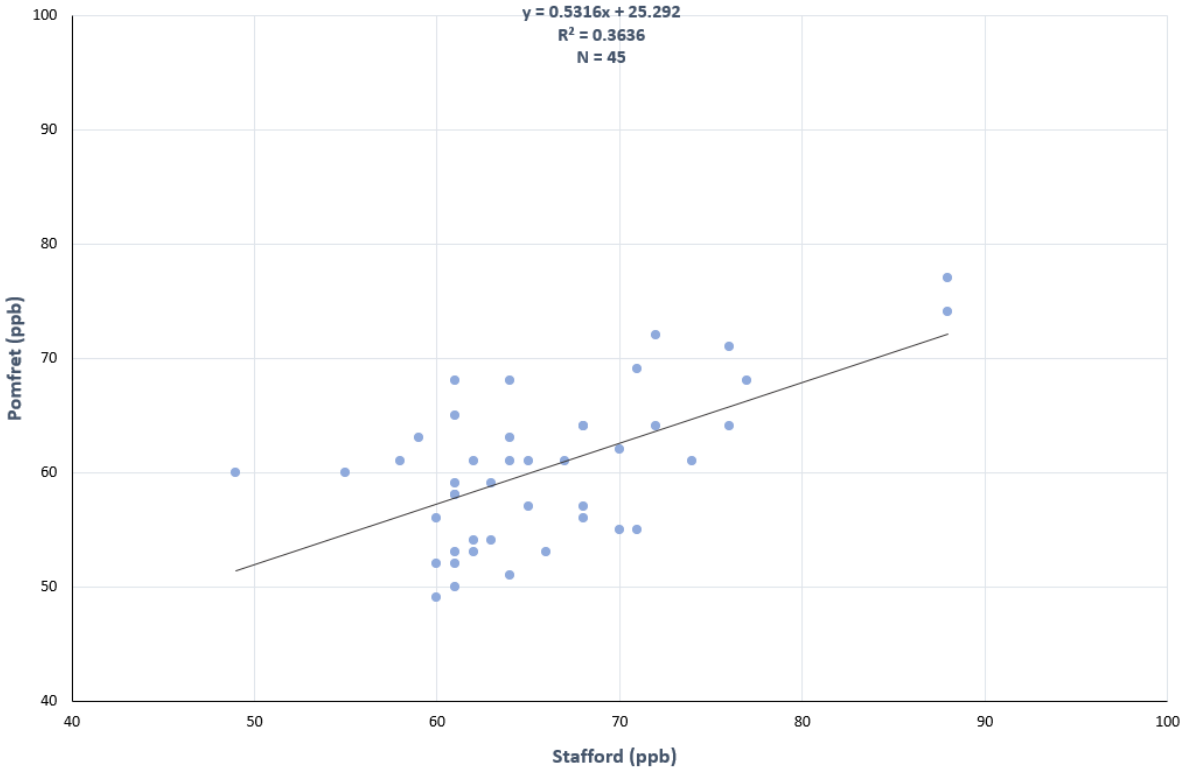
Middletown vs East Hartford Daily Max 8hr Ozone
(for all pairs with at least 1 value >= 60 ppb, 2022-2024 ozone season)



Middletown vs New Haven Daily Max 8hr Ozone
(for all pairs with at least 1 value >= 60 ppb, 2022-2024 ozone season)




Cornwall vs Stafford Daily Max 8hr Ozone
(for all pairs with at least 1 value >= 60 ppb, 2022-2024 ozone season)
y = 0.5527x + 25.956
R² = 0.2091
N = 58
Stafford (ppb)
Cornwall (ppb)
100
90
80
70
60
50
40
40
50
60
70
80
90
100


Stafford vs Pomfret Daily Max 8hr Ozone
(for all pairs with at least 1 value >= 60 ppb, 2022-2024 ozone season)
y = 0.5316x + 25.292
R² = 0.3636
N = 45
Pomfret (ppb)
Stafford (ppb)
100
90
80
70
60
50
40
40
50
60
70
80
90
100