

STATE OF CONNECTICUT  
DEPARTMENT OF ENVIRONMENTAL PROTECTION



August 16, 2010

VIA ELECTRONIC MAIL

Michael Kenyon, Director  
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RE: Connecticut 2010 Annual Air Monitoring Network Plan

Dear Mr. Kenyon:

In fulfillment of the requirements of 40 CFR§53 and 58; Revisions to Ambient Air Monitoring Regulations; Final Rule posted to the Federal Register on October 17, 2006, the Connecticut Bureau of Air Management submits this request for approval of the Connecticut 2010 Annual Air Monitoring Network Plan.

The Connecticut 2010 Annual Air Monitoring Network Plan, which covers the Connecticut Department of Environmental Protection (CTDEP) existing air monitoring network and proposed changes to the network, was presented to SIPRAC (State Implementation Plan Revision Advisory Committee) on June 10, 2010. SIPRAC is comprised of approximately 400 members representing business and industry, the environmental community, the public, academia, as well as the US EPA. The network plan was posted on the CTDEP website on June 10, 2010, for a 30-day public comment period as required by 40 CFR§53 and 58; Revisions to Ambient Air Monitoring Regulations; Final Rule.

I look forward to receiving your approval on this monitoring plan for Connecticut. If you have any questions concerning this network plan, please contact Peter Babich of my staff at 860-724-9615.

Sincerely,

Anne Gobin, Chief  
Bureau of Air Management

AG:PB

cc: David Conroy, EPA R1  
Katrina Kipp, EPA R1  
Robert Judge, EPA R1

Enc: Connecticut 2010 Annual Air Monitoring Network Plan

# Connecticut 2010 Annual Air Monitoring Network Plan



Connecticut Department of Environmental Protection  
Bureau of Air Management  
August 16, 2010

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## Acronyms and Abbreviations

AMTIC – Ambient Monitoring Technical Information Center  
AQS – Air Quality System  
CAA – Clean Air Act  
CFR – Code of Federal Regulations  
CO – carbon monoxide  
CSA – combined statistical area  
CTDEP – Connecticut Department of Environmental Protection  
CV – coefficient of variance  
DAS – data acquisition system  
DQA – data quality assessment  
DQO – data quality objective  
EPA – Environmental Protection Agency  
FEM – Federal Equivalent Method  
FRM – Federal Reference Method  
GC – gas chromatography  
GC/MS – gas chromatography/mass spectrometry  
GIS – geographical information systems  
GPS – global positioning system  
HAP – hazardous air pollutant  
HPLC – high performance liquid chromatography  
ICP/MS – inductively coupled plasma/mass spectrometry  
IMPROVE – Interagency Monitoring of Protected Visual Environments  
IO – Inorganic  
IT – information technology  
LAN – local area network  
LMP – limited maintenance plan  
MQO – measurement quality objectives  
MPA – monitoring planning area  
MSA – metropolitan statistical area  
NAAQS – National Ambient Air Quality Standards  
NIST – National Institute of Standards and Technology  
NO<sub>x</sub> – nitrogen oxides  
NO<sub>y</sub> – reactive oxides of nitrogen  
NPAP – National Performance Audit Program  
NSPS – New Source Performance Standard  
OAQPS – Office of Air Quality Planning and Standards  
OARM – Office of Administration and Resources Management  
OIRM – Office of Information Resources Management  
OMB – Office of Management and Budget  
ORD – Office of Research and Development  
PAMS – Photochemical Assessment Monitoring Stations  
P&A – precision and accuracy  
PE – performance evaluation  
PM<sub>2.5</sub> – fine particulate matter (2.5 microns)  
PM<sub>10</sub> – respirable particulate matter (10 microns)  
PM<sub>10-2.5</sub> – coarse particulate matter (PM<sub>10</sub> – PM<sub>2.5</sub>)  
PMSA – primary metropolitan statistical area  
QA – quality assurance  
QA/QC – quality assurance/quality control  
QAPP – quality assurance project plan  
QMP – quality management plan  
RH – relative humidity  
RPD – relative percent difference  
SIP – State Implementation Plan  
SLAMS – state and local monitoring stations  
SO<sub>2</sub> – sulfur dioxide  
SOP – standard operating procedure  
SPMS – special purpose monitoring stations  
STN – Speciation Trends Network  
TSA – technical system audit  
TSP – total suspended particulate  
VOC – volatile organic compound

## Introduction

The Connecticut Department of Environmental Protection (CTDEP) regulates air quality to protect public health and the environment. Monitoring data is a crucial component of regulations used to determine compliance with the Federal Environmental Protection Agency (EPA) primary and secondary air quality standards. Other important uses of air quality data include: support of timely reporting of the Air Quality Index (AQI) and issuing air quality forecasts, support of long-term health assessments, and tracking long-term air quality both to gauge effectiveness of emission control and abatement strategies and to quantify accuracy of supporting model evaluations.

EPA requires, per 40 CFR § 58.10, for each state to submit an annual air monitoring network plan which proposes sites and parameters to be added, maintained or terminated. Prior to submission to EPA, the annual network plan must be made available for public comment for at least 30 days. This document was made available on the [ct.gov](http://ct.gov) website from June 10, 2010 through July 10, 2010. Comments are included in Appendix A of this document and the responses to comments are included in Appendix B.

Today, the CTDEP air monitoring network consists of 24 permanent monitoring stations; however, the network is in constant flux as program requirements and needs are continually changing. The two key issues we face are budget constraints and new EPA monitoring requirements. Constrained resources need to be made available and reallocated in order to meet the new requirements.

Over the last 20 years, monitored levels of the criteria pollutants have decreased significantly due to various control measures implemented by CTDEP and the EPA.

Air monitoring began in Connecticut in the 1970's, when CTDEP started to monitor for total suspended particulate. At this time, CTDEP installed its first computerized network and started daily pollution forecasting with the Pollution Standards Index.

The decade of the 1980's was a transition for air quality. With new automobiles equipped with catalytic converters, nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO) and volatile organic compounds (VOCs) were greatly reduced. Ozone and particulate matter with diameter 10 microns or less (PM<sub>10</sub>) have been greatly reduced, although Connecticut still remains in non-attainment for ozone. The phasing out of leaded gasoline dropped the lead pollution to lower levels. New air pollution control technologies for stationary sources, including lower sulfur fuels, reduced sulfur dioxide, NO<sub>2</sub> and VOCs.

In the 1980's, CTDEP instituted the ambient dioxin monitoring program and in 1992, CTDEP established the Photochemical Assessment Monitoring Stations (PAMS) network which by 1995 had the capability of monitoring over 100 toxic pollutants.

In 1997, the fine particulate (PM<sub>2.5</sub>) National Ambient Air Quality Standards (NAAQS) were promulgated, and by 1999, the CTDEP established a comprehensive PM<sub>2.5</sub> Federal Reference Method (FRM) network.

Today, the primary objective of the air monitoring network is to adequately characterize and measure ozone and the precursors of ozone, and PM<sub>2.5</sub> and the precursors and chemical components of fine particle matter.

## Network Overview and NCore Site Approval

On September 21, 2006, the EPA reduced daily PM<sub>2.5</sub> NAAQS from 65 µg/m<sup>3</sup> to 35 µg/m<sup>3</sup>. Along with the new daily standard, new ambient air monitoring regulations were implemented. On September 27, 2006, the EPA amended its national air quality monitoring requirements. The changes focus on retaining but reshaping existing monitoring networks to ensure that monitors are concentrated in areas with air quality problems, where monitoring is most critical.

The most significant feature of the 2006 monitoring regulations is the establishment of new multi-pollutant monitoring sites. EPA and the states will add about 80 multi-pollutant NCore sites around the country. Monitoring multiple pollutants at the same site is critical to enable EPA to improve air quality management by enhancing the Agency's ability to model and forecast air pollution. These NCore sites also will provide real-time data for some pollutants, including particle pollution and ground-level ozone. By requiring that these monitors be co-located with improved resolution, EPA's rule will enhance the ability of federal, state and local air quality experts to examine the effects of multiple air pollutants on health and the environment.

On October 30, 2009, EPA's Office of Air Quality Planning and Standards (OAQPS) approved CTDEP's proposal to designate the Criscuolo Park site in New Haven and the Mohawk Mountain site in Cornwall as NCore monitoring sites. The full NCore network is to be operational by January 1, 2011.

There will continue to be a national network of monitors for the criteria pollutants, but the improved network will be more strategic and efficient. Along with new and future National Ambient Air Quality Standards (NAAQS), there are also new monitoring requirements. These requirements will change the locations of some types of monitors, add new monitors for some pollutants, and allow states to shut down unneeded monitors for other pollutants.

The current network and the proposed network changes presented in this document are consistent with the national air quality monitoring requirements.

### National Ambient Air Quality Standards (NAAQS)

The EPA Office of Air Quality Planning and Standards (OAQPS) has set National Ambient Air Quality Standards for six principal pollutants, which are called "criteria" pollutants.

Pollutant	Primary Standards		Secondary Standards	
	Level	Averaging Time	Level	Averaging Time
Carbon Monoxide	9 ppm	8-hour <sup>(1)</sup>	None	
	35 ppm	1-hour <sup>(1)</sup>		
Lead	0.15 µg/m <sup>3</sup> <sup>(2)</sup>	Rolling 3-Month Average	Same as Primary	
	1.5 µg/m <sup>3</sup>	Quarterly Average	Same as Primary	
Nitrogen Dioxide	53 ppb <sup>(3)</sup>	Annual	Same as Primary	
	100 ppb	1-hour <sup>(4)</sup>	None	
Particulate Matter (PM <sub>10</sub> )	150 µg/m <sup>3</sup>	24-hour <sup>(5)</sup>	Same as Primary	
Particulate Matter (PM <sub>2.5</sub> )	15.0 µg/m <sup>3</sup>	Annual <sup>(6)</sup>	Same as Primary	
	35 µg/m <sup>3</sup>	24-hour <sup>(7)</sup>	Same as Primary	
Ozone	0.075 ppm (2008)	8-hour <sup>(8)</sup>	Same as Primary	
	0.08 ppm (1997)	8-hour <sup>(9)</sup>	Same as Primary	
	0.12 ppm	1-hour <sup>(10)</sup>	Same as Primary	
Sulfur Dioxide	0.03 ppm	Annual	0.5 ppm	3-hour <sup>(1)</sup>
	0.14 ppm	24-hour <sup>(1)</sup>		
	75 ppb <sup>(11)</sup>	1-hour	None	

(1) Not to be exceeded more than once per year.

(2) Final rule signed October 15, 2008.

(3) The official level of the annual NO<sub>2</sub> standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of clearer comparison to the 1-hour standard.

(4) To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 100 ppb (effective January 22, 2010).

(5) Not to be exceeded more than once per year on average over 3 years.

(6) To attain this standard, the 3-year average of the weighted annual mean PM<sub>2.5</sub> concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m<sup>3</sup>.

(7) To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m<sup>3</sup> (effective December 17, 2006).

- (8) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm. (effective May 27, 2008)
- (9) (a) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.  
(b) The 1997 standard—and the implementation rules for that standard—will remain in place for implementation purposes as EPA undertakes rulemaking to address the transition from the 1997 ozone standard to the 2008 ozone standard.  
(c) EPA is in the process of reconsidering these standards (set in March 2008).
- (10) (a) EPA revoked the 1-hour ozone standard in all areas, although some areas have continuing obligations under that standard ("anti-backsliding").  
(b) The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is  $\leq 1$ .
- (11) (a) Final rule signed June 2, 2010. To attain this standard, the 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 75 ppb.

### Monitoring Site Network Map

Below is the CTDEP ambient air monitoring site network map as of July 2010.



## Parameter Network Maps

Below are network maps segregated by parameter with a description of sampling frequency and specific network or site qualifiers.

### PM<sub>2.5</sub> FRM Network

The CTDEP operates fourteen PM<sub>2.5</sub> FRM sites in the air monitoring network. Four of the sites, Criscoolo Park in New Haven, East Hartford, Westport and Norwich operate on an everyday sample schedule while all the other sites operate on a 1-in-3 day sample schedule. Two sites, Waterbury and Criscoolo Park in New Haven, operate collocated PM<sub>2.5</sub> FRM samplers on a 1-in-6 day sample schedule.



### PM<sub>10</sub> FRM Network

The CTDEP operates six PM<sub>10</sub> FRM sites in the air monitoring network. All sites are operated on a 1-in-6 day sample schedule. Two sites, Waterbury and Criscoolo Park in New Haven, operate collocated PM<sub>10</sub> FRM samplers on a 1-in-6 day sample schedule. All sites that operate PM<sub>10</sub> FRM samplers, also operate PM<sub>2.5</sub> samplers, which provide PM<sub>10-2.5</sub> measurements.



### PM Speciation Network

PM<sub>2.5</sub> chemical speciation measurements are being obtained at four sites in the CTDEP air monitoring network. The IMPROVE (Interagency Monitoring of Protected Visual Environments) site is located at the Cornwall site and the EPA STN (Speciation Trends Network) site is at the New Haven Criscoolo Park site. Both sites are operated on the same 1-in-3 day sample schedule and provide 24-hour integrated filter-base measurements. Continuous sulfate and continuous organic and elemental carbon sampling is being conducted at the Cornwall and Thomaston sites and is planned for the New Haven Criscoolo Park site. The Aethalometer used to measure black carbon and wood smoke PM is currently in operation at the Criscoolo Park, Cornwall, Thomaston and East Hartford McAuliffe Park sites.



### Continuous PM<sub>2.5</sub> Network

The CTDEP operates nine continuous PM<sub>2.5</sub> sites in the air monitoring network. All continuous PM<sub>2.5</sub> samplers are operated year-round and the measurements are sent to the EPA AIRNow website for AQI purposes on an hourly basis. The MetOne BAM is operated at the Cornwall, Danbury, Groton Fort Griswold, Waterbury, East Hartford High Street and New Haven Criscuolo Park sites, while the Thermo FDMS 8500 is operated at the Bridgeport Roosevelt School, East Hartford McAuliffe Park, Thomaston and New Haven Criscuolo Park sites. In addition to both types of continuous PM<sub>2.5</sub> samplers, a continuous PM<sub>10</sub> MetOne BAM is also operated at Criscuolo Park. A Thermo1405-DF, which measures both continuous PM<sub>2.5</sub> and PM<sub>10-2.5</sub> is currently deployed at the New Haven Criscuolo Park site and will be deployed at Cornwall in 2010.



Currently CTDEP operates several FEM-like continuous PM<sub>2.5</sub>, PM<sub>10</sub> and PM<sub>10-2.5</sub> instruments; however, none of that data is reported as FEM data to AQS. Regarding future continuous PM FEM plans, it is the CTDEP position that for each individual FEM, there should be an extended period of comparison to the FRM; partly to understand and consider any biases that may be inherent in the continuous method or that may be a function of mass lost from the FRM, and partly to evaluate the new FEM instruments as there is very little FEM operating experience besides the vendor-operated FEM testing and early indications dictate that we need to move cautiously on this front until it can be shown that these FEMs can produce both accurate and precise mass measurements. Additionally, given the close proximity of Connecticut's PM<sub>2.5</sub> design values to the daily NAAQS, CTDEP wants to ensure the highest quality data is used to determine compliance with the 24-hr standard.

### Ozone Network

The CTDEP operates eleven ozone sites in the air monitoring network. The ozone samplers at the Cornwall and New Haven Criscuolo Park sites are operated year-round, while the remaining sites are operated from April 1<sup>st</sup> through September 30<sup>th</sup>. Ozone measurements are sent to the EPA AIRNow website for AQI purposes on an hourly basis.



### PAMS Network

The CTDEP operates three PAMS sites in the air monitoring network. PAMS measurements are obtained from June 1<sup>st</sup> through August 31<sup>st</sup>. PAMS sampling generates hourly measurements of 56 volatile organic compounds (VOCs), such as benzene and toluene, which are precursors to ozone formation. Carbonyl sampling is also done in conjunction with PAMS at the East Hartford site on a 1-in-3 day sample schedule from June 1<sup>st</sup> through August 31<sup>st</sup>; four three-hour samples are collected and analyzed for formaldehyde and acetaldehyde. The CTDEP is currently looking into establishing upper air measurements in Connecticut. Currently upper air measurements obtained at the New Brunswick, NJ and Stowe, MA sites are used for modeling purposes.



### NOx / NOy Network

The CTDEP operates four nitrogen oxide (NOx) sites in the air monitoring network. All NOx samplers are operated year-round. Nitrogen oxide (NO) and nitrogen dioxide (NO<sub>2</sub>) measurements are obtained primarily to complement the PAMS measurements to study ozone formation. The CTDEP operates one trace-NOy (total reactive oxides of nitrogen) sampler at the New Haven Crisculo Park site. Both NOx and NOy samplers will be deployed to the Cornwall Mohawk Mountain site in 2010.



### CO Network

The CTDEP operates seven carbon monoxide (CO) sites in the air monitoring network. All CO samplers are operated year-round. Trace-CO samplers are deployed at the Thomaston, Westport and New Haven Crisculo Park sites. Trace-CO samplers will be deployed to the Bridgeport Roosevelt School, Cornwall, East Hartford McAuliffe Park and Hartford Morgan Street sites in 2010.



### SO<sub>2</sub> Network

The CTDEP operates six sulfur dioxide (SO<sub>2</sub>) sites in the air monitoring network. All SO<sub>2</sub> samplers are operated year-round. Trace-SO<sub>2</sub> samplers are deployed at all SO<sub>2</sub> sites: Bridgeport Edison School, Cornwall, East Hartford McAuliffe Park, New Haven Criscuolo Park, Thomaston and Westport.



### Lead (Pb) Network

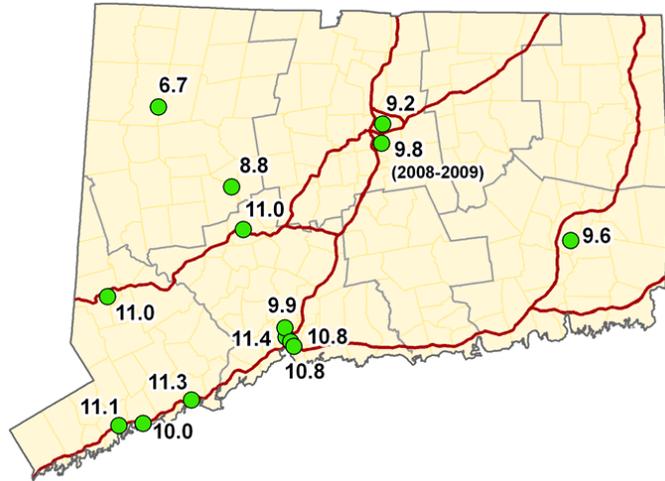
The CTDEP operates one lead (Pb) monitoring site in the air monitoring network. Lead measurements are obtained from analysis of the low volume PM<sub>10</sub> filters. Lead sampling began at the New Haven Criscuolo Park site on January 1, 2010. Lead sampling will begin at the Cornwall Mohawk Mountain site on January 1, 2011.



### PM<sub>2.5</sub> Annual Design Value Map (2007-2009)

Below are the current annual design values for PM<sub>2.5</sub> using 2007 through 2009 data. PM<sub>2.5</sub> annual design values are calculated using the 3-year average of the respective annual averages. The current annual PM<sub>2.5</sub> standard is 15 µg/m<sup>3</sup>. Although all Connecticut monitors are compliant with the annual PM<sub>2.5</sub> NAAQS, Fairfield and New Haven Counties remain designated nonattainment for the annual standard as part of the Greater New York City area.

Site	Design Value (µg/m <sup>3</sup> )
Bridgeport	11.3
Danbury	11.0
East Hartford – High St.*	9.8
East Hartford - McAuliffe	9.2
New Haven – Ag. Center	9.9
New Haven – Criscuolo	10.8
New Haven – State St.	11.4
New Haven – Woodward	10.8
Norwalk	11.1
Norwich	9.6
Thomaston	8.8
Waterbury	11.0
Westport	10.0

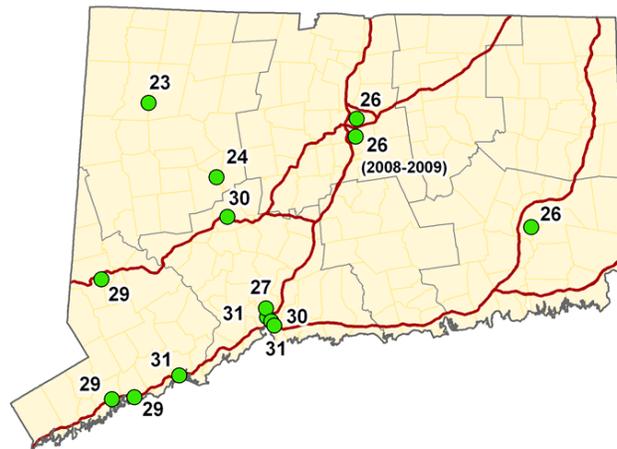


\* East Hartford High Street design value based on 2008-09 data.

### PM<sub>2.5</sub> Daily Design Value Map (2007-2009)

Below are the current daily design values for PM<sub>2.5</sub> using 2007 through 2009 data. PM<sub>2.5</sub> daily design values are calculated using the 3-year average of the annual 98th percentile values. As of 2006, the new, more stringent daily PM<sub>2.5</sub> standard is 35 µg/m<sup>3</sup>. The previous daily standard was 65 µg/m<sup>3</sup>. Final designations relative to the new standard were finalized by EPA in November 2009 (effective as of December 14, 2009), based upon measured data from 2006 through 2008. Although all Connecticut monitors are compliant with the 2006 24-hour PM<sub>2.5</sub> NAAQS, Fairfield and New Haven Counties are designated nonattainment for the daily standard as part of the Greater New York City area.

Site	Design Value (µg/m <sup>3</sup> )
Bridgeport	31
Danbury	29
East Hartford – High St.*	26
East Hartford - McAuliffe	26
New Haven – Ag. Center	27
New Haven – Criscuolo	31
New Haven – State St.	31
New Haven – Woodward	30
Norwalk	29
Norwich	26
Thomaston	24
Waterbury	30
Westport	29

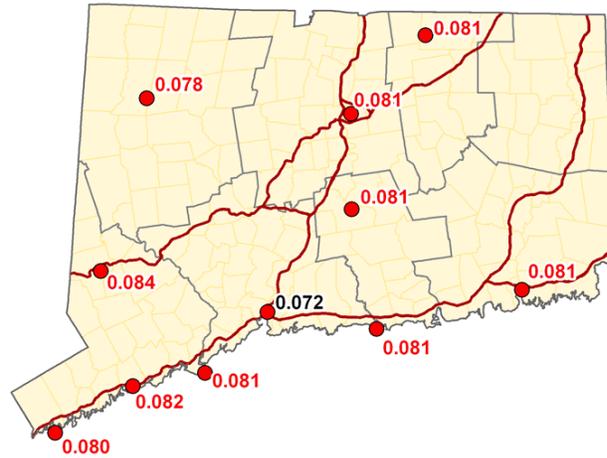


\* East Hartford High Street design value based on 2008-09 data.

### Ozone Design Value Map (2007-2009)

Below are the current design values for ozone using 2007 through 2009 data. Ozone design values are calculated by taking the 3-year average of the annual 4<sup>th</sup> maximum daily maximum 8-hr ozone averages. EPA issued a final rulemaking on March 12, 2008 that tightened the 8-hr ozone standard from effectively 0.085 ppm to 0.075 ppm. Currently the entire state of Connecticut is designated as non-attainment for ozone based on the 1997 standard and the 2009 ozone design values exceed the 2008 standard at all sites except New Haven. EPA is currently reconsidering the 2008 ozone NAAQS, proposing to lower the NAAQS to somewhere in the range of 0.060 to 0.070 ppm. EPA plans to finalize a revised ozone NAAQS by the end of August 2010. The proposed Ozone Monitoring Rule was issued in the summer of 2008 and finalized in 2010. The implementation of this rule may require expanding the ozone monitoring season in Connecticut into March and through October.

Site	Design Value (ppm)
Cornwall	0.078
Danbury	0.084
East Hartford	0.081
Greenwich	0.080
Groton	0.081
Madison	0.081
Middletown	0.081
New Haven – Criscuolo	0.072
Stafford	0.081
Stratford	0.081
Westport	0.082



## **Lead NAAQS and Proposed Lead Monitoring Network**

On October 15, 2008, EPA promulgated a strengthening of the NAAQS (Rule) for lead (Pb) from 1.5  $\mu\text{g}/\text{m}^3$  to 0.15 $\mu\text{g}/\text{m}^3$ . On December 23, 2009 the EPA proposed to revise the ambient monitoring requirements for measuring airborne lead. EPA proposed to change the lead emissions monitoring threshold to 0.50 tons per year (tpy). A review of Connecticut Pb emission sources based on the 2005 National Emission Inventory (NEI) determined that there are no potential of individual or clustered Pb sources to approach or exceed this revised threshold. Therefore, source-oriented monitoring would not be required in Connecticut.

EPA also proposed to replace the current requirement to place lead monitors in each Core Based Statistical Area (CBSA) with a population of 500,000 or more people with a requirement for lead monitoring at all NCore sites, and possibly only at urban NCore sites. If finalized as proposed, CTDEP proposes to begin monitoring for lead at the Cornwall Mohawk Mountain NCore sites by January 1, 2011 as well as continue lead monitoring at the Crisco Park NCore site. Both sites will utilize low-volume  $\text{PM}_{10}$  gravimetric samplers to determine lead concentrations.

## **$\text{NO}_2$ NAAQS and Proposed $\text{NO}_2$ Monitoring Network**

On January 22, 2010 EPA finalized the new 1-hour  $\text{NO}_2$  NAAQS; the standard was set to 100ppb (effective April 12, 2010). The new NAAQS is a rolling 3-year average of the 98<sup>th</sup> percentile of the highest daily maximum concentration in a year. The 98<sup>th</sup> percentiles of Connecticut's daily highs are approximately 50% of the standard. Under this new rule Connecticut is required to have four monitors total, three of which are to be near-road monitors (New Haven, Fairfield and Hartford County) and one community based monitor (Hartford County). Any near-road monitor would be sited consistent with the requirements of the final  $\text{NO}_2$  NAAQS rule which are intended to focus on monitoring in the location of maximum concentrations. Designations for the new standard are required by January 2012 based on the existing community based monitors. The new  $\text{NO}_2$  monitoring network is required to be operational by January 1, 2013. EPA re-designations based on data from the new network are scheduled to occur by January 2016/17. Attainment is required by January 2021/22. The Connecticut  $\text{NO}_2$  monitoring network will be presented in the Connecticut 2012 Annual Air Monitoring Network Plan.

## **$\text{SO}_2$ NAAQS and Proposed $\text{SO}_2$ Monitoring Network**

On June 2, 2010 the EPA finalized a new 1-hour  $\text{SO}_2$  NAAQS of 75 ppb. The design value for the new  $\text{SO}_2$  NAAQS is the 3-year average of the 99<sup>th</sup> percentile of the annual distribution of daily maximum 1-hour average concentrations. Historic  $\text{SO}_2$  measurements in Connecticut indicate that the New Haven Crisco Park site, with Connecticut's greatest concentration measurements, would have a 2009 1-hour design value of 49 ppb. According to this rule, Connecticut is obligated to run three  $\text{SO}_2$  monitors based on a PWEI (Population Weighted Emissions Index). The PWEI incorporates both population and source sizes. EPA's PWEI table requires one monitor to be located in Hartford, Fairfield and New Haven Counties. CTDEP will work with EPA to evaluate the current  $\text{SO}_2$  network along with these new requirements and propose any changes to the network to EPA in the Connecticut 2011 Annual Air Monitoring Network Plan. Any  $\text{SO}_2$  monitors must be operational by January 1, 2013.

## **Data Acquisition Network**

Other significant changes to the network include the continuing upgrades of the data acquisition system, which is necessary to manage the air quality and meteorological data generated within the network and have it accessible for internal review and validation, AQI reporting and forecasting, and submittal to EPA AQS database. The data acquisition system was installed primarily in 2007 and will continue to be enhanced in 2010. It allows digital data acquisition for all parameters present at the monitoring sites and includes valuable diagnostic information to facilitate in validation and analysis. Along with the upgrade to the data acquisition system, the communications has been upgraded throughout the network from phone lines to DSL, cable, aircards and dedicated T1 lines. This has resulted in significant cost savings by eliminating instate toll call charges.

## Proposed Network Changes

The CTDEP network changes planned in the near- to mid-term involve establishing a network that is consistent with the new regulations and the EPA National Monitoring Strategy. This includes continuing to establish the EPA-approved Cornwall Mohawk Mountain and New Haven Criscuolo Park NCore sites to be fully online as of January 1, 2011 while also maintaining a comprehensive fine particle and ozone network throughout the state for compliance, SIP development, control strategy assessment, AQI reporting and forecasting purposes.

Details of the proposed network changes are described in the following site information pages. The significant network changes proposed for 2011 include:

- Establish 1-in-3 day  $PM_{10}$  FRM and continuous  $PM_{10-2.5}$  measurements at the Cornwall Mohawk Mountain site.
- Establish lead measurements at the Cornwall Mohawk Mountain site if required.
- Establish trace-CO measurements at the Cornwall Mohawk Mountain site.
- Establish  $NO_x$  and trace- $NO_y$  measurements at the Cornwall Mohawk Mountain site.
- Replace all remaining non-trace CO and  $SO_2$  instruments in network with trace-level monitors.
- Discontinue all sampling at the Thomaston Waste Water Treatment site.
- Discontinue  $PM_{2.5}$  FRM sampling at the New Haven Agricultural Center and New Haven Woodward Avenue sites.
- Discontinue  $PM_{10}$  FRM sampling at the Westport, Norwalk and Waterbury sites.
- Discontinue every day  $PM_{2.5}$  FRM sampling at Westport and Norwich sites; revert back to 1-in-3 day  $PM_{2.5}$  sampling at the Westport and Norwich sites.
- Discontinue mercury sampling at the New Haven Criscuolo Park site.

The CTDEP has made a concerted effort to maintain its air monitoring network so the critical data needs are fulfilled. It is very clear the new EPA requirements will require additional monitoring over the next several years and consistent with the LEAN culture of the agency, this plan calls for the continued effort to streamline data handling and looking at a reduced effort in low value added monitoring sites. Limited opportunities exist for disinvestment and the limited disinvestment will occur by eliminating lower value data collection. This disinvestment is necessary to enable the limited staff available to focus on the work efforts necessary to fulfill the new mandates.

## Contingency Site Shutdown Plan

The level of funding for air monitoring efforts will determine to what extent the CTDEP is able to maintain the current ambient air monitoring network. CTDEP needs adequate levels to establish and operate two NCore sites, establish a lead monitoring network, expand the ozone season, as well as, continue operating the current monitoring programs at a high level. Other resource-intensive tasks, required by the new federal monitoring regulations, include the annual air monitoring network plan and a 5-year network assessment justifying all sites and monitors within the CTDEP network due in 2010. Other ongoing deliverables include the submission of the annual SLAMS data certification report and annual updates and revisions to all QAPPS. The expanded monitoring requirements come at a time the state has new SIP requirements to fulfill and is dealing with unprecedented economic challenges. All of these efforts require additional funding or negotiating reduced level of effort by Connecticut to fulfill its obligations under the Clean Air Act.

Given the anticipated budget constraints and personnel reductions, CTDEP is planning for site shutdowns in 2010. CTDEP solicited public comment on which sites are proposed to be shutdown so as to minimize critical data loss. Below is a list of monitoring sites in the order of shutdown preference based on value added to the network and potential savings by discontinuing site operation This final *Connecticut 2010 Annual Air Monitoring Network Plan* submitted to EPA proposes what sites will be shutdown in 2010.

Moving forward, CTDEP is committed to conduct a detailed review of all monitoring-related operating costs over the next year and make a determination which parameters and/or sites are not absolutely necessary and prioritize which will be shutdown. This will allow the limited resources to be directed and focused on the critical elements of the monitoring network.

All monitoring site pollutant information can be found on the following site information pages. In summary, the first three sites on the following list are proposed to be shutdown in this Network Plan, the New Haven Agricultural Center, Woodward Avenue Fire Station and Thomaston Waste Water Treatment Plant sites. There are other individual parameters proposed to be shut down at various sites within this Network Plan as well.

### Order of Shutdown of Monitoring Sites Due to Budget Cutting

Monitoring Site	Ozone	PM	PAMS	NCore
New Haven – Agricultural Center		X		
New Haven – Woodward Avenue Fire Station		X		
Thomaston – Waste Water Treatment Plant		X		
Mansfield – DOT				
Hartford – Brainard Field				
Hartford – Morgan Street				
Stratford – USCG Lighthouse	X			
Danbury - WCSU	X	X		
Stafford – Shenipsit State Forest	X			
East Hartford – High Street		X		
Norwalk – Health Department		X		
Bridgeport – Edison School				
Bridgeport – Roosevelt School		X		
Waterbury – Bank & Meadow Street		X		
New Haven – State Street		X		
Madison – Hammonasset State Park	X			
Norwich – Courthouse		X		
Middletown – CVH Shew Hall	X			
Groton – Fort Griswold	X			
Greenwich – Greenwich Point Park	X			
Westport – Sherwood Island State Park	X	X	X	
East Hartford – McAuliffe Park	X	X	X	
Cornwall – Mohawk Mountain	X	X		X
New Haven – Criscuolo Park	X	X	X	X

 = Indicates site proposed to be shut down per this Annual Air Monitoring Network Plan

### Monitoring Site Information

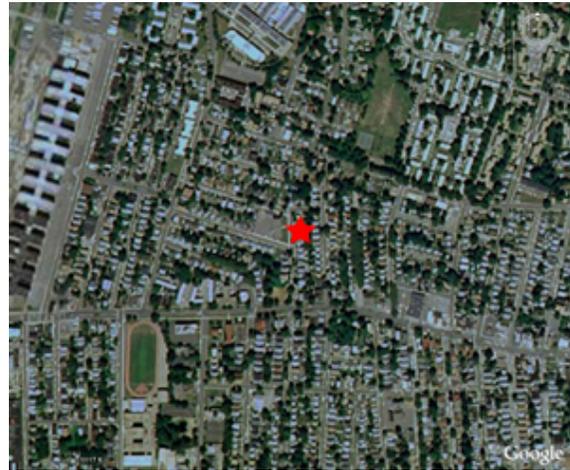
Below is a table with a list of all monitoring sites currently operated by the State of Connecticut. The following pages list detailed information for each monitoring site. The monitoring sites are listed in alphabetical order by site name.

Site Information Table

Town	Site	PM2.5 FRM	PM2.5 FRM colo	PM2.5 FDMS	PM2.5 BAM	PM2.5 Nephelometer	PM-Coarse FDMS	PM10 FRM (lo-vol)	PM10 FRM colo	PM10 BAM	STN	IMPROVE	Continuous OC/EC	Continuous Sulfate	BC/JVC	Ozone	SO2	CO	NOx	NOy	Lead (Pb)	VOCs (PAMS)	Carbonyls (PAMS)	Cont. PAH	Mercury	Dioxins	Wind Speed	Wind Direction	Temperature	Dew Point / Rel. Humidity	Rain Fall	Barometric Pressure	Solar Radiation		
Bridgeport	Edison School																X	T																	
Bridgeport	Roosevelt School	1/3		X	P			1/6										X	T										X						
Cornwall	Mohawk Mountain	1/3		P	X	X	P	1/3		P		X	X	X	X	X	T	PT	P	PT	P						X	X	X	X	X	X	X	X	
Danbury	Western Connecticut State University	1/3			X											X											X	X	X		X				
East Hartford	High Street	1/3			X																						X	X							
East Hartford	McAuliffe Park	1/1		X	P			1/6							X	X	T	X	T			X	X				X	X	X	X			X		
Greenwich	Point Park															X											X	X	X		X				
Groton	Fort Griswold				X											X												X							
Hartford	Brainard Field																									X									
Hartford	Morgan Street Courthouse																																		
Madison	Hammonasset State Park															X											X	X	X						
Mansfield	DOT																										X	X	X						
Middletown	Connecticut Valley Hospital															X											X	X	X		X	X			
New Haven	Agricultural Center	1/3																																	
New Haven	Criscuolo Park	1/1	1/6	X	X		X	1/6	1/3	1/6	X	X		X	X	X	T	T	X	T	X	X		X	X		X	X	X	X	X	X	X	X	
New Haven	State Street	1/3																																	
New Haven	Woodward Avenue Fire House	1/3																																	
Norwalk	Health Department	1/3						1/6																											
Norwich	Norwich Courthouse	1/1		1/3																															
Stafford	Sherpsit State Forest															X											X	X	X						
Stratford	Stratford Lighthouse															X												X							
Thomaston	Waste Water Treatment Plant	1/3		X									X	X	X			T	T	X				X			X	X	X	X		X		X	
Waterbury	Meadow & Bank Street	1/3	1/6		X			1/6	1/6																		X	X	X		X				
Westport	Sherwood Island State Park	1/1	1/3					1/6								X	T	T	X			X					X	X	X	X				X	

X=Existing, P =Planned, = Planned to Terminate, T=Trace, 1/1=Everyday sampling, 1/3=1-in-3 day sampling; 1/6=1-in-6 day sampling

Town – Site: **Bridgeport – Edison School**  
 County: **Fairfield** Latitude: **41.19500°**  
 Address: **115 Boston Terrace** Longitude: **-73.16350°**  
 AQS Site ID: **09-001-0012** Elevation: **34 m (110 ft)**  
 Spatial Scale: **Neighborhood** Year Established: **1983**  
 Statistical Area: **CSA (New York-Newark-Bridgeport)**



**Pollutant and Meteorological Parameters:**

PM2.5 FRM	PM2.5 FRM colo	PM2.5 FDMS	PM2.5 BAM	PM2.5 Nephelometer	PM-Coarse FDMS	PM10 FRM (lo-vol)	PM10 FRM colo	PM10 BAM	STN	IMPROVE	Continuous OC/EC	Continuous Sulfate	BC/UVC	Ozone	SO2	CO	NOx	NOy	Lead (Pb)	VOCs (PAMS)	Carbonyls (PAMS)	Cont. PAH	Mercury	Dioxins	Wind Speed	Wind Direction	Temperature	Dew Point	Rain Fall	Barometric Pressure	Solar Radiation
															X	T															

X=Existing, P =Planned, = Planned to Terminate, T=Trace, 1/1=Everyday sampling, 1/3=1-in-3 day; 1/6=1-in-6 day

**Site Description:** The Edison School site is a neighborhood-scale site located in southwestern Connecticut in the town of Bridgeport. This site is located 170 m to the north of Rte 1, 2.2 km to the north of I-95 and 2.7 km to the east of Rte 8. Residential neighborhoods are located in all directions of the site. This site meets all siting requirements and criteria and has been approved internally by the CTDEP and independently by EPA Region I.

**Monitoring Objectives:** The Bridgeport Edison School monitoring site objective is to collect SO<sub>2</sub> measurements for compliance purposes and potentially addresses EPA’s proposed source-oriented monitoring requirement for the proposed NAAQS revision.

**Planned changes for 2011:** Trace-SO<sub>2</sub> instrumentation is planned to be deployed at this site in 2010 to replace the existing non-trace SO<sub>2</sub> measurements.

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)**



**Pollutant and Meteorological Parameters:**

PM2.5 FRM	PM2.5 FRM colo	PM2.5 FDMS	PM2.5 BAM	PM2.5 Nephelometer	PM-Coarse FDMS	PM10 FRM (lo-vol)	PM10 FRM colo	PM10 BAM	STN	IMPROVE	Continuous OC/EC	Continuous Sulfate	BC/UVC	Ozone	SO2	CO	NOx	NOy	Lead (Pb)	VOCs (PAMS)	Carbonyls (PAMS)	Cont. PAH	Mercury	Dioxins	Wind Speed	Wind Direction	Temperature	Dew Point	Rain Fall	Barometric Pressure	Solar Radiation
1/3		X	P			1/6										XT											X				

X=Existing, P =Planned, = Planned to Terminate, T=Trace, 1/1=Everyday sampling, 1/3=1-in-3 day; 1/6=1-in-6 day

**Site Description:** The Roosevelt School site is a neighborhood-scale site located in southwestern Connecticut in the town of Bridgeport. This site is located 50 m to the north of I-95 and 200 m to the west of the I-95 and Rte 8 interchange. This coastal site is located in a schoolyard and residential neighborhoods are present in every direction of the site. This site meets all siting requirements and criteria and has been approved internally by the CTDEP and independently by EPA Region I.

**Monitoring Objectives:** The Bridgeport Roosevelt School monitoring site objectives include collecting PM<sub>2.5</sub> FRM measurements for compliance purposes and continuous PM<sub>2.5</sub> for AQI and forecasting purposes. CO measurements will continue to be conducted at this site per requirements of the CO limited maintenance plan (LMP).

**Planned changes for 2011:** Trace-CO instrumentation is planned to be deployed at this site in 2010 to replace the existing non-trace CO measurements. The continuous PM<sub>2.5</sub> Thermo FDMS will be replaced with a continuous PM<sub>2.5</sub> MetOne BAM in 2010.

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)**



**Pollutant and Meteorological Parameters:**

PM2.5 FRM	PM2.5 FRM colo	PM2.5 FDMS	PM2.5 BAM	PM2.5 Nephelometer	PM-Coarse FDMS	PM10 FRM (Io-vol)	PM10 FRM colo	PM10 BAM	STN	IMPROVE	Continuous OC/EC	Continuous Sulfate	BC/UVC	Ozone	SO2	CO	NOx	NOy	Lead (Pb)	VOCs (PAMS)	Carbonyls (PAMS)	Cont. PAH	Mercury	Dioxins	Wind Speed	Wind Direction	Temperature	Dew Point	Rain Fall	Barometric Pressure	Solar Radiation
1/3		P	X	X	P	1/3		P		X	X	X	X	X	T	PT	P	PT	P						X	X	X	X	X	X	X

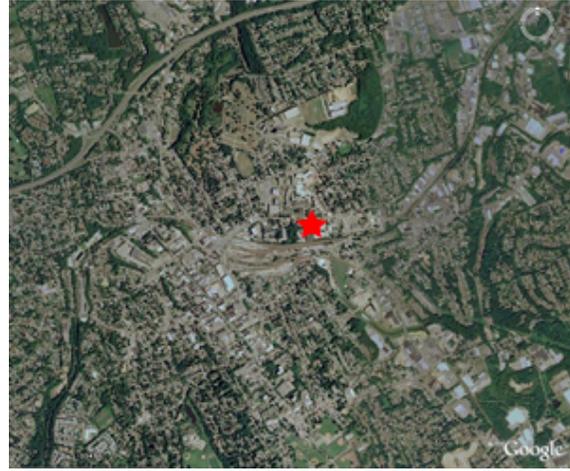
X=Existing, P =Planned, = Planned to Terminate, T=Trace, 1/1=Everyday sampling, 1/3=1-in-3 day; 1/6=1-in-6 day

**Site Description:** The Mohawk Mountain site is a regional-scale site located in northwestern Connecticut in the town of Cornwall. The site is located at the top of Mohawk Mountain with an elevation of 505 m (1656 ft) and is approximately 17 km to the east of the New York border and 25 km to the south of the Massachusetts border. This site meets all siting requirements and criteria and has been approved internally by the CTDEP and independently by EPA Region I.

**Monitoring Objectives:** The Cornwall Mohawk Mountain site was approved to be an NCore site on October 30, 2009 by EPA OAQPS. The primary monitoring site objective is meet NCore requirements. Other monitoring site objectives include collecting PM<sub>2.5</sub> FRM measurements for compliance purposes and continuous PM<sub>2.5</sub> for AQI reporting and forecasting purposes. PM<sub>2.5</sub> chemical speciation measurements are collected through the IMPROVE network. Ozone is measured at the Mohawk Mountain site for compliance assessment and AQI and forecasting purposes. Trace-SO<sub>2</sub> monitoring is being conducted to collect PM precursor gas measurements. Continuous organic carbon (OC) and elemental carbon (EC), sulfate, PM<sub>2.5</sub> measurements using a Nephelometer are collected as part of the Mid-Atlantic/Northeast Visibility Union (MANE-VU) Rural Aerosol Intensive Network (RAIN) to study the effects of regional haze and to provide data and information to develop the Regional Haze State Implementation Plan.

**Planned changes for 2011:** Trace-CO, trace-NOy, NOx, Lead, PM<sub>10</sub> FRM and continuous PM<sub>10-2.5</sub> and PM<sub>2.5</sub> are planned to be deployed to the Cornwall Mohawk Mountain site in 2010 as part of NCore siting requirements.

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)**



**Pollutant and Meteorological Parameters:**

PM2.5 FRM	PM2.5 FRM colo	PM2.5 FDMS	PM2.5 BAM	PM2.5 Nephelometer	PM-Coarse FDMS	PM10 FRM (Io-vol)	PM10 FRM colo	PM10 BAM	STN	IMPROVE	Continuous OC/EC	Continuous Sulfate	BC/UVC	Ozone	SO2	CO	NOx	NOy	Lead (Pb)	VOCs (PAMS)	Carbonyls (PAMS)	Cont. PAH	Mercury	Dioxins	Wind Speed	Wind Direction	Temperature	Dew Point	Rain Fall	Barometric Pressure	Solar Radiation
1/3			X											X											X	X	X		X		

X=Existing, P =Planned, ■ = Planned to Terminate, T=Trace, 1/1=Everyday sampling, 1/3=1-in-3 day; 1/6=1-in-6 day

**Site Description:** The Western Connecticut State University (WCSU) site is a neighborhood site located in western Connecticut in the town of Danbury. This site is located on the top level of a parking garage on the WCSU campus. This site is located approximately 140 m to the southeast of I-84 on White Street. Residential neighborhoods are located in all directions of the site. This site meets all siting requirements and criteria and has been approved internally by the CTDEP and independently by EPA Region I.

**Monitoring Objectives:** The Danbury WCSU monitoring site objectives include collecting PM<sub>2.5</sub> FRM measurements for compliance purposes and continuous PM<sub>2.5</sub> for AQI and forecasting purposes. Ozone is measured at the Danbury site for compliance assessment and AQI and forecasting purposes.

**Planned changes for 2011:** None

Town – Site: **East Hartford – High Street**  
 County: **Hartford** Latitude: **41.74259°**  
 Address: **High Street** Longitude: **-72.63433°**  
 AQS Site ID: **09-003-2006** Elevation: **12 m (40 ft)**  
 Spatial Scale: **Neighborhood** Year Established: **1989**  
 Statistical Area: **CSA (Hartford-West Hartford-Willimantic)**



**Pollutant and Meteorological Parameters:**

PM2.5 FRM	PM2.5 FRM colo	PM2.5 FDMS	PM2.5 BAM	PM2.5 Nephelometer	PM-Coarse FDMS	PM10 FRM (Io-vol)	PM10 FRM colo	PM10 BAM	STN	IMPROVE	Continuous OC/EC	Continuous Sulfate	BC/UVC	Ozone	SO2	CO	NOx	NOy	Lead (Pb)	VOCs (PAMS)	Carbonyls (PAMS)	Cont. PAH	Mercury	Dioxins	Wind Speed	Wind Direction	Temperature	Dew Point	Rain Fall	Barometric Pressure	Solar Radiation
1/3			X																						X	X					

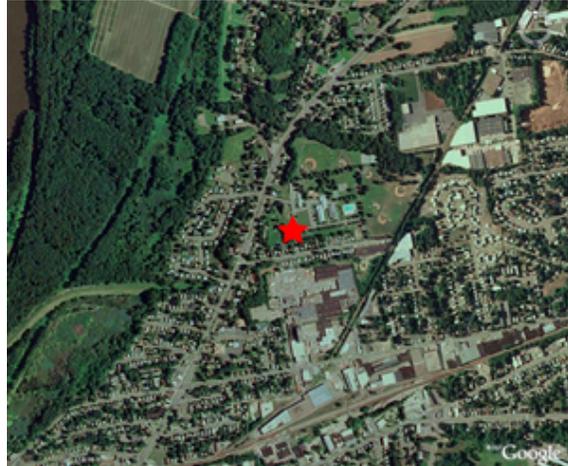
X=Existing, P =Planned, ■ = Planned to Terminate, T=Trace, 1/1=Everyday sampling, 1/3=1-in-3 day; 1/6=1-in-6 day

**Site Description:** The High Street site is neighborhood-scale site located in central Connecticut in the town of East Hartford. The site is located approximately 70 m to the northeast of Rte 2 and 20 m to the west of High Street. This site is located 4.2 km to the southeast of the city of Hartford. Residential neighborhoods are located in all directions of this site. This site meets all siting requirements and criteria and has been approved internally by the CTDEP and independently by EPA Region I.

**Monitoring Objectives:** The East Hartford High Street monitoring site objectives include collecting PM<sub>2.5</sub> FRM measurements for compliance purposes and continuous PM<sub>2.5</sub> for AQI and forecasting purposes.

**Planned changes for 2011:** None

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)**



**Pollutant and Meteorological Parameters:**

PM2.5 FRM	PM2.5 FRM colo	PM2.5 FDMS	PM2.5 BAM	PM2.5 Nephelometer	PM-Coarse FDMS	PM10 FRM (Io-vol)	PM10 FRM colo	PM10 BAM	STN	IMPROVE	Continuous OC/EC	Continuous Sulfate	BC/LVC	Ozone	SO2	CO	NOx	NOy	Lead (Pb)	VOCs (PAMS)	Carbonyls (PAMS)	Cont. PAH	Mercury	Dioxins	Wind Speed	Wind Direction	Temperature	Dew Point	Rain Fall	Barometric Pressure	Solar Radiation
1/1		X	P			1/6							X	X	T	X	X			X	X				X	X	X	X			X

X=Existing, P=Planned, = Planned to Terminate, T=Trace, 1/1=Everyday sampling, 1/3=1-in-3 day; 1/6=1-in-6 day

**Site Description:** The McAuliffe Park site is neighborhood-scale site located in central Connecticut in the town of East Hartford. The site is located approximately 120 m to the east of Rte 5, 2.0 km to the east of I-91 and 2.5 km to the south of I-291. This site is located 3.7 km to the northeast of the city of Hartford. Residential neighborhoods are located in all directions of this site. This site meets all siting requirements and criteria and has been approved internally by the CTDEP and independently by EPA Region I.

**Monitoring Objectives:** The East Hartford McAuliffe Park monitoring site objectives include collecting PM<sub>2.5</sub> FRM measurements for compliance purposes and continuous PM<sub>2.5</sub> for AQI and forecasting purposes. A PM<sub>10</sub> FRM is operated for compliance purposes, as well as to gather PM<sub>10-2.5</sub> measurements. Ozone is measured at the McAuliffe Park site for compliance assessment and AQI and forecasting purposes and PAMS and NO<sub>x</sub> monitoring is conducted to obtain measurements of ozone precursors. CO measurements are being collected to complement the PAMS measurements.

**Planned changes for 2011:** Trace-CO instrumentation is planned to be deployed at this site in 2010 to replace the existing non-trace measurements. The continuous PM<sub>2.5</sub> Thermo FDMS will be replaced with a continuous PM<sub>2.5</sub> MetOne BAM in 2010.

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)**



**Pollutant and Meteorological Parameters:**

PM2.5 FRM	PM2.5 FRM colo	PM2.5 FDMS	PM2.5 BAM	PM2.5 Nephelometer	PM-Coarse FDMS	PM10 FRM (lo-vol)	PM10 FRM colo	PM10 BAM	STN	IMPROVE	Continuous OC/EC	Continuous Sulfate	BC/UVC	Ozone	SO2	CO	NOx	NOy	Lead (Pb)	VOCs (PAMS)	Carbonyls (PAMS)	Cont. PAH	Mercury	Dioxins	Wind Speed	Wind Direction	Temperature	Dew Point	Rain Fall	Barometric Pressure	Solar Radiation
														X											X	X	X		X		

X=Existing, P =Planned, ■ = Planned to Terminate, T=Trace, 1/1=Everyday sampling, 1/3=1-in-3 day; 1/6=1-in-6 day

**Site Description:** The Greenwich Point Park site is an urban-scale site located in southwestern Connecticut on the Long Island Sound in Greenwich. This is a coastal site located approximately 3.0 km to the southeast and 5.0 km to the northeast of the New York border. This site meets all siting requirements and criteria and has been approved internally by the CTDEP and independently by EPA Region I.

**Monitoring Objectives:** The Greenwich Point Park monitoring site objectives include collecting ozone measurements for compliance assessment and AQI and forecasting purposes.

**Planned changes for 2011:** None

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)**



**Pollutant and Meteorological Parameters:**

PM2.5 FRM	PM2.5 FRM colo	PM2.5 FDMS	PM2.5 BAM	PM2.5 Nephelometer	PM-Coarse FDMS	PM10 FRM (10-vol)	PM10 FRM colo	PM10 BAM	STN	IMPROVE	Continuous OC/EC	Continuous Sulfate	BC/UVC	Ozone	SO2	CO	NOx	NOy	Lead (Pb)	VOCs (PAMS)	Carbonyls (PAMS)	Cont. PAH	Mercury	Dioxins	Wind Speed	Wind Direction	Temperature	Dew Point	Rain Fall	Barometric Pressure	Solar Radiation
			X											X													X				

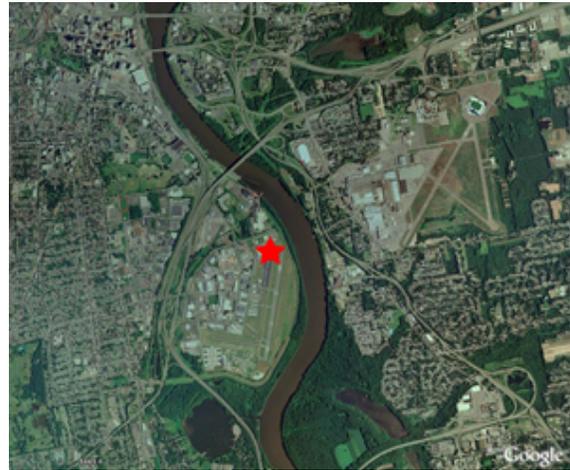
X=Existing, P =Planned, ■ = Planned to Terminate, T=Trace, 1/1=Everyday sampling, 1/3=1-in-3 day; 1/6=1-in-6 day

**Site Description:** The Fort Griswold site is a neighborhood-scale site located in southeastern Connecticut in the town of Groton. This site is located approximately 1.1 km to the south of I-95 and 0.5 km to the east of the New London Harbor. Residential neighborhoods are located in all directions of this site. This site meets all siting requirements and criteria and has been approved internally by the CTDEP and independently by EPA Region I.

**Monitoring Objectives:** The Groton Fort Griswold monitoring site objectives include collecting PM<sub>2.5</sub> FRM measurements for compliance purposes and continuous PM<sub>2.5</sub> for AQI and forecasting purposes. Ozone is measured at the Fort Griswold site for compliance assessment and AQI and forecasting purposes.

**Planned changes for 2011:** Initially, it was planned to establish PM<sub>2.5</sub> 1-in-3 day FRM, wind speed, wind direction and rainfall at the Groton Fort Griswold site; however, due to the inability to meet siting criteria, alternate siting locations are being considered.

Town – Site: **Hartford – Brainard Field**  
 County: **Hartford** Latitude: **41.74551°**  
 Address: **Maxim Road** Longitude: **-72.64917°**  
 AQS Site ID: **Not assigned** Elevation: **12 m (39 ft)**  
 Spatial Scale: **Neighborhood** Year Established: **2003**  
 Statistical Area: **CSA (Hartford-West Hartford-Willimantic)**



**Pollutant and Meteorological Parameters:**

PM2.5 FRM	PM2.5 FRM colo	PM2.5 FDMS	PM2.5 BAM	PM2.5 Nephelometer	PM-Coarse FDMS	PM10 FRM (Io-vol)	PM10 FRM colo	PM10 BAM	STN	IMPROVE	Continuous OC/EC	Continuous Sulfate	BC/UVC	Ozone	SO2	CO	NOx	NOy	Lead (Pb)	VOCs (PAMS)	Carbonyls (PAMS)	Cont. PAH	Mercury	Dioxins	Wind Speed	Wind Direction	Temperature	Dew Point	Rain Fall	Barometric Pressure	Solar Radiation
																							X								

X=Existing, P =Planned, ■ = Planned to Terminate, T=Trace, 1/1=Everyday sampling, 1/3=1-in-3 day; 1/6=1-in-6 day

**Site Description:** The Brainard Field site is a neighborhood-scale site located in central Connecticut in the eastern part of the city of Hartford. This site is located on the Connecticut River approximately 1.0 km to the east and south of I-91 and the Wilbur Cross Highway. Residential neighborhoods are located in all directions of this site. This site meets all siting requirements and criteria and has been approved internally by the CTDEP and independently by EPA Region I.

**Monitoring Objectives:** The Hartford Brainard Field monitoring site objective is to collect dioxin measurements for trends analysis. The CTDEP performs audits on the dioxin samplers, but the sample collection and analysis is performed by an outside contractor under the supervision of the CTDEP.

**Planned changes for 2011:** Five-year vendor contract ends February 2011. It will be determined whether to continue sampling for dioxin at this site based on the level of funding available.

Town – Site: **Hartford – Morgan Street Courthouse**  
 County: **Hartford** Latitude: **41.76923°**  
 Address: **155 Morgan Street** Longitude: **-72.67033°**  
 AQS Site ID: **09-003-0017** Elevation: **8 m (25 ft)**  
 Spatial Scale: **Micro** Year Established: **1984**  
 Statistical Area: **CSA (Hartford-West Hartford-Willimantic)**



**Pollutant and Meteorological Parameters:**

PM2.5 FRM	PM2.5 FRM colo	PM2.5 FDMS	PM2.5 BAM	PM2.5 Nephelometer	PM-Coarse FDMS	PM10 FRM (Io-vol)	PM10 FRM colo	PM10 BAM	STN	IMPROVE	Continuous OC/EC	Continuous Sulfate	BC/UVC	Ozone	SO2	CO	NOx	NOy	Lead (Pb)	VOCs (PAMS)	Carbonyls (PAMS)	Cont. PAH	Mercury	Dioxins	Wind Speed	Wind Direction	Temperature	Dew Point	Rain Fall	Barometric Pressure	Solar Radiation
																X	T														

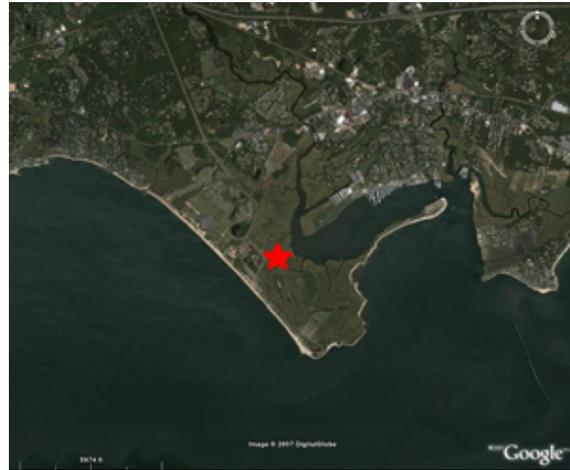
X=Existing, P =Planned, ■ = Planned to Terminate, T=Trace, 1/1=Everyday sampling, 1/3=1-in-3 day; 1/6=1-in-6 day

**Site Description:** The Morgan Street Courthouse is a micro-scale site located in central Connecticut in the city of Hartford. This site is located at 155 Morgan Street directly adjacent and below I-84 and is approximately 0.4 km from the I-84 and I-91 interchange. This site meets all siting requirements and criteria and has been approved internally by the CTDEP and independently by EPA Region I.

**Monitoring Objectives:** The Morgan Street Courthouse monitoring site objective is to collect CO measurements for compliance purposes. This site is a maximum impact site for CO. This site registers the highest CO measurements in the CTDEP ambient air monitoring network; however, the levels are still well below the NAAQS. This site will likely continue to be operated into the future as a maximum impact site and for historic trends.

**Planned changes for 2011:** Trace-CO instrumentation is planned to be deployed at this site in 2010 to replace the existing non-trace CO measurements.

Town – Site: **Madison – Hammonasset State Park**  
 County: **New Haven** Latitude: **41.25984°**  
 Address: **Hammonasset SP** Longitude: **-72.55018°**  
 AQS Site ID: **09-009-3002** Elevation: **3 m (10 ft)**  
 Spatial Scale: **Regional** Year Established: **1981**  
 Statistical Area: **CSA (New York-Newark-Bridgeport)**



**Pollutant and Meteorological Parameters:**

PM2.5 FRM	PM2.5 FRM colo	PM2.5 FDMS	PM2.5 BAM	PM2.5 Nephelometer	PM-Coarse FDMS	PM10 FRM (lo-vol)	PM10 FRM colo	PM10 BAM	STN	IMPROVE	Continuous OC/EC	Continuous Sulfate	BC/UVC	Ozone	SO2	CO	NOx	NOy	Lead (Pb)	VOCs (PAMS)	Carbonyls (PAMS)	Cont. PAH	Mercury	Dioxins	Wind Speed	Wind Direction	Temperature	Dew Point	Rain Fall	Barometric Pressure	Solar Radiation
														X											X	X	X				

X=Existing, P =Planned, ■ = Planned to Terminate, T=Trace, 1/1=Everyday sampling, 1/3=1-in-3 day; 1/6=1-in-6 day

**Site Description:** The Hammonasset State Park site is a regional-scale site located in central coastal Connecticut in the town of Madison. This site is located approximately 1.5 km to the south of Rte 1 and 3.0 km to the south of I-95 on the Long Island Sound. Residential neighborhoods are located primarily to the northeast, north and northwest of the site. This site meets all siting requirements and criteria and has been approved internally by the CTDEP and independently by EPA Region I.

**Monitoring Objectives:** The Madison Hammonasset State Park monitoring site objective is to collect ozone measurements for compliance assessment and AQI and forecasting purposes.

**Planned changes for 2011:** None

Town – Site: **Mansfield – DOT**  
 County: **Tolland** Latitude: **41.73140°**  
 Address: **N. Frontage Road** Longitude: **-72.21163°**  
 AQS Site ID: **09-013-0003** Elevation: **76 m (253 ft)**  
 Spatial Scale: **Neighborhood** Year Established: **2006**  
 Statistical Area: **CSA (Hartford-West Hartford-Willimantic)**



**Pollutant and Meteorological Parameters:**

PM2.5 FRM	PM2.5 FRM colo	PM2.5 FDMS	PM2.5 BAM	PM2.5 Nephelometer	PM-Coarse FDMS	PM10 FRM (lo-vol)	PM10 FRM colo	PM10 BAM	STN	IMPROVE	Continuous OC/EC	Continuous Sulfate	BC/UVC	Ozone	SO2	CO	NOx	NOy	Lead (Pb)	VOCs (PAMS)	Carbonyls (PAMS)	Cont. PAH	Mercury	Dioxins	Wind Speed	Wind Direction	Temperature	Dew Point	Rain Fall	Barometric Pressure	Solar Radiation
																								X	X	X					

X=Existing, P =Planned, ■ = Planned to Terminate, T=Trace, 1/1=Everyday sampling, 1/3=1-in-3 day; 1/6=1-in-6 day

**Site Description:** The Mansfield DOT site is a neighborhood-scale site located in eastern Connecticut to the north of downtown Mansfield. This site is located on North Frontage Road and is 60 m to the north of Rte 6. Residential neighborhoods are located in all directions of this site with the downtown located to the south. This site meets all siting requirements and criteria and has been approved internally by the CTDEP and independently by EPA Region I.

**Monitoring Objectives:** The Mansfield DOT site monitoring objective is to collect meteorological data for forecasting and modeling purposes.

**Planned changes for 2011:** None

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)**



**Pollutant and Meteorological Parameters:**

PM2.5 FRM	PM2.5 FRM colo	PM2.5 FDMS	PM2.5 BAM	PM2.5 Nephelometer	PM-Coarse FDMS	PM10 FRM (lo-vol)	PM10 FRM colo	PM10 BAM	STN	IMPROVE	Continuous OC/EC	Continuous Sulfate	BC/UVC	Ozone	SO2	CO	NOx	NOy	Lead (Pb)	VOCs (PAMS)	Carbonyls (PAMS)	Cont. PAH	Mercury	Dioxins	Wind Speed	Wind Direction	Temperature	Dew Point	Rain Fall	Barometric Pressure	Solar Radiation
														X											X	X	X		X	X	

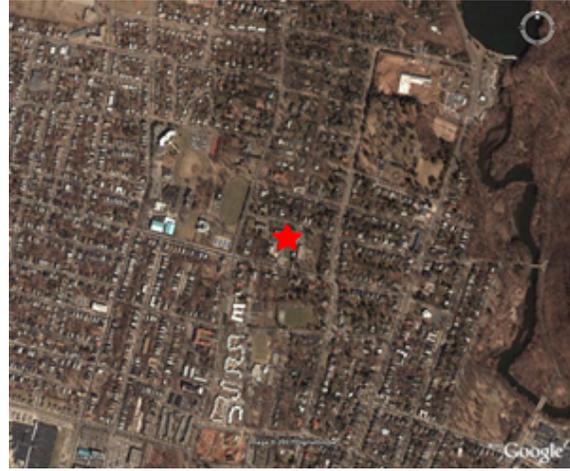
X=Existing, P =Planned, ■ = Planned to Terminate, T=Trace, 1/1=Everyday sampling, 1/3=1-in-3 day; 1/6=1-in-6 day

**Site Description:** The Middletown Central Valley Hospital site is a neighborhood-scale site located in central Connecticut. This site is located approximately 0.2 km to the east of Rte 9. Residential neighborhoods are located to the west, north and south of this site. This site meets all siting requirements and criteria with the exception of the height requirement. A height requirement waiver has been approved and granted by EPA Region I and EPA Headquarters. This site has been approved internally by the CTDEP and independently by EPA Region I.

**Monitoring Objectives:** The Middletown Central Valley Hospital monitoring site objective is to collect ozone measurements for compliance assessment and AQI and forecasting purposes.

**Planned changes for 2011:** None

Town – Site: **New Haven – Agricultural Center**  
 County: **New Haven** Latitude: **41.33145°**  
 Address: **Huntington Street** Longitude: **-72.91980°**  
 AQS Site ID: **09-009-2008** Elevation: **40 m (131 ft)**  
 Spatial Scale: **Neighborhood** Year Established: **2003**  
 Statistical Area: **CSA (New York-Newark-Bridgeport)**



**Pollutant and Meteorological Parameters:**

PM2.5 FRM	PM2.5 FRM colo	PM2.5 FDMS	PM2.5 BAM	PM2.5 Nephelometer	PM-Coarse FDMS	PM10 FRM (Io-vol)	PM10 FRM colo	PM10 BAM	STN	IMPROVE	Continuous OC/EC	Continuous Sulfate	BC/UVC	Ozone	SO2	CO	NOx	NOy	Lead (Pb)	VOCs (PAMS)	Carbonyls (PAMS)	Cont. PAH	Mercury	Dioxins	Wind Speed	Wind Direction	Temperature	Dew Point	Rain Fall	Barometric Pressure	Solar Radiation
1/3																															

X=Existing, **P** =Planned, **■** = Planned to Terminate, T=Trace, 1/1=Everyday sampling, 1/3=1-in-3 day; 1/6=1-in-6 day

**Site Description:** The Agricultural Center site is a neighborhood-scale site located on the northern side of the city of New Haven. The site is approximately 2.0 km to the northwest of the I-91. The site is approximately 3.5 km to the north of the I-91 and I-95 interchange. Residential neighborhoods are located in all directions of the site. This site meets all siting requirements and criteria and has been approved internally by the CTDEP and independently by EPA Region I.

**Monitoring Objectives:** The New Haven Agricultural Center monitoring site objective is to collect PM<sub>2.5</sub> FRM measurements for compliance purposes.

**Planned changes for 2011:** This site is proposed to be officially terminated at the end of 2010. This site was initially part of a special study to demonstrate that the increased levels of PM<sub>2.5</sub> at the Stiles Street site were unique to Stiles Street. That special study was completed several years ago and currently this site serves little purpose in our network. The PM<sub>2.5</sub> daily design value (2007-2009) at the Agricultural Center site is 27 µg/m<sup>3</sup>. This compares to the New Haven Crisculo Park and State Street sites both at 31 µg/m<sup>3</sup>.

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)**



**Pollutant and Meteorological Parameters:**

PM2.5 FRM	PM2.5 FRM colo	PM2.5 FDMS	PM2.5 BAM	PM2.5 Nephelometer	PM-Coarse FDMS	PM10 FRM (1o-vol)	PM10 FRM colo	PM10 BAM	STN	IMPROVE	Continuous OC/EC	Continuous Sulfate	BC/UVC	Ozone	SO2	CO	NOx	NOy	Lead (Pb)	VOCs (PAMS)	Carbonyls (PAMS)	Cont. PAH	Mercury	Dioxins	Wind Speed	Wind Direction	Temperature	Dew Point	Rain Fall	Barometric Pressure	Solar Radiation
1/1	1/6	X	X		X	1/6 1/3	1/6	X	X		X	X	X	X	T	T	X	T	X	X		X	X		X	X	X	X	X	X	X

X=Existing, **P** =Planned, **■** = Planned to Terminate, T=Trace, 1/1=Everyday sampling, 1/3=1-in-3 day; 1/6=1-in-6 day

**Site Description:** The Criscuolo Park site is a neighborhood-scale site located on the western side of the city of New Haven. The site is approximately 0.25 km to the north of the I-95 Quinnipiac River Bridge. The site is approximately 1.0 km to the east of the I-91 and I-95 interchange. Bulk gasoline transfer stations are located 0.3 to 2.0 km to the south of the site. Residential neighborhoods are located to the west, north and east of the site. This site meets all siting requirements and criteria and has been approved internally by the CTDEP and independently by EPA Region I.

**Monitoring Objectives:** The New Haven Criscuolo Park site was approved to be an NCore site on October 30, 2009 by EPA OAQPS. The primary monitoring site objective is meet NCore requirements. Other monitoring site objectives include collecting PM<sub>2.5</sub> FRM measurements for compliance purposes and continuous PM<sub>2.5</sub> for AQI reporting and forecasting purposes. A PM<sub>2.5</sub> collocated FRM sampler is operated at this site to gather precision measurements. PM<sub>2.5</sub> chemical speciation measurements are collected through the EPA Speciation Trends Network (STN). A PM<sub>10</sub> FRM is operated for compliance purposes, as well as to gather PM<sub>10-2.5</sub> measurements and obtain lead measurements to determine compliance with the newly established lead NAAQS. A PM<sub>10</sub> collocated FRM sampler is operated at this site to gather precision measurements. Ozone is measured at the Criscuolo Park site for compliance assessment and AQI and forecasting purposes and PAMS and NO<sub>x</sub> monitoring is conducted to obtain measurements of ozone precursors. Trace-CO measurements are being collected to complement the PAMS measurements. Trace-SO<sub>2</sub> monitoring is being conducted to collect PM precursor gas measurements.

**Planned changes for 2011:** PM<sub>10</sub> FRM sampling frequency will be increased from 1-in-6 day sampling to 1-in-3 day sampling to meet NCore requirements. Mercury sampling is proposed to be discontinued as of January 1, 2011. Resources have been redirected to higher priority tasks. Mercury sampling may be reestablished in the future as resources allow and the need arises.

Town – Site: **New Haven – State Street**  
 County: **New Haven** Latitude: **41.31078°**  
 Address: **715 State Street** Longitude: **-72.91688°**  
 AQS Site ID: **09-009-1123** Elevation: **9 m (30 ft)**  
 Spatial Scale: **Neighborhood** Year Established: **1975**  
 Statistical Area: **CSA (New York-Newark-Bridgeport)**



**Pollutant and Meteorological Parameters:**

PM2.5 FRM	PM2.5 FRM colo	PM2.5 FDMS	PM2.5 BAM	PM2.5 Nephelometer	PM-Coarse FDMS	PM10 FRM (Io-vol)	PM10 FRM colo	PM10 BAM	STN	IMPROVE	Continuous OC/EC	Continuous Sulfate	BC/UVC	Ozone	SO2	CO	NOx	NOy	Lead (Pb)	VOCs (PAMS)	Carbonyls (PAMS)	Cont. PAH	Mercury	Dioxins	Wind Speed	Wind Direction	Temperature	Dew Point	Rain Fall	Barometric Pressure	Solar Radiation
1/3																															

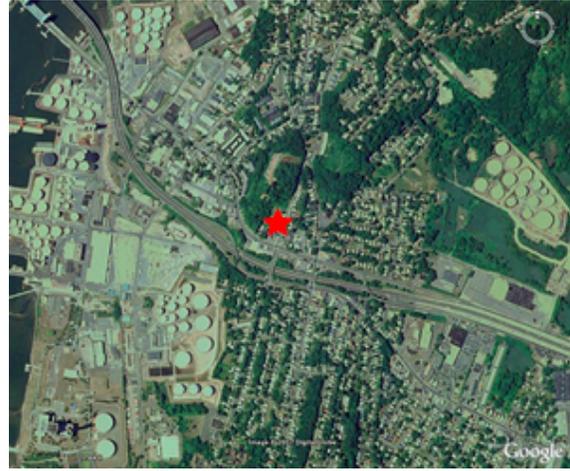
X=Existing, P =Planned, ■ = Planned to Terminate, T=Trace, 1/1=Everyday sampling, 1/3=1-in-3 day; 1/6=1-in-6 day

**Site Description:** The State Street site is a neighborhood-scale site located in the center of New Haven near the State Street and Trumbull Street intersection. The site is located 0.3 km to the west of I-91 and approximately 1.0 km to the northwest of the I-91 and I-95 interchange. Residential neighborhoods are located to the east, west, north and south of the site. This site meets all siting requirements and criteria and has been approved internally by the CTDEP and independently by EPA Region I.

**Monitoring Objectives:** The New Haven State Street monitoring site objective is to collect PM<sub>2.5</sub> FRM measurements for compliance purposes.

**Planned changes for 2011:** None

Town – Site: **New Haven – Woodward Avenue Fire House**  
 County: **New Haven** Latitude: **41.29122°**  
 Address: **Woodward Avenue** Longitude: **-72.89406°**  
 AQS Site ID: **09-009-0026** Elevation: **21 m (70 ft)**  
 Spatial Scale: **Neighborhood** Year Established: **2003**  
 Statistical Area: **CSA (New York-Newark-Bridgeport)**



**Pollutant and Meteorological Parameters:**

PM2.5 FRM	PM2.5 FRM colo	PM2.5 FDMS	PM2.5 BAM	PM2.5 Nephelometer	PM-Coarse FDMS	PM10 FRM (Io-vol)	PM10 FRM colo	PM10 BAM	STN	IMPROVE	Continuous OC/EC	Continuous Sulfate	BC/UVC	Ozone	SO2	CO	NOx	NOy	Lead (Pb)	VOCs (PAMS)	Carbonyls (PAMS)	Cont. PAH	Mercury	Dioxins	Wind Speed	Wind Direction	Temperature	Dew Point	Rain Fall	Barometric Pressure	Solar Radiation
1/3																															

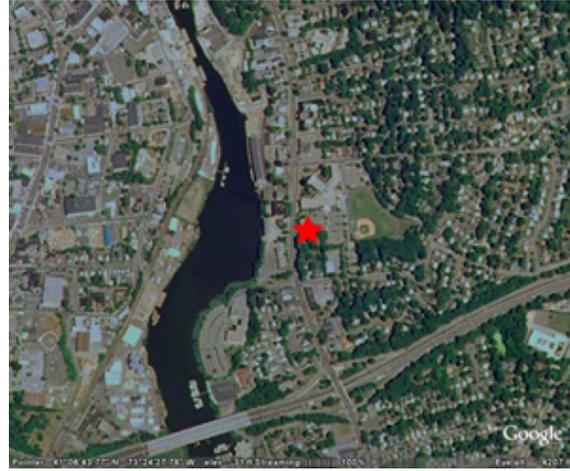
X=Existing, **P** =Planned, **■** = Planned to Terminate, T=Trace, 1/1=Everyday sampling, 1/3=1-in-3 day; 1/6=1-in-6 day

**Site Description:** The Woodward Avenue Fire House site is a neighborhood-scale site in the city of New Haven. This site is approximately 0.2 km to the north, northeast and east of I-95 and 1.0 km to the southeast of the I-95 Quinnipiac River Bridge. The site is approximately 2.0 km to the southeast of the I-91 and I-95 interchange. Bulk gasoline transfer stations are located 0.75 to 1.5 km to the west and northwest of the site. Residential neighborhoods are located to the east, north and south of the site. This site meets all siting requirements and criteria and has been approved internally by the CTDEP and independently by EPA Region I.

**Monitoring Objectives:** The New Haven Woodward Avenue Fire House monitoring site objective is to collect PM<sub>2.5</sub> FRM measurements for compliance purposes.

**Planned changes for 2011:** This site is proposed to be officially terminated at the end of 2010. This site was initially part of a special study to demonstrate that the increased levels of PM<sub>2.5</sub> at the Stiles Street site were unique to Stiles Street. That special study was completed several years ago and currently this site serves little purpose in our network. The PM<sub>2.5</sub> daily design value (2007-2009) at the Woodward Firehouse site is 30 µg/m<sup>3</sup>. This compares to the New Haven Criscuolo Park and State Street sites both at 31 µg/m<sup>3</sup>.

Town – Site: **Norwalk – Health Department**  
 County: **Fairfield** Latitude: **41.11248°**  
 Address: **137 East Avenue** Longitude: **-73.40737°**  
 AQS Site ID: **09-001-3005** Elevation: **15 m (50 ft)**  
 Spatial Scale: **Neighborhood** Year Established: **1969**  
 Statistical Area: **CSA (New York-Newark-Bridgeport)**



**Pollutant and Meteorological Parameters:**

PM2.5 FRM	PM2.5 FRM colo	PM2.5 FDMS	PM2.5 BAM	PM2.5 Nephelometer	PM-Coarse FDMS	PM10 FRM (Io-vol)	PM10 FRM colo	PM10 BAM	STN	IMPROVE	Continuous OC/EC	Continuous Sulfate	BC/UVC	Ozone	SO2	CO	NOx	NOy	Lead (Pb)	VOCs (PAMS)	Carbonyls (PAMS)	Cont. PAH	Mercury	Dioxins	Wind Speed	Wind Direction	Temperature	Dew Point	Rain Fall	Barometric Pressure	Solar Radiation
1/3						1/6																									

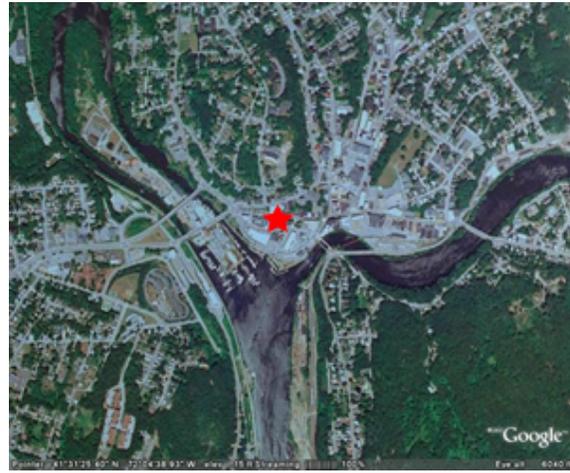
X=Existing, **P** =Planned, **■** = Planned to Terminate, T=Trace, 1/1=Everyday sampling, 1/3=1-in-3 day; 1/6=1-in-6 day

**Site Description:** The Norwalk Health Department site is a neighborhood-scale site located in southwestern Connecticut in the town of Norwalk. This is a coastal site located approximately 1.0 km to the north and northwest of I-95. The site is approximately 23 km to the northeast of the New York border. Residential neighborhoods are located in all directions of the site. This site meets all siting requirements and criteria and has been approved internally by the CTDEP and independently by EPA Region I.

**Monitoring Objectives:** The Norwalk Health Department monitoring site objectives include collecting PM<sub>2.5</sub> FRM measurements for compliance purposes. A PM<sub>10</sub> FRM is operated for compliance purposes, as well as to gather PM<sub>10-2.5</sub> measurements.

**Planned changes for 2011:** PM<sub>10</sub> FRM sampling is proposed to be discontinued as of January 1, 2011. PM<sub>10</sub> sampling was initially established at this site in the anticipation of a PM-coarse standard in 2006. To date, a PM-coarse standard has not been established nor will lead sampling be conducted at this site, therefore there is limited value added to the network to continue PM<sub>10</sub> FRM sampling at this site.

Town – Site: **Norwich – Courthouse**  
 County: **New London** Latitude: **41.52407°**  
 Address: **22 Courthouse Sq.** Longitude: **-72.07676°**  
 AQS Site ID: **09-011-3002** Elevation: **12 m (39 ft)**  
 Spatial Scale: **Neighborhood** Year Established: **1984**  
 Statistical Area: **MSA (Norwich-New London)**



**Pollutant and Meteorological Parameters:**

PM2.5 FRM	PM2.5 FRM colo	PM2.5 FDMS	PM2.5 BAM	PM2.5 Nephelometer	PM-Coarse FDMS	PM10 FRM (Io-vol)	PM10 FRM colo	PM10 BAM	STN	IMPROVE	Continuous OC/EC	Continuous Sulfate	BC/UVC	Ozone	SO2	CO	NOx	NOy	Lead (Pb)	VOCs (PAMS)	Carbonyls (PAMS)	Cont. PAH	Mercury	Dioxins	Wind Speed	Wind Direction	Temperature	Dew Point	Rain Fall	Barometric Pressure	Solar Radiation
1/1																															
1/3																															

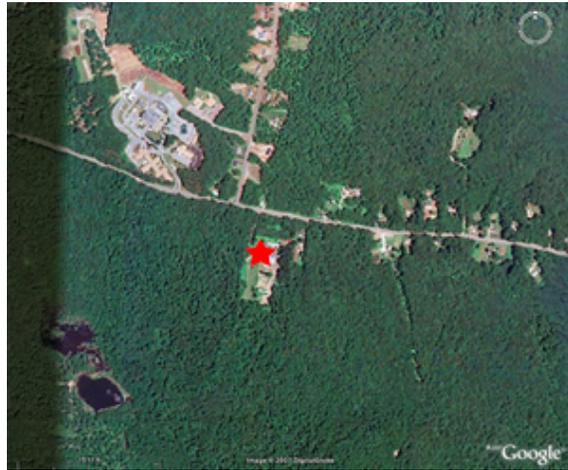
X=Existing, P =Planned, ■ = Planned to Terminate, T=Trace, 1/1=Everyday sampling, 1/3=1-in-3 day; 1/6=1-in-6 day

**Site Description:** The Norwich Courthouse site is a neighborhood-scale site located in southeastern Connecticut in the center of the town of Norwich. The site is located in downtown Norwich between Water Street and Cliff Street and is approximately 3.5 km to the east of I-395. Residential neighborhoods are located to the east, west, north and south of the site. This site meets all siting requirements and criteria and has been approved internally by the CTDEP and independently by EPA Region I.

**Monitoring Objectives:** The Norwich Courthouse monitoring site objectives include collecting PM<sub>2.5</sub> FRM measurements for compliance purposes. Given that the Norwich daily PM<sub>2.5</sub> design value was within 5% of the new daily PM<sub>2.5</sub> NAAQS of 35 µg/m<sup>3</sup>, everyday PM<sub>2.5</sub> FRM sampling started on January 1, 2007, and has been conducted for a minimum of three years and is now in the fourth year of everyday sampling.

**Planned changes for 2011:** Everyday PM<sub>2.5</sub> sampling is proposed to be discontinued as of January 1, 2011 with 1-in-3 day sampling being established. The 2006 regulations required everyday sampling to be conducted at all sites that were within 5% of the daily PM<sub>2.5</sub> NAAQS of 35 µg/m<sup>3</sup> for a minimum of three years. The current daily design value for this site based on 2007-2009 data is 26 µg/m<sup>3</sup>, well below the current NAAQS. Sampling through 2010 will provide four continuous years of everyday PM<sub>2.5</sub> FRM sampling (2007-2010).

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: **CSA (Hartford-West Hartford-Willimantic)**



**Pollutant and Meteorological Parameters:**

PM2.5 FRM	PM2.5 FRM colo	PM2.5 FDMS	PM2.5 BAM	PM2.5 Nephelometer	PM-Coarse FDMS	PM10 FRM (lo-vol)	PM10 FRM colo	PM10 BAM	STN	IMPROVE	Continuous OC/EC	Continuous Sulfate	BC/UVC	Ozone	SO2	CO	NOx	NOy	Lead (Pb)	VOCs (PAMS)	Carbonyls (PAMS)	Cont. PAH	Mercury	Dioxins	Wind Speed	Wind Direction	Temperature	Dew Point	Rain Fall	Barometric Pressure	Solar Radiation
														X											X	X	X				

X=Existing, P =Planned, ■ = Planned to Terminate, T=Trace, 1/1=Everyday sampling, 1/3=1-in-3 day; 1/6=1-in-6 day

**Site Description:** The Shenipsit State Forest site is a regional-scale site that is located in northern Connecticut in the town of Stafford. The site is approximately 100 m to the south of Rte 190, 17 km to the east of I-91 and 12 km to the northwest of I-84. This site is located 34 km to the northeast of the city of Hartford. This site meets all siting requirements and criteria and has been approved internally by the CTDEP and independently by EPA Region I.

**Monitoring Objectives:** The Stafford Shenipsit State Forest monitoring site objective is to collect ozone measurements for compliance assessment and AQI and forecasting purposes.

**Planned changes for 2011:** None

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)**



**Pollutant and Meteorological Parameters:**

PM2.5 FRM	PM2.5 FRM colo	PM2.5 FDMS	PM2.5 BAM	PM2.5 Nephelometer	PM-Coarse FDMS	PM10 FRM (Io-vol)	PM10 FRM colo	PM10 BAM	STN	IMPROVE	Continuous OC/EC	Continuous Sulfate	BC/UVC	Ozone	SO2	CO	NOx	NOy	Lead (Pb)	VOCs (PAMS)	Carbonyls (PAMS)	Cont. PAH	Mercury	Dioxins	Wind Speed	Wind Direction	Temperature	Dew Point	Rain Fall	Barometric Pressure	Solar Radiation
														X													X				

X=Existing, P =Planned, ■ = Planned to Terminate, T=Trace, 1/1=Everyday sampling, 1/3=1-in-3 day; 1/6=1-in-6 day

**Site Description:** The Stratford Lighthouse site is a regional-scale site located in southwestern Connecticut in the town of Stratford. This is a coastal site that is located 4.5 km to the southeast of I-95 and is directly on the Long Island Sound. This site is approximately 45 km to the northeast of the New York border. This site meets all siting requirements and criteria and has been approved internally by the CTDEP and independently by EPA Region I.

**Monitoring Objectives:** The Stratford Lighthouse monitoring site objective is to collect ozone measurements for compliance assessment and AQI and forecasting purposes.

**Planned changes for 2011:** None

Town – Site: **Thomaston – Waste Water Treatment Plant**  
 County: **Litchfield** Latitude: **41.64486°**  
 Address: **Old Waterbury Rd.** Longitude: **-73.07908°**  
 AQS Site ID: **09-005-0004** Elevation: **104 m (340 ft)**  
 Spatial Scale: **Neighborhood** Year Established: **2006**  
 Statistical Area: **CSA (New York-Newark-Bridgeport)**



**Pollutant and Meteorological Parameters:**

PM2.5 FRM	PM2.5 FRM colo	PM2.5 FDMS	PM2.5 BAM	PM2.5 Nephelometer	PM-Coarse FDMS	PM10 FRM (Io-vol)	PM10 FRM colo	PM10 BAM	STN	IMPROVE	Continuous OC/EC	Continuous Sulfate	BC/UVC	Ozone	SO2	CO	NOx	NOy	Lead (Pb)	VOCs (PAMS)	Carbonyls (PAMS)	Cont. PAH	Mercury	Dioxins	Wind Speed	Wind Direction	Temperature	Dew Point	Rain Fall	Barometric Pressure	Solar Radiation
1/3		X									X	X	X		T	T	X				X				X	X	X	X		X	

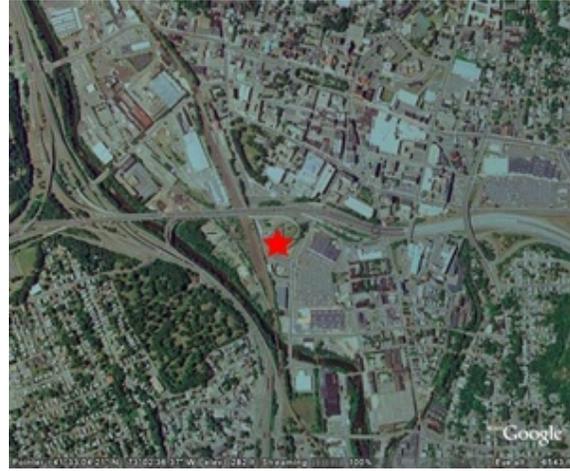
X=Existing, P =Planned, = Planned to Terminate, T=Trace, 1/1=Everyday sampling, 1/3=1-in-3 day; 1/6=1-in-6 day

**Site Description:** The Waste Water Treatment Plant site is a neighborhood-scale site located in western Connecticut in the Naugatuck River Valley in the town of Thomaston. This site is approximately 10 km to the north of I-84 and Waterbury and 0.3 km to the east of Rte 8. This site is approximately 2.5 km south of downtown Thomaston. This site meets all siting requirements and criteria and has been approved internally by the CTDEP and independently by EPA Region I.

**Monitoring Objectives:** The Thomaston Waste Water Treatment Plant monitoring site objective was to collect data related to the *Evaluation of Wood Smoke Contribution to Particle Matter in Connecticut* project which was funded through the 2005 EPA Local-Scale Air Toxics Ambient Monitoring grant. The Thomaston site was the core site in the Wood Smoke project.

**Planned changes for 2011:** This site is proposed to be terminated at the end of 2010. This site was the core site in the *Evaluation of Wood Smoke Contribution to Particle Matter in Connecticut* product which concluded April 2008.

Town – Site: **Waterbury – Meadow & Bank Street**  
 County: **New Haven** Latitude: **41.55046°**  
 Address: **Meadow & Bank** Longitude: **-73.04365°**  
 AQS Site ID: **09-009-2123** Elevation: **80 m (269 ft)**  
 Spatial Scale: **Neighborhood** Year Established: **1975**  
 Statistical Area: **CSA (New York-Newark-Bridgeport)**



**Pollutant and Meteorological Parameters:**

PM2.5 FRM	PM2.5 FRM colo	PM2.5 FDMS	PM2.5 BAM	PM2.5 Nephelometer	PM-Coarse FDMS	PM10 FRM (10-vol)	PM10 FRM colo	PM10 BAM	STN	IMPROVE	Continuous OC/EC	Continuous Sulfate	BC/UVC	Ozone	SO2	CO	NOx	NOy	Lead (Pb)	VOCs (PAMS)	Carbonyls (PAMS)	Cont. PAH	Mercury	Dioxins	Wind Speed	Wind Direction	Temperature	Dew Point	Rain Fall	Barometric Pressure	Solar Radiation
1/3	1/6		X			1/6	1/6																		X	X	X		X		

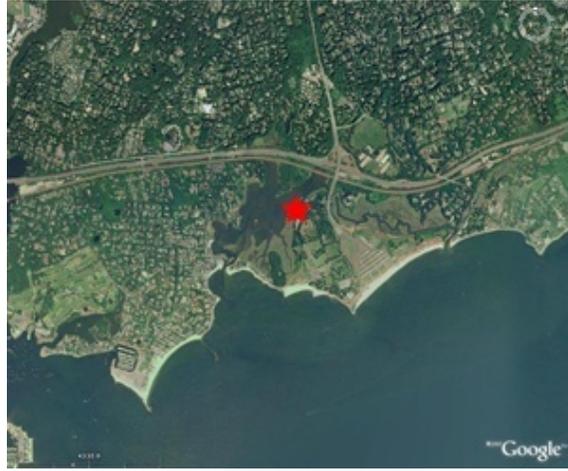
X=Existing, P =Planned, ■ = Planned to Terminate, T=Trace, 1/1=Everyday sampling, 1/3=1-in-3 day; 1/6=1-in-6 day

**Site Description:** The Waterbury site is a neighborhood-scale site located in western Connecticut at Meadow Street and Bank Street in the Naugatuck River Valley. This site is approximately 170 m to the south of I-84, 300 m to the east of Rte 8 and 0.75 km to the east of the I-84 and Rte 8 interchange. Residential neighborhoods are located in all directions of the site. This site meets all siting requirements and criteria and has been approved internally by the CTDEP and independently by EPA Region I.

**Monitoring Objectives:** The Waterbury Meadow & Bank Street site monitoring objectives include collecting PM<sub>2.5</sub> FRM measurements for compliance purposes and continuous PM<sub>2.5</sub> for AQI reporting and forecasting purposes. A PM<sub>10</sub> FRM is operated for compliance purposes, as well as to gather PM<sub>10-2.5</sub> measurements. PM<sub>2.5</sub> and PM<sub>10</sub> colocated FRM samplers are operated at this site to gather precision measurements.

**Planned changes for 2011:** PM<sub>10</sub> FRM sampling is proposed to be discontinued as of January 1, 2011. PM<sub>10</sub> sampling was initially established at this site in the anticipation of a PM-coarse standard in 2006. To date, a PM-coarse standard has not been established nor will lead sampling be conducted at this site, therefore there is limited value added to the network to continue PM<sub>10</sub> FRM sampling at this site.

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)**



**Pollutant and Meteorological Parameters:**

PM2.5 FRM	PM2.5 FRM colo	PM2.5 FDMS	PM2.5 BAM	PM2.5 Nephelometer	PM-Coarse FDMS	PM10 FRM (lo-vol)	PM10 FRM colo	PM10 BAM	STN	IMPROVE	Continuous OC/EC	Continuous Sulfate	BC/UVC	Ozone	SO2	CO	NOx	NOy	Lead (Pb)	VOCs (PAMS)	Carbonyls (PAMS)	Cont. PAH	Mercury	Dioxins	Wind Speed	Wind Direction	Temperature	Dew Point	Rain Fall	Barometric Pressure	Solar Radiation
1/1						1/6							X	T	T	X				X					X	X	X	X			X

X=Existing, P =Planned, ■ = Planned to Terminate, T=Trace, 1/1=Everyday sampling, 1/3=1-in-3 day; 1/6=1-in-6 day

**Site Description:** The Westport Sherwood Island State Park site is a regional-scale site located in southwestern Connecticut. This is a coastal site that is approximately 0.5 km to the south of I-95 on the Long Island Sound. This site meets all siting requirements and criteria and has been approved internally by the CTDEP and independently by EPA Region I.

**Monitoring Objectives:** The Westport Sherwood Island State Park monitoring site objectives include collecting PM<sub>2.5</sub> FRM measurements for compliance purposes. Given that the Westport daily PM<sub>2.5</sub> design value was within 5% of the new daily PM<sub>2.5</sub> NAAQS of 35 µg/m<sup>3</sup>, everyday PM<sub>2.5</sub> FRM sampling started on January 1, 2007, and will be conducted for a minimum of three years. A PM<sub>10</sub> FRM is operated for compliance purposes, as well as to gather PM<sub>10-2.5</sub> measurements. Ozone is measured at the Westport site for compliance assessment and AQI and forecasting purposes and PAMS and NO<sub>x</sub> monitoring is conducted to obtain measurements of ozone precursors. Trace-CO measurements are being collected to complement the PAMS measurements.

**Planned changes for 2011:** Everyday PM<sub>2.5</sub> sampling is proposed to be discontinued as of January 1, 2011 with 1-in-3 day sampling being established. The 2006 regulations required everyday sampling to be conducted at all sites that were within 5% of the daily PM<sub>2.5</sub> NAAQS of 35 µg/m<sup>3</sup> for a minimum of three years. The current daily design value for this site based on 2007-2009 data is 29 µg/m<sup>3</sup>, well below the current NAAQS. Sampling through 2010 will provide four continuous years of everyday PM<sub>2.5</sub> FRM sampling (2007-2010).

## Appendix A: Public Comments

Below are comments that were received during the public comment period, which was open from June 10, 2010, through July 10, 2010.

<---- Start of EPA Region I comments submitted June 25, 2010 ---->

Thank you for providing EPA with a draft of the Connecticut 2010 Air Monitoring Plan which was released on June 10, 2010 for public comment. EPA-New England has reviewed your draft plan with respect to meeting the requirements of 40 CFR Part 58. Upon final submission of this document in July, we will move forward regarding approval of the Annual Network Plan. We look forward to the submission of your 5 Year Network Assessment as well. In addition, upon final submission of this document, we will work with Headquarters offices to address the portions of the plan which require their attention, most notably monitoring associated with NCore, PAMS and STN.

The following are our comments:

1. We believe it would be beneficial for the State should discuss future plans for utilizing data from continuous PM<sub>2.5</sub> monitors which are FEMs. Currently, the State is operating several continuous FEM monitors which are only used for real-time data reporting purposes. We further recognize that CT intends to be replacing several PM<sub>2.5</sub> FDMS monitors with PM<sub>2.5</sub> BAM monitors.
2. On page 9, the last sentence (under PM<sub>2.5</sub> NAAQS) should be revised as follows: "Although all Connecticut monitors are compliant with the 2006 24-hour PM<sub>2.5</sub> NAAQS, Fairfield and New Haven Counties are designated nonattainment for the annual daily standard as part of the Greater New York City area."
3. Page 11. Lead Network – As Connecticut correctly indicates, the lead monitoring requirements for population CBSA based areas remains in the current lead monitoring rule. But with the proposed lead monitoring rule changing those CBSA based requirements to be instead only at NCore monitoring sites, and even further, possibly only at urban NCore locations, we believe the State should move forward in a deliberative fashion prior to determining how it will meet the lead monitoring requirement. We expect that the revised lead monitoring rule will be finalized later this fall. EPA supports the State's intended plan and will keep Connecticut informed as EPA moves forward to finalize monitoring requirements under the new lead NAAQS.

We would also suggest revising the language in this section to clarify that ". . . EPA promulgated a *strengthening* of the NAAQS . . ." (rather than ". . . a *decrease* in the NAAQS . . ."). Also, in the second to last sentence of the first paragraph, it should be clarified that there are ". . . no potential of individual of clustered Pb sources to approach or exceed *this revised threshold, nor exceed* the revised NAAQS."

4. Page 11. Nitrogen dioxide network – EPA New England appreciates you discussing the need to evaluate and identify future NO<sub>2</sub> monitoring locations by July 2012 to reflect maximum area-wide and near-roadway NO<sub>2</sub> concentrations. As you correctly note, Connecticut would be required to have at least four monitors under this rule. Those monitors are to be sited based in each of the CBSAs of Bridgeport, Hartford and New Haven. Each of these areas would need a "near roadway" monitor, and Hartford would also need an urban community based monitor. Any "near roadway" monitor would need to be sited consistent with the requirements of the final NO<sub>2</sub> NAAQS rule which are intended to focus on monitoring in the location of maximum concentrations. In addition, working with the States, EPA Regional Administrators will site at least 40 NO<sub>2</sub> related health effects. Any NO<sub>2</sub> monitors required would need to be operational by January 1, 2013. Exact locations can be identified in future Annual Network Plans.
5. Page 11. Sulfur dioxide network – The final rule for SO<sub>2</sub> was signed on June 2, 2010. EPA strengthened the primary NAAQS for sulfur dioxide by establishing a new 1-hour standard at a level of 0.075 ppm. The design value for the new SO<sub>2</sub> NAAQS is the 3-year average of the 99<sup>th</sup> percentile of the annual distribution of daily maximum 1-hour average concentrations. According to this rule, Connecticut is obligated to site 3 SO<sub>2</sub> monitors under EPA's Population Weighted Emissions Index (PWEI) criteria in the Hartford (2 were proposed – 1 was finalized), Bridgeport,

and New Haven CBSAs. In some cases, existing monitors may already meet this requirement, if they are sited at the location of maximum 1-hour impact. EPA will work with Connecticut to determine any efforts needed pursuant to EPA's refined SO<sub>2</sub> source-oriented dispersion modeling or any additional Regional Administrator required SO<sub>2</sub> monitoring. Any SO<sub>2</sub> monitors required would need to be operational by January 1, 2013. Exact locations can be identified in future Annual Network Plans.

6. Page 12. Under the "Proposed Network Changes," we have no concerns with any of the listed changes below, but offer the following comment in italics on certain proposed changes:
  - Establish 1-in-6 day PM<sub>10</sub> FRM and continuous PM<sub>10-2.5</sub> measurements at the Cornwall Mohawk Mountain site.
  - Establish lead measurements at Cornwall Mohawk Mountain site.  
*(The State should consider our comment 3 above as it moves forward with this plan.)*
  - Establish trace-CO measurements at the Cornwall Mohawk Mountain site.
  - Establish NOx and trace-NOy measurements at the Cornwall Mohawk Mountain site.
  - Replace all remaining non-trace CO and SO<sub>2</sub> instruments in network with trace-level monitors. *(To the extent some of the SO<sub>2</sub> monitors in the network may be used to support meeting the strengthened NAAQS, these monitors will need to be able to measure higher concentrations as well. EPA will also be reviewing the CO NAAQS.)*
  - Discontinue PM<sub>10</sub> FRM sampling at the Westport, Norwalk and Waterbury sites.
  - Discontinue every day PM<sub>2.5</sub> sampling at Westport and Norwich sites; revert back to 1-in-3 day PM<sub>2.5</sub> sampling at the Westport and Norwich sites.
  
7. Page 11. EPA notes the listing entitled "Order of Shutdown of Monitoring Sites Due to Budget Cutting" in Connecticut. EPA commits to work closely to ensure that any site intended for possible shut down does not affect the State's ability to meet monitoring obligations under 40 CFR Part 58. Additionally, we note some monitors have remained in place for the purposes of long term trends or other air concerns beyond 40 CFR Part 58. Finally, given that the ozone NAAQS is likely to be strengthened, and considering the longstanding nonattainment issues regarding ozone in Connecticut, we believe it would be unwise to shut down any ozone sites. 40 CFR Part 58.14(c) describes the process for any monitor discontinuation.
 

While we agree it is prudent to consider the need for shutting down monitors in the event of severe budget constraints, we would like to note a clarification to this language included in the second paragraph. "Additional site shutdowns are inevitable with EPA's reallocation formula for Clean Air Act section 105 funds." On April 14, 2010, Deputy EPA Administrator McCabe wrote to NACAA about a STAG allocation strategy that would result in increases in funding to all EPA Regions.
  
8. It may be worth highlighting that EPA's Office of Air Quality Planning and Standards (OAQPS) approved Connecticut DEP's NCore stations at Mohawk Mountain, Cornwall and Crisco Park, New Haven on October 30, 2009.
  
9. As a summary, we believe it may be useful to provide a summary table of the National Ambient Air Quality Standards (NAAQS) in the plan, in addition to the descriptions of each NAAQS included in the text.

EPA-New England appreciates your partnership in conducting ambient air monitoring, and we look forward to working with you to continuously improve the quality of ambient air in Connecticut. We also look forward to the final submission of the Final Annual Network Plan, and the Five Year Network Assessment this July.

## Appendix B: Response to Public Comments

Below is CTDEP's response to the public comments that were received relative to the Connecticut 2010 Annual Air Monitoring Network Plan.

Response to comments from EPA Region I:

1. **Page 7, Continuous PM FEM Plan** – The following paragraph has been added to the Continuous PM section: "Currently CTDEP operates several FEM-like continuous PM<sub>2.5</sub>, PM<sub>10</sub> and PM<sub>10-2.5</sub> instruments; however, none of that data is reported as FEM data to AQS. Regarding future continuous PM FEM plans, it is the CTDEP position that for each individual FEM, there must be an extended period of comparison to the FRM; partly to understand and consider any biases that may be inherent in the continuous method or that may be a function of mass lost from the FRM, and partly to evaluate the new FEM instruments as there is very little FEM operating experience besides the vendor-operated FEM testing and early indications dictate that we need to move cautiously on this front until it can be shown that these FEMs can produce both accurate and precise mass measurements. Additionally, given the close proximity of Connecticut's PM<sub>2.5</sub> design values to the daily NAAQS, CTDEP wants to ensure the highest quality data is used to determine compliance with the 24-hr standard."
2. **Page 10, Sentence Revised** – The last sentence under PM<sub>2.5</sub> NAAQS has been revised to read: ". . . *designated nonattainment for the daily standard as part of the Greater New York City area.*"
3. **Page 12, Lead Network** – The lead network paragraph has been revised to clarify that the final rule may include requirements for lead monitoring at both Connecticut NCore sites, or if urban-only NCore are dictated in the final rule, then lead sampling will be conducted at the New Haven Crisculo Park site only. Revisions have also been made to this section to read: ". . . EPA promulgated a *strengthening of the NAAQS . . .*" and in the second to last sentence of the first paragraph, ". . . no potential of individual of clustered Pb sources to approach or exceed *this revised threshold, nor exceed the revised NAAQS.*"
4. **Page 12, Nitrogen Dioxide Network** – An additional sentence has been added to clarify that monitors will be sited consistent with requirements of final NO<sub>2</sub> NAAQS rule which will focus on locations of maximum concentration.
5. **Page 12, Sulfur Dioxide Network** – This section has been updated based on the signing of the SO<sub>2</sub> final rule on June 2, 2010.
6. **Proposed Network Changes** – Regarding EPA's comment to ensure trace-level instruments also measure higher concentrations, all current trace-level instruments that CTDEP operate or will shortly deploy, measure the equivalent upper-end of the range of non-trace instruments providing adequate coverage of the full range of ambient SO<sub>2</sub> levels.
7. **Page 14, Order of Shutdown of Monitoring Sites Due to Budget Cutting** – Based on EPA's clarification, the following sentence has been removed from this section: "*Additional site shutdowns are inevitable with EPA's reallocation formula for Clean Air Act section 105 funds.*"
8. **NCore Site Approval** – The EPA-approval of CTDEP's NCore sites, Cornwall Mohawk Mountain and New Haven Crisculo Park, has been highlighted in the Network Overview and NCore Site Approval section (page 4) as well as the individual site pages (pages 18 and 30, respectively).
9. **NAAQS Summary Table** – A summary table for the NAAQS has been added on page 4.