Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
One Winter Street Boston, MA 02108 • 617-292-5500

DEVAL L. PATRICK
Governor

TIMOTHY P. MURRAY
Lieutenant Governor

RICHARD K. SULLIVAN JR.
Secretary

KENNETH L. KIMMELL
Commissioner

Massachusetts 2012 Air Monitoring Network Plan

Air Assessment Branch
Bureau of Waste Prevention

September 6, 2012

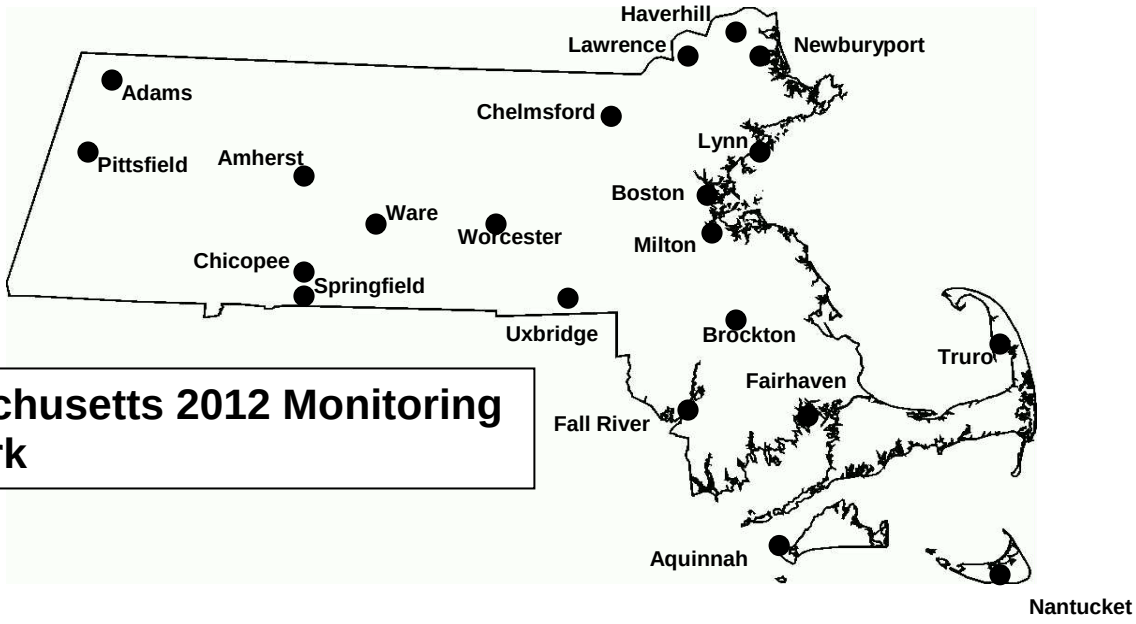
This is the Massachusetts 2012 Air Monitoring Network Plan, prepared by the Massachusetts Department of Environmental Protection (MassDEP) in accordance with Title 40 CFR Part 58.10. Each year, MassDEP is required to submit a Network Plan to the U.S. Environmental Protection Agency (EPA) for review and approval.

MassDEP operates a network of 27 ambient air quality monitoring stations in 19 communities located across the state. The Wampanoag Tribe of Gay Head (Aquinnah) on Martha's Vineyard and the EPA's New England Regional Laboratory in Chelmsford also operate monitoring stations. MassDEP, the Wampanoag Tribe and EPA all are members of the same Primary Quality Assurance Organization (PQAO), which ensures consistent quality assurance of ambient air quality data collected in Massachusetts.

The Massachusetts monitoring network is part of a comprehensive program to provide information about air quality to the public and to determine compliance with National Ambient Air Quality Standards. This Network Plan reviews MassDEP's ambient air monitoring network to determine that the requirements of 40 CFR Part 58 Appendices A, C, D and E are met, describes which pollutants and other parameters MassDEP measures at its various ambient air monitoring stations, and discusses recent and planned changes to the network. For detailed information on monitor locations, pollutants analyzed, and methods used, see Attachments 1 – 3.

Background information about the Massachusetts air monitoring network, pollutants measured, their health significance, and current and past ambient air quality data, can be found on the Air and Climate page of MassDEP's Website at www.mass.gov/dep/air/airquali.htm. For more information on this Network Plan, please contact:

Thomas McGrath, Chief
MassDEP Air Assessment Branch
Senator William X. Wall Experiment Station
37 Shattuck Street
Lawrence, MA 01843-1398
Thomas.McGrath@state.ma.us



Massachusetts 2012 Monitoring Network

1. Criteria Pollutants

This section describes MassDEP's plans to monitor criteria pollutants listed in the federal Clean Air Act for which EPA has set National Ambient Air Quality Standards (NAAQS), including ozone, sulfur dioxide, nitrogen dioxide, carbon monoxide, particulate matter (PM_{10} and $PM_{2.5}$) and lead. EPA periodically reviews and revises these standards based on new public health and scientific information. These revisions often require changes to air monitoring networks and methodologies.

National Ambient Air Quality Standards				
	Primary Standards		**Secondary Standards**	
Pollutant	**Level**	**Averaging Time**	**Level**	**Averaging Time**
Carbon Monoxide	9 ppm (10 mg/m^3)	8-hour [(1)]	None	
	35 ppm (40 mg/m^3)	1-hour [(1)]		
Lead	0.15 µg/m^3	Rolling 3-Month Average	Same as Primary	
Nitrogen Dioxide	0.053 ppm	Annual (Arithmetic Average)	Same as Primary	
	100 ppb	1-hour [(2)]	None	
Particulate Matter (PM_{10})	150 µg/m^3	24-hour [(3)]	Same as Primary	
Particulate Matter ($PM_{2.5}$)	15.0 µg/m^3	Annual [(4)] (Arithmetic Average)	Same as Primary	
	35 µg/m^3	24-hour [(5)]	Same as Primary	
Ozone	0.075 ppm	8-hour [(6)]	Same as Primary	
Sulfur Dioxide	75 ppb [(7)]	1-hour	0.5 ppm	3-hour [(1)]

µg/m³ = micrograms per cubic meter; ppm = parts per million; ppb = parts per billion; mg/m³ = milligrams per cubic meter

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

[(2)] 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 (0.100 ppm).

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

[(4)] To attain this standard, the 3-year average of the weighted annual mean PM2.5 concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m^3.

[(5)] 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^3.

[(6)] 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.

[(7)] 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 (0.075 ppm).

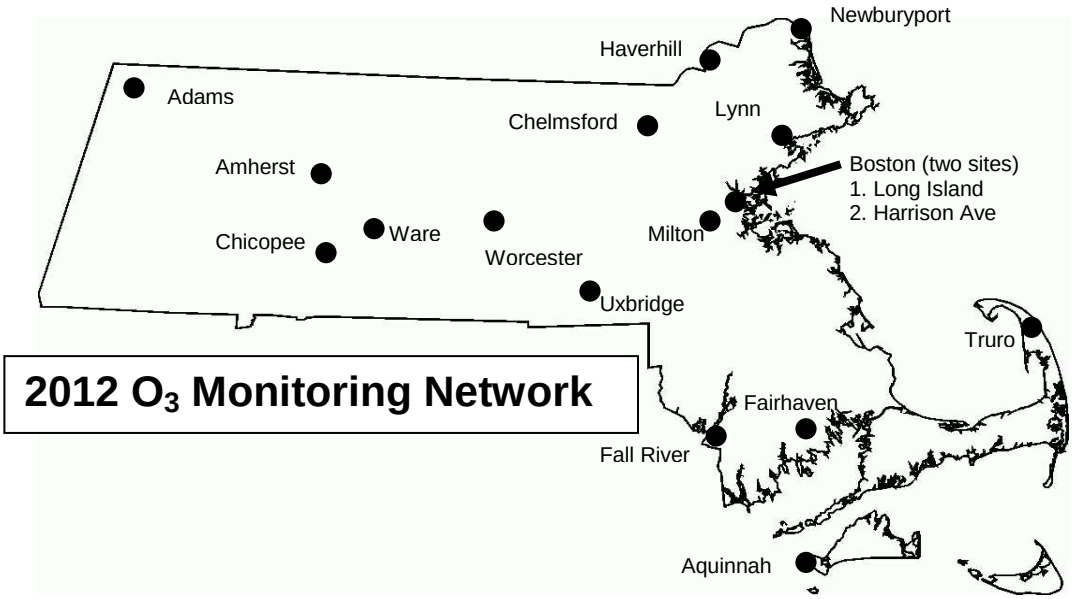
A. OZONE

MassDEP operates 14 ozone monitors at the locations listed below (including the Site Identification Number). EPA's New England Regional Laboratory (NERL) in Chelmsford and the Wampanoag Tribe of Gay Head (Aquinnah) on Martha's Vineyard also operate ozone monitors.

Adams (25-023-4002)
Amherst (25-015-0103)
Boston – Long Island (25-025-0041)
Boston – Harrison Ave/Roxbury (25-025-0042)
Chelmsford – NERL (25-017-0009)
Chicopee (25-013-0008)
Fairhaven (25-005-1002) (temporarily closed)
Fall River (25-005-1004)
Haverhill (25-009-5005)
Lynn (25-009-2006)
Milton (25-021-3003)
Newburyport (25-009-4005)
Aquinnah – Tribal Site (25-007-0001)
Truro (25-001-0002)
Uxbridge (25-027-0024)
Ware (25-015-4002)
Worcester Airport (25-027-0015)

The following is a description of recent and proposed changes to the ozone monitoring network.

1. MassDEP had to discontinue ozone monitoring in Stow (25-017-1102) in September 2011 when the host U.S. Air Force meteorology laboratory closed and ended access to utilities to power the monitor. MassDEP was unable to establish a monitor at a comparable nearby location. However, the EPA Region 1 Laboratory operates an ozone monitor in nearby Chelmsford, and MassDEP proposes to rely on this monitor in place of Stow. MassDEP proposes to enhance the EPA Region 1 Laboratory ozone monitoring site so it can serve as the maximum concentration ozone site in the prevailing downwind direction from Worcester.
2. MassDEP had to discontinue ozone monitoring in Fairhaven (25-005-1002) due to the reconstruction of the Leroy Wood Elementary School where the monitor was located. The site was shut down in April 2012. MassDEP is working with the Town of Fairhaven and EPA to place an ozone monitor at another nearby school, and plans to have the new ozone monitor ready to operate for the 2013 ozone season. To offset the loss of the Fairhaven monitor for the 2012 ozone season, MassDEP added ozone monitoring at its Fall River site (25-005-1004), which began on operating March 1, 2012, and will continue even after the Fairhaven site is operating.
3. After the 2012 ozone season, MassDEP proposes to close the Boston - Long Island ozone monitor (25-025-0041). MassDEP believes that the measurements at this site are redundant with those taken at other nearby sites (e.g., Milton - Blue Hill and Lynn) and that resources used to operate the Long Island monitor are needed to operate a new nitrogen dioxide near-road site that will be sited in Boston.
4. After the 2012 ozone season, MassDEP proposes to move the Amherst ozone monitor (25-015-0103) to a different location. MassDEP believes that the measurements taken at this site are redundant with those taken at other nearby sites (e.g., Chicopee and Ware). MassDEP proposes to move the ozone monitor to a location farther north in Franklin County by the 2013 ozone season to fill a gap in the existing monitoring network.
5. After the 2012 ozone season, MassDEP proposes to move the Adams/Mt. Greylock ozone monitor (25-023-4002) to a lower elevation site that can better characterize population exposures to ozone concentrations in Berkshire County.


Newburyport
Haverhill
Adams
Chelmsford
Lynn
Amherst
Boston (two sites)
1. Long Island
2. Harrison Ave
Chicopee
Ware
Worcester
Milton
Uxbridge
Truro
2012 O3 Monitoring Network
Fairhaven
Fall River
Aquinnah

B. SULFUR DIOXIDE

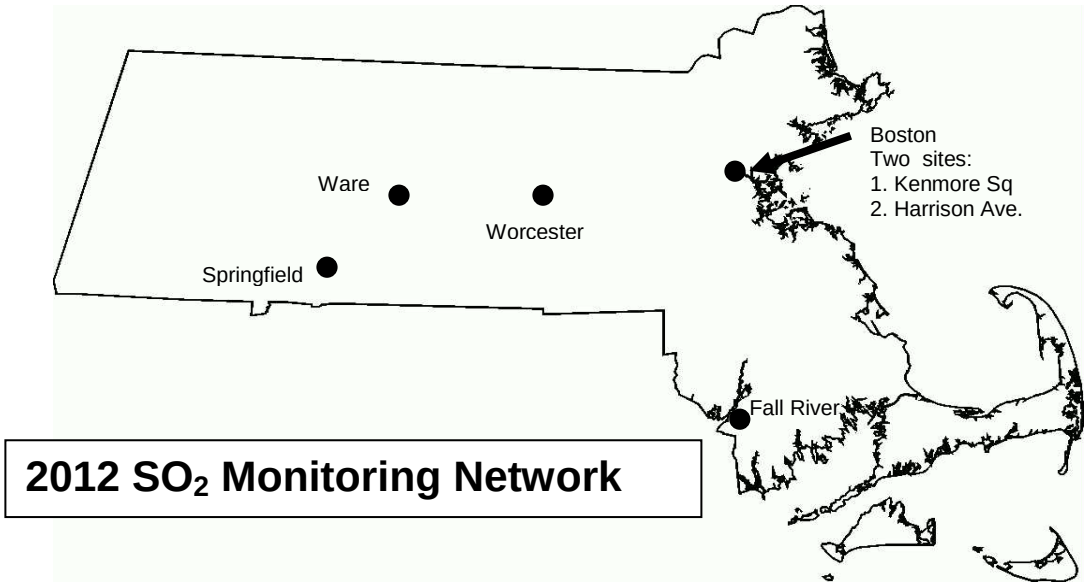
MassDEP operates six sulfur dioxide (SO_2) monitors, which includes four full-scale instruments that are used for comparison with the SO_2 NAAQS. Two are trace-scale (low measurement scale) analyzers (located at Boston-Harrison Avenue, due to its NCore[1] status, and at Ware, due to its background/rural nature). SO_2 monitors are at the following locations:

Boston – Harrison Ave (25-025-0042) *trace*
Boston – Kenmore Square (25-025-0002)
Fall River (25-005-1004)
Springfield – Liberty Street (25-013-0016)
Ware (25-015-4002) *trace*
Worcester – Summer Street (25-027-0023)

In June 2010, EPA revised the SO_2 NAAQS establishing a 1-hour SO_2 standard of 100 ppb and new SO_2 monitoring requirements. EPA requires monitors to be placed in Core Based Statistical Areas (CBSAs) based a on a population-weighted emissions index for the area. EPA requires:

- Three monitors in CBSAs with index values of 1,000,000 or more;
- Two monitors in CBSAs with index values less than 1,000,000 but greater than 100,000; and
- One monitor in CBSAs with index values greater than 5,000.

Monitors must be operational by January 1, 2013. Based on the new monitoring regulations, there must be one monitor in the Springfield CBSA, one monitor in the multi-state Providence/New Bedford/Fall River CBSA (MA/RI), and two monitors in the multi-state Boston area CBSA (MA/NH). MassDEP's four full-scale existing SO_2 monitors, combined with existing SO_2 monitors in RI and NH, fulfill the new requirements. MassDEP proposes to convert the full-scale SO_2 instruments in Boston-Kenmore Square, Springfield, and Worcester to trace-level analyzers to improve resolution at the low range of concentrations these analyzers are currently measuring.



[1] NCore is a program established by EPA and state and local air quality agencies to create multi-pollutant monitoring networks that integrate several advanced measurement systems for particles, pollutant gases and meteorology.

C. NITROGEN DIOXIDE

MassDEP operates 11 nitrogen dioxide (NO_2) monitors. These monitors measure NO_2 and nitrogen oxides [NO_x, which is NO_2 plus NO (nitric oxide)]. NO_2 is a NAAQS pollutant but also an ozone precursor, along with NO_x. MassDEP operates four NO_2 monitors specifically to determine compliance with the NAAQS (based on population exposure), and operates six additional monitors to measure ozone precursors as part of the Photochemical Assessment Monitoring Sites (PAMS) network. NO_2 monitors are at the following locations:

Boston – Harrison Ave (25-025-0042)
Boston – Kenmore Square (25-025-0002)
Boston – Long Island (25-025-0041) *PAMS, summer only*
Chicopee (25-013-0008) *PAMS, year-round*
Haverhill (25-009-5005)
Lynn (25-009-2006) *PAMS, year-round*
Milton (25-021-3003) *PAMS, summer only*
Newburyport (25-009-4005) *PAMS, summer only*
Springfield – Liberty Street (25-013-0016)
Ware (25-015-4002) *PAMS, summer only*
Worcester (25-027-0023)

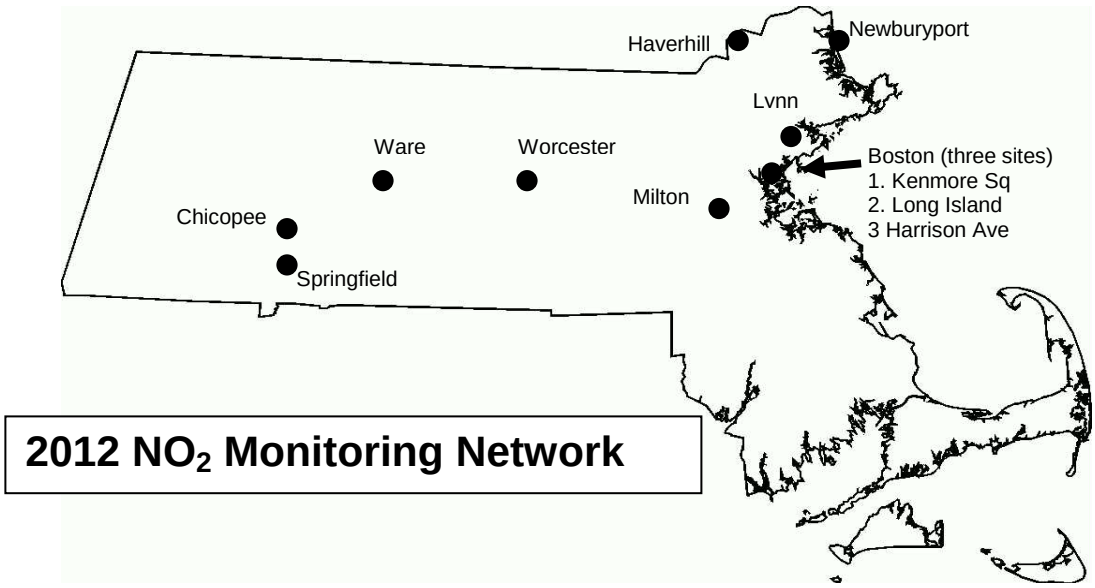
In January 2010, EPA revised the NO_2 NAAQS establishing a 1-hour NO_2 standard of 75 ppb and new NO_2 monitoring requirements. The regulations require near-road monitors to capture short-term NO_2 concentrations that occur near roads and in community-wide areas. EPA currently requires:

- At least one monitor near a roadway in any urban area with a population greater than or equal to 500,000 people;
- One monitor in any urban area with a population greater than or equal to 1 million people;
- Potentially additional monitors in susceptible and vulnerable communities.

Monitors must be operational by January 1, 2013. MassDEP will continue to operate its existing NO_2 monitors to address the community monitoring requirements of the new NO_2 monitoring requirements. The new monitoring regulations would require one near-road monitor each in the Springfield and Worcester CBSAs, one near-road monitor in the Providence/New Bedford/Fall River CBSA (MA/RI), and two monitors in the Boston area CBSA (MA/NH). If Rhode Island and New Hampshire each establish new monitors in the shared multi-state CBSAs, MassDEP would need three new near-road NO_2 monitors.

In recognition of state and EPA limited resources , EPA has developed a strategy to phase in near-road monitors nationwide over a multi-year period, initially focusing on near-road monitors in areas with a population greater than or equal to 1 million people. Under this strategy, MassDEP will install one near-road monitor in the Boston area by January 2013. MassDEP is working with EPA and the Massachusetts Department of Transportation (MassDOT) to identify an appropriate near-road monitoring location in Boston. Once an appropriate site is located and secured, MassDEP will install and operate the near-road monitor.

In addition, MassDEP proposes to discontinue NO_2 and NO_x monitoring in Haverhill and to expand NO_2 and NO_x monitoring to year-round at the Newburyport PAMS site (instead of just during the ozone season).


Haverhill
Newburyport
Lvnn
Ware
Worcester
Boston (three sites)
1. Kenmore Sq
2. Long Island
3 Harrison Ave
Milton
Chicopee
Springfield
2012 NO2 Monitoring Network

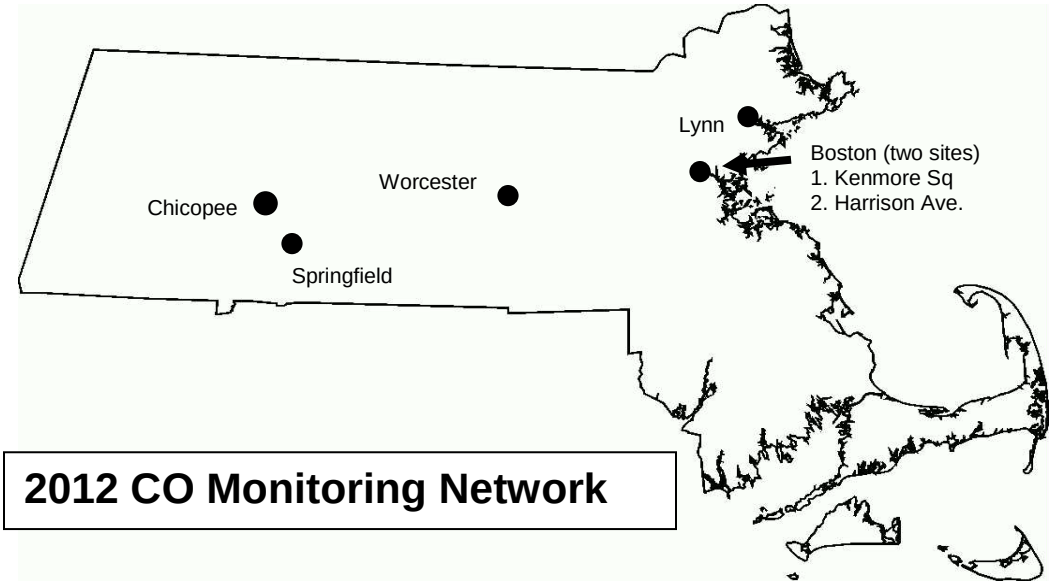
D. CARBON MONOXIDE

MassDEP operates six carbon monoxide (CO) monitors, including three trace-level instruments. Full scale CO instruments (0 to 50 ppm) are operated to determine NAAQS compliance. Trace-level CO analyzers (0 to 5 ppm) are operated at sites where CO measurement is of interest, but where levels are expected to be low (less than 2 ppm). CO monitors are at the following locations:

Boston – Harrison Ave (25-025-0042) *trace*
Boston – Kenmore Square (25-025-0002)
Chicopee (25-013-0008) *trace*
Lynn (25-009-2006) *trace*
Springfield – Liberty Street (25-013-0016)
Worcester – Summer Street (25-027-0023)

In May 2011, EPA approved a revision to MassDEP's CO maintenance plan for Lowell that allowed MassDEP to discontinue CO monitoring in Lowell. MassDEP closed the Lowell monitor on June 30, 2011.

In August 2011, EPA issued a decision to retain the existing CO NAAQS and to establish new CO monitoring requirements. The new regulations require one CO monitor to be collocated with a NO_2 near-road monitor in urban areas having a population of 1 million or more. Monitors required in CBSAs of 2.5 million or more persons must be operational by January 1, 2015, and monitors required in CBSAs having 1 million or more persons must be operation by January 1, 2017. Based on the monitoring regulations, MassDEP would need a CO monitor at a near-road NO_2 site in the Boston area CBSA (MA/NH) by January 1, 2015, and a CO monitor at near-road NO_2 site in the Providence/New Bedford/Fall River CBSA (MA/RI) by January 1, 2017. MassDEP plans to install a CO monitor at the near-road NO_2 site it will establish in Boston.



E. PARTICULATE MATTER

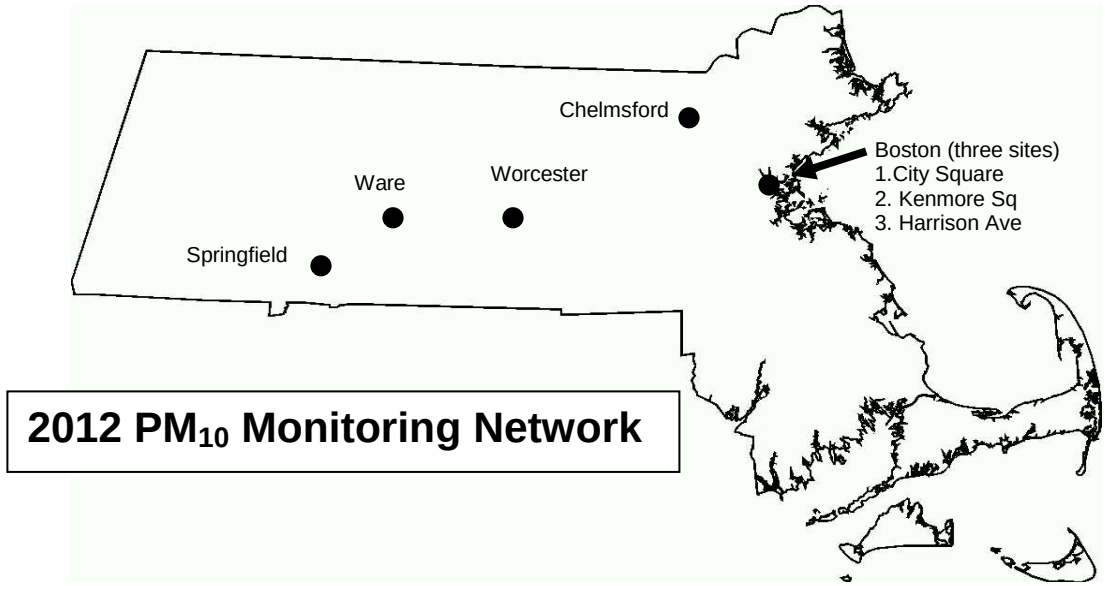
PM_{10}

MassDEP operates seven PM_{10} monitors (low volume instruments), including two monitors collocated at the Boston - Harrison Avenue NCore site for quality assurance purposes. EPA's New England Regional Laboratory operates a PM_{10} monitor in Chelmsford. PM_{10} monitors are at the following locations:

Boston – Harrison Avenue (25-025-0042) *2 monitors*
Boston – Kenmore Square (25-025-0002)
Boston – City Square (25-025-0027)
Chelmsford – NERL (25-017-0009)
Springfield – Main Street (25-013-2009)
Ware (25-015-4002)
Worcester – Summer Street (25-027-0023)[2]

Samples from the Boston - Harrison Avenue PM_{10} monitors are used in association with samples from collocated $PM_{2.5}$ monitors at the site to calculate PM_{coarse} concentrations, which was required beginning January 1, 2011 for any NCore site.

MassDEP proposes to move the PM_{10} monitor at Springfield – Main Street (25-013-2009) to the Springfield-Liberty Street site (25-013-0016) beginning January 1, 2013, due to the close proximity of the two sites. MassDEP also proposes to close the Boston-City Square monitor. This monitor is located very close to North Street where MassDEP operates $PM_{2.5}$ monitors. The building where the North Street monitors are has recently changed ownership, so closing the City Square monitor will be contingent on MassDEP ensuring that it can continue monitoring PM at the North Street site.



[2] MassDEP notes that it operates a continuous atmospheric radiation sampler (TSP-based) at the Worcester-Summer Street station (25-027-0023) in cooperation with the EPA's National Air and Radiation Environmental Laboratory (NAREL).

$PM_{2.5}$

MassDEP's operates 18 fine particulate matter ($PM_{2.5}$) Federal Reference Method (FRM) monitors at 15 locations. MassDEP collects samples at the Boston – North Street collocated monitors on a daily basis and samples the remaining monitors on an every third day schedule. Collocated monitors also are located at Brockton and Chicopee, for quality assurance purposes. MassDEP uses the data from the FRM network to determine compliance with the $PM_{2.5}$ NAAQS. EPA NERL also operates a $PM_{2.5}$ monitor in Chelmsford. $PM_{2.5}$ monitors are at the following locations:

Boston – Harrison Avenue (25-025-0042)
Boston – North St (25-025-0043) *2 monitors*
Boston – City Square (25-025-0027)
Boston – Kenmore Square (25-025-0002)
Brockton (25-023-0004) *2 monitors*
Chelmsford – NERL (25-017-0009)
Chicopee (25-013-0008) *2 monitors*
Fall River – Globe Street (25-005-1004)
Haverhill – Consentino School (25-009-5005)
Lawrence (25-009-6001)
Lynn – Water Treatment Plant (25-009-2006)
Pittsfield (25-003-5001)
Springfield – Liberty St (25-013-0016)
Springfield – Main St (25-013-2009)
Worcester – Washington Street (25-027-0016)
Worcester – Summer Street (25-027-0023)

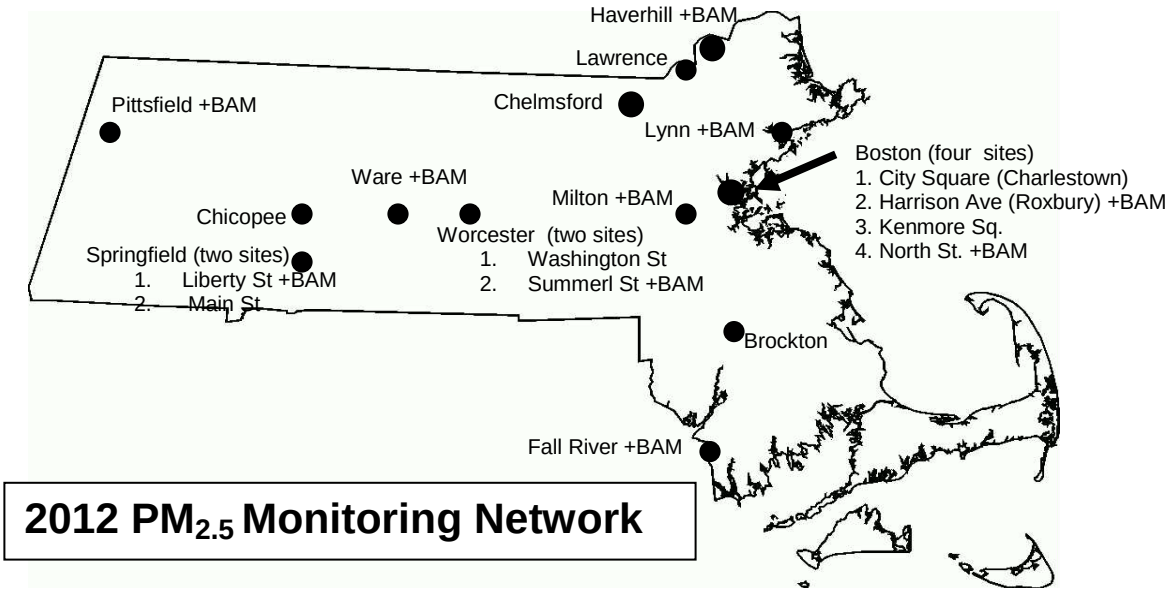
MassDEP has equipped 10 monitoring stations with continuous $PM_{2.5}$ monitors (Beta Attenuation Monitors or BAMs). These monitors are at the following locations:

Boston – Harrison Avenue (25-025-0042)
Boston – North St (25-025-0043)
Fall River – Globe Street (25-005-1004)
Haverhill – Consentino School (25-009-5005)
Lynn – Water Treatment Plant (25-009-2006)
Milton – Blue Hill (25-021-3003)
Pittsfield (25-003-0006)
Springfield – Liberty Street (25-013-0016)
Ware – Quabbin Summit (25-015-4002)
Worcester – Summer Street (25-027-0023)

All of the BAMs have a Federal Equivalent Method (FEM) designation. BAMs provide the hourly $PM_{2.5}$ data that appears on MassDEP's *MassAir* website, but currently are not used to determine NAAQS compliance. MassDEP is currently evaluating the $PM_{2.5}$ data obtained by FRMs in relation to data obtained by the BAMS located at the same sites to determine the viability of using the BAMS for NAAQS compliance purposes at appropriate sites, which could save MassDEP resources without jeopardizing data quality. Depending on the results of these evaluations and available resources, MassDEP may propose additional BAMs in future correspondence.

MassDEP proposes to discontinue $PM_{2.5}$ monitoring at Boston - City Square (25-025-0043). This monitor is located very close to the North Street $PM_{2.5}$ monitors and measured concentrations at City Square have been consistently lower than at North Street (since 2000 when North Street began operating). In addition, the City Square building has an outdated wiring system which has led to data losses and posed other challenges to maintaining the monitors at this location. Closing the City Square monitor will be contingent on MassDEP ensuring that it can continue monitoring $PM_{2.5}$ at the North Street site. The North Street building recently changed ownership, and MassDEP will work with the new owner to ensure that monitoring may continue at the site.

MassDEP proposes to close the $PM_{2.5}$ site at Springfield-Main St (25-013-2009). The Main Street site is located very close to the Liberty Street site (less than 1 mile away) and the reported concentrations have tracked very closely with Liberty Street (since 2002 when Main Street began operating). MassDEP plans to locate a $PM_{2.5}$ monitor station in Franklin County in 2013 (in combination with an ozone monitor – see Ozone Section).



Speciated $PM_{2.5}$

MassDEP collects speciated $PM_{2.5}$ samples at Boston – Harrison Avenue (25-025-0042) and Chicopee (25-013-0008). The speciated $PM_{2.5}$ program is designed to determine some of the chemical components (elements, sulfates/nitrates, carbon species) that are contained in $PM_{2.5}$.

IMPROVE sampling sites also provide speciated $PM_{2.5}$ data. The IMPROVE program measures parameters that are similar to those measured by the speciation program, and is designed to measure species at rural locations to evaluate the contribution of fine particulates and their constituents to the degradation of visibility. Two IMPROVE samplers are located at the following MassDEP sites:

- Truro – National Sea Shore (25-001-0002), operated by the National Park Service
- Ware – Quabbin Summit (25-015-4002), operated by the University of Massachusetts

The Wampanoag Tribe on Martha's Vineyard also operates an IMPROVE sampler.

PM_{coarse} ($PM_{10} - PM_{2.5}$)

MassDEP began using the Federal Reference Method (FRM) for PM_{coarse} in compliance with NCore requirements at the Boston-Harrison Avenue NCore site beginning in January 2011. This method consists of the subtraction of $PM_{2.5}$ values from PM_{10} values at a site that has side-by-side samplers of each type sampling on the same dates. MassDEP recently built a new platform at the site to allow the $PM_{2.5}$ and PM_{10} samplers to be installed side-by-side for this purpose.

F. LEAD

MassDEP operates three lead monitors, one in Boston, one in Springfield, and one on Nantucket (for a special one-year study period).

In 2008, EPA lowered the NAAQS for lead from 1.5 $\mu g/m^3$ to 0.15 $\mu g/m^3$ and established new monitoring requirements. EPA requires lead monitoring at NCore sites beginning January 1, 2012 and around industrial sources that emit 0.5 tons or more of lead (there are no such sources in Massachusetts). EPA is requiring lead to be monitored as lead in total suspended particles (TSP). However, EPA allows the use of low-volume lead-PM_{10} monitors instead of lead-TSP monitors where lead is not expected to occur as large particles and where 3-month average concentrations are not expected to equal or exceed 0.10 $\mu g/m^3$. In addition, EPA is requiring 1 year of monitoring at 15 general aviation airports using lead-TSP monitors, including Nantucket Memorial Airport.

MassDEP had been measuring lead-TSP at Boston-Kenmore Square for many years. In 2009, MassDEP moved the lead-TSP monitor from Kenmore Square to Harrison Avenue because of the physical downsizing of the Kenmore monitoring station. Since MassDEP has started lead sampling at the NCore site using the new low-volume PM_{10} method, MassDEP discontinued lead-TSP sampling at Harrison Avenue at the end of 2011.

In addition to the NCore site, MassDEP continues lead-PM_{10} sampling at Springfield-Main Street (25-013-2009) to obtain additional lead concentration data for a different urban environment. As noted in the PM_{10} Section, MassDEP proposes to move the PM_{10} monitor from Springfield – Main Street to Springfield – Liberty Street (25-013-0016), and therefore also plans to move lead-PM_{10} monitoring from Main Street to Liberty Street starting in January 2013.

In accordance with EPA's lead monitoring regulations, on January 22, 2012, MassDEP began operating collocated lead-TSP monitors at Nantucket Memorial Airport (25-019-0001) for a required one-year period.

2. Photochemical Assessment Monitoring Stations

MassDEP operates six Photochemical Assessment Monitoring Stations (PAMS) designed to measure ozone precursors (ingredients) and meteorological parameters in order to provide data about ozone formation and the effect of precursor controls on ozone production. At these sites MassDEP measures oxides of nitrogen and other ozone precursors, such as volatile organic compounds, including hydrocarbons and carbonyl compounds (e.g., formaldehyde, acetaldehyde). These are measured by taking discrete samples (carbonyls at Type 2 sites and VOCs at Type 1 sites) and by operating hourly gas chromatographs that measure individual hydrocarbon compounds. Type 1 sites generally are upwind of the studied urban area, Type 2 sites are at or near the downwind edge of the urban area, and Type 3 sites are downwind in a location of maximum ground-level ozone formation. PAMS sites are at the following locations:

Boston – Long Island (25-025-0041) *Type 2A*
Chicopee (25-013-0008) *Type 2*
Lynn (25-009-2006) *Type 2*
Milton – Blue Hill (25-021-3003) *Type 1*
Newburyport (25-009-4005) *Type 3*
Ware (25-015-4002) *Type 3*

During the 2012 PAMS season, MassDEP will collect carbonyl samples at Chicopee and Lynn and will operate automated hourly gas chromatographs for VOCs at Chicopee, Lynn, Newburyport and Ware. MassDEP also collects every sixth day 24-hour canister VOC and carbonyl samples throughout the year at Chicopee and Lynn, in compliance with the original PAMS regulations. MassDEP proposes to temporarily suspend time-weighted canister sampling during the PAMS season at the Milton-Blue Hill and Boston-Long Island sites in order to more efficiently use existing staff resources to support the four hourly automated gas chomatograph sites. A proposal to permanently end PAMS canister sampling at these sites would come in a separate correspondence.

MassDEP operated an Upper Air Profiler at the Stow monitoring station that measured high elevation meteorology (wind speed/direction) to characterize long-range transport of air pollutants, including ozone and its precursors, but discontinued this site in September 2011 when the host U.S. Air Force meteorology laboratory closed and discontinued access to utilities to power the Profiler.

MassDEP continues to participate in national and regional discussions regarding evaluation of the future of the PAMS monitoring network and may propose changes to the Massachusetts PAMS network based on the results of these assessments and EPA guidelines.

3. Total Reactive Nitrogen (NO_y)

MassDEP operates NO_y analyzers during the PAMS season at Ware (25-015-4002) and Newburyport (25-009-4005) . MassDEP operates an NO_y monitor at the NCore site at Boston – Harrison Avenue (25-025-0042) to fulfill NCore requirements. NO_y measurement is very similar to NO_x, except that the NO_y instrument configuration monitors for a wider range of nitrogen species than a traditional NO_x monitor. Compounds in this wider nitrogen compound group participate in ozone and particulate matter formation and can be pollutants themselves.

4. Air Toxics

Boston – Harrison Avenue (25-025-0042) is a National Air Toxics Trends Site (NATTS) monitoring station, in addition to being an NCore site. NATTS is an EPA program comprised of monitoring sites across the country equipped to measure a wide range of toxic air pollutants, including metals, VOCs, carbonyls, black carbon and semi-volatile organic compounds (SVOCs). At the Harrison Avenue site MassDEP monitors black carbon (using an aethalometer), toxic VOCs, carbonyls (formaldehyde and acetaldehyde), toxic metals (from PM_{10} filters), chromium +6, and polycyclic aromatic hydrocarbons (PAHs).

In addition to the NATTS site, MassDEP collects 24-hour VOC canister samples every sixth day for toxics analysis from Lynn (which serves as a Boston Area background location), and sends the samples to the State of Rhode Island Department of Public Health Laboratory for analysis. MassDEP also monitors black carbon at Boston – North Street (25-025-0043) and at Springfield – Liberty Street (25-013-0016).

5. Private Monitoring

Constellation Generation Company, LLC has operated four monitors near its facilities in Boston. Currently, only one private monitoring site in South Boston (25-025-0040) is still active. Previous sites at Boston-Long Island (25-025-0019), Dorchester (25-025-0020) and East Boston (25-025-0021), were given permission by MassDEP to close and were closed in June 2011.

6. Summary of Network Changes

MassDEP had to close its ozone and upper air profiler site in Stow (25-017-1102) in September 2011 due to the closing of the host U.S. Air Force meteorology laboratory. MassDEP is proposing to rely on and enhance ozone monitoring at EPA's Region 1 Laboratory in Chelmsford to serve as the maximum ozone concentration downwind monitoring location for Worcester.

MassDEP had to close its ozone monitoring site at the Leroy Wood Elementary School in Fairhaven (25-005-1002) in April 2012 due to school renovation/construction. MassDEP began ozone monitoring at its Fall River site (25-005-1004) on March 1, 2012 to offset the loss of the Fairhaven site. MassDEP proposes to establish another ozone monitoring site in Fairhaven for the 2013 season.

MassDEP proposes to close the ozone monitoring site in Boston - Long Island (25-025-0041) and rely on other nearby ozone monitoring site in Boston.

MassDEP proposes to move the ozone monitor in Adams/Mt Greylock (25-023-4002) to a lower elevation location to better account for population exposure.

MassDEP proposes to move the ozone monitor in Amherst (25-015-0103) to a different location in Franklin County prior to the 2013 ozone monitoring season.

MassDEP proposes to establish a near-road NO_2 monitoring site by January 2013 and also measure carbon monoxide at the same site as required by EPA. MassDEP proposes to discontinue NO_x/NO_2 monitoring in Haverhill (25-009-5005) and begin NO_x/NO_2 PAMS oriented-monitoring year-round in Newburyport (25-009-4005).

Massachusetts closed the Lowell- Old City Hall CO monitor (25-017-0007) in 2011.

MassDEP discontinued lead-TSP monitoring at Boston - Harrison Avenue (25-025-0042) in 2011.

MassDEP proposes to close the Springfield- Main Street (25-013-2009) PM_{10} and $PM_{2.5}$ site and begin monitoring PM_{10} (and lead-PM_{10}) at the Springfield – Liberty Street site (25-013-0016). MassDEP proposes closing the Boston-City Square site (25-025-0027) for PM_{10} and $PM_{2.5}$, contingent on MassDEP ensuring that $PM_{2.5}$ monitoring continues at the nearby Boston-North Street site (25-025-0043).

MassDEP is suspending the collection of PAMS VOC samples for the 2012 PAMS season at Milton - Blue Hill (25-021-3003) and Boston - Long Island (25-025-0041).

MassDEP began monitoring lead-TSP at Nantucket Memorial Airport (25-019-0001) in January 2012 as part of a year-long special study.