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Massachusetts 2013 Air Monitoring Network Plan

Air Assessment Branch
Bureau of Waste Prevention

August 26, 2013

This is the Massachusetts 2013 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 29 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 (please note that the EPA Chelmsford ozone monitor is being incorporated into the MassDEP network; see Ozone section on page 5). 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 Draft 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. For more information on this Network Plan, please contact:

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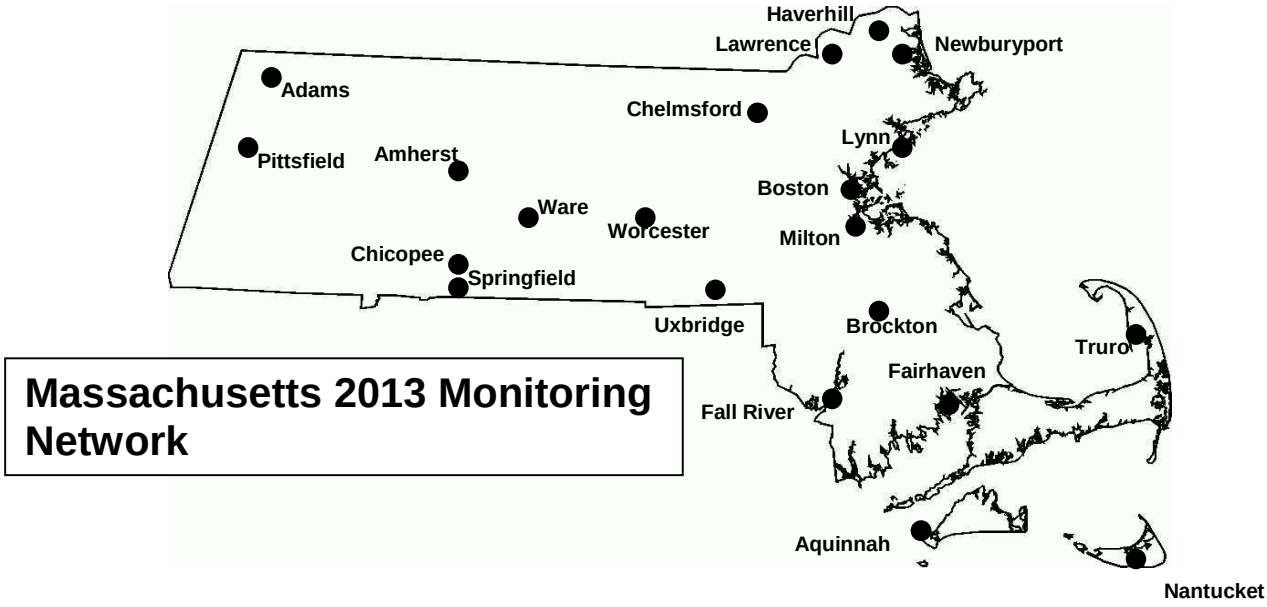

Massachusetts 2013 Monitoring Network
Haverhill
Lawrence
Newburyport
Adams
Chelmsford
Lynn
Pittsfield
Amherst
Boston
Ware
Worcester
Milton
Chicopee
Springfield
Uxbridge
Brockton
Truro
Fairhaven
Fall River
Aquinnah
Nantucket

1. Criteria Pollutants

This section describes MassDEP's network for monitoring 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					
Pollutant		**Primary/ Secondary**	**Averaging Time**	**Level**	**Form**
Carbon Monoxide		primary	8-hour	9 ppm	Not to be exceeded more than once per year
			1-hour	35 ppm	
Lead		primary and secondary	Rolling 3 month average	0.15 µg/m^3	Not to be exceeded
Nitrogen Dioxide		primary	1-hour	100 ppb	98th percentile, averaged over 3 years
		primary and secondary	Annual	53 ppb	Annual Mean
Ozone		primary and secondary	8-hour	0.075 ppm	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
Particle Pollution	$PM_{2.5}$	primary	Annual	12 µg/m^3	annual mean, averaged over 3 years
		secondary	Annual	15 µg/m^3	annual mean, averaged over 3 years
		primary and secondary	24-hour	35 µg/m^3	98th percentile, averaged over 3 years
	PM_{10}	primary and secondary	24-hour	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide		primary	1-hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

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

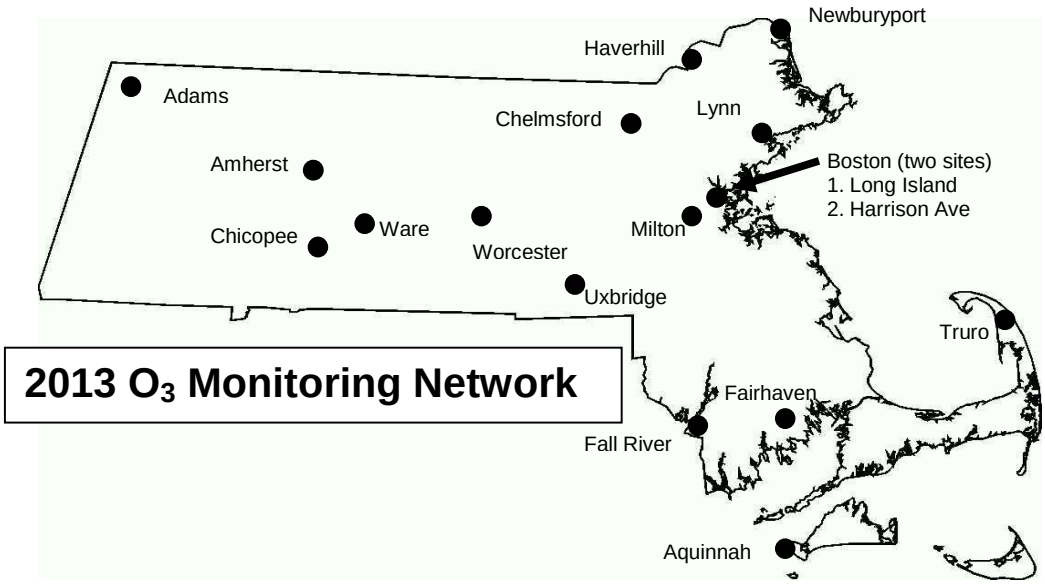
A. OZONE

MassDEP operates 15 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 (25-005-1006)
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)

Below is a description of recent and planned network changes:

1. MassDEP completed relocation of its ozone monitoring station in Fairhaven from the Leroy Wood School to the Hastings Middle School (25-005-1006), and began monitoring at the new location in June 2013.
2. MassDEP has made the Fall River ozone monitor (25-005-1004) permanent since it provides valuable ozone data for the transport-affected South Coast (this ozone monitor was set up in 2012 to account for the temporary loss of Fairhaven).
3. After the 2013 ozone season, MassDEP plans to close the Boston - Long Island ozone monitor (25-025-0041). As described in the 2012 Network Plan, 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 the new nitrogen dioxide near-road site in Boston.
4. MassDEP is working to enhance the EPA NERL ozone monitoring site in Chelmsford so it can serve as the maximum concentration ozone site in the prevailing downwind direction from Worcester. As described in the 2012 Network Plan, an ozone monitor in Stow formerly served this purpose, but had to be closed in September 2011. Once enhanced, the EPA Chelmsford ozone monitor will be officially incorporated into MassDEP's monitoring network.
5. After the 2013 ozone season, MassDEP plans to move the Amherst ozone monitor (25-015-0103) to a location in Greenfield. As described in the 2012 Network Plan, MassDEP believes that the measurements taken at this site are redundant with those taken at other nearby sites (e.g., Chicopee and Ware) and that moving the site to Greenfield will fill a gap in Franklin County in the existing monitoring network. MassDEP also plans to monitor $PM_{2.5}$ at the Greenfield site.
6. After the 2013 ozone season, MassDEP plans (as resources allow) 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.


2013 O_3 Monitoring Network
Newburyport
Haverhill
Adams
Chelmsford
Lynn
Amherst
Boston (two sites)
1. Long Island
2. Harrison Ave
Chicopee
Ware
Worcester
Milton
Uxbridge
Truro
Fairhaven
Fall River
Aquinnah

B. SULFUR DIOXIDE

MassDEP operates 6 sulfur dioxide (SO_2) monitors, which includes three full-scale monitors and three trace-scale (low measurement scale) monitors. SO_2 monitors are at the following locations:

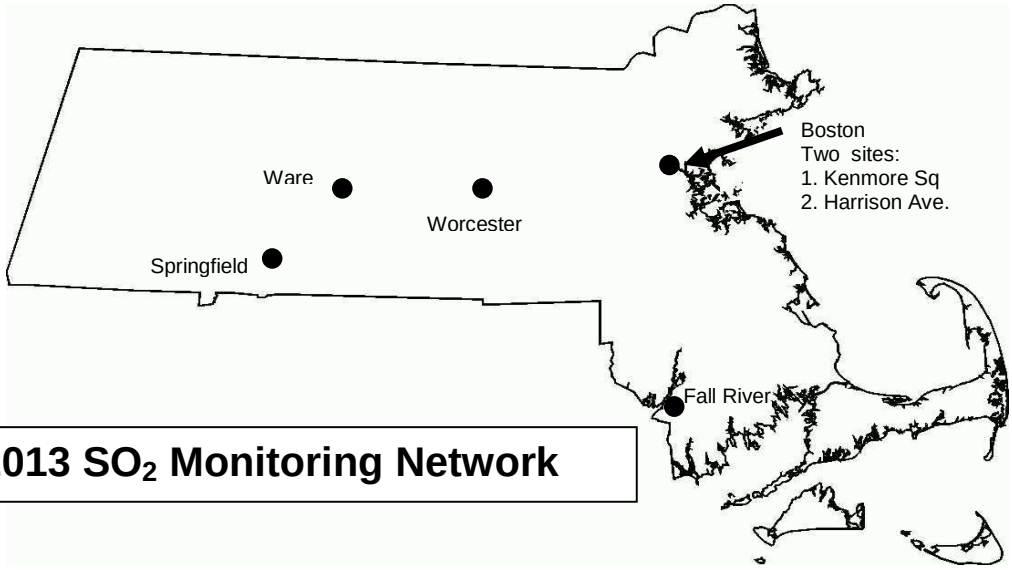
Boston – Harrison Ave (25-025-0042) *trace*
Boston – Kenmore Square (25-025-0002) *trace*
Fall River - (25-005-1004)
Springfield – Liberty Street (25-013-0016)
Ware - (25-015-4002) *trace*
Worcester – Summer Street (25-027-0023)

In June 2010, EPA revised the SO_2 NAAQS, establishing a 1-hour SO_2 standard of 75 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 and to be operational by January 1, 2013. 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.

Based on the SO_2 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 existing SO_2 monitors, combined with existing SO_2 monitors in RI and NH, fulfill the requirements.

MassDEP converted the Boston-Kenmore Square monitor to trace-level in 2012, and plans to convert the full-scale SO_2 instruments in Springfield and Worcester to trace-level monitors to improve resolution at the low range of concentrations these monitors are currently measuring.



2013 SO_2 Monitoring Network

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 monitored as an NAAQS pollutant and as an ozone precursor. MassDEP operates four NO_2 monitors to determine compliance with the NAAQS (based on population exposure) and one near-road monitor added in 2013, 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*
Boston – Von Hillern Street (25-025-0044) *Near-road*
Chicopee (25-013-0008) *PAMS, year-round*
Lynn (25-009-2006) *PAMS, year-round*
Milton (25-021-3003) *PAMS, summer only*
Newburyport (25-009-4005) *PAMS, year-round*
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 100 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. On March 7, 2013, EPA revised the deadlines by which the near-road monitors are to be operational. EPA currently requires:

- One near-road monitor in any CBSA with 1 million or more people to be operational by January 1, 2014;
- A second near-road monitor in any CBSA with 2.5 million or more people to be operational by January 1, 2015;
- One near-road monitor in all remaining CBSAs with 500,000 or more people to be operational by January 1, 2017; and
- Potentially additional monitors in susceptible and vulnerable communities.

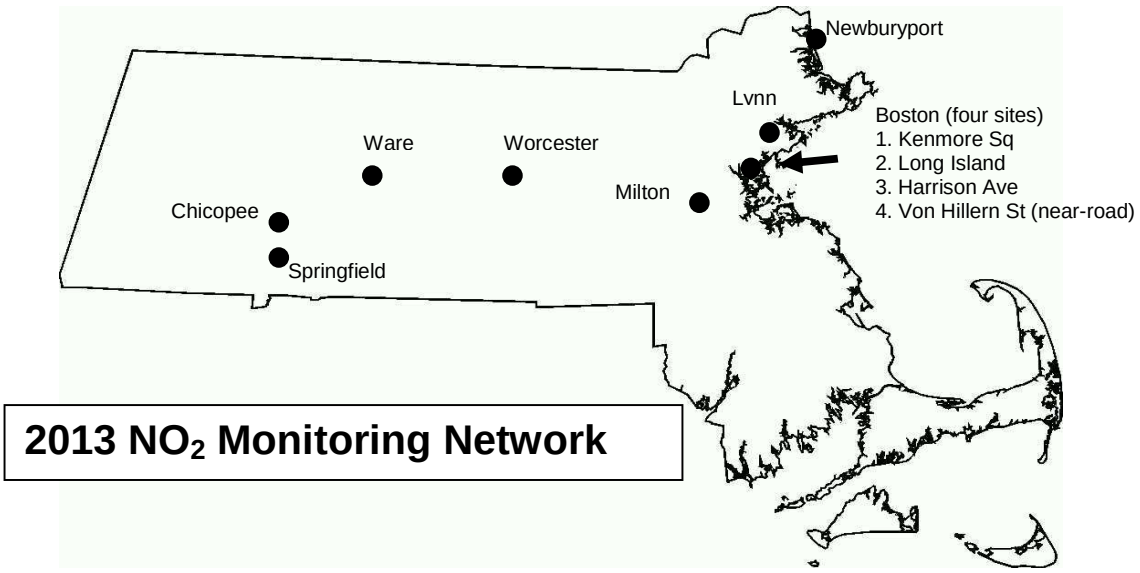
MassDEP will continue to operate its existing NO_2 monitors to address the community monitoring/vulnerable population requirements of the new NO_2 monitoring requirements. Harrison Ave (25-025-0042), Kenmore Square (25-025-0002) and Liberty Street (25-013-0016) have been identified as sites that meet this requirement. For near-road monitors, current EPA regulations require two monitors in the Boston area CBSA (MA/NH), one each in the Springfield and Worcester CBSAs, and one in the Providence/New Bedford/Fall River CBSA (MA/RI). To meet the first phase-in date for near-road monitors, MassDEP installed and began operating a near-road NO_2 monitor station on Von Hillern Street in Boston in June 2013. The Von Hillern Street location was selected as the first Boston near-road site because:

1. The location of the site is downwind (east) of the prevailing direction and at the same level as six lanes of heavy traffic in both directions, which fits the criteria for measuring near-road NO_2 and other pollutants.
2. The development of property along Route I-93, the submersion of the highway through a large section of Boston, and the proximity of the open harbor just south of the chosen location limited the potential areas to site a near-road monitoring station adjacent to the highway.
3. While the available traffic data indicates one or two locations in the urban corridor with higher average daily traffic volume, the data indicates that the traffic volume at the chosen location is

consistent with that measured at other locations from Columbia Road (south) to the O'Neil Tunnel (north). The proximity of this location at the entrance and exit to the city is consistent with traffic congestion selection factors in EPA's guidance.

MassDEP will consider a second near-road NO_2 monitor in the Boston area CBSA (MA/NH) in the context of MassDEP's and EPA's future budgets and national discussions regarding phase 2 of NO_2 near-road monitoring. Additional near-road sites for the Springfield and Worcester CBSAs also will be considered as part of future phases of NO_2 near-road monitoring. Rhode Island has established a monitor in the multi-state (MA/RI) Providence CBSA, and therefore MassDEP is not required to site a monitor in that CBSA.

As described in the 2012 Network Plan, MassDEP discontinued NO_2 and NO_x monitoring in Haverhill as of January 1, 2013, and expanded NO_2 and NO_x monitoring to year-round at the Newburyport PAMS site (instead of just during the ozone season).

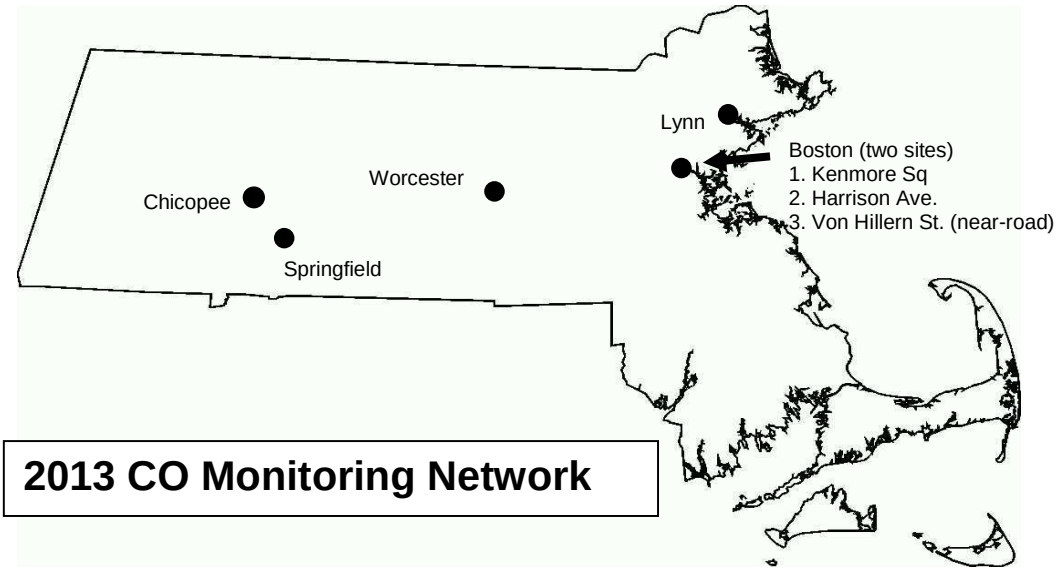


D. CARBON MONOXIDE

MassDEP operates 7 carbon monoxide (CO) monitors, including four trace-level monitors. Due to the very low concentrations of CO that have been measured statewide for a number of years, MassDEP is transitioning from full-scale (0 to 50 ppm) to trace-level (0 to 5 ppm) monitors for all CO monitoring locations to maximize measurement resolution. MassDEP CO monitors are at the following locations:

Boston – Harrison Ave (25-025-0042) *trace*
Boston – Kenmore Square (25-025-0002)
Boston – Von Hillern Street Near-road (25-025-0044) *trace*
Chicopee (25-013-0008) *trace*
Lynn (25-009-2006) *trace*
Springfield – Liberty Street (25-013-0016)
Worcester – Summer Street (25-027-0023)

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 an urban area with a population of 1 million or more. Monitors required in CBSAs of 2.5 million or more people must be operational by January 1, 2015, and monitors required in CBSAs having 1 million or more people must be operation by January 1, 2017. Based on the monitoring regulations, MassDEP began operating a CO monitor at the new near-road NO_2 site in Boston (Von Hillern Street) in June 2013 ahead of schedule. The requirement for a CO monitor at a near-road NO_2 site for the Providence/New Bedford/Fall River CBSA (MA/RI) by January 1, 2017 will be fulfilled by Rhode Island including a CO monitor at its near-road site in Providence. MassDEP also may place CO monitors at future near-road sites.



E. PARTICULATE MATTER

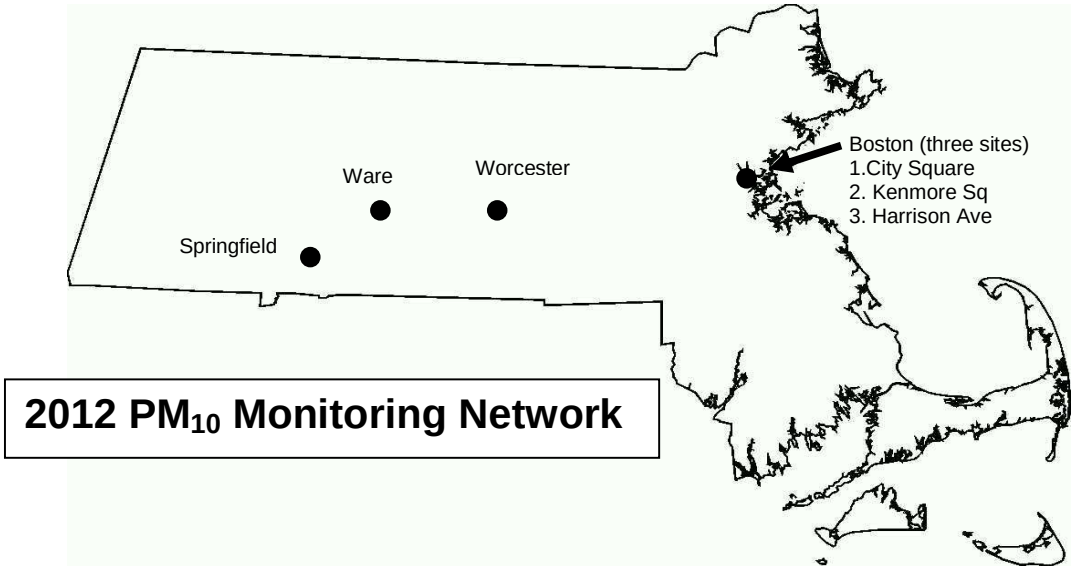
PM_{10}

MassDEP operates 7 PM_{10} monitors (low volume instruments), including two monitors collocated at the Boston - Harrison Avenue NCore site for quality assurance purposes. 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)
Springfield – Main Street (25-013-2009)
Ware (25-015-4002)
Worcester – Summer Street (25-027-0023)[1]

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 is required for NCore sites. These samples also are used for PM_{10} based lead monitoring and NATTS metals.

As described in the 2012 Network Plan, MassDEP plans to move the PM_{10} monitor at Springfield – Main Street (25-013-2009) to the Springfield- Liberty Street site (25-013-0016), due to the close proximity of the two sites. MassDEP also plans to close the Boston-City Square monitor since this monitor is located very close to North Street, where MassDEP operates daily $PM_{2.5}$ monitors. The building where the North Street monitors are is undergoing renovations, so closing the City Square monitor will be contingent on MassDEP ensuring that it can continue monitoring PM at the North Street site.



[1] 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 are also 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. $PM_{2.5}$ 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*
Chicopee (25-013-0008) *2 monitors*
Fall River – Globe Street (25-005-1004)
Worcester – Summer Street (25-027-0023)
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)

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

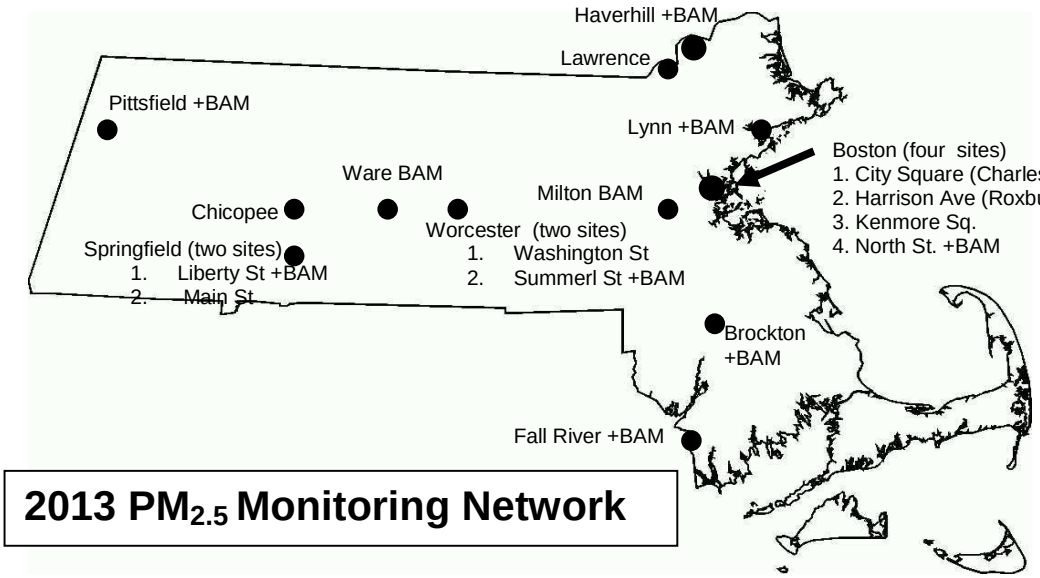
Boston – Harrison Avenue (25-025-0042)
Boston – North St (25-025-0043)
Fall River – Globe Street (25-005-1004)
Haverhill – Consentino School (25-009-5005)
Lynn – Water Treatment Plant (25-009-2006)
Milton – Blue Hill (25-021-3003)
Pittsfield (25-003-0006)
Springfield – Liberty Street (25-013-0016)
Ware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

All of MassDEP's BAMs have a Federal Equivalent Method (FEM) designation. FEM monitors provide the hourly $PM_{2.5}$ data that appears on MassDEP's *MassAir* website. On January 15, 2013, EPA published its final rule, "National Ambient Air Quality Standards for Particulate Matter," which lowered the annual standard to 12 μ/m^3 and revised $PM_{2.5}$ monitoring requirements (78 FR 3086). The rule requires each agency to specify its intention and rationale to use or not use data from continuous $PM_{2.5}$ FEMs for comparison to the NAAQS as part of its annual monitoring network plan. In accordance with the rule, MassDEP has assessed data comparability using EPA's tool that compares the performance of collocated FEM and FRM monitors (available at www.epa.gov/ttn/amtic/contmont.html), and based on these assessments will use the data from of its FEM monitors for comparison to the NAAQS, with the exception of the FEM monitor in Springfield (Liberty Street) because this monitor did not have acceptable data comparability with the collocated FRM monitor (see Attachment 4 for Comparability Assessment results for this monitor). MassDEP will continue to use the Springfield FEM data for Air Quality Index reporting to the public and will evaluate ways to improve data comparability to the FRM data.

MassDEP is establishing a new monitoring station in Brockton at Buckley Playground (25-023-0005) that will replace the existing monitoring station at the Post Office, once six months of data is collected from both locations for comparison. This new site will have both FRM and FEM (BAM) monitors. MassDEP also will include a BAM monitor at the new Greenfield monitoring station (in combination with an ozone monitor - see Ozone Section). Finally, MassDEP plans to install an FRM and BAM at the new near-road Boston-Von

Hillern Street site by the end of 2013. Together, these efforts will add three continuous $PM_{2.5}$ monitoring sites to MassDEP's network. Initially, each of these monitors will serve as special purpose monitors.

As described in the 2012 Network Plan, MassDEP plans to discontinue $PM_{2.5}$ monitoring at Boston - City Square, contingent on MassDEP ensuring that it can continue monitoring $PM_{2.5}$ at the North Street site, which is still undergoing building renovations, and close the $PM_{2.5}$ site at Springfield-Main Street and rely on the Springfield-Liberty Street site (less than 1 mile away).



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 uses the Federal Reference Method (FRM) for PM_{coarse} in compliance with NCore requirements at the Boston-Harrison Avenue NCore site. 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.

F. LEAD

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 required 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 requires 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 required 1 year of monitoring at 15 general aviation airports using lead-TSP monitors, including Nantucket Memorial Airport.

MassDEP monitors lead at its Boston (Harrison Avenue) NCore site using the low-volume PM_{10} method. In addition to the NCore site, MassDEP monitors 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 plans 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.

In February 2013, MassDEP completed a one-year monitoring program of collocated lead-TSP monitors at Nantucket Memorial Airport (25-019-0001). The monitoring results show that lead levels were more than 50% lower than the lead NAAQS, and therefore MassDEP stopped monitoring in February 2013. In June 2013, EPA approved termination of this monitoring site, and MassDEP has removed the monitors from the airport.

2. Photochemical Assessment Monitoring Stations

MassDEP operates enhanced ozone, Photochemical Assessment Monitoring Stations (PAMS) in the Boston and Springfield Metropolitan Areas. PAMS are 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. MassDEP has operated 6 PAMS sites in the Boston and Springfield Areas 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 PAMS season, MassDEP collects carbonyl samples at Chicopee and Lynn and operates 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.

As described in the 2012 Network Plan, MassDEP suspended time-weighted canister sampling (eight 3-hour canister samples every third day) during the 2012 PAMS season at the Boston-Long Island and Milton-Blue Hill sites in order to more efficiently use existing staff resources to support the four hourly automated gas chromatograph sites, and indicated its intention to permanently end PAMS canister sampling at these sites due to the labor intensive nature of collecting and processing canister samples. MassDEP has permanently end canister sampling at the Boston–Long Island and Milton–Blue Hill sites in order to focus resources on its four PAMS hourly monitoring sites.

MassDEP continues to participate in national and regional discussions regarding evaluation of the future of the PAMS monitoring network and may propose future 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 a 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), and polycyclic aromatic hydrocarbons (PAHs).

In 2013, EPA announced that hexavalent chromium is no longer a required element to be monitored at NATTS sites and that states may discontinue monitoring as of June 30, 2013. Monitored levels have been very low, and MassDEP discontinued monitoring hexavalent chromium as of June 30, 2013 in accordance with EPA's announcement. As of January 1, 2013, MassDEP discontinued the collection of high volume PM_{10} samples for toxic metals and is now submitting the regular low volume samples for toxic metals analysis. These analyses also will provide lead results for the NCore/NATTS site.

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 operates one private monitoring site in South Boston (25-025-0040) that measures sulfur dioxide, oxides of nitrogen and total suspended particulates (TSP).

6. Summary of Network Changes

- MassDEP completed a 1-year special purpose monitoring study of lead-TSP at Nantucket Memorial Airport (25-019-0001) in February 2013 and has terminated the monitoring site.

- MassDEP discontinued monitoring chromium +6 as part of NATTS monitoring at the Harrison Avenue Boston site at the end of June 2013, and discontinued the collection of high volume PM_{10} samples for metals analysis in favor of using existing low volume PM_{10} samples for that purpose.

- MassDEP began near-road NO_2 and carbon monoxide monitoring on Von Hillern Street in Boston (25-025-0044) and plans to add $PM_{2.5}$ at this site.

- MassDEP completed relocation of its Fairhaven ozone monitoring site from the Leroy Wood Elementary School to the Hastings Middle School (25-005-1006) and began monitoring in June 2013.

- MassDEP discontinued NO_x/NO_2 monitoring in Haverhill (25-009-5005) and began NO_x/NO_2 PAMS oriented-monitoring year-round in Newburyport (25-009-4005).

- MassDEP is planning to establish three new FEM $PM_{2.5}$ monitoring sites, in Boston (Von Hillern Street), Greenfield, and Brockton (Buckley Playground). MassDEP plans to close the FRM $PM_{2.5}$ monitoring site at the Brockton Post Office (25-023-0004) after the new site at the Buckley Playground (25-023-0005) has operated for 6 months.

- MassDEP is using FEM $PM_{2.5}$ monitors for comparison with the NAAQS at all FEM sites except Springfield–Liberty Street (25-013-0016).

- MassDEP has permanently discontinued PAMS VOC canister sampling (8 canisters every third day) at the Milton-Blue Hill (25-021-3003) and Boston-Long Island (25-025-0041) sites.

- As described in the 2012 Network Plan, MassDEP continues its plans to:

    - Enhance ozone monitoring at EPA's NERL in Chelmsford to serve as MassDEP's the maximum ozone concentration monitor downwind of Worcester.
    - Close the ozone monitoring site in Boston - Long Island (25-025-0041) after the 2013 ozone season and rely on other nearby ozone monitoring sites in Boston.
    - Move the ozone monitor in Amherst (25-015-0103) to a site in Greenfield after the 2013 ozone season.
    - 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), and close the Boston-City Square site (25-025-0027) for PM_{10} and $PM_{2.5}$, contingent on continued $PM_{2.5}$ monitoring at the nearby Boston-North Street site (25-025-0043).
    - Convert the full-scale SO_2 instruments in Springfield, and Worcester to trace-level analyzers to improve resolution at the low range of concentrations these analyzers are currently measuring.