2010 Annual Report on Air Quality in New England

United States Environmental Protection Agency, Region 1
New England Regional Laboratory
North Chelmsford, MA 01863

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Ecosystems Assessment Unit
http://www.epa.gov/region01/lab/reportsdocuments.html

This Report has been prepared by the Air Monitoring Team of the ECA Unit at OEME
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with
Map Data Source: USGS Earth Resources Observation Systems (EROS) Data Center, for elevation data.

The photo on the cover is from the Mt. Washington site of the Hazecam network

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2010 ANNUAL REPORT ON AIR QUALITY

IN NEW ENGLAND

This report provides a summary of 2010 annual air quality information for all states in New England. The majority of the data included in this report were submitted to EPA by the states from their ambient monitoring networks in accordance with 40 CFR 58. The only data from industrial monitors which have been included are from the Massachusetts Industrial Network. These industrial sites supplement the state network.

This report reflects the status of the Air Quality System (AQS) database as of April 2011. The majority of data used have been evaluated and verified by EPA. However, for those monitors that appear to be violating an applicable ambient air quality standard, the data may require further evaluation by both EPA and the states. EPA has designated areas in New England as nonattainment for the 1997 8-hour ozone standard as reflected in the map of ozone nonattainment areas on page 81. Nonattainment area designations for the annual and 24-hour particulate matter less than 2.5 microns ($PM_{2.5}$) standards are also shown on page 81.

A table of the National Ambient Air Quality Standards (NAAQS) follows this introduction.

There is a list of potential health effects of the criteria pollutants after the NAAQS.

A summary of New England air quality follows. The bulk of the report, beginning on page 5, lists by state, a summary of criteria pollutant data from sites in each state in New England, and from industrial sites in Massachusetts. The information presented compares the measured values to each NAAQS; it includes the number of violations, the maximum and second high values, and the annual means [arithmetic mean or average for sulfur dioxide (SO_2), particulate matter less than 10 microns (PM_{10}), and nitrogen dioxide (NO_2)]. An annual mean is not valid for intermittent data unless there are four valid quarters. For PM_{10} and $PM_{2.5}$, 75% of the scheduled samples must be available for a quarter to be considered valid. However, years with at least 11 samples in each quarter shall be considered valid, notwithstanding quarters with less than complete data, if the resulting annual mean is greater that the level of the standard. (For continuous data, 75% of the year must be available to calculate a valid annual average.)

Graphs of selected air quality monitoring sites that show a multi-year span of data for PM_{10}, carbon monoxide (CO), $PM_{2.5}$, SO_2, ozone (O_3), and NO_2. are included with these data summary tables.

The state maps display the location of the monitoring sites (when measuring particulates, each state has at least one location where duplicate, or collocated, monitors run side by side for quality assurance purposes).

Additional maps are provided to show the current areas in New England designated non-attainment by EPA.

A discussion of regional atmospheric deposition of sulfates and nitrates follows this section.

A list of AQS state and regional Air Quality Contacts, their addresses and phone numbers is provided at the end of the report.

National Ambient Air Quality Standards

The Clean Air Act, which was last amended in 1990, requires EPA to set **National Ambient Air Quality Standards** (40 CFR part 50) for pollutants considered harmful to public health and the environment. The Clean Air Act established two types of national air quality standards. ***Primary standards*** set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. ***Secondary standards*** set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

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. They are listed below. Units of measure for the standards are parts per million (ppm) by volume, milligrams per cubic meter of air (mg/m^3), and micrograms per cubic meter of air (µg/m^3).

	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 (2)	Rolling 3-Month Average	Same as Primary	
	1.5 µg/m^3	Quarterly Average	Same as Primary	
Nitrogen Dioxide	53 ppb (3)	Annual (Arithmetic Ave.)	Same as Primary	
	100 ppb	1-hour (4)	None	
Particulate Matter (PM_{10})	150 µg/m^3	24-hour (5)	Same as Primary	
Particulate Matter ($PM_{2.5}$)	15.0 µg/m^3	Annual (6) (Arithmetic Average)	Same as Primary	
	35 µg/m^3	24-hour (7)	Same as Primary	
Ozone	0.075 ppm (2008 std)	8-hour (8)	Same as Primary	
	0.08 ppm (1997 std)	8-hour (9)	Same as Primary	
	0.12 ppm	1-hour (10)	Same as Primary	
Sulfur Dioxide	0.03 ppm	Annual (Arithmetic Ave.)	0.5 ppm	3-hour (1)
	0.14 ppm	24-hour (1)		
	75 ppb (11)	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_2 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 $PM_{2.5}$ concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m^3.
(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^3 (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 ≤ 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.

Health Effects of Criteria Pollutants

Lead (Pb)

Children are particularly sensitive to the chronic effects of lead and can suffer from damage to the brain and nervous system: behavior and learning problems, such as hyperactivity: slowed growth: hearing problems: and chronic headaches. Adults can suffer from reproductive problems (in both men and women), high blood pressure and hypertension, nerve disorder, memory and concentration problems, and muscle and joint pain. The major sources of lead air pollution are lead smelters, lead-acid battery manufacturers, utilities, airports and waste incinerators.

Ozone (O_3)

Ozone can irritate the respiratory system, causing coughing, throat irritation, and/or an uncomfortable sensation in the chest. Ozone can reduce lung function and make it more difficult to breathe deeply and vigorously. Ozone can aggravate asthma and increase susceptibility to respiratory infections. It injures vegetation, and has adverse effects on materials. Ozone is generally highest on sultry summer afternoons. Ozone is formed in the atmosphere by the reaction of nitrogen oxides, and hydrocarbons in the presence of sunlight.

Sulfur Dioxide (SO_2)

Children and adults with asthma who are active outdoors are most vulnerable to the health effects of sulfur dioxide. The primary effect they experience, even with brief exposure, is a narrowing of the airways, which may cause symptoms such as wheezing, chest tightness, and shortness of breath. Long-term exposure to both sulfur dioxide and fine particles can cause respiratory illness, alter the lung's defense mechanisms, and aggravate existing cardiovascular disease. It combines with water to form acid aerosols and sulfuric acid mist which falls to earth as acid rain, causing plant and structural damage, and acidifying watershed and freshwater ecosystems. Sulfate aerosols are also a component of $PM_{2.5}$. Major sources include power plants and industrial boilers.

Nitrogen Dioxide (NO_2)

In children and adults with respiratory disease, nitrogen dioxide can cause respiratory symptoms such as coughing, wheezing, and shortness of breath, and affect lung function. In children, short-term exposure can increase the risk of respiratory illness. Studies suggest that long-term exposure may cause permanent structural changes in the lungs. It also combines with water in the atmosphere to form acid aerosols and contributes to the acid rain that causes watershed acidification and damage to material structures. Nitrate aerosols contribute to ozone formation and are a component of $PM_{2.5}$. The sources of nitrogen dioxide are motor-vehicle exhaust, and fuel combustion sources such as electric power generating facilities.

Carbon Monoxide (CO)

People with cardiovascular disease, such as angina, may experience chest pain and more cardiovascular symptoms if they are exposed to carbon monoxide, particularly while exercising. In healthy individuals, exposure to higher levels of carbon monoxide can affect mental alertness and vision. Carbon monoxide forms when carbon and hydrocarbon in fuels do not completely burn. Motor vehicles are the most significant source of CO to ambient air.

Particulate Matter ($PM_{2.5}$ and PM_{10})

Both fine ($PM_{2.5}$) and coarse (PM_{10}) particles can accumulate in the respiratory system. When exposed to particulate matter (PM), people with existing heart or lung problems are at increased risk of premature death or admission to hospitals or emergency rooms. Children and people with existing lung disease may not be able to breathe as deeply or vigorously as they would normally, and they may experience coughing and shortness of breath. PM can increase susceptibility to respiratory infections and can aggravate existing respiratory diseases, causing more use of medication and more doctor visits. PM includes both solid particles and liquid droplets found in air. Many sources, both manmade and natural, emit PM directly or emit other pollutants that react in the atmosphere to form PM. Sources of fine particles include all types of combustion (motor vehicles, power plants, wood burning, etc.) and some industrial processes. Sources of coarse particles include crushing or grinding operations, agricultural operations, and dust from paved or unpaved roads.

Site Maps, Narratives, Summary Data, and Charts for the Criteria Pollutants in the Six New England States

Abbreviations and Symbols used in the Ambient Air Quality Data Section

SITE ID Site Identification number

POC Parameter Occurrence Code - differentiates between monitors for a given pollutant

MT Monitor type:
1=NAMS National Air Monitoring Station,
2=SLAMS State/Local Air Monitoring Station,
3=Other,
4=Industrial, Industrially owned Air Monitoring Station,
6,7,8=PAMS Photochemical Assessment Air Monitoring Station
0=Unknown,
C=Non EPA Federal

YR Year

REP ORG Reporting Organization

#OBS Number of Observations

MAX 24-HR:
- 1st Highest 24-hour value recorded in the year
- 2nd Second highest 24-hour value for the year
- 3rd Third highest 24-hour value for the year.
- 4th Fourth highest 24-hour value for the year.

ARITH MEAN Arithmetic mean

WTD ARITH MEAN Weighted arithmetic mean

GEO MEAN Geometric mean

GEO STD Geometric standard deviation

QUARTERLY ARITH MEANS:
- 1ST First quarter arithmetic mean
- 2ND Second quarter arithmetic mean
- 3RD Third quarter arithmetic mean
- 4TH Fourth quarter arithmetic mean

MAX VALUES:
- 1st Highest 24-hour value recorded for the year
- 2nd Second highest 24-hour value in the year.

METHOD Method

MAX 1-HR:
- 1st Highest 1-hour value recorded in the year
- 2nd Second highest 1-hour value recorded in the year

OBS > 35 Number of observations greater than 35 ppm for CO

MAX 8-HR:
- 1st Highest 8-hour average value recorded in the year
- 2nd Second highest 8-hour average value recorded in the year

OBS > 9 Number of 8-hour ave. greater than 9 ppm for CO

OBS > 365 Number of 24-hour ave. greater than 365 ug/m^3 for SO_2

MAX 3-HR:
- 1st Highest 3-hour value recorded in the year
- 2nd Second highest 3-hour value recorded in the year

Obs > 1300 Number of 3-hour ave. greater than 1300 µg/m^3 for SO_2

NUM MEAS The valid number of days measured

- **NUM REQ** The valid number of days in the ozone season

NUM OBS Number of Observations

SCHEDULED NUM OBS Number of observations scheduled

% OBS Percent completed of number of observations scheduled

MISS DAYS ASSUMED < STANDARD
Number of missing days assumed to be less than the standard

"METHOD" REPORTED = Details can be found at: http://www.epa.gov/ttn/airs/airsaqs/manuals/ A "code "0" is included if Multiple Methods codes are input for the same year.

PPM: Parts Per Million

PPB: Parts Per Billion

µg/m^3 : micrograms per cubic meter

98th (or 99th) percentile: Value at which 98 (or 99) percent of the maximum values are below.

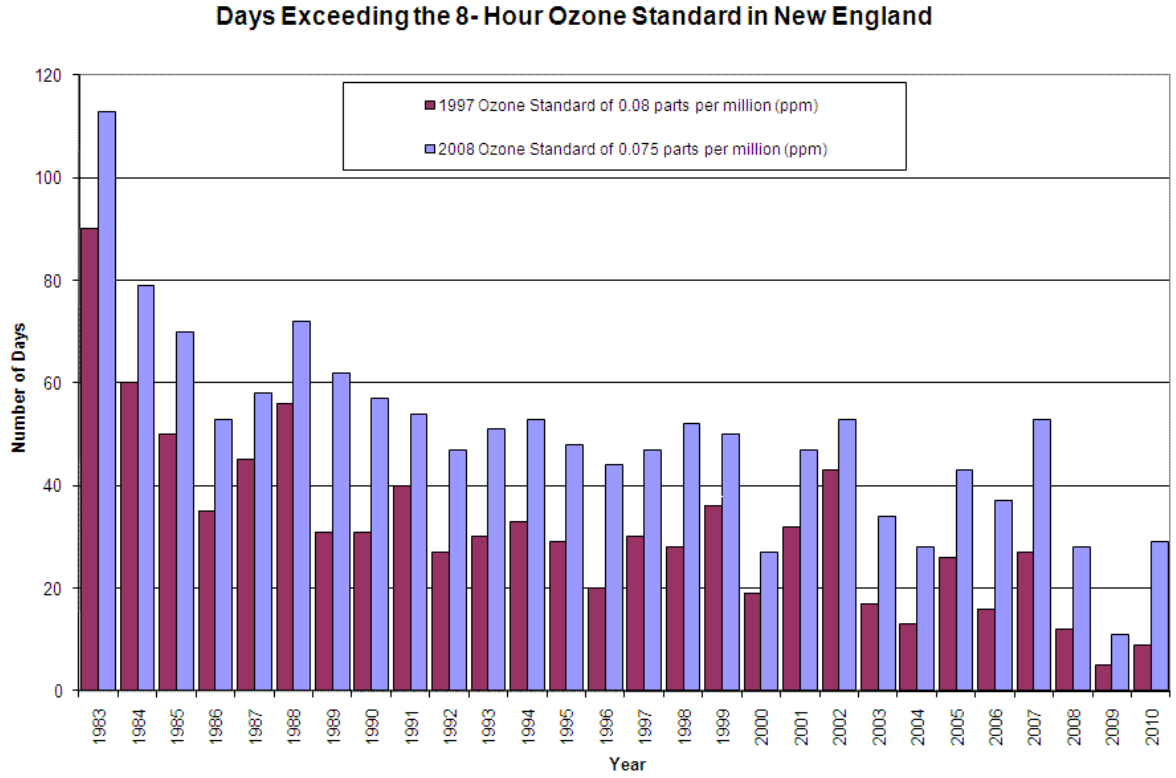
2010 Summary of New England Ambient Air Quality

2010 Summary of Ambient Air Quality in New England

The New England states operate more than 110 criteria pollutant monitoring sites, with more than 250 ambient air quality monitors. These monitors measure the criteria pollutants: CO, SO_2, NO_2, O_3, Pb, PM_{10} and $PM_{2.5}$. Levels of these pollutants are compared to the NAAQS, limits set by EPA to protect public health and welfare. In addition, more than a dozen sites measure precursor pollutants for ozone (PAMS sites) and toxic compounds.

In general, air quality measurements are strongly influenced by seasonal weather patterns. This is especially true for ozone and haze (principally composed of fine particulate matter - $PM_{2.5}$) which can be influenced by photochemical and transport mechanisms. For these pollutants, higher ambient air concentrations are generally recorded during warm and dry summers and lower concentrations during cool and/or wet summers. In addition, high $PM_{2.5}$ concentrations can be recorded during strong temperature inversions in the winter months. Both of these pollutants are tracked real-time by the EPA AIRNow Air Quality Index (AQI) program, which maps the relative health impacts of ozone and fine particulate concentrations throughout the U.S. (http://www.airnow.gov/).

During 2010, weather conditions during the summer were generally warmer and drier than normal, with thirty-four days above 90 F at Bradley Airport near Hartford, CT, leading to more high ozone days. Using the number of days when at least one ozone monitoring site exceeded the 2008 8-hour ozone standard (0.075 ppm), 2010 had 29 days which exceeded the NAAQS. 2009 had 11 days which exceeded that NAAQS. In contrast, relative to the less stringent 1997 8-hour ozone standard (0.08 ppm), there were only 9 days which exceeded this standard. This chart shows the trend in the number of days above both the newer 0.075 ppm standard and the previous 0.08 ppm standard. At the time of this writing, EPA is reconsidering the 2008 NAAQS and has proposed to strengthen the 8-hr primary ozone standard to a level within the range of 0.060 – 0.070 ppm.



More information can be found at www.epa.gov/region1/aqi. In 2010, the Danbury, Connecticut site recorded a fourth highest maximum 8-hour ozone concentration of 0.084 ppm, the highest in New England. The other New England states measured fourth highest maximum 8-hour concentrations ranging from 0.080 ppm (MA) to 0.068 ppm (VT). Fifteen (15) monitoring sites in New England exceeded the fourth highest 8-hour ozone threshold (> 0.075 ppm). In 2009, only 3 monitors exceeded this threshold. Nevertheless, based on 2008 – 2010 data, all ozone sites in New England meet the 1997 8-hour ozone standard of 0.08 ppm.

During 2010, the highest daily concentrations of fine particulate matter $PM_{2.5}$ occurred at Pierce Island, Portsmouth, New Hampshire at 61.5 µg/m^3. Other high concentrations were in the order of 50-60 µg/m^3 and were measured at a number of sites throughout New England. That said, however, based on 2008-2010 data, all sites in New England met the 24-hour and the annual $PM_{2.5}$ NAAQS. The highest annual average concentration for fine particulate matter were measured in New Haven , CT and Boston, MA at just over 10 µg/m^3. The lowest annual average concentrations of fine particulate matter were measured at the Bar Harbor, Presque Isle, and Greenville, Maine sites; the Laconia, NH site; and the Underhill, VT site (<6.0 µg/m^3). For coarse particulate matter (PM_{10}), the highest daily concentration was measured at the Presque Isle, ME site (80 µg/m^3). None of the PM_{10} sites in New England exceeded either the primary or the secondary NAAQS for PM_{10}. In New England, $PM_{2.5}$ concentrations are collected using both the typical 24- hour, or daily, sampling techniques, and some monitors collect data on a continuous basis. This real time data collection is useful for AIRNow reporting purposes in all areas. It is also used for NAAQS compliance purposes in some States, even while other States evaluate the continuous monitors for NAAQS compliance purposes. It should be noted that when this available continuous data is used in one State, but not another, it may result in it appearing that one State may have higher pollution values because a State that did not sample a given day may miss an air pollution episode. This was the case in 2010. Wildfires in Quebec resulted in very high $PM_{2.5}$ values being reported in some States on May 31, 2010. Neither Maine nor Vermont were sampling that day for the $PM_{2.5}$ NAAQS with filter based monitors, even though they recorded high values on their continuous $PM_{2.5}$ monitors and reported high values to AIRNow that day.

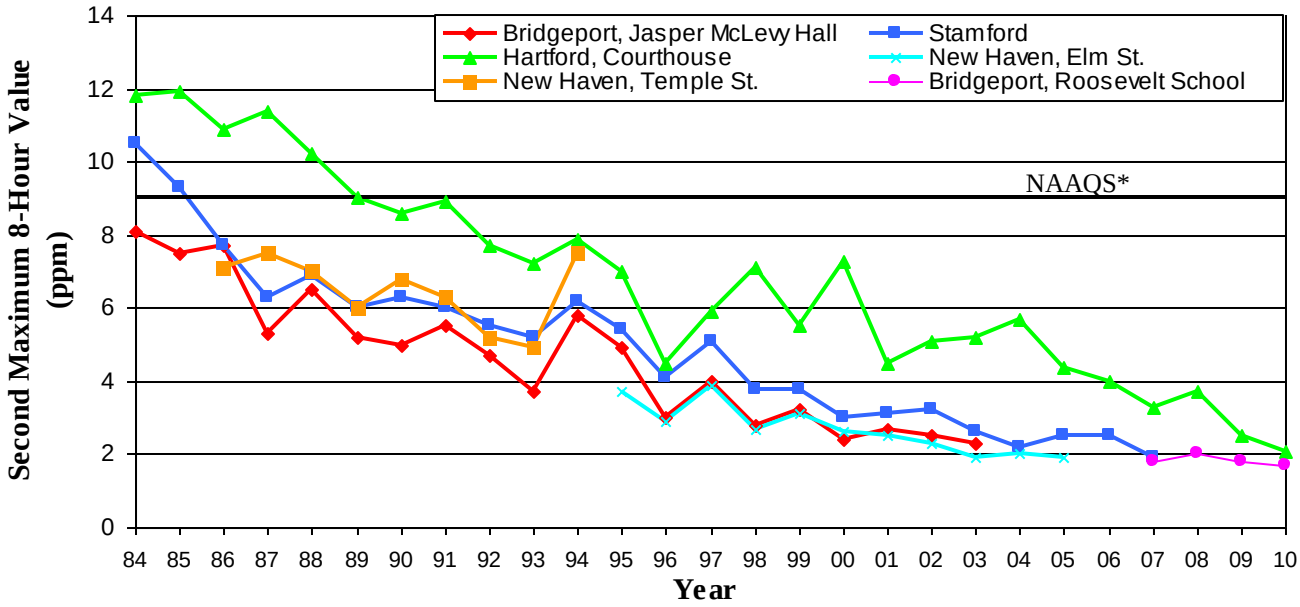
In general, the concentrations for most of the other criteria pollutants (NO_2, CO, and Pb) measured at monitoring sites throughout New England either declined or remained at historically low levels. Ambient air concentrations of NO_2, CO, and Pb measured at sites in New England were well below the NAAQS in effect in 2010.

In the coming year, with the substantially strengthened NAAQS for lead, EPA expects that additional measurements will be made to better characterize lead concentrations in New England. In addition, EPA promulgated substantially strengthened NAAQS for SO_2 and NO_2. In the coming years, new monitors will be placed throughout New England to characterize pollutant concentrations relative to these pollutants. Based on the 2008-2010 data, the Pembroke, New Hampshire monitor measures sulfur dioxide concentrations that violate this new NAAQS, with the highest recorded value during 2010 over 320 ppb for one hour.

As a further resource, detailed information about air monitors and a variety of mapping and data plotting information for the entire United States can be found at www.epa.gov/airexplorer.

Connecticut Sites - 2010 - Carbon Monoxide

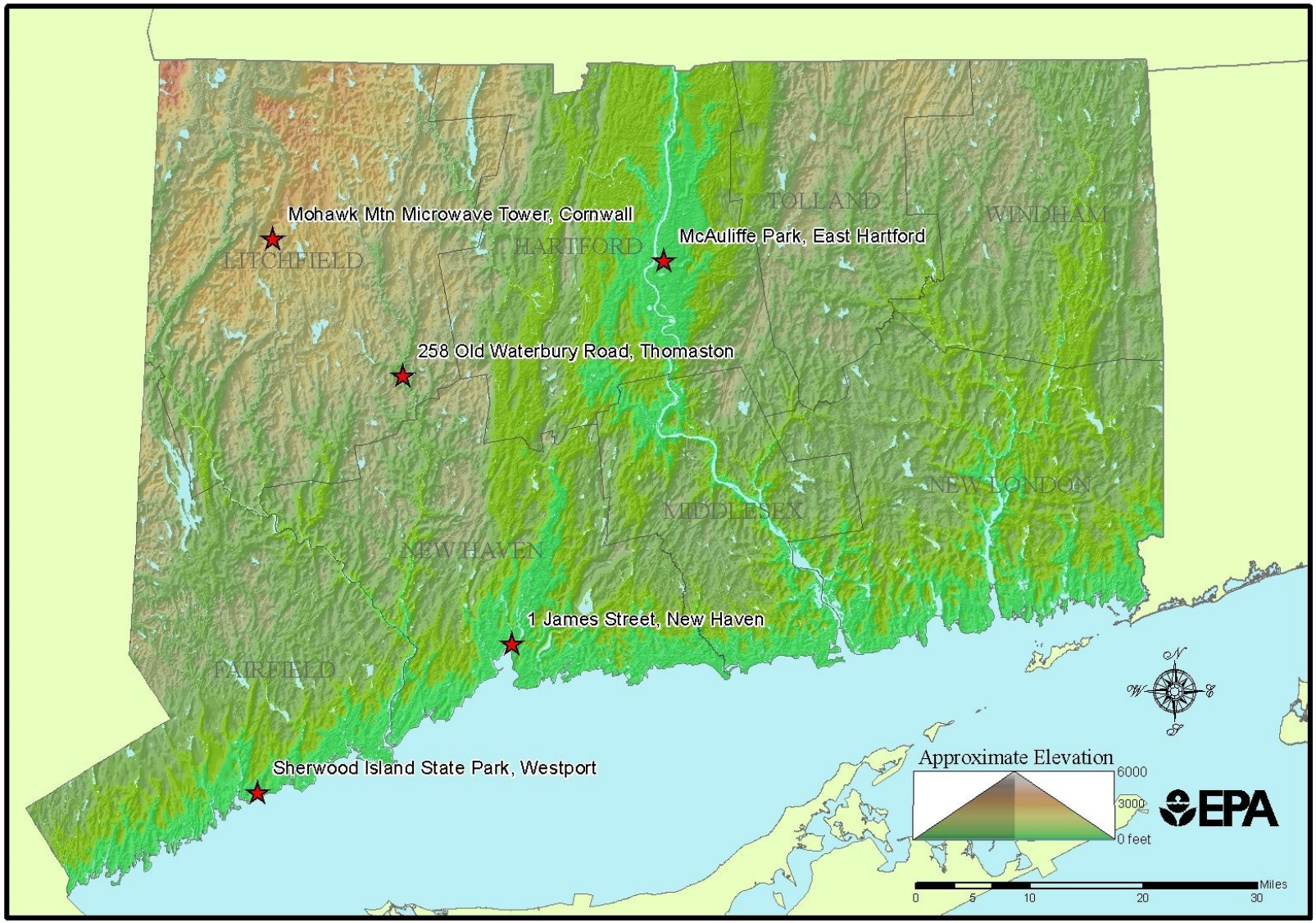
Connecticut Carbon Monoxide Data



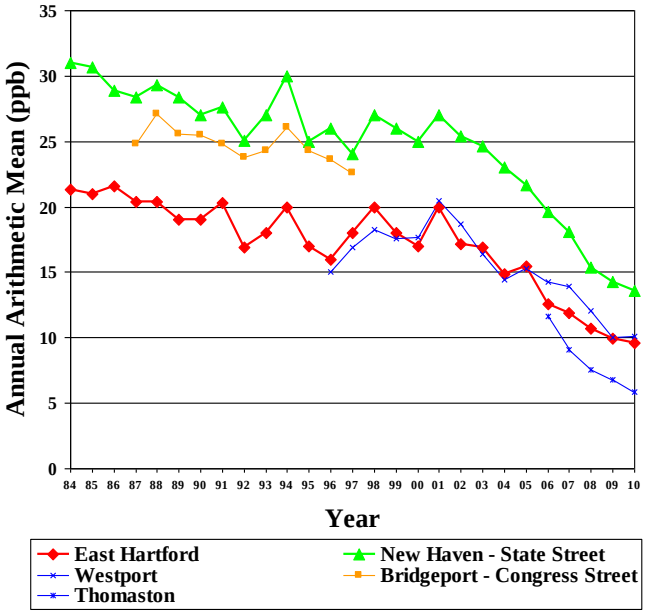
*NAAQS for Carbon Monoxide:
8-hour – 9 ppm, not to be exceeded more than one per year
1-hour – 35 ppm, not to be exceeded more than once per year

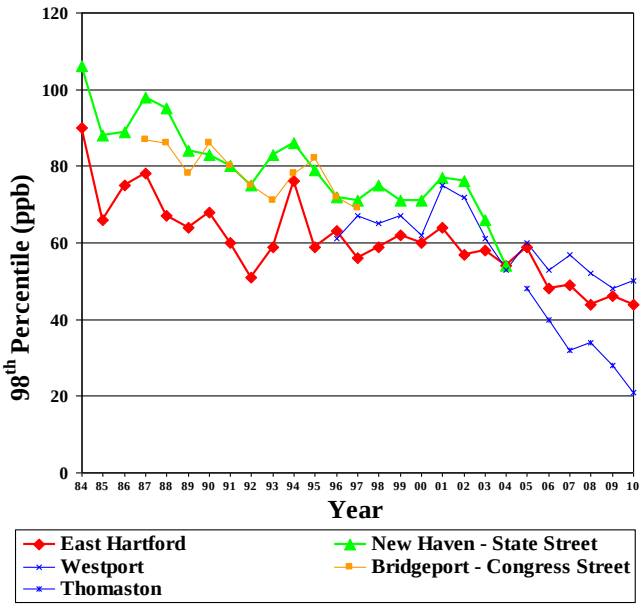
2010													
Connecticut													
Carbon Monoxide													
All Values are in Units of Parts Per Million (ppm)													
								1-hour	1-hour		8-hour	8-hour	
	P								2nd			2nd	
	O					Meth	#	Highest	Highest	OBS	Highest	Highest	OBS
Site ID	C	PQAO	City	County	Address	Used	Obs	Value	Value	> 35	Value	Value	> 9
09-001-0010	1	251	Bridgeport	Fairfield	ROOSEVELT SCHOOL, PARK AVE.	0	8453	3.20	3.1	0	2.0	1.7	0
09-001-9003	1	251	Westport	Fairfield	SHERWOOD ISL. STATE PARK	554	8593	1.63	1.51	0	1.1	1.0	0
09-003-0017	1	251	Hartford	Hartford	COURTHOUSE, 155 MORGAN ST.	54	7933	3.70	3.1	0	2.2	2.1	0
09-003-1003	1	251	East Hartford	Hartford	MCAULIFFE PARK	54	8416	1.50	1.4	0	1.2	1.2	0
09-005-0004	1	251	Thomaston	Litchfield	258 OLD WATERBURY RD.	554	5955	1.20	1.01	0	0.7	0.6	0
09-005-0005	1	251	Cornwall	Litchfield	MOHAWK MOUNTAIN ROAD	554	3263	1.66	1.48	0	0.5	0.4	0
09-009-0027	1	251	New Haven	New Haven	1 JAMES STREET	554	8053	2.17	2.1	0	1.6	1.6	0

Connecticut Sites - 2010 - Nitrogen Dioxide



Connecticut Nitrogen Dioxide Data



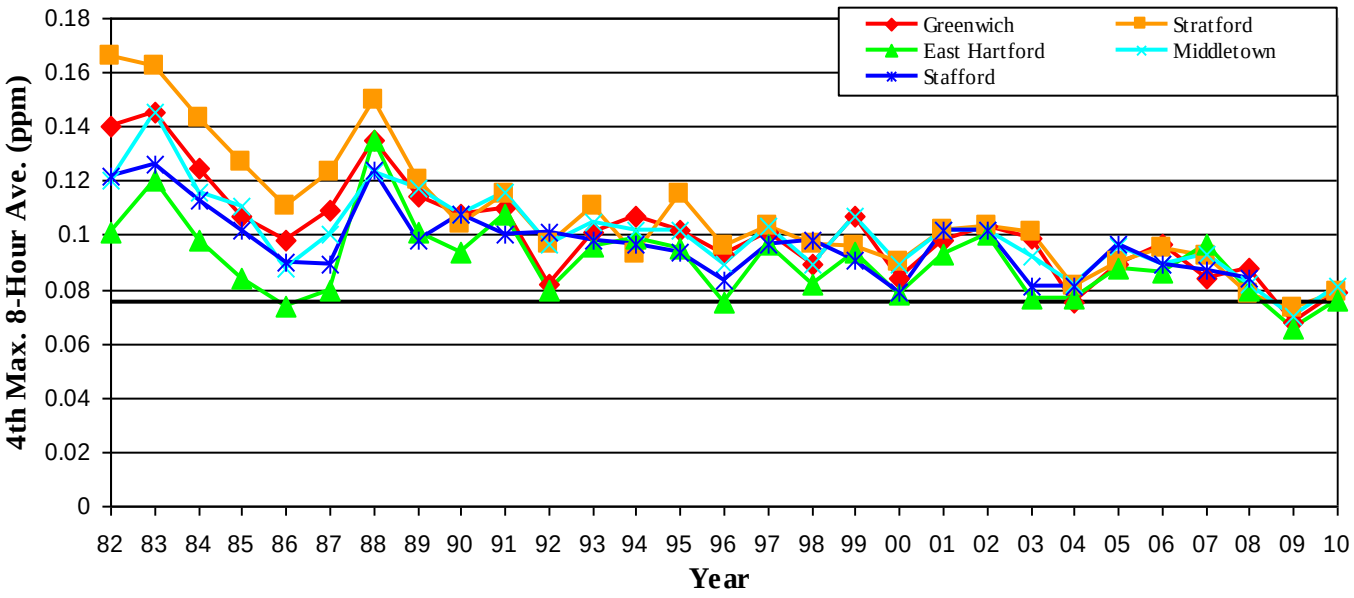


NAAQS for Nitrogen Dioxide:
Annual Arithmetic Mean- 53 ppb (100 µg/m^3)
1-hour – 100 ppb (as of January 22, 2010) 98th percentile

2010														
Connecticut														
Nitrogen Dioxide														
All Values are in Units of Parts Per Billion (ppb)														
									1-hour	1-hour				
	P									2nd				Annual
	O							Comp.	Highest	Highest	98th		Pct.	Arith.
Site ID	C	PQAO	City	County	Address	Meth.	Qtrs.	Value	Value	Pct.	# Obs	Comp.	Mean	
09-001-9003	1	251	Westport	Fairfield	SHERWOOD ISLAND STATE PARK	74	4	56	54	50	8411	96	10.13	
09-003-1003	1	251	East Hartford	Hartford	MCAULIFFE PARK	74	4	54	53	44	8141	93	9.61	
09-005-0004	1	251	Thomaston	Litchfield	258 OLD WATERBURY RD.	74	3	40	38	28	5740	66	5.89	*
09-005-0005	1	251	Cornwall	Litchfield	MOHAWK MOUNTAIN RD.	74	1	25	21	21	2423	28	1.68	*
09-009-0027	1	251	New Haven	New Haven	1 JAMES STREET	74	4	72	66	57	8294	95	13.56	
*Indicates that the mean does not meet summary criteria														

Connecticut Sites - 2010 - Ozone

Connecticut Ozone 8-Hour Data



*NAAQS for Ozone:

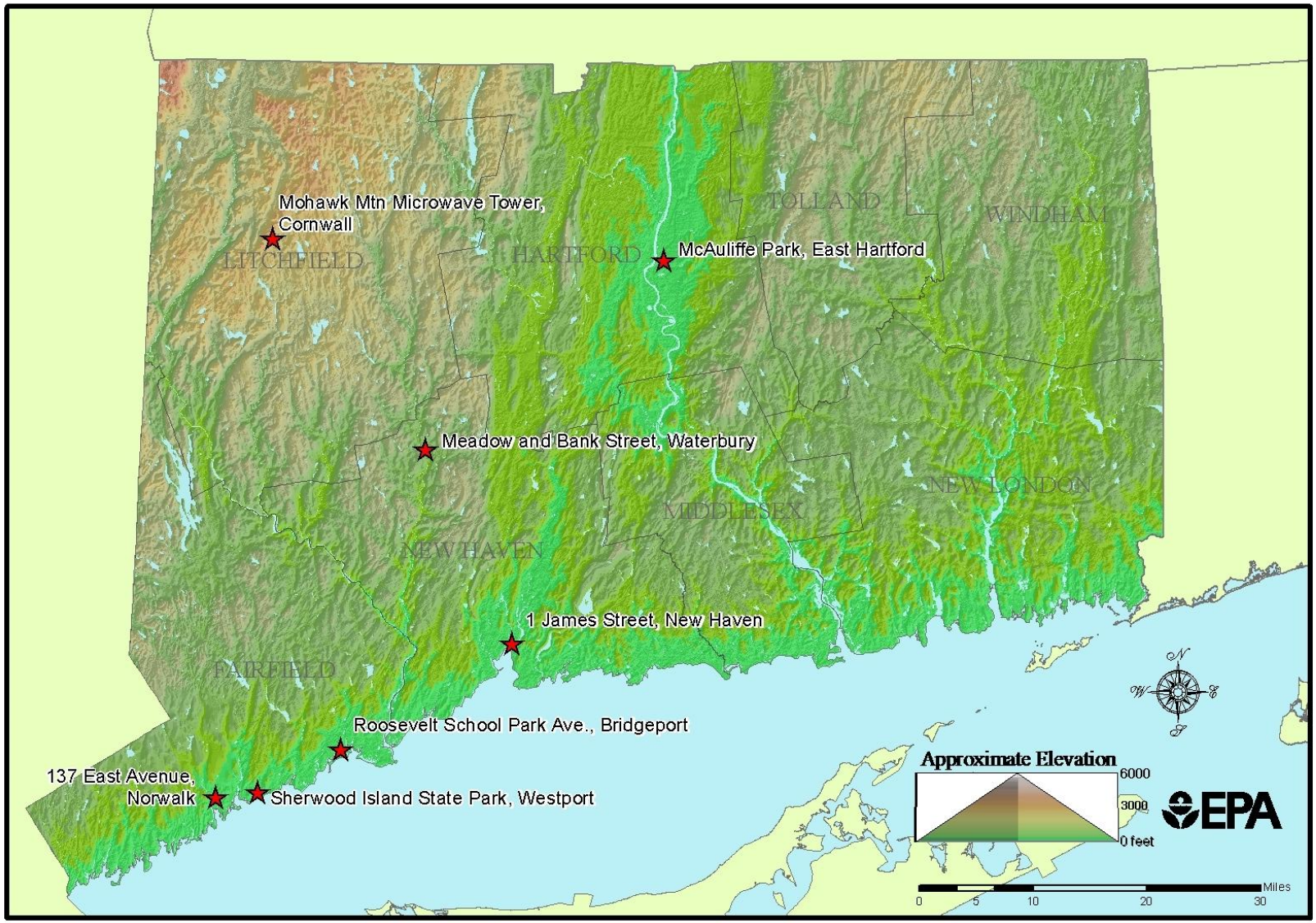
8-hour – 0.075 ppm (2008 std)

(To attain this 0.075 ppm 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. This graph represents the 4th highest value for each year for each monitor depicted. Thus, being above or below this NAAQS line does not indicate whether or not a monitor exceeds the NAAQS.)

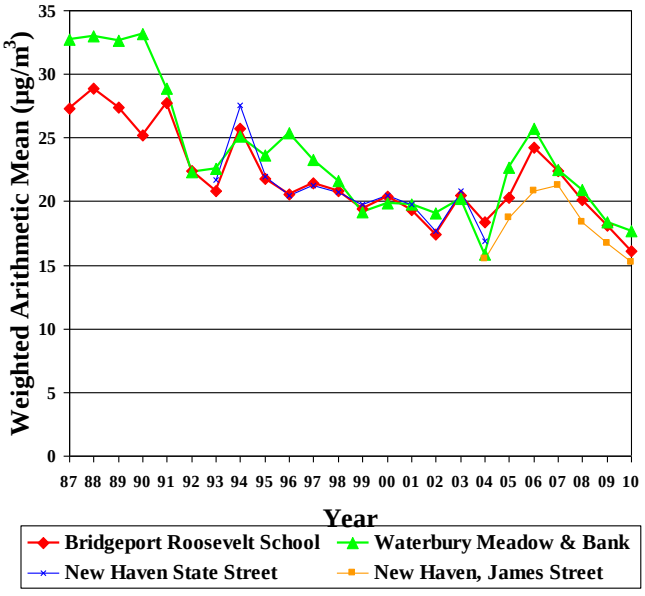
2010
Connecticut
Ozone (8-Hour)
All Values are in Units of Parts Per Million (ppm)

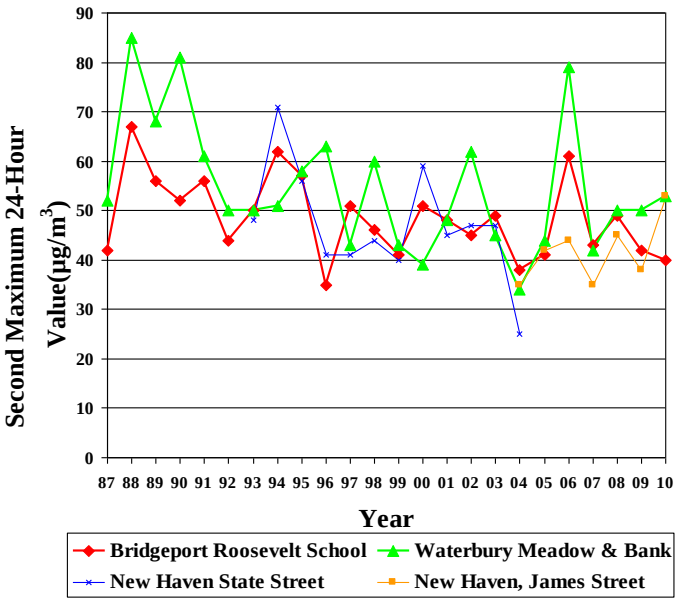
Site ID	PO C	PQAO	City	County	Address	Methods Reported	% Obs	Valid Days Meas.	Num Required Days	Highest 8-Hr Value	2nd Highest 8-Hr Value	3rd Highest 8-Hr Value	4th Highest 8-Hr Value	Days Max ≥ 0.075
09-001-0017	1	251	Greenwich	Fairfield	GREENWICH POINT PARK	47	97	177	183	0.091	0.082	0.082	0.079	7
09-001-1123	1	251	Danbury	Fairfield	W. CONNECTICUT STATE U.	47	96	176	183	0.097	0.091	0.088	0.084	7
09-001-3007	1	251	Stratford	Fairfield	USCG LIGHTHOUSE ,PROSPECT ST.	47	93	170	183	0.080	0.080	0.080	0.079	9
09-001-9003	1	251	Westport	Fairfield	SHERWOOD ISLAND STATE PARK	47	95	173	183	0.087	0.083	0.079	0.079	10
09-003-1003	1	251	East Hartford	Hartford	MCAULIFFE PARK	47	93	171	183	0.089	0.079	0.077	0.076	4
09-005-0005	1	251	Cornwall	Litchfield	MOHAWK MOUNTAIN RD.	47	96	176	183	0.087	0.083	0.074	0.072	2
09-007-0007	1	251	Middletown	Middlesex	CONN. VALLEY HOSP.	47	96	176	183	0.086	0.083	0.081	0.081	6
09-009-0027	1	251	New Haven	New Haven	1 JAMES STREET	47	97	178	183	0.076	0.073	0.070	0.068	1
09-009-3002	1	251	Madison	New Haven	HAMMONASSET STATE PARK	47	96	176	183	0.082	0.081	0.080	0.079	7
09-011-0124	1	251	Groton	New London	141 SMITH ST.	47	95	174	183	0.078	0.078	0.076	0.075	3
09-013-1001	1	251	Stafford	Tolland	ROUTE 190, SHENIPSIT ST. FOREST	47	98	179	183	0.101	0.087	0.082	0.079	6

Connecticut Sites - 2010 - Particulate Matter < 10 Microns



Connecticut Particulate Matter < 10 Microns (PM_{10}) Data

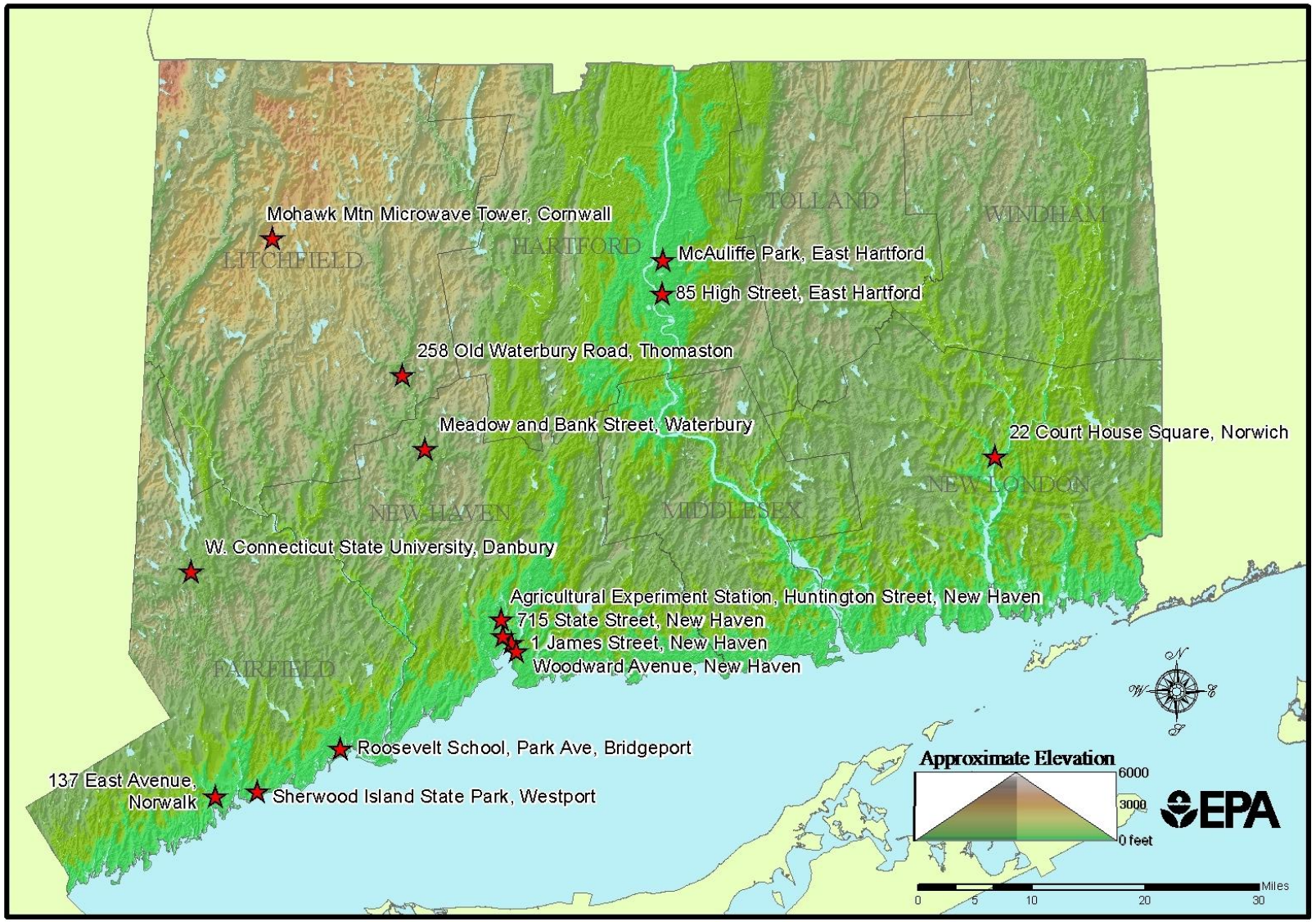




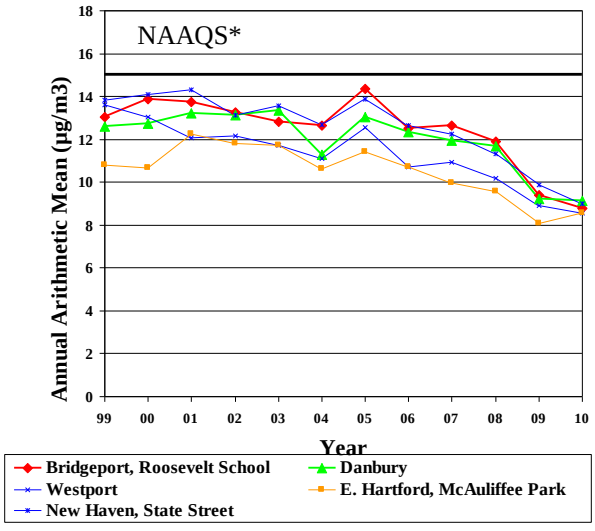
NAAQS for Particulate Matter less than 10 Microns:
24-hour- 150 µg/m^3

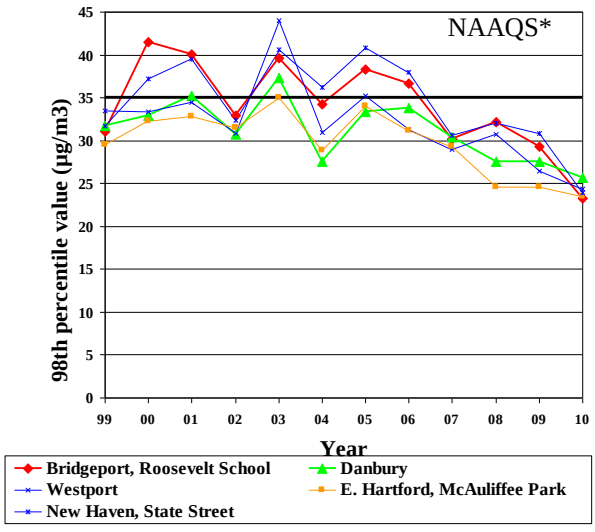
2010																		
Connecticut																		
Particulate Matter < 10 Microns																		
All values are in units of ug/m^3																		
	P											2nd	3rd	4th	Days	Est. Days	Wtd.	
	O					Meth.			Num.	Valid	Highest	Highest	Highest	Highest	Max	Max	Arith.	
SITE ID	C	PQAO	City	County	Address	Used	# Obs	# Req.	Days	% Obs	Value	Value	Value	Value	>150	>150	Mean	
09-001-0010	1	251	Bridgeport	Fairfield	ROOSEVELT SCH. PARK AVE.	126	61	61	61	100	42	40	39	38	0	0	16.1	
09-001-3005	1	251	Norwalk	Fairfield	137 EAST AVE.	126	55	61	55	90	30	29	25	24	0	0	12.8	*
09-001-9003	1	251	Westport	Fairfield	SHERWOOD ISLAND STATE PARK	126	49	61	49	80	42	31	28	27	0	0	12.0	*
09-003-1003	1	251	East Hartford	Hartford	MCAULIFFE PARK	126	54	61	52	85	26	24	21	20	0	0	10.5	*
09-005-0005	2	251	Cornwall	Litchfield	MOHAWK MOUNTAIN ROAD	126	21	122	21	17	19	12	11	10	0	0	5.2	*
09-009-0027	1	251	New Haven	New Haven	1 JAMES STREET	127	59	61	59	97	34	32	31	31	0	0	15.2	
09-009-0027	2	251	New Haven	New Haven	1 JAMES STREET	127	56	61	56	92	36	34	33	32	0	0	14.4	*
09-009-2123	1	251	Waterbury	New Haven	MEADOW AND BANK ST.	126	59	61	59	97	56	53	44	40	0	0	17.7	
09-009-2123	2	251	Waterbury	New Haven	MEADOW AND BANK ST.	126	56	61	56	92	55	55	42	42	0	0	18.0	*
*Indicates that the mean does not meet summary criteria																		

Connecticut Sites - 2010 - Particulate Matter < 2.5 Microns



Connecticut Particulate Matter < 2.5 Microns ($PM_{2.5}$) Data





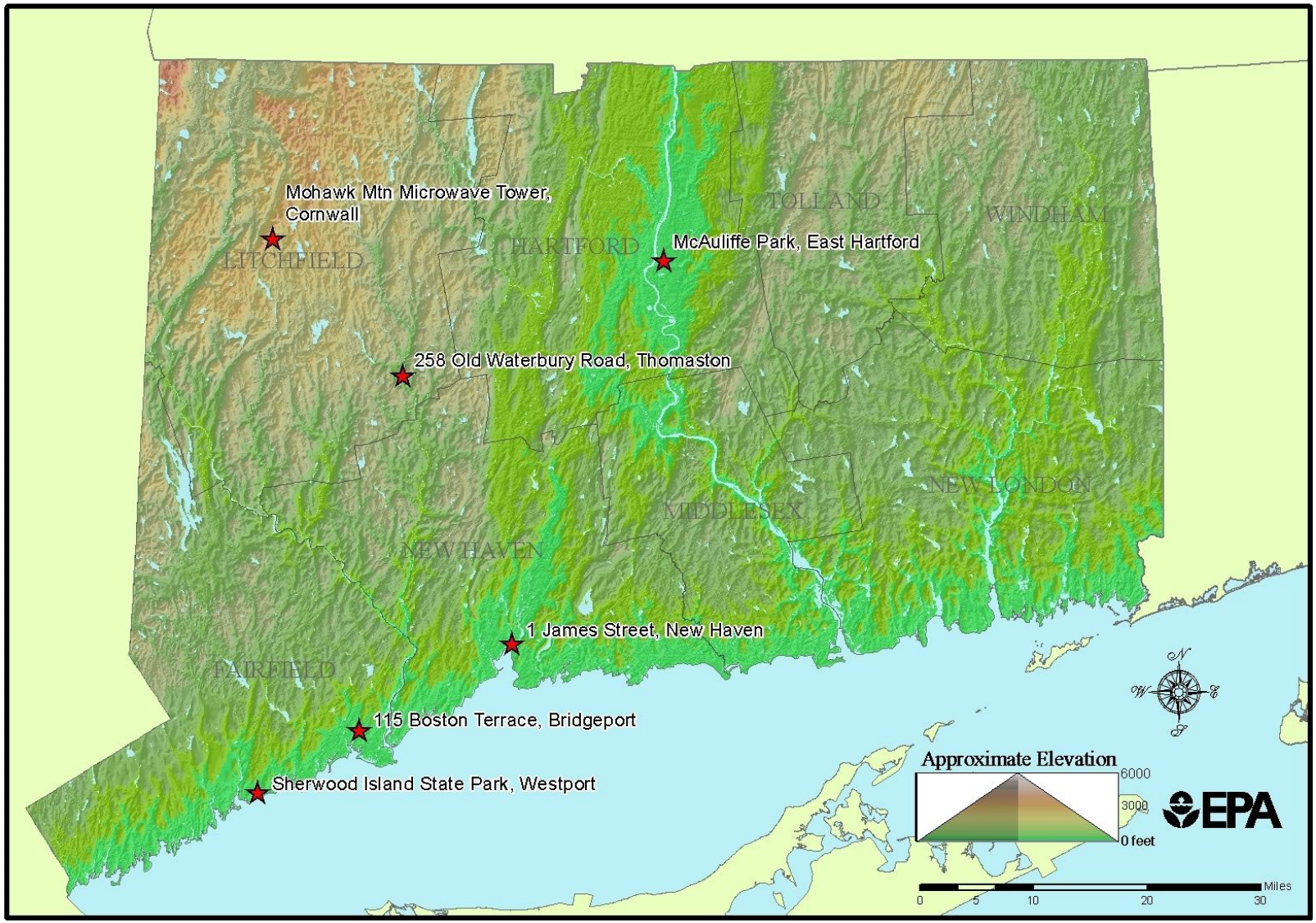
*NAAQS for Particulate Matter less than 2.5 Microns:
Annual: the 3-year average of the Annual Arithmetic Mean - 15.0 µg/m^3
24-Hour: the 3-year average of the 98th percentile of 24-hour average concentrations - 35 µg/m^3

2010
Connecticut
Particulate Matter < 2.5 Microns
All Values are in µg/m^3 Local Conditions

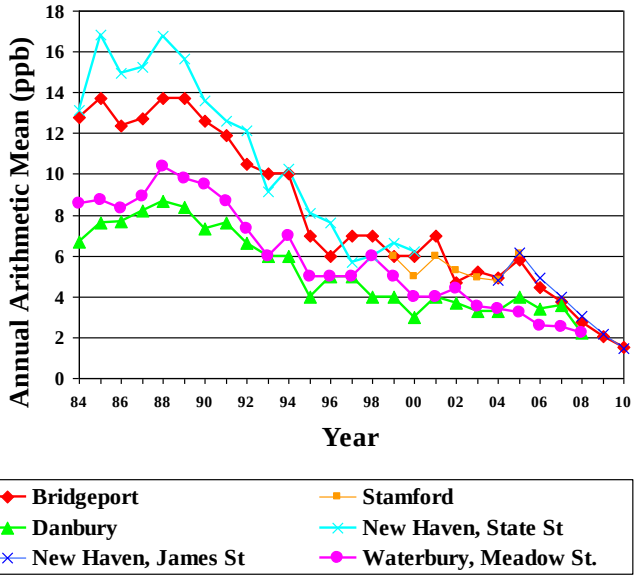
Site ID	PO C	PQAO	City	County	Address	Method	# Obs	Highest Value	2nd Highest Value	3rd Highest Value	4th Highest Value	98th Percentile Value	Wtd. Arith. Mean	
09-001-0010	1	251	Bridgeport	Fairfield	ROOSEVELT SCHOOL PARK AVE.	145	114	40.0	26.9	23.3	21.7	23.3	8.79	
09-001-1123	1	251	Danbury	Fairfield	W. CONNECTICUT STATE U.	145	119	39.5	30.2	25.7	25.6	25.7	9.14	
09-001-3005	1	251	Norwalk	Fairfield	137 EAST AVE.	145	109	50.5	25.2	23.0	22.6	23.0	8.66	*
09-001-9003	1	251	Westport	Fairfield	SHERWOOD ISLAND STATE PARK	145	360	45.2	38.5	31.4	27.3	24.2	8.58	
09-003-1003	1	251	East Hartford	Hartford	MCAULIFFE PARK	0	358	34.9	29.7	25.7	25.2	24.2	7.63	
09-003-2006	1	251	East Hartford	Hartford	85 HIGH STREET	145	114	35.2	26.0	23.5	22.3	23.5	8.55	
09-005-0004	1	251	Thomaston	Litchfield	258 OLD WATERBURY RD.	145	77	21.2	20.9	20.0	18.8	20.9	8.06	*
09-005-0005	1	251	Cornwall	Litchfield	MOHAWK MOUNTAIN ROAD	145	112	26.2	23.4	19.1	18.0	19.1	5.96	
09-009-0026	1	251	New Haven	New Haven	WOODWARD AVENUE	145	11	21.7	19.4	15.8	11.6	21.7	10.16	*
09-009-0027	1	251	New Haven	New Haven	1 JAMES STREET	145	358	38.8	33.4	32.0	29.2	25.5	8.92	
09-009-0027	2	251	New Haven	New Haven	1 JAMES STREET	145	60	23.4	22.6	21.6	17.8	22.6	8.68	
09-009-1123	1	251	New Haven	New Haven	715 STATE STREET	145	118	44.0	27.5	23.9	23.3	23.9	9.02	
09-009-2008	1	251	New Haven	New Haven	AGRI EXPR STA. HUNTINGTON ST.	145	11	19.5	17.5	13.0	11.0	19.5	9.02	*
09-009-2123	1	251	Waterbury	New Haven	MEADOW AND BANK ST.	145	122	41.5	31.7	25.7	23.2	25.7	9.20	
09-009-2123	2	251	Waterbury	New Haven	MEADOW AND BANK ST.	145	61	30.4	23.1	22.2	20.3	23.1	9.04	
09-011-3002	1	251	Norwich	New London	22 COURT HOUSE SQUARE	145	360	33.7	29.4	23.5	23.2	21.3	7.77	

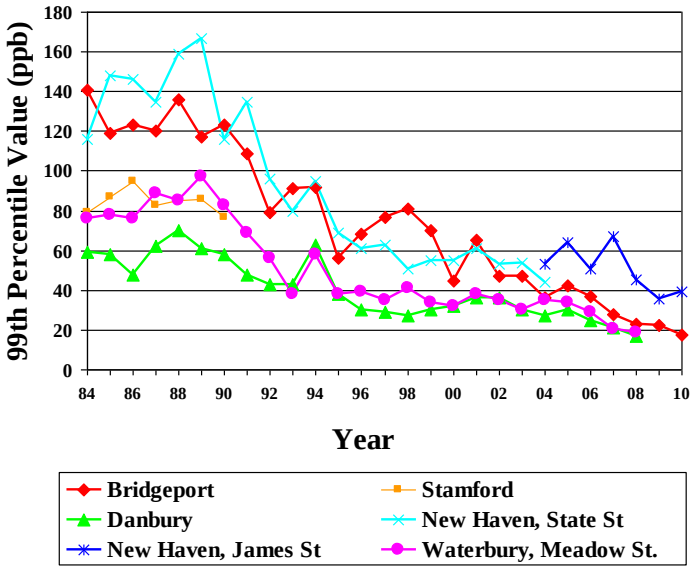
*Indicates that the mean does not meet summary criteria

Connecticut Sites - 2010 - Sulfur Dioxide



Connecticut Sulfur Dioxide Data





NAAQS for Sulfur Dioxide:

Primary: Annual Arithmetic Mean - 0.03 ppm (revoked as of August 23, 2010)
24-hour -0.14 ppm (revoked as of August 23, 2010)
1-hour 75 ppb (0.075 ppm) (Effective as of August 23, 2010) 99th percentile

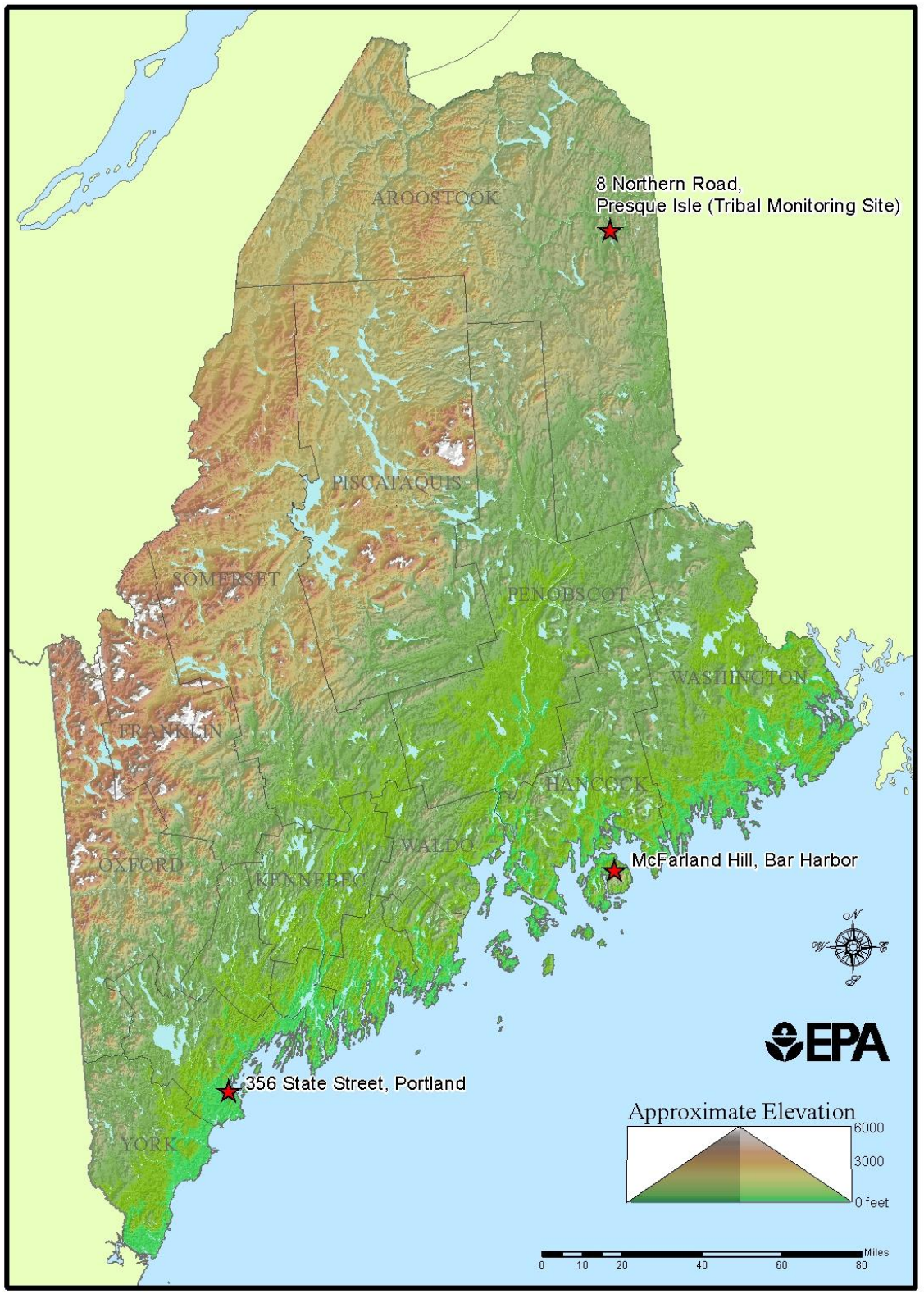
Secondary: 3-hour 0.5 ppm

2010
Connecticut
Parameter: Sulfur Dioxide
All Values are in Units of Parts Per Billion (ppb)

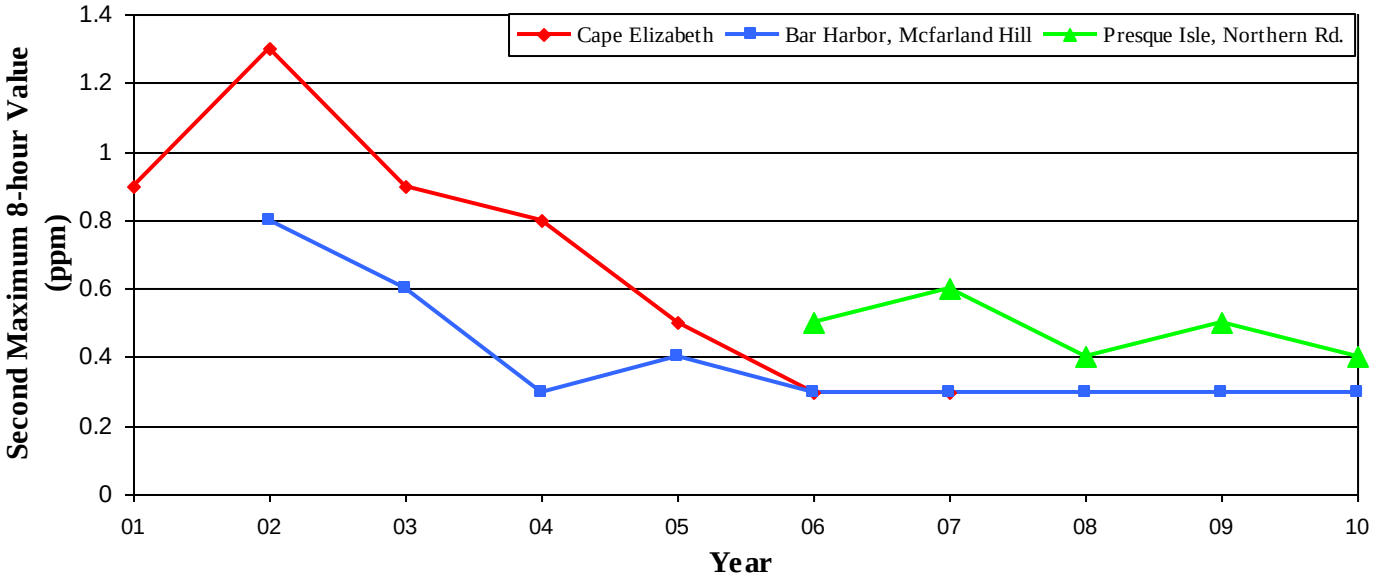
Site ID	P/O C	PQAO	City	County	Address	Meth. Used	# Obs	Comp. Qtrs.	First Max 1-hour	Second Max 1-hour	99th Pct. 1-hour	First Max 24-hour	Second Max 24-hour	Days >24 Hr. Std	Arith. Mean	
09-001-0012	1	251	Bridgeport	Fairfield	115 BOSTON TERRACE	0	8731	4	20.4	20.3	17.8	12.2	10.4	0	1.53	
09-001-9003	1	251	Westport	Fairfield	SHERWOOD ISLAND STATE PARK	0	8447	4	20.4	16.0	14.7	13.0	8.3	0	1.32	
09-003-1003	1	251	East Hartfor	Hartford	MCAULIFFE PARK	0	8421	4	10.4	10.2	9.9	7.8	6.0	0	1.00	
09-005-0004	1	251	Thomaston	Litchfield	258 OLD WATERBURY RD.	560	5909	3	8.9	7.6	5.8	4.1	3.1	0	0.58	*
09-005-0005	1	251	Cornwall	Litchfield	MOHAWK MOUNTAIN RD.	560	6336	2	16.8	14.3	13.9	5.7	4.9	0	0.64	*
09-009-0027	1	251	New Haven	New Haven	1 JAMES STREET	560	8187	4	77.0	42.0	39.5	22.0	11.7	0	1.48	

*Indicates that the mean does not meet summary criteria

Maine Sites 2010 - Carbon Monoxide



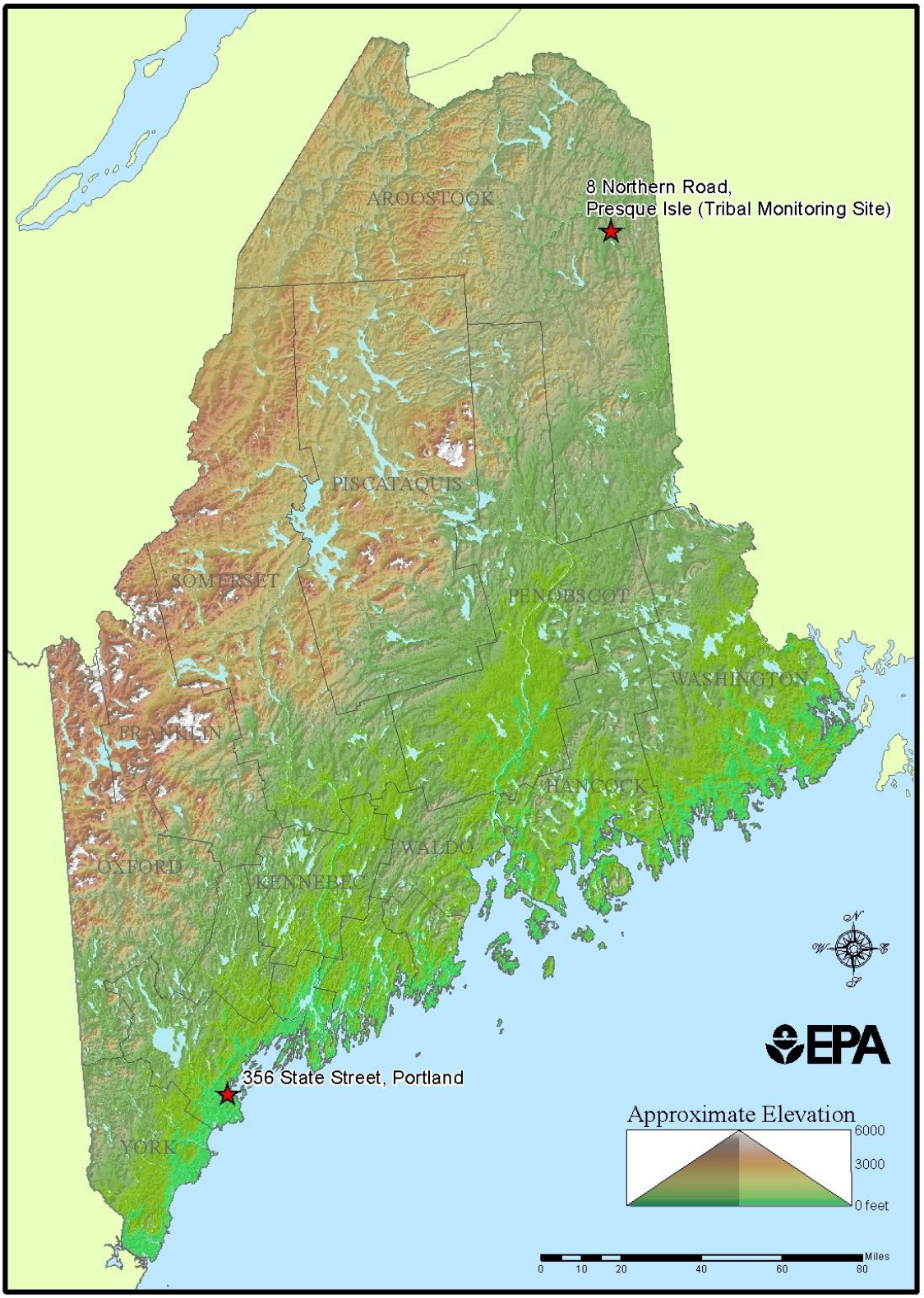
Maine Carbon Monoxide Data



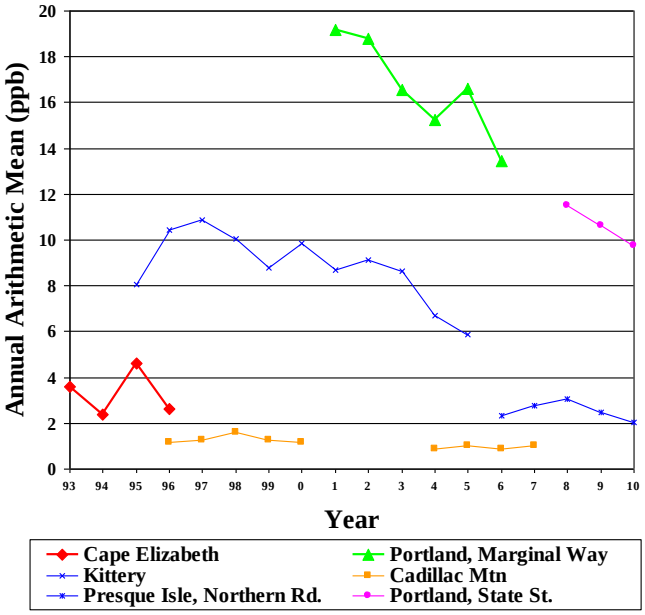
NAAQS for Carbon Monoxide:
8-hour – 9 ppm, not to be exceeded more than one per year
1-hour – 35 ppm, not to be exceeded more than once per year

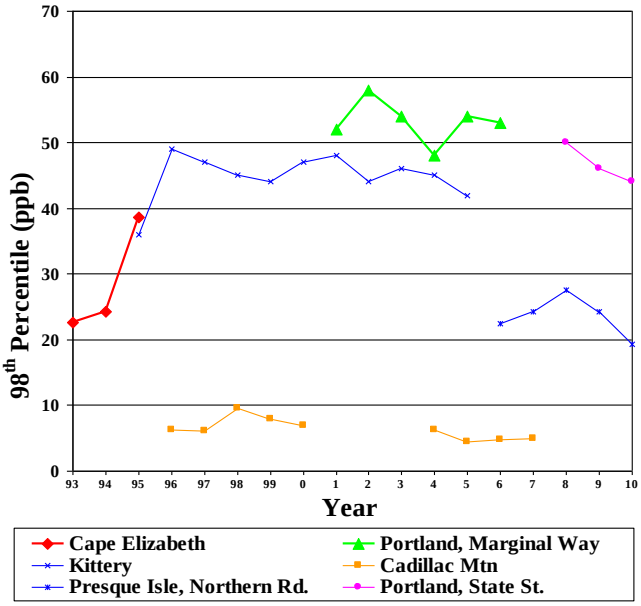
2010													
Maine													
Carbon Monoxide													
All Values are in Units of Parts Per Million (ppm)													
								1-hour	1-hour		8-hour	8-hour	
	P								2nd			2nd	
	O					Meth	#	Highest	Highest	Obs	Highest	Highest	Obs
Site ID	C	PQAO	City	County	Address	Used	Obs	Value	Value	> 35	Value	Value	> 9
23-003-1100	1	635	Presque Isle	Aroostook	8 NORTHERN RD.	554	7944	0.630	0.558	0	0.4	0.4	0
23-005-0029	1	635	Portland	Cumberland	356 State Street	54	8612	2.300	2.000	0	1.4	1.3	0
23-009-0103	1	635	Bar Harbor	Hancock	MCFARLAND HILL	0	7919	0.394	0.323	0	0.3	0.3	0

Maine Sites 2010 - Nitrogen Dioxide



Maine Nitrogen Dioxide Data

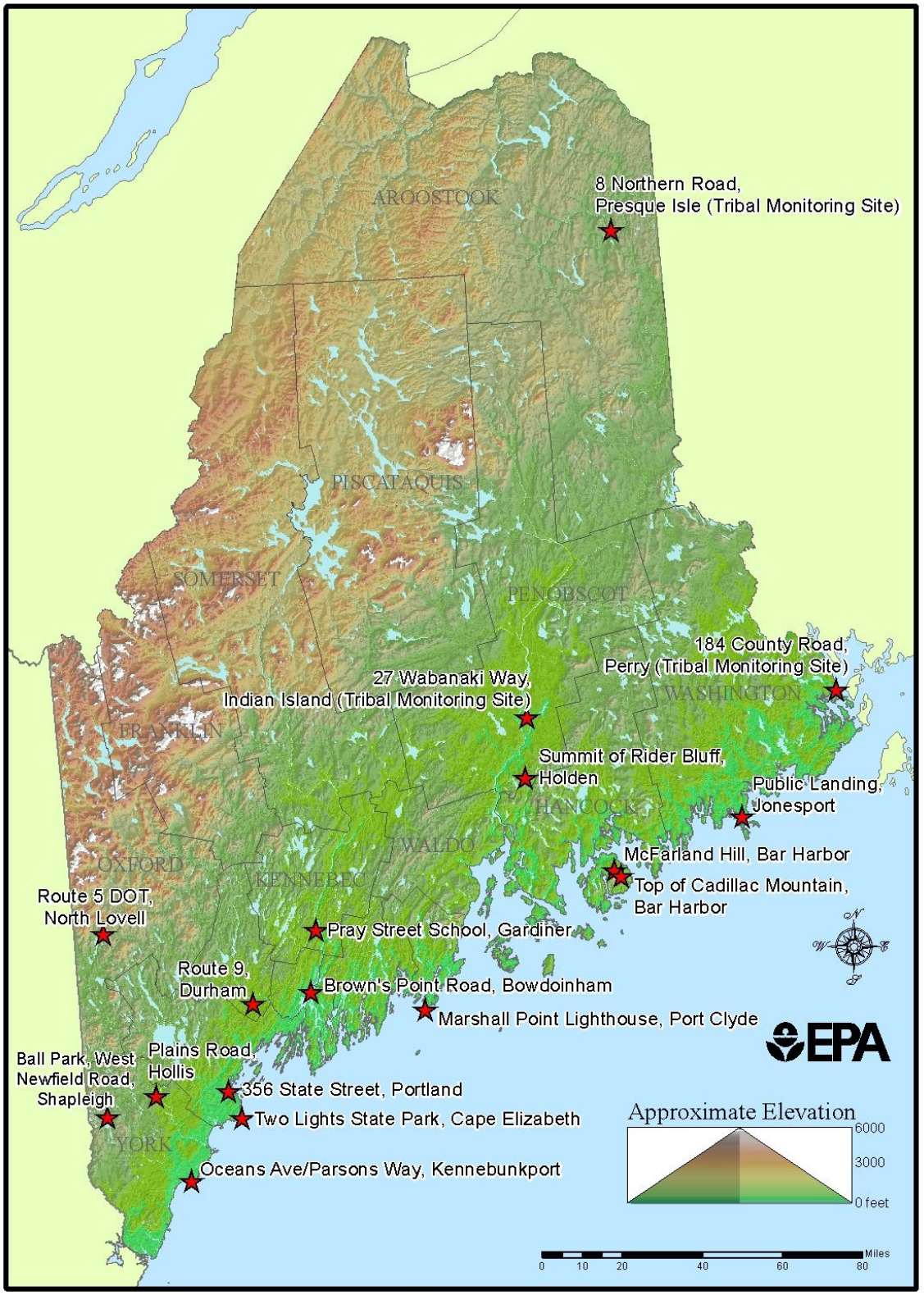




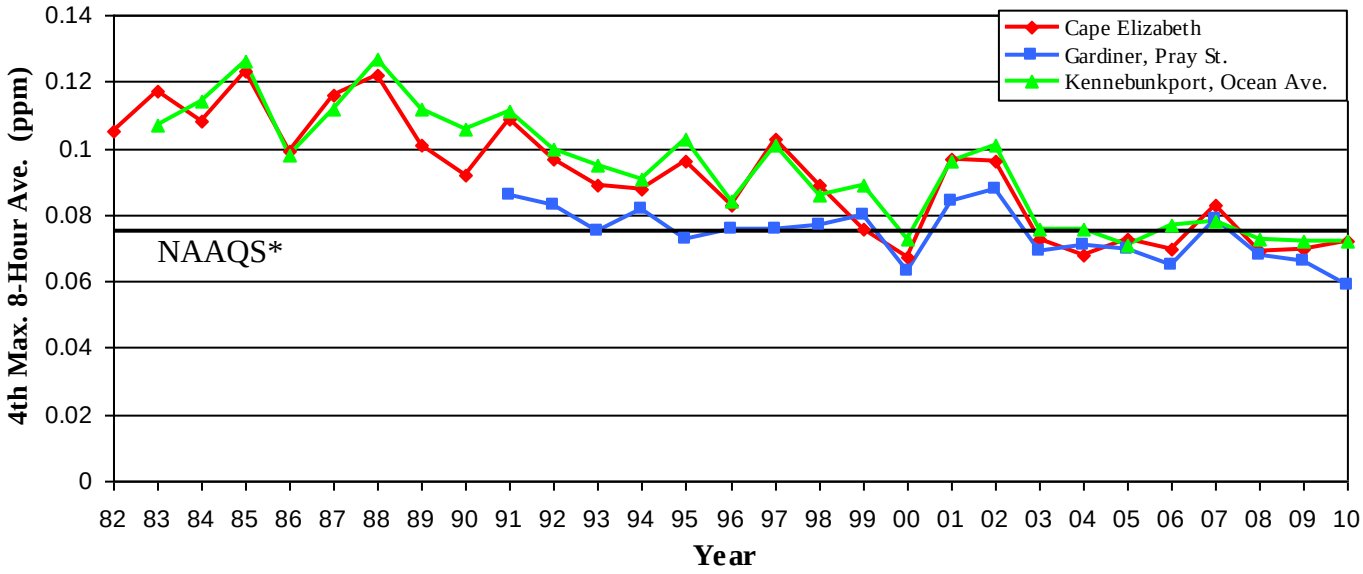
NAAQS for Nitrogen Dioxide:
Annual Arithmetic Mean 53 ppb (100 µg/m^3)
1-hour – 100 ppb (as of January 22, 2010) 98th percentile

2010													
Maine													
Parameter: Nitrogen Dioxide													
All Values are in Units of Parts Per Billion (ppb)													
								1-hour	1-hour				
	P								2nd				Annual
	O						Comp.	Highest	Highest	98th		Pct.	Arith.
Site ID	C	PQAO	City	County	Address	Meth.	Qtrs.	Value	Value	Pct.	# Obs	Comp.	Mean
23-003-1100	1	635	Presque Isle	Aroostook	8 NORTHERN ROAD	74	3	27.3	25.4	19.3	7281	83	2.03
23-005-0029	1	635	Portland	Cumberland	356 STATE STREET	75	4	53.0	49.0	44	8263	94	9.76

Maine Sites 2010 - Ozone



Maine Ozone 8-Hour Data



*NAAQS for Ozone:

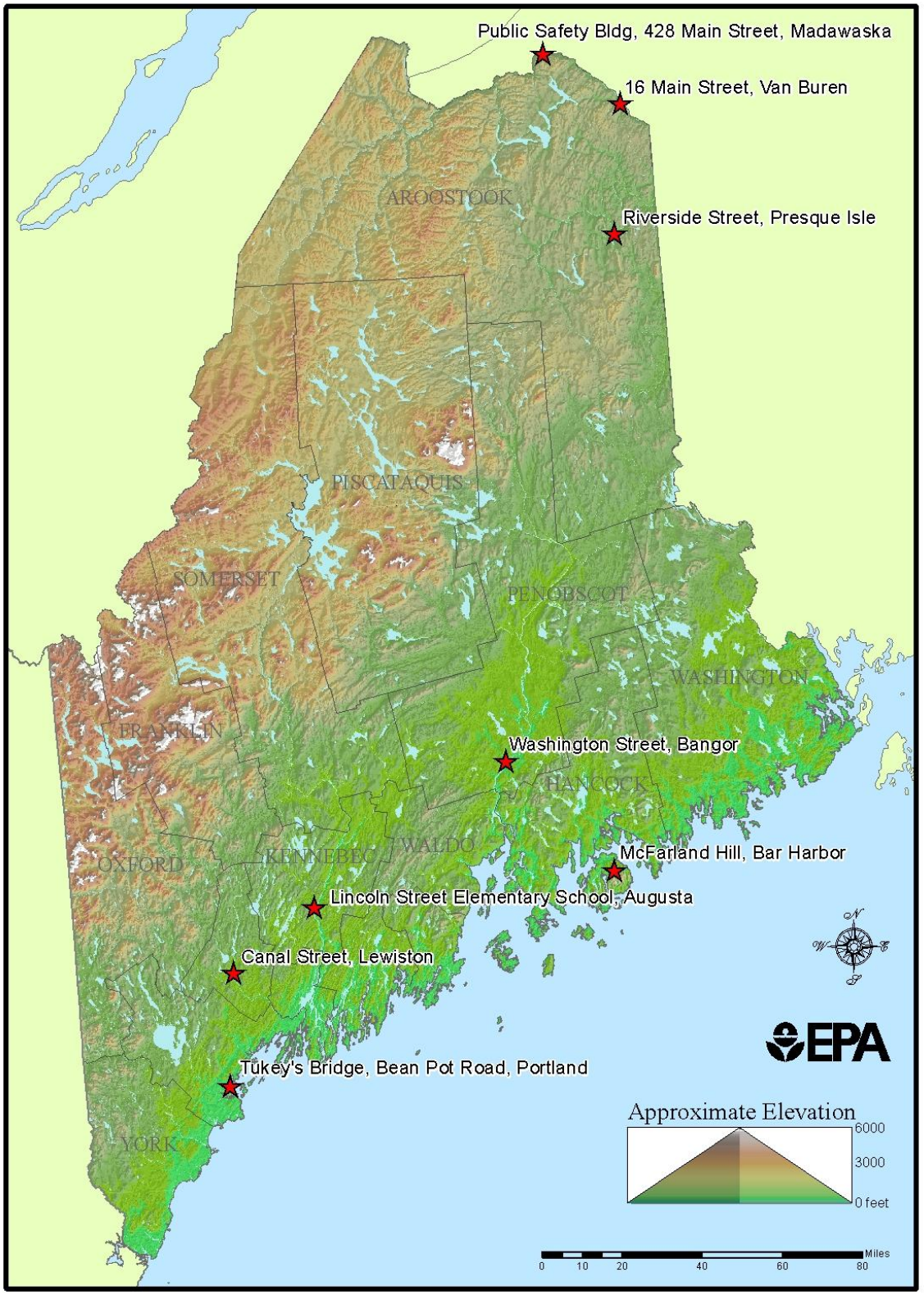
8-hour – 0.075 ppm (2008 std)

(To attain this 0.075 ppm 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. This graph represents the 4th highest value for each year for each monitor depicted. Thus, being above or below this NAAQS line does not indicate whether or not a monitor exceeds the NAAQS.)

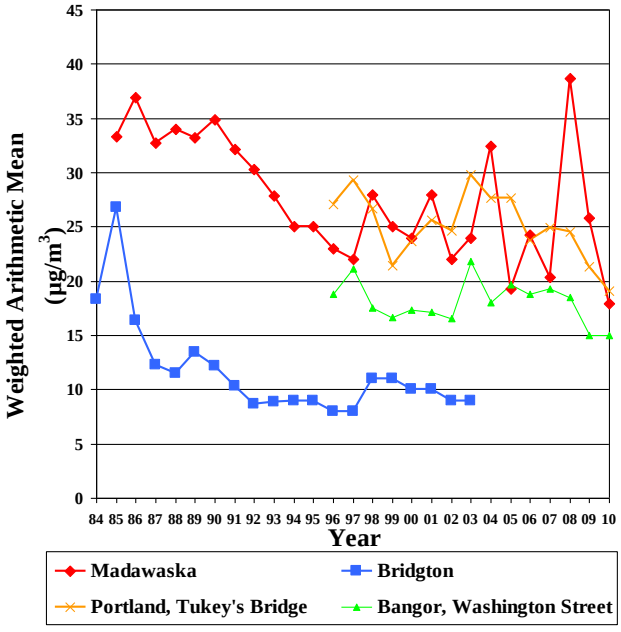
2010
Maine
Ozone (8-Hour)
All Values are in Units of Parts Per Million (ppm)

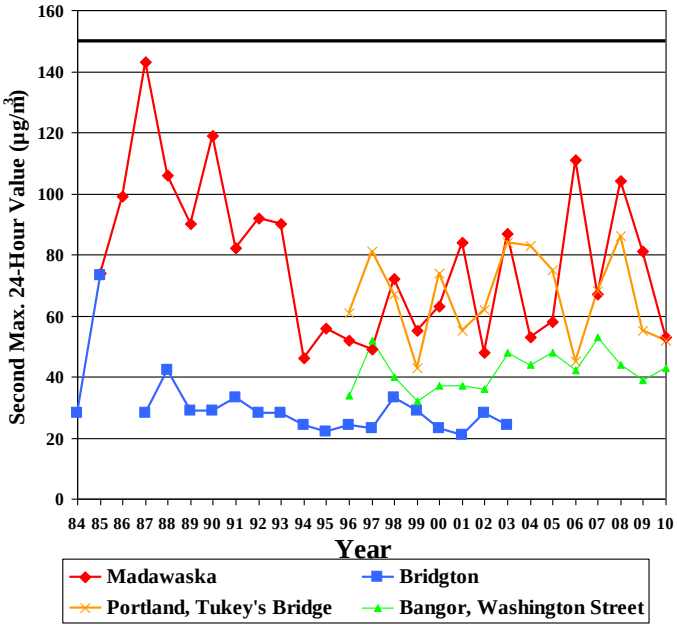
Site ID	POC	PQAO	City	County	Address	Methods Reported	% Obs	Valid Days Meas.	Num Required Days	Highest 8-Hr Value	2nd Highest 8-Hr Value	3rd Highest 8-Hr Value	4th Highest 8-Hr Value	Days Max > 0.075
23-001-0014	2	635	Durham	Androscoggin	ROUTE 9	47	98	180	183	0.064	0.062	0.060	0.058	0
23-003-1100	1	635	Presque Isle	Aroostook	8 NORTHERN ROAD	47	93	171	183	0.055	0.054	0.053	0.051	0
23-005-0029	1	635	Portland	Cumberland	356 STATE STREET	47	97	178	183	0.070	0.068	0.066	0.060	0
23-005-2003	1	635	Cape Elizabeth	Cumberland	TWO LIGHTS STATE PARK	47	100	183	183	0.096	0.080	0.072	0.072	2
23-009-0102	1	635	Bar Harbor	Hancock	TOP OF CADILLAC MOUNTAIN	47	98	180	183	0.089	0.081	0.079	0.076	4
23-009-0103	1	635	Bar Harbor	Hancock	MCFARLAND HILL	47	92	168	183	0.087	0.077	0.072	0.070	2
23-011-2005	1	635	Gardiner	Kennebec	PRAY STREET SCHOOL	47	99	182	183	0.079	0.069	0.067	0.059	1
23-013-0004	2	635	Port Clyde	Knox	MARSHALL POINT LIGHTHOUSE	47	99	181	183	0.092	0.076	0.075	0.070	2
23-017-3001	1	635	Lovell	Oxford	ROUTE 5, NORTH LOVELL DOT	47	99	182	183	0.056	0.054	0.054	0.054	0
23-019-1100	1	635	Indian Island	Penobscot	27 WABANAKI WAY	47	99	181	183	0.063	0.061	0.055	0.054	0
23-019-4008	1	635	Holden	Penobscot	SUMMIT OF RIDER BLUFF	47	99	181	183	0.067	0.066	0.060	0.059	0
23-023-0006	1	635	Bowdoinham	Sagadahoc	BROWN'S POINT ROAD	47	99	182	183	0.071	0.070	0.064	0.061	0
23-029-0019	1	635	Jonesport	Washington	JONESPORT - PUBLIC LANDING	47	99	181	183	0.078	0.065	0.064	0.061	1
23-029-0032	1	635	Perry	Washington	184 COUNTY ROAD	47	66	120	183	0.062	0.062	0.056	0.053	0
23-031-0038	1	635	Hollis	York	PLAINS ROAD	47	95	174	183	0.070	0.058	0.058	0.058	0
23-031-0040	1	635	Shapleigh	York	Rt. 11, SHAPLEIGH BALL PARK	47	100	183	183	0.072	0.071	0.067	0.066	0
23-031-2002	1	635	Kennebunkport	York	OCEAN AVE/PARSONS WAY	47	100	183	183	0.095	0.078	0.076	0.072	3

Maine Sites 2010 - Particulate Matter < 10 Microns



Maine Particulate Matter < 10 Microns (PM_{10}) Data





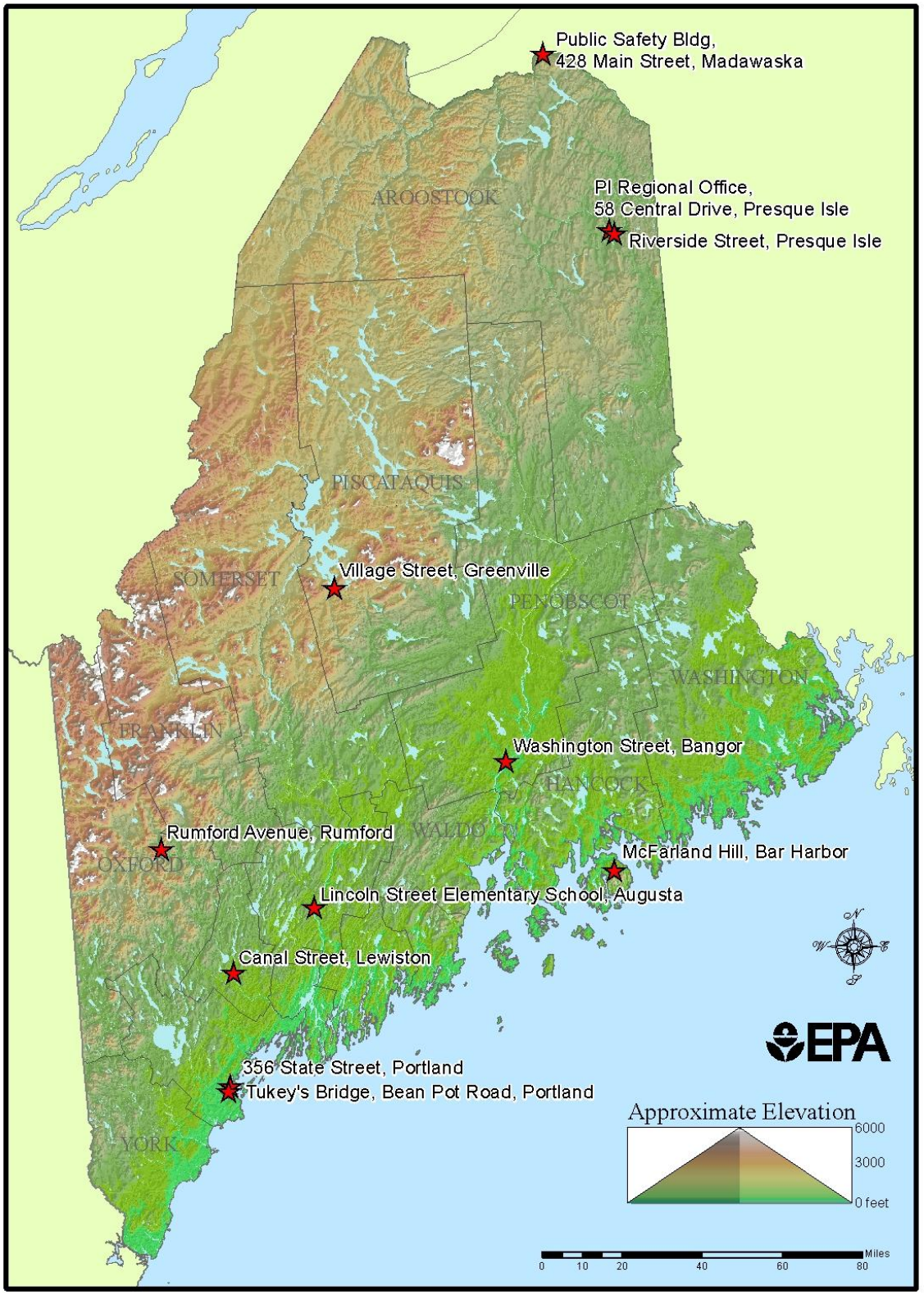
*NAAQS for Particulate Matter less than 10 Microns:
24-hour -150 µg/m^3

2010
Maine
Particulate Matter < 10 Microns
All values are in Units of µg/m^3

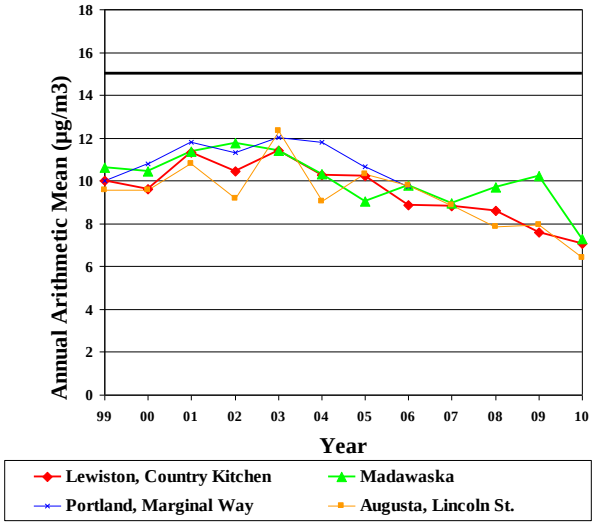
SITE ID	PO	PQAO	City	County	Address	Meth. Used	# Obs	# Req.	Num. Days	Valid % Obs	Highest Value	2nd Highest Value	3rd Highest Value	4th Highest Value	Days Max >150	Est. Days Max >150	Wtd. Arith. Mean	
23-001-0011	2	635	Lewiston	Androscoggin	COUNTRY KITCHEN LOT CANAL ST.	126	60	61	59	97	59	43	32	26	0	0	13.3	
23-003-0014	1	635	Madawaska	Aroostook	428 MAIN ST.	127	54	122	54	44	65	53	50	43	0	0	17.9	*
23-003-1011	2	635	Presque Isle	Aroostook	RIVERSIDE STREET	79	8710	365	361	99	80	79	77	68	0	0	15.2	
23-003-1019	1	635	Van Buren	Aroostook	16 MAIN STREET	127	116	122	113	93	65	57	56	53	0	0	17.6	
23-005-0015	2	635	Portland	Cumberland	TUKEY'S BRIDGE-BEAN POT RD.	126	53	61	53	87	53	52	43	31	0	0	18.5	*
23-005-0015	3	635	Portland	Cumberland	TUKEY'S BRIDGE-BEAN POT RD.	126	26	30	26	87	57	54	31	29	0	0	19.1	*
23-009-0103	2	635	Bar Harbor	Hancock	MCFARLAND HILL	126	116	122	116	95	30	25	23	18	0	0	6.1	
23-011-0016	2	635	Augusta	Kennebec	LINCOLN ST. ELEMENTARY SCH.	126	60	61	60	98	58	43	40	27	0	0	12.7	
23-019-0002	3	635	Bangor	Penobscot	WASHINGTON ST.	126	60	61	60	98	45	43	39	35	0	0	15.0	

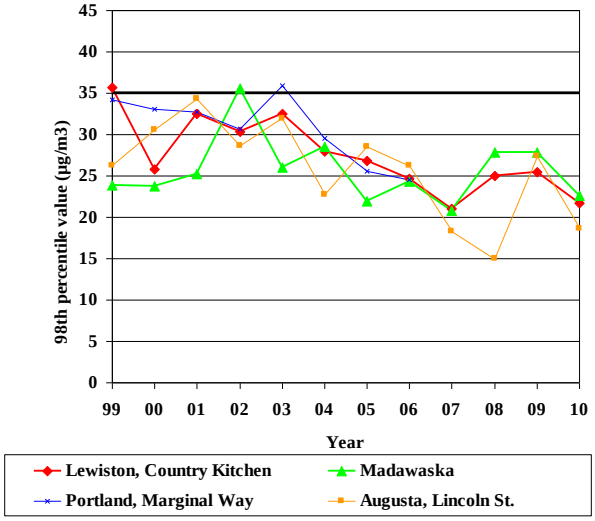
*Indicates that the mean does not meet summary criteria

Maine Sites 2010 - Particulate Matter < 2.5 Microns



Maine Particulate Matter < 2.5 Microns ($PM_{2.5}$) Data





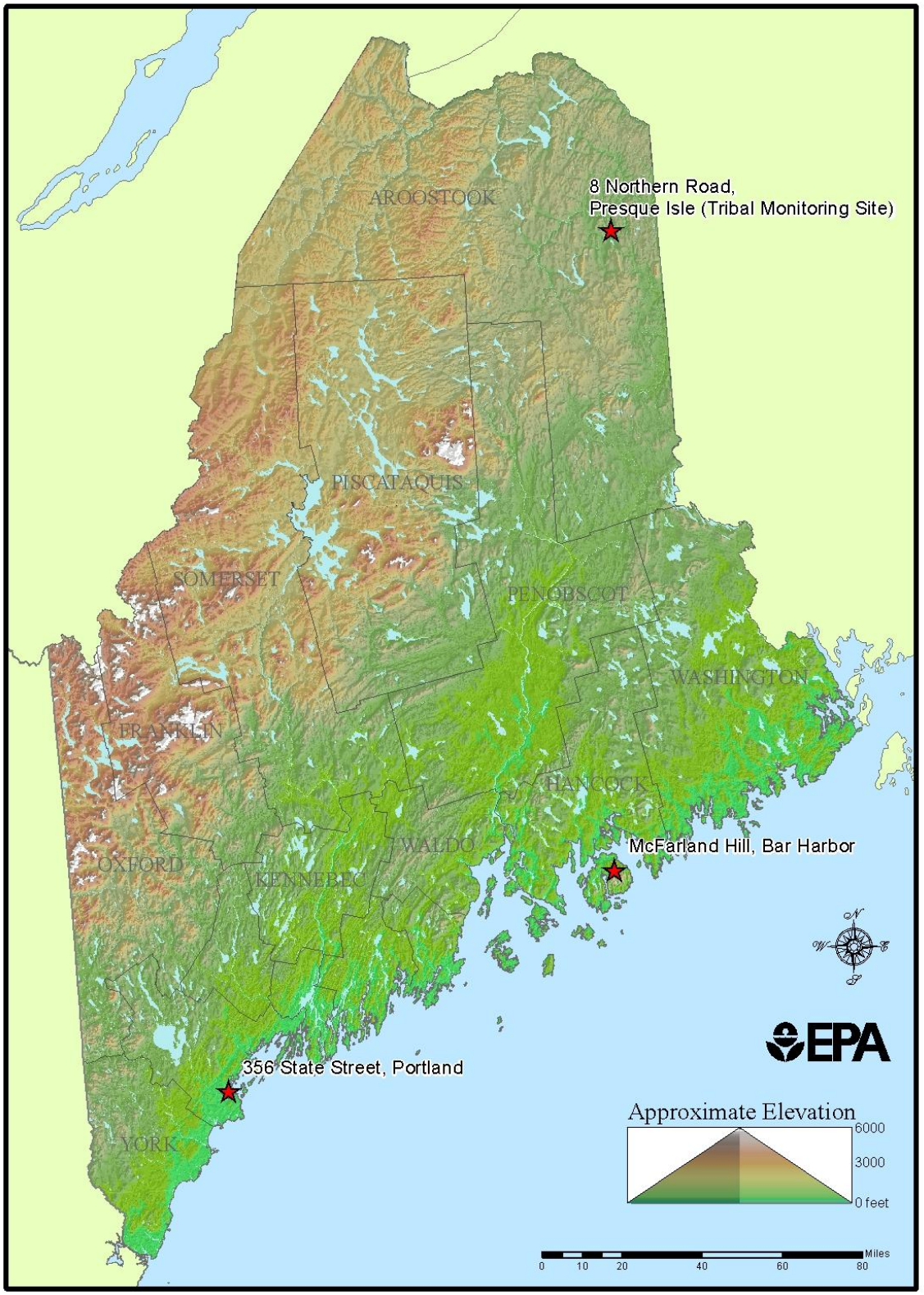
*NAAQS for Particulate Matter less than 2.5 Microns:
Annual: the 3-year average of the Annual Arithmetic Mean - 15.0 µg/m^3
24-Hour: the 3-year average of the 98th percentile of 24-hour average concentrations - 35 µg/m^3

2010
Maine
Particulate Matter < 2.5 Microns
All Values are in µg/m^3 Local Conditions

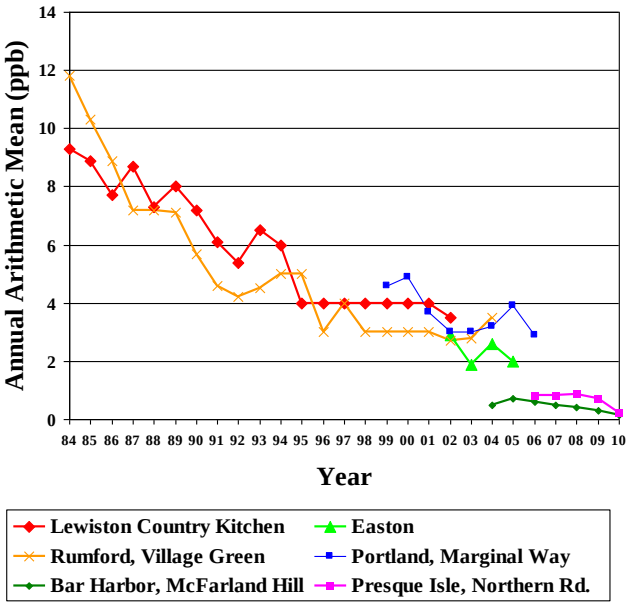
Site ID	PO C	PQAO	City	County	Address	Meth.	# Obs	Highest Value	2nd Highest Value	3rd Highest Value	4th Highest Value	98th Percentile Value	Wtd. Arith. Mean	
23-001-0011	1	635	Lewiston	Androscoggin	COUNTRY KITCHEN LOT CANAL ST	118	112	47.2	22.5	21.7	20.1	21.7	7.09	*
23-003-0014	1	635	Madawaska	Aroostook	428 MAIN ST.	118	117	28.9	23.3	22.6	18.7	22.6	7.28	
23-003-1008	2	635	Presque Isle	Aroostook	PI REG OFF 58 CENTRAL DR.	118	119	18.9	18.6	15.4	15.1	15.4	5.06	*
23-003-1011	1	635	Presque Isle	Aroostook	RIVERSIDE STREET	118	103	34.0	27.2	26.2	22.6	27.2	6.99	*
23-005-0015	1	635	Portland	Cumberland	TUKEY'S BRIDGE-BEANPOT RD.	118	58	41.3	23.2	18.9	15.1	23.2	8.01	
23-005-0029	1	635	Portland	Cumberland	356 State Street	118	119	26.7	24.2	20.3	20.2	20.3	7.42	
23-005-0029	2	635	Portland	Cumberland	356 State Street	118	29	39.3	23.7	9.5	9.4	39.3	7.61	
23-009-0103	1	635	Bar Harbor	Hancock	MCFARLAND HILL	118	121	24.9	18.7	16.2	15.8	16.2	4.35	
23-011-0016	1	635	Augusta	Kennebec	LINCOLN ST. ELEMENTARY SCH.	117	55	33.1	18.6	13.9	13.2	18.6	6.42	
23-011-0016	2	635	Augusta	Kennebec	LINCOLN ST. ELEMENTARY SCH.	117	30	32.4	19.8	13.3	12.2	32.4	6.79	
23-017-2011	1	635	Rumford	Oxford	RUMFORD AVENUE	117	57	58.7	29.7	18.1	16.1	29.7	8.01	
23-019-0002	1	635	Bangor	Penobscot	WASHINGTON ST.	118	118	25.2	23.6	23.3	19.6	23.3	7.04	
23-021-0004	1	635	Greenville	Piscataquis	VILLAGE STREET	118	218	36.4	17.2	15.2	14.1	15.2	5.09	

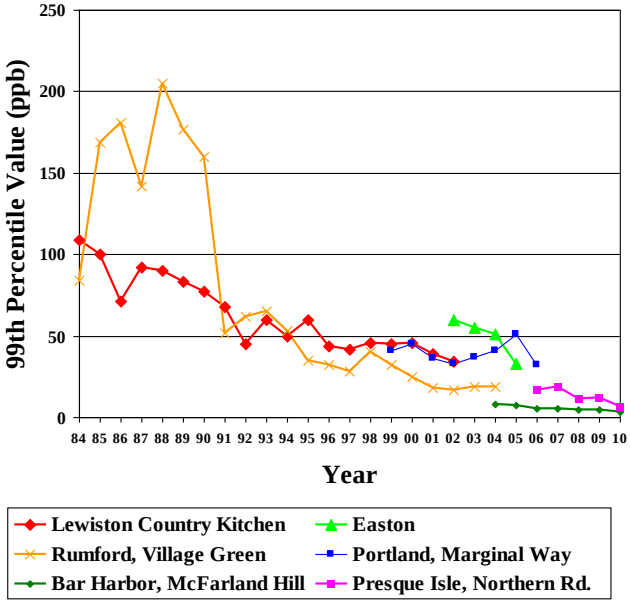
*Indicates that the mean does not meet summary criteria

Maine Sites 2010 - Sulfur Dioxide



Maine Sulfur Dioxide Data





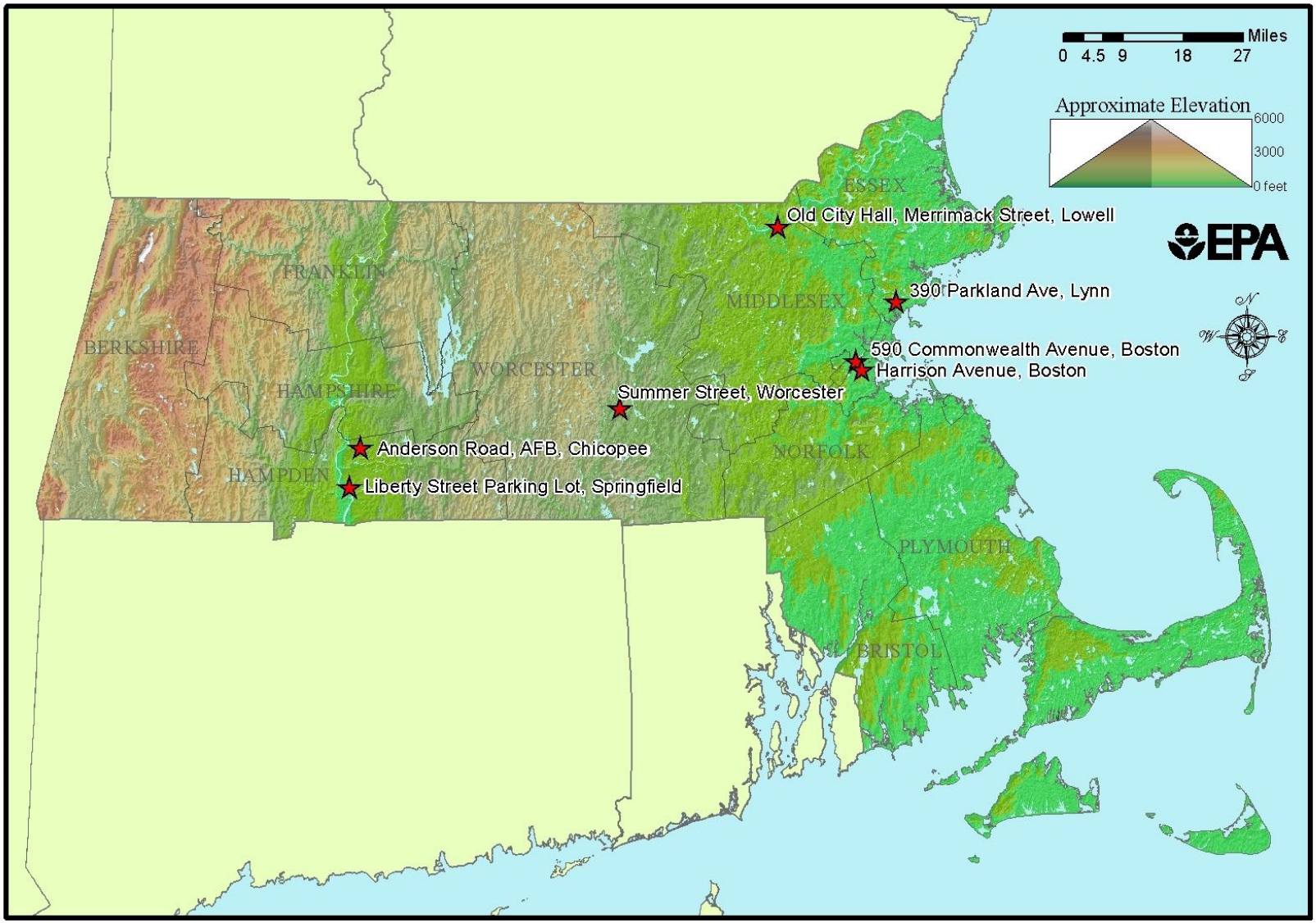
NAAQS for Sulfur Dioxide:

Primary: Annual Arithmetic Mean - 0.03 ppm (revoked as of August 23, 2010)
24-hour -0.14 ppm (revoked as of August 23, 2010)
1-hour 75 ppb (0.075 ppm) (Effective as of August 23, 2010) 99th percentile

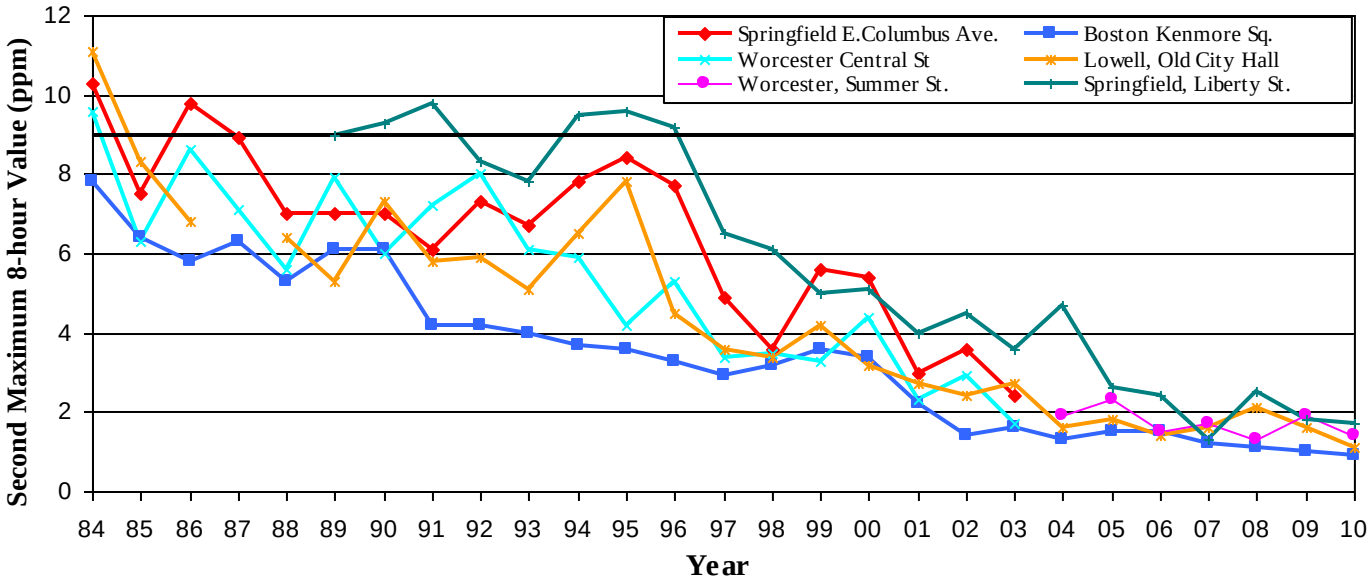
Secondary: 3-hour 0.5 ppm

2010																
Maine																
Sulfur Dioxide																
All Values are in Units of Parts Per Billion (ppb)																
	P								First	Second	99th	First	Second	Days		
	O						Meth.	#	Comp.	Max	Max	pct	Max	Max	>24 Hr.	Arith.
Site ID	C	PQAO	City	County	Address		Used	Obs	Qtrs.	1-hour	1-hour	1-hou	24-hour	24-hour	Std	Mean
23-003-1100	1	635	Presque Isle	Aroostook	8 NORTHERN RD.		560	8076	4	10	7.6	6.9	2.2	2.2	0	0.22
23-005-0029	1	635	Portland	Cumberland	356 STATE ST.		60	8627	4	27	26.0	21.0	9.5	9.5	0	1.56
23-009-0103	1	635	Bar Harbor	Hancock	MCFARLAND HILL		0	8194	4	3.5	3.4	3.1	2.0	1.1	0	0.15

Massachusetts Sites - 2010 - Carbon Monoxide



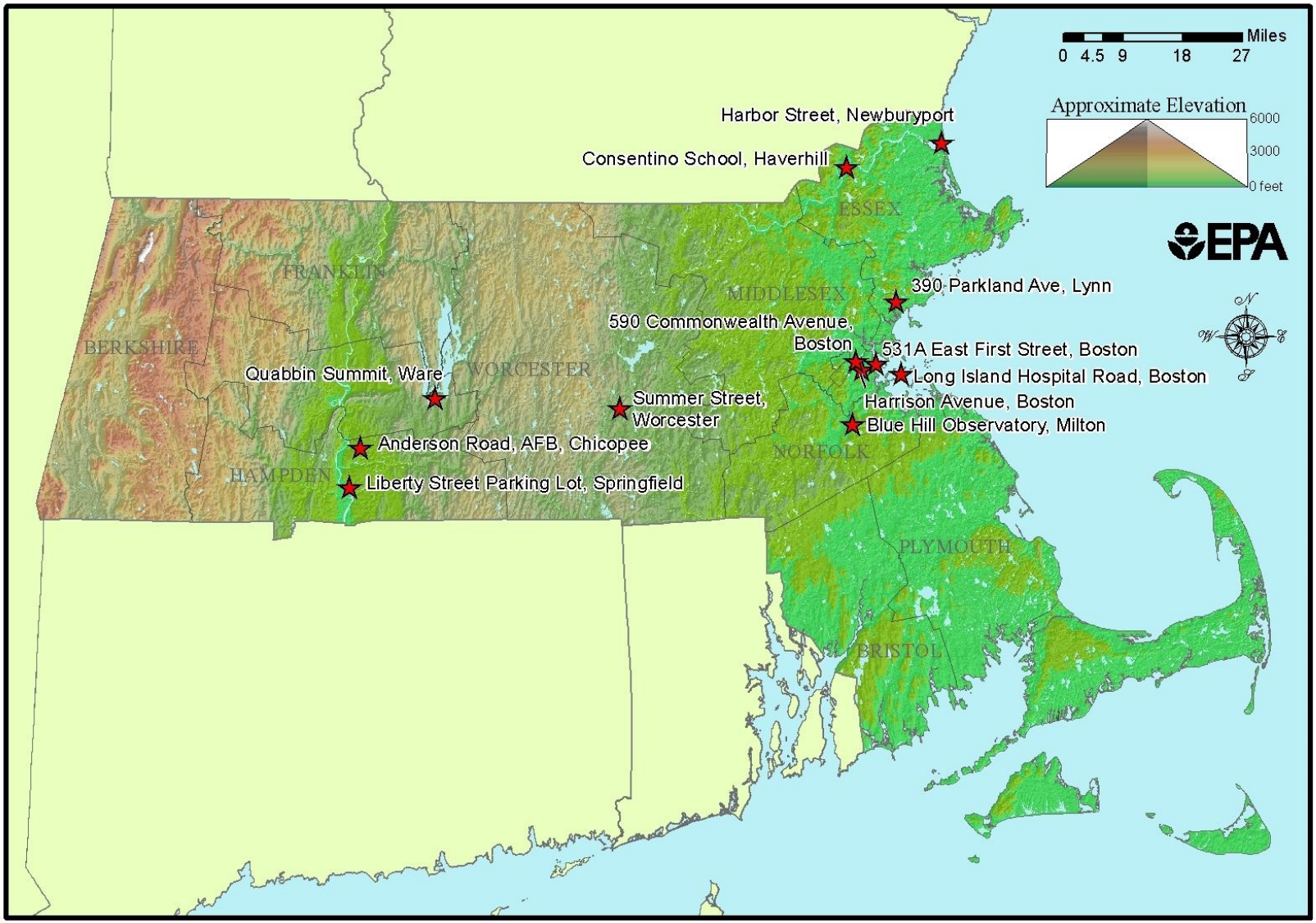
Massachusetts Carbon Monoxide Data



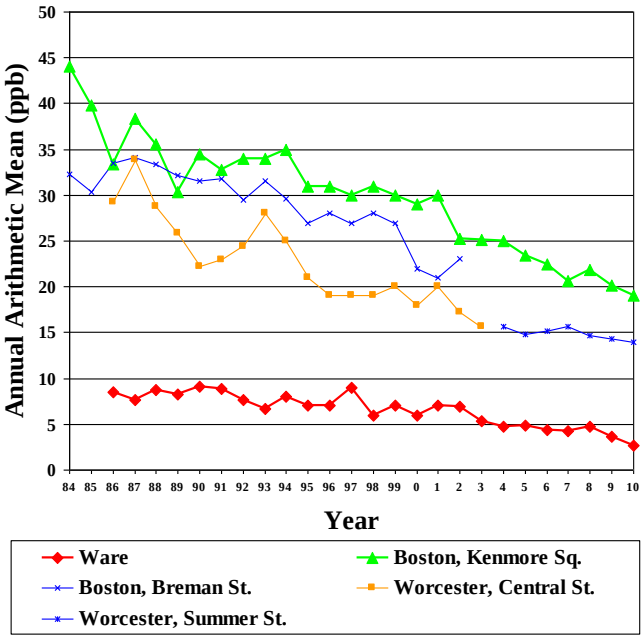
*NAAQS for Carbon Monoxide:
8-hour – 9 ppm, not to be exceeded more than once per year
1-hour – 35 ppm, not to be exceeded more than once per year

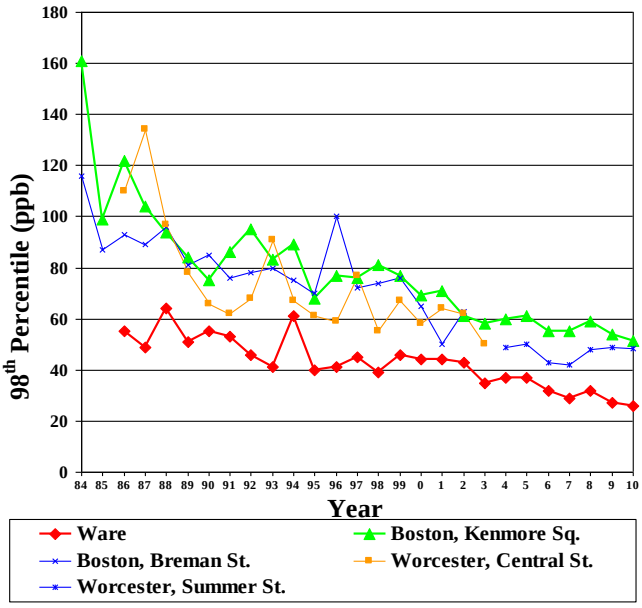
2010														
Massachusetts														
Carbon Monoxide														
All Values are in Units of Parts Per Million (ppm)														
								1-hour	1-hour		8-hour	8-hour	
	P								2nd			2nd	
	O					Meth	#	Highest	Highest	Obs	Highest	Highest	Obs
Site ID	C	PQAO	City	County	Address	Used	Obs	Value	Value	> 35	Value	Value	> 9
25-009-2006	1	660	Lynn	Essex	390 PARKLAND	593	8034	0.963	0.879	0	0.7	0.6	0
25-013-0008	1	660	Chicopee	Hampden	ANDERSON RD AFB	593	4846	0.876	0.851	0	0.7	0.7	0
25-013-0016	1	660	Springfield	Hampden	LIBERTY P-LOT	93	8200	2.200	2.000	0	1.8	1.7	0
25-017-0007	1	660	Lowell	Middlesex	MERRIMACK ST	93	8191	1.600	1.600	0	1.3	1.1	0
25-025-0002	1	660	Boston	Suffolk	KENMORE SQ	93	8180	1.900	1.800	0	1.5	0.9	0
25-025-0042	1	660	Boston	Suffolk	HARRISON AVE	593	8515	2.906	2.519	0	2.1	1.8	0
25-027-0023	1	660	Worcester	Worcester	SUMMER ST	0	7941	1.800	1.800	0	1.7	1.4	0

Massachusetts Sites - 2010 - Nitrogen Dioxide



Massachusetts Nitrogen Dioxide Data

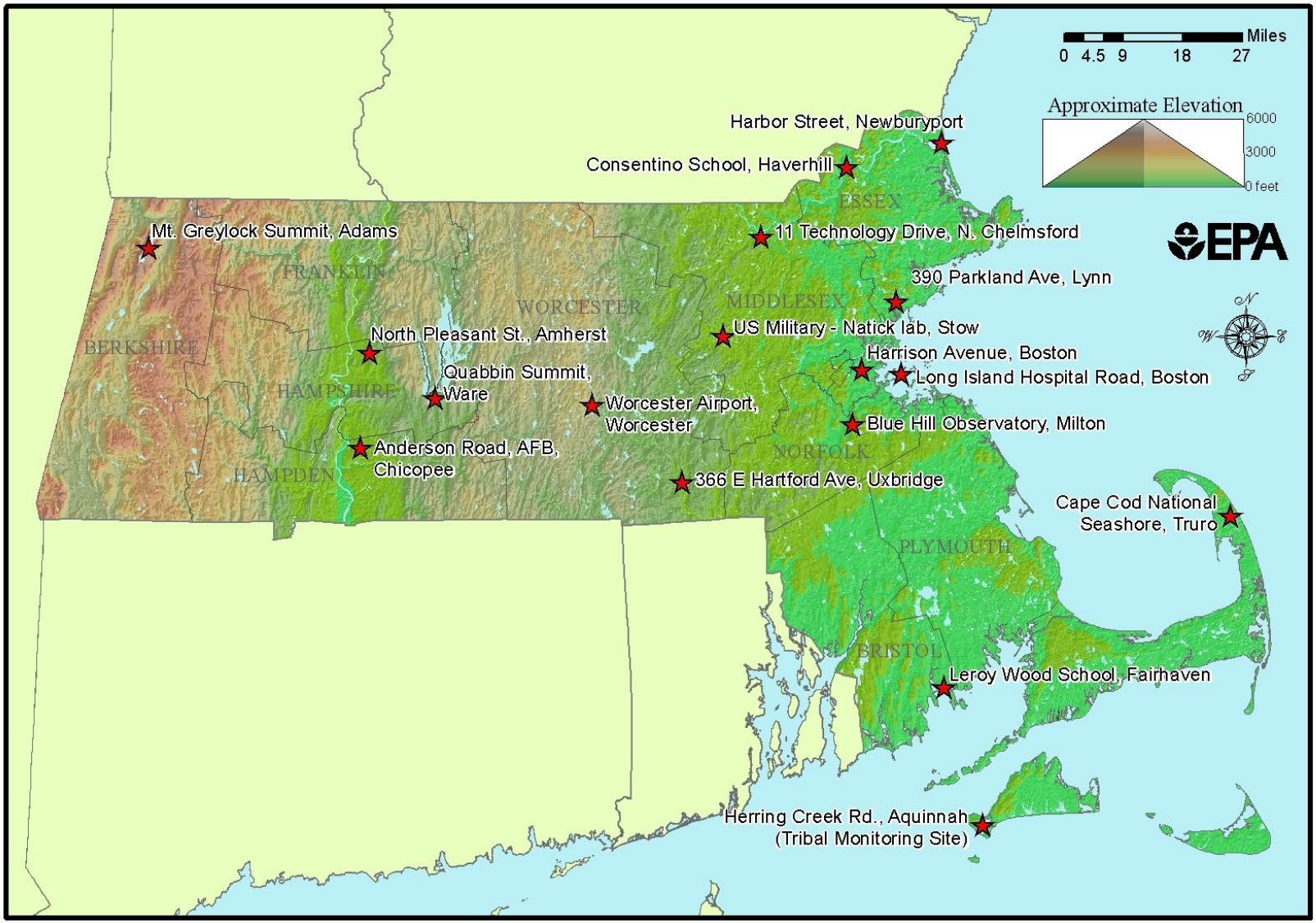




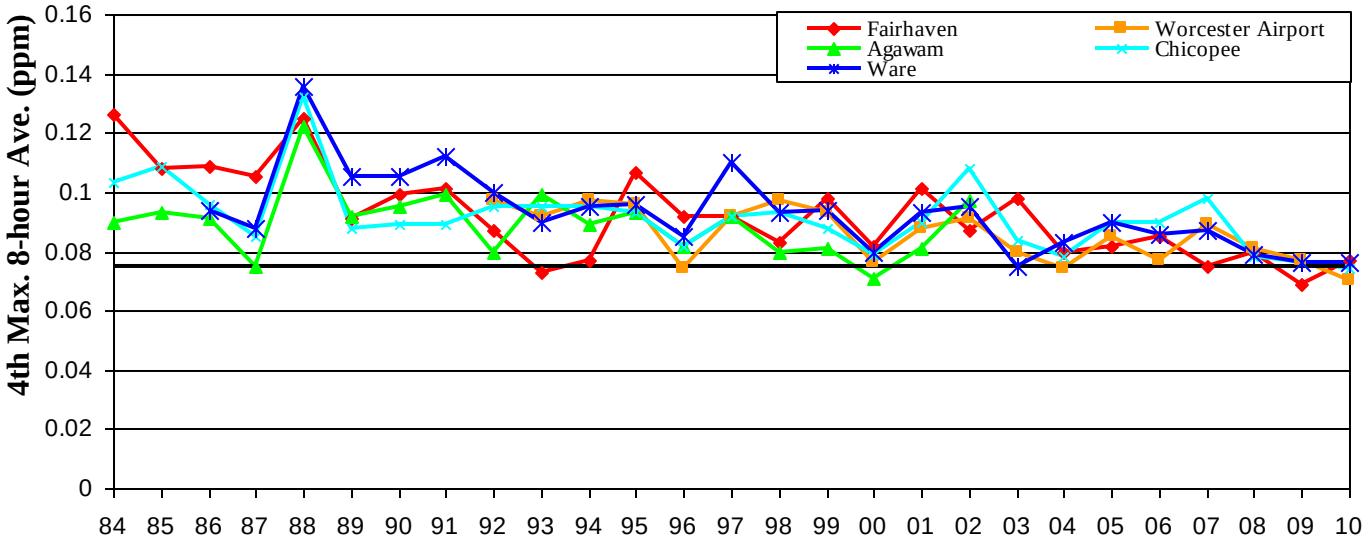
NAAQS for Nitrogen Dioxide:
Annual Arithmetic Mean 53 ppb (100 µg/m^3)
1-hour – 100 ppb (as of January 22, 2010) 98th percentile

2010														
Massachusetts														
Nitrogen Dioxide														
All Values are in Units of Parts Per Billion (ppb)														
									1-hour	1-hour				
	P									2nd				Annual
	O							Comp.	Highest	Highest	98th		Prcnt.	Arith.
Site ID	C	PQAO	City	County	Address	Meth.	Qtrs.	Value	Value	Pct.	# Obs	Comp.	Mean	
25-009-2006	1	660	Lynn	Essex	390 PARKLAND	99	4	50.3	48.1	42.4	8351	95	7.30	
25-009-4005	1	660	Newburyport	Essex	HARBOR STREET	99	1	40.2	26.3	26.3	1847	21	3.58	*
25-009-5005	1	660	Haverhill	Essex	CONSENTINO SCHOOL	99	4	44.7	42.8	40.1	7988	91	6.99	
25-013-0008	1	660	Chicopee	Hampden	ANDERSON RD AFB	99	4	42.0	40.0	35	8287	95	6.19	
25-013-0016	1	660	Springfield	Hampden	LIBERTY P-LOT	99	4	51.0	51.0	48	8252	94	14.54	
25-015-4002	1	660	Ware	Hampshire	QUABBIN SUMMIT	99	4	44.0	39.0	26	8312	95	2.67	
25-021-3003	1	660	Milton	Norfolk	BLUE HILL OBS	99	2	33.5	26.8	21	4711	54	4.40	*
25-025-0002	1	660	Boston	Suffolk	KENMORE SQ	99	4	63.5	53.4	51.5	8229	94	19.10	
25-025-0040	1	345	Boston	Suffolk	531A EAST FIRST ST.	74	4	64.0	52.0	47	8526	97	12.72	
25-025-0041	1	660	Boston	Suffolk	LONG ISLAND	99	2	48.8	47.9	44.4	4788	55	7.21	*
25-025-0042	1	660	Boston	Suffolk	HARRISON AVE	99	4	62.0	62.0	53	8218	94	17.05	
25-027-0023	1	660	Worcester	Worcester	SUMMER ST	99	4	59.0	59.0	48.4	8178	93	13.99	
*Indicates that the mean does not meet summary criteria														

Massachusetts Sites - 2010 - Ozone



Massachusetts Ozone 8-Hour Data



*NAAQS for Ozone:

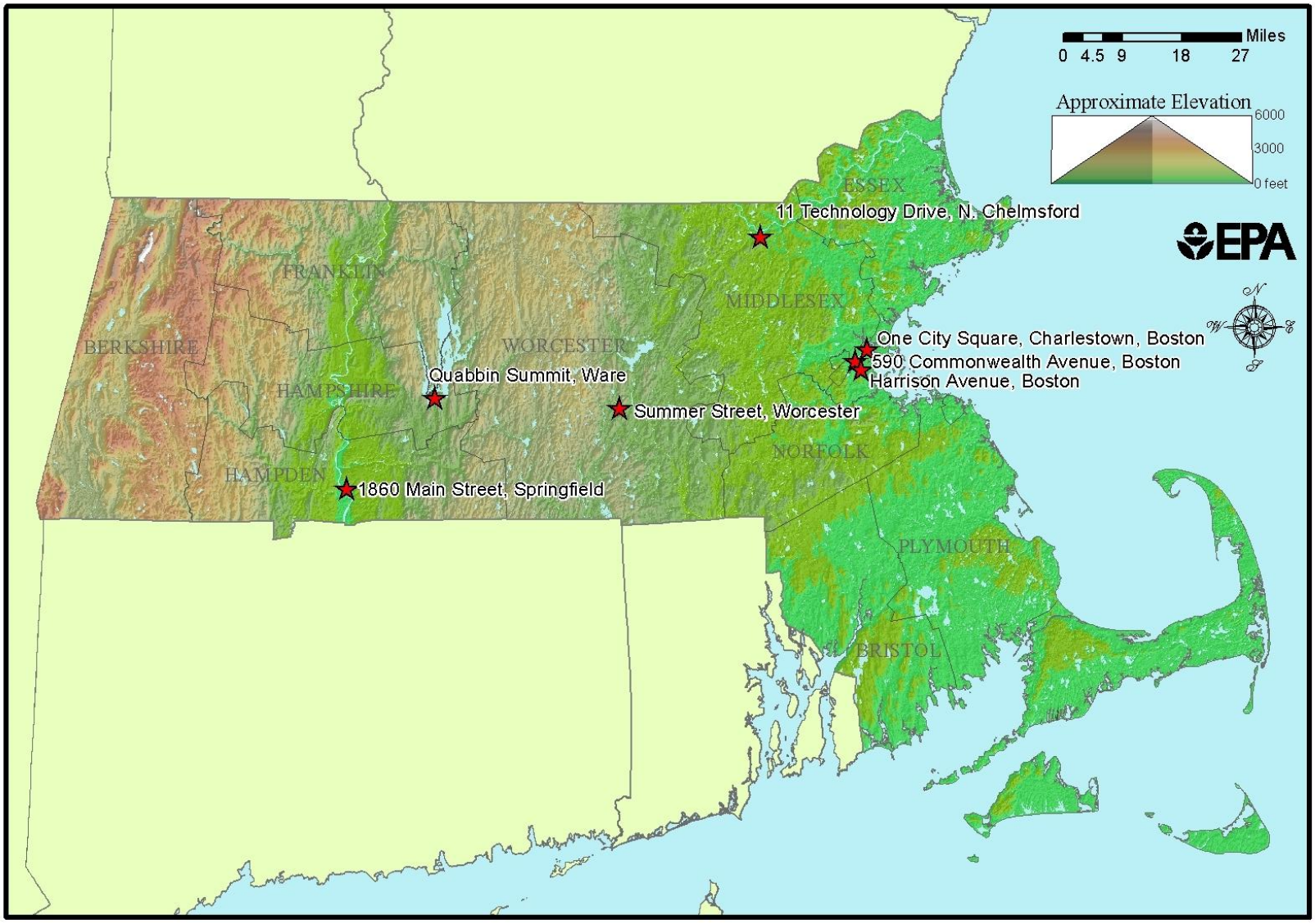
8-hour – 0.075 ppm (2008 std)

(To attain this 0.075 ppm 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. This graph represents the 4th highest value for each year for each monitor depicted. Thus, being above or below this NAAQS line does not indicate whether or not a monitor exceeds the NAAQS.)

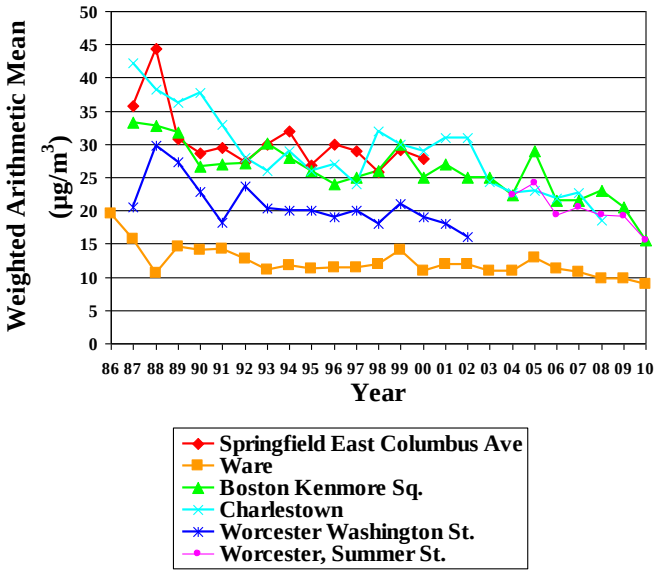
2010
Massachusetts
Ozone (8-Hour)
All Values are in Units of Parts Per Million (ppm)

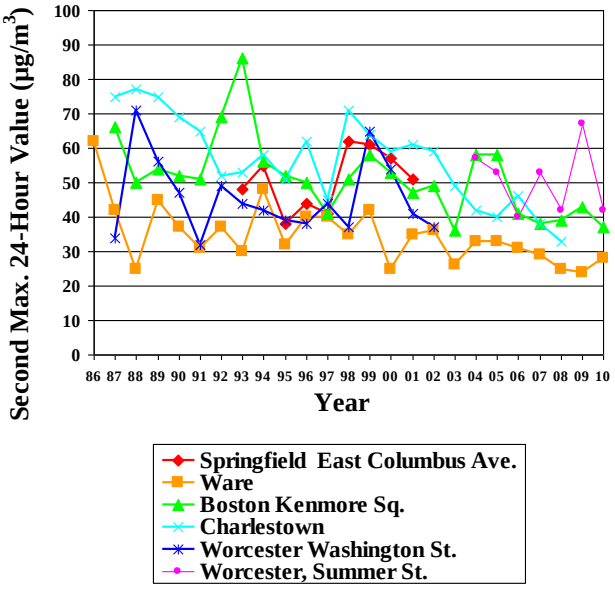
Site ID	POC	PQAO	City	County	Address	Methods Reported	% Obs	Valid Days Meas.	Num Required Days	Highest 8-Hr Value	2nd Highest 8-Hr Value	3rd Highest 8-Hr Value	4th Highest 8-Hr Value	Days Max > 0.075
25-001-0002	1	660	Truro	Barnstable	FOX BOTTOM AREA	87	99	181	183	0.086	0.079	0.079	0.078	4
25-003-4002	1	660	Adams	Berkshire	MT GREYLOCK SUMMIT	87	75	137	183	0.080	0.074	0.074	0.073	1
25-005-1002	1	660	Fairhaven	Bristol	LEROY WOOD SCHOOL	87	98	179	183	0.081	0.079	0.078	0.077	5
25-007-0001	1	660	Oak Bluffs	Dukes	HERRING CREEK RD	87	95	173	183	0.100	0.086	0.081	0.080	6
25-009-2006	1	660	Lynn	Essex	390 PARKLAND	87	99	182	183	0.083	0.075	0.075	0.072	1
25-009-4005	1	660	Newburyport	Essex	HARBOR STREET	87	46	84	183	0.079	0.074	0.067	0.066	1
25-009-5005	1	660	Haverhill	Essex	CONSENTINO SCHOOL	87	82	150	183	0.076	0.074	0.072	0.071	1
25-013-0008	1	660	Chicopee	Hampden	ANDERSON RD AFB	87	98	180	183	0.091	0.078	0.075	0.074	2
25-015-0103	1	660	North Amherst	Hampshire	N PLEASANT ST	87	96	175	183	0.077	0.074	0.070	0.069	1
25-015-4002	1	660	Ware	Hampshire	QUABBIN SUMMIT	87	95	173	183	0.089	0.084	0.077	0.076	5
25-017-0009	1	660	Chelmsford	Middlesex	11 TECHNOLOGY DR.	47	98	179	183	0.079	0.074	0.069	0.069	1
25-017-1102	1	660	Stow	Middlesex	US MILITARY RES	87	97	177	183	0.077	0.070	0.070	0.069	1
25-021-3003	1	660	Milton	Norfolk	BLUE HILL OBS	87	99	182	183	0.083	0.081	0.075	0.073	2
25-025-0041	1	660	Boston	Suffolk	LONG ISLAND	87	97	178	183	0.079	0.074	0.071	0.070	1
25-025-0042	1	660	Boston	Suffolk	HARRISON AVE	87	98	179	183	0.070	0.065	0.063	0.063	0
25-027-0015	1	660	Worcester	Worcester	WORCESTER AIRPORT	87	99	181	183	0.083	0.078	0.077	0.070	3
25-027-0024	1	660	Uxbridge	Worcester	366 E HARTFORD AVE.	87	97	177	183	0.077	0.074	0.074	0.071	1

Massachusetts Sites - 2010 - Particulate Matter < 10 Microns



Massachusetts Particulate Matter < 10 Microns (PM_{10}) Data

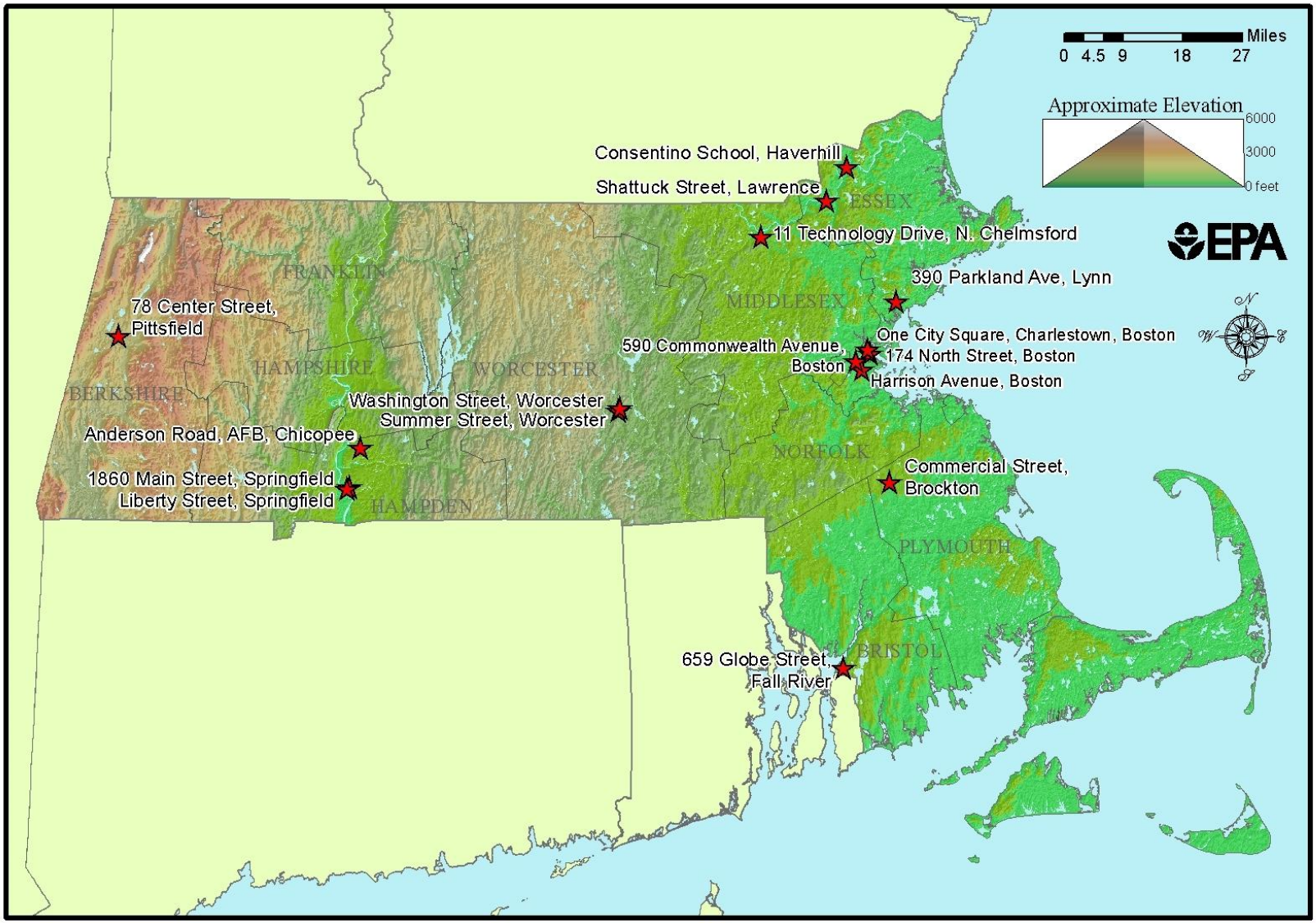




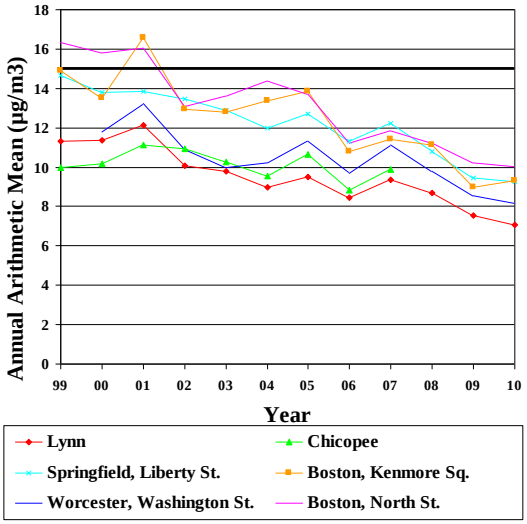
NAAQS for Particulate Matter less than 10 Microns:
24-hour 150 µg/m^3

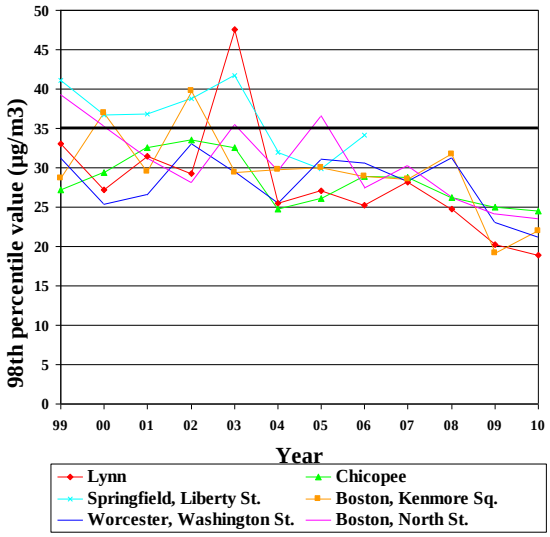
2010																		
Massachusetts																		
Particulate Matter < 10 Microns																		
All Values are in Units of µg/m^3																		
												2nd	3rd	4th	Days	Est. Days	Wtd.	
						Meth.			Num.	Valid	Highest	Highest	Highest	Highest	Max	Max	Arith.	
SITE ID	PO	PQAO	City	County	Address	Used	# Obs	# Req.	Days	% Obs	Value	Value	Value	Value	>150	>150	Mean	
25-013-2009	4	660	Springfield	Hampden	1860 MAIN ST	127	60	61	60	98	35	33	33	31	0	0	14.7	
25-015-4002	4	660	Ware	Hampshire	QUABBIN SUMMIT	127	60	61	60	98	30	28	24	18	0	0	8.9	
25-017-0009	1	660	Chelmsford	Middlesex	11 TECHNOLOGY DRIVE	125	59	61	59	97	31	28	27	23	0	0	10.9	
25-025-0002	4	660	Boston	Suffolk	KENMORE SQ	127	57	61	57	93	40	37	32	28	0	0	15.5	
25-025-0027	4	660	Boston	Suffolk	ONE CITY SQ	127	59	61	59	97	32	31	30	30	0	0	15.1	
25-025-0042	1	660	Boston	Suffolk	HARRISON AVE	63	60	61	60	98	43	25	25	23	0	0	11.9	
25-025-0042	2	660	Boston	Suffolk	HARRISON AVE	63	61	61	60	98	48	41	26	25	0	0	12.5	
25-025-0042	4	660	Boston	Suffolk	HARRISON AVE	127	61	61	60	98	50	30	30	29	0	0	14.1	
25-025-0042	5	660	Boston	Suffolk	HARRISON AVE	127	58	61	58	95	47	30	29	29	0	0	13.8	
25-027-0023	4	660	Worcester	Worcester	SUMMER ST	127	60	61	60	98	48	42	32	31	0	0	15.5	

Massachusetts Sites - 2010 - Particulate Matter < 2.5 Microns



Massachusetts Particulate Matter < 2.5 Microns ($PM_{2.5}$) Data





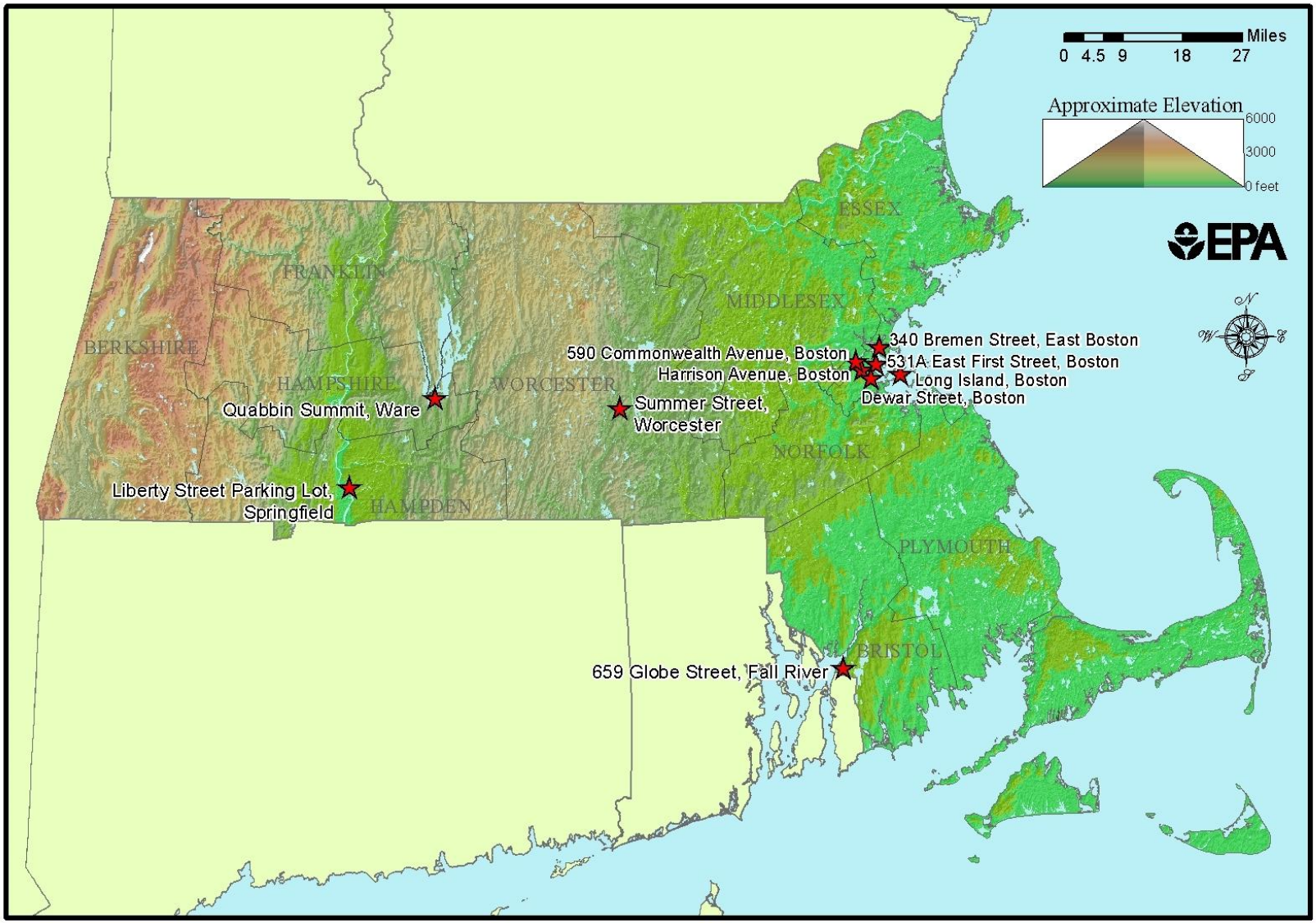
*NAAQS for Particulate Matter less than 2.5 Microns:
Annual: the 3-year average of the Annual Arithmetic Mean - 15.0 µg/m^3
24-Hour: the 3-year average of the 98th percentile of 24-hour average concentrations - 35 µg/m^3

2010
Massachusetts
Particulate Matter < 2.5 Microns
All Values are in µg/m^3 Local Conditions

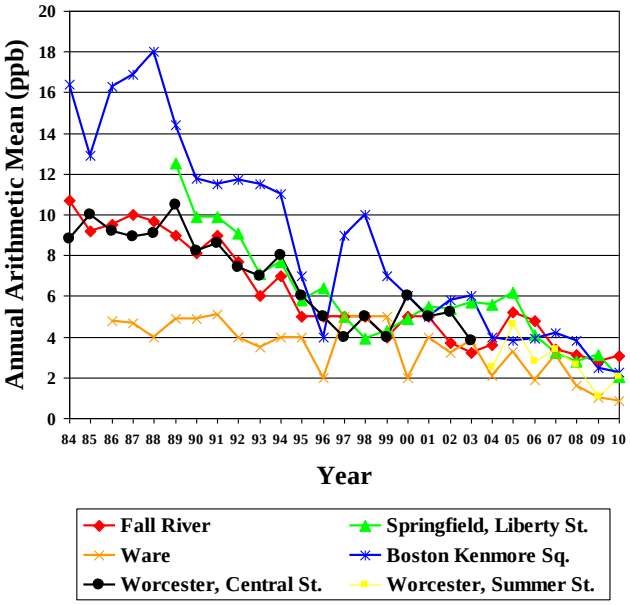
Site ID	P O C	PQAO	City	County	Address	Meth.	# Obs	Highest Value	2nd Highest Value	3rd Highest Value	4th Highest Value	98th Percentile Value	Wtd. Arith. Mean	
25-003-5001	1	660	Pittsfield	Berkshire	78 CENTER ST	145	119	45.4	26.4	25.4	25.0	25.4	8.93	
25-005-1004	1	660	Fall River	Bristol	659 GLOBE ST	145	122	27.5	25.8	24.4	24.2	24.4	7.73	
25-009-2006	1	660	Lynn	Essex	390 PARKLAND	145	115	25.4	23.0	18.9	17.2	18.9	7.06	
25-009-5005	1	660	Haverhill	Essex	CONSENTINO SCHOOL	145	119	26.2	20.9	19.7	19.3	19.7	7.41	
25-009-6001	1	660	Lawrence	Essex	SHATTUCK ST	145	113	31.8	21.0	20.1	20.0	20.1	7.94	
25-013-0008	1	660	Chicopee	Hampden	ANDERSON RD AFB	145	122	37.3	29.1	24.5	23.5	24.5	7.72	
25-013-0008	2	660	Chicopee	Hampden	ANDERSON RD AFB	145	109	36.2	29.1	23.2	23.1	23.2	8.02	
25-013-0016	1	660	Springfield	Hampden	LIBERTY P-LOT	145	120	44.5	32.0	25.8	25.5	25.8	9.24	
25-013-2009	1	660	Springfield	Hampden	1860 MAIN ST	145	121	42.5	28.5	23.5	23.0	23.5	8.73	
25-017-0009	1	660	Chelmsford	Middlesex	11 TECHNOLOGY DRIVE	142	58	22.0	19.6	17.4	14.4	19.6	7.03	
25-017-0009	2	660	Chelmsford	Middlesex	11 TECHNOLOGY DRIVE	142	15	13.8	8.3	7.7	7.3	13.8	5.53	*
25-023-0004	1	660	Brockton	Plymouth	COMMERCIAL ST	145	122	27.8	27.5	22.6	20.5	22.6	7.84	
25-023-0004	2	660	Brockton	Plymouth	COMMERCIAL ST	145	113	28.2	27.5	23.0	20.4	23.0	7.87	
25-025-0002	1	660	Boston	Suffolk	KENMORE SQ	145	103	29.5	24.5	21.9	20.7	21.9	9.31	*
25-025-0027	1	660	Boston	Suffolk	ONE CITY SQ	145	118	28.9	24.9	24.5	23.3	24.5	9.14	
25-025-0042	1	660	Boston	Suffolk	HARRISON AVE	145	122	26.8	26.0	22.5	21.4	22.5	8.25	
25-025-0043	1	660	Boston	Suffolk	174 NORTH ST	145	361	60.5	28.7	27.4	24.1	23.5	10.03	
25-025-0043	2	660	Boston	Suffolk	174 NORTH ST	145	349	60.2	29.6	27.5	26.3	24.8	10.00	
25-027-0016	1	660	Worcester	Worcester	WASHINGTON ST	145	119	28.2	22.5	21.2	20.1	21.2	8.18	
25-027-0023	1	660	Worcester	Worcester	SUMMER ST	145	119	28.3	22.4	21.2	20.9	21.2	8.70	

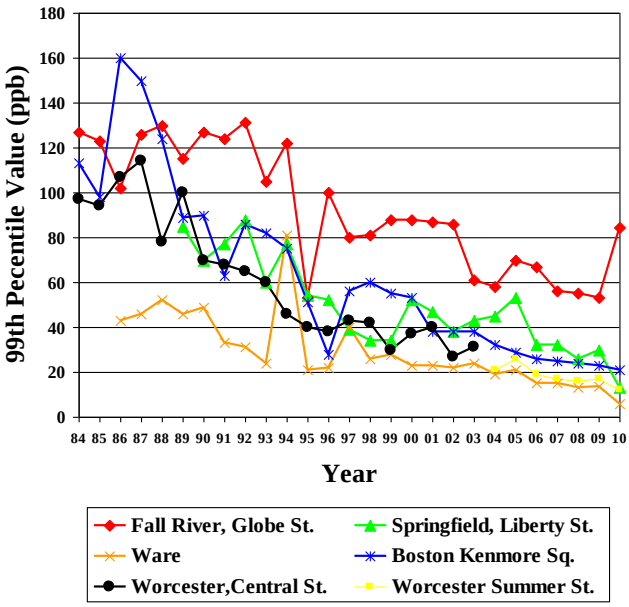
*Indicates that the mean does not meet summary criteria

Massachusetts Sites - 2010 - Sulfur Dioxide



Massachusetts Sulfur Dioxide Data





NAAQS for Sulfur Dioxide:

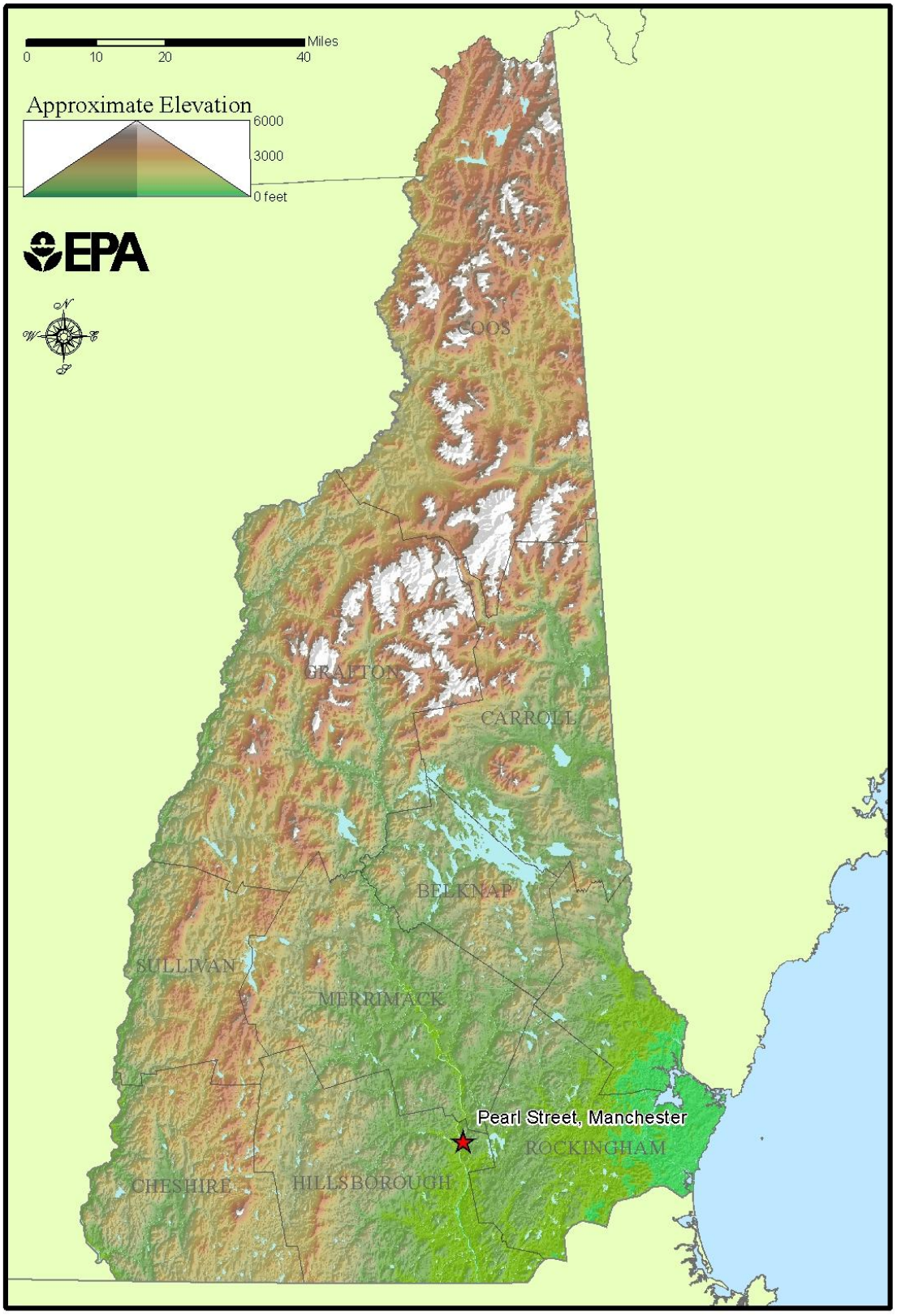
Primary: Annual Arithmetic Mean - 0.03 ppm (revoked as of August 23, 2010)
24-hour -0.14 ppm (revoked as of August 23, 2010)
1-hour 75 ppb (0.075 ppm) (Effective as of August 23, 2010) 99th percentile

Secondary: 3-hour 0.5 ppm

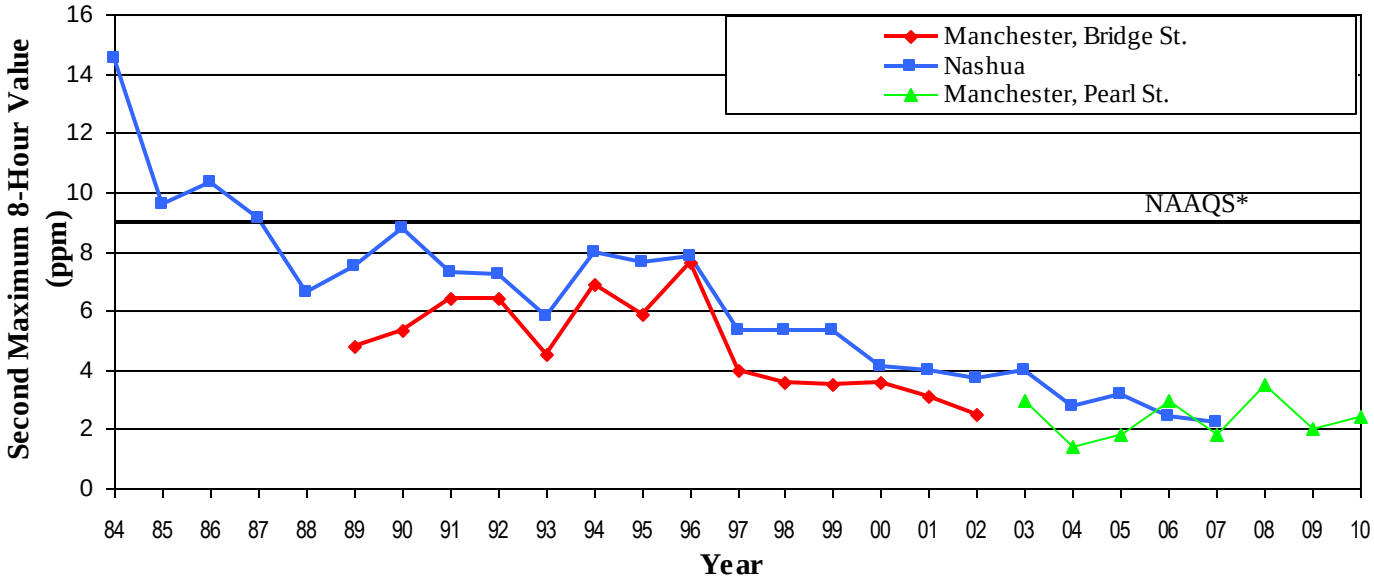
2010
Massachusetts
Sulfur Dioxide
All Values are in Units of Parts Per Billion (ppb)

Site ID	PO C	PQAO	City	County	Address	Meth. Used	# Obs	Comp. Qtrs.	First Max 1-hour	Second Max 1-hour	99th Pct. 1-hour	First Max 24-hour	Second Max 24-hour	Days >24 Hr. Std	Arith. Mean
25-005-1004	1	660	Fall River	Bristol	659 GLOBE ST	100	8559	4	118.7	112.2	84.3	36.7	33.1	0	3.08
25-013-0016	1	660	Springfield	Hampden	LIBERTY ST.	100	8364	4	17.0	15.0	13.0	8.1	7.4	0	2.05
25-015-4002	1	660	Ware	Hampshire	QUABBIN SUMMIT	600	8527	4	11.0	10.1	5.8	7.4	5.7	0	0.84
25-025-0002	1	660	Boston	Suffolk	KENMORE SQ.	100	8521	4	26.9	25.0	21.1	8.4	7.9	0	2.24
25-025-0019	1	345	Boston	Suffolk	LONG ISLAND, BOSTON HARBOR	60	8489	4	13.0	12.0	11.0	4.7	4.7	0	1.79
25-025-0020	1	345	Boston	Suffolk	DEWAR STREET, DORCHESTER	60	8728	4	24.0	23.0	19.0	9.2	7.9	0	2.93
25-025-0021	2	345	Boston	Suffolk	340 BREMEN ST. EAST BOSTON	60	8617	4	27.0	26.0	25.0	10.0	9.4	0	2.93
25-025-0040	1	345	Boston	Suffolk	531A EAST FIRST ST.	60	8445	4	16.0	14.0	9.0	4.9	4.7	0	2.32
25-025-0042	1	660	Boston	Suffolk	HARRISON AVE.	600	8337	4	24.3	22.2	19.3	8.8	7.9	0	1.60
25-027-0023	1	660	Worcester	Worcester	SUMMER ST	100	8307	4	22.0	12.0	12.0	8.8	6.8	0	2.06

New Hampshire Sites 2010 - Carbon Monoxide



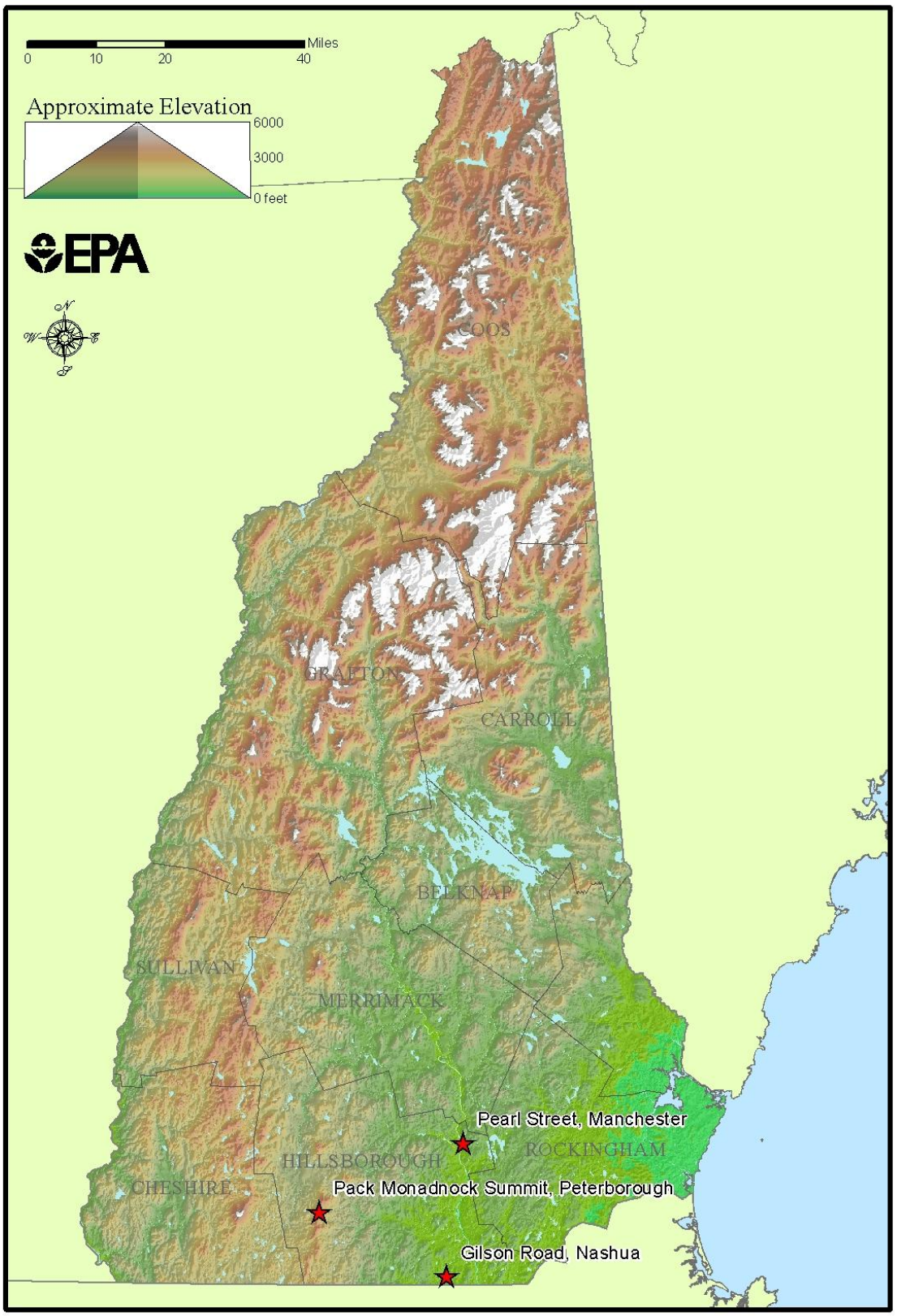
New Hampshire Carbon Monoxide Data



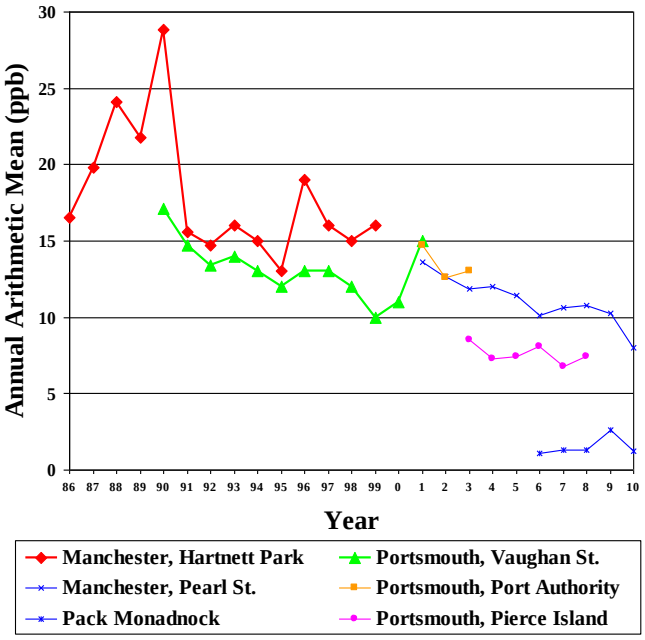
*NAAQS for Carbon Monoxide:
8-hour – 9 ppm, not to be exceeded more than one per year
1-hour – 35 ppm, not to be exceeded more than once per year

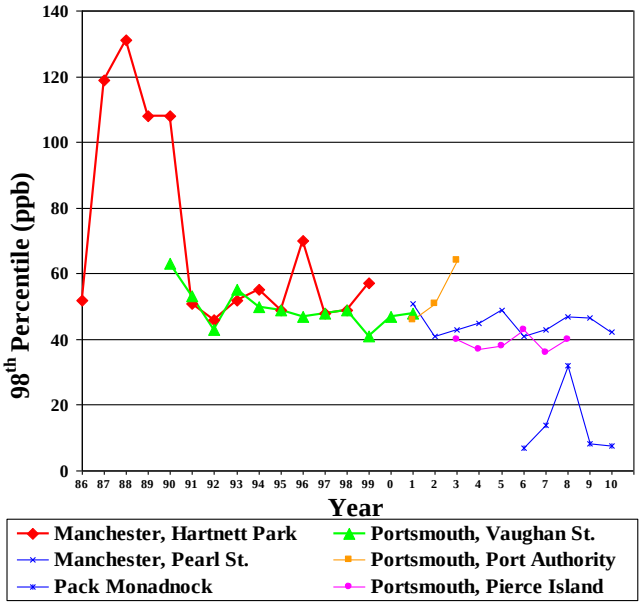
2010													
New Hampshire													
Carbon Monoxide													
All Values are in Units of Parts Per Million (ppm)													
									1-hour	1-hour		8-hour	8-hour	
	P									2nd			2nd	
	O						Meth	#	Highest	Highest	Obs	Highest	Highest	Obs
Site ID	C	PQAO	City	County	Address		Used	Obs	Value	Value	> 35	Value	Value	> 9
33-011-0020	1	762	Manchester	Hillsborough	PEARL ST		54	8646	3.4	3.1	0	2.4	2.4	0

New Hampshire Sites 2010 - Nitrogen Dioxide



New Hampshire Nitrogen Dioxide Data

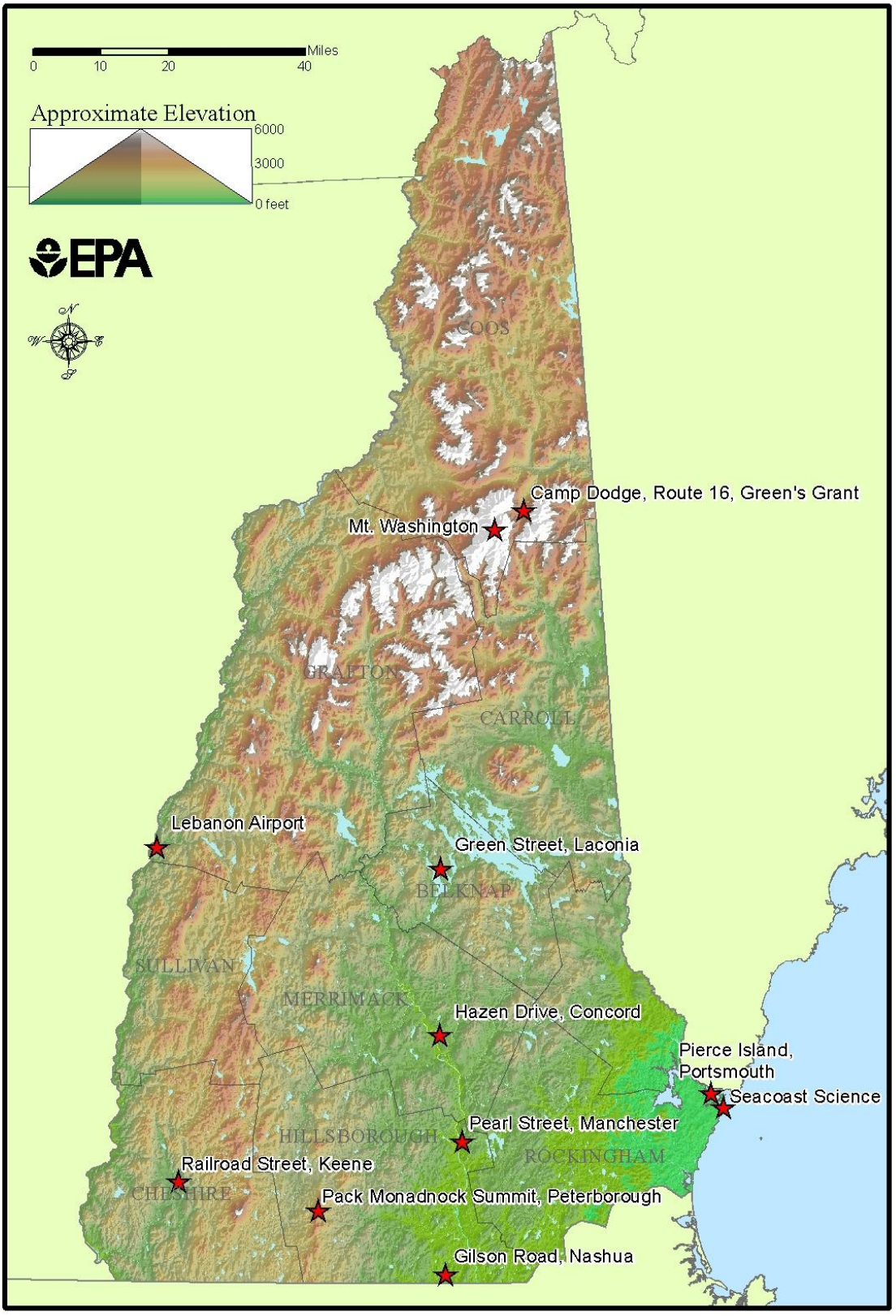




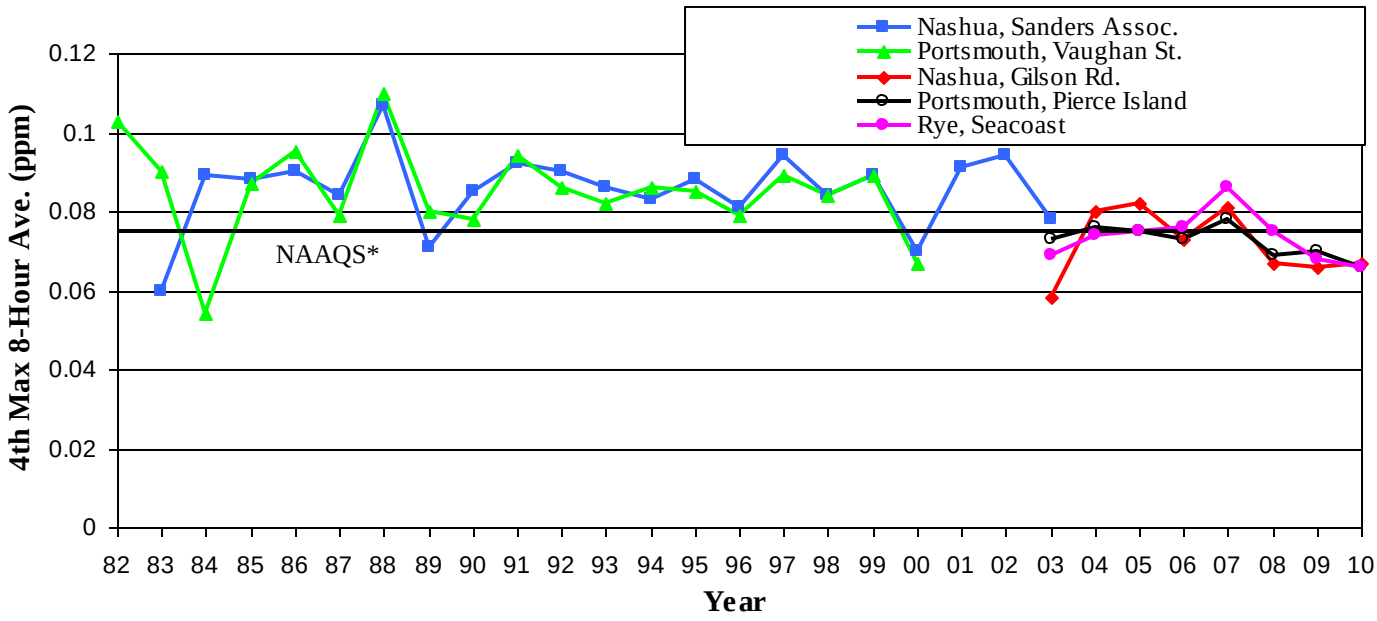
NAAQS for Nitrogen Dioxide:
Annual Arithmetic Mean 53 ppb (100 µg/m^3)
1-hour – 100 ppb (as of January 22, 2010) 98th percentile

2010														
New Hampshire														
Parameter: Nitrogen Dioxide														
All Values are in Units of Parts Per Billion (ppb)														
									1-hour	1-hour				
	P									2nd				Annual
	O							Comp.	Highest	Highest	98th		Prcnt.	Arith.	
Site ID	C	PQAO	City	County	Address	Meth.	Qtrs.	Value	Value	Pct.	# Obs	Comp.	Mean	
33-011-0020	1	762	Manchester	Hillsborough	PEARL ST	74	4	50.3	48.8	42.2	8444	96	7.99	
33-011-1011	1	762	Nashua	Hillsborough	GILSON ROAD	74	1	13.9	13.1	12.1	3520	40	1.50	*
33-011-5001	1	762	Peterborough	Hillsborough	PACK MONADNOCK SUMMIT	82	1	11.4	8.4	7.7	3612	41	1.22	*
*Indicates that the mean does not meet summary criteria														

New Hampshire Sites 2010 - Ozone



New Hampshire Ozone 8-Hour Data



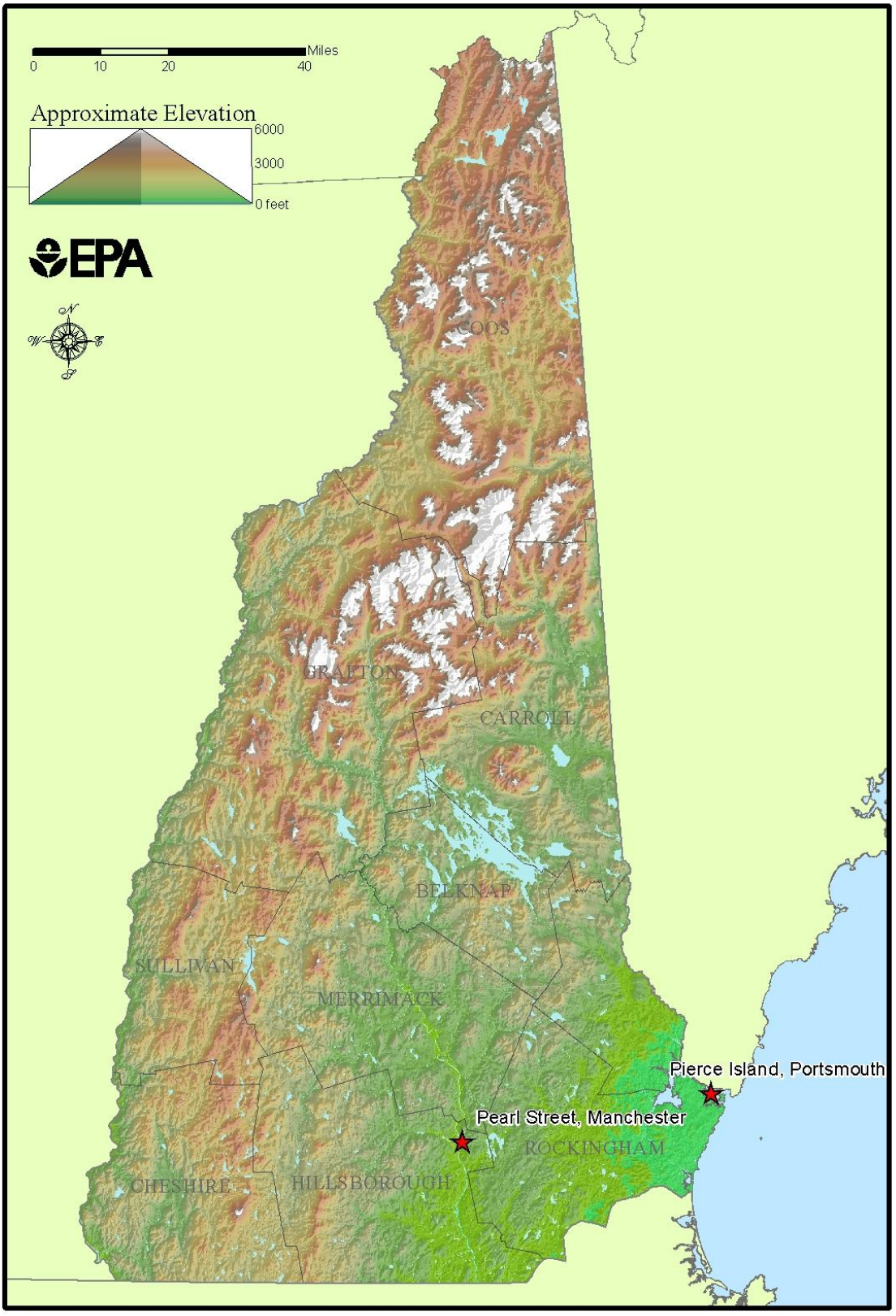
*NAAQS for Ozone:

8-hour – 0.075 ppm (2008 std)

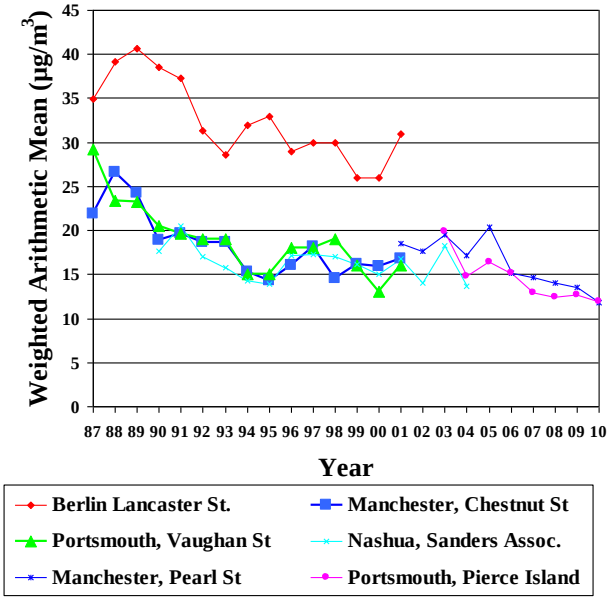
(To attain this 0.075 ppm standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm. This graph represents the 4th highest value for each year for each monitor depicted. Thus, being above or below this NAAQS line does not indicate whether or not a monitor exceeds the NAAQS.)

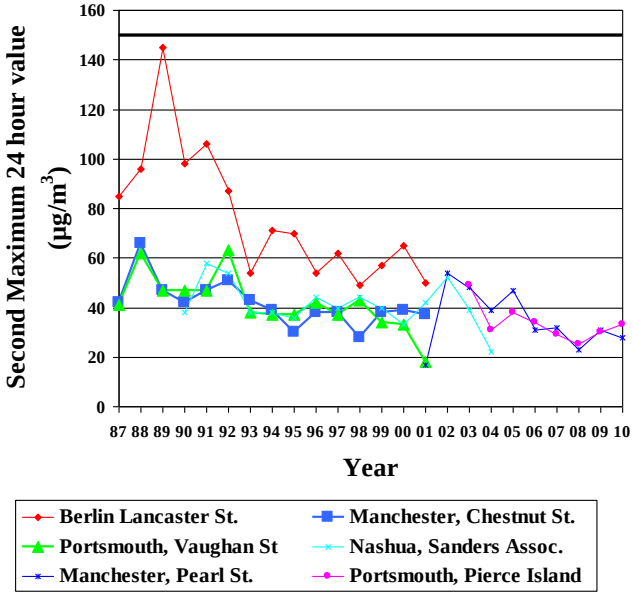
2010															
New Hampshire															
Ozone (8-Hour)															
All Values are in Units of Parts Per Million (ppm)															
	P							Valid	Num		2nd	3rd	4th	Days	
	O					Methods	%	Days	Required	Highest	Highest	Highest	Highest	Max >	
Site ID	C	PQAO	City	County	Address	Reported	Obs	Meas.	Days	8-Hr Value	8-Hr Value	8-Hr Value	8-Hr Value	0.075	
33-001-2004	1	762	Laconia	Belknap	GREEN STREET	47	99	182	183	0.076	0.075	0.071	0.064	1	
33-005-0007	1	762	Keene	Cheshire	RAILROAD STREET	87	89	162	183	0.066	0.065	0.064	0.064	0	
33-007-4001	1	762	Summit	Coos	MT. WASHINGTON	87	99	182	183	0.079	0.076	0.073	0.073	2	
33-007-4002	1	762	Green's Grant	Coos	CAMP DODGE, ROUTE 16	47	100	183	183	0.065	0.061	0.060	0.059	0	
33-009-0010	1	762	Lebanon	Grafton	LEBANON AIRPORT	87	97	178	183	0.065	0.064	0.062	0.061	0	
33-011-0020	1	762	Manchester	Hillsborough	PEARL ST	47	99	181	183	0.077	0.070	0.066	0.063	1	
33-011-1011	1	762	Nashua	Hillsborough	GILSON ROAD	87	99	182	183	0.081	0.078	0.069	0.067	2	
33-011-5001	1	762	Peterborough	Hillsborough	PACK MONADNOCK SUMMIT	87	96	176	183	0.082	0.080	0.077	0.077	4	
33-013-1007	1	762	Concord	Merrimack	HAZEN DRIVE	47	94	172	183	0.078	0.073	0.070	0.068	1	
33-015-0014	1	762	Portsmouth	Rockingham	PIERCE ISLAND	47	99	182	183	0.081	0.076	0.069	0.066	2	
33-015-0016	1	762	Rye	Rockingham	SEACOAST SCIENCE CENTER	87	99	181	183	0.081	0.073	0.072	0.066	1	

New Hampshire Sites 2010 - Particulate Matter < 10 Microns



New Hampshire Particulate Matter < 10 Microns (PM_{10}) Data

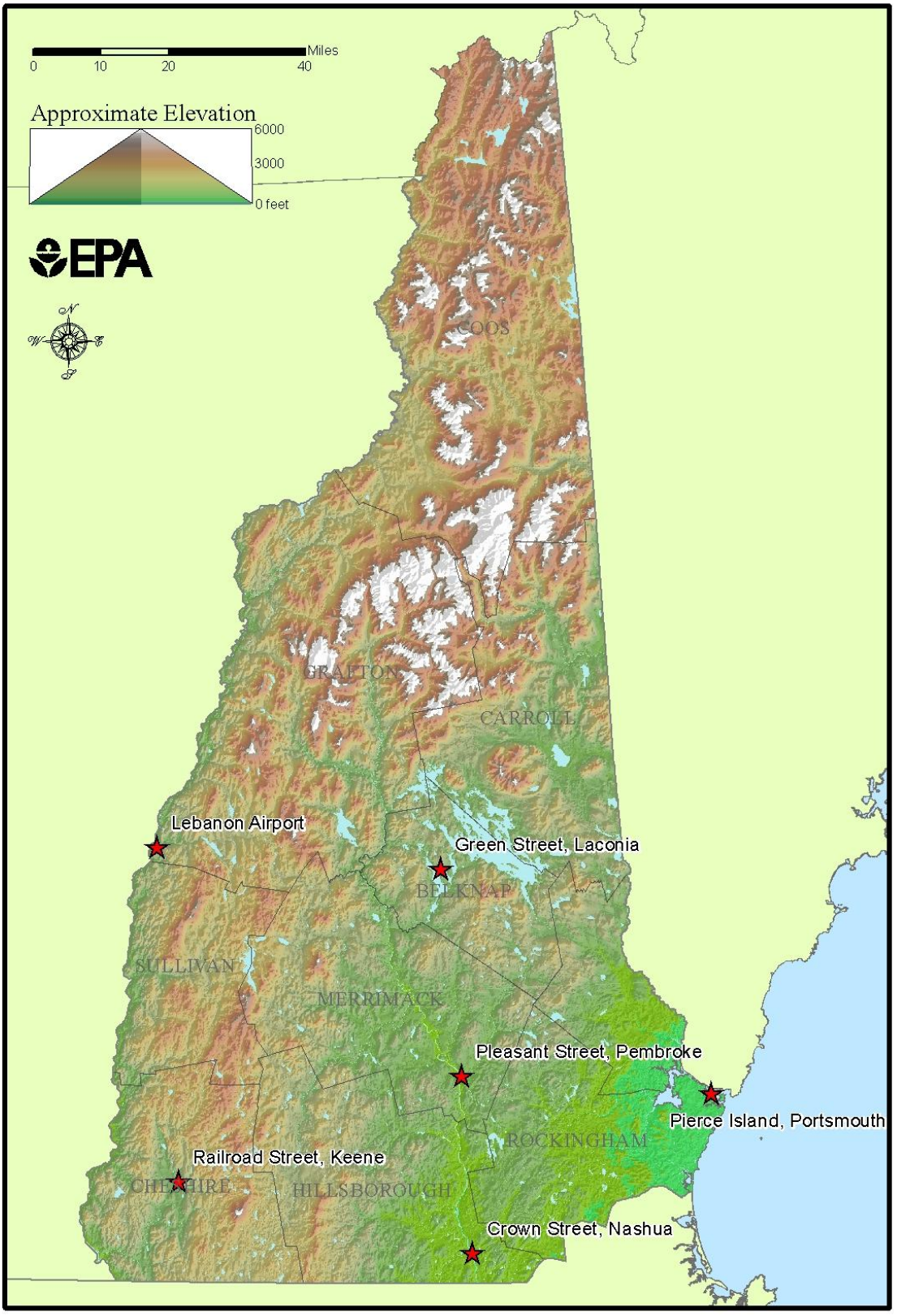




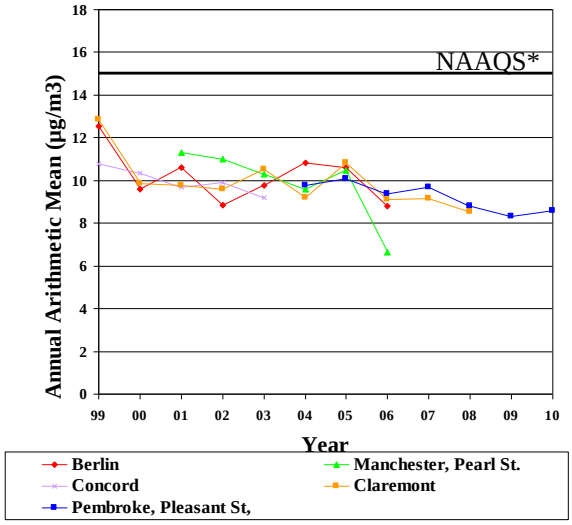
*NAAQS for Particulate Matter less than 10 Microns:
24-hour -150 µg/m^3

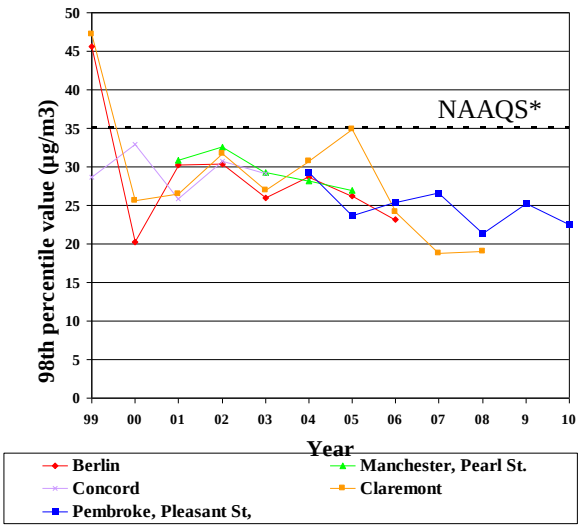
2010																			
New Hampshire																			
Particulate Matter < 10 Microns																			
All Values are in Units of µg/m^3																			
												2nd	3rd	4th	Days	Est. Days	Wtd.	
						Meth.			Num.	Valid	Highest	Highest	Highest	Highest	Max	Max	Arith.	
SITE ID	PO	PQAO	City	County	Address	Used	# Obs	# Req.	Days	% Obs	Value	Value	Value	Value	>150	>150	Mean	
33-011-0020	1	762	Manchester	Hillsborough	PEARL ST	125	56	61	56	92	35	28	27	26	0	0	11.8	*
33-011-0020	2	762	Manchester	Hillsborough	PEARL ST	125	56	61	56	92	34	29	27	25	0	0	11.4	
33-015-0014	1	762	Portsmouth	Rockingham	PIERCE ISLAND	125	60	61	60	98	34	33	26	26	0	0	11.9	
*Indicates that the mean does not meet summary criteria																			

New Hampshire Sites 2010 - Particulate Matter < 2.5 Microns



New Hampshire Particulate Matter < 2.5 Microns ($PM_{2.5}$) Data





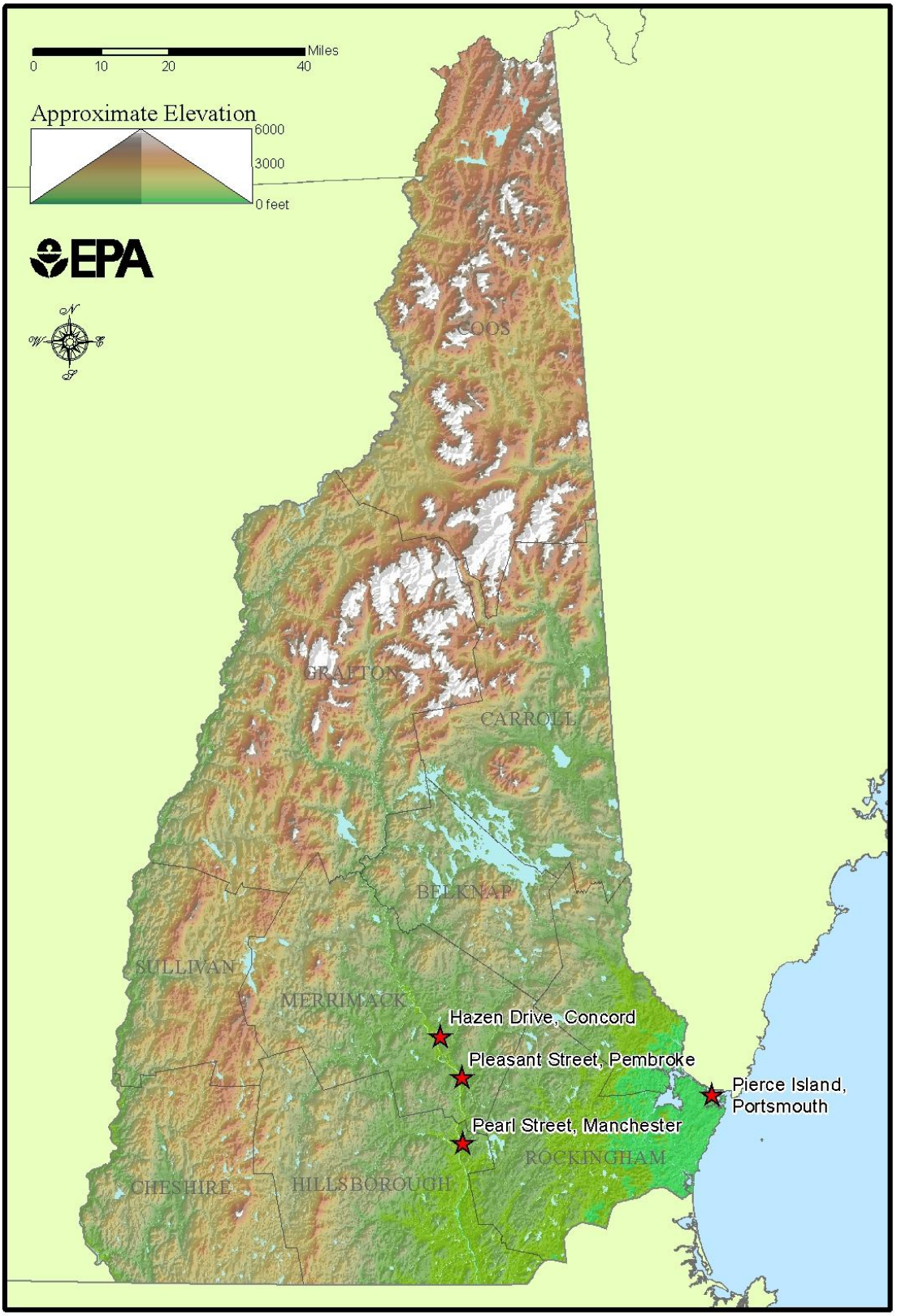
*NAAQS for Particulate Matter less than 2.5 Microns:
Annual: the 3-year average of the Annual Arithmetic Mean - 15.0 µg/m^3
24-Hour: the 3-year average of the 98th percentile of 24-hour average concentrations - 35 µg/m^3

2010
New Hampshire
Particulate Matter < 2.5 Microns
All Values are in µg/m^3 Local Conditions

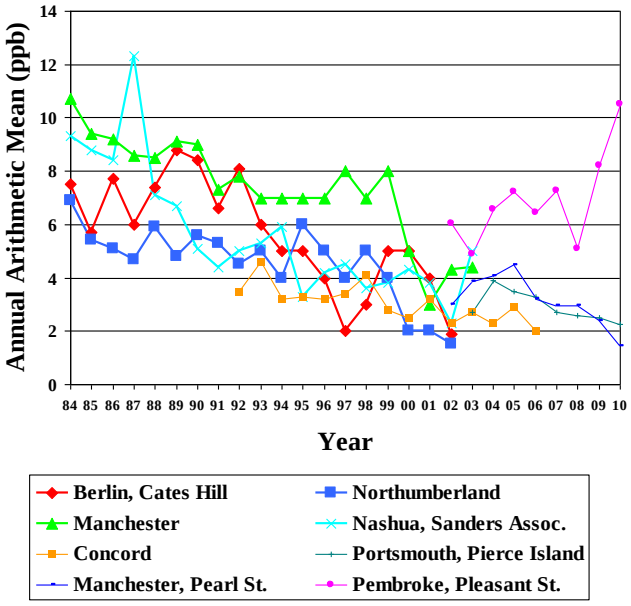
Site ID	PO C	PQAO	City	County	Address	Meth.	# Obs	Highest Value	2nd Highest Value	3rd Highest Value	4th Highest Value	98th Percentile Value	Wtd. Arith. Mean	
33-001-2004	1	762	Laconia	Belknap	GREEN STREET,	116	61	30.1	18.0	17.0	15.4	18.0	5.39	
33-005-0007	1	762	Keene	Cheshire	RAILROAD STREET	116	63	23.3	21.6	19.2	18.5	21.6	8.26	
33-005-0007	3	762	Keene	Cheshire	RAILROAD STREET	170	8563	37.4	27.9	27.0	24.4	23.6	8.33	
33-009-0010	3	762	Lebanon	Grafton	LEBANON AIRPORT	170	8060	32.4	24.3	24.1	23.2	19.7	6.60	
33-011-1015	1	762	Nashua	Hillsborough	CROWN ST	0	119	25.7	24.8	24.8	23.9	24.8	7.97	
33-013-1006	1	762	Suncook	Merrimack	PLEASANT STREET	0	121	44.4	23.6	22.6	22.4	22.6	8.57	
33-013-1006	2	762	Suncook	Merrimack	PLEASANT STREET	0	61	23.8	21.2	19.6	17.8	21.2	7.62	
33-015-0014	1	762	Portsmouth	Rockingham	PIERCE ISLAND	0	110	26.3	24.7	24.2	20.1	24.2	7.37	*
33-015-0014	3	762	Portsmouth	Rockingham	PIERCE ISLAND	170	6746	61.5	31.5	26.3	25.3	23.9	6.77	*

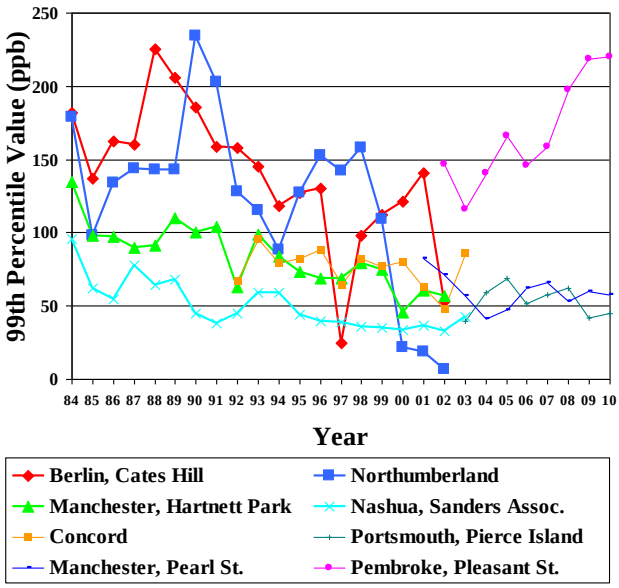
*Indicates that the mean does not meet summary criteria

New Hampshire Sites 2010 - Sulfur Dioxide



New Hampshire Sulfur Dioxide Data





NAAQS for Sulfur Dioxide:

Primary: Annual Arithmetic Mean - 0.03 ppm (revoked as of August 23, 2010)
24-hour -0.14 ppm (revoked as of August 23, 2010)
1-hour 75 ppb (0.075 ppm) (Effective as of August 23, 2010) 99th percentile

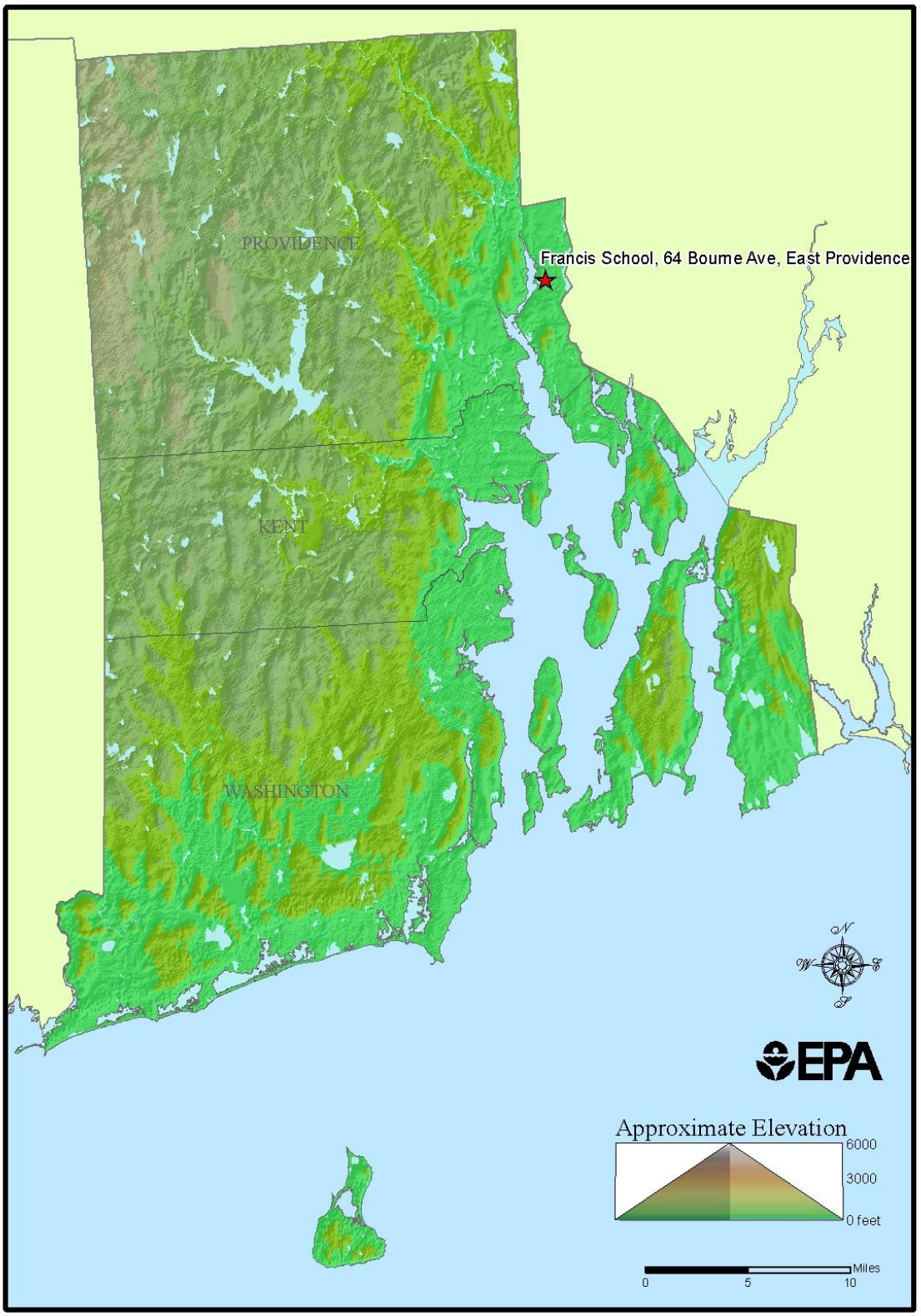
Secondary: 3-hour 0.5 ppm

2010
New Hampshire
Sulfur Dioxide
All Values are in Units of Parts Per Billion (ppb)

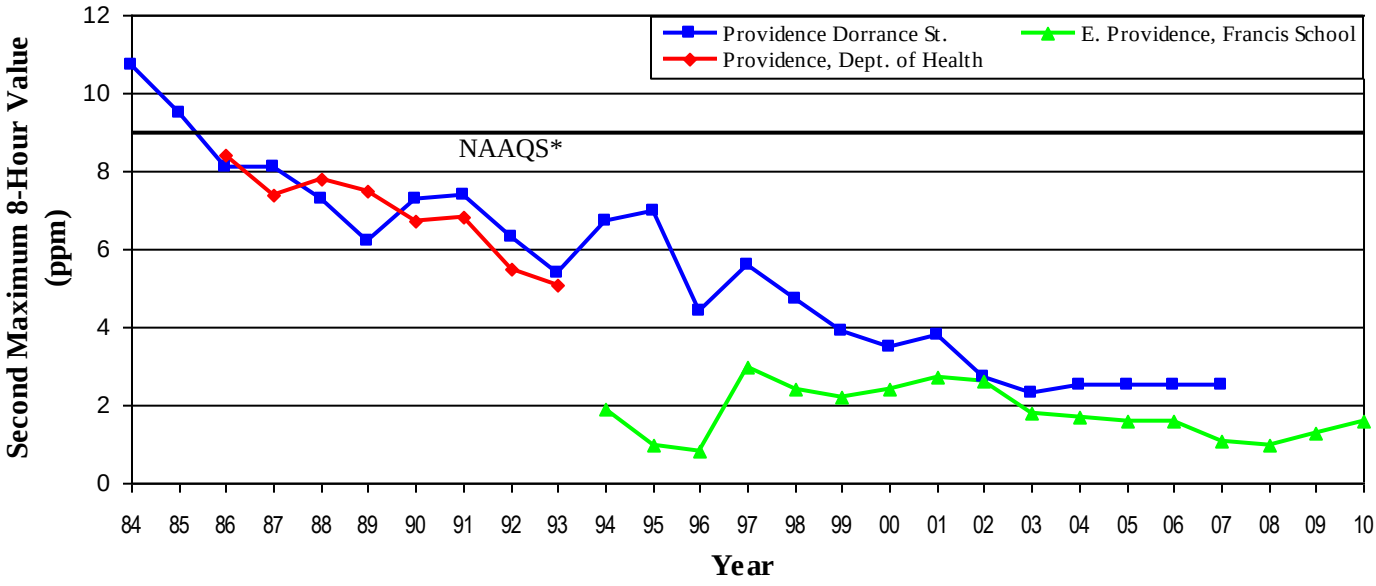
Site ID	P O C	PQAO	City	County	Address	Meth. Used	# Obs	Comp. Qtrs.	First Max 1-hour	Second Max 1-hour	99th Pct. 1-hou	First Max 24-hour	Second Max 24-hour	Days >24 Hr. Std	Arith. Mean	
33-011-0020	1	762	Manchester	Hillsborough	PEARL ST.	60	8621	4	101.7	65.7	57.7	14.2	12.0	0	1.45	
33-013-1006	1	762	Pembroke	Merrimack	PLEASANT ST.	0	8517	4	323.2	240.0	219.7	124.8	109.0	0	10.49	
33-013-1007	1	762	Concord	Merrimack	HAZEN DRIVE	600	2154	1	60.1	52.0	60.1	12.2	6.5	0	0.80	*
33-015-0014	1	762	Portsmouth	Rockingham	PIERCE ISLAND	60	8613	4	47.5	46.1	44.9	15.0	10.5	0	2.27	

*Indicates that the mean does not meet summary criteria

Rhode Island Sites - 2010 - Carbon Monoxide

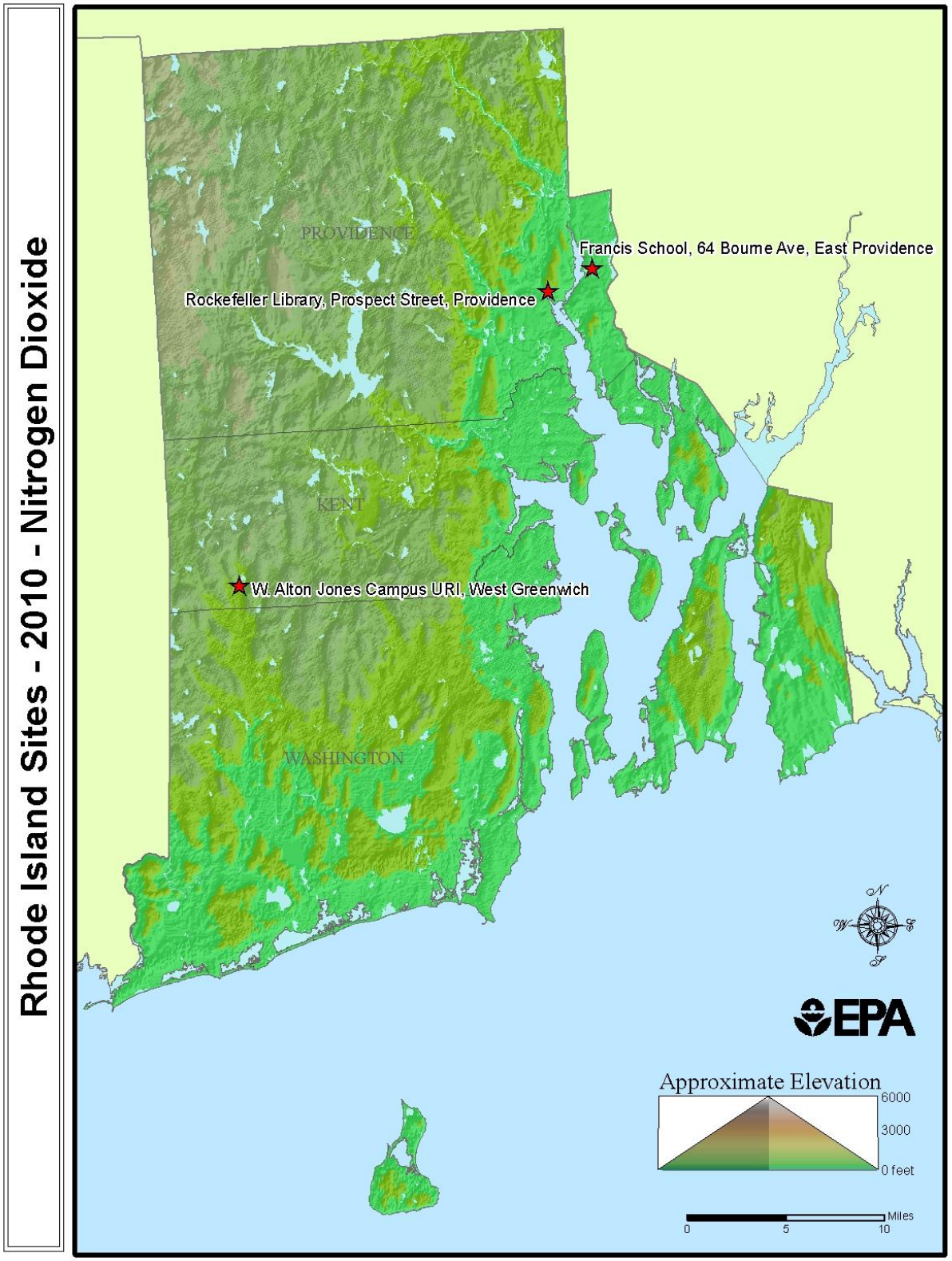


Rhode Island Carbon Monoxide Data

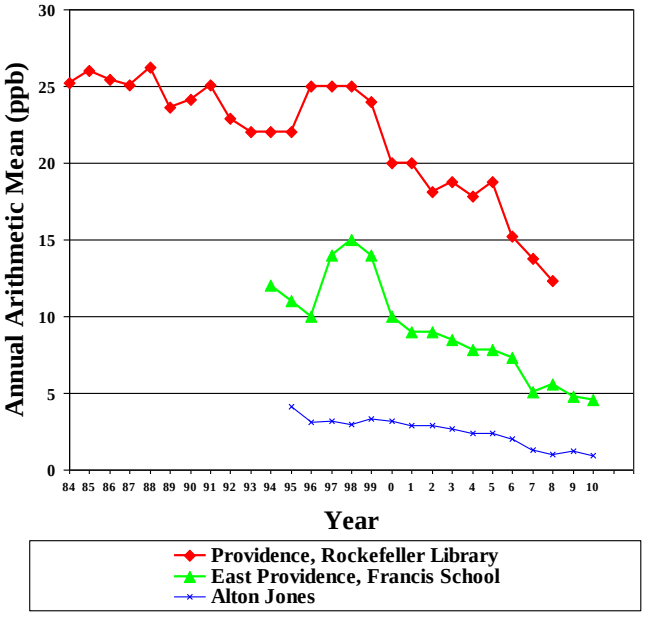


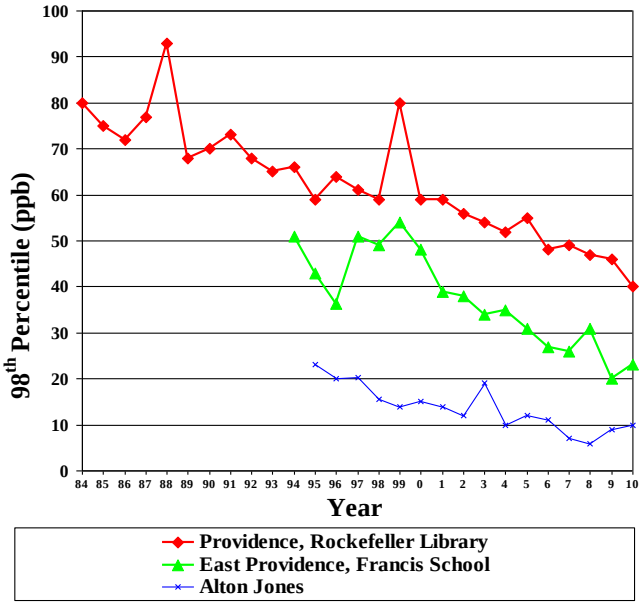
*NAAQS for Carbon Monoxide:
8-hour – 9 ppm, not to be exceeded more than one per year
1-hour – 35 ppm, not to be exceeded more than once per year

2010													
Rhode Island													
Carbon Monoxide													
All Values are in Units of Parts Per Million (ppm)													
								1-hour	1-hour		8-hour	8-hour	
	P								2nd			2nd	
	O					Meth	#	Highest	Highest	Obs	Highest	Highest	Obs
Site ID	C	PQAO	City	County	Address	Used	Obs	Value	Value	> 35	Value	Value	> 9
44-007-1010	1	907	East Providence	Providence	FRANCIS SCHOOL, 64 BOURNE AVE.	54	8263	2.3	2.3	0	1.8	1.6	0


Rhode Island Sites - 2010 - Nitrogen Dioxide
PROVIDENCE
KENT
WASHINGTON
Francis School, 64 Bourne Ave, East Providence
Rockefeller Library, Prospect Street, Providence
W. Alton Jones Campus URI, West Greenwich
N
W
E
S
EPA
Approximate Elevation
6000
3000
0 feet
Miles
0
5
10

Rhode Island Nitrogen Dioxide Data

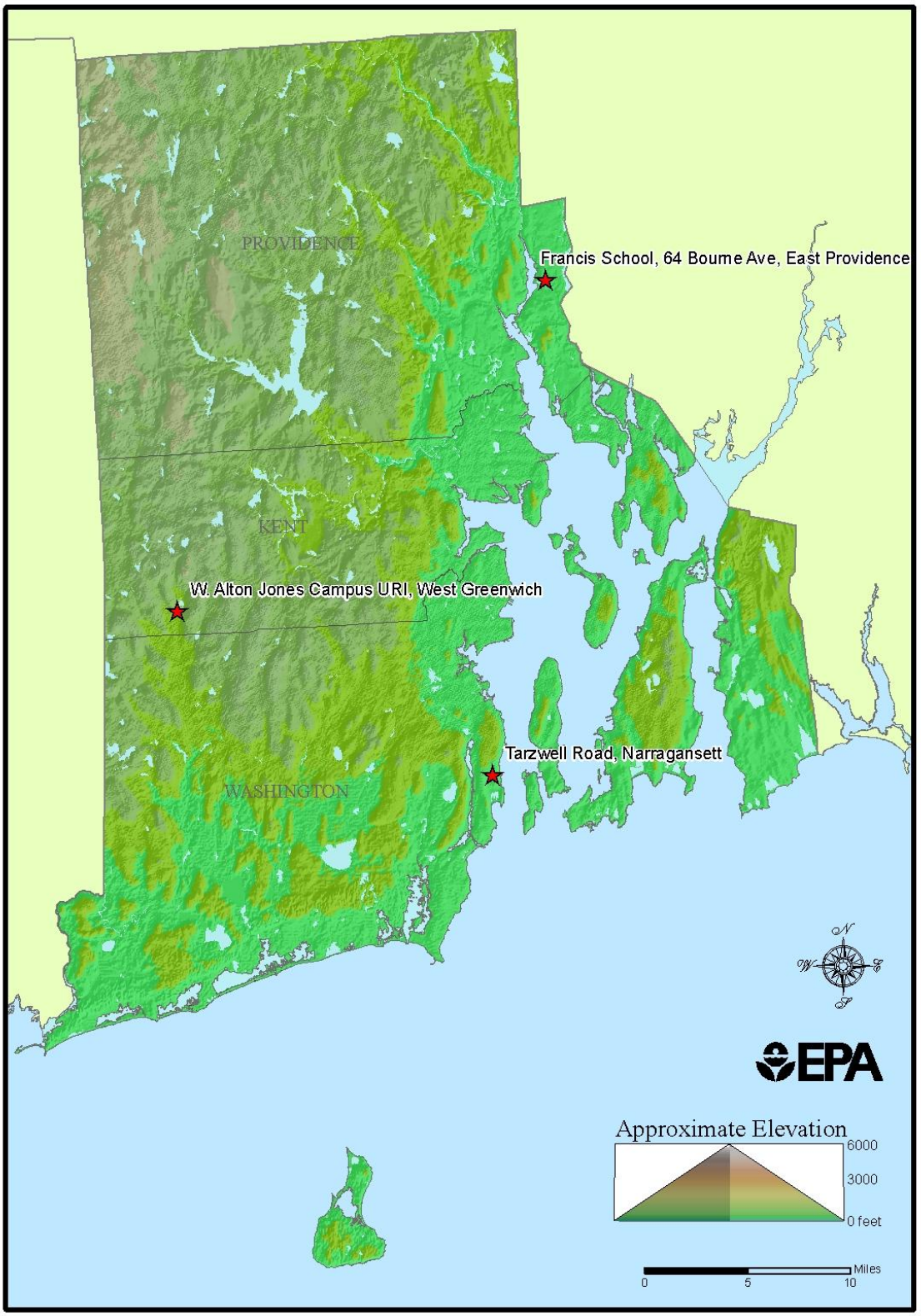




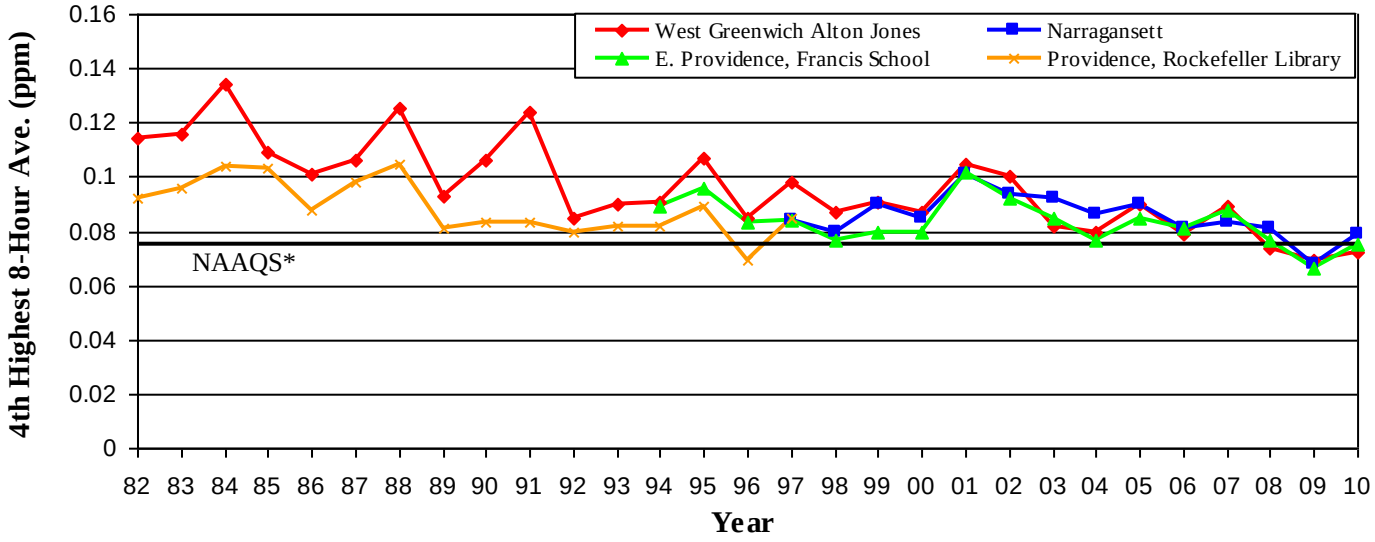
NAAQS for Nitrogen Dioxide:
Annual Arithmetic Mean 53 ppb (100 µg/m^3)
1-hour – 100 ppb (as of January 22, 2010) 98th percentile

2010														
Rhode Island														
Parameter: Nitrogen Dioxide														
All Values are in Units of Parts Per Billion (ppb)														
									1-hour	1-hour				
	P									2nd				Annual
	O							Comp.	Highest	Highest	98th		Pct.	Arith.
Site ID	C	PQAO	City	County	Address	Meth.	Qtrs.	Value	Value	Pct.	# Obs	Comp.	Mean	
44-003-0002	1	907	W. Greenwich	Kent	W. ALTON JONES, URI CAMPUS	74	0	13	10	10	1837	21	0.92	*
44-007-0012	1	907	Providence	Providence	ROCKEFELLER LIB. PROSPECT ST.	74	4	45	43	40	8040	92	9.83	
44-007-1010	1	907	E. Providence	Providence	FRANCIS SCHOOL, 64 BOURNE AVE.	74	0	27	23	23	2048	23	4.53	*
*Indicates that the mean does not meet summary criteria														

Rhode Island Sites - 2010 - Ozone



Rhode Island 8-Hour Ozone Data

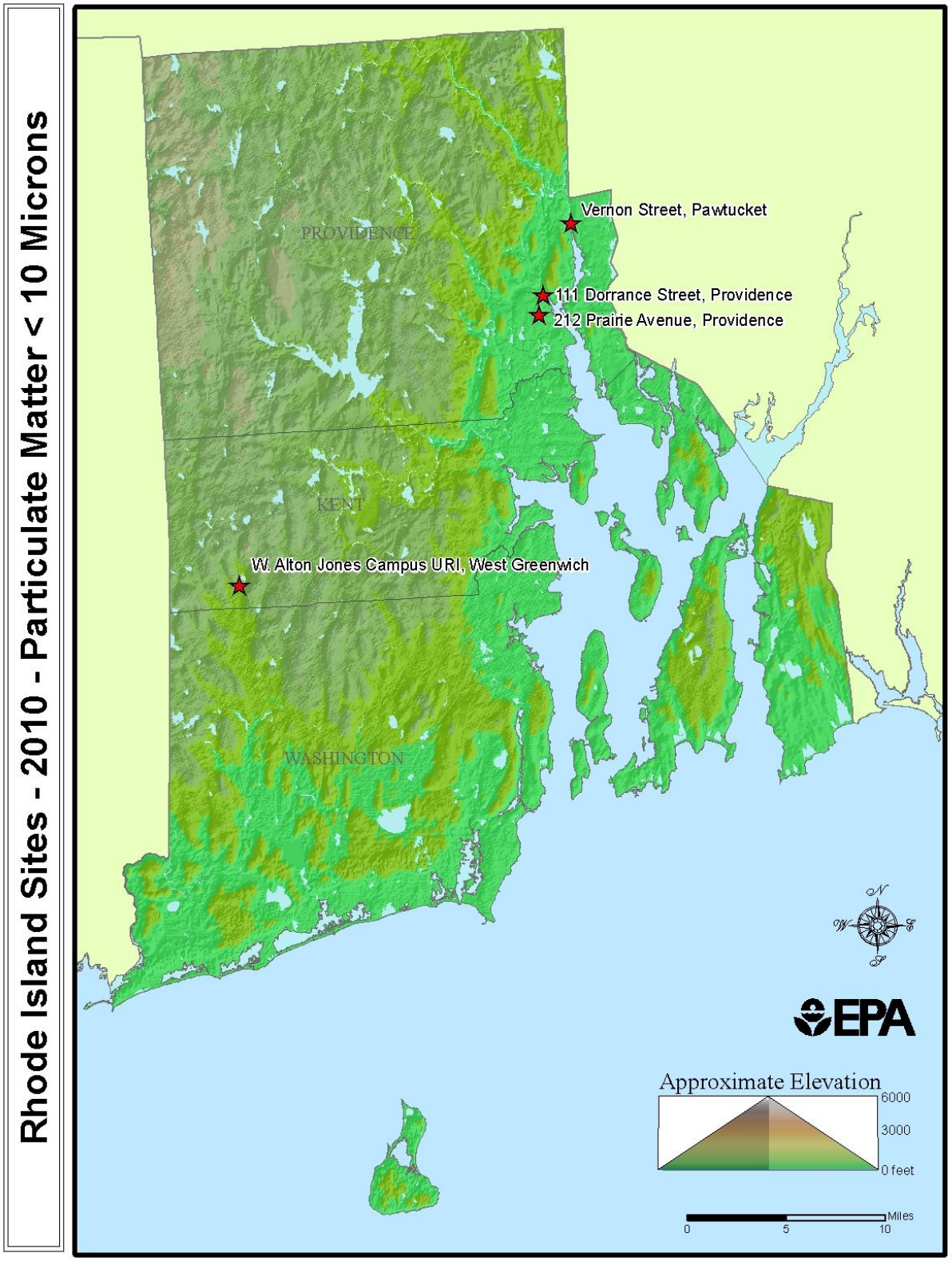


*NAAQS for Ozone:

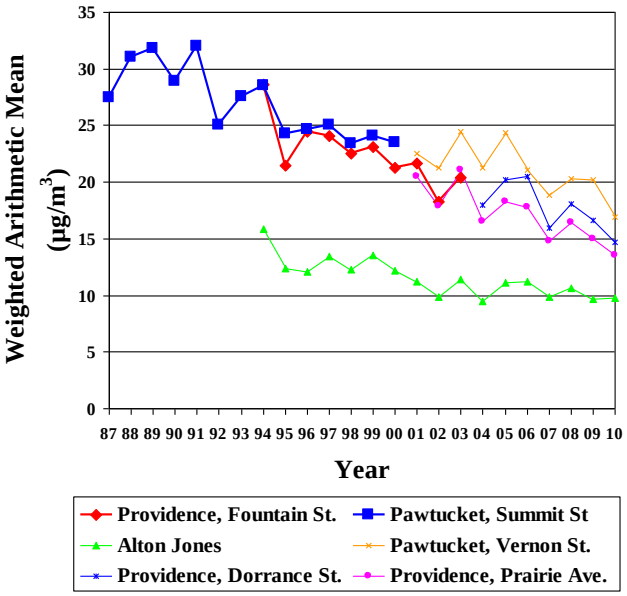
8-hour – 0.075 ppm (2008 std)

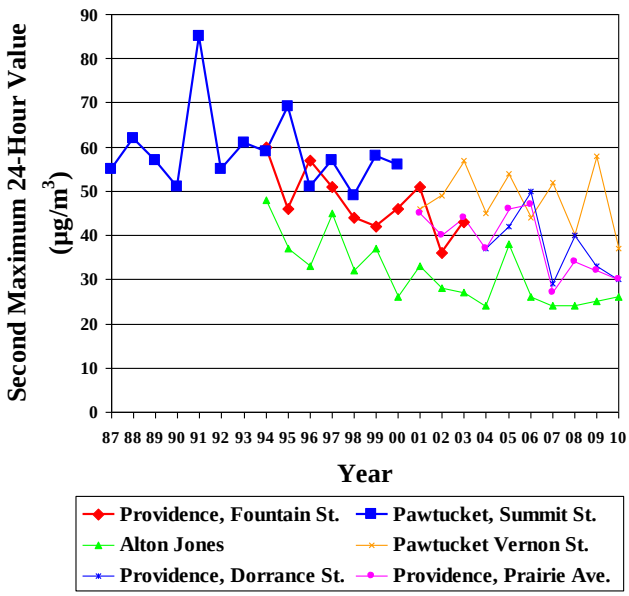
(To attain this 0.075 ppm standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm. This graph represents the 4th highest value for each year for each monitor depicted. Thus, being above or below this NAAQS line does not indicate whether or not a monitor exceeds the NAAQS.)

2010															
Rhode Island															
Ozone (8-Hour)															
All Values are in Units of Parts Per Million (ppm)															
	P							Valid	Num		2nd	3rd	4th	Days	
	O					Methods	%	Days	Required	Highest	Highest	Highest	Highest	Max >	
Site ID	C	PQAO	City	County	Address	Reported	Obs	Meas.	Days	8-Hr Value	8-Hr Value	8-Hr Value	8-Hr Value	0.075	
44-003-0002	1	907	West Greenwich	Kent	W. ALTON JONES CAMPUS URI	47	91	167	183	0.081	0.076	0.073	0.072	2	
44-007-1010	1	907	East Providence	Providence	FRANCIS SCHOOL, 64 BOURNE AVE.	47	98	179	183	0.086	0.076	0.076	0.075	3	
44-009-0007	1	907	Narragansett	Washington	TARZWELL ROAD	47	97	178	183	0.083	0.080	0.080	0.079	4	


Rhode Island Sites - 2010 - Particulate Matter < 10 Microns
Vernon Street, Pawtucket
111 Dorrance Street, Providence
212 Prairie Avenue, Providence
W. Alton Jones Campus URI, West Greenwich
PROVIDENCE
KENT
WASHINGTON
EPA
Approximate Elevation
6000
3000
0 feet
Miles
0
5
10

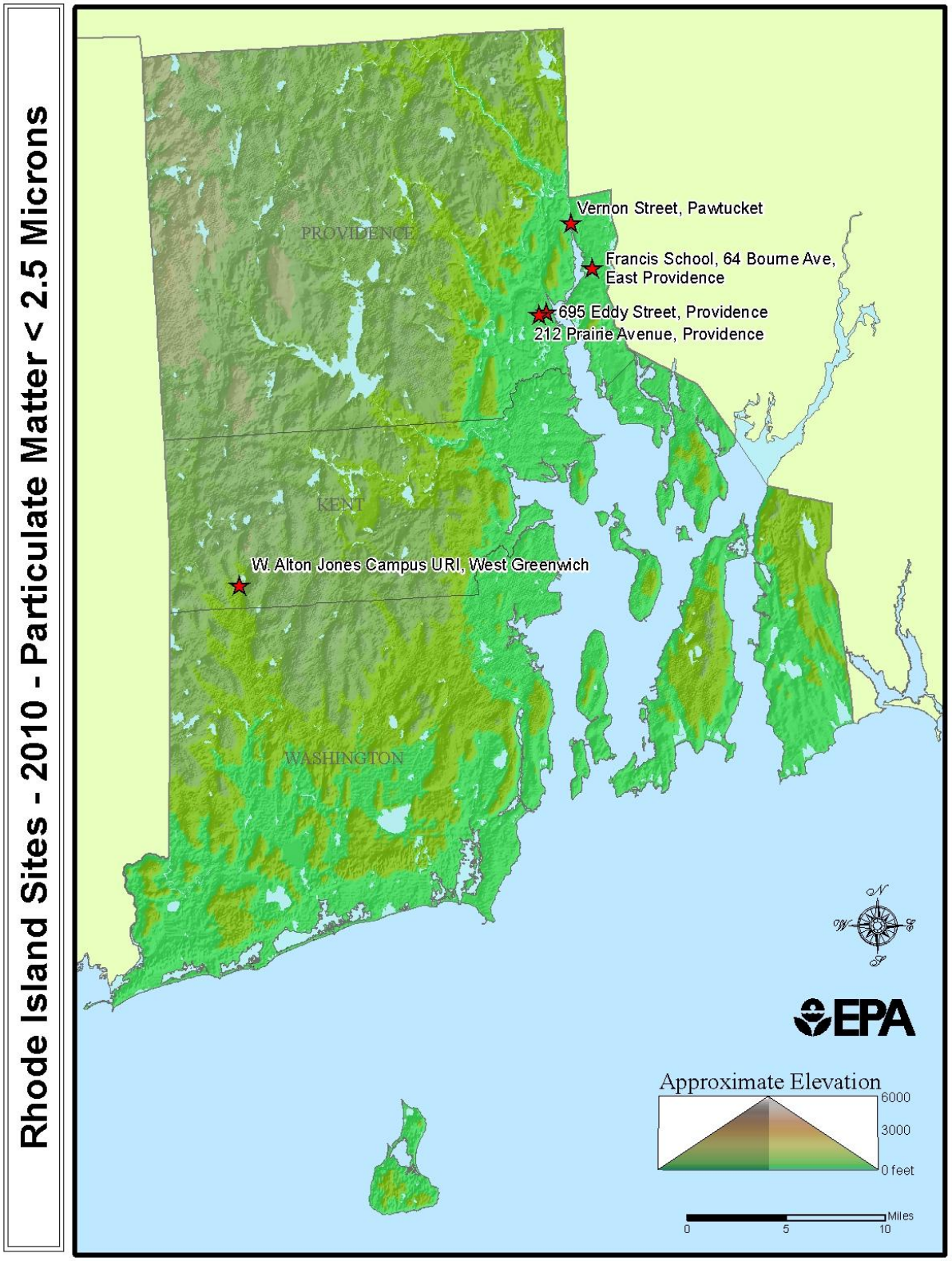
Rhode Island Particulate Matter < 10 Microns (PM_{10}) Data



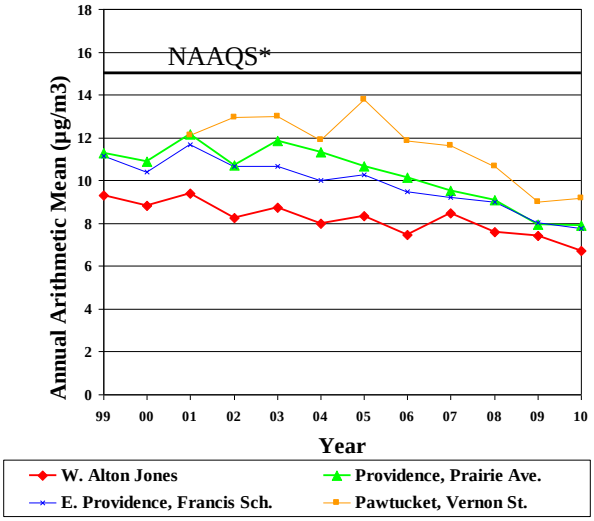


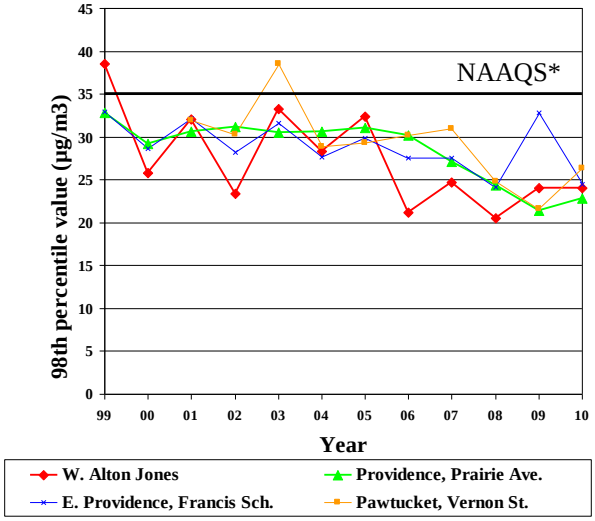
NAAQS for Particulate Matter less than 10 Microns:
24-hour 150 µg/m^3

2010																		
Rhode Island																		
Particulate Matter < 10 Microns																		
All Values are in µg/m^3																		
	P											2nd	3rd	4th	Days	Est. Days	Wtd.	
	O					Meth.			Num.	Valid	Highest	Highest	Highest	Highest	Max	Max	Arith.	
SITE ID	C	PQAO	City	County	Address	Used	# Obs	# Req.	Days	% Obs	Value	Value	Value	Value	>150	>150	Mean	
44-003-0002	1	907	West Greenwich	Kent	W. ALTON JONES CAMPUS, URI	63	60	61	60	98	33	26	25	23	0	0	9.8	
44-007-0022	1	907	Providence	Providence	212 PRAIRIE AVE	63	58	61	58	95	34	30	29	28	0	0	13.5	
44-007-0022	2	907	Providence	Providence	212 PRAIRIE AVE	63	59	61	59	97	37	34	29	28	0	0	13.6	
44-007-0026	1	907	Pawtucket	Providence	VERNON STREET	63	55	61	55	90	37	37	34	31	0	0	16.9	
44-007-0027	1	907	Providence	Providence	111 DORRANCE ST.	63	54	61	54	89	30	30	29	29	0	0	14.7	*
*Indicates that the mean does not meet summary criteria																		


Rhode Island Sites - 2010 - Particulate Matter < 2.5 Microns
PROVIDENCE
KENT
WASHINGTON
Vernon Street, Pawtucket
Francis School, 64 Bourne Ave, East Providence
695 Eddy Street, Providence
212 Prairie Avenue, Providence
W. Alton Jones Campus URI, West Greenwich
N
W
E
S
EPA
Approximate Elevation
6000
3000
0 feet
Miles
0
5
10

Rhode Island Particulate Matter < 2.5 Microns ($PM_{2.5}$) Data

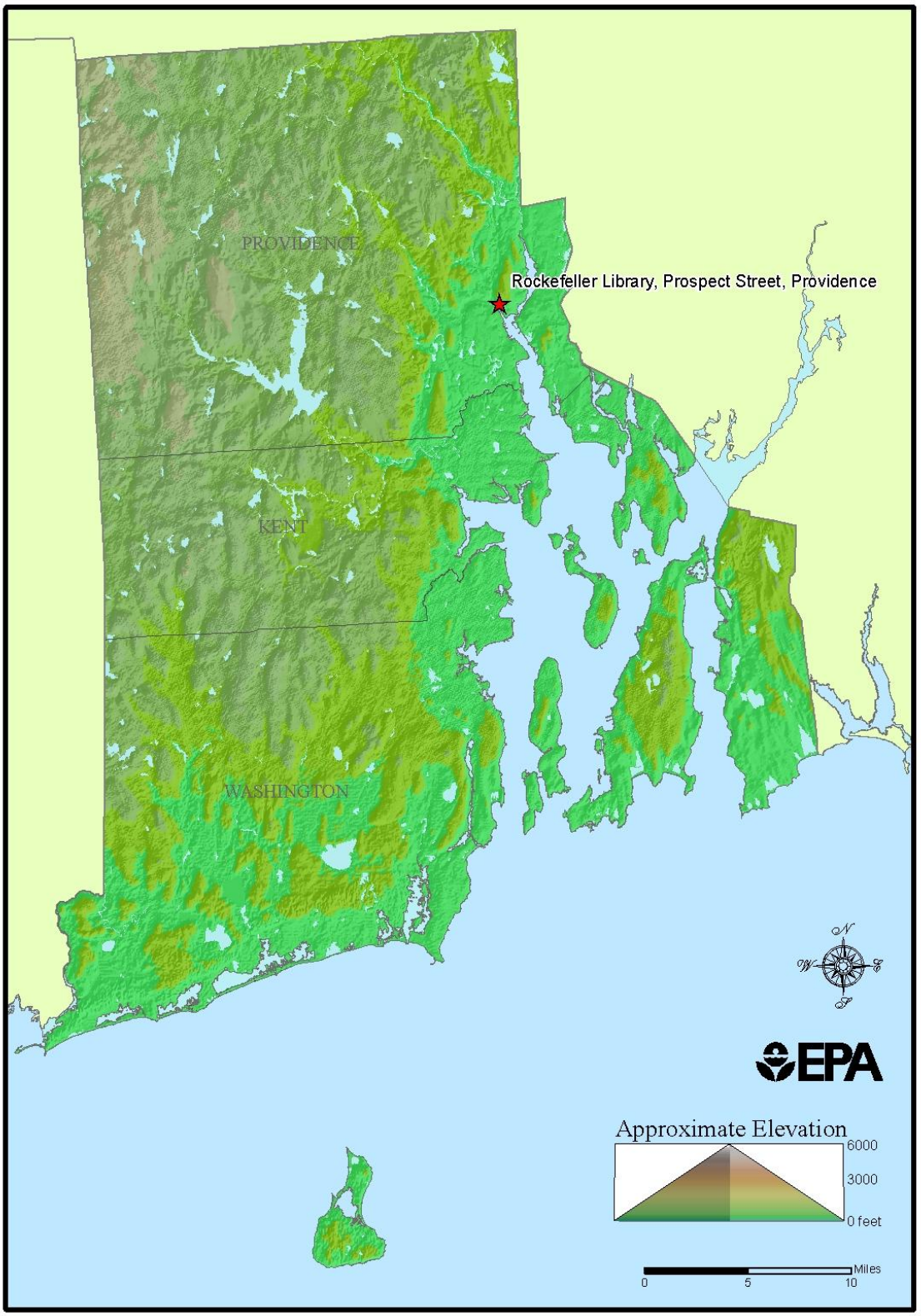




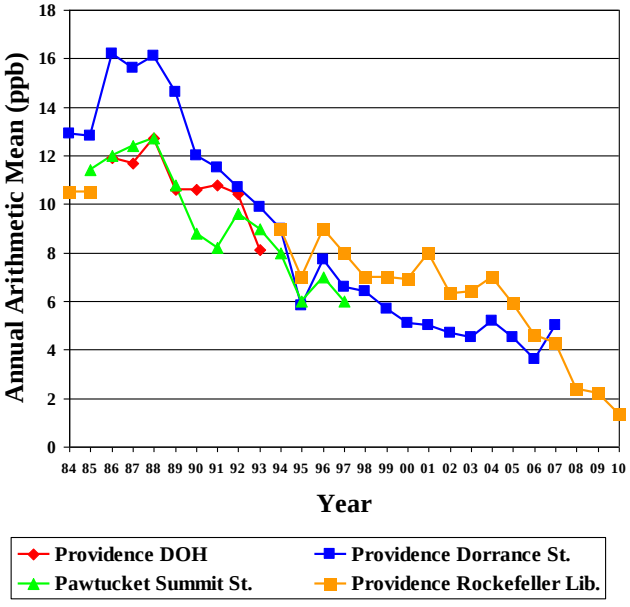
*NAAQS for Particulate Matter less than 2.5 Microns:
Annual: the 3-year average of the Annual Arithmetic Mean - 15.0 µg/m^3
24-Hour: the 3-year average of the 98th percentile of 24-hour average concentrations - 35 µg/m^3

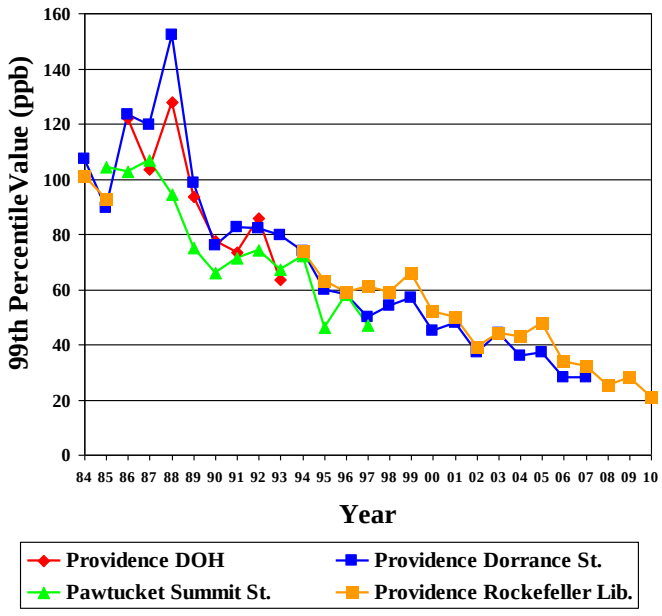
2010														
Rhode Island														
Particulate Matter < 2.5 Microns														
All Values are in µg/m^3 Local Conditions														
	P								2nd	3rd	4th	98th	Wtd.	
	O						#	Highest	Highest	Highest	Highest	Percentile	Arith.	
Site ID	C	PQAO	City	County	Address	Meth.	Obs	Value	Value	Value	Value	Value	Mean	
44-003-0002	2	907	West Greenwich	Kent	W. ALTON JONES CAMPUS, URI	142	52	24.5	24.0	15.7	14.1	24.0	6.70	*
44-003-0002	3	907	Not in a city	Kent	W. ALTON JONES CAMPUS, URI	170	8198	26.1	25.7	22.5	22.5	21.3	6.31	
44-007-0022	1	907	Providence	Providence	212 PRAIRIE AVE	145	357	56.2	31.9	30.9	26.6	22.8	7.91	
44-007-0022	2	907	Providence	Providence	212 PRAIRIE AVE	145	58	25.9	20.1	18.0	16.8	20.1	7.74	
44-007-0026	1	907	Pawtucket	Providence	VERNON STREET	0	111	37.5	27.1	26.3	26.2	26.3	9.16	
44-007-0026	2	907	Pawtucket	Providence	VERNON STREET	120	11	21.3	11.8	10.1	9.7	21.3	8.36	*
44-007-0028	1	907	Providence	Providence	695 EDDY STREET	145	91	24.1	22.0	21.9	20.3	22.0	7.69	*
44-007-1010	1	907	East Providence	Providence	FRANCIS SCHOOL, 64 BOURNE AVE.	0	336	33.5	28.3	27.7	25.3	24.5	7.77	
44-007-1010	2	907	East Providence	Providence	FRANCIS SCHOOL, 64 BOURNE AVE.	120	27	24.4	19.0	13.3	12.5	24.4	7.64	*
*Indicates that the mean does not meet summary criteria														

Rhode Island Sites - 2010 - Sulfur Dioxide



Rhode Island Sulfur Dioxide Data





NAAQS for Sulfur Dioxide:

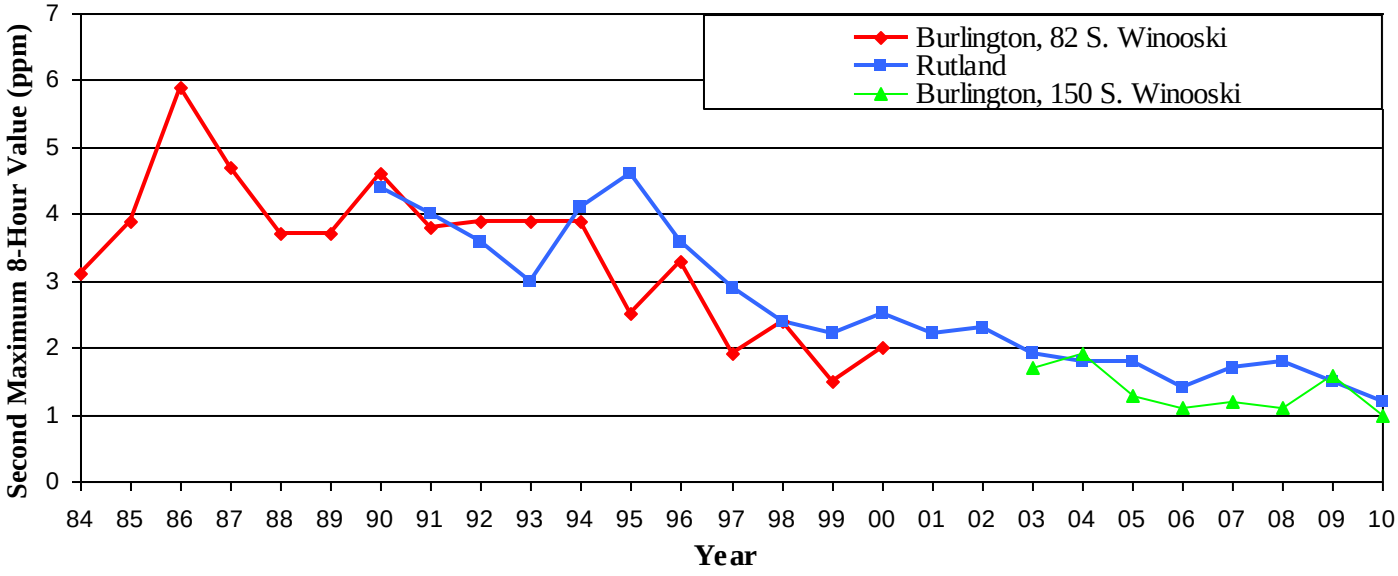
Primary: Annual Arithmetic Mean - 0.03 ppm (revoked as of August 23, 2010)
24-hour -0.14 ppm (revoked as of August 23, 2010)
1-hour 75 ppb (0.075 ppm) (Effective as of August 23, 2010) 99th percentile

Secondary: 3-hour 0.5 ppm

2010																
Rhode Island																
Sulfur Dioxide																
All Values are in Units of Parts Per Billion (ppb)																
	P								First	Second	99th	First	Second	Days		
	O						Meth.	#	Comp.	Max	Max	Pct.	Max	Max	>24 Hr.	Arith.
Site ID	C	PQAO	City	County	Address		Used	Obs	Qtrs.	1-hour	1-hour	1-hou	24-hour	24-hour	Std	Mean
44-007-0012	1	907	Providence	Providence	ROCKEFELLER LIBRARY, PROSPECT ST.		60	8060	4	32	28	21	16.1	13.1	0	1.34

Vermont Sites 2010 - Carbon Monoxide

Vermont Carbon Monoxide Data

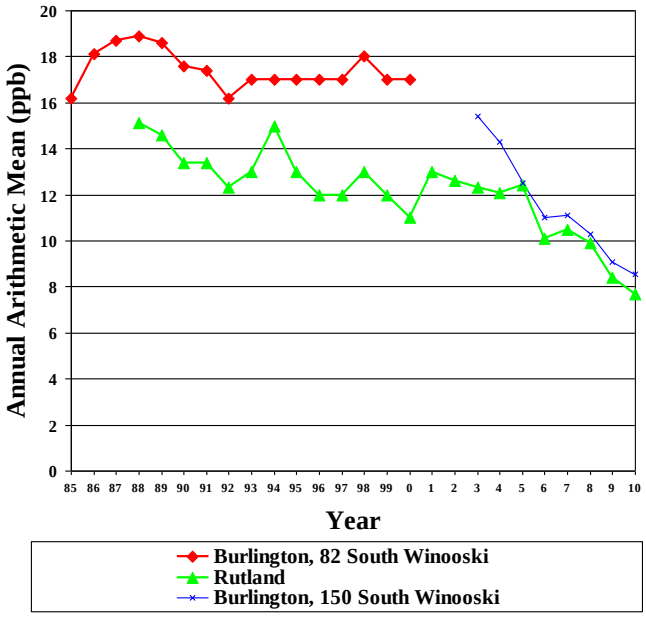


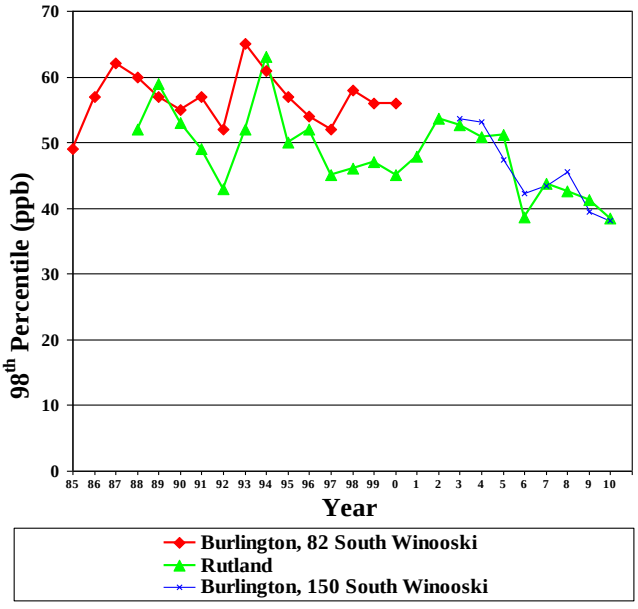
NAAQS for Carbon Monoxide:
8-hour – 9 ppm, not to be exceeded more than one per year
1-hour – 35 ppm, not to be exceeded more than once per year

2010													
Vermont													
Carbon Monoxide													
All Values are in Units of Parts Per Million (ppm)													
								1-hour	1-hour		8-hour	8-hour	
	P								2nd			2nd	
	O					Meth	#	Highest	Highest	Obs	Highest	Highest	Obs
Site ID	C	PQAO	City	County	Address	Used	Obs	Value	Value	> 35	Value	Value	> 9
50-007-0014	1	1119	Burlington	Chittenden	150 SOUTH WINOOSKI AVE.	54	8238	3.3	1.6	0	1.2	1.0	0
50-021-0002	1	1119	Rutland	Rutland	96 STATE STREET	54	8250	2.5	2.1	0	1.3	1.2	0

Vermont Sites 2010 - Nitrogen Dioxide

Vermont Nitrogen Dioxide Data



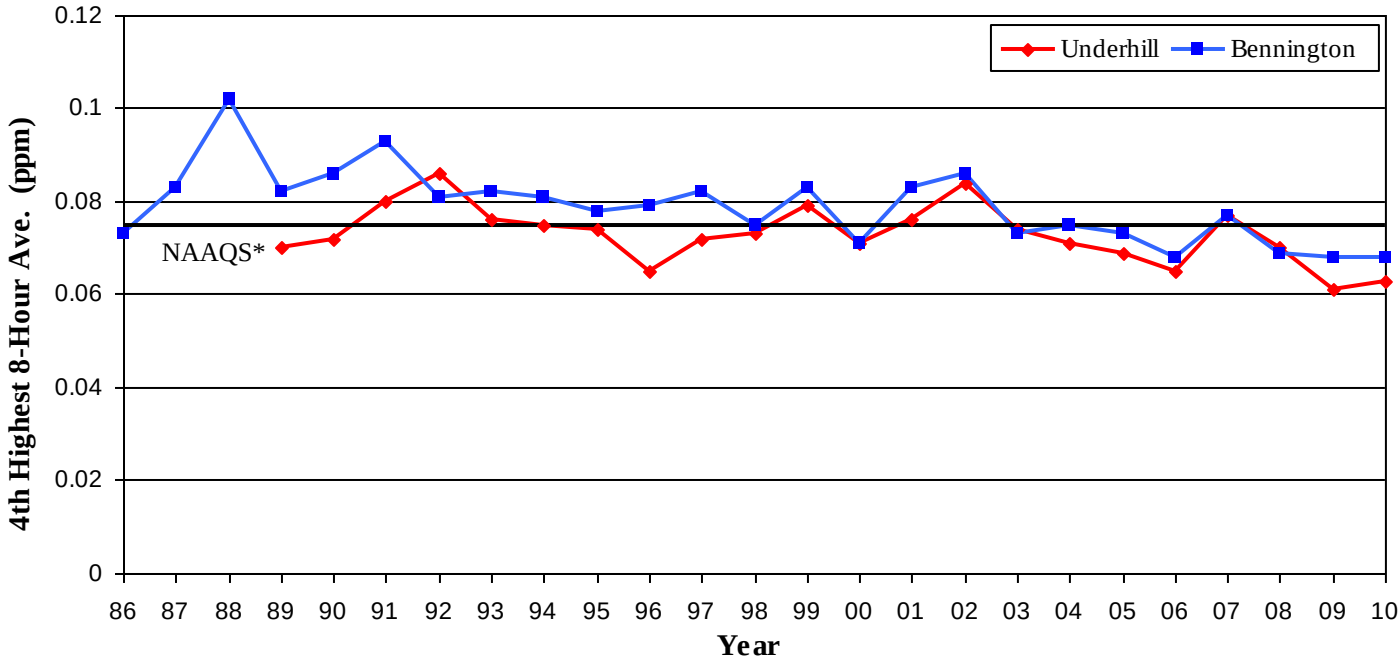


NAAQS for Nitrogen Dioxide:
Annual Arithmetic Mean 53 ppb (100 µg/m^3)
1-hour – 100 ppb (as of January 22, 2010) 98th percentile

2010													
Vermont													
Nitrogen Dioxide													
All Values are in Units of Parts Per Billion (ppb)													
									1-hour	1-hour			
	P									2nd			Annual
	O							Comp.	Highest	Highest	98th		Pct.	Arith.
Site ID	C	PQAO	City	County	Address	Method	Qtrs.	Value	Value	Pct.	# Obs	Comp.	Mean
50-007-0014	1	1119	Burlington	Chittenden	150 SOUTH WINOOSKI AVE.	74	4	48.7	45.4	38.2	7430	85	8.56
50-021-0002	1	1119	Rutland	Rutland	96 STATE STREET	74	4	62.9	56.0	38.5	8234	94	7.68

Vermont Sites 2010 - Ozone

Vermont 8-Hour Ozone Data



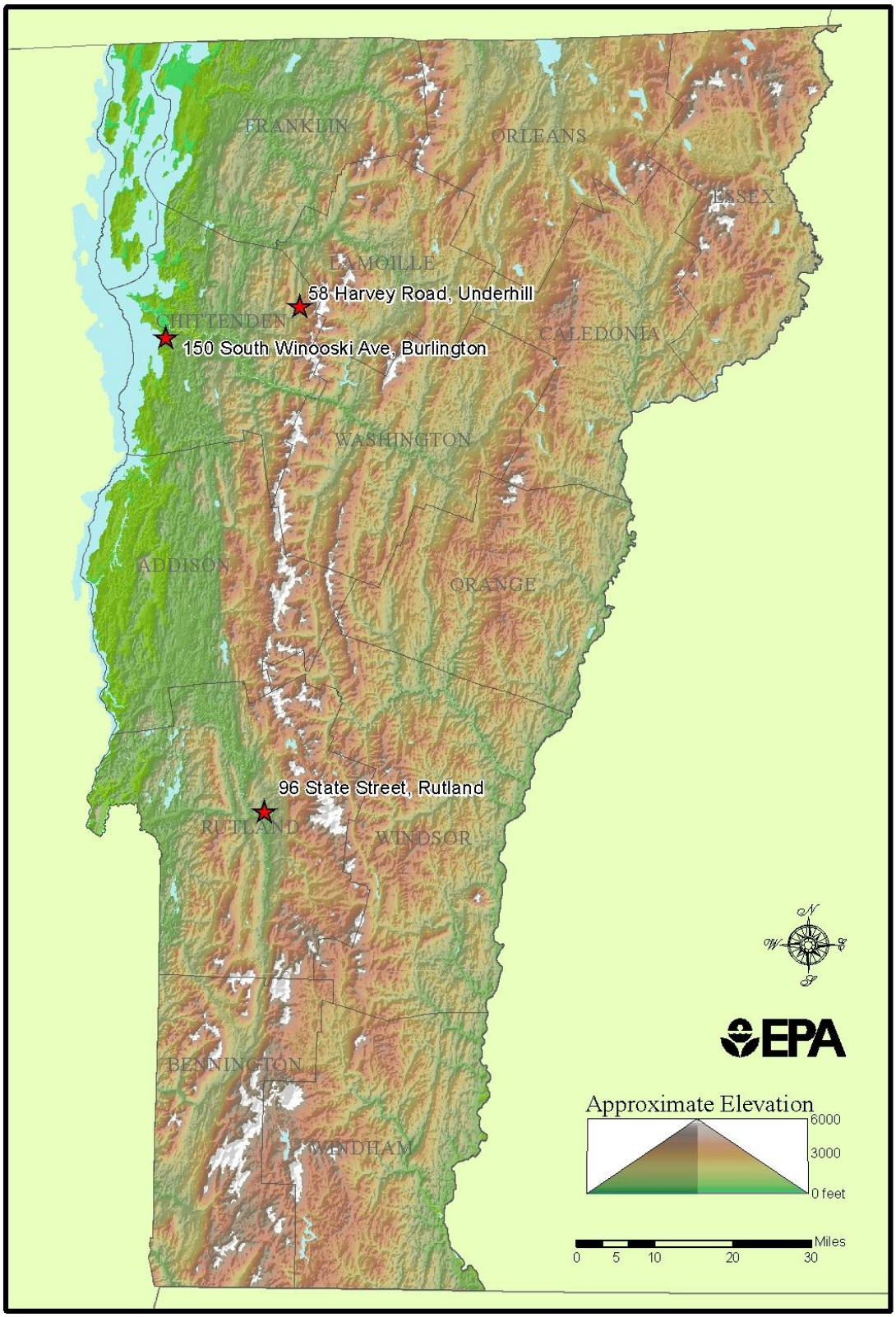
*NAAQS for Ozone:

8-hour – 0.075 ppm (2008 std)

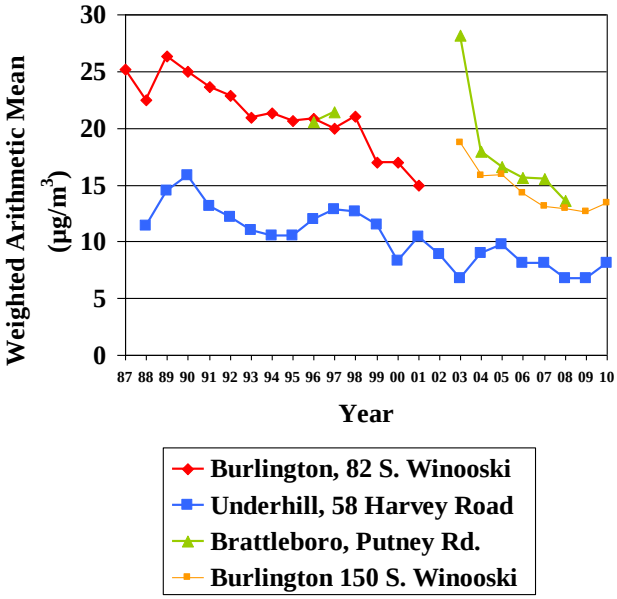
(To attain this 0.075 ppm standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm. This graph represents the 4th highest value for each year for each monitor depicted. Thus, being above or below this NAAQS line does not indicate whether or not a monitor exceeds the NAAQS.)

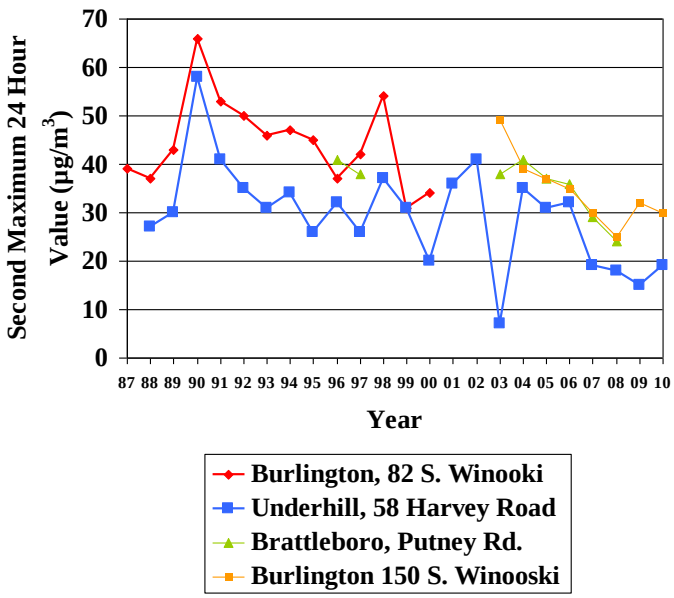
2010														
Vermont														
Ozone (8-Hour)														
All Values are in Units of Parts Per Million (ppm)														
	P							Valid	Num		2nd	3rd	4th	Days
	O					Methods	%	Days	Required	Highest	Highest	Highest	Highest	Max >
Site ID	C	PQAO	City	County	Address	Reported	Obs	Meas.	Days	8-Hr Value	8-Hr Value	8-Hr Value	8-Hr Value	0.075
50-003-0004	1	1119	Bennington	Bennington	AIRPORT RD	87	97	178	183	0.071	0.071	0.069	0.068	0
50-007-0007	1	1119	Underhill	Chittenden	58 HARVEY ROAD	87	98	180	183	0.071	0.067	0.064	0.063	0

Vermont Sites 2010 - Particulate Matter < 10 Microns



Vermont Particulate Matter < 10 Microns (PM_{10}) Data

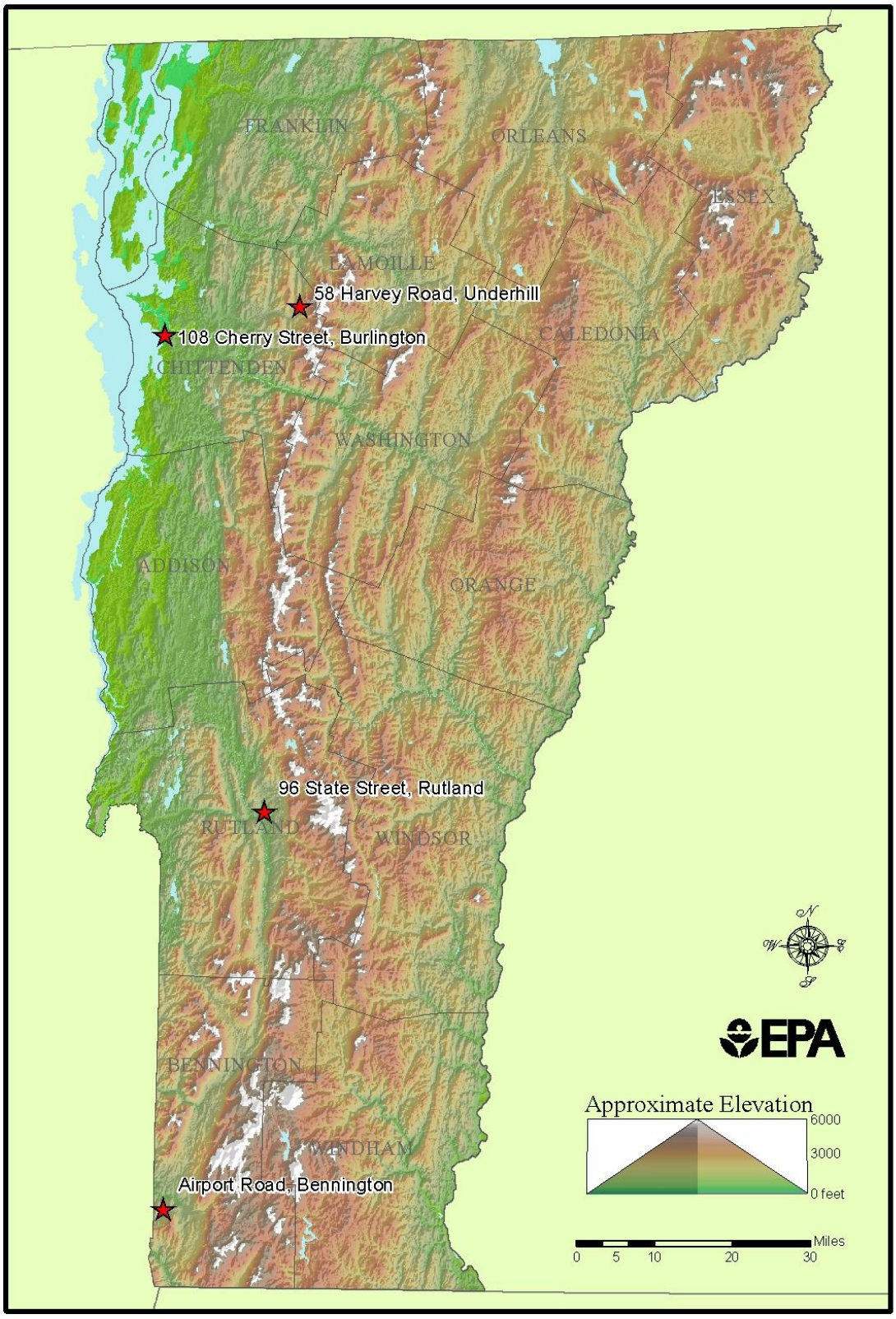




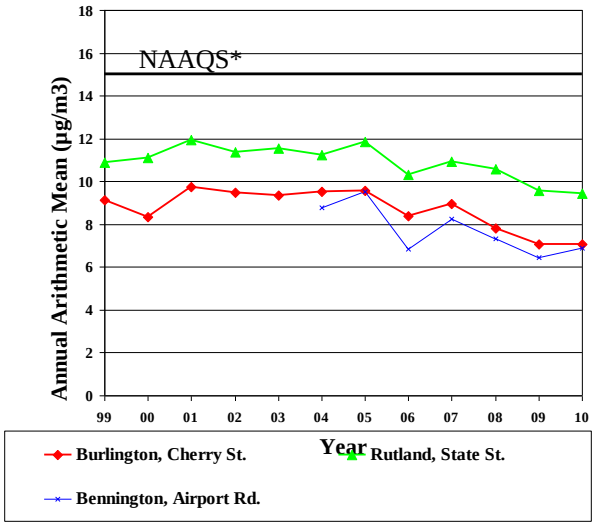
NAAQS for Particulate Matter less than 10 Microns:
24-hour 150 µg/m^3

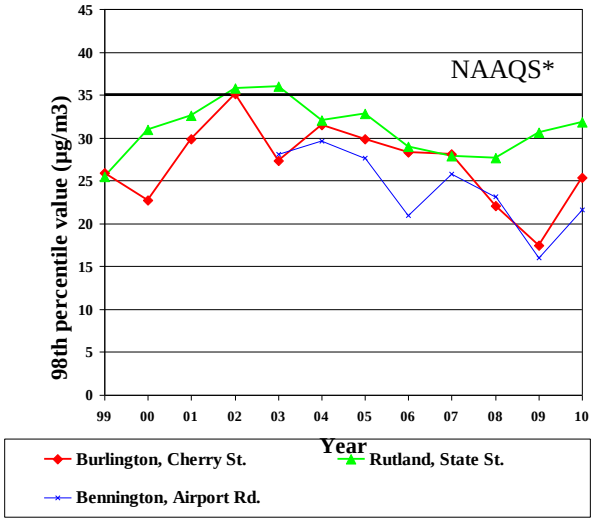
2010																			
Vermont																			
Particulate Matter < 10 Microns																			
All Values are in Units of µg/m^3																			
													2nd	3rd	4th	Days	Est. Days	Wtd.	
							Meth.			Num.	Valid	Highest	Highest	Highest	Highest	Max	Max	Arith.	
SITE ID	POC	PQAO	City	County	Address		Used	# Obs	# Req.	Days	% Obs	Value	Value	Value	Value	>150	>150	Mean	
50-007-0007	1	1119	Underhill	Chittenden	58 HARVEY ROAD		62	54	61	54	89	33	19	18	17	0	0	8.1	*
50-007-0014	1	1119	Burlington	Chittenden	150 SOUTH WINOOSKI AVE.		62	58	61	58	95	31	30	25	24	0	0	13.4	
50-007-0014	2	1119	Burlington	Chittenden	150 SOUTH WINOOSKI AVE.		62	57	61	57	93	36	28	26	23	0	0	12.8	
50-021-0002	1	1119	Rutland	Rutland	96 STATE STREET		62	59	61	59	97	32	31	25	24	0	0	13.6	
*Indicates that the mean does not meet summary criteria																			

Vermont Sites 2010 - Particulate Matter < 2.5 Microns



Vermont Particulate Matter < 2.5 Microns ($PM_{2.5}$) Data



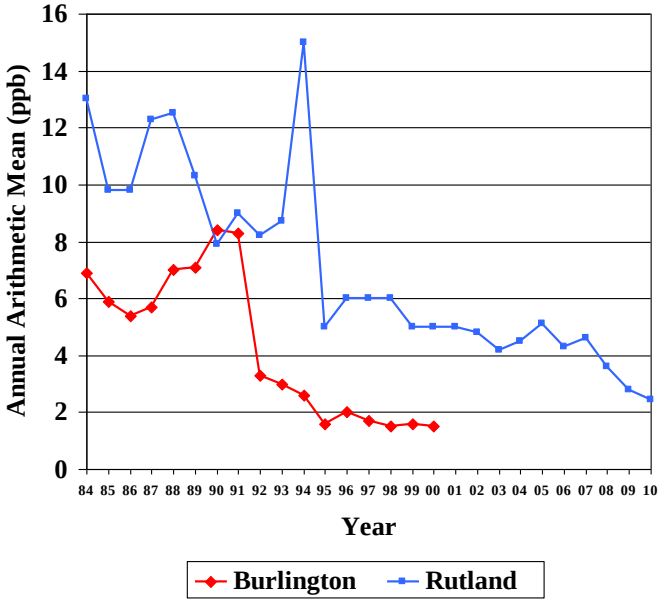


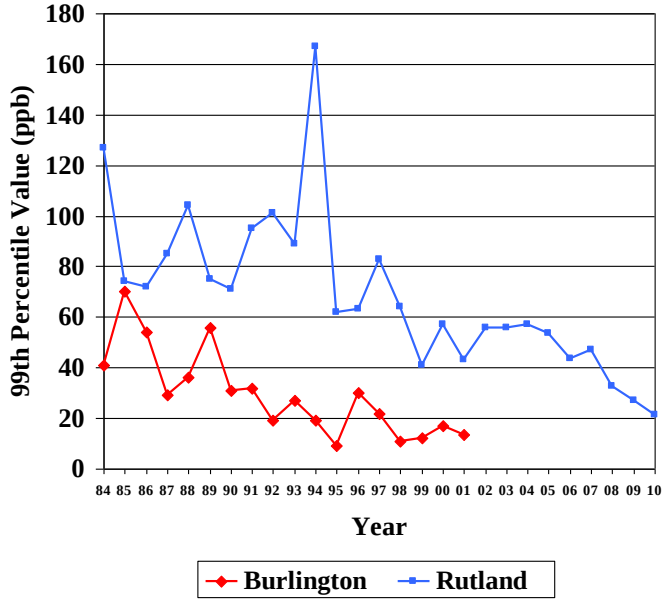
*NAAQS for Particulate Matter less than 2.5 Microns:
Annual: the 3-year average of the Annual Arithmetic Mean - 15.0 µg/m^3
24-Hour: the 3-year average of the 98th percentile of 24-hour average concentrations - 35 µg/m^3

2010													
Vermont													
Particulate Matter <2.5 Microns													
All Values are in µg/m^3 Local Conditions													
	P								2nd	3rd	4th	98th	Wtd.
	O						#	Highest	Highest	Highest	Highest	Percentile	Arith.
Site ID	C	PQAO	City	County	Address	Meth.	Obs	Value	Value	Value	Value	Value	Mean
50-003-0004	1	1119	Bennington	Bennington	AIRPORT RD	145	120	25.0	23.4	21.6	19.8	21.6	6.91
50-007-0007	1	1119	Underhill	Chittenden	58 HARVEY ROAD	145	119	26.5	20.9	15.1	14.8	15.1	5.29
50-007-0012	1	1119	Burlington	Chittenden	108 CHERRY ST.	145	121	27.1	26.1	25.3	18.2	25.3	7.06
50-007-0012	2	1119	Burlington	Chittenden	108 CHERRY ST.	145	119	26.9	26.2	24.8	21.4	24.8	7.19
50-021-0002	1	1119	Rutland	Rutland	96 STATE STREET	145	116	35.6	32.1	31.8	28.5	31.8	9.45

Vermont Sites 2010 - Sulfur Dioxide

Vermont Sulfur Dioxide Data





NAAQS for Sulfur Dioxide:

Primary: Annual Arithmetic Mean - 0.03 ppm (revoked as of August 23, 2010)
24-hour -0.14 ppm (revoked as of August 23, 2010)
1-hour 75 ppb (0.075 ppm) (Effective as of August 23, 2010) 99th percentile

Secondary: 3-hour 0.5 ppm

2010
Vermont
Sulfur Dioxide
All Values are in Units of Parts Per Billion (ppb)

Site ID	P O C	PQAO	City	County	Address	Meth. Used	# Obs	Comp. Qtrs.	First Max 1-hour	Second Max 1-hour	99th Pctl. 1-hou	First Max 24-hour	Second Max 24-hour	Days >24 Hr. Std	Arith. Mean
50-021-0002	1	1119	Rutland	Rutland	96 STATE ST.	60	7789	4	27.3	25.7	21.4	10.3	9.2	0	2.44

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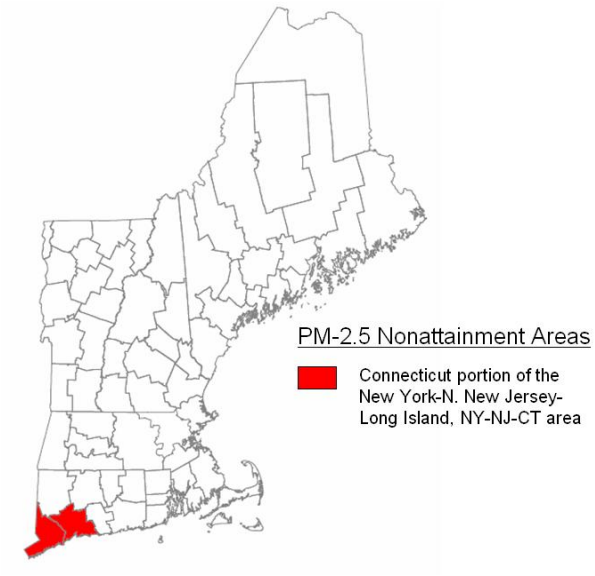
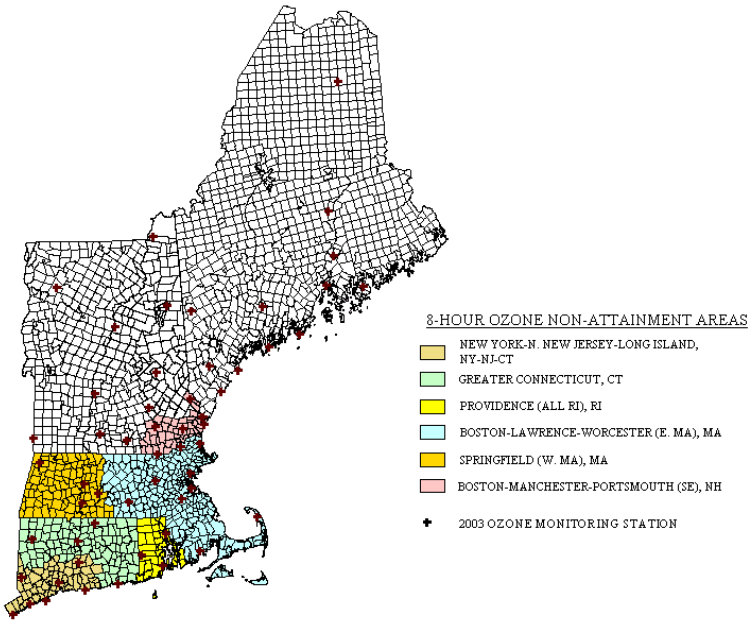
Non-Attainment Areas

Non-Attainment Areas for the 1997 $PM_{2.5}$ Annual and 2006 $PM_{2.5}$ 24- hour Standard



Non-Attainment Areas for the 1997 8-Hour Ozone Standard



Regional Atmospheric Deposition of Sulfates and Nitrates

Atmospheric deposition has both wet and dry components. The dry components are particles and gases that fall upon or adhere to vegetation, water bodies, and man-made structures. Wet components include rain, hail, fog and cloud water, ice, and snow. Types of harmful atmospheric deposition include acidic precipitation (acid rain), nutrients, toxic trace elements (such as mercury) and toxic organic compounds. Acid rain is probably the most commonly known and best understood type of atmospheric deposition in New England. This section provides a brief discussion of long-term trends in regional acid rain, focusing on its most important constituents, sulfate and nitrate.

There are ten long-term acid precipitation monitoring sites in New England that began operating in the late 1970's and early 1980's. These monitoring sites are part of a North American network of 200+ sites that constitute the National Atmospheric Deposition Monitoring Program/National Trends Network (NADP/NTN), which was established in the late 1970's to monitor trends in the chemistry of wet and dry deposition throughout North America. The NADP/NTN is operated and maintained by a consortium of federal, state, tribal and provincial agencies; as well as universities and private industry.

The New England NADP/NTN sites are located on Figure 1. This map includes all of the sites in the region, and highlights the New England trend sites. Table 1 lists these sites and provides additional information on their history and location.

Figure 1

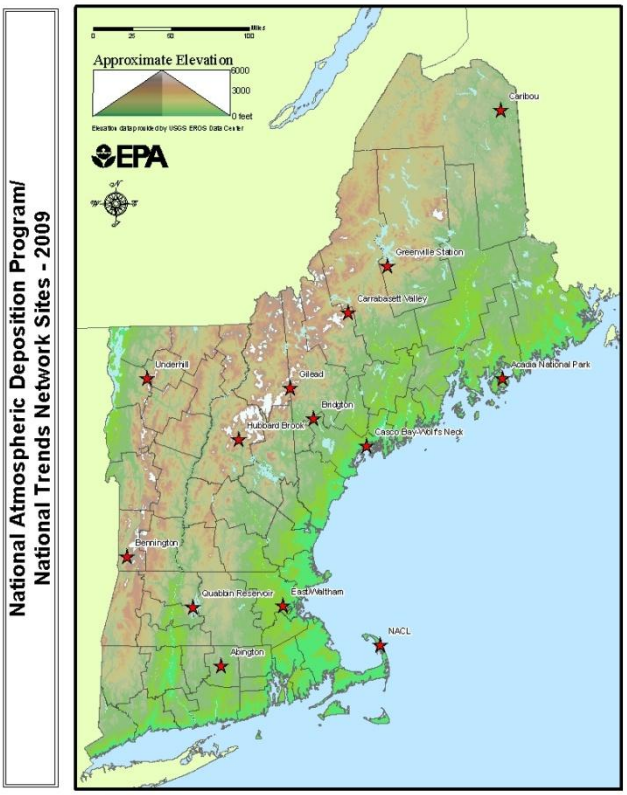


Table 1. National Atmospheric Deposition Program/National Trends Network sites located in New England. Sites in bold print constitute the New England trend sites.

Site Name	Site ID	Elevation (m)	Latitude / Longitude	Operating Agency	Start Up
Abington	CT15	209	41.84 / -72.0101	US EPA	1999
NACL/Truro	MA01	41	41.9758 / -71.0247	National Park Service	1981
East/Waltham	MA13	18	42.3839 / -71.2147	U of Massachusetts	1982
Quabbin Reservoir	MA08	306	42.3925 / -72.3444	U of Massachusetts	1982
Acadia National Park	ME98	150	44.3772 / -68.2608	National Park Service	1981
Caribou	ME00	191	46.8675 / -68.0134	Maine DEP	1980
Greenville Station	ME09	322	45.4891 / -69.6647	Maine DEP	1979
Carrabasett Valley	ME04	270	45.0803 / -70.2119	Penobscot Indian Nation	2002
Gilead	ME08	212	44.4003 / -71.0098	US Geological Survey	1999
Bridgton	ME02	222	44.1075 / -70.7289	Maine DEP	1980
Casco Bay-Wolf's Neck	ME96	15	43.8325 / -70.0645	Maine DEP	1998
Hubbard Brook	NH02	250	43.9433 / -71.7029	NRS - US Forest Service	1978
Underhill	VT99	399	44.5283 / -72.8684	U of Vermont, USGS	1984
Bennington	VT01	305	42.8761 / -73.1633	Vermont DEC	1981

Almost all forms of precipitation are efficient scavengers of atmospheric pollution. Hence, the chemistry of precipitation can reflect changes in the level of pollutants in the atmosphere and provide evidence of trends in air pollution emissions. The NADP/NTN sites in New England provide a unique view of long-term changes in the deposition and concentration of pollutants in precipitation that fall on New England landscapes.

Figures 2 and 3 provide long-term trend data on the amount of wet sulfate and nitrate deposited on New England landscapes (kilograms per hectare) (Kg/ha) along with historical national emissions inventory data for SO_2 and NOx. The annual wet deposition data are a composite average of the ten trend sites for each year since 1990. The emissions data, presented here in millions of tons (Mtons) of SO_2 and NOx, are from the EPA National Emissions Inventory Report. Internally consistent and continuous emissions data can be obtained from this report for the period 1990 – 2008.

These two figures show long-term declines (1990 through 2008) in NOx and SO_2 emissions and long-term declines in regional sulfate and nitrate deposition. Recent data, however, indicate that the long-term decline in sulfate deposition has reversed since its lowest value in 2001. Nitrate deposition appears to continue to decline.

Figure 2. Long-term trends in national sulfur dioxide emissions (Mtons) and sulfate deposition (kg/ha) on New England landscapes (1990-2008).

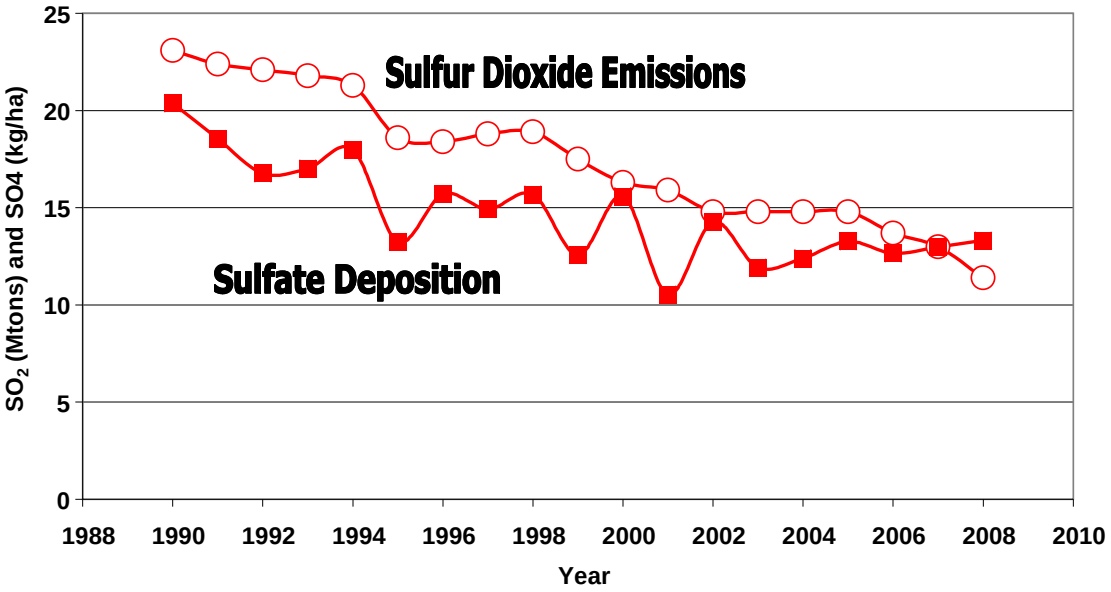
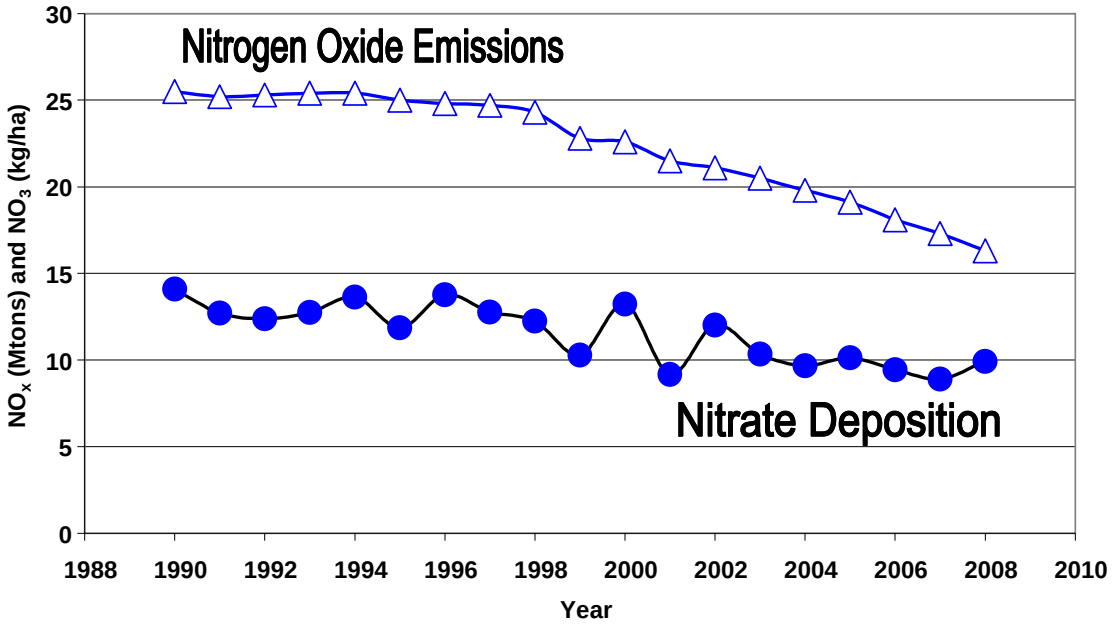


Figure 3. Long-term trends in national nitrogen oxide emissions (Mtons) and nitrate deposition (kg/ha) on New England landscapes (1990-2008).



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