2007 Annual Report on Air Quality in New England

United States Environmental Protection Agency, Region 1
Office of Environmental Measurement and Evaluation
North Chelmsford, MA 01863

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Ecosystems Assessment Unit
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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 of Camp Ogontz, New Hampshire

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2007 ANNUAL REPORT ON AIR QUALITY

IN NEW ENGLAND

This report provides a summary of 2007 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 AQS database as of May 2008. 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 had designated areas in New England as non-attainment for the 1997 8-hour ozone standard and the 1997 annual $PM_{2.5}$ standard. Designations for the 2006 $PM_{2.5}$ 24-hour standard will be issued in December 2008. Designations for the 2008 ozone standard have not yet been made. Statements in this report relative to ozone exceedances and violations are in relation to the 0.08 Standard which was in effect in 2007.

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.

The following table 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 SO_2, PM_{10} and 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. For continuous data, 75% of the year must be available to calculate a valid annual average. 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.

Included with this table are graphs of selected air quality monitoring sites that show a multi-year span of data for PM_{10}, CO, $PM_{2.5}$, SO_2, and NO_2. For hourly ozone, there is a graph of the number of days ozone exceeded 0.125ppm.

The State maps display the location of the monitoring sites (when measuring particulates, each state has at least one location where duplicate, or co-located, 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. This is followed by a summary of information from the Performance Evaluation Program Audits.

The last section provides a list of AQS state and regional Air Quality Contacts, their addresses and phone numbers.

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 ($\mu g/m^3$).

National Ambient Air Quality Standards

	Primary Standards		Secondary Standards	
Pollutant	**Level**	**Averaging Time**	**Level**	**Averaging Time**
Carbon Monoxide	9 ppm (10 mg/m^3)	8-hour (1)	None	
	35 ppm (40 mg/m^3)	1-hour (1)		
Lead	0.15 $\mu g/m^3$ (2)	Rolling 3-Month Average	Same as Primary	
	1.5 $\mu g/m^3$	Quarterly Average	Same as Primary	
Nitrogen Dioxide	0.053 ppm (100 $\mu g/m^3$)	Annual (Arithmetic Mean)	Same as Primary	
Particulate Matter (PM_{10})	150 $\mu g/m^3$	24-hour (3)	Same as Primary	
Particulate Matter ($PM_{2.5}$)	15.0 $\mu g/m^3$	Annual (4) (Arithmetic Mean)	Same as Primary	
	35 $\mu g/m^3$	24-hour (5)	Same as Primary	
Ozone	0.075 ppm (2008 std)	8-hour (6)	Same as Primary	
	0.08 ppm (1997 std)	8-hour (7)	Same as Primary	
	0.12 ppm	1-hour (8) (Applies only in limited areas)	Same as Primary	
Sulfur Dioxide	0.03 ppm	Annual (Arithmetic Mean)	0.5 ppm (1300 $\mu g/m^3$)	3-hour (1)
	0.14 ppm	24-hour (1)		

(1) Not to be exceeded more than once per year.
(2) Final rule signed October 15, 2008.
(3) Not to be exceeded more than once per year on average over 3 years.
(4) To attain this standard, the 3-year average of the weighted annual mean $PM_{2.5}$ concentrations from single or multiple community-oriented monitors must not exceed 15.0 $\mu g/m^3$.
(5) To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 $\mu g/m^3$ (effective December 17, 2006).
(6) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm. (effective May 27, 2008)
(7) (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.
(8) (a) The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is ≤ 1.
(b) As of June 15, 2005 EPA revoked the 1-hour ozone standard in all areas except the 8-hour ozone nonattainment Early Action Compact (EAC) Areas.

Health Effects of Criteria Pollutants

Lead (Pb)

Brain damage, kidney damage, and gastrointestinal distress are seen from short-term exposure to high levels of lead. Long-term exposure to lead in humans results in effects on the blood, central nervous system, blood pressure, kidneys, and Vitamin D metabolism. Children are particularly sensitive to the chronic effects of lead, with slowed cognitive development, reduced growth and other effects reported. The major sources of lead air pollution are lead smelters and battery manufacturing plants.

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 ecosytems. 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 acid rain causing watershed acidification and damage to material structures. 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.

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

Both fine and coarse 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 symptoms. 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 manmade and natural sources 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, and dust from paved or unpaved roads.

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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

MEANS > 1.5 Number of quarterly means greater than 1.5 ug/m^3 for lead

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

METH 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 value recorded in the year
- 2nd Second highest 8-hour 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 ug/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

VALID DAILY 1-HR MAXIMUM:
Maximum hourly values for
- 1ST the highest day
- 2ND the second highest day
- 3RD the third highest day
- 4TH the fourth highest day

VALS > .125: MEAS Number of measured daily maximum $\geq$ 0.125 ppm

VALS > .125: **EST** Number of expected violations

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

THE DATA IN THE FOLLOWING SECTION CONSISTS OF BOTH STATE AND PRIVATE NETWORKS.

2007 Summary of New England Ambient Air Quality

2007 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: carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), ozone (O_3), lead, and particulate matter (PM_{10} and $PM_{2.5}$). Levels of these pollutants are compared to the National Ambient Air Quality Standards (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/).

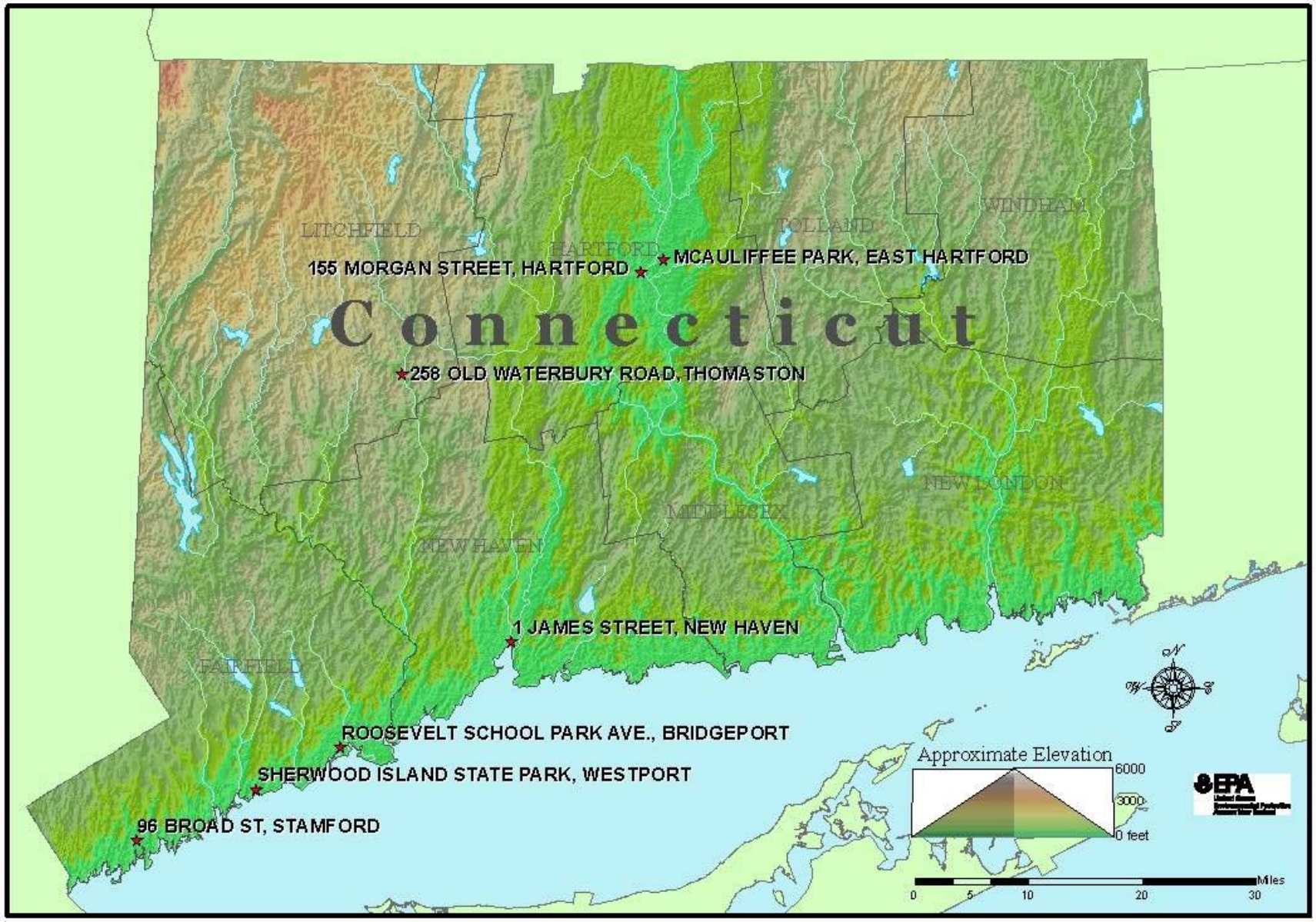
During 2007, weather conditions during the summer favored warmer and drier conditions. Concentrations of ozone and fine particles were higher at sites in southern New England than in northern New England. Using the number of days when at least one ozone monitoring site exceeded the NAAQS 8-hour ozone concentration of 0.085 ppm, the 2007 ozone season was comparable to 2005 (26 days), but not similar to 2006 (16 days), 2004 (13 days), or 2003 (15 days), with 27 exceedance days.. The highest 8-hour ozone concentration was measured in Connecticut (0.123 ppm). The other New England states measured maximum 8-hour concentrations ranging from 0.112 ppm (MA) to 0.086 ppm (VT). Twenty-three (23) monitoring sites in New England exceeded the fourth highest 8-hour ozone threshold ($\geq$ 0.085 ppm). This compares with previous years: 2006 – 14 monitoring sites, 2005 – 22 sites, 2004 – 2 sites, and 2003 – 14 sites. Vermont was the only state in New England that has not exceeded the fourth highest 8-hour ozone standard of 0.085ppmduring the five-year period from 2003 – 2007.

Since 1993, the New England states (except Vermont) have operated Photochemical Assessment Monitoring Stations (PAMS), which measure ozone precursors (oxides of nitrogen and organic compounds). The 2007 PAMS data indicate that the highest concentrations of organics, measured as Total Non-Methane Organic Compounds (TNMOC), were recorded at the New Haven (CT) Type 2 urban site. The lowest concentrations were recorded at the far downwind sites located in Maine (Cape Elizabeth and Acadia National Park). In general, TNMOC concentrations remained below those measured during the 1990's, but were similar to the last five years of measurements.

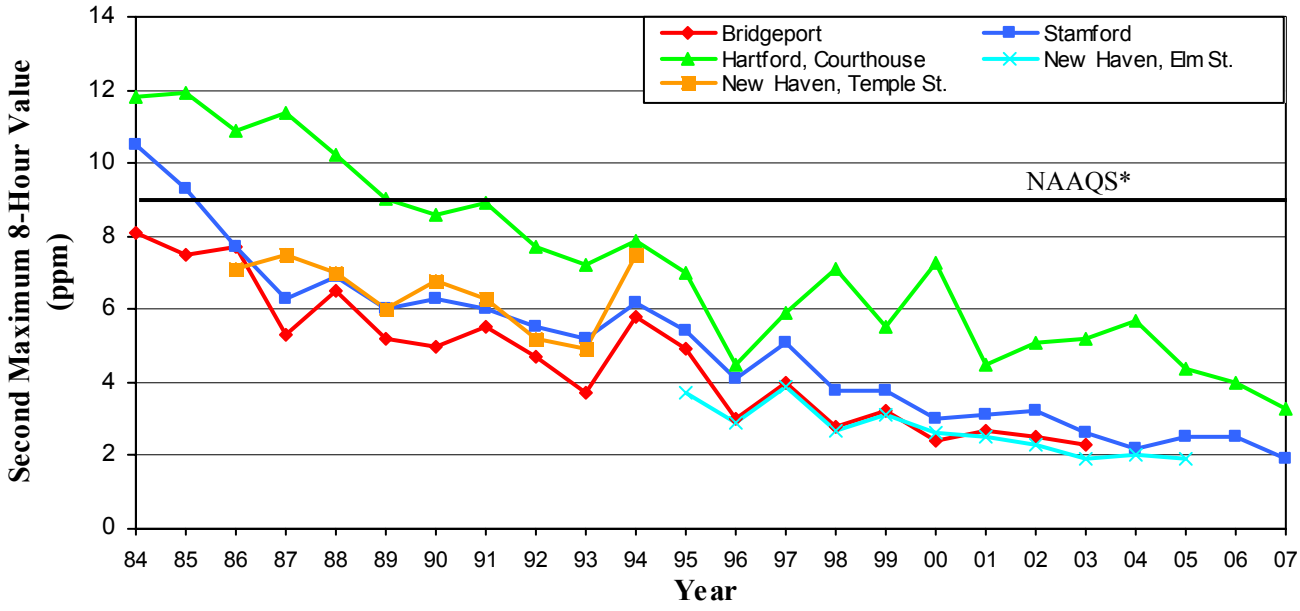
During 2007, the highest daily concentrations of fine particulate matter $PM_{2.5}$ (on the order of 40-50 $\mu g/m^3$) were measured at sites in Massachusetts, Connecticut and Rhode Island. No sites exceeded either the 24-hour or the annual NAAQS. The highest annual average concentrations for fine particulate matter (>12 $\mu g/m^3$, but <13 $\mu g/m^3$) were measured at Springfield (MA), Bridgeport (CT) and New Haven (CT). The lowest annual average concentrations of fine particulate matter were measured at the Bar Harbor and Greenville (ME) sites (<6.0 $\mu g/m^3$). For coarse particulate matter (PM_{10}), the highest daily concentration was measured at the Madawaska (ME) site (106 $\mu g/m^3$). None of the PM_{10} sites in New England exceeded either the primary or the secondary NAAQS for PM_{10}.

In general, the concentrations for all of the other criteria pollutants (SO_2, NO_2, CO, and lead) measured at monitoring sites throughout New England either declined or remained at historically low levels. The only exception was the Pembroke (NH) site which continued to measure increasing concentrations of SO_2 (five-year trend). However, the SO_2 concentrations for this site, and the other SO_2, NO_2, CO, and lead sites in New England were well below the NAAQS.

Connecticut Sites - 2007 - Carbon Monoxide



Connecticut Carbon Monoxide Data

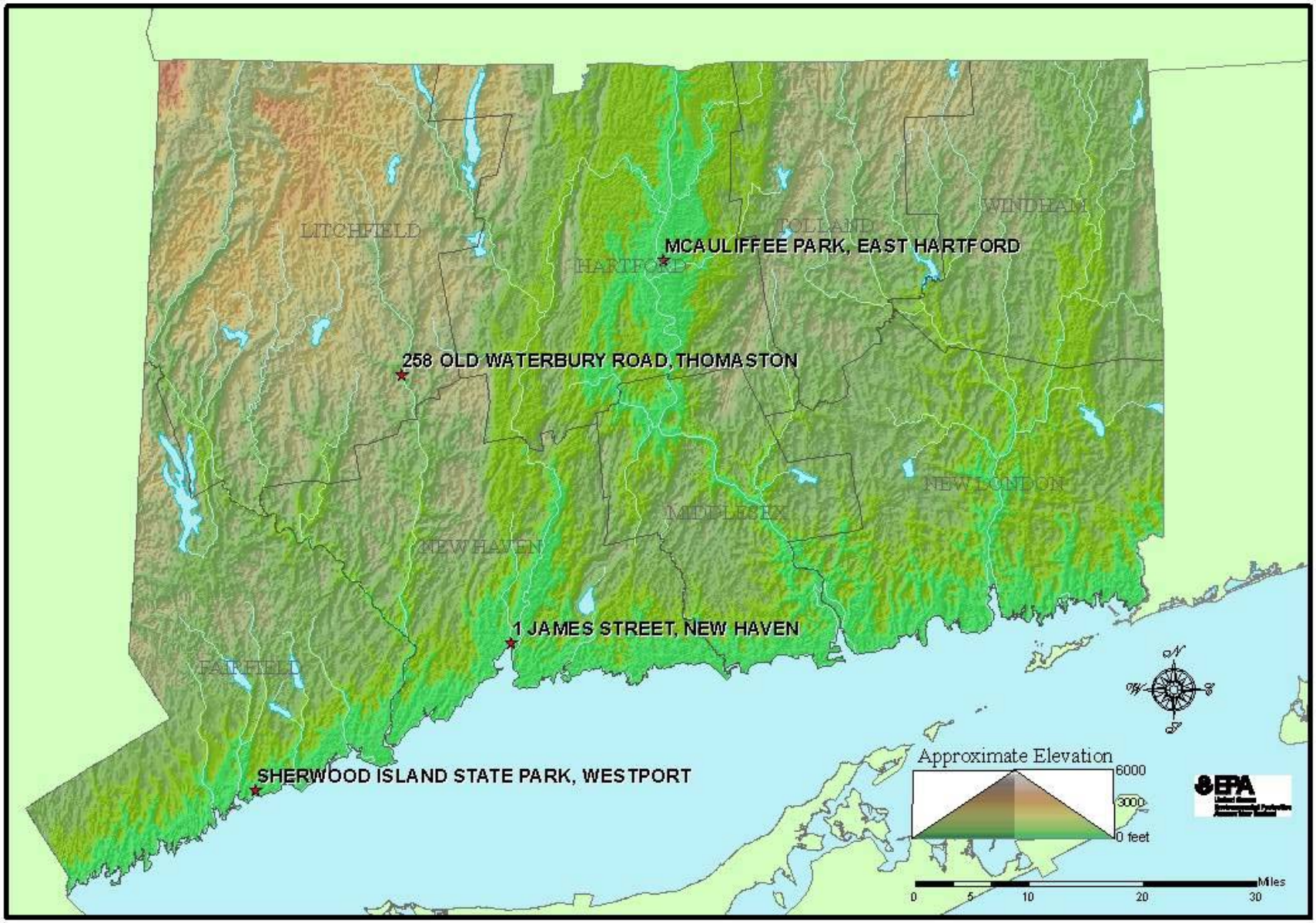


*NAAQS for Carbon Monoxide:
8-hour – 9 ppm, not to be exceeded more than one per year
1-hour – 35 ppm, not to be exceeded more than once per year.

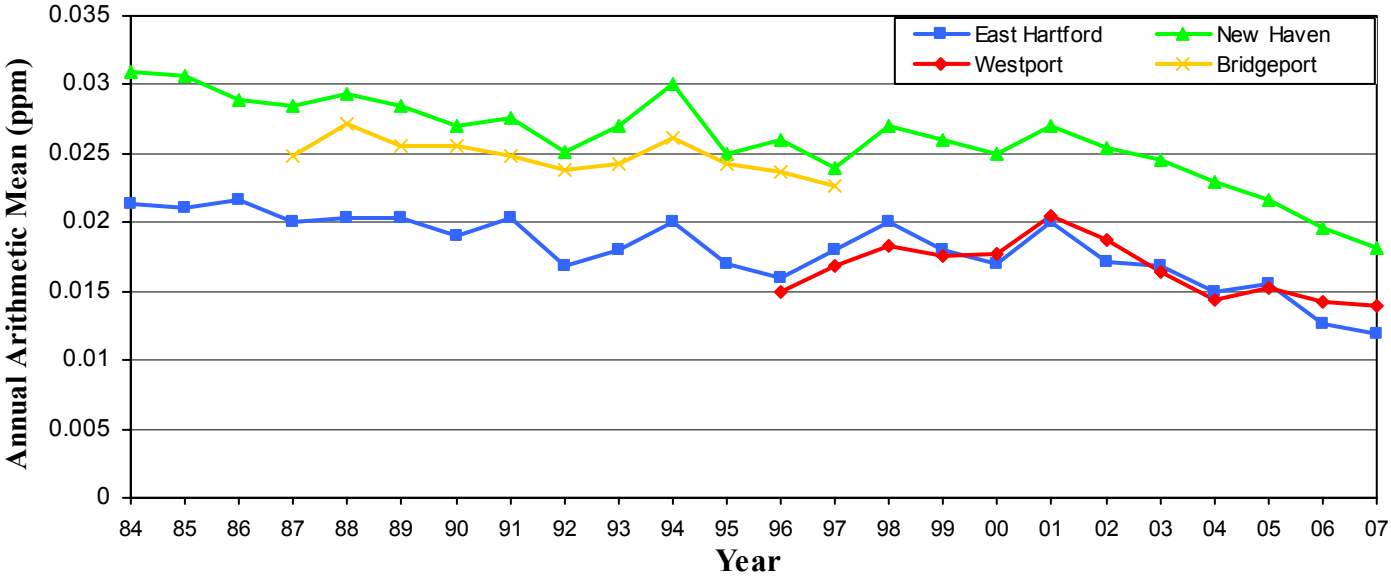
2007													
Connecticut													
Carbon Monoxide													
All Values are in Units of Parts Per Million													
							1-hour	1-hour		8-hour	8-hour		
	P							2nd			2nd		
	O	Org				#	Highest	Highest		Highest	Highest		Methods
Site ID	C	Type	City	County	Address	Obs	Value	Value	# > 35	Value	Value	# > 9	Used
09-001-0010	1	251	Bridgeport	Fairfield	ROOSEVELT SCHOOL, PARK AVE	4700	4.4	3.8	0	2.4	1.8	0	54
09-001-0020	1	251	Stamford	Fairfield	LIBRARY 96 BROAD STREET	4226	3.0	2.8	0	2.1	1.9	0	54
09-001-9003	1	251	Westport	Fairfield	SHERWOOD ISLAND STATE PARK	7333	1.3	1.1	0	1.0	0.8	0	0
09-003-0017	1	251	Hartford	Hartford	COURTHOUSE, 155 MORGAN STREET	8667	5.9	5.6	0	3.4	3.3	0	54
09-003-1003	1	251	East Hartford	Hartford	MCAULIFFE PARK	8673	2.0	2.0	0	1.5	1.2	0	54
09-005-0004	1	251	Thomaston	Litchfield	ACRS FROM 258 OLD WATERBURY RD	8535	1.1	1.0	0	0.8	0.8	0	0
09-009-0027	1	251	New Haven	New Haven	1 JAMES STREET	8661	2.1	1.9	0	1.6	1.4	0	54

Seven carbon monoxide (CO) ambient monitoring sites operated in 2007, three of which are trace CO ambient monitoring sites. No exceedance or violation of the 1-hour or 8-hour CO NAAQS were recorded in Connecticut during 2007. The highest recorded maximum 8-hour concentration of 3.4 ppm was recorded at the Hartford Courthouse site. This contrasts with previous 8-hour maximum measurements in 2006 (4.4 ppm), 2005 (5.4 ppm), 2004 (5.7 ppm), 2003 (5.7 ppm) and 2002 (5.7 ppm), 2001 (6.1 ppm), and 2000 (8.5 ppm). The trend graph shows for the past twenty four years CO concentrations are well below the national standards and indicate a downward trend in concentration.

Connecticut Sites - 2007 - Nitrogen Dioxide



Connecticut Nitrogen Dioxide Data

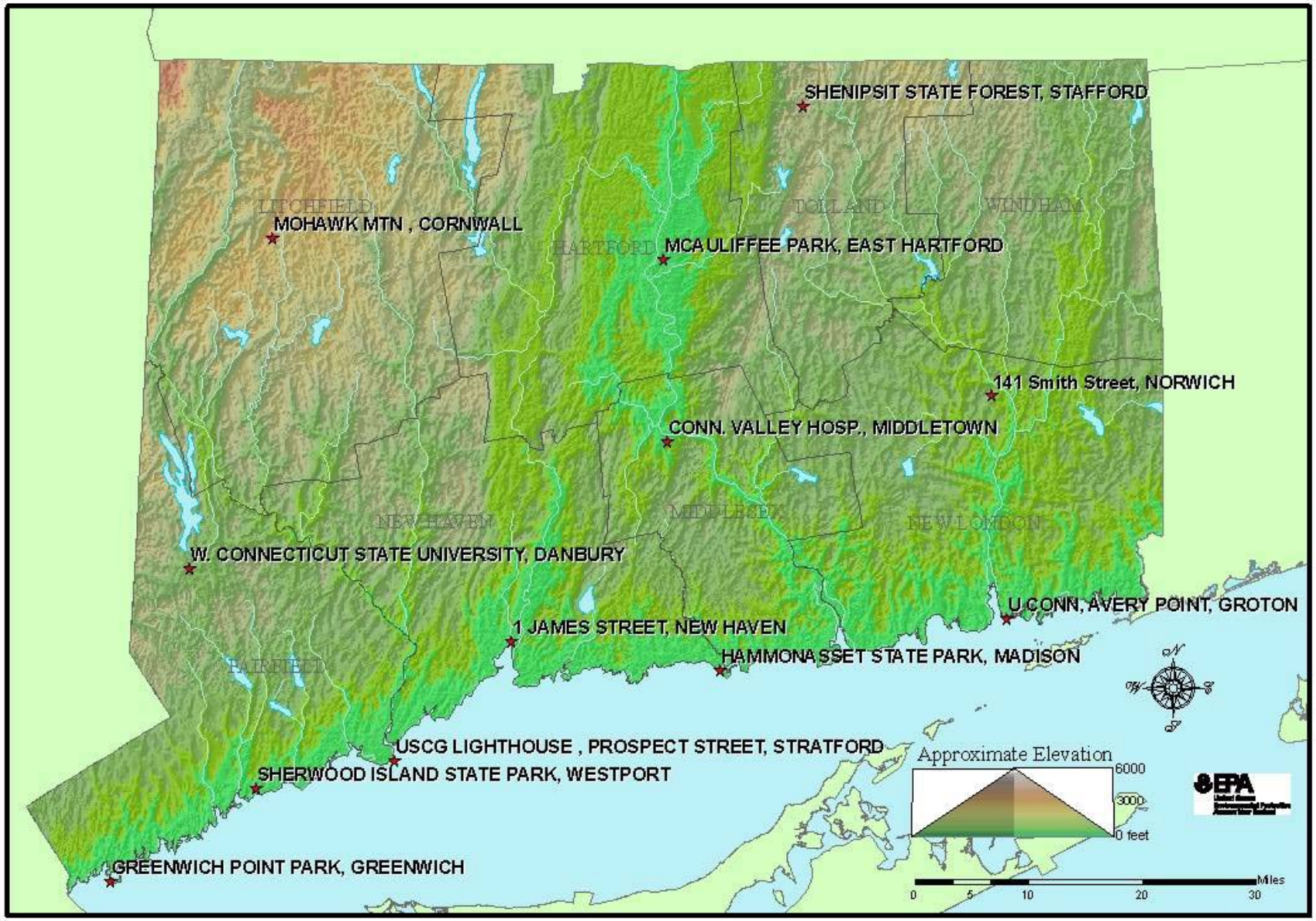


NAAQS for Nitrogen Dioxide:
0.053 ppm (100 µg/m^3)
Annual (Arithmetic Mean) Same as Primary

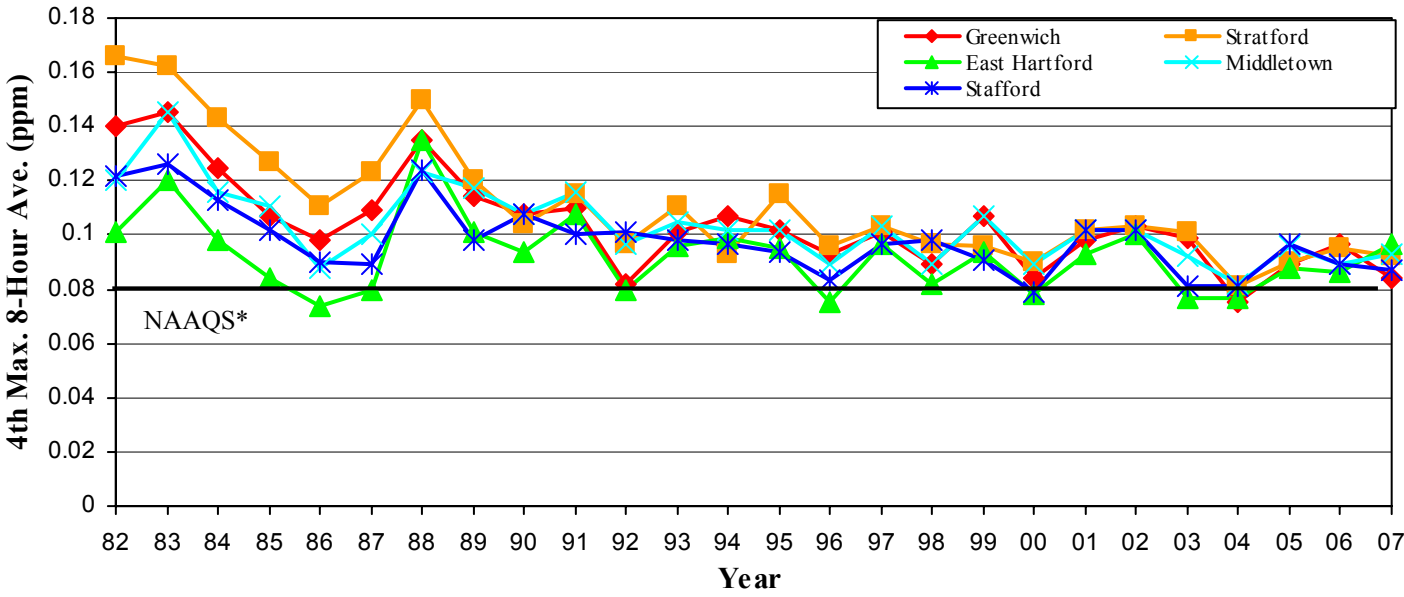
2007 NO2										
Connecticut										
Parameter: Nitrogen Dioxide										
All Values are in Units of Parts Per Million										
								1-hour	1-hour	
	P								2nd	Annual
	O	Rept.					#	Highest	Highest	Arith.
Site ID	C	Org.	City	County	Address	Method	Obs	Value	Value	Mean
09-001-9003	1	251	Westport	Fairfield	SHERWOOD ISLAND STATE P	74	7904	0.070	0.065	0.0139
09-003-1003	1	251	East Hartford	Hartford	MCAULIFFE PARK	74	8631	0.064	0.059	0.0119
09-005-0004	1	251	Thomaston	Litchfield	258 OLD WATERBURY RD	74	8218	0.050	0.047	0.0091
09-009-0027	1	251	New Haven	New Haven	1 JAMES STREET	74	8625	0.078	0.076	0.0181

The four nitrogen dioxide (NO_2) ambient air monitoring sites that operated during 2007, did not measure any violation of the NAAQS. The New Haven site reported the highest annual arithmetic mean NO_2 concentration of 0.018 ppm, which is 34% of the NAAQS. The Photochemical Assessment Monitoring Stations (PAMS) located in East Hartford and Westport both reported concentrations of NO_2 well below the NAAQS. The trend graph shows for the past twenty four years annual concentrations of NO_2 have been relatively constant with a slight downward trend since 2001.

Connecticut Sites - 2007 - Ozone



Connecticut Ozone 8-Hour Data

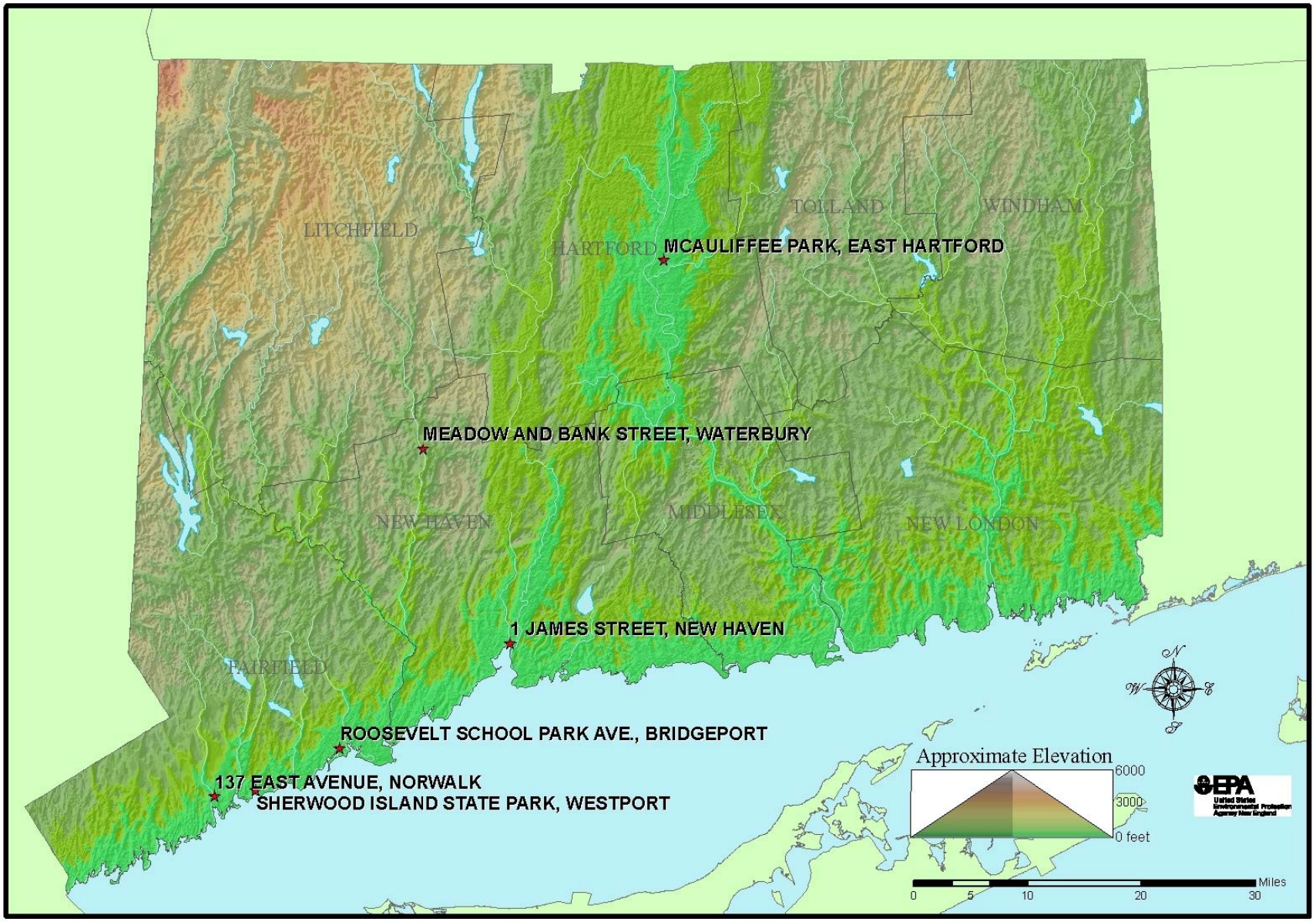


*NAAQS for Ozone:
8-Hour – 0.08 ppm (1997 std)
8-hour – 0.075 ppm (2008 std)

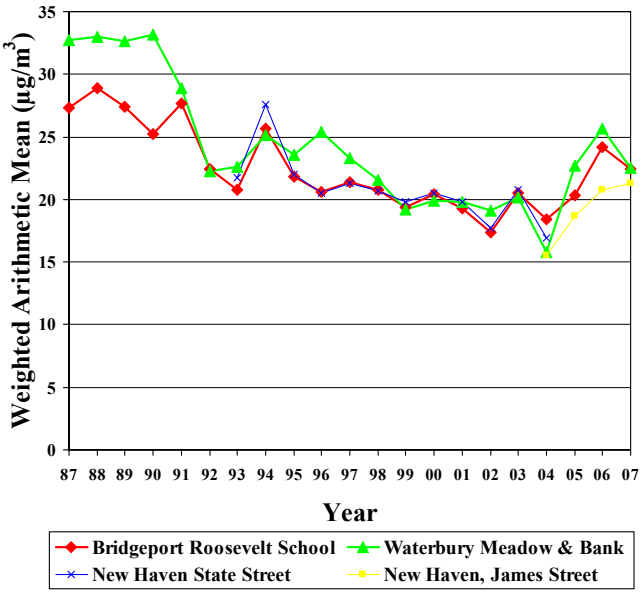
2007															
O3 8hour															
Connecticut															
Parameter: Ozone (8-Hour)															
All Values are in Units of Parts Per Million															
	P						Valid	Num		2nd	3rd	4th	Days		
	O	Rept.				%	Days	Required	Highest	Highest	Highest	Highest	Max ≥	Meth	
Site ID	C	Org.	City	County	Address	Obs	Meas.	Days	8-Hr Value	8-Hr Value	8-Hr Value	8-Hr Value	0.075*	Repo	
09-001-0017	1	0251	Greenwich	Fairfield	GREENWICH POINT PARK	97	177	183	0.093	0.090	0.085	0.084	10	47	
09-001-1123	1	0251	Danbury	Fairfield	W. CONNECTICUT STATE UNIV.	99	181	183	0.108	0.100	0.098	0.092	18	47	
09-001-3007	1	0251	Stratford	Fairfield	USCG LIGHTHOUSE, PROSPECT ST	100	183	183	0.095	0.094	0.093	0.092	15	47	
09-001-9003	1	0251	Westport	Fairfield	SHERWOOD ISLAND STATE PARK	93	170	183	0.096	0.093	0.085	0.083	8	47	
09-003-1003	1	0251	East Hartford	Hartford	MCAULIFFE PARK	98	179	183	0.107	0.100	0.097	0.097	9	47	
09-005-0005	1	0251	Cornwall	Litchfield	MOHAWK MTN MICROWAVE TWR	96	176	183	0.123	0.095	0.091	0.089	20	47	
09-007-0007	1	0251	Middletown	Middlesex	CONN. VALLEY HOSP.SHEW HALL	99	182	183	0.111	0.101	0.099	0.093	15	47	
09-009-0027	1	0251	New Haven	New Haven	1 JAMES STREET	99	181	183	0.087	0.087	0.085	0.082	6	47	
09-009-3002	1	0251	Madison	New Haven	HAMMONASSET STATE PARK	99	182	183	0.105	0.101	0.095	0.093	13	47	
09-011-0008	1	0251	Groton	New London	UNIV. OF CT, AVERY POINT	94	172	183	0.095	0.090	0.089	0.089	5	47	
09-011-0124	1	0251	Groton	New London	141 SMITH STREET	99	144	146	0.097	0.094	0.093	0.092	11	47	
09-013-1001	1	0251	Stafford	Tolland	ROUTE 190, SHENIPSIT STATE FOR.	92	169	183	0.107	0.101	0.100	0.087	18	47	
*Relative to the 2008 Standard															

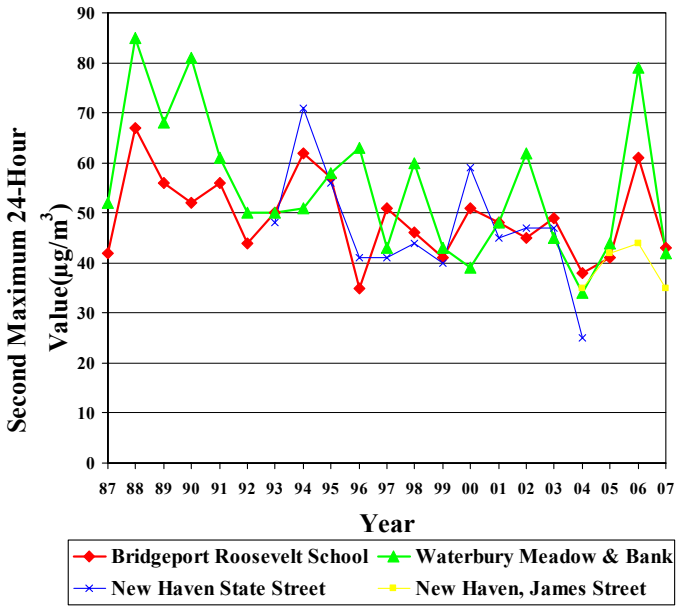
During 2007, nine of the twelve ozone monitoring sites reported a fourth-highest daily 8-hour average ozone concentration above the level of the 8-hour NAAQS. In 2006 and 2005 ten sites recorded values above this level. In 2004, only 1 site recorded a value above this level. In 2003, ten of the eleven ozone monitoring sites recorded fourth high values above this level. In 2007, the highest 8-hour ozone concentration of 0.123 ppm was measured at the Cornwall site. The highest 8-hour ozone concentration in 2006 was recorded at the Westport site at 0.119 ppm.

Connecticut Sites - 2007 - Particulate Matter < 10 Microns



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



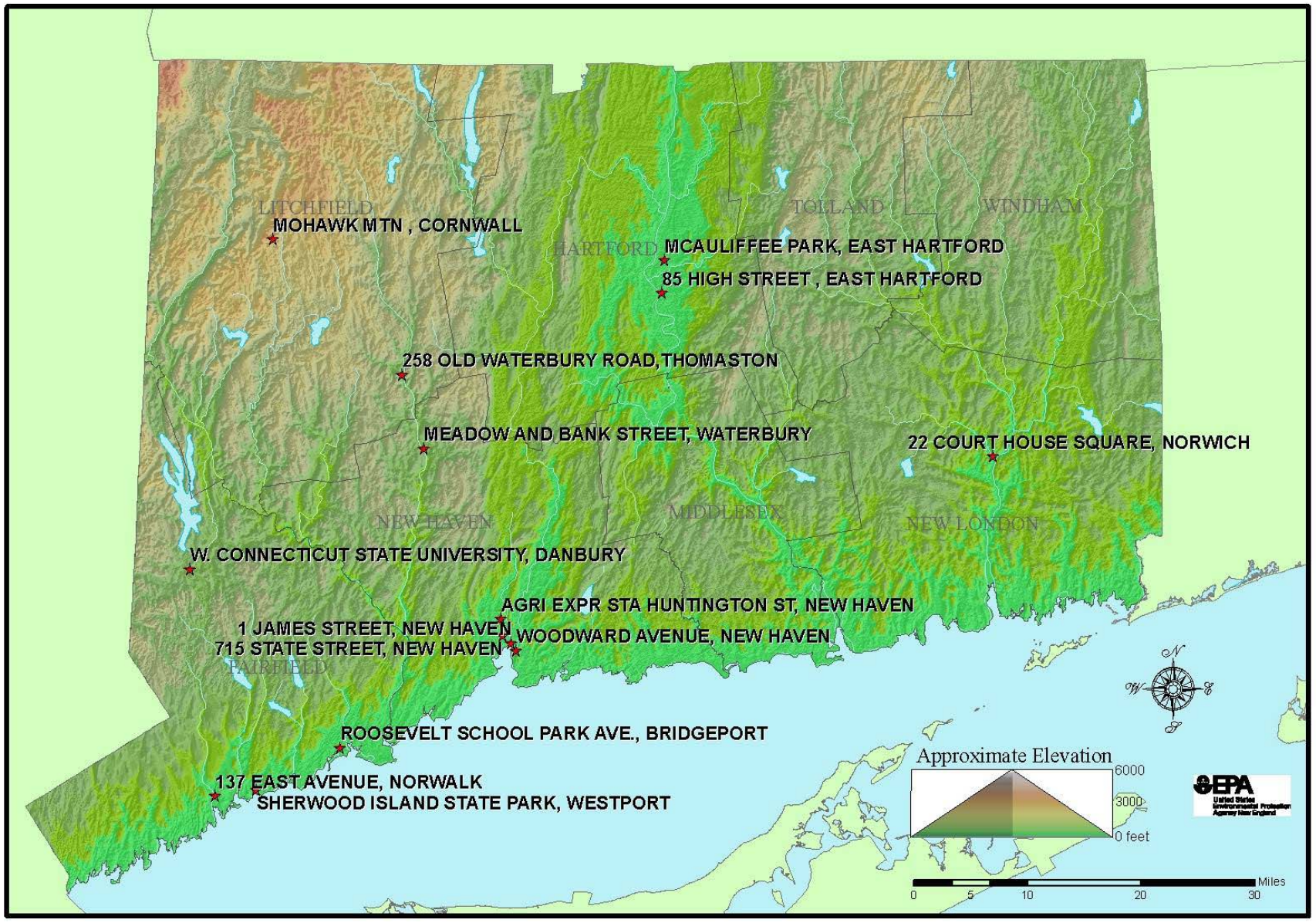


NAAQS for Particulate Matter less than 10 Microns:
24-hour 150 µg/m^3

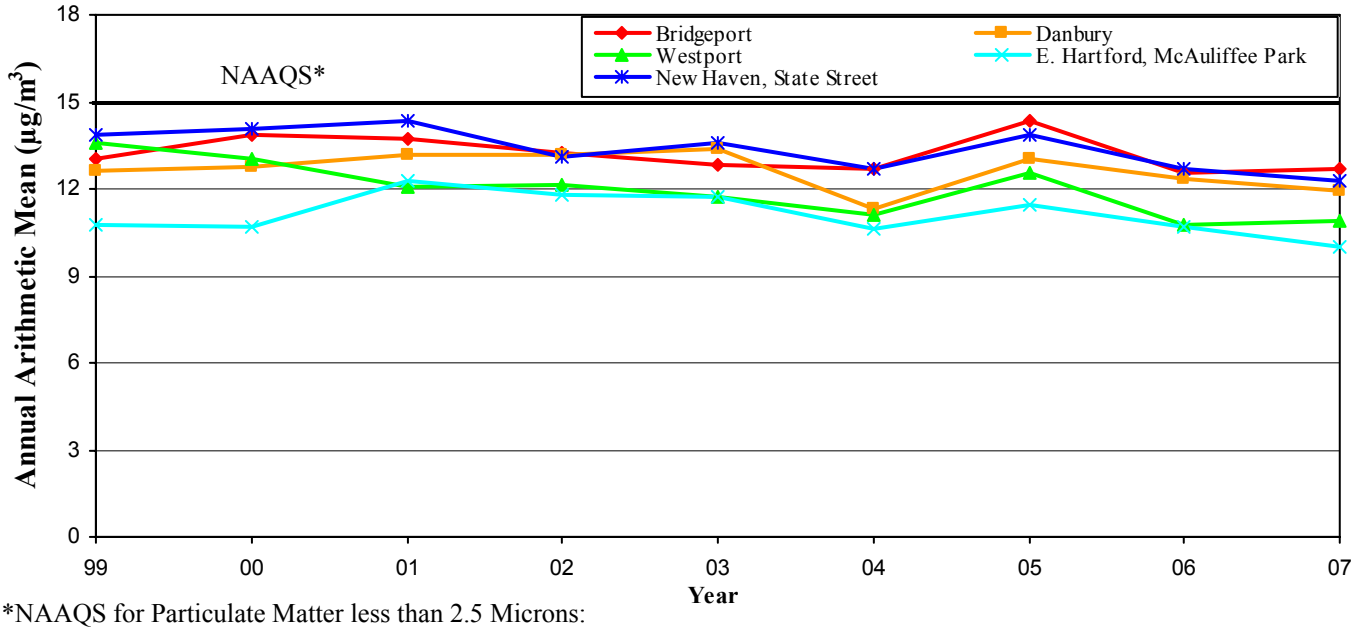
PM10																			
2007																			
Connecticut																			
Particulate Matter < 10 Microns																			
ug/m3																			
												2nd	3rd	4th	Days	Est. D	Wtd.		
		Rep.							Number	Valid	Highest	Highest	Highest	Highest	Max	Max	Arith.		Method
SITE ID	PO	Org	City	County	Address	# Obs	# Req.	Days	% Obs	Value	Value	Value	Value	>150	>150	Mean		Used
09-001-0010	1	0251	Bridgeport	Fairfield	ROOSEVELT SCHOOL, PARK AV	57	60	57	95	44	43	42	41	0	0	22.4		126
09-001-3005	1	0251	Norwalk	Fairfield	NORWALK HEALTH DEPT.137 E.	53	60	53	88	37	36	34	32	0	0	19.1		126
09-001-9003	1	0251	Westport	Fairfield	SHERWOOD ISLAND STATE PAR	54	60	54	90	34	30	30	28	0	0	17.3		126
09-003-1003	1	0251	East Hartford	Hartford	MCAULIFFE PARK	56	60	56	93	34	28	25	24	0	0	16.0		126
09-009-0027	1	0251	New Haven	New Haven	1 JAMES STREET	50	60	50	83	35	35	34	32	0	0	21.3	*	0
09-009-0027	2	0251	New Haven	New Haven	1 JAMES STREET	22	22	22	100	33	32	31	27	0	0	18.7	*	127
09-009-2123	1	0251	Waterbury	New Haven	MEADOW AND BANK STREETS	56	60	56	93	43	42	41	40	0	0	22.5		126
09-009-2123	2	0251	Waterbury	New Haven	MEADOW AND BANK STREETS	58	60	58	97	43	42	41	39	0	0	21.5		126

The six sites measuring particulate matter of less than 10 microns (PM_{10}) did not record an exceedance or violation of the 24-hour NAAQS during 2007. The Bridgeport site reported the highest 24-hour second maximum value of 43 µg/m^3 during 2007, which is 28% of the NAAQS. The other five monitoring sites reported highest 24-hour second maximum values of 42 µg/m^3, 36 µg/m^3, 35 µg/m^3, 30 µg/m^3 and 28 µg/m^3 in 2007.

Connecticut Sites - 2007 - Particulate Matter < 2.5 Microns



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

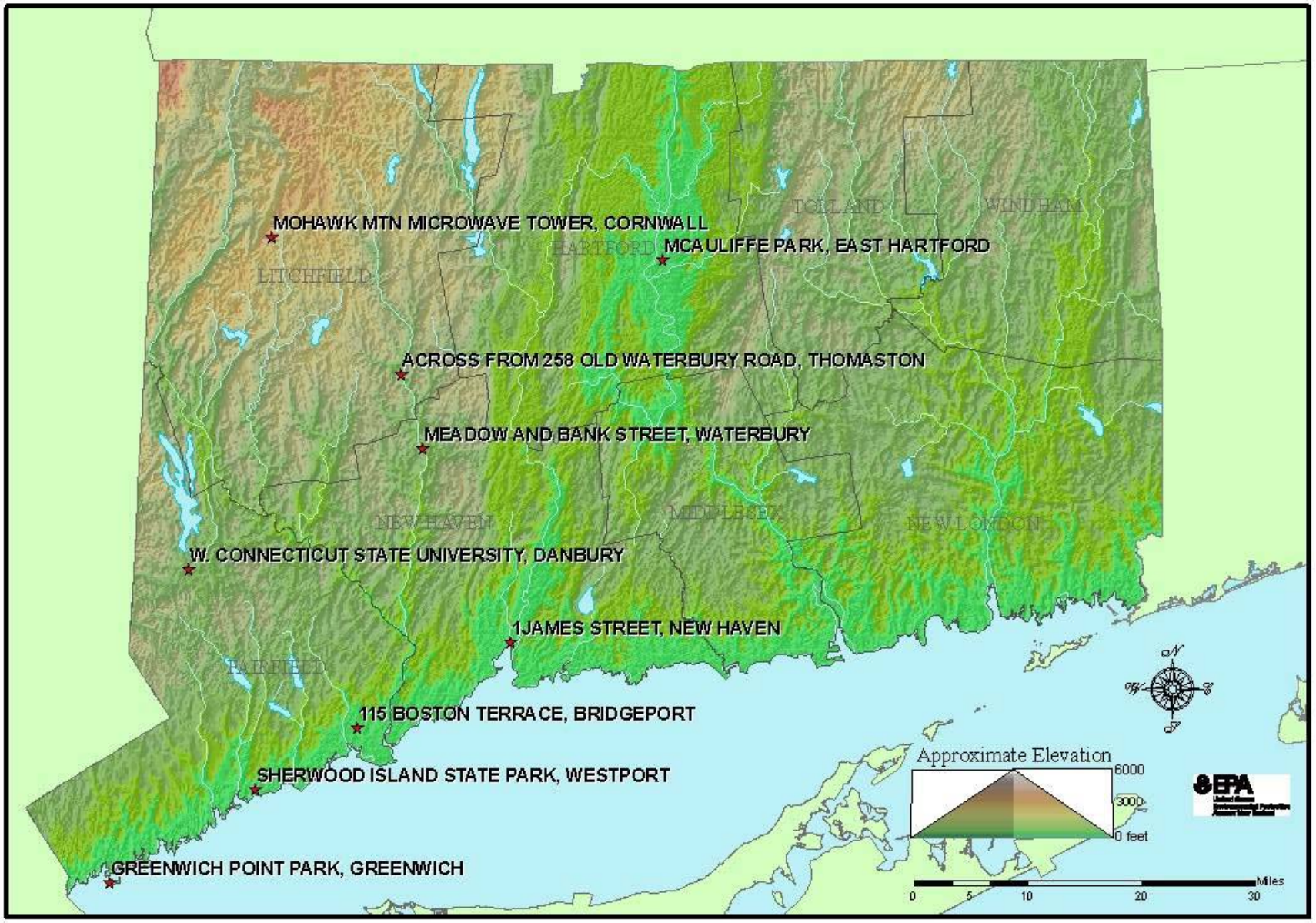


*NAAQS for Particulate Matter less than 2.5 Microns:
Annual Arithmetic Mean - 15.0 µg/m^3

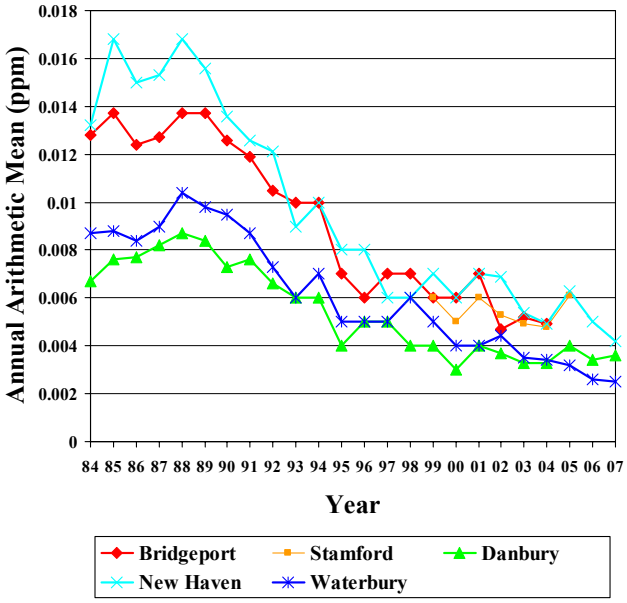
2007													
Connecticut													
Parameter: PM 2.5													
All Values are in UG/CU Meters Local Conditions													
									2nd	3rd	4th	98th	Wtd.
	P						#	Highest	Highest	Highest	Highest	Percentile	Arith.
	O	Rept.											
Site ID	C	Org.	City	County	Address	Method	Obs	Value	Value	Value	Value	Value	Mean
09-001-0010	1	0251	Bridgeport	Fairfield	ROOSEVELT SCHOOL, PARK AVE	145	115	35.2	32.7	30.2	29.3	30.2	12.66
09-001-1123	1	0251	Danbury	Fairfield	W. CONNECTICUT ST.UNIV.	145	120	36.8	34.6	30.4	30.0	30.4	11.95
09-001-3005	1	0251	Norwalk	Fairfield	NORWALK HEALTH DEPT. 137 E.AVE.	145	113	35.2	33.9	31.9	26.9	31.9	11.94
09-001-9003	1	0251	Westport	Fairfield	SHERWOOD ISLAND STATE PARK	145	342	40.7	40.5	34.2	32.7	29.0	10.91
09-003-1003	1	0251	East Hartford	Hartford	MCAULIFFE PARK	0	353	45.8	39.4	35.1	32.2	29.3	9.98
09-005-0004	1	0251	Thomaston	Litchfield	258 OLD WATERBURY RD.	145	114	37.7	34.0	29.3	25.6	29.3	10.20
09-005-0005	1	0251	Cornwall	Litchfield	MOHAWK MTN MICROWAVE TOWER	145	119	41.4	35.5	31.0	25.2	31.0	8.06
09-009-0026	1	0251	New Haven	New Haven	WOODWARD AVENUE	145	113	34.0	30.0	29.8	29.3	29.8	11.59
09-009-0027	1	0251	New Haven	New Haven	1 JAMES STREET	145	351	44.9	40.3	40.3	37.5	30.5	11.48
09-009-0027	2	0251	New Haven	New Haven	1 JAMES STREET	118	57	26.4	25.1	24.3	24.1	25.1	11.53
09-009-1123	1	0251	New Haven	New Haven	715 STATE STREET	145	118	33.6	31.2	30.6	27.5	30.6	12.25
09-009-2008	1	0251	New Haven	New Haven	AGRI EXPR STA, HUNTINGTON ST.	145	121	32.0	29.7	28.5	26.7	28.5	10.84
09-009-2123	1	0251	Waterbury	New Haven	MEADOW AND BANK STREETS	145	120	34.2	33.7	32.7	28.6	32.7	11.96
09-009-2123	2	0251	Waterbury	New Haven	MEADOW AND BANK STREETS	0	60	28.7	27.5	25.5	23.6	27.5	11.39
09-011-3002	1	0251	Norwich	New London	22 COURT HOUSE SQUARE	145	304	39.9	39.2	35.2	30.8	28.7	10.07

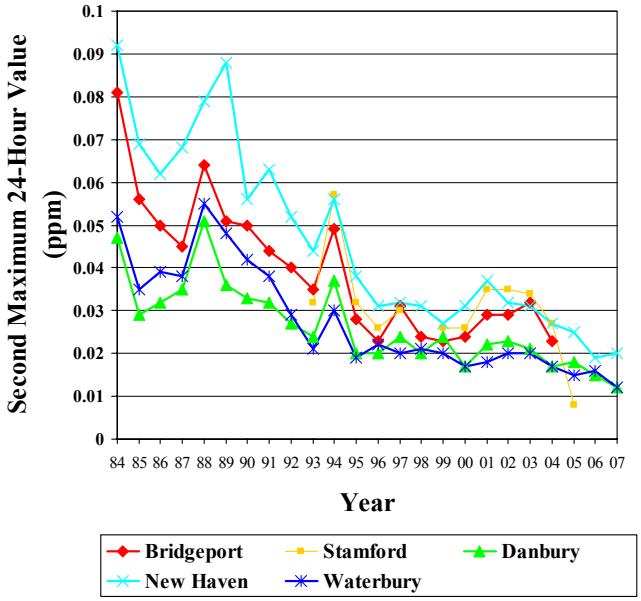
In 2007, Connecticut operated a network of fourteen fine particulate matter ($PM_{2.5}$) sites. During 2007, the annual arithmetic mean concentration of $PM_{2.5}$ was the highest at the Bridgeport site with a value of 12.66 µg/m^3. The highest 98th percentile 24-hour value was 32.7 µg/m^3 recorded at the Waterbury site. The nine year annual arithmetic mean concentration trend graph shown for the Bridgeport, Westport, New Haven State Street, Danbury and East Hartford McAuliffe Park sites have remained relatively flat, except for a slight increase during 2005.

Connecticut Sites - 2007 - Sulfur Dioxide



Connecticut Sulfur Dioxide Data





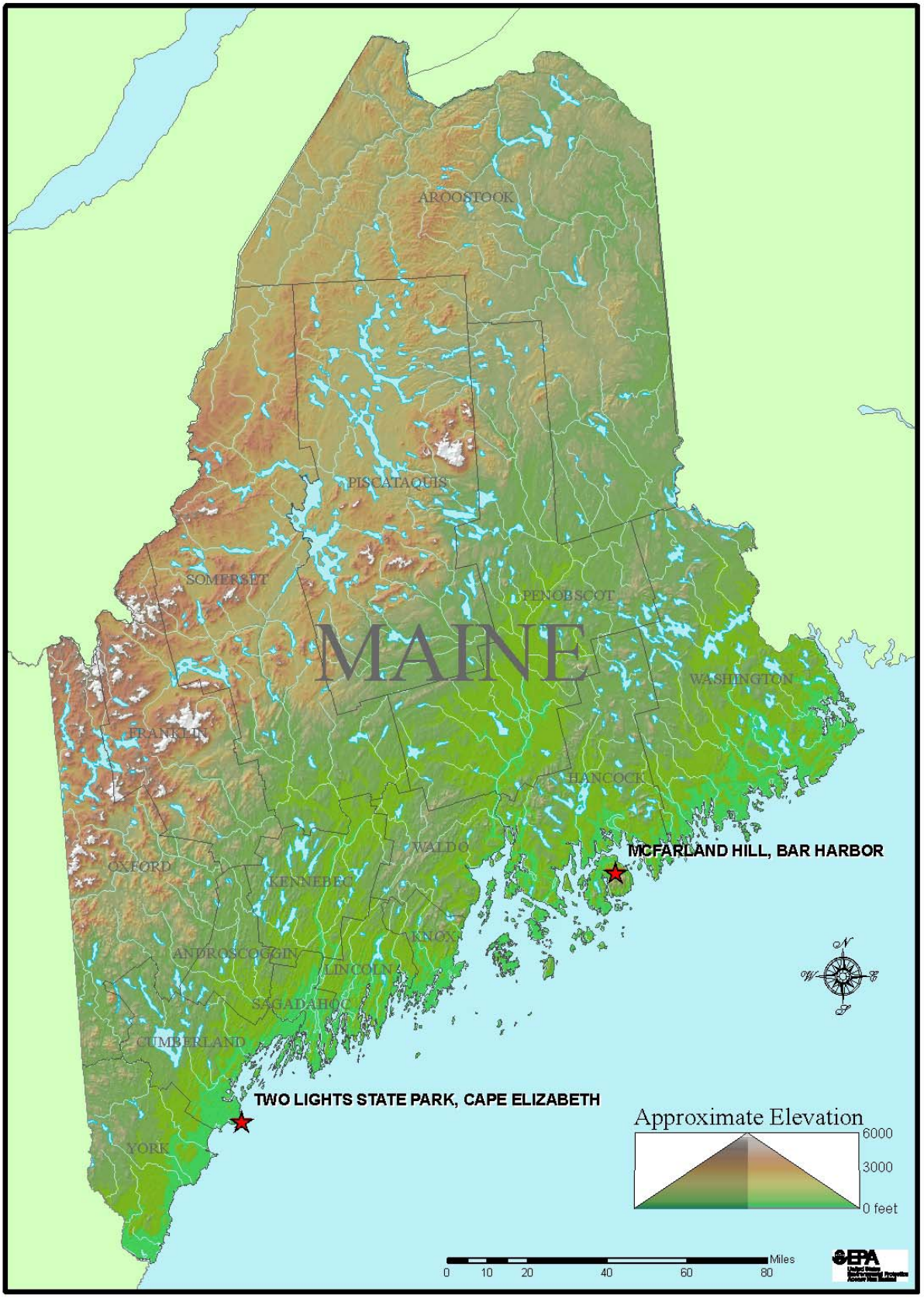
NAAQS for Sulfur Dioxide:
Annual Arithmetic Mean - 0.03 ppm
3-hour 0.5 ppm
24-hour 0.14 ppm

Parameter: Sulfur Dioxide
All Values are in Units of Parts Per Million

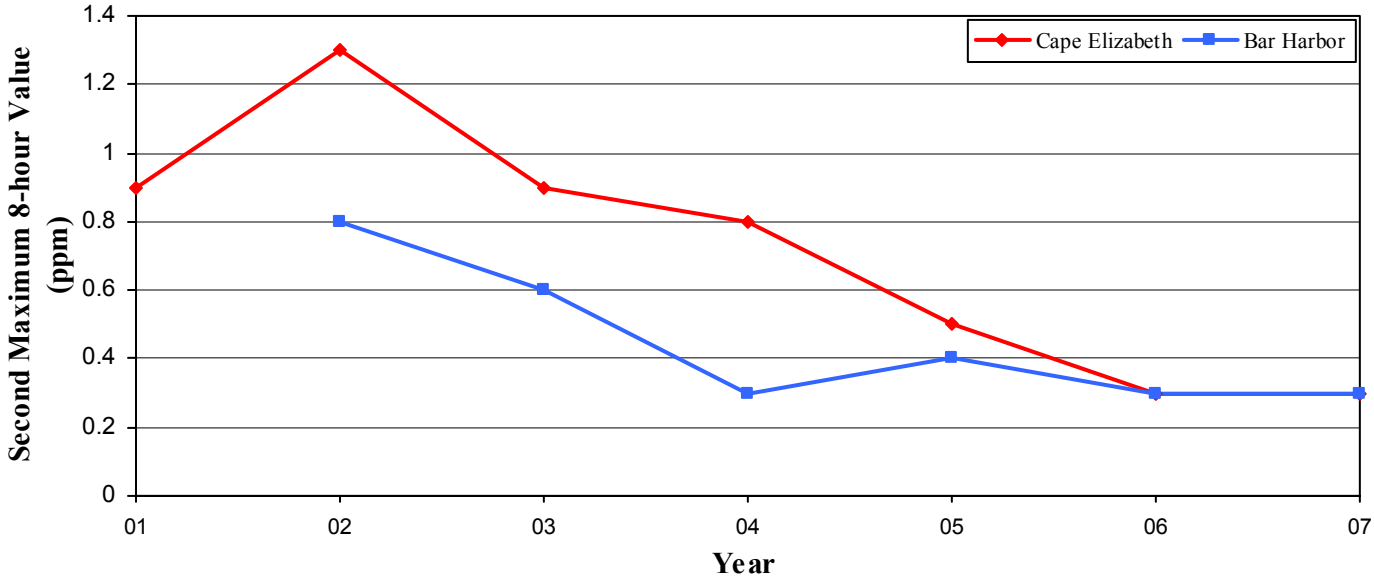
Site ID	POC	Org Type	City	County	Address	# Obs	24-hour 2nd Highest	24-hour 2nd Highest	Obs > 0.14	3-hour Highest Value	3-hour 2nd Highest Value	Obs > 0.5	1-hour Highest Value	1-hour 2nd Highest Value	Arith. Mean	Meth Used
09-001-0012	1	251	Bridgeport	Fairfield	115 BOSTON TERRACE	8524	0.018	0.017	0	0.031	0.029	0	0.034	0.034	0.0040	60
09-001-0017	1	251	Greenwich	Fairfield	GREENWICH POINT PARK	8612	0.014	0.012	0	0.023	0.021	0	0.028	0.025	0.0026	60
09-001-1123	1	251	Danbury	Fairfield	W. CT STATE UNIV.	8659	0.013	0.012	0	0.018	0.018	0	0.022	0.021	0.0036	60
09-001-9003	1	251	Westport	Fairfield	SHERWOOD ISL ST PK	8010	0.015	0.013	0	0.025	0.025	0	0.029	0.027	0.0024	60
09-003-1003	1	251	East Hartford	Hartford	MCAULIFFE PARK	8596	0.011	0.011	0	0.020	0.018	0	0.022	0.020	0.0023	60
09-005-0004	1	251	Thomaston	Litchfield	ACRS FM 258 OLD WATER	8352	0.009	0.008	0	0.015	0.014	0	0.020	0.018	0.0017	0
09-005-0005	1	251	Cornwall	Litchfield	MOHAWK MTN	8231	0.015	0.013	0	0.025	0.023	0	0.027	0.027	0.0017	0
09-009-0027	1	251	New Haven	New Haven	1 JAMES STREET	8650	0.029	0.020	0	0.080	0.065	0	0.094	0.084	0.0042	60
09-009-2123	1	251	Waterbury	New Haven	MEADOW AND BANK ST	8677	0.012	0.012	0	0.018	0.017	0	0.022	0.022	0.0025	60

Nine air quality monitoring sites measured sulfur dioxide (SO_2) in Connecticut during 2007, three of which are trace SO_2 ambient monitoring sites. There were no exceedances or violations at any of the Connecticut ambient monitoring sites for the annual, 24-hour, or 3-hour SO_2 NAAQS. The New Haven-James Street site reported the highest arithmetic mean concentration of SO_2 at 0.0042 ppm, which is 14% of the NAAQS. The highest 24-hour second maximum concentration of 0.020 ppm and the highest 3-hour second maximum concentration of 0.065 ppm were also recorded at the New Haven site. The long range trend for SO_2 concentrations in Connecticut continually shows a downward trend.

Maine Sites 2007 - Carbon Monoxide



Maine Carbon Monoxide Data

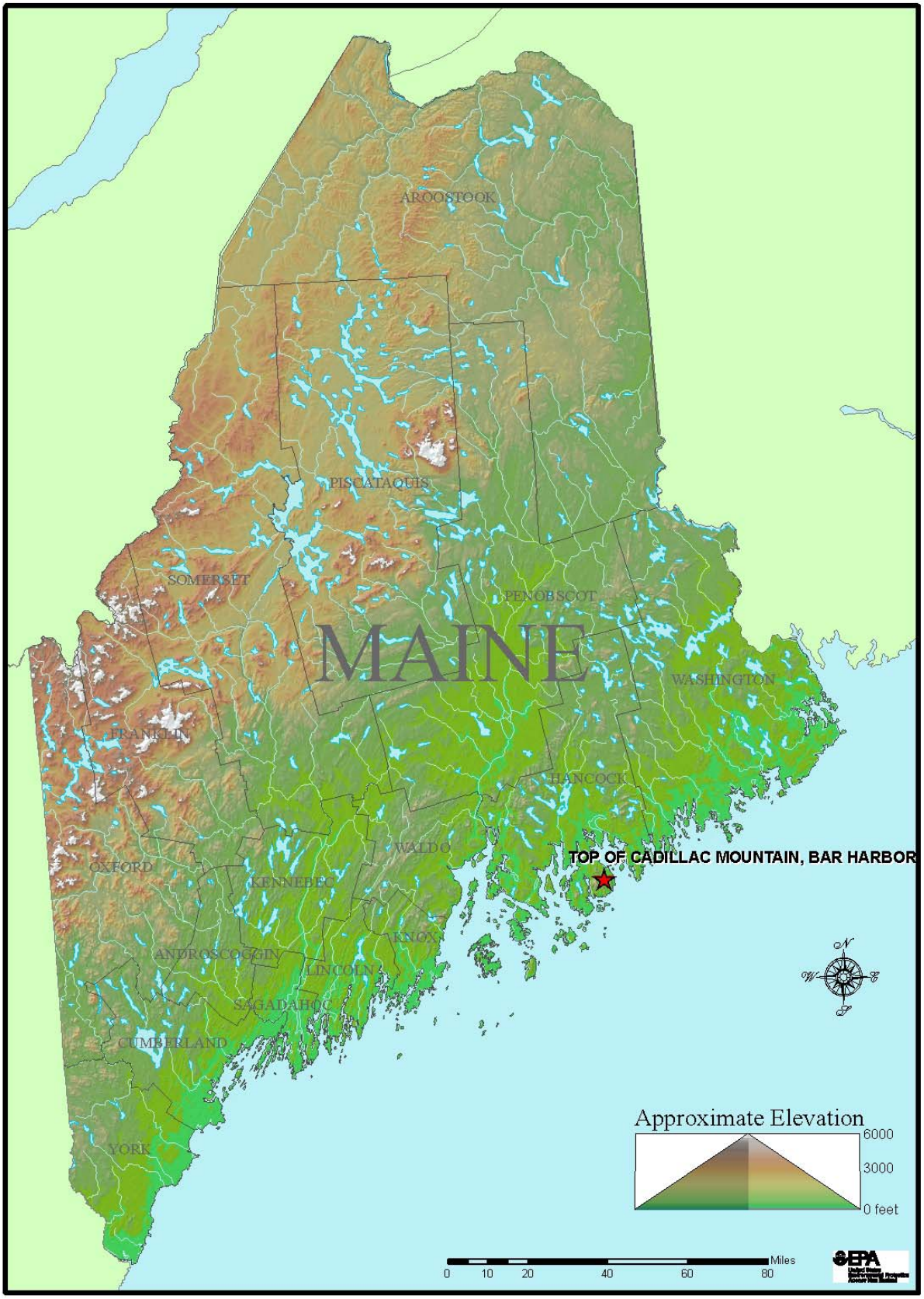


NAAQS for Carbon Monoxide:
8-hour – 9 ppm, not to be exceeded more than one per year
1-hour – 35 ppm, not to be exceeded more than once per year.

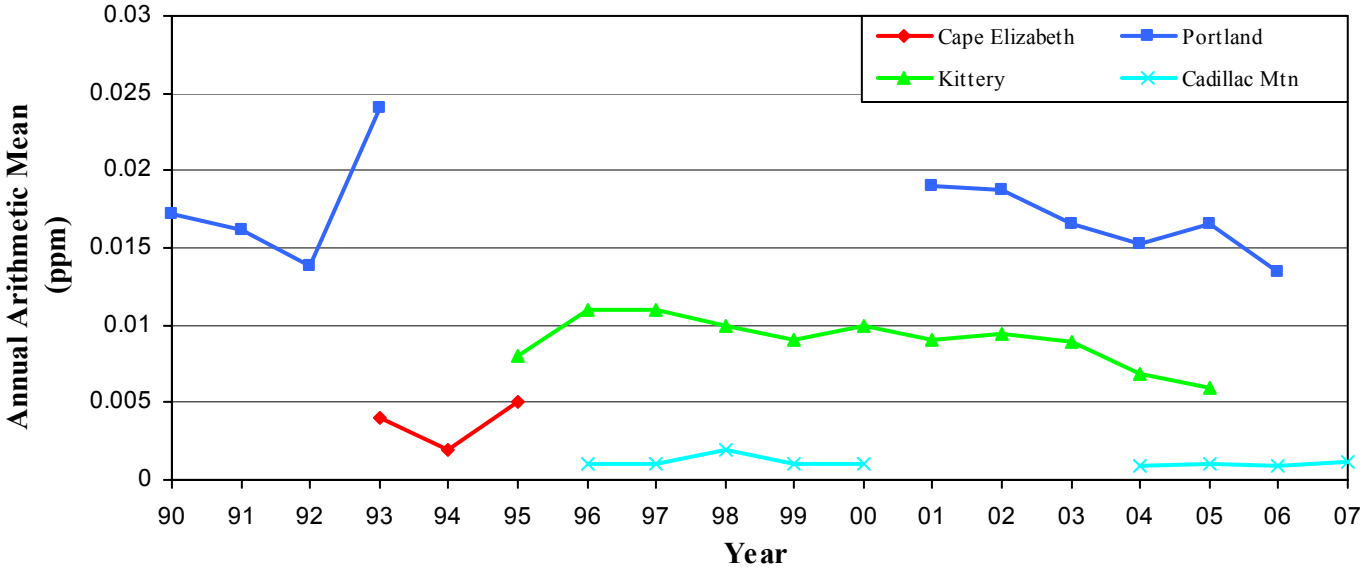
2007														
Maine														
Carbon Monoxide														
All Values are in Units of Parts Per Million														
								1-hour	1-hour		8-hour	8-hour		
	P								2nd			2nd		
	O	Org					#	Highest	Highest		Highest	Highest		Methods
Site ID	C	Type	City	County	Address		Obs	Value	Value	# > 35	Value	Value	# > 9	Used
23-005-2003	1	635	Cape Elizabeth	Cumberland	TWO LIGHTS STATE PARK		3498	0.3	0.3	0	0.3	0.3	0	93
23-009-0103	1	635	Bar Harbor (cens	Hancock	MCFARLAND HILL		8092	0.3	0.3	0	0.3	0.3	0	54

In 2007, the state of Maine operated two low-level, highly sensitive carbon monoxide (CO) monitors – one at the Cape Elizabeth - Two Lights State Park Photochemical Assessment Monitoring Station (PAMS) site, and the other at the Bar Harbor - McFarland Hill Acadia National Park site. CO measurements were recorded at these sites to help understand ozone formation, summer photochemistry, and pollution transport along the Maine coast.

Maine Sites 2007 - Nitrogen Dioxide



Maine Nitrogen Dioxide Data

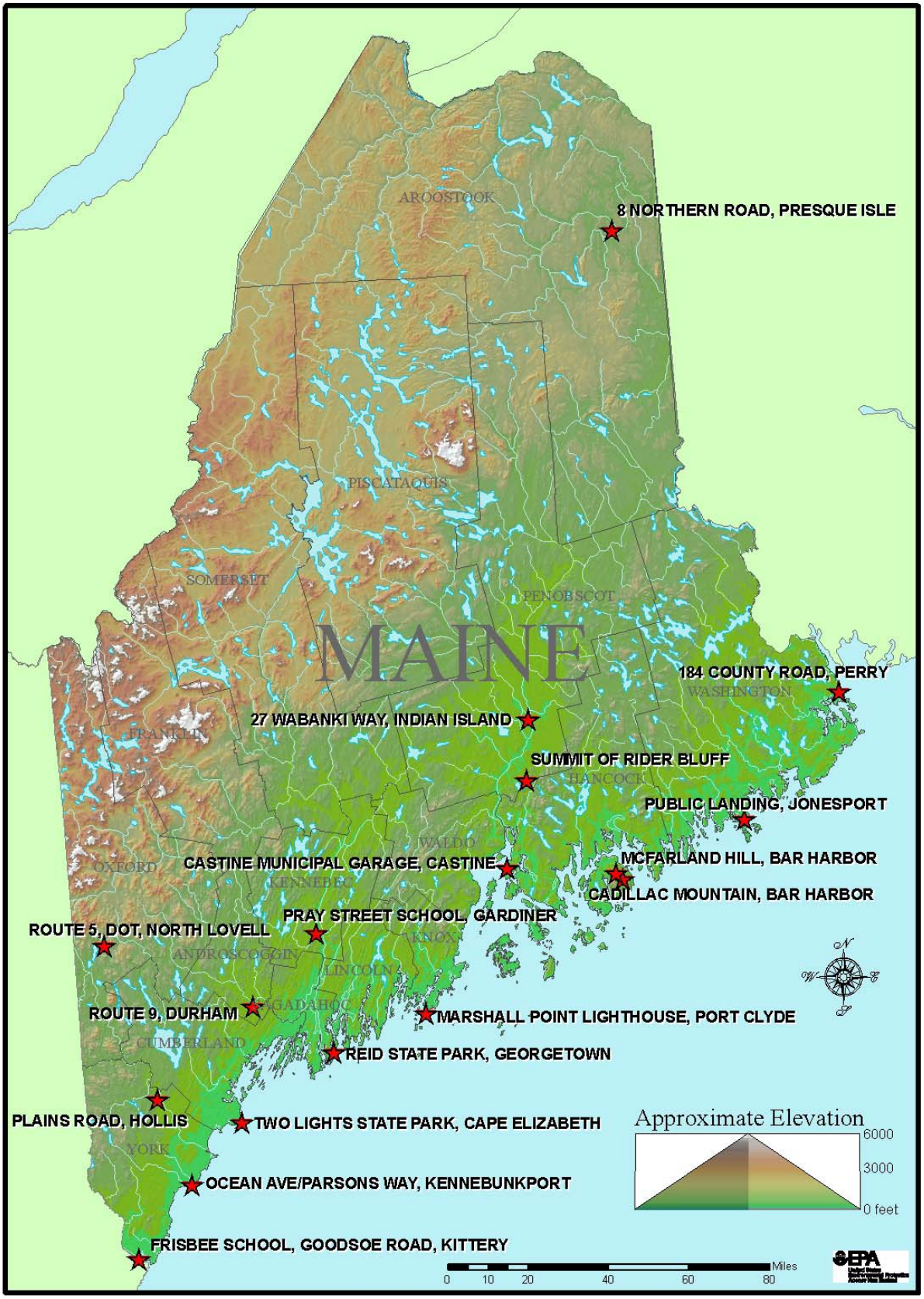


NAAQS for Nitrogen Dioxide:
Annual Arithmetic Mean 0.053 ppm (100 µg/m^3)

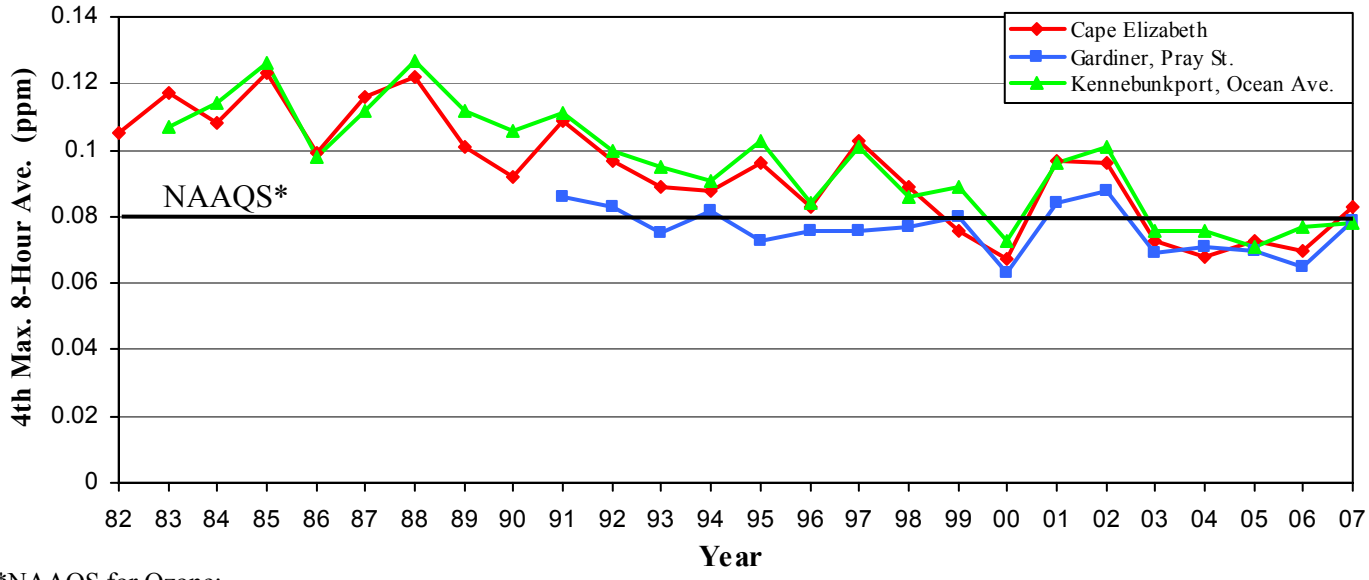
2007 NO2											
Maine											
Parameter: Nitrogen Dioxide											
All Values are in Units of Parts Per Million											
								1-hour	1-hour		
	P								2nd	Annual	
	O	Rept.					#	Highest	Highest	Arith.	
Site ID	C	Org.	City	County	Address	Method	Obs	Value	Value	Mean	
23-009-0102	1	635	Bar Harbor	Hancock	TOP OF CADILLAC MOUNTAIN	75	3441	0.005	0.005	0.0011	*
*Indicates that the mean does not meet summary criteria											

There was one nitrogen dioxide (NO_2) monitoring site that operated during 2007, the Bar Harbor – Cadillac Mountain Acadia National Park PAMS site. There were no exceedances or violations of the NAAQS measured

Maine Sites 2007 - Ozone



Maine Ozone 8-Hour Data

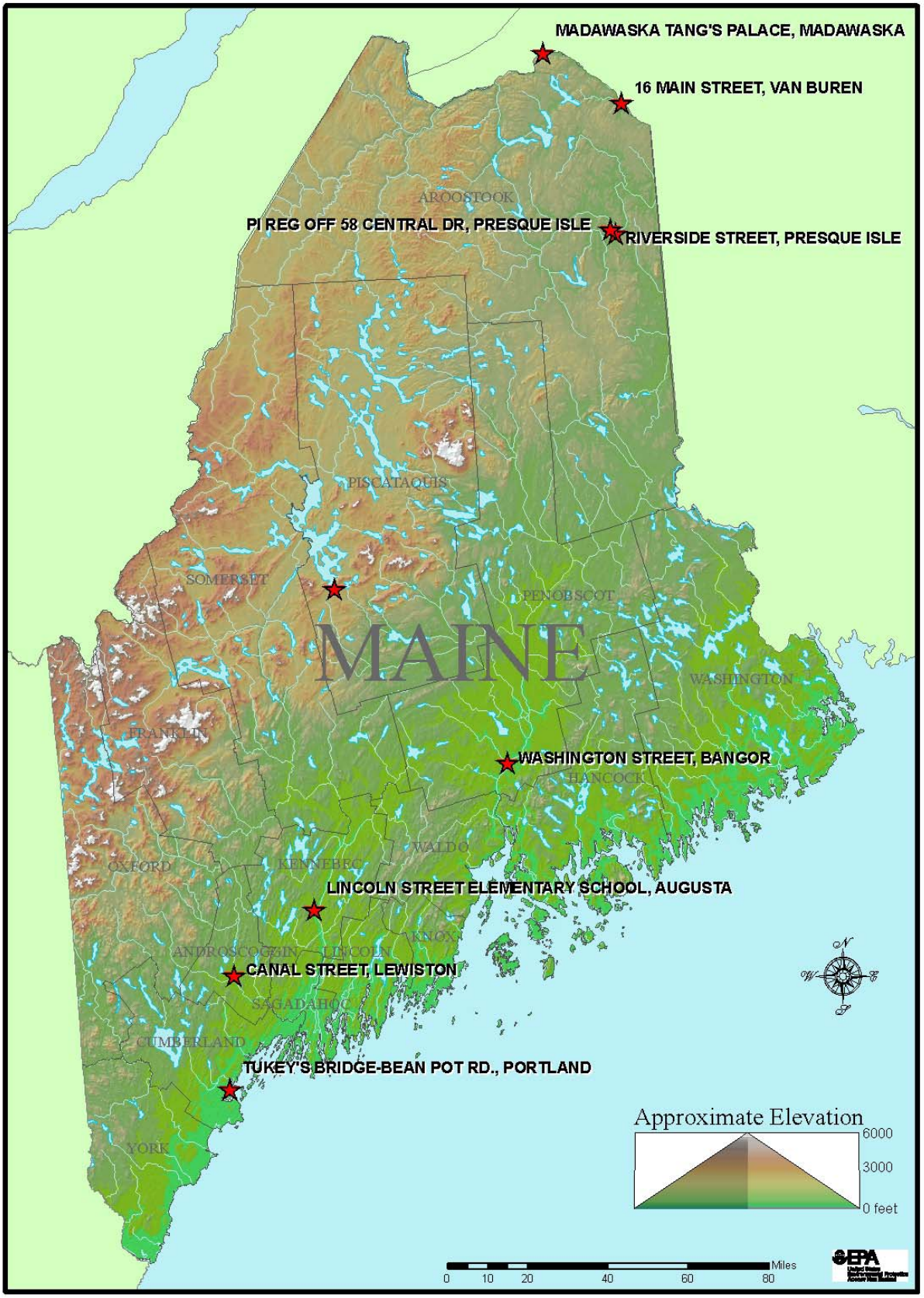


*NAAQS for Ozone:
8-Hour – 0.08 ppm (1997 std)
8-hour – 0.075 ppm (2008 std)

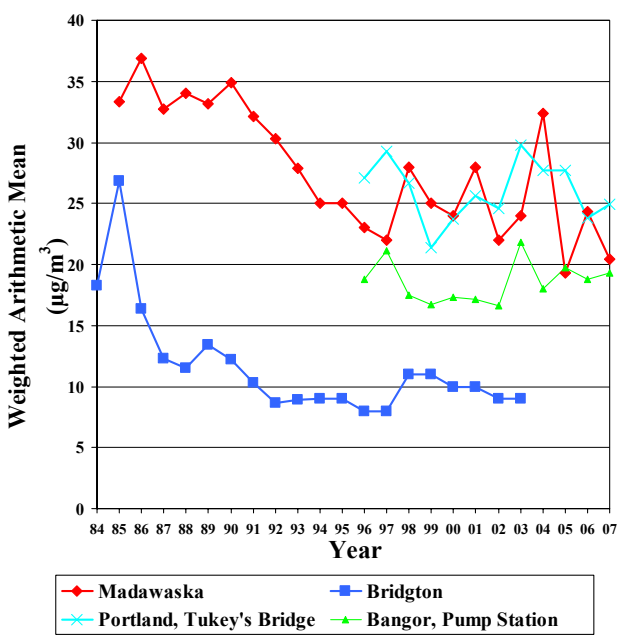
2007															
Maine															
Parameter: Ozone (8-Hour)															
All Values are in Units of Parts Per Million															
	P						Valid	Num		2nd	3rd	4th	Days		
	O	Rept.				%	Days	Required	Highest	Highest	Highest	Highest	Max ≥	Meth	
Site ID	C	Org.	City	County	Address	Obs	Meas.	Days	8-Hr Value	8-Hr Value	8-Hr Value	8-Hr Value	0.075*	Rpt	
23-001-0014	2	0635	Durham	Androscoggin	ROUTE 9	99	181	183	0.092	0.087	0.086	0.081	6	47	
23-003-1100	1	0031	Presque Isle	Aroostook	8 NORTHERN ROAD	97	178	183	0.076	0.073	0.067	0.057	1	47	
23-005-2003	1	0635	Cape Elizabeth	Cumberland	TWO LIGHTS STATE PARK	98	179	183	0.099	0.085	0.084	0.083	5	47	
23-009-0102	1	0635	Bar Harbor	Hancock	TOP OF CADILLAC MOUNTAIN	97	178	183	0.098	0.094	0.089	0.086	10	47	
23-009-0103	1	0635	Bar Harbor	Hancock	MCFARLAND HILL	98	180	183	0.092	0.085	0.083	0.083	9	47	
23-009-0301	1	0635	Castine	Hancock	CASTINE MUNICIPAL GARAGE	98	179	183	0.094	0.079	0.079	0.075	3	47	
23-011-2005	1	0635	Gardiner	Kennebec	PRAY STREET SCHOOL	98	180	183	0.088	0.081	0.080	0.079	6	47	
23-013-0004	2	0635	Port Clyde	Knox	MARSHALL POINT LIGHTHOUSE	98	179	183	0.096	0.093	0.085	0.082	6	47	
23-017-3001	1	0635	North Lovell	Oxford	ROUTE 5, NORTH LOVELL DOT	93	171	183	0.085	0.077	0.075	0.074	2	47	
23-019-1100	1	0018	Indian Island	Penobscot	27 WABANAKI WAY	49	89	183	0.080	0.080	0.071	0.068	2	47	
23-019-4008	1	0635	Holden	Penobscot	SUMMIT OF RIDER BLUFF	99	182	183	0.079	0.078	0.075	0.074	2	47	
23-023-0004	1	0635	Georgetown	Sagadahoc	REID STATE PARK	69	127	183	0.097	0.084	0.082	0.079	5	47	
23-029-0019	1	0635	Jonesport	Washington	JONESPORT - PUBLIC LANDING	100	183	183	0.085	0.081	0.078	0.076	4	47	
23-029-0032	1	0017	Perry	Washington	184 COUNTY ROAD	95	174	183	0.062	0.058	0.057	0.056	0	47	
23-031-0038	1	0635	Hollis	York	PLAINS ROAD	99	182	183	0.082	0.082	0.081	0.081	5	47	
23-031-2002	1	0635	Kennebunkport	York	OCEAN AVE/PARSONS WAY	85	155	183	0.099	0.091	0.087	0.078	6	47	
23-031-3002	1	0635	Kittery	York	FRISBEE SCHOOL, GOODSOE RI	100	183	183	0.080	0.077	0.077	0.077	4	47	
*Relative to the 2008 Standard															

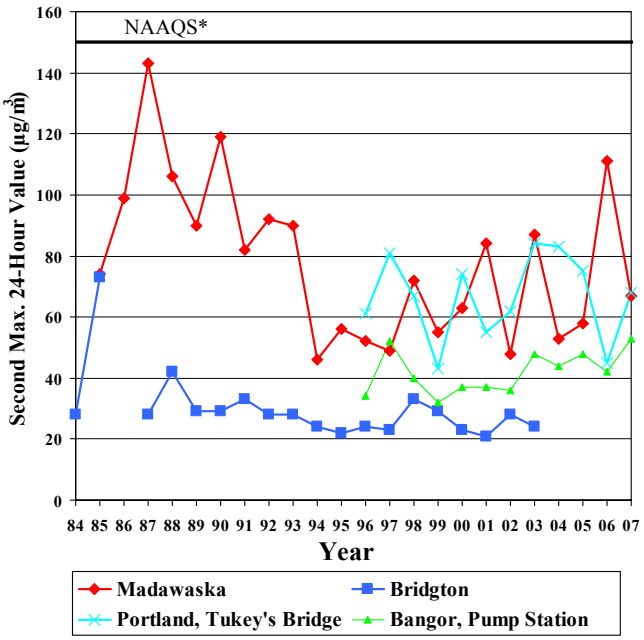
During 2007, only one of Maine's seventeen ozone (O_3) monitoring sites recorded a fourth highest 8-hr average ozone concentration above the level of the 8-hr NAAQS. The Bar Harbor - Cadillac Mountain site recorded a value of 0.086 ppm. The Cape Elizabeth - Two Lights State Park and the Kennebunkport - Ocean Ave. / Parsons Way sites recorded the highest 8-hour ozone concentration at 0.099 ppm. The Bar Harbor - Cadillac Mountain site recorded a value of 0.098 ppm. O_3 levels in 2007 were similar to those in 2006.

Maine Sites 2007 - Particulate Matter < 10 Microns



Maine Particulate Matter < 10 Microns (PM10) Data



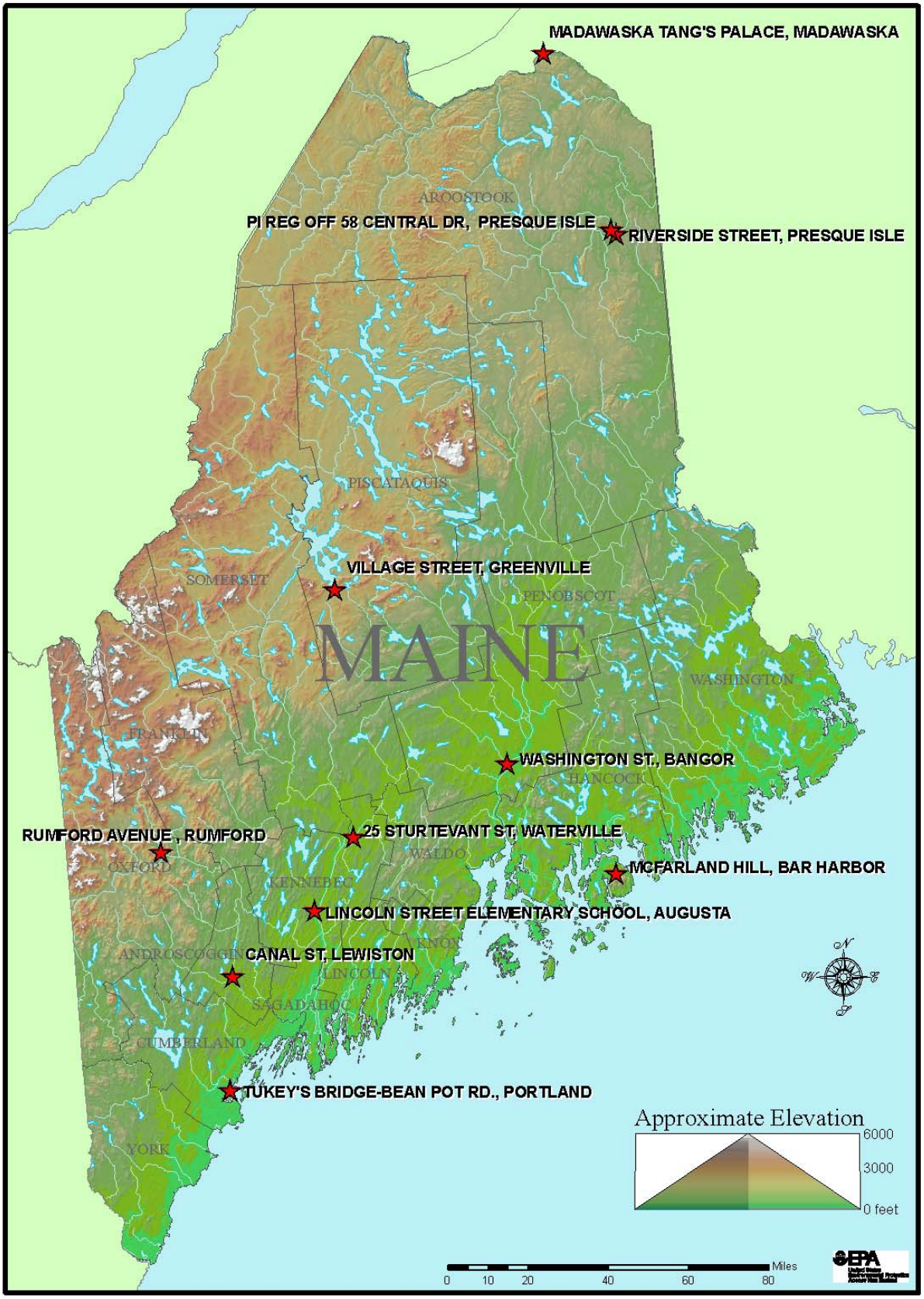


*NAAQS for Particulate Matter less than 10 Microns:
24-hour 150 µg/m^3

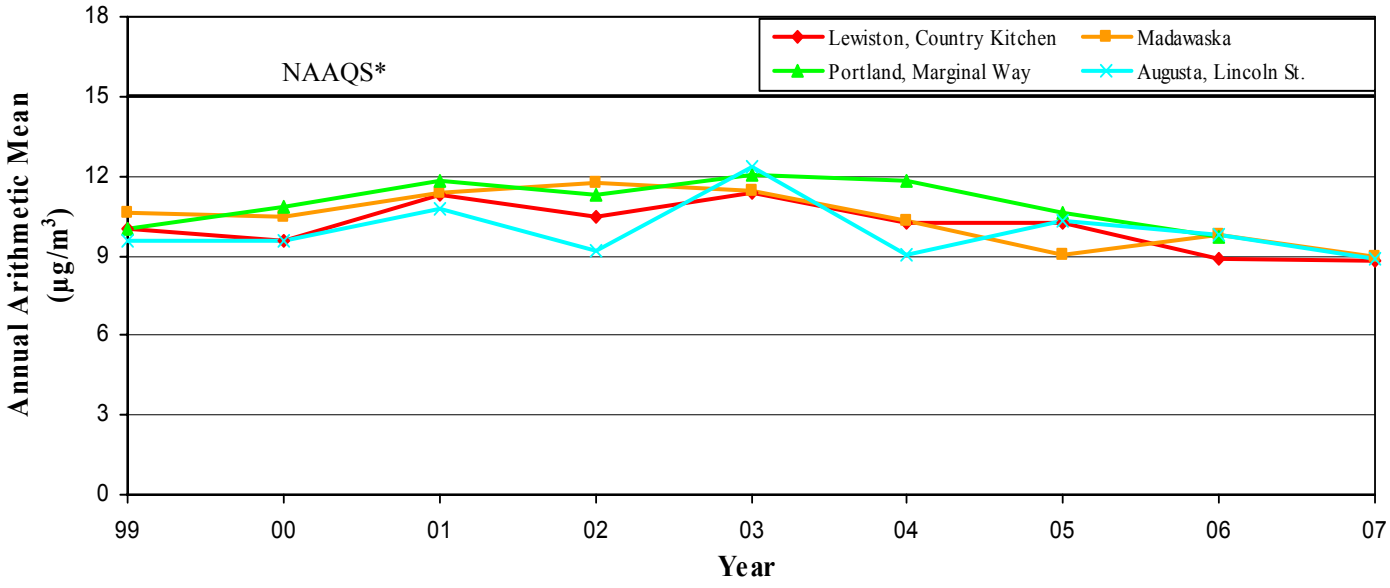
2007																			
Maine																			
Particulate Matter < 10 Microns																			
ug/m3																			
												2nd	3rd	4th	Days	Est. D	Wtd.		
		Rep.						#	Valid	Highest	Highest	Highes	Highes	Max	Max	Arith.		Meth
SITE ID	PO	Org	City	County	Address	# Obs	# Req.	Days	% Obs	Value	Value	Value	Value	>150	>150	Mean		Used
23-001-0011	2	0635	Lewiston	Androscoggin	COUNTRY KITCHEN LOT, CANAL ST	58	60	58	97	37	34	34	33	0	0	16.2		126
23-003-0013	3	0635	Madawaska	Aroostook	TANG'S PALACE	128	121	70	58	75	67	64	46	0	0	20.4	*	127
23-003-1008	3	0635	Presque Isle	Aroostook	PI REG OFF 58 CENTRAL DRIVE	43	45	43	96	32	30	30	25	0	0	12.6	*	127
23-003-1011	2	0635	Presque Isle	Aroostook	RIVERSIDE STREET	8694	365	361	99	106	86	70	68	0	0	16.3		79
23-003-1019	1	0635	Van Buren	Aroostook	16 MAIN STREET	3	0	0		24	19	6	0	0	0	16.3	*	127
23-005-0015	2	0635	Portland	Cumberland	TUKEY'S BRIDGE-BEAN POT RD.	57	60	57	95	82	68	54	54	0	0	24.9		126
23-005-0015	3	0635	Portland	Cumberland	TUKEY'S BRIDGE-BEAN POT RD.	25	60	25	42	70	57	46	38	0	0	26.9	*	126
23-011-0016	2	0635	Augusta	Kennebec	LINCOLN STREET ELEMENTARY SC	57	60	57	95	45	37	35	33	0	0	15.7		126
23-019-0002	3	0635	Bangor	Penobscot	PUMP STATION-WASHINGTON ST.	52	60	51	85	56	53	50	48	0	0	19.3	*	126
*Indicates that the mean does not satisfy summary criteria																		

None of Maine's particulate matter sites which measured particles of 10 microns or less (PM_{10}) reported any exceedances of the 24-hour NAAQS during 2007. The highest 24-hour PM_{10} concentration was recorded at the Presque Isle - Riverside St. monitoring site at 106 ug/m^3. The Portland - Tukey's Bridge site recorded the highest annual weighted arithmetic mean PM_{10} concentration at 24.9 µg/m^3.

Maine Sites 2007 - Particulate Matter < 2.5 Microns



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

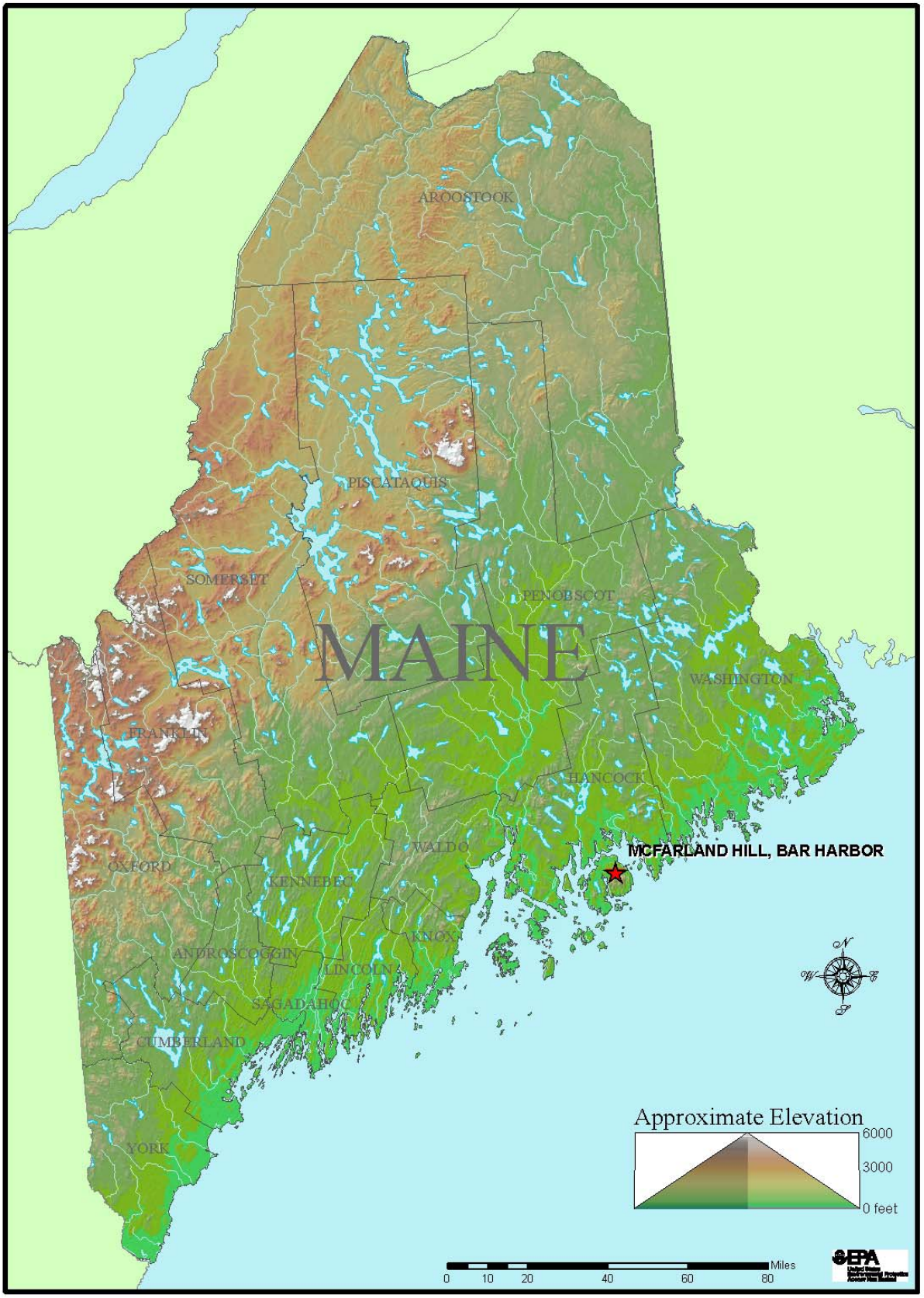


*NAAQS for Particulate Matter less than 2.5 Microns:
Annual Arithmetic Mean - 15.0 µg/m^3

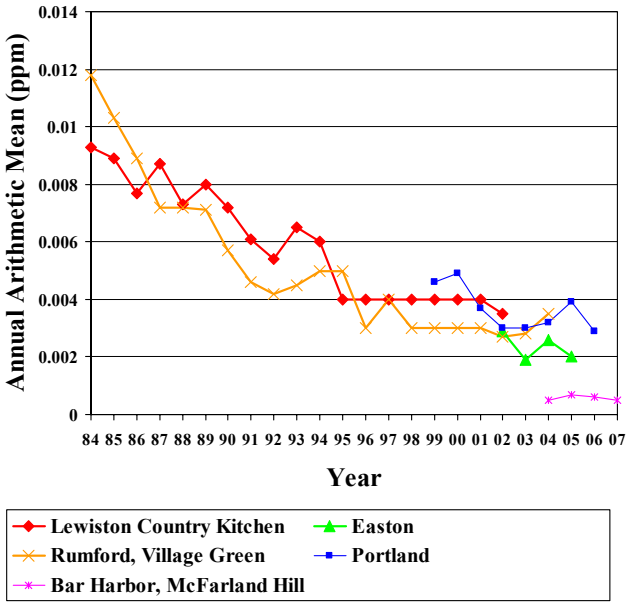
2007														
Maine														
Parameter: PM 2.5														
All Values are in UG/CU Meters Local Conditions														
	P								2nd	3rd	4th	98th	Wtd.	
	O	Rept.					#	Highest	Highest	Highest	Highest	Percentile	Arith.	
Site ID	C	Org.	City	County	Address	Method	Obs	Value	Value	Value	Value	Value	Mean	
23-001-0011	1	0635	Lewiston	Androscoggin	COUNTRY KITCHEN LOT, CANAL ST.	118	119	27.0	25.5	21.0	20.4	21.0	8.81	
23-003-0013	1	0635	Madawaska	Aroostook	TANG'S PALACE	118	116	34.8	22.2	20.8	20.2	20.8	8.84	
23-003-1008	1	0635	Presque Isle	Aroostook	PI REG OFF 58 CENTRAL DR.	117	22	9.8	8.0	7.7	7.3	9.8	4.58	*
23-003-1011	1	0635	Presque Isle	Aroostook	RIVERSIDE STREET	118	115	21.4	19.9	17.5	16.2	17.5	7.47	
23-005-0015	1	0635	Portland	Cumberland	TUKEY'S BRIDGE-BEAN POT ROAD	118	58	21.6	20.9	20.0	18.8	20.9	10.15	
23-009-0103	1	0635	Bar Harbor	Hancock	MCFARLAND HILL	118	82	24.9	21.6	19.8	16.3	19.8	5.41	
23-011-0016	1	0635	Augusta	Kennebec	LINCOLN ST. ELEMENTARY SCHOOL	117	59	21.3	18.3	18.1	18.1	18.3	8.85	
23-011-0016	2	0635	Augusta	Kennebec	LINCOLN ST. ELEMENTARY SCHOOL	117	28	21.3	18.7	18.6	16.2	21.3	9.30	
23-017-2011	1	0635	Rumford	Oxford	RUMFORD AVENUE	117	55	26.8	21.9	19.4	17.0	21.9	9.06	
23-019-0002	1	0635	Bangor	Penobscot	PUMP STATION-WASHINGTON ST.	118	116	27.1	20.7	20.4	20.0	20.4	8.69	
23-021-0004	1	0635	Greenville	Piscataquis	VILLAGE STREET	118	136	16.8	16.7	14.9	13.0	14.9	5.76	
*Indicates that the mean does not meet summary criteria														

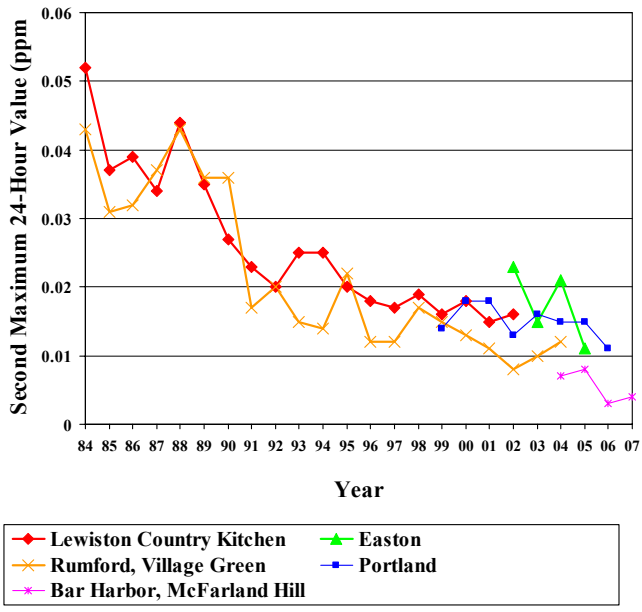
Maine began monitoring for fine particulate matter ($PM_{2.5}$) in 1999. During 2007, there were ten $PM_{2.5}$ monitoring sites. Data from the sites indicate that none of the sites have recorded $PM_{2.5}$ concentrations that would result in an exceedance or violation of either the 24-hour or the annual NAAQS for $PM_{2.5}$. The Portland – Tukey's Bridge site recorded the highest weighted arithmetic mean at 10.15 µg/m^3. The Madawaska – Tang's Palace site recorded the highest 24-hour value at 34.8 µg/m^3.

Maine Sites 2007 - Sulfur Dioxide



Maine Sulfur Dioxide Data



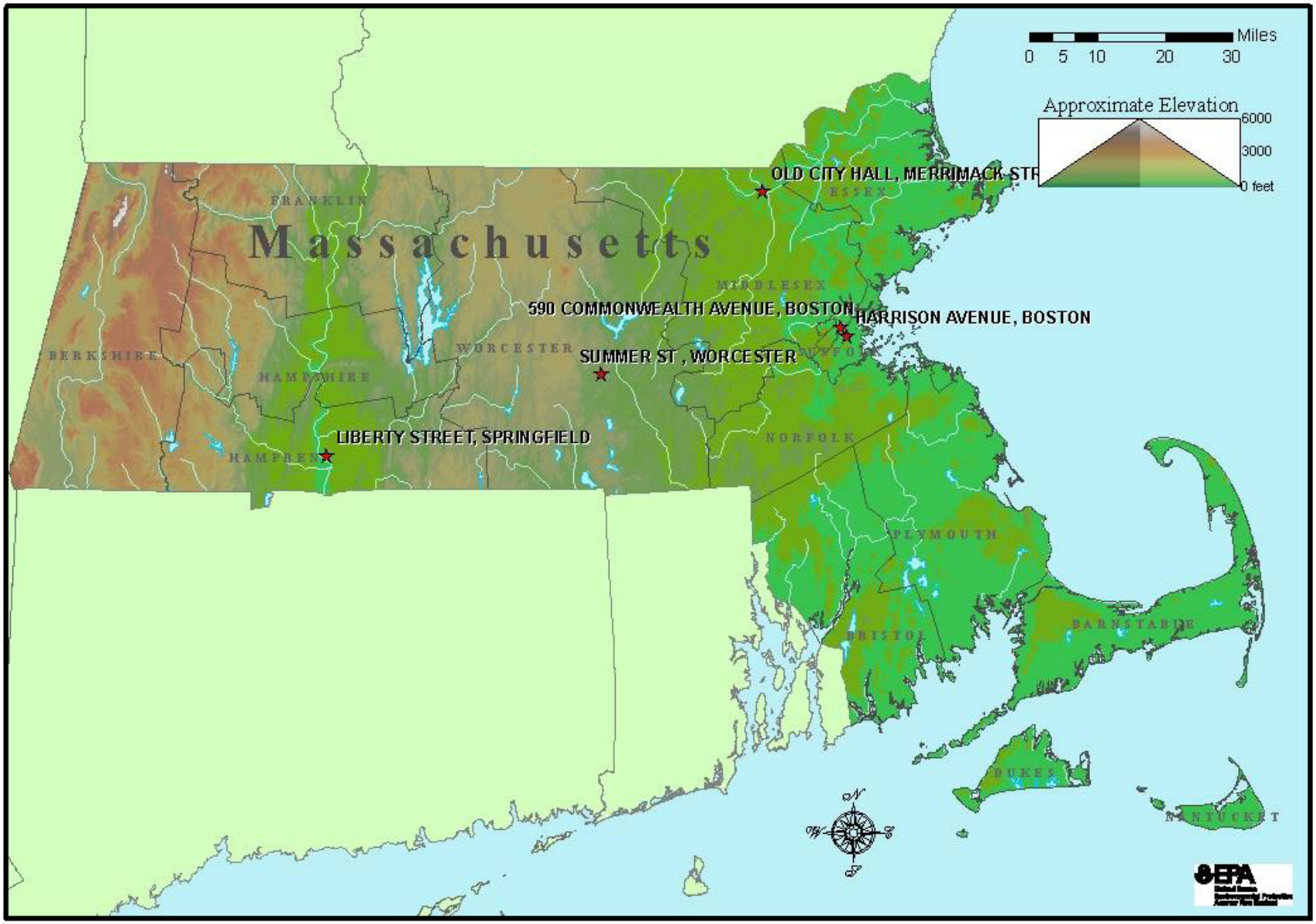


NAAQS for Sulfur Dioxide:
Annual Arithmetic Mean - 0.03 ppm
3-hour 0.5 ppm
24-hour 0.14 ppm

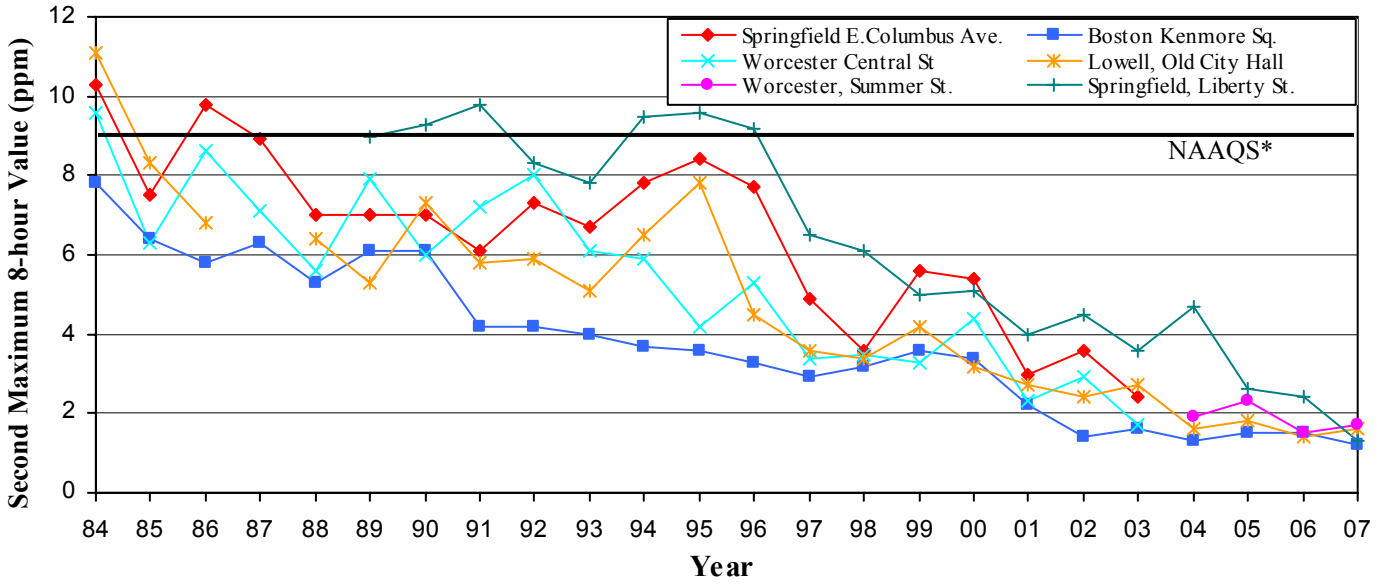
2007																
Maine																
Parameter: Sulfur Dioxide																
All Values are in Units of Parts Per Million																
								24-	24-		3-hour	3-hour		1-hour	1-hour		
	P							hour	hour			2nd			2nd		
	O	Org				#		2nd	Obs	Highest	Highest	Obs	Highest	Highest	Arith.	Meth
Site ID	C	Type	City	County	Address	Obs	Highest	Highest	> 0.14	Value	Value	> 0.5	Value	Value	Mean	Used
23-009-0103	1	635	Bar Harbor	Hancock	MCFARLAND HILL	8617	0.006	0.004	0	0.006	0.006	0	0.014	0.007	0.0005	60

In 2007, there were no exceedances or violations of the sulfur dioxide (SO_2) NAAQS at the only SO_2 monitoring site. The Bar Harbor - McFarland Hill site 3-hour, 24-hour, and arithmetic mean SO_2 concentrations were 0.006 ppm, 0.006 ppm, and 0.0005 ppm respectively, all well below the standards. The trend for SO_2 concentrations is well below the NAAQS and shows small year-to-year changes.

Massachusetts Sites - 2007 - Carbon Monoxide



Massachusetts Carbon Monoxide Data

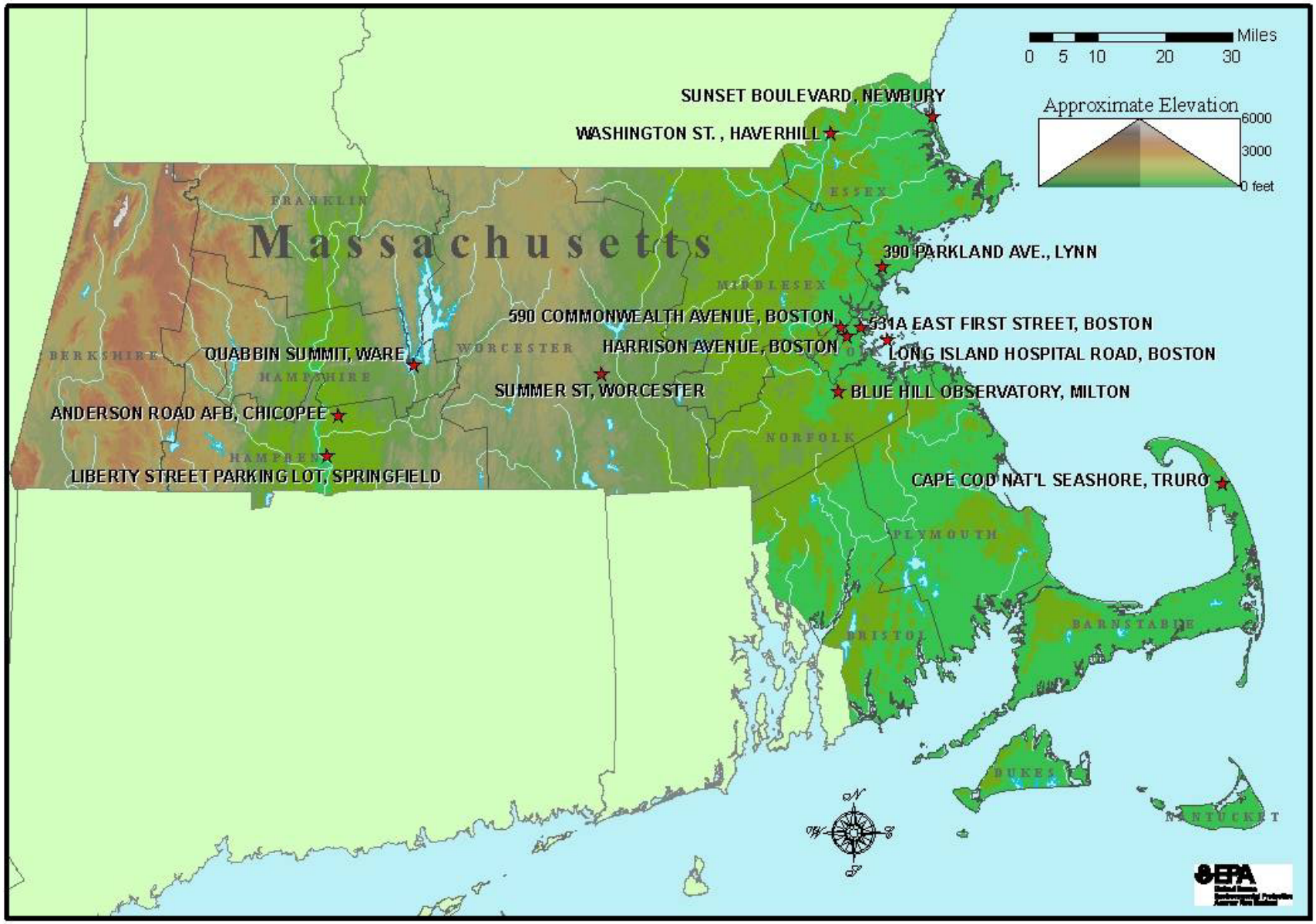


*NAAQS for Carbon Monoxide:
8-hour – 9 ppm, not to be exceeded more than once per year
1-hour – 35 ppm, not to be exceeded more than once per year

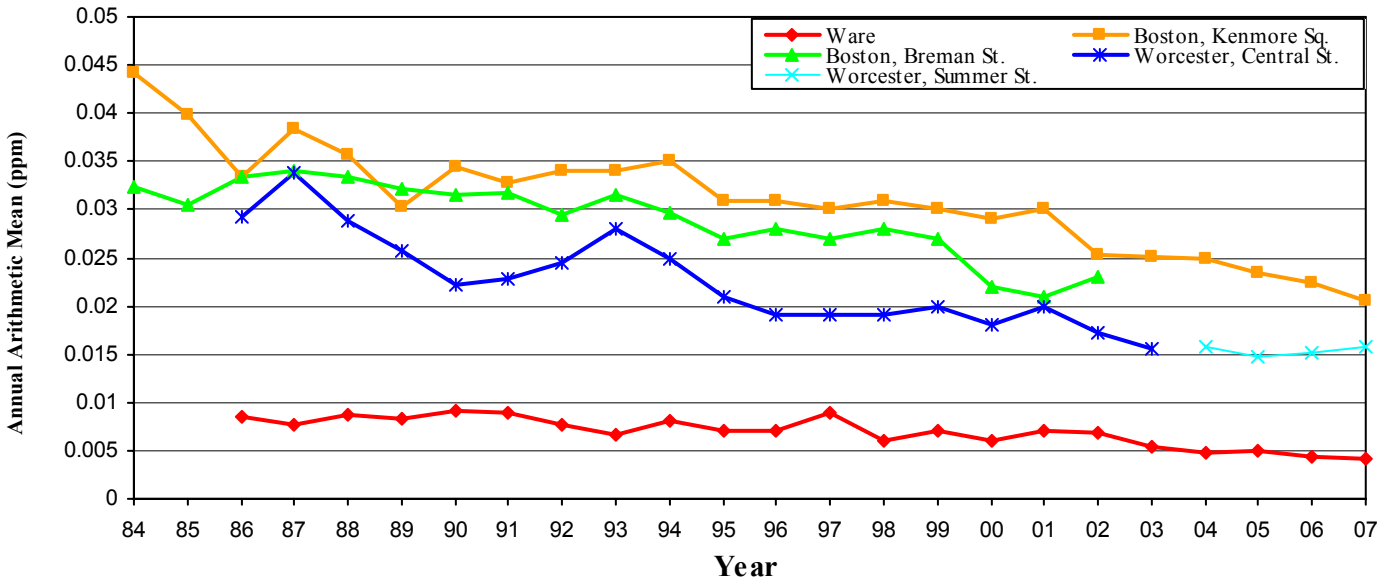
2007 Massachusetts Carbon Monoxide													
All Values are in Units of Parts Per Million													
							1-hour	1-hour		8-hour	8-hour		
	P							2nd			2nd		
	O	Org				#	Highest	Highest		Highest	Highest		Methods
Site ID	C	Type	City	County	Address	Obs	Value	Value	# > 35	Value	Value	# > 9	Used
25-013-0016	1	660	Springfield	Hampden	LIBERTY P-LOT	8195	2.2	2.1	0	1.8	1.3	0	93
25-017-0007	1	660	Lowell	Middlesex	MERRIMACK ST	8132	2.9	2.5	0	2.1	1.6	0	93
25-025-0002	1	660	Boston	Suffolk	KENMORE SQ	8166	1.6	1.6	0	1.3	1.2	0	93
25-025-0042	1	660	Boston	Suffolk	HARRISON AV	8103	2.0	2.0	0	1.3	1.2	0	93
25-027-0023	1	660	Worcester	Worcester	SUMMER ST	8199	2.5	2.4	0	1.8	1.7	0	67

Massachusetts operated five carbon monoxide (CO) ambient monitoring sites in 2007. The five sites are located in Boston (one at Kenmore Square and one at Harrison Ave - Roxbury), Springfield (Liberty Street), Worcester (Summer Street), and Lowell (Old City Hall). No exceedances of the 8-hour National Ambient Air Quality Standards (NAAQS) for CO have been recorded at any site in Massachusetts since 1996. The twenty-three year trend graph of second maximum 8-hour CO concentrations in Massachusetts generally shows an average decrease of more than 6 ppm over the twenty-four year period at each of the five sites included in the analysis. The highest 8-hour value was recorded at the Lowell site and was 2.1 ppm. The 2nd highest 8-hour value was recorded at the Worcester Summer St. site and was 1.7 ppm.

Massachusetts Sites - 2007 - Nitrogen Dioxide



Massachusetts Nitrogen Dioxide Data

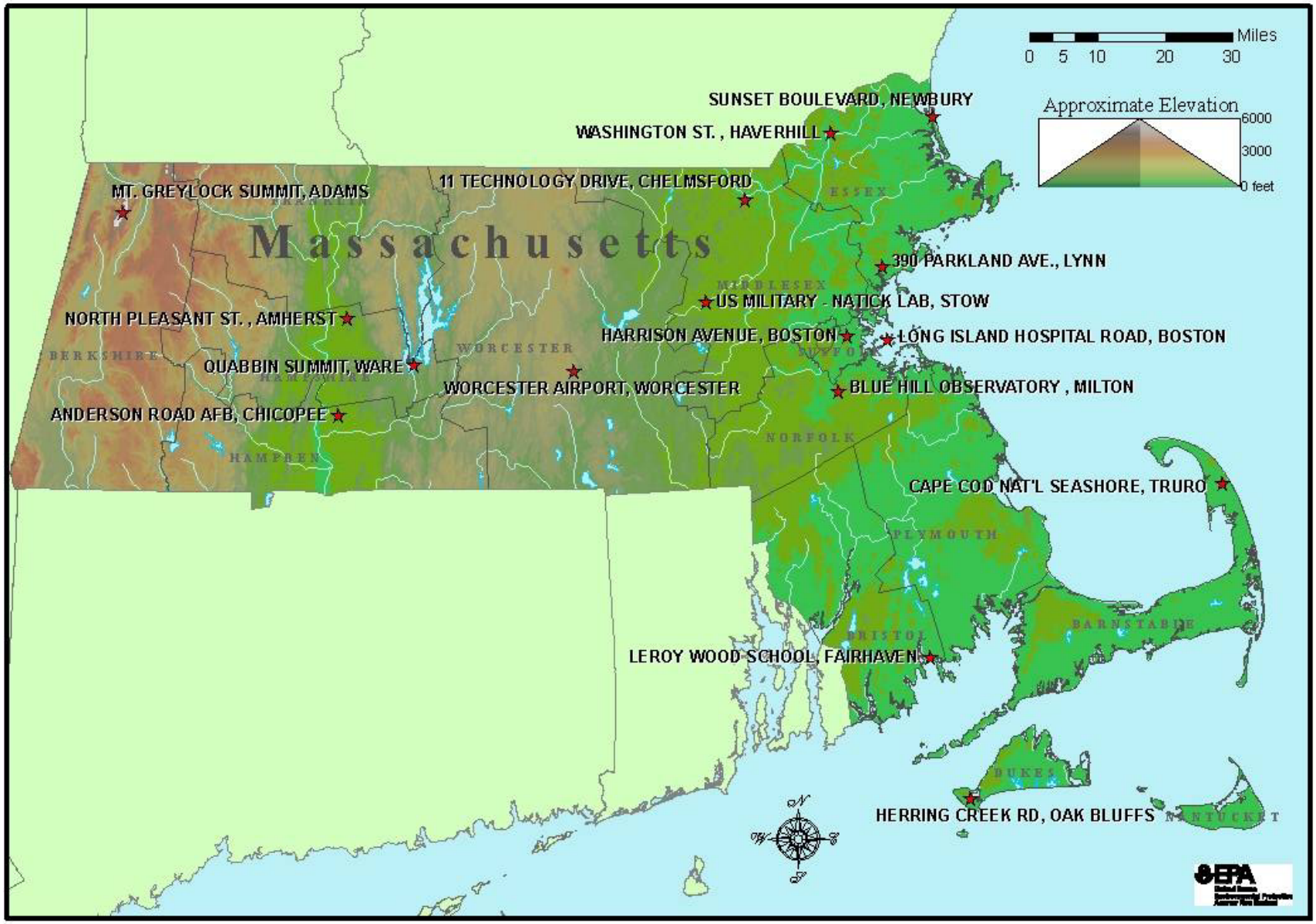


NAAQS for Nitrogen Dioxide:
Annual Arithmetic Mean 0.053 ppm (100 µg/m^3)

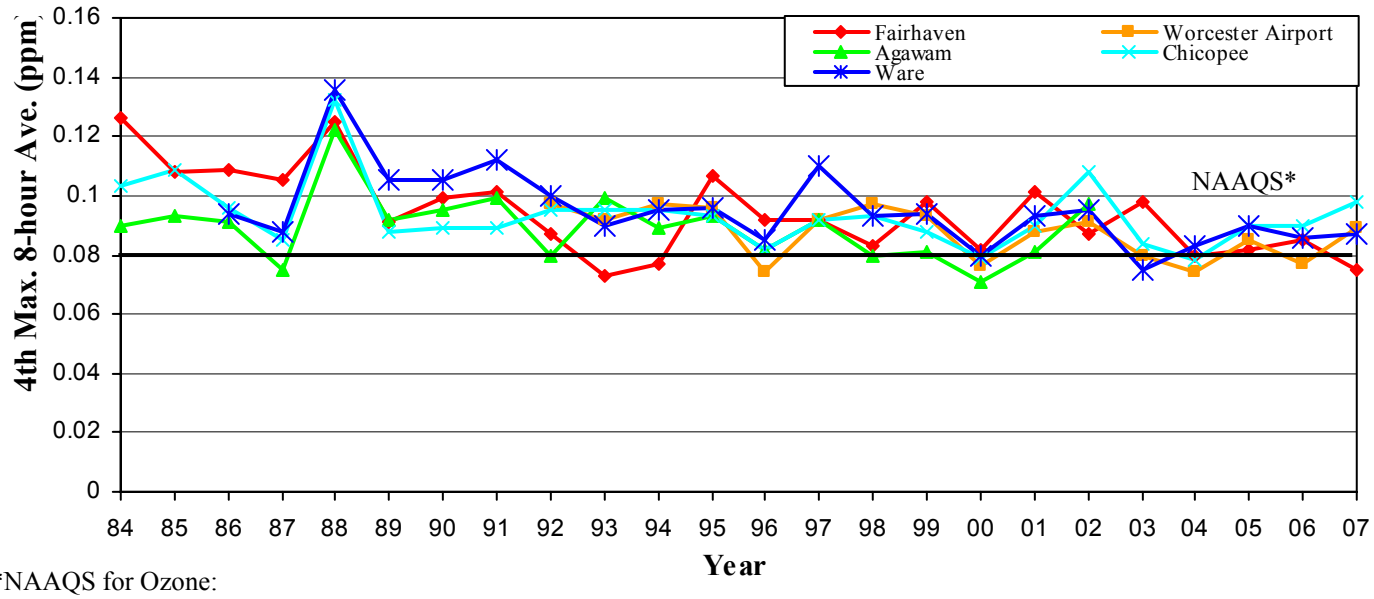
2007 NO2 Massachusetts											
All Values are in Units of Parts Per Million											
	P								2nd	Annual	
	O	Rept.					#	Highest	Highest	Arith.	
Site ID	C	Org.	City	County	Address	Method	Obs	Value	Value	Mean	
25-009-2006	1	660	Lynn	Essex	390 PARKLAND	99	8031	0.052	0.051	0.0085	
25-009-4004	1	660	Newbury	Essex	SUNSET BLVD	99	4169	0.020	0.018	0.0034	
25-009-5005	1	660	Haverhill	Essex	CONSENTINO SCHOOL	99	8303	0.044	0.044	0.0085	
25-013-0008	1	660	Chicopee	Hampden	ANDERSON RD AFB	99	8273	0.050	0.048	0.0091	
25-013-0016	1	660	Springfield	Hampden	LIBERTY P-LOT	99	8363	0.078	0.058	0.0152	
25-015-4002	1	660	Ware	Hampshire	QUABBIN SUMMIT	99	8271	0.036	0.034	0.0042	
25-021-3003	1	660	Milton	Norfolk	BLUE HILL OBS	99	4200	0.050	0.040	0.0046	
25-025-0002	1	660	Boston	Suffolk	KENMORE SQ	99	8214	0.067	0.067	0.0206	
25-025-0040	1	345	Boston	Suffolk	531A EAST FIRST ST	74	2259	0.075	0.064	0.0197	
25-025-0041	1	660	Boston	Suffolk	LONG ISLAND	99	1256	0.041	0.039	0.0065	*
25-025-0042	1	660	Boston	Suffolk	HARRISON AV	74	8423	0.073	0.073	0.0196	
25-027-0023	1	660	Worcester	Worcester	SUMMER ST	99	8330	0.056	0.056	0.0156	
*Indicates that the mean does not meet summary criteria											

Nitrogen dioxide (NO_2) measurements were made at 12 monitoring sites in Massachusetts during 2007. The highest 1-hour concentrations of NO_2 were recorded at monitors in Boston, Springfield and Worcester. The lowest 1-hour concentration was measured at the Newbury site. The highest annual mean NO_2 concentration was recorded at Kenmore Square (0.0206 ppm) and the lowest concentration was at Newbury (0.0034 ppm). A generally downward trend in NO_2 concentration can be detected in the twenty-four year trend data.

Massachusetts Sites - 2007 - Ozone



Massachusetts Ozone 8-Hour Data

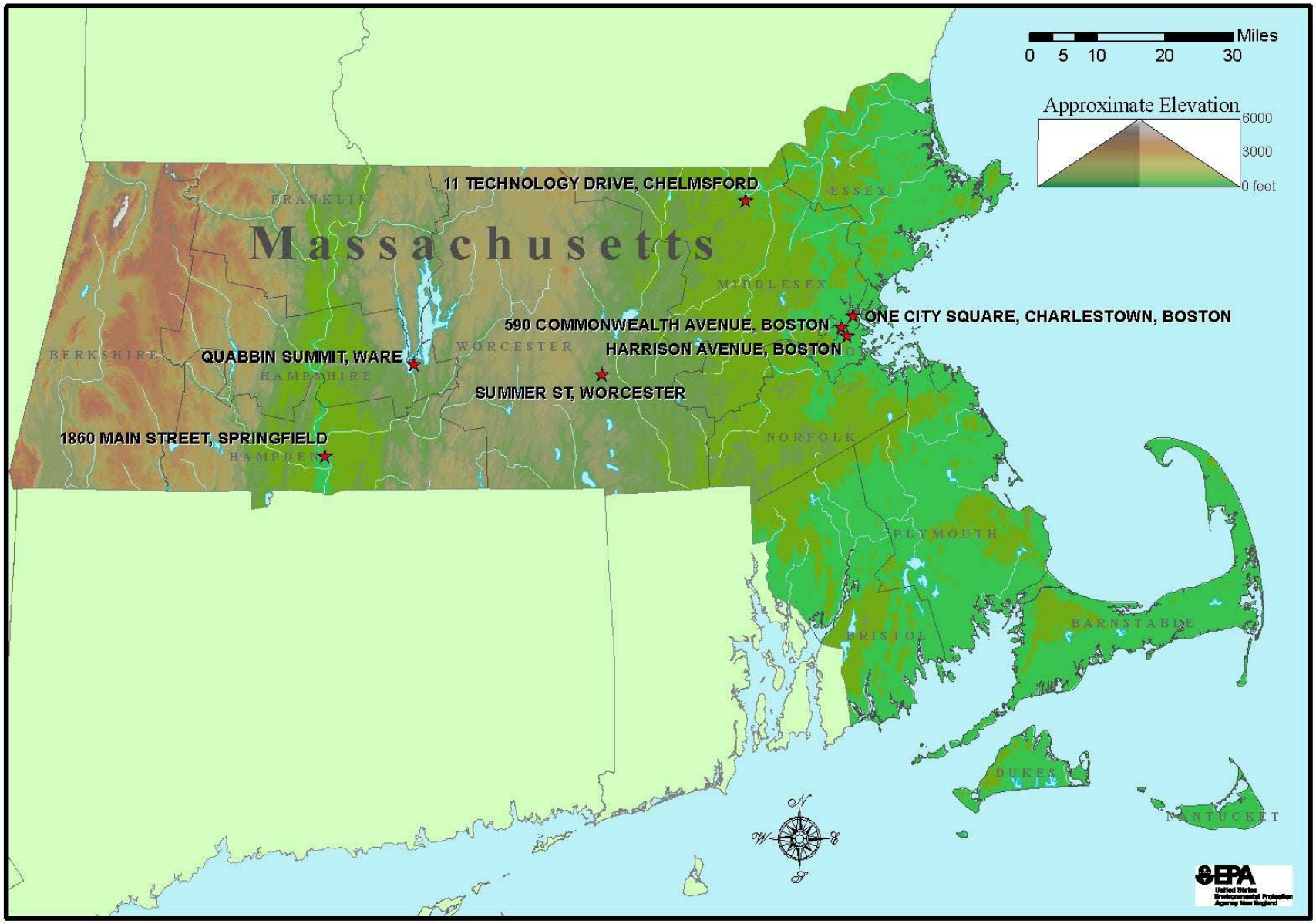


*NAAQS for Ozone:
8-Hour – 0.08 ppm (1997 std)
8-hour – 0.075 ppm (2008 std)

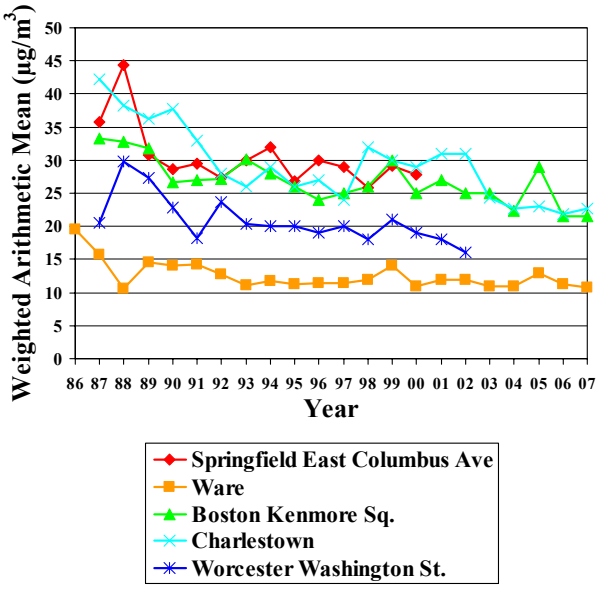
2007														
Massachusetts														
Parameter: Ozone (8-Hour)														
All Values are in Units of Parts Per Million														
	P						Valid	Num		2nd	3rd	4th	Days	
	O	Rept.				%	Days	Require	Highest	Highest	Highest	Highest	Max ≥	Methods
Site ID	C	Org.	City	County	Address	Obs	Meas.	Days	8-Hr Value	8-Hr Value	8-Hr Value	8-Hr Value	0.075*	Reported
25-001-0002	1	0660	Truro	Barnstable	FOX BOTTOM AREA	94	172	183	0.093	0.085	0.082	0.082	13	87
25-003-4002	1	0660	Adams	Berkshire	MT GREYLOCK SUMMIT	79	144	183	0.093	0.086	0.083	0.080	11	87
25-005-1002	1	0660	Fairhaven	Bristol	LEROY WOOD SCH	98	179	183	0.086	0.083	0.082	0.075	3	87
25-007-0001	1	0030	Oak Bluffs	Dukes	HERRING CREEK RD, OFF STATE	93	170	183	0.094	0.091	0.088	0.077	6	87
25-009-2006	1	0660	Lynn	Essex	390 PARKLAND	98	179	183	0.103	0.102	0.093	0.088	13	87
25-009-4004	1	0660	Newbury	Essex	SUNSET BLVD	97	178	183	0.097	0.094	0.086	0.086	9	87
25-009-5005	1	0660	Haverhill	Essex	CONSENTINO SCHOOL	99	181	183	0.096	0.095	0.092	0.089	11	87
25-013-0008	1	0660	Chicopee	Hampden	ANDERSON RD AFB	99	208	210	0.112	0.109	0.102	0.098	19	87
25-015-0103	1	0660	North Amherst	Hampshire	N PLEASANT ST	98	180	183	0.094	0.091	0.087	0.080	9	87
25-015-4002	1	0660	Ware	Hampshire	QUABBIN SUMMIT	97	177	183	0.109	0.102	0.093	0.087	15	87
25-017-0009	1	1096	Chelmsford	Middlesex	11 TECHNOLOGY DR. EPA R1 NE	96	175	183	0.095	0.091	0.089	0.087	9	47
25-017-1102	1	0660	Stow	Middlesex	US MILITARY RES	100	183	183	0.091	0.091	0.086	0.086	10	87
25-021-3003	1	0660	Milton	Norfolk	BLUE HILL OBS	99	182	183	0.095	0.095	0.094	0.088	14	87
25-025-0041	1	0660	Boston	Suffolk	LONG ISLAND	30	54	183	0.082	0.080	0.076	0.072	3	87
25-025-0042	1	0660	Boston	Suffolk	HARRISON AV	99	181	183	0.081	0.080	0.072	0.071	2	87
25-027-0015	1	0660	Worcester	Worcester	WORC AIRPORT	99	182	183	0.096	0.095	0.090	0.089	20	87
*Relative to the 2008 Standard														

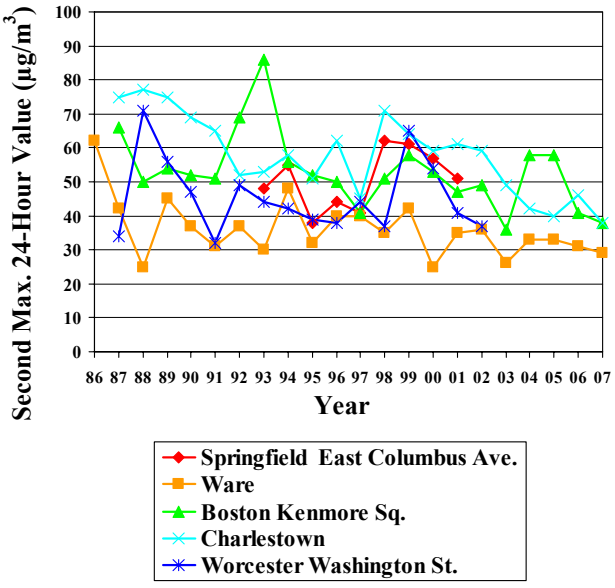
In 2007, nine of the sixteen ozone monitoring sites recorded a fourth highest 8-hour average ozone concentration at or above the level of the 8-hour NAAQS. Generally, years that have many days with temperatures above 90° F, as in 1988, 1993 and 2002, have higher ozone levels while years that are cool and/or wet as in 2003, 2004 and 2005 tend to have lower ozone levels.

Massachusetts Sites - 2007 - Particulate Matter < 10 Microns



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



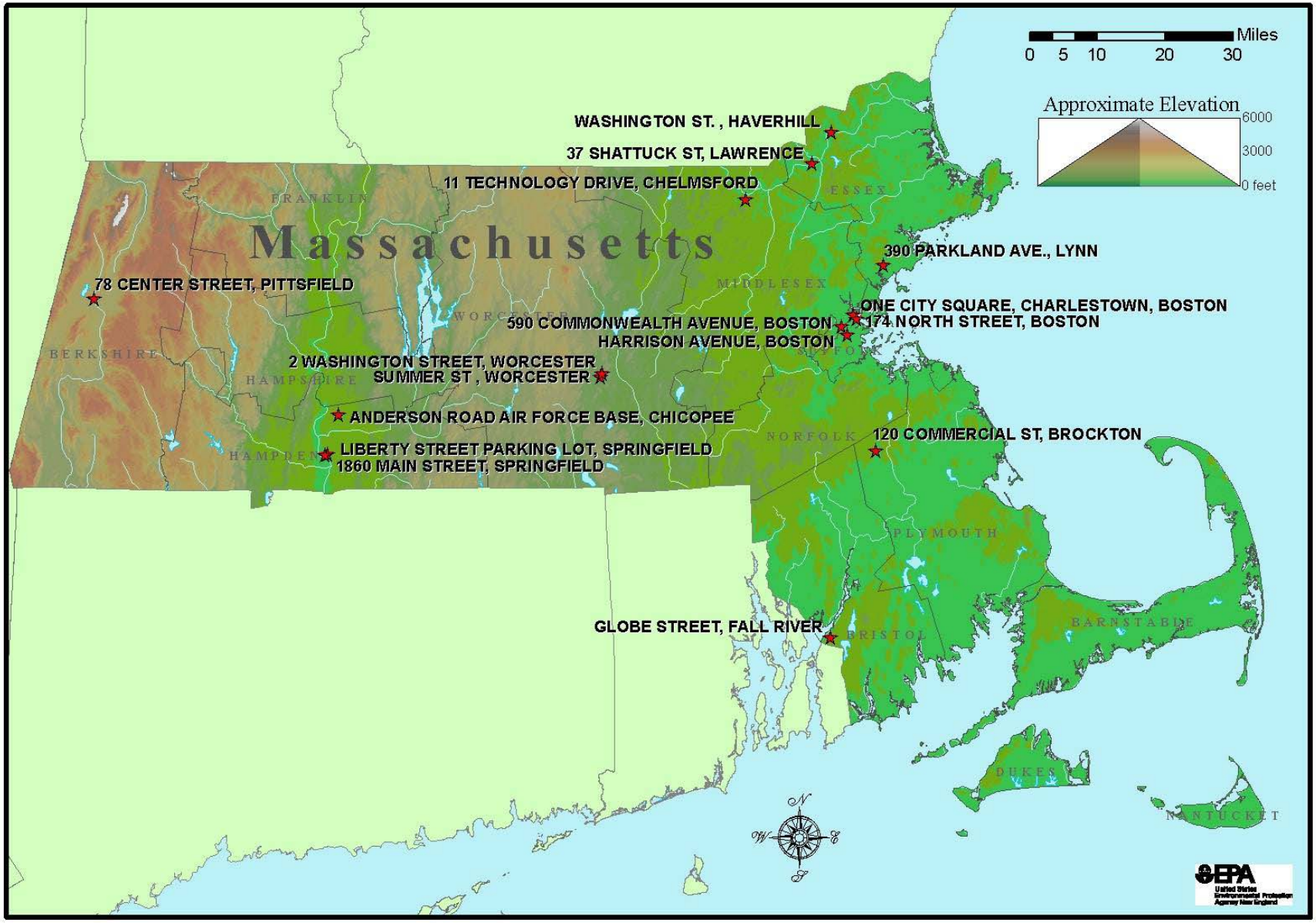


NAAQS for Particulate Matter less than 10 Microns:
24-hour 150 µg/m^3

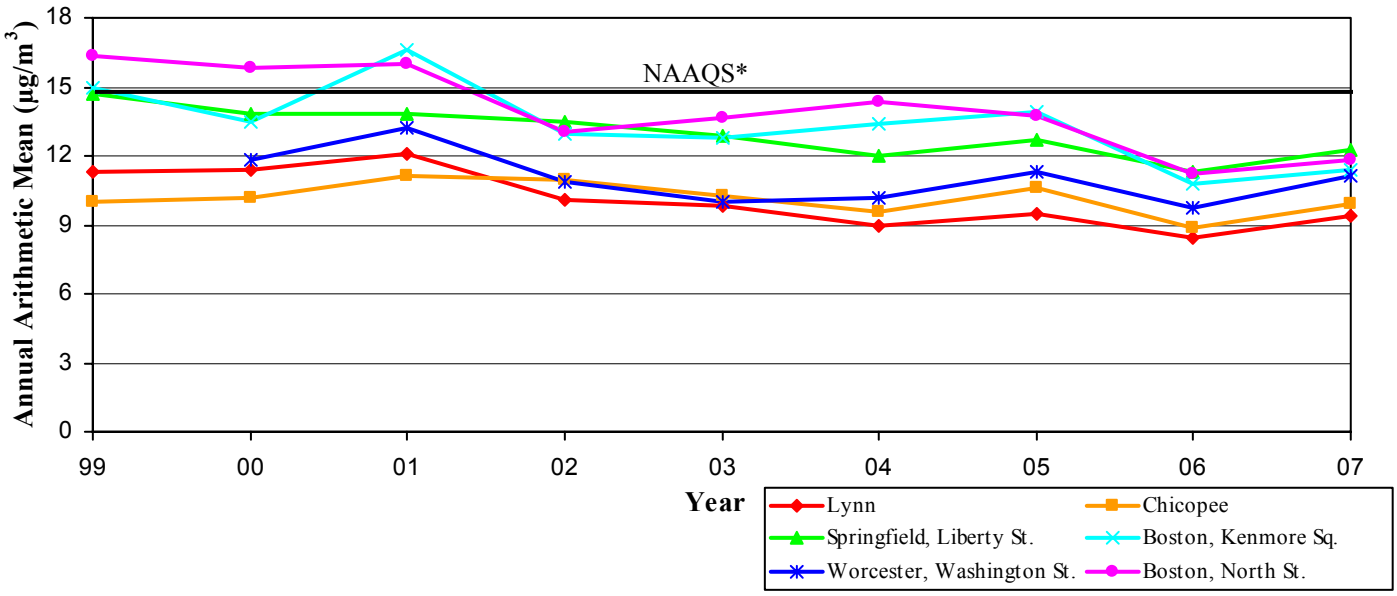
2007																		
Massachusetts																		
Particulate Matter < 10 Microns																		
ug/m3																		
											2nd	3rd	4th	Days	Est. D	Wtd.		
		Rep.						Number	Valid	Highest	Highest	Highes	Highes	Max	Max	Arith.		Metho
SITE ID	PO	Org	City	County	Address	# Obs	# Req.	Days	% Obs	Value	Value	Value	Value	>150	>150	Mean		Used
25-013-2009	4	0660	Springfield	Hampden	1860 MAIN ST	59	60	59	98	36	35	34	33	0	0	18.4		0
25-015-4002	4	0660	Ware	Hampshire	QUABBIN SUMMIT	51	60	51	85	31	29	27	24	0	0	10.7	*	0
25-017-0009	1	1096	Chelmsford	Middlesex	11 TECHNOLOGY DR. EPA NERL	56	60	56	93	32	31	30	27	0	0	13.8		125
25-025-0002	4	0660	Boston	Suffolk	KENMORE SQ	56	60	56	93	40	38	37	37	0	0	21.6		0
25-025-0027	4	0660	Boston	Suffolk	ONE CITY SQ	46	60	46	77	54	38	37	37	0	0	22.7	*	0
25-025-0042	1	0660	Boston	Suffolk	HARRISON AV	58	60	58	97	40	24	23	22	0	0	14.2		63
25-025-0042	2	0660	Boston	Suffolk	HARRISON AV	56	60	56	93	40	24	23	23	0	0	13.7		63
25-025-0042	4	0660	Boston	Suffolk	HARRISON AV	60	60	60	100	44	35	29	28	0	0	16.7		0
25-025-0042	5	0660	Boston	Suffolk	HARRISON AV	55	60	55	92	42	33	29	28	0	0	16.8		0
25-027-0023	4	0660	Worcester	Worcester	SUMMER ST	57	60	57	95	57	53	52	36	0	0	20.6		0
*Indicates that the mean does not satisfy summary criteria																		

In 2007, Massachusetts maintained seven ambient monitoring sites measuring particulate matter less than 10 microns (PM_{10}). The highest 24-hour PM_{10} concentration was recorded at the Worcester Summer St. site (57 µg/m^3). The lowest 24-hour maximum concentration was measured at the Quabbin Summit site and was recorded as 31 µg/m^3. Over the past twenty-one years PM_{10} levels have shown significant year to year variability especially for the 24-hour sampling period. However, overall PM_{10} levels do not appear to trend up or down during the time period.

Massachusetts Sites - 2007 - Particulate Matter < 2.5 Microns



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

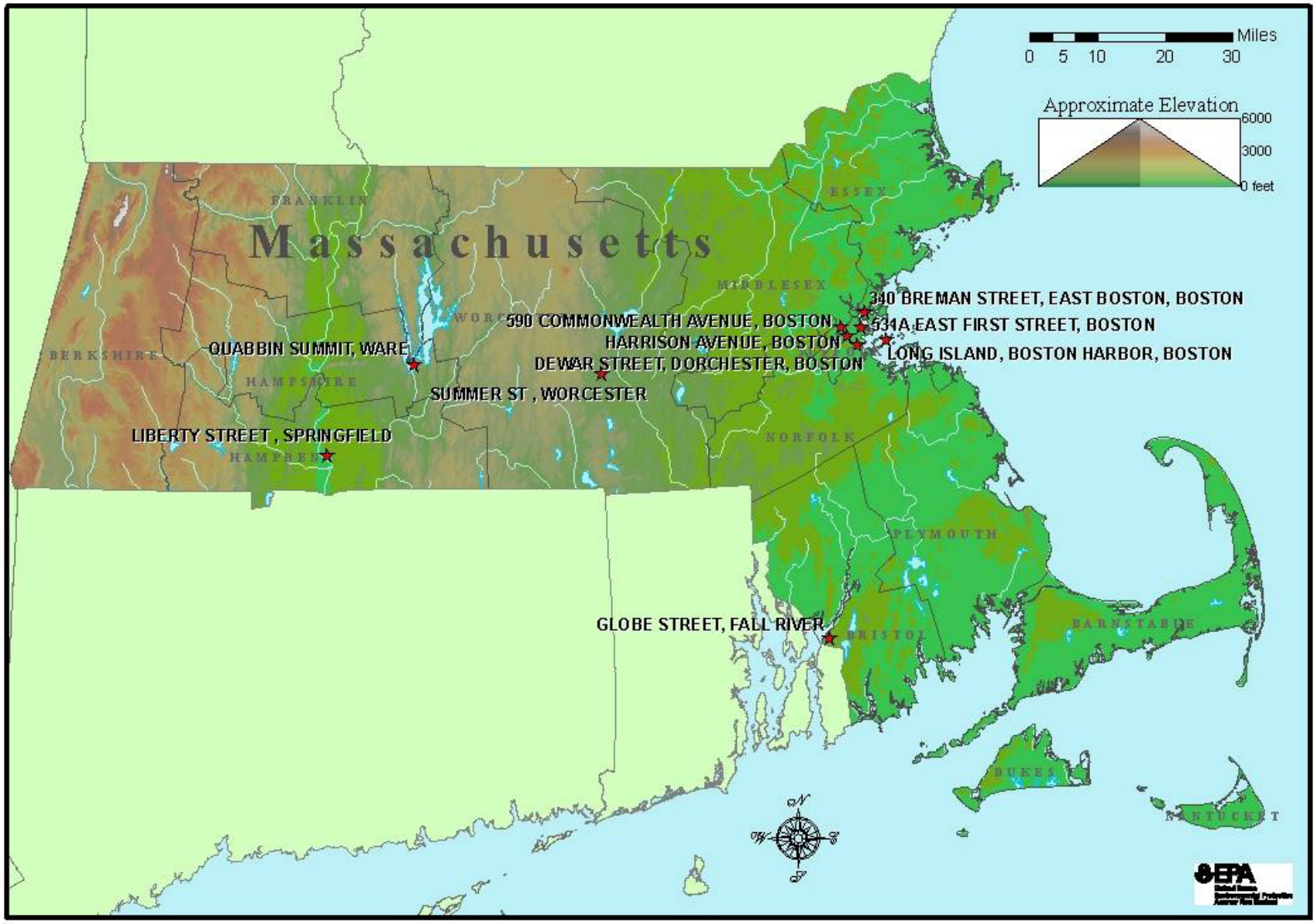


*NAAQS for Particulate Matter less than 2.5 Microns:
Annual Arithmetic Mean - 15.0 µg/m^3

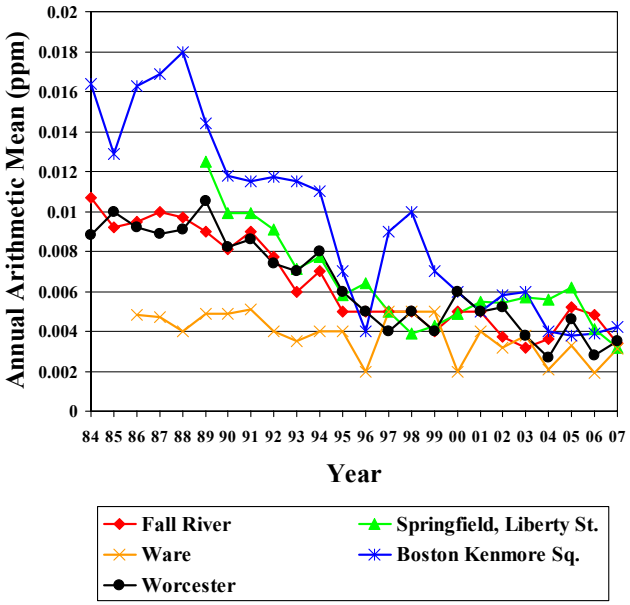
2007														
Massachusetts														
Parameter: PM 2.5														
All Values are in UG/CU Meters Local Conditions														
	P									2nd	3rd	4th	98th	Wtd.
	O	Rept.					#	Highest	Highest	Highest	Highest	Percentile	Arith.	
Site ID	C	Org.	City	County	Address	Method	Obs	Value	Value	Value	Value	Value	Mean	
25-003-5001	1	0660	Pittsfield	Berkshire	78 CENTER ST	145	129	41.4	30.2	28.9	28.0	28.9	10.14	
25-005-1004	1	0660	Fall River	Bristol	659 GLOBE ST	145	119	29.8	29.4	26.0	25.7	26.0	9.17	
25-009-2006	1	0660	Lynn	Essex	390 PARKLAND	145	117	32.0	30.4	28.2	27.8	28.2	9.36	
25-009-5005	1	0660	Haverhill	Essex	CONSENTINO SCHOOL	145	111	31.2	27.3	25.1	23.9	25.1	9.12	
25-009-6001	1	0660	Lawrence	Essex	SHATTUCK ST	145	115	32.2	27.9	26.6	24.4	26.6	9.45	
25-013-0008	1	0660	Chicopee	Hampden	ANDERSON RD AFB	145	121	36.1	29.9	28.8	26.7	28.8	9.88	
25-013-0008	2	0660	Chicopee	Hampden	ANDERSON RD AFB	145	116	35.3	31.0	29.6	28.5	29.6	10.39	
25-013-0016	1	0660	Springfield	Hampden	LIBERTY P-LOT	145	114	38.1	31.1	30.0	29.5	30.0	12.22	
25-013-2009	1	0660	Springfield	Hampden	1860 MAIN ST	145	118	36.7	30.4	30.0	29.1	30.0	11.58	
25-017-0009	1	1096	Chelmsford	Middlesex	11 TECHNOLOGY DR. EPA R1 NERL	142	59	22.7	21.2	20.3	18.3	21.2	8.36	
25-017-0009	2	1096	Chelmsford	Middlesex	11 TECHNOLOGY DR. EPA R1 NERL	142	57	23.1	21.2	17.4	15.1	21.2	8.14	
25-023-0004	1	0660	Brockton	Plymouth	COMMERCIAL ST	145	119	36.3	29.2	28.1	26.5	28.1	9.57	
25-023-0004	2	0660	Brockton	Plymouth	COMMERCIAL ST	145	108	29.2	28.9	26.1	25.6	26.1	9.20	
25-025-0002	1	0660	Boston	Suffolk	KENMORE SQ	145	115	39.0	32.0	31.7	28.6	31.7	11.43	
25-025-0027	1	0660	Boston	Suffolk	ONE CITY SQ	145	112	38.0	33.0	31.8	30.5	31.8	11.65	
25-025-0042	1	0660	Boston	Suffolk	HARRISON AV	145	119	39.0	31.7	31.5	31.0	31.5	10.48	
25-025-0043	1	0660	Boston	Suffolk	174 NORTH ST	145	365	50.2	40.7	39.2	35.2	30.3	11.86	
25-025-0043	2	0660	Boston	Suffolk	174 NORTH ST	145	343	49.1	40.2	38.7	35.8	31.2	11.90	
25-027-0016	1	0660	Worcester	Worcester	WASHINGTON ST	145	107	35.2	31.4	31.2	30.0	31.2	11.12	
25-027-0023	1	0660	Worcester	Worcester	SUMMER ST	145	119	35.9	33.2	31.7	30.2	31.7	11.53	

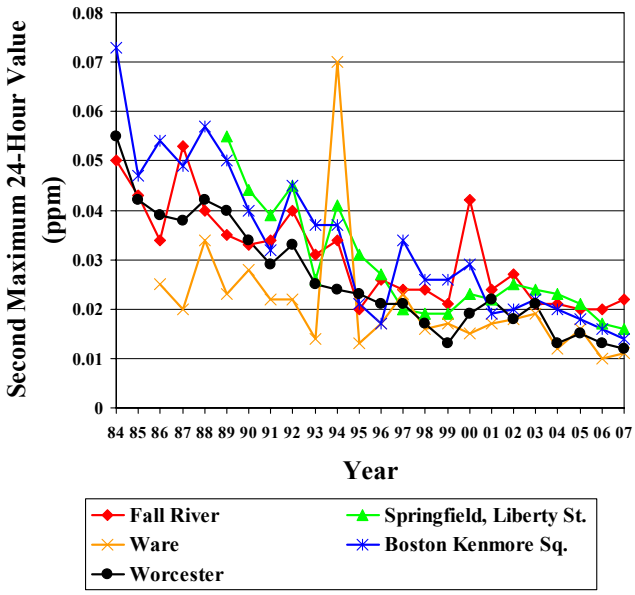
Massachusetts operated a network of sixteen fine particulate matter ($PM_{2.5}$) ambient monitoring sites in 2007. The highest 24-hour concentration was recorded at the Boston North St. site and measured 50.2 µg/m^3. The highest annual weighted arithmetic mean was calculated at the Springfield Liberty site and measured 12.22 µg/m^3. Since 1999, a slight downward trend can be seen in the data.

Massachusetts Sites - 2007 - Sulfur Dioxide



Massachusetts Sulfur Dioxide Data



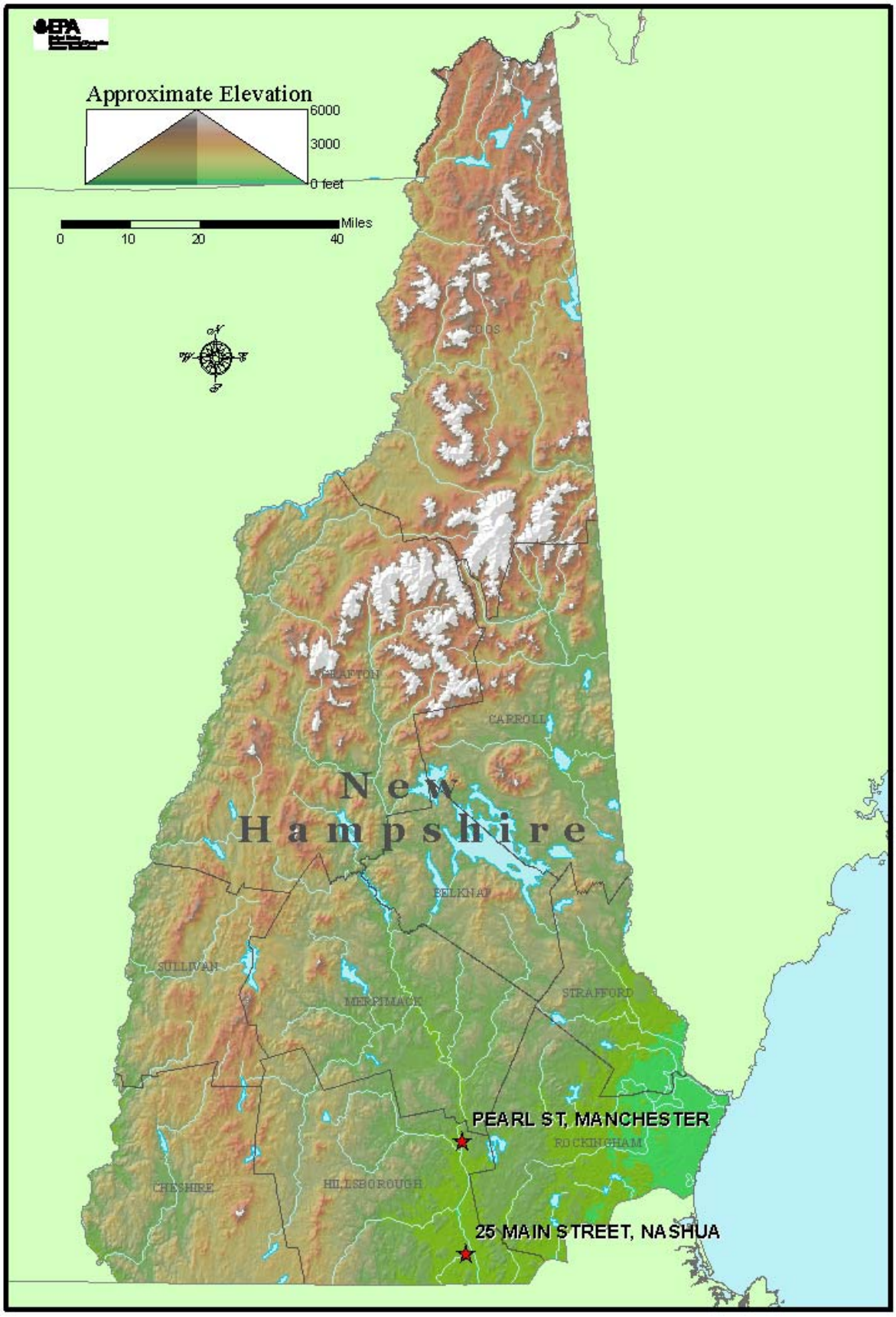


NAAQS for Sulfur Dioxide:
Annual Arithmetic Mean - 0.03 ppm
3-hour 0.5 ppm
24-hour 0.14 ppm

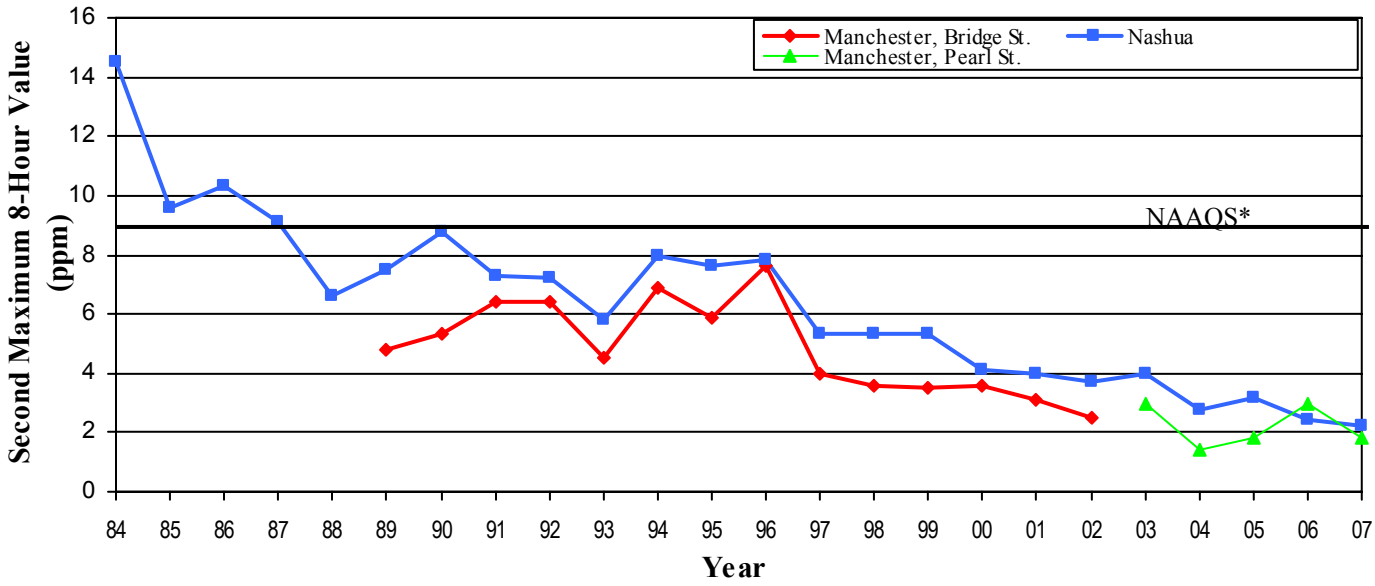
2007																
Massachusetts																
Parameter: Sulfur Dioxide																
All Values are in Units of Parts Per Million																
							24-	24-		3-hour	3-hour		1-hour	1-hour		
	P						hour	hour			2nd			2nd		
	O	Org				#		2nd	Obs	Highest	Highest	Obs	Highest	Highest	Arith.	Meth
Site ID	C	Type	City	County	Address	Obs	Highest	Highest	> 0.14	Value	Value	> 0.5	Value	Value	Mean	Used
25-005-1004	1	660	Fall River	Bristol	659 GLOBE	8521	0.026	0.022	0	0.054	0.046	0	0.082	0.076	0.0034	100
25-013-0016	1	660	Springfield	Hampden	LIBERTY P-LOT	8547	0.016	0.016	0	0.031	0.030	0	0.039	0.035	0.0032	60
25-015-4002	1	660	Ware (census	Hampshire	QUABBIN	8188	0.011	0.011	0	0.015	0.015	0	0.019	0.017	0.0031	100
25-025-0002	1	660	Boston	Suffolk	KENMORE SQ	8512	0.020	0.014	0	0.034	0.031	0	0.036	0.034	0.0042	60
25-025-0019	1	345	Boston	Suffolk	LONG ISLAND	8459	0.012	0.011	0	0.023	0.022	0	0.037	0.036	0.0030	60
25-025-0020	1	345	Boston	Suffolk	DEWAR STREET	8306	0.013	0.012	0	0.021	0.020	0	0.026	0.025	0.0035	60
25-025-0021	2	345	Boston	Suffolk	340 BREMEN ST	8716	0.014	0.014	0	0.029	0.027	0	0.036	0.034	0.0048	60
25-025-0040	1	345	Boston	Suffolk	531A EAST FIRST STREET	8720	0.054	0.015	0	0.092	0.078	0	0.095	0.095	0.0056	60
25-025-0042	1	660	Boston	Suffolk	HARRISON AVE	8522	0.014	0.013	0	0.024	0.022	0	0.028	0.027	0.0032	100
25-027-0023	1	660	Worcester	Worcester	SUMMER ST	8302	0.014	0.012	0	0.021	0.016	0	0.031	0.026	0.0035	0

Ten sulfur dioxide (SO_2) monitoring sites were operated in Massachusetts during 2007. No exceedance or violation of the annual or 24-hour (primary) or the 3-hour (secondary) NAAQS for SO_2 was recorded in 2007. The highest 3-hour and 24-hour SO_2 concentrations, along with the highest annual arithmetic mean, were recorded at the Boston North St. site and measured 0.092 ppm, 0.054 ppm and 0.0056 ppm, respectively. All SO_2 trend sites in Massachusetts have shown a general decline in concentrations over the past twenty-four years.

New Hampshire Sites 2007 - Carbon Monoxide



New Hampshire Carbon Monoxide Data

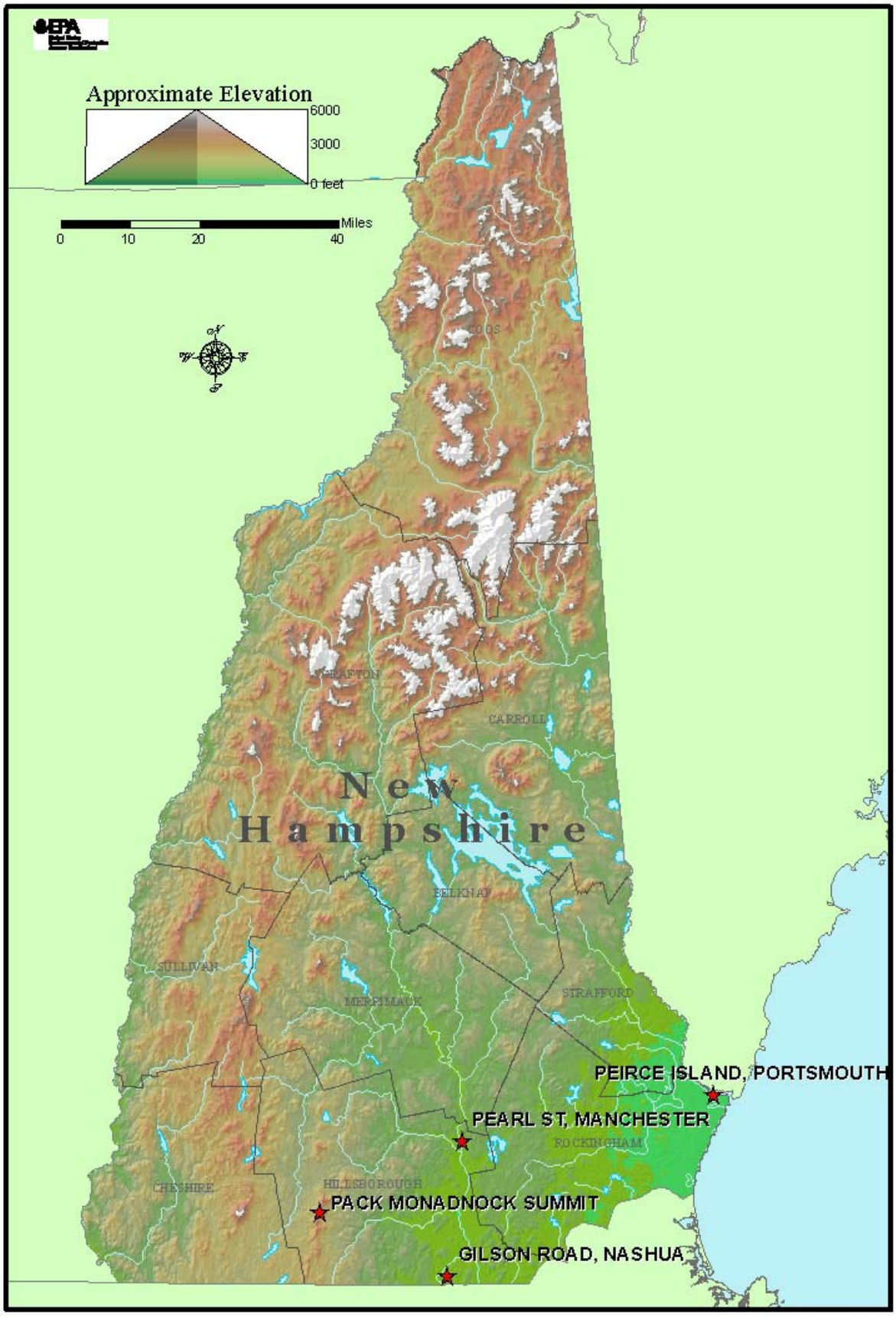


*NAAQS for Carbon Monoxide:
8-hour – 9 ppm, not to be exceeded more than one per year
1-hour – 35 ppm, not to be exceeded more than once per year.

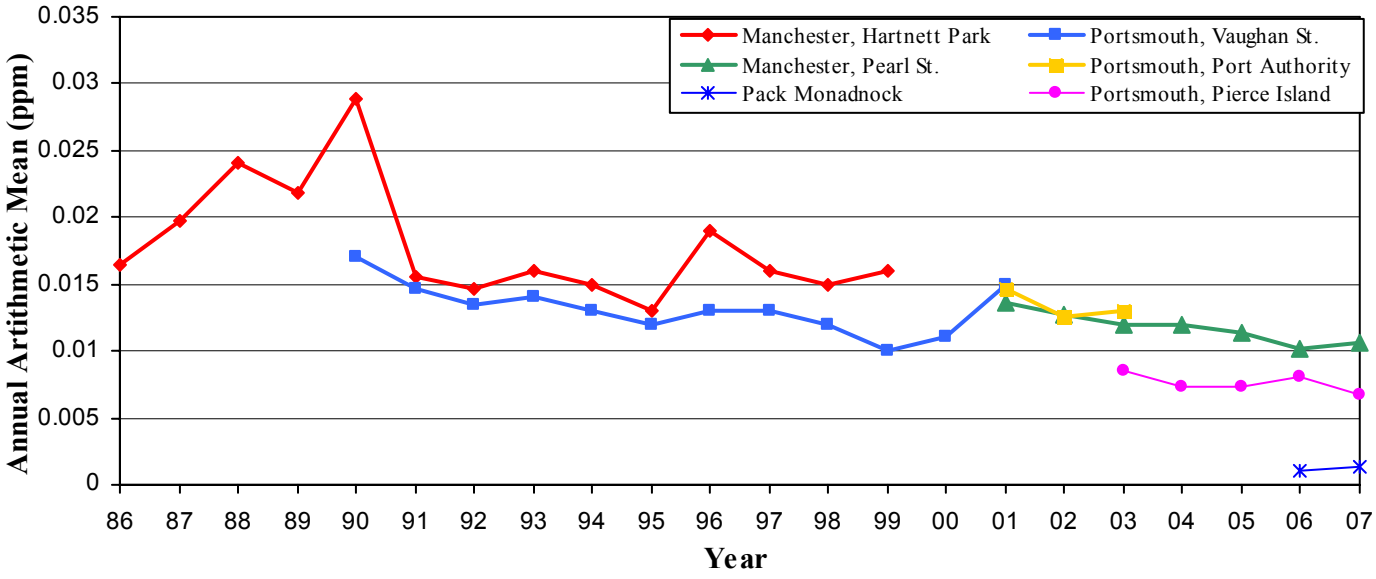
2007													
New Hampshire													
Carbon Monoxide													
All Values are in Units of Parts Per Million													
							1-hour	1-hour		8-hour	8-hour		
	P							2nd			2nd		
	O	Org				#	Highest	Highest		Highest	Highest		Methods
Site ID	C	Type	City	County	Address	Obs	Value	Value	# > 35	Value	Value	# > 9	Used
33-011-0020	1	762	Manchester	Hillsborough	PEARL ST	8346	5.9	2.6	0	1.8	1.8	0	54
33-011-1009	1	762	Nashua	Hillsborough	25 MAIN STREET, MATARAZZO BUILDING	8627	4.6	3.7	0	2.3	2.2	0	54

As has been the case for over a decade, in 2007 there were no violations of either the 8-hour or 1-hour National Ambient Air Quality Standard (NAAQS) for carbon monoxide (CO) at the two CO monitoring sites in New Hampshire. The last exceedances of the 8-hour CO NAAQS occurred in Manchester (13.5 ppm) during the winter of 1996. In 2007, Manchester reported a second maximum 8-hour average CO concentration of 1.8 ppm, which was less than 15% of the standard. The Nashua site recorded a second maximum 8-hour average CO concentration of 2.2 ppm. The most recent ten year trend for CO indicates that the CO levels show relatively small year-to-year fluctuations, but tend to be falling and well below the NAAQS.

New Hampshire Sites 2007 - Nitrogen Dioxide



New Hampshire Nitrogen Dioxide Data

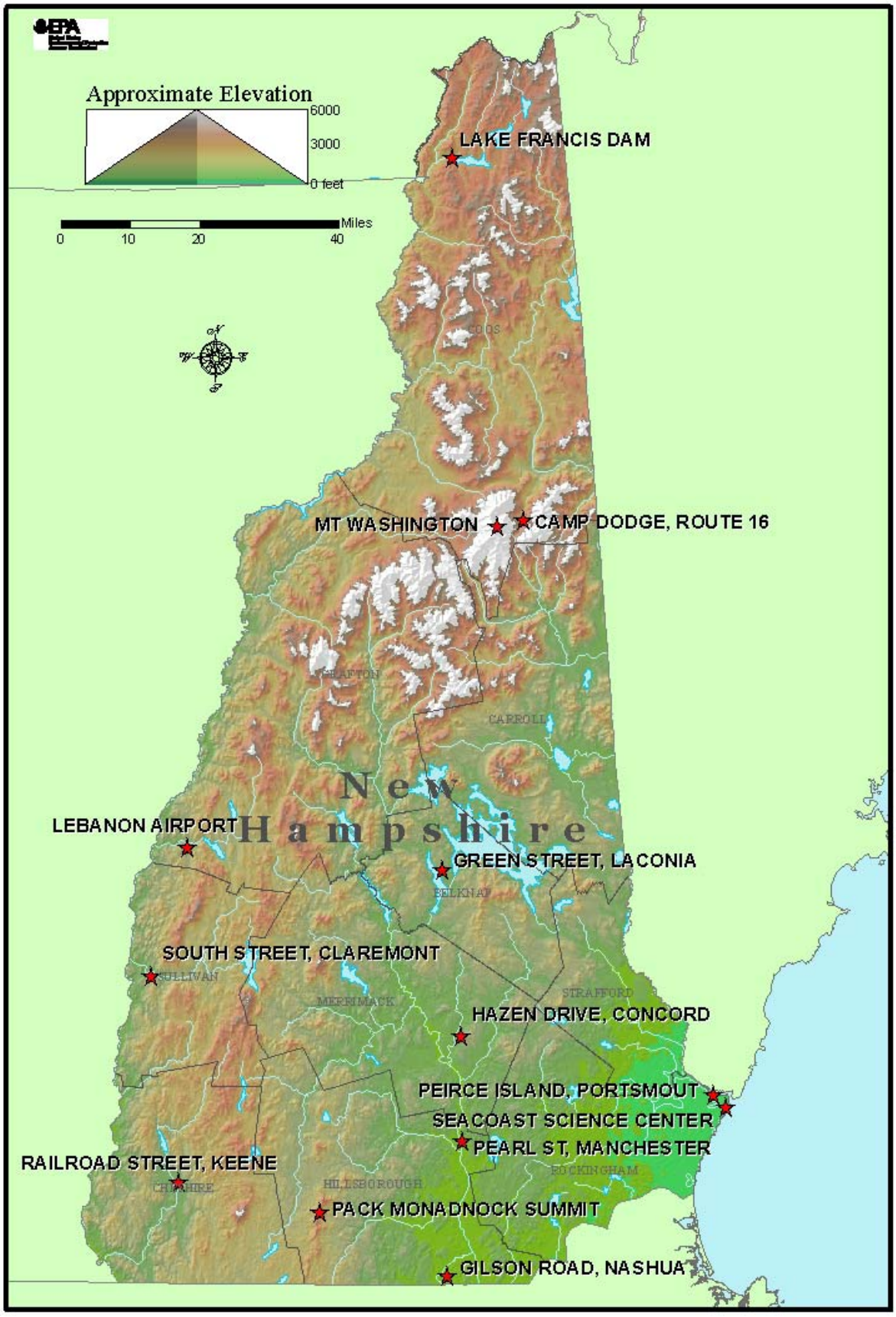


NAAQS for Nitrogen Dioxide:
Annual Arithmetic Mean 0.053 ppm (100 µg/m^3)

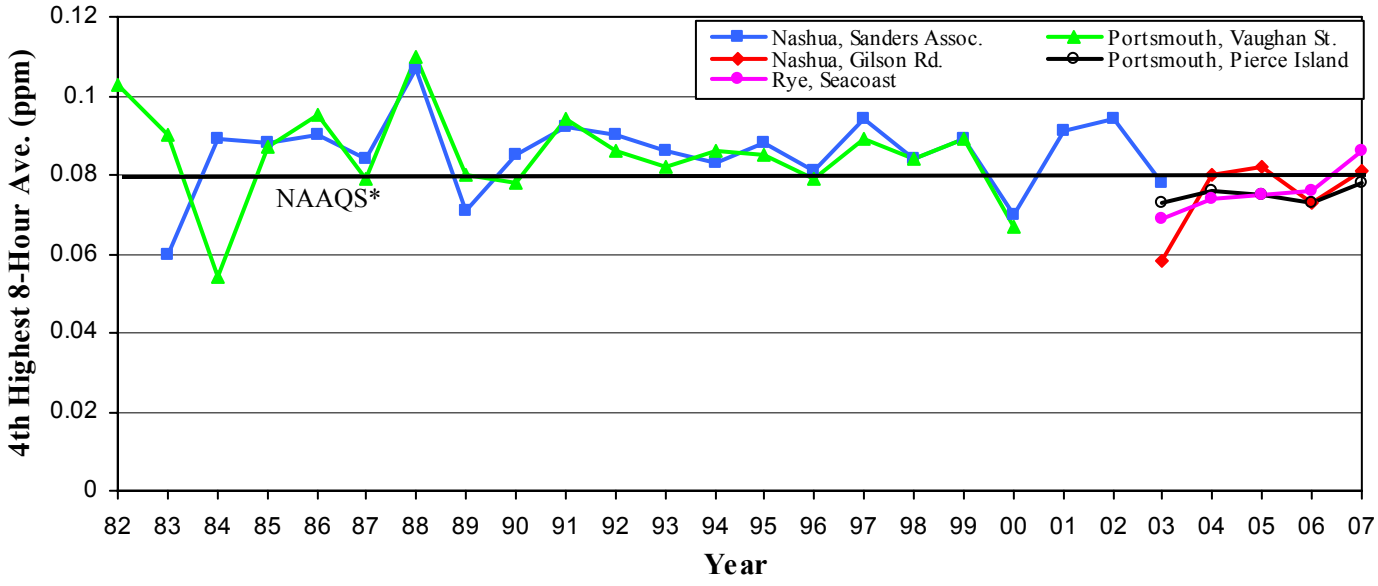
2007 NO2											
New Hampshire											
Parameter: Nitrogen Dioxide											
All Values are in Units of Parts Per Million											
								1-hour	1-hour		
	P								2nd	Annual	
	O	Rept.					#	Highest	Highest	Arith.	
Site ID	C	Org.	City	County	Address	Method	Obs	Value	Value	Mean	
33-011-0020	1	762	Manchester	Hillsborough	PEARL ST	74	8404	0.050	0.048	0.0106	
33-011-1011	1	762	Nashua	Hillsborough	GILSON ROAD	74	4880	0.039	0.039	0.0036	*
33-011-5001	1	762	Peterborough	Hillsborough	PACK MONADNOCK SUMMIT	74	5735	0.028	0.027	0.0013	*
33-015-0014	1	762	Portsmouth	Rockingham	PORTSMOUTH, PIERCE ISLE	74	8420	0.046	0.043	0.0068	
*Indicates that the mean does not meet summary criteria											

In 2007, nitrogen dioxide (NO_2) was measured at four monitoring sites. The Portsmouth and Manchester monitoring sites recorded the highest NO_2 concentrations, but well below the standard. The ten-year trend in NO_2 indicates that there has been no recent upward or downward trend in concentration.

New Hampshire Sites 2007 - Ozone



New Hampshire Ozone 8-Hour Data

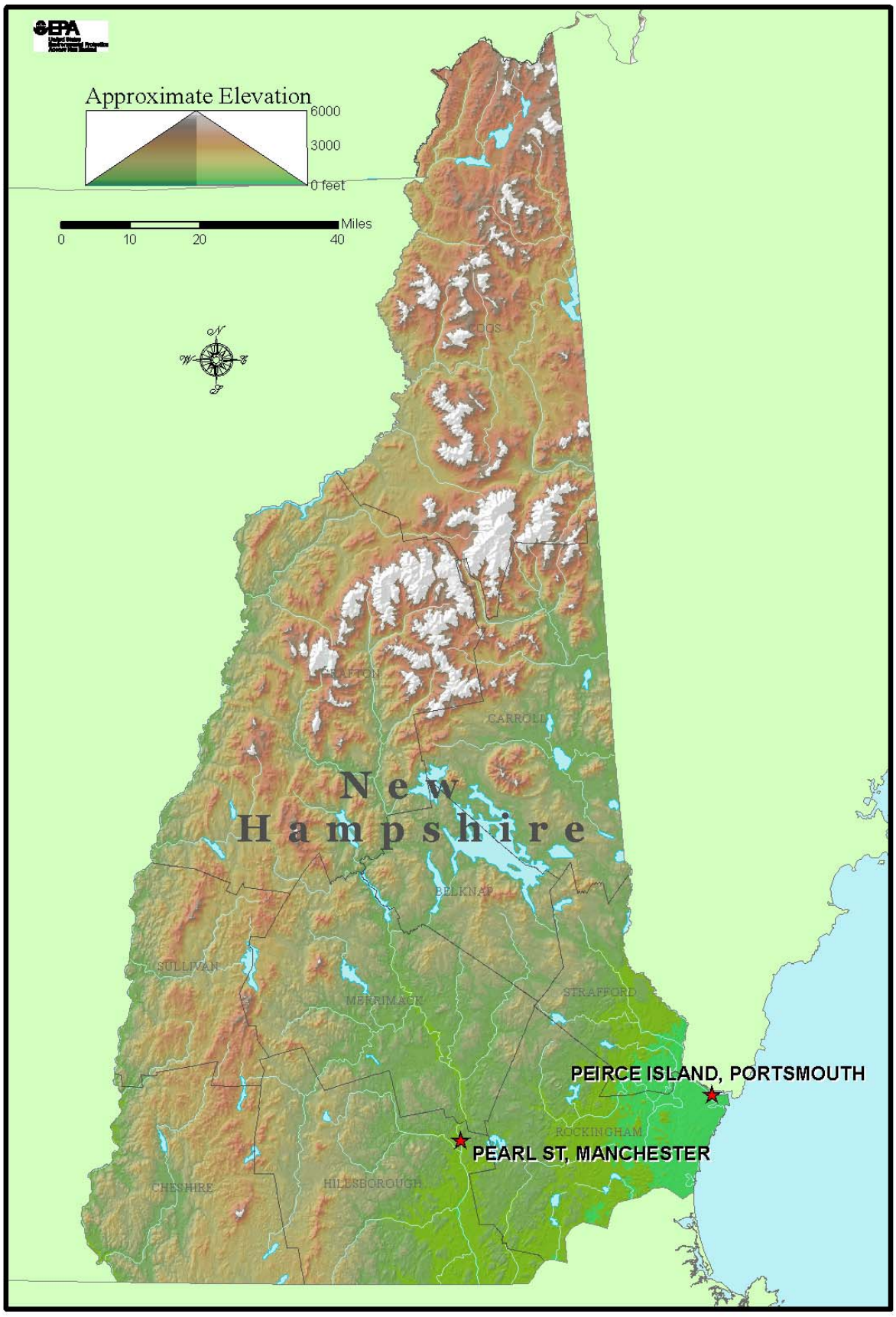


*NAAQS for Ozone:
8-Hour – 0.08 ppm (1997 std)
8-hour – 0.075 ppm (2008 std)

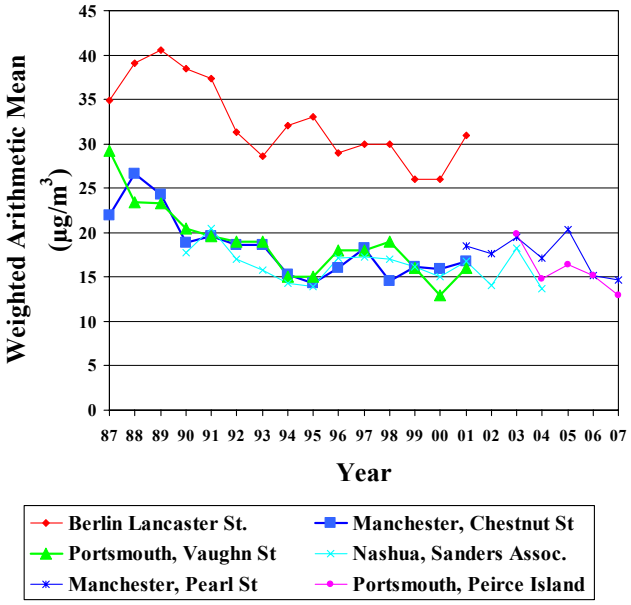
2007															
New Hampshire															
Parameter: Ozone (8-Hour)															
All Values are in Units of Parts Per Million															
	P						Valid	Num		2nd	3rd	4th	Days	
	O	Rept.				%	Days	Required	Highest	Highest	Highest	Highest	Max ≥	Methods
Site ID	C	Org.	City	County	Address	Obs	Meas.	Days	8-Hr Value	8-Hr Value	8-Hr Value	8-Hr Value	0.075*	Reported
33-001-2004	1	0762	Laconia	Belknap	GREEN STREET	97	177	183	0.088	0.079	0.076	0.075	3	47
33-005-0007	1	0762	Keene	Cheshire	RAILROAD STREET	96	175	183	0.083	0.076	0.075	0.073	2	47
33-007-4001	1	0762	Not in a city	Coos	MT. WASHINGTON	89	163	183	0.091	0.091	0.086	0.085	10	47
33-007-4002	1	0762	Greens Grant	Coos	CAMP DODGE, ROUTE 16	85	155	183	0.075	0.067	0.063	0.061	0	47
33-007-4003	1	0762	Not in a city	Coos	LAKE FRANCES DAM	98	179	183	0.087	0.080	0.073	0.066	2	47
33-009-0010	1	0762	Lebanon	Grafton	LEBANON AIRPORT	100	183	183	0.079	0.077	0.072	0.072	2	47
33-011-0020	1	0762	Manchester	Hillsborough	PEARL ST	98	179	183	0.086	0.075	0.075	0.074	1	47
33-011-1011	1	0762	Nashua	Hillsborough	GILSON ROAD	96	175	183	0.090	0.084	0.081	0.081	8	47
33-011-5001	1	0762	Peterborough	Hillsborough	PACK MONADNOCK SUMMIT	96	175	183	0.094	0.088	0.082	0.081	11	47
33-013-1007	1	0762	Concord	Merrimack	HAZEN DRIVE	97	177	183	0.087	0.079	0.079	0.074	3	47
33-015-0014	1	0762	Portsmouth	Rockingham	PORTSMOUTH, PEIRCE ISLAND	95	174	183	0.082	0.080	0.080	0.078	5	47
33-015-0016	1	0762	Rye	Rockingham	SEACOAST SCIENCE CENTER	98	180	183	0.097	0.093	0.091	0.086	8	47
33-019-0003	1	0762	Claremont	Sullivan	SOUTH STREET	98	180	183	0.080	0.079	0.078	0.076	5	47
*Relative to the 2008 Standard														

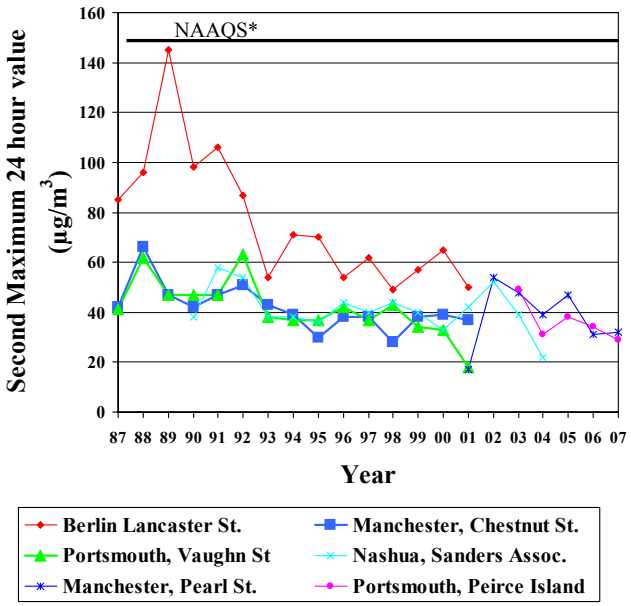
Two of the thirteen ozone monitors in New Hampshire violated the 8-hour ozone standard. In 2007, the maximum 8-hour average ozone concentration occurred at the Seacoast Science Center in Rye (0.097 ppm). The Pack Monadnock Summit PAMS monitoring site recorded the second highest maximum 8-hr ozone concentration (0.094 ppm)

New Hampshire Sites 2007 - Particulate Matter < 10 Microns



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



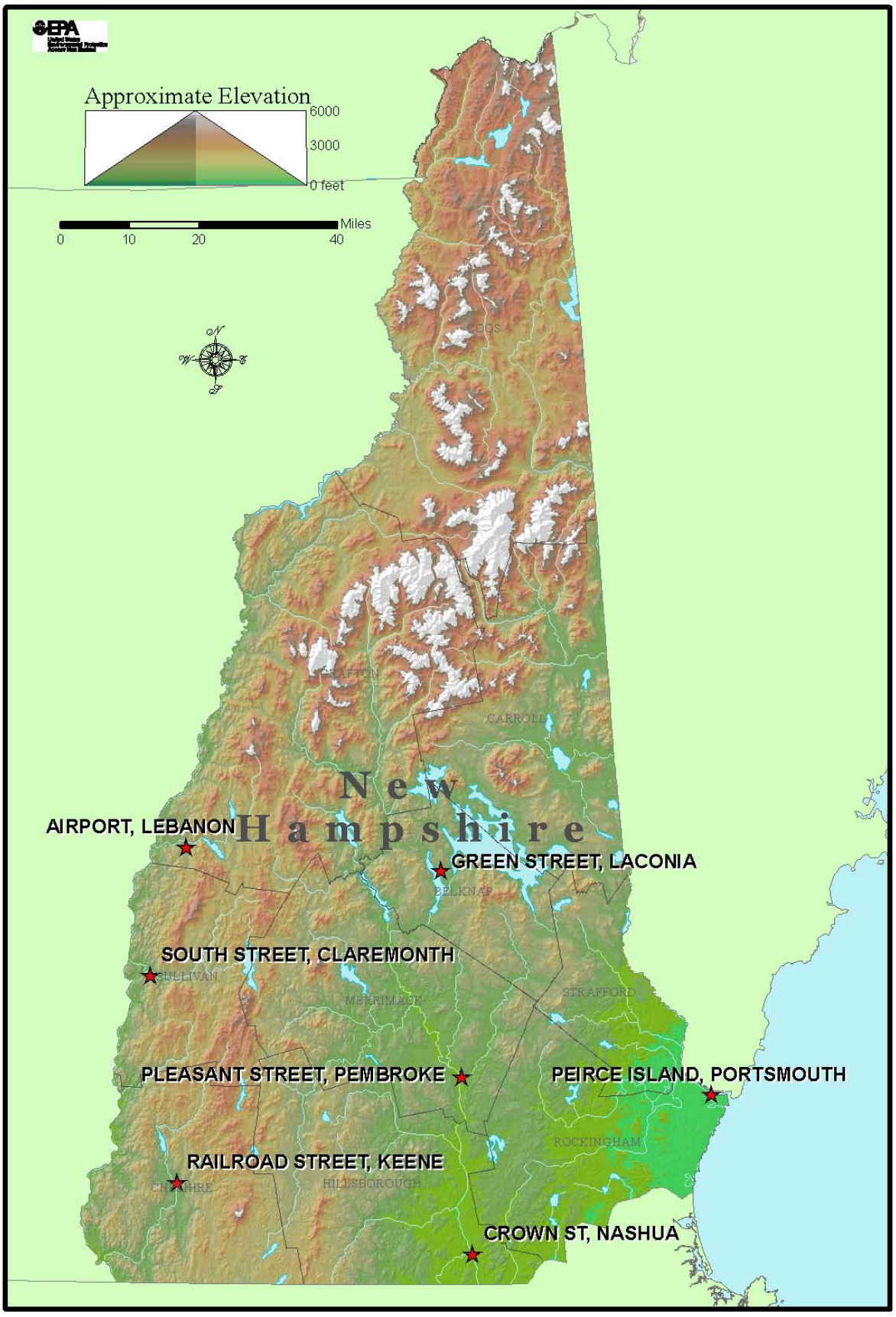


*NAAQS for Particulate Matter less than 10 Microns:
24-hour 150 µg/m^3

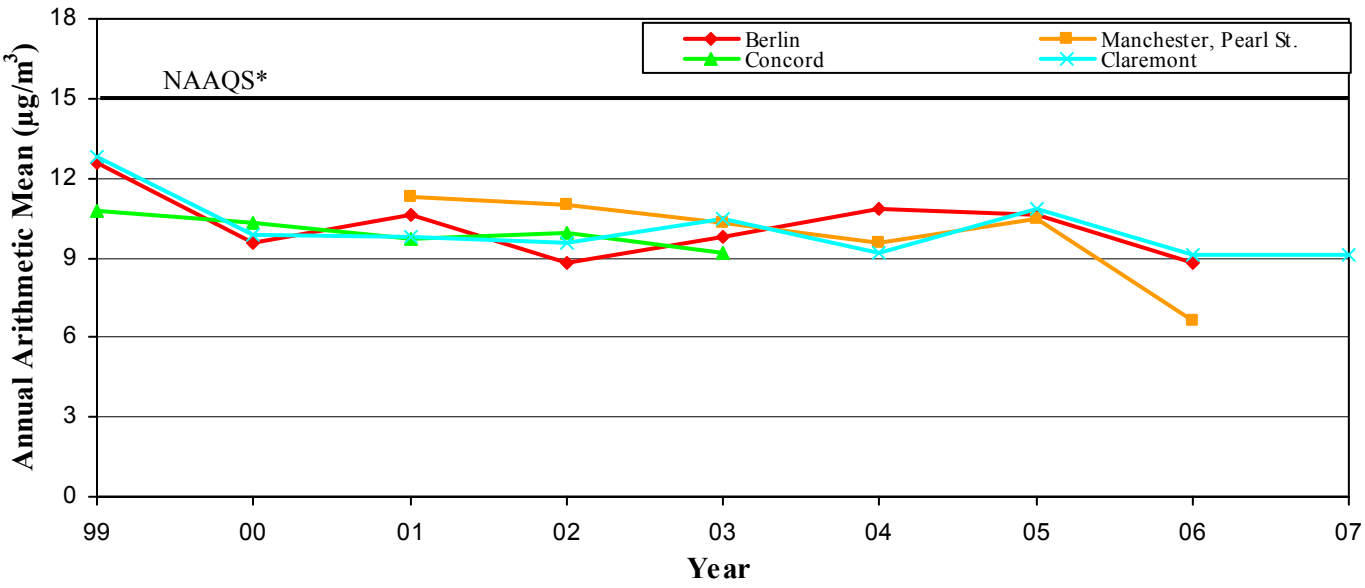
2007																		
New Hampshire																		
Particulate Matter < 10 Microns																		
ug/m3																		
												2nd	3rd	4th	Days	Est. D	Wtd.	
		Rep.							Number	Valid	Highest	Highest	Highes	Highes	Max	Max	Arith.	Metho
SITE ID	PO	Org	City	County	Address	# Obs	# Req.	Days	% Obs	Value	Value	Value	Value	>150	>150	Mean	Used	
33-011-0020	1	0762	Manchester	Hillsborough	PEARL ST	57	60	57	95	40	32	27	26	0	0	14.7	130	
33-011-0020	2	0762	Manchester	Hillsborough	PEARL ST	58	60	58	97	41	32	27	27	0	0	14.6	130	
33-015-0014	1	0762	Portsmouth	Rockingham	PIERCE ISLAND	59	60	58	97	30	29	29	23	0	0	12.9	130	

None of the two coarse particulate matter (PM_{10}) monitoring sites in New Hampshire (Portsmouth and Manchester) exceeded or violated the annual or 24-hr NAAQS for PM_{10} over the past ten years (1998-2007). The highest 24-hour concentration in 2007 was recorded in Manchester (41 ug/m^3 each - less than 30% of the NAAQS). The highest maximum annual average PM_{10} concentration was recorded in Manchester (14.7 ug/m^3, <30% of the NAAQS). Over the past ten years, all of the PM_{10} monitors in New Hampshire recorded PM_{10} concentrations well below the national standards. PM_{10} concentration variability is common, due to differences in weather and local PM_{10} emissions.

New Hampshire Sites 2007 - Particulate Matter < 2.5 Microns



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

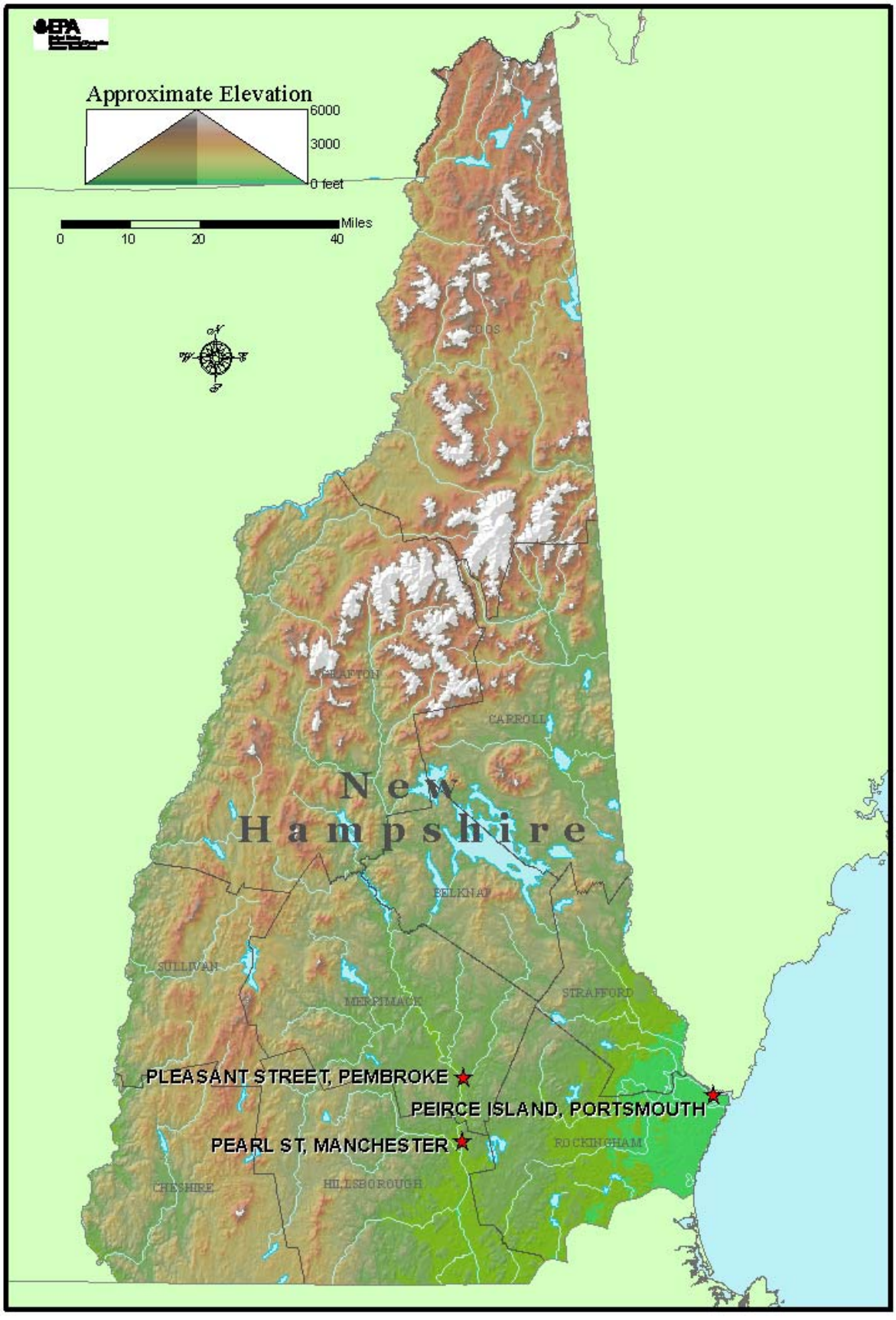


*NAAQS for Particulate Matter less than 2.5 Microns:
Annual Arithmetic Mean - 15.0 µg/m^3

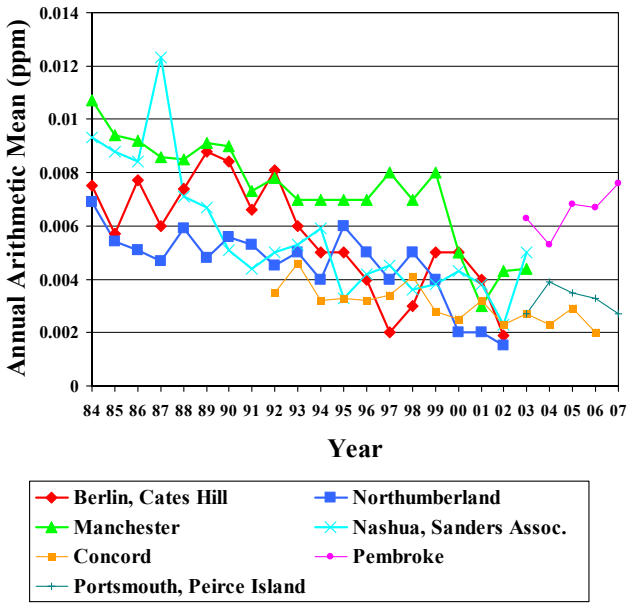
2007													
New Hampshire													
Parameter: PM 2.5													
All Values are in UG/CU Meters Local Conditions													
	P								2nd	3rd	4th	98th	Wtd.
	O	Rept.					#	Highest	Highest	Highest	Highest	Percentile	Arith.
Site ID	C	Org.	City	County	Address	Method	Obs	Value	Value	Value	Value	Value	Mean
33-001-2004	1	0762	Laconia	Belknap	GREEN STREET	116	59	19.8	18.3	17.4	16.3	18.3	6.88
33-001-2004	2	0762	Laconia	Belknap	GREEN STREET	116	57	20.2	18.7	17.5	16.3	18.7	6.68
33-005-0007	1	0762	Keene	Cheshire	RAILROAD STREET	116	60	29.0	26.3	25.7	23.5	26.3	10.84
33-009-0010	1	0762	Lebanon	Grafton	LEBANON AIRPORT	116	60	20.3	18.8	18.5	18.4	18.8	7.89
33-011-1015	1	0762	Nashua	Hillsborough	CROWN ST	116	119	35.8	33.1	29.9	28.1	29.9	10.26
33-013-1006	1	0762	Pembroke	Merrimack	PLEASANT STREET	116	115	32.4	27.3	26.6	25.4	26.6	9.67
33-013-1006	2	0762	Pembroke	Merrimack	PLEASANT STREET	0	61	22.4	21.8	18.2	17.9	21.8	9.09
33-015-0014	1	0762	Portsmouth	Rockingham	PIERCE ISLAND	116	120	31.4	30.1	23.7	22.0	23.7	8.63
33-019-0003	1	0762	Claremont	Sullivan	SOUTH STREET	116	59	20.1	18.8	18.4	18.2	18.8	9.15

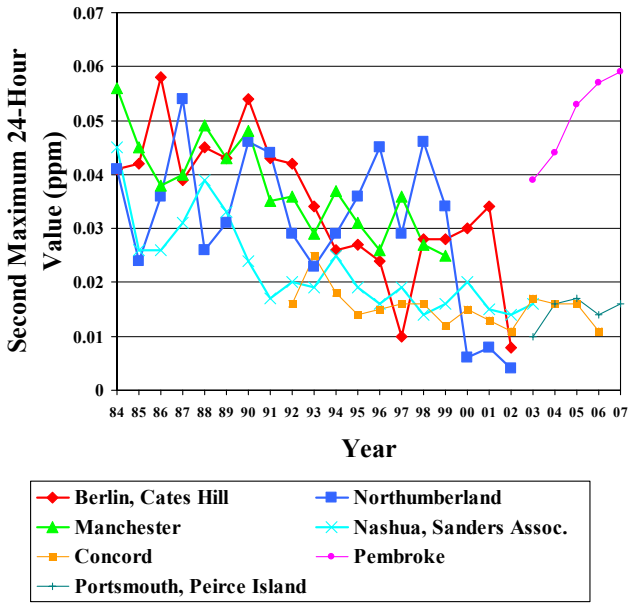
In 1999, New Hampshire established a network of fine particulate monitors ($PM_{2.5}$). By 2003, eleven monitoring sites provided data on the concentration of $PM_{2.5}$ in the state. Over the past several years the highest concentrations of $PM_{2.5}$ have been in the Nashua and Keene urban areas. During 2007, relatively high concentrations of fine particulate matter ($PM_{2.5}$ – [FRM – Federal Reference Method] annual weighted arithmetic mean) were recorded at the Railroad Street site in Keene (10.84 ug/m^3), and at the Crown Street site in Nashua (10.26 ug/m^3), compared with the other seven New Hampshire monitoring sites. These concentrations were well below the primary standard for $PM_{2.5}$ which is 15 ug/m^3.

New Hampshire Sites 2007 - Sulfur Dioxide



New Hampshire Sulfur Dioxide Data

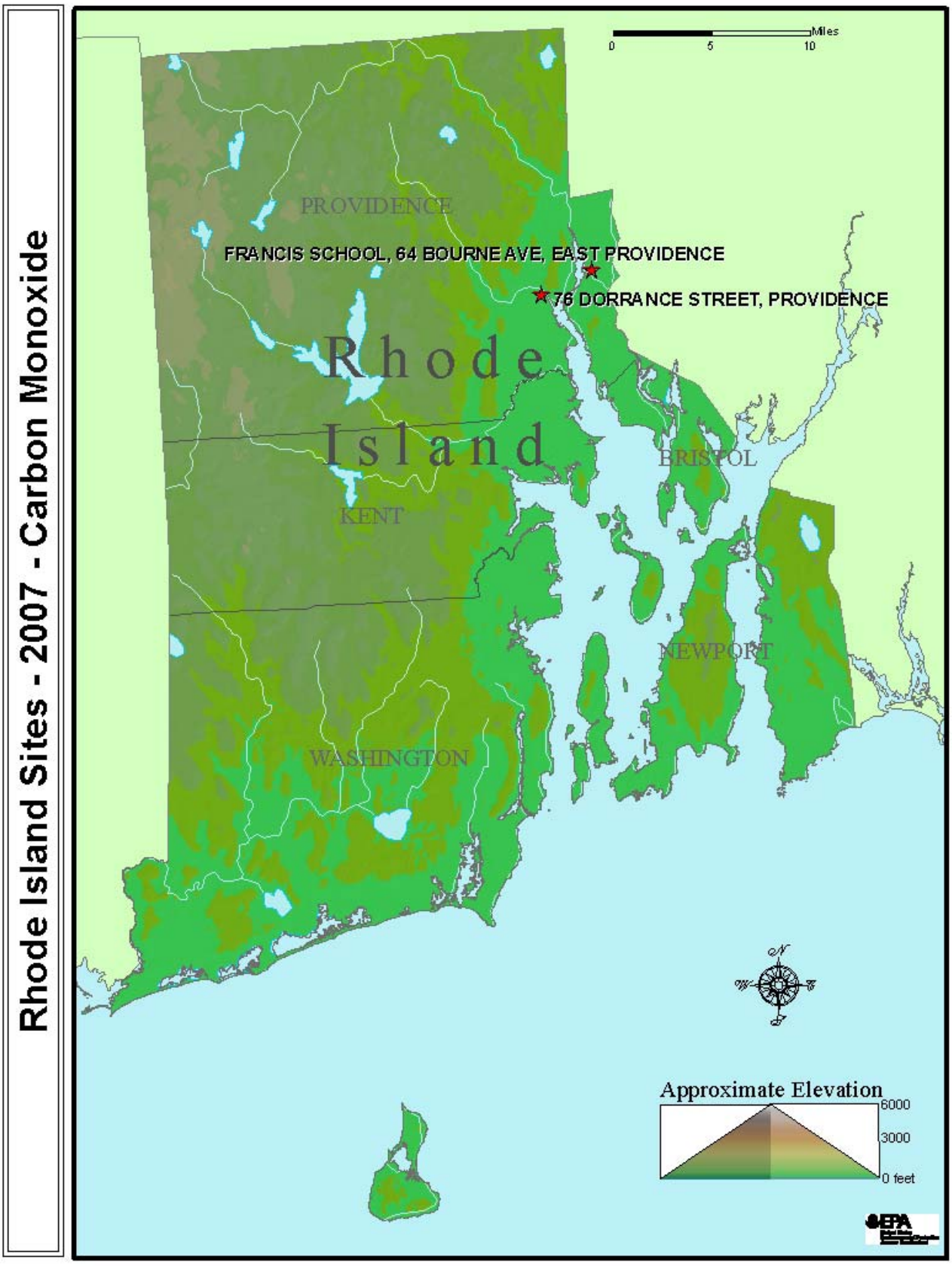




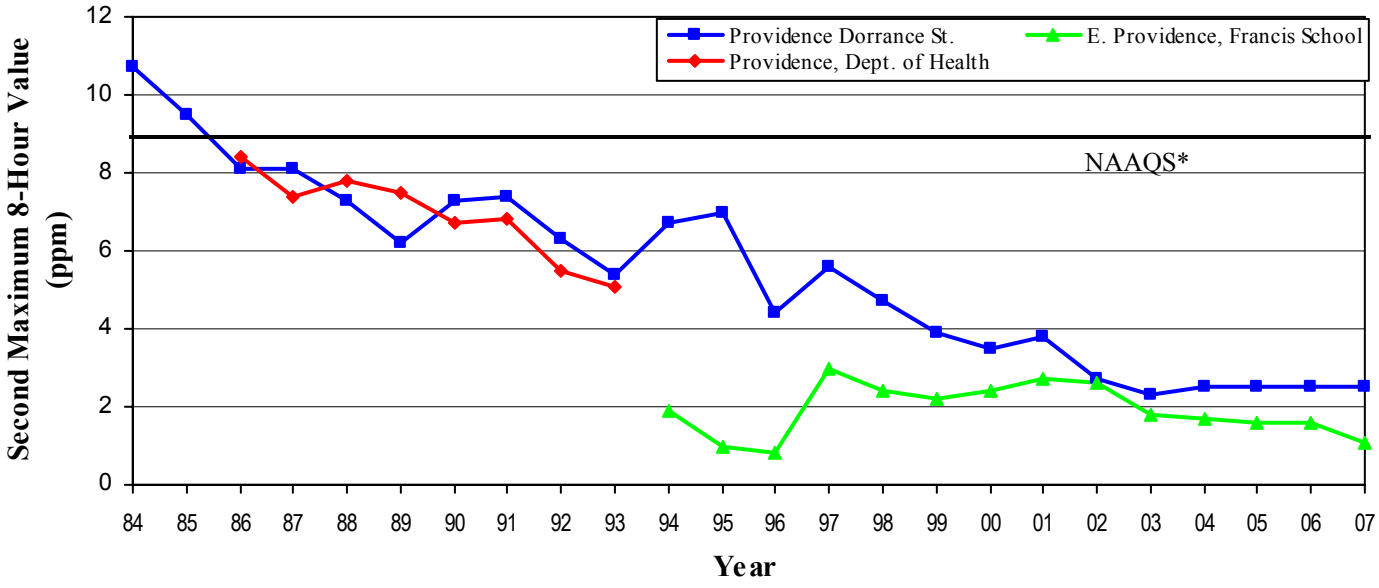
NAAQS for Sulfur Dioxide:
Annual Arithmetic Mean - 0.03 ppm
3-hour 0.5 ppm
24-hour 0.14 ppm

2007																	
New Hampshire																	
Parameter: Sulfur Dioxide																	
All Values are in Units of Parts Per Million																	
								24-	24-		3-hour	3-hour		1-hour	1-hour		
	P							hour	hour			2nd			2nd		
	O	Org					#		2nd	Obs	Highest	Highest	Obs	Highest	Highest	Arith.	Metho
Site ID	C	Type	City	County	Address	Obs	Highest	Highest	> 0.14	Value	Value	> 0.5	Value	Value	Mean	Used	
33-011-0020	1	762	Manchester	Hillsborough	PEARL ST	8427	0.019	0.018	0	0.046	0.043	0	0.079	0.075	0.0034	60	
33-013-1006	1	762	Pembroke	Merrimack	PLEASANT STREET	8545	0.083	0.059	0	0.141	0.134	0	0.210	0.175	0.0076	60	
33-015-0014	1	762	Portsmouth	Rockingham	PIERCE ISLAND	8612	0.018	0.016	0	0.041	0.037	0	0.068	0.059	0.0027	60	

During 2007, no exceedance or violation of the sulfur dioxide NAAQS occurred at any of the three monitoring sites in New Hampshire. The highest annual SO_2 concentration was recorded in Pembroke (0.0076 ppm SO_2). The Pembroke site also reported the highest 24-hour second maximum SO_2 concentration (0.059 ppm SO_2), and reported the highest 3-hour SO_2 second maximum concentration (0.134 ppm SO_2).


Rhode Island Sites - 2007 - Carbon Monoxide
Miles
0
5
10
PROVIDENCE
FRANCIS SCHOOL, 64 BOURNE AVE, EAST PROVIDENCE
76 DORRANCE STREET, PROVIDENCE
Rhode Island
BRISTOL
KENT
NEWPORT
WASHINGTON
Approximate Elevation
6000
3000
0 feet
EPA

Rhode Island Carbon Monoxide Data

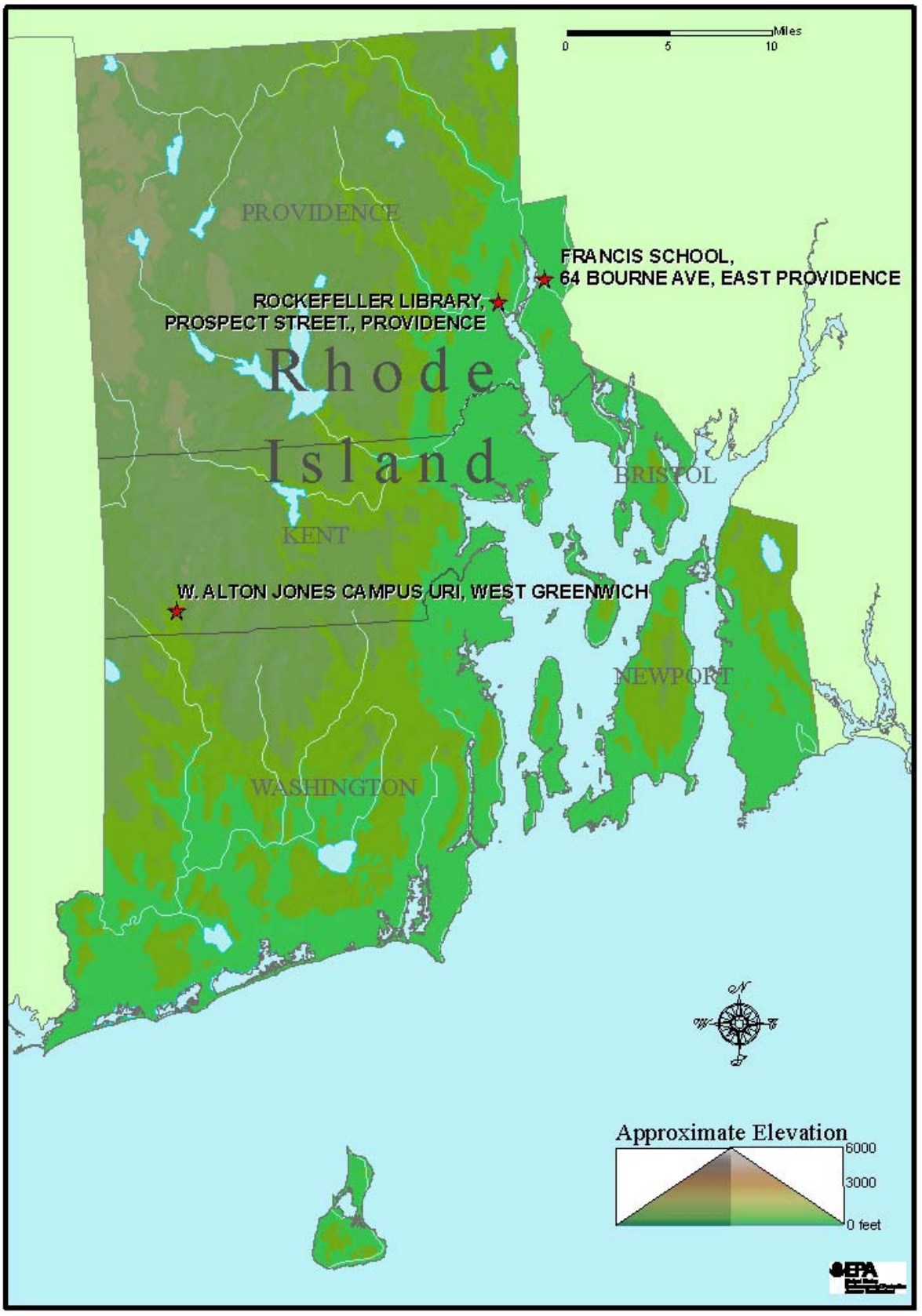


*NAAQS for Carbon Monoxide:
8-hour – 9 ppm, not to be exceeded more than one per year
1-hour – 35 ppm, not to be exceeded more than once per year.

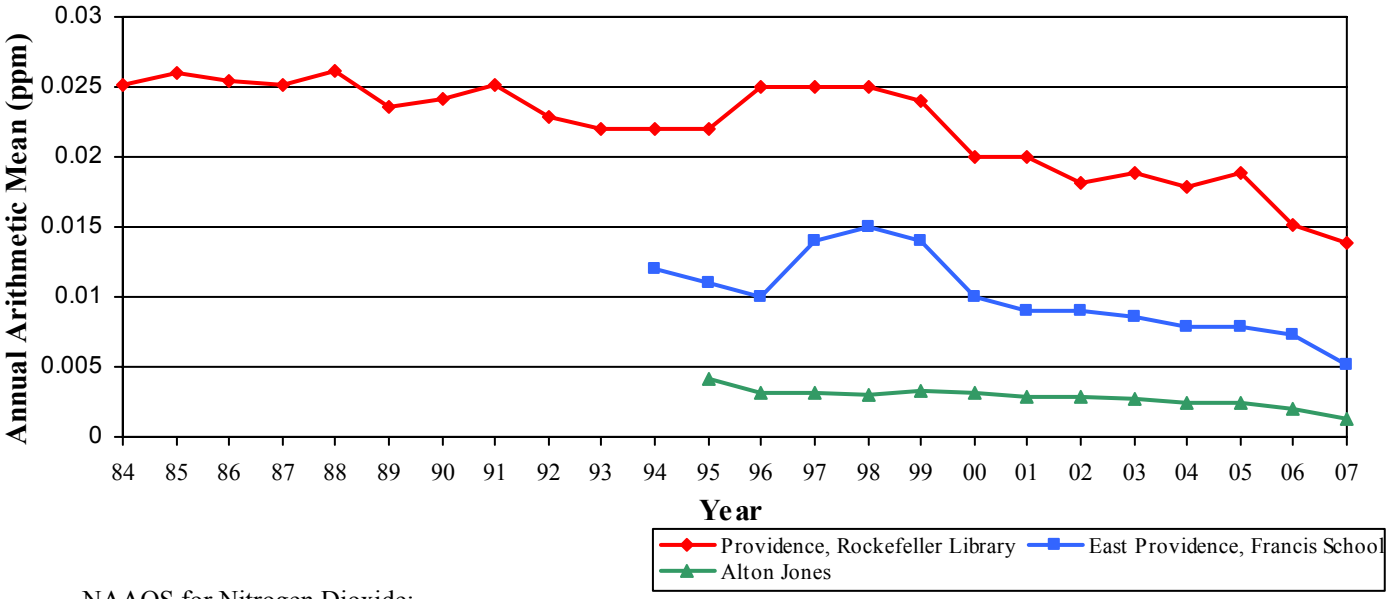
2007													
Rhode Island													
Carbon Monoxide													
All Values are in Units of Parts Per Million													
							1-hour	1-hour		8-hour	8-hour		
	P							2nd			2nd		
	O	Org				#	Highest	Highest		Highest	Highest		Methods
Site ID	C	Type	City	County	Address	Obs	Value	Value	# > 35	Value	Value	# > 9	Used
44-007-1009	1	907	Providence	Providence	76 DORRANCE STREET.	4080	4.7	4.5	0	2.9	2.5	0	54
44-007-1010	1	907	East Providence	Providence	FRANCIS SCHOOL, 64 BOURNE AVE	8393	2.0	1.8	0	1.5	1.1	0	54

No exceedance or violation of the 1-hour or 8-hour carbon monoxide (CO) NAAQS was recorded at the two CO monitoring sites in Rhode Island during 2007. The Dorrance Street Site in Providence reported the highest 8-hour second maximum CO level of 2.5 ppm, which was the same value reported in 2004, 2005 and 2006. Over the past six years the highest 8-hour second maximum concentration of CO at this site was 2.7 ppm, which occurred in 2002. Lower concentrations of CO were recorded at the East Providence Site with the highest 8-hour second maximum concentration within the past six years of 2.6 ppm occurring in 2002. The 24 year trend of CO concentrations shows a downward trend with concentrations leveling off between 2003 and 2007.

Rhode Island Sites - 2007 - Nitrogen Dioxide



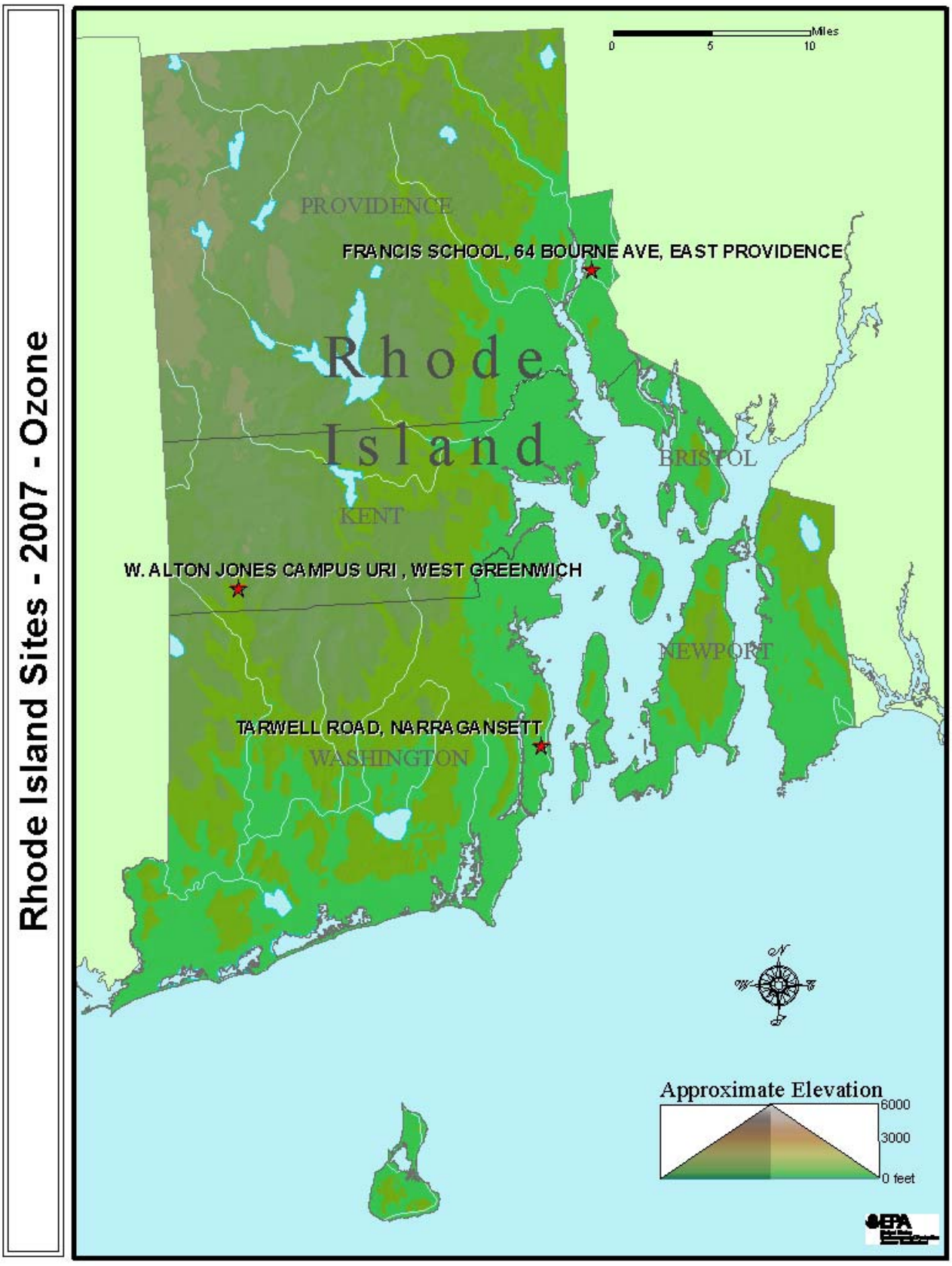
Rhode Island Nitrogen Dioxide Data



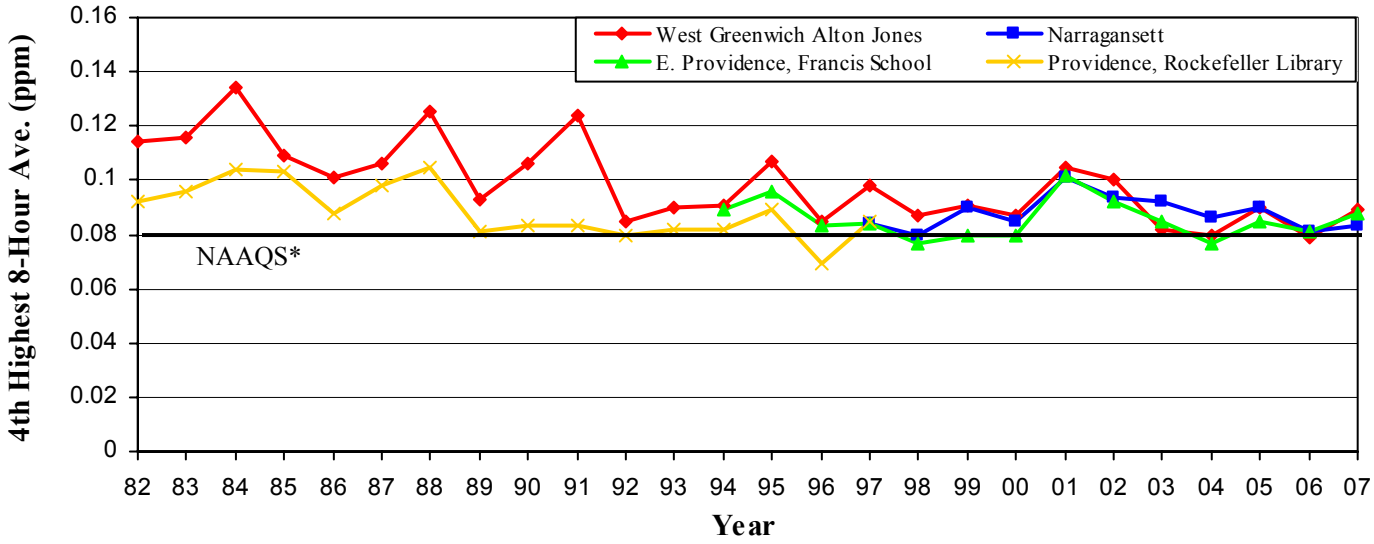
NAAQS for Nitrogen Dioxide:
Annual Arithmetic Mean 0.053 ppm (100 µg/m^3)

2007 NO2											
Rhode Island											
Parameter: Nitrogen Dioxide											
All Values are in Units of Parts Per Million											
								1-hour	1-hour		
	P								2nd	Annual	
	O	Rept.					#	Highest	Highest	Arith.	
Site ID	C	Org.	City	County	Address	Method	Obs	Value	Value	Mean	
44-003-0002	1	907	West Greenwich	Kent	W. ALTON JONES, URI	74	1886	0.010	0.008	0.0013	*
44-007-0012	1	907	Providence	Providence	ROCKEFELLER LIBRARY	74	8042	0.071	0.070	0.0138	
44-007-1010	1	907	East Providence	Providence	FRANCIS SCH, 64 BOURNE A	74	2079	0.028	0.027	0.0051	*
*Indicates that the mean does not meet summary criteria											

Rhode Island operated three nitrogen dioxide (NO_2) monitoring sites during 2007. NO_2 monitors were located at two Photochemical Assessment Monitoring Stations (PAMS) Sites that operated during June, July and August and at the Rockefeller Library in Providence which operated all year. This latter site recorded the highest annual arithmetic mean NO_2 concentration of 0.014 ppm, which is lower than the previous year of 0.015 ppm and 26% of the NAAQS. The 24 year NO_2 concentration trend at the Rockefeller Library Site has remained relatively flat with a slight decreasing trend beginning in 2000. Each year, over the past eight years, the mean NO_2 concentration during the PAMS season has been three to five times higher at the Francis School Site (0.005 - 0.01ppm) compared to the Alton Jones Site (0.001 – 0.003 ppm).


Rhode Island Sites - 2007 - Ozone
Miles
0
5
10
PROVIDENCE
FRANCIS SCHOOL, 64 BOURNE AVE, EAST PROVIDENCE
Rhode
Island
BRISTOL
KENT
W. ALTON JONES CAMPUS URI , WEST GREENWICH
NEWPORT
TARWELL ROAD, NARRAGANSETT
WASHINGTON
Approximate Elevation
6000
3000
0 feet

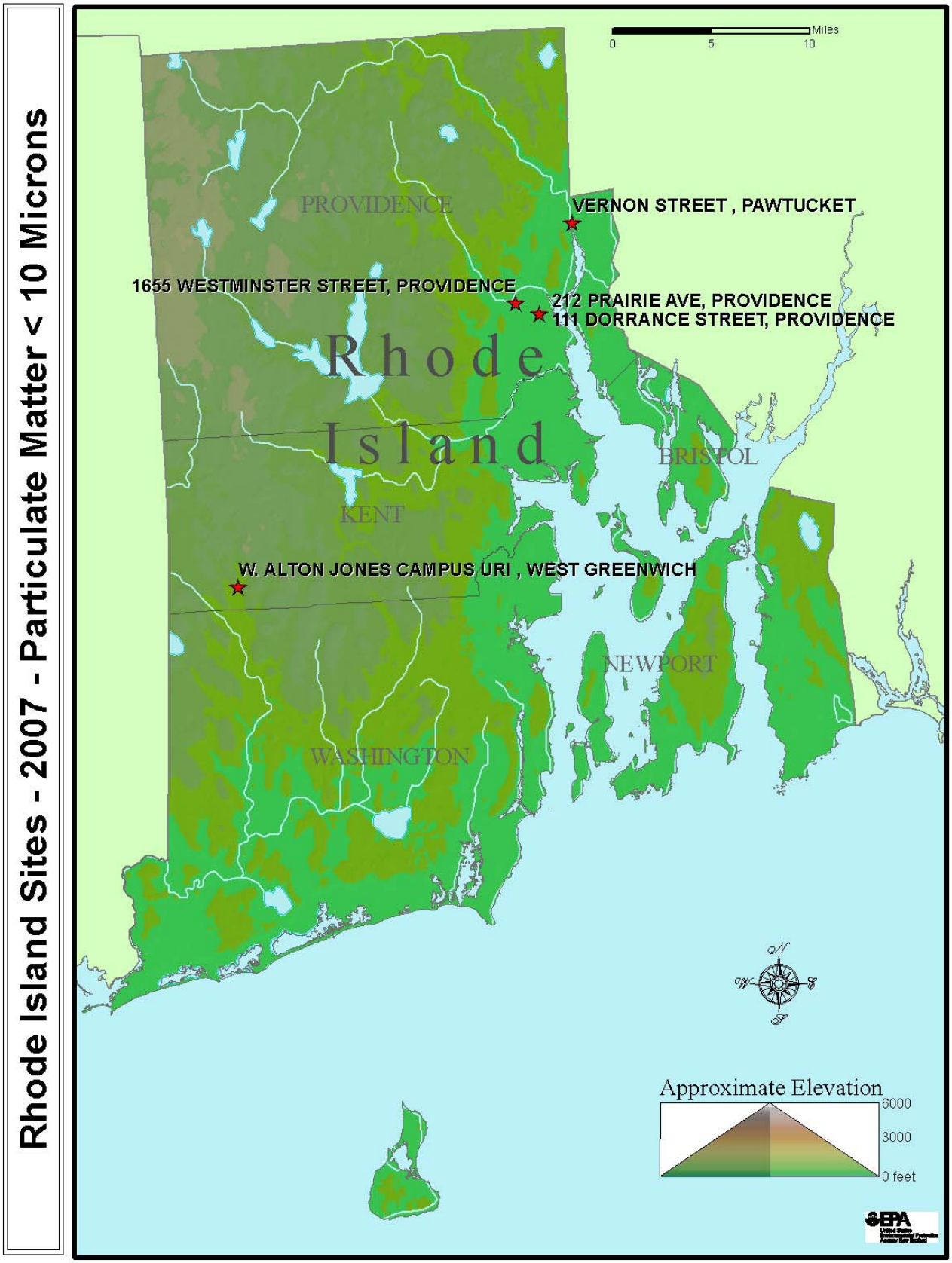
Rhode Island 8-Hour Ozone Data



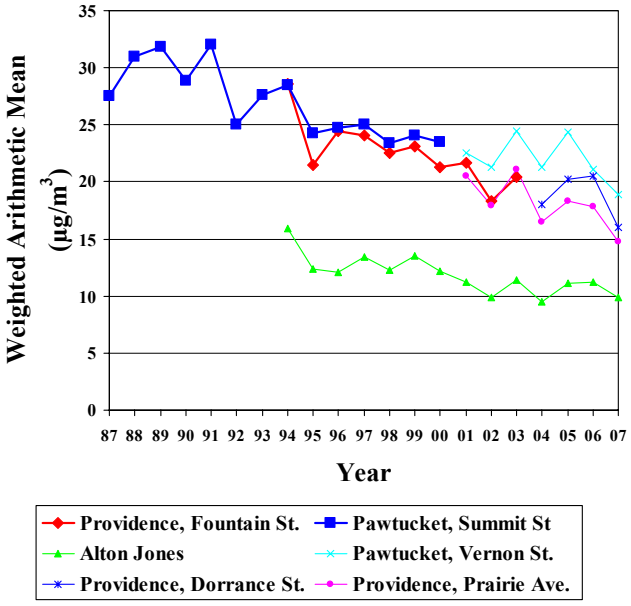
*NAAQS for Ozone:
8-Hour – 0.08 ppm (1997 std)
8-hour – 0.075 ppm (2008 std)

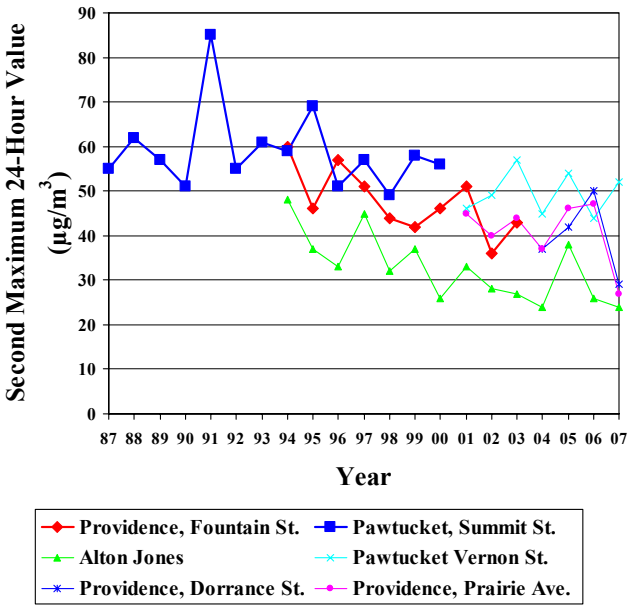
2007															
Rhode Island															
Parameter: Ozone (8-Hour)															
All Values are in Units of Parts Per Million															
	P						Valid	Num		2nd	3rd	4th	Days		
	O	Rept.				%	Days	Required	Highest	Highest	Highest	Highest	Max ≥	Methods	
Site ID	C	Org.	City	County	Address	Obs	Meas.	Days	8-Hr Value	8-Hr Value	8-Hr Value	8-Hr Value	0.075*	Reported	
44-003-0002	1	0907	West Greenwi	Kent	W. ALTON JONES CAMPUS URI	98	180	183	0.092	0.092	0.091	0.089	10	47	
44-007-1010	1	0907	East Providenc	Providence	FRANCIS SCHOOL, 64 BOURNE AV	96	176	183	0.096	0.090	0.089	0.088	11	47	
44-009-0007	1	0907	Narragansett	Washington	TARZWELL ROAD	99	181	183	0.100	0.089	0.085	0.083	9	47	
*Relative to the 2008 Standard															

In 2007, the West Greenwich and the East Providence sites both reported a fourth highest 8-hour average O_3 concentration above the Ozone Standard at 0.089 ppm and 0.088 ppm, respectively. The Narragansett site reported a fourth highest 8-hour average value of 0.083 ppm during 2007. Over the past eleven years, 2002 was the year with the most days above the 1997 Ozone Standard compared to other years. The Narragansett Site recorded the highest 8-hour average concentration of 0.100 ppm during 2007.


Rhode Island Sites - 2007 - Particulate Matter < 10 Microns
Miles
0
5
10
PROVIDENCE
VERNON STREET , PAWTUCKET
1655 WESTMINSTER STREET, PROVIDENCE
212 PRAIRIE AVE, PROVIDENCE
111 DORRANCE STREET, PROVIDENCE
Rhode Island
BRISTOL
KENT
W. ALTON JONES CAMPUS URI , WEST GREENWICH
NEWPORT
WASHINGTON
N
W
E
S
Approximate Elevation
6000
3000
0 feet
EPA

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

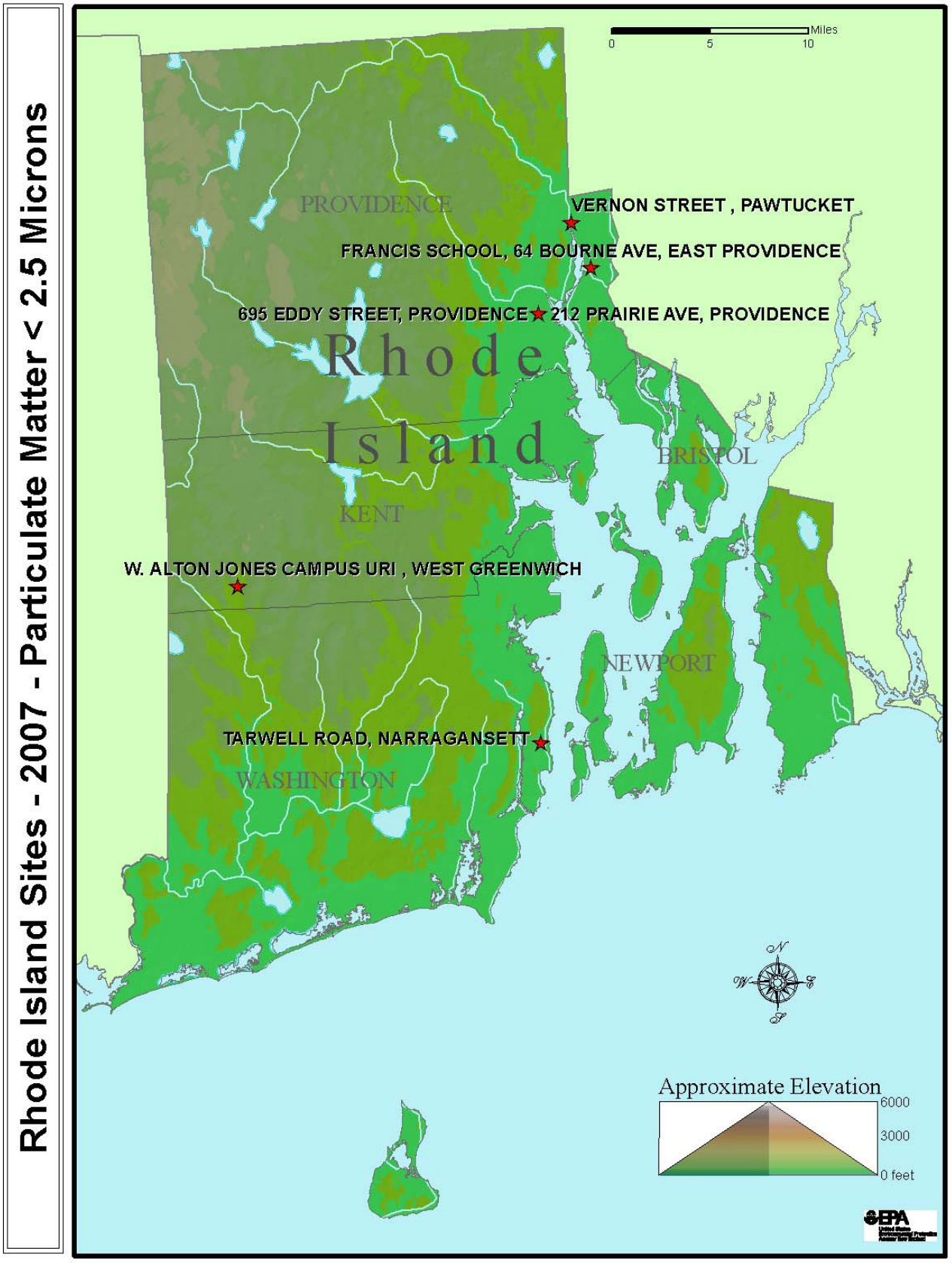




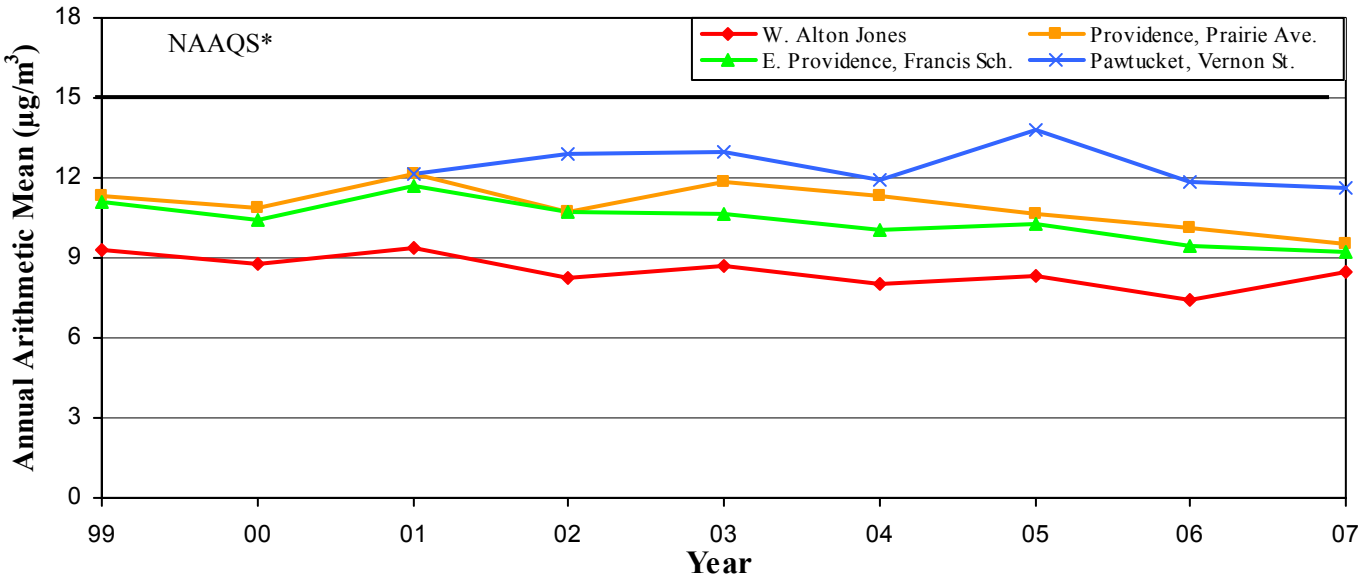
NAAQS for Particulate Matter less than 10 Microns:
24-hour 150 µg/m^3

2007																		
Rhode Island																		
Particulate Matter < 10 Microns																		
ug/m3																		
											1st	2nd	3rd	4th	Days	Est. D	Wtd.	
		Rep.							Number	Valid	Highest	Highest	Highes	Highes	Max	Max	Arith.	Metho
SITE ID	PO	Org	City	County	Address	# Obs	# Req.	Days	% Obs	Value	Value	Value	Value	>150	>150	Mean	Used	
44-003-0002	1	0907	West Greenw	Kent	W. ALTON JONES CAMPUS, URI	57	60	57	95	26	24	21	21	0	0	9.9	63	
44-007-0022	1	0907	Providence	Providence	212 PRAIRIE AVE	60	60	60	100	30	27	27	26	0	0	14.8	63	
44-007-0022	2	0907	Providence	Providence	212 PRAIRIE AVE	56	60	56	93	30	27	26	26	0	0	14.7	63	
44-007-0026	1	0907	Pawtucket	Providence	VERNON STREET	55	60	55	92	54	52	35	32	0	0	18.9	63	
44-007-0027	1	0907	Providence	Providence	111 DORRANCE STREET	58	60	58	97	31	29	27	27	0	0	16	63	

None of the particulate matter (PM_{10}) sites in Rhode Island had any exceedances or violations of the 24-hour standards over the past seven years. Of the four PM_{10} monitoring sites, the Vernon Street Site in Pawtucket reported the highest 24-hour second maximum value of 52 µg/m^3 during 2007. The other three monitoring sites reported the highest 24-hour second maximum values of 24 µg/m^3, 27 µg/m^3 and 29 µg/m^3 in 2007. The long range graphs for PM_{10} show values varied up and down from year-to-year with no signs of an upwind or downwind trend. However, there was a significant decline of the highest 24-hour second maximum value at the Dorrance Street and Prairie Avenue sites in Providence during 2007 compared to 2006.


Rhode Island Sites - 2007 - Particulate Matter < 2.5 Microns
Miles
0
5
10
PROVIDENCE
VERNON STREET , PAWTUCKET
FRANCIS SCHOOL, 64 BOURNE AVE, EAST PROVIDENCE
695 EDDY STREET, PROVIDENCE
212 PRAIRIE AVE, PROVIDENCE
Rhode
Island
BRISTOL
KENT
W. ALTON JONES CAMPUS URI , WEST GREENWICH
NEWPORT
TARWELL ROAD, NARRAGANSETT
WASHINGTON
N
W
E
S
Approximate Elevation
6000
3000
0 feet
EPA

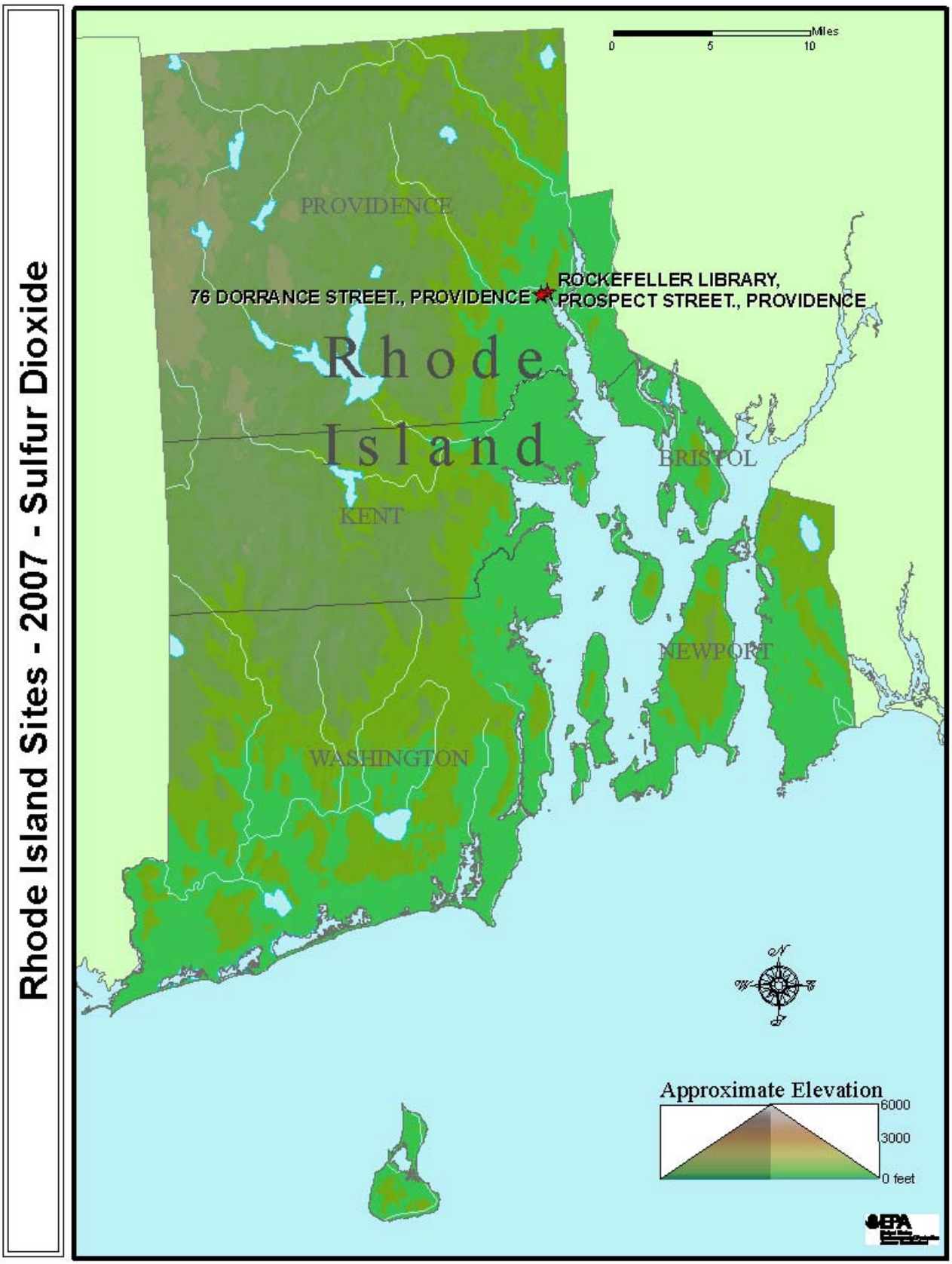
Rhode Island Particulate Matter < 2.5 Microns ($PM_{2.5}$) Data



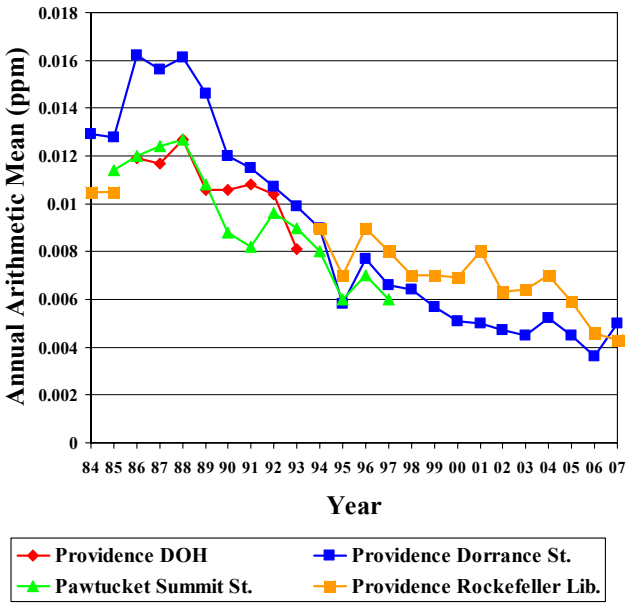
*NAAQS for Particulate Matter less than 2.5 Microns:
Annual Arithmetic Mean - 15.0 µg/m^3

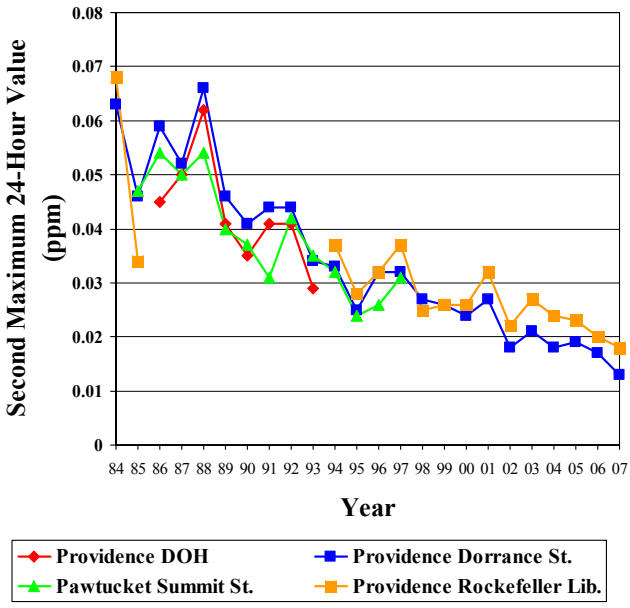
2007													
Rhode Island													
Parameter: PM 2.5													
All Values are in UG/CU Meters Local Conditions													
	P								2nd	3rd	4th	98th	Wtd.
	O	Rept.					#	Highest	Highest	Highest	Highest	Percentile	Arith.
Site ID	C	Org.	City	County	Address	Method	Obs	Value	Value	Value	Value	Value	Mean
44-003-0002	1	0907	West Greenwich	Kent	W. ALTON JONES CAMPUS URI	120	113	38.1	26.1	25.7	25.3	25.7	8.47
44-007-0022	1	0907	Providence	Providence	212 PRAIRIE AVE.	0	347	43.2	31.2	29.8	29.7	27.1	9.52
44-007-0022	2	0907	Providence	Providence	212 PRAIRIE AVE.	0	55	24.0	20.3	19.7	18.4	20.3	9.72
44-007-0026	1	0907	Pawtucket	Providence	VERNON STREET	120	114	34.8	32.1	31.0	29.5	31.0	11.68
44-007-0028	1	0907	Providence	Providence	695 EDDY STREET	120	117	30.4	30.1	28.3	28.0	28.3	10.47
44-007-1010	1	0907	East Providence	Providence	FRANCIS SCHOOL, 64 BOURNE AVE.	120	347	43.7	40.7	32.6	29.6	27.5	9.21

In 2007, Rhode Island operated a network of five fine particulate matter ($PM_{2.5}$) sites. During 2007, the annual arithmetic mean concentrations of $PM_{2.5}$ were highest at the Providence area sites (i.e. Francis School, Prairie Ave., Vernon St., and Eddy St.) compared to the rural site at Alton Jones. The nine year concentration trends for the Alton Jones, Francis School, Prairie Ave., and Vernon Street Sites have remained relatively flat, except for a slight increase at the Vernon Street Site during 2005. The 2006 and 2007 concentrations at the Vernon Street Site went back to similar levels seen in 2004.


Rhode Island Sites - 2007 - Sulfur Dioxide
Miles
0
5
10
PROVIDENCE
76 DORRANCE STREET., PROVIDENCE
ROCKEFELLER LIBRARY,
PROSPECT STREET., PROVIDENCE
Rhode
Island
BRISTOL
KENT
NEWPORT
WASHINGTON
Approximate Elevation
6000
3000
0 feet
EPA

Rhode Island Sulfur Dioxide Data





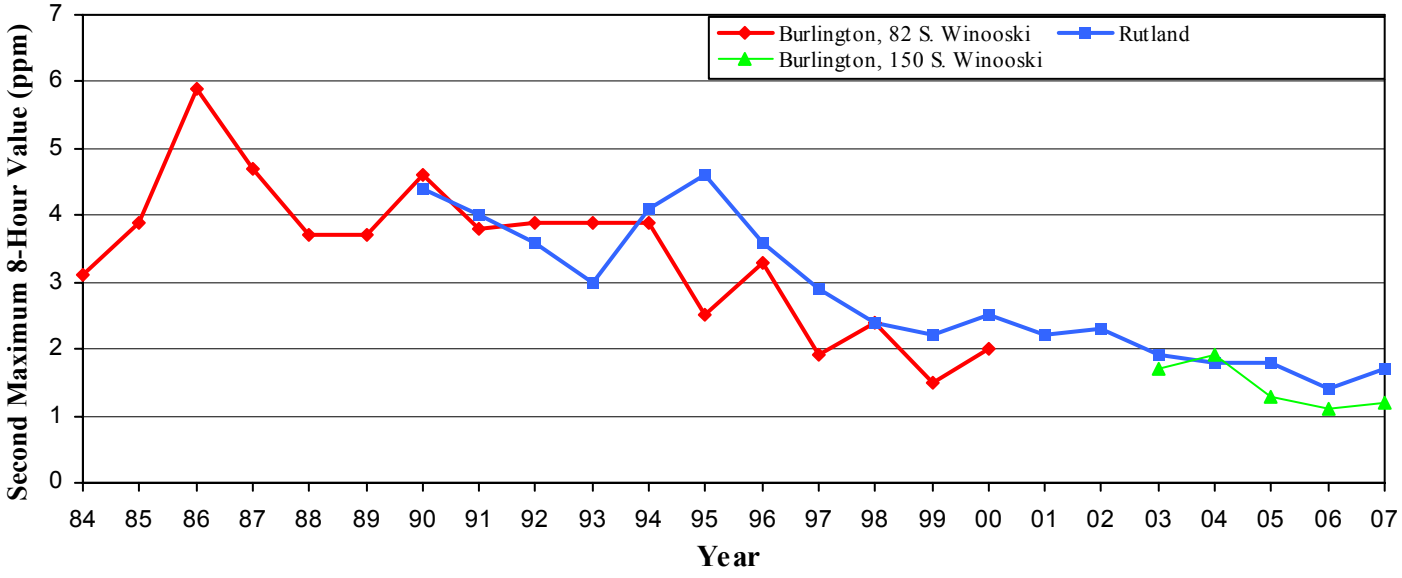
*NAAQS for Sulfur Dioxide:
Annual Arithmetic Mean - 0.03 ppm
3-hour 0.5 ppm
24-hour 0.14 ppm

2007																		
Rhode Island																		
Parameter: Sulfur Dioxide																		
All Values are in Units of Parts Per Million																		
								24-	24-		3-hour	3-hour		1-hour	1-hour			
	P							hour	hour			2nd			2nd			
	O	Org					#		2nd	Obs	Highest	Highest	Obs	Highest	Highest	Arith.		Method
Site ID	C	Type	City	County	Address	Obs	Highest	Highest	> 0.14	Value	Value	> 0.5	Value	Value	Mean		Used	
44-007-0012	1	907	Providence	Providence	ROCKEFELLER LIBRARY	8171	0.026	0.018	0	0.042	0.039	0	0.047	0.046	0.0043		60	
44-007-1009	1	907	Providence	Providence	76 DORRANCE STREET	4091	0.014	0.013	0	0.026	0.026	0	0.029	0.028	0.0050	*	60	

Two air quality monitoring sites measured sulfur dioxide (SO_2) in Rhode Island during 2007. There were no exceedances or violations of the annual, 24-hour, or 3-hour NAAQS. The Dorrance Street Site in Providence reported the highest arithmetic mean concentration of SO_2 at 0.005 ppm, which is 17% of the NAAQS. The highest 24-hour second maximum concentration of 0.018 ppm and the highest 3-hour second maximum concentration of 0.039 ppm were recorded at the Rockefeller Library Site in Providence. The long range trend for SO_2 concentrations in Rhode Island continually shows a downward trend.

Vermont Sites 2007 - Carbon Monoxide

Vermont Carbon Monoxide Data



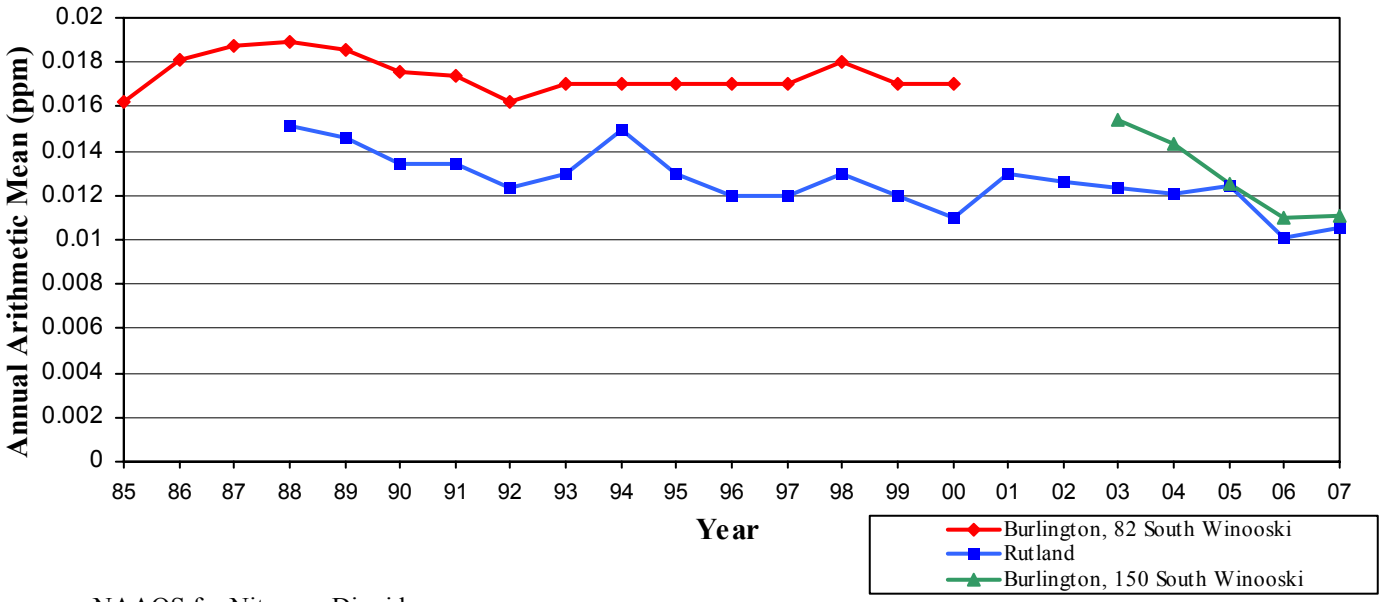
NAAQS for Carbon Monoxide:
8-hour – 9 ppm, not to be exceeded more than one per year
1-hour – 35 ppm, not to be exceeded more than once per year.

Vermont													
Carbon Monoxide													
All Values are in Units of Parts Per Million													
								1-hour	1-hour		8-hour	8-hour		
	P								2nd			2nd		
	O	Org				#	Highest	Highest		Highest	Highest		Methods
Site ID	C	Type	City	County	Address	Obs	Value	Value	# > 35	Value	Value	# > 9	Used
50-007-0014	1	1119	Burlington	Chittenden	150 SOUTH WINOOSKI AVE	8041	1.9	1.9	0	1.2	1.2	0	54
50-021-0002	1	1119	Rutland	Rutland	96 STATE STREET	7476	3.2	3.2	0	2.6	1.7	0	54

The state of Vermont operated two carbon monoxide (CO) ambient monitoring sites during 2007, one in Rutland and one in Burlington. No exceedance or violation of the 1-hour or 8-hour CO National Ambient Air Quality Standards (NAAQS) was recorded at either of the two monitoring sites during 2007. The greatest first and second highest 8-hour concentrations of CO were recorded at the Rutland site. These values were 2.6 ppm and 1.7 ppm, respectively. A general decline is shown in the 24 year trend of CO concentrations in Vermont.

Vermont Sites 2007 - Nitrogen Dioxide

Vermont Nitrogen Dioxide Data



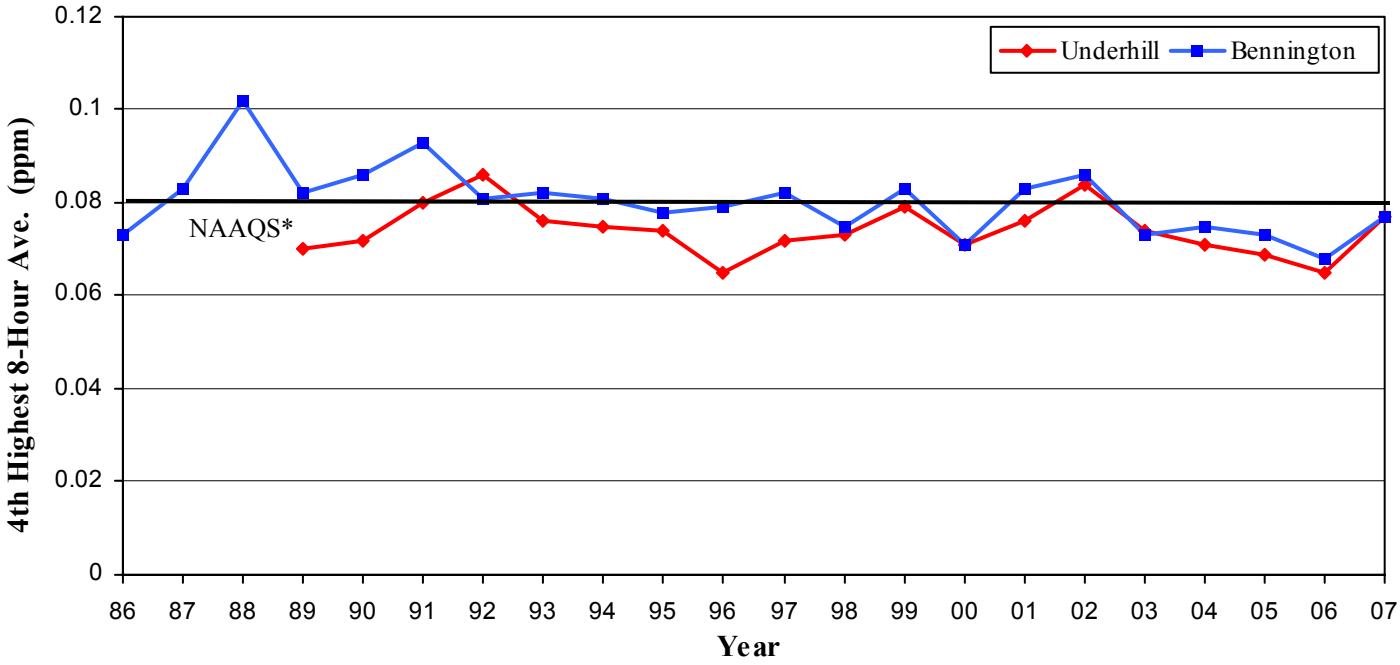
NAAQS for Nitrogen Dioxide:
Annual Arithmetic Mean 0.053 ppm (100 µg/m^3)

2007 NO2										
Vermont										
Parameter: Nitrogen Dioxide										
All Values are in Units of Parts Per Million										
								1-hour	1-hour	
	P								2nd	Annual
	O	Rept.					#	Highest	Highest	Arith.
Site ID	C	Org.	City	County	Address	Method	Obs	Value	Value	Mean
50-007-0014	1	1119	Burlington	Chittenden	150 SOUTH WINOOSKI AVE	74	8032	0.054	0.050	0.0111
50-021-0002	1	1119	Rutland	Rutland	96 STATE STREET	74	8212	0.060	0.057	0.0105

Two nitrogen dioxide (NO_2) monitoring sites (Rutland and Burlington) were operated by the state during 2007. No exceedances of the NAAQS for NO_2 were recorded for either site. The past 23 years of NO_2 data indicate that the concentrations of NO_2 have remained relatively steady with a slight decrease in the past few years. These concentrations are very low in comparison with the NAAQS. During 2007, the highest annual arithmetic mean concentration of NO_2 in Vermont was measured at the Burlington site. This value was 0.0111 ppm, which is approximately 21% of the NAAQS.

Vermont Sites 2007 - Ozone

Vermont 8-Hour Ozone Data

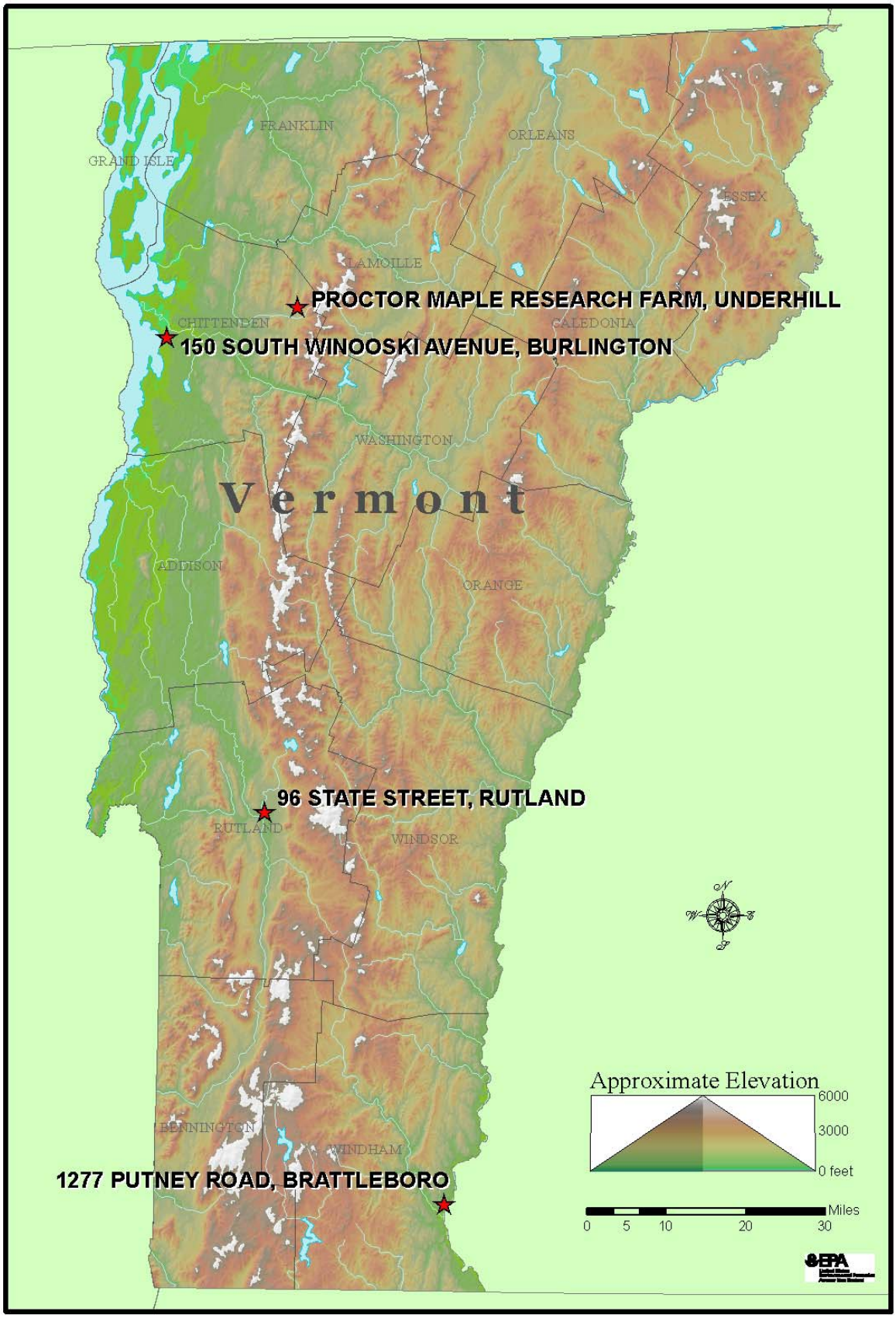


*NAAQS for Ozone:
8-Hour – 0.08 ppm (1997 std)
8-hour – 0.075 ppm (2008 std)

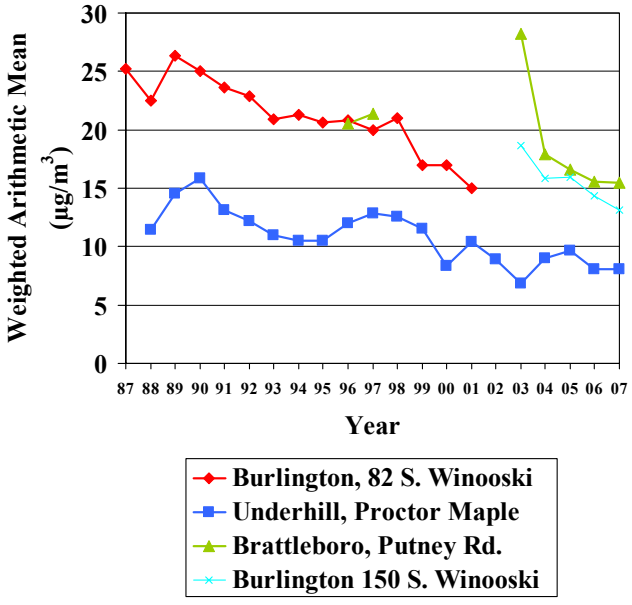
2007														
Vermont														
Parameter: Ozone (8-Hour)														
All Values are in Units of Parts Per Million														
	P						Valid	Num		2nd	3rd	4th	Days	
	O	Rept.				%	Days	Required	Highest	Highest	Highest	Highest	Max >	Methods
Site ID	C	Org.	City	County	Address	Obs	Meas.	Days	8-Hr Value	8-Hr Value	8-Hr Value	8-Hr Value	0.075*	Reported
50-003-0004	1	1119	Bennington	Bennington	AIRPORT RD	99	181	183	0.081	0.080	0.079	0.077	4	87
50-007-0007	1	1119	Underhill	Chittenden	58 HARVEY ROAD	97	178	183	0.086	0.077	0.077	0.077	4	87
*Relative to the 2008 Standard														

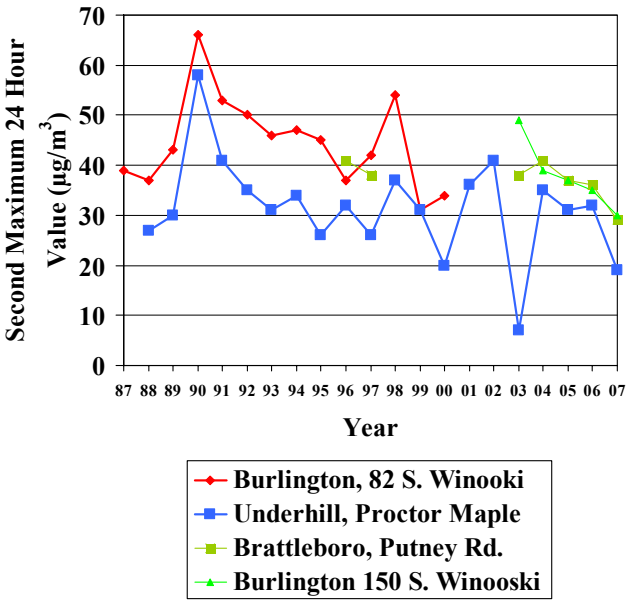
Neither of the two ozone monitoring sites in Vermont (Underhill and Bennington) recorded a fourth highest 8-hr average ozone concentration above the level of the 8-hr ozone NAAQS. The highest 8-hour average ozone concentration in Vermont during 2007 was recorded at the Underhill site and was 0.086 ppm.

Vermont Sites 2007 - Particulate Matter < 10 Microns



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



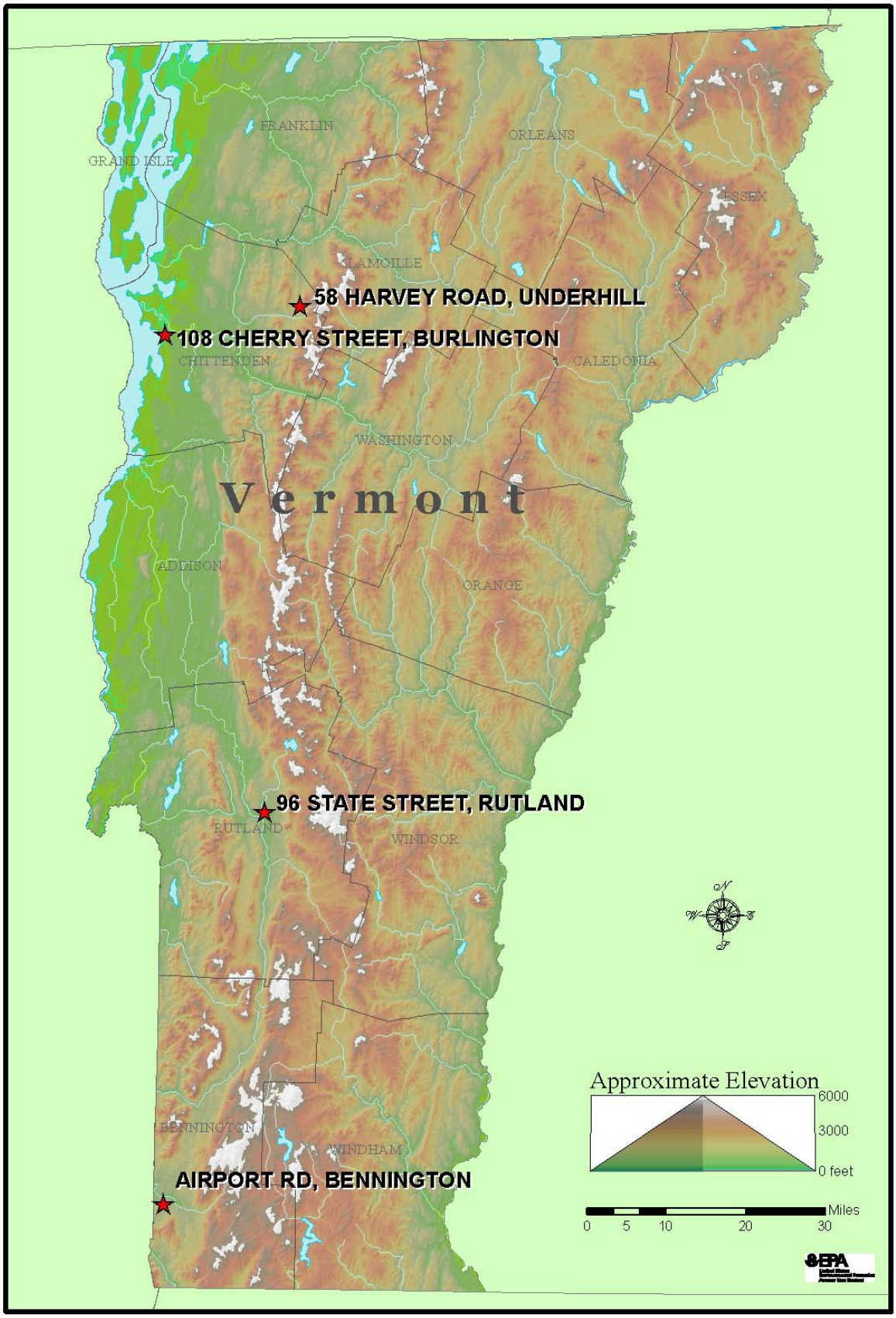


NAAQS for Particulate Matter less than 10 Microns:
24-hour 150 µg/m^3

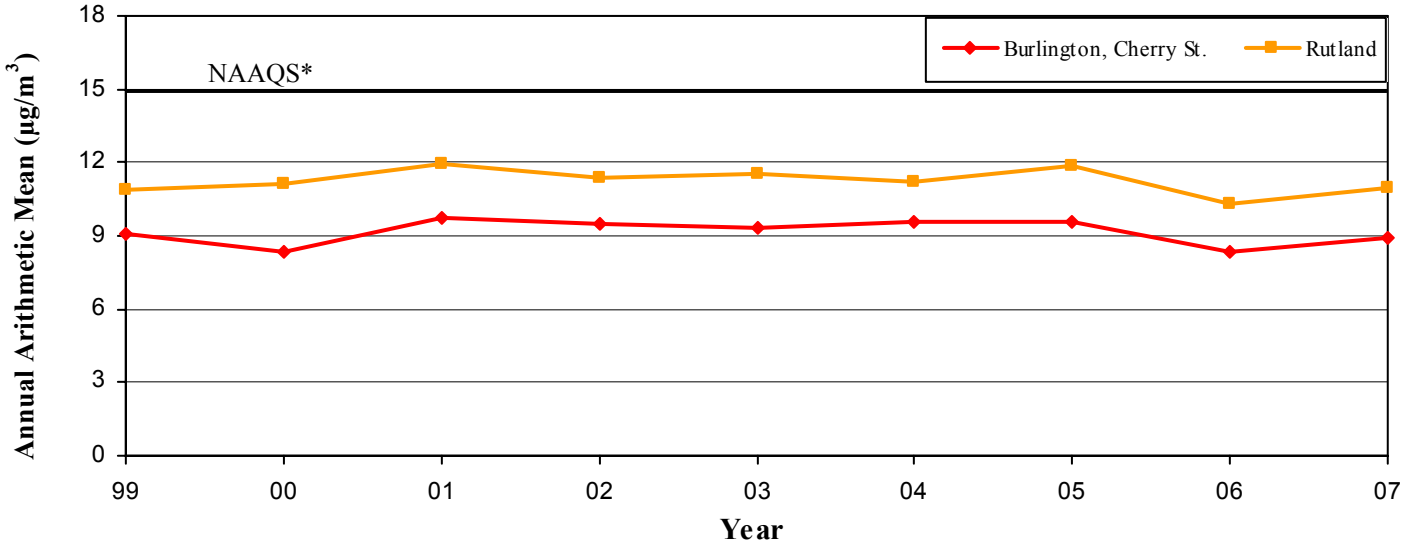
2007																		
Vermont																		
Particulate Matter < 10 Microns																		
ug/m3																		
												2nd	3rd	4th	Days	Est. D	Wtd.	
		Rep.						Number	Valid	Highest	Highest	Highes	Highes	Max	Max	Arith.		Metho
SITE ID	PO	Org	City	County	Address	# Obs	# Req.	Days	% Obs	Value	Value	Value	Value	>150	>150	Mean		Used
50-007-0007	1	1119	Underhill	Chittenden	58 HARVEY ROAD	54	60	54	90	26	19	19	17	0	0	8.1		62
50-007-0014	1	1119	Burlington	Chittenden	150 SOUTH WINOOSKI AVENUE	57	60	57	95	33	30	27	25	0	0	13.1		62
50-021-0002	1	1119	Rutland	Rutland	96 STATE STREET	58	60	58	97	33	29	28	26	0	0	14.4		62
50-025-0004	1	1119	Brattleboro	Windham	1277 PUTNEY RD, RTE 5	52	60	52	87	34	29	26	25	0	0	15.5	*	62
50-025-0004	2	1119	Brattleboro	Windham	1277 PUTNEY RD, RTE 5	52	60	52	87	30	26	25	25	0	0	14.7	*	62
*Indicates that the mean does not satisfy summary criteria																		

During 2007, Vermont maintained four ambient monitoring sites measuring particulate matter less than 10 microns (PM_{10}). The sites include Underhill, Burlington, Rutland and Brattleboro. The two special purpose monitoring sites, operating in Shoreham for the past few years, were discontinued at the end of 2006. Data for 2007 continued the 12 year trend of low PM_{10} concentrations recorded by Vermont monitoring sites. The highest 24-hour PM_{10} concentration in the state was recorded at the Brattleboro ambient monitoring site and measured 34 µg/m^3. The Brattleboro site also recorded the highest annual weighted arithmetic mean PM10 concentration of 15.5 µg/m^3. These concentrations were well below the NAAQS for PM_{10}. The lowest 24-hour PM_{10} maximum value concentration was measured at the Underhill ambient monitoring site and was recorded as 26 µg/m^3. The lowest PM_{10} annual weighted arithmetic mean concentration was also measured at the Underhill site and was recorded as 8.1 µg/m^3.

Vermont Sites 2007 - Particulate Matter < 2.5 Microns



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



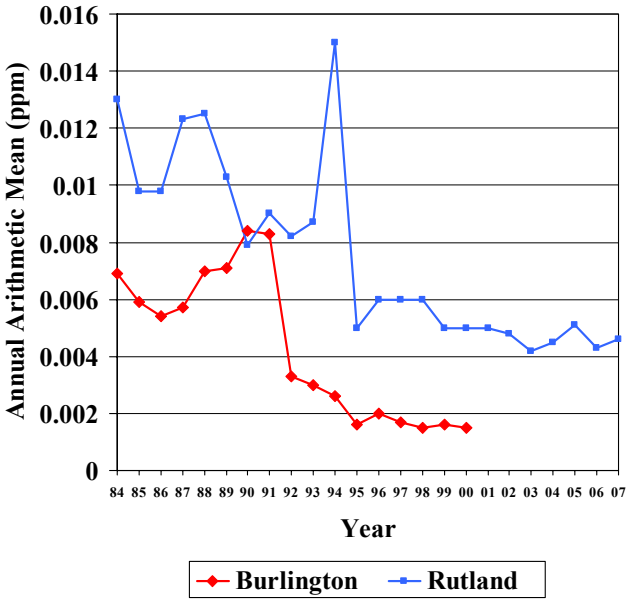
*NAAQS for Particulate Matter less than 2.5 Microns:
Annual Arithmetic Mean - 15.0 µg/m^3

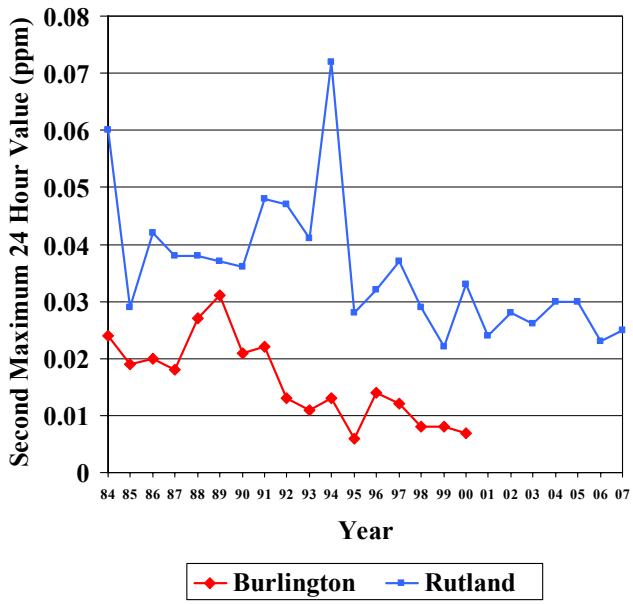
2007													
Vermont													
Parameter: PM 2.5													
All Values are in UG/CU Meters Local Conditions													
	O	Rept.					#	Highest	Highest	Highest	Highest	Percentile	Arith.
Site ID	C	Org.	City	County	Address	Method	Obs	Value	Value	Value	Value	Value	Mean
50-003-0004	1	1119	Bennington	Bennington	AIRPORT RD,	145	117	31.4	30.9	25.8	24.8	25.8	8.25
50-007-0007	1	1119	Underhill (Town	Chittenden	58 HARVEY ROAD	145	117	30.7	25.4	21.9	21.2	21.9	6.51
50-007-0012	1	1119	Burlington	Chittenden	108 CHERRY STREET	145	118	33.1	29.4	28.1	26.9	28.1	8.95
50-007-0012	2	1119	Burlington	Chittenden	108 CHERRY STREET	145	120	31.7	29.2	28.2	25.7	29.2	8.73
50-021-0002	1	1119	Rutland	Rutland	96 STATE STREET	145	112	29.4	28.8	27.9	27.7	27.9	10.95

Vermont operated a network of four fine particulate matter ($PM_{2.5}$) ambient monitoring sites in 2007. The sites include Bennington, Underhill, Burlington and Rutland. The two special purpose monitoring sites, operating in Shoreham for the past few years, were discontinued at the end of 2006. $PM_{2.5}$ concentrations in Vermont have historically been below the NAAQS. The Rutland site recorded the highest annual weighted arithmetic mean for a POC 1 monitor (Parameter Occurrence Code). This value was 10.95 µg/m^3.

Vermont Sites 2007 - Sulfur Dioxide

Vermont Sulfur Dioxide Data





NAAQS for Sulfur Dioxide:
Annual Arithmetic Mean - 0.03 ppm
3-hour 0.5 ppm
24-hour 0.14 ppm

2007																	
Vermont																	
Parameter: Sulfur Dioxide																	
All Values are in Units of Parts Per Million																	
								24-	24-		3-hour	3-hour		1-hour	1-hour		
	P							hour	hour			2nd			2nd		
	O	Org					#		2nd	Obs	Highest	Highest	Obs	Highest	Highest	Arith.	Meth
Site ID	C	Type	City	County	Address	Obs	Highest	Highest	> 0.14	Value	Value	> 0.5	Value	Value	Mean	Used	
50-021-0002	1	1119	Rutland	Rutland	96 STATE STREET	8247	0.028	0.025	0	0.047	0.045	0	0.062	0.055	0.0046	60	

The state operated one sulfur dioxide (SO_2) ambient monitoring site during 2007, located in Rutland. The highest 3-hour SO_2 concentration at the site was 0.047 ppm. The highest 24-hour average SO_2 concentration was 0.028 ppm and the annual arithmetic mean was 0.0046 ppm. With the exception of 1994, the historical data indicate a general decline in the concentration of SO_2 in the state of Vermont.

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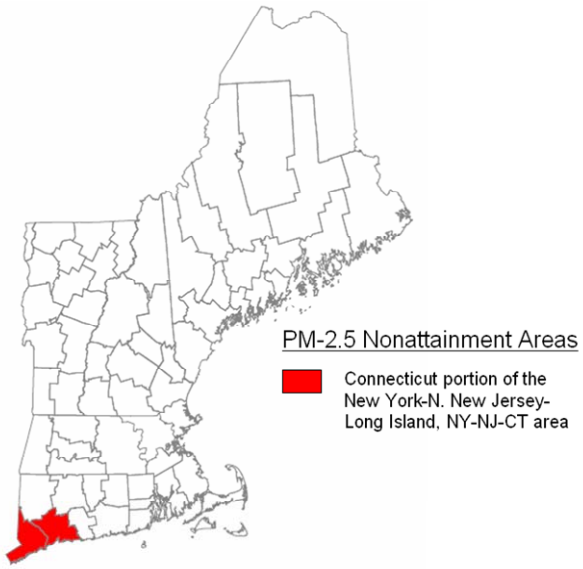
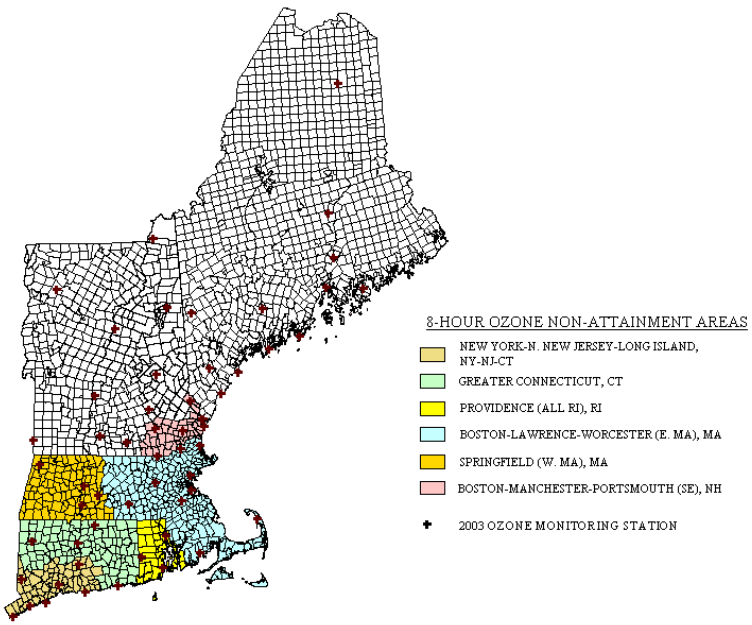
Non-Attainment Areas for Annual PM $_{2.5}$, and 8-Hour Ozone

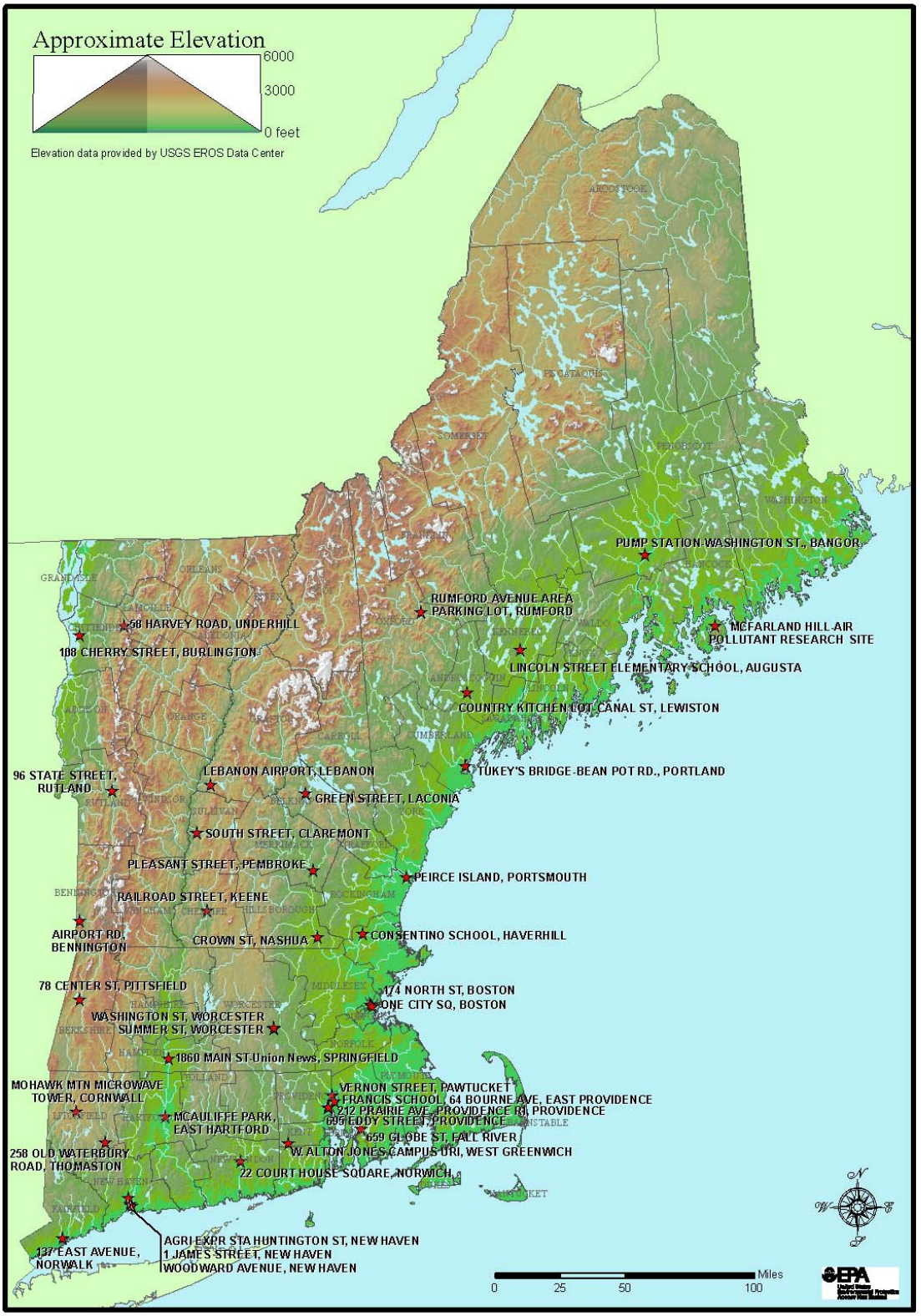
Non-Attainment Areas for the 1997 $PM_{2.5}$ Annual Standard



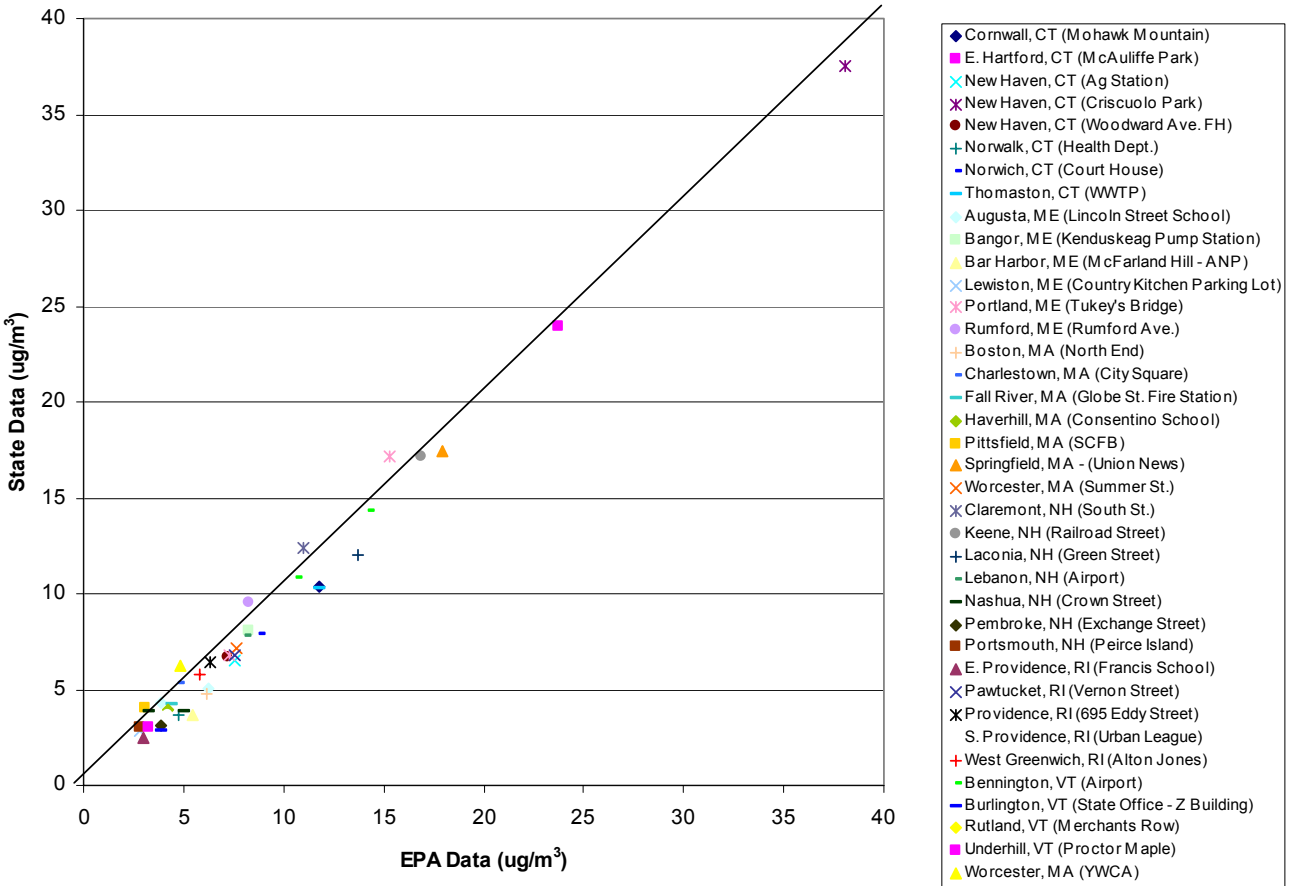
Non-Attainment Areas for the 1997 8-Hour Ozone standard



Performance Evaluation Program (PEP) Sites - 2007



2007 Performance Evaluation Program (PEP) Audits



The $PM_{2.5}$ Performance Evaluation Program (PEP) is part of a National Quality Assurance Program for $PM_{2.5}$. Its purpose is to determine total bias for the $PM_{2.5}$ sample collection and laboratory analysis processes. EPA contractors collocate portable federally referenced $PM_{2.5}$ samplers adjacent to states' routine $PM_{2.5}$ samplers. The instruments run for a 24-hour period at the states' monitoring sites. Once the run is completed in Region I, the $PM_{2.5}$ PEP filters are sent to an independent EPA East Coast Weighing Laboratory in Region IV where $PM_{2.5}$ concentrations are determined and compared in order to assess bias. Statistical analyses are conducted between EPA's data and the states' data in order to decide if bias exists.

In September 2006, the PEP program was modified as follows:

•Primary Quality Assurance Organizations (PQAOs) with five or less $PM_{2.5}$ monitoring sites are required to have five valid audits per year distributed across four quarters; PQAOs with more than five $PM_{2.5}$ monitoring sites are required to have eight valid audits per year distributed across four quarters.

•100% completeness is required (meaning doing as many audits as necessary in order to obtain either five or eight valid samples).

•All samplers are subject to an audit within six years.

If a $PM_{2.5}$ PEP audit isn't successfully completed (either because of problems with the states' or contractor's equipment, or other obstacles), make up audits are performed as soon as possible – usually within the same quarter. This allows for better data completeness. In addition, the EPA contractors in Region I also conduct semi-annual collocation studies using all five EPA portable $PM_{2.5}$ samplers. The samplers are collocated for three 24-hour sampling periods at EPA's North Chelmsford, MA facility.

The 2007 $PM_{2.5}$ PEP graph shows that in general, all six states performed very well during the year.

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