

2006 Annual Report on Air Quality in New England



United States Environmental Protection Agency, Region 1
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Ecosystems Assessment Unit

<http://www.epa.gov/region01/lab/reportsdocuments.html>

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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 Mount Washington, New Hampshire from www.hazecam.net

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2006 ANNUAL REPORT ON AIR QUALITY IN NEW ENGLAND

This report provides a summary of 2006 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 2007. 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. For the 8-hour ozone standard, and the PM_{2.5} standard, EPA has designated areas as attainment/non-attainment.

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 SO₂, PM₁₀ and NO₂). An annual mean is not valid for intermittent data unless there are four valid quarters. For PM₁₀ 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.

Included with this table, are graphs of selected air quality monitoring sites that show a multi-year span of data for PM₁₀, CO, PM_{2.5}, SO₂, and NO₂. 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.

Precision and accuracy data submitted by the six New England states are graphed in a chart following the data tables. The 95% probability limit for each of the six criteria pollutants are given as a network average for each state.

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.

NATIONAL AIR QUALITY STANDARDS^a

For Criteria Pollutants

<u>Pollutant</u>	<u>Averaging Time</u>	<u>Primary Standards^b</u>	<u>Secondary Standards^c</u>
SO ₂	Annual Arithmetic Mean	80 µg/m ³ (0.03 ppm)	
	24 hours	365 µg/m ³ (0.14 ppm)	
	3 hours	--	1300 µg/m ³ (0.5 ppm)
PM _{2.5} ^{fgh}	Annual (3-year average)	15.0 µg/m ³	Same as Primary
	24 hours	3-year average of 98 th percentile values ≤65 µg/m ³	Same as Primary
PM ₁₀ ^{df}	Annual Arithmetic Mean	50 µg/m ³	Same as Primary
	24 hours	150 µg/m ³ ³	Same as Primary
CO	8 hours	9 ppm	Same as Primary
	1 hour	35 ppm	Same as Primary
O ₃ ^e	8 hour	0.08 ppm	Same as Primary
NO ₂	Annual Arithmetic Mean	(0.05 ppm) 100 µg/m ³	Same as Primary
Pb	Calendar Quarter Arithmetic Mean	1.5 µg/m ³	Same as Primary

^a National standards, other than those based on annual arithmetic means, are not to be exceeded more than once a year.

^b National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

^c National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

^d PM₁₀ replaced TSP as the ambient particulate standard effective July 31, 1987, and includes only those particles with an aerodynamic diameter of ≤ a nominal 10 microns. Expected number of exceedances shall not be more than one per year (3 year average) as determined by Appendix K and N of 40CFR Part 50.

^e 8-Hour: The standards are met at an ambient air quality site when the average of the annual fourth-highest daily maximum 8-hour average ozone concentration is less than or equal to 0.08 ppm as determined by Appendix I of 40CFR 50.

^f Measurement of PM₁₀ is at Standard Temperature and Pressure (STP). Measurement of PM_{2.5} for purposes of comparison to the standards shall be reported based on actual ambient temperature and pressure at the monitoring site during the measurement period. The annual arithmetic mean standard was revoked effective December 17, 2006.

^g Appendix N of 40 CFR Part 50 gives the specific procedures for determining whether the PM_{2.5} Primary and Secondary Annual and 24 Hour Standards are attained.

^h In September of 2006 EPA promulgated a new 24-Hour Pm_{2.5} standard of ≤35 µg/m³, effective December 17, 2006.

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 (O₃)

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 (SO₂)

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

Nitrogen Dioxide (NO₂)

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 PM₁₀)

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	OBS > 35	Number of observations greater than 35 ppm for CO
POC	Parameter Occurrence Code - differentiates between monitors for a given pollutant	MAX 8-HR:	1st Highest 8-hour value recorded in the year
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		2nd Second highest 8-hour value recorded in the year
YR	Year	OBS > 9	Number of 8-hour ave. greater than 9 ppm for CO
REP ORG	Reporting Organization	OBS > 365	Number of 24-hour ave. greater than 365 ug/m ³ for SO ₂
#OBS	Number of Observations	MAX 3-HR:	1st Highest 3-hour value recorded in the year
MAX 24-HR:	1st Highest 24-hour value recorded in the year		2nd Second highest 3-hour value recorded in the year
	2nd Second highest 24-hour value for the year	Obs > 1300	Number of 3-hour ave. greater than 1300 ug/m ³ for SO ₂
	3rd Third highest 24-hour value for the year.	NUM MEAS	The valid number of days measured
	4th Fourth highest 24-hour value for the year.	NUM REQ	The valid number of days in the ozone season
ARITH MEAN	Arithmetic mean	NUM OBS	Number of Observations
WTD ARITH MEAN	Weighted arithmetic mean	SCHEDULED NUM OBS	Number of observations scheduled
GEO MEAN	Geometric mean	% OBS	Percent completed of number of observations scheduled
GEO STD	Geometric standard deviation	VALID DAILY 1-HR MAXIMUM:	Maximum hourly values for
QUARTERLY ARITH MEANS:			1ST the highest day
1ST	First quarter arithmetic mean		2ND the second highest day
2ND	Second quarter arithmetic mean		3RD the third highest day
3RD	Third quarter arithmetic mean		4TH the fourth highest day
4TH	Fourth quarter arithmetic mean	VALS > .125: MEAS	Number of measured daily maximum \geq 0.125 ppm
MEANS > 1.5	Number of quarterly means greater than 1.5 ug/m ³ for lead	VALS > .125: EST	Number of expected violations
MAX VALUES:	1st Highest 24-hour value recorded for the year	MISS DAYS ASSUMED < STANDARD	Number of missing days assumed to be less than the standard
	2nd Second highest 24-hour value in the year.	THE DATA IN THE FOLLOWING SECTION CONSISTS OF BOTH STATE AND PRIVATE NETWORKS.	
METH	Method		
MAX 1-HR:	1st Highest 1-hour value recorded in the year		
	2nd Second highest 1-hour value recorded in the year		

2006 Summary of New England Ambient Air Quality

The air quality in New England fluctuates with annual weather patterns. In general warm and dry summers result in higher concentrations of regional pollutants such as ozone and haze, than cool wet summers. According to data from the Northeast Climate Center, the summer of 2006 was a warm summer (ranked 87th in the last 112 years) and the wettest summer on record (ranked 112th wettest in the last 112 years). The warmer but wetter summer in New England led to a decrease in the number of days over the 8-hour Ozone National Ambient Air Quality Standard for 2006 (16 days over the standard). In 2005 (a hot dry summer) there were 26 days over the standard versus 13 days over the standard in 2004 (a cool wet summer). There were 17 days over the standard in 2003 (a cool wet summer).

The maximum 8-hour ozone concentrations for each state in 2006 were: Connecticut (0.119ppm), Maine (0.092ppm), Rhode Island (0.130ppm), New Hampshire (0.086ppm), Massachusetts (0.119ppm) and Vermont (0.077ppm). In 2006 fourteen ozone monitoring sites in New England recorded a fourth highest 8-hour average ozone concentration ≥ 85 ppb ozone. In 2005, 22 ozone monitoring sites recorded a fourth high value above this level, in 2004 there were 2 sites, and in 2003 there were 14 sites. Maine, New Hampshire, Rhode Island and Vermont had no ozone monitoring sites with a fourth highest average ozone concentration ≥ 0.085 ppm.

Since 1993, the New England Photochemical Assessment Monitoring Stations (PAMS) have routinely measured air pollutants that contribute to the regional formation of ozone. These monitoring stations are located in each of the New England states, except Vermont. The 2006 regional PAMS data for ambient concentrations of hydrocarbon pollutants (total non-methane hydrocarbons-TNMOC) indicate that many of the PAMS Type 2 core sites and downwind Type 3 and Type 4 sites are experiencing a continued decline in TNMOC ambient concentrations from the mid-1990's.

For particulate matter, the highest annual average concentrations of fine particulate matter (PM_{2.5}) were measured in Waterbury, Connecticut (12.7 $\mu\text{g}/\text{m}^3$) and in Boston, Massachusetts (11.2 $\mu\text{g}/\text{m}^3$). The primary annual and 24-hr exposure standards for fine particulate matter (PM_{2.5}) are based on a three year annual average of the 98th percentile 24-hr concentration, respectively. In 2006, there were 6 sites in Connecticut that measured 98th percentile PM_{2.5} concentrations exceeding the EPA's new 24-hour fine particulate standard. All other New England sites were below this standard. The data for 2002 – 2006 for each PM_{2.5} monitoring site in New England shows attainment of the annual fine particulate standard. The highest daily concentration of PM₁₀ was recorded in Madawaska, Maine (165 $\mu\text{g}/\text{m}^3$) None of the PM₁₀ monitoring sites exceeded the primary or secondary NAAQS for PM₁₀.

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Ambient Air Quality Summary – Connecticut

Three carbon monoxide (CO) ambient monitoring sites and two trace CO ambient monitoring sites operated in 2006. The highest recorded maximum 8-hour concentration (4.4 ppm) was recorded at the Hartford Courthouse site. This contrasts with previous 8-hour maximum measurements in 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 graphs for the past twenty years show concentrations of CO well below the national standards and indicate a downward trend in concentrations.

There have been no exceedances or violations of the quarterly lead (Pb) national standard for many years. By the end of 1996, the Connecticut ambient air monitoring program was reduced to one site, Waterbury. In 2002 the Waterbury monitoring site reported a maximum quarterly average Pb concentration of 0.02 $\mu\text{g}/\text{m}^3$ (less than 2% of the NAAQS). Monitoring for lead in Connecticut was terminated late in 2002.

Not one of the three ambient air monitoring sites that measured nitrogen dioxide (NO_2) measured a violation of the NAAQS during 2006. New Haven reported concentrations that were roughly 40% 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 twenty-year graphs for these sites show relatively constant annual concentrations of NO_2 with a minor downward trend since 2001.

In 2006, four of the eleven ozone (O_3) monitoring sites recorded a violation frequency above 0.125 ppm (the level of the former 1-hour ozone standard). In 2005, four sites exceeded this standard, in 2004, only 2 sites exceeded this standard. In 2003, seven of the eleven ozone sites exceeded the 1-hour NAAQS while in 2002 all eleven exceeded the 1-hour standard. In 2001, ten of the eleven sites exceeded this standard. These observed increases/decreases of NAAQS exceedances corresponds to changing summer weather conditions. Warm and dry summers, with more frequent periods of air stagnation and/or pollution transport conditions, generally record increased exceedances of the ozone NAAQS. The Westport ozone monitoring site measured the highest 1-hour maximum ozone concentration (0.148 ppm) and the highest second highest 1-hour maximum ozone concentration (0.137 ppm) was also recorded in Westport.

During 2006 (and also in 2005), ten of the eleven ozone monitoring sites reported a fourth-highest daily 8-hour average ozone concentration above the level of the 8-hour NAAQS. 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 2006 the highest 8-hour ozone concentration of 0.119 ppm was measured at Westport. The highest 8-hour ozone concentration in 2005 was measured at three sites (0.110 ppm). These data contrast to those recorded in 2004, 2003, 2002, 2001, 2000 and 1998, when the maximum 8-hour concentrations were 0.111, 0.125, 0.134, 0.133, 0.124 and 0.118 ppm respectively.

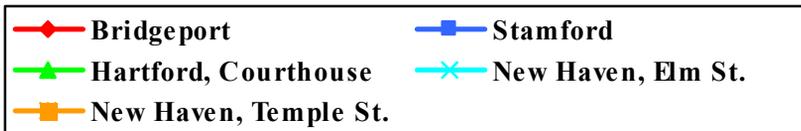
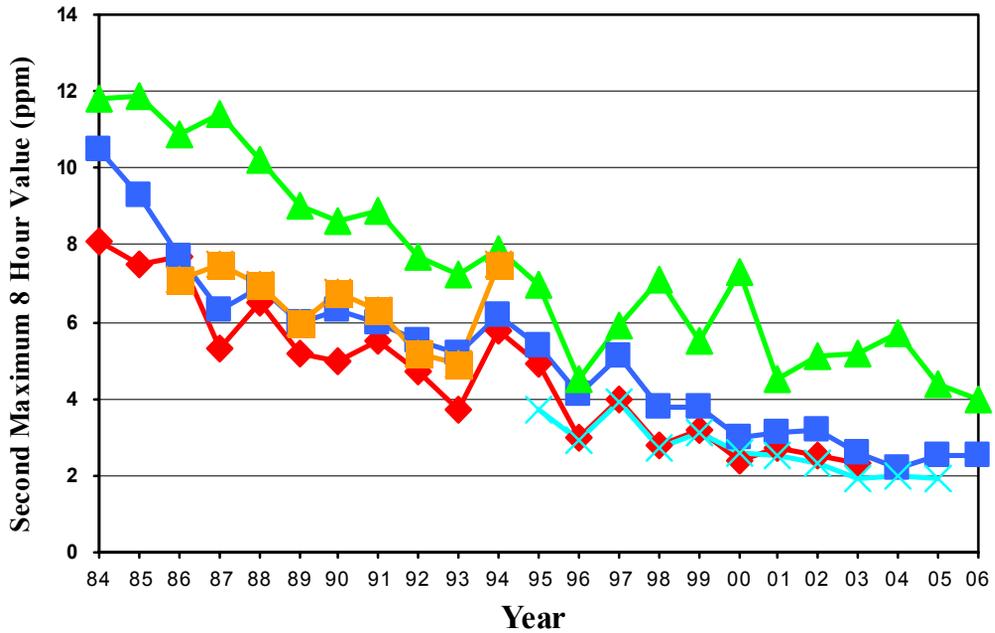
None of the monitoring sites that collected particulate matter of less than 10 microns (PM_{10}) recorded exceedances of either the 24-hour or the annual NAAQS for PM_{10} . The Stiles Street site in New Haven which recorded the highest 24-hour measurements, was terminated in 2005. The highest PM_{10} 24-hour averaged was recorded at Waterbury (83 $\mu\text{g}/\text{m}^3$). The New Haven State Street fine particulate ($\text{PM}_{2.5}$) monitoring site recorded the highest daily average concentration (53.2 $\mu\text{g}/\text{m}^3$). Of the thirteen $\text{PM}_{2.5}$ monitoring sites in Connecticut that measured particulate matter in 2006, the New Haven State Street site reported the highest annual average (12.7 $\mu\text{g}/\text{m}^3$). Six of the $\text{PM}_{2.5}$ air monitoring sites recorded a 98th percentile value greater than the $\text{PM}_{2.5}$ 24-hour NAAQS of 35 $\mu\text{g}/\text{m}^3$.

There were no exceedances or violations at any of the Connecticut ambient monitoring sites for either the 24-hour or 3-hour sulfur dioxide (SO_2) NAAQS. The highest annual arithmetic mean SO_2 concentration was measured at a new site in New Haven-James Street (5 ppb). New Haven also measured the highest 24-hour concentration (66 ppb) which was roughly 50% of the NAAQS. The twenty-year trend graphs for SO_2 show decreasing SO_2 concentrations with some year-to-year variability.

Connecticut Sites - 2006 - Carbon Monoxide



Connecticut Carbon Monoxide Data

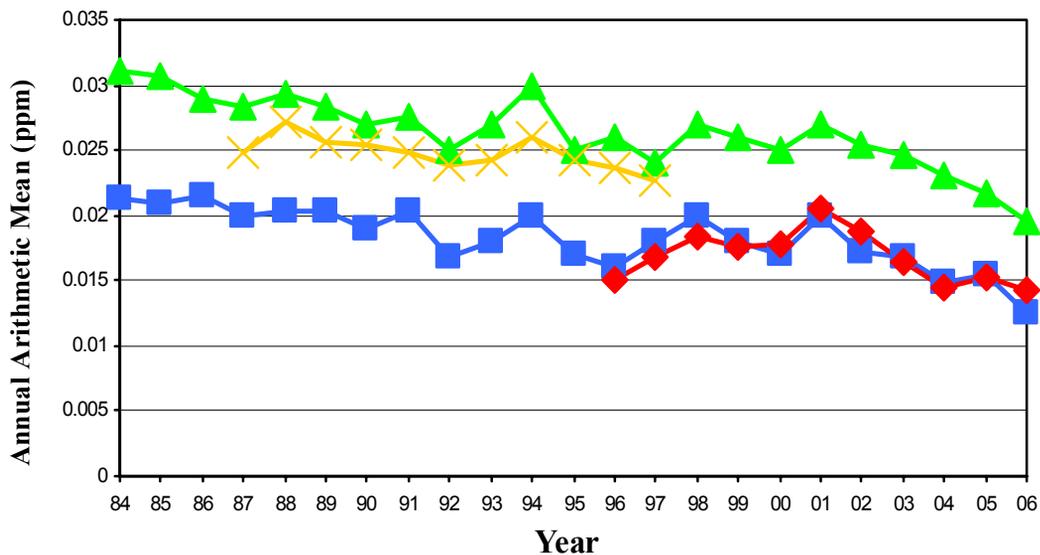


Connecticut						2006 Carbon Monoxide							
All Values are in Units of Parts Per Million							1-hour	1-hour		8-hour	8-hour		
	P						Highest	Highest		Highest	Highest		Methods
Site ID	C	Type	City	County	Address	# Obs	Value	Value	# > 35	Value	Value	# > 9	Used
09-001-0020	1	0251	Stamford	Fairfield	LIBRARY 96, BROAD STREET	8639	4.0	3.6	0	3.1	2.5	0	054
09-003-0017	1	0251	Hartford	Hartford	COURTHOUSE, 155	8630	7.1	7.0	0	4.4	4.0	0	054
09-003-1003	1	0251	East Hartford	Hartford	MCAULIFFE PARK	8665	2.8	2.7	0	2.0	1.7	0	054
09-005-0004	1	0251	Thomaston	Litchfield	ACROSS FROM 258 OLD WATERBURY R	1619	1.5	1.5	0	1.3	1.1	0	054
09-009-0027	1	0251	New Haven	New Haven	1 JAMES STREET	4246	1.4	1.4	0	1.1	1.1	0	054

Connecticut Sites - 2006 - Nitrogen Dioxide

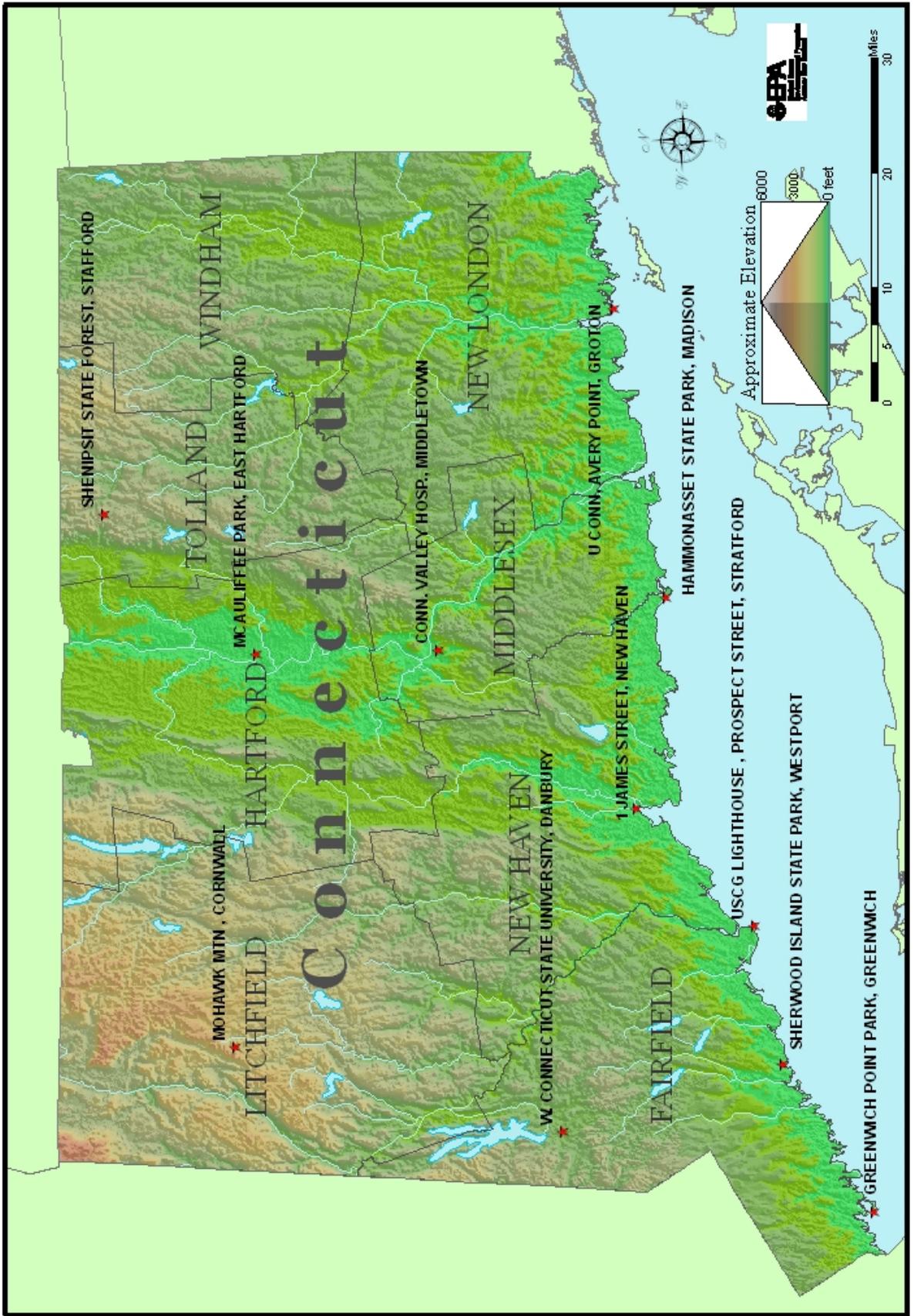


Connecticut Nitrogen Dioxide Data

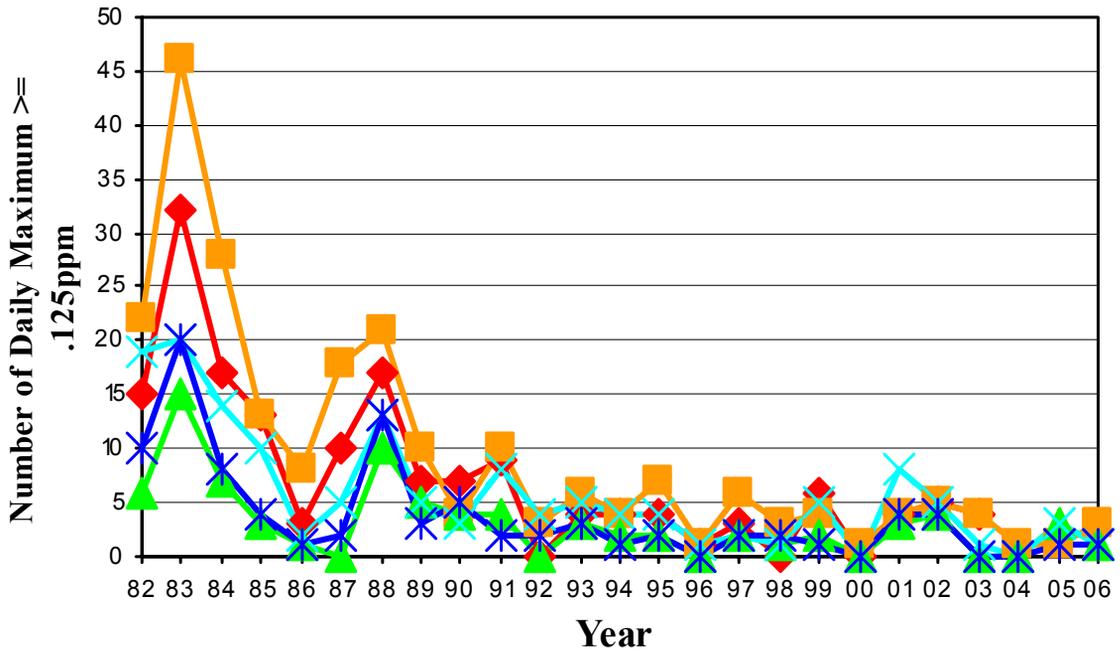


NO2										
Connecticut										
2006 Nitrogen Dioxide										
All Values are in Units of Parts Per Million										
								1-hour	1-hour	Annual
	P								2nd	Arith.
Site ID	O Rept.	C Org.	City	County	Address	Method	# Obs	Highest Value	Highest Value	Mean
09-001-9003	1	0251	Westport	Fairfield	SHERWOOD ISLAND ST PK	074	8104	0.086	0.084	0.0143
09-003-1003	1	0251	East Hartford	Hartford	MCAULIFFE PARK	074	8316	0.069	0.061	0.0126
09-005-0004	1	0251	Thomaston	Litchfield	258 OLD WATERBURY RD	074	2081	0.203	0.075	0.0118
09-009-0027	1	0251	New Haven	New Haven	1 JAMES STREET	074	8478	0.079	0.076	0.0196

Connecticut Sites - 2006 - Ozone

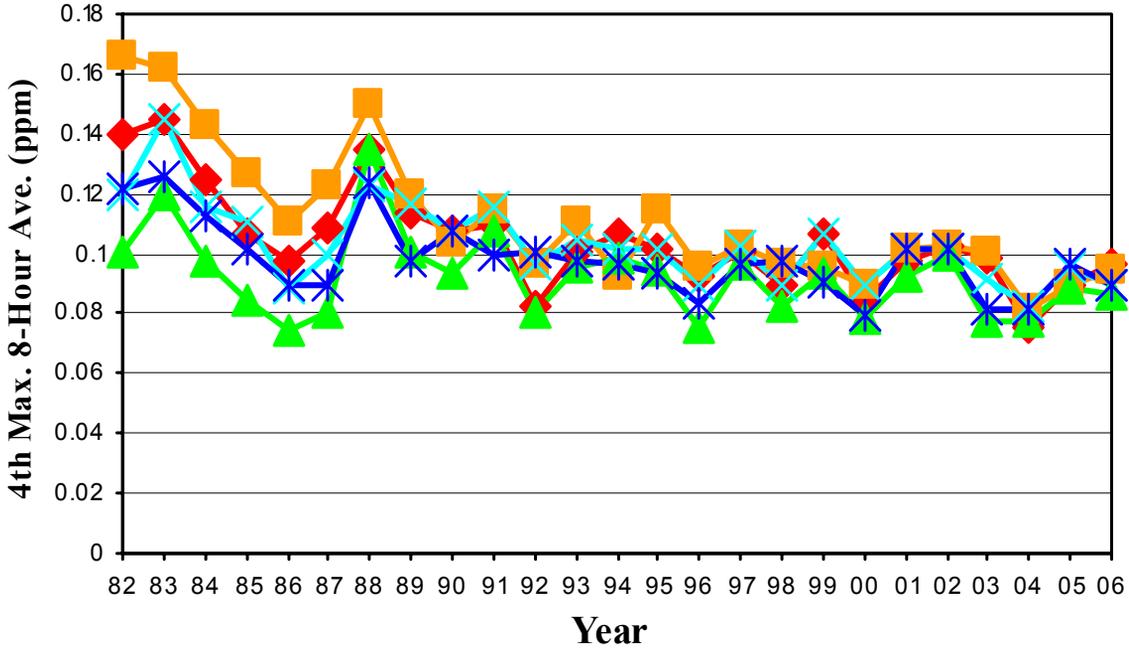


Connecticut Ozone 1-Hour Data



O3 1 hour															
Connecticut															
2006 Ozone (1-Hour)															
All Values are in Units of Parts Per Million															
	P								2nd	3rd	4th			Missing	
	O	Rep.							Highest	Highest	Highest	Day Max	Est. Day	Days	Method
Site ID	C	Org.	City	County	Address	Meas	Num	Num	Value	Value	Value	> 0.125	> 0.125	< 0.125	used
09-001-0017	1	0251	Greenwich	Fairfield	GREENWICH POINT	179	183	0.134	0.134	0.128	0.124	3	3	2	047
09-001-1123	1	0251	Danbury	Fairfield	W. CT STATE UNIVERSITY	176	183	0.144	0.123	0.112	0.106	1	1	1	047
09-001-3007	1	0251	Stratford	Fairfield	USCG LIGHTHOUSE PROSPECT ST	179	183	0.138	0.136	0.125	0.120	3	3.1	1	047
09-001-9003	1	0251	Westport	Fairfield	SHERWOOD ISLAND STATE PK	181	183	0.148	0.137	0.130	0.104	3	3	0	047
09-003-1003	1	0251	East Hartford	Hartford	MCAULIFFE PARK	180	183	0.146	0.117	0.103	0.102	1	1	3	047
09-005-0005	1	0251	Cornwall	Litchfield	MOHAWK MTN MICROWAVE TOWER	182	183	0.123	0.111	0.110	0.100	0	0	1	047
09-007-0007	1	0251	Middletown	Middlesex	CONN. VALLEY HOSP. SHEW HALL	179	183	0.144	0.108	0.107	0.107	1	1	1	047
09-009-0027	1	0251	New Haven	New Haven	1JAMES STREET	182	183	0.121	0.111	0.101	0.096	0	0	1	047
09-009-3002	1	0251	Madison	New Haven	HAMMONASSET STATE PARK	172	183	0.131	0.117	0.115	0.115	1	1.1	1	047
09-011-0008	1	0251	Groton	New London	UNIV OF CT AVERY POINT	180	183	0.120	0.112	0.109	0.107	0	0	3	047
09-013-1001	1	0251	Stafford	Tolland	ROUTE 190, SHENIPSIT STATE FORES	176	183	0.136	0.113	0.109	0.104	1	1	1	047

Connecticut Ozone 8-Hour Data



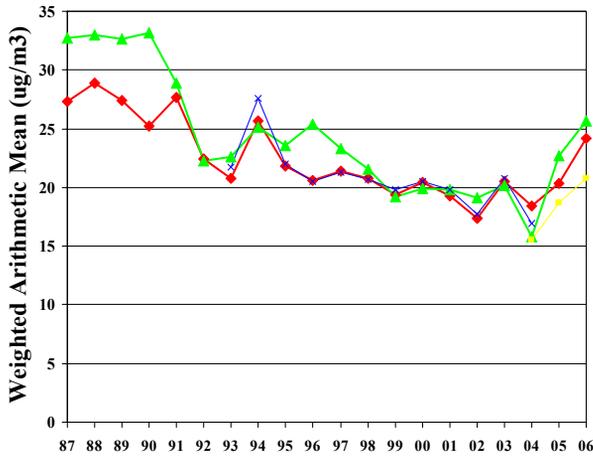
O3 8hour														
Connecticut														
2006 Ozone (8-Hour)														
All Values are in Units of Parts Per Million														
Site ID	P	O Rept.	City	County	Address	% Obs	Valid Days	Num Meas.	Required Days	Highest 8-Hr Value	2nd Highest 8-Hr Value	3rd Highest 8-Hr Value	4th Highest 8-Hr Value	Days Max > 0.085
09-001-0017	1	0251	Greenwich (Town)	Fairfield	GREENWICH POINT PARK	96	176	183	0.100	0.099	0.099	0.097	5	
09-001-1123	1	0251	Danbury	Fairfield	W. CT STATE UNIVERSITY	94	172	183	0.103	0.098	0.088	0.087	4	
09-001-3007	1	0251	Stratford	Fairfield	USCG LIGHTHOUSE PROSPECT ST	97	177	183	0.110	0.099	0.097	0.095	7	
09-001-9003	1	0251	Westport	Fairfield	SHERWOOD ISLAND STATE PK	97	178	183	0.119	0.109	0.102	0.089	6	
09-003-1003	1	0251	East Hartford	Hartford	MCAULIFFE PARK	97	178	183	0.111	0.098	0.087	0.086	4	
09-005-0005	1	0251	Cornwall	Litchfield	MOHAWK MTN MICROWAVE TOWER	96	175	183	0.100	0.094	0.089	0.085	4	
09-007-0007	1	0251	Middletown	Middlesex	CONN. VALLEY HOSP. SHEW HALL	97	177	183	0.110	0.098	0.094	0.089	5	
09-009-0027	1	0251	New Haven	New Haven	1 JAMES STREET	98	179	183	0.100	0.083	0.080	0.079	1	
09-009-3002	1	0251	Madison	New Haven	HAMMONASSET STATE PARK	93	171	183	0.114	0.100	0.095	0.095	6	
09-011-0008	1	0251	Groton	New London	UNIVERSITY OF CT, AVERY POINT	97	178	183	0.110	0.100	0.092	0.090	4	
09-013-1001	1	0251	Stafford	Tolland	ROUTE 190, SHENIPSIT STATE FORE	95	174	183	0.105	0.100	0.096	0.089	4	

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Connecticut Sites - 2006 - Particulate Matter < 10 Microns

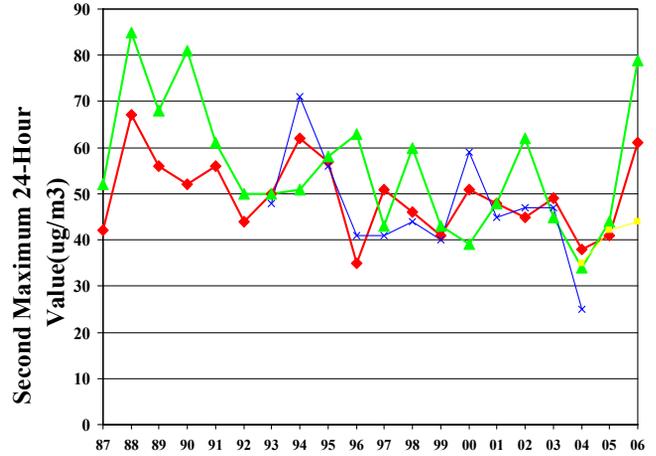


Connecticut Particulate Matter < 10 Microns (PM10) Data



Year

◆ Bridgeport Roosevelt School ▲ Waterbury Meadow & Bank
✱ New Haven State Street ◆ New Haven, James Street



Year

◆ Bridgeport Roosevelt School ▲ Waterbury Meadow & Bank
✱ New Haven State Street ◆ New Haven, James Street

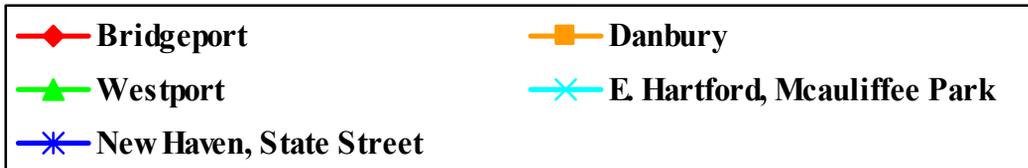
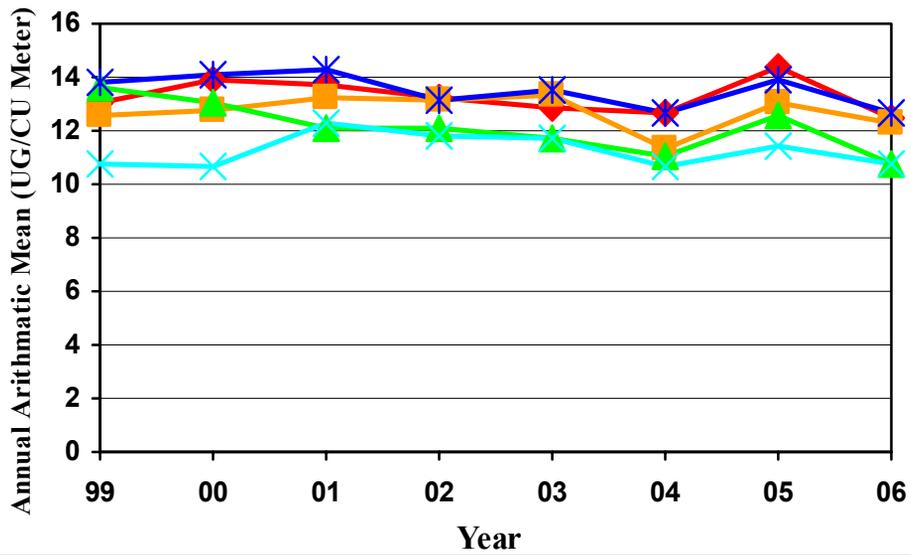
Connecticut																		
2006 Particulate Matter < 10 Microns																		
ug/m3																		
SITE ID	PO	Rep. Org	City	County	Address	# Obs	# Req.	Days	% Obs	Highest Value	2nd Highest Value	3rd Highest Value	4th Highest Value	Days Max >150	Est. Max >150	D Wtd. Arith. Mean	Method Used	
P	O	REP				NUM	VALID			1ST	2ND	3RD	4TH	DAY	EST	WTD		
SITE ID	C	ORG	CITY	COUNTY	ADDRESS	#OBS	REQ	DAYS	%OBS	MAX	MAX	MAX	MAX	>150	>150	MEAN	CER	METH
09-001-0010	1	0251	Bridgeport	Fairfield	ROOSEVELT SCH PARK AV	55	61	55	90	68	61	53	49	0	0	24.2		126
09-001-3005	1	0251	Norwalk	Fairfield	NORWALK HEALTH DEPT	48	61	48	79	49	47	42	42	0	0	21.8	*	126
09-001-9003	1	0251	Westport	Fairfield	SHERWOOD ISLAND ST PA	58	61	58	95	45	38	38	35	0	0	16.8		126
09-003-1003	1	0251	East Hartford	Hartford	MCAULIFFE PARK	59	61	59	97	39	36	36	33	0	0	17.0		126
09-009-0027	1	0251	New Haven	New Haven	1JAMES STREET	53	61	53	87	56	44	43	38	0	0	20.8	*	126
09-009-2123	1	0251	Waterbury	New Haven	MEADOW & BANK STREET	54	61	54	89	83	79	50	49	0	0	25.7	*	126
09-009-2123	2	0251	Waterbury	New Haven	MEADOW & BANK STREET	57	61	57	93	81	48	42	42	0	0	25.2		126

*Indicates that the mean does not satisfy summary criteria

Connecticut Sites - 2006 - Particulate Matter < 2.5 Microns



Connecticut Particulate Matter < 2.5 Microns (PM2.5) Data



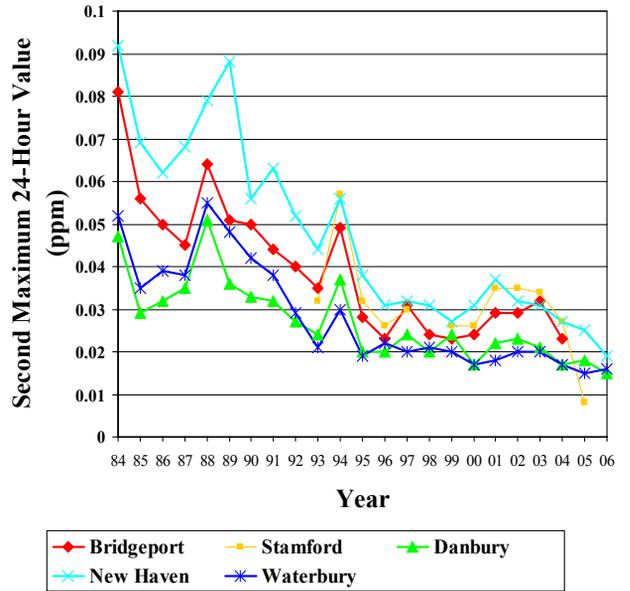
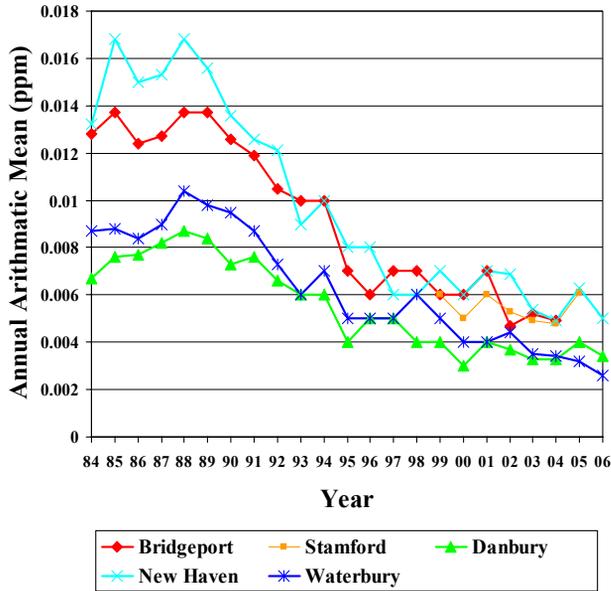
Site ID	P	O	Rept.	City	County	Address	Method	#	Highest	2nd	3rd	4th	98th	Wtd.
	C	Org.						Obs	Value	Highest	Highest	Highest	Percentile	Arith.
										Value	Value	Value	Value	Mean
09-001-0010	1	0251	Bridgeport	Fairfield		ROOSEVELT SCHOOL PARK AVE	145	118	42.3	41.8	36.7	35.7	36.7	12.52
09-001-1123	1	0251	Danbury	Fairfield		W. CONN STATE UNIVERSITY	145	114	40.9	36.3	33.8	33.4	33.8	12.32
09-001-3005	1	0251	Norwalk	Fairfield		NORWALK HEALTH DEPT.137 E, AVE	145	110	40.5	39.2	35.9	32.2	35.9	11.72
09-001-9003	1	0251	Westport	Fairfield		SHERWOOD ISLAND STATE PARK	145	105	39.0	38.4	31.3	30.6	31.3	10.73 *
09-003-1003	1	0251	East Hartford	Hartford		MCAULIFFE PARK	145	325	38.5	35.4	33.0	32.1	31.2	10.72
09-005-0004	1	0251	Thomaston	Litchfield		258 OLD WATERBURY RD	145	34	24.2	20.5	14.5	13.5	24.2	8.7 *
09-005-0005	1	0251	Cornwall	Litchfield		MOHAWK MTN MICROWAVE TOWER	145	117	32.2	28.0	25.1	24.0	25.1	7.23
09-009-0026	1	0251	New Haven	New Haven		WOODWARD AVE	145	118	49.2	37.6	36.5	33.2	36.5	11.75
09-009-0027	1	0251	New Haven	New Haven		1 JAMES STREET	145	347	46.7	44.3	40.3	38.1	36.7	12.18
09-009-0027	2	0251	New Haven	New Haven		1 JAMES STREET	000	57	43.2	31.6	31.1	30.9	31.6	12.79
09-009-1123	1	0251	New Haven	New Haven		715 STATE ST	145	115	53.2	45.1	38.1	38.0	38.1	12.66
09-009-2008	1	0251	New Haven	New Haven		AGRI EXPR STA, HUNTINGTON ST	145	120	40.2	37.8	33.9	31.3	33.9	10.78
09-009-2123	1	0251	Waterbury	New Haven		MEADOW & BANK STREETS	145	117	40.2	38.9	35.6	34.4	35.6	12.05
09-009-2123	2	0251	Waterbury	New Haven		MEADOW & BANK STREETS	145	60	37.4	35.2	32.0	28.6	35.2	12.38
09-011-3002	1	0251	Norwich	New London		22 COURT HOUSE SQUARE	145	118	34.2	32.8	28.3	26.8	28.3	10.15

*Indicates that the mean does not meet summary criteria

Connecticut Sites - 2006 - Sulfur Dioxide



Connecticut Sulfur Dioxide Data



SO2																
Connecticut																
2006 Sulfur Dioxide																
All Values are in Units of Parts Per Million																
Site ID	P	O	C	Type	City	County	Address	#	24-hour	24-hour	3-hour	3-hour	1-hour	1-hour	Arith. Mean	Method Used
									Obs	Highest	Highest	> 0.14	Highest Value	Highest Value		
09-001-0012	1	0251	Bridgeport	Fairfield	115 BOSTON TERRACE	8695	0.022	0.021	0	0.033	0.033	0	0.042	0.041	0.0047	060
09-001-0017	1	0251	Greenwich	Fairfield	GREENWICH POINT PARK	8595	0.016	0.015	0	0.030	0.025	0	0.034	0.029	0.0027	060
09-001-1123	1	0251	Danbury	Fairfield	WEST CT STATE UNIVERS	8582	0.017	0.015	0	0.023	0.021	0	0.028	0.025	0.0034	060
09-001-9003	1	0251	Westport	Fairfield	SHERWOOD ISLAND ST PH	8408	0.018	0.017	0	0.028	0.025	0	0.031	0.029	0.0029	060
09-003-2006	1	0251	East Hartford	Hartford	85 HIGH ST EAST	8337	0.016	0.012	0	0.024	0.020	0	0.025	0.024	0.0024	060
09-009-0027	1	0251	New Haven	New Haven	1 JAMES STREET	8413	0.021	0.019	0	0.043	0.043	0	0.066	0.063	0.0050	060
09-009-2123	1	0251	Waterbury	New Haven	MEADOW & BANK ST	8715	0.016	0.016	0	0.025	0.025	0	0.038	0.033	0.0026	060

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Ambient Air Quality Summary - Maine

In 2006, 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 made along these sites to help understand ozone formation, summer photochemistry, and pollution transport along the Maine coast. This year, the Aroostook Band of Micmac Indians operated a low-level trace CO monitor at the Northern Road site in Presque Isle.

Ambient air monitoring for lead (Pb) has been discontinued because the concentration of lead in Maine's air has been well below the NAAQS for many years.

Two nitrogen dioxide (NO₂) monitoring sites were operated during 2006 (Portland – Marginal Way site, and Bar Harbor – Cadillac Mountain Acadia National Park PAMS site). Neither of these sites measured any exceedances or violations of the NAAQS. In addition, Maine continued to operate a long-path Ultra Violet Differential Optical Absorption Spectroscopy (UV-DOAS) monitor which measured NO₂ as part of the Breathing Easier Through Air Monitoring (BEAM) monitoring effort in Portland. This was discontinued in late 2006.

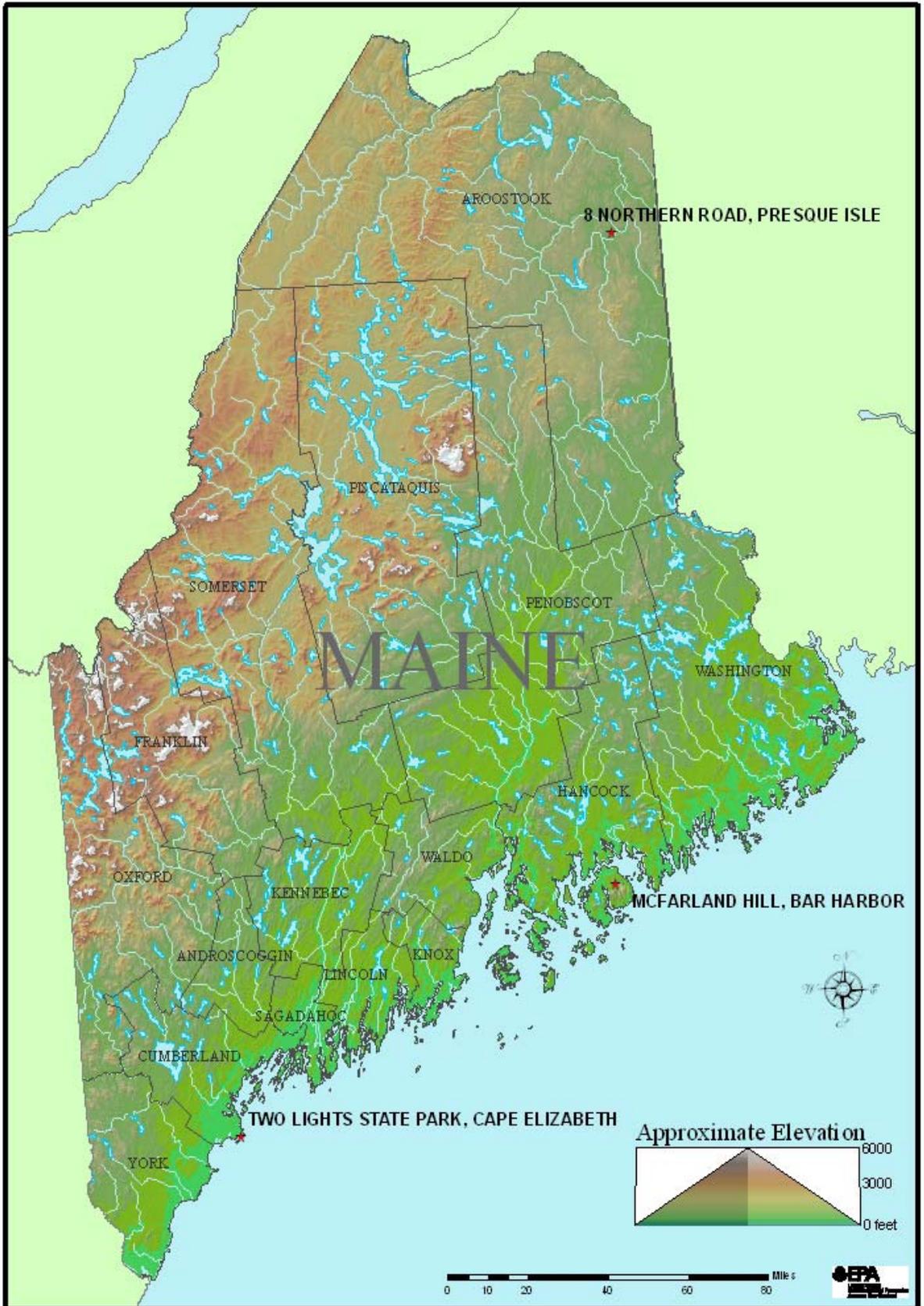
During 2006, none of Maine's ozone (O₃) monitoring sites recorded a fourth highest 8-hr average ozone concentration above the level of the 8-hr NAAQS. Neither did any of the three tribal O₃ monitoring sites that operated this year: the Presque Isle - Northern Road site operated by the Aroostook Band of Micmac Indians, the Indian Island – Wabanaki Way site operated by the Penobscot Indian Nation, and the Perry – County Road site operated by the Passamaquoddy Tribe at Sipayik (Pleasant Point). The Bar Harbor – Cadillac Mountain site recorded the highest 8-hour average ozone concentration at 0.092 ppm. O₃ levels in 2006 were similar to those in 2005.

Only one of Maine's particulate matter sites which measured particles of 10 microns or less (PM₁₀) reported an exceedance of the 24-hour NAAQS during 2006. The highest 24-hour PM₁₀ concentration was recorded at the Madawaska – Tang's Palace site at 165 µg/m³. This site also recorded the highest annual weighted arithmetic mean PM₁₀ concentration at 24.3 ≥µg/m³.

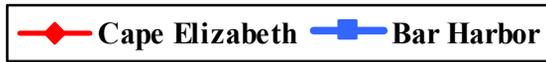
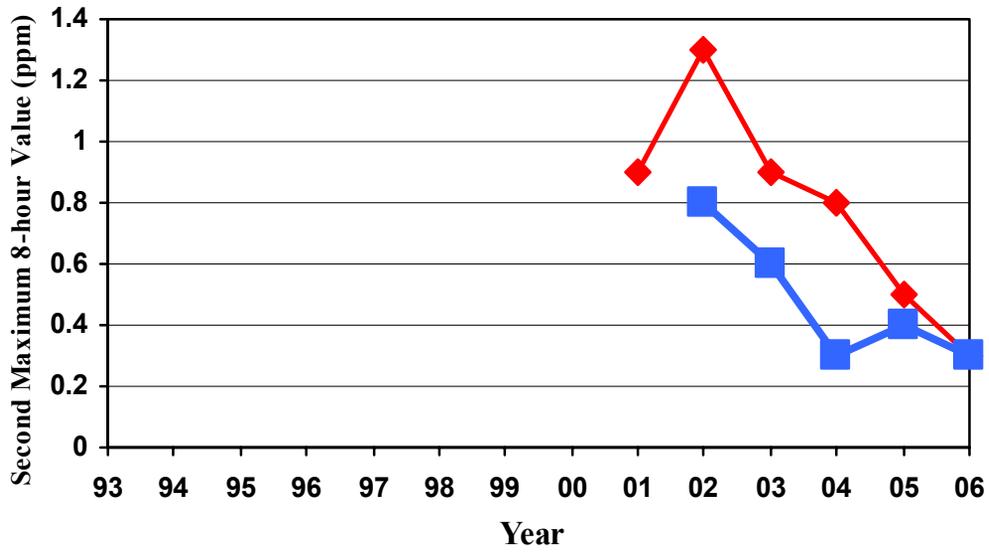
Maine began monitoring for fine particulate matter (PM_{2.5}) in 1999. During 2006, there were ten PM_{2.5} monitoring sites; however, the Waterville site was discontinued early in the year. Data from the sites indicate that none of the sites have recorded PM_{2.5} concentrations that would result in 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 10.68 µg/m³. The Madawaska – Tang's Palace site recorded the highest 24-hour value at 34.6 µg/m³. The PM_{2.5} graph remains unremarkable.

In 2006, there were no exceedances or violations of the sulfur dioxide (SO₂) NAAQS at any of the three monitoring sites. One site was operated by the Aroostook Band of Micmac Indians (Presque Isle - Northern Road site). The Portland - Marginal Way site recorded the highest 3-hour, 24-hour, and arithmetic mean SO₂ concentrations at 28 ppb, 11 ppb, and 2.9 ppb respectively, all well below the standards. The trend for SO₂ concentrations is well below the NAAQS and shows small year-to-year changes.

Maine Sites 2006 - Carbon Monoxide

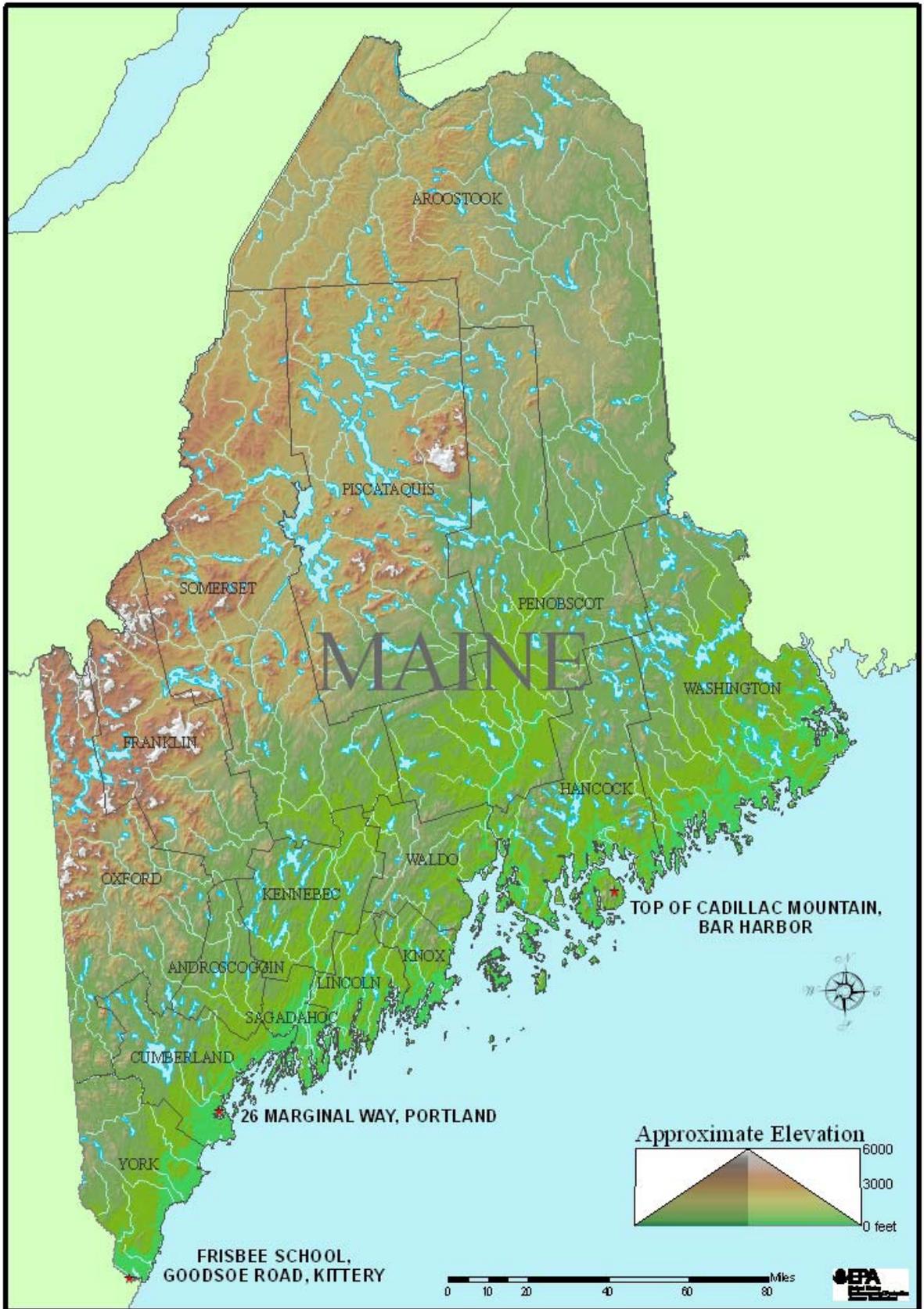


Maine Carbon Monoxide Data

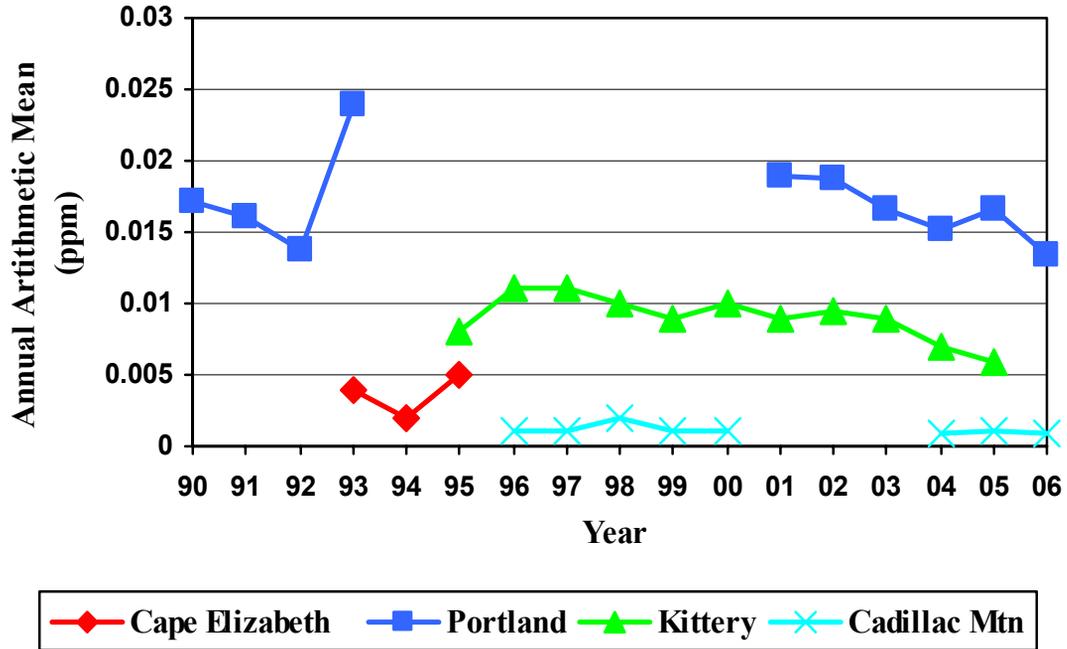


Maine																							
2006 Carbon Monoxide																							
All Values are in Units of Parts Per Million																							
	P												1-hour	1-hour		8-hour	8-hour						
	O	Org											2nd	2nd		2nd	2nd						
Site ID	C	Type	City	County	Address	#	Highest	Highest		Highest	Highest	Methods											
	Obs	Value	Value	# > 35	Value	Value	# > 9	Used															
23-003-1100	1	0031	Presque Isle	Aroostook	8 NORTHERN RD	6508	1.2	0.9	0	0.5	0.5	0	054										
23-005-2003	1	0635	Cape Elizabeth	Cumberland	TWO LIGHTS STATE PARK	3601	0.7	0.3	0	0.3	0.3	0	093										
23-009-0103	1	0635	Bar Harbor	Hancock	MCFARLAND HILL-AIR RESEARCH SITE	8139	0.3	0.3	0	0.3	0.3	0	054										

Maine Sites 2006 - Nitrogen Dioxide

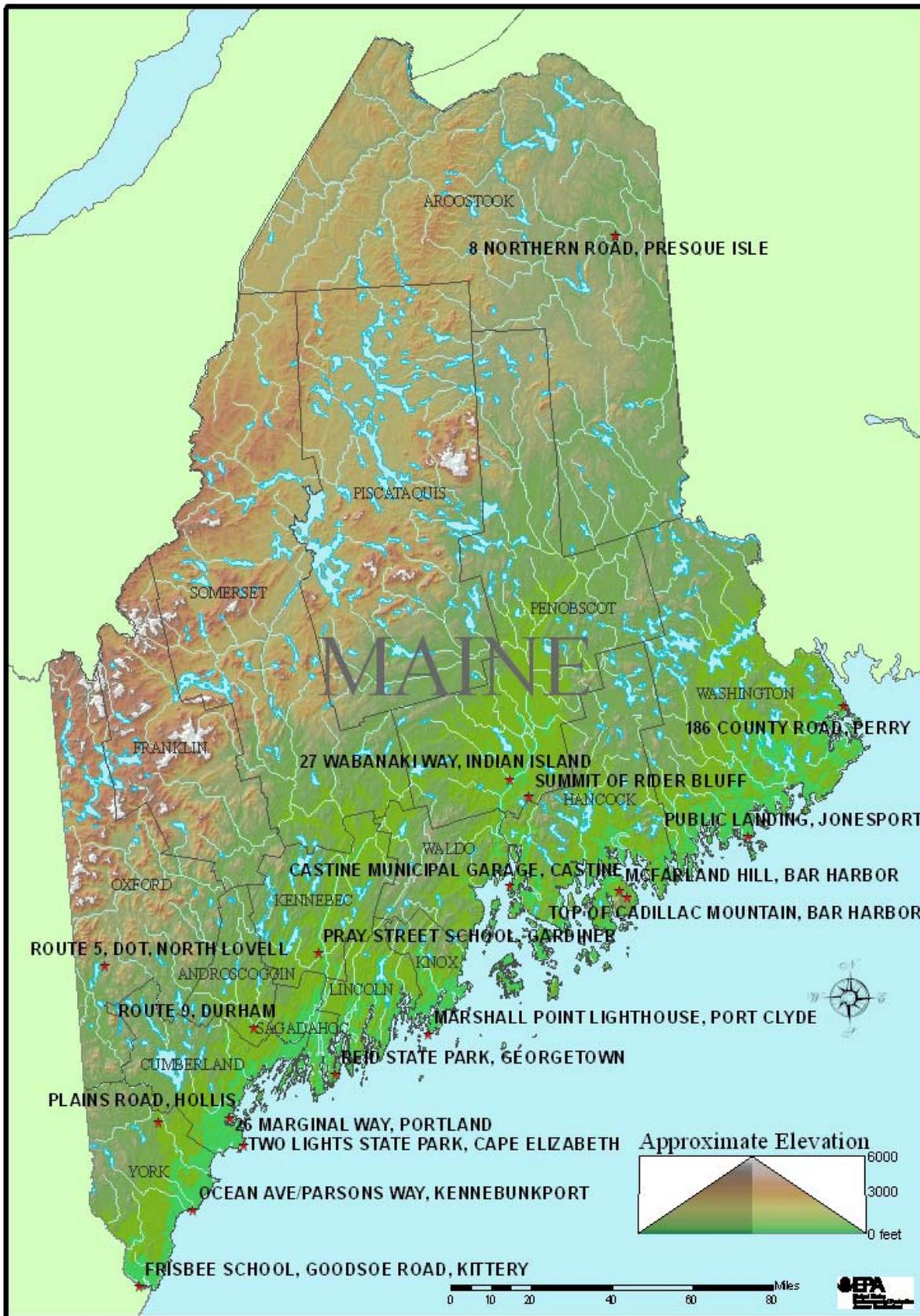


Maine Nitrogen Dioxide Data

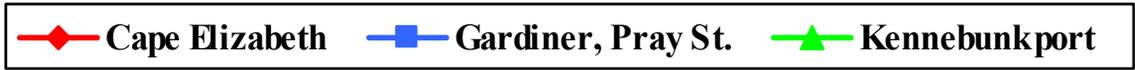
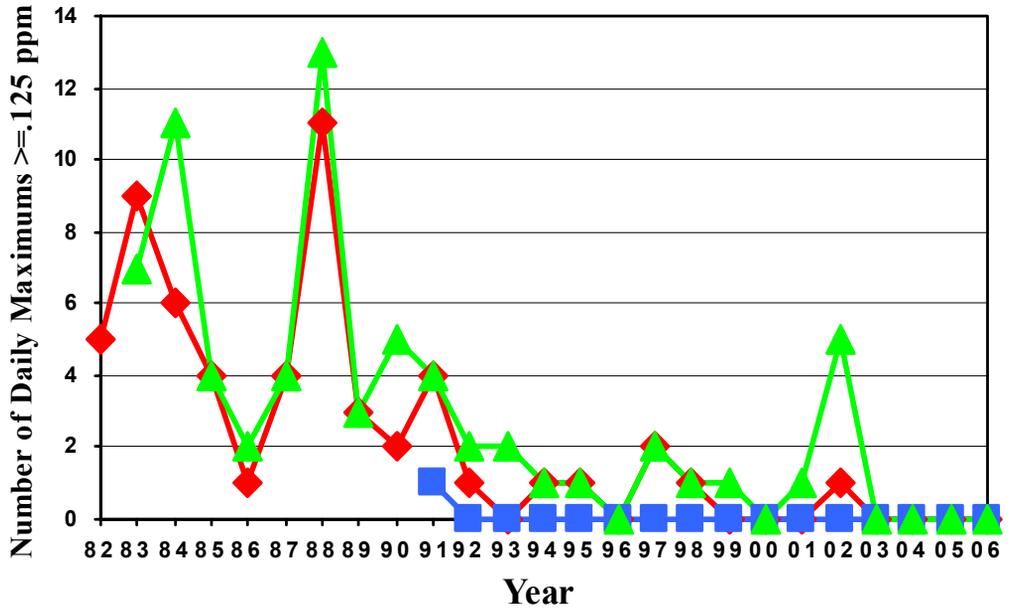


Maine									
2006 Nitrogen Dioxide									
All Values are in Units of Parts Per Million									
	P						1-hour	1-hour	Annual
	O Rept.					#	Highest	2nd	Arith.
Site ID	C Org.	City	County	Address	Method	Obs	Value	Highest	Mean
23-005-0027	1 0635	Portland	Cumberland	26 MARGINAL WAY	075	8282	0.058	0.053	0.0134
23-009-0102	1 0635	Bar Harbor	Hancock	TOP OF CADILLAC MTN	075	3936	0.007	0.006	0.0009 *
*Indicates that the mean does not meet summary criteria									

Maine Sites 2006 - Ozone

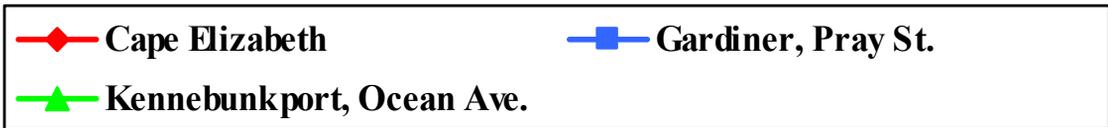
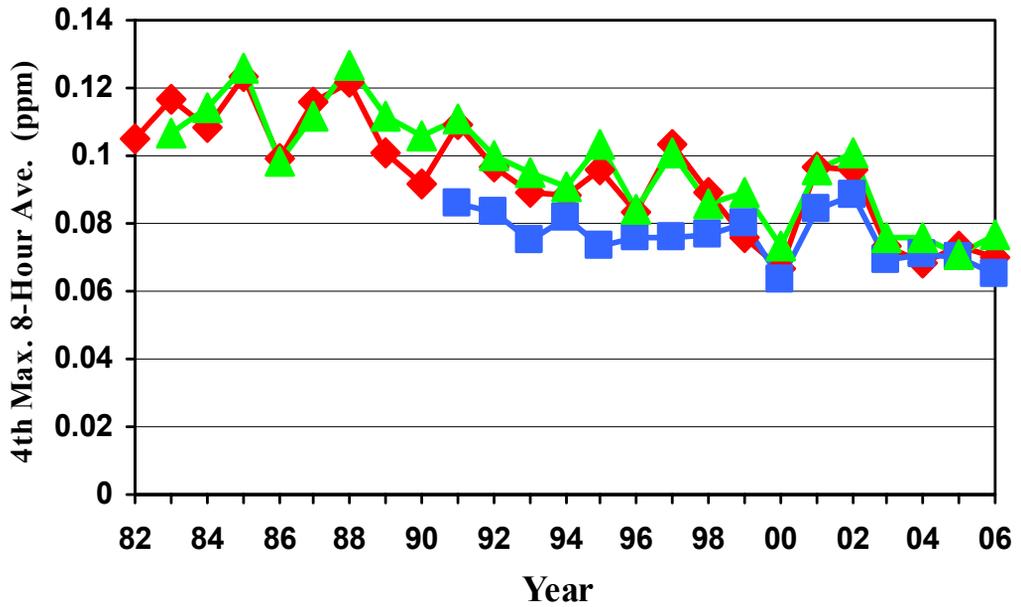


Maine Ozone 1-Hour Data



Maine															
2006 Ozone (1-Hour)															
All Values are in Units of Parts Per Million															
	P	Rep.								2nd	3rd	4th		Missing	
Site ID	C	Org.	City	County	Address	Meas	Num	Highest	Highest	Highest	Highest	Day Max	Est. Day	Days	Method
							Req	Value	Value	Value	Value	> 0.125	> 0.125	< 0.125	used
23-001-0014	2	0635	Durham	Androscoggin	ROUTE 9, DURHAM	84	183	0.087	0.087	0.086	0.075	0	0	2	047
23-003-1100	1	0031	Presque Isle	Aroostook	8 NORTHERN RD	179	183	0.072	0.070	0.065	0.065	0	0	0	047
23-005-0027	1	0635	Portland	Cumberland	26 MARGINAL WAY	181	183	0.078	0.076	0.074	0.072	0	0	2	047
23-005-2003	1	0635	Cape Elizabeth	Cumberland	TWO LIGHTS STATE PARK	181	183	0.098	0.094	0.090	0.080	0	0	2	047
23-009-0102	1	0635	Bar Harbor	Hancock	TOP OF CADILLAC MTN	181	183	0.105	0.101	0.097	0.091	0	0	1	047
23-009-0103	1	0635	Bar Harbor	Hancock	MCFARLAND HILL-	181	183	0.087	0.087	0.081	0.080	0	0	2	047
23-009-0301	1	0635	Castine	Hancock	CASTINE MUNICIPAL GARAGE	182	183	0.081	0.076	0.072	0.071	0	0	1	047
23-009-1100	1	0018	Indian Island	Hancock	27 WABANAKI WAY	178	183	0.084	0.084	0.078	0.076	0	0	3	047
23-011-2005	1	0635	Gardiner	Kennebec	PRAY STREET SCHOOL	181	183	0.089	0.087	0.085	0.083	0	0	2	047
23-013-0004	2	0635	Port Clyde	Knox	MARSHALL POINT LIGHTHOUSE	182	183	0.096	0.093	0.090	0.084	0	0	1	047
23-017-3001	1	0635	Lovell	Oxford	ROUTE 5, N. LOVELL DOT	179	183	0.073	0.071	0.061	0.061	0	0	2	047
23-019-4008	1	0635	Not in a city	Penobscot	SUMMIT OF RIDER BLUFF	183	183	0.099	0.087	0.078	0.078	0	0	0	047
23-023-0004	1	0635	Georgetown	Sagadahoc	REID STATE PARK	182	183	0.095	0.082	0.076	0.076	0	0	1	047
23-029-0019	1	0635	Jonesport	Washington	PUBLIC LANDING	176	183	0.072	0.069	0.068	0.068	0	0	1	047
23-029-0032	1	0017	Not in a city	Washington	184 COUNTY ROAD	152	183	0.064	0.063	0.062	0.061	0	0	0	047
23-031-0038	1	0635	Hollis	York	PLAINS ROAD,	172	183	0.094	0.087	0.084	0.083	0	0	2	047
23-031-2002	1	0635	Kennebunkport	York	OCEAN AVE/PARSONS WAY	182	183	0.111	0.104	0.098	0.087	0	0	1	047
23-031-3002	1	0635	Kittery	York	FRISBEE SCHOOL, GOODSOE RD	176	183	0.090	0.086	0.082	0.080	0	0	0	047

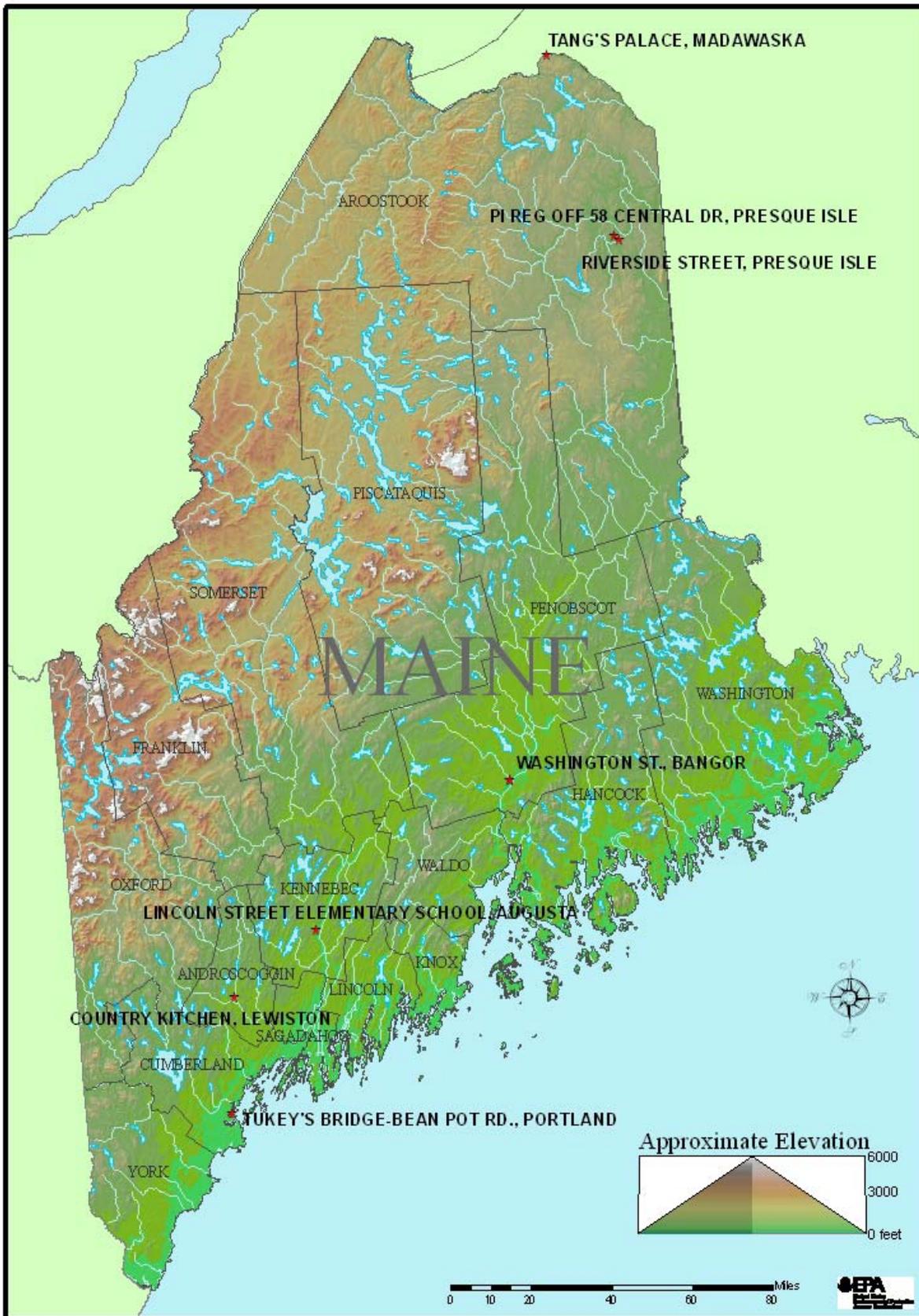
Maine Ozone 8-Hour Data



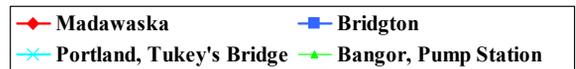
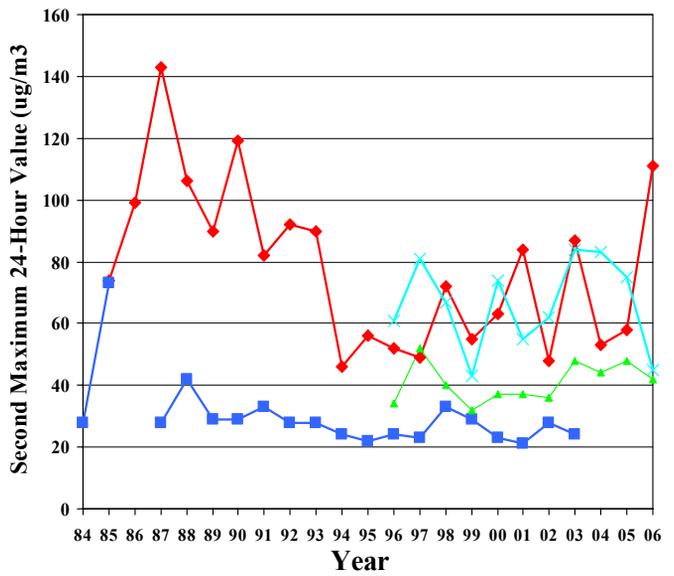
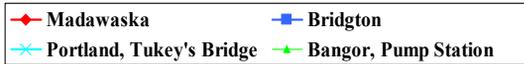
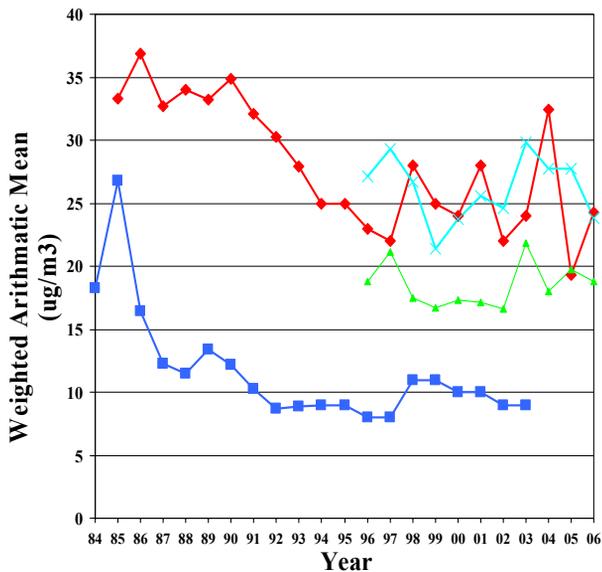
Maine														
2006 Ozone (8-Hour)														
All Values are in Units of Parts Per Million														
	P													
	O	Rept.												
Site ID	C	Org.	City	County	Address	Obs	Meas.	Days	Required	Highest	Highest	Highest	Highest	Max >
										8-Hr Value	8-Hr Value	8-Hr Value	8-Hr Value	0.085
23-001-0014	2	0635	Durham	Androscoggin	ROUTE 9	45	83	183		0.079	0.074	0.067	0.065	0
23-003-1100	1	0031	Presque Isle	Aroostook	8 NORTHERN RD	96	175	183		0.067	0.065	0.061	0.060	0
23-005-0027	1	0635	Portland	Cumberland	26 MARGINAL WAY	97	178	183		0.068	0.067	0.064	0.061	0
23-005-2003	1	0635	Cape Elizabeth	Cumberland	TWO LIGHTS STATE PARK	99	181	183		0.078	0.074	0.073	0.070	0
23-009-0102	1	0635	Bar Harbor	Hancock	TOP OF CADILLAC MTN	97	177	183		0.092	0.085	0.082	0.080	2
23-009-0103	1	0635	Bar Harbor	Hancock	MCFARLAND HILL	98	179	183		0.074	0.072	0.072	0.070	0
23-009-0301	1	0635	Castine	Hancock	CASTINE MUNICIPAL GARAGE	98	180	183		0.069	0.068	0.067	0.065	0
23-009-1100	1	0018	Indian Island	Hancock	27 WABANAKI WAY	96	176	183		0.077	0.068	0.064	0.062	0
23-011-2005	1	0635	Gardiner	Kennebec	PRAY STREET SCHOOL	98	180	183		0.076	0.074	0.067	0.065	0
23-013-0004	2	0635	Port Clyde	Knox	MARSHALL POINT LIGHTHOUSE	99	181	183		0.080	0.080	0.073	0.072	0
23-017-3001	1	0635	Lovell	Oxford	ROUTE 5, N. LOVELL DOT	96	176	183		0.062	0.061	0.056	0.055	0
23-019-4008	1	0635	Not in a city	Penobscot	SUMMIT OF RIDER BLUFF	100	183	183		0.074	0.066	0.065	0.064	0
23-023-0004	1	0635	Georgetown	Sagadahoc	REID STATE PARK	99	182	183		0.073	0.068	0.067	0.065	0
23-029-0019	1	0635	Jonesport	Washington	PUBLIC LANDING	96	176	183		0.067	0.063	0.061	0.060	0
23-029-0032	1	0017	Not in a city	Washington	184 COUNTY ROAD	83	152	183		0.059	0.057	0.057	0.057	0
23-031-0038	1	0635	Hollis	York	PLAINS ROAD	93	171	183		0.075	0.073	0.071	0.069	0
23-031-2002	1	0635	Kennebunkport	York	OCEAN AVE/PARSONS WAY	99	182	183		0.082	0.079	0.079	0.077	0
23-031-3002	1	0635	Kittery	York	FRISBEE SCHOOL, GOODSOE RD	96	175	183		0.082	0.072	0.070	0.069	0

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Maine Sites 2006 - Particulate Matter < 10 Microns



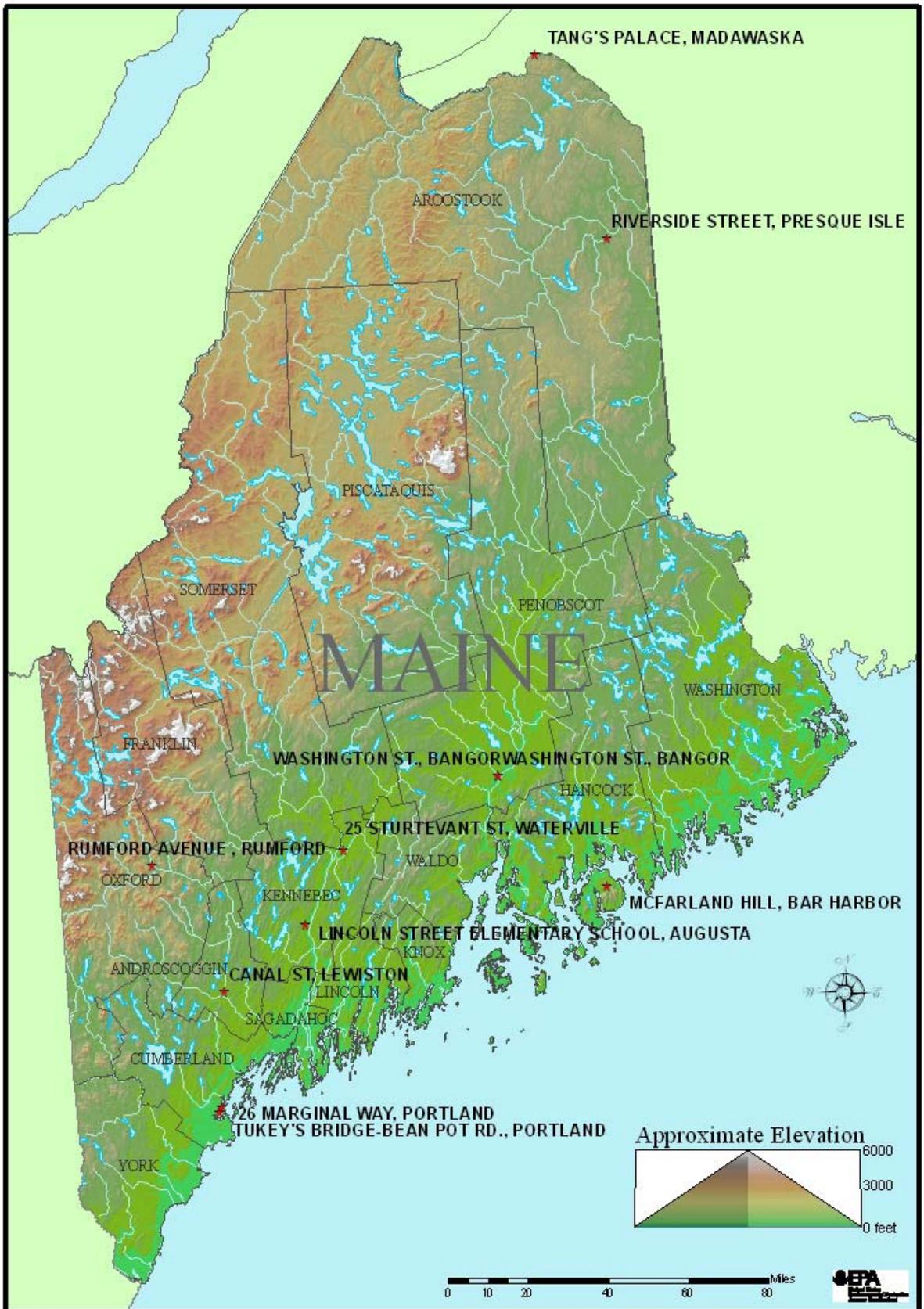
Maine Particulate Matter < 10 Microns (PM10) Data



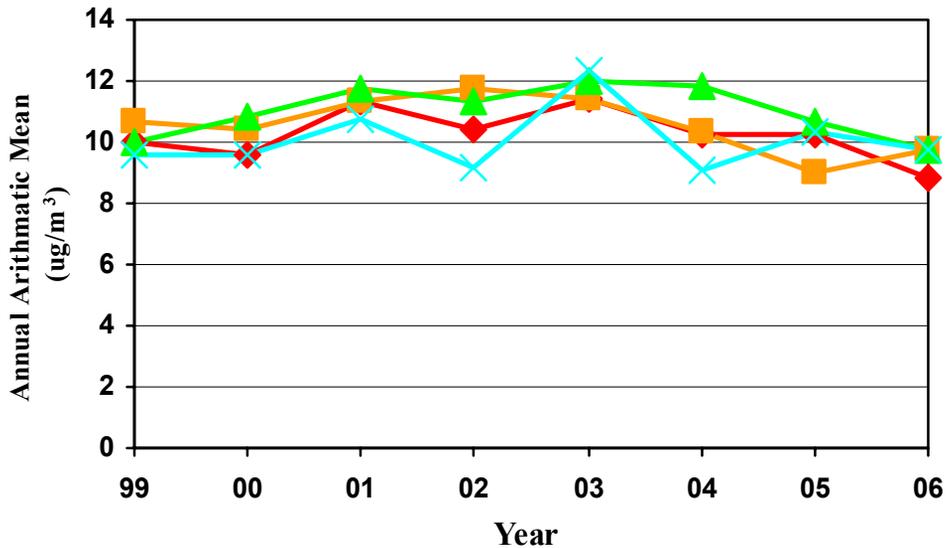
Maine																	
2006 Particulate Matter < 10 Microns																	
ug/m3																	
	Rep.									2nd	3rd	4th	Days Est.	D	Wtd.		
SITE ID	PO	Org	City	County	Address	# Obs	# Req.	Days	% Obs	Highest Value	Highest Value	Highest Value	Highest Value	>150	>150	Arith. Mean	Method Used
23-001-0011	2	0635	Lewiston	Androscoggin	COUNT. KIT. CANAL ST.	60	61	60	98	44	37	36	36	0.0	0	17.1	126
23-003-0013	3	0635	Madawaska	Aroostook	TANG'S PALACE, MTP	110	122	110	90	165	111	85	77	1.0	3.2	24.3	127
23-003-1008	3	0635	Presque Isle	Aroostook	PI REG OFF 58 CENTRAL D	61	61	61	100	31	30	27	27	0.0	0	12.7	127
23-003-1011	2	0635	Presque Isle	Aroostook	RIVERSIDE STREET	8583	365	356	98	103	79	75	68	0.0	0	15.5	079
23-005-0015	2	0635	Portland	Cumberland	TUKEY'S BRIDGE	55	61	55	90	46	45	45	43	0.0	0	23.8	126
23-005-0015	3	0635	Portland	Cumberland	TUKEY'S BRIDGE	58	61	58	95	50	46	45	44	0.0	0	24.1	126
23-011-0016	2	0635	Augusta	Kennebec	LINCOLN ST ELEM SCH	60	61	60	98	39	38	35	30	0	0	14.6	126
23-019-0002	3	0635	Bangor	Penobscot	WASHINGTON ST.	50	61	49	80	42	42	39	37	0	0	18.8 *	126

*Indicates that the mean does not satisfy summary criteria

Maine Sites 2006 - Particulate Matter < 2.5 Microns



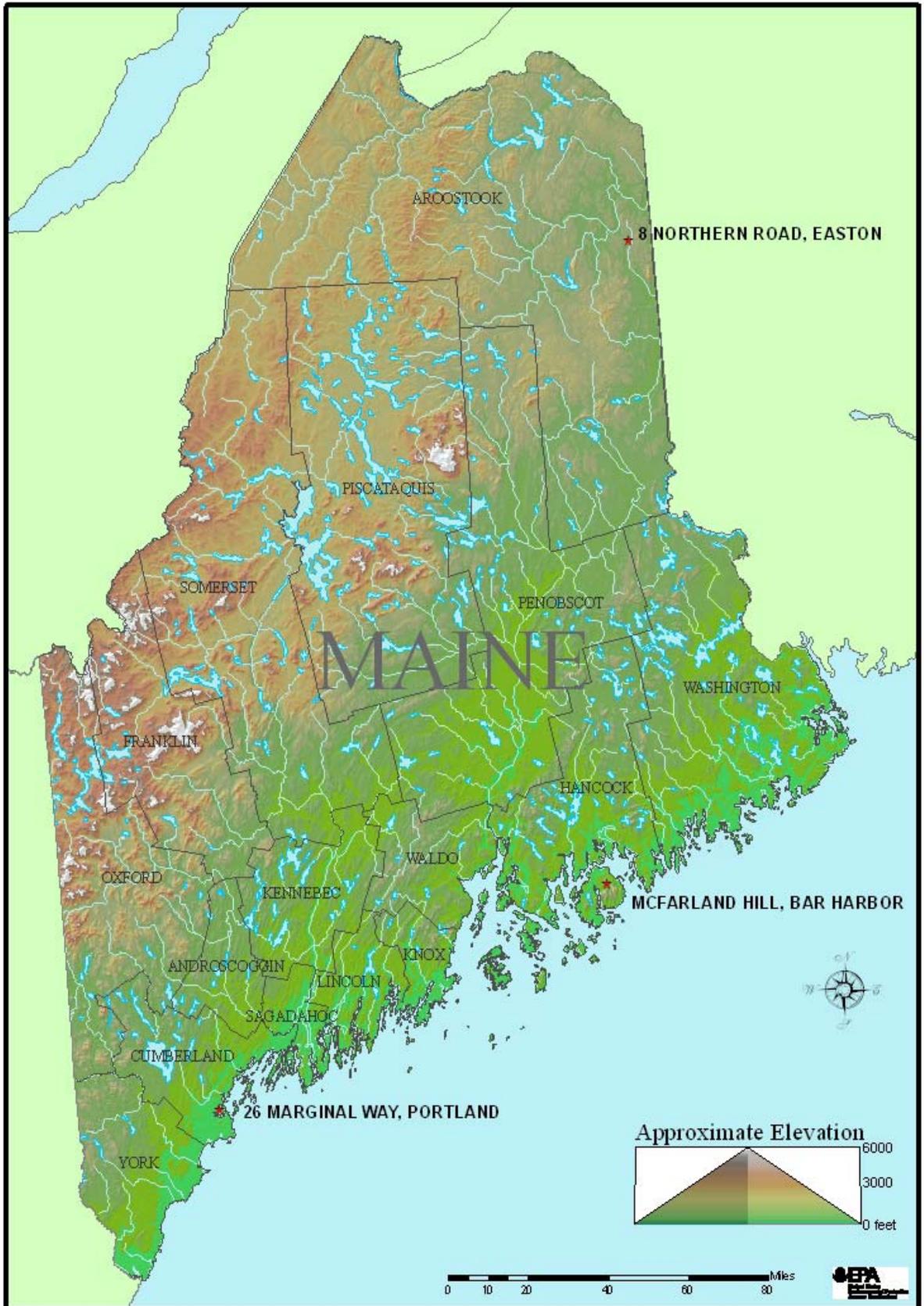
Maine Particulate Matter < 2.5 Microns (PM2.5) Data



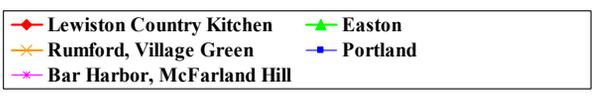
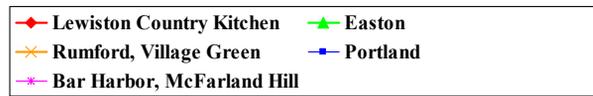
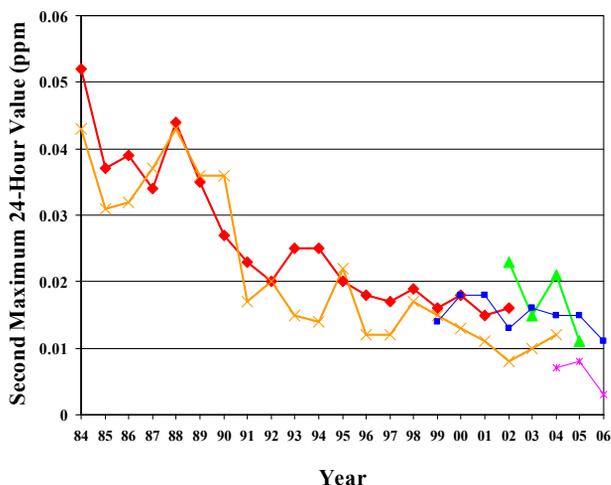
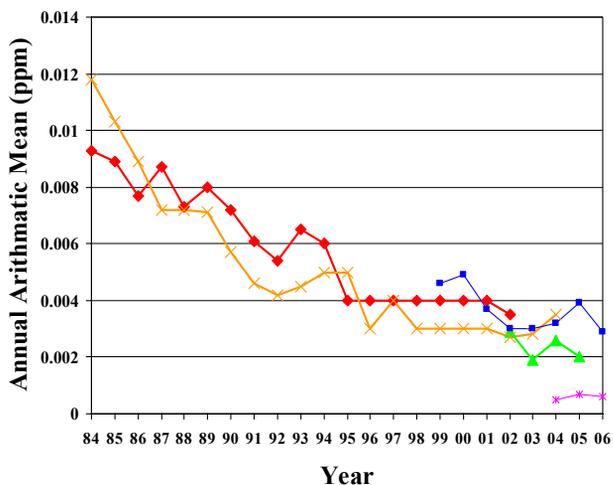
Maine														
2006 PM 2.5														
All Values are in UG/CU Meters Local Conditions														
	P								2nd	3rd	4th	98th	Wtd.	
	O	Rept.						#	Highest	Highest	Highest	Highest	Percentile	Arith.
Site ID	C	Org.	City	County	Address	Method	Obs	Value	Value	Value	Value	Value	Mean	
23-001-0011	1	0635	Lewiston	Androscoggin	COUNTRY KITCHEN LOT, CANAL ST.	118	116	29.9	26.6	24.7	24.5	24.7	8.86	
23-001-0011	3	0635	Lewiston	Androscoggin	COUNTRY KITCHEN LOT, CANAL ST.	701	8589	31.8	26.2	24.1	23.2	20.1	6.09	
23-003-0013	1	0635	Madawaska	Aroostook	TANG'S PALACE, MTP	118	115	34.6	33.1	24.3	24.3	24.3	9.79	
23-003-1011	1	0635	Presque Isle	Aroostook	RIVERSIDE ST.	118	117	27.5	24.2	22.4	20.9	22.4	7.63	
23-005-0015	1	0635	Portland	Cumberland	TUKEY'S BRIDGE, BEAN POT RD.	118	56	33.3	25.5	25.4	23.8	25.5	10.68	
23-005-0027	1	0635	Portland	Cumberland	26 MARGINAL WAY	118	106	32.4	24.6	24.5	22.8	24.5	9.73	
23-005-0027	2	0635	Portland	Cumberland	26 MARGINAL WAY	118	59	32.7	27.3	25.1	24.1	27.3	10.5	
23-005-0027	3	0635	Portland	Cumberland	26 MARGINAL WAY	701	8705	29.4	28.8	23.7	20.6	20.0	7.08	
23-009-0103	1	0635	Bar Harbor	Hancock	MCFARLAND HILL	118	90	21.7	19.9	19.9	19.6	19.9	5.13	
23-009-0103	3	0635	Bar Harbor	Hancock	MCFARLAND HILL	701	8651	29.9	24.6	23.0	20.1	17.0	4.59	
23-011-0016	1	0635	Augusta	Kennebec	LINCOLN ST. ELEMENTARY SCHOOL	117	60	29.5	26.2	23.8	23.1	26.2	9.78	
23-011-0016	2	0635	Augusta	Kennebec	LINCOLN ST. ELEMENTARY SCHOOL	117	57	28.9	25.3	23.3	21.6	25.3	9.23	
23-011-2006	1	0635	Waterville	Kennebec	25 STURTEVANT STREET	118	28	28.0	25.3	24.1	22.4	28.0	11.72 *	
23-017-2011	1	0635	Rumford	Oxford	RUMFORD AVENUE AREA PARKING L	117	56	29.7	28.9	27.5	26.2	28.9	10.61	
23-019-0002	1	0635	Bangor	Penobscot	PUMP STATION, WASHINGTON ST.	118	116	26.2	21.2	21.1	20.0	21.1	8.47	
23-019-0002	3	0635	Bangor	Penobscot	PUMP STATION, WASHINGTON ST.	701	7734	27.3	22.3	21.6	19.7	18.9	6.73 *	

*Indicates that the mean does not meet summary criteria

Maine Sites 2006 - Sulfur Dioxide



Maine Sulfur Dioxide Data



Maine																
2006 Sulfur Dioxide																
All Values are in Units of Parts Per Million																
Site ID	P O C	Type	City	County	Address	# Obs	24-	24-	3-hour	3-hour	1-hour	1-hour	Arith.	Method		
							hour	hour	Hour	Hour	Hour	Hour				
							Highest	Highest	Highest	Highest	Highest	Highest	Mean	Used		
							> 0.14	> 0.14	> 0.14	> 0.5	> 0.5	> 0.5				
23-003-1100	1	0031	Presque Isle	Aroostook	8 NORTHERN ROAD	2009	0.008	0.006	0	0.017	0.016	0	0.021	0.021	.00184*	560
23-005-0027	1	0635	Portland	Cumberland	26 MARGINAL WAY	8608	0.011	0.011	0	0.028	0.024	0	0.049	0.041	0.0029	060
23-009-0103	1	0635	Bar Harbor	Hancock	MCFARLAND HILL	8540	0.004	0.003	0	0.005	0.005	0	0.006	0.006	0.0006	060

*Indicates that the mean does not meet summary criteria

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Ambient Air Quality Summary – Massachusetts

Massachusetts has reduced their carbon monoxide (CO) monitoring network from nine sites in 2002 to five sites in 2006 principally because CO levels have dropped to levels well below National Ambient Air Quality Standards (NAAQS) at all sites in the state. The five remaining monitoring sites are located in Boston (Kenmore Square and Harrison Ave - Roxbury), Springfield (Liberty Street), Worcester (Summer Street), and Lowell (Old City Hall). No exceedances of the 8-hour NAAQS for CO have been recorded at any site in Massachusetts since 1996. The twenty two 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 year period at each of the five sites included in the analysis. The highest level each year is normally observed at a site in Springfield and was less than 27% of the 8-hour NAAQS in 2006.

In 1996, Massachusetts discontinued monitoring of lead (Pb) at all but one site in Boston because the statewide levels were typically well below the NAAQS and at or near the minimum detection level for the measurement method. The 2006 maximum quarterly average concentration of lead at the Kenmore Square (Boston) site (0.01 ug/m³) was well below (1%) the NAAQS for lead.

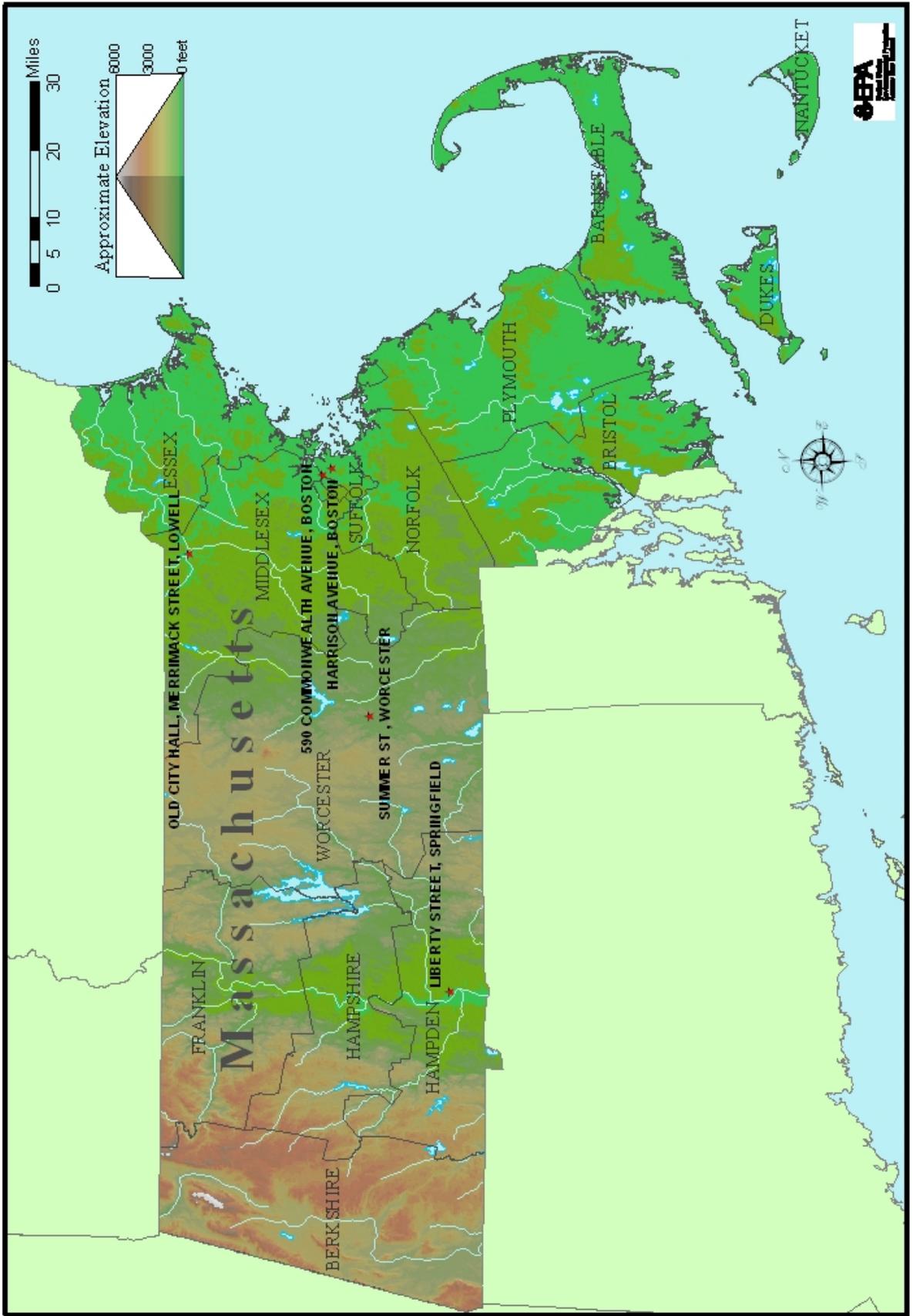
Nitrogen dioxide (NO₂) measurements were made at 13 monitoring sites in Massachusetts during 2006. The highest one-hour concentrations of NO₂ were recorded at monitors in Boston, Springfield, Worcester and Chicopee. The lowest one-hour concentrations were measured at the Truro site. The highest annual mean NO₂ concentrations were recorded at Kenmore Square (23 ppb or 45% of the NAAQS) and the lowest concentrations were at Truro (3 ppb), Newbury (3 ppb) and the Quabbin Summit (4 ppb). A generally downward trend in NO₂ concentration can be detected in the 22-year trend data.

In 2006, four of the sixteen ozone monitoring sites recorded a fourth highest 8-hour average ozone concentration above the level of the 8-hour NAAQS. In 2005, nine of the sixteen operating monitoring sites recorded a fourth highest 8-hour average above 0.085 ppm. 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.

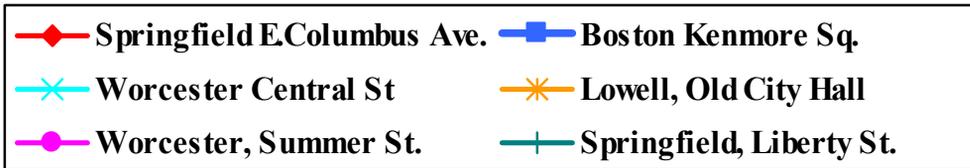
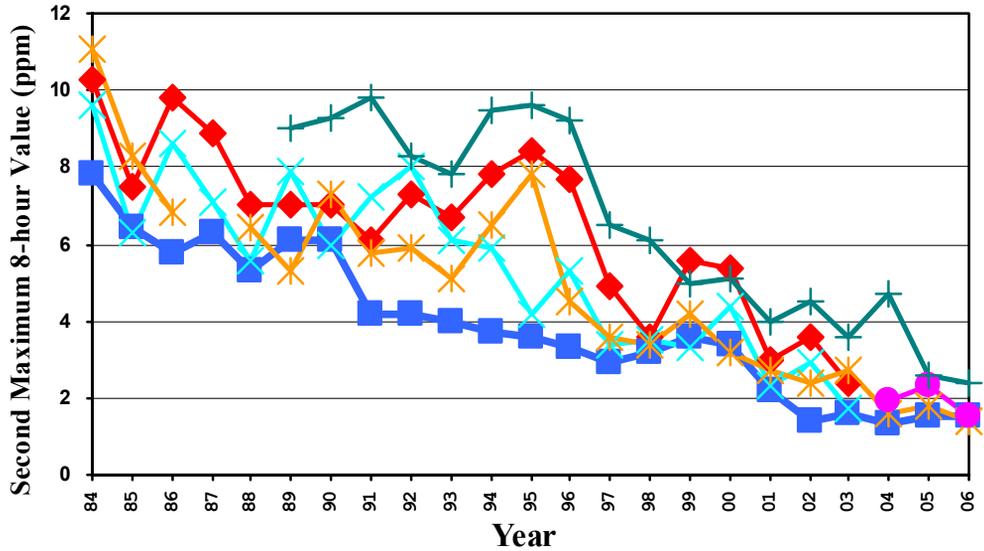
In 2006, Massachusetts monitored for PM₁₀ using the traditional Selective Size Inlet High Volume method at only the Roxbury site, while the modified Federal Reference Method for PM_{2.5} (without the particle size separator) was deployed at six locations including the Roxbury site. The highest annual average concentration of PM₁₀ was also recorded at the City Square monitoring site in Boston (21.8 ug/m³). The highest 24-hour PM₁₀ concentration was recorded at the City Square site (54 µg/m³). Over the past 20 years PM₁₀ levels have shown significant year to year variability especially for the twenty four hour sampling period. However overall PM₁₀ levels do not appear to trend up or down during the time period. Since 1999, 26 PM_{2.5} monitoring sites have been deployed in Massachusetts. Sixteen PM_{2.5} sites were operated in 2005. The highest PM_{2.5} concentrations have typically been measured in the urban areas of Boston and Springfield. In 2006, the Kenmore Square, Charlestown and North Street sites measured annual average PM_{2.5} concentrations of 10.8 µg/m³, 11.1 µg/m³ and 11.2 µg/m³, respectively. These values are lower than levels in 2005, where the Kenmore Square, Charlestown and North Street sites measured annual average PM_{2.5} concentrations of 12.9 µg/m³, 11.8 µg/m³ and 13.7 µg/m³, respectively. No apparent trend is evident for PM_{2.5} levels since 1999.

Ten sulfur dioxide (SO₂) monitoring sites were operated in Massachusetts during 2006. No exceedance or violation of the annual or 24-hour (primary) or the 3-hour (secondary) NAAQS for SO₂ was recorded in 2006. The highest 3-hour and the highest 24-hour SO₂ concentrations and the highest valid annual average were recorded at the Globe Street site in Fall River at 71 ppb and 31 ppb respectively, well below both standards. All SO₂ trend sites in Massachusetts showed a general decline in SO₂ concentrations over the past 22 years.

Massachusetts Sites - 2006 - Carbon Monoxide

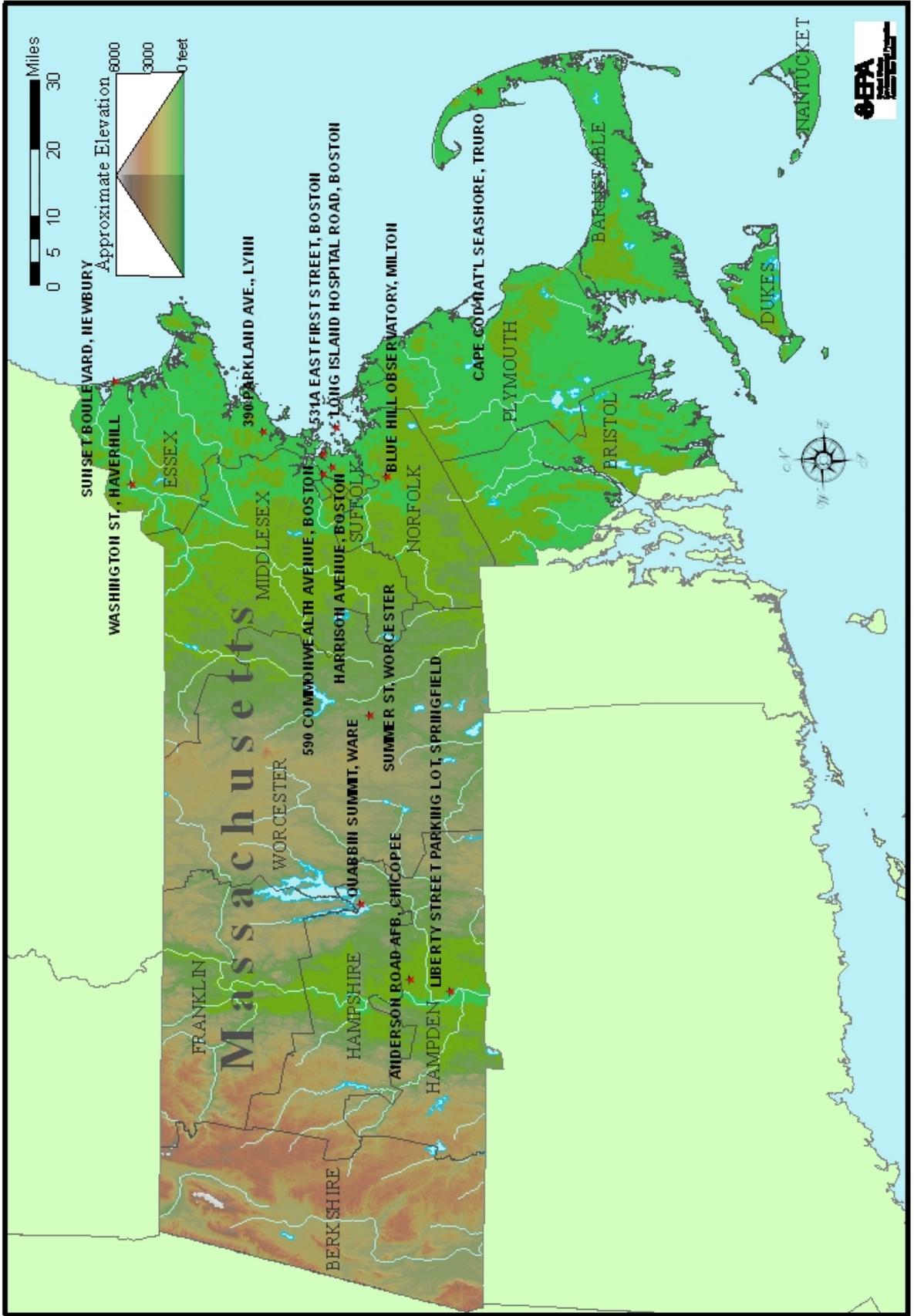


Massachusetts Carbon Monoxide Data

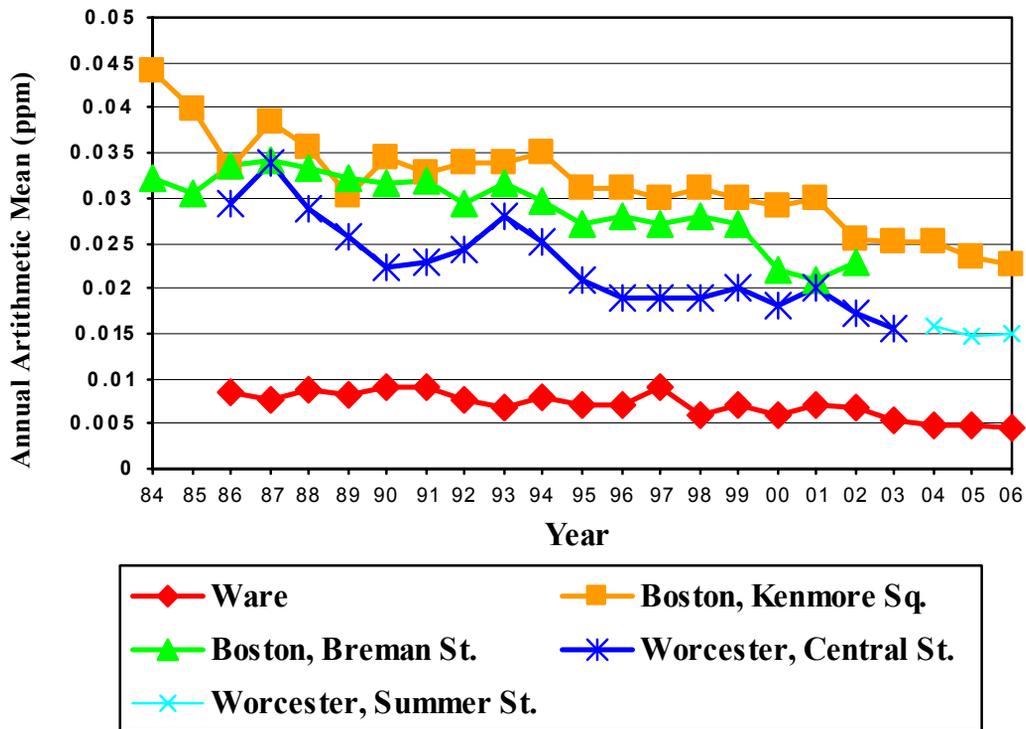


Massachusetts 2006 Carbon Monoxide													
All Values are in Units of Parts Per Million													
Site ID	C	Type	City	County	Address	# Obs	1-hour		8-hour		# > 9	Used	Methods
							Highest Value	2nd Highest Value	Highest Value	2nd Highest Value			
25-013-0016	1	0660	Springfield	Hampden	LIBERTY P-LOT	8193	3.3	3.1	0	2.7	2.4	0	093
25-017-0007	1	0660	Lowell	Middlesex	MERRIMACK ST	8086	2.3	2.2	0	1.5	1.4	0	093
25-025-0002	1	0660	Boston	Suffolk	KENMORE SQ	7985	2.3	2.2	0	1.7	1.5	0	093
25-025-0042	1	0660	Boston	Suffolk	HARRISON AV	8216	3.5	3.0	0	2.1	1.7	0	093
25-027-0023	1	0660	Worcester	Worcester	SUMMER ST	8124	2.8	2.5	0	1.5	1.5	0	067

Massachusetts Sites - 2006 - Nitrogen Dioxide



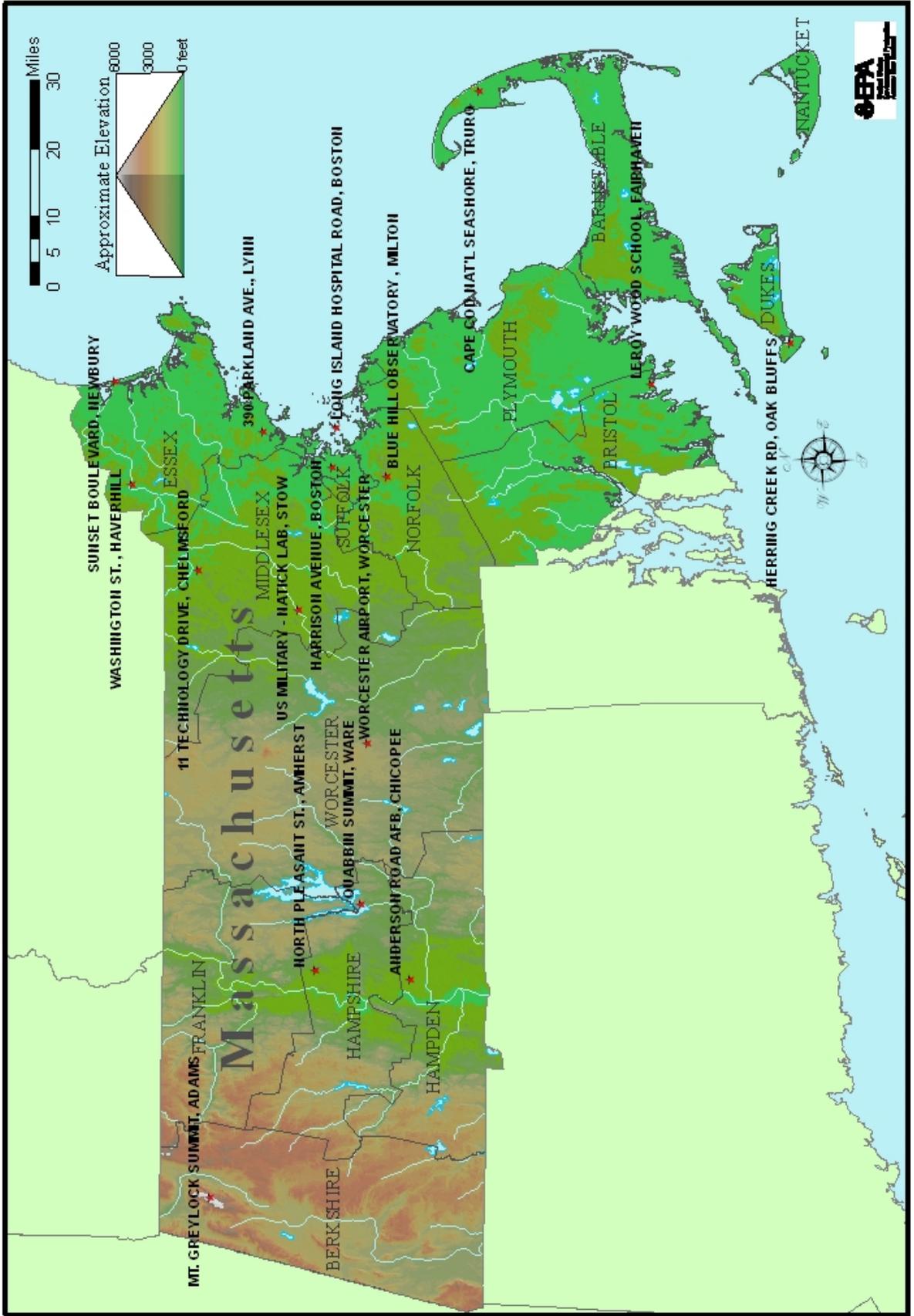
Massachusetts Nitrogen Dioxide Data



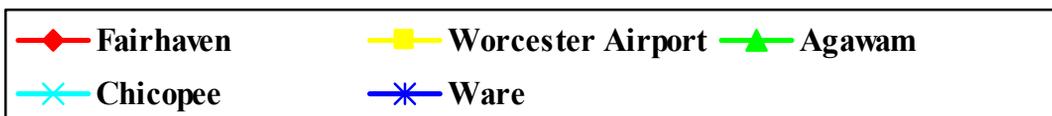
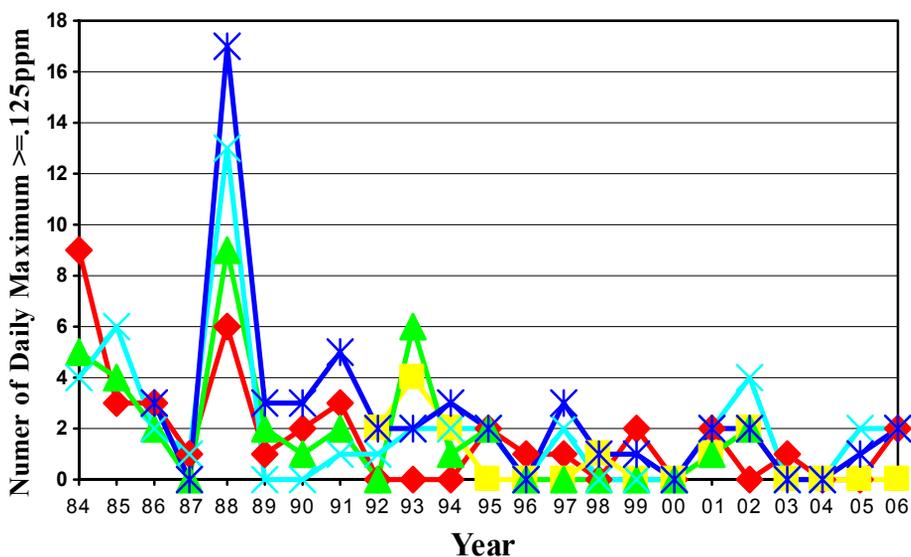
Massachusetts										
2006 Nitrogen Dioxide										
All Values are in Units of Parts Per Million										
							1-hour	1-hour	Annual	
	P						Highest	Highest	Arith.	
Site ID	O Rept.	C Org.	City	County	Address	Method	# Obs	Value	Value	Mean
25-001-0002	1	0660	Truro	Barnstable	FOX BOTTOM AREA	099	4192	0.011	0.011	0.0027
25-009-2006	1	0660	Lynn	Essex	390 PARKLAND	099	8254	0.051	0.048	0.0096
25-009-4004	1	0660	Newbury	Essex	SUNSET BLVD	099	4142	0.017	0.017	0.0034
25-009-5005	1	0660	Haverhill	Essex	CONSENTINO	099	8214	0.049	0.047	0.0086
25-013-0008	1	0660	Chicopee	Hampden	ANDERSON RD AFB	099	8294	0.051	0.050	0.0095
25-013-0016	1	0660	Springfield	Hampden	LIBERTY P-LOT	099	8375	0.054	0.051	0.0149
25-015-4002	1	0660	Ware	Hampshire	QUABBIN SUMMIT	099	8321	0.043	0.042	0.0044
25-021-3003	1	0660	Milton	Norfolk	BLUE HILL OBS	099	3951	0.069	0.050	0.0048
25-025-0002	1	0660	Boston	Suffolk	KENMORE SQ	099	8250	0.079	0.063	0.0225
25-025-0040	1	0345	Boston	Suffolk	531A EAST FIRST ST	074	740	0.157	0.099	0.0209 *
25-025-0041	1	0660	Boston	Suffolk	LONG ISLAND	099	4040	0.044	0.043	0.0074
25-025-0042	1	0660	Boston	Suffolk	HARRISON AV	000	8307	0.067	0.060	0.0187
25-027-0023	1	0660	Worcester	Worcester	SUMMER ST	000	8153	0.054	0.052	0.0151

*Indicates that the mean does not meet summary criteria

Massachusetts Sites - 2006 - Ozone

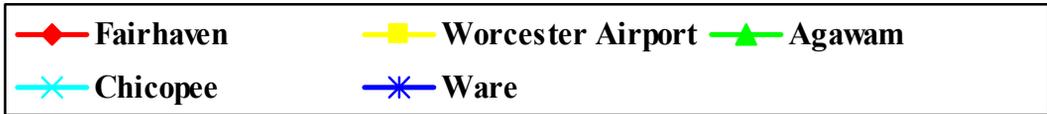
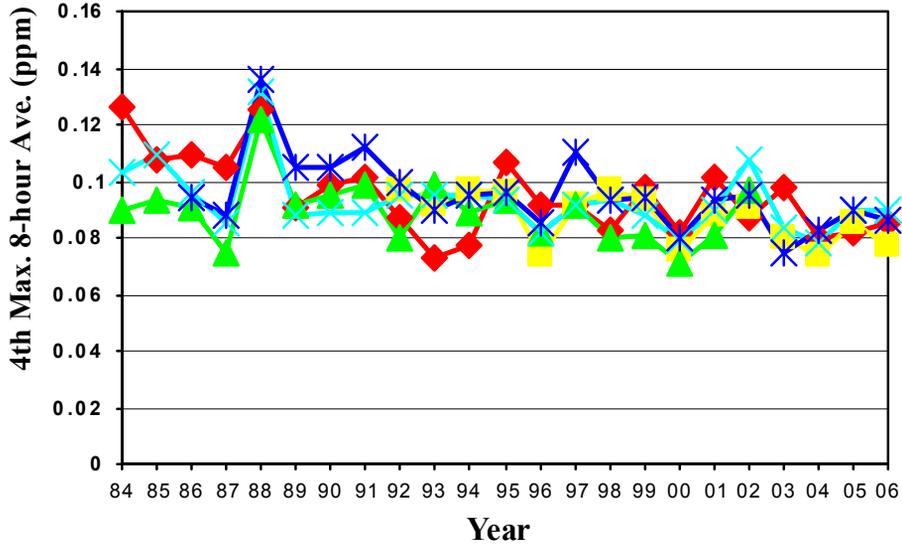


Massachusetts Ozone 1-Hour Data



Site ID	P O C	Rep. Org.	City	County	Address	Num Meas	Num Req	Highest				Day Max > 0.125	Est. Day > 0.125	Missing Days < 0.125	Method used
								Value	Value	Value	Value				
25-001-0002	1	660	Truro	Barnstable	FOX BOTTOM AREA	182	183	0.124	0.117	0.105	0.094	0	0	1	087
25-003-4002	1	660	Adams (Town of)	Berkshire	MT GREYLOCK SUMMIT	172	183	0.090	0.085	0.083	0.082	0	0	0	087
25-005-1002	1	660	Fairhaven (Town of)	Bristol	LEROY WOOD SCH	177	183	0.129	0.126	0.102	0.093	2	2	2	087
25-007-0001	1	030	Oak Bluffs	Dukes	HERRING CREEK RD	168	183	0.142	0.136	0.120	0.108	2	2.1	3	087
25-009-2006	1	660	Lynn	Essex	390 PARKLAND	180	183	0.099	0.097	0.092	0.087	0	0	0	087
25-009-4004	1	660	Newbury	Essex	SUNSET BLVD	181	183	0.105	0.092	0.090	0.085	0	0	0	087
25-009-5005	1	660	Haverhill	Essex	CONSENTINO	181	183	0.098	0.087	0.086	0.086	0	0	2	087
25-013-0008	1	660	Chicopee	Hampden	ANDERSON RD AFB	182	183	0.143	0.126	0.105	0.105	2	2	1	087
25-015-0103	1	660	Amherst	Hampshire	N PLEASANT ST	182	183	0.136	0.103	0.098	0.095	1	1	1	087
25-015-4002	1	660	Ware	Hampshire	QUABBIN SUMMIT	174	183	0.135	0.130	0.113	0.100	2	2.1	2	087
25-017-0009	1	1096	Chelmsford	Middlesex	11 TECHNOLOGY DRIVE	179	183	0.091	0.084	0.082	0.081	0	0	4	047
25-017-1102	1	660	Stow	Middlesex	US MILITARY RES	183	183	0.100	0.092	0.090	0.087	0	0	0	087
25-021-3003	1	660	Milton	Norfolk	BLUE HILL OBS	175	183	0.099	0.093	0.092	0.090	0	0	1	087
25-025-0041	1	660	Boston	Suffolk	LONG ISLAND	177	183	0.096	0.092	0.092	0.091	0	0	1	087
25-025-0042	1	0660	Boston	Suffolk	HARRISON AV	183	183	0.084	0.082	0.080	0.080	0	0	0	087
25-027-0015	1	0660	Worcester	Worcester	WORC AIRPORT	172	183	0.101	0.099	0.097	0.091	0	0	2	087

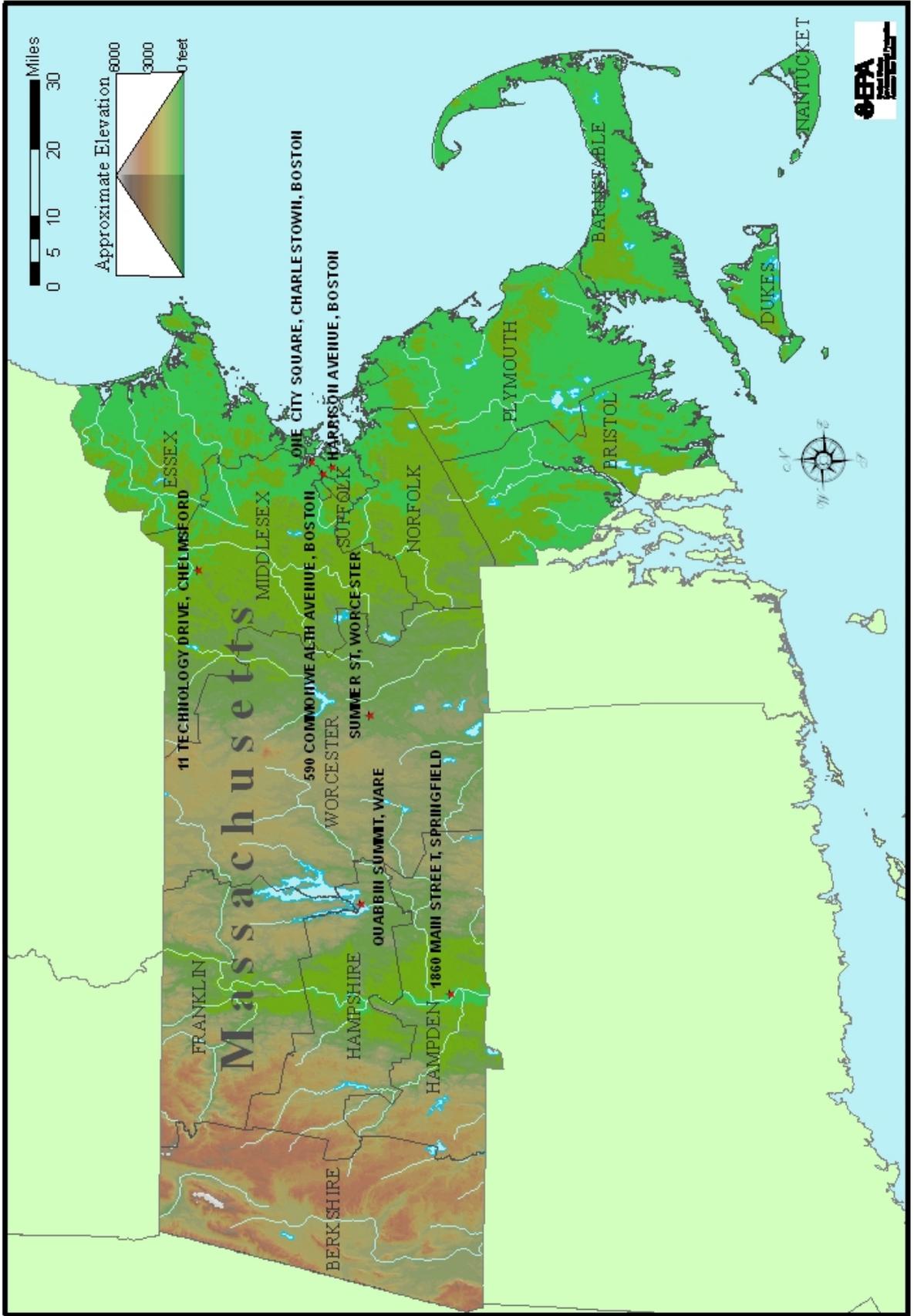
Massachusetts Ozone 8-Hour Data



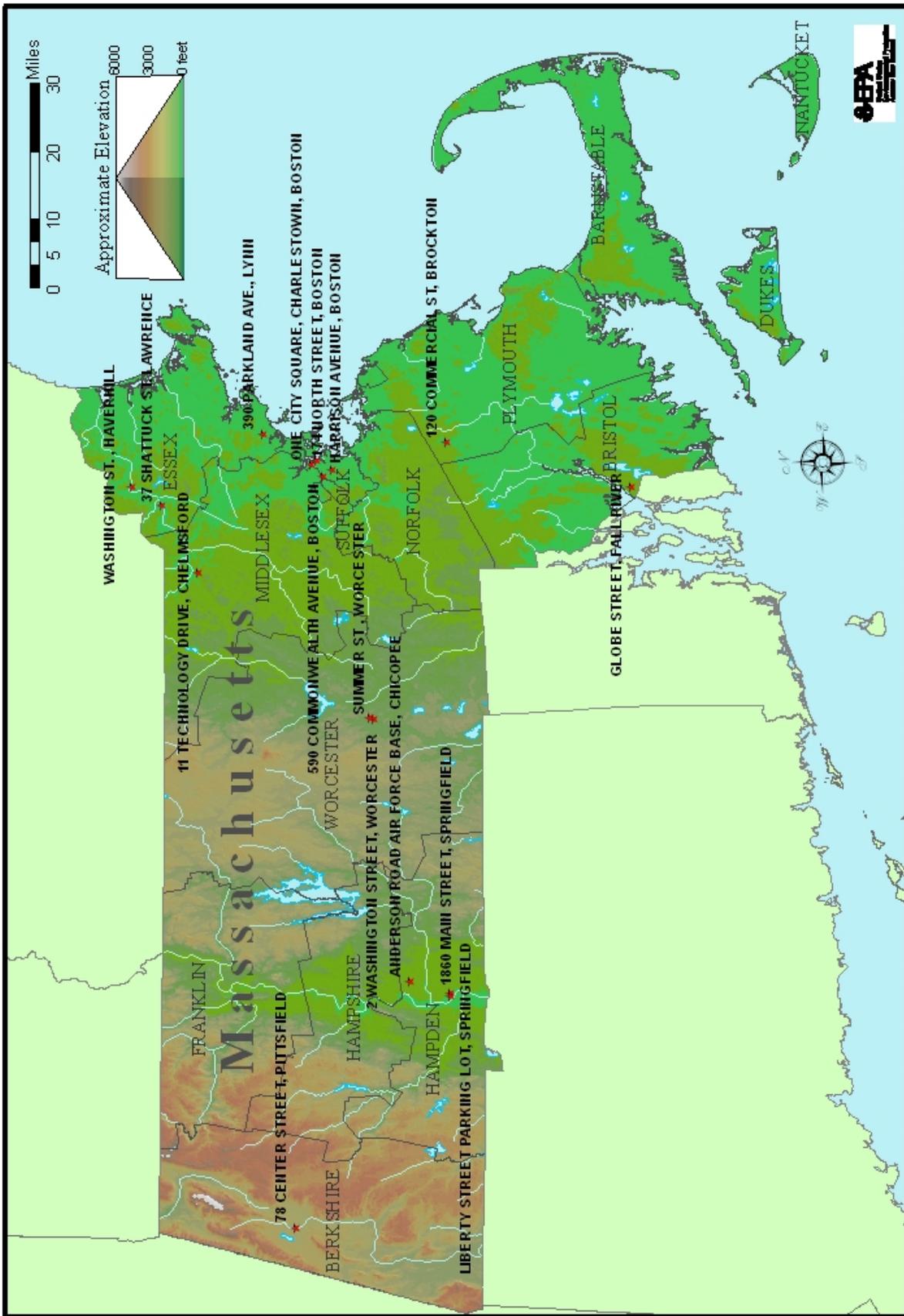
Massachusetts													
2006 Ozone (8-Hour)													
All Values are in Units of Parts Per Million													
	P												
	O	Rept.											
Site ID	C	Org.	City	County	Address	Obs	Days Meas.	Num Required	Highest 8-Hr Value	2nd Highest 8-Hr Value	3rd Highest 8-Hr Value	4th Highest 8-Hr Value	Days Max ≥ 0.085
25-001-0002	1	0660	Truro	Barnstable	FOX BOTTOM AREA	98	179	183	0.106	0.104	0.098	0.082	3
25-003-4002	1	0660	Adams	Berkshire	MT GREYLOCK SUMMIT	93	171	183	0.082	0.079	0.077	0.076	0
25-005-1002	1	0660	Fairhaven	Bristol	LEROY WOOD SCH	95	174	183	0.107	0.104	0.093	0.085	4
25-007-0001	1	0030	Oak Bluffs	Dukes	HERRING CREEK RD	90	165	183	0.112	0.112	0.101	0.089	4
25-009-2006	1	0660	Lynn	Essex	390 PARKLAND	97	177	183	0.086	0.084	0.079	0.078	1
25-009-4004	1	0660	Newbury	Essex	SUNSET BLVD	97	177	183	0.086	0.082	0.078	0.075	1
25-009-5005	1	0660	Haverhill	Essex	CONSENTINO	98	180	183	0.089	0.081	0.075	0.075	1
25-013-0008	1	0660	Chicopee	Hampden	ANDERSON RD AFB	99	181	183	0.119	0.102	0.091	0.090	5
25-015-0103	1	0660	Amherst	Hampshire	N PLEASANT ST	99	182	183	0.102	0.078	0.075	0.074	1
25-015-4002	1	0660	Ware	Hampshire	QUABBIN SUMMIT	94	172	183	0.110	0.103	0.098	0.086	4
25-017-0009	1	1096	Chelmsford	Middlesex	11 TECHNOLOGY DRIVE	97	178	183	0.083	0.077	0.073	0.071	0
25-017-1102	1	0660	Stow	Middlesex	US MILITARY RES	100	183	183	0.084	0.083	0.076	0.075	0
25-021-3003	1	0660	Milton	Norfolk	BLUE HILL OBS	95	174	183	0.087	0.086	0.084	0.083	2
25-025-0041	1	0660	Boston	Suffolk	LONG ISLAND	96	175	183	0.083	0.083	0.083	0.079	0
25-025-0042	1	0660	Boston	Suffolk	HARRISON AV	98	180	183	0.075	0.070	0.069	0.069	0
25-027-0015	1	0660	Worcester	Worcester	WORC AIRPORT	94	172	183	0.091	0.091	0.083	0.077	2

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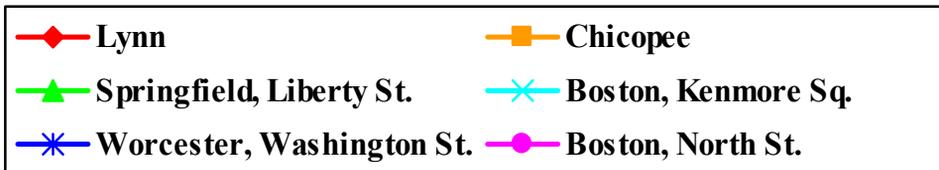
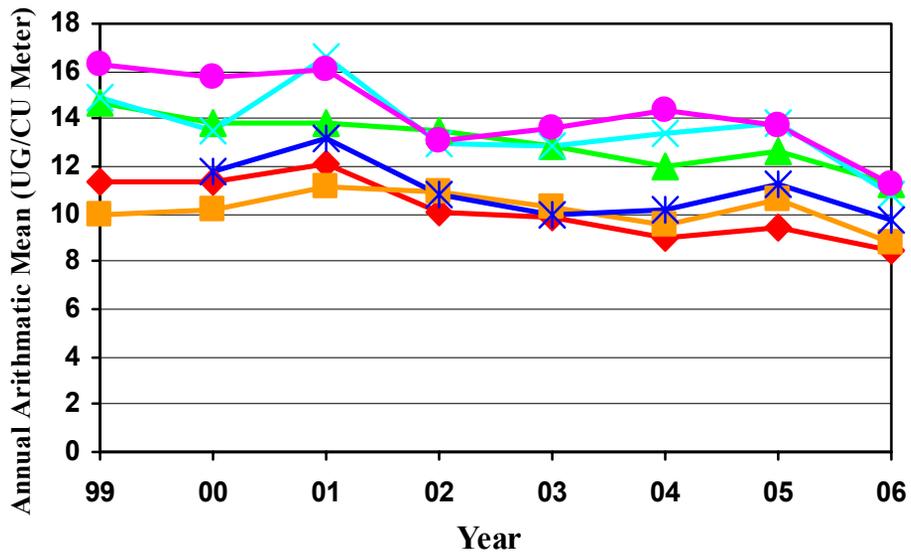
Massachusetts Sites - 2006 - Particulate Matter < 10 Microns



Massachusetts Sites - 2006 - Particulate Matter < 2.5 Microns



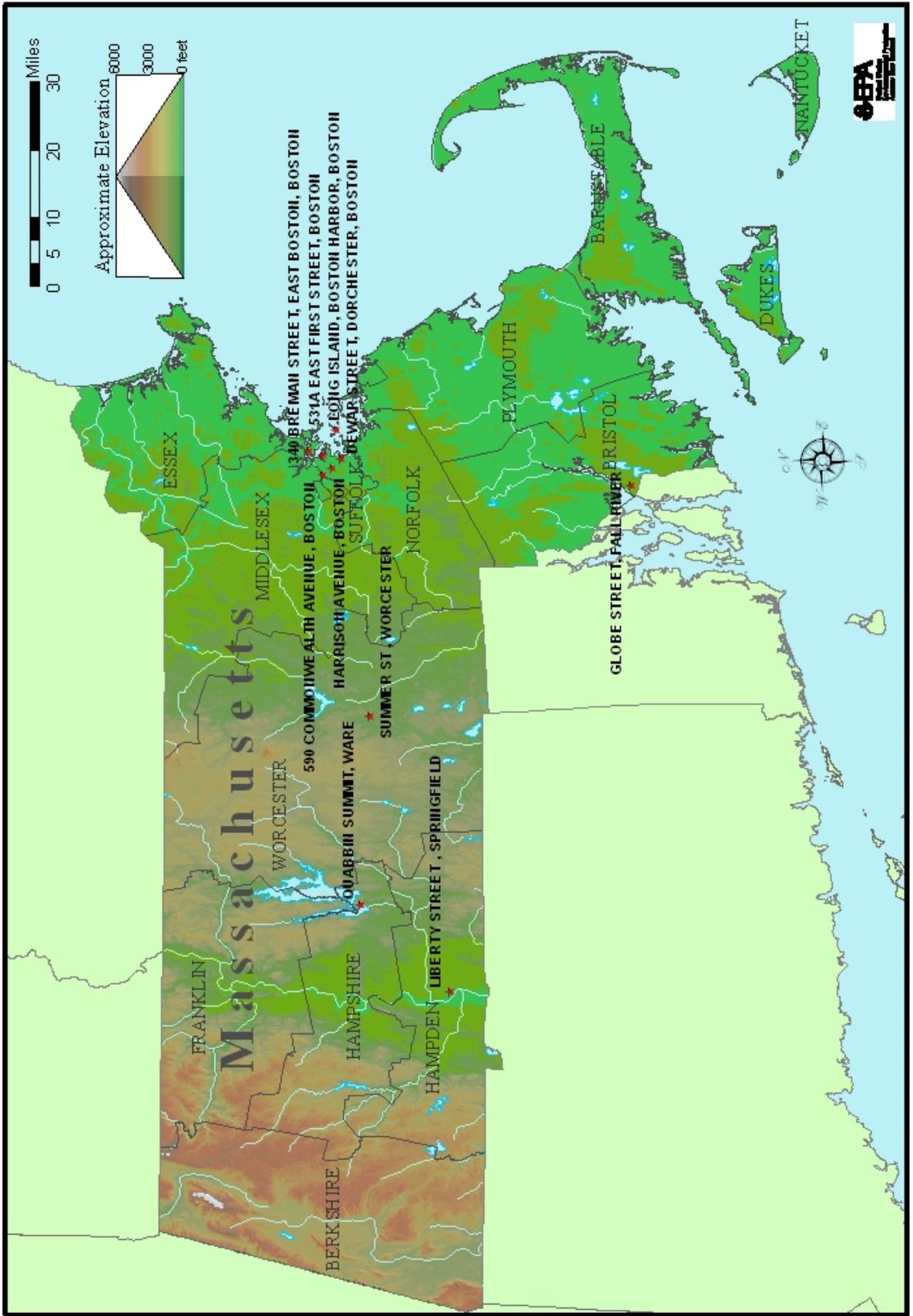
Massachusetts Particulate Matter < 2.5 Microns (PM2.5) Data



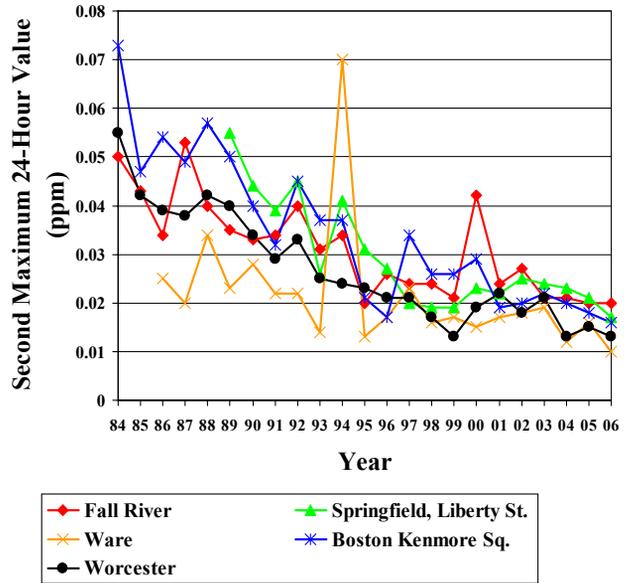
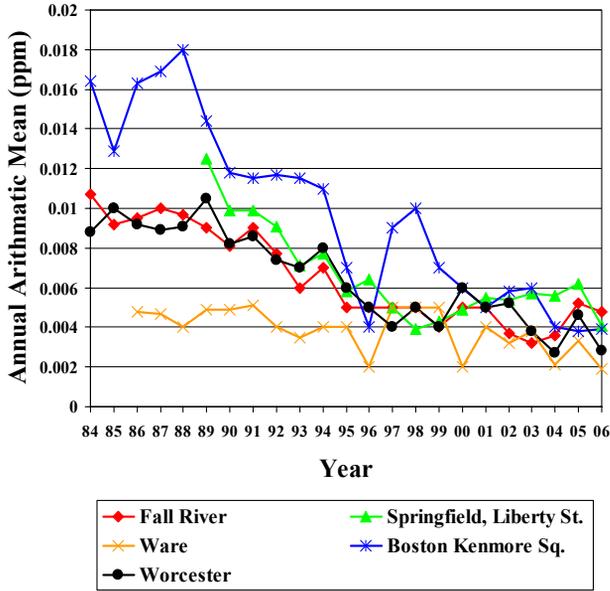
Massachusetts												
2006 PM 2.5												
All Values are in UG/CU Meters Local Conditions												
	P							2nd	3rd	4th	98th	Wtd.
	O	Rept.				#	Highest	Highest	Highest	Highest	Percentile	Arith.
Site ID	C	Org.	City	County	Address	Method	Obs	Value	Value	Value	Value	Mean
25-003-5001	1	0660	Pittsfield	Berkshire	78 CENTER ST	000	123	38.2	30.6	26.7	26.2	9.03
25-005-1004	1	0660	Fall River	Bristol	659 GLOBE ST	145	114	36.9	27.9	24.5	22.6	8.11
25-009-2006	1	0660	Lynn	Essex	390 PARKLAND	145	115	39.2	31.3	25.2	23.8	8.46
25-009-5005	1	0660	Haverhill	Essex	CONSENTINO	145	113	40.2	30.1	27.2	24.6	8.25
25-009-6001	1	0660	Lawrence	Essex	SHATTUCK ST	000	114	41.6	35.3	29.0	27.5	8.88
25-009-6001	2	0660	Lawrence	Essex	SHATTUCK ST	000	35	31.2	27.6	21.2	20.8	9.03 *
25-009-6001	7	0660	Lawrence	Essex	SHATTUCK ST	120	21	19.0	15.0	14.6	13.5	7.15 *
25-013-0008	1	0660	Chicopee	Hampden	ANDERSON RD AFB	145	120	40.2	28.9	28.9	28.3	8.83
25-013-0008	2	0660	Chicopee	Hampden	ANDERSON RD AFB	145	90	39.3	27.5	24.1	23.9	9.2 *
25-013-0016	1	0660	Springfield	Hampden	LIBERTY P-LOT	000	115	38.5	34.3	34.1	33.6	11.3
25-013-2009	1	0660	Springfield	Hampden	1860 MAIN ST	145	111	39.1	37.3	35.1	33.9	10.95
25-017-0009	1	1096	Chelmsford	Middlesex	11 TECHNOLOGY DRIVE EPA-NE	000	57	25.2	23.7	20.7	20.6	8.7
25-017-0009	2	1096	Chelmsford	Middlesex	11 TECHNOLOGY DRIVE EPA-NE	000	54	25.2	24.4	19.7	19.3	8.7 *
25-023-0004	1	0660	Brockton	Plymouth	COMMERCIAL ST	145	119	34.2	32.0	31.1	24.4	9.95
25-023-0004	2	0660	Brockton	Plymouth	COMMERCIAL ST	145	114	34.8	34.6	31.5	24.7	9.11
25-025-0002	1	0660	Boston	Suffolk	KENMORE SQ	000	115	40.5	29.6	28.5	27.5	10.8
25-025-0027	1	0660	Boston	Suffolk	ONE CITY SQ	145	113	39.5	34.0	27.4	26.6	11.08
25-025-0042	1	0660	Boston	Suffolk	HARRISON AV	145	116	37.3	29.8	27.3	27.1	9.69
25-025-0043	1	0660	Boston	Suffolk	174 NORTH ST	000	359	39.2	34.1	32.7	32.3	11.21
25-025-0043	2	0660	Boston	Suffolk	174 NORTH ST	000	294	42.2	39.5	32.7	32.5	11.78 *
25-027-0016	1	0660	Worcester	Worcester	WASHINGTON ST	000	111	40.2	28.7	28.3	26.6	9.71
25-027-0023	1	0660	Worcester	Worcester	SUMMER ST	000	108	41.2	31.6	29.6	28.2	10.22

*Indicates that the mean does not meet summary criteria

Massachusetts Sites - 2006 - Sulfur Dioxide



Massachusetts Sulfur Dioxide Data



Massachusetts						2006 Sulfur Dioxide											
All Values are in Units of Parts Per Million																	
Site ID	P	O	Org	City	County	Address	#	24-hour		3-hour		1-hour		Arith. Mean	Method Used		
								Obs	Highest	Obs	Highest	Obs	Highest				
25-005-1004	1	0660	Fall River	Bristol	659 GLOBE ST	8535	0.031	0.020	0	0.071	0.056	0	0.087	0.079	0.0048	100	
25-013-0016	1	0660	Springfield	Hampden	LIBERTY PARKING LOT	8554	0.017	0.017	0	0.033	0.030	0	0.044	0.044	0.0041	060	
25-015-4002	1	0660	Ware	Hampshire	QUABBIN SUMMIT	8488	0.011	0.010	0	0.018	0.014	0	0.021	0.018	0.0019	100	
25-025-0002	1	0660	Boston	Suffolk	KENMORE SQ	8374	0.020	0.016	0	0.031	0.031	0	0.036	0.036	0.0039	060	
25-025-0019	1	0345	Boston	Suffolk	LONG ISLAND	743	0.008	0.007	0	0.013	0.012	0	0.016	0.015	0.0042	* 060	
25-025-0020	1	0345	Boston	Suffolk	DEWAR ST	742	0.010	0.010	0	0.014	0.013	0	0.018	0.016	0.0070	* 060	
25-025-0021	2	0345	Boston	Suffolk	340 BREMEN ST	742	0.013	0.012	0	0.020	0.020	0	0.025	0.024	0.0077	* 060	
25-025-0040	1	0345	Boston	Suffolk	531A EAST FIRST ST	742	0.010	0.009	0	0.019	0.017	0	0.040	0.028	0.0054	* 060	
25-025-0042	1	0660	Boston	Suffolk	HARRISON AV	8466	0.015	0.012	0	0.020	0.019	0	0.026	0.024	0.0028	100	
25-027-0023	1	0660	Worcester	Worcester	SUMMER ST	8495	0.014	0.013	0	0.020	0.020	0	0.034	0.025	0.0028	060	

*Indicates that the mean does not meet summary criteria

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Ambient Air Quality Summary - New Hampshire

During the last several years, New Hampshire has streamlined and improved its ambient air quality monitoring network. The carbon dioxide monitor in Manchester was moved from the Bridge Street location to the central Manchester monitoring location at Pearl Street in 2002. The Portsmouth monitoring site, located at the Port Authority site was moved to Pierce Island at the end of 2002. The Portsmouth-Court Street PM₁₀ and PM_{2.5} particulate monitors were moved to Pierce Island at the end of 2003. The Rye Harbor ozone monitoring site was discontinued after the 2003 season and replaced by the Sea Coast Science Center site located on Odiome Point (Rye, NH). The ozone monitor in Rochester was discontinued in 2003. The Brentwood PAMS site, which measured ozone precursors (hydrocarbons and oxides of nitrogen), ozone and meteorological conditions, was moved to Gilson Road (Nashua, NH) in 2003. Monitoring for oxides of nitrogen continued through 2003 at Brentwood, then discontinued. Measurements of sulfur dioxide were discontinued at three sites in 2003: Sanders Associates (Nashua, NH), Storrs Street (Concord, NH), and Pembroke Hills (Pembroke, NH). 2005 was the last year of PAMS (Photochemical Assessment Monitoring Station) measurements at the PAMS Type 2 monitoring site in Kittery (ME). This site was moved to the summit of Pack Monadnock (Peterborough), and has provided very valuable information about the transport of ozone precursors aloft (at 2,300 ft above mean sea level).

The accompanying charts indicate that improvements in air quality continue, based on long-term measurements of air pollutants at New Hampshire air quality monitoring sites. Air pollution levels are significantly below primary and secondary National Ambient Air Quality Standards (NAAQS) for carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen dioxide (NO₂) and coarse particulate matter (PM₁₀ – particulate matter with a mass mean diameter of less than 10 microns). Long-term changes in the ambient concentration of ozone and fine particulate matter (PM_{2.5}) do not show improvements that are as large as those of the other pollutants. This is partly because the concentrations of ozone and fine particulate matter are more sensitive to atmospheric conditions that promote transport, transformation and accumulation.

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. The lowest PM_{2.5} levels were recorded at Grants Green (near the base of Mount Washington) and at Peterborough (Pack Monadnock) sites. During 2006, 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 (11.67 µg/m³), at the Pierce Island, Portland site (11.34 µg/m³), compared with the other eight New Hampshire monitoring sites. These concentrations were well below the primary standard for PM_{2.5} which is 15 µg/m³.

None of the two coarse particulate matter (PM₁₀) monitoring sites in New Hampshire exceeded or violated the annual or 24-hour NAAQS for PM₁₀ over the past ten years (1997-2006). The highest 24-hour concentration in 2006 was recorded in Manchester and Portsmouth (43 µg/m³ each - less than 30% of the NAAQS). The highest maximum annual average PM₁₀ was recorded in Manchester (15.9 µg/m³, <30% of the NAAQS). Over the past ten years, all of the PM₁₀ monitors in New Hampshire recorded PM₁₀ concentrations below the national standards. Yearly variability is common, due to differences in weather and local PM₁₀ emissions.

None of the thirteen ozone monitors reported a fourth highest 8-hr average ozone concentration above the level of the 8-hour NAAQS. This is the fourth year in a row when no sites had a fourth high above this level. In 2006, the maximum 8-hr average ozone concentration occurred at the Pack Monadnock Summit PAMS site (0.086 ppm).

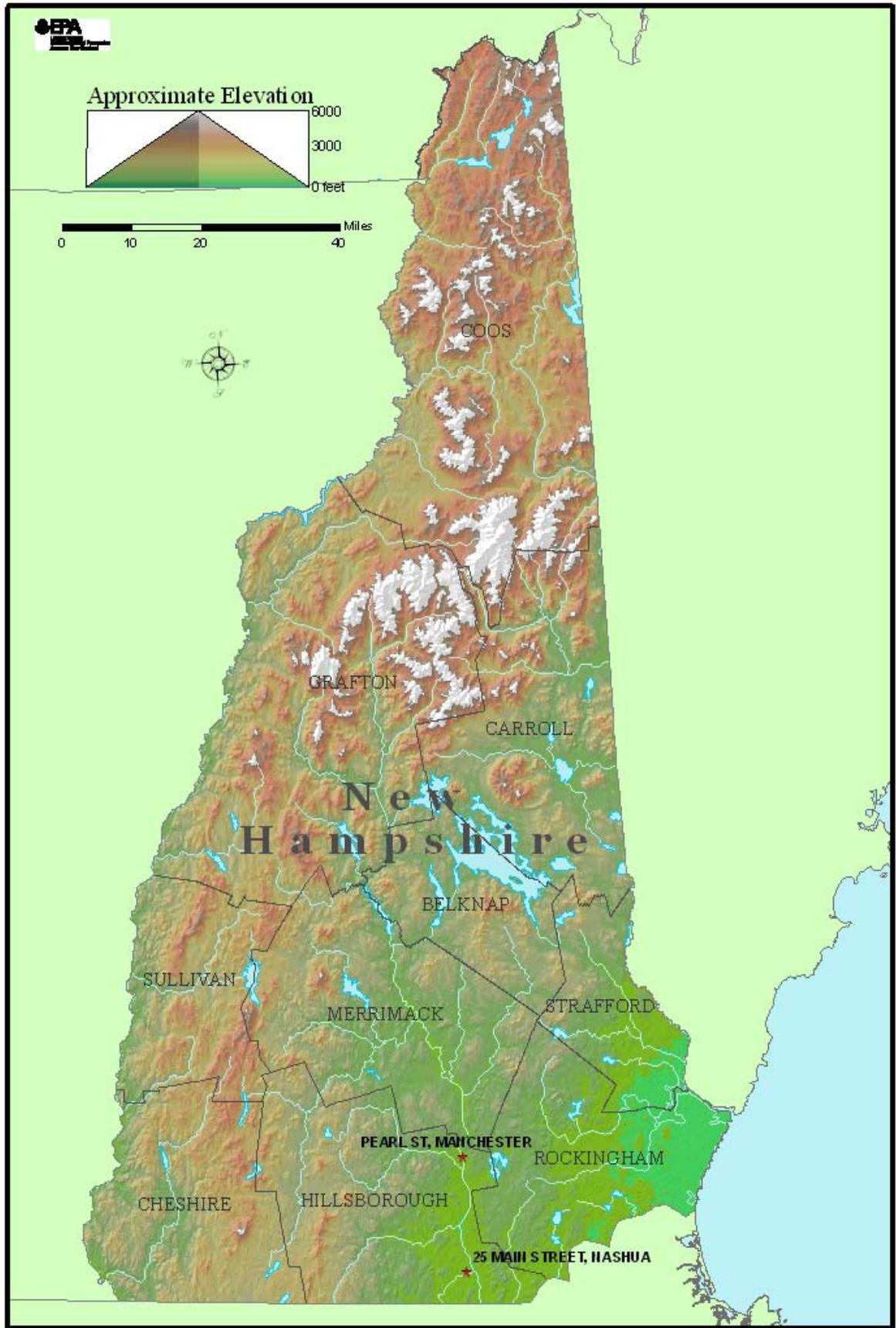
During 2006, no exceedance or violation of the sulfur dioxide NAAQS occurred at any of four the monitoring sites in New Hampshire. The highest annual SO₂ concentration was recorded in Pembroke (0.0067 ppm). The Pembroke site also reported the highest 24-hour second maximum SO₂ concentration (0.057 ppm), and reported the highest 3-hour SO₂ second maximum concentration (0.136 ppm).

In 2006, nitrogen dioxide (NO₂) was measured at four monitoring sites. The Portsmouth and Manchester monitoring sites recorded the highest NO₂ concentrations, but well below the standard. The ten-year trend in NO₂ indicates that there has been no recent upward or downward trend in concentration.

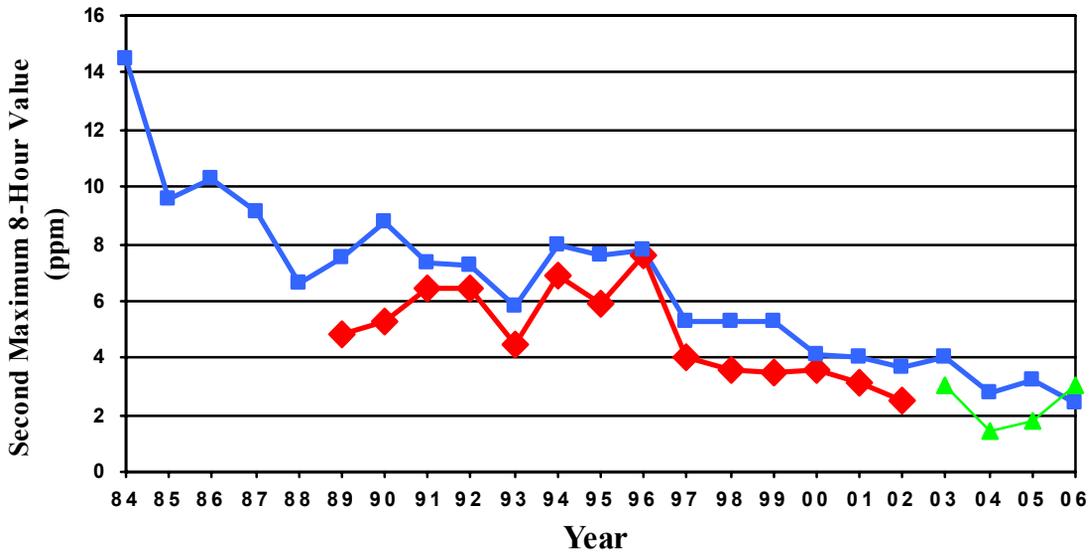
As has been the case for more than a decade, in 2006 there were no violations of either the 8-hour or 1-hour National Ambient Air Quality Standard (NAAQS) for carbon monoxide (CO) at the two CO monitoring sites in New Hampshire. This is the eighth year in a row during which no exceedances occurred. The last exceedances of the 8-hour CO NAAQS occurred in Manchester (13.5 ppm) during the winter of 1996. In 2006, Manchester reported a second maximum 8-hour average CO concentration of 3.0 ppm, which was roughly 30% of the standard. The Nashua site recorded a second maximum 8-hour average CO concentration of 2.4 ppm. The most recent ten year trend for CO indicates that the CO levels show moderate year-to-year fluctuations, but tend to be falling and well below the NAAQS.

During 1996, New Hampshire discontinued ambient air monitoring for lead (Pb). Historically, lead concentrations in New Hampshire ambient air declined to the point where virtually no lead was detectable at the monitoring sites.

New Hampshire Sites 2006 - Carbon Monoxide

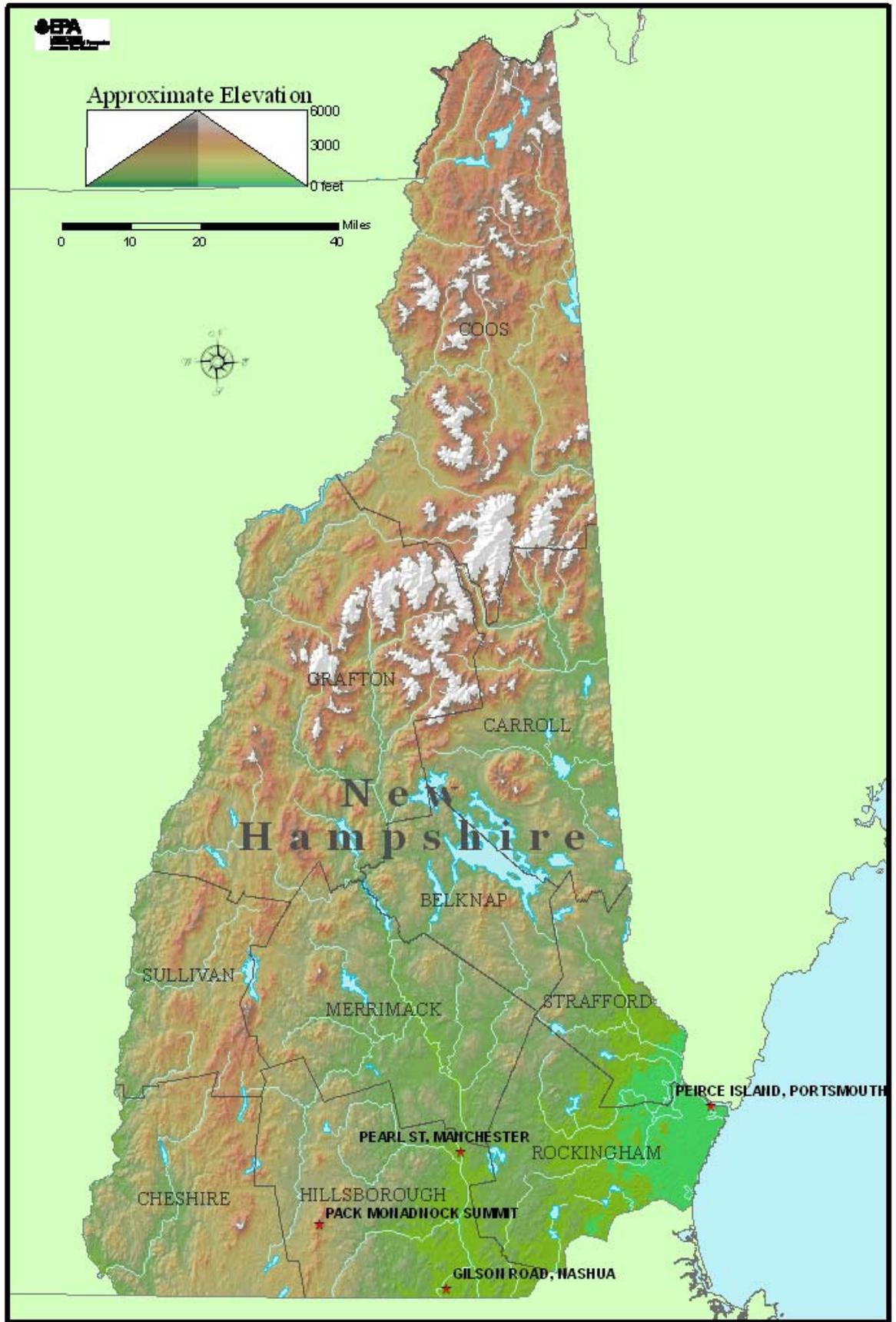


New Hampshire Carbon Monoxide Data

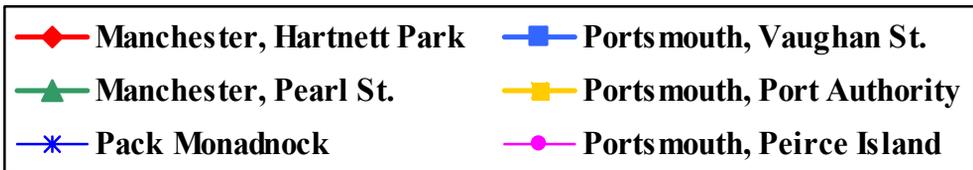
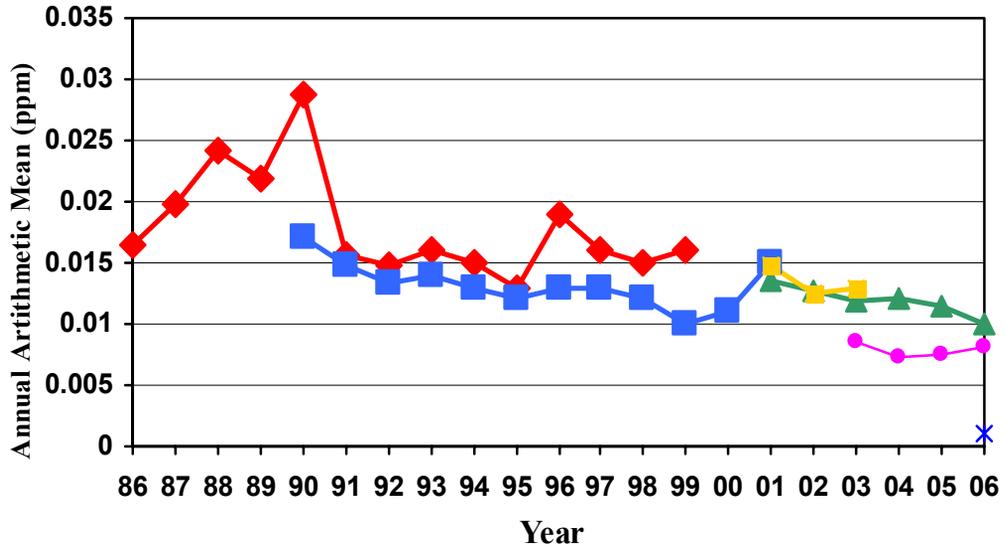


New Hampshire					2006 Carbon Monoxide								
All Values are in Units of Parts Per Million													
Site ID	P O C	Type	City	County	Address	# Obs	1-hour		8-hour		8-hour		Methods
							Highest Value	Highest Value	Highest Value	Highest Value	# > 35	# > 9	
33-011-0020	1	0762	Manchester	Hillsborough	PEARL ST	8692	8.2	8.1	0	5.8	3.0	0	054
33-011-1009	1	0762	Nashua	Hillsborough	25 MAIN STREET, MATARAZZO BLDG	8638	9.9	9.1	0	2.7	2.4	0	054

New Hampshire Sites 2006 - Nitrogen Dioxide



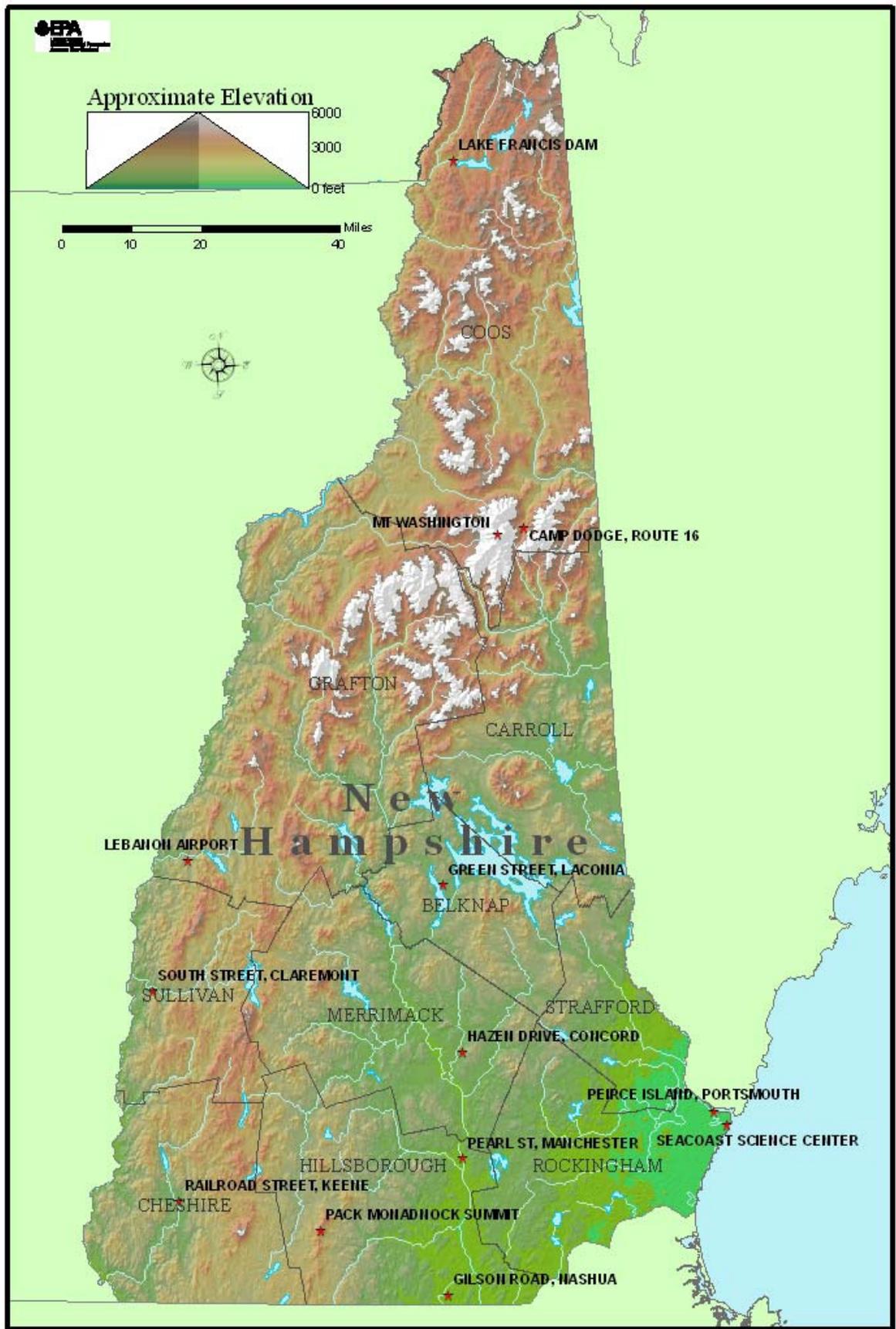
New Hampshire Nitrogen Dioxide Data



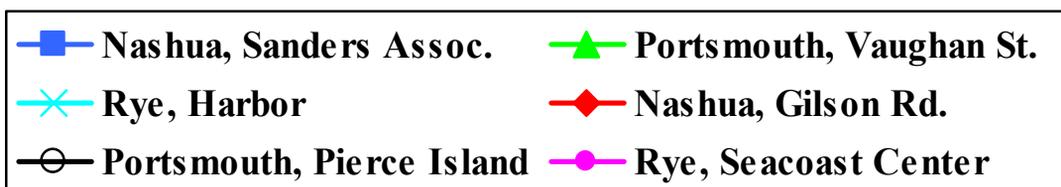
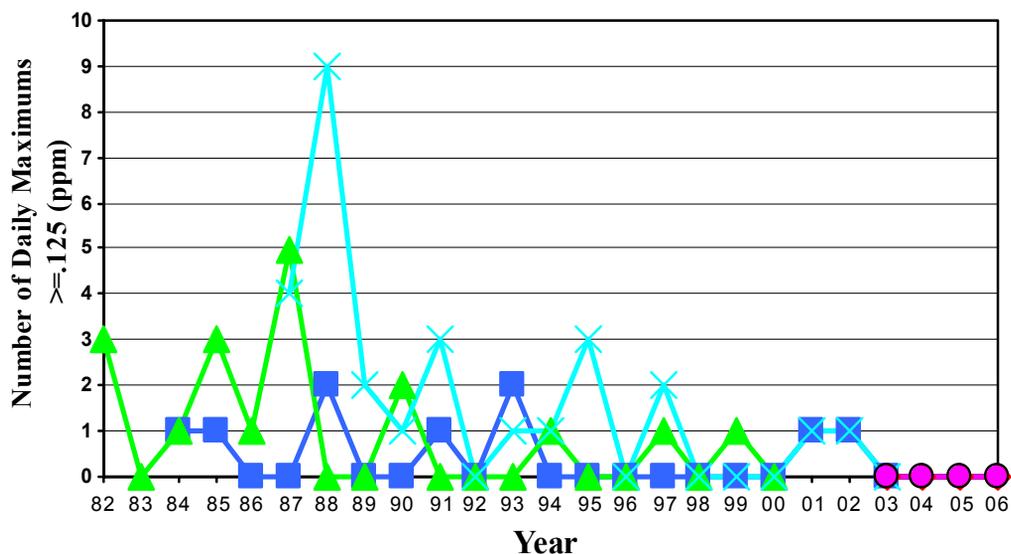
New Hampshire									
2006 Nitrogen Dioxide									
All Values are in Units of Parts Per Million									
Site ID	P O Rept. C Org.	City	County	Address	Method	Obs	1-hour Highest Value	1-hour 2nd Highest Value	Annual Arith. Mean
33-011-0020	1 0762	Manchester	Hillsborough	PEARL ST	074	8085	0.048	0.047	0.0101
33-011-1011	1 0762	Nashua	Hillsborough	GILSON ROAD	074	3993	0.021	0.019	0.0020 *
33-011-5001	1 0762	Peterborough	Hillsborough	PACK MONADNOCK	074	2709	0.014	0.008	0.0011
33-015-0014	1 0762	Portsmouth	Rockingham	PEIRCE ISLAND	074	8418	0.048	0.047	0.0081

*Indicates that the mean does not meet summary criteria

New Hampshire Sites 2006 - Ozone



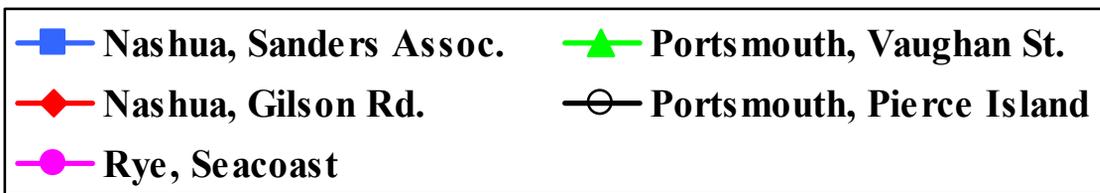
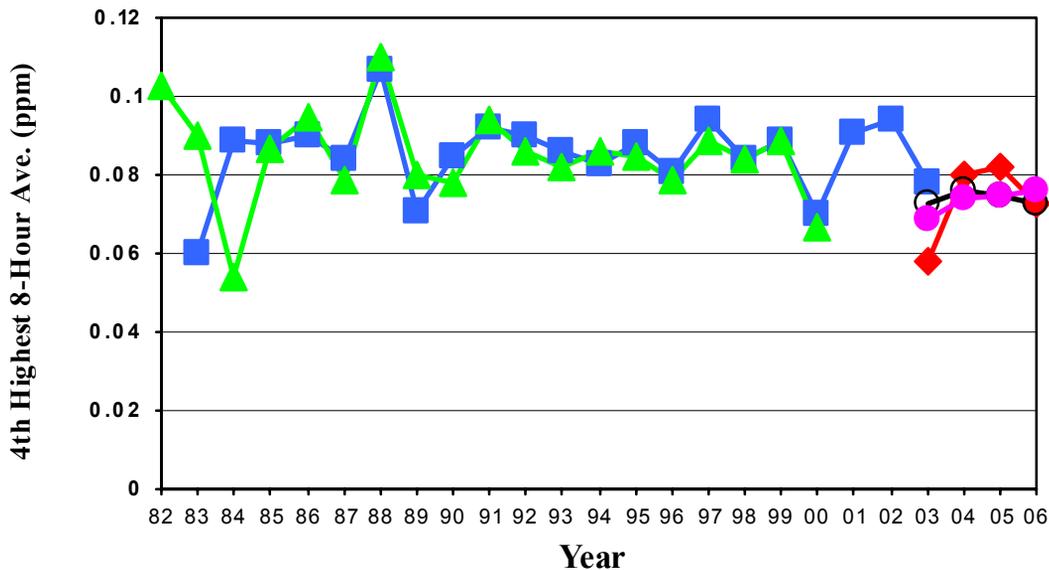
New Hampshire Ozone 1-Hour Data



New Hampshire																	
2006 Ozone (1-Hour)																	
All Values are in Units of Parts Per Million																	
	P								2nd	3rd	4th	Missing					
Site ID	O	Rep.							Highest	Highest	Highest	Day Max	Est. Day	Days	Method		
	C	Org.	City	County	Address	Meas	Req	Value	Value	Value	Value	> 0.125	> 0.125	< 0.125	used		
33-001-2004		1	0762	Laconia	Belknap	GREEN STREET		174	183	0.081	0.079	0.076	0	0	5	047	
33-005-0007		1	0762	Keene	Cheshire	RAILROAD STREET		181	183	0.100	0.090	0.088	0.076	0	0	2	047
33-007-4001		1	0762	Not in a city	Coos	MT. WASHINGTON		121	183	0.081	0.079	0.077	0.075	0	0	5	047
33-007-4002		1	0762	Green's Grant	Coos	CAMP DODGE, ROUTE 16		177	183	0.077	0.069	0.068	0.066	0	0	4	047
33-007-4003		1	0762	Not in a city	Coos	LAKE FRANCES DAM		183	183	0.080	0.069	0.067	0.066	0	0	0	047
33-009-0010		1	0762	Lebanon	Grafton	LEABNON AIRPORT		182	183	0.078	0.073	0.072	0.072	0	0	1	047
33-011-0020		1	0762	Manchester	Hillsborough	PEARL ST		179	183	0.087	0.086	0.079	0.075	0	0	4	047
33-011-1011		1	0762	Nashua	Hillsborough	GILSON ROAD		177	183	0.091	0.090	0.081	0.081	0	0	3	047
33-011-5001		1	0762	Peterborough	Hillsborough	PACK MONADNOCK SUMMIT		179	183	0.112	0.096	0.094	0.089	0	0	4	047
33-013-1007		1	0762	Concord	Merrimack	HAZEN DRIVE		176	183	0.085	0.081	0.081	0.080	0	0	0	047
33-015-0014		1	0762	Portsmouth	Rockingham	PEIRCE ISLAND		177	183	0.092	0.091	0.091	0.082	0	0	6	047
33-015-0016		1	0762	Rye	Rockingham	SEACOAST SCIENCE CENTER		175	183	0.100	0.099	0.096	0.091	0	0	2	047
33-019-0003		1	0762	Claremont	Sullivan	SOUTH STREET		183	183	0.088	0.081	0.079	0.078	0	0	0	047

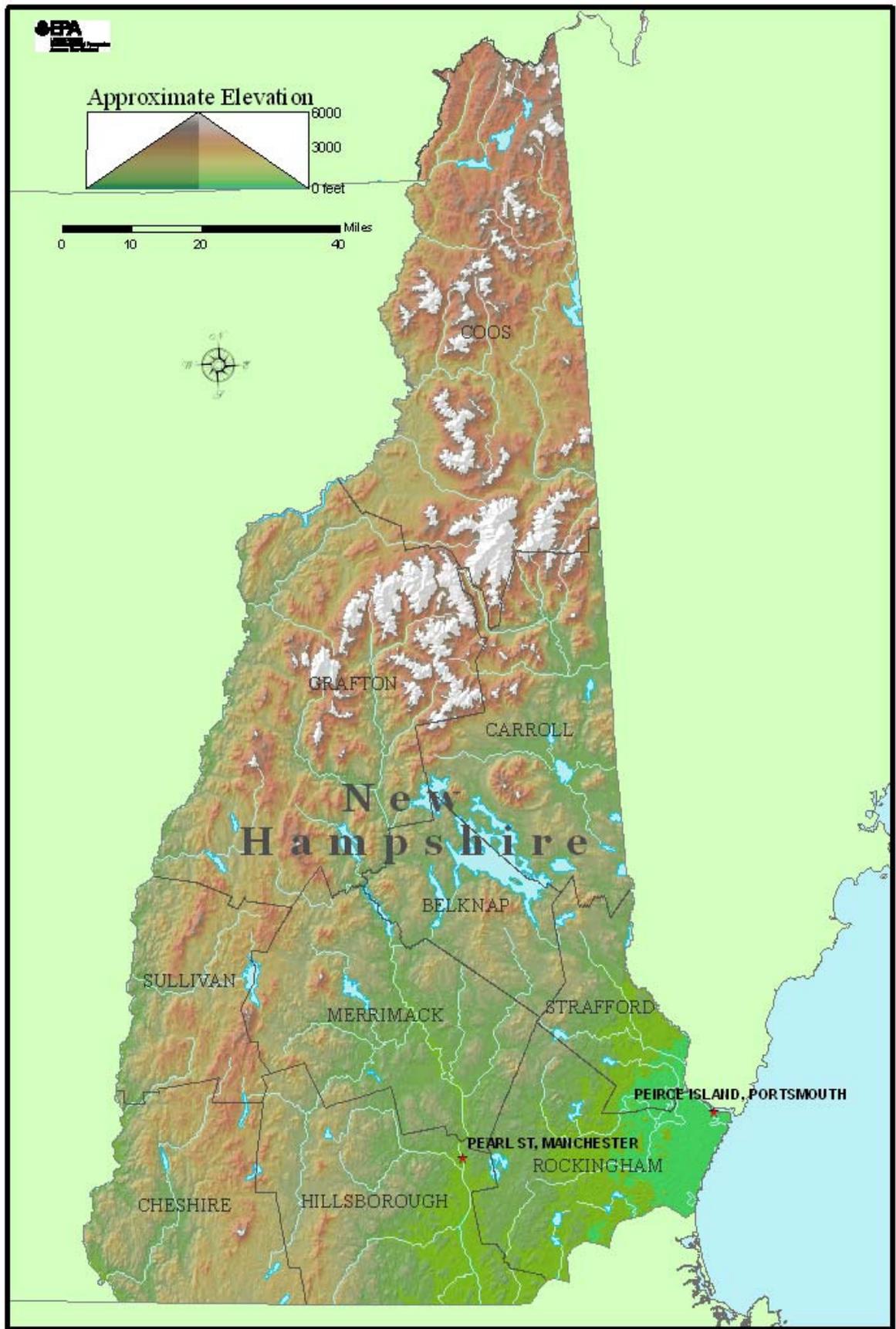
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New Hampshire Ozone 8-Hour Data

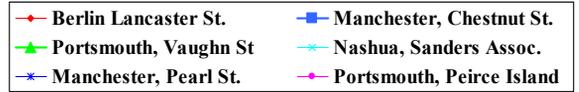
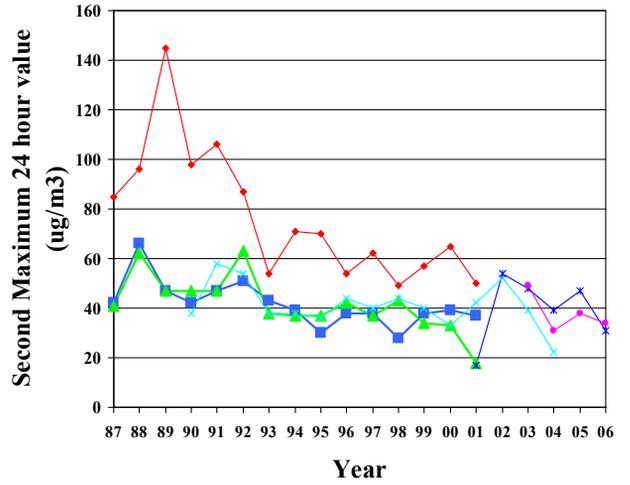
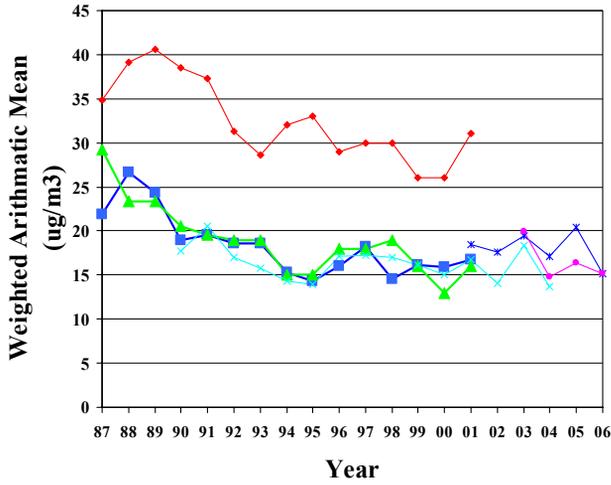


New Hampshire														
2006 Ozone (8-Hour)														
All Values are in Units of Parts Per Million														
	P													
	O	Rept.				%	Valid	Num		2nd	3rd	4th	Days	
Site ID	C	Org.	City	County	Address	Obs	Days	Required	Highest	Highest	Highest	Highest	Max ≥	
								Days	8-Hr Value	8-Hr Value	8-Hr Value	8-Hr Value		
33-001-2004	1	0762	Laconia	Belknap	GREEN STREET	94	172	183	0.074	0.071	0.068	0.067	0	
33-005-0007	1	0762	Keene	Cheshire	RAILROAD STREET	99	181	183	0.075	0.071	0.068	0.067	0	
33-007-4001	1	0762	Not in a city	Coos	MT. WASHINGTON	61	112	183	0.079	0.078	0.075	0.069	0	
33-007-4002	1	0762	Green's Grant	Coos	CAMP DODGE, ROUTE 16	96	175	183	0.064	0.061	0.060	0.059	0	
33-007-4003	1	0762	Not in a city	Coos	LAKE FRANCES DAM	98	180	183	0.073	0.066	0.063	0.062	0	
33-009-0010	1	0762	Lebanon	Grafton	LEABNON AIRPORT	99	181	183	0.066	0.064	0.064	0.063	0	
33-011-0020	1	0762	Manchester	Hillsborough	PEARL ST	98	179	183	0.076	0.072	0.069	0.068	0	
33-011-1011	1	0762	Nashua	Hillsborough	GILSON ROAD	97	177	183	0.084	0.075	0.073	0.073	0	
33-011-5001	1	0762	Peterborough	Hillsborough	PACK MONADNOCK SUMMIT	97	178	183	0.086	0.085	0.083	0.078	2	
33-013-1007	1	0762	Concord	Merrimack	HAZEN DRIVE	96	176	183	0.074	0.073	0.071	0.069	0	
33-015-0014	1	0762	Portsmouth	Rockingham	PEIRCE ISLAND	97	177	183	0.077	0.076	0.075	0.073	0	
33-015-0016	1	0762	Rye	Rockingham	SEACOAST SCIENCE CENTER	95	174	183	0.078	0.077	0.077	0.076	0	
33-019-0003	1	0762	Claremont	Sullivan	SOUTH STREET	99	182	183	0.070	0.065	0.065	0.064	0	

New Hampshire Sites 2006 - Particulate Matter < 10 Microns



New Hampshire Particulate Matter < 10 Microns (PM10) Data

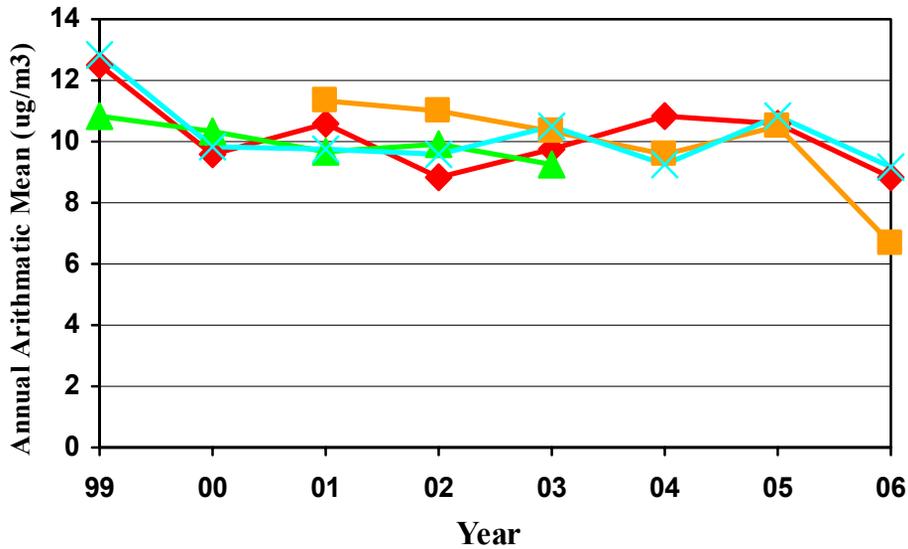


New Hampshire						2006 Particulate Matter < 10 Microns ug/m3											
SITE ID	PC	Rep. Org	City	County	Address	# Obs	# Req.	Days	Valid % Obs	Highest Value	2nd	3rd	4th	Days Est. >150	Days Max >150	Wtd. Arith. Mean	Method Used
											Highest Value	Highest Value	Highest Value				
33-011-0020	1	0762	Manchester	Hillsborough	PEARL ST	58	61	58	95	43	31	29	29	0.0	0	15.2	000
33-011-0020	2	0762	Manchester	Hillsborough	PEARL ST	59	61	59	97	42	31	31	31	0.0	0	15.9	000
33-015-0014	1	0762	Portsmouth	Rockingham	PEIRCE ISLAND	60	61	60	98	43	34	34	33	0.0	0	15.2	000

New Hampshire Sites 2006 - Particulate Matter < 2.5 Microns



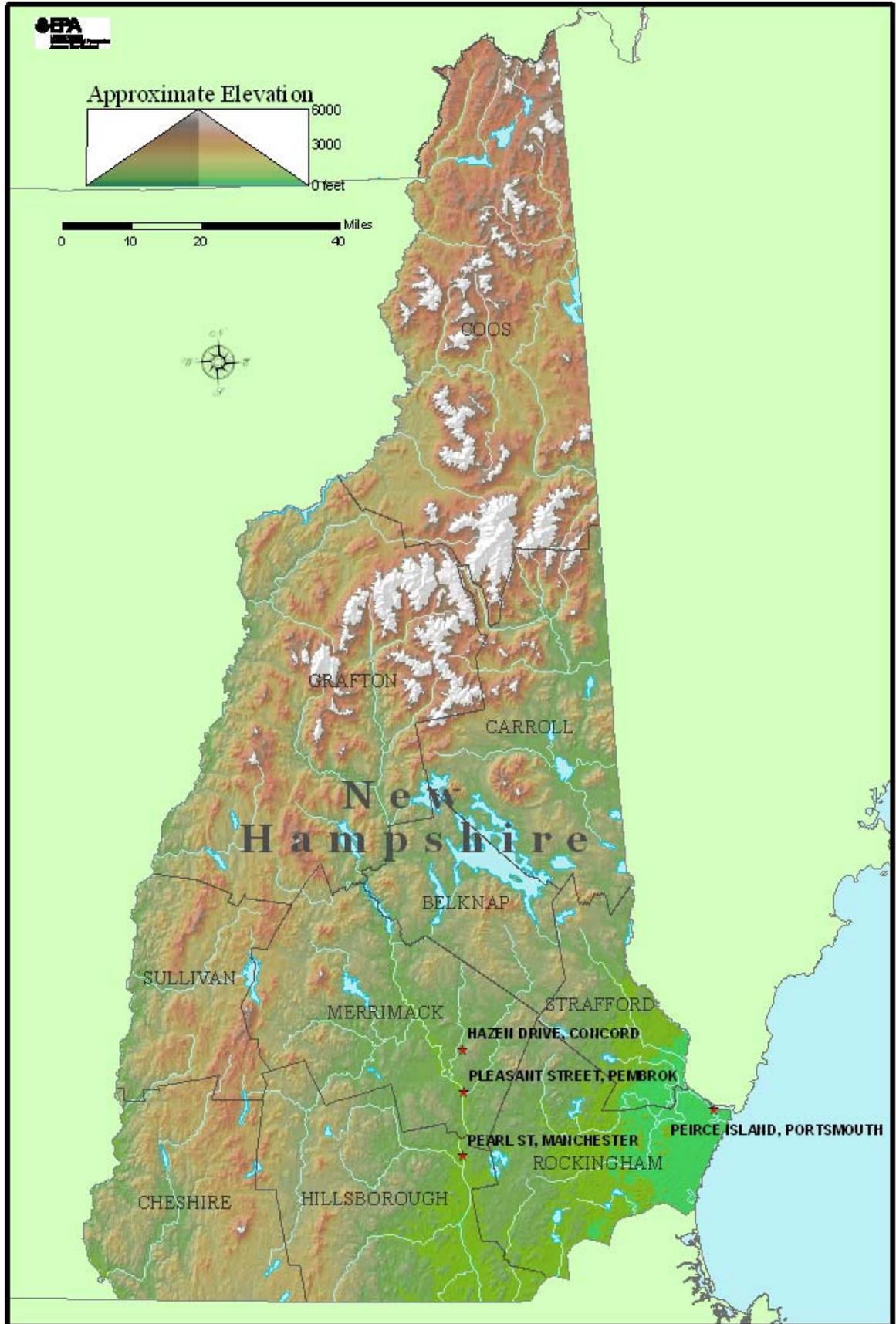
New Hampshire Particulate Matter < 2.5 Microns (PM2.5) Data



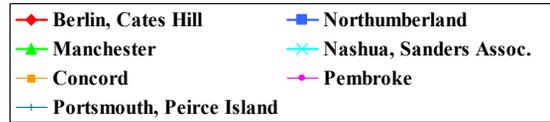
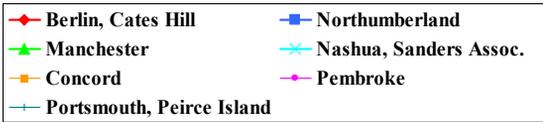
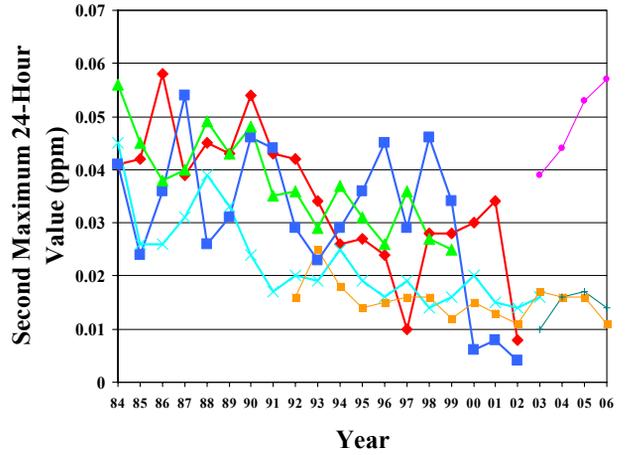
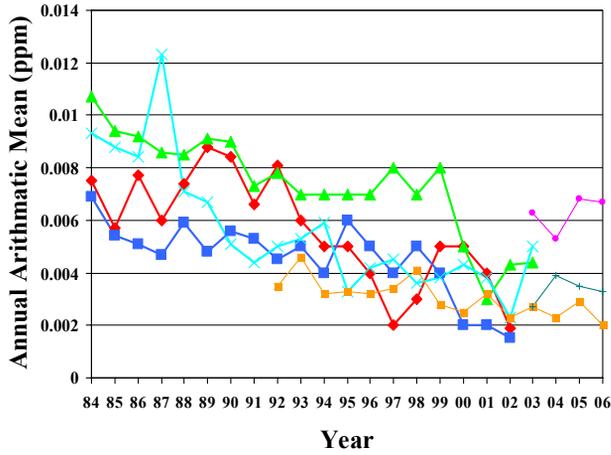
New Hampshire													
2006 PM 2.5													
All Values are in UG/CU Meters Local Conditions													
P													
O Rept.													
C	Org.	City	County	Address	Method	# Obs	Highest Value	2nd Highest Value	3rd Highest Value	4th Highest Value	98th Percentile Value	Wtd. Arith. Mean	
33-001-2004	1	0762	Laconia	Belknap	GREEN STREET,	116	60	23.0	22.8	19.9	19.3	22.8	7.39
33-001-2004	2	0762	Laconia	Belknap	GREEN STREET,	116	59	22.6	22.4	19.5	19.2	22.4	7.53
33-005-0007	1	0762	Keene	Cheshire	RAILROAD STREET	116	61	34.0	32.1	25.5	24.4	32.1	11.67
33-007-0014	1	0762	Berlin	Coos	LANCASTER STREET TRAILER	116	122	30.6	24.4	23.2	22.5	23.2	8.81
33-007-4002	3	0762	Green's Grant	Coos	CAMP DODGE, ROUTE 16	000	3246	12.7	11.5	9.5	9.2	9.5	2.78 *
33-009-0010	1	0762	Lebanon	Grafton	LEBANON AIRPORT	116	61	23.7	18.8	18.4	18.1	18.8	8.2
33-009-0010	3	0762	Lebanon	Grafton	LEBANON AIRPORT	703	1632	31.3	31.0	26.9	25.2	31.0	13.5 *
33-011-0020	3	0762	Manchester	Hillsborough	PEARL ST	703	3579	25.2	21.3	20.8	19.9	20.8	6.65 *
33-011-1015	1	0762	Nashua	Hillsborough	CROWN ST	116	121	40.1	30.5	27.3	26.7	27.3	9.25
33-011-5001	3	0762	Peterborough	Hillsborough	PACK MONADNOCK SUMMIT	000	3552	17.9	14.3	12.9	12.4	12.9	3.1 *
33-013-1006	1	0762	Pembroke	Merrimack	PLEASANT STREET	116	119	33.9	25.7	25.4	23.2	25.4	9.38
33-013-1006	2	0762	Pembroke	Merrimack	PLEASANT STREET	116	61	25.1	23.4	21.1	21.0	23.4	9.93
33-015-0014	1	0762	Portsmouth	Rockingham	PEIRCE ISLAND	116	122	33.8	32.0	26.6	23.0	26.6	8.88
33-015-0014	3	0762	Portsmouth	Rockingham	PEIRCE ISLAND	000	3462	30.5	30.1	28.8	28.6	28.8	11.34 *
33-019-0003	1	0762	Claremont	Sullivan	SOUTH STREET	116	58	24.3	24.2	20.6	20.5	24.2	9.13

*Indicates that the mean does not meet summary criteria

New Hampshire Sites 2006 - Sulfur Dioxide



New Hampshire Sulfur Dioxide Data



New Hampshire																	
2006 Sulfur Dioxide																	
All Values are in Units of Parts Per Million																	
Site ID	P	O	C	Type	City	County	Address	#	24-	24-	3-hour	3-hour	1-hour	1-hour	Arith.	Method	
									hour	hour	Obs	Highest	Highest	Obs			Highest
									> 0.14	Value	Value	> 0.5	Value	Value	Mean	Used	
33-011-0020	1	0762	Manchester	Hillsborough	PEARL ST	8579	0.018	0.014	0	0.044	0.036	0	0.064	0.064	0.0035	0	060
33-013-1006	1	0762	Pembroke	Merrimack	PLEASANT STREET	8655	0.075	0.057	0	0.136	0.126	0	0.176	0.162	0.0067	0	060
33-013-1007	1	0762	Concord	Merrimack	HAZEN DRIVE	6425	0.013	0.011	0	0.063	0.041	0	0.117	0.093	0.0020	0	060
33-015-0014	1	0762	Portsmouth	Rockingham	PEIRCE ISLAND	8658	0.020	0.014	0	0.058	0.047	0	0.093	0.090	0.0033	0	060

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Ambient Air Quality Summary - Rhode Island

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 2006. The Dorrance Street Site in Providence reported the highest 8-hour second maximum CO level of 2.5 ppm, which was the same in 2005 and 2004. Over the past five years the highest 8-hour second maximum concentration of CO at this site was 2.7 ppm in 2002. Lower concentrations of CO were recorded at the East Providence Site with the highest 8-hour second maximum concentration within the past five years of 2.6 ppm occurring in 2002. The 22 year trend of CO concentrations shows a downward trend with concentrations leveling off between 2003 and 2006.

Rhode Island operated lead ambient air monitoring between 1980 and 1992. The measurement of lead was discontinued because of extremely low lead levels being recorded.

Rhode Island operated three nitrogen dioxide (NO₂) monitoring sites during 2006. NO₂ 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 NO₂ concentration of 0.015 ppm, which is lower than the previous year of 0.019 ppm and 30% of the NAAQS. The 23 year NO₂ concentration trend at the Rockefeller Library Site has remained relatively flat with a slight decreasing trend beginning in 2000. Each year, over the past six years, the mean NO₂ concentration during the PAMS season has been three to four times higher at the Francis School Site (0.007 - 0.009 ppm) compared to the Alton Jones Site (0.002 - 0.003 ppm).

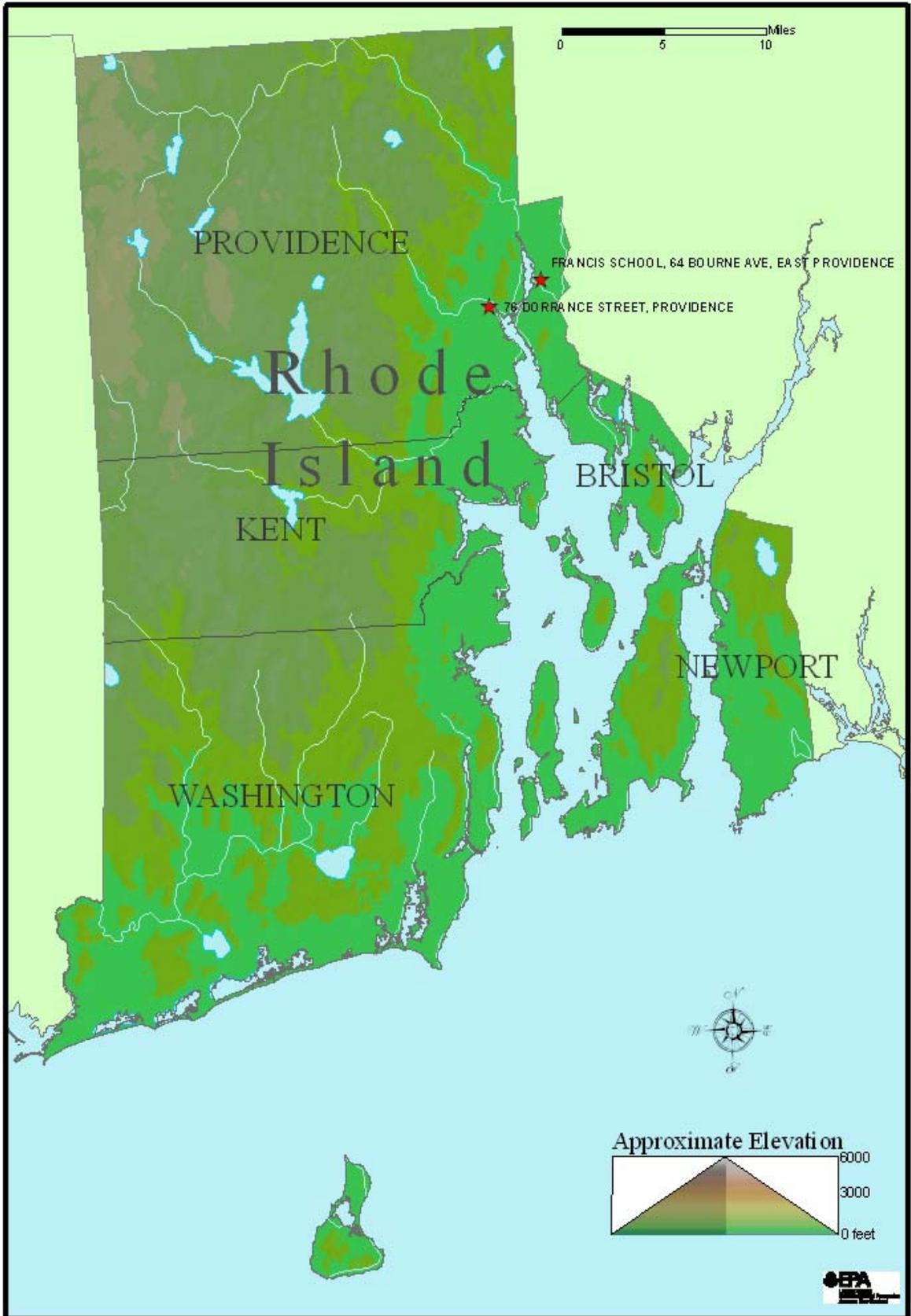
In 2006, all three ozone sites reported a fourth highest 8-hour average O₃ concentration below 0.085 ppm. Over the past ten years, 2002 was the year with the most days above 0.085 ppm compared to other years. The Narragansett Site recorded the highest 1-hour O₃ concentration of 0.156 ppm and the highest 8-hour average concentration of 0.130 ppm during 2006.

None of the particulate matter (PM₁₀) sites in Rhode Island had any exceedances or violations of the annual or 24-hour standards over the past six years. Of the four PM₁₀ monitoring sites, the Dorrance Street Site in Providence reported the highest 24-hour second maximum value of 50 µg/m³ and the Vernon Street Site in Pawtucket reported the highest annual arithmetic mean of 21 µg/m³ during 2006. The long range graphs for PM₁₀ show values varied up and down from year-to-year with no signs of an upwind or downwind trend.

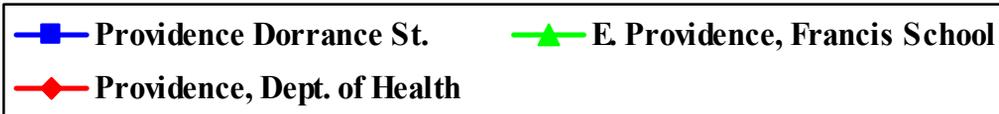
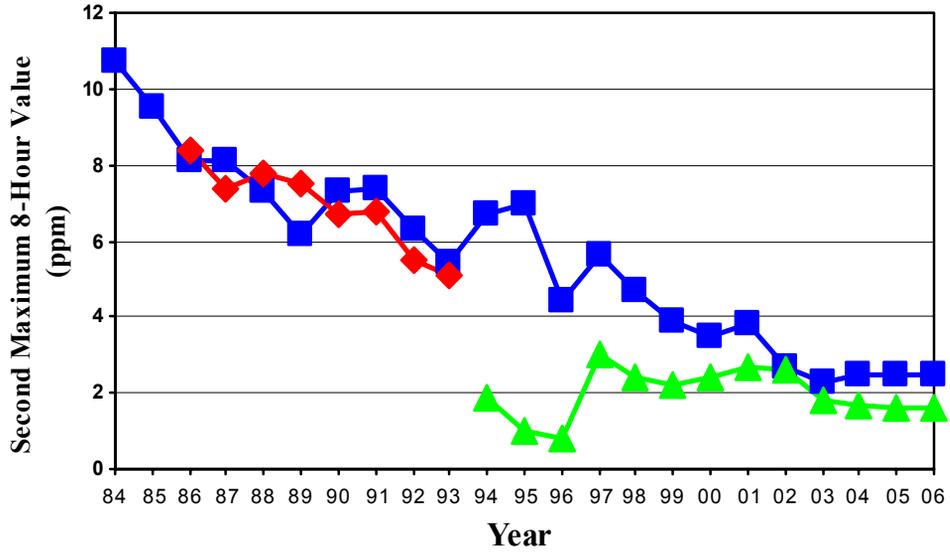
In 2006, Rhode Island operated a network of five fine particulate matter (PM_{2.5}) sites. During 2006, the annual arithmetic mean concentrations of PM_{2.5} were highest at the Providence area sites (i.e. Francis School, Prairie Ave., Vernon St., and Eddy St.) compared to the rural site at Alton Jones. The eight 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 concentrations at the Vernon Street Site went back to similar levels seen in 2004.

Two air quality monitoring sites measured sulfur dioxide (SO₂) in Rhode Island during 2006. There were no exceedances or violations of the annual, 24-hour, or 3-hour NAAQS. The Rockefeller Library Site in Providence reported the highest arithmetic mean concentration of SO₂ at 0.005 ppm, which is 17% of the NAAQS, the highest 24-hour second maximum concentration of 0.020 ppm, and the highest 3-hour second maximum concentration of 0.030 ppm. The long range trend for SO₂ concentrations in Rhode Island continually shows a downward trend.

Rhode Island Sites - 2006 - Carbon Monoxide

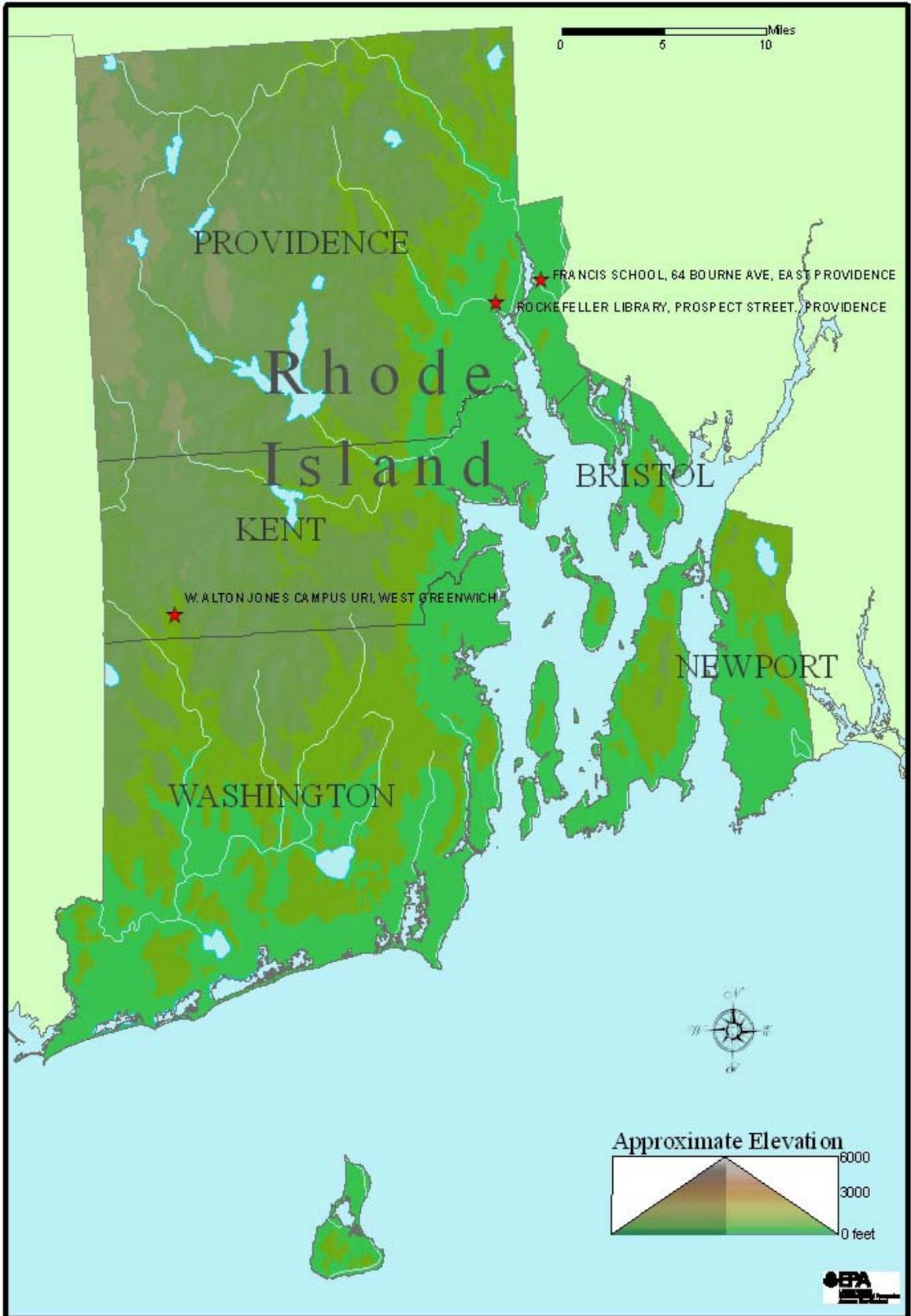


Rhode Island Carbon Monoxide Data

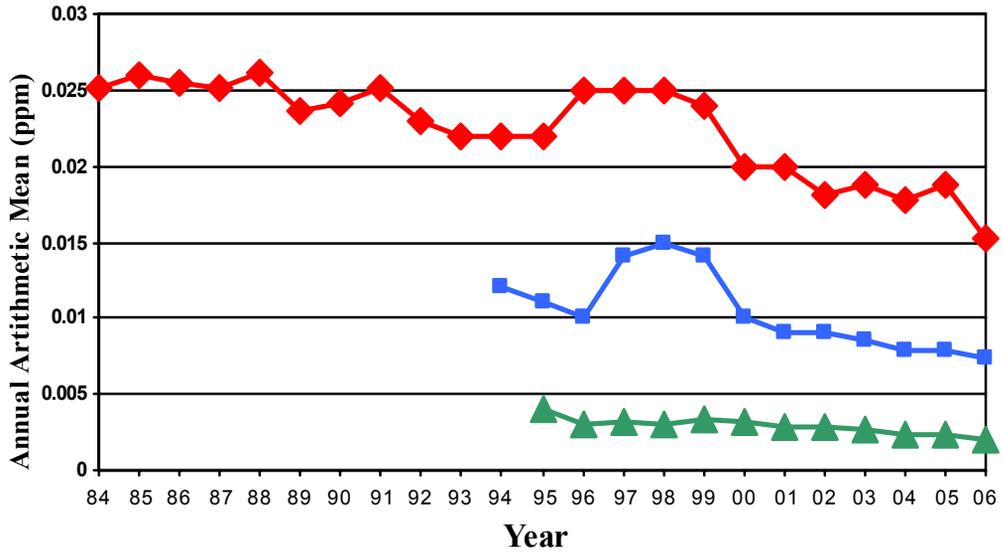


Rhode Island														
2006 Carbon Monoxide														
All Values are in Units of Parts Per Million														
						1-hour	1-hour			8-hour	8-hour			
						#	Highest	Highest			Highest	Highest		
Site ID	C	Type	City	County	Address	Obs	Value	Value	# > 35	Value	Value	# > 9	Methods Used	
44-007-1009	1	0907	Providence	Providence	76 DORRANCE STREET	7587	11.9	9.7	0	3.8	2.5	0	054	
44-007-1010	1	0907	East Providence	Providence	FRANCIS SCHOOL, 64 BOURNE AVE	8229	2.5	2.5	0	1.6	1.6	0	054	

Rhode Island Sites - 2006 - Nitrogen Dioxide



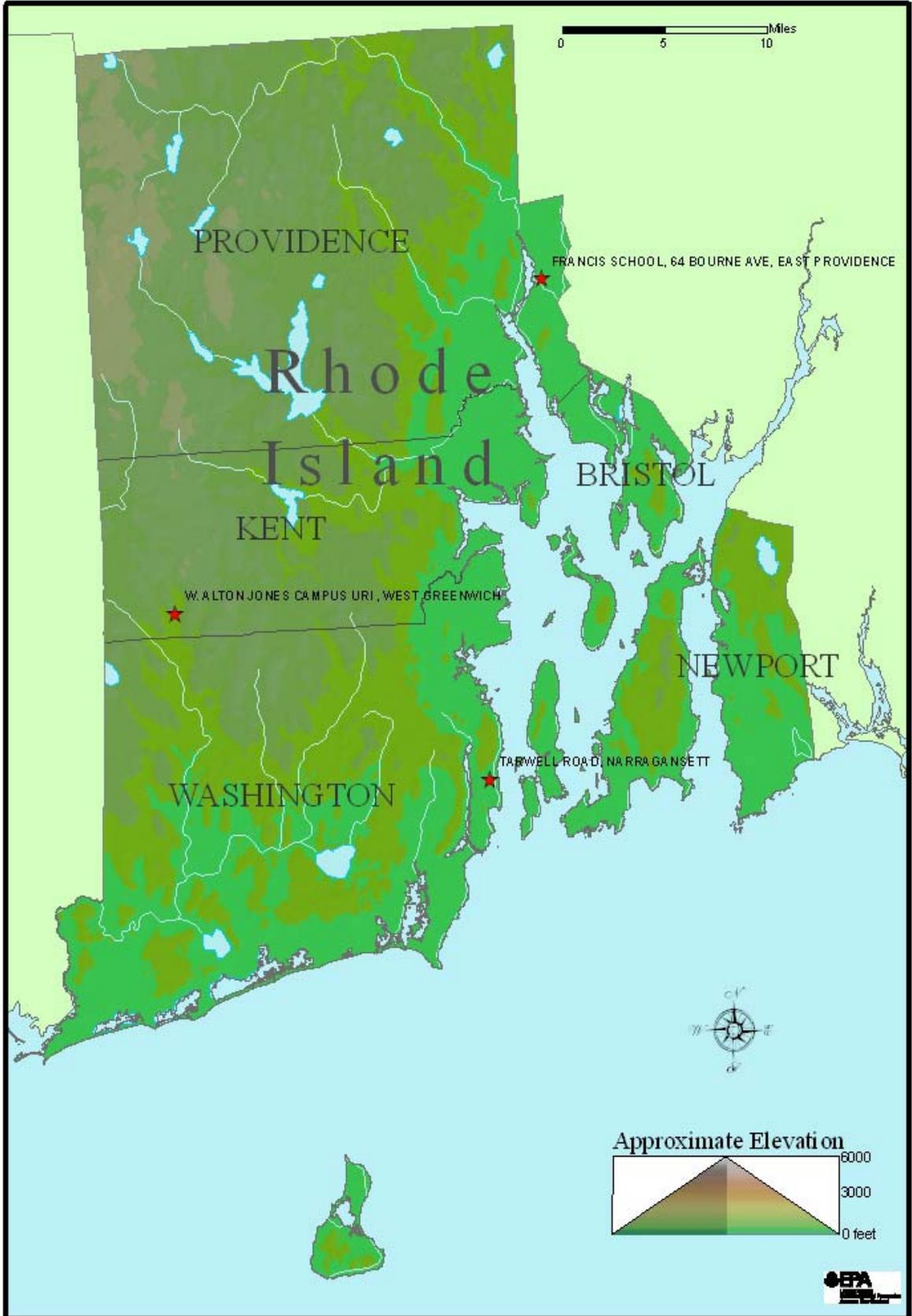
Rhode Island Nitrogen Dioxide Data



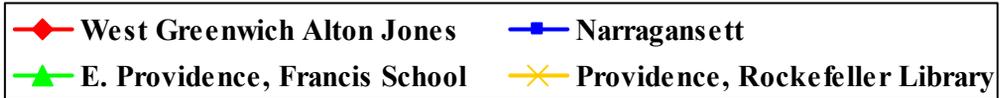
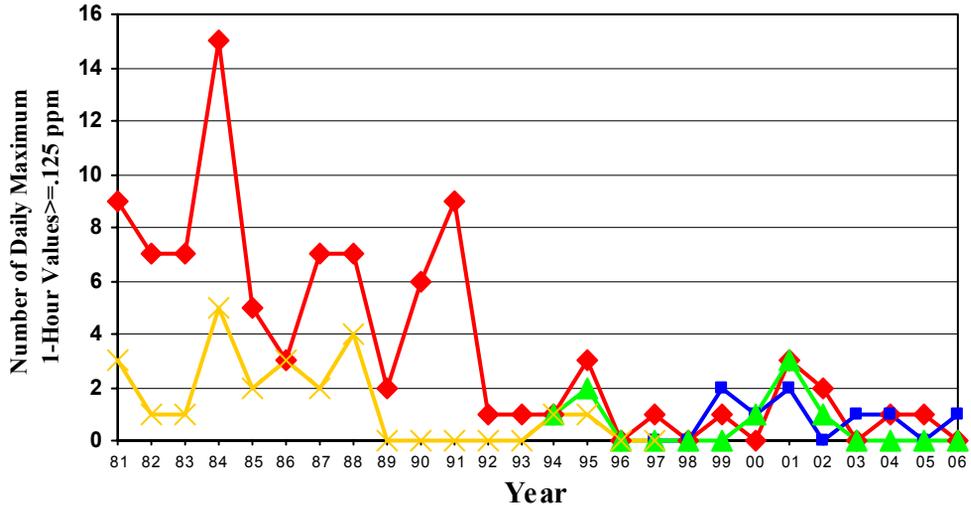
Rhode Island											
2006 Nitrogen Dioxide											
All Values are in Units of Parts Per Million											
Site ID	P	O Rept.	C Org.	City	County	Address	Method	# Obs	1-hour Highest Value	1-hour 2nd Highest Value	Annual Arith. Mean
44-003-0002	1	0907	West Greenwich	Kent	W. ALTON JONES, URI	074	2017	0.014	0.014	0.0020	*
44-007-0012	1	0907	Providence	Providence	ROCKEFELLER LIBRARY	074	7100	0.057	0.054	0.0152	
44-007-1010	1	0907	East Providence	Providence	FRANCIS SCHOOL, 64 BOURN	074	2099	0.028	0.027	0.0073	*

*Indicates that the mean does not meet summary criteria

Rhode Island Sites - 2006 - Ozone

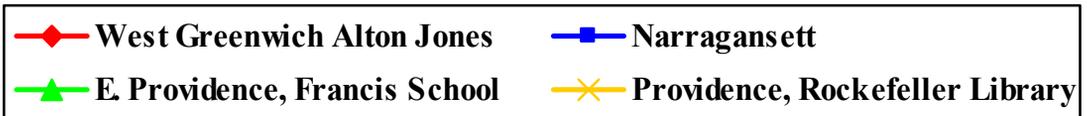
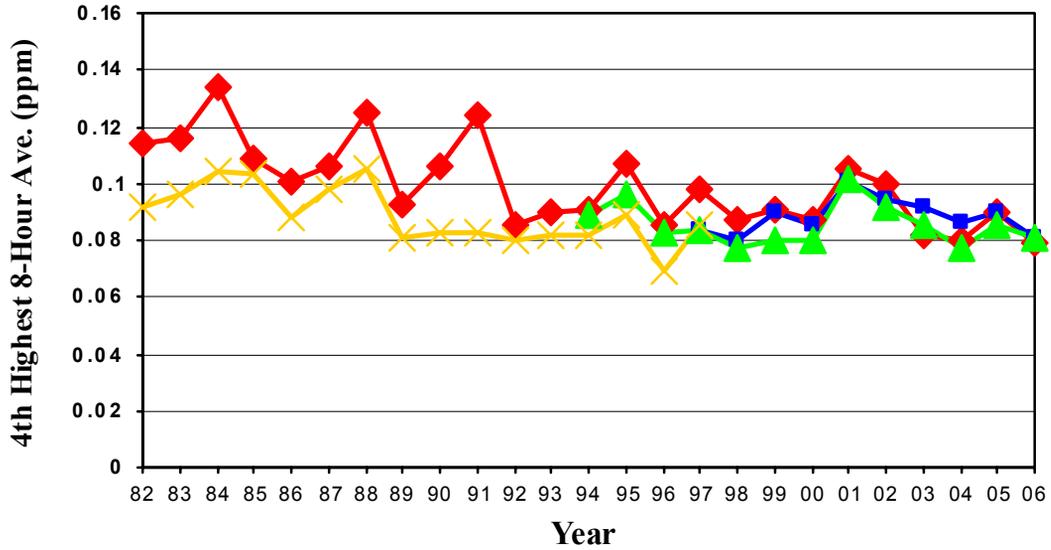


Rhode Island 1-Hour Ozone Data



Rhode Island																
2006 Ozone (1-Hour)																
All Values are in Units of Parts Per Million																
	P												Missing			
O	Rep.															
Site ID	C	Org.	City	County	Address	Num Meas	Num Req	Highest Value	Highest Value	2nd Highest Value	3rd Highest Value	4th Highest Value	Day Max > 0.125	Est. Day > 0.125	Days < 0.125	Method used
44-003-0002	1	907	West Greenwich	Kent	W. ALTON JONES, URI,	178	183	0.106	0.088	0.088	0.087	0.087	0	0	3	047
44-007-1010	1	907	East Providence	Providence	FRANCIS SCHOOL, 64 BOURNE AVE	178	183	0.106	0.093	0.092	0.091	0.091	0	0	1	047
44-009-0007	1	907	Narragansett	Washington	TARZWELL ROAD	183	183	0.156	0.123	0.118	0.095	0.095	1	1	0	047

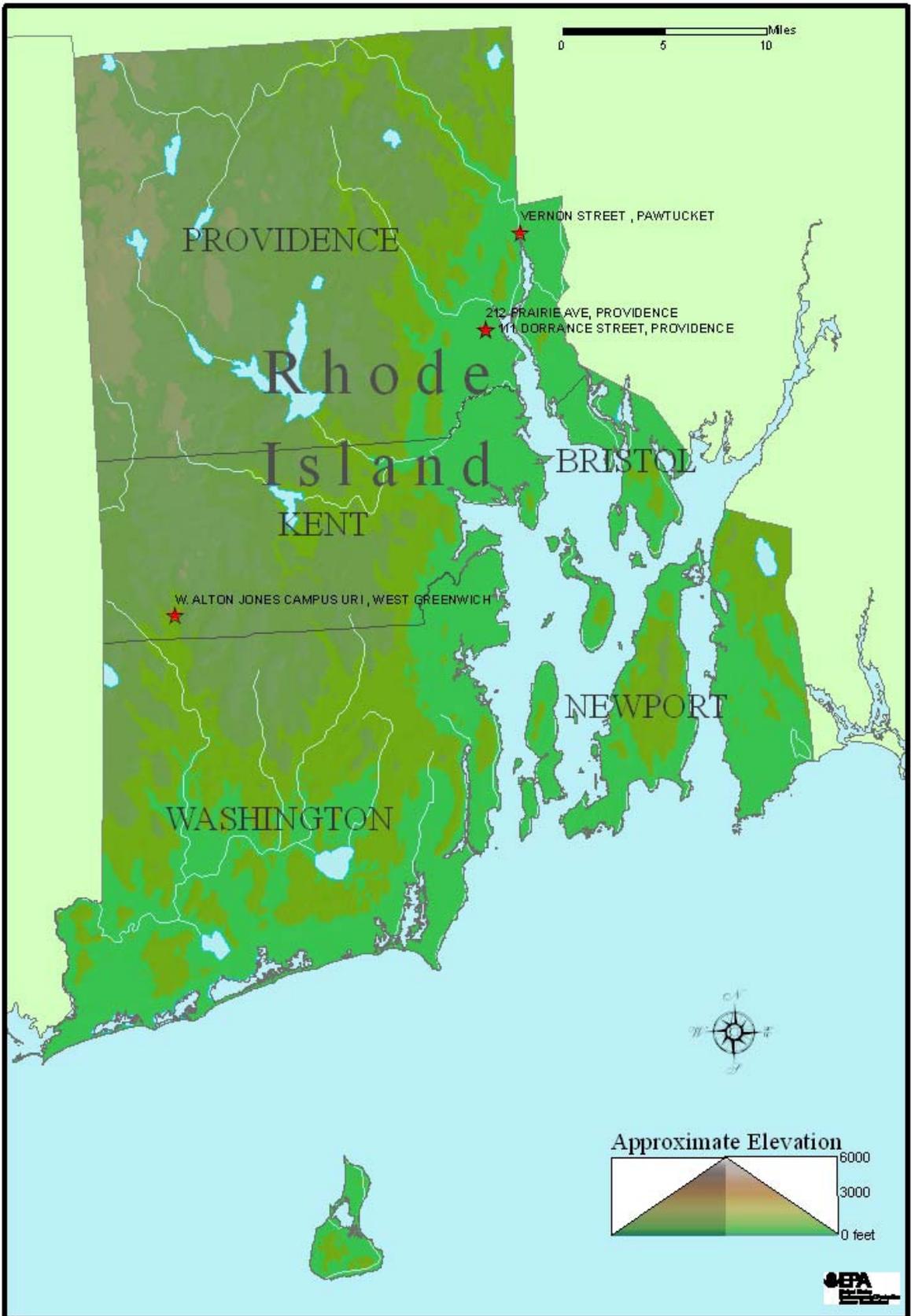
Rhode Island 8-Hour Ozone Data



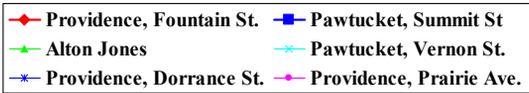
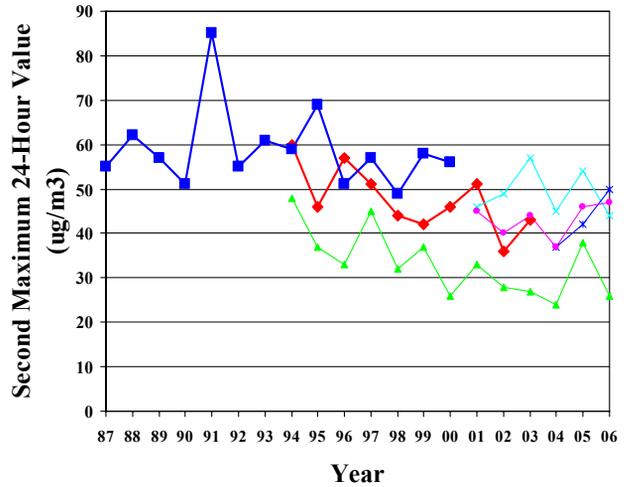
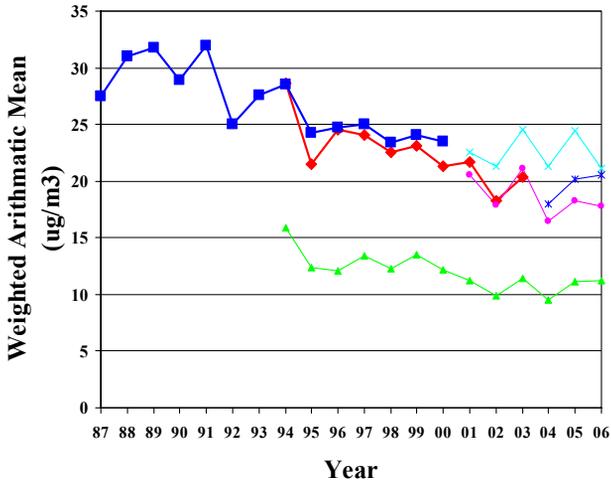
Rhode Island													
2006 Ozone (8-Hour)													
All Values are in Units of Parts Per Million													
	P					Valid	Num		2nd	3rd	4th	Days	
	O	Rept.				%	Days	Required	Highest	Highest	Highest	Max ≥	
Site ID	C	Org.	City	County	Address	Obs	Meas.	Days	8-Hr Value	8-Hr Value	8-Hr Value	0.085	
Ozone (44201)												Parts per million	
44-003-0002	1	0907	West Greenwich	Kent	W. ALTON JONES, URI	96	175	183	0.091	0.080	0.080	0.079	1
44-007-1010	1	0907	East Providence	Providence	FRANCIS SCHOOL, 64 BOURNE AVE	96	176	183	0.095	0.082	0.082	0.081	1
44-009-0007	1	0907	Narragansett	Washington	TARZWELL ROAD	100	183	183	0.130	0.100	0.093	0.081	3

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Rhode Island Sites - 2006 - Particulate Matter < 10 Microns

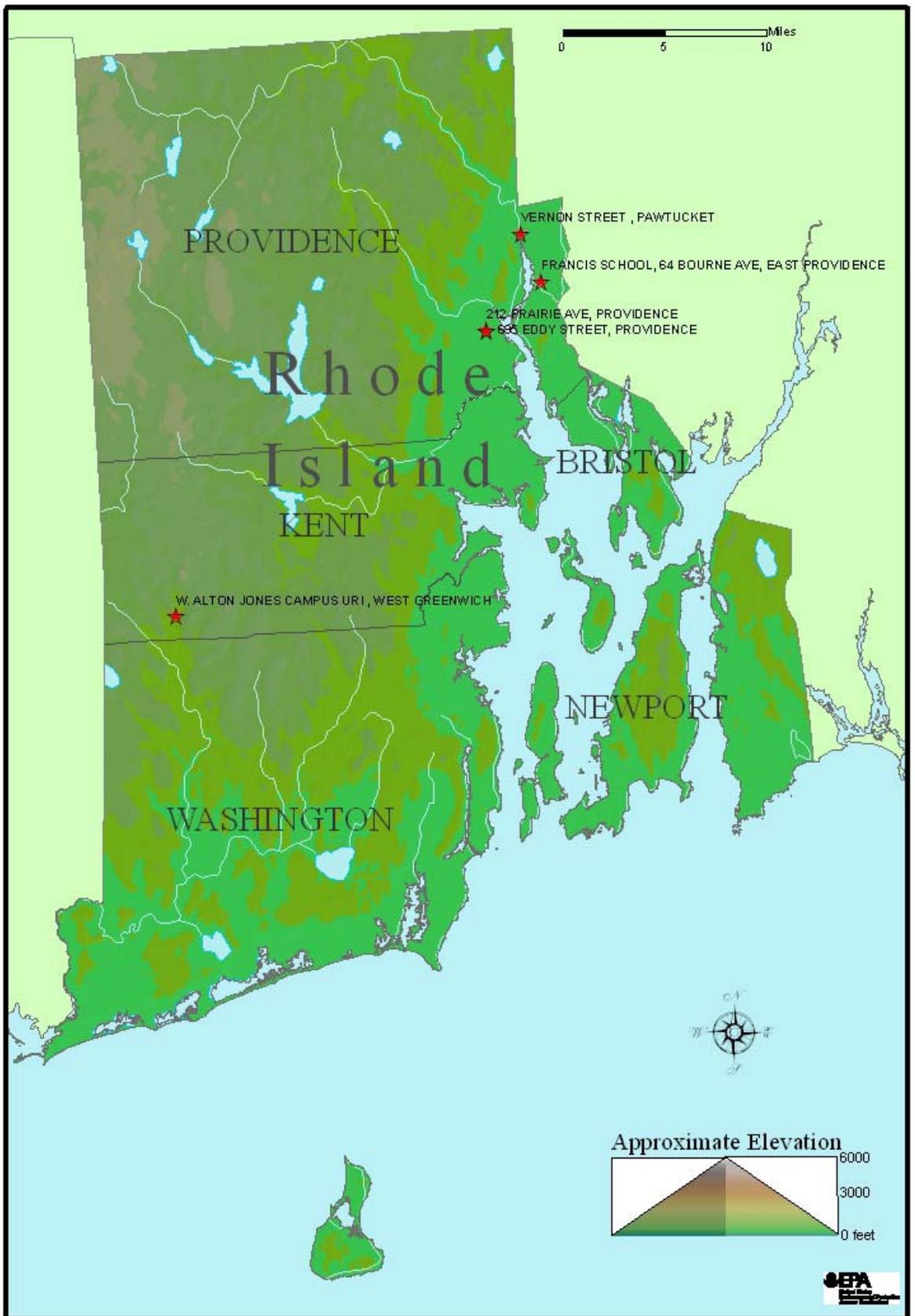


Rhode Island Particulate Matter < 10 Microns (PM10) Data

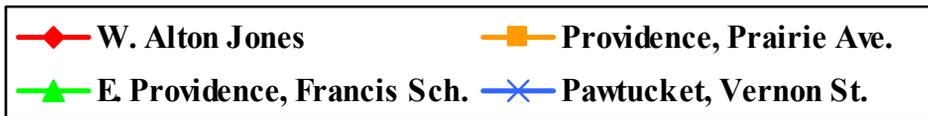
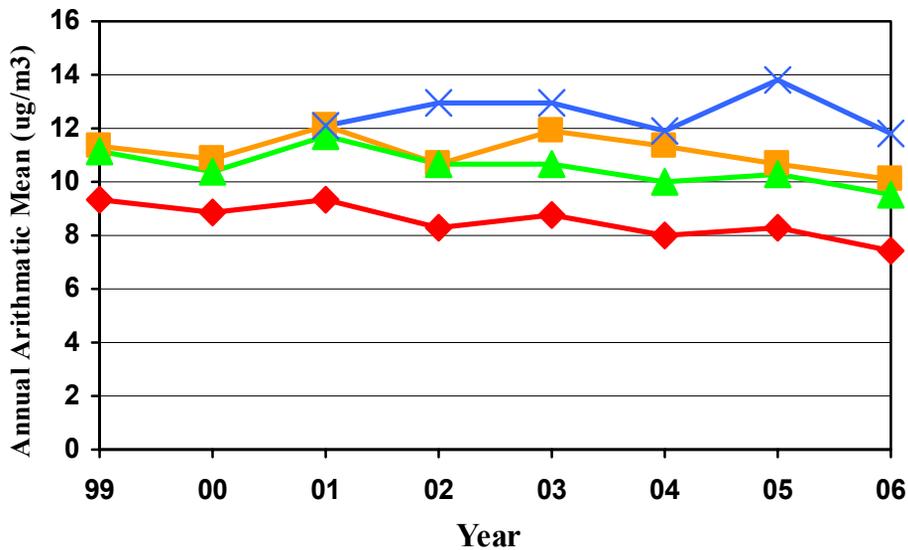


Rhode Island																	
2006 Particulate Matter < 10 Microns																	
ug/m3																	
	Rep.									1st	2nd	3rd	4th	Days Est.	D	Wtd.	
SITE ID	PO	Org	City	County	Address	# Obs	# Req.	Days	% Obs	Highest Value	Highest Value	Highest Value	Highest Value	Max >150	Max >150	Arith. Mean	Method Used
44-003-0002	1	0907	West Greenwich	Kent	W. ALTON JONES CAMPUS	58	61	58	95	38	26	26	22	0.0	0	11.2	063
44-007-0022	1	0907	Providence	Providence	212 PRAIRIE AVE	61	61	61	100	54	47	33	31	0.0	0	17.8	063
44-007-0022	2	0907	Providence	Providence	212 PRAIRIE AVE	55	61	55	90	48	48	33	31	0.0	0	17.7	063
44-007-0026	1	0907	Pawtucket	Providence	VERNON STREET	57	61	57	93	46	44	37	35	0.0	0	21.1	063
44-007-0027	1	0907	Providence	Providence	111 DORRANCE STREET	55	61	55	90	55	50	43	37	0.0	0	20.5	063

Rhode Island Sites - 2006 - Particulate Matter < 2.5 Microns



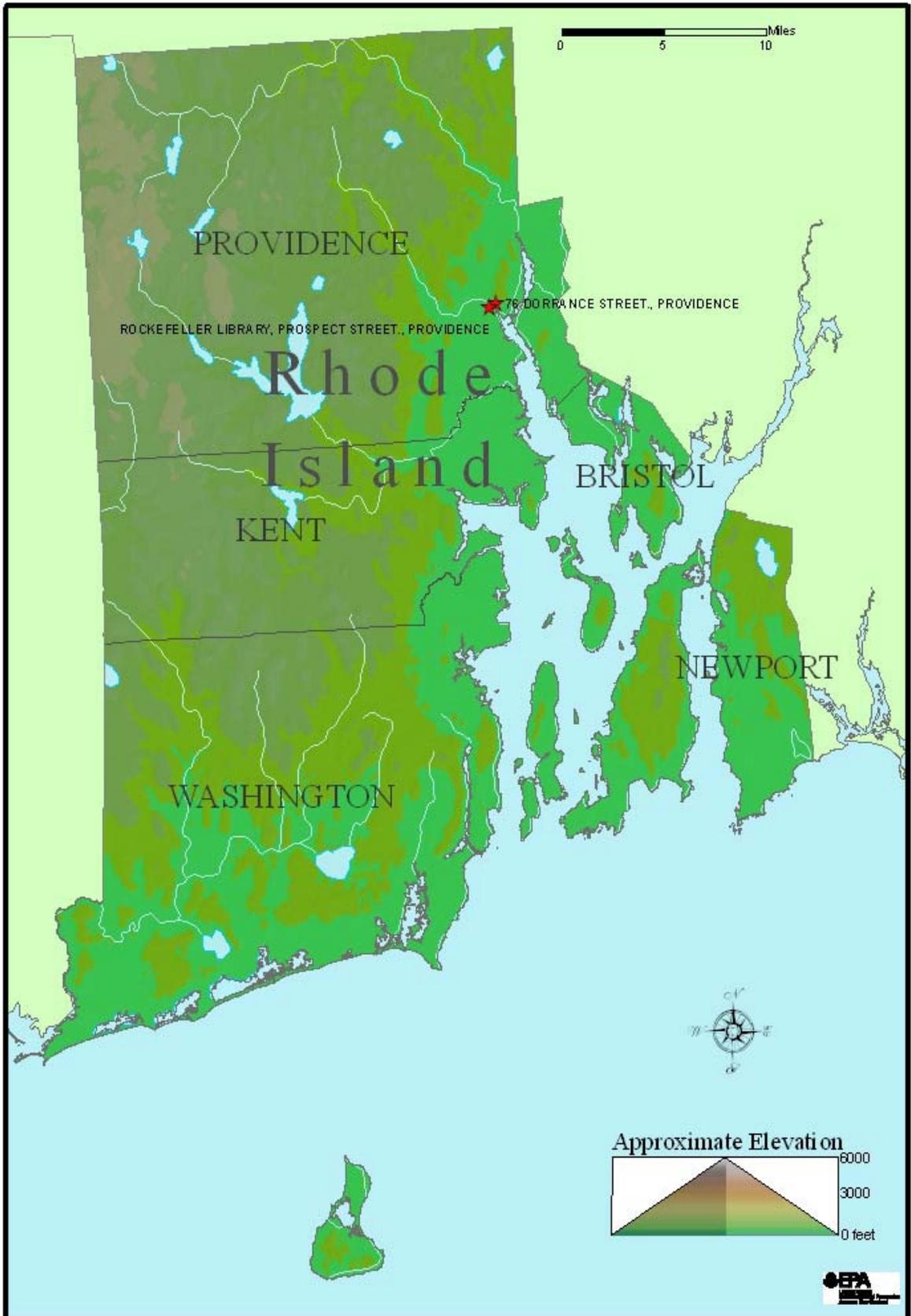
Rhode Island Particulate Matter < 2.5 Microns (PM2.5) Data



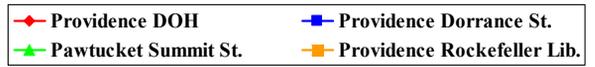
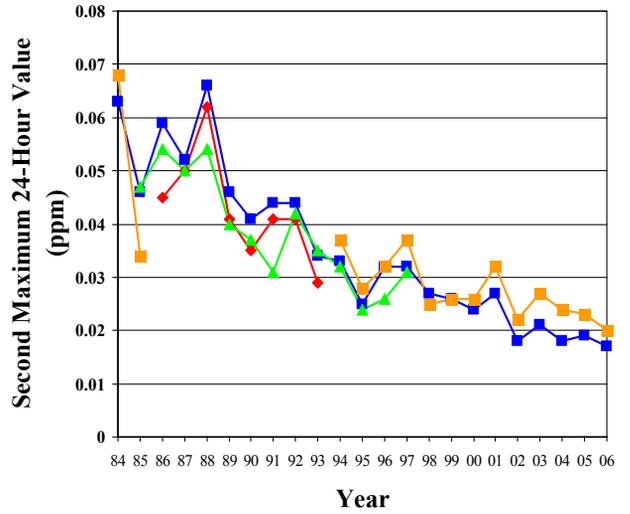
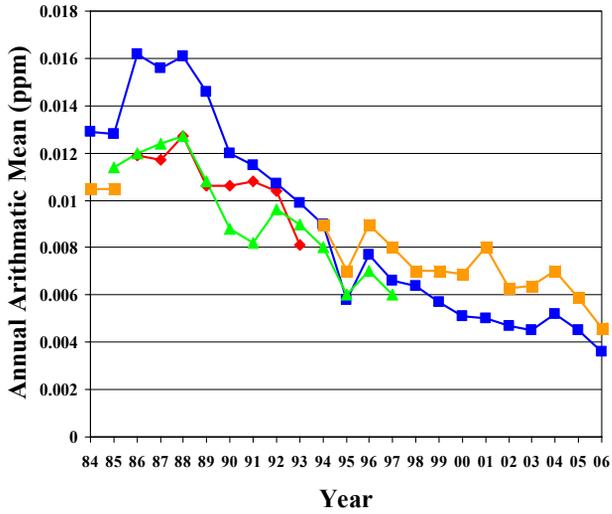
Rhode Island 2006 PM 2.5													
All Values are in UG/CU Meters Local Conditions													
	P												
	O	Rept.											
Site ID	C	Org.	City	County	Address	Method	#	Highest Value	2nd Highest Value	3rd Highest Value	4th Highest Value	98th Percentile Value	Wtd. Arith. Mean
44-003-0002	1	0907	West Greenwich	Kent	W. ALTON JONES CAMPUS, URI	120	114	34.8	27.9	21.2	19.7	21.2	7.46
44-007-0022	1	0907	Providence	Providence	212 PRAIRIE AVE	120	345	43.3	33.3	32.6	32.0	30.2	10.12
44-007-0022	2	0907	Providence	Providence	212 PRAIRIE AVE	000	57	44.7	31.0	25.3	22.8	31.0	11.39
44-007-0026	1	0907	Pawtucket	Providence	VERNON STREET	120	102	35.0	32.0	30.2	26.1	30.2	11.85 *
44-007-0028	1	0907	Providence	Providence	695 EDDY STREET	120	115	34.8	32.1	24.8	22.9	24.8	9.84
44-007-1010	1	0907	East Providence	Providence	FRANCIS SCHOOL, 64 BOURNE AVE	120	328	38.2	31.1	30.7	30.6	27.5	9.48

*Indicates that the mean does not meet summary criteria

Rhode Island Sites - 2006 - Sulfur Dioxide



Rhode Island Sulfur Dioxide Data



Rhode Island																
2006 Sulfur Dioxide																
All Values are in Units of Parts Per Million																
Site ID	P	O	C	Type	City	County	Address	#	24-	24-	3-hour	3-hour	1-hour	1-hour	Arith.	Method
									hour	hour	Obs	Highest	Highest	Obs		
									> 0.14	Value	Value	> 0.5	Value	Value		
44-007-0012	1	0907	Providence	Providence	ROCKEFELLER LIBRARY	7850	0.024	0.020	0	0.031	0.030	0	0.046	0.039	0.0046	060
44-007-1009	1	0907	Providence	Providence	76 DORRANCE STREET	8218	0.017	0.017	0	0.034	0.026	0	0.044	0.035	0.0036	060

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Ambient Air Quality Summary – Vermont

The state of Vermont operated two carbon monoxide (CO) ambient monitoring sites during 2006, 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 2006. The greatest first and second highest 8-hour concentrations of CO were recorded at the Rutland site. These values were 2.6 ppm and 2.6 ppm, respectively. A general decline is shown in the 23 year trend of CO concentrations in Vermont.

During 2006, Vermont did not conduct ambient air lead monitoring. Historical ambient air concentrations of lead in Vermont have been extremely low and monitoring for this pollutant has not been warranted. The last data recorded for lead in the state of Vermont was in 1990.

Two nitrogen dioxide (NO₂) monitoring sites (Rutland and Burlington) were operated by the state during 2006. No exceedances of the NAAQS for NO₂ were recorded for either site. The past 22 years of NO₂ data indicate that the concentrations of NO₂ have remained relatively steady with a slight decrease in the past few years. These concentrations are very low in comparison with the NAAQS. During 2006, the highest annual arithmetic mean concentration of NO₂ in Vermont was measured at the Burlington site. This value was 0.0110 ppm, which is approximately 21% of the NAAQS.

Neither of the ozone monitoring sites in Vermont 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 2006 was recorded at the Underhill site and was 0.077 ppm.

During 2006, Vermont maintained six ambient monitoring sites measuring particulate matter less than 10 microns (PM₁₀). Data for 2006 continued the eleven-year trend of low PM₁₀ concentrations recorded by Vermont monitoring sites. The highest 24-hour PM₁₀ concentration in the state was recorded at the Burlington – S. Winooski ambient monitoring site and measured 50 µg/m³. The Burlington – S. Winooski site also recorded the highest annual weighted arithmetic mean PM₁₀ concentration of 19.3 µg/m³. These concentrations were well below the NAAQS for PM₁₀. The lowest 24-hour PM₁₀ maximum value concentration was measured at the Shoreham South special purpose monitoring site and was recorded as 25 µg/m³. The lowest PM₁₀ annual weighted arithmetic mean concentration was measured at the Underhill site and was recorded as 8.1 µg/m³.

Vermont continued to operate a network of six fine particulate matter (PM_{2.5}) ambient monitoring sites in 2006. PM_{2.5} concentrations for these sites have historically been below the NAAQS. The Rutland site recorded the highest annual weighted arithmetic mean for a POC 1 monitor. This value was 10.33 µg/m³.

The state operated one sulfur dioxide (SO₂) ambient monitoring site in Rutland during 2006. The highest 3-hour SO₂ concentration at the site was 0.043 ppm. The highest 24-hour average SO₂ concentration was 0.024 ppm and the annual arithmetic mean was 0.0043 ppm. With the exception of 1994, the historical data indicate a general decline in the concentration of SO₂ in the state of Vermont.

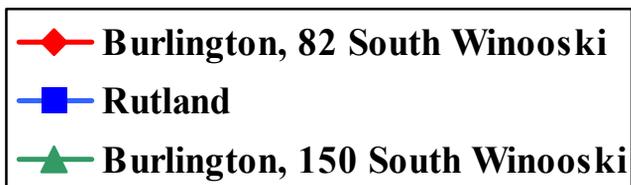
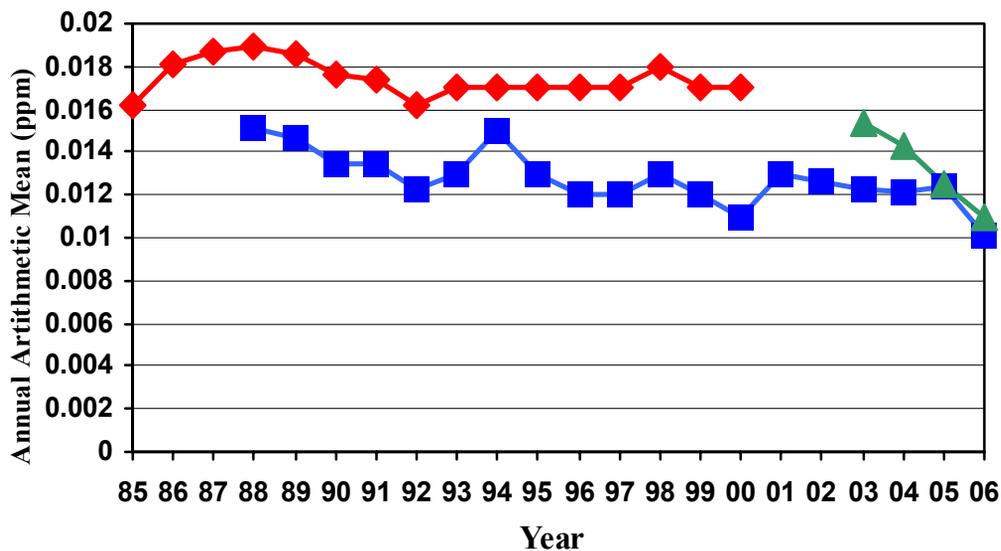
Vermont Sites 2006 - Carbon Monoxide



Vermont Sites 2006 - Nitrogen Dioxide



Vermont Nitrogen Dioxide Data

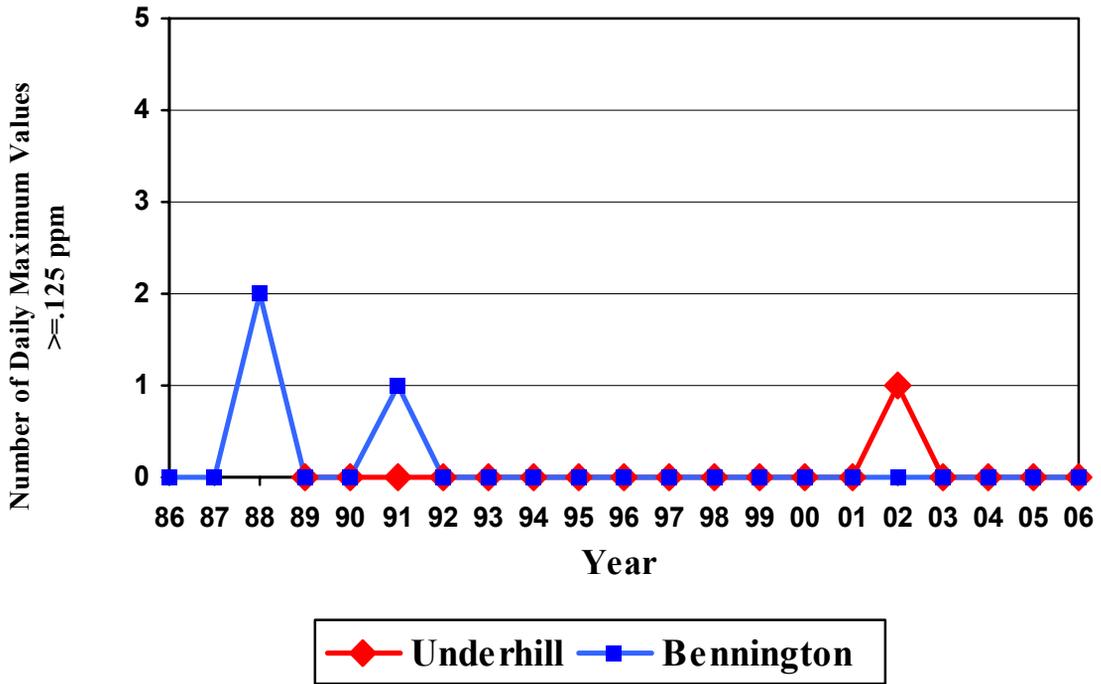


Vermont										
2006 Nitrogen Dioxide										
All Values are in Units of Parts Per Million										
								1-hour	1-hour	
	P								2nd	Annual
	O Rept.					#		Highest	Highest	Arith.
Site ID	C	Org.	City	County	Address	Method	Obs	Value	Value	Mean
50-007-0014	1	1119	Burlington	Chittenden	150 SOUTH WINOOSKI AVE	074	8165	0.059	0.053	0.0110
50-021-0002	1	1119	Rutland	Rutland	96 STATE STREET	074	7886	0.048	0.047	0.0101

Vermont Sites 2006 - Ozone

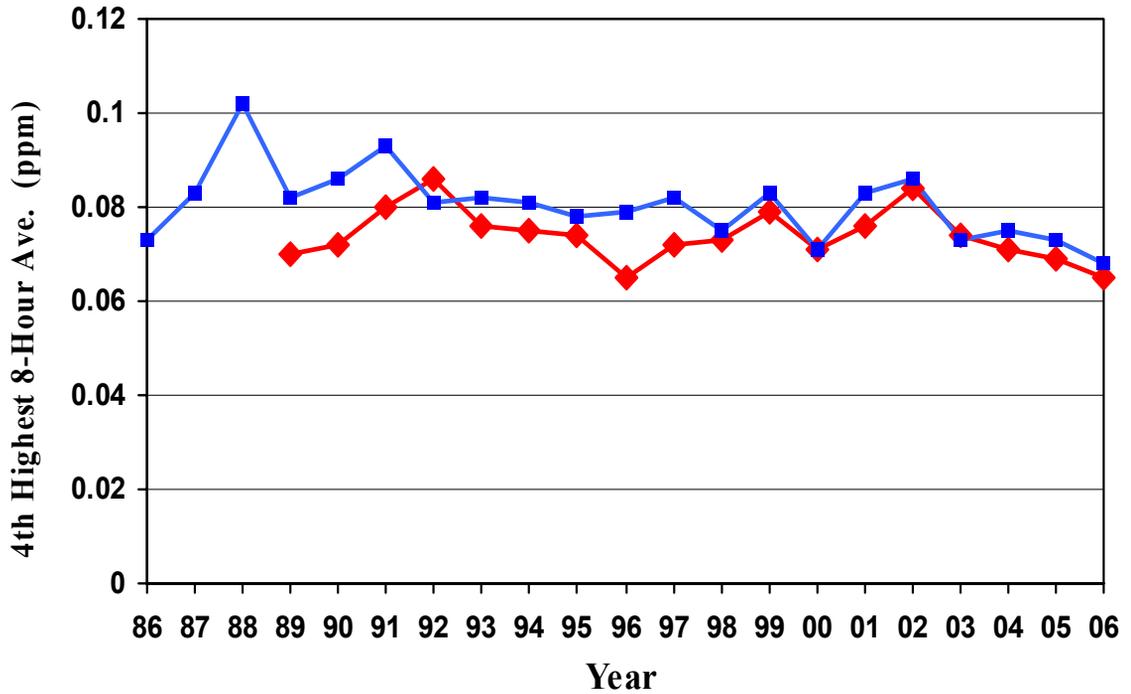


Vermont 1-Hour Ozone Data



Vermont																	
2006 Ozone (1-Hour)																	
All Values are in Units of Parts Per Million																	
	P									2nd	3rd	4th	Missing				
Site ID	O	Rep.								Highest	Highest	Highest	Day Max	Est. Day	Days	Method	
C	Org.	City	County	Address						Value	Value	Value	> 0.125	> 0.125	< 0.125	used	
50-003-0004	1	1119	Bennington	Bennington	AIRPORT RD					0.080	0.079	0.078	0.077	0	0	3	087
50-007-0007	1	1119	Underhill	Chittenden	58 HARVEY ROAD					0.081	0.079	0.071	0.070	0	0	0	087

Vermont 8-Hour Ozone Data

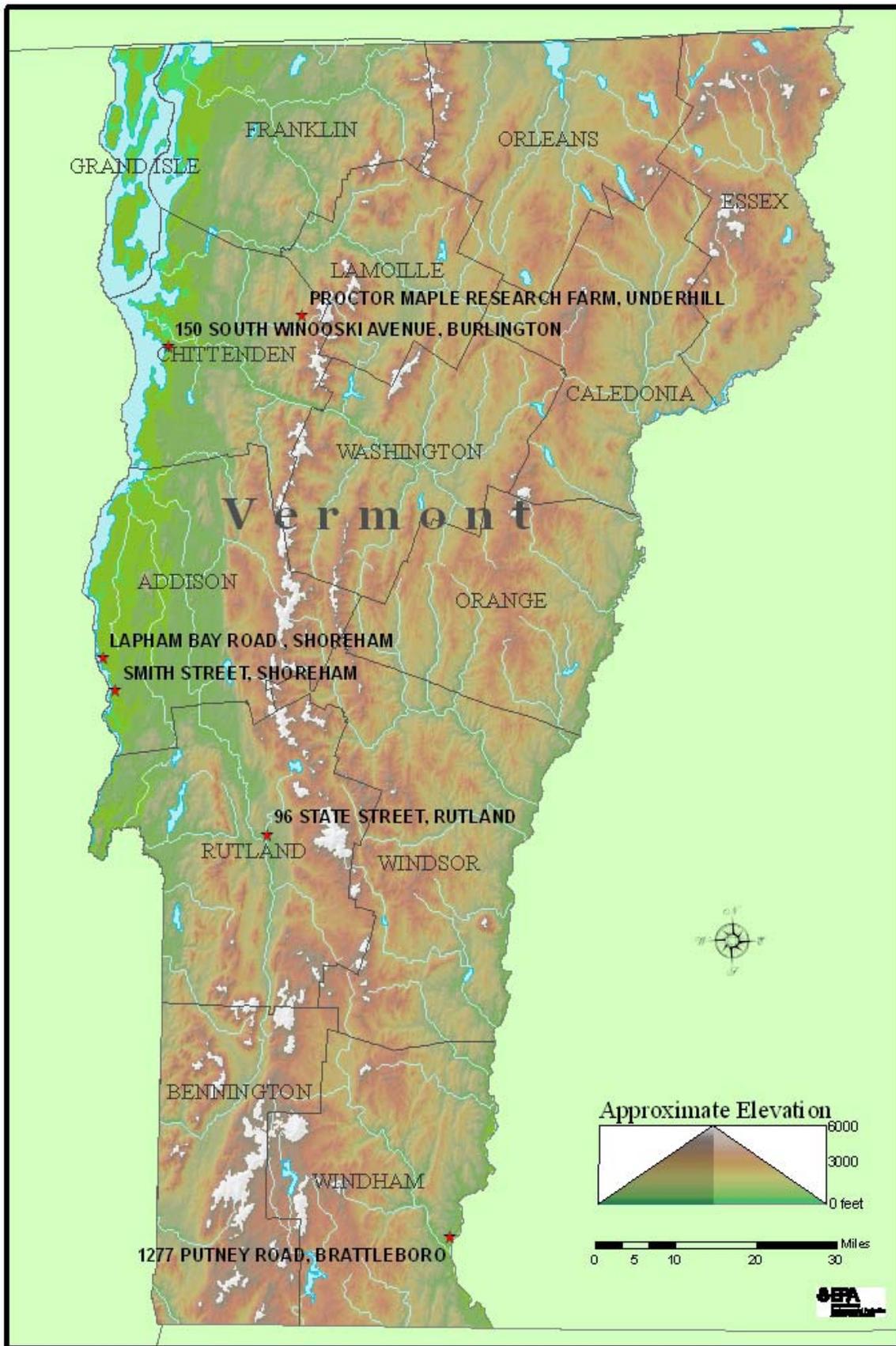


◆ Underhill ■ Bennington

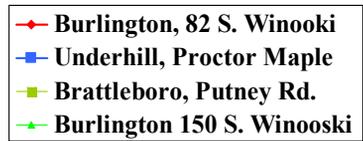
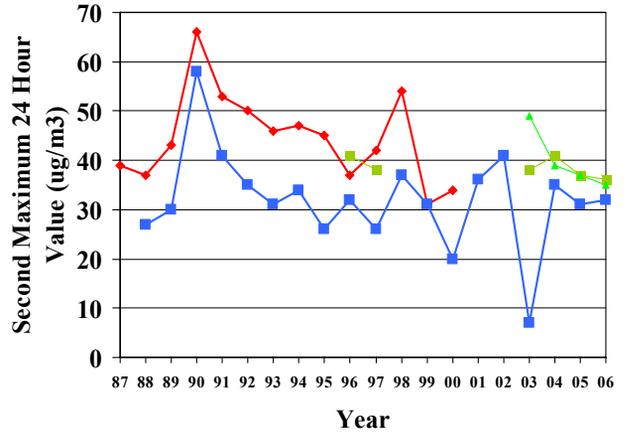
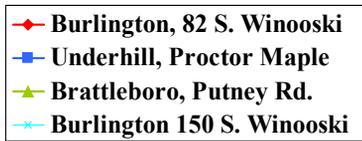
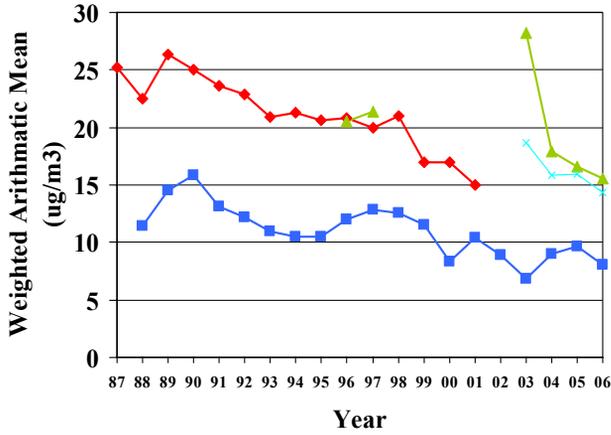
Vermont													
2006 Ozone (8-Hour)													
All Values are in Units of Parts Per Million													
	P												
Site ID	O Rept.	C Org.	City	County	Address	% Obs	Days Meas.	Num Required Days	Highest 8-Hr Value	2nd Highest 8-Hr Value	3rd Highest 8-Hr Value	4th Highest 8-Hr Value	Days Max ≥ 0.085
Ozone (44201)												Parts per million	
50-003-0004	1	1119	Bennington	Bennington	AIRPORT RD	92	169	183	0.076	0.073	0.071	0.068	0
50-007-0007	1	1119	Underhill	Chittenden	58 HARVEY ROAD	99	182	183	0.077	0.070	0.066	0.065	0

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Vermont Sites 2006 - Particulate Matter < 10 Microns



Vermont Particulate Matter < 10 Microns (PM10) Data



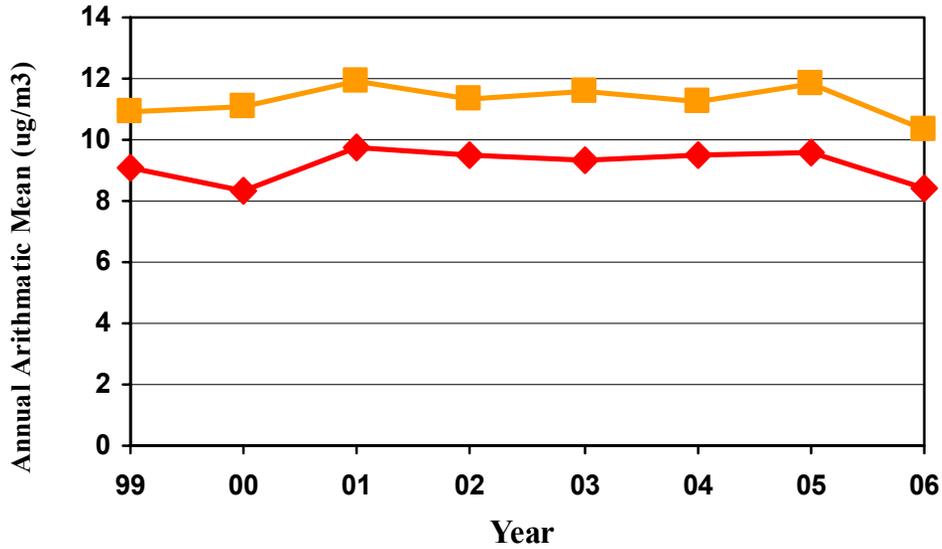
Vermont 2006 Particulate Matter < 10 Microns ug/m3																	
SITE ID	PC	Rep. Org	City	County	Address	# Obs	# Req.	Number Days	Valid % Obs	Highest Value	2nd	3rd	4th	Days Est. >150	Days Est. >150	D Wtd. Arith. Mean	Method Used
											Highest Value	Highest Value	Highest Value				
50-001-0002	1	1119	Shoreham	Addison	LAPHAM BAY ROAD	39	44	39	89	39	34	25	24	0	0	12.7 *	062
50-001-0002	3	1119	Shoreham	Addison	LAPHAM BAY ROAD	40	43	40	93	28	27	26	21	0	0	10.0 *	127
50-001-0003	1	1119	Shoreham	Addison	SMITH STREET	41	44	41	93	32	24	22	22	0	0	12.2 *	062
50-001-0003	3	1119	Shoreham	Addison	SMITH STREET	38	44	38	86	25	24	22	21	0	0	8.4 *	127
50-007-0007	1	1119	Underhill	Chittenden	58 HARVEY ROAD	58	61	58	95	32	20	20	19	0	0	8.1	062
50-007-0014	1	1119	Burlington	Chittenden	150 SOUTH WINOOSKI AVE	61	61	58	95	35	34	29	26	0	0	14.3	062
50-007-0014	3	1119	Burlington	Chittenden	150 SOUTH WINOOSKI AVE	85	88	85	97	50	45	41	40	0	0	19.3 *	127
50-021-0002	1	1119	Rutland	Rutland	96 STATE STREET	57	61	57	93	34	33	33	32	0	0	16.2	062
50-025-0004	1	1119	Brattleboro	Windham	1277 PUTNEY ROAD	55	61	55	90	36	34	30	28	0	0	15.6	062
50-025-0004	2	1119	Brattleboro	Windham	1277 PUTNEY ROAD	56	61	56	92	37	34	33	31	0	0	16.2	062

*Indicates that the mean does not satisfy summary criteria

Vermont Sites 2006 - Particulate Matter < 2.5 Microns



Vermont Particulate Matter < 2.5 Microns (PM2.5) Data



◆ Burlington, Cherry St. ■ Rutland

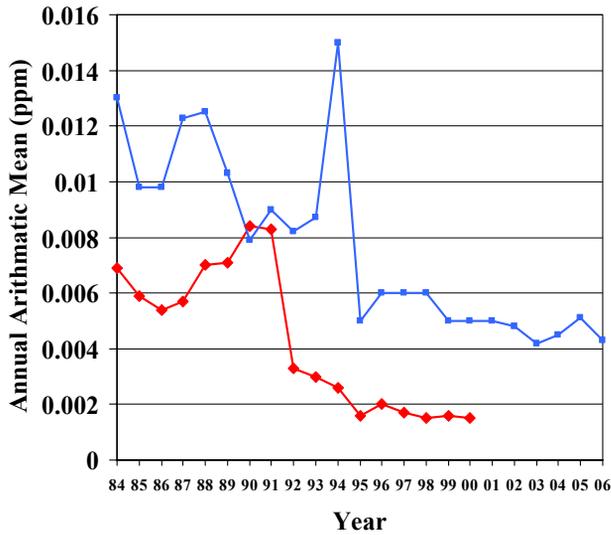
Vermont 2006 PM 2.5													
All Values are in UG/CU Meters Local Conditions													
P	O	Rept.			#	Highest	2nd	3rd	4th	98th	Wtd.		
Site ID	C	Org.	City	County	Address	Method	Obs	Value	Highest	Highest	Highest	Percentile	Arith.
								Value	Value	Value	Value	Value	Mean
50-001-0002	1	1119	Shoreham	Addison	LAPHAM BAY ROAD	145	126	37.7	26.9	21.3	20.8	21.3	7.84
50-001-0003	1	1119	Shoreham	Addison	SMITH STREET	145	118	34.4	34.3	21.9	20.8	34.3	7.81
50-003-0004	1	1119	Bennington	Bennington	AIRPORT RD	145	114	24.8	21.9	21.0	18.5	21.0	6.85
50-003-0004	3	1119	Bennington	Bennington	AIRPORT RD	761	6950	38.8	35.4	34.4	30.1	28.9	11.68 *
50-007-0012	1	1119	Burlington	Chittenden	108 CHERRY STREET	145	120	35.6	32.1	28.3	22.4	28.3	8.38
50-007-0012	2	1119	Burlington	Chittenden	108 CHERRY STREET	118	121	33.0	31.6	27.2	22.0	31.6	7.85
50-007-0014	1	1119	Burlington	Chittenden	150 SOUTH WINOOSKI AVE	145	77	35.9	28.8	21.9	20.6	28.8	9.14 *
50-007-0014	3	1119	Burlington	Chittenden	150 SOUTH WINOOSKI AVE	761	8686	39.2	38.9	38.4	33.8	26.7	8.73
50-021-0002	1	1119	Rutland	Rutland	96 STATE STREET	145	119	33.5	32.5	29.0	28.6	29.0	10.33
50-021-0002	3	1119	Rutland	Rutland	96 STATE STREET	761	8611	36.8	34.6	34.0	33.5	30.7	11.84

*Indicates that the mean does not meet summary criteria

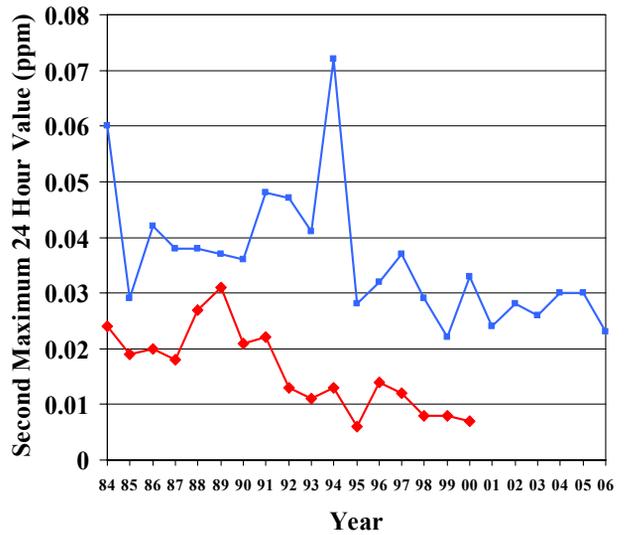
Vermont Sites 2006 - Sulfur Dioxide



Vermont Sulfur Dioxide Data



—♦ Burlington —■ Rutland



—♦ Burlington —■ Rutland

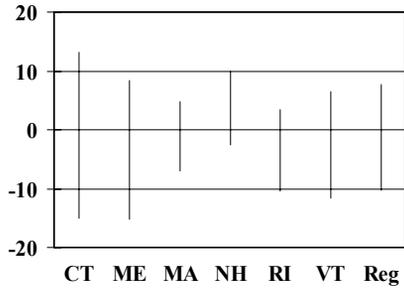
Vermont														
2006 Sulfur Dioxide														
All Values are in Units of Parts Per Million														
	P						24-hour	24-hour		3-hour	3-hour		1-hour	1-hour
Site ID	C	Type	City	County	Address	#	Highest	Highest	Obs	Highest	Highest	Obs	Highest	Highest
						Obs	> 0.14	> 0.14	> 0.14	> 0.14	> 0.14	> 0.5	> 0.5	> 0.5
50-021-0002	1	1119	Rutland	Rutland	96 STATE STREET	8269	0.024	0.023	0	0.043	0.042	0	0.052	0.052
													0.0043	060

Accuracy Data

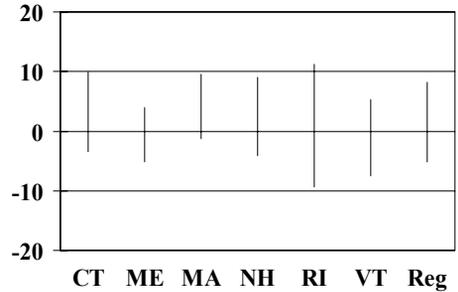
Acceptable 95% probability limits as established by the QA Division of EPA.
The numbers are taken from level 1 probability limits

<u>Limits</u>	<u>Accuracy</u>
Satisfactory	<± 20%
High	± 21% to ±25%
Excessive	>±25%

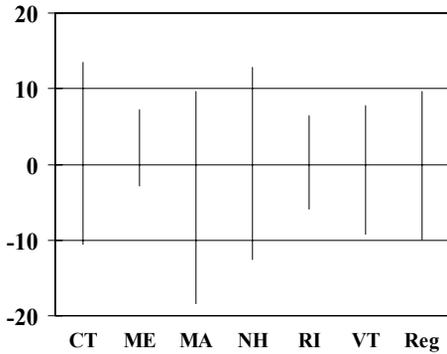
SO2 Accuracy Data



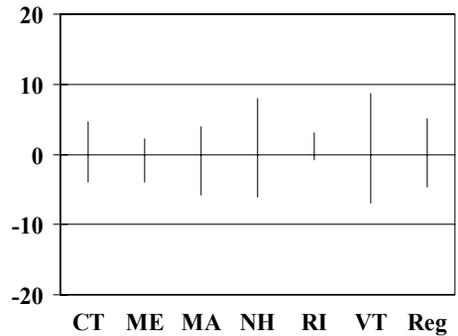
O3 Accuracy Data



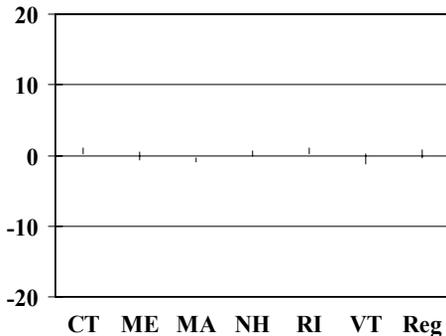
NO2 Accuracy Data



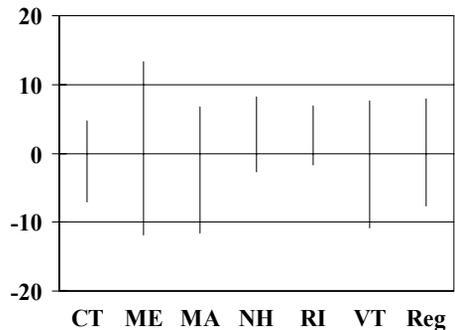
PM10 Accuracy Data



PM2.5 Accuracy Data



CO Accuracy Data

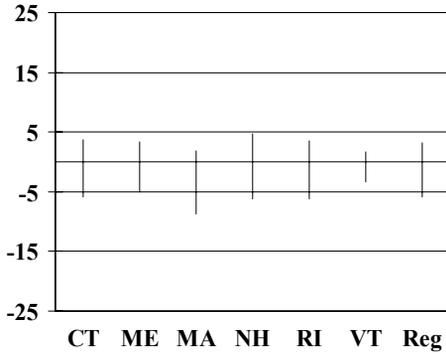


Precision Data

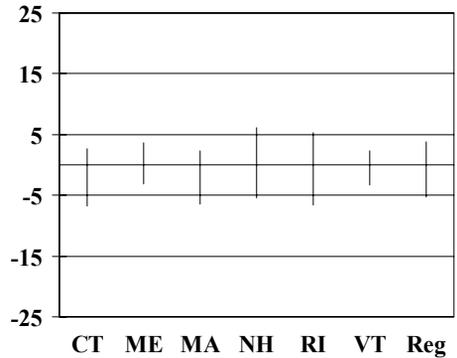
Acceptable 95% probability limits as established by the QA Division of EPA.

<u>Limits</u>	<u>Precision</u>
Satisfactory	<± 15%
High	± 16% to ±20%
Excessive	>±20%

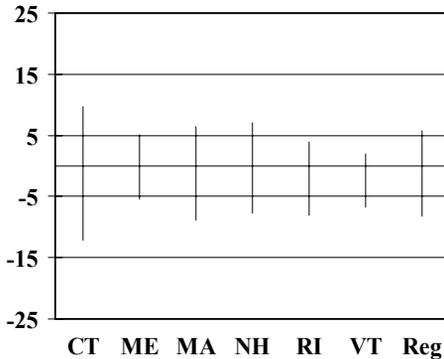
SO2 Precision Data



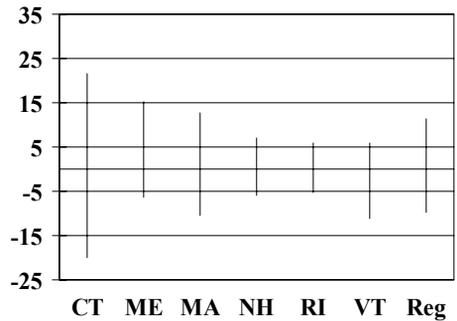
O3 Precision Data



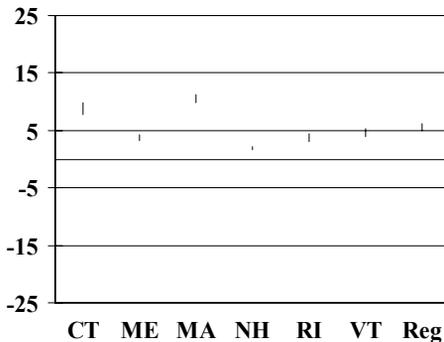
NO2 Precision Data



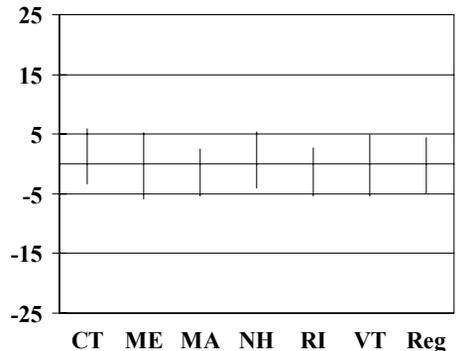
PM10 Precision Data Collocated



PM2.5 Precision Data



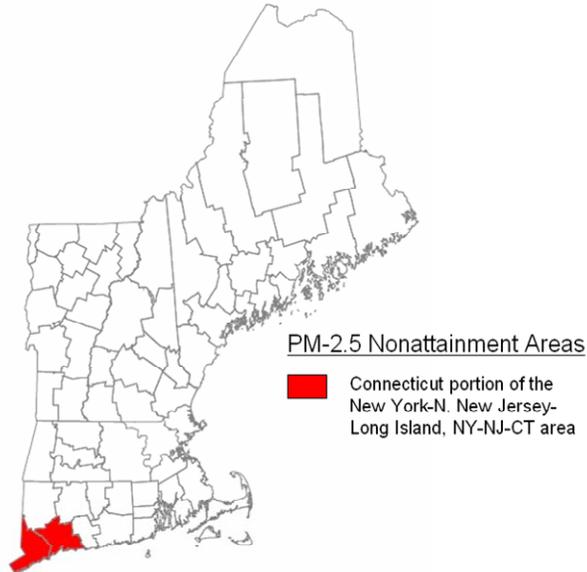
CO Precision Data



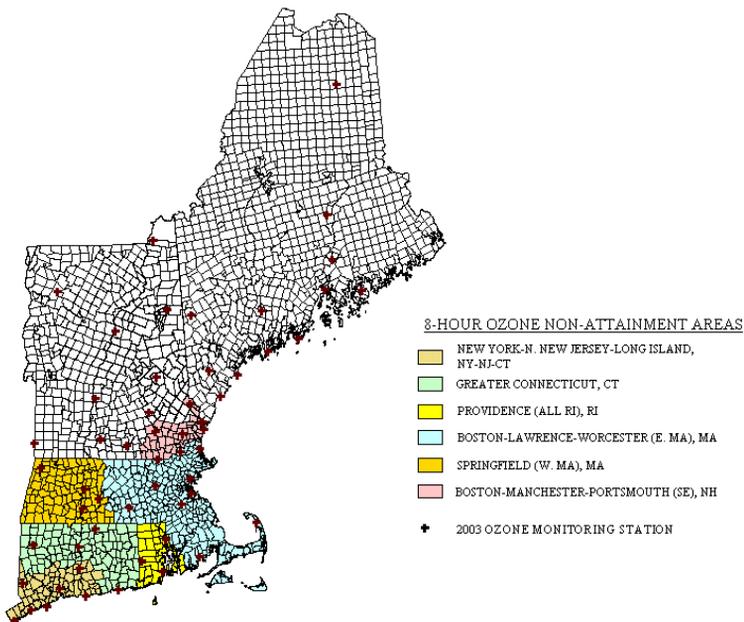
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Non-Attainment Areas for Annual PM_{2.5} and 8-Hour Ozone

Non-Attainment Areas for PM_{2.5}



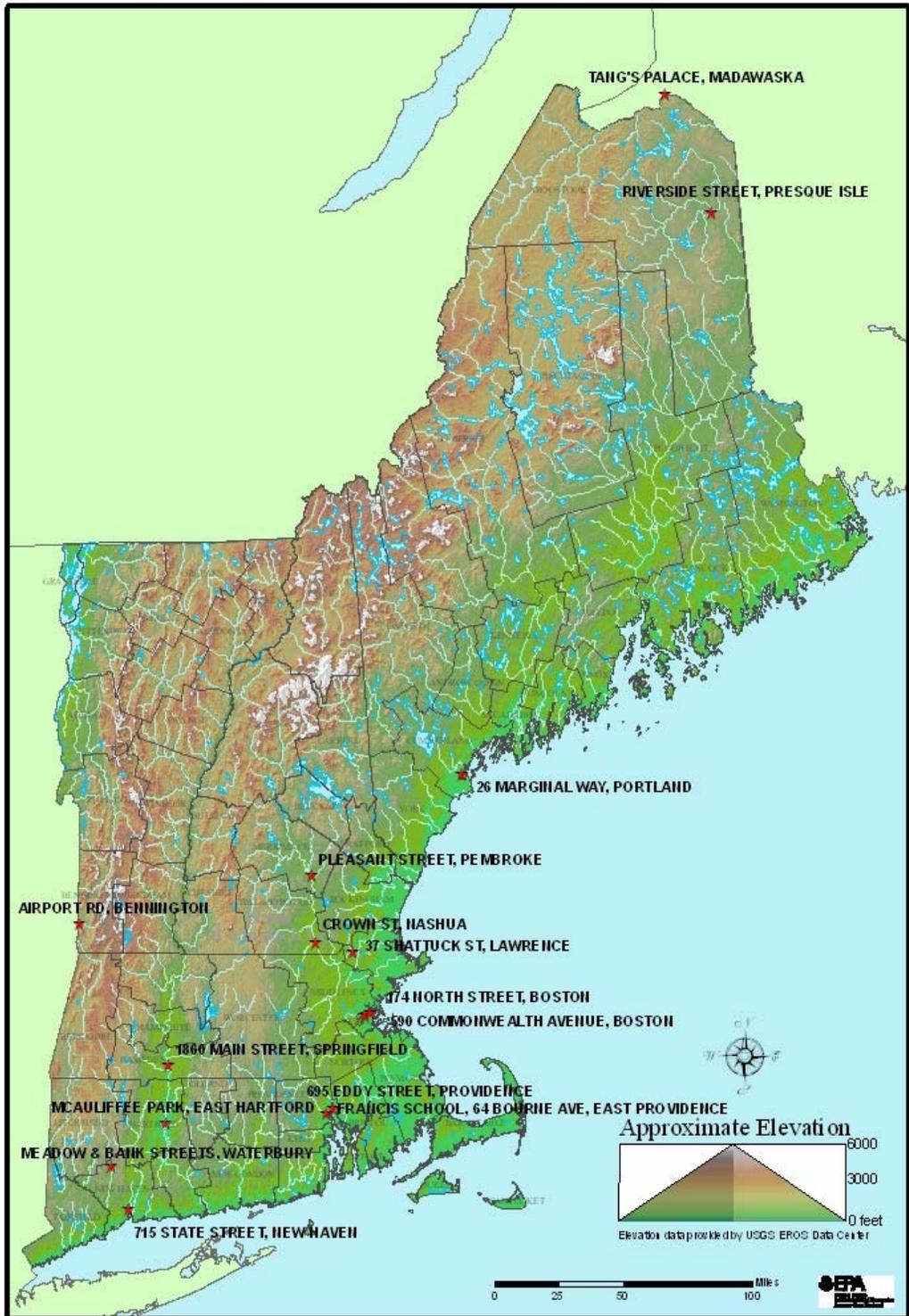
Non-Attainment Areas for 8-Hour Ozone



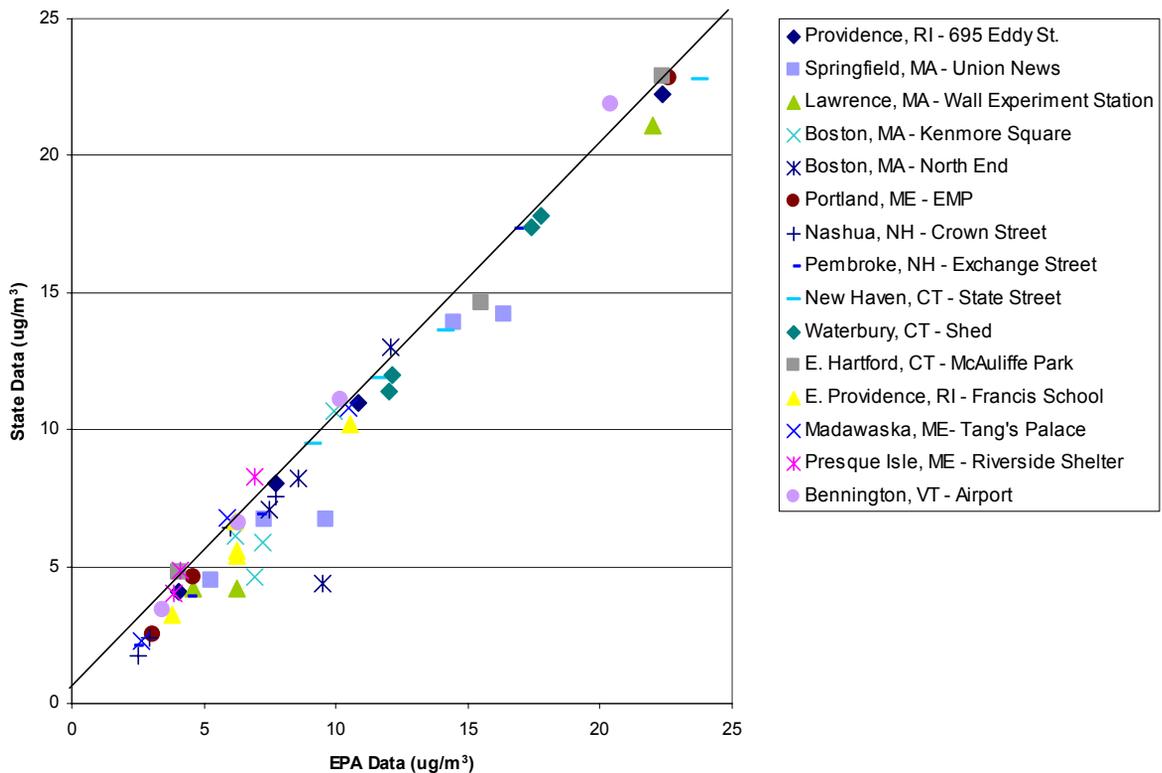
EPA has revoked the 1-hour ozone standard,
effective June 15, 2005

Performance Evaluation Program

Performance Evaluation Program (PEP) Sites - 2006



2006 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 the 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.

The PM_{2.5} PEP audits are conducted four times per year (once per quarter) at one-fourth (25%) of the states' PM_{2.5} monitoring sites; therefore, all PM_{2.5} sites in each state's monitoring network are audited in four 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 contractor in Region I also conducts quarterly 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 2006 PM_{2.5} PEP graph shows that in general, all six states performed very well during the year.

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