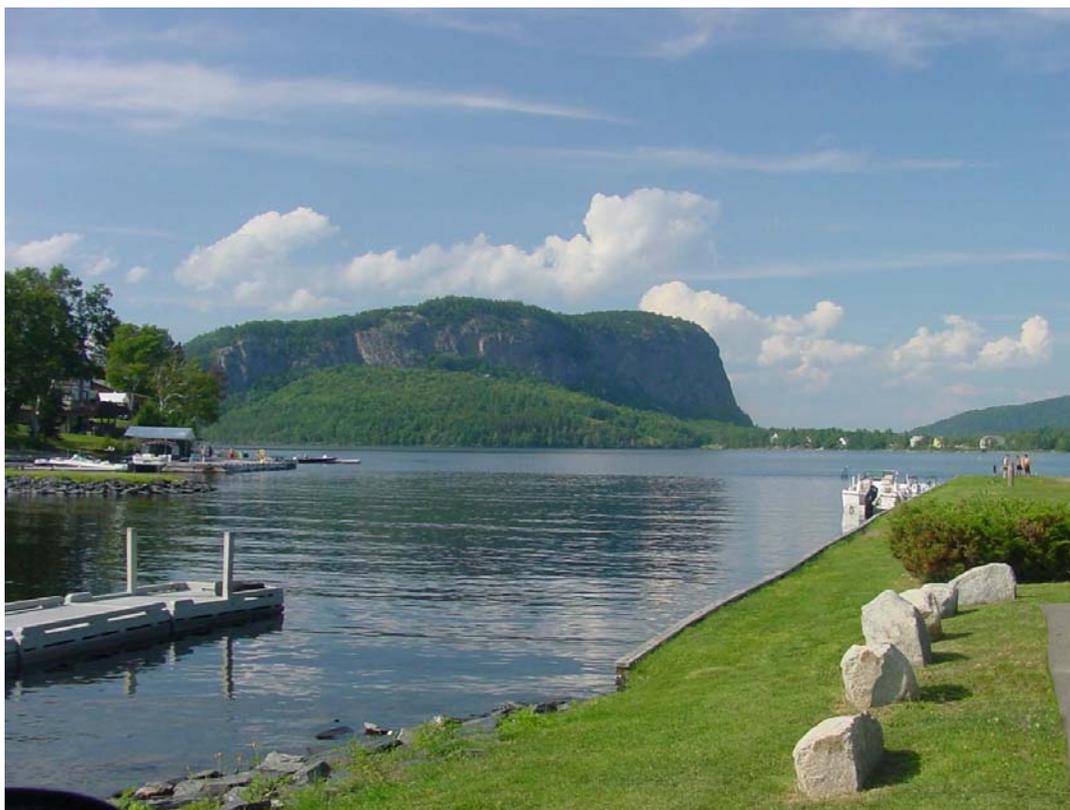


# 2003 Annual Report on Air Quality in New England



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

August 2004

Ecosystems Assessment Unit

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

The cover photo is of Rockwood Maine and was taken by Hillary Snook

This Report has been prepared by the ECA Group at OEME with special thanks to;  
Andrea Newman, Veridian Corp for the maps

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## 2003 ANNUAL REPORT ON AIR QUALITY IN NEW ENGLAND

This report represents 2003 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, EPA-required networks in New Hampshire and Maine's licensing program. These industrial sites supplement the state networks.

This report reflects the status of the AIRS database as of July 2004. 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, EPA designated areas as attainment/nonattainment in April 2004 and for the PM<sub>2.5</sub> standard, EPA has not yet designated areas as either attainment or nonattainment.

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

There is a list of 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 New Hampshire, Massachusetts, and Maine. The information presented compares the measured values to each NAAQS; it includes the number of violations, the maximum and second high values, and the annual means (arithmetic mean or average for SO<sub>2</sub>, PM<sub>10</sub> and NO<sub>2</sub>). An annual mean is not valid for intermittent data unless there are four valid quarters. For PM<sub>10</sub>, 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 PM<sub>10</sub>, CO, SO<sub>2</sub>, and NO<sub>2</sub>. A graph of the number of days ozone exceeded the standard during the last five years is used. PM<sub>2.5</sub> has only been monitored for five years, the chart reflects this.

The State maps included display the location of the monitoring sites.

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

Finally there are maps of the current areas in New England designated nonattainment by EPA. As stated above, EPA has not yet finalized designations for the PM<sub>2.5</sub> standards.

The last section is a list of AIRS state and regional Air Quality Contacts and Emission data contacts, their addresses and phone numbers.

NATIONAL AIR QUALITY STANDARDS<sup>a</sup>

For Criteria Pollutants

<u>Pollutant</u>	<u>Averaging Time</u> <u>Secondary Standards<sup>c</sup></u>	<u>Primary Standards<sup>b</sup></u>	
SO <sub>2</sub>	Annual Arithmetic Mean	80 ug/m <sup>3</sup> (0.03 ppm)	
	24 hours	365 ug/m <sup>3</sup> (0.14 ppm)	
	3 hours	--	1300 ug/m <sup>3</sup> (0.5 ppm)
Pm <sub>fine</sub> <sup>fg</sup>	Annual (3-year average)	15.0 ug/m <sup>3</sup>	Same as Primary
	24 hours	3-year average of 98 <sup>th</sup> percentile values ≤65 ug/m <sup>3</sup>	Same as Primary
PM <sub>10</sub> <sup>df</sup>	Annual Arithmetic Mean	50 ug/m <sup>3</sup>	Same as Primary
	24 hours	150 ug/m <sup>3</sup>	Same as Primary
CO	8 hours	9 ppm	Same as Primary
	1 hour	35 ppm	Same as Primary
O <sub>3</sub> <sup>e</sup>	1 hour	0.125 ppm	Same as Primary
	8 hour	0.08 ppm	Same as Primary
NO <sub>2</sub>	Annual Arithmetic	(0.05 ppm)	Same as Primary
	Mean	100 ug/m <sup>3</sup>	
Pb	Calendar Quarter Arithmetic Mean	1.5 ug/m <sup>3</sup>	Same as Primary

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

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

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

<sup>d</sup> PM<sub>10</sub> 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.

<sup>e</sup> 1-Hour: Expected number of exceedance days shall not be more than one per year (3 year average) as determined by Appendix H of 40CFR Part 50.

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.

<sup>f</sup> Measurement of PM<sub>10</sub> is at Standard Temperature and Pressure (STP). Measurement of PM<sub>2.5</sub> 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.

<sup>g</sup> Appendix N of 40 CFR Part 50 gives the specific procedures for determining whether the PM<sub>2.5</sub> Primary and Secondary Annual and 24 Hour Standards are attained.

# Health Effects of Criteria Pollutants

## **Lead (Pb)**

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

## **Ozone (O<sub>3</sub>)**

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

## **Sulfur Dioxide (SO<sub>2</sub>)**

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 bodies of water. Major sources include power plants and industrial boilers.

## **Nitrogen Dioxide (NO<sub>2</sub>)**

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. 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 the carbon in fuels does not completely burn. Motor vehicles are the most significant source.

## **Particulate Matter (PM<sub>2.5</sub> and PM<sub>10</sub>)**

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 normally would, and they may experience symptoms such as coughing and shortness of breath. PM can increase susceptibility to respiratory infections and can aggravate existing respiratory diseases, causing more use of medication and more doctor visits. PM includes both solid particles and liquid droplets found in air. Many 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

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

## 2003 SUMMARY OF NEW ENGLAND AMBIENT AIR QUALITY AND ATMOSPHERIC DEPOSITION

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. Recent summer weather patterns in New England have shown an almost biannual pattern of warm and cool summers, and no pattern in seasonal precipitation patterns. The summer of 2003 was a cool and wet summer, while the summer of 2002 was hottest summer in New England since 1983. In the northeast the summer of 2003 was a much wetter and cooler summer than either 2002 or 2001. In fact the summer of 2003 was the sixth wettest summer in the northeast for the last 109 years. This excessive rainfall led to a much cleaner ozone season in 2003 than 2002 or 2001.

The maximum 1-hr ozone concentrations in 2003 were recorded in Connecticut (155 ppb ozone), Maine (120 ppb ozone), Rhode Island (129 ppb ozone), New Hampshire (105 ppb ozone) and Massachusetts (127 ppb ozone). Ten ozone monitoring sites measured 1-hr ozone concentrations above or equal to 125 ppb ozone compared to 36 in 2002. These levels were higher compared to 2000, when only eight ozone monitoring sites measured 1-hr ozone levels  $\geq 125$  ppb ozone but lower than 2001 when 23 sites recorded values above 124 ppb. Fourteen ozone monitoring sites in New England recorded violations of the 8-hr ozone standard (the fourth highest 8-hr average ozone concentration  $\geq 85$  ppb ozone). In 2002, 48 ozone monitoring sites recorded violations to the 8-hr standard. The maximum single 8-hr average ozone concentration was recorded in Connecticut (124 ppb 8-hr average ozone). Vermont had no ozone monitoring sites that exceeded the 8-hr ozone standard.

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 2003 regional PAMS data for ambient concentrations of hydrocarbon pollutants (total non-methane hydrocarbons-TNMOC) indicate that most, but not all, of the PAMS Type 2 core sites and downwind Type 3 and Type 4 sites are experiencing a continued decline in TMOC ambient concentrations from the mid-1990's.

For particulate matter, the highest annual average concentrations of fine particulate matter (PM<sub>2.5</sub>) were measured in urban locations in Massachusetts (13.6 ug/m<sup>3</sup>) and Connecticut (16.9 ug/m<sup>3</sup>). The highest annual average concentrations of PM<sub>10</sub> were also recorded in Connecticut (41 ug/m<sup>3</sup>). None of the PM<sub>10</sub> monitoring sites approached the PM<sub>10</sub> primary or secondary NAAQS for PM<sub>10</sub>. The primary annual and acute (24-hr) exposure standards for fine particulate matter (PM<sub>2.5</sub>) are based on a three year consecutive average and the fourth highest maximum 24-hr concentration (within a single calendar year), respectively. No PM<sub>2.5</sub> monitoring sites will be designated non-attainment for either the annual or acute fine particulate matter standards until December 2004. The initial start-up problems and sporadic or recurrent problems with some instruments, generally during the cold months, resulted in virtually no complete data for any of the New England states for the period 1999 - 2001. In 2002 and 2003 data capture improved to the point where there is sufficient data of good quality to determine the attainment status for fine particulate matter sites throughout New England, although Massachusetts and New Hampshire still have many sites with incomplete data capture. In 2003 no sites in New England measured 24-hr PM<sub>2.5</sub> concentrations exceeding the acute (fourth highest 24-hr) fine particulate standard. Where high quality data exist for 2001-2003, these data show attainment of the annual fine particulate standard in Connecticut (except one site in New Haven), Maine, Massachusetts, New Hampshire, Vermont and Rhode Island. Additional data will be necessary to determine the annual PM<sub>2.5</sub> NAAQS attainment status of several urban areas in Massachusetts.

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## Air Quality Summary – Connecticut

Five carbon monoxide (CO) ambient monitoring sites operated in 2003. The highest recorded maximum 8-hour concentration (5.7 ppm) was recorded at the Hartford Courthouse site. This contrasts with previous 8-hour maximum measurements in 2002 (5.7ppm), 2001 (6.1ppm), 2000 (8.5 ppm), 1999 (5.6 ppm), and 1998 (7.9 ppm). The trend graphs for the past ten years show maximum concentrations of CO well below the national standards and indicated a slight 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 ug/m<sup>3</sup> (less than 2% of the NAAQS). Monitoring for lead in Connecticut was terminated late in 2002.

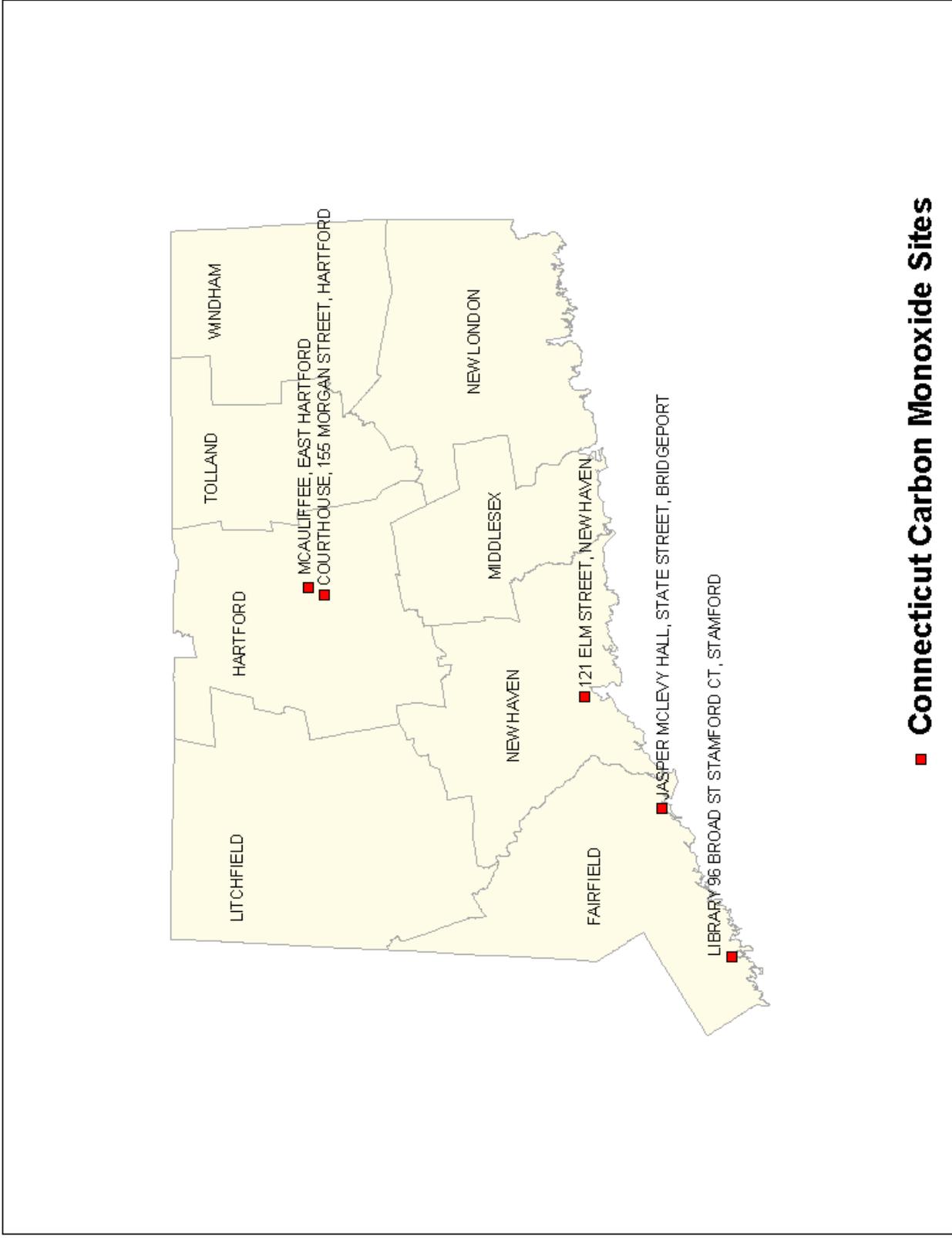
Not one of the four ambient air monitoring sites that measured nitrogen dioxide (NO<sub>2</sub>) measured any violations of the NAAQS during 2003. New Haven reported concentrations that were roughly 50% of the NAAQS. The Photochemical Assessment Monitoring Stations (PAMS) located in East Hartford, Westport, Hamden and Stafford Springs all reported concentrations of NO<sub>2</sub> well below the NAAQS. The ten-year graphs for these sites show relatively constant annual concentrations of NO<sub>2</sub>, and minor year-to-year fluctuations.

In 2003, seven of the eleven ozone (O<sub>3</sub>) monitoring sites exceeded the 1-hour ozone standard and/or were in violation of the 1-hour NAAQS. In 2002 all eleven exceeded the 1-hour standard. In 2001 ten of the eleven sites exceeded this standard and in 2000 only five sites had comparable concentrations. In 1999 all of the ozone monitoring sites in Connecticut reported exceedances above the 1-hour NAAQS. Seven of the eleven sites exceeded the NAAQS in 1998, and ten of the eleven ozone monitoring sites exceeded the NAAQS in 1997. 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 Stratford ozone monitoring site measured the highest 1-hour maximum ozone concentration (155 ppb) and the second highest 1-hour maximum ozone concentration (144 ppb) was recorded in Greenwich Point Park. The ten-year trend graph for ozone indicates that virtually no upward or downward trend exists in the number of days with 1-hour ozone NAAQS exceedances for the sites recording ozone concentrations in Connecticut.

During 2003, ten of eleven ozone monitoring sites reported a fourth-highest daily 8-hour average ozone concentration above the level of the 8-hour NAAQS. The highest 8-hour ozone concentrations were measured in Stratford (125 ppb), Madison (124 ppb), and Greenwich Point Park (124 ppb). These data contrast to those recorded in 2002, 2001, 2000 and 1998, when the maximum 8-hour concentrations were 134, 133, 124 ppb and 118 ppb respectively.

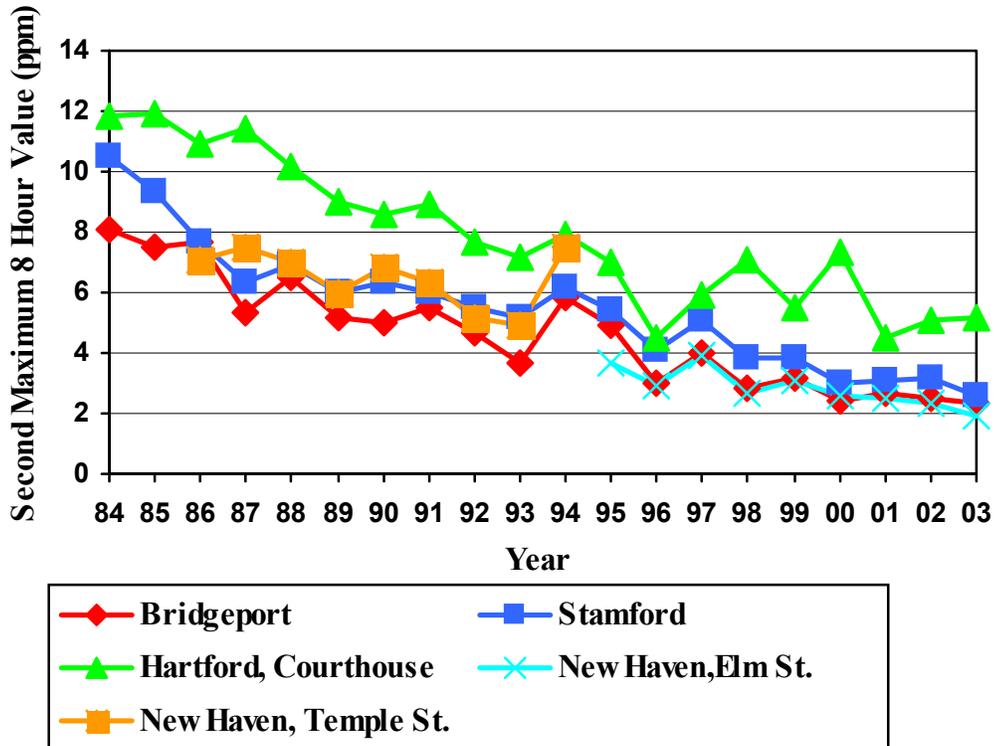
None of the monitoring sites that collected particulate matter of less than 10 microns (PM<sub>10</sub>), recorded exceedances of either the 24-hour or the annual NAAQS for PM<sub>10</sub>. As in 2002, 2001 and in 2000, the Stiles Street site in New Haven recorded the single highest 24-hour measurement (131 ug/m<sup>3</sup>). Similarly, the Stiles Street fine particulate monitoring site also recorded the highest weighted arithmetic average concentration (41 ug/m<sup>3</sup>). Of the sixteen PM<sub>2.5</sub> monitoring sites in Connecticut that measured particulate matter in 2003, the New Haven area reported the highest concentrations.

There were no exceedances or violations at any of the Connecticut ambient monitoring sites (four sites) for either the 24-hour or 3-hour sulfur dioxide (SO<sub>2</sub>) NAAQS. The highest annual arithmetic mean SO<sub>2</sub> concentration was measured at New Haven (5 ppb). Stamford measured the highest 24-hour concentration (35 ppb) which was roughly 26% of the NAAQS. The ten-year trend graphs for SO<sub>2</sub> show decreasing SO<sub>2</sub> concentrations with some year-to-year variability.

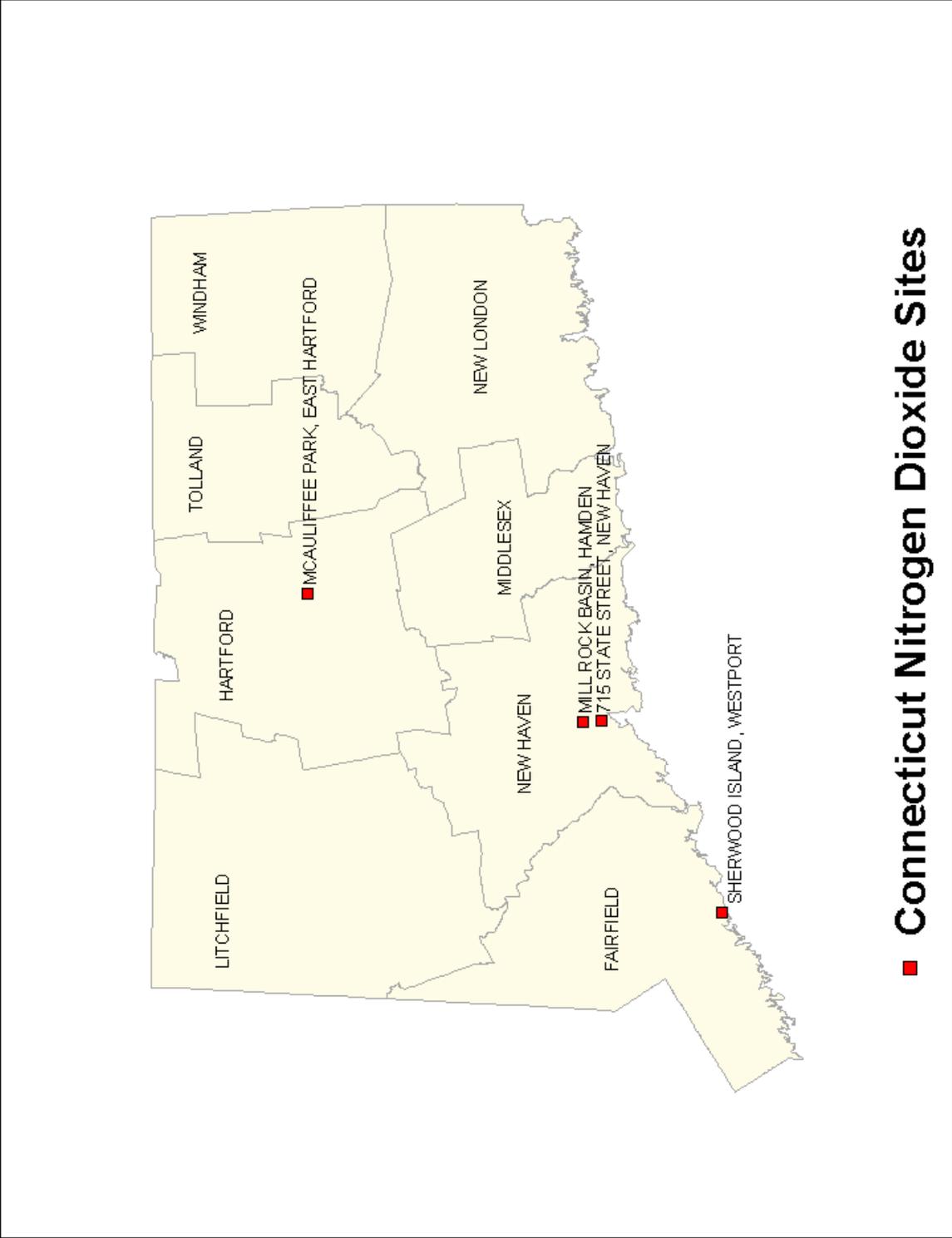


■ Connecticut Carbon Monoxide Sites

# Connecticut Carbon Monoxide

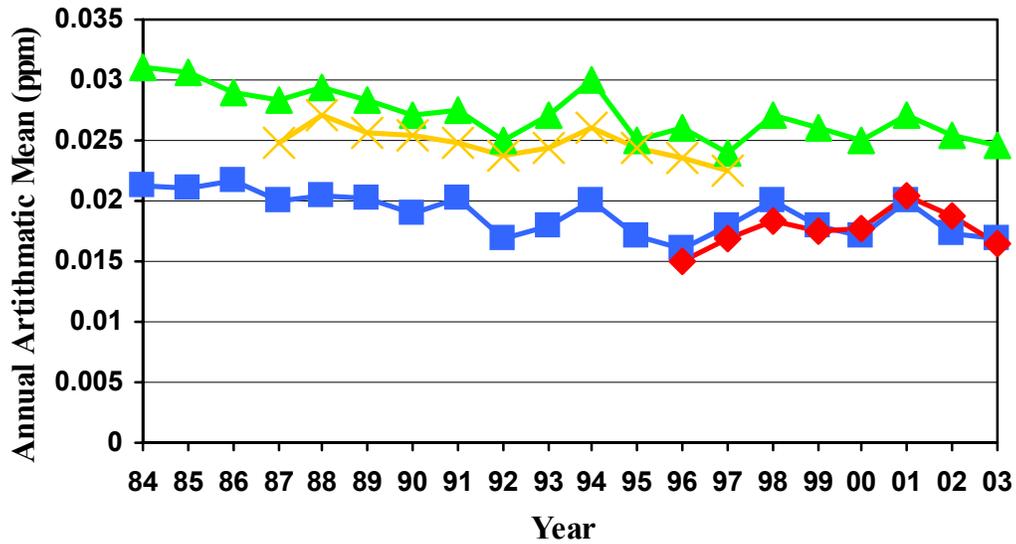


Carbon Monoxide													
All Values are in Units of Parts Per Million													
	P	O	C										
Site ID	Type	City	County	Address	# Obs	1-hour Highest Value	1-hour 2nd Highest Value	# > 35	8-hour Highest Value	8-hour 2nd Highest Value	# > 9		
09-001-0004	1	251	BRIDGEPORT	FAIRFIELD	JASPER MCLEVY HALL	8399	4	4	0	3	2.3	0	54
09-001-0020	1	251	STAMFORD	FAIRFIELD	LIBRARY 96 BROAD ST	8295	4.3	3.8	0	2.8	2.6	0	54
09-003-0017	1	251	HARTFORD	HARTFORD	COURTHOUSE, 155 MORGAN S	8706	10.2	10.1	0	5.7	5.2	0	54
09-003-1003	1	251	EAST HARTFORD	HARTFORD	MCAULIFFEE PARK	8688	2.6	2.4	0	2	1.8	0	54
09-009-0025	1	251	NEW HAVEN	NEW HAVEN	121 ELM STREET	8592	3	2.7	0	2.1	1.9	0	54



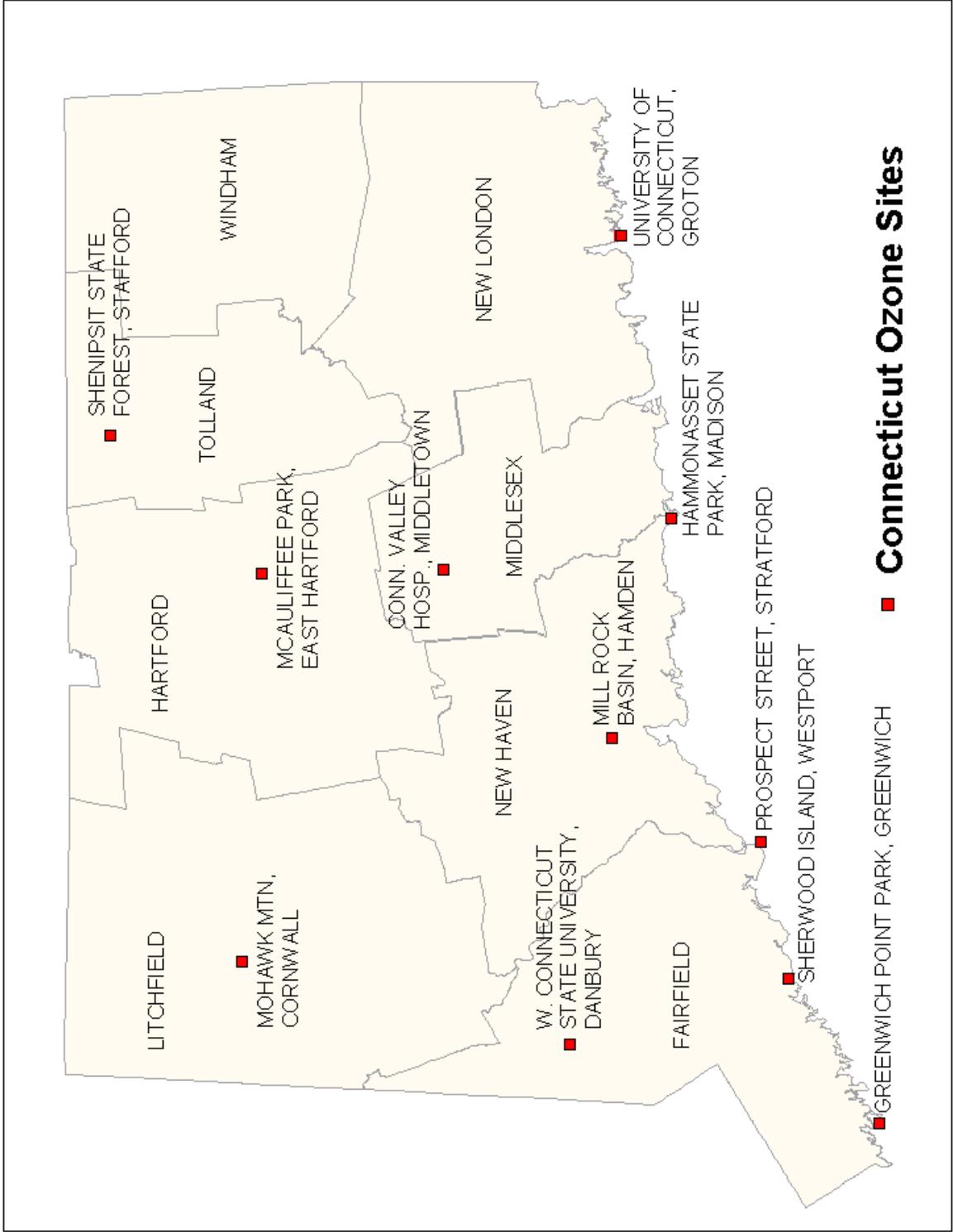
■ Connecticut Nitrogen Dioxide Sites

# Connecticut Nitrogen Dioxide



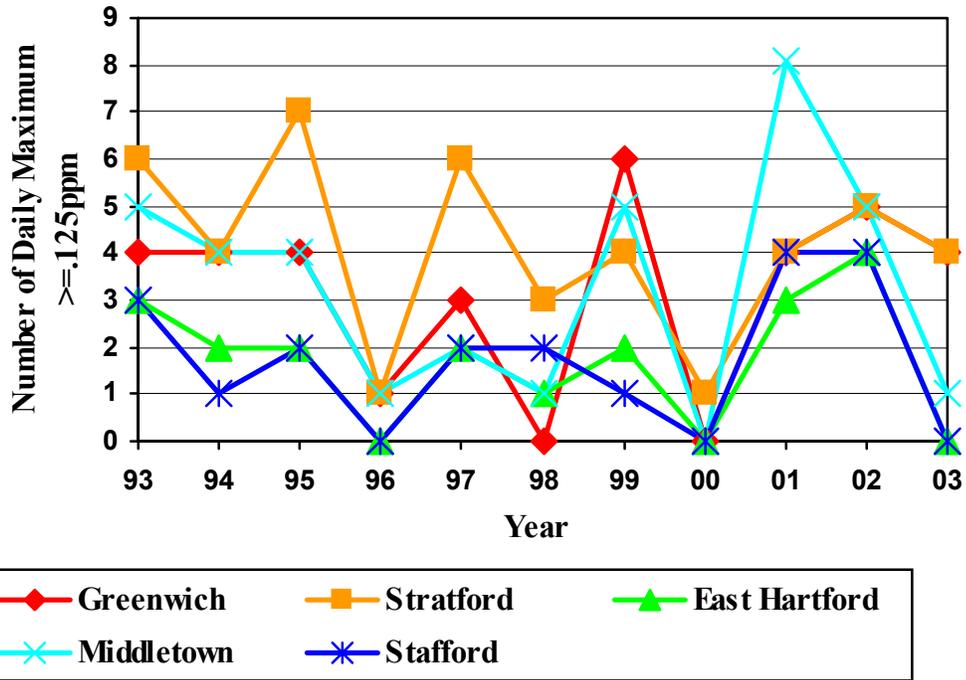
Parameter: Nitrogen Dioxide										
All Values are in Units of Parts Per Million										
								1-hour	1-hour	
	P	O	Rept.				#	Highest	2nd	Annual
Site ID	C	Org.	City	County	Address	Method	Obs	Value	Highest	Arith.
09-001-9003	1	251	WESTPORT	FAIRFIELD	SHERWOOD IS. STATE PAR	74	8636	0.074	0.073	0.0164
09-003-1003	1	251	EAST HARTFORD	HARTFORD	MCAULIFFEE PARK	74	8452	0.068	0.066	0.0169
09-009-1123	1	251	NEW HAVEN	NEW HAVEN	715 STATE STREET	74	8552	0.11	0.099	0.0246
09-009-9005	1	251	HAMDEN	NEW HAVEN	MILL ROCK BASIN	74	4674	0.058	0.057	0.013 *

\*Indicates that the mean does not satisfy summary criteria



**■ Connecticut Ozone Sites**

# Connecticut Ozone 1-Hour

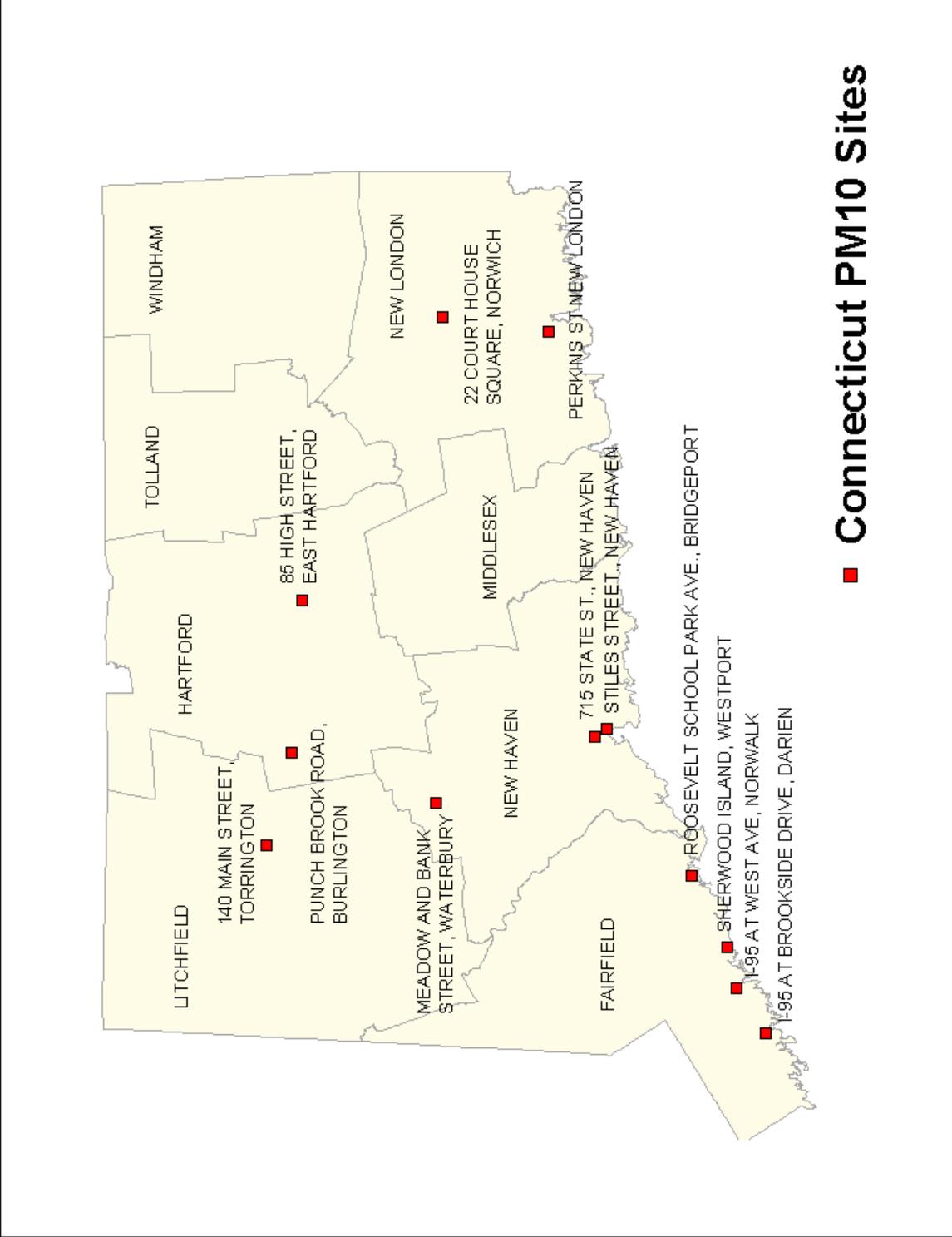


Parameter: Ozone (1-Hour)															
All Values are in Units of Parts Per Million															
	P													Missing	
	O	Rep.						2nd	3rd	4th					
Site ID	C	Org.	City	County	Address	Meas	Req	Highest Value	Highest Value	Highest Value	Highest Value	Day Max $\geq 0.125$	Est. Day $\geq 0.125$	Days $< 0.125$	Method used
09-001-0017	1	251	GREENWICH	FAIRFIELD	GREENWICH POINT PARK	177	183	0.144	0.137	0.126	0.125	4	4.1	1	47
09-001-1123	1	251	DANBURY	FAIRFIELD	W. CT STATE UNIVERSITY	182	183	0.113	0.110	0.109	0.104	0	0	1	47
09-001-3007	1	251	STRATFORD	FAIRFIELD	USCG LIGHTHOUSE	172	183	0.155	0.144	0.135	0.127	4	4.2	1	47
09-001-9003	1	251	WESTPORT	FAIRFIELD	SHERWOOD IS. STATE PARK	181	183	0.141	0.133	0.132	0.118	3	3	2	47
09-003-1003	1	251	EAST HARTFORD	HARTFORD	MCAULIFFEE PARK	183	183	0.116	0.097	0.093	0.089	0	0	0	47
09-005-0005	2	251	CORNWALL	LITCHFIELD	MOHAWK MTN	179	183	0.103	0.101	0.100	0.097	0	0	4	47
09-007-0007	1	251	MIDDLETOWN	MIDDLESEX	CONN. VALLEY HOSP.,	179	183	0.138	0.113	0.113	0.108	1	1	2	47
09-009-3002	1	251	MADISON	NEW HAVEN	HAMMONASSET STATE PARK	182	183	0.139	0.134	0.129	0.123	3	3	0	47
09-009-9005	1	251	HAMDEN	NEW HAVEN	MILL ROCK BASIN	183	183	0.136	0.119	0.101	0.101	1	1	0	47
09-011-0008	1	251	GROTON	NEW LONDON	U. OF CONNECTICUT	180	183	0.126	0.120	0.116	0.110	1	1	1	47
09-013-1001	1	251	STAFFORD	TOLLAND	SHENIPSISIT ST. PARK	182	183	0.120	0.098	0.097	0.094	0	0	1	47

# Connecticut Ozone 8-Hour

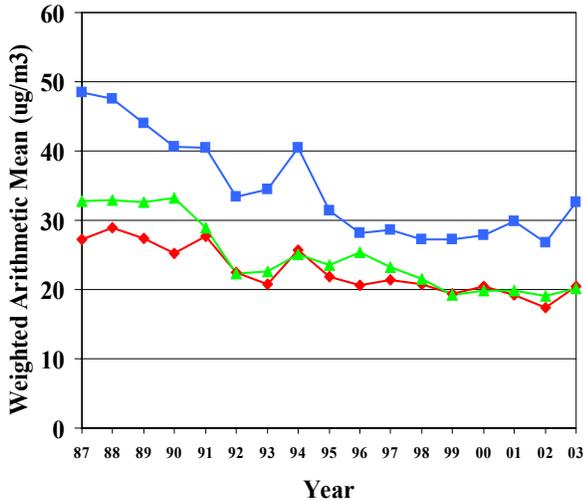
Parameter: Ozone (8-Hour)														
All Values are in Units of Parts Per Million														
	P						Valid Num		2nd	3rd	4th	Days		
	O Rept.				#	Days	Required	Highest	Highest	Highest	Highest	Max >	Methods	
Site ID	C	Org.	City	County	Address	Obs	Meas	Days	8-Hr Value	8-Hr Value	8-Hr Value	8-Hr Value	0.085	Reporte
09-001-0017	1	251	GREENWICH	FAIRFIELD	GREENWICH POINT PARK	96	175	183	0.124	0.106	0.105	0.099	7	47
09-001-1123	1	251	DANBURY	FAIRFIELD	W. CT STATE UNIVERSITY	98	180	183	0.103	0.088	0.086	0.085	4	47
09-001-3007	1	251	STRATFORD	FAIRFIELD	USCG LTHOUSE, PROSPECT	92	169	183	0.125	0.114	0.106	0.101	8	47
09-001-9003	1	251	WESTPORT	FAIRFIELD	SHERWOOD ISLAND ST PK	98	180	183	0.113	0.112	0.108	0.097	6	47
09-003-1003	1	251	EAST HARTFORD	HARTFORD	MCAULIFFEE PARK	99	181	183	0.084	0.083	0.077	0.077	0	47
09-005-0005	2	251	CORNWALL	LITCHFIELD	MOHAWK MTN	98	180	183	0.098	0.091	0.087	0.085	4	47
09-007-0007	1	251	MIDDLETOWN	MIDDLESEX	CONN. VALLEY HOSP.,	98	179	183	0.111	0.096	0.093	0.092	7	47
09-009-3002	1	251	MADISON	NEW HAVEN	HAMMONASSET STATE PK	98	180	183	0.124	0.117	0.115	0.101	9	47
09-009-9005	1	251	HAMDEN	NEW HAVEN	MILL ROCK BASIN	99	181	183	0.105	0.096	0.092	0.091	7	47
09-011-0008	1	251	GROTON	NEW LONDON	UNIVERSITY OF CT	97	177	183	0.113	0.112	0.104	0.095	5	47
09-013-1001	1	251	STAFFORD	TOLLAND	SHENIPSIT ST PK	99	181	183	0.085	0.082	0.082	0.081	1	47

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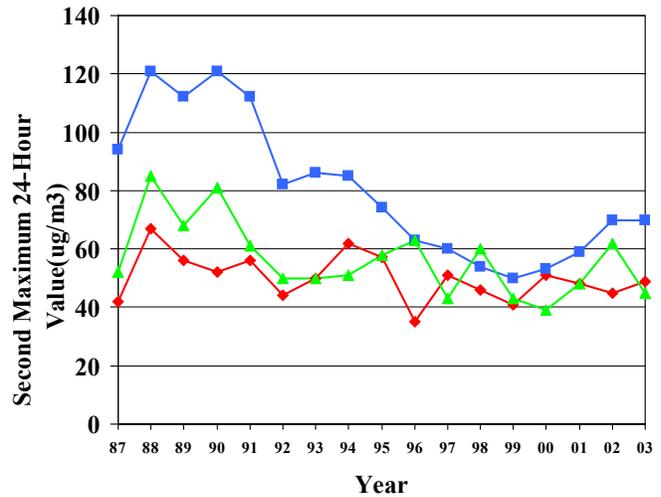


■ Connecticut PM10 Sites

# Connecticut PM10



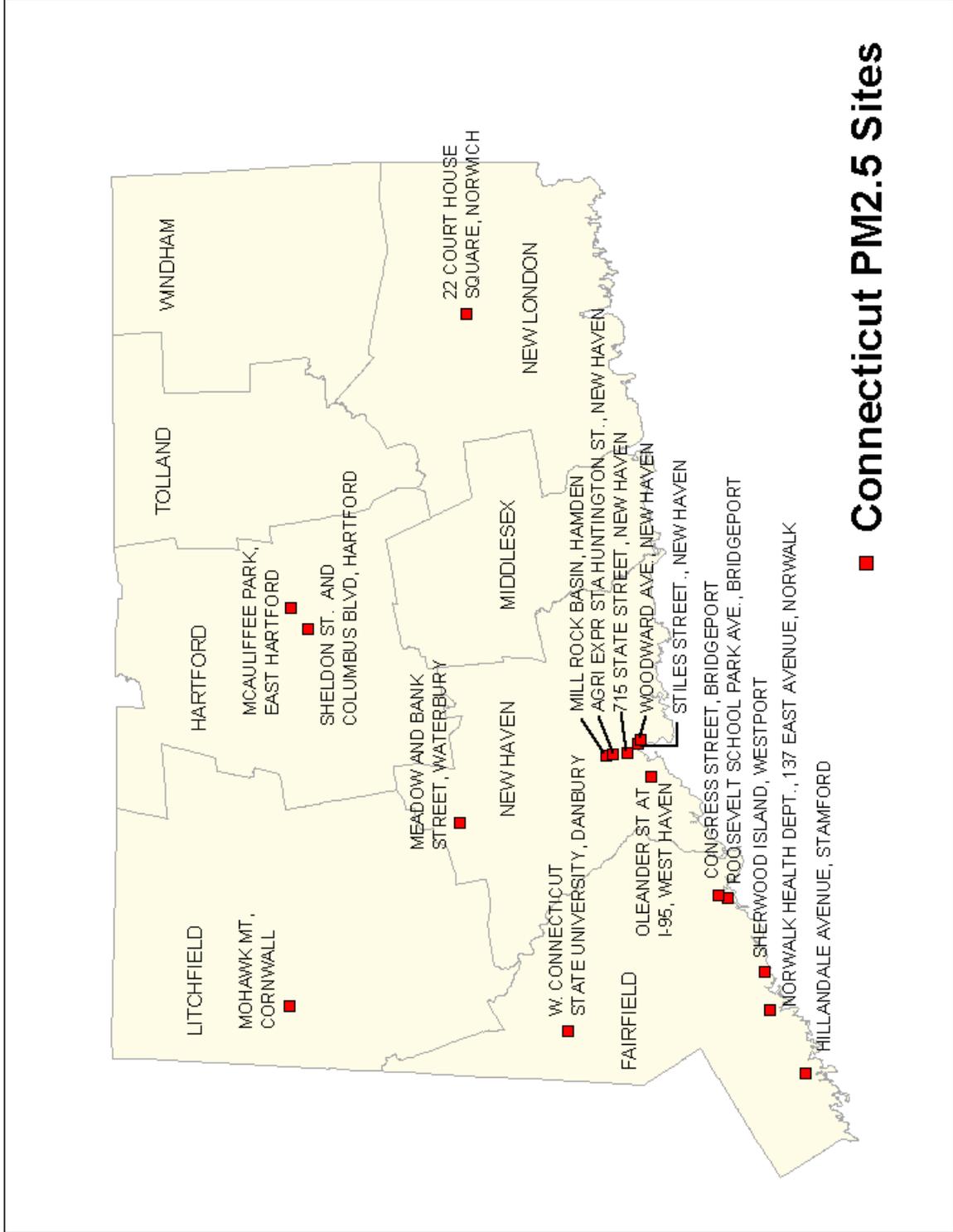
◆ Bridgeport Roosevelt School 
 ■ New Haven Stiles St. 
 ▲ Waterbury Shed Meadow



◆ Bridgeport Roosevelt School 
 ■ New Haven Stiles St. 
 ▲ Waterbury Shed Meadow

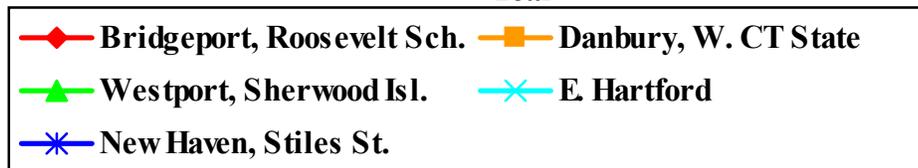
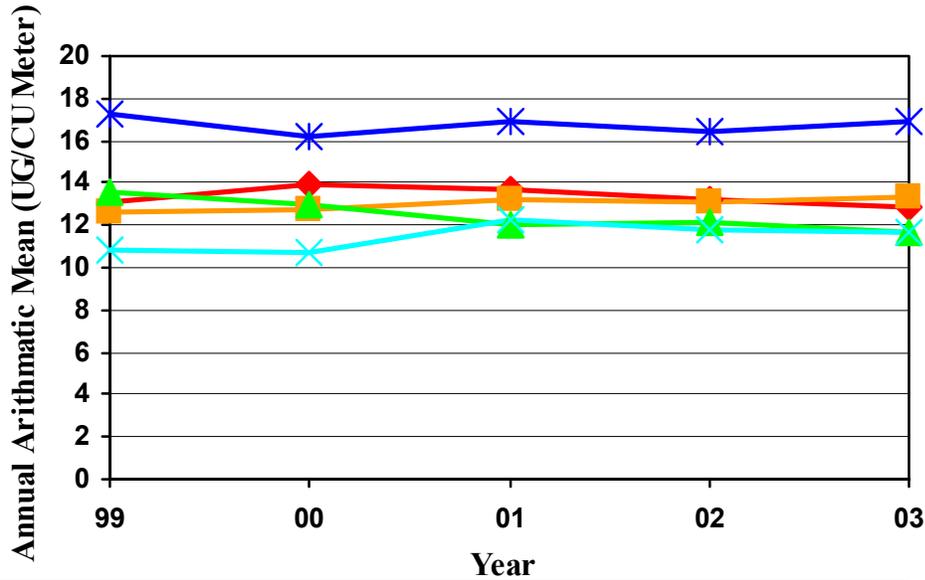
Parameter: PM 10														2nd	3rd	4th	Days	Est. Day	Wtd.	
SITE ID	POC	Rep. Org	City	County	Address	# Obs	# Req.	Days	Valid % Obs	Highest Value	Highest Value	Highest Value	Highest Value	Max >150	Max >150	Arith. Mean	Methods Used			
09-001-0010	1	251	BRIDGEPORT	FAIRFIELD	ROOSEVELT SCHOOL	58	61	58	95	58	49	47	39	0	0	21	62			
09-001-1401	1	251	DARIEN	FAIRFIELD	I-95 AT BROOKSIDE DR	1	1	1	100	12			0	0	0	12*	62			
09-001-2014	1	251	NORWALK	FAIRFIELD	I-95 AT WEST AVE	47	61	47	77	77	75	55	50	0	0	30*	62			
09-001-9003	1	251	WESTPORT	FAIRFIELD	SHERWOOD ISLAND	57	61	57	93	54	33	33	28	0	0	15	62			
09-003-2001	1	251	BURLINGTON	HARTFORD	PUNCH BROOK ROAD	1	1	1	100	4			0	0	0	4*	62			
09-003-2006	1	251	EAST HARTFORD	HARTFORD	85 HIGH STREET	56	61	56	92	51	38	32	32	0	0	17*	62			
09-003-2006	9	251	EAST HARTFORD	HARTFORD	85 HIGH STREET	2	2	2	100	14	7		0	0	0	11*	62			
09-005-6001	1	251	TORRINGTON	LITCHFIELD	140 MAIN STREET	1	1	1	100	4			0	0	0	4*	62			
09-009-0018	1	251	NEW HAVEN	NEW HAVEN	STILES STREET.	56	61	56	92	74	70	66	64	0	0	33	62			
09-009-0018	3	251	NEW HAVEN	NEW HAVEN	STILES STREET.	344	365	344	94	132	130	115	107	0	0	41	122			
09-009-0018	4	251	NEW HAVEN	NEW HAVEN	STILES STREET.	8368	365	345	95	131	130	114	106	0	0	41	0			
09-009-1123	1	251	NEW HAVEN	NEW HAVEN	715 STATE STREET	58	61	58	95	60	47	41	37	0	0	21	62			
09-009-1123	2	251	NEW HAVEN	NEW HAVEN	715 STATE STREET	2	2	2	100	20	8		0	0	0	14*	62			
09-009-2123	1	251	WATERBURY	NEW HAVEN	MEADOW AND BANK ST	58	61	58	95	49	45	41	39	0	0	20	62			
09-009-2123	2	251	WATERBURY	NEW HAVEN	MEADOW AND BANK ST	59	61	59	97	49	45	41	41	0	0	21	62			
09-011-0009	1	251	NEW LONDON	NEW LONDON	PERKINS ST	1	1	1	100	18			0	0	0	18*	62			
09-011-3002	1	251	NORWICH	NEW LONDON	22 COURT HOUSE SQ	2	2	2	100	20	6		0	0	0	13*	62			

\*Indicates that the mean does not satisfy summary criteria



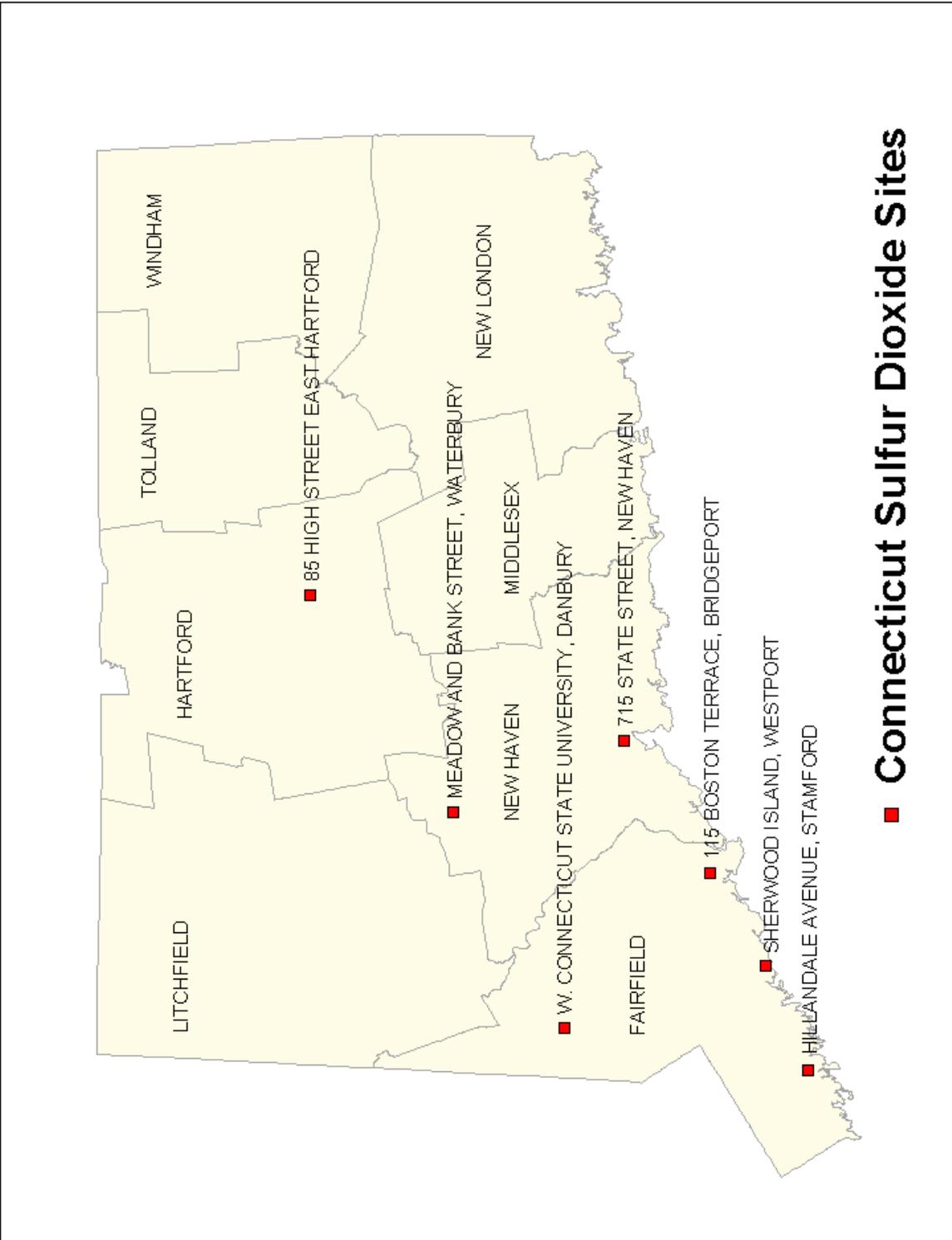
■ Connecticut PM2.5 Sites

# Connecticut PM2.5

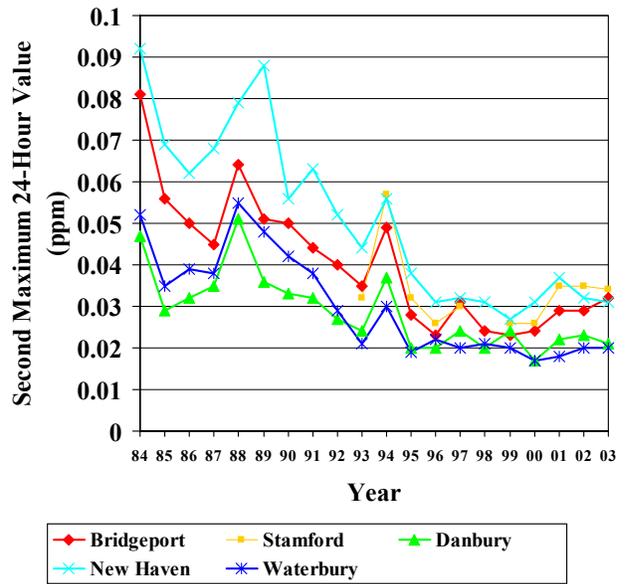
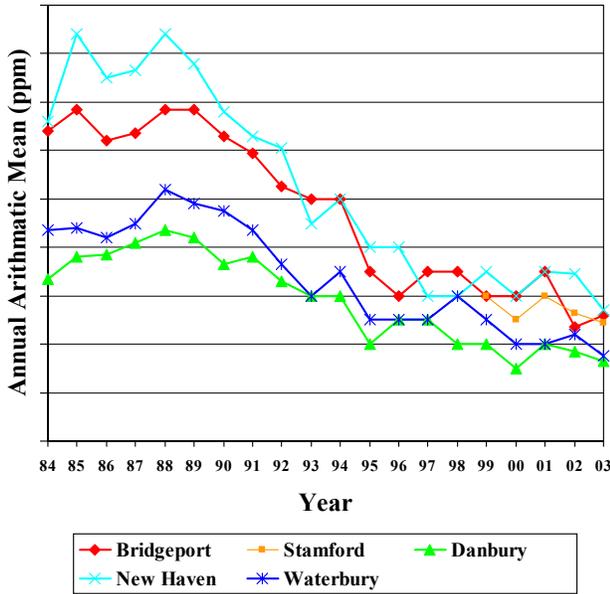


Parameter: PM 2.5																
All Values are in UG/CU Meters Local Conditions																
	P															
	O	Rept.														
Site ID	C	Org.	City	County	Address	#	Highest	2nd	3rd	4th	98th	Wtd.				
						Obs	Value	Highest	Highest	Highest	Highest	Percentile	Arith.			Metho
								Value	Value	Value	Value	Mean				Used
09-001-0010	1	251	BRIDGEPORT	FAIRFIELD	ROOSEVELT SCHOOL	108	45.8	44.8	39.6	29.5	39.6	12.8 *	145			
09-001-0010	2	251	BRIDGEPORT	FAIRFIELD	ROOSEVELT SCHOOL	4	10.7	8.1	8.1	6.1	10.7	8.3 *	145			
09-001-0113	1	251	BRIDGEPORT	FAIRFIELD	CONGRESS ST	100	45.6	40.4	31.9	31.8	40.4	12.3	145			
09-001-0113	3	251	BRIDGEPORT	FAIRFIELD	CONGRESS ST	8079	51.9	46.1	45.7	40	35.9	11.5 *	0			
09-001-0113	4	251	BRIDGEPORT	FAIRFIELD	CONGRESS ST	169	26.2	24.2	24	23.9	23.9	8.4 *	711			
09-001-1123	1	251	DANBURY	FAIRFIELD	W. CT ST UNIVERSITY	109	45.7	43.9	37.3	36.8	37.3	13.4 *	145			
09-001-2124	1	251	STAMFORD	FAIRFIELD	HILLDALE AVE	107	47.4	42.1	41.5	37.9	41.5	13.5	145			
09-001-3005	1	251	NORWALK	FAIRFIELD	HEALTH DEP	108	47.7	46.1	42.9	36.8	42.9	13.1 *	145			
09-001-9003	1	251	WESTPORT	FAIRFIELD	SHERWOOD ISLAND	116	44.8	44.8	44	36.1	44.8	11.7	145			
09-001-9003	5	1217	WESTPORT	FAIRFIELD	SHERWOOD ISLAND	35	22.7	19.2	17.6	16.4	22.7	9.4 *	810			
09-003-1003	1	251	EAST HARTFORD	HARTFORD	MCAULIFFEE PARK	338	47.1	44.2	43.5	37.3	35	11.7	145			
09-003-1018	1	251	HARTFORD	HARTFORD	SHELDON ST	107	47.1	45.3	45.1	39.2	45.1	13 *	145			
09-003-1018	3	251	HARTFORD	HARTFORD	SHELDON ST	8522	55.7	54.5	49.5	45.5	37.8	12.5	0			
09-003-1018	4	251	HARTFORD	HARTFORD	SHELDON ST	159	27.2	25.4	22	19.9	19.9	8 *	711			
09-005-0005	3	251	CORNWALL	LITCHFIELD	MOHAWK MTN	8236	47.2	41.7	39.6	32.6	27.3	7.6	0			
09-005-0005	4	251	CORNWALL	LITCHFIELD	MOHAWK MTN	169	28.6	21.2	19	16	16	6 *	711			
09-009-0018	1	251	NEW HAVEN	NEW HAVEN	STILES STREET.	333	58.6	52.2	47.6	46.9	44	16.9	145			
09-009-0018	2	251	NEW HAVEN	NEW HAVEN	STILES STREET.	4	18.1	15.3	13.4	9.5	18.1	14.1 *	145			
09-009-0026	1	251	NEW HAVEN	NEW HAVEN	WOODWARD AVENUE	76	48.2	45.9	42.3	36.3	45.9	11.9 *	145			
09-009-1123	1	251	NEW HAVEN	NEW HAVEN	715 STATE STREET	112	45.6	44	40.6	35.1	40.6	13.6	145			
09-009-1123	2	251	NEW HAVEN	NEW HAVEN	715 STATE STREET	57	48.8	38.9	34.6	33.9	38.9	15.5	145			
09-009-1123	3	251	NEW HAVEN	NEW HAVEN	715 STATE STREET	2095	45.4	45	43.8	41.4	45	10.1 *	731			
09-009-1123	5	1217	NEW HAVEN	NEW HAVEN	715 STATE STREET	56	70.6	53	49.1	47	49.1	17.9 *	810			
09-009-2008	1	251	NEW HAVEN	NEW HAVEN	AGRI EXPR STA HU	81	45.6	44.3	42.3	37.3	44.3	11.9 *	145			
09-009-2123	1	251	WATERBURY	NEW HAVEN	MEADOW AND BANK S	117	41.8	40.7	37.7	32.8	37.7	12.6	145			
09-009-2123	2	251	WATERBURY	NEW HAVEN	MEADOW AND BANK S	57	41.2	32.8	30.9	30.1	32.8	14.1	145			
09-009-2123	3	251	WATERBURY	NEW HAVEN	MEADOW AND BANK S	4644	44.7	44.1	42.3	40.7	40.7	14.3 *	731			
09-009-8003	1	251	WEST HAVEN	NEW HAVEN	OLEANDER ST	81	51.6	47.3	45.2	37.4	47.3	12.9 *	145			
09-009-9005	1	251	HAMDEN	NEW HAVEN	MILL ROCK BASIN	114	46.5	44.7	44	39.1	44	12.3	145			
09-011-3002	1	251	NORWICH	NEW LONDON	22 COURT HOUSE SQ	106	41.5	38.6	38.4	32.1	38.4	11.7	145			

\*Indicates that the mean does not satisfy summary criteria



# Connecticut Sulfur Dioxide



Parameter: Sulfur Dioxide																
All Values are in Units of Parts Per Million																
Site ID	C	O	Org	City	County	Address	#	24-hour	24-hour	3-hour	3-hour	1-hour	1-hour	Arith.	Meth	od
								Obs	Highest	Highest	Obs	Highest	Highest			
09-001-0012	1	251	BRIDGEPORT	FAIRFIELD	115 BOSTON TERR.	8507	0.033	0.032	0	0.047	0.044	0	0.054	0.05	0.0052	60
09-001-1123	1	251	DANBURY	FAIRFIELD	W. CT STATE U.	8539	0.025	0.021	0	0.03	0.03	0	0.035	0.034	0.0033	60
09-001-2124	1	251	STAMFORD	FAIRFIELD	HILLDALE AVE	8576	0.035	0.034	0	0.05	0.043	0	0.056	0.052	0.0049	60
09-001-9003	1	251	WESTPORT	FAIRFIELD	SHERWOOD ISLAND	8499	0.03	0.028	0	0.042	0.036	0	0.044	0.042	0.0037	60
09-003-2006	1	251	EAST HARTFORD	HARTFORD	85 HIGH ST	8631	0.023	0.022	0	0.032	0.031	0	0.045	0.042	0.0035	60
09-009-1123	2	251	NEW HAVEN	NEW HAVEN	715 STATE ST	8604	0.034	0.031	0	0.058	0.054	0	0.064	0.062	0.0054	60
09-009-2123	1	251	WATERBURY	NEW HAVEN	MEADOW & BANK ST	8552	0.024	0.02	0	0.032	0.029	0	0.04	0.035	0.0035	60

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## Ambient Air Quality Summary - Maine Summary

Low-level, highly sensitive CO monitors have been operating at the Cape Elizabeth PAMS site and the Acadia National Park PAMS site. Measurements of CO at these sites are made to help understand ozone formation, summertime photochemistry and pollution transport along the Maine coast.

Ambient air monitoring for lead (Pb) has been discontinued because the concentration of lead in the air in Maine was very low, well below the NAAQS.

Ambient air concentrations of nitrogen dioxide (NO<sub>2</sub>) were recorded at two sites in Maine. No sites recorded NO<sub>2</sub> concentrations approaching the NAAQS. A long-path UV DOAS monitor measured NO<sub>2</sub> as part of BEAM monitoring effort in Portland. The other NO<sub>2</sub> monitors was located at the PAMS sites in Kittery. In addition, the Acadia National Park and the Cape Elizabeth PAMS sites also measured ambient concentrations of reactive nitrogen compounds as part of a program to understand photochemistry and transport of airborne pollutants along the coast.

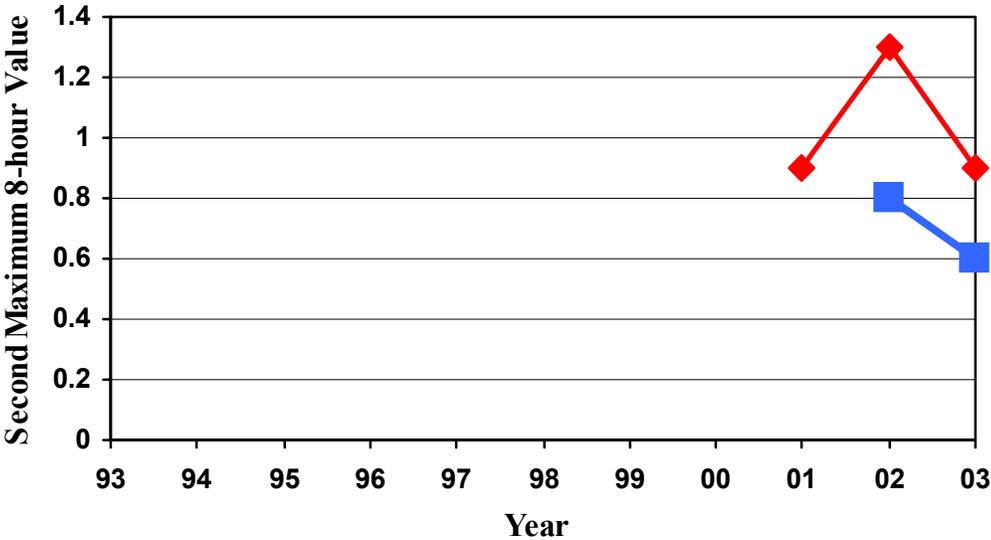
During 2003, none of Maine's twelve ozone monitoring sites reported ozone concentrations over 124 ppb. This compares with 2002, 2001, 2000 and 1999 when five, three, none and three monitoring sites, respectively measured exceedances of the 1-hour ozone standard. The highest 1-hour ozone concentrations were recorded at the Bar Harbor (120 ppb) monitoring site. No ozone monitoring sites recorded a fourth highest 8-hour average ozone concentration above the level of the 8-hour NAAQS. The highest 8-hour average was in Port Clyde at 107 ppb.

In 2003 no particulate matter sites which measured particles of 10 microns or less (PM<sub>10</sub>) reported either 24-hour or annual violations of the NAAQS. The highest PM<sub>10</sub> concentrations were measured at the Madawska site (95 ug/m<sup>3</sup>, ~75% of the 24-hour NAAQS). The Tukey's Bridge PM<sub>10</sub> monitor site in Portland recorded the highest annual PM<sub>10</sub> concentrations (26 ug/m<sup>3</sup>, ~50% of the NAAQS). The ten-year trend in PM<sub>10</sub> show decreasing concentrations. Maine began monitoring fine particulate matter (PM<sub>2.5</sub>) in 1999. Since then 17 PM<sub>2.5</sub> monitoring sites have been established in the state. Data for these sites indicate that none of the sites have recorded PM<sub>2.5</sub> concentrations that would result in exceedances of the 24-hour or annual NAAQS for PM<sub>2.5</sub>. Typically annual average PM<sub>2.5</sub> concentrations are approximately 75% of the NAAPS in urban area in Maine.

There were no exceedances or violations of the sulfur dioxide (SO<sub>2</sub>) NAAQS during 2002 in Maine. The highest annual arithmetic mean concentration was reported at the Portland site (3 ppb). The Easton monitoring site recorded the highest 24-hour second maximum at 19 ppb. The highest 3-hour second maximum concentration was recorded also in Easton (50 ppb). The ten-year trends in SO<sub>2</sub> concentrations are well below NAAQS and show small year-to-year changes.

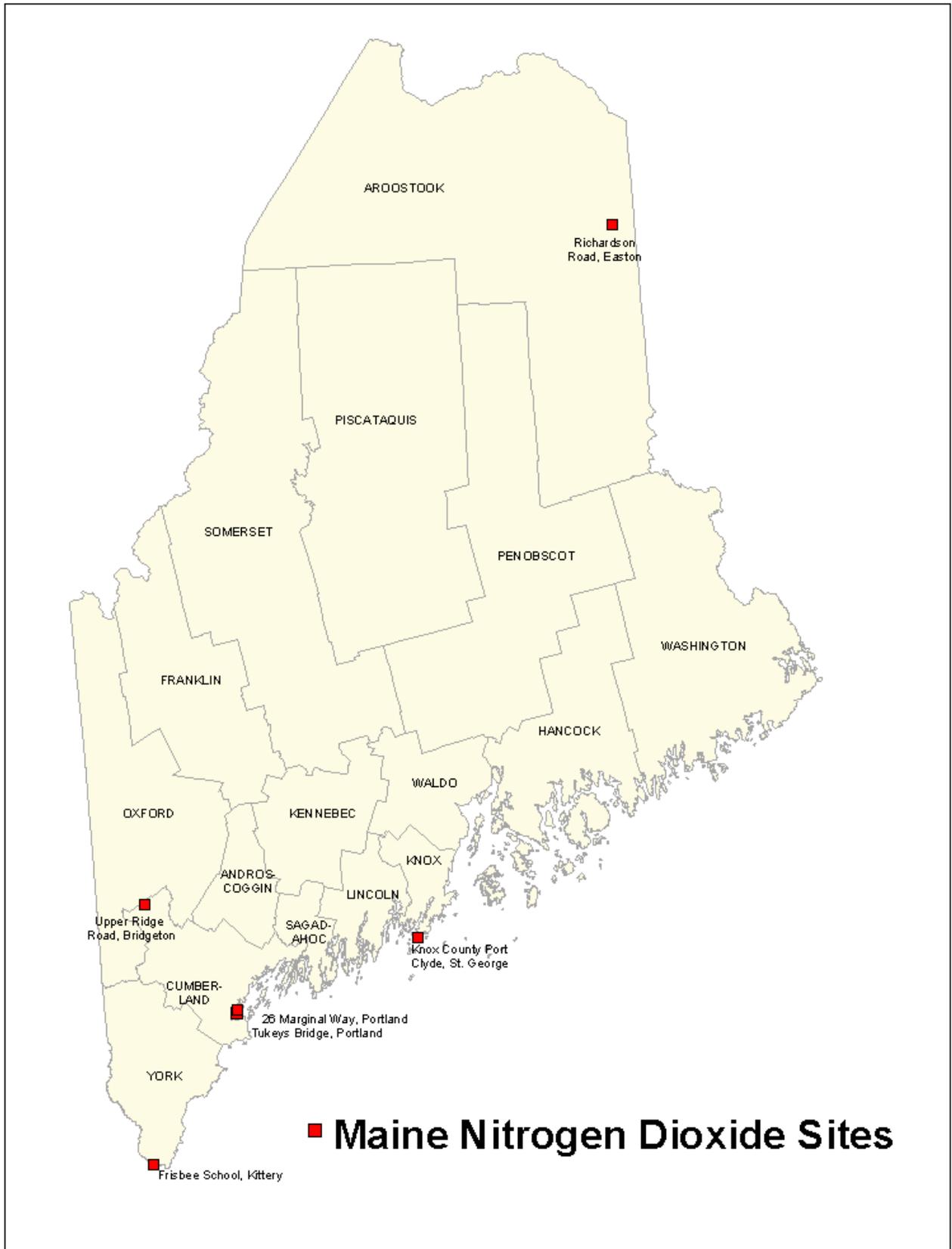


# Maine Carbon Monoxide

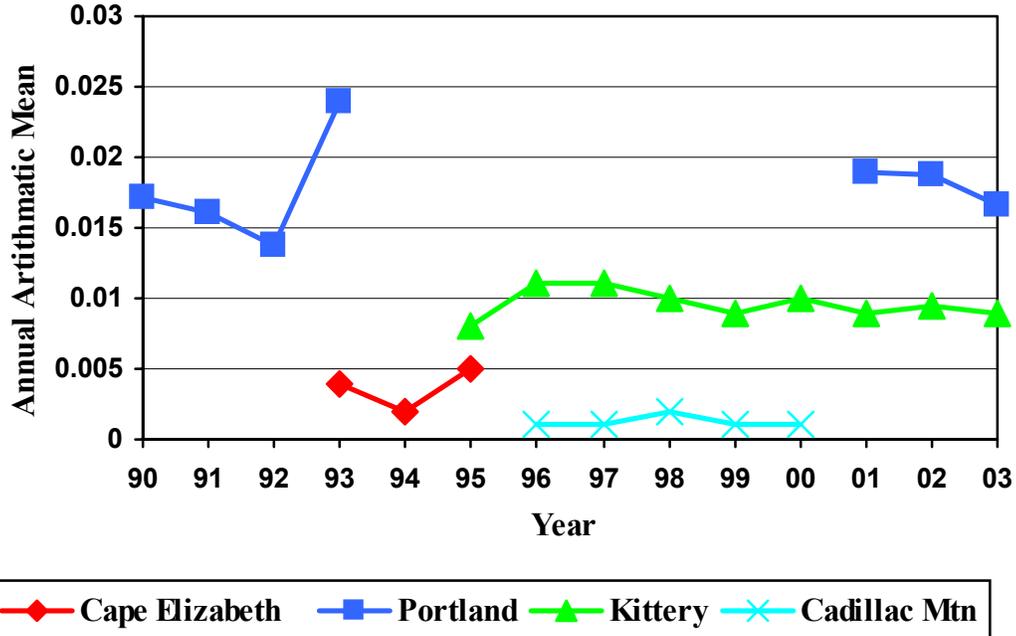


◆ Cape Elizabeth    ■ Bar Harbor

Carbon Monoxide													
All Values are in Units of Parts Per Million													
	P					1-hour	1-hour		8-hour	8-hour			
	O	Org				Highest	Highest		Highest	Highest		#	
Site ID	C	Type	City	County	Address	Obs	Value	Value	# > 35	Value	Value	# > 9	Methods Used
23-005-2003	1	635	CAPE ELIZABETH	CUMBERLAND	TWO LIGHTS STATE PARK	3603	0.9	0.9	0	0.8	0.8	0	93
23-009-0102	1	635	BAR HARBOR	HANCOCK	TOP OF CADILLAC MT	2358	0.6	0.6	0	0.5	0.4	0	54



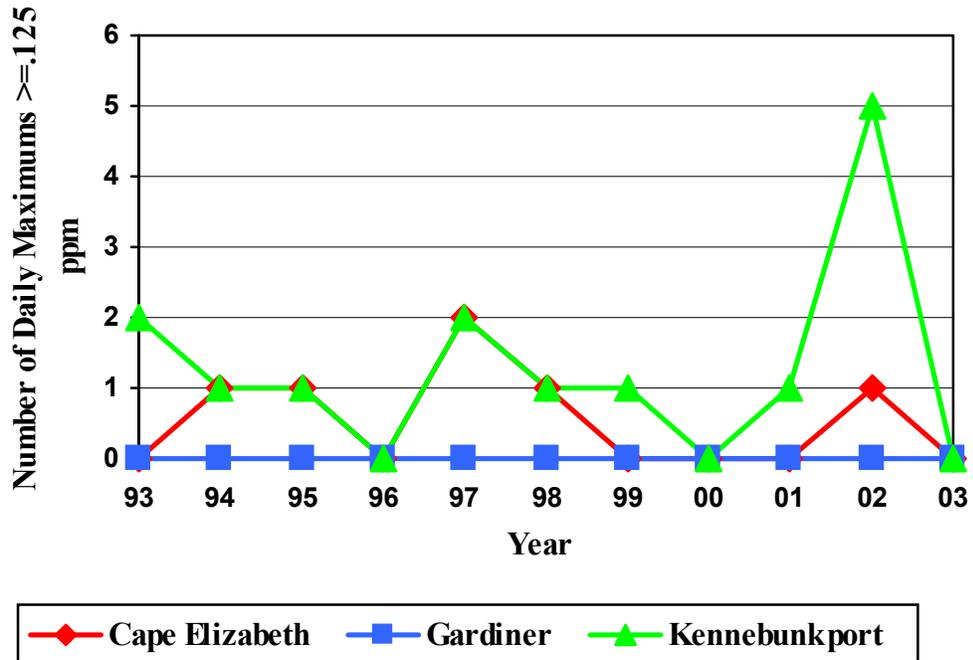
# Maine Nitrogen Dioxide



Parameter: Nitrogen Dioxide										
All Values are in Units of Parts Per Million										
								1-hour	1-hour	
	P								2nd	Annual
Site ID	O	Rept.				#	Highest	Highest	Arith.	
	C	Org.	City	County	Address	Method	Obs	Value	Value	Mean
23-005-0027	1	635	PORTLAND	CUMBERLAND	26 MARGINAL WAY	75	8509	0.078	0.072	0.0166
23-031-3002	1	762	KITTERY	YORK	FRISBEE SCH, GOODSOE R	14	8365	0.056	0.051	0.0089



# Maine Ozone 1-Hour

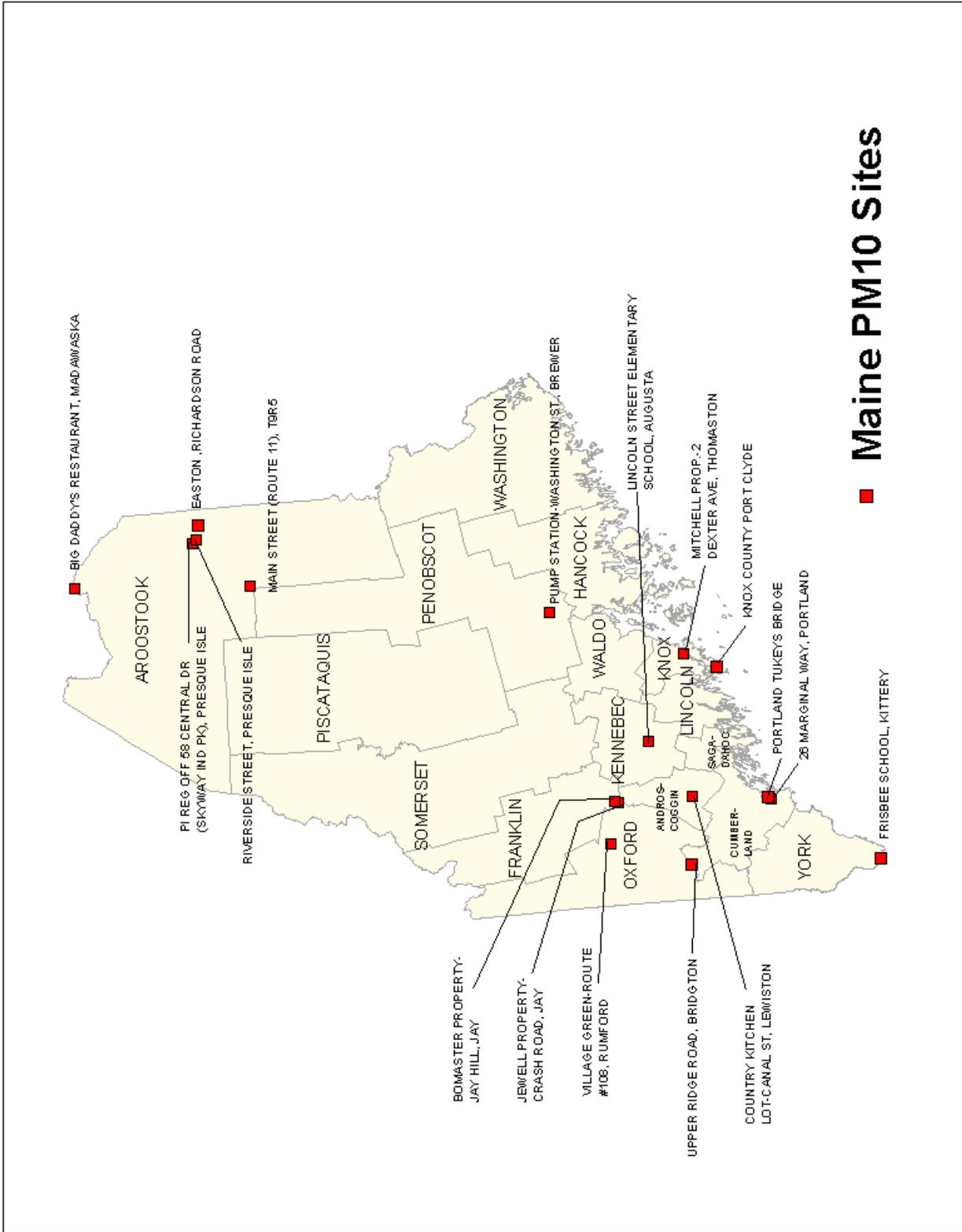


Parameter: Ozone (1-Hour)															
All Values are in Units of Parts Per Million															
	P								2nd	3rd	4th			Missing	
Site ID	O	Rep.				Num	Num	Highest	Highest	Highest	Highest	Day Max	Est. Day	Days	
C	Org.	City	County	Address	Meas	Req	Value	Value	Value	Value	Value	> 0.125	> 0.125	< 0.125	
23-005-0027	1	635	PORTLAND	CUMBERLAND	26 MARGINAL WAY	131	131	0.106	0.097	0.083	0.078	0	0	0	47
23-005-2003	1	635	CAPE ELIZABETH	CUMBERLAND	TWO LIGHTS STATE PK	183	183	0.097	0.097	0.088	0.085	0	0	0	47
23-009-0102	1	635	BAR HARBOR	HANCOCK	TOP OF CADILLAC MT	183	183	0.120	0.114	0.111	0.098	0	0	0	47
23-009-0103	1	635	BAR HARBOR	HANCOCK	MCFARLAND HILL	182	183	0.099	0.097	0.096	0.095	0	0	1	47
23-009-0301	1	635	CASTINE	HANCOCK	CASTINE MUNICIPAL GARG.	183	183	0.103	0.099	0.097	0.094	0	0	0	47
23-009-0401	1	635	WINTER HARBOR	HANCOCK	MAINTENANCE ROAD	178	183	0.090	0.089	0.089	0.086	0	0	0	47
23-011-2005	1	635	GARDINER	KENNEBEC	PRAY STREET SCHOOL	182	183	0.104	0.092	0.090	0.085	0	0	1	47
23-013-0004	2	635	PORT CLYDE	KNOX	MARSHAL PT LTHOUSE	172	183	0.116	0.095	0.092	0.091	0	0	0	47
23-017-3001	1	635	NORTH LOVELL	OXFORD	ROUTE 5	179	183	0.087	0.078	0.072	0.068	0	0	0	47
23-019-4008	1	635	HOLDEN	PENOBSCOT	SUMMIT OF RIDER BLUFF	183	183	0.117	0.092	0.083	0.079	0	0	0	47
23-023-0004	1	635	GEORGETOWN	SAGADAHOC	REID STATE PARK	166	183	0.098	0.092	0.088	0.086	0	0	1	47
23-031-0038	1	635	WEST BUXTON	YORK	PLAINS ROAD, HOLLIS	183	183	0.101	0.095	0.088	0.087	0	0	0	47
23-031-2002	1	635	KENNEBUNKPORT	YORK	OCEAN AVE/PARSONS W	182	183	0.109	0.105	0.092	0.087	0	0	0	47
23-031-3002	1	762	KITTERY	YORK	FRISBEE SCHOOL, GOO	181	183	0.111	0.104	0.095	0.091	0	0	1	11
23-901-0001	1	635		MOBILE MONITO	MS SCOTIA PRINCE CO	137	183	0.114	0.106	0.099	0.094	0	0	0	56

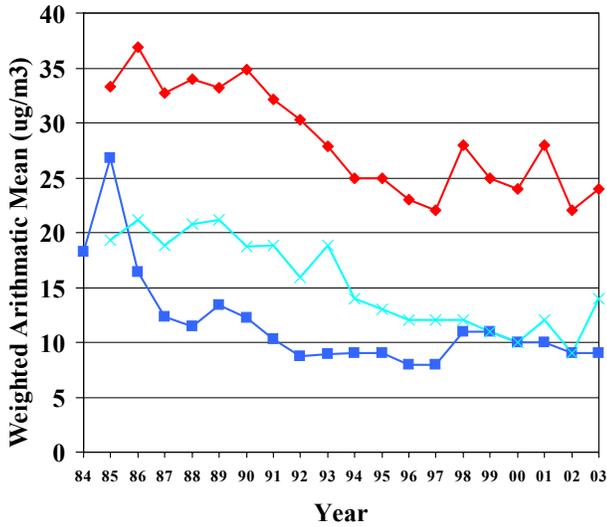
# Maine Ozone 8-Hour

Parameter: Ozone (8-Hour)														
All Values are in Units of Parts Per Million														
	P					Valid	Num		2nd	3rd	4th	Days		
	O Rept.				#	Days	Required	Highest	Highest	Highest	Highest	Max >	Methods	
Site ID	C	Org.	City	County	Address	Obs	Meas	Days	8-Hr Value	8-Hr Value	8-Hr Value	8-Hr Value	0.085	Reporte
23-005-0027	1	635	PORTLAND	CUMBERLAND	26 MARGINAL WAY, PO	100	131	131	0.08	0.069	0.067	0.066	0	47
23-005-2003	1	635	CAPE ELIZABETH	CUMBERLAND	TWO LIGHTS STATE PA	100	183	183	0.084	0.083	0.074	0.073	0	47
23-009-0102	1	635	BAR HARBOR	HANCOCK	TOP OF CADILLAC MOU	99	181	183	0.103	0.091	0.086	0.083	3	47
23-009-0103	1	635	BAR HARBOR	HANCOCK	MCFARLAND HILL-DISP	99	181	183	0.091	0.088	0.084	0.08	2	47
23-009-0301	1	635	CASTINE	HANCOCK	CASTINE MUNICIPAL G	99	182	183	0.094	0.079	0.079	0.076	1	47
23-009-0401	1	635	WINTERHARBOR	HANCOCK	MAINTENANCE ROAD	97	177	183	0.085	0.081	0.079	0.077	1	47
23-011-2005	1	635	GARDINER	KENNEBEC	PRAY STREET SCHOOL	99	181	183	0.086	0.079	0.07	0.069	1	47
23-013-0004	2	635	PORT CLYDE	KNOX	PORT CLYDE, MARSHAL	92	168	183	0.107	0.085	0.085	0.082	3	47
23-017-3001	1	635	LOVELL	OXFORD	ROUTE 5, NORTH LOVE	97	178	183	0.071	0.064	0.063	0.059	0	47
23-019-4008	1	635	HOLDEN	PENOBSCOT	SUMMIT OF RIDER BLU	100	183	183	0.11	0.076	0.074	0.073	1	47
23-023-0004	1	635	GEORGETOWN	SAGADAHOC	REID STATE PARK, GE	90	164	183	0.088	0.082	0.079	0.074	1	47
23-031-0038	1	635	WEST BUXTON	YORK	PLAINS ROAD, HOLLIS	100	183	183	0.081	0.08	0.077	0.069	0	47
23-031-2002	1	635	KENNEBUNKPORT	YORK	OCEAN AVE/PARSONS W	99	181	183	0.093	0.085	0.079	0.076	2	47
23-031-3002	1	762	KITTERY	YORK	FRISBEE SCHOOL, GOO	99	181	183	0.09	0.086	0.083	0.08	2	11
23-901-0001	1	635		MOBILE MONITC	MS SCOTIA PRINCE CO	75	137	183	0.089	0.084	0.082	0.079	1	56

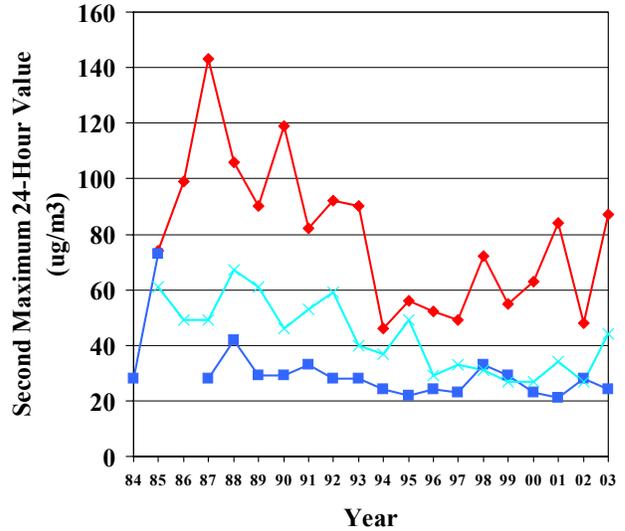
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# Maine PM 10



—◆— Madawaska —■— Bridgton —×— Jay Bomaster Prop.

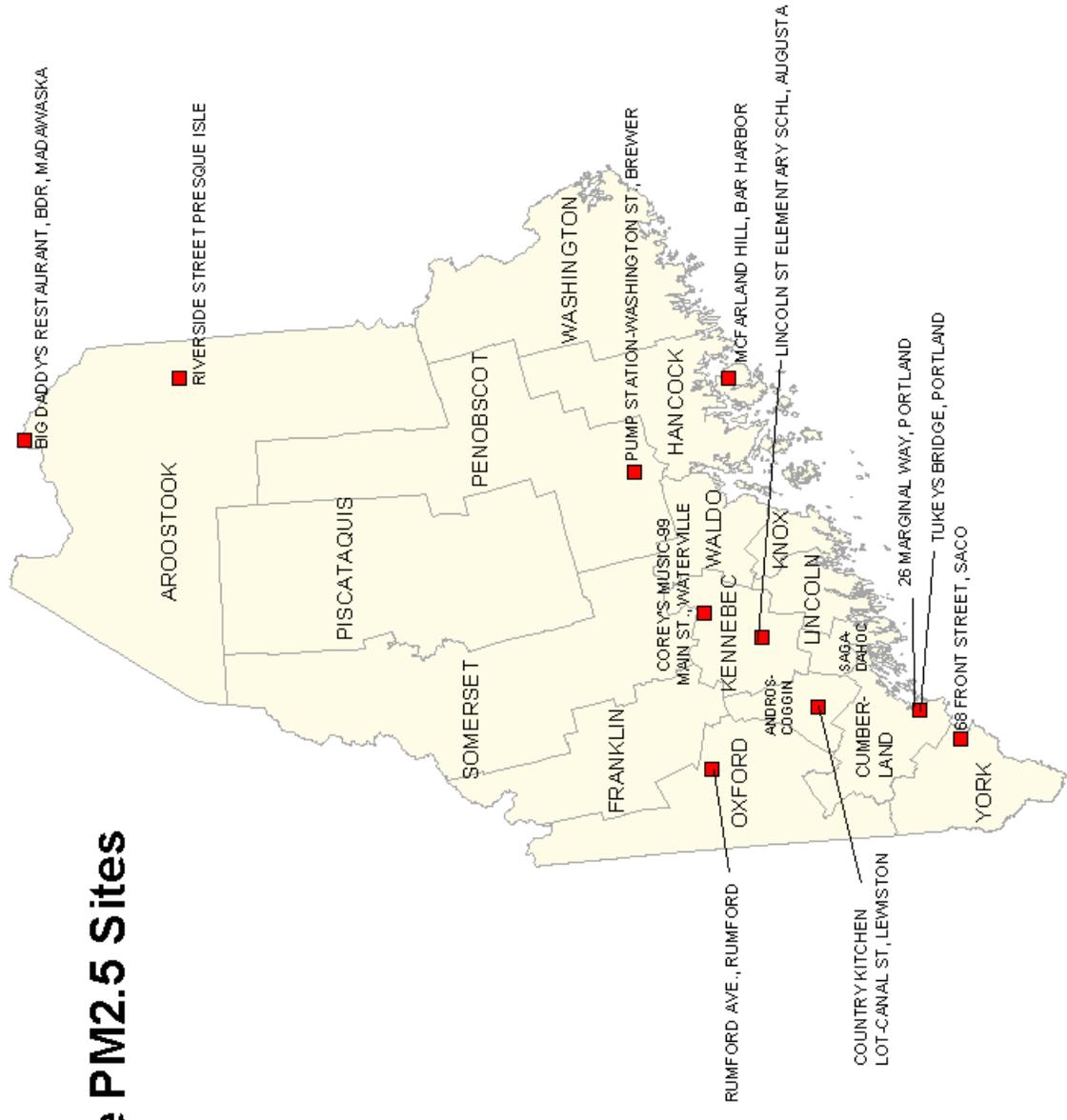


—◆— Madawaska —■— Bridgton —×— Jay Bomaster Prop.

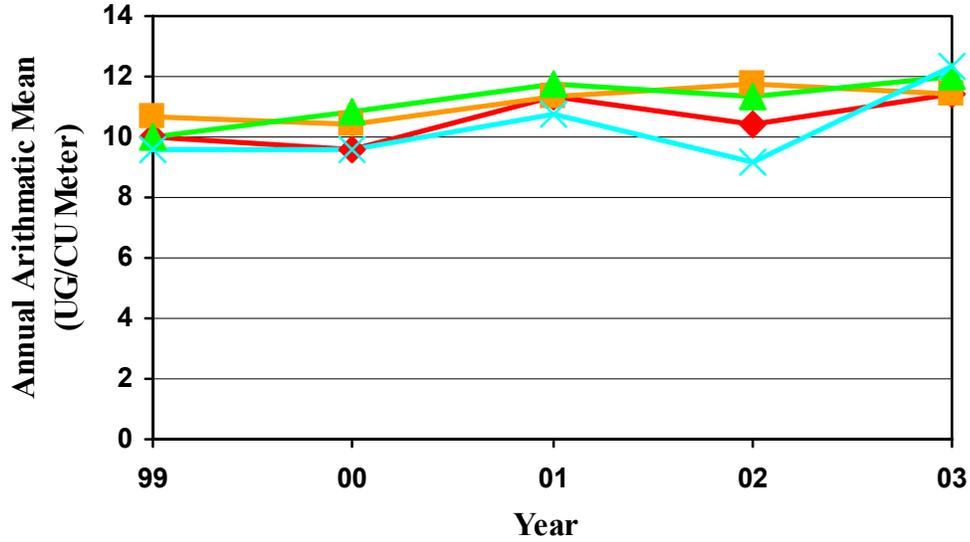
Parameter: PM 10																	
SITE ID	Rep. POC	Org	City	County	Address	# Obs	# Req.	Days	Valid % Obs	Highest Value	2nd Highest Value	3rd Highest Value	4th Highest Value	Days Max >150	Est. Day Max >150	Wtd. Arith. Mean	Methods Used
23-001-0011	1	635	LEWISTON	ANDROSCOGGIN	COUNTRY KITCHEN	56	61	56	92	67	63	51	44	0	0	22	64
23-003-0013	2	635	MADAWASKA	AROOSTOOK	BIG DADDY'S REST.	60	61	60	98	95	87	73	45	0	0	24	64
23-003-1008	1	635	PRESQUE ISLE	AROOSTOOK	58 CENTRAL DR	61	61	61	100	46	40	29	28	0	0	14	63
23-003-1011	2	635	PRESQUE ISLE	AROOSTOOK	RIVERSIDE STREET	8408	365	349	96	76	73	70	54	0	0	16	79
23-003-1016	1	635	T9R5	AROOSTOOK	MAIN STREET (RT 11)	21	30	21	70	98	92	61	36	0	0	32	63
23-003-1018	1	635	EASTON	AROOSTOOK	RICHARDSON ROAD	58	61	58	95	76	62	49	45	0	0	19	64
23-005-0002	2	635	BRIDGTON	CUMBERLAND	UPPER RIDGE ROAD	58	61	58	95	41	24	22	20	0	0	9	62
23-005-0027	1	635	PORTLAND	CUMBERLAND	26 MARGINAL WAY,	57	61	57	93	83	57	52	46	0	0	26	62
23-007-0003	1	635	JAY	FRANKLIN	JEWELL PROPERTY	58	61	58	95	45	34	30	26	0	0	14	63
23-007-0004	3	528	JAY	FRANKLIN	BOMASTER PROPERTY	61	61	61	100	47	44	28	27	0	0	14	62
23-011-0016	1	635	AUGUSTA	KENNEBEC	LINCOLN ST SCHOOL	59	61	59	97	87	79	53	47	0	0	20	64
23-013-2001	1	314	THOMASTON	KNOX	MITCHELL PROP.-2	61	61	61	100	50	34	32	31	0	0	15	63
23-017-2007	1	635	RUMFORD	OXFORD	VILLAGE GREEN-RT 108	61	61	61	100	36	28	25	22	0	0	12	62
23-019-0002	2	635	BANGOR	PENOBSCOT	WASHINGTON ST	56	61	55	90	60	48	45	44	0	0	22	62

\*Indicates that the mean does not satisfy summary criteria

■ **Maine PM2.5 Sites**



# Maine PM2.5



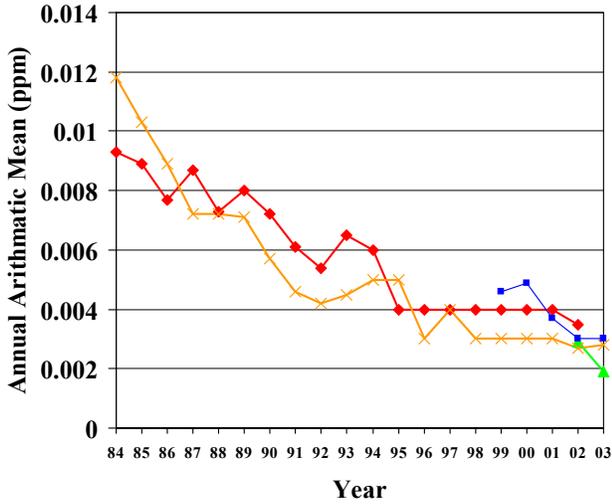
Parameter: PM 2.5												
All Values are in UG/CU Meters Local Conditions												
	P											
	O	Rept.			#	Highest	2nd	3rd	4th	98th	Wtd.	
Site ID	C	Org.	City	County	Address	Obs	Value	Highest	Highest	Value	Value	Method
23-001-0011	1	635	LEWISTON	ANDROSCOGGIN	COUNTRY KITCHEN	108	41.1	38	32.5	31	32.5	118
23-001-0011	3	635	LEWISTON	ANDROSCOGGIN	COUNTRY KITCHEN	8675	39.2	39	29.8	27.2	21.7	701
23-003-0013	1	635	MADAWASKA	AROOSTOOK	BIG DADDY'S REST.	119	34.1	28.7	26	25.5	26	118
23-003-0013	2	635	MADAWASKA	AROOSTOOK	BIG DADDY'S REST.	59	24.6	23.1	22.4	21.7	23.1	118
23-003-1011	1	635	PRESQUE ISLE	AROOSTOOK	RIVERSIDE STREET	116	33.2	30.7	24.6	23.7	24.6	118
23-005-0015	1	635	PORTLAND	CUMBERLAND	TUKEY'S BRIDGE	58	38.9	29.3	27.2	26.3	29.3	0
23-005-0027	1	635	PORTLAND	CUMBERLAND	26 MARGINAL WAY	115	37	36.3	35.9	34.4	35.9	118
23-005-0027	2	635	PORTLAND	CUMBERLAND	26 MARGINAL WAY	52	37.4	34.3	29.1	28.7	34.3	118
23-005-0027	3	635	PORTLAND	CUMBERLAND	26 MARGINAL WAY	8415	40.3	35.6	32.5	32.4	24	701
23-009-0103	1	635	BAR HARBOR	HANCOCK	MCFARLAND HILL	150	29.8	25.4	21.8	17.6	21.8	118
23-009-0103	2	635	BAR HARBOR	HANCOCK	MCFARLAND HILL	1546	12.7	6.9	6.8	5.3	6.9	701
23-011-0016	1	635	AUGUSTA	KENNEBEC	LINCOLN ST SCHOOL	60	36.1	31.9	28.1	28	31.9	117
23-011-0016	2	635	AUGUSTA	KENNEBEC	LINCOLN ST SCHOOL	57	36	33.8	30.2	27	33.8	117
23-011-2002	1	635	WATERVILLE	KENNEBEC	COREY'S 99 MAIN ST	60	36.6	34	32.4	30.9	34	117
23-017-2011	1	635	RUMFORD	OXFORD	RUMFORD AVENUE	60	33.9	32.3	19.8	19.8	32.3	117
23-019-0002	1	635	BANGOR	PENOBSCOT	WASHINGTON ST	123	47.1	30.7	30.6	28	30.6	118
23-019-0002	2	635	BANGOR	PENOBSCOT	WASHINGTON ST	58	33.8	28.3	28.2	23.2	28.3	118
23-019-0002	3	635	BANGOR	PENOBSCOT	WASHINGTON ST	7495	50.7	44.7	37.1	28.7	22.8	701
23-031-0008	1	635	SACO	YORK	68 FRONT STREET,	59	33.1	26.2	24	18.6	26.2	117

\*Indicates that the mean does not satisfy summary criteria

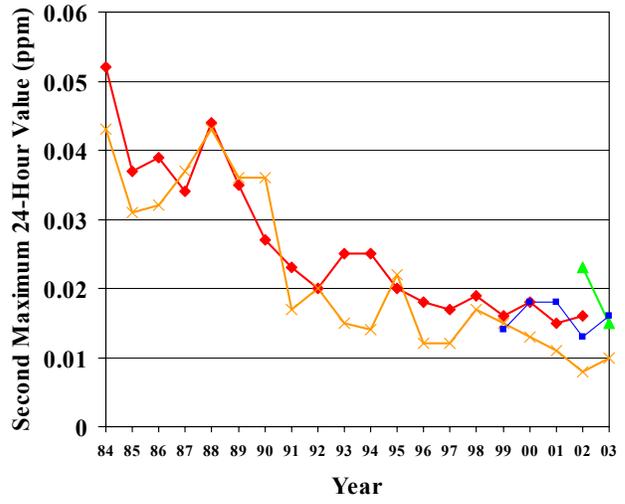


■ **Maine Sulfur Dioxide Sites**

# Maine Sulfur Dioxide



◆ Lewiston Country Kitchen    ▲ Easton  
✕ Rumford, Village Green    ■ Portland



◆ Lewiston Country Kitchen    ▲ Easton  
✕ Rumford, Village Green    ■ Portland

Parameter: Sulfur Dioxide																
All Values are in Units of Parts Per Million																
Site ID	C	Type	City	County	Address	#	24-hour		3-hour		1-hour		Arith. Mean	Method Used		
							Obs	Highest	Obs	Highest	Obs	Highest				
23-003-1018	1	635	EASTON	AROOSTOOK	RICHARDSON RD	6084	0.019	0.015	0	0.05	0.044	0	0.059	0.055	0.0019	60
23-005-0027	1	635	PORTLAND	CUMBERLAND	26 MARGINAL WAY	8697	0.017	0.016	0	0.036	0.027	0	0.061	0.039	0.003	60
23-017-2007	2	106	RUMFORD	OXFORD	VILLAGE GREEN	8634	0.011	0.01	0	0.017	0.017	0	0.024	0.02	0.0028	9

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## Ambient Air Quality Summary – Massachusetts

Massachusetts has reduced their carbon monoxide (CO) monitoring network to six sites. Two sites are located in Boston (Kenmore Square, Harrison Ave - Roxbury), two sites are located in Springfield (East Columbus Avenue and Liberty Street), one site is located in Worcester (Central Street), and a single site in Lowell (Old City Hall). No exceedances of the 8-hour NAAQS for CO were recorded at any site in Massachusetts since 1996. Over the past few years, the concentrations of CO were highest in 1999. The annual fluctuations in CO concentrations are evident in the 20 year records. The data show an overall decrease in the concentration of CO over the past 20 years.

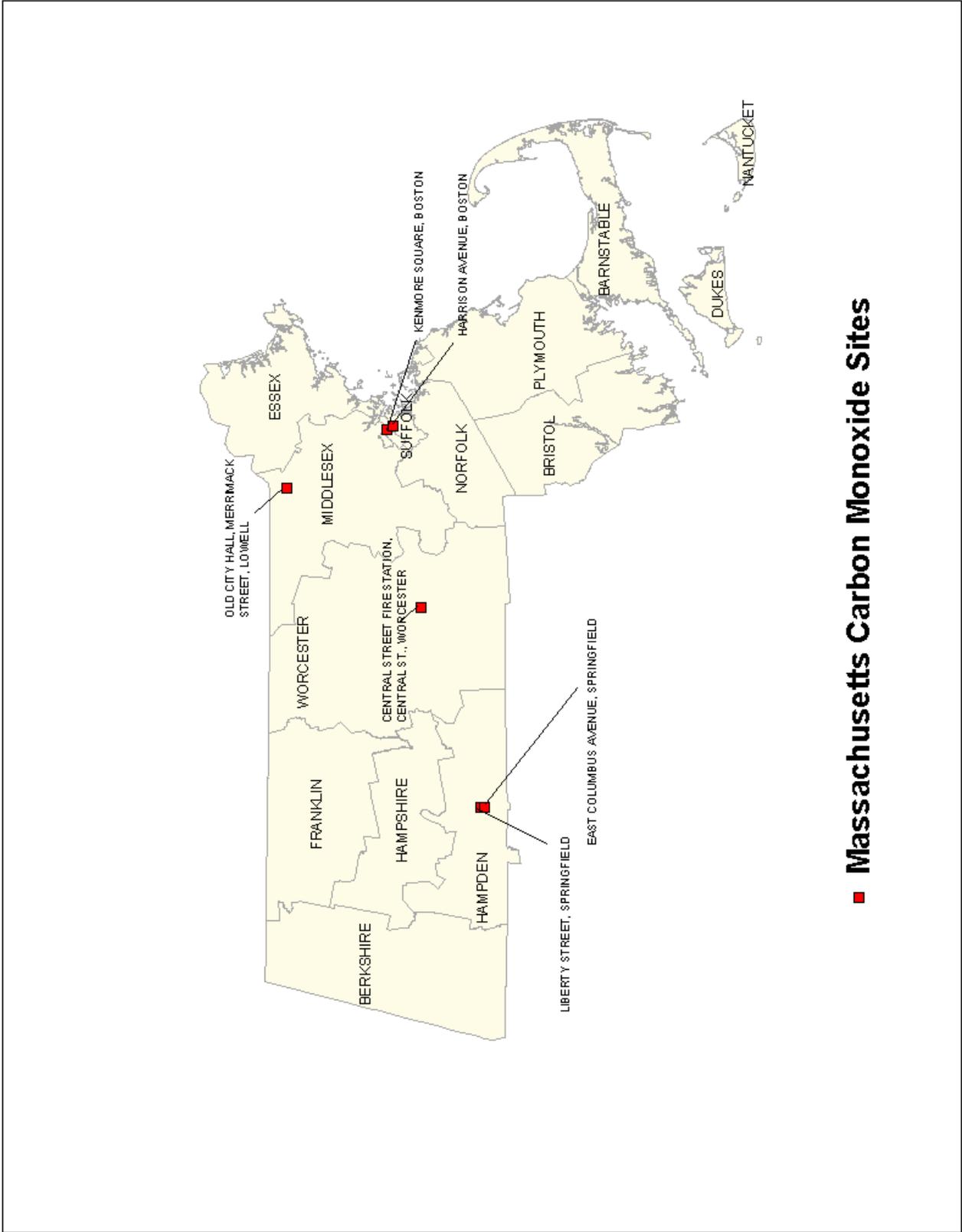
In 1996, Massachusetts discontinued ambient air monitoring of lead (Pb) at all but one site in Boston because air quality levels were well below the NAAQS and the level of detection for the measurement method. The maximum quarterly average concentration of lead at the Kenmore Square (Boston) site (0.01 ug/m<sup>3</sup>) was well below (~1%) the NAAQS for lead.

Nitrogen dioxide (NO<sub>2</sub>) measurements were made at 12 monitoring sites in Massachusetts during 2003. The highest concentrations of NO<sub>2</sub> were recorded at monitors in Boston, Springfield, Worcester and Lynn. The lowest concentrations were measured at the Truro, Quabbin Summit (Ware) and Newbury sites. The highest annual mean NO<sub>2</sub> concentrations were recorded at Kenmore Square (25 ppb) and the lowest concentrations at Truro (3 ppb), Newbury (4 ppb) and the Quabbin Summit (5 ppb). No upward or downward trend in NO<sub>2</sub> concentration can be detected in the 20-year trend data.

During 2003, thirteen ozone monitoring sites measured ozone (O<sub>3</sub>) in Massachusetts with two sites measuring at least one day over 124 ppb. The highest 1-hour concentrations of ozone were recorded at the Fairhaven (127 ppb) and Blue Hill (126 ppb). In 2002 there were eleven sites over 124 ppb, in 2001 six sites recorded levels above 124 ppb, and in 2000 only Truro measured high (141 ppb) concentrations of ozone. In 2003, three of the thirteen ozone monitoring sites recorded a fourth highest 8-hour average ozone concentration above the level of the 8-hour NAAQS. In comparison, during 2002 fourteen of the fifteen ozone monitoring sites recorded a fourth highest 8-hour average ozone concentration above the level of the 8-hour NAAQS, in 2001 eleven of the fifteen were above this level, and in 2000 no sites recorded an 8-hr average ozone concentration above the 8-hour ozone NAAQS.

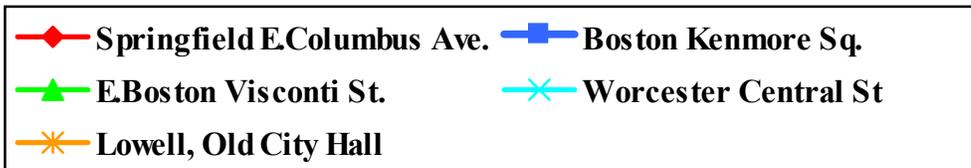
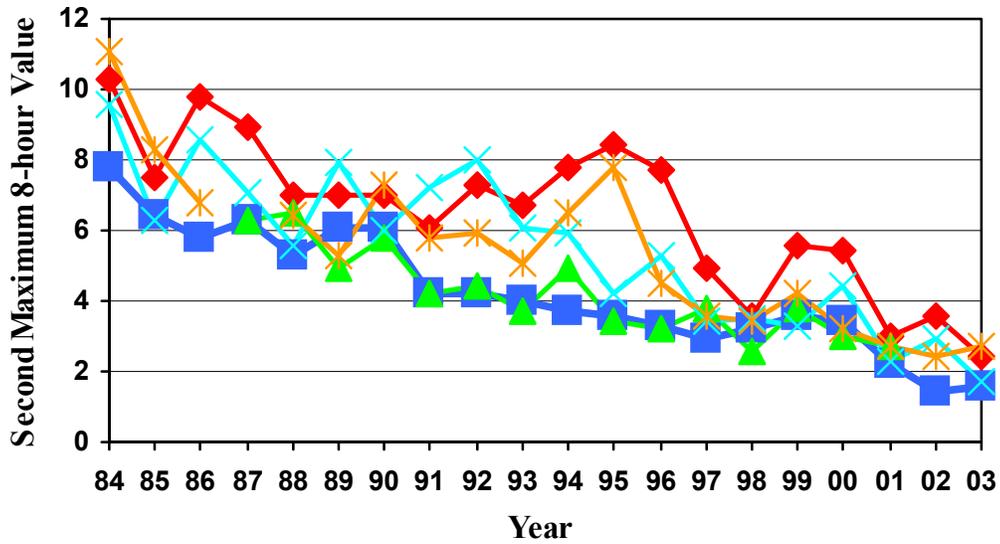
In Massachusetts, during 2003, three sites measured particulate matter (PM<sub>10</sub>) using the traditional SSI High Volume method. All of these PM<sub>10</sub> monitoring sites were located in urban areas. In addition Massachusetts operated six sites using modified FRMs and reported these data under local conditions. The highest annual average concentrations of PM<sub>10</sub> were recorded at the Boston-Kenmore (25 ug/m<sup>3</sup>) monitoring site. The highest 24-hour PM<sub>10</sub> concentration was recorded at the Boston site (55 ug/m<sup>3</sup>). Over the past 20 years the concentration of PM<sub>10</sub> has show some variability in the urban areas. In 1999, Massachusetts established a fine particulate matter (PM<sub>2.5</sub>) monitoring network. Since 1999, 26 PM<sub>2.5</sub> monitoring sites have been deployed in urban, suburban and rural areas. In 2003 the network was reduced to fifteen sites. The highest PM<sub>2.5</sub> concentrations have been measured in the urban areas of Boston and Springfield. In 2003, the Kenmore Square and North Street sites measured annual average PM<sub>2.5</sub> concentrations of 12.8 ug/m<sup>3</sup> and 13.6 ug/m<sup>3</sup>, respectively. These values are similar to 2002 with the measured concentrations at Kenmore Square of 13.4 ug/m<sup>3</sup> and North Street at 13.5 ug/m<sup>3</sup>. Massachusetts continues to have problems with PM<sub>2.5</sub> data completeness with only four of the fifteen sites reporting a valid annual average.

Ten sulfur dioxide (SO<sub>2</sub>) monitoring sites were operated in Massachusetts during 2003. No exceedance or violation of the annual or 24-hour (primary) or the 3-hour (secondary) NAAQS for SO<sub>2</sub> was recorded in 2003. The highest short-term (3-hour) SO<sub>2</sub> concentrations were recorded at the Globe Street monitoring site in Fall River (90 ppb). The 24-hour SO<sub>2</sub> concentrations were recorded in Liberty Street site in Springfield, well below the NAAQS. All SO<sub>2</sub> measurement sites in Massachusetts showed a general decline in SO<sub>2</sub> concentrations over the past 20 years.

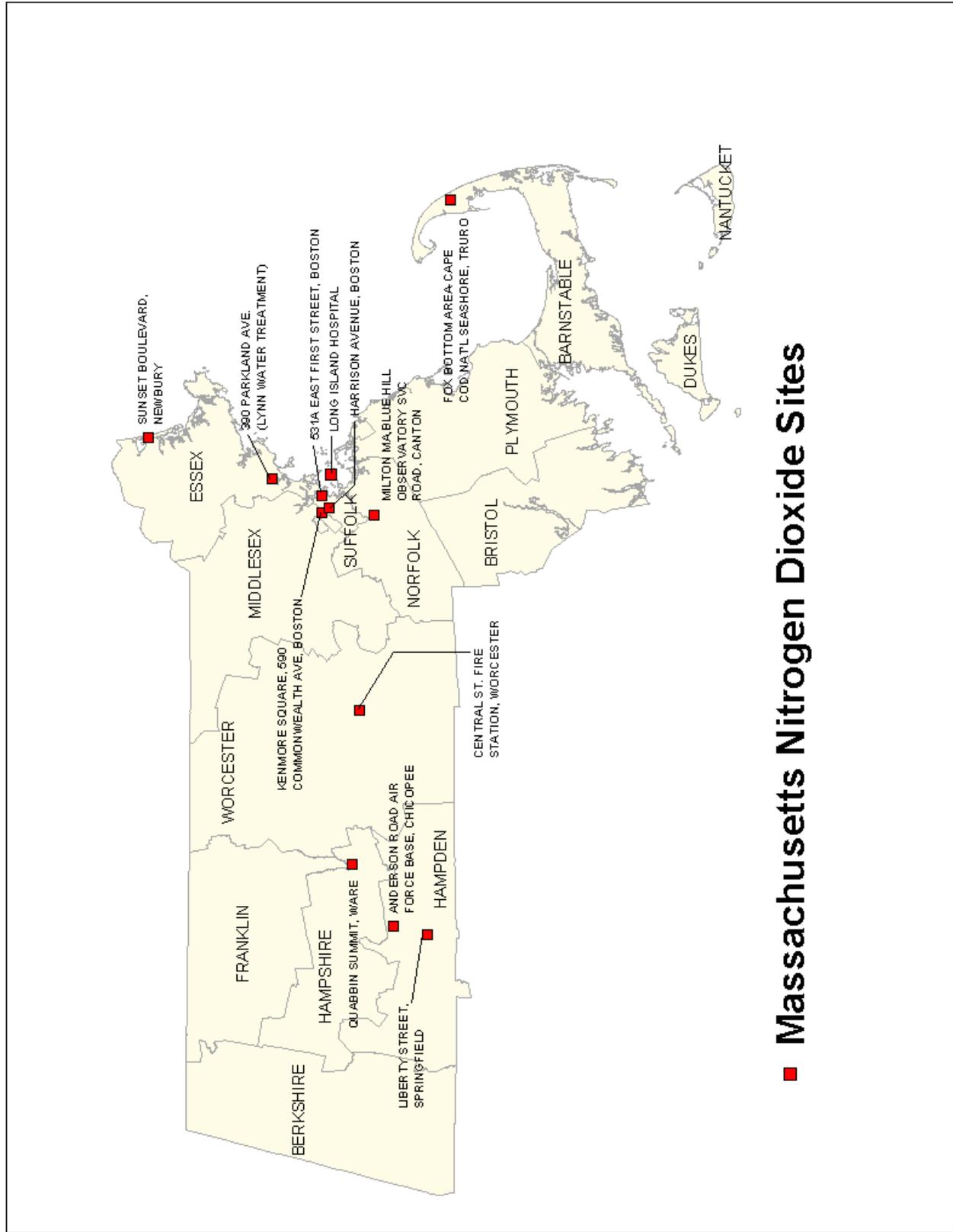


■ Massachusetts Carbon Monoxide Sites

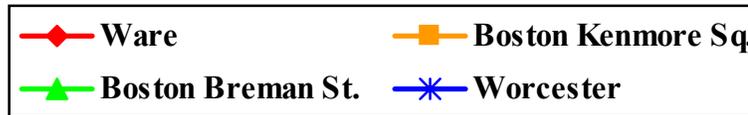
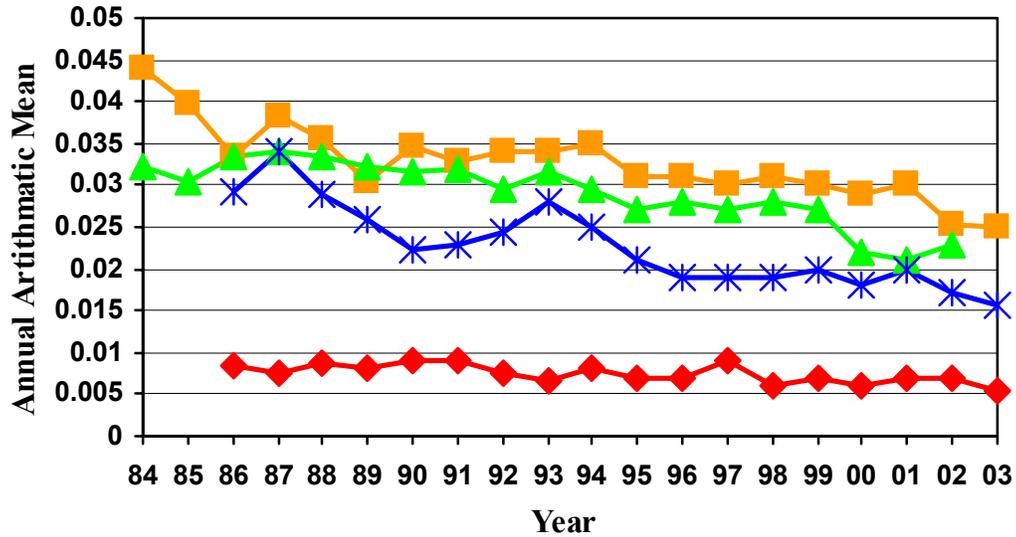
# Massachusetts CO



Carbon Monoxide														
All Values are in Units of Parts Per Million														
Site ID	P	O Org	C Type	City	County	Address	# Obs	1-hour			8-hour			# Methods Used
								Highest Value	2nd Highest Value	# > 35	Highest Value	2nd Highest Value	# > 9	
25-013-0016	1	660	SPRINGFIELD	HAMPDEN	LIBERTY STREET PARK	8167	3.9	3.6	0	3.1	3	0	93	
25-013-2007	1	660	SPRINGFIELD	HAMPDEN	EAST COLUMBUS AVE	1199	4	3.9	0	2.8	2.4	0	93	
25-017-0007	1	660	LOWELL	MIDDLESEX	OLD CITY HALL, MERRIMACK S	8191	4	3.8	0	3.2	2.7	0	93	
25-025-0002	1	660	BOSTON	SUFFOLK	KENMORE SQ, 590 COMM AVE	5725	2.1	2.1	0	1.7	1.6	0	93	
25-025-0042	1	660	BOSTON	SUFFOLK	HARRISON AVENUE	8159	4.1	4	0	2.6	2.4	0	67	
25-027-0020	1	660	WORCESTER	WORCESTER	CENTRAL STREET FIRE	5715	3.8	3.6	0	2.3	1.7	0	93	

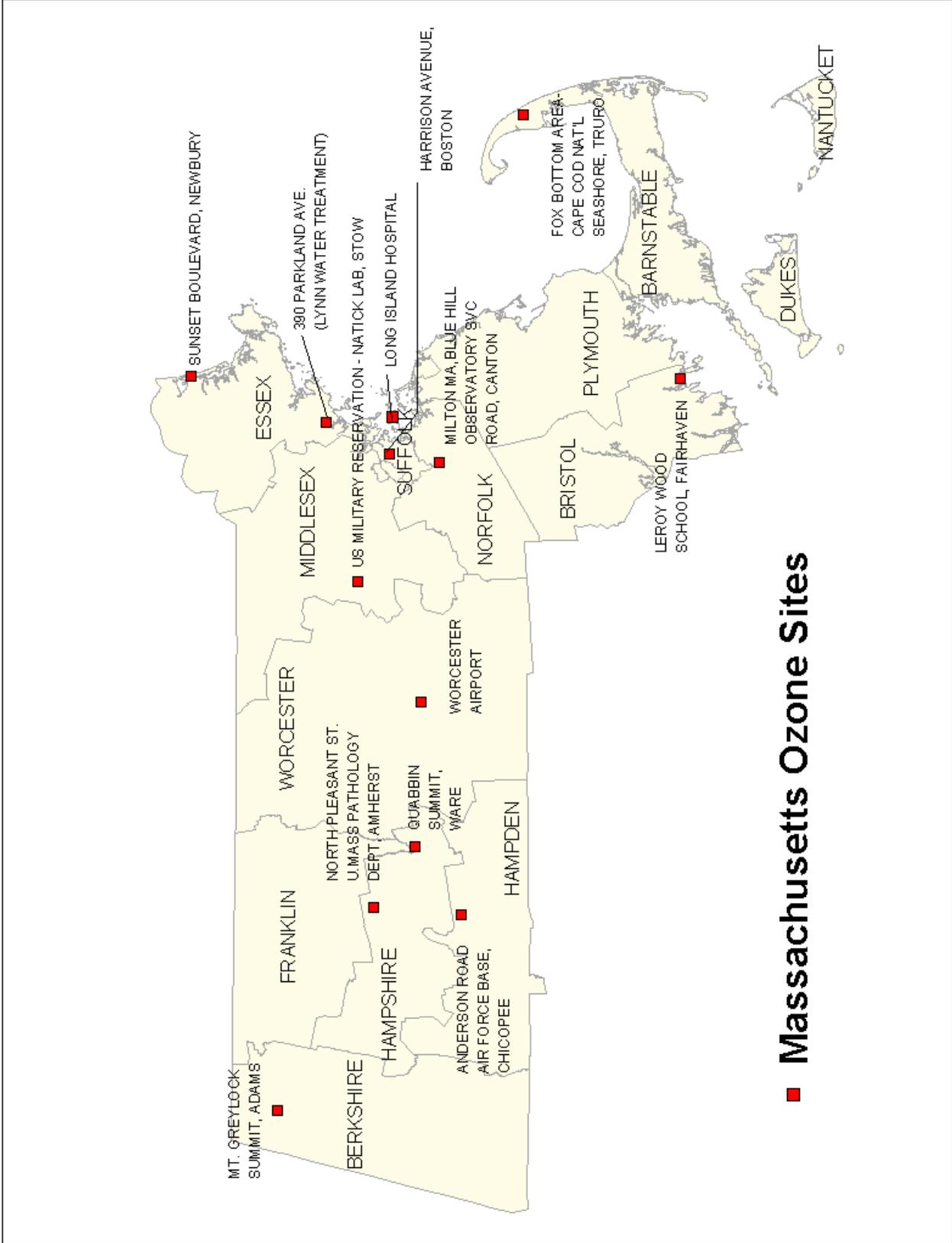


# Massachusetts NO2

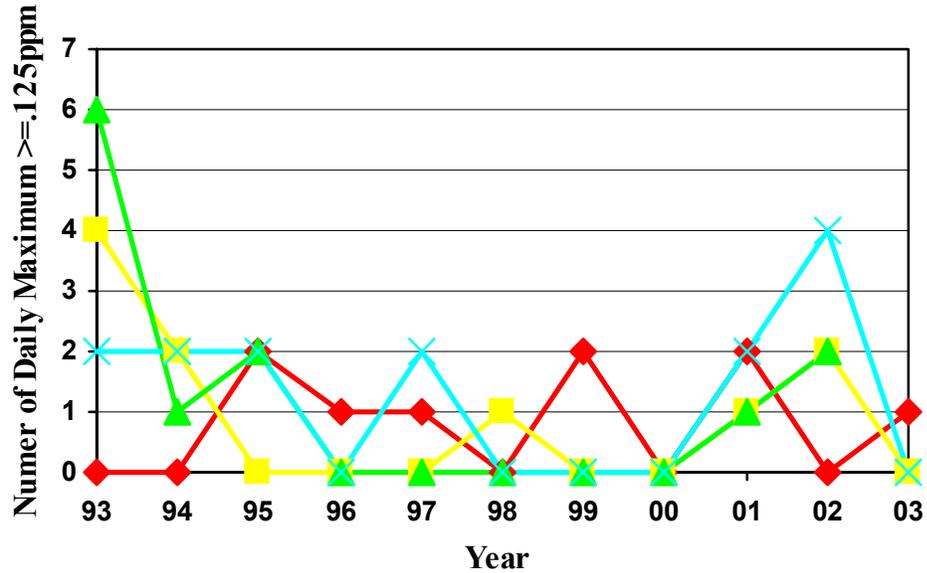


Parameter: Nitrogen Dioxide										
All Values are in Units of Parts Per Million										
								1-hour	1-hour	Annual
P	O	Rept.						Highest	Highest	Arith.
Site ID	C	Org.	City	County	Address	Method	Obs	Value	Value	Mean
25-001-0002	1	660	TRURO	BARNSTABLE	FOXBOTTOM AREA NATL S	74	3951	0.012	0.01	0.0026 *
25-009-2006	1	660	LYNN	ESSEX	390 PARKLAND AVE.	82	8232	0.055	0.052	0.0107
25-009-4004	1	660	NEWBURY	ESSEX	SUNSET BOULEVARD	74	4174	0.025	0.022	0.0042 *
25-013-0008	1	660	CHICOPEE	HAMPDEN	ANDERSON RD AIR FCE	82	8071	0.06	0.06	0.0125
25-013-0016	1	660	SPRINGFIELD	HAMPDEN	LIBERTY STREET PARK	82	8191	0.093	0.08	0.0202
25-015-4002	1	660	WARE	HAMPSHIRE	QUABBIN SUMMIT	82	8397	0.05	0.05	0.0053
25-021-3003	1	660	MILTON	NORFOLK	MILTON MA,BLUE HILL	82	3451	0.04	0.039	0.0057 *
25-025-0002	1	660	BOSTON	SUFFOLK	KENMORE SQ, 590 COMM	82	6392	0.073	0.07	0.0251 *
25-025-0040	1	345	BOSTON	SUFFOLK	531A EAST FIRST ST	74	8348	0.099	0.094	0.0212
25-025-0041	1	660	BOSTON	SUFFOLK	LONG ISLAND HOSPITAL	74	4191	0.045	0.044	0.0085 *
25-025-0042	1	660	BOSTON	SUFFOLK	HARRISON AVENUE	74	8341	0.073	0.071	0.0225
25-027-0020	1	660	WORCESTER	WORCESTER	CENTRAL STREET FIRE	74	5836	0.074	0.052	0.0156

\*Indicates that the mean does not satisfy summary criteria



# Massachusetts Ozone 1-Hour

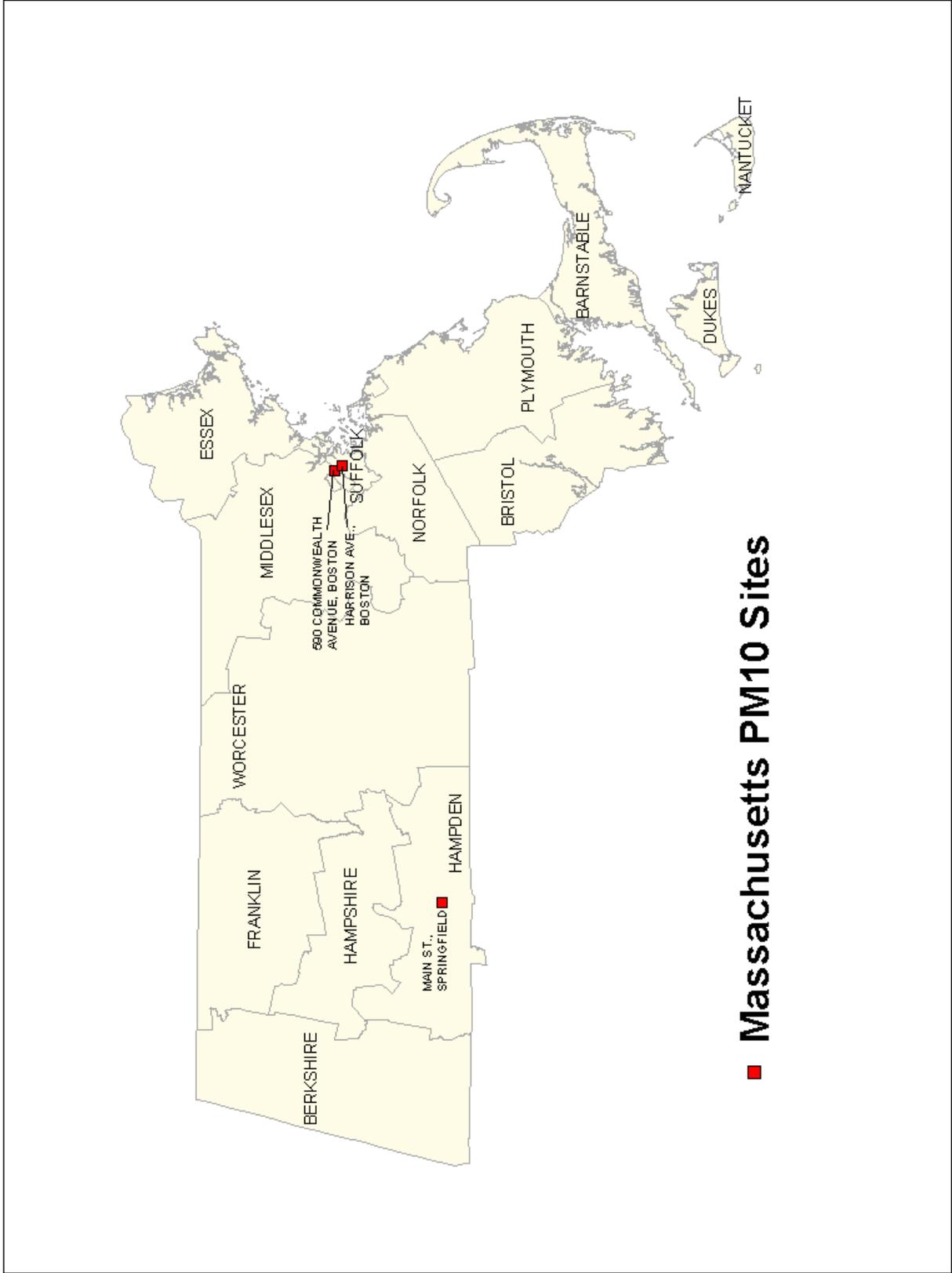


Parameter: Ozone (1-Hour)																
All Values are in Units of Parts Per Million																
	P															
Site ID	O	Rep.				Num	Num	Highest	2nd	3rd	4th	Day Max	Est. Day	Missing		
	C	Org.	City	County	Address	Meas	Req	Value	Highest	Highest	Highest	Value	> 0.125	> 0.125	< 0.125	Method
25-001-0002	1	660	TRURO	BARNSTABLE	FOX BOTTOM AREA NTNL SE	172	183	0.119	0.108	0.107	0.104	0	0	0	1	87
25-003-4002	1	660	ADAMS	BERKSHIRE	MT. GREYLOCK SUMMIT	139	183	0.108	0.106	0.094	0.090	0	0	0	1	87
25-005-1002	1	660	FAIRHAVEN	BRISTOL	LEROY WOOD SCHOOL	180	183	0.127	0.113	0.112	0.108	1	1	1	1	87
25-009-2006	1	660	LYNN	ESSEX	390 PARKLAND AVE.	175	183	0.118	0.108	0.105	0.105	0	0	0	2	87
25-009-4004	1	660	NEWBURY	ESSEX	SUNSET BOULEVARD	181	183	0.117	0.112	0.098	0.093	0	0	0	2	87
25-013-0008	1	660	CHICOPEE	HAMPDEN	ANDERSON ROAD AIR FCE	178	183	0.111	0.109	0.105	0.103	0	0	0	5	87
25-015-0103	1	660	AMHERST	HAMPSHIRE	NORTH PLEASANT ST.	180	183	0.079	0.075	0.074	0.074	0	0	0	3	87
25-015-4002	1	660	WARE	HAMPSHIRE	QUABBIN SUMMIT	182	183	0.097	0.088	0.088	0.085	0	0	0	1	87
25-017-1102	1	660	STOW	MIDDLESEX	US MILITARY RESERVATION	181	183	0.097	0.089	0.088	0.081	0	0	0	2	87
25-021-3003	1	660	MILTON	NORFOLK	MILTON MA.BLUE HILL	176	183	0.126	0.107	0.105	0.102	1	1	1	3	87
25-025-0041	1	660	BOSTON	SUFFOLK	LONG ISLAND HOSPITAL	172	183	0.120	0.115	0.098	0.092	0	0	0	6	87
25-025-0042	1	660	BOSTON	SUFFOLK	HARRISON AVENUE	183	183	0.104	0.091	0.090	0.089	0	0	0	0	87
25-027-0015	1	660	WORCESTER	WORCESTER	WORCESTER AIRPORT	176	183	0.106	0.095	0.092	0.091	0	0	0	2	87

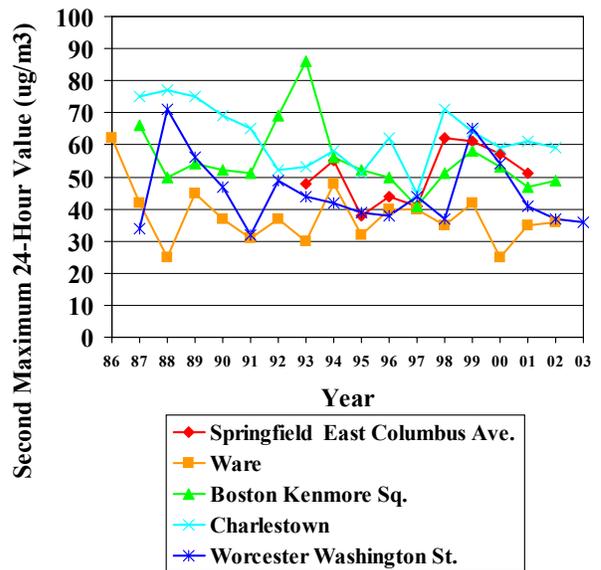
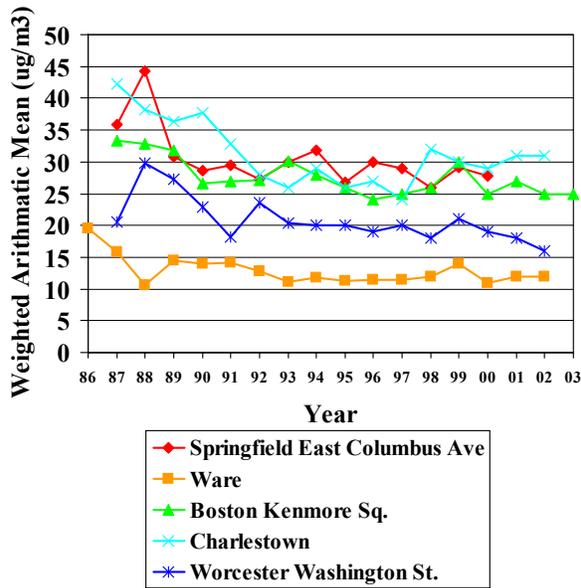
# Massachusetts Ozone 8-Hour

Parameter: Ozone (8-Hour)														
All Values are in Units of Parts Per Million														
	P						Valid	Num		2nd	3rd	4th	Days	
	O Rept.				#	Days	Required	Highest	Highest	Highest	Highest	Max >	Methods	
Site ID	C Org.	City	County	Address	Obs	Meas	Days	8-Hr Value	8-Hr Value	8-Hr Value	8-Hr Value	0.085	Reported	
25-001-0002	1	660 TRURO	BARNSTABLE	FOX BOTTOM AREA	93	171	183	0.11	0.094	0.094	0.089	8	87	
25-003-4002	1	660 ADAMS	BERKSHIRE	MT. GREYLOCK SUMMIT	76	139	183	0.104	0.1	0.083	0.083	2	87	
25-005-1002	1	660 FAIRHAVEN	BRISTOL	LEROY WOOD SCHOOL	98	180	183	0.117	0.101	0.1	0.098	8	87	
25-009-2006	1	660 LYNN	ESSEX	390 PARKLAND AVE.	95	174	183	0.1	0.092	0.088	0.079	3	87	
25-009-4004	1	660 NEWBURY	ESSEX	SUNSET BOULEVARD	97	177	183	0.099	0.092	0.082	0.08	2	87	
25-013-0008	1	660 CHICOPEE	HAMPDEN	ANDERSON ROAD AIR FCE B	97	177	183	0.099	0.093	0.089	0.084	3	87	
25-015-0103	1	660 AMHERST	HAMPSHIRE	NORTH PLEASANT ST.	97	178	183	0.069	0.066	0.061	0.061	0	87	
25-015-4002	1	660 WARE	HAMPSHIRE	QUABBIN SUMMIT	99	181	183	0.084	0.08	0.077	0.075	0	87	
25-017-1102	1	660 STOW	MIDDLESEX	US MILITARY RESERVATION	99	181	183	0.083	0.079	0.077	0.073	0	87	
25-021-3003	1	660 MILTON	NORFOLK	MILTON MA, BLUE HILL	95	174	183	0.109	0.091	0.09	0.089	5	87	
25-025-0041	1	660 BOSTON	SUFFOLK	LONG ISLAND HOSPITAL	92	169	183	0.102	0.083	0.078	0.078	1	87	
25-025-0042	1	660 BOSTON	SUFFOLK	HARRISON AVENUE	98	180	183	0.089	0.076	0.075	0.074	1	87	
25-027-0015	1	660 WORCESTER	WORCESTER	WORCESTER AIRPORT	96	176	183	0.089	0.084	0.08	0.08	1	87	

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# Massachusetts PM10

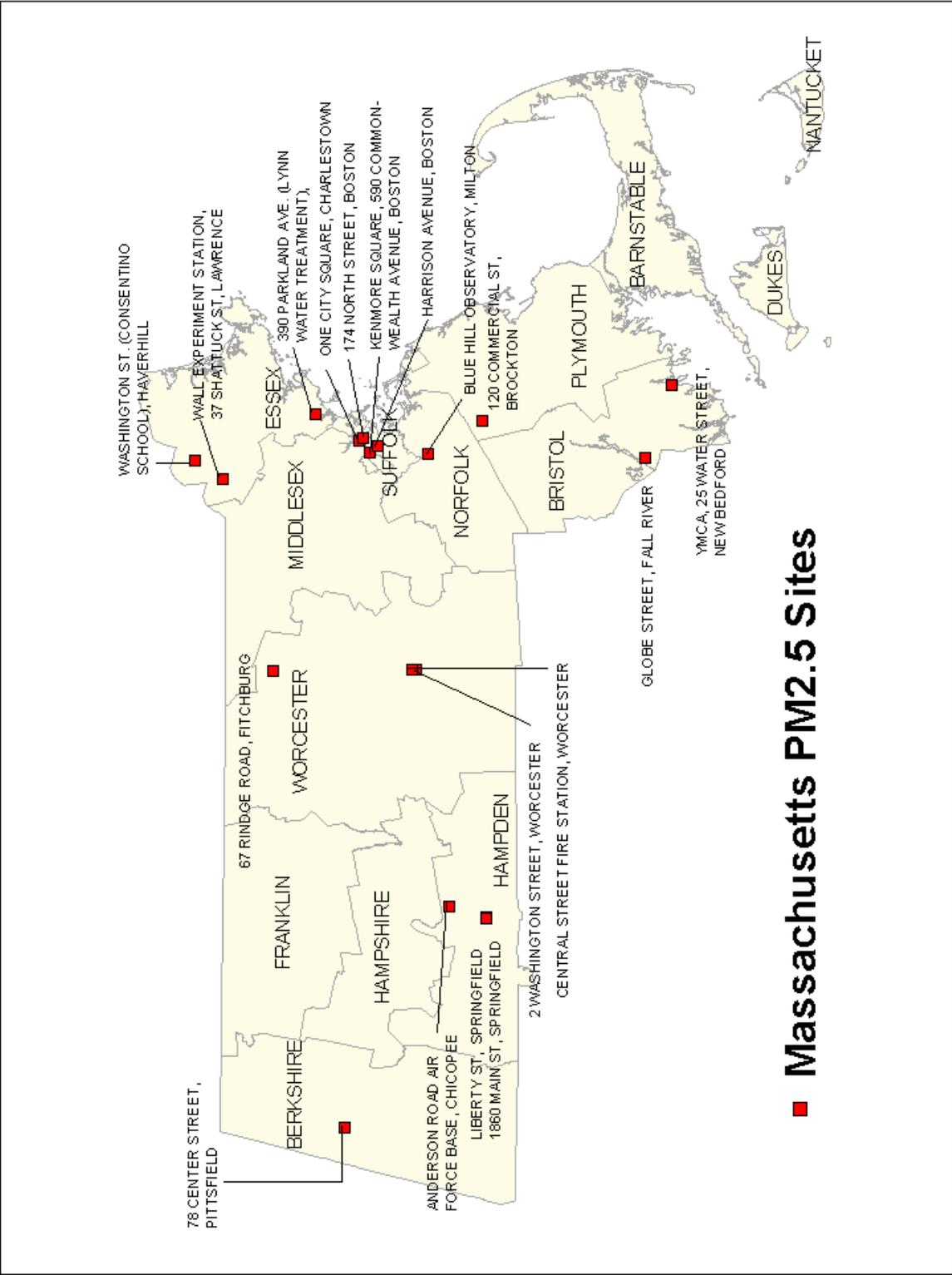


Parameter: PM 10		Standard Conditions															
SITE ID	POC	Rep. Org	City	County	Address	# Obs	# Req.	Days	% Obs	Highest Value	2nd Highest Value	3rd Highest Value	4th Highest Value	Days Max >150	Est. Day Max >150	Arith. Mean	Wtd.
25-013-2009	1	660	SPRINGFIELD	HAMPDEN	1860 MAIN STREET	3	3	3	100	22	21	17	0	0	0	20	*
25-025-0002	1	660	BOSTON	SUFFOLK	KENMORE SQUARE,	30	46	29	63	55	36	34	34	0	0	25	*
25-025-0042	1	660	BOSTON	SUFFOLK	HARRISON AVENUE	13	14	13	93	31	29	29	25	0	0	19	*
25-025-0042	2	660	BOSTON	SUFFOLK	HARRISON AVENUE	11	14	11	79	29	27	24	24	0	0	20	*

\*Indicates that the mean does not satisfy summary criteria

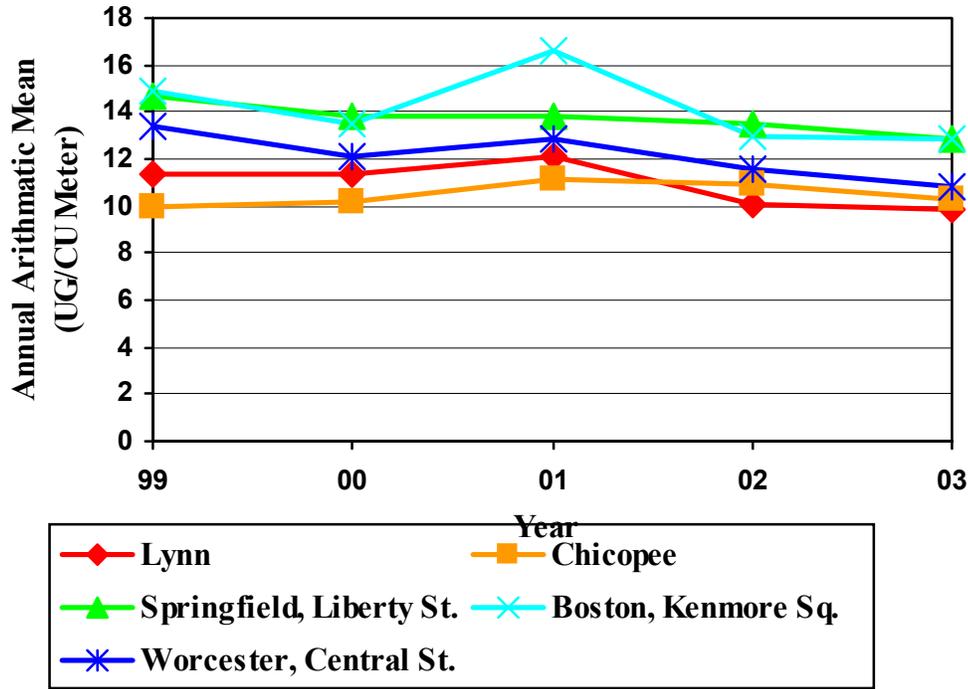
Parameter: PM 10		Local Conditions															
SITE ID	POC	Rep. Org	City	County	Address	# Obs	# Req.	Days	% Obs	Highest Value	2nd Highest Value	3rd Highest Value	4th Highest Value	Days Max >150	Est. Day Max >150	Arith. Mean	Wtd.
25-013-2009	4	660	SPRINGFIELD	HAMPDEN	1860 MAIN STREET	47				58	54	53	48	0	0	21.2	*
25-025-4002	4	660	WARE	HAMPSHIRE	QUABBIN SUMMIT	53				41	26	25	22	0	0	10.9	*
25-025-0002	4	660	BOSTON	SUFFOLK	KENMORE SQUARE, 590	20				49	37	32	30	0	0	19.6	*
25-025-0027	4	660	BOSTON	SUFFOLK	ONE CITY SQUARE, CHA	38				59	46	43	41	0	0	23.9	*
25-025-0027	5	660	BOSTON	SUFFOLK	ONE CITY SQUARE, CHA	20				59	53	45	43	0	0	24.5	*
25-025-0042	4	660	BOSTON	SUFFOLK	HARRISON AVENUE	51				72	65	45	35	0	0	22.7	*
25-025-0020	4	660	WORCESTER	WORCESTER	CENTRAL STREET FIRE S	35				47	35	34	27	0	0	18.0	

\*Indicates that the mean does not satisfy summary criteria



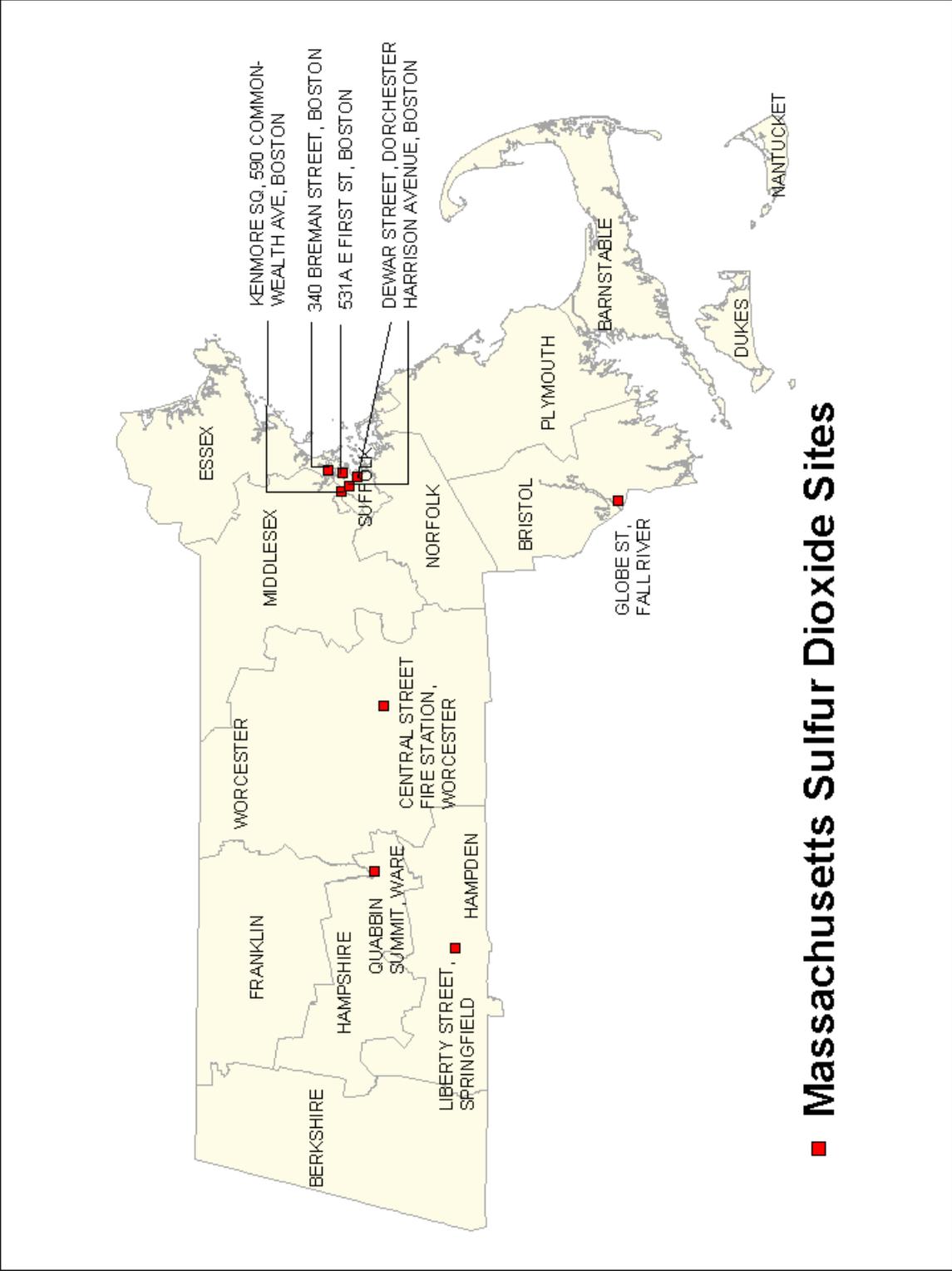
■ Massachusetts PM2.5 Sites

# Massachusetts PM2.5

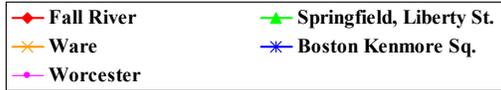
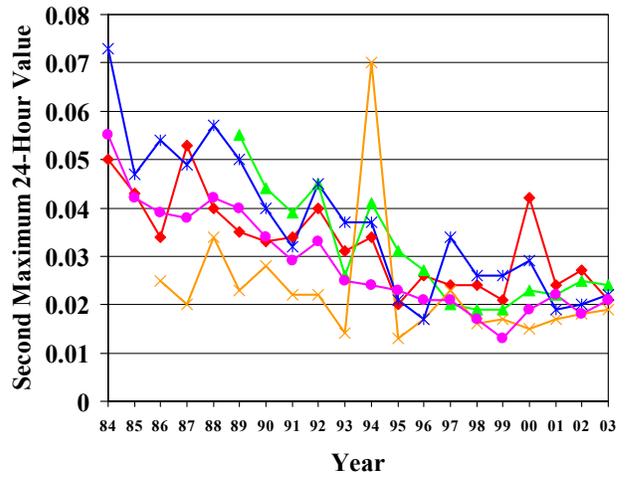
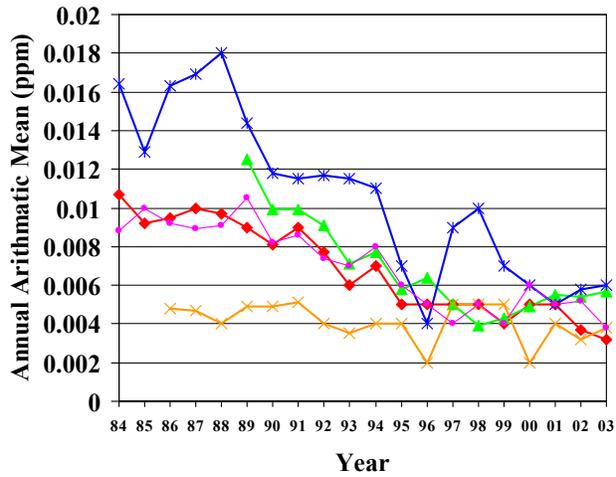


Parameter: PM 2.5													
All Values are in UG/CU Meters Local Conditions													
	P												
	O	Rept.					2nd	3rd	4th	98th	Wtd.		
Site ID	C	Org.	City	County	Address	#	Highest	Highest	Highest	Highest	Percentile	Arith.	
						Obs	Value	Value	Value	Value	Mean	Used	
25-003-5001	1	660	PITTSFIELD	BERKSHIRE	78 CENTER STREET	100	40	37.2	33.4	28.2	37.2	11.1 *	120
25-005-1004	1	660	FALL RIVER	BRISTOL	GLOBE STREET	92	43.6	32.4	27.5	27.3	32.4	10.2 *	120
25-005-1004	3	660	FALL RIVER	BRISTOL	GLOBE STREET	2334	35.2	33.3	29.3	25.6	33.3	9.5 *	731
25-009-2006	1	660	LYNN	ESSEX	390 PARKLAND AVE	85	61.4	47.6	40	39	47.6	9.8 *	120
25-009-5005	1	660	HAVERTHILL	ESSEX	WASHINGTON ST.	94	37.1	34.6	30.2	24.3	34.6	9 *	120
25-009-6001	1	660	LAWRENCE	ESSEX	WALL EXP. STATION	67	49.5	29.2	26.9	25.6	29.2	11.9 *	0
25-013-0008	1	660	CHICOPEE	HAMPDEN	ANDERSON ROAD	272	40.4	39.1	36.1	34.5	32.6	10.3 *	120
25-013-0008	5	1217	CHICOPEE	HAMPDEN	ANDERSON ROAD	28	29.3	23.8	18.6	18.1	23.8	8.5 *	0
25-013-0016	1	660	SPRINGFIELD	HAMPDEN	LIBERTY STREET	297	49.5	47.6	46.3	43	46.3	12.9	120
25-013-0016	2	660	SPRINGFIELD	HAMPDEN	LIBERTY STREET	92	51.1	41.9	39.2	35.4	41.9	12.5 *	120
25-013-0016	3	660	SPRINGFIELD	HAMPDEN	LIBERTY STREET	4471	45	43.5	43.4	38.9	38.9	10.6 *	731
25-013-2009	1	660	SPRINGFIELD	HAMPDEN	1860 MAIN STREET	91	37.7	37.5	35.5	32.6	37.5	11.5 *	120
25-021-3003	3	660	MILTON	NORFOLK	BLUE HILLS	449	18.8	14.8	13.7	11.3	18.8	8 *	731
25-023-0004	1	660	BROCKTON	PLYMOUTH	120 COMMERCIAL ST	111	41.3	36.8	34.5	24.7	34.5	9.8	120
25-023-0004	2	660	BROCKTON	PLYMOUTH	120 COMMERCIAL ST	77	40.8	40.3	30.4	24.7	40.3	10.6 *	120
25-025-0002	1	660	BOSTON	SUFFOLK	KENMORE SQUARE	97	40.9	29.7	29.2	27.5	29.7	12.8 *	120
25-025-0027	1	660	BOSTON	SUFFOLK	ONE CITY SQUARE	285	48	43.2	42.3	34.3	42.3	12.5	120
25-025-0027	2	660	BOSTON	SUFFOLK	ONE CITY SQUARE	75	53.7	41.3	25.7	24.1	41.3	12 *	120
25-025-0042	1	660	BOSTON	SUFFOLK	HARRISON AVENUE	270	50.7	40.9	39.6	36.5	30.6	11.4 *	120
25-025-0042	3	660	BOSTON	SUFFOLK	HARRISON AVENUE	8585	96.8	60.8	53.2	47.4	35.7	14.4	731
25-025-0042	5	1217	BOSTON	SUFFOLK	HARRISON AVENUE	91	42	40.6	31.1	28.7	31.1	11.4 *	820
25-025-0042	6	1217	BOSTON	SUFFOLK	HARRISON AVENUE	97	42.2	41	31	29.5	41	11.7 *	820
25-025-0043	1	660	BOSTON	SUFFOLK	174 NORTH STREET	106	44.8	42.5	35.5	34.1	35.5	13.6 *	120
25-025-0043	3	660	BOSTON	SUFFOLK	174 NORTH STREET	8344	69.5	54.3	50.4	42.2	37.1	14.3	731
25-027-0016	1	660	WORCESTER	WORCESTER	2 WASHINGTON ST	24	25.5	23.1	17.9	17.1	25.5	10 *	120
25-027-0020	1	660	WORCESTER	WORCESTER	CENTRAL STREET	241	49.5	42.4	40.8	37.6	35.5	10.8	120
25-027-0020	2	660	WORCESTER	WORCESTER	CENTRAL STREET	64	43.3	33.2	29.7	25.4	33.2	9 *	120
25-027-0020	3	660	WORCESTER	WORCESTER	CENTRAL STREET	5875	52.2	42.4	40.5	39.7	34.7	11.4 *	731

\*Indicates that the mean does not satisfy summary criteria



# Massachusetts Sulfur Dioxide



Parameter: Sulfur Dioxide																
All Values are in Units of Parts Per Million																
							24-hour	24-hour	3-hour		1-hour					
							hour	hour	Obs	Highest	Highest	Obs	Highest	Highest	Arith.	
							2nd	2nd	> 0.14	Value	Value	> 0.5	Value	Value	Mean	Method
Site ID	O	Org	City	County	Address	#	Obs	Highest	Highest	Obs	Highest	Highest	Arith.	Mean	Method	
C	Type	City	County	Address	Obs	Highest	Highest	Obs	Highest	Highest	Obs	Highest	Highest	Arith.	Method	
25-005-1004	1	660	FALL RIVER	BRISTOL	GLOBE STREET	8360	0.024	0.021	0	0.09	0.051	0	0.13	0.1	0.0032	77
25-013-0016	1	660	SPRINGFIELD	HAMPDEN	LIBERTY STREET	8526	0.027	0.024	0	0.043	0.04	0	0.06	0.052	0.0057	60
25-015-4002	1	660	WARE	HAMPSHIRE	QUABBIN SUMMIT	8521	0.025	0.019	0	0.027	0.026	0	0.028	0.028	0.0038	77
25-025-0002	1	660	BOSTON	SUFFOLK	KENMORE SQUARE	6476	0.023	0.022	0	0.035	0.032	0	0.044	0.042	0.006*	61
25-025-0019	1	345	BOSTON	SUFFOLK	LONG ISLAND	8588	0.019	0.017	0	0.035	0.025	0	0.039	0.035	0.0043	60
25-025-0020	1	345	BOSTON	SUFFOLK	DEWAR STREET	8539	0.021	0.021	0	0.044	0.038	0	0.047	0.046	0.0049	60
25-025-0021	2	345	BOSTON	SUFFOLK	340 BREMAN ST	8721	0.022	0.021	0	0.045	0.036	0	0.05	0.049	0.0051	60
25-025-0040	1	345	BOSTON	SUFFOLK	531A EAST FIRST ST	8584	0.022	0.021	0	0.073	0.045	0	0.182	0.101	0.0059	60
25-025-0042	1	660	BOSTON	SUFFOLK	HARRISON AVEN	8529	0.022	0.021	0	0.047	0.035	0	0.056	0.046	0.006	60
25-027-0020	1	660	WORCESTER	WORCESTER	CENTRAL ST	6254	0.021	0.021	0	0.028	0.028	0	0.038	0.032	0.0038	60

\*Indicates that the mean does not satisfy summary criteria

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## Ambient air Quality Summary - New Hampshire

In 2003, there were no violations of the 8-hour or 1-hour National Ambient Air Quality Standard (NAAQS) for carbon monoxide (CO) at the two CO monitoring site in New Hampshire. This is the seventh 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 2003, Manchester reported the highest second maximum 8-hour average CO concentration (4.0 ppm) which was roughly 40% of the standard. The most recent ten year trend for CO indicates that CO levels show moderate year-to-year fluctuations, but tend to be well below the NAAQS.

During 1996, New Hampshire discontinued ambient air monitoring for lead (Pb). Historically, lead concentrations in ambient air in New Hampshire have declined to the point where virtually no lead is present. In 2003 nitrogen dioxide (NO<sub>2</sub>) was conducted at four monitoring sites. The Portsmouth and Manchester monitoring sites recorded the highest NO<sub>2</sub> concentrations in New Hampshire (well below the standard). The ten-year trend in NO<sub>2</sub> indicates that there has been no upward or downward trend in concentration.

None of the eighteenth ozone monitors in New Hampshire violated the 1-hour NAAQS in 2003. Rye reported the highest 1-hour daily maximum ozone concentration (105 ppb). In 2002 five sites reported concentrations above 124 ppb, in 2001 there were three sites above 124 ppb, and there were no reported exceedances of the 1-hour ozone NAAQS in 2000. For the 8-hour ozone standard, none of the eighteen O<sub>3</sub> sites reported a fourth highest 8-hr average ozone concentration of at least 85 ppb in 2003. The maximum 8-hour average in 2003 was in Claremont, which recorded an 8-hour concentration of 84 ppb.

None of the four particulate matter (PM<sub>10</sub> – particulate matter with a mass mean diameter of less than 10 microns) sites in New Hampshire had exceeded or violated the annual or 24-hr NAAQS for PM<sub>10</sub> over the past seven years (1997-2003). The highest 24-hour concentration in 2003 was recorded in Manchester, with a highest second maximum of 48 ug/m<sup>3</sup> (roughly 32% of the NAAQS). The highest maximum annual average PM<sub>10</sub> was also recorded in Manchester (20 ug/m<sup>3</sup> or ~40% of the NAAQS). Over the past ten years, all of the PM<sub>10</sub> monitors in New Hampshire recorded PM<sub>10</sub> concentrations below the national standards. Yearly variability is common, however, due to differences in weather and local PM<sub>10</sub> emissions.

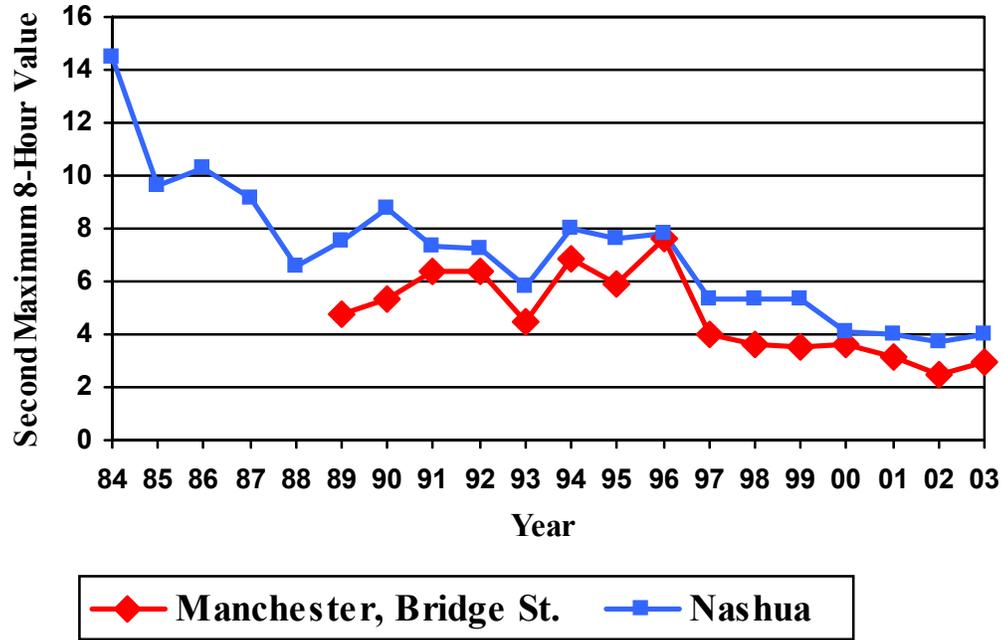
In 1999, New Hampshire established a network of fine particulate monitors (PM<sub>2.5</sub>). By 2003, eleven monitoring sites provided data on the concentration of PM<sub>2.5</sub> in the state. Over the past several years the highest concentrations of PM<sub>2.5</sub> have been in the Portsmouth, Nashua, Manchester and Keene urban areas. The lowest PM<sub>2.5</sub> levels were recorded in Laconia and Peterborough.

During 2003, no exceedance or violation of the sulfur dioxide NAAQS for any of the sites in New Hampshire occurred. The highest annual SO<sub>2</sub> concentrations were recorded in Pembroke (5.3 ppb or ~17% of the NAAQS). Pembroke reported the highest 24-hour second maximum SO<sub>2</sub> concentration of 44 ppb (~42% of the NAAQS), and reported the highest 3-hour SO<sub>2</sub> second maximum concentration (115 ppb). Statewide, the ten-year data trend for SO<sub>2</sub> shows no obvious upward or downward trend in SO<sub>2</sub> concentration.



■ **New Hampshire Carbon Monoxide Sites**

# New Hampshire Carbon Monoxide

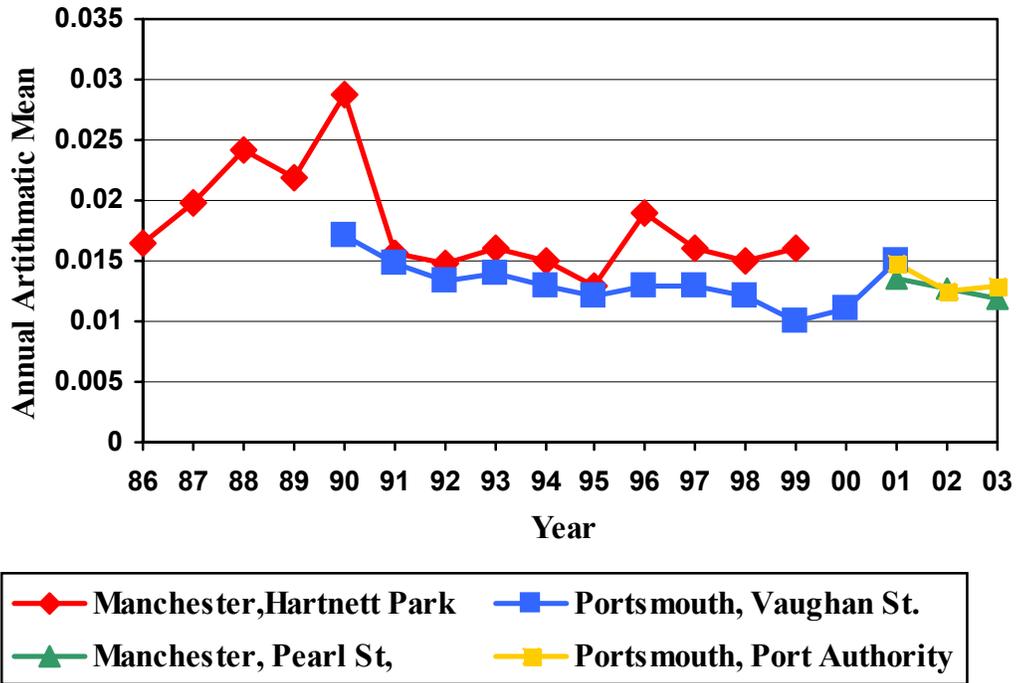


Carbon Monoxide													
All Values are in Units of Parts Per Million													
	P					1-hour	1-hour		8-hour	8-hour			
	O	Org			#	Highest	Highest		Highest	Highest		#	
Site ID	C	Type	City	County	Address	Obs	Value	Value	# > 35	Value	Value	# > 9	Methods
33-011-0020	1	762	MANCHESTER	HILLSBOROUGH	PEARL ST	8631	8.1	7.5	0	5.4	3	0	11
33-011-1009	1	762	NASHUA	HILLSBOROUGH	25 MAIN STREET, MAT	8421	7.3	6.2	0	4	4	0	11

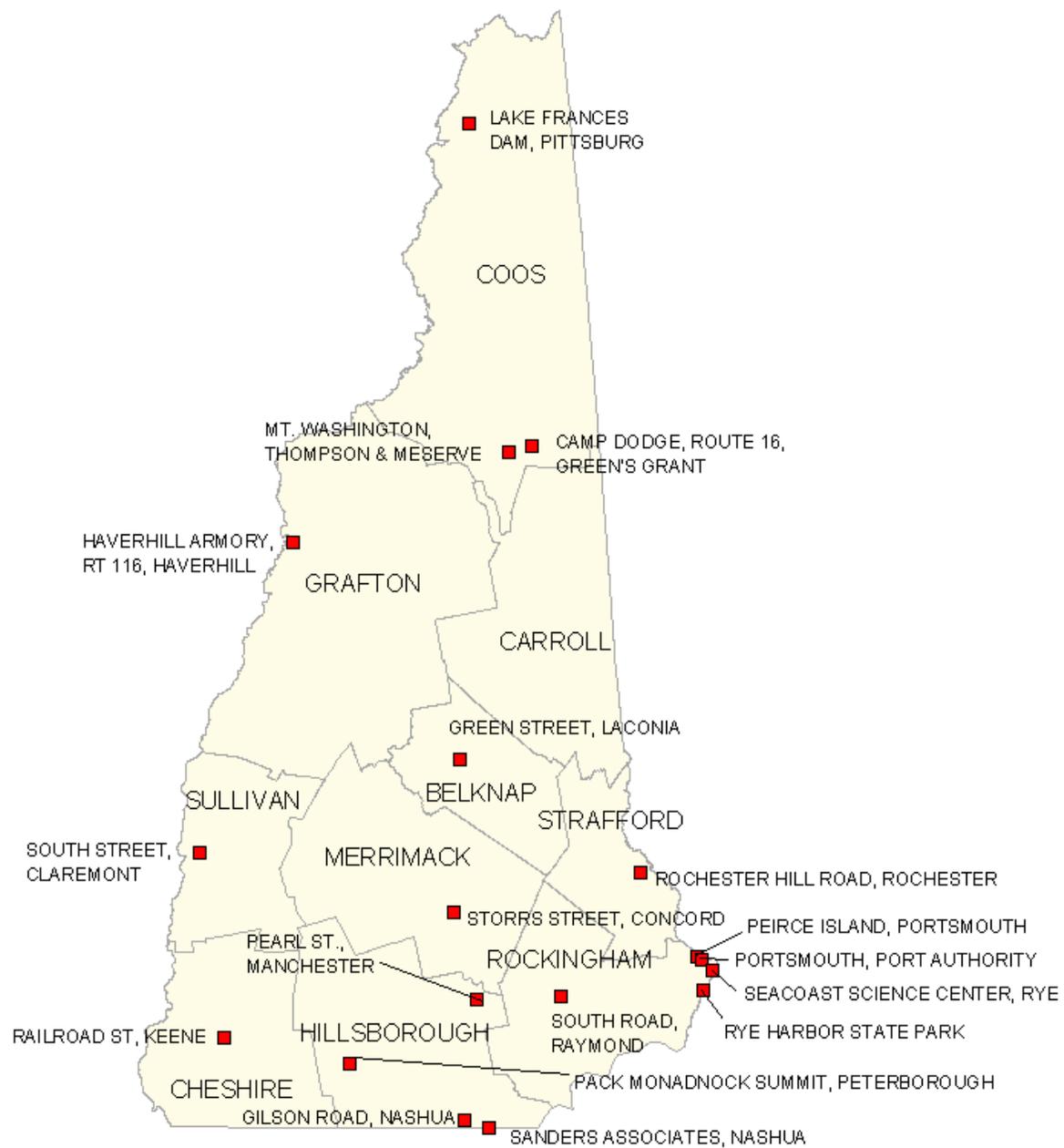


■ **New Hampshire Nitrogen Dioxide Sites**

# New Hampshire Nitrogen Dioxide

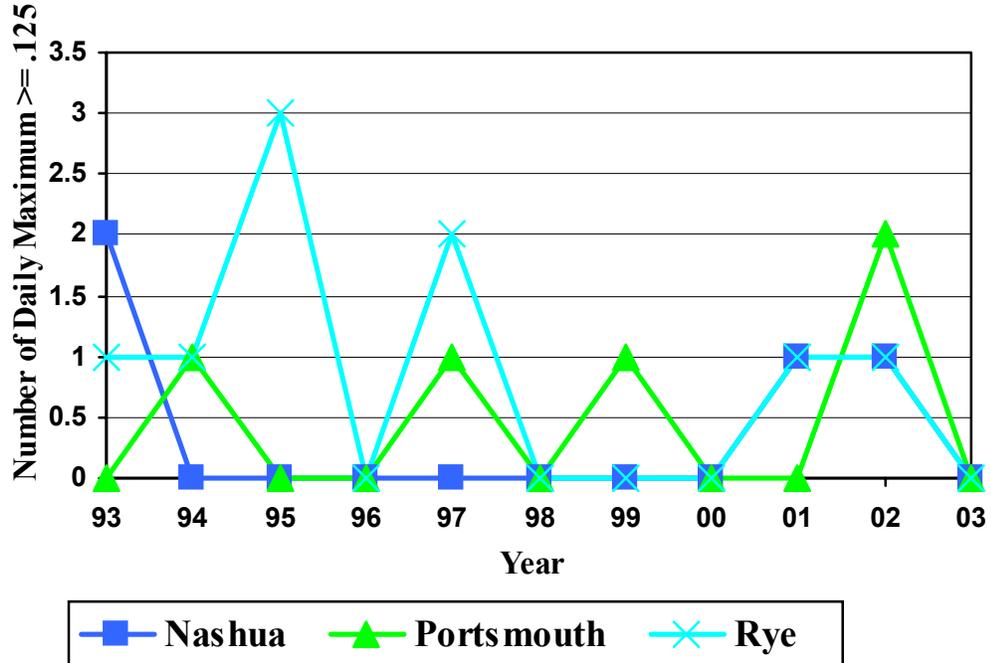


Parameter: Nitrogen Dioxide											
All Values are in Units of Parts Per Million											
Site ID	P O	Rept. C	Org.	City	County	Address	Method	Obs	1-hour	1-hour	Annual
									Highest	2nd Highest	
33-011-0020	1	762	MANCHESTER	HILLSBOROUGH	PEARL ST		14	7912	0.058	0.049	0.0119
33-015-0013	1	762	NOT IN A CITY	ROCKINGHAM	SOUTH ROAD BRENTWOOD		14	2642	0.044	0.043	0.008
33-015-0014	1	762	PORTSMOUTH	ROCKINGHAM	PORTSMOUTH, PEIRCE		0	4886	0.092	0.084	0.0085
33-015-0015	1	762	PORTSMOUTH	ROCKINGHAM	PORTSMOUTH, PORT AU		14	3483	0.082	0.074	0.013



■ **New Hampshire  
Ozone Sites**

# New Hampshire Ozone 1-Hour



Parameter: Ozone (1-Hour)															
All Values are in Units of Parts Per Million															
Site ID	P	O Rep.	City	County	Address	Num Meas	Num Req	Highest Value	2nd Highest Value	3rd Highest Value	4th Highest Value	Day Max $\geq 0.125$	Est. Day $\geq 0.125$	Missing Days $< 0.125$	Method used
33-001-2004	1	762	LACONIA	BELKNAP	GREEN STREET, LACON	179	183	0.090	0.089	0.088	0.088	0	0	4	11
33-005-0007	1	762	KEENE	CHESHIRE	RAILROAD STREET	183	183	0.091	0.089	0.085	0.079	0	0	0	11
33-007-4001	1	043	NOT IN A CITY	COOS	MT. WASHINGTON	152	183	0.093	0.090	0.085	0.084	0	0	5	11
33-007-4002	1	043	NOT IN A CITY	COOS	CAMP DODGE, ROUTE 1	170	183	0.084	0.081	0.075	0.074	0	0	7	11
33-007-4003	1	043	NOT IN A CITY	COOS	LAKE FRANCES DAM	176	183	0.073	0.070	0.070	0.065	0	0	3	11
33-009-0008	1	762	HVERHILL	GRAFTON	HVERHILL ARMORY, R	181	183	0.093	0.088	0.084	0.084	0	0	2	11
33-011-0020	1	762	MANCHESTER	HILLSBOROUGH	PEARL ST	175	183	0.094	0.089	0.088	0.084	0	0	4	11
33-011-1010	1	762	NASHUA	HILLSBOROUGH	SANDERS ASSOCIATES,	182	183	0.101	0.099	0.094	0.092	0	0	1	11
33-011-1011	1	762	NASHUA	HILLSBOROUGH	GILSON ROAD	57	114	0.080	0.075	0.073	0.067	0	0	2	134
33-011-5001	1	762	PETERBOROUGH	HILLSBOROUGH	PACK MONADNOCK SUMM	183	183	0.089	0.089	0.088	0.085	0	0	0	134
33-013-0007	1	762	CONCORD	MERRIMACK	STORRS STREET	183	183	0.089	0.084	0.078	0.074	0	0	0	11
33-015-0012	1	762	RYE	ROCKINGHAM	RYE HARBOR STATE PA	179	183	0.103	0.096	0.093	0.089	0	0	2	11
33-015-0013	1	762	NOT IN A CITY	ROCKINGHAM	SOUTH ROAD BRENTWOO	29	32	0.088	0.078	0.073	0.073	0	0	1	11
33-015-0014	1	762	PORTSMOUTH	ROCKINGHAM	PORTSMOUTH, PEIRCE	94	122	0.097	0.093	0.093	0.085	0	0	1	0
33-015-0015	1	762	PORTSMOUTH	ROCKINGHAM	PORTSMOUTH, PORT AU	60	63	0.082	0.074	0.069	0.067	0	0	1	11
33-015-0016	1	762	RYE	ROCKINGHAM	SEACOAST SCIENCE CE	138	153	0.105	0.095	0.090	0.079	0	0	3	134
33-017-3002	1	762	ROCHESTER	STRAFFORD	ROCHESTER HILL ROAD	183	183	0.101	0.097	0.085	0.084	0	0	0	11
33-019-0003	1	762	CLAREMONT	SULLIVAN	SOUTH STREET	178	183	0.091	0.083	0.082	0.078	0	0	2	11

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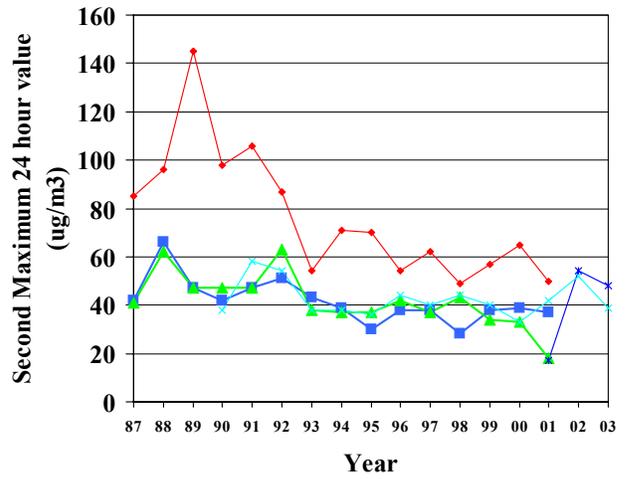
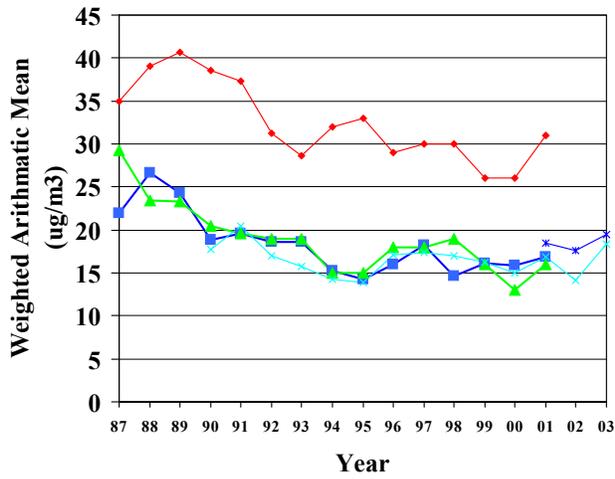
# New Hampshire Ozone 8-Hour

Parameter: Ozone (8-Hour)													
All Values are in Units of Parts Per Million													
	P					Valid	Num		2nd	3rd	4th	Days	
	O Rept.				#	Days	Required	Highest	Highest	Highest	Highest	Max >	Methods
Site ID	C Org.	City	County	Address	Obs	Meas	Days	8-Hr Value	8-Hr Value	8-Hr Value	8-Hr Value	0.085	Reporte
33-001-2004	1	762 LACONIA	BELKNAP	GREEN STREET, LACON	97	178	183	0.084	0.083	0.078	0.076	0	11
33-005-0007	1	762 KEENE	CHESHIRE	RAILROAD STREET	100	183	183	0.081	0.077	0.072	0.071	0	11
33-007-4001	1	43 NOT IN A CITY	COOS	MT. WASHINGTON	77	141	183	0.079	0.076	0.075	0.074	0	11
33-007-4002	1	43 NOT IN A CITY	COOS	CAMP DODGE, ROUTE 1	87	159	183	0.078	0.073	0.071	0.066	0	11
33-007-4003	1	43 NOT IN A CITY	COOS	LAKE FRANCES DAM	96	175	183	0.068	0.061	0.06	0.058	0	11
33-009-0008	1	762 HAVERHILL	GRAFTON	HAVERHILL ARMORY, R	94	172	183	0.082	0.078	0.077	0.072	0	11
33-011-0020	1	762 MANCHESTER	HILLSBOROUGH	PEARL ST	94	172	183	0.079	0.079	0.074	0.07	0	11
33-011-1010	1	762 NASHUA	HILLSBOROUGH	SANDERS ASSOCIATES,	99	181	183	0.085	0.082	0.079	0.078	1	11
33-011-1011	1	762 NASHUA	HILLSBOROUGH	GILSON ROAD	49	56	114	0.07	0.069	0.069	0.058	0	134
33-011-5001	1	762 PETERBOROUGH	HILLSBOROUGH	PACK MONADNOCK SUMM	100	183	183	0.083	0.079	0.078	0.076	0	134
33-013-0007	1	762 CONCORD	MERRIMACK	STORRS STREET	100	183	183	0.076	0.076	0.07	0.068	0	11
33-015-0012	1	762 RYE	ROCKINGHAM	RYE HARBOR STATE PA	98	179	183	0.078	0.077	0.073	0.071	0	11
33-015-0013	1	762 NOT IN A CITY	ROCKINGHAM	SOUTH ROAD BRENTWOO	91	29	32	0.08	0.067	0.067	0.062	0	11
33-015-0014	1	762 PORTSMOUTH	ROCKINGHAM	PORTSMOUTH, PEIRCE	77	94	122	0.081	0.081	0.075	0.073	0	0
33-015-0015	1	762 PORTSMOUTH	ROCKINGHAM	PORTSMOUTH, PORT AU	95	60	63	0.075	0.06	0.058	0.055	0	11
33-015-0016	1	762 RYE	ROCKINGHAM	SEACOAST SCIENCE CE	90	137	153	0.081	0.075	0.072	0.069	0	134
33-017-3002	1	762 ROCHESTER	STRAFFORD	ROCHESTER HILL ROAD	100	183	183	0.079	0.079	0.077	0.072	0	11
33-019-0003	1	762 CLAREMONT	SULLIVAN	SOUTH STREET	97	177	183	0.084	0.078	0.075	0.073	0	11



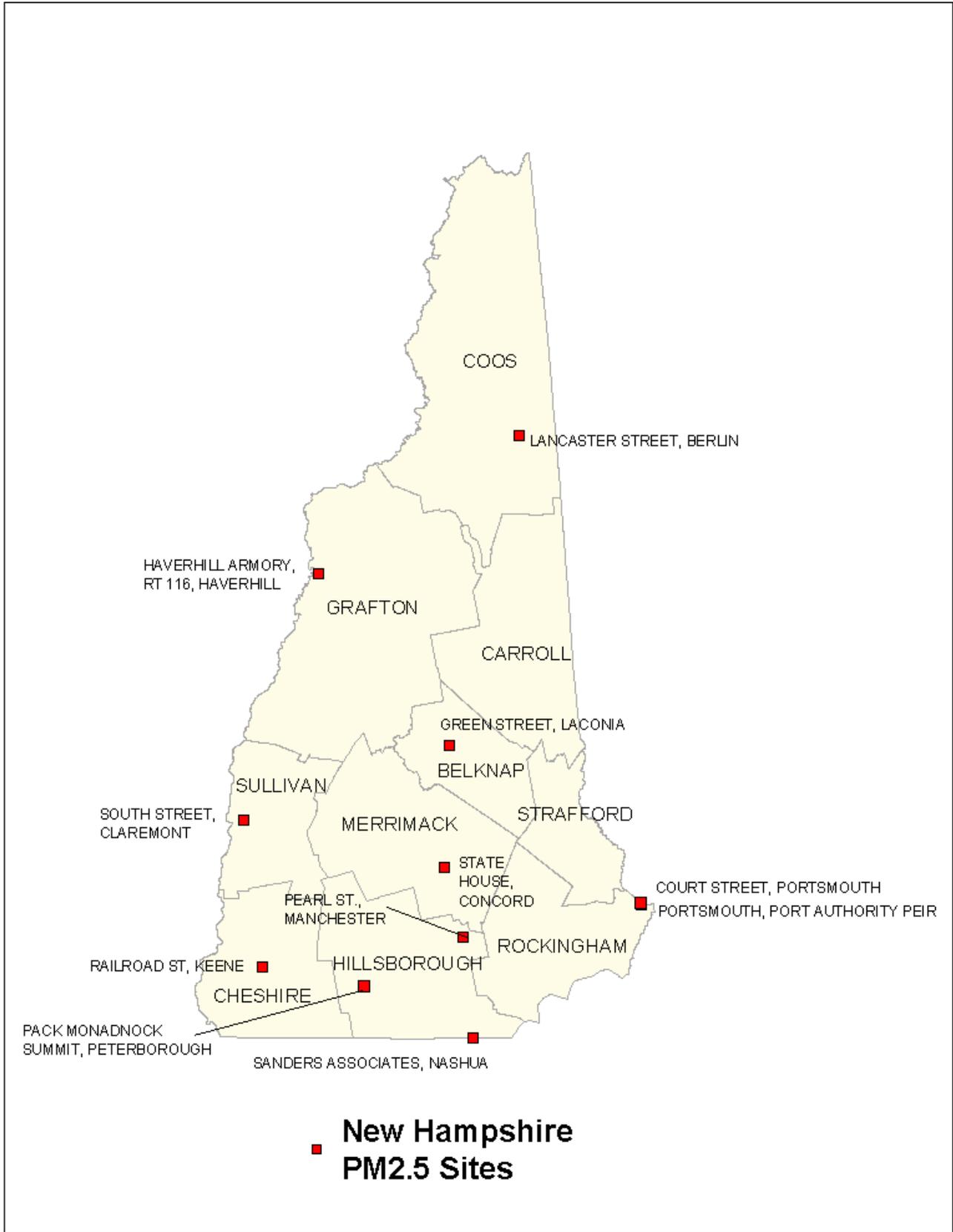
 **New Hampshire  
PM10 Sites**

# New Hampshire PM10

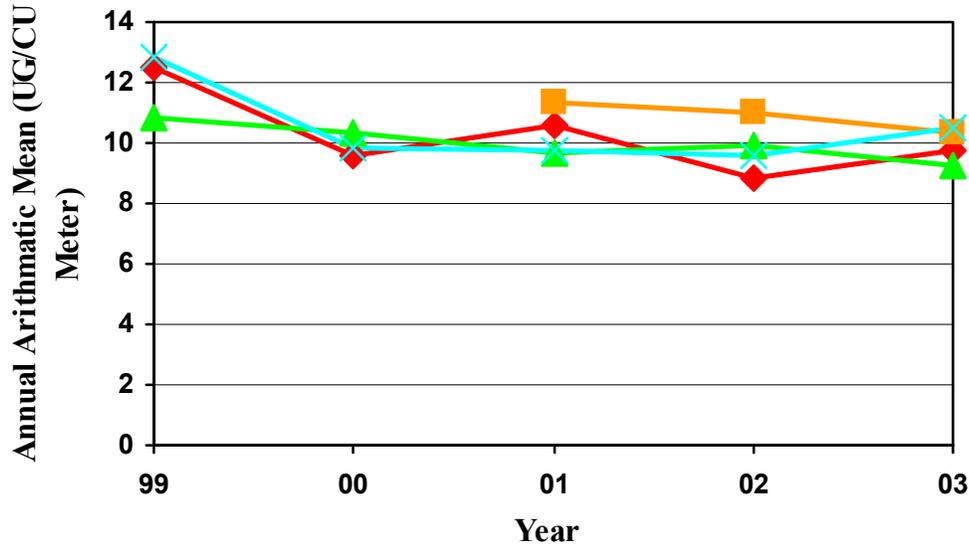


Parameter: PM 10																		
SITE ID	POC	Rep. Org	City	County	Address	# Obs	# Req.	Days	% Obs	Valid	Highest Value	2nd Highest Value	3rd Highest Value	4th Highest Value	Days Max >150	Est. Day Max >150	Wtd. Arith. Mean	Methods Used
33-011-0020	1	762	MANCHESTER	HILLSBOROUGH	PEARL ST	59	61	59	97	52	48	46	42	0	0	20	64	
33-011-0020	2	762	MANCHESTER	HILLSBOROUGH	PEARL ST	60	61	60	98	50	44	36	36	0	0	18	64	
33-011-1010	1	762	NASHUA	HILLSBOROUGH	SANDERS ASSOCIAT	60	61	60	98	50	39	32	32	0	0	18	64	
33-015-0006	1	762	PORTSMOUTH	ROCKINGHAM	COURT STREET	10	13	10	77	34	20	18	16	0	0	13	*	64
33-015-0014	1	762	PORTSMOUTH	ROCKINGHAM	PORTSMOUTH, PEIR	44	46	44	96	50	49	43	42	0	0	20	*	64

\*Indicates that the mean does not satisfy summary criteria

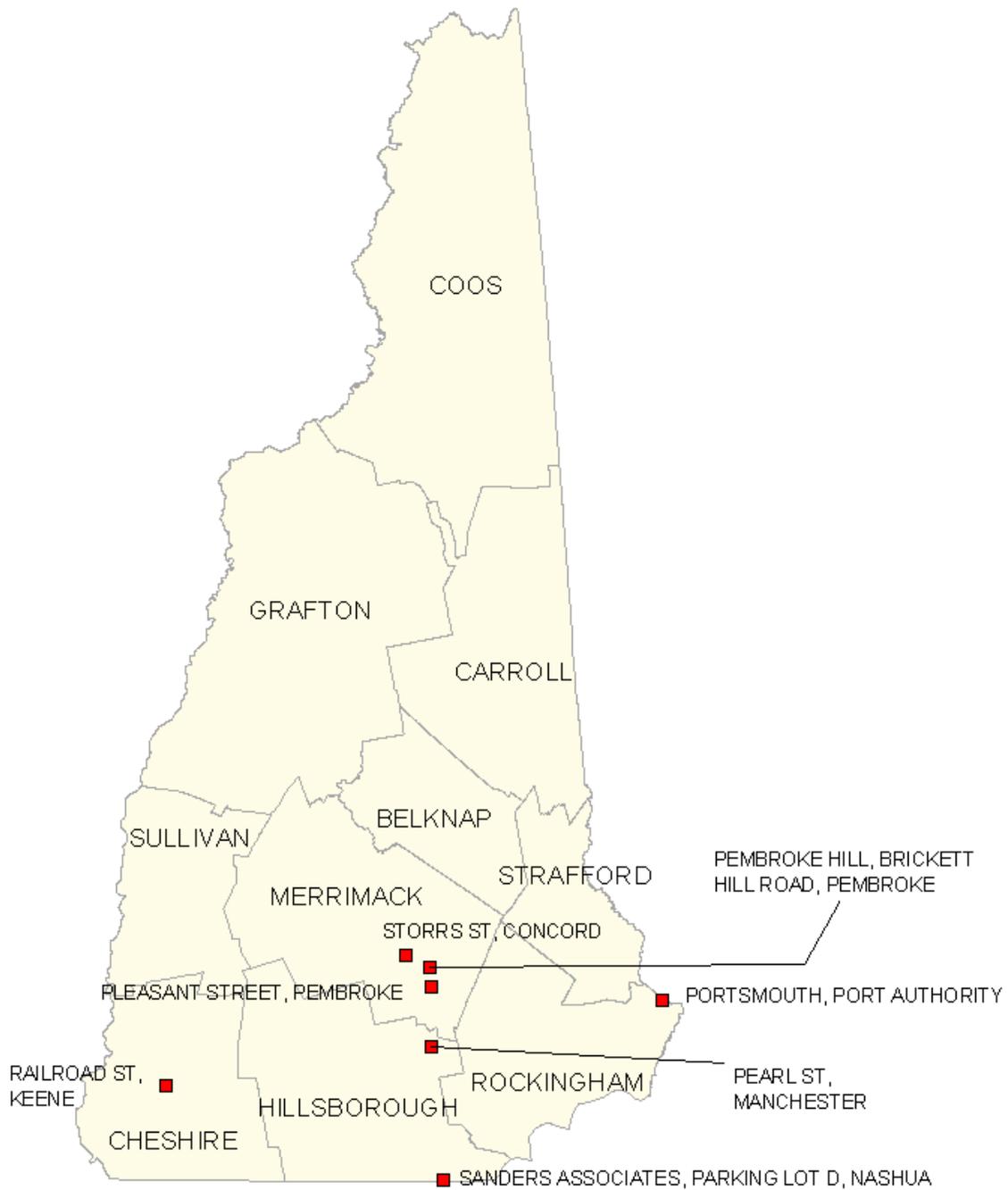


# New Hampshire PM2.5



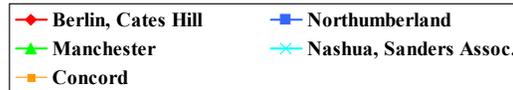
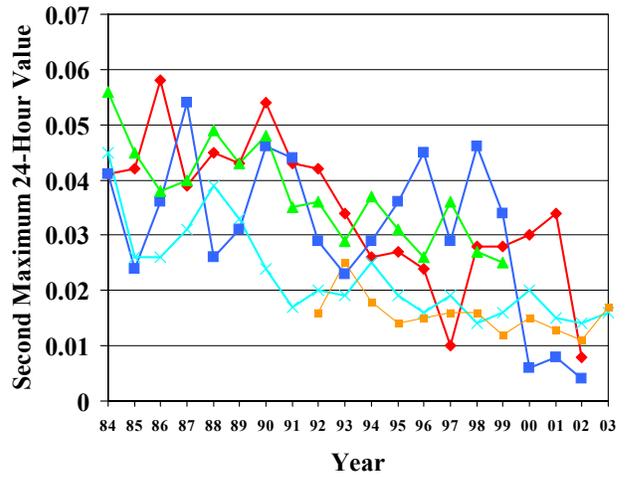
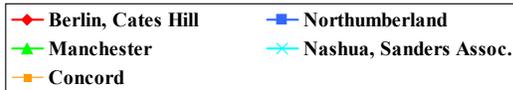
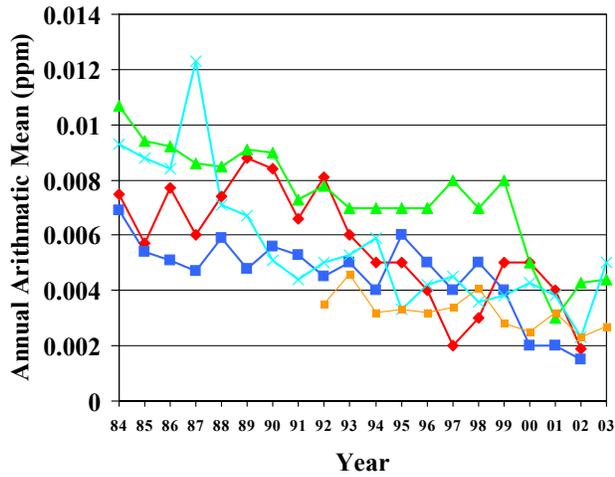
Parameter: PM 2.5													
All Values are in UG/CU Meters Local Conditions													
	P						2nd	3rd	4th	98th	Wtd.		
	O	Rept.			#	Highest	Highest	Highest	Highest	Percentile	Arith.	Metho	
Site ID	C	Org.	City	County	Address	Obs	Value	Value	Value	Value	Mean	Used	
33-001-2004	1	762	LACONIA	BELKNAP	GREEN STREET, LA	60	30	18.9	16.6	16.3	18.9	7.3	119
33-001-2004	2	762	LACONIA	BELKNAP	GREEN STREET, LA	53	30.2	18.8	16.5	16	18.8	7.2 *	0
33-005-0007	1	762	KEENE	CHESHIRE	RAILROAD STREET	61	35.1	33.6	29.7	26.3	33.6	12	0
33-007-0014	1	762	BERLIN	COOS	LANCASTER STREET	121	28.4	27.1	26	25.7	26	9.8	120
33-007-0014	2	762	BERLIN	COOS	LANCASTER STREET	14	14.8	12.3	11.8	11.7	14.8	8.7 *	120
33-009-0008	1	762	HAVERHILL	GRAFTON	HAVERHILL ARMORY	59	24.6	19.1	18.8	16.1	19.1	7.7	120
33-009-0008	3	762	HAVERHILL	GRAFTON	HAVERHILL ARMORY	8312	28	27.3	27.1	26	23.5	7.3	703
33-011-0020	1	762	MANCHESTER	HILLSBOROUGH	PEARL ST	114	40	37.6	29.3	26	29.3	10.3	120
33-011-0020	2	762	MANCHESTER	HILLSBOROUGH	PEARL ST	57	38.6	30.8	23.6	23	30.8	10.9	120
33-011-0020	3	762	MANCHESTER	HILLSBOROUGH	PEARL ST	8472	39.4	37.9	35.8	31.5	22.8	8	703
33-011-0020	5	1217	MANCHESTER	HILLSBOROUGH	PEARL ST	60	37.1	29.4	23.2	22.3	29.4	10.8	820
33-011-1010	1	762	NASHUA	HILLSBOROUGH	SANDERS ASSOCIAT	118	37.4	37.1	35.4	27	35.4	9.7	0
33-011-5001	1	762	PETERBOROUGH	HILLSBOROUGH	PACK MONADNOCK S	61	31.1	23	18.4	17.3	23	6.5	119
33-011-5001	3	762	PETERBOROUGH	HILLSBOROUGH	PACK MONADNOCK S	7783	27	24.2	19.8	18.7	15	4.3 *	703
33-013-0003	1	762	CONCORD	MERRIMACK	NO. STATE HOUSE	119	38.1	32.4	29.1	25.6	29.1	9.2	120
33-015-0006	1	762	PORTSMOUTH	ROCKINGHAM	COURT STREET	10	23.8	19.3	15.3	13	23.8	10.8 *	120
33-015-0014	1	762	PORTSMOUTH	ROCKINGHAM	PORTSMOUTH, PEIR	118	38.5	35.5	31.4	28.5	31.4	9.6	0
33-015-0014	5	1217	PORTSMOUTH	ROCKINGHAM	PORTSMOUTH, PEIR	116	39.5	27.8	24.2	22.8	22.8	8.8	820
33-019-0003	1	762	CLAREMONT	SULLIVAN	SOUTH STREET	59	29	27	22.5	22	27	10.5	0

\*Indicates that the mean does not satisfy summary criteria



■ **New Hampshire  
Sulfur Dioxide Sites**

# New Hampshire Sulfur Dioxide



Parameter: Sulfur Dioxide																
All Values are in Units of Parts Per Million																
						24-hour	24-hour	3-hour		3-hour	1-hour		1-hour			
P						hour	hour	hour	hour	2nd	hour	hour	2nd			
O Org						#	2nd	Obs	Highest	Highest	Obs	Highest	Highest	Arith.	Method	
Site ID	C	Type	City	County	Address	Obs	Highest	Highest	> 0.14	Value	Value	> 0.5	Value	Value	Mean	Used
33-005-0007	1	762	KEENE	CHESHIRE	RAILROAD STRE	8652	0.027	0.024	0	0.048	0.045	0	0.06	0.049	0.004	23
33-011-0020	1	762	MANCHESTER	HILLSBOROUGH	PEARL ST	8488	0.023	0.021	0	0.036	0.034	0	0.067	0.064	0.0044	23
33-011-1010	1	762	NASHUA	HILLSBOROUGH	SANDERS ASSOC	2117	0.022	0.016	0	0.039	0.038	0	0.043	0.043	0.005 *	23
33-013-0007	1	762	CONCORD	MERRIMACK	STORRS STREET	8423	0.021	0.017	0	0.075	0.069	0	0.128	0.096	0.0027	23
33-013-1003	1	762	PEMBROKE	MERRIMACK	PEMBROKE HILL	8038	0.026	0.026	0	0.089	0.078	0	0.135	0.126	0.0033	23
33-013-1006	1	762	PEMBROKE	MERRIMACK	PLEASANT STRE	8244	0.048	0.044	0	0.115	0.107	0	0.231	0.137	0.0053	23
33-015-0014	1	762	PORTSMOUTH	ROCKINGHAM	PORTSMOUTH, P	5014	0.011	0.01	0	0.03	0.026	0	0.056	0.043	0.0027	23
33-015-0015	1	762	PORTSMOUTH	ROCKINGHAM	PORTSMOUTH, P	3574	0.03	0.026	0	0.063	0.06	0	0.113	0.086	0.006	23

\*Indicates that the mean does not satisfy summary criteria

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## 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 2003. The Dorrance Street site in Providence reported the highest 8-hour second maximum CO level (2.3 ppm) which was slightly lower than the previous year at 2.7 ppm. Over the past six years the highest 8-hour second maximum concentration of CO at this site was in 1997 at 5.6 ppm. Lower concentrations of CO were recorded at the East Providence site. The 20 year trend of CO concentrations shows a slight downward trend.

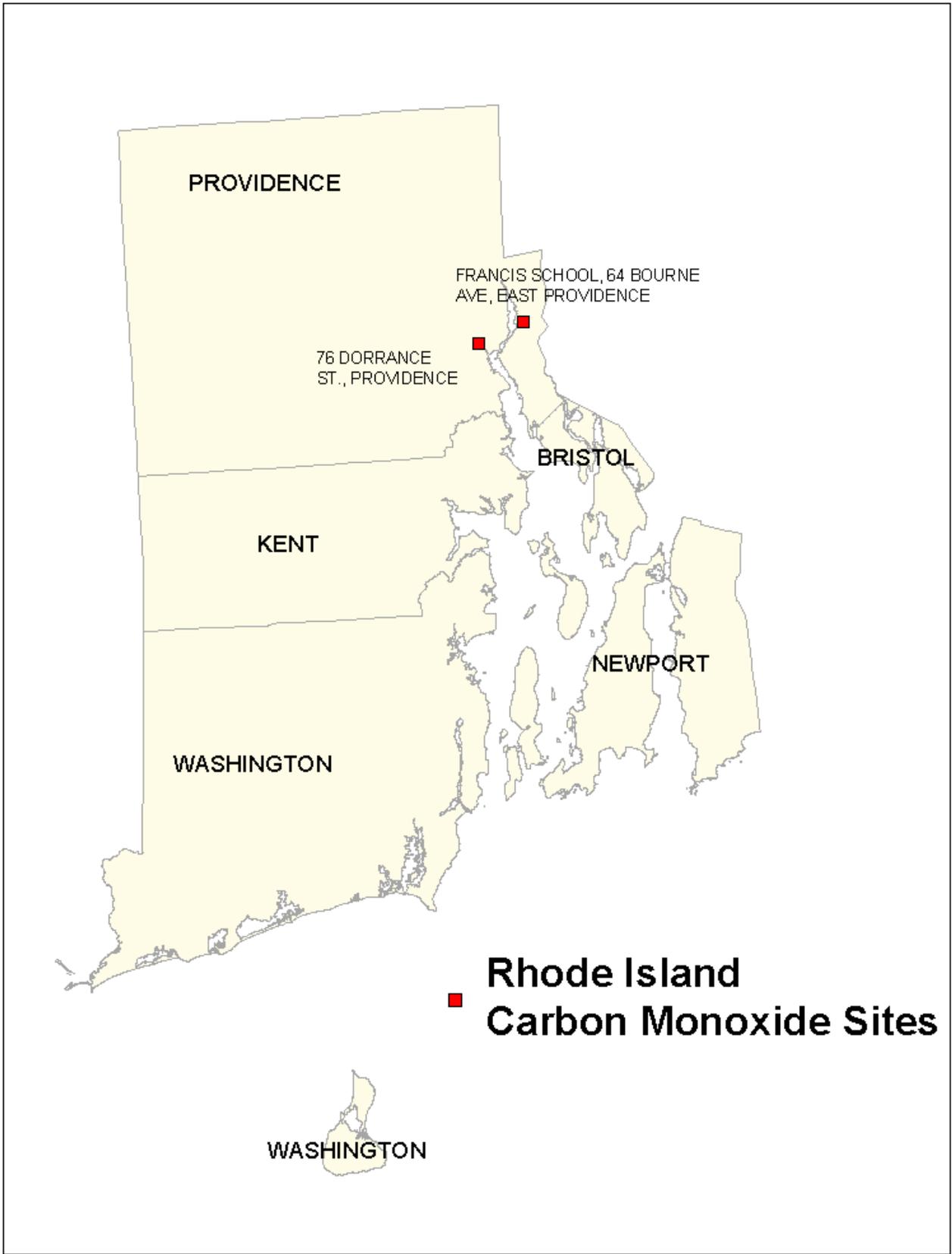
Rhode Island discontinued its ambient air monitoring of lead several years ago because of the extremely low levels of lead that had been recorded in the state.

Rhode Island operated three nitrogen dioxide (NO<sub>2</sub>) monitoring sites during 2003. NO<sub>2</sub> monitors were located at two Photochemical Assessment Monitoring Stations (PAMS) sites and at the Rockefeller Library in Providence. This latter site recorded the highest annual arithmetic mean concentration of NO<sub>2</sub> (19 ppb). The trend lines for NO<sub>2</sub> concentrations, over the past 20 years, have remained almost flat.

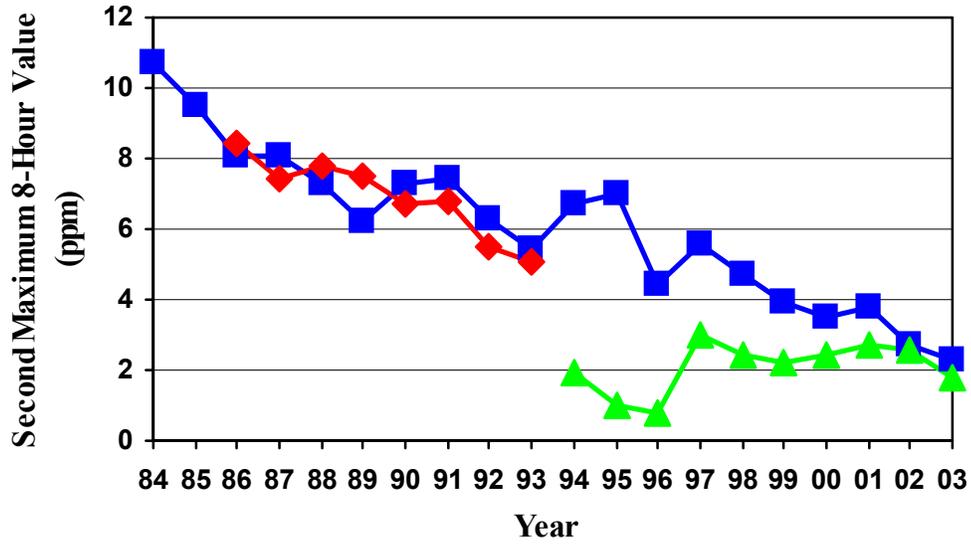
One of the three ozone monitoring sites in Rhode Island reported exceedances of the 1-hour ozone (O<sub>3</sub>) NAAQS during 2003. There were more exceedances of the 1-hr standard in 2001 at the two sites than many of the previous six years.. Two of the three ozone sites reported a fourth highest 8-hr average ozone concentration of at least 85 ppb. The Narragansett site recorded the highest 1-hour ozone concentration of 129 ppb and the highest 8-hour average concentration (113 ppb ozone) during 2003.

None of the four particulate matter (PM<sub>10</sub>) sites in Rhode Island had any exceedances or violations of the annual or 24-hour standards over the past five years. The Vernon Street site in Pawtucket reported both the highest 24-hour second maximum value (57 ug/m<sup>3</sup>) and the highest annual arithmetic mean (25 ug/m<sup>3</sup>) during 2003. The long range graphs for PM<sub>10</sub> show no discernable upward or downward trends. In 2003, Rhode Island operated a network of four fine particulate matter (PM<sub>2.5</sub>) sites. During 2003, the annual arithmetic mean concentrations of PM<sub>2.5</sub> were highest in the Providence area compared to the rural site at Alton Jones.

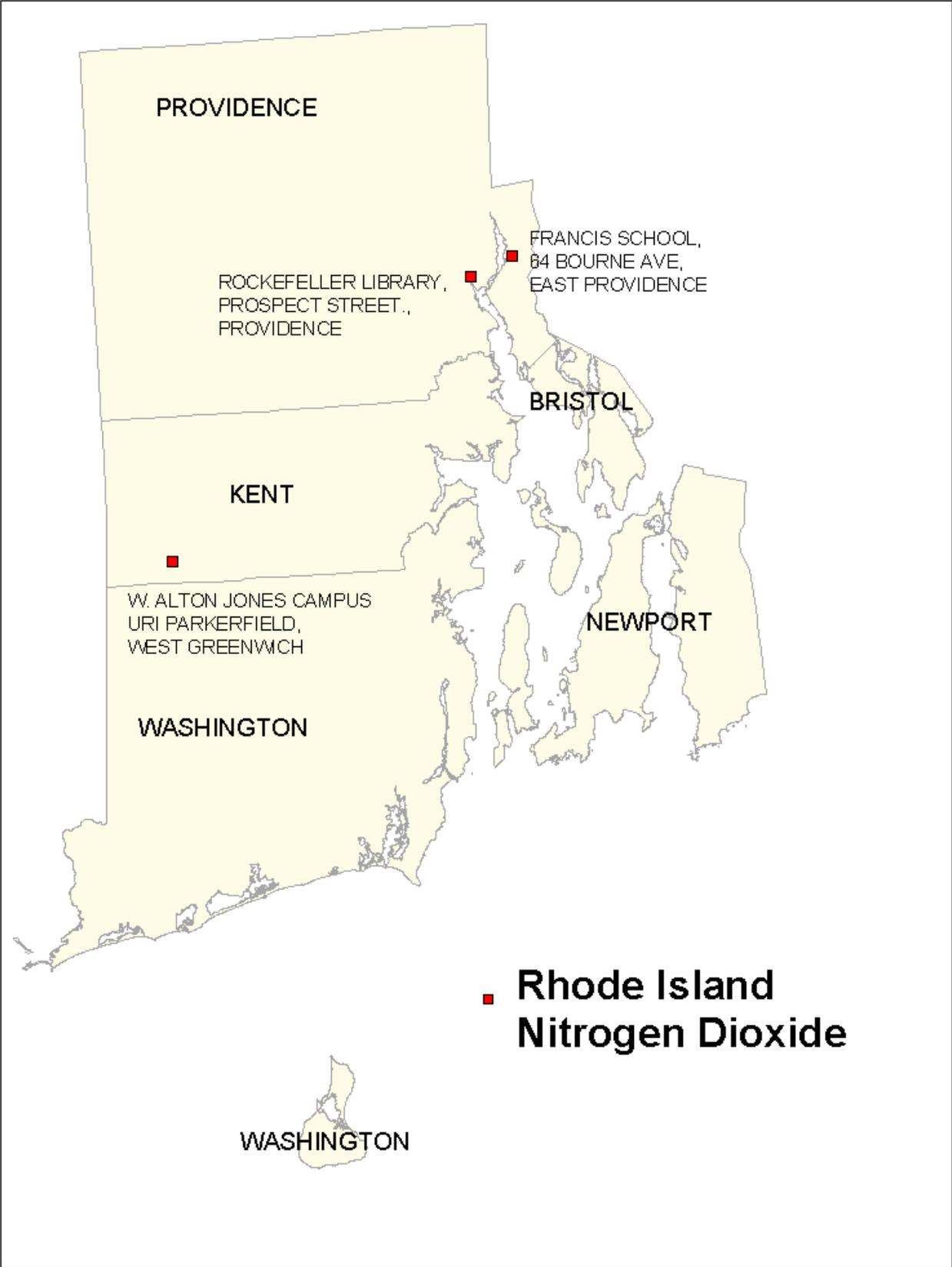
Two air quality monitoring sites measured sulfur dioxide (SO<sub>2</sub>) in Rhode Island during 2003. There were no exceedances or violations of the annual, 24-hour, or 3-hour NAAQS. The Rockefeller Library site in Providence reported the highest arithmetic mean concentration of SO<sub>2</sub> (6 ppb), which was ~20% of the NAAQS, the highest 24-hour second maximum concentration (27 ppb), and the highest 3-hour second maximum concentration of SO<sub>2</sub> (47 ppb). The long range trend for SO<sub>2</sub> concentrations in Rhode Island shows a slight downward trend.



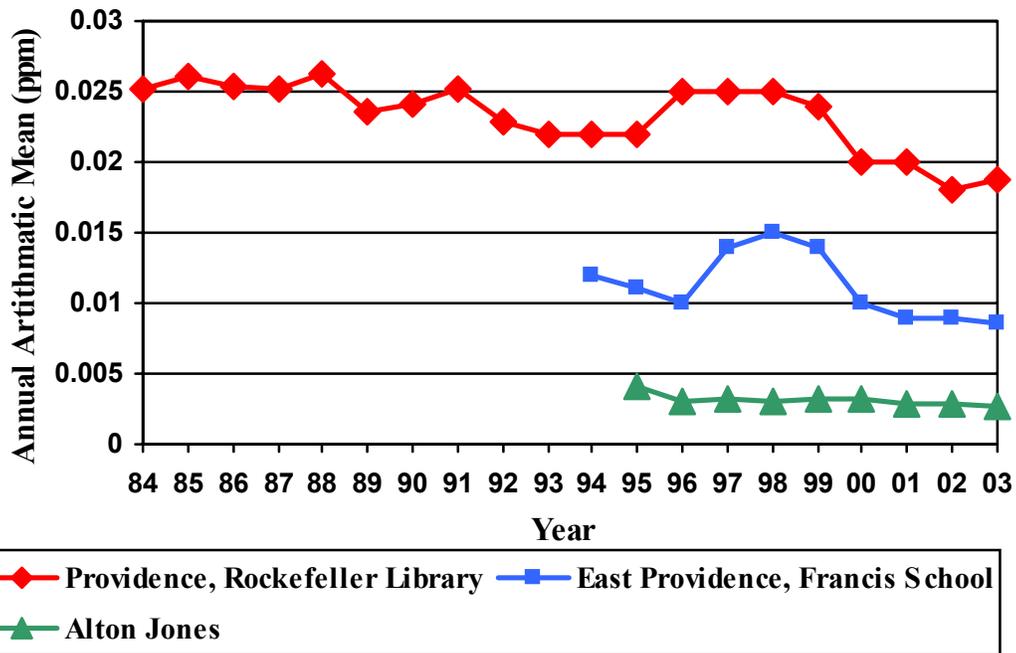
# Rhode Island Carbon Monoxide



Carbon Monoxide													
All Values are in Units of Parts Per Million													
Site ID	C	Type	City	County	Address	# Obs	1-hour			8-hour			#
							Highest Value	2nd Highest Value	# > 35	Highest Value	2nd Highest Value	# > 9	
44-007-1009	1	907	PROVIDENCE	PROVIDENCE	76 DORRANCE STREET.	8426	4.6	3.7	0	2.5	2.3	0	11
44-007-1010	1	907	EAST PROVIDENCE	PROVIDENCE	FRANCIS SCHOOL, 64	7974	3.4	3.1	0	2.2	1.8	0	11

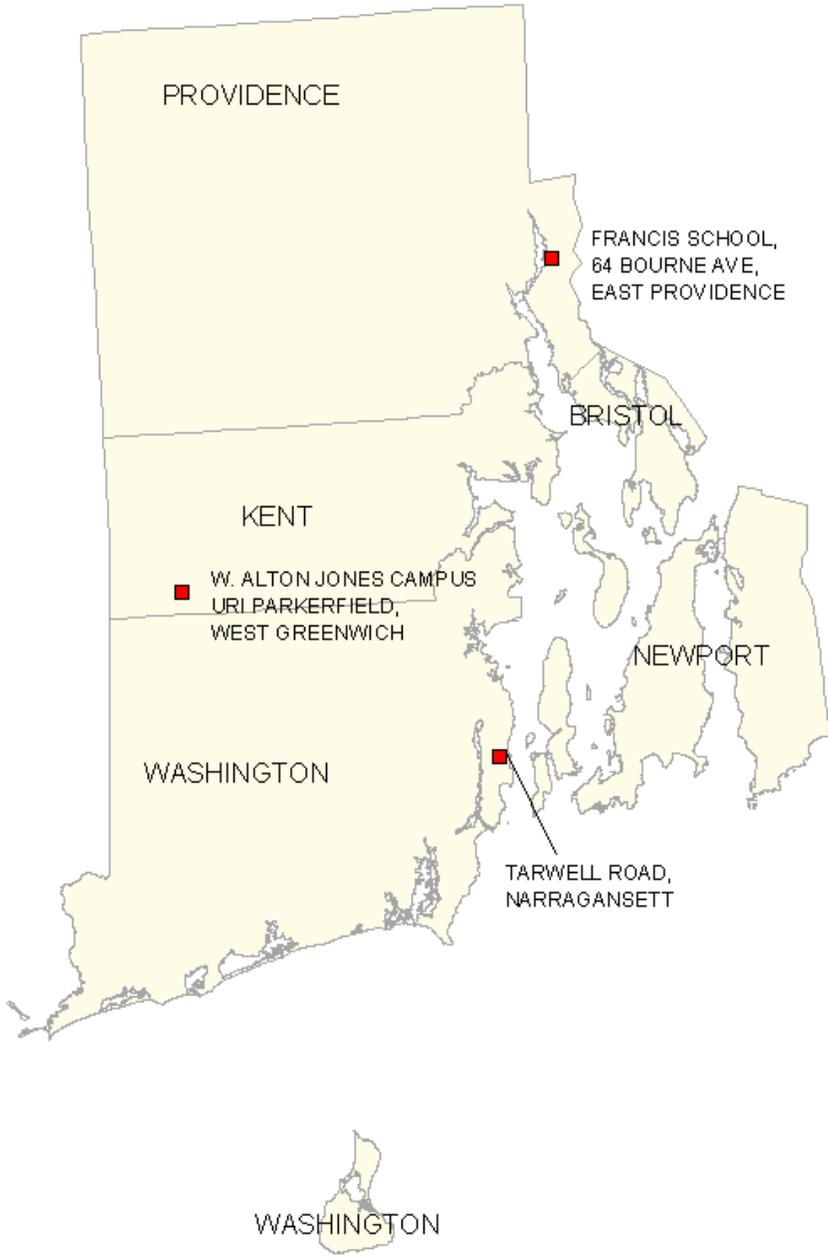


# Rhode Island Nitrogen Dioxide



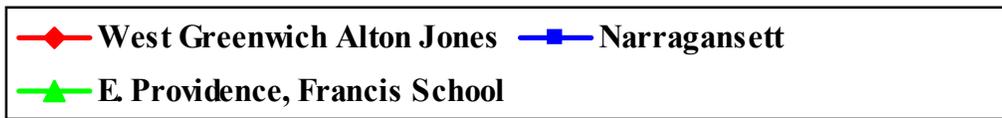
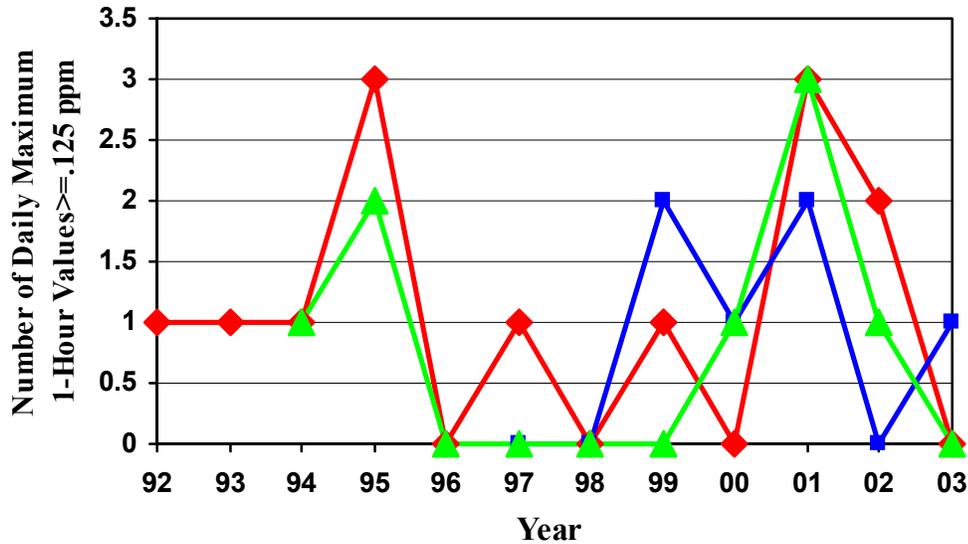
Parameter: Nitrogen Dioxide										
All Values are in Units of Parts Per Million										
								1-hour	1-hour	Annual
	P	O	Rept.				#	Highest	Highest	Arith.
Site ID	C	Org.	City	County	Address	Method	Obs	Value	Value	Mean
44-003-0002	1	907	NOT IN A CITY	KENT	W. ALTON JONES CAMP	14	1956	0.02	0.019	0.0027 *
44-007-0012	2	907	PROVIDENCE	PROVIDENCE	ROCKEFELLER LIBRARY	14	8052	0.075	0.069	0.0188 *
44-007-1010	1	907	EAST PROVIDENCE	PROVIDENCE	FRANCIS SCHOOL, 64	14	1546	0.038	0.034	0.0085 *

\*Indicates that the mean does not satisfy summary criteria



■ Rhode Island Ozone Sites

# Rhode Island Ozone 1-Hour and 8-Hour



## Rhode Island Ozone 1-Hour

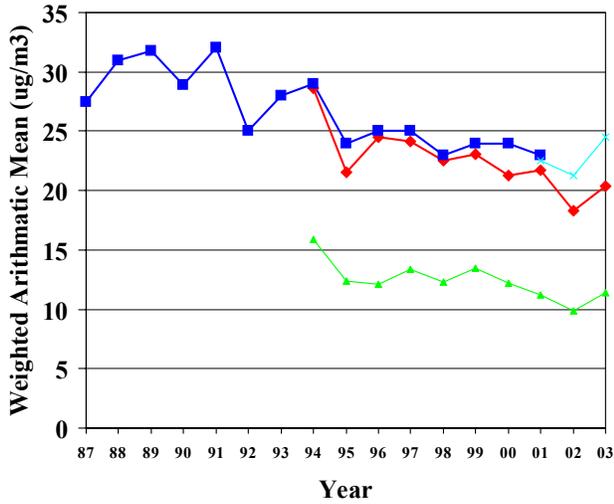
Parameter: Ozone (1-Hour)															
All Values are in Units of Parts Per Million															
	P								2nd	3rd	4th			Missing	
	O	Rep.				Num	Num	Highest	Highest	Highest	Highest	Day Max	Est. Day	Days	Method
Site ID	C	Org.	City	County	Address	Meas	Req	Value	Value	Value	Value	≥ 0.125	≥ 0.125	< 0.125	used
44-003-0002	1	907	NOT IN A CITY	KENT	W. ALTON JONES CAMP	180	183	0.121	0.107	0.104	0.100	0	0	1	14
44-007-1010	1	907	EAST PROVIDENCE	PROVIDENCE	FRANCIS SCHOOL, 64	175	183	0.119	0.112	0.110	0.104	0	0	2	14
44-009-0007	1	907	NARRAGANSETT	WASHINGTON	TARWELL ROAD, NARRA	183	183	0.129	0.109	0.105	0.102	1	1	0	14

## Rhode Island Ozone 8-Hour

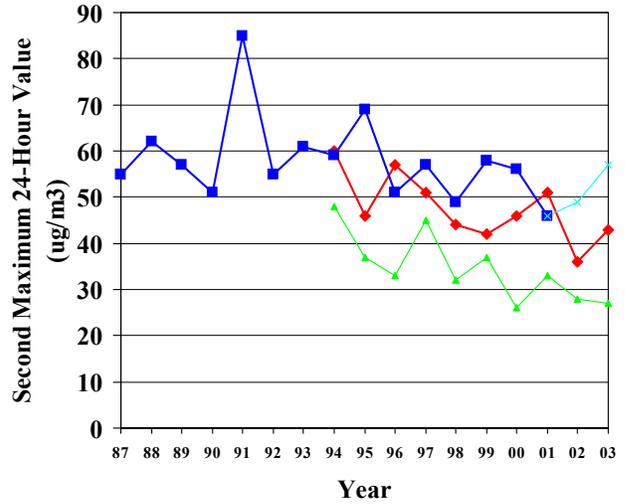
Parameter: Ozone (8-Hour)															
All Values are in Units of Parts Per Million															
	P								2nd	3rd	4th	Days			
	O	Rept.				#	Valid	Num	Highest	Highest	Highest	Highest	Max ≥	Methods	
Site ID	C	Org.	City	County	Address	Obs	Days	Required	8-Hr Value	8-Hr Value	8-Hr Value	8-Hr Value	0.085	Reporter	
44-003-0002	1	907	NOT IN A CITY	KENT	W. ALTON JONES CAMP	95	173	183	0.105	0.084	0.083	0.082	1	14	
44-007-1010	1	907	EAST PROVIDENCE	PROVIDENCE	FRANCIS SCHOOL, 64	90	164	183	0.104	0.091	0.087	0.085	4	14	
44-009-0007	1	907	NARRAGANSETT	WASHINGTON	TARWELL ROAD, NARRA	99	182	183	0.113	0.097	0.093	0.092	8	14	



# Rhode Island PM10



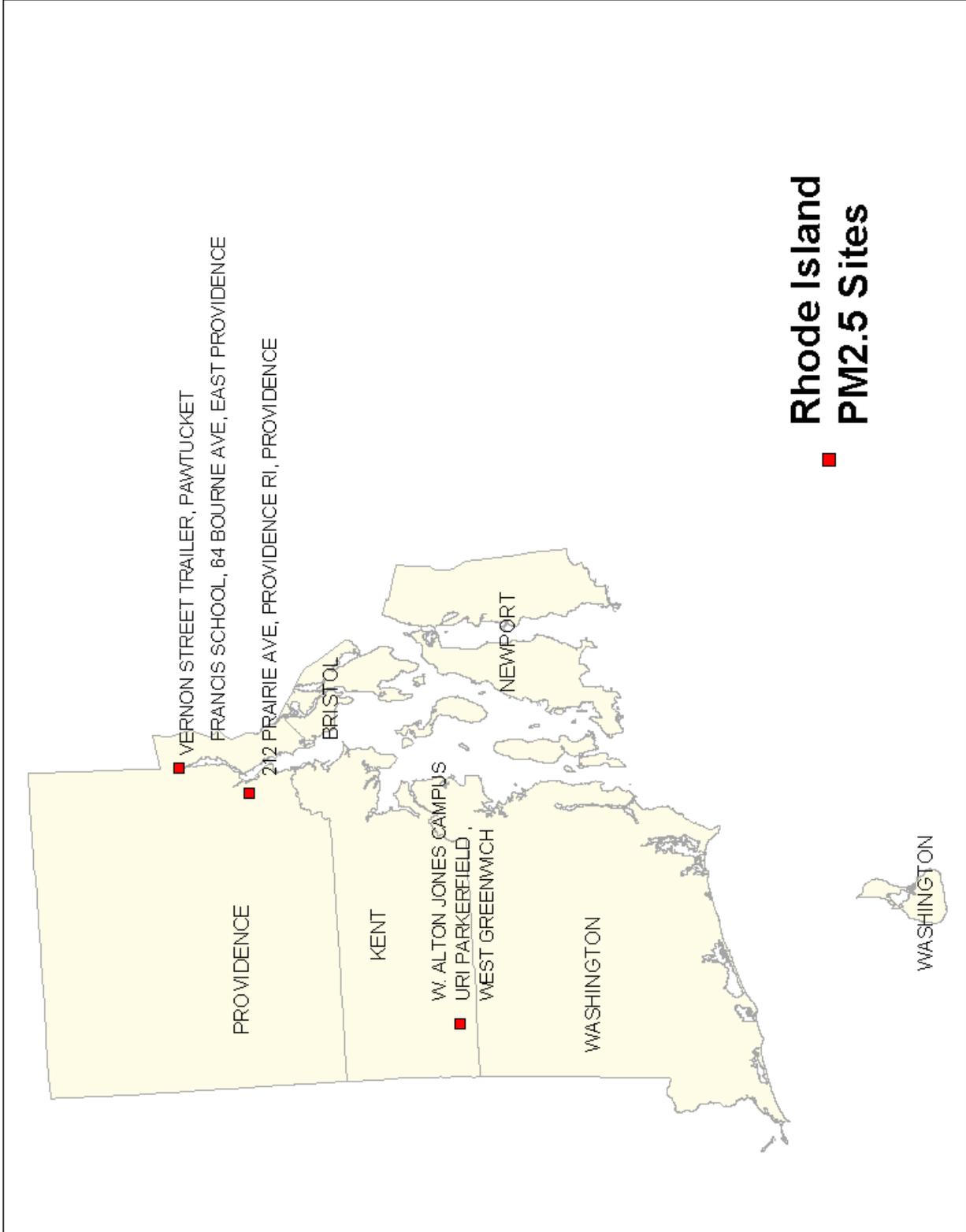
◆ Providence, Fountain St. 
 ■ Pawtucket, Summit St.  
▲ Alton Jones 
 ◆ Pawtucket, Vernon St.



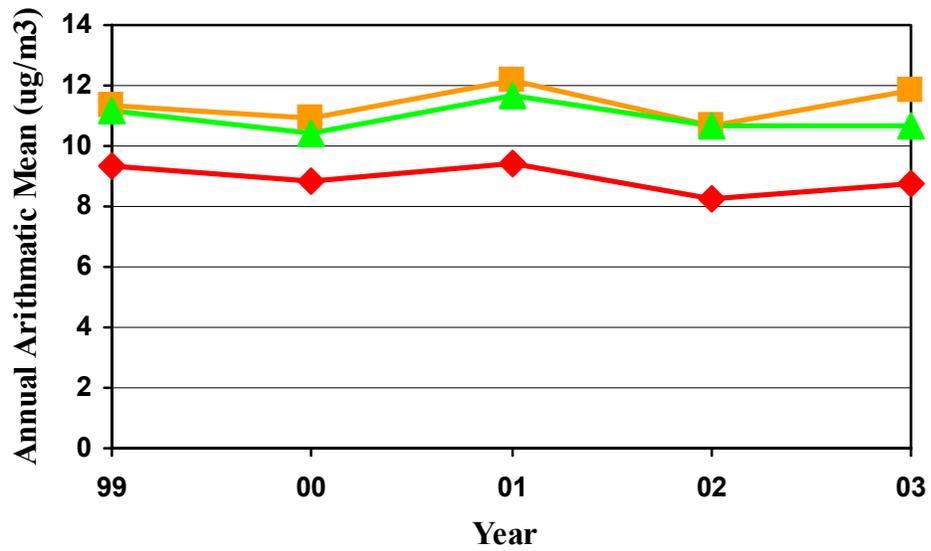
◆ Providence, Fountain St. 
 ■ Pawtucket, Summit St.  
▲ Alton Jones 
 ◆ Pawtucket, Vernon St.

Parameter: PM 10																	
SITE ID	POC	Rep. Org	City	County	Address	# Obs	# Req.	Days	Valid % Obs	Highest Value	2nd Highest Value	3rd Highest Value	4th Highest Value	Days Max >150	Est. Day Max >150	Wtd. Arith. Mean	Methods Used
44-003-0002	1	907	NOT IN A CITY	KENT	W. ALTON JONES C	57	61	57	93	41	27	25	22	0	0	11	64
44-007-0021	1	907	PROVIDENCE	PROVIDENCE	111 FOUNTAIN ST	56	61	56	92	56	43	34	34	0	0	20	64
44-007-0021	2	907	PROVIDENCE	PROVIDENCE	111 FOUNTAIN ST	54	61	54	89	58	44	35	34	0	0	21*	64
44-007-0022	1	907	PROVIDENCE	PROVIDENCE	212 PRAIRIE AVE.	58	61	58	95	60	44	38	34	0	0	21	64
44-007-0026	1	907	PAWTUCKET	PROVIDENCE	VERNON STREET TR	60	61	60	98	73	57	42	42	0	0	25	64

\*Indicates that the mean does not satisfy summary criteria

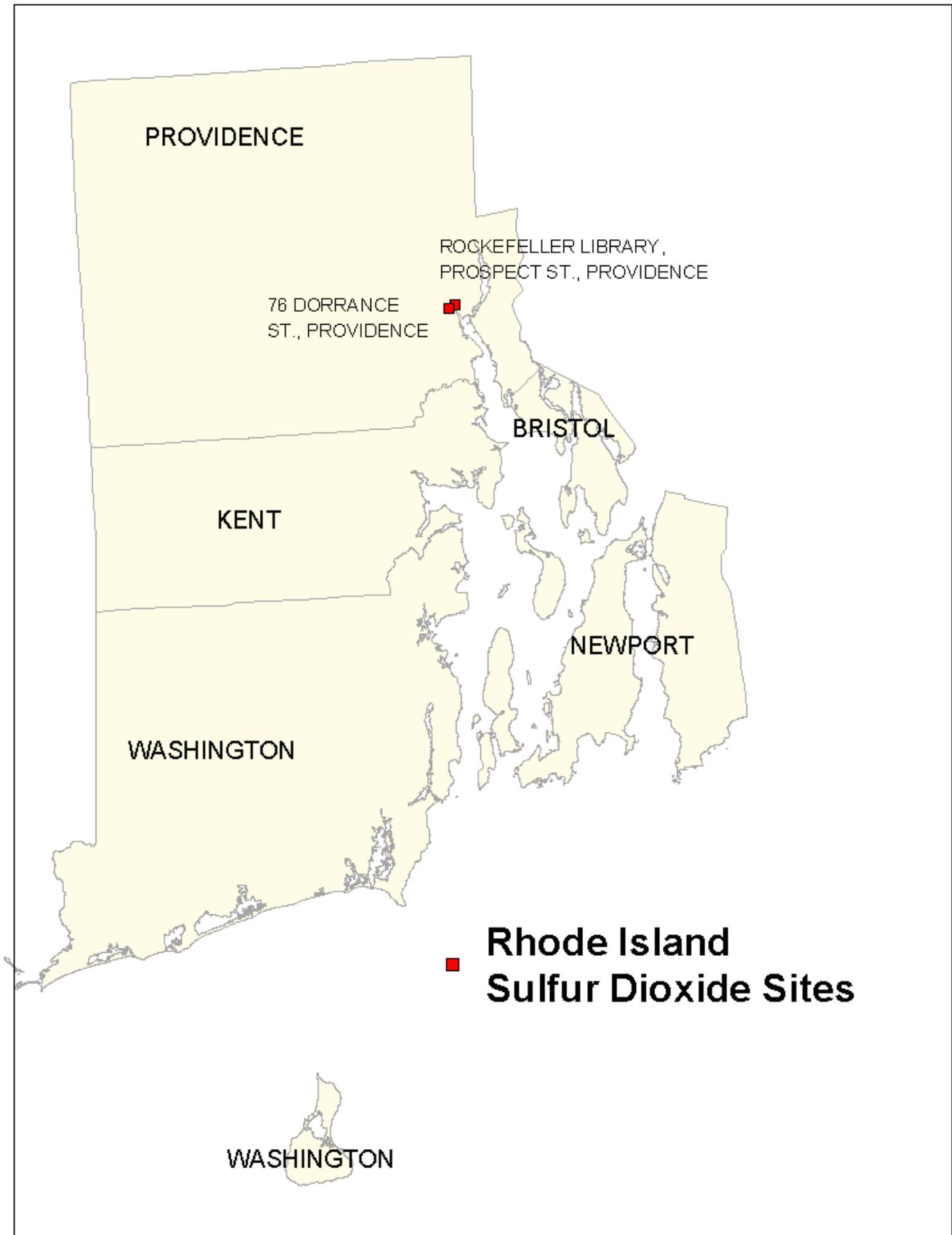


# Rhode Island PM2.5

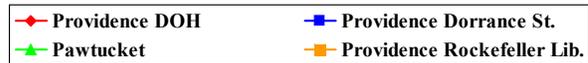
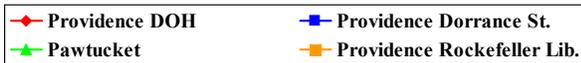
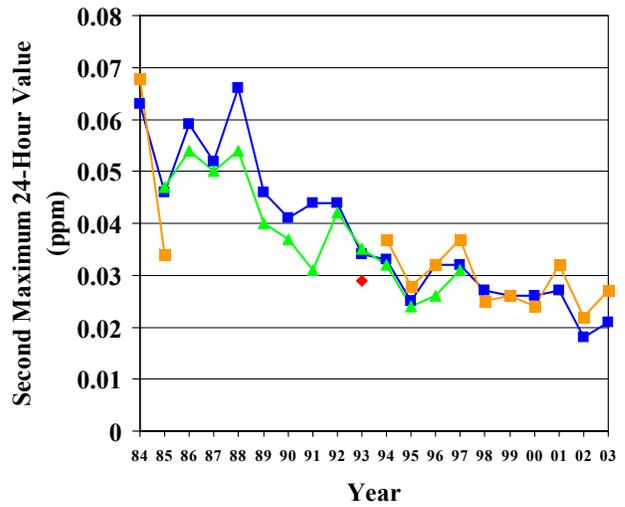
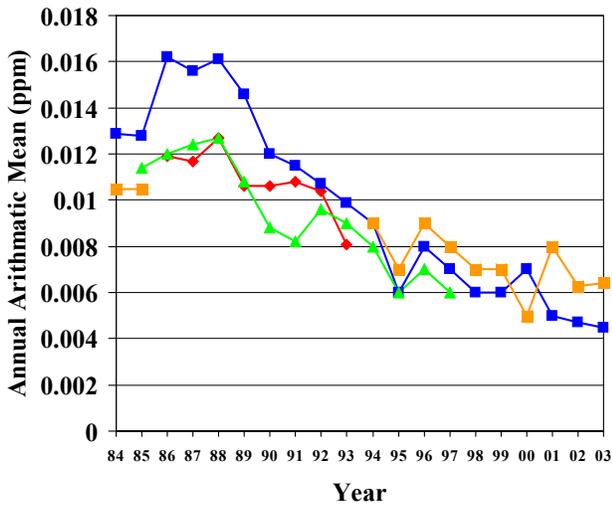


Parameter: PM 2.5													
All Values are in UG/CU Meters Local Conditions													
	P												
	O	Rept.			#	Highest	2nd Highest	3rd Highest	4th Highest	98th Percentile	Wtd. Arith.	Metho	
Site ID	C	Org.	City	County	Address	Obs	Value	Value	Value	Value	Mean	Used	
44-003-0002	1	907	NOT IN A CITY	KENT	W. ALTON JONES C	86	35.5	33.3	31.8	29.1	33.3	8.7 *	120
44-007-0022	1	907	PROVIDENCE	PROVIDENCE	212 PRAIRIE AVE,	308	60.2	42.8	41.3	35	30.5	11.9 *	120
44-007-0022	2	907	PROVIDENCE	PROVIDENCE	212 PRAIRIE AVE,	47	42.1	28.1	26.4	24	42.1	10.8 *	120
44-007-0022	5	1217	PROVIDENCE	PROVIDENCE	212 PRAIRIE AVE,	61	41.8	29.5	28.3	23.2	29.5	11.6 *	820
44-007-0026	1	907	PAWTUCKET	PROVIDENCE	VERNON STREET TR	96	45	40.8	38.5	36.3	40.8	13.1 *	120
44-007-1010	1	907	EAST PROVIDENCI	PROVIDENCE	FRANCIS SCHOOL,	270	40.8	39.1	34.2	33.1	32	10.7 *	120
44-007-1010	2	907	EAST PROVIDENCI	PROVIDENCE	FRANCIS SCHOOL,	38	40.9	28.2	23.3	23	40.9	10.3 *	120
44-007-1010	5	1217	EAST PROVIDENCI	PROVIDENCE	FRANCIS SCHOOL,	57	41.5	29.5	24.3	24.2	29.5	11.3 *	820

\*Indicates that the mean does not satisfy summary criteria



# Rhode Island Sulfur Dioxide



Parameter: Sulfur Dioxide																		
All Values are in Units of Parts Per Million																		
						24-hour	24-hour	3-hour		3-hour	1-hour		1-hour					
						P		Obs	Highest	Highest	Obs	Highest	Highest	Arith.			Method	
Site ID	C	O	Org	City	County	Address	#	Obs	Highest	2nd Highest	Obs	Highest	Highest	Arith.	Mean		Used	
44-007-0012	2	907	PROVIDENCE	PROVIDENCE	PROVIDENCE	ROCKEFELLER L	8165	0.031	0.027	0.027	0	0.047	0.047	0	0.059	0.059	0.0064	23
44-007-1009	1	907	PROVIDENCE	PROVIDENCE	PROVIDENCE	76 DORRANCE S	8427	0.021	0.021	0.021	0	0.046	0.04	0	0.06	0.056	0.0045	23

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## Air Quality Summary – Vermont

The state of Vermont operated two carbon monoxide (CO) monitoring sites during 2003, in Rutland and Burlington. The highest first and second 8-hour concentrations of CO, recorded at the Rutland site, were 2.2 ppm and 1.9 ppm CO respectively.

During 2003, Vermont did not conduct ambient air lead monitoring. Historical ambient air concentrations of lead in Vermont have been extremely low and ambient monitoring for this pollutant has not been warranted.

Two nitrogen dioxide (NO<sub>2</sub>) monitoring sites (Rutland and Burlington) operated in 2003. No exceedances of the NAAQS for NO<sub>2</sub> were recorded for either site. The last 20 years of NO<sub>2</sub> data indicate that the concentrations of NO<sub>2</sub> have remained relatively steady and low in comparison with the NAAQS. The maximum annual concentration of NO<sub>2</sub> (15 ppb or ~ 25% of the NAAQS ) was measured at the Burlington site.

None of the two ozone monitoring sites in Vermont recorded 1-hour concentrations of ozone in excess of the NAAQS. The highest 1-hour concentration of ozone (93 ppb) was recorded at the Bennington site. The highest 1-hour ozone concentration recorded at the Underhill site was 85 ppb. None of the ozone sites in Vermont recorded a fourth highest 8-hour average ozone concentration above the level of the 8-hour ozone NAAQS. The highest 8-hour average ozone concentration (87 ppb) in Vermont was recorded at the Bennington site.

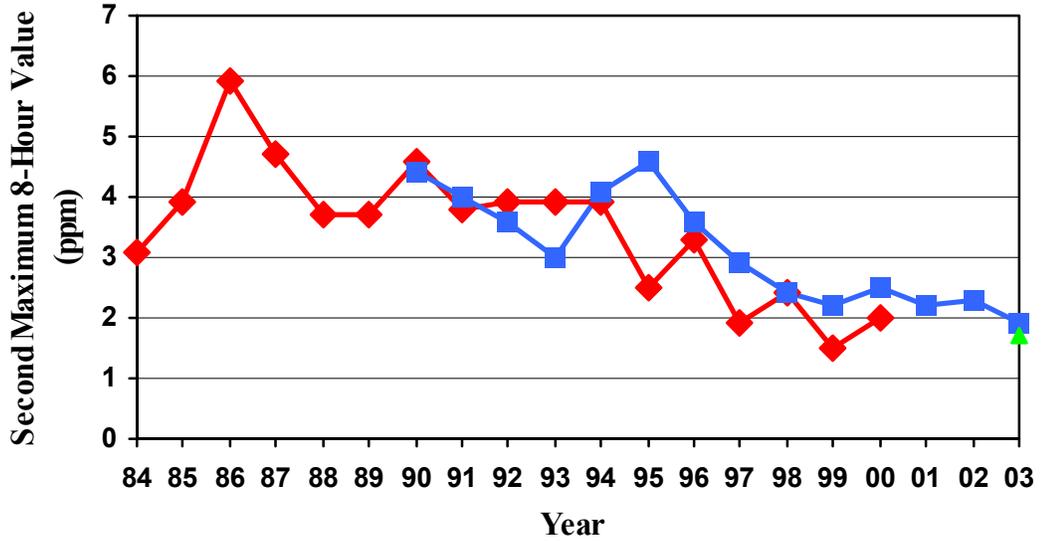
During 2003 Vermont maintained four monitoring sites measuring particulate matter (PM<sub>10</sub>). Data for 2003 continue the ten-year trend of low PM<sub>10</sub> concentrations recorded by Vermont monitoring sites. The highest 24-hour PM<sub>10</sub> concentration was recorded at the Burlington monitoring site (51 ug/m<sup>3</sup>). Brattleboro recorded the highest annual average (weighted) PM<sub>10</sub> concentration (28 ug/m<sup>3</sup>). These concentrations are well below the NAAQS. The lowest PM<sub>10</sub> concentrations were recorded at the Underhill site. The annual average PM<sub>10</sub> concentration at this site was 7 ug/m<sup>3</sup>, and the maximum 24-hour concentration was 12 ug/m<sup>3</sup>. Vermont has established a network of five fine particulate matter (PM<sub>2.5</sub>) monitoring sites. PM<sub>2.5</sub> concentrations for these sites have been below the NAAQS. The highest weighted Annual Average concentration of fine particulate matter have been recorded at the Rutland site.

Vermont operated one sulfur dioxide (SO<sub>2</sub>) monitoring site during 2003. The Rutland site recorded a maximum 3-hour SO<sub>2</sub> concentration of 62 ppb. The 24-hour highest average SO<sub>2</sub> concentration was 29 ppb. The annual average was 4 ppb. The historical data (ten-year trend) indicate a general decline in the concentration of SO<sub>2</sub>, with the exception of 1994.



## Vermont Carbon Monoxide Sites

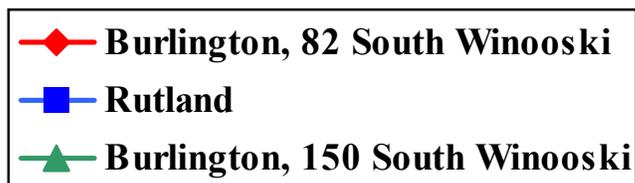
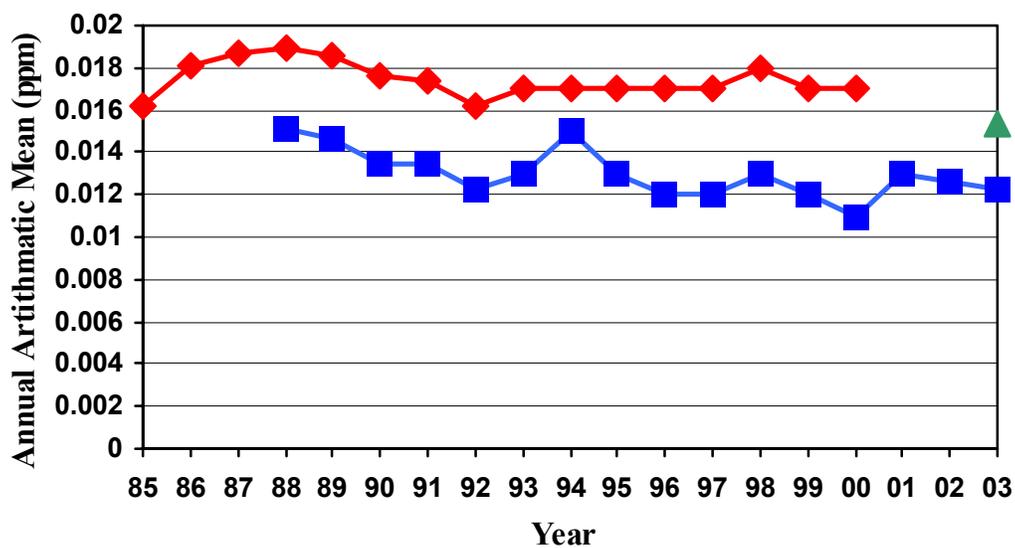
# Vermont Carbon Monoxide



Carbon Monoxide													
All Values are in Units of Parts Per Million													
	P					1-hour	1-hour		8-hour	8-hour		#	
Site ID	O Org	C Type	City	County	Address	Obs	Highest Value	Highest Value	# > 35	Highest Value	Highest Value	# > 9	Methods Used
50-007-0014	1	1119	BURLINGTON	CHITTENDEN	150 SOUTH WINOOSKI	7722	2.9	2.9	0	1.9	1.7	0	54
50-021-0002	1	1119	RUTLAND	RUTLAND	PARKING LOT ADJ. TO	5844	3.1	2.9	0	2.2	1.9	0	54



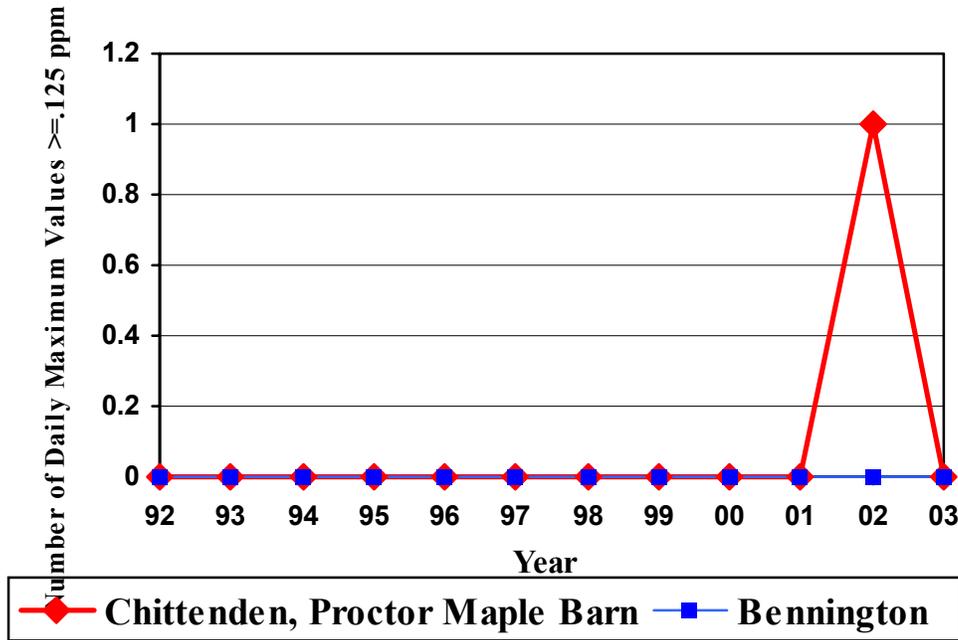
# Vermont Nitrogen Dioxide



Parameter: Nitrogen Dioxide											
All Values are in Units of Parts Per Million											
								1-hour	1-hour		
	P	O	Rept.				#	Highest	Highest	Annual	
Site ID	C	Org.	City	County	Address	Method	Obs	Value	Value	Arith.	
50-007-0014	1	1119	BURLINGTON	CHITTENDEN	150 SOUTH WINOOSKI		74	7714	0.06	0.059	0.0154
50-021-0002	1	1119	RUTLAND	RUTLAND	PARKING LOT ADJ. TO		74	6019	0.075	0.059	0.0123



# Vermont Ozone 1-Hour and 8-Hour

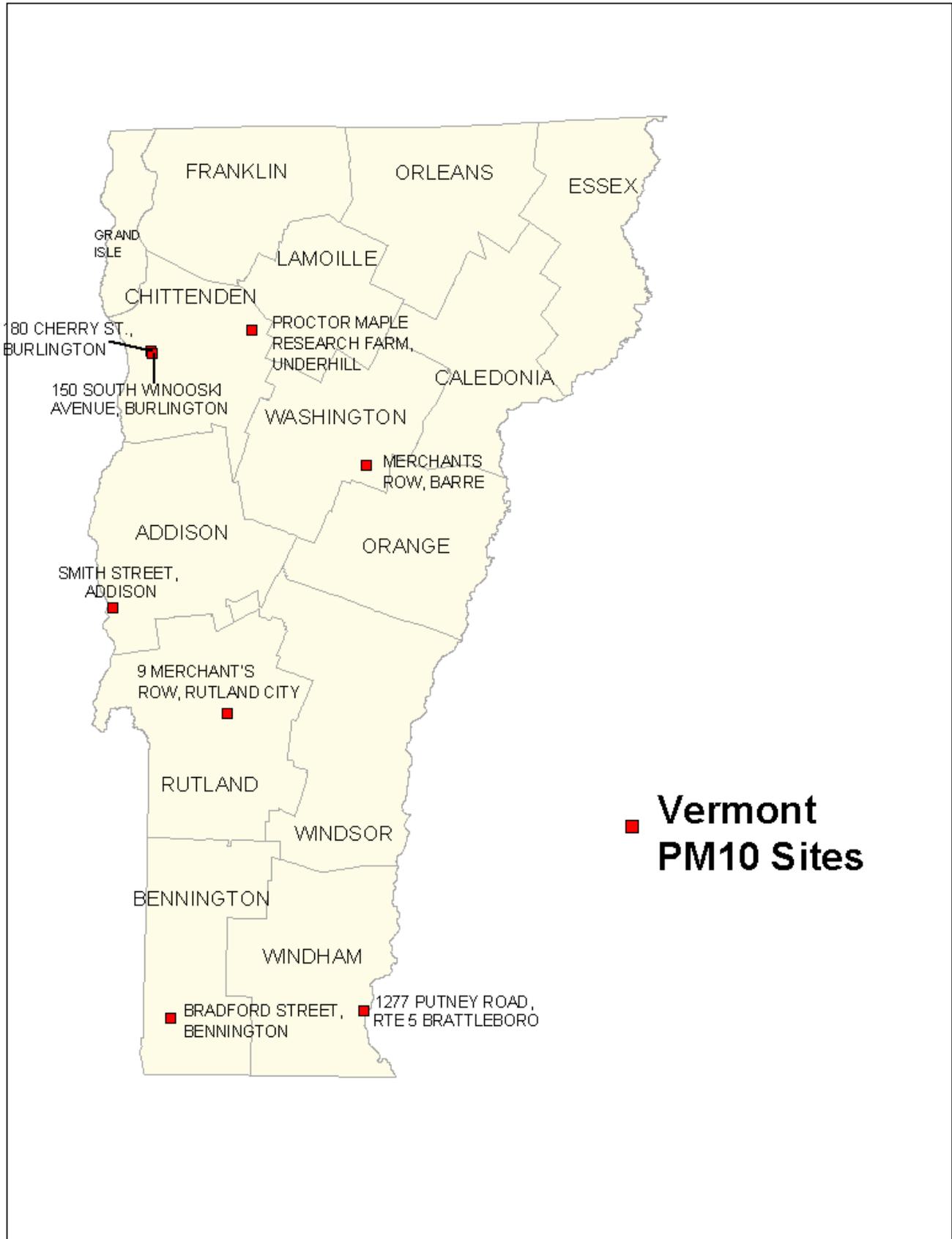


## Vermont Ozone 1-Hour

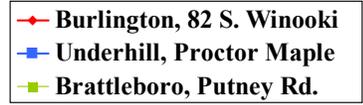
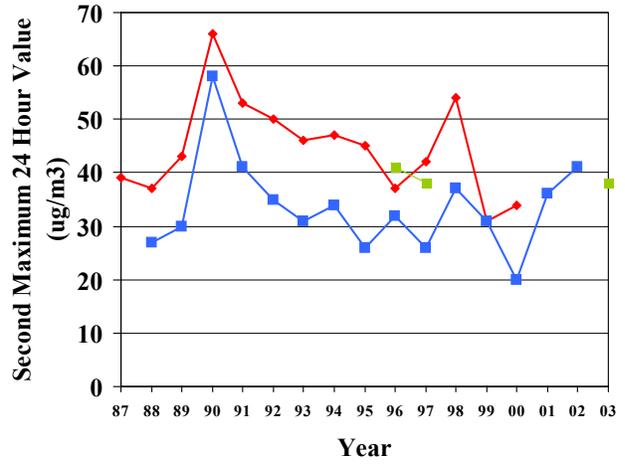
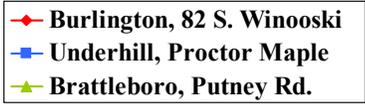
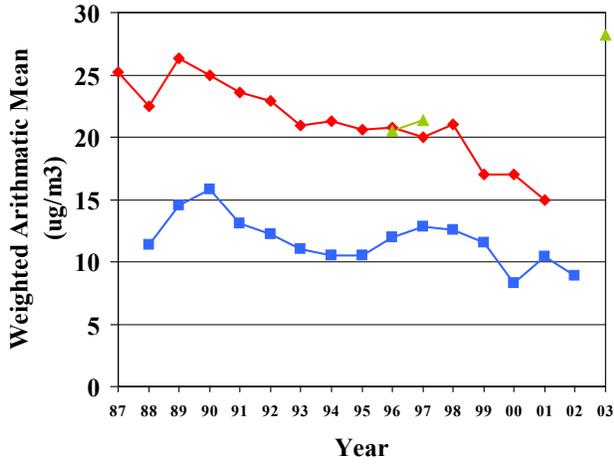
Parameter: Ozone (1-Hour)															
All Values are in Units of Parts Per Million															
	P														
	O	Rep.						2nd	3rd	4th	Day Max	Est. Day	Missing	Method	
Site ID	C	Org.	City	County	Address	Num Meas	Num Req	Highest Value	Highest Value	Highest Value	≥ 0.125	≥ 0.125	< 0.125	used	
50-003-0004	1	1119	BENNINGTON	BENNINGTON	AIRPORT RD, BENNING	172	183	0.093	0.085	0.084	0.084	0	0	1	87
50-007-0007	1	1119	UNDERHILL	CHITTENDEN	PROCTOR MAPLE RESEA	177	183	0.085	0.084	0.082	0.081	0	0	3	87

## Vermont Ozone 8-Hour

Parameter: Ozone (8-Hour)														
All Values are in Units of Parts Per Million														
	P													
	O	Rep.						Valid Num	2nd	3rd	4th	Days	Methods	
Site ID	C	Org.	City	County	Address	# Obs	Days Meas	Required Highest	Highest 8-Hr Value	Highest 8-Hr Value	Highest 8-Hr Value	Highest 8-Hr Value	Max ≥ 0.085	Reporter
50-003-0004	1	1119	BENNINGTON	BENNINGTON	AIRPORT RD, BENNING	94	172	183	0.087	0.081	0.076	0.073	0	87
50-007-0007	1	1119	UNDERHILL	CHITTENDEN	PROCTOR MAPLE RESEA	97	177	183	0.077	0.075	0.074	0.074	0	87

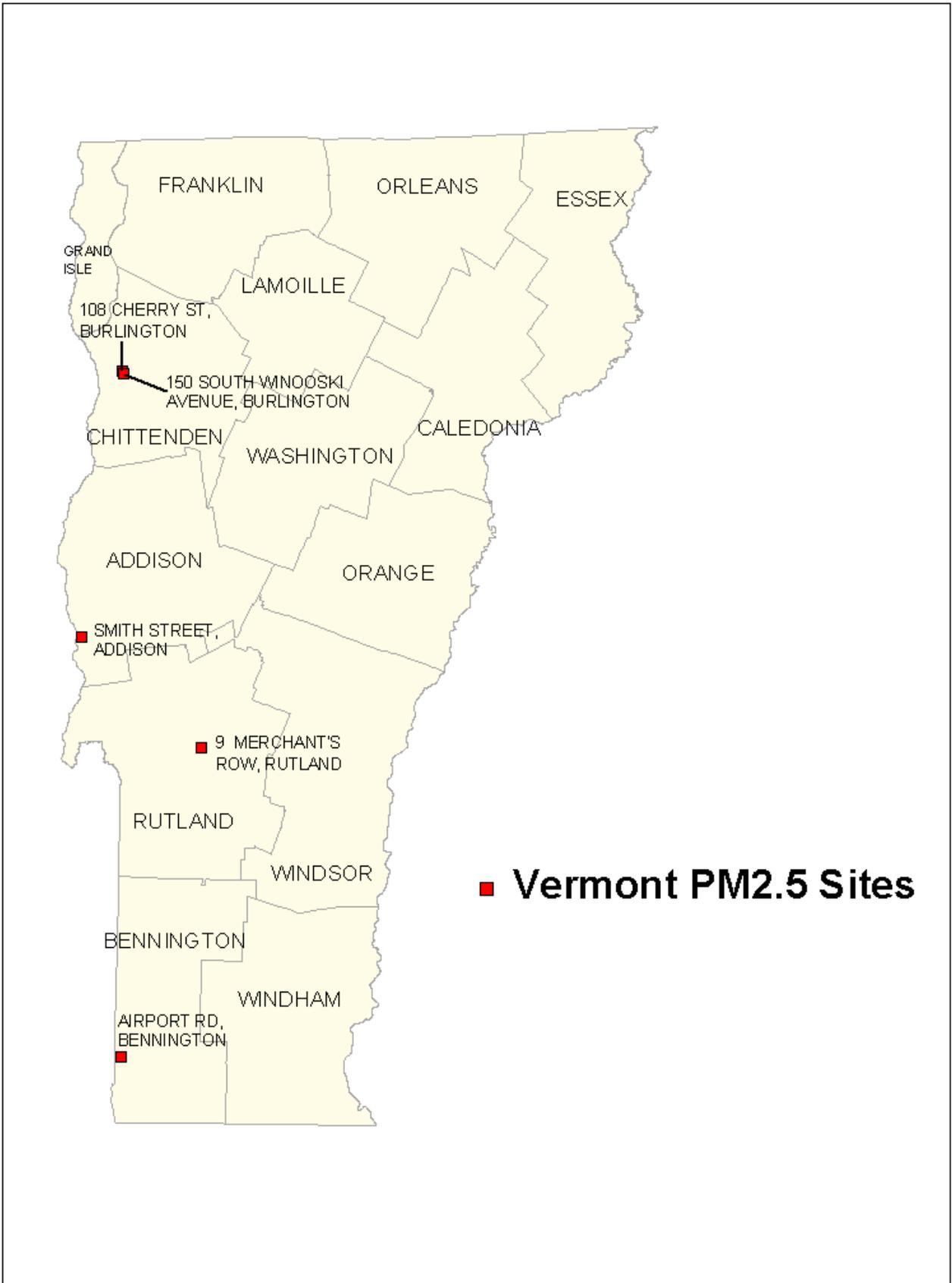


# Vermont PM10

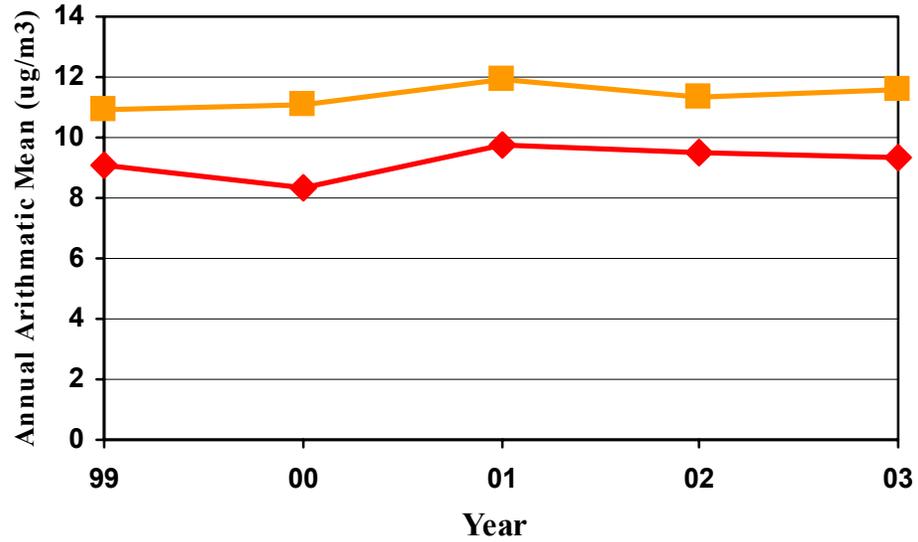


Parameter: PM 10														2nd	3rd	4th	Days	Est. Day	Wtd.		
SITE ID	POC	Rep. Org	City	County	Address	# Obs	# Req.	Days	% Obs	Highest Value	Highest Value	Highest Value	Highest Value	Max >150	Max >150	Arith. Mean	Methods Used				
50-001-0003	1	1119	NOT IN A CITY	ADDISON	SMITH STREET	4	6	4	67	21	13	11	4	0	0	12	* 62				
50-007-0007	1	1119	UNDERHILL	CHITTENDEN	PROCTOR MAPLE RE	5	5	5	100	12	7	7	6	0	0	7	* 62				
50-007-0014	1	1119	BURLINGTON	CHITTENDEN	150 SOUTH WINOOS	54	58	54	93	51	49	34	34	0	0	19	62				
50-025-0004	1	1119	BRATTLEBORO	WINDHAM	1277 PUTNEY ROAD	5	5	5	100	41	38	24	20	0	0	28	* 62				

\*Indicates that the mean does not satisfy summary criteria



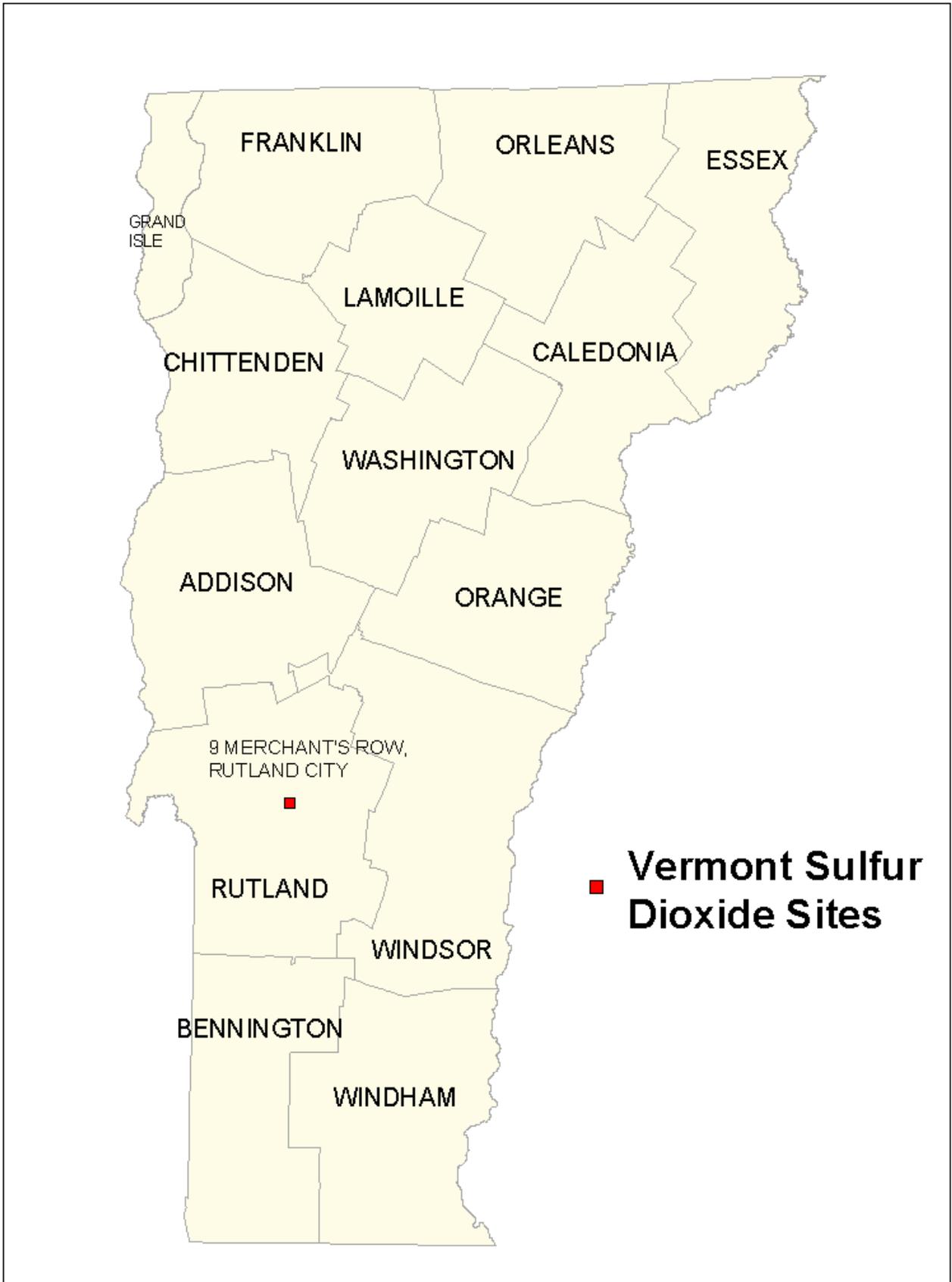
# Vermont PM2.5



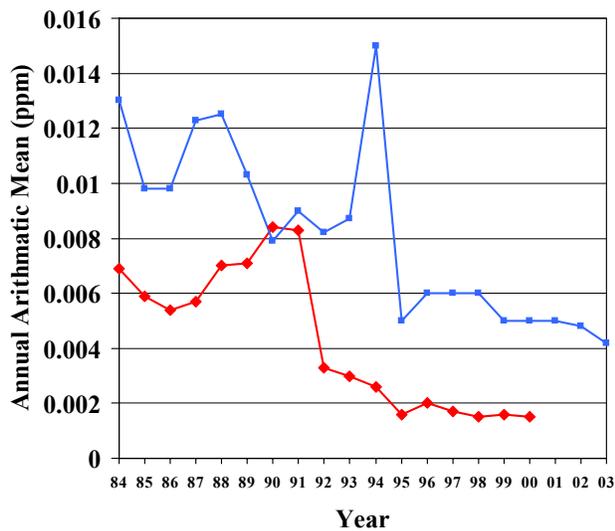
◆ Burlington, Cherry St.    ■ Rutland

Parameter: PM 2.5													
All Values are in UG/CU Meters Local Conditions													
	P						2nd	3rd	4th	98th	Wtd.		
	O	Rept.			#	Highest	Highest	Highest	Highest	Percentile	Arith.	Metho	
Site ID	C	Org.	City	County	Address	Obs	Value	Value	Value	Value	Mean	Used	
50-001-0003	1	1119	NOT IN A CITY	ADDISON	SMITH STREET	11	17.1	16.6	14.1	12.1	17.1	8.4 *	145
50-003-0004	1	1119	BENNINGTON	BENNINGTON	AIRPORT RD, BENN	107	41.1	35.9	28.2	25.9	28.2	8.7 *	145
50-003-0004	3	1119	BENNINGTON	BENNINGTON	AIRPORT RD, BENN	8531	44.4	36.8	35.3	33.3	26.4	8.3	0
50-007-0012	1	1119	BURLINGTON	CHITTENDEN	108 CHERRY STREE	115	37.6	32.5	27.3	26.9	27.3	9.4	145
50-007-0012	2	1119	BURLINGTON	CHITTENDEN	108 CHERRY STREE	120	37.2	32.3	26.8	26.7	32.3	9.3	118
50-007-0012	3	1119	BURLINGTON	CHITTENDEN	108 CHERRY STREE	2978	32.9	31.3	27.6	26.7	27.6	10.4 *	0
50-007-0012	5	1217	BURLINGTON	CHITTENDEN	108 CHERRY STREE	114	38.3	27.4	25.9	24.7	24.7	9.8	810
50-007-0014	1	1119	BURLINGTON	CHITTENDEN	150 SOUTH WINDOOS	114	39	34.3	29.4	28.6	29.4	10.1	145
50-021-0002	1	1119	RUTLAND	RUTLAND	PARKING LOT ADJ.	85	37.3	36	32.6	28.9	36	11.6 *	145
50-021-0002	3	1119	RUTLAND	RUTLAND	PARKING LOT ADJ.	5500	42.6	40.1	38.3	37.1	35.7	11.8 *	761

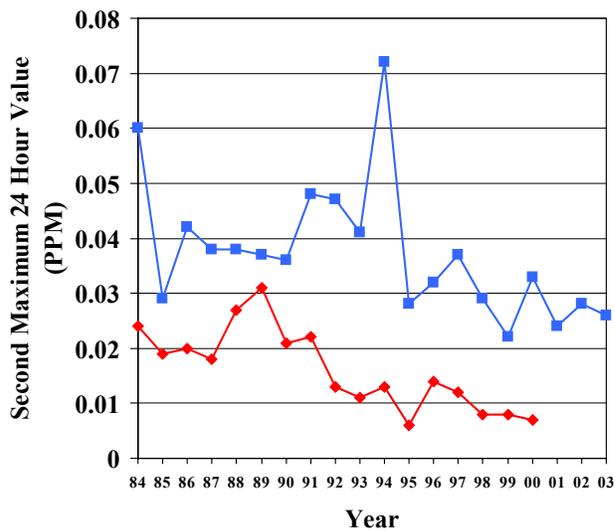
\*Indicates that the mean does not satisfy summary criteria



# Vermont Sulfur Dioxide



—♦— Burlington —■— Rutland



—♦— Burlington —■— Rutland

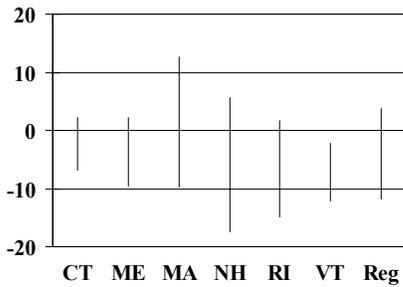
Parameter: Sulfur Dioxide																
All Values are in Units of Parts Per Million																
	P					24-hour	24-hour		3-hour	3-hour		1-hour	1-hour			
	O	Org					2nd	Obs	Highest	Highest	Obs	Highest	Highest	Arith.		
Site ID	C	Type	City	County	Address	Obs	Highest	> 0.14	Value	Value	> 0.5	Value	Value	Mean		
50-021-0002	1	1119	RUTLAND	RUTLAND	PARKING LOT A	5973	0.029	0.026	0	0.062	0.05	0	0.073	0.065	0.0042	60

# Accuracy Data

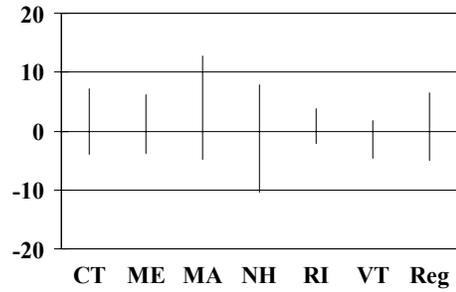
Acceptable 95% probability limits as established by the QA Division of EPA.

Limits	Accuracy
Satisfactory	$< \pm 20\%$
High	$\pm 21\%$ to $\pm 25\%$
Excessive	$> \pm 25\%$

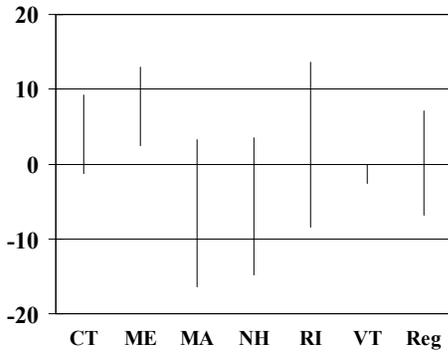
**SO2 Accuracy Data**



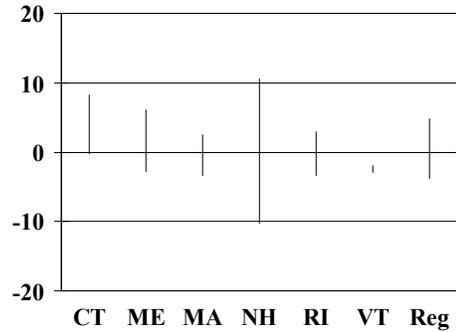
**O3 Accuracy Data**



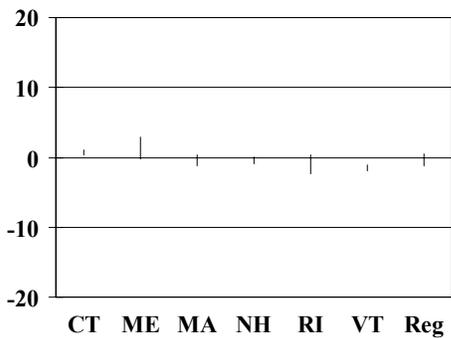
**NO2 Accuracy Data**



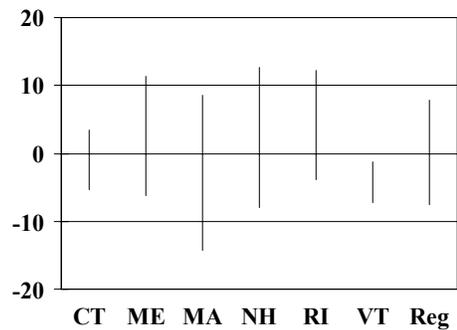
**PM10 Accuracy Data**



**PM2.5 Accuracy Data**



**CO Accuracy Data**

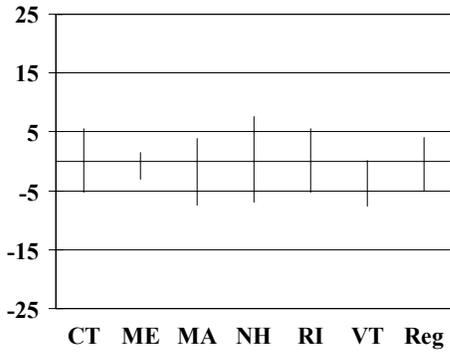


# Precision Data

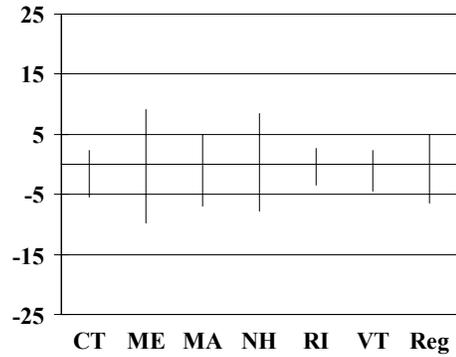
Acceptable 95% probability limits as established by the QA Division of EPA.

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

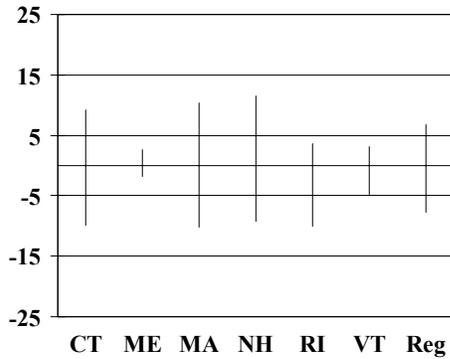
**SO2 Precision Data**



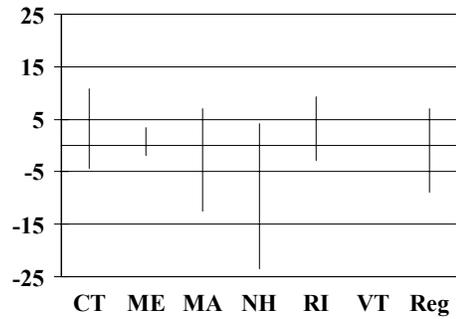
**O3 Precision Data**



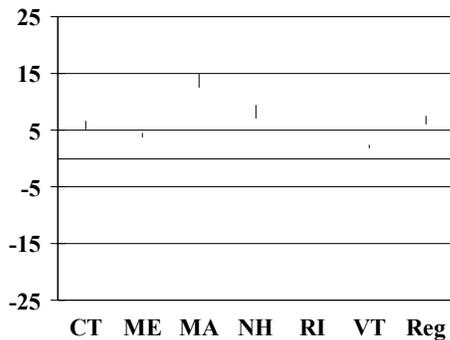
**NO2 Precision Data**



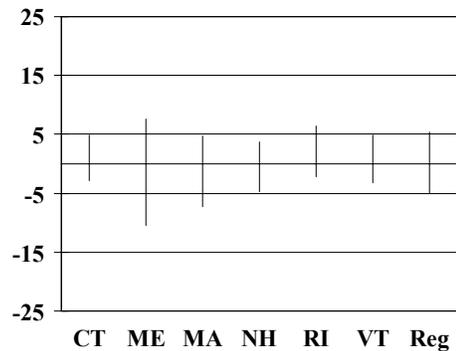
**PM10 Precision Data Collocated**



**PM2.5 Precision Data**

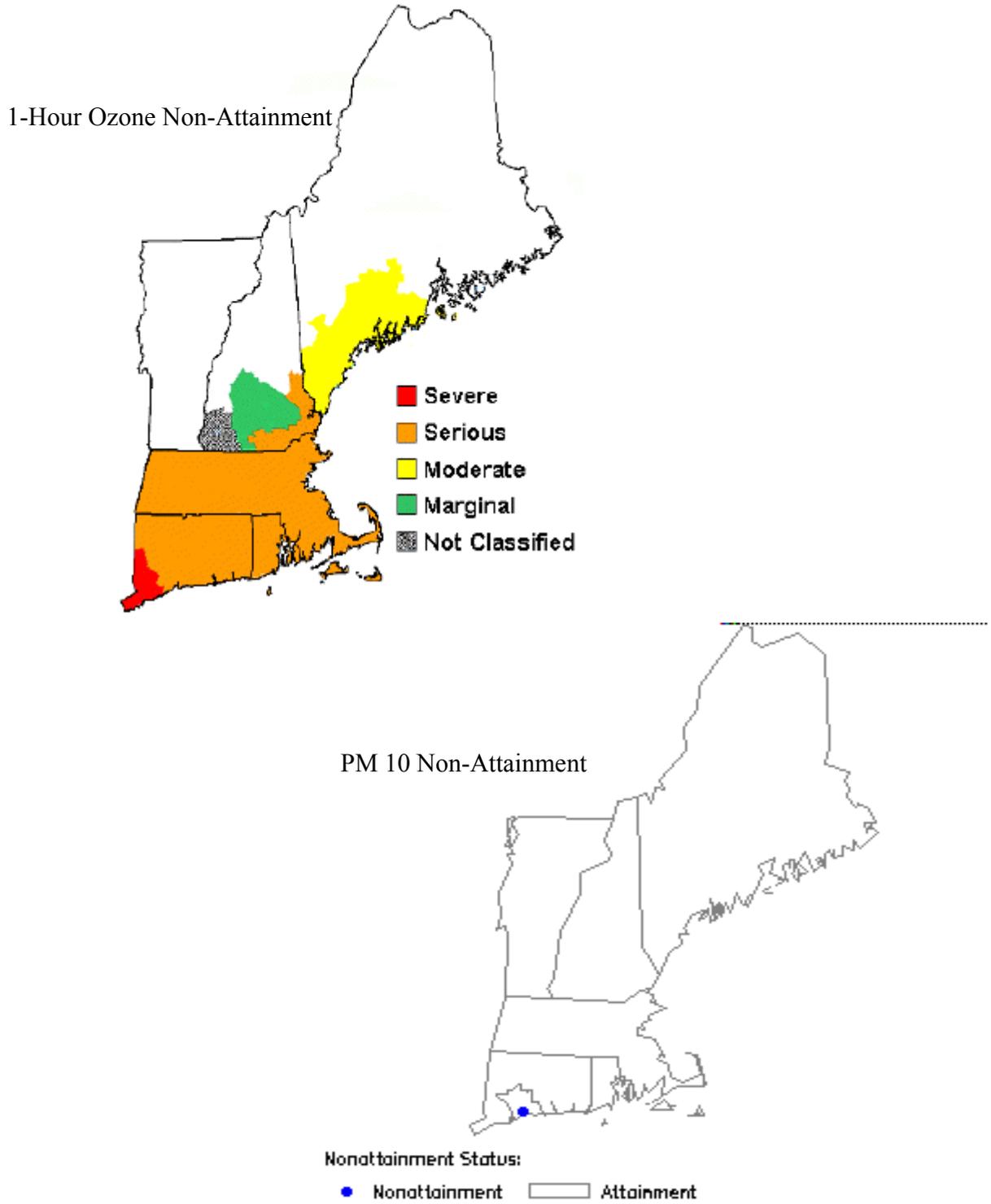


**CO Precision Data**

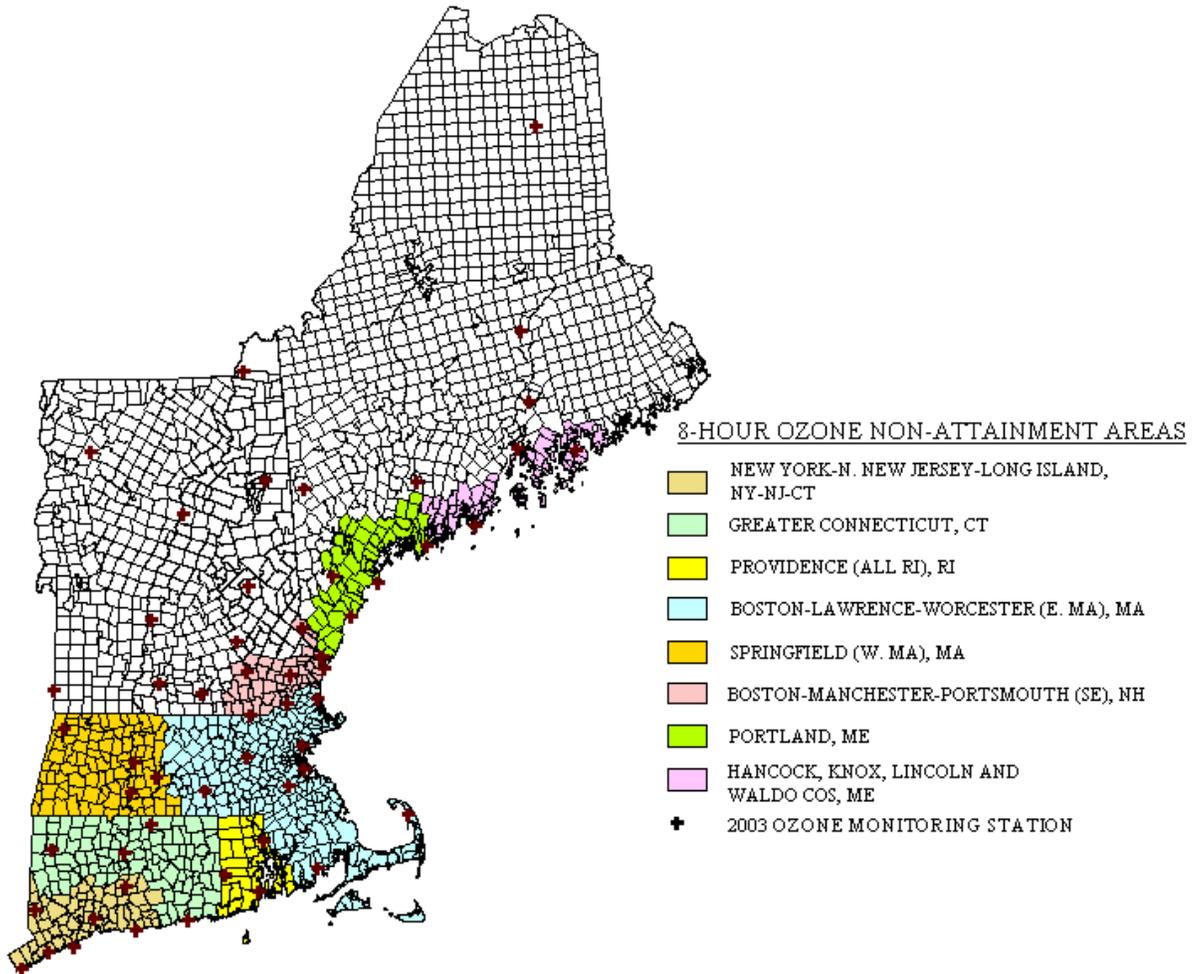


RI Precision Data is below limit.

# Non-Attainment Areas for 1-Hour Ozone and PM 10



# Non-Attainment Areas for 8-Hour Ozone



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