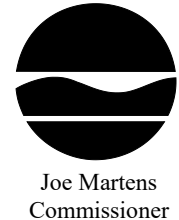


New York State Department of Environmental Conservation  
Assistant Commissioner  
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JUN - 1 2011

Ms. Judith Enck  
Regional Administrator  
United States Environmental Protection Agency  
290 Broadway, 26th Floor  
New York, New York 10007-1866

Dear Regional Administrator Enck:

On June 2, 2010, EPA strengthened the primary National Ambient Air Quality Standard (NAAQS) for sulfur dioxide (SO<sub>2</sub>) by establishing a new, 1- hour primary NAAQS at the level of 75 parts per billion (ppb). This revision of the NAAQS requires New York, as a partner with EPA in administering the Clean Air Act, to make recommendations to EPA no later than June 2, 2011 for areas to be designated attainment, nonattainment and/or unclassifiable. As such, on behalf of Governor Andrew Cuomo, I am submitting New York State's attainment designation recommendations for the new standard.

EPA has noted, for a short-term 1-hour SO<sub>2</sub> NAAQS, that it is more technically appropriate, efficient, and effective to use modeling as the principal means of assessing compliance for medium to larger sources, and to rely more on monitoring for groups of smaller sources and sources not conducive to modeling. While such an approach is consistent with EPA's historical approach and its longstanding guidance for assessing individual and combination of sources of SO<sub>2</sub>, the Department does not believe that it is appropriate for determining the attainment status for an entire metropolitan area where adequate monitoring exists. Still, to determine compliance with the new 1-hour SO<sub>2</sub> NAAQS, EPA anticipates utilizing an approach for implementation that would use monitoring and refined dispersion modeling of SO<sub>2</sub> sources to determine compliance. The Department is committed to completing the modeling to determine whether individual sources by themselves or in combination with other sources might cause modeled violations of the 1-hour SO<sub>2</sub> NAAQS, but is recommending that areas be designated based on current monitoring data.

In the preamble to the June 22, 2010 Final Rule (75 FR 35520), EPA outlined the expected process for initially determining attainment status. EPA was concerned that, while monitoring data is available for many areas, modeling has not been completed for most sources that could contribute significantly to nonattainment. As such, the initial process provides that where a monitored violation occurs, the area will be designated as "nonattainment". If monitoring reveals no violations, the attainment status of the area will be designated as "unclassifiable" since modeling results will not be available to provide a complete analysis of air quality in a given area. An area would not be designated as "attainment" unless there is adequate monitoring data and all applicable sources have been modeled.

EPA's March 24, 2011 guidance memorandum entitled "Area Designations for the 2010 Revised Primary Sulfur Dioxide National Ambient Air Quality Standard" states, "*EPA may initially designate*

*an area as attainment if it is clear that it meets the SO<sub>2</sub> NAAQS. EPA does not believe it would be appropriate to do so without appropriate refined dispersion modeling and, where available, air quality monitoring data indicating no violations of the NAAQS.”*

The Department believes that this reliance on modeling is inappropriate and unnecessary in New York given that its comprehensive network is sufficient to establish whether the air quality within areas in New York is in attainment. Source-specific modeling has historically been a part of the permitting process where the potential exists for an exceedance of a NAAQS, thereby making such modeling a permitting issue. New York expects to continue this practice of using source-specific modeling to identify both existing and future situations in which the NAAQS may be exceeded and where controls are necessary at specific sources. However, if future routine modeling reveals that an exceedance of the NAAQS might occur, this will be dealt with on a case-by-case basis. This approach is already provided for in New York’s air quality program under provisions such as Title 6 of New York Code of Rules and Regulations §200.6 which states, *“Notwithstanding the provisions of this Subchapter, no person shall allow or permit any air contamination source to emit air contaminants in quantities which alone or in combination with emissions from other air contamination sources would contravene any applicable ambient air quality standard and/or cause air pollution. In such cases where contravention occurs or may occur, the commissioner shall specify the degree and/or method of emission control required.”*

This initial attainment designation recommendation, therefore, is based solely on New York’s SO<sub>2</sub> monitoring results, as modeling, in any case (using a refined dispersion model), would not be completed prior to the June 2, 2010 deadline for initial attainment designations and is, in the Department’s opinion, unnecessary given the extensive monitoring data coverage and results presented in this submission as well as the authority cited above in 6 NYCRR Part 200. The Department also believes that it is inappropriate to place an entire metropolitan area under the specter of nonattainment if it has an adequately-sited population exposure-monitoring network that is documenting attainment. If an individual source or combination of sources is causing a potential localized violation of the NAAQS, it is more appropriate and effective to focus efforts to address nonattainment on these sources rather than requiring the entire area to undergo the state implementation plan process.

### **The SO<sub>2</sub> Emissions Monitoring System**

The form of the NAAQS provides that compliance with the standard will be based in part on the three-year average of the 99th percentile of the annual distribution of daily maximum 1-hour average concentrations for designated areas subject to SO<sub>2</sub> monitoring.

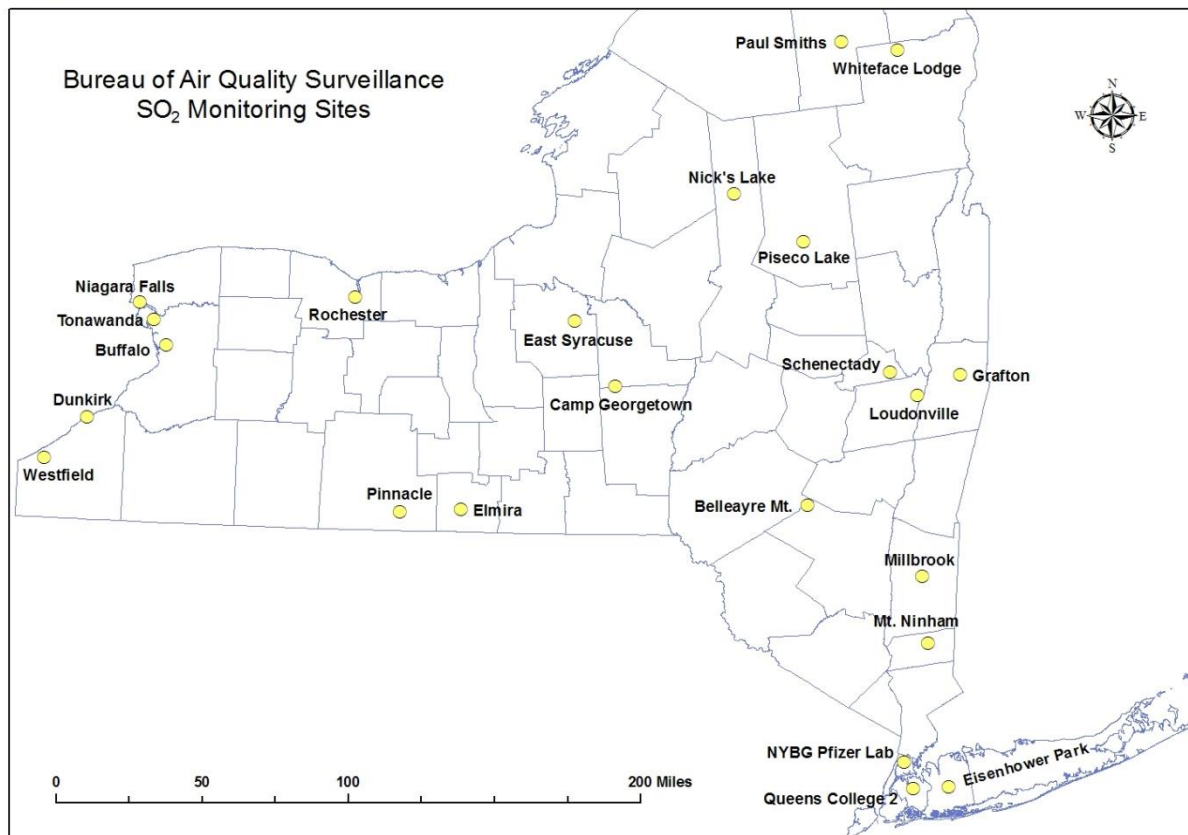
Because EPA plans to use a hybrid approach combining air quality modeling and monitoring to determine compliance with the new SO<sub>2</sub> health standard, it is requiring fewer monitors than originally proposed, but also setting specific minimum requirements that inform States on where they are required to place SO<sub>2</sub> monitors.

In revising the ambient air monitoring requirements for SO<sub>2</sub>, New York may need to make adjustments to the existing monitoring network in order to ensure that monitors meeting the network design regulations for the new 1-hour SO<sub>2</sub> NAAQS are sited and operational by the designated deadline of January 1, 2013.

New York State’s existing SO<sub>2</sub> monitoring locations are shown below; this includes all monitors and all networks as of calendar year 2009:



New York State Dept of Environmental Conservation  
2011 Ambient Air Monitoring Network



EPA's final network design siting requirements also require monitors to be "sited at locations where they can meet any one or more of the following objectives:

- (1) *Source-Oriented Monitoring*: This is accomplished with a monitor sited to determine the impact of significant sources or source categories on air quality.
- (2) *Highest Concentration*: This is assessed by a monitor sited to measure the highest concentrations expected to occur in the area covered by the network.
- (3) *Population Exposure*: This is assessed by a monitor sited to measure typical concentrations in areas of (relatively) high population density.
- (4) *General Background*: This is assessed by placing a monitor in an area to determine general background concentrations.

All of the existing SO<sub>2</sub> monitors in New York meet one or more of these siting requirements.

Based on EPA's guidelines, New York anticipates the following deployment of monitors throughout New York State in order to meet EPA siting requirements:

Designated Metropolitan Statistical Area	Recommended Monitoring <sup>1</sup>	Existing Monitoring <sup>2</sup>
Buffalo-Niagara Falls Population: 1,124,309	1	3
New York-Northern New Jersey-Long Island Population: 19,006,798	3	4
Albany-Schenectady-Troy Population: 853,919	1	3
Poughkeepsie-Newburgh-Middletown Population: 672,525	1	1
Rochester Population: 1,034,090	1	1
Syracuse Population: 643,794	1	1

Operation of the monitor in the Poughkeepsie-Newburgh-Middletown area began in May of 2011. With existing monitors meeting or exceeding EPA's guidelines, we believe that New York has a comprehensive, existing network of monitors that fully meets EPA's final network design siting requirements.

### Monitoring Results

Ambient air monitoring plays a key role in determining initially whether New York is in attainment with the new 1-hour NAAQS. The Department has calculated the following Design Values in accordance with EPA's criteria (the 3-year average of the 99th percentile of the daily maximum 1-hour average concentrations) for the following rolling three year periods for monitoring locations for which SO<sub>2</sub> monitoring data was available beginning in 2005 (values in parts per billion, ppb):

City	County	Location	Three Year 99th Percentile Average (ppb)			
			2005-07	2006-08	2007-09	2008-10
Albany	Albany	Loudonville Reservoir - 300 Albany Shaker Rd	22.0	21.0	20.0	18.0
New York	Bronx	Harding Lab - 200th Street And Southern Blvd	56.3	N/A	N/A	N/A
New York	Bronx	IS 52 - 681 Kelly St	68.3	59.7	53.7	46.0
New York	Bronx	Pfizer Lab - 200th Street and Southern Boulevard	N/A	N/A	54.1	52.7
Dunkirk	Chautauqua	STP - Wright Park Drive, Dunkirk	61.5	54.0	49.7	N/A
Westfield	Chautauqua	8150 Hardscrabble Road, Westfield	32.1	29.1	29.2	22.7
Chemung	Elmira	Water Treatment Plant - Sullivan St.	24.7	22.7	20.0	15.7

<sup>1</sup> Source: Bob Judge and Mazeeda Khan.

NESCAUM MAC Meeting Presentation entitled, "Overview of New Monitoring Requirements for NAAQS", October, 2010

<sup>2</sup> Source: Bureau of Air Quality Surveillance, Division of Air Resources, NYS Department of Environmental Conservation

City	County	Location	Three Year 99th Percentile Average (ppb)			
			2005-07	2006-08	2007-09	2008-10
Buffalo	Erie	Trailer -185 Dingens Street	30.7	25.0	22.3	18.3
Tonawanda	Erie	192 Brookside Terrace West	N/A	N/A	39.0	36.0
Tonawanda	Erie	STP - 779 Two Mile Creek Road <sup>3</sup>	118.7	88.0	N/A	N/A
Wilmington	Essex	ASRC (SUNY) Base of Whiteface Mtn - Wilmington	10.0	9.1	8.3	6.4
Paul Smiths	Franklin	Route 86&30, Paul Smith's College	9.2	8.7	7.9	6.3
Arietta	Hamilton	Piseco Lake Airport	10.4	9.5	9.0	6.8
Old Forge	Herkimer	Nicks Lake Campground - 278 Bisby Road	9.9	9.3	9.1	6.9
Georgetown	Madison	Camp Georgetown - Crumb Hill Road	20.0	18.3	17.0	12.7
Rochester	Monroe	Rg&E Substation - 2 Yarmouth Road	52.0	49.7	43.3	27.7
East Meadow	Nassau	Eisenhower Park - 740 Merrick Ave At Old Country Rd	39.3	40.0	39.7	34.7
New York	New York	PS 59 - 228 E. 57th Street, Manhattan	62.7	55.0	N/A	N/A
Niagara Falls	Niagara	Frontier Ave At 55th Street	21.7	21.6	22.3	19.1
East Syracuse	Onondaga	5895 Enterprise Parkway	17.0	15.0	14.3	12.3
Carmel	Putnam	NYSDEC Field Headquarters - Gypsy Trail Road	21.9	18.5	17.7	15.0
New York	Queens	Queens College - 65-30 Kissena Blvd Parking Lot#6	44.3	39.3	N/A	31.7
Grafton	Rensselaer	Grafton Lakes State Park - 194 Shaver Pond Road	16.2	16.0	14.7	12.3
Schenectady	Schenectady	Mt.Pleasant HS - 1121 Forest Rd.	23.0	20.3	20.0	18.7
Addison	Steuben	Pinnacle State Park - 8301 Ackerson Road	N/A	N/A	23.6	19.6
Holtsville	Suffolk	57 Division Street	56.0	52.7	47.0	39.4
Highmount	Ulster	Belleayre Mountain Cross Country Ski Area	15.5	14.3	12.1	9.5

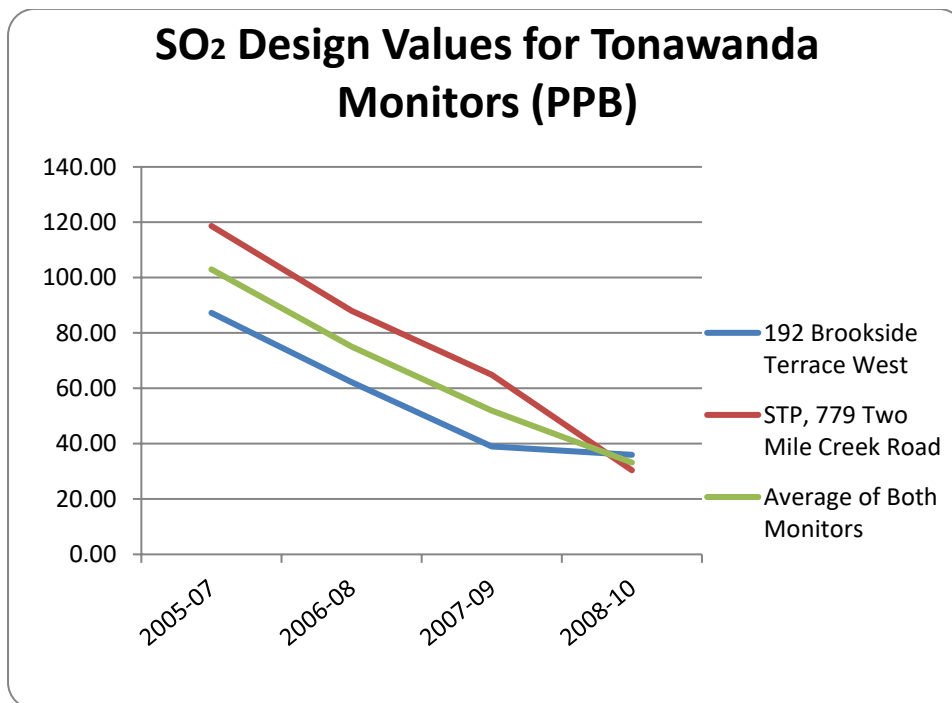
The results show that only one monitoring station (Sewage Treatment Plant in Tonawanda, NY) exceeded the new, 1-hour SO<sub>2</sub> NAAQS of 75 ppb during the four three-year design value periods shown, recording Design Values of 118.7 ppb and 88.0 ppb for the 2005-07 and 2006-08 three-year periods, respectively. The monitor was moved in 2007 to the 192 Brookside Terrace West location 0.2 miles away for the reasons noted in the table's footnote.

Since this is the only monitor that recorded SO<sub>2</sub> values that exceed the new, 1-hour SO<sub>2</sub> NAAQS, these values were examined more closely. Because of the monitor's proximity to the new monitor, Design Values were calculated for the years that were missing data at that location by substituting the values for the adjacent monitor instead; that allowed us to calculate values for all three-year Design Value periods, for both monitors. Those three-year Design Value periods are shown below in red in order to distinguish them from the non-substituted values:

<sup>3</sup> This monitoring station was relocated in 2007 to the 192 Brookside Terrace West address as part of the Tonawanda Community Air Quality Study. This site borders a residential neighborhood and the industrial complex, and is approximately 0.2 mile northeast of the original 779 Two Mile Creek Road site location.

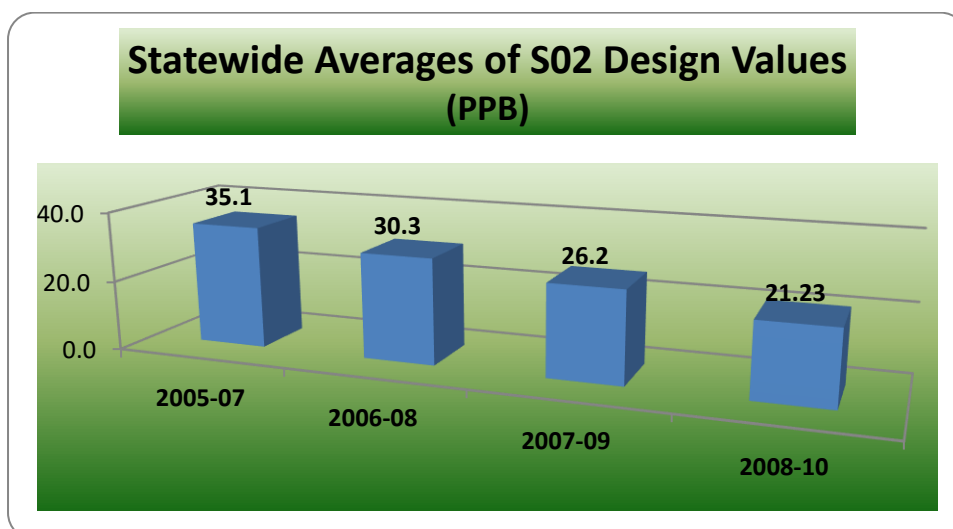
STREET ADDRESS	THREE YEAR			
	99TH PERCENTILE AVG.			
	2005-07	2006-08	2007-09	2008-10
192 BROOKSIDE TERRACE WEST	87.3	62.2	39.03	36.0
STP, 779 TWO MILE CREEK ROAD	118.7	88.0	64.9	30.4

Plotting those values on a chart (along with the average of both locations), we observed a downward trend in monitored SO<sub>2</sub> values for both locations. Those values are graphically illustrated below:



With a decreasing trend in SO<sub>2</sub> values clearly demonstrated for these two monitoring locations from 2005 to the present, it can be reasonably concluded that this monitoring location does not present an area of heightened concern for the new 1-hour SO<sub>2</sub> NAAQS.

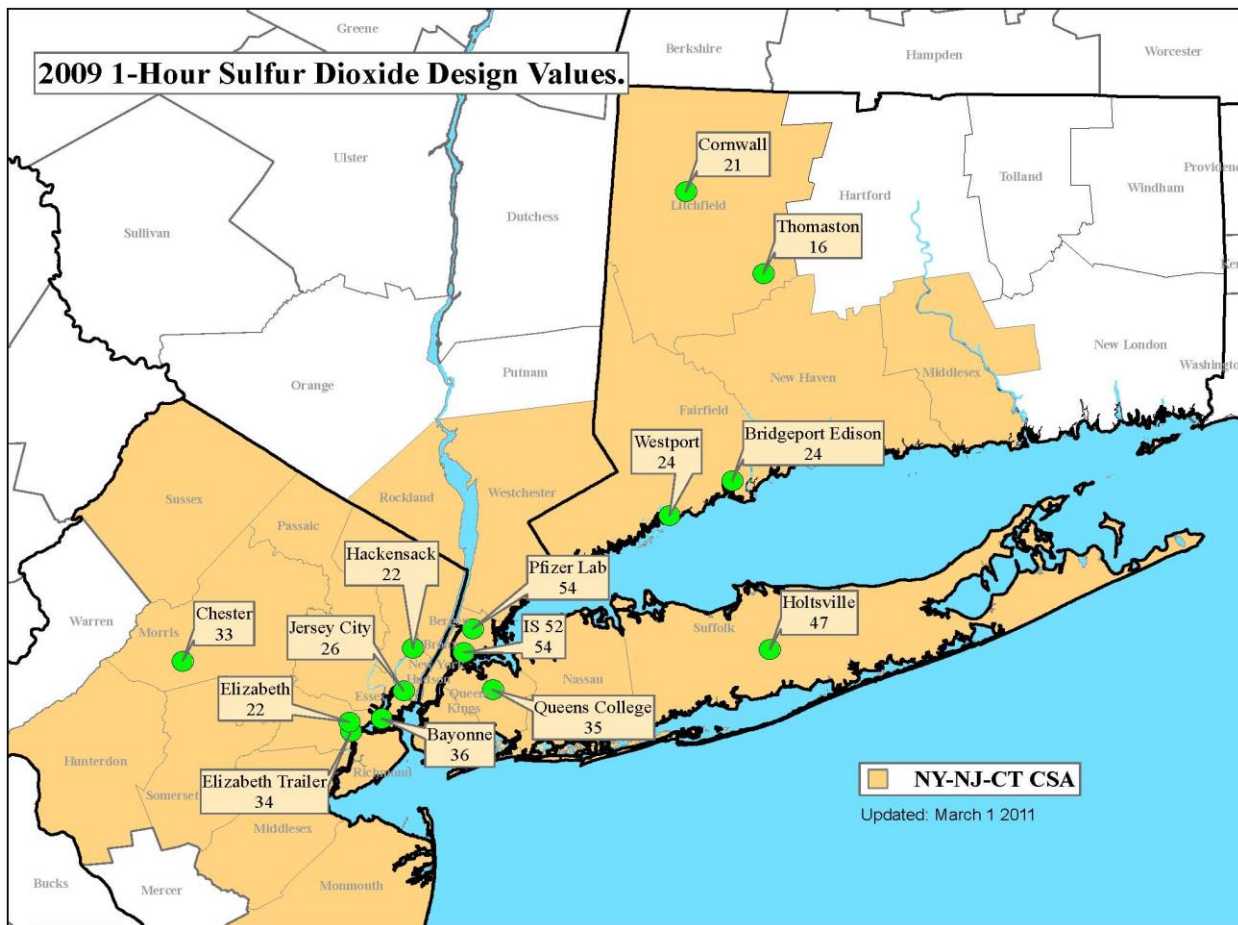
The overall, statewide site monitoring results are summarized below, showing the three year averaged SO<sub>2</sub> Design Values for all SO<sub>2</sub> monitors for each three-year Design Value period, beginning in 2005:



### Adjacent States:

In addition to assessing the existing monitoring data within New York State, the Department has also assessed the SO<sub>2</sub> monitoring data from neighboring states of Connecticut and New Jersey, as both are part of the New York-Northern New Jersey-Long Island-Connecticut Metropolitan Statistical Area, or "MSA". This assessment is necessary in order to determine if New York emissions contribute significantly to nonattainment in, or interfere with maintenance by, any other state as a result of the interstate transport of pollutants.

The map on the following page shows the outline of the New York-Northern New Jersey-Long Island-Connecticut MSA as well as the location of the SO<sub>2</sub> monitoring sites within this MSA, and their corresponding 2009 Design Values.



The calculated SO<sub>2</sub> annual 99<sup>th</sup> percentile values<sup>4</sup>, and the calculated Design Values for 2008-10 for the New Jersey counties located within the New York-Northern New Jersey-Long Island-Connecticut MSA are shown below. None of the Design Values exceeded the 1-hour SO<sub>2</sub> NAAQS of 75 ppb:

#### Monitored SO<sub>2</sub> Concentrations in NJ (ppb) Annual 99th Percentile Values\*

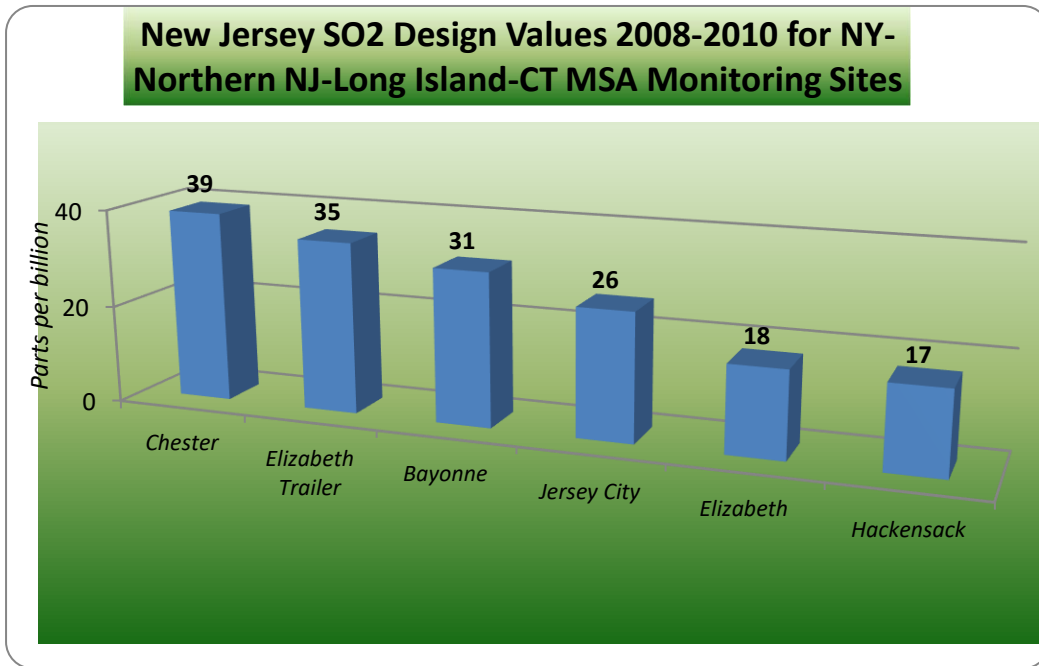
Site	2008	2009	2010	Average
Chester	49	33	35	39
Elizabeth Trailer	41	34	30	35
Bayonne	31	36	27	31
Jersey City	31	26	21	26
Elizabeth	20	22	11	18
Hackensack	18	22	9	17

\* Sites that are within the NY-Northern NJ-Long Island-Connecticut MSA only.

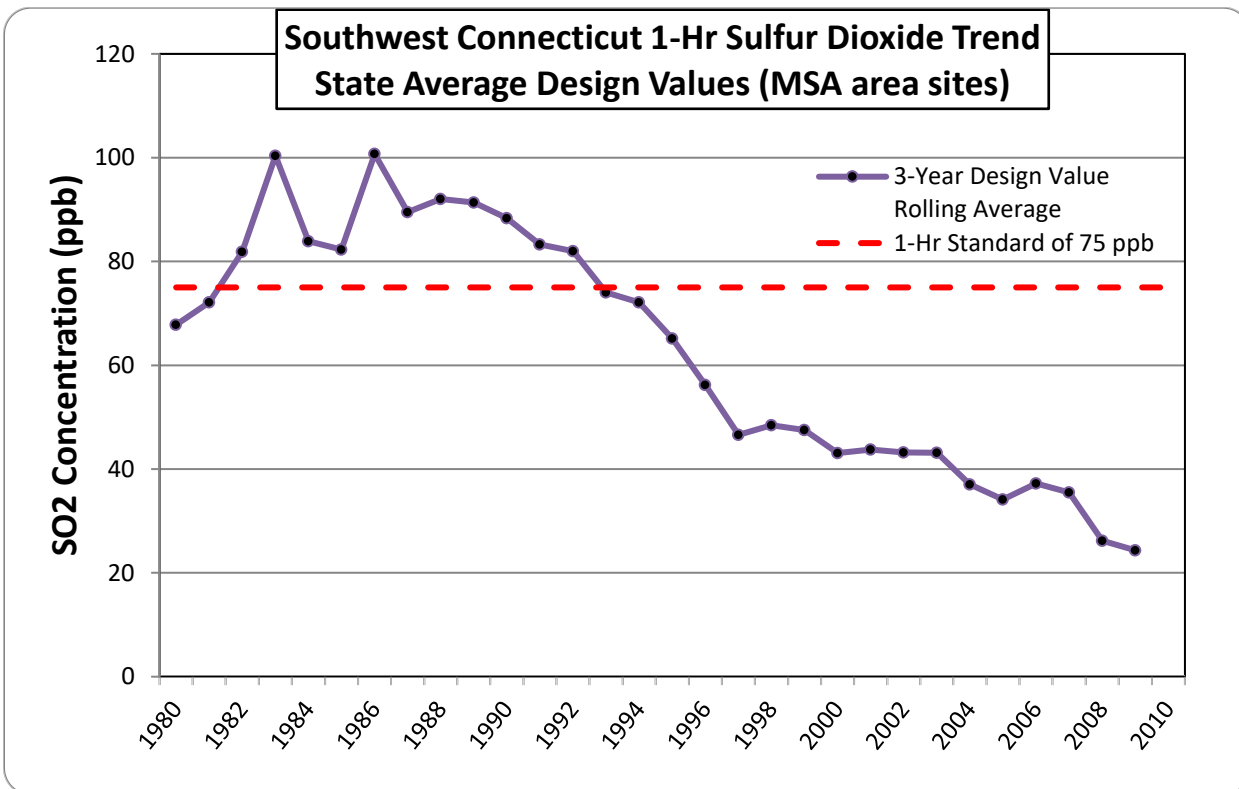
<sup>4</sup> Highest daily 1-hour 99<sup>th</sup> percentile value on an annual basis.



The New Jersey Design Values for 2008-2010, graphically illustrated below, show that values are well below the new 1-hour SO<sub>2</sub> NAAQS of 75 ppb:



Similarly, monitoring sites downwind from New York within the Connecticut portion of the New York-Northern New Jersey-Long Island-Connecticut MSA all show Design Values in recent years well below the 75 ppb standard:



The last instance of a 3-year rolling Design Value exceeding the new 1-hour SO<sub>2</sub> NAAQS of 75 ppb in southwest Connecticut (MSA) occurred in 1999 at the Bridgeport monitoring site.

Since there are no monitors indicating non-attainment in either state in recent years, New York State cannot, at this time, be deemed to contribute to, or interfere with, attainment of the new 1-hour SO<sub>2</sub> NAAQS in other states within the NY-Northern NJ-Long Island-Connecticut MSA, which includes northern New Jersey and the southwestern part of Connecticut.

To aid in our assessment of SO<sub>2</sub> attainment designations for New York, we have also constructed and attached a map showing the location of all SO<sub>2</sub> monitors in New York, as well as the location of all 100 TPY-and-greater emission sources (as of 2008), and the boundaries of all Core-Based Statistical Areas (CBSAs). The map provides a visual guide for assessing the relationships between these three important elements. While the absence of 100 tpy-and-greater sources in a particular CBSA is not, in and of itself, evidence of attainment, the presence of a compliant monitor within the same CBSA is an additionally compelling argument for attainment designation for that particular area. As such, we note that the Elmira and Utica-Rome CBSAs all have monitors with recent Design Values well below the new standard, and contain no 100 tpy-and-greater SO<sub>2</sub> sources within their boundaries.

### **Recommendations:**

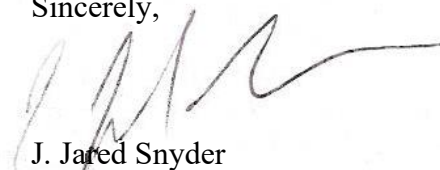
The Department is recommending that all areas of New York be designated as “attainment”, with the exception of the Poughkeepsie-Middletown-Newburgh CBSA, which we recommend be designated as “unclassifiable” since sufficient data to make an attainment determination has not yet been collected. We believe that for all other areas of New York State, based on existing monitoring data, there is sufficient evidence demonstrating attainment of the new NAAQS Primary Standard. In addition, no non-attainment is indicated based on the monitoring data, in either New York State or adjoining states in the New York-Northern NJ-Long Island-Connecticut MSA. As such, the Department recommends that the following CBSAs, as well as the remainder of the State, be designated as “attainment” with respect to the new, 1-hour NAAQS for SO<sub>2</sub>:

- New York – northern New Jersey – Long Island, NY - CT
- Buffalo-Niagara Falls
- Albany-Schenectady-Troy
- Rochester
- Syracuse
- Kingston
- Ithaca
- Binghamton
- Elmira
- Utica-Rome

We believe that each of these recommendations is consistent with Section 107(d) of the Clean Air Act.

Should you have any questions regarding these recommendations, please do not hesitate to contact me at (518) 402-8537 or David J. Shaw, Director of the Department's Division of Air Resources, at (518) 402-8452.

Sincerely,

A handwritten signature in black ink, appearing to read "J. Jared Snyder", with a long horizontal flourish extending to the right.

J. Jared Snyder  
Assistant Commissioner  
Office of Air Resources, Climate Change  
& Energy

Enclosure

cc: D. Shaw  
R. Sliwinski  
M. Reis  
J. Close  
C. McCarthy

# Metropolitan Statistical Areas: SO2 Emission Sources & Monitor Locations

