2009 Air Quality Index Summary

New Jersey Department of Environmental Protection

What is the Air Quality Index (AQI)?

The Air Quality Index (AQI) is a national air quality rating system based on the National Ambient Air Quality Standards (NAAQS). Generally, an index value of 100 is equal to the primary, or health based, NAAQS for each pollutant. This allows for a direct comparison of each of the pollutants used in the AQI (carbon monoxide, nitrogen dioxide, particulate matter, ozone, and sulfur dioxide). The ozone NAAQS were revised in 2008 because EPA had determined that the old standard of 0.08 parts per million (ppm) maximum daily eight-hour average was not sufficiently protective of public health. On March 12, 2008 they set a revised standard of 0.075 ppm maximum daily 8-hour average, so this is the first complete year AQI values for ozone are based on this new standard. The AQI rating for a reporting region is equal to the highest rating recorded for any pollutant within that region. In an effort to make the AQI easier to understand, a descriptive rating and a color code, based on the numerical rating are used (see Table 1). For more information on the AQI, visit EPA's web site at http://airnow.gov/.

Table 1
Air Quality Index

Numerical AQI Rating	Descriptive Rating	AQI Color Code
0-50	Good	Green
51-100	Moderate	Yellow
101-150	Unhealthy for Sensitive Groups	Orange
151-200	Unhealthy	Red
201-300	Very Unhealthy	Purple

Each weekday morning a forecast is prepared using the AQI format. The forecast is provided to participating radio and television stations. Each afternoon, an air quality update, which includes the current air quality information and a forecast for the following day, is issued to various newspapers.

For purposes of reporting the AQI, the state is divided into 9 regions (see Figure 1). Table 2 shows the monitoring sites and parameters used in each reporting region to calculate the AQI values.

Figure 1

Air Quality Index Regions

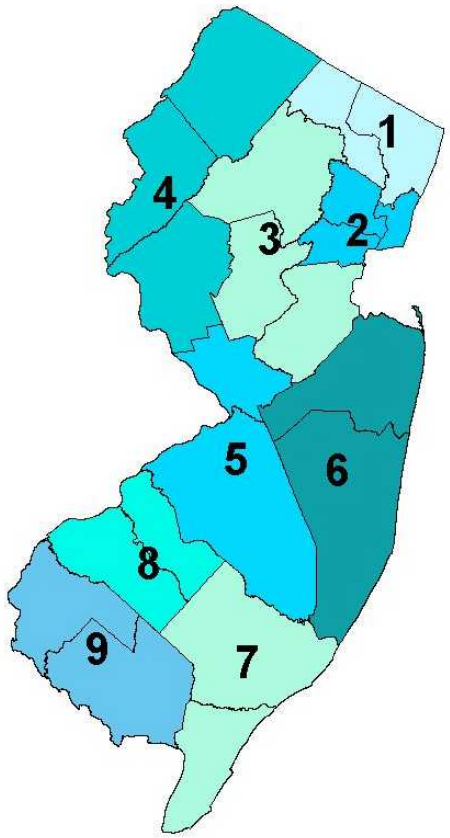


Table 2

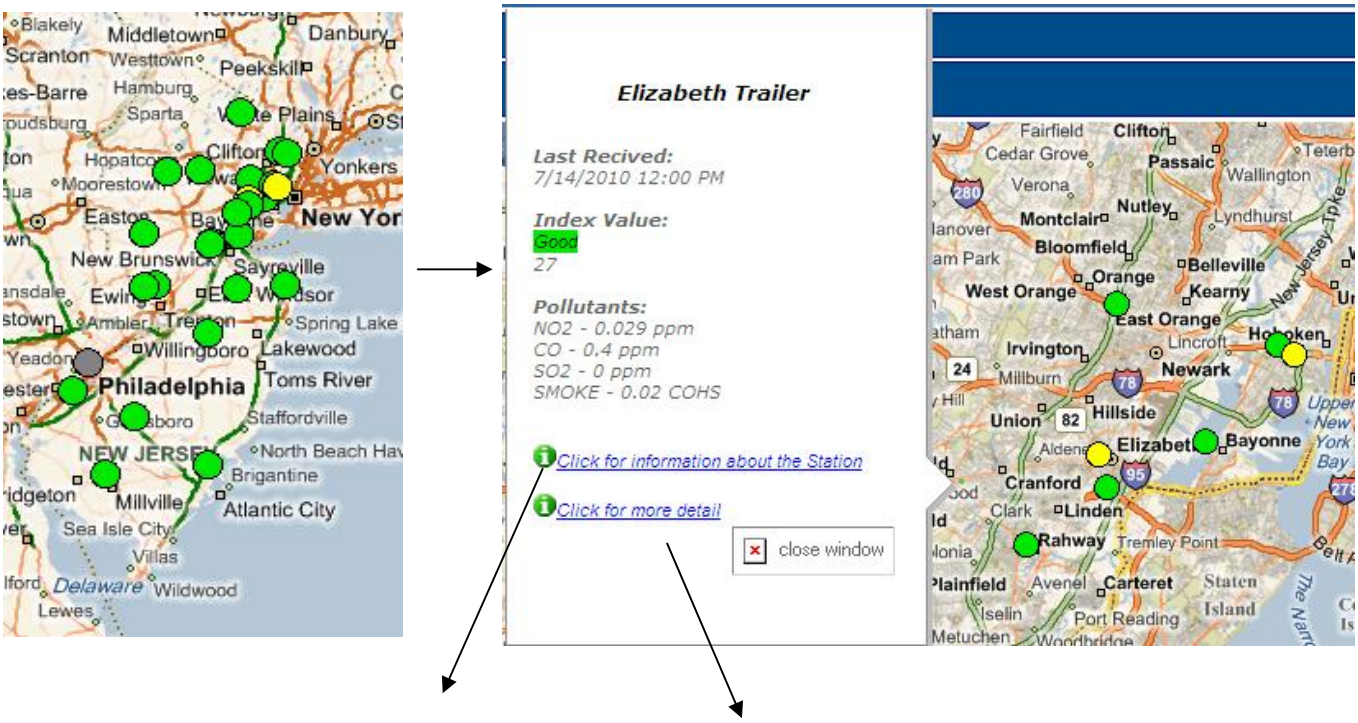
Pollutants Monitored According to Air Quality Index Reporting Region - 2009

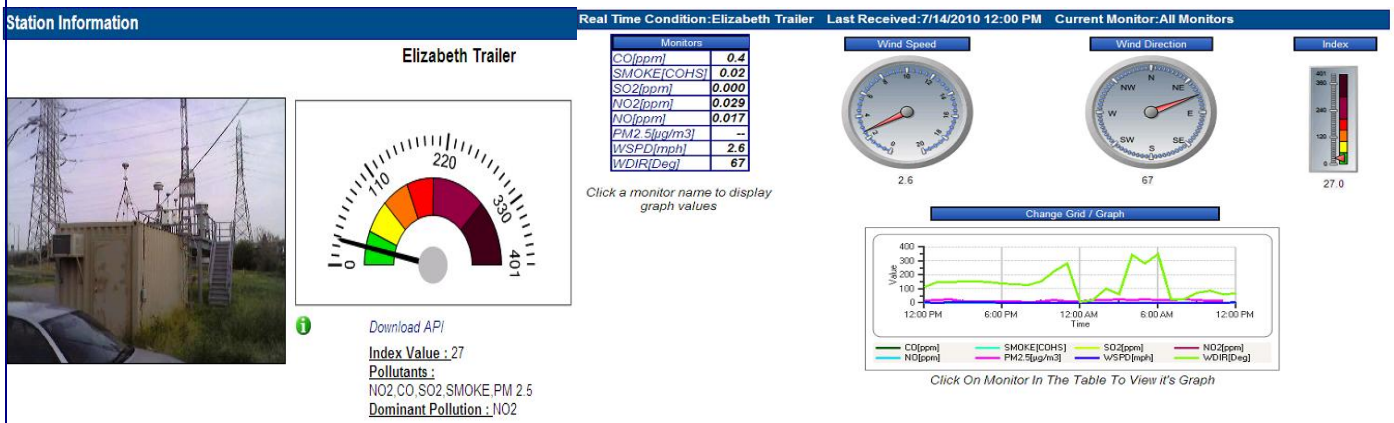
CO - Carbon Monoxide
SO_2 - Sulfur Dioxide
PM - Particulate Matter
O_3 - Ozone
NO_2 - Nitrogen Dioxide

Reporting Region	Monitoring Site	CO	SO_2	PM	O_3	NO_2
1. Northern Metropolitan	Fort Lee	X	---	X	---	---
	Hackensack	X	X	X	---	---
	Leonia	---	---	---	X	X
	Ramapo	---	---	---	X	---
2. Southern Metropolitan	Bayonne	---	X	---	X	X
	East Orange	X	---	---	---	X
	Elizabeth	X	X	X	---	---
	Elizabeth Lab	X	X	X	---	X
	Jersey City	X	X	X	---	---
	Jersey City Firehouse	---	---	X	---	---
	Newark Firehouse	X	X	X	X	---
	Rahway	---	---	X	---	---
3. Suburban	Chester	---	X	---	X	X
	Morristown	X	---	X	---	---
	New Brunswick	---	---	X	---	---
	Perth Amboy	X	X	X	---	---
	Rutgers University	---	---	---	X	X
4. Northern Delaware Valley	Flemington	---	---	X	X	---
5. Central Delaware Valley	Burlington	X	X	X	---	---
	Ewing	---	---	X	---	---
	Rider University	---	---	---	X	X
6. Northern Coastal	Colliers Mills	---	---	---	X	---
	Freehold	X	---	X	---	---
	Monmouth University	---	---	---	X	---
7. Southern Coastal	Brigantine	---	X	X	X	---
8. Southern Delaware Valley	Ancora State Hospital	X	X	---	X	---
	Clarksboro	---	X	---	X	---
	South Camden	---	---	X	---	---
9. Delaware Bay	Millville	---	X	X	X	X

Along with the forecast, cautionary statements are provided for days when the air quality is expected to be unhealthy. A weekday air quality forecast map, introduced during the 1996 ozone season, is televised on New Jersey Network's (NJN) TV News Broadcast. An initial web page was also created in 1996 to show current air quality levels, and was updated in 2009 to a newer format. This page can be accessed at the following internet address: http://www.njaqinow.net/ . Some examples of the air quality information available on our web site are shown in Figure 2 below:

Figure 2
Examples of NJDEP's Air Monitoring Website





2009 AQI SUMMARY

A summary of the AQI ratings for New Jersey in 2009 is presented in the pie chart to the right. In 2009 there were 178 "Good" days, 169 were "Moderate", 18 were rated "Unhealthy for Sensitive Groups", zero were considered "Unhealthy", and zero were rated "Very Unhealthy". This indicates that air quality in New Jersey is considered good or moderate most of the time, but that pollution is still bad enough to adversely affect some people on about one day in twenty. Table 3 lists the dates when the AQI reached the "Unhealthy for Sensitive Groups" threshold at any monitoring location and shows which pollutant(s) were in that range or higher. Figure 4 shows the AQI ratings for the year broken down by AQI region (AQI data was not available for every day therefore some of the regions total day count does not add up to 365).

Figure 3
Air Quality Summary by Days

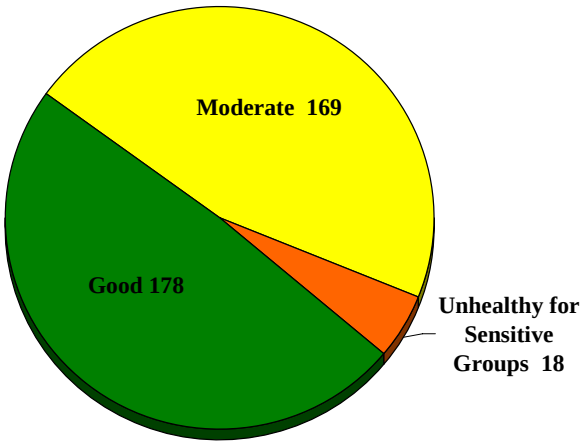


Table 3
Air Quality Index (AQI) Exceedances of 100 During 2009

Ratings

USG - Unhealthy for Sensitive Groups
UH - Unhealthy
VUH - Very Unhealthy

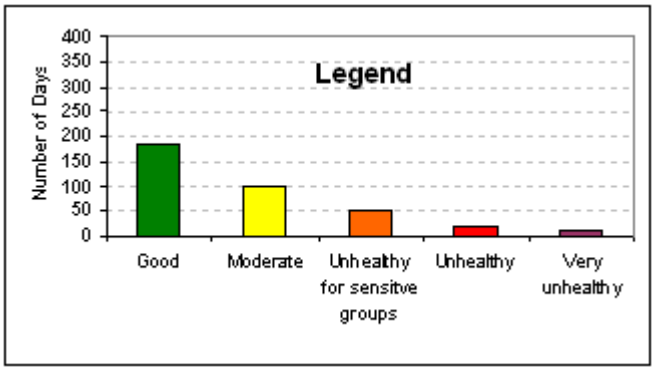
Pollutants

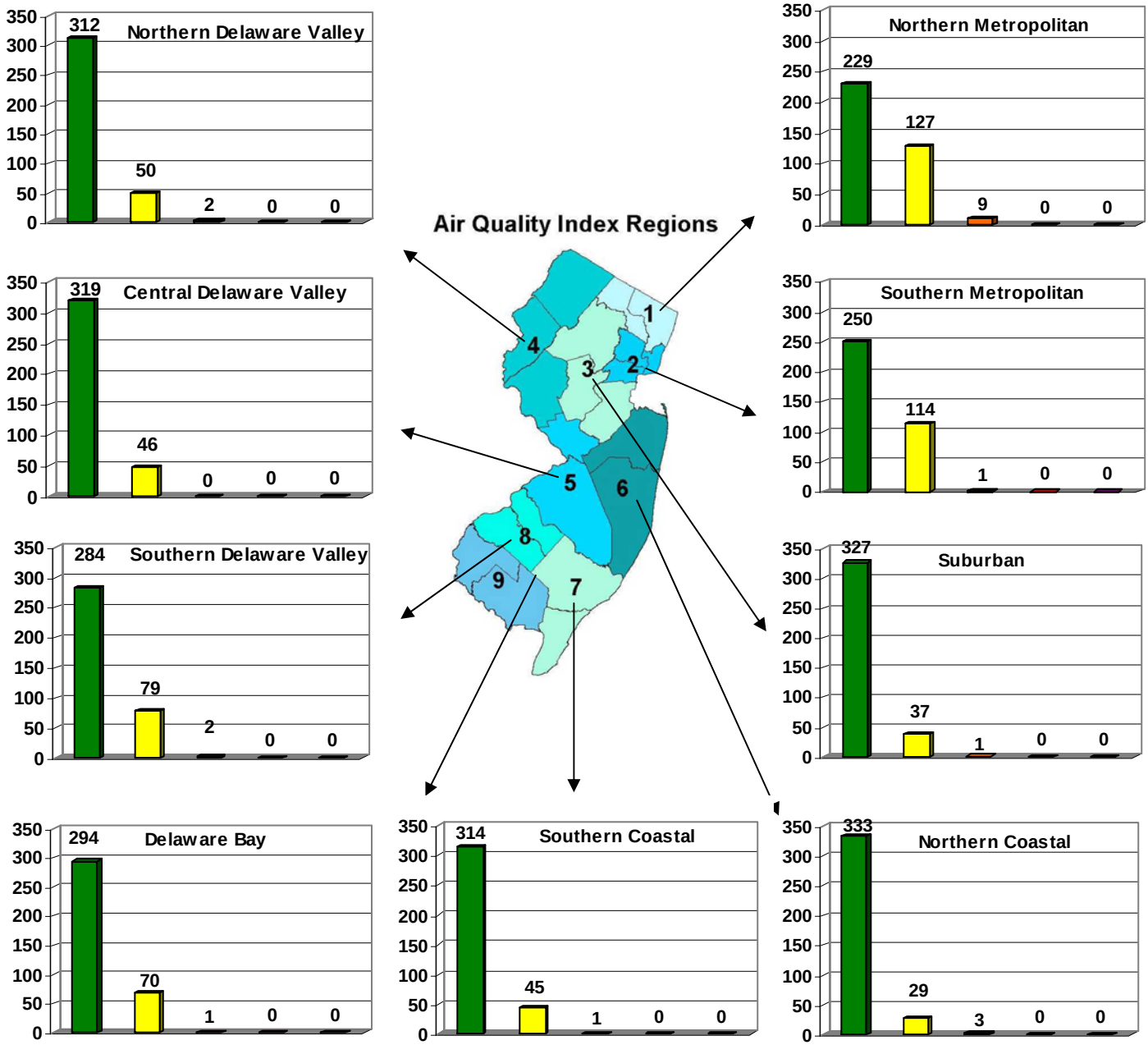
PM - Fine Particle Matter (11 Sites Monitored)
O3 - Ozone (14 Sites Monitored)

* Number in parentheses () indicates the total number of ozone and $PM_{2.5}$ sites exceeding 100 on a given day

Date	Highest Location	Highest AQI Value	Highest Pollutant	Highest Rating	Pollutant(s) with AQI above 100 *	
January 23	Fort Lee	104	PM	USG		PM(1)
January 30	Jersey City Firehouse	101	PM	USG		PM(1)
April 10	Fort Lee	104	PM	USG		PM(1)
April 26	Monmouth University	106	O3	USG	O3(1)	
April 27	Chester	119	O3	USG	O3(2)	
May 15	Fort Lee	103	PM	USG		PM(1)
June 26	Clarksboro	101	O3	USG	O3(1)	
July 16	Colliers Mills	111	O3	USG	O3(1)	
July 17	Fort Lee	111	PM	USG		PM(1)
July 27	Fort Lee	101	PM	USG		PM(1)
July 28	Fort Lee	127	PM	USG		PM(1)
July 29	Fort Lee	126	PM	USG		PM(1)
August 04	Flemington	101	O3	USG	O3(1)	
August 10	Millville	109	O3	USG	O3(1)	
August 15	Leonia	106	O3	USG	O3(1)	
August 17	Colliers Mills	124	O3	USG	O3(3)	PM(1)
September 05	Brigantine	111	O3	USG	O3(1)	
November 09	South Camden	103	PM	USG		PM(1)

Figure 4
2009 Air Quality Index Summary
Number of Days by Reporting Region





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