2006 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 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
200-300	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.

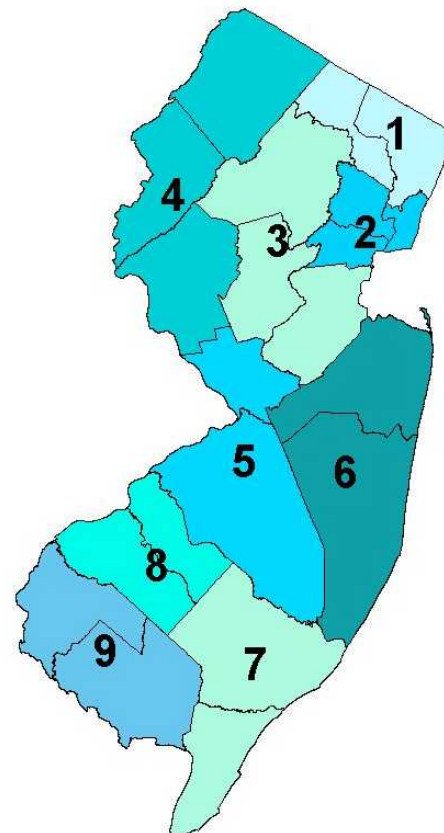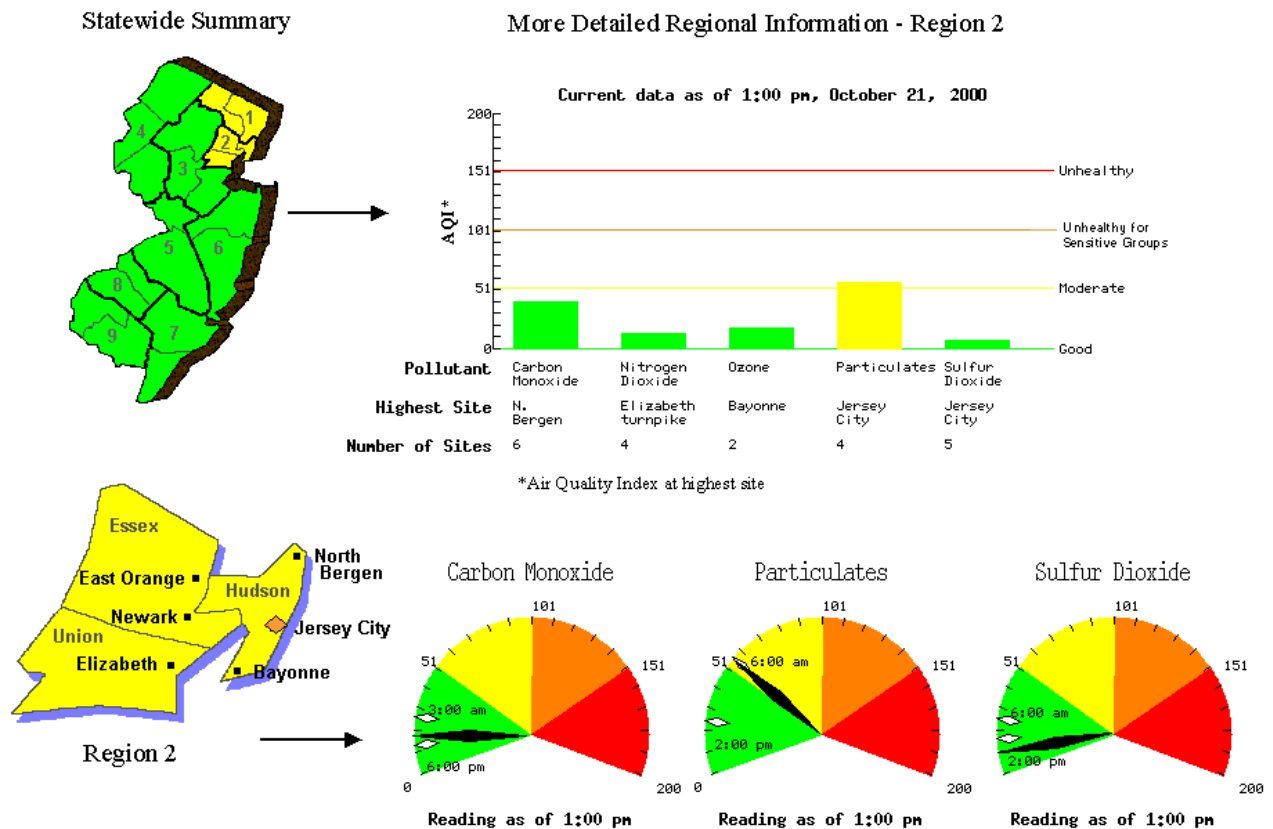**Figure 1**

Air Quality Index Regions

Table 2
Pollutants Monitored According to Air Quality Index Reporting Region - 2006

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

Reporting Region	Monitoring Site	CO	SO_2	PM	O_3	NO_2
1. Northern Metropolitan	Fort Lee	X	---	X	---	---
	Hackensack	X	X	X	---	---
	Ramapo	---	---	---	X	---
	Teaneck	---	---	---	X	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	---	---
	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	---	---
	Rider University	---	---	---	X	X
6. Northern Coastal	Colliers Mills	---	---	---	X	---
	Freehold	X	---	X	---	---
	Monmouth University	---	---	---	X	---
7. Southern Coastal	Nacote Creek R. S.	---	X	---	X	---
8. Southern Delaware Valley	Ancora State Hospital	X	X	---	X	---
	Camden Lab	X	X	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. A web page was also created in 1996 to show current air quality levels. This page can be accessed at the following internet address: http://www.state.nj.us/dep/airmon. 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

Statewide Summary

More Detailed Regional Information - Region 2

Current data as of 1:00 pm, October 21, 2000

Pollutant	Carbon Monoxide	Nitrogen Dioxide	Ozone	Particulates	Sulfur Dioxide
Highest Site	N. Bergen	Elizabeth turnpike	Bayonne	Jersey City	Jersey City
Number of Sites	6	4	2	4	5

*Air Quality Index at highest site

Region 2

Carbon Monoxide   Particulates   Sulfur Dioxide

Reading as of 1:00 pm   Reading as of 1:00 pm   Reading as of 1:00 pm

Readings from Individual Instruments at Jersey City

2006 AQI SUMMARY

A summary of the AQI ratings for New Jersey in 2006 is presented in the pie chart to the right. In 2006 there were 161 "Good" days, 170 were "Moderate", 31 were rated "Unhealthy for Sensitive Groups", 3 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 eleven. 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

Moderate 170

Good 161

Unhealthy for Sensitive Groups 31
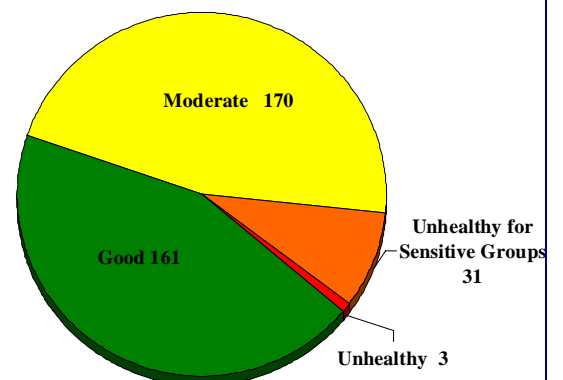
Unhealthy 3

Table 3
Air Quality Index (AQI) Exceedances of 100 During 2006

<u>Ratings</u>

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

<u>Pollutants</u>

PM - Fine Particle Matter
(9 sites monitored)
O_3 - 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 11	Jersey City Firehouse	110	PM	USG		PM (3)
January 13	Fort Lee	102	PM	USG		PM (1)
February 16	Elizabeth Lab	132	PM	USG		PM (2)
March 13	Fort Lee	103	PM	USG		PM (2)
May 26	Fort Lee	128	PM	USG		PM (2)
May 29	Colliers Mills	135	O3	USG	O3 (1)	
May 30	Chester	140	O3	USG	O3 (3)	PM (1)
June 01	Rutgers University	147	O3	USG	O3 (3)	
June 17	Rutgers University	119	O3	USG	O3 (3)	
June 18	Rutgers University	154	O3	UH	O3 (6)	
June 19	Jersey City Firehouse	120	PM	USG	O3 (3)	PM (4)
June 22	Camden Lab	119	O3	USG	O3 (5)	
June 29	Chester	104	O3	USG	O3 (1)	
July 02	Monmouth University	111	O3	USG	O3 (2)	
July 03	Colliers Mills	109	O3	USG	O3 (1)	
July 04	Jersey City Firehouse	105	PM	USG		PM (1)
July 11	Rutgers University	137	O3	USG	O3 (4)	PM (2)
July 12	Fort Lee	149	PM	USG		PM (5)
July 17	Ancora State Hospital	177	O3	UH	O3 (9)	
July 18	Ancora State Hospital	169	O3	UH	O3 (1)	PM (3)
July 19	Chester	111	O3	USG	O3 (1)	
July 21	South Camden	106	PM	USG		PM (1)
July 26	Chester	104	O3	USG	O3 (2)	
July 27	Rider University	109	O3	USG	O3 (1)	
July 30	South Camden	103	PM	USG		PM (1)
August 01	Ancora State Hospital	122	O3	USG	O3 (3)	PM (4)
August 02	Camden Lab	124	PM	USG	O3 (4)	PM (5)
August 03	Colliers Mills	106	O3	USG	O3 (2)	PM (2)
August 05	Monmouth University	109	O3	USG	O3 (1)	
September 19	Fort Lee	110	PM	USG		PM (1)
October 4	Fort Lee	106	PM	USG		PM (1)
November 27	Jersey City Firehouse	106	PM	USG		PM (1)
November 28	Elizabeth Lab	120	PM	USG		PM (4)
November 29	Fort Lee	110	PM	USG		PM (2)

Figure 4
2006 Air Quality Index Summary
Number of Days by Reporting Region
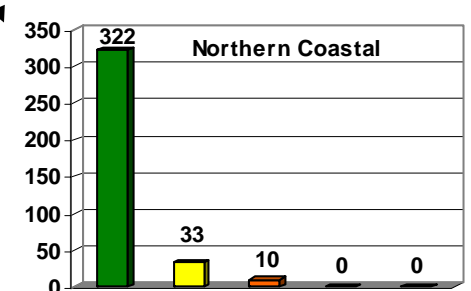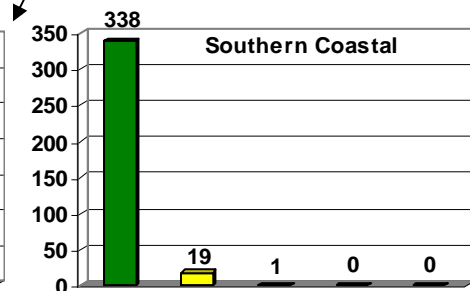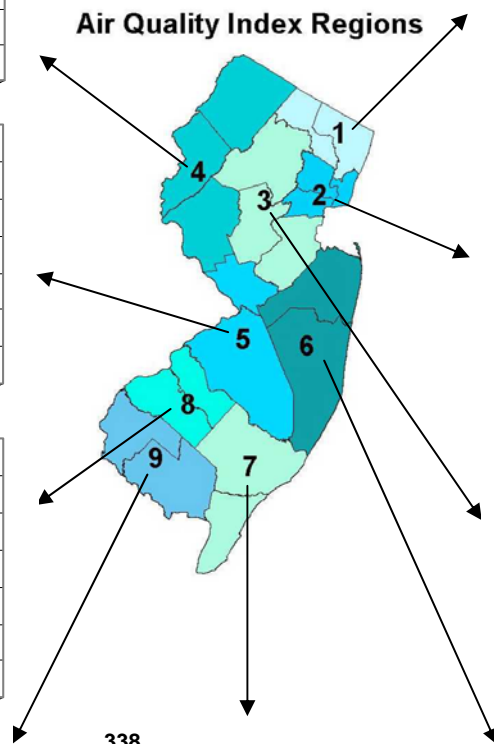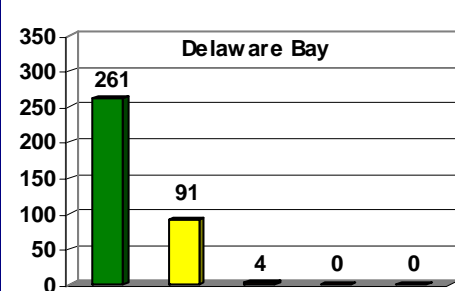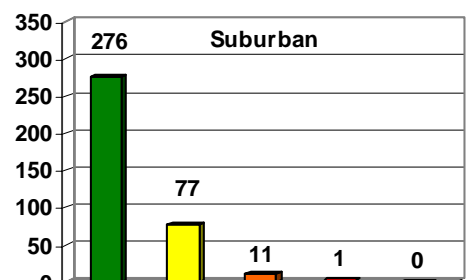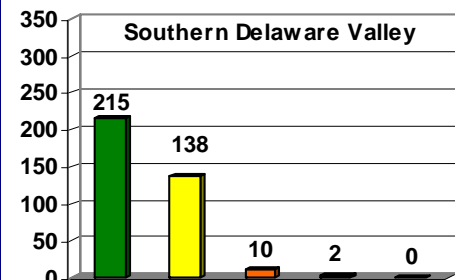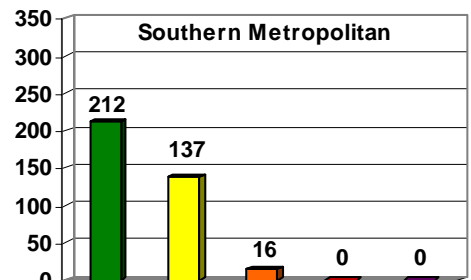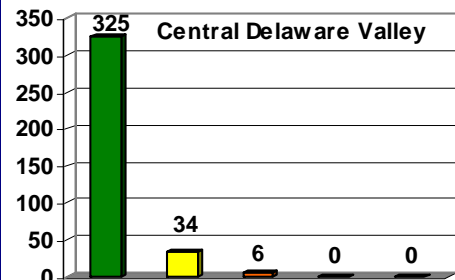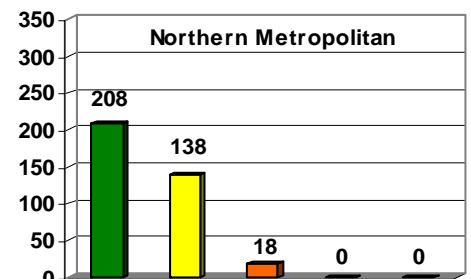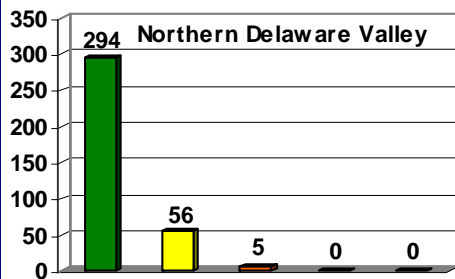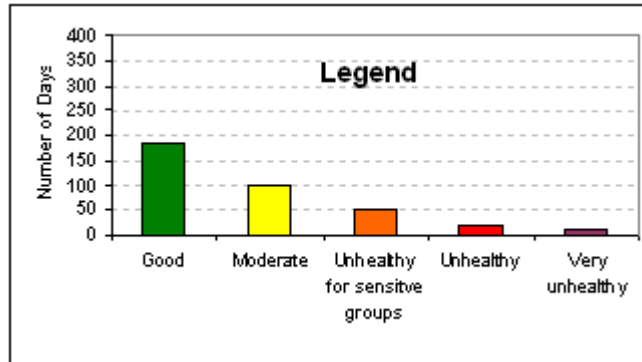
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