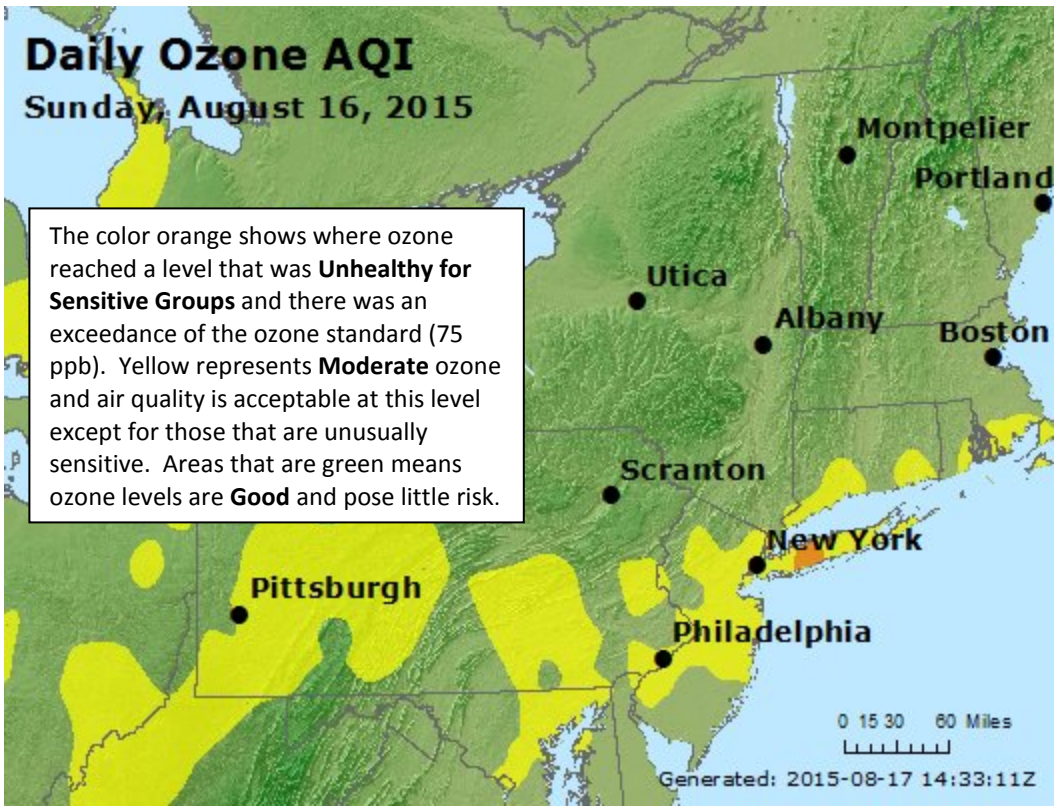
Ozone National Ambient Air Quality Standard Health Exceedance on August 16, 2015

Exceedances Locations and Levels

On Sunday, August 16, 2015, an exceedance of the 8-hour average 75 ppb NAAQS for ozone was recorded at one (1) New York station: Babylon with a concentration of 79 ppb. The highest 1-hour average ozone concentration recorded on August 16, 2015 was 112 ppb, also at the Babylon, NY station, which is below the 1-hour NAAQS of 120 ppb. The Babylon, NY ozone level was the only exceedance in the 5 states that make up the Air Quality Control Region that includes New Jersey. Figure 1 shows the ozone AQI across the region for August 16.

Figure 1. Ozone Air Quality Index for August 16, 2015



Source: www.airnow.gov

For ozone terminology definitions see NJDEP Air Quality Planning's Glossary and Acronyms webpage: http://nj.gov/dep/baqp/glossary.html

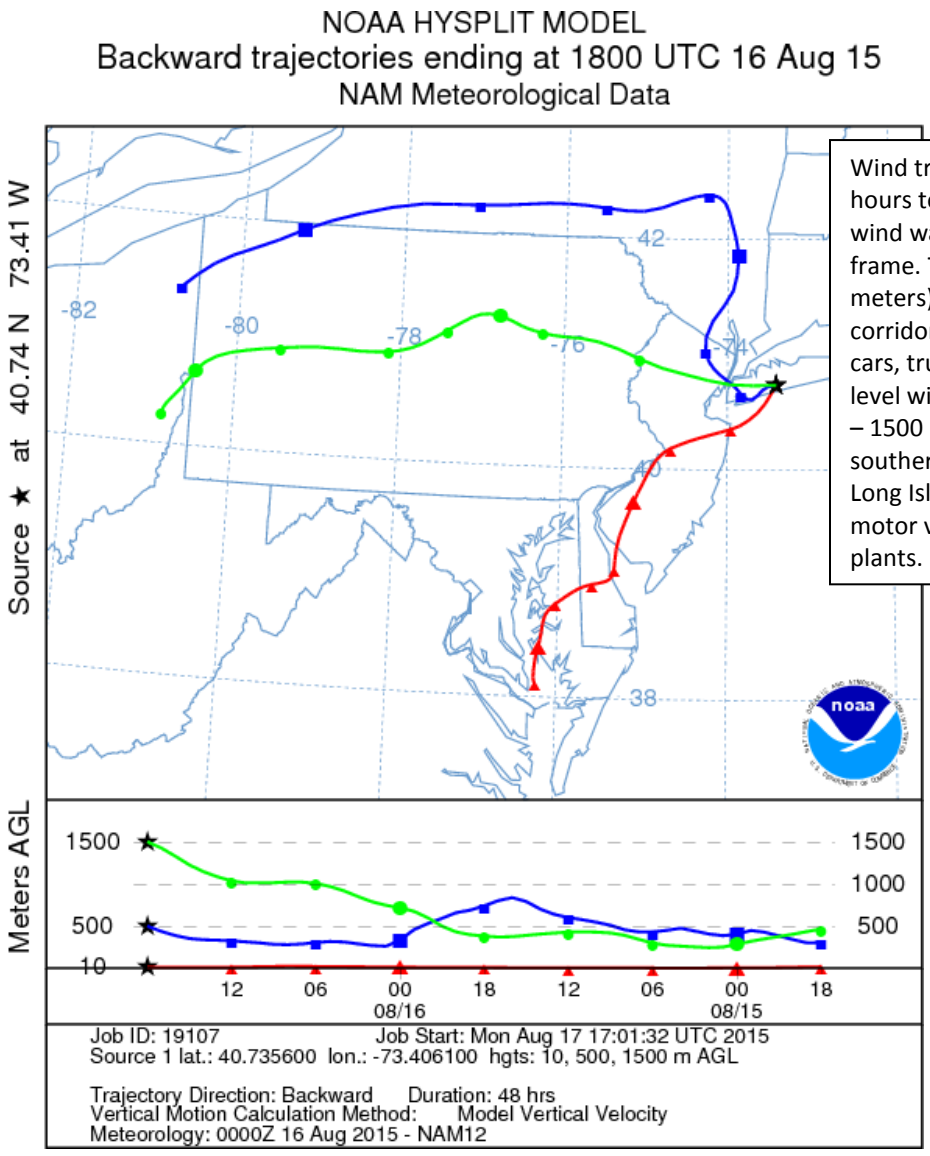
Weather

Meteorological data from Republic Airport in Babylon, NY shows temperatures reached 88^{o} F, while winds were light and from the south/southwest. Skies were mostly sunny across Long Island, NY. Sufficient sunlight, combined with warm temperatures and a southwest wind component, are features commonly seen with an ozone exceedance.

Where Did the Air Pollution that Caused Ozone Come From?

Figure 2 shows the back trajectories for the monitored exceedance for August 16. Figure 2 shows that low level winds (red line) traveled up along the I-95 corridor, picking up air contaminant emissions from cars, trucks, and industry. Higher level winds (blue and green lines) traveled through Pennsylvania, southern New York, northern New Jersey, and New York City on their way to the Babylon site, bringing additional pollution from motor vehicles and coal fired power plants. The combination of these winds caused air pollution from both mobile sources and large industrial sources to be transported into the area of Long Island, NY that experienced high ozone on August 16.

Figure 2. 48-hour Back Trajectories for August 16, 2015



Wind trajectories look backwards 48 hours to show what direction the wind was blowing during that time frame. The low level winds (red – 10 meters) traveled up along the I-95 corridor, picking up pollution from cars, trucks, and industry. Higher level winds (blue – 500 meters, green – 1500 meters) crossed through PA, southern NY, and NYC on their way to Long Island, picking up pollution from motor vehicles and coal fired power plants.

How is Smog Created?

Ground-level ozone, also known as smog, is an air pollutant known to cause a number of health effects and negatively impact air quality and the environment in the state of New Jersey. Smog is formed when oxides of nitrogen (NOx) and volatile organic compounds (VOCs) react in the presence of sunlight. Smog can irritate any set of lungs, but those with lung-related deficiencies should take extra precautions on bad ozone days.

Find Out About Air Quality Every Day

The "What's Your Air Quality Today?" page at http://www.nj.gov/dep/cleanairnj/ tells you how to sign up to receive notifications and find out when your local air has reached unhealthy ozone levels.