Ozone National Ambient Air Quality Standard Health Exceedances on July 12, 2016

Exceedance Locations and Levels

On Tuesday, July 12, 2016, there were no exceedances in New Jersey of the new 8-hour average ozone NAAQS of 70 ppb that became effective in December 2015. The highest 8-hour average ozone concentration was 63 ppb recorded at the Flemington station.

The highest 1-hour average ozone concentration recorded on July 12, 2016 in New Jersey was 79 ppb at the Leonia station, which is below the 1-hour ozone NAAQS of 120 ppb.

The number of days in 2016 on which exceedances of the new 8-hour ozone NAAQS of 70 ppb were recorded in New Jersey remains at fourteen (14). By the 12th of July in 2015, there were a total of seven (7) days on which ozone exceedances were measured in New Jersey (based on the former 75 ppb NAAQS of 2008), and there were two (2) days by this same date in 2014.

There is a group of monitoring stations in designated counties of five (5) states, New York, Connecticut, Pennsylvania, Delaware and Maryland, that are included in New Jersey's ozone non-attainment areas. From this group of stations in the other neighboring states, there was one (1) exceedance of the new 8-hour ozone NAAQS of 70 ppb recorded on Tuesday, July 12, 2016 (see Table 1):

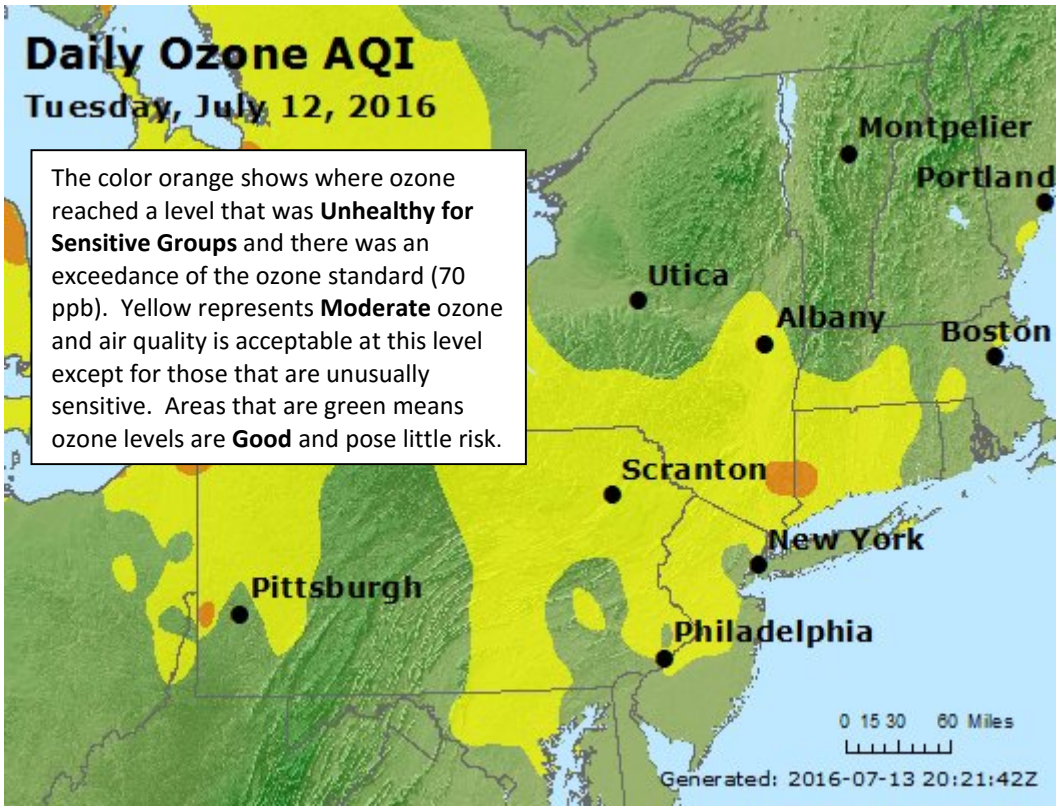
Table 1: Ozone NAAQS Exceedances at Other Monitoring Stations in New Jersey's Ozone Nonattainment Areas on July 12, 2016

STATE	STATION	Daily Maximum 8-Hr Average (ppb)
CT	Danbury	72

The highest 1-hour average ozone concentration recorded was 92 ppb at the Danbury station in Connecticut, which is below the 1-hour ozone NAAQS of 120 ppb.

Tuesday marks the 14th day in 2016 on which exceedances of the new 8-hour ozone NAAQS of 70 ppb were recorded in Connecticut. The number of days for New York remains at thirteen (11), eight (8) days for Pennsylvania, five (5) days for Delaware, and four (4) days for Maryland.

Figure 1. Ozone Air Quality Index for July 12, 2016



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

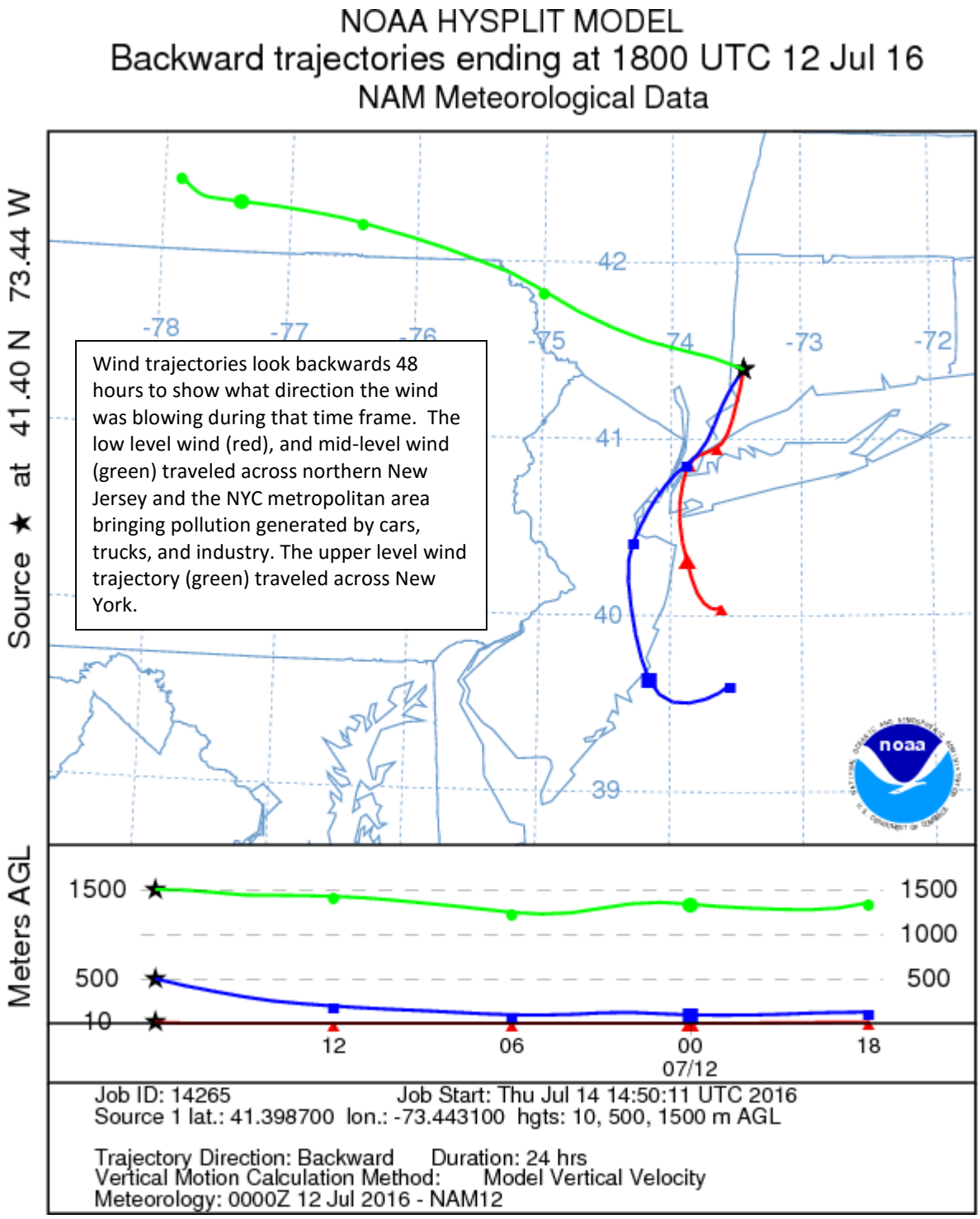
Meteorological data from across the region showed temperatures reached the high 70°F's to mid 80°F's, while winds were light and from the south. Skies were mostly sunny. A high pressure system was located off of the New England coast. Light winds, adequate sunlight, and warm temperatures, are all meteorological conditions known to contribute to the formation of ground level ozone.

Where Did the Air Pollution that Caused Ozone Come From?

Figure 2 shows the back trajectories at different wind heights for the monitored exceedance on July 12, 2016. The figure illustrates where the winds came from during the 48 hours preceding the high ozone event.

The back trajectories for the low level (10 meter) and mid-level (500 meter) winds illustrate similar transport pathways. Winds originated over the Atlantic Ocean and traveled north across northern New Jersey and the New York City metropolitan area bringing local emissions generated by cars, trucks, and industry. The upper level wind trajectory (1500 meter) traveled across New York. The higher level wind, in combination with low and mid-level winds transported pollutants into the area of Connecticut that experienced high ozone on July 12, 2016.

Figure 2. 48-hour Back Trajectories for July 12, 2016



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.