

Ozone National Ambient Air Quality Standard Health Exceedances on June 26, 2016

Exceedance Locations and Levels

On Sunday, June 26, 2016, there was one (1) exceedance in New Jersey of the new 8-hour average ozone NAAQS of 70 ppb that became effective in December 2015 (See Table 1):

Table 1. Ozone NAAQS Exceedances in New Jersey on June 26, 2016

STATION	Daily Maximum 8-Hr Average (ppb)
Washington Crossing*	74

*The Washington Crossing station is operated and maintained by EPA as part of the nationwide Clear Air Status and Trends Network (CASTNET).

The highest 1-hour average ozone concentration recorded on June 26, 2016 in New Jersey was 91 ppb at the Leonia station, which is below the 1-hour ozone NAAQS of 120 ppb.

Sunday marks the 12th day in 2016 on which exceedances of the new 8-hour ozone NAAQS of 70 ppb were recorded in New Jersey. By the 26th of June in 2015, there were a total of five (5) days on which ozone exceedances were measured in New Jersey (based on the former 75 ppb NAAQS of 2008), and there was one (1) day 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 nonattainment areas. From this group of stations in the other neighboring states, there were three (3) exceedances of the new 8-hour ozone NAAQS of 70 ppb recorded on Sunday, June 26, 2016 (see Table 2):

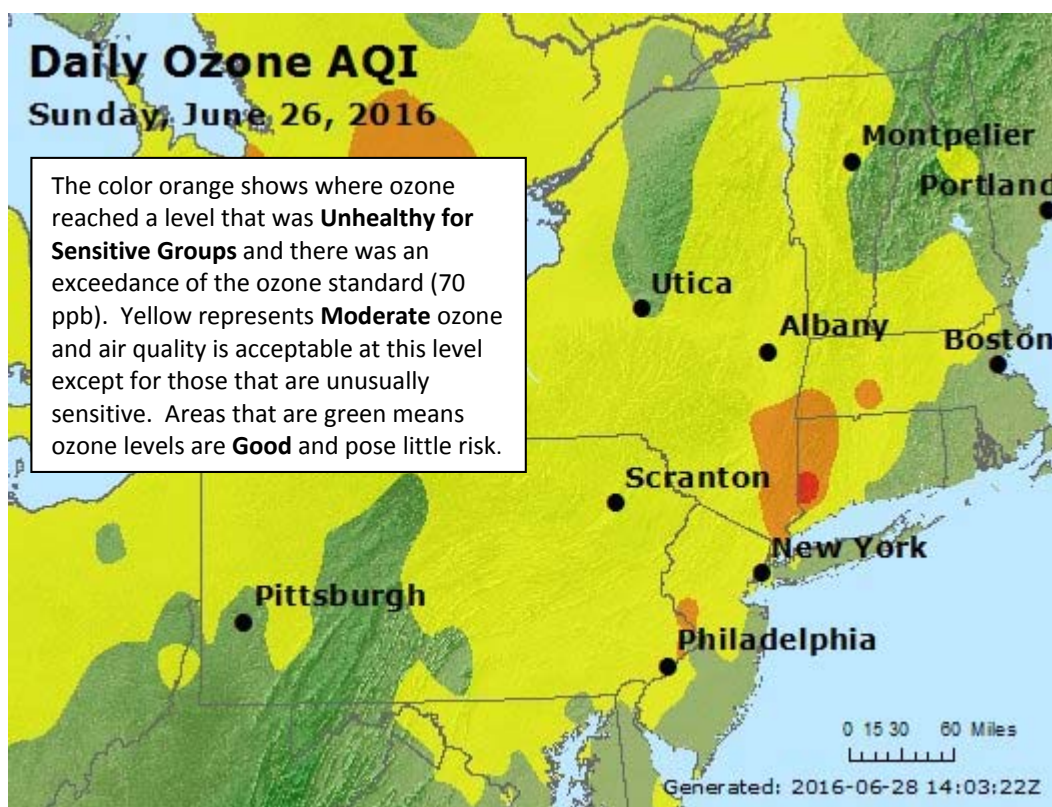
Table 2: Ozone NAAQS Exceedances at Other Monitoring Stations in New Jersey's Ozone Nonattainment Areas on June 26, 2016

STATE	STATION	Daily Maximum 8-Hr Average (ppb)
CT	Danbury	87
NY	White Plains	75
PA	NEA (Philadelphia Co.)	76

The highest 1-hour average ozone concentration recorded was 104 ppb at the Danbury station in Connecticut, 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 Connecticut is twelve (12), ten (10) days for New York, eight (8) days for Pennsylvania, and four (4) days each for Delaware and Maryland.

Figure 1. Ozone Air Quality Index for June 26, 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 around the region showed temperatures reached the mid to high 80s°F's, while winds were light and from the south. A high pressure system was centered just off the coast of New England, leading to mostly sunny skies across the region. Adequate sunlight, along with warm temperatures and light winds, are all meteorological conditions known to contribute to the formation of ground level ozone.

Where Did the Air Pollution that Caused Ozone Come From?

Figures 2, 3, and 4 show the back trajectories at different wind heights for the monitored exceedances on June 26, 2016. The figures illustrate where the winds came from during the 48 hours preceding the high ozone event.

Low level (10 meter) winds (Figure 2) originated over the Atlantic Ocean. The wind traveled inland over southern New Jersey circulating over the Philadelphia metropolitan area to monitors located in New Jersey and Pennsylvania. The winds circulated over the New York City metropolitan area before heading to monitors located in New York and Connecticut. The wind picked up emissions from cars, trucks, and industry along the way.

The mid-level (500 meter) winds (Figure 3) also originated off the coast of New Jersey and traveled southwest before circulating over New Jersey, Pennsylvania, and the Philadelphia and New York City

metropolitan areas before reaching the monitor locations. These winds brought emissions generated by motor vehicles, and industry.

The upper level (1500 meter) wind (Figure 4) circulated over New Jersey, Pennsylvania, and the Philadelphia and New York City metropolitan areas, where there are many large industrial sources and power plants. The higher level wind, in combination with the low and mid-level winds, caused air pollution from a variety of mobile and stationary sources to accumulate and then be transported into the areas that experienced high ozone on June 26, 2016.

Figure 2. 48-hour Back Trajectories for June 26, 2016 at 10 meters

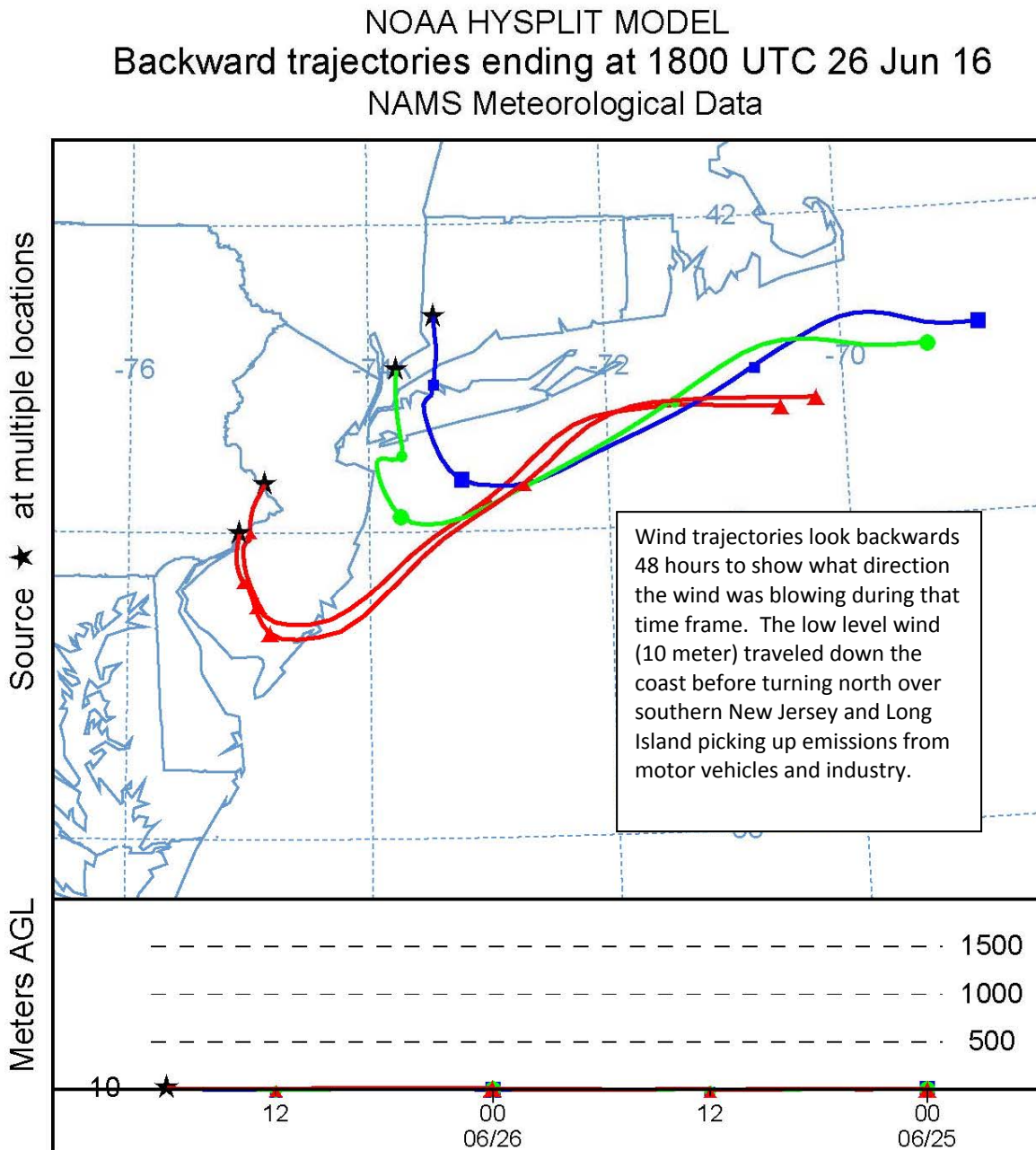


Figure 3. 48-hour Back Trajectories for June 26, 2016 at 500 meters

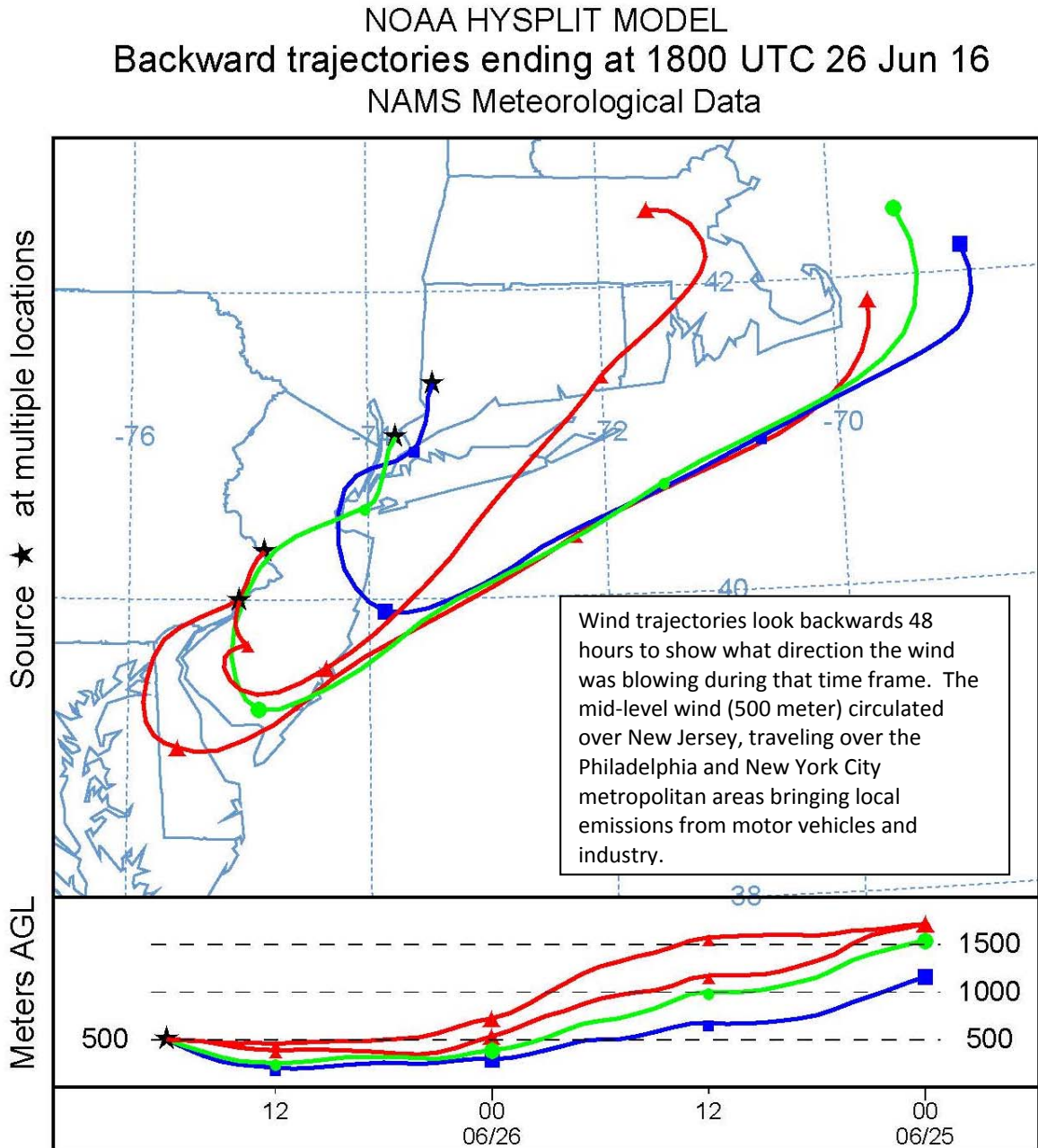
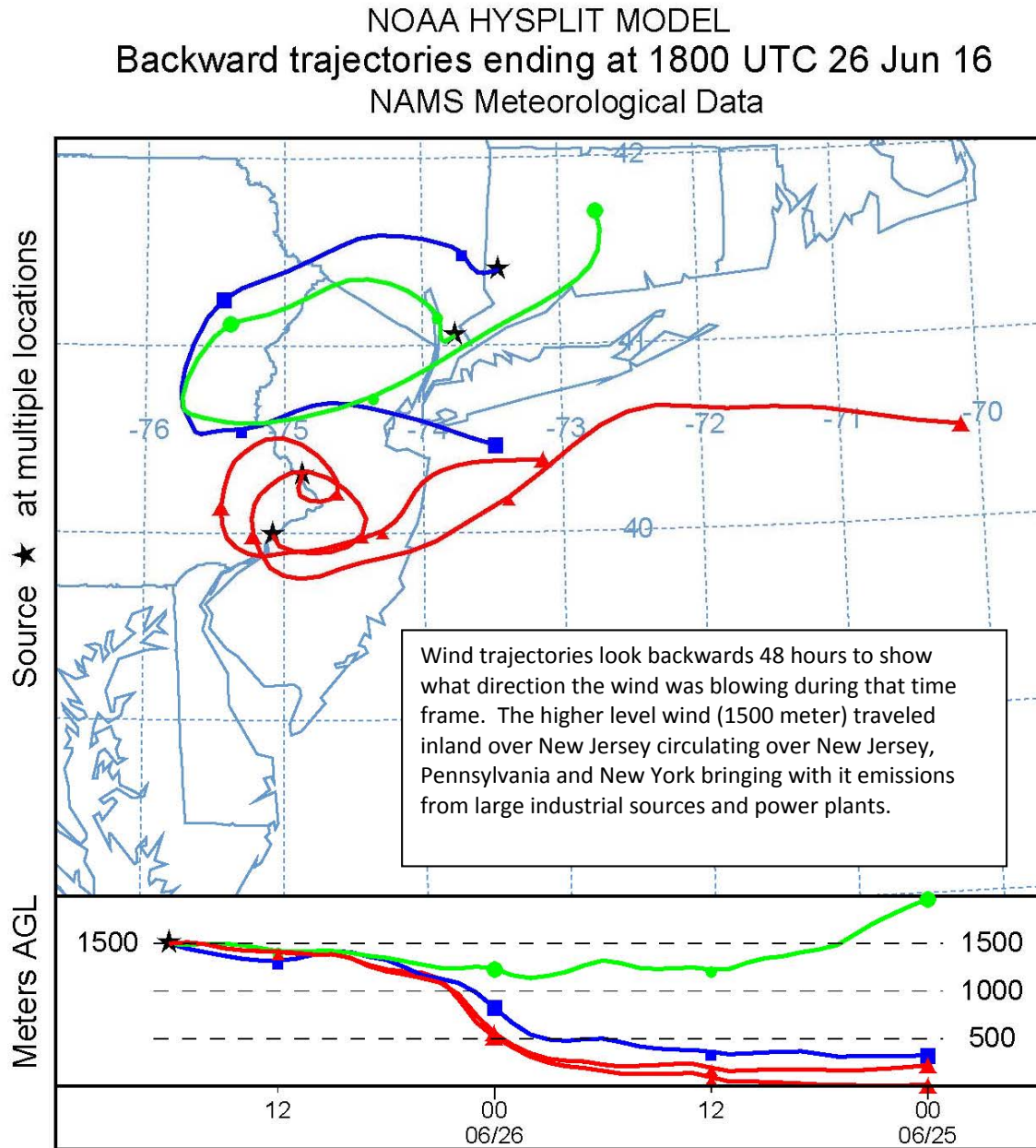


Figure 4. 48-hour Back Trajectories for June 26, 2016 at 1500 meters



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 (NO_x) 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.