Ozone National Ambient Air Quality Standard Health Exceedances on June 30, 2025

Exceedance Locations and Levels

On Monday, June 30, 2025, there was one (1) exceedance in New Jersey of the National Ambient Air Quality Standard (NAAQS) for ozone (daily maximum 8-hour average of 70 ppb). See Table 1.

Table 1. New Jersey Ozone Concentrations on 6/30/2025

Site		8-Hr Maximum Average (ppb)
1	Ancora	40
2	Bayonne	58
3	Brigantine	41
4	Chester	64
5	Clarksboro	41
6	Colliers Mills	50
7	Columbia	55
8	Flemington	58
9	Leonia	69
10	Millville	39
11	Monmouth University	54
12	Ramapo	73
13	Rider University	63
14	Rutgers University	58
15	South Camden	43
16	Washington Crossing*	62

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

From the out-of-state stations within New Jersey's ozone non-attainment areas, there were two (2) exceedances of the ozone NAAQS in New York. See Table 2.

Table 2. Ozone Concentrations at Out-of-State Monitoring Stations in New Jersey's Ozone Non-Attainment Areas on 6/30/2025

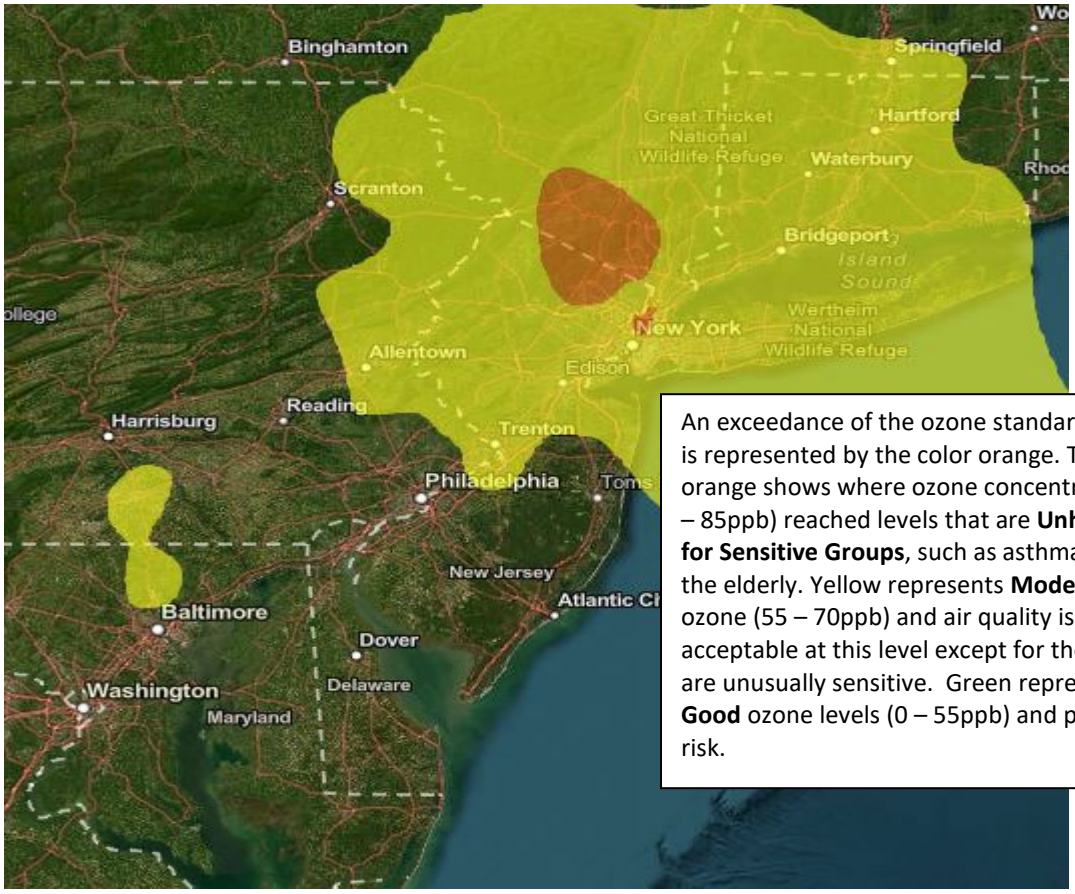
STATE	STATION	Daily Maximum 8-Hr Average (ppb)
CT	Danbury	66
CT	Greenwich	55
CT	Madison-Beach Road	60
CT	Middletown-CVH-Shed	56
CT	New Haven	59
CT	Stratford	58
CT	Westport	56
DE	BCSP (New Castle Co.)	48
DE	BELLFNT2 (New Castle Co.)	45
DE	KILLENS (Kent Co.)	53
DE	LEWES (Sussex Co.)	42
DE	LUMS 2 (New Castle Co.)	43
DE	MLK (New Castle Co.)	43
DE	SEAFORD (Sussex Co.)	48
MD	Fair Hill	48
NY	Babylon	65
NY	Bronx - IS52	65
NY	CCNY	73
NY	Flax Pond	56
NY	Fresh Kills	60
NY	Holtsville	64
NY	Pfizer Lab	70
NY	Queens	68
NY	Riverhead	58
NY	Rockland Cty	73
NY	White Plains	67
PA	BRIS (Bucks Co.)	56
PA	CHES (Delaware Co.)	48
PA	NEWG (Chester Co.)	50
PA	NORR (Montgomery Co.)	51
PA	LAB (Philadelphia Co.)	46
PA	NEA (Philadelphia Co.)	52
PA	NEW (Philadelphia Co.)	48
	TOTAL EXCEEDANCES	2

The number of days in 2025 on which exceedances of the ozone NAAQS were recorded for all the states within New Jersey's ozone non-attainment areas is summarized in Table 3.

Table 3. Number of Days Ozone NAAQS was Exceeded in NJ's Non-Attainment Areas in 2025.

STATE	# of Days NAAQS was Exceeded January 1 – June, 2025 NAAQS = 70 ppb
Connecticut	10
Delaware	4
Maryland	1
New Jersey	8
New York	8
Pennsylvania	4

Figure 1. Ozone Air Quality Index for June 30, 2025



Source: www.airnow.gov

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

Weather

On Monday, June 30th, multiple ozone exceedances were observed in New Jersey and New York. Early Monday morning, a stalled frontal boundary sat over southern portions of New Jersey and Pennsylvania, with mostly sunny skies and warm and humid conditions observed throughout the nonattainment area. By early afternoon, the front began to slowly lift northward, sparking off showers and thunderstorms behind it. As the storms grew in both size and intensity, cloud cover also began to increase from the south. By the early evening hours, the front was draped across northern Pennsylvania, northern New Jersey, and Long Island. While areas south of the front observed showers and thunderstorms along with mostly cloudy skies, skies north of the front remained mostly sunny. The frontal boundary provided ample vertical mixing to its north, bringing any pollutants aloft down to the surface. These favorable conditions ahead of the front allowed ozone levels to reach the Unhealthy for Sensitive Groups (USG) category in isolated locations in northern New Jersey, The Lower Hudson Valley, and New York City.

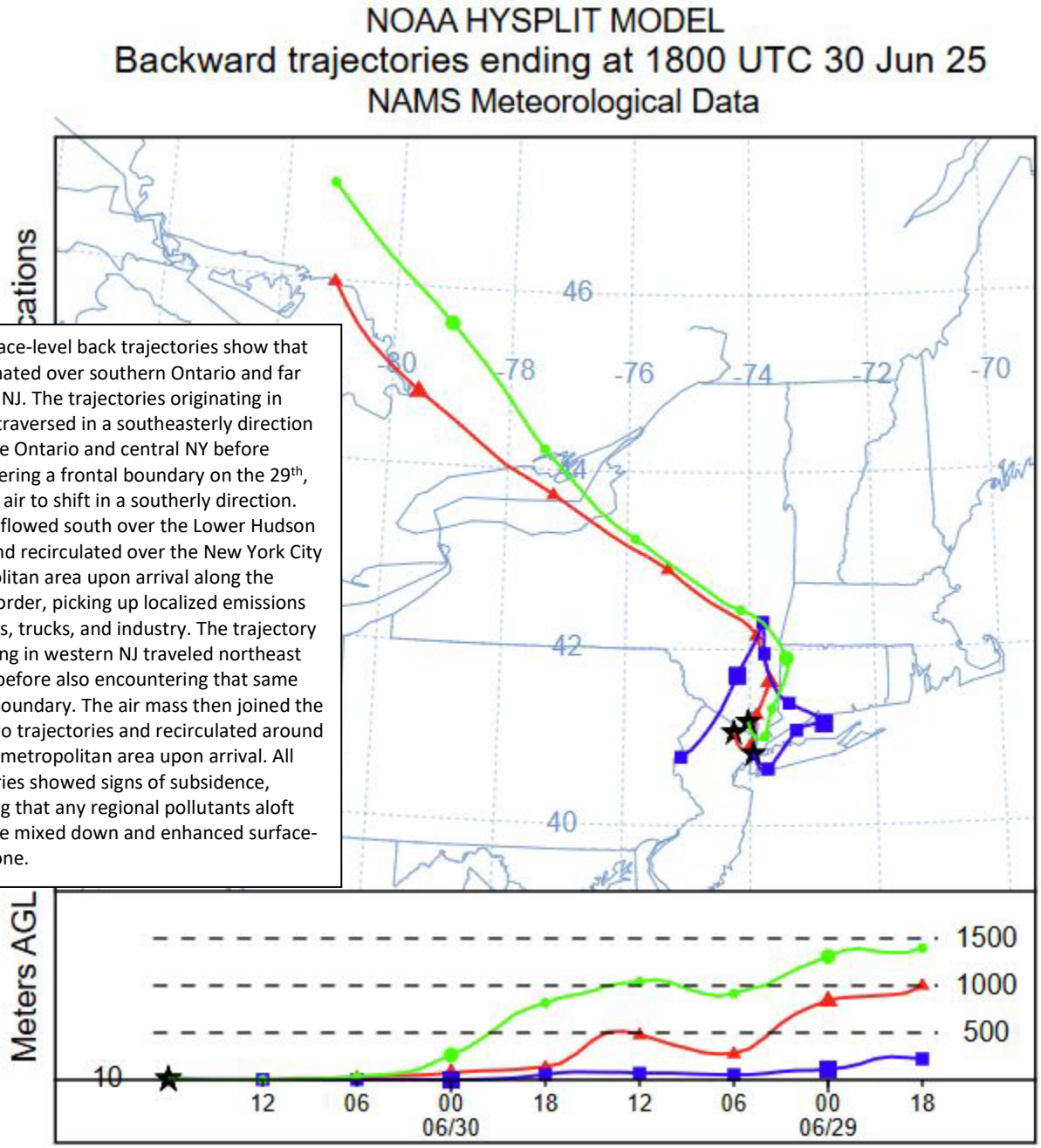
Where Did the Air Pollution that Caused Ozone Come From?

Figures 2, 3, and 4 show the back trajectories of different wind heights for the monitored exceedance(s) on this day. The figures illustrate where the air came from during the 48 hours preceding the 8-hour ozone standard exceedances. A transport analysis is provided with each figure shown below along with a map of the National Air Quality Index for the previous day (Figure 5). The monitoring station(s) that were chosen to model back trajectories are listed in Table 4.

Table 4. Monitoring Stations with an 8-hr Ozone Exceedance that were selected to Run 48-hr Back Trajectories

STATE	STATION	Daily Maximum 8-Hr Average (ppb)
NJ	Ramapo	73
NY	Rockland Cty	73
NY	CCNY	73

Figure 2. 48-hour Back Trajectories for June 30, 2025 at 10 meters



The surface-level back trajectories show that air originated over southern Ontario and far western NJ. The trajectories originating in Canada traversed in a southeasterly direction over Lake Ontario and central NY before encountering a frontal boundary on the 29th, allowing air to shift in a southerly direction. Air then flowed south over the Lower Hudson Valley and recirculated over the New York City metropolitan area upon arrival along the NJ/NY border, picking up localized emissions from cars, trucks, and industry. The trajectory originating in western NJ traveled northeast into NY before also encountering that same frontal boundary. The air mass then joined the other two trajectories and recirculated around the NYC metropolitan area upon arrival. All trajectories showed signs of subsidence, indicating that any regional pollutants aloft may have mixed down and enhanced surface-level ozone.

Figure 3. 48-hour Back Trajectories for June 30, 2025 at 500 meters

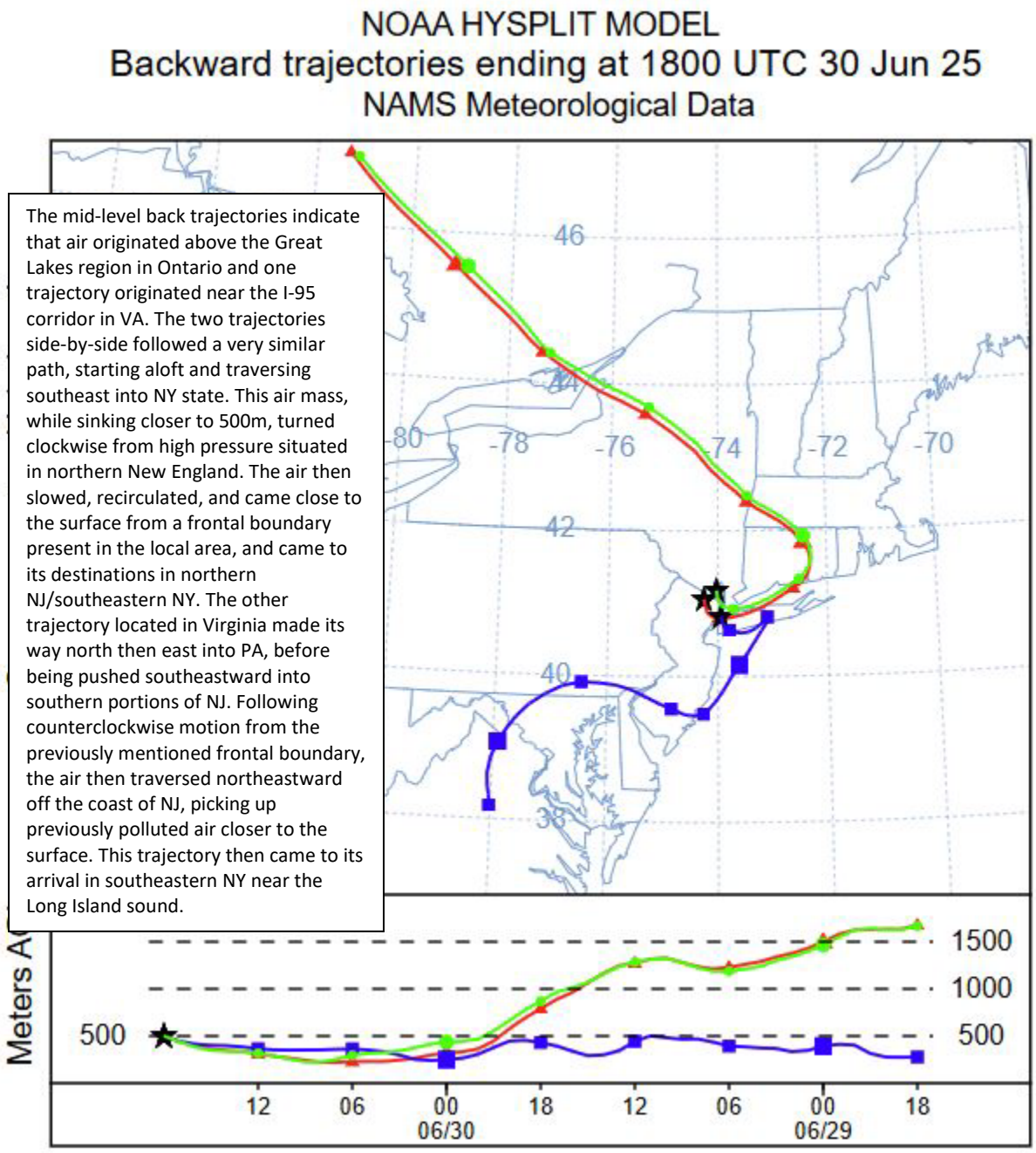
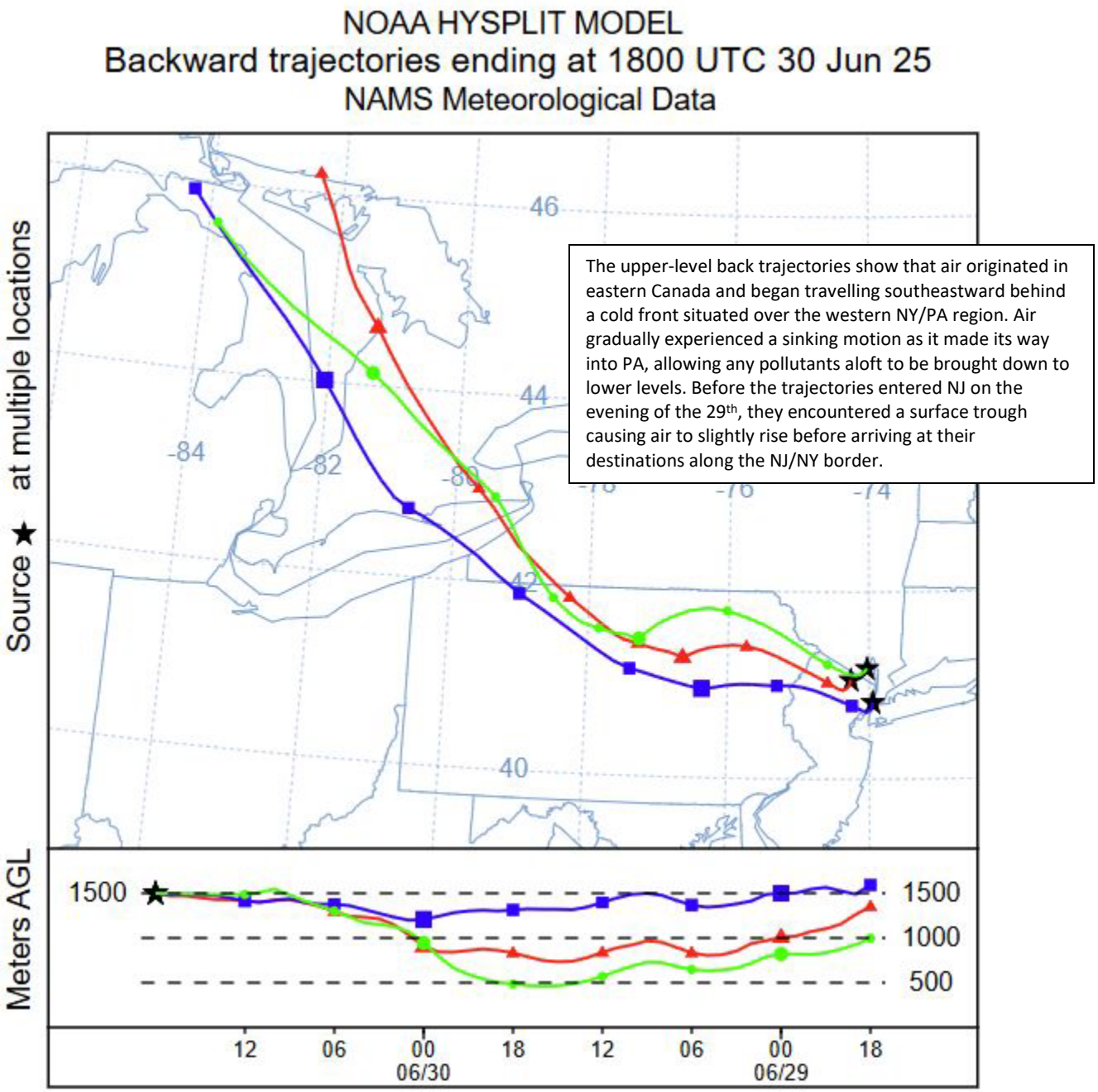
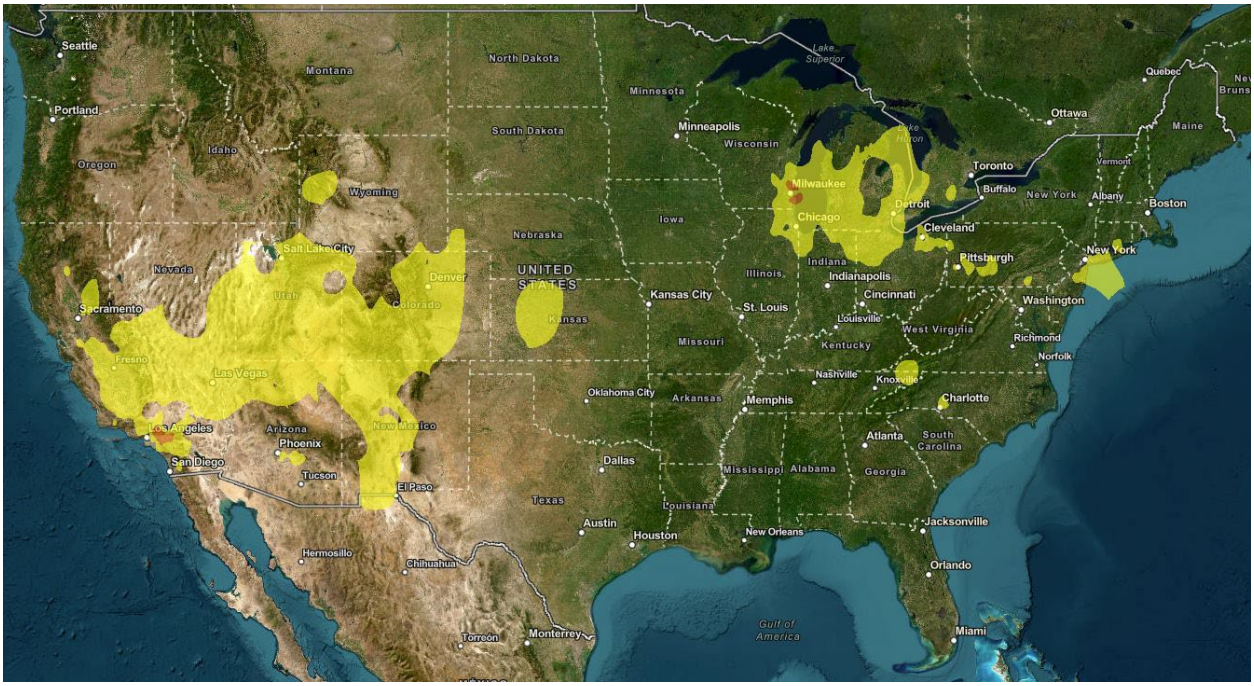


Figure 4. 48-hour Back Trajectories for June 30, 2025 at 1500 meters



The upper-level back trajectories show that air originated in eastern Canada and began travelling southeastward behind a cold front situated over the western NY/PA region. Air gradually experienced a sinking motion as it made its way into PA, allowing any pollutants aloft to be brought down to lower levels. Before the trajectories entered NJ on the evening of the 29th, they encountered a surface trough causing air to slightly rise before arriving at their destinations along the NJ/NY border.

Figure 5. Air Quality Index for the United States on June 29, 2025



Source: www.airnow.gov

How is Ozone Created?

Ground-level ozone is an air pollutant known to cause several health effects and negatively impact air quality and the environment in New Jersey. Ozone is formed when oxides of nitrogen (NOx) and volatile organic compounds (VOCs) react in the presence of sunlight. Ozone can irritate any person's lungs, but the effect may be more pronounced for those with existing lung-related deficiencies, and therefore, one should take extra precautions on bad ozone days.

Find Out About Air Quality Every Day

Learn more about your local ozone air quality forecast by visiting the "What's Your Air Quality Today?" page at https://dep.nj.gov/airplanning/aqi-today/.