STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PAUL R. LEPAGE
GOVERNOR

PATRICIA W. AHO
COMMISSIONER

Anne Arnold, Manager
Air Quality Planning Unit
EPA Region I
5 Post Office Square - Suite 100
Mail Code OEP05-02
Boston, MA 02109-3912

Dear Ms. Arnold,

The State of Maine is submitting these additional comments in support of its requests for a section 182(f) NOx waiver and the restructuring of Ozone Transport Region new source review (NSR) requirements in Maine. I would first like to thank EPA for its guidance and assistance in preparing these requests; your help has proven invaluable in moving this process forward. We believe that Maine's requests are not only technically justified, but are also the logical result of EPA's success in overseeing significant air quality improvements not only in Maine, but throughout the Ozone Transport Region. The implementation of a wide ranging suite of controls on VOC and NOx both in Maine and upwind areas has enabled our state to attain and maintain the 1997 8-hour ozone NAAQS since 2005. More importantly, the entire state of Maine has been in attainment of the more stringent 2008 8-hour ozone NAAQS since its inception. This truly is a success story for which we have many to thank.

EPA has long recognized that Maine is subject to overwhelming transport from upwind areas, and previously granted regulatory relief from control requirements that will not contribute to the attainment or maintenance of the federal ozone NAAQS in Maine, or elsewhere within the Ozone Transport Region. For example, many counties in Maine have had a section 182(f) NOx waiver for much of the past eighteen years. Similarly, EPA issued restructured Ozone Transport Region motor vehicle emission inspection and maintenance (I/M) requirements for both Maine and New Hampshire in 2001. Throughout this time, Maine has continued to make progress in lowering ozone levels in the state. Based on our technical analysis, we are confident that our current requests will not hinder the State of Maine from continuing to experience further reductions in ozone levels, and this request should also be granted.

As you know, EPA has been working to provide additional flexibility for states in meeting Clean Air Act requirements. Just this year, EPA proposed and took comments on the 2008 Ozone Implementation Rule, with a number of states and multi-state organizations, including the Northeast States for Coordinated Air Use Management and the Ozone Transport Commission emphasizing the need for increased flexibility in meeting these planning requirements. The State of Maine also reiterates its support for flexibility in developing rules that will best meet each state's ability to achieve and maintain the Ozone NAAQS, and we believe this request reflects the flexibility that the Clean Air Act envisions and allows.

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826

BANGOR
106 HOGAN ROAD, SUITE 6
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769
(207) 764-0477 FAX: (207) 760-3143

web site: www.maine.gov/dep

The original Clean Air Act of 1970, as sponsored and co-authored by Maine's Senator Muskie, recognized that the greatest opportunity for making reductions in air pollution was through investments in replacing old uncontrolled units with new, more efficient and well-controlled equipment. Throughout the 1980s and early 1990s, Maine facilities saw a significant amount of investment that resulted in much lower environmental profiles. Many of the pulp and paper facilities, along with other manufacturers, permitted and installed new steam generating units and made other modifications to improve efficiencies of production equipment, oftentimes replacing older uncontrolled units. Each of these projects resulted in the implementation of Best Available Control Technology or better air emission control requirements resulting in more efficient operations, much lower air emissions and better environmental profiles. As a result of these investments, the state has seen a continuous reduction in emissions, not only in NOx and VOCs but also of PM, SO_2 and CO.

Unfortunately, the "test" that determines applicable requirements for licensed sources looks at past actuals compared to future license allowed or projected actual emissions. Many times, this test results in "triggering" a major modification that would require offsets, which are a significant expense and provide little future environmental benefit, since the reduction in emissions from the offset has already occurred. It has been the Department's experience that offset requirements can have the unintended consequence of discouraging and limiting investments and upgrades in newer and more efficient equipment, and that offsets do not result in lower emissions or improved environmental performance at facilities in Maine. We believe that the elimination of offset requirements in Maine will remove roadblocks to investment in a facility's operations and provide additional flexibility to both the Department and the regulated community, creating greater, and not lesser environmental improvement.

In the original submittal, the Department provided an analysis that Maine does not contribute to nonattainment of ozone in the 8-hour Ozone NAAQS nonattainment areas in the Ozone Transport Region, and that Maine emissions do not significantly contribute to ozone formation in Maine. The Department is now supplementing its request with a map showing wind direction frequencies for when hourly ozone levels were greater than 59 ppb at two coastal and two inland sites during 2008-13 ozone seasons. If wind data was not collected at a site the nearest representative wind data were used. The wind direction frequency plots for coastal locations show that elevated ozone levels are being transported over the Gulf of Maine from the south-southwest. The wind direction frequency plots for inland locations show that elevated ozone levels only occur with a sea breeze from the south. The Department is also submitting additional maps with 36-hour wind back trajectories for every hour where ozone levels exceeded 75 parts per billion (ppb) during 2011-13 8-hour exceedance events at monitoring sites in the state of Maine. These back trajectories provide further evidence that ozone levels above 75 ppb are a result of transport, and are almost entirely coastal events. Each event shows that ozone and emissions from the Boston and New York metropolitan areas are transported out over the Gulf of Maine, and are then blown toward Maine's coastline by sea breezes coming from the south-southwest. As shown by these maps, ozone levels drop off immediately as the air mass moves over inland Maine. These trajectories also demonstrate that major sources of NO_x in Maine

would not contribute to higher ozone levels since their emissions would be transported inland, and away from coastal areas. [1]

In closing, the State of Maine has submitted an analysis that supports both its Clean Air Act Section 176(A) request to change VOC NSR requirements and its request for a Section 182(f) NO_x waiver for the 2008 ozone NAAQS. This additional information provides further support for these requests by showing that Maine emissions have little or no impact on ozone levels that are above the ozone NAAQS. Finally, we believe the flexibility provided by these requests will result in lower emissions from stationary sources in Maine. Thank you again for your consideration of these requests.

Sincerely,

Marc Allen Robert Cone

Marc Allen Robert Cone P.E., Director
Bureau of Air Quality

Cc: Tom Downs, MEDEP
Jeff Crawford, MEDEP

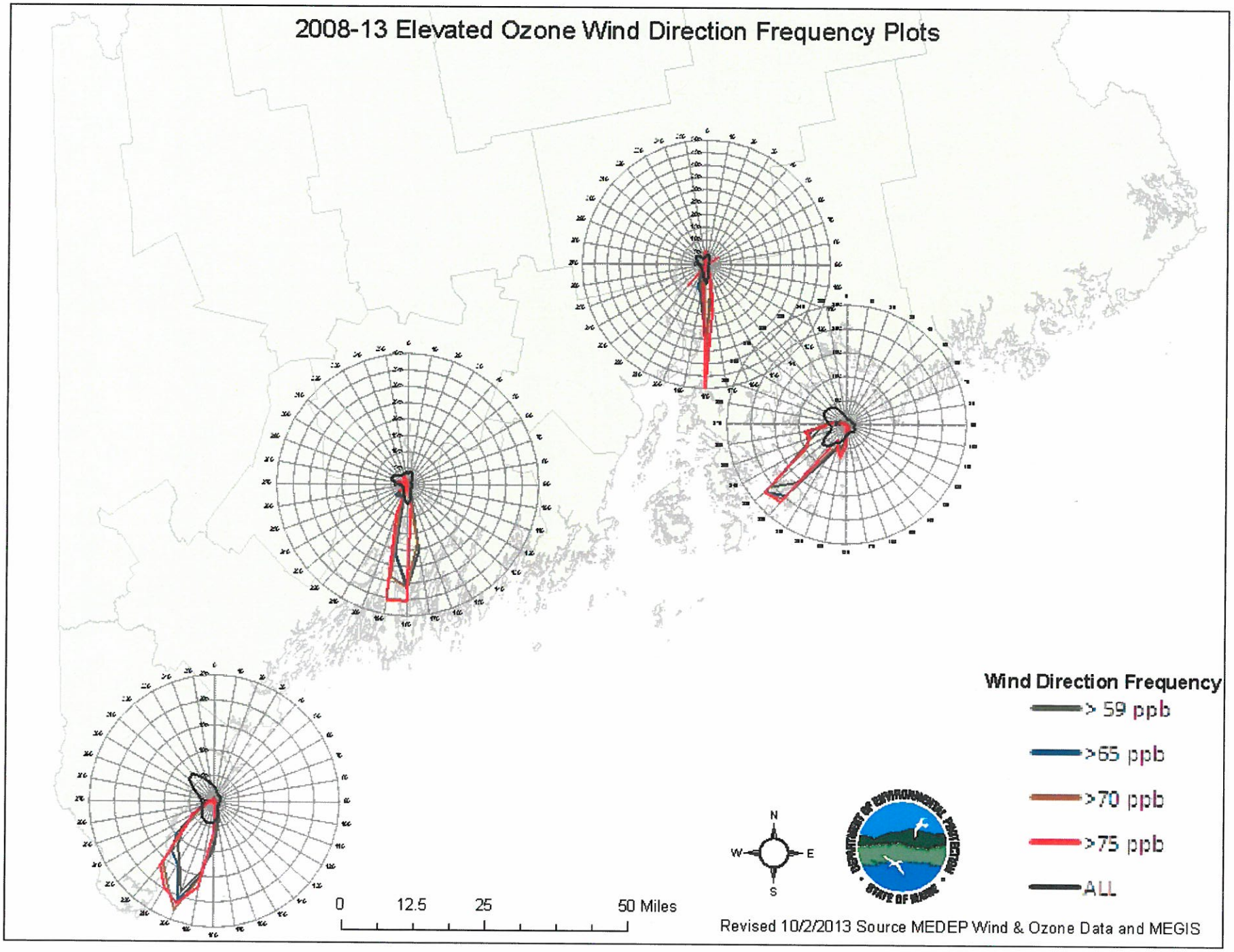
[1] Inland, where most of the major NO_x sources are located, the state's design values for ozone are below 60 ppb, which is well below the current standard.

Analysis of Transport Wind Directions When Ozone Levels are High in Maine

State of Maine
Department of Environmental Protection
Bureau of Air Quality

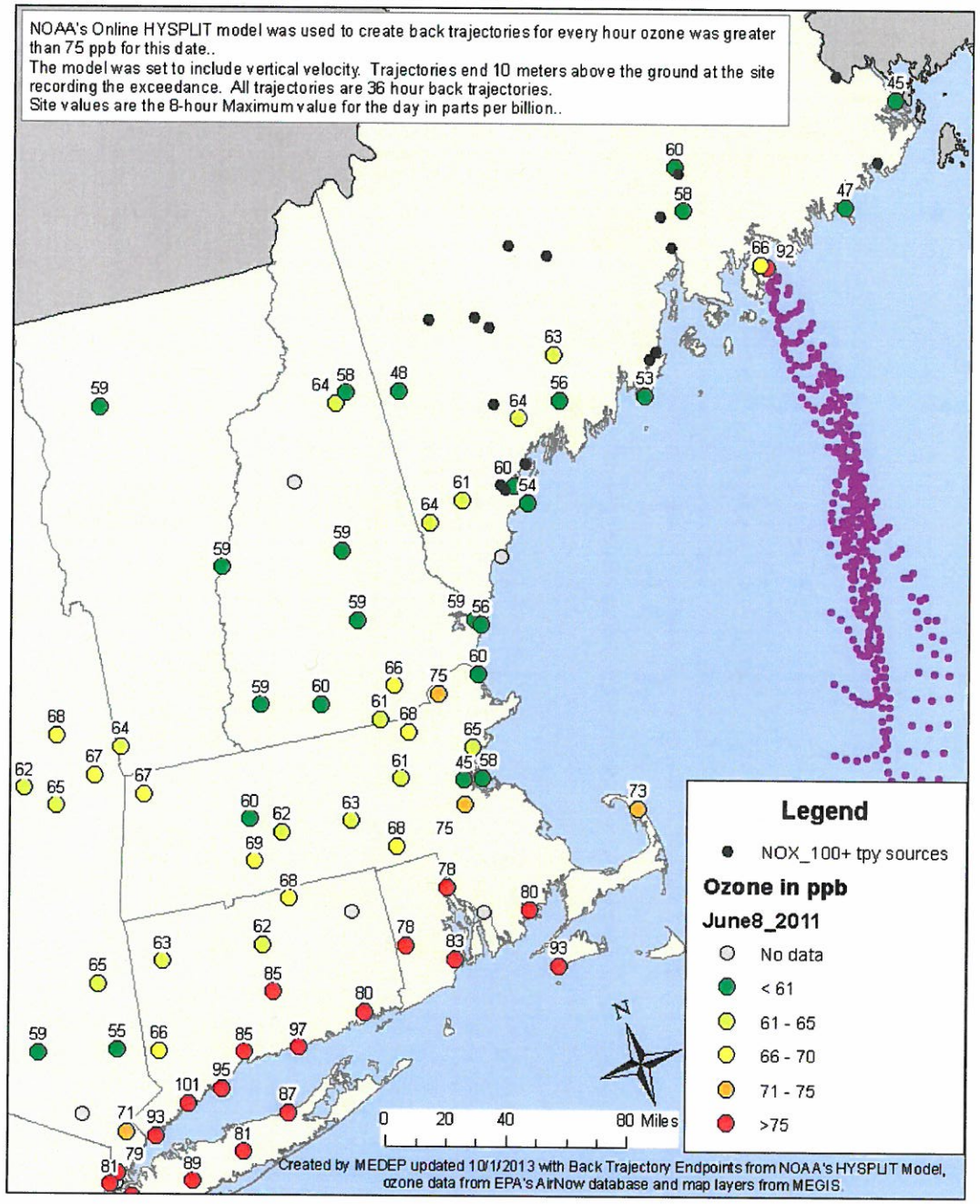
Wind Direction Frequency Plots
2008-13 Ozone Levels > 59 ppb

2008-13 Elevated Ozone Wind Direction Frequency Plots

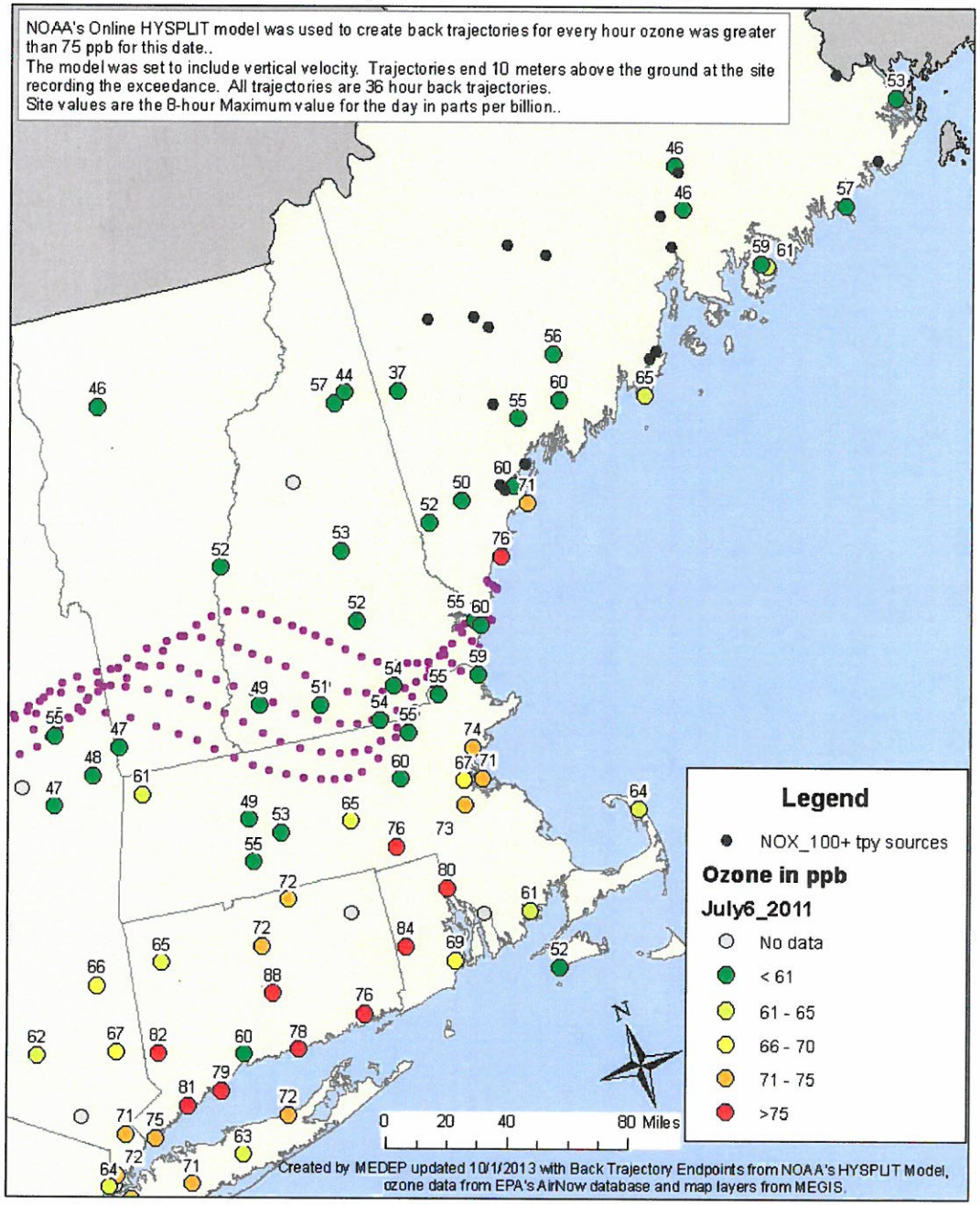


Trajectories of Ozone Events 2011 – 2013 With NO_x Sources

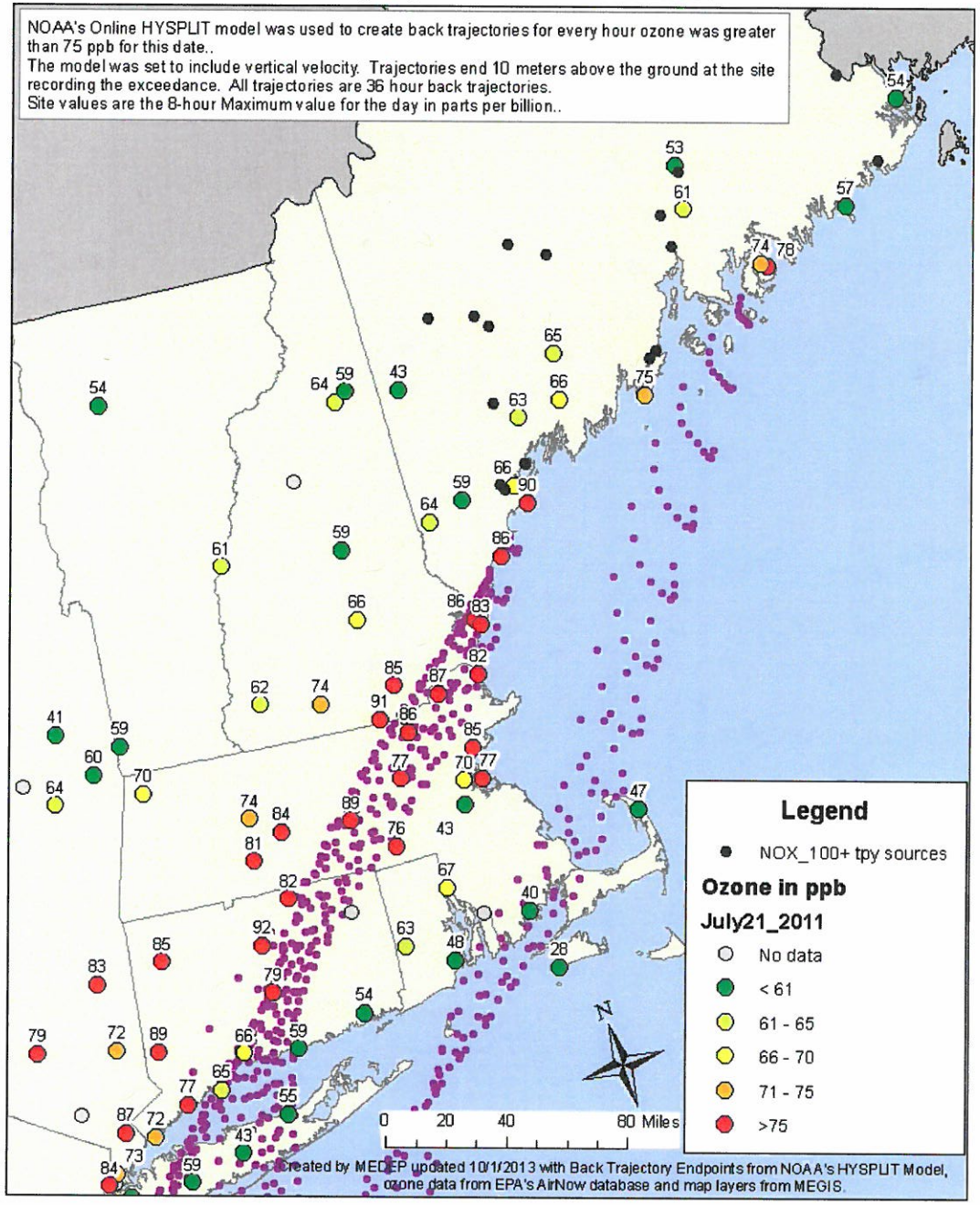
Hourly Endpoints from Back Trajectories for Maine's June 8 2011 Ozone Exceedance



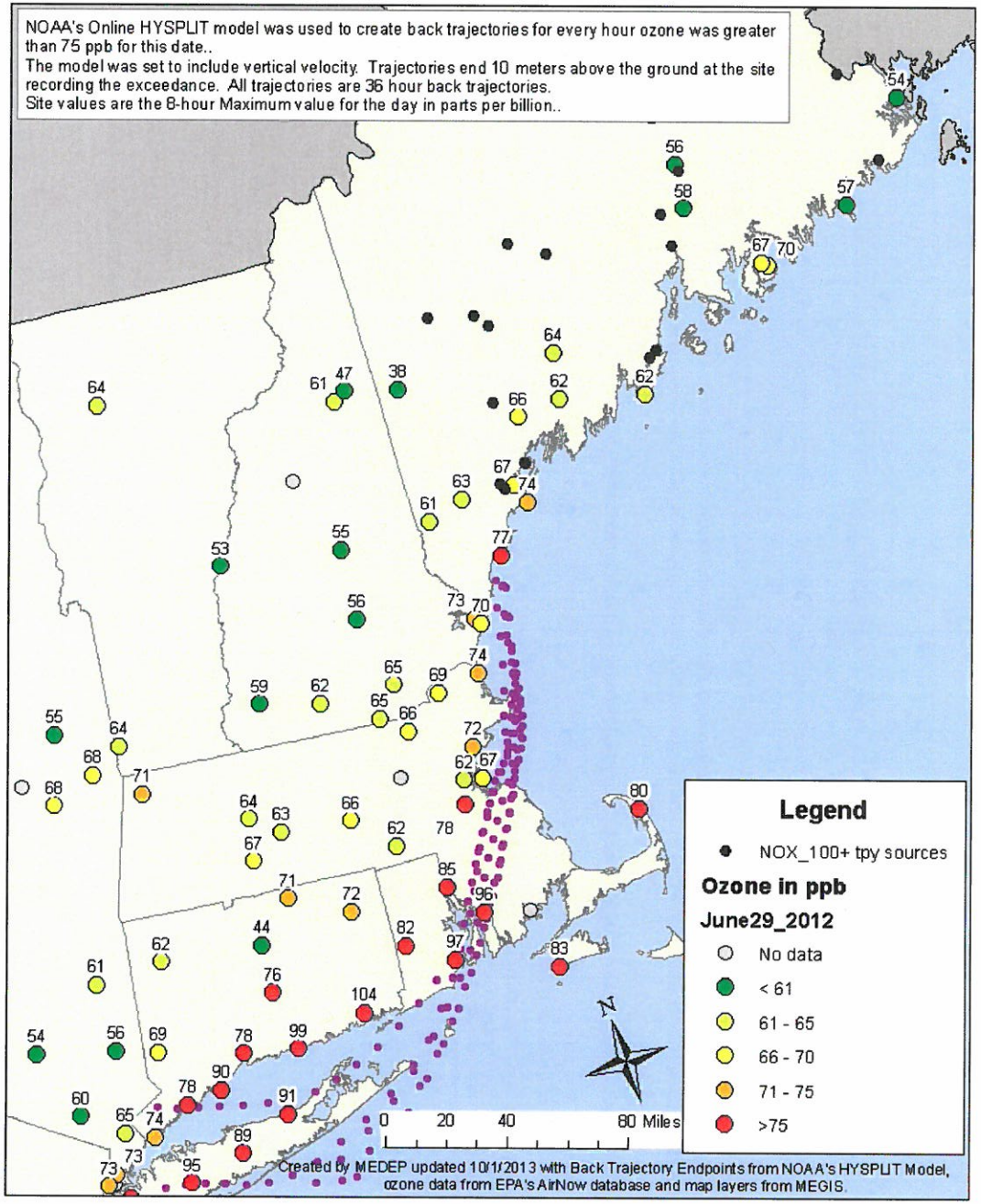
Hourly Endpoints from Back Trajectories for Maine's July 6, 2011 Ozone Exceedance



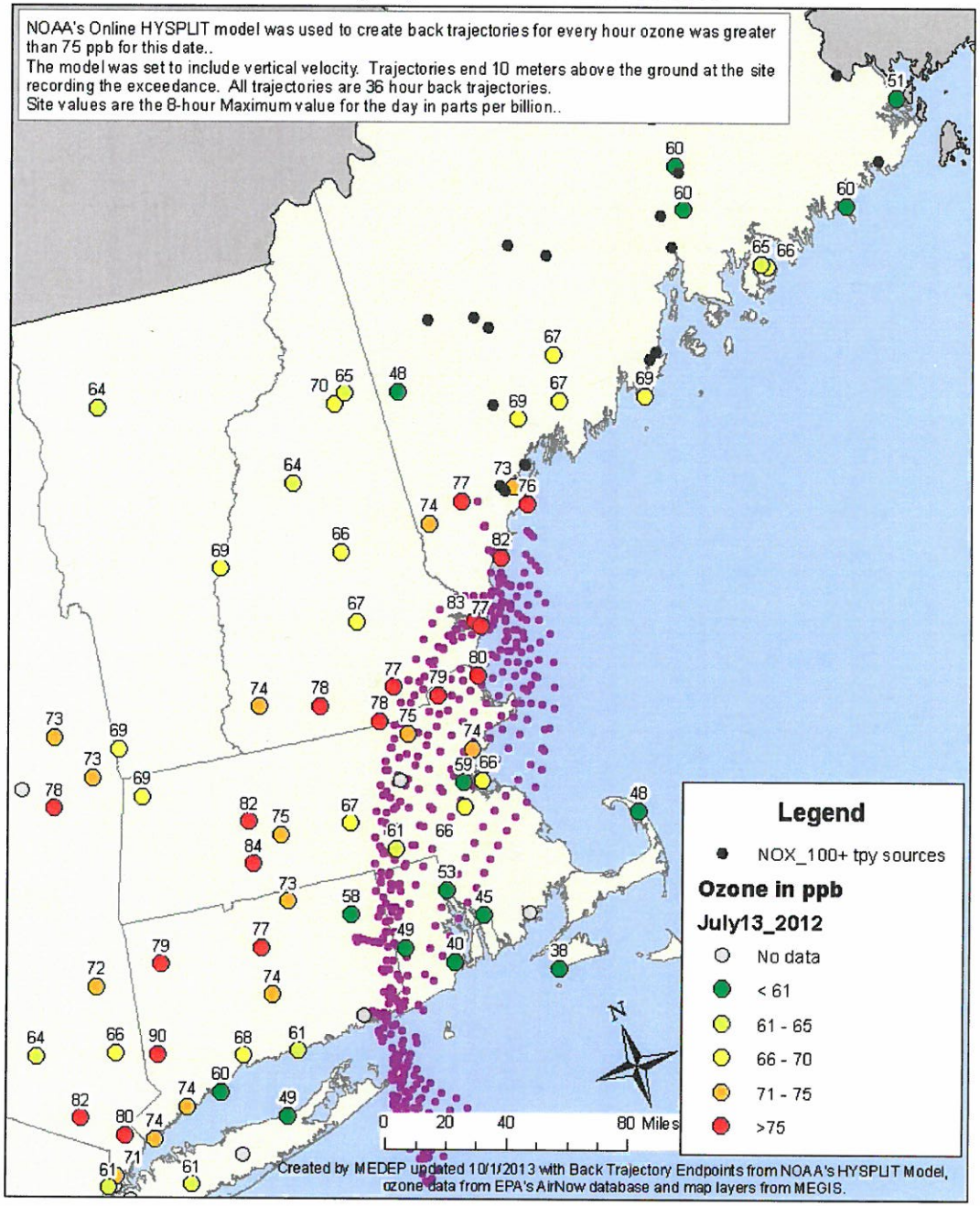
Hourly Endpoints from Back Trajectories for Maine's July 21, 2011 Ozone Exceedance



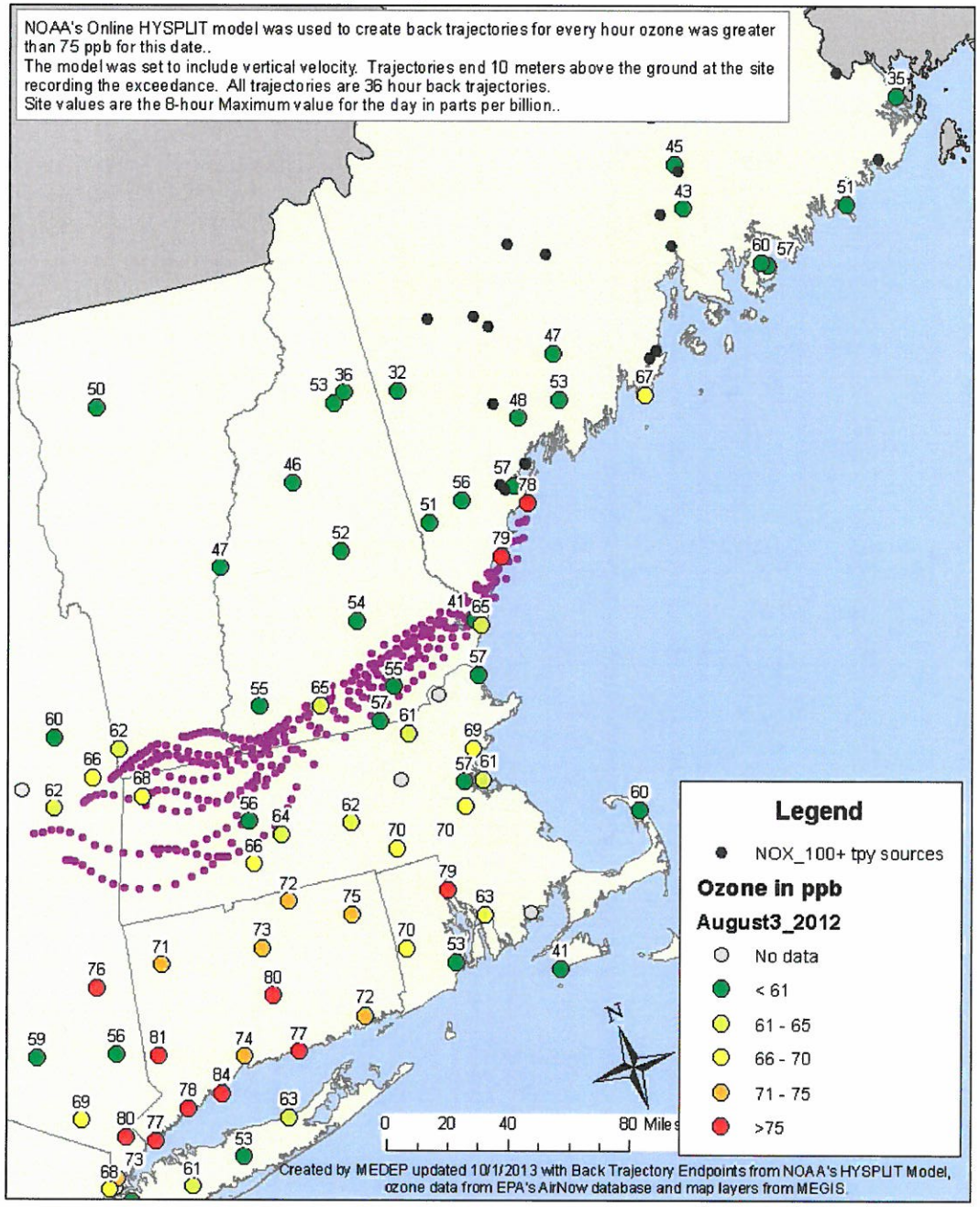
Hourly Endpoints from Back Trajectories for Maine's June 29, 2012 Ozone Exceedance



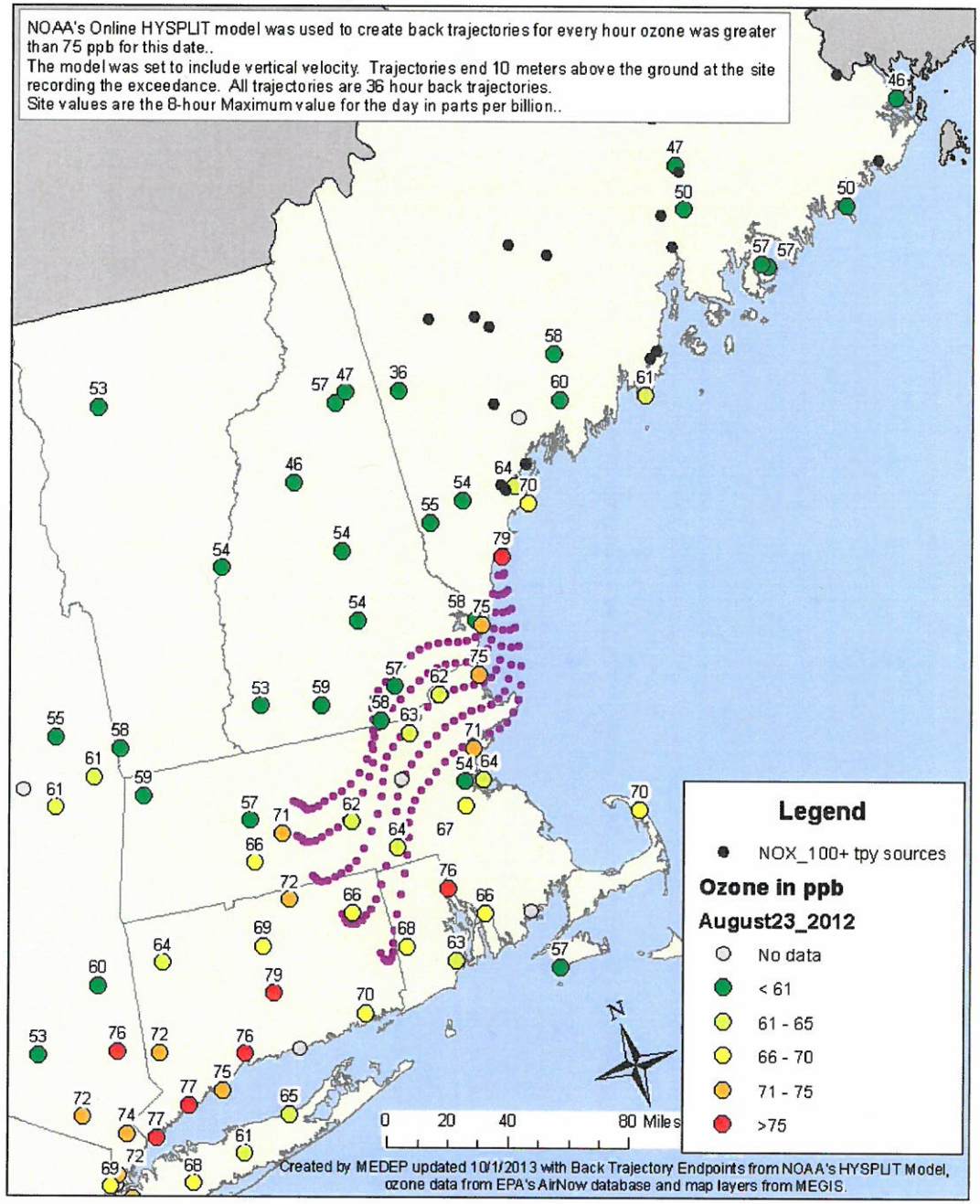
Hourly Endpoints from Back Trajectories for Maine's July 13, 2012 Ozone Exceedance



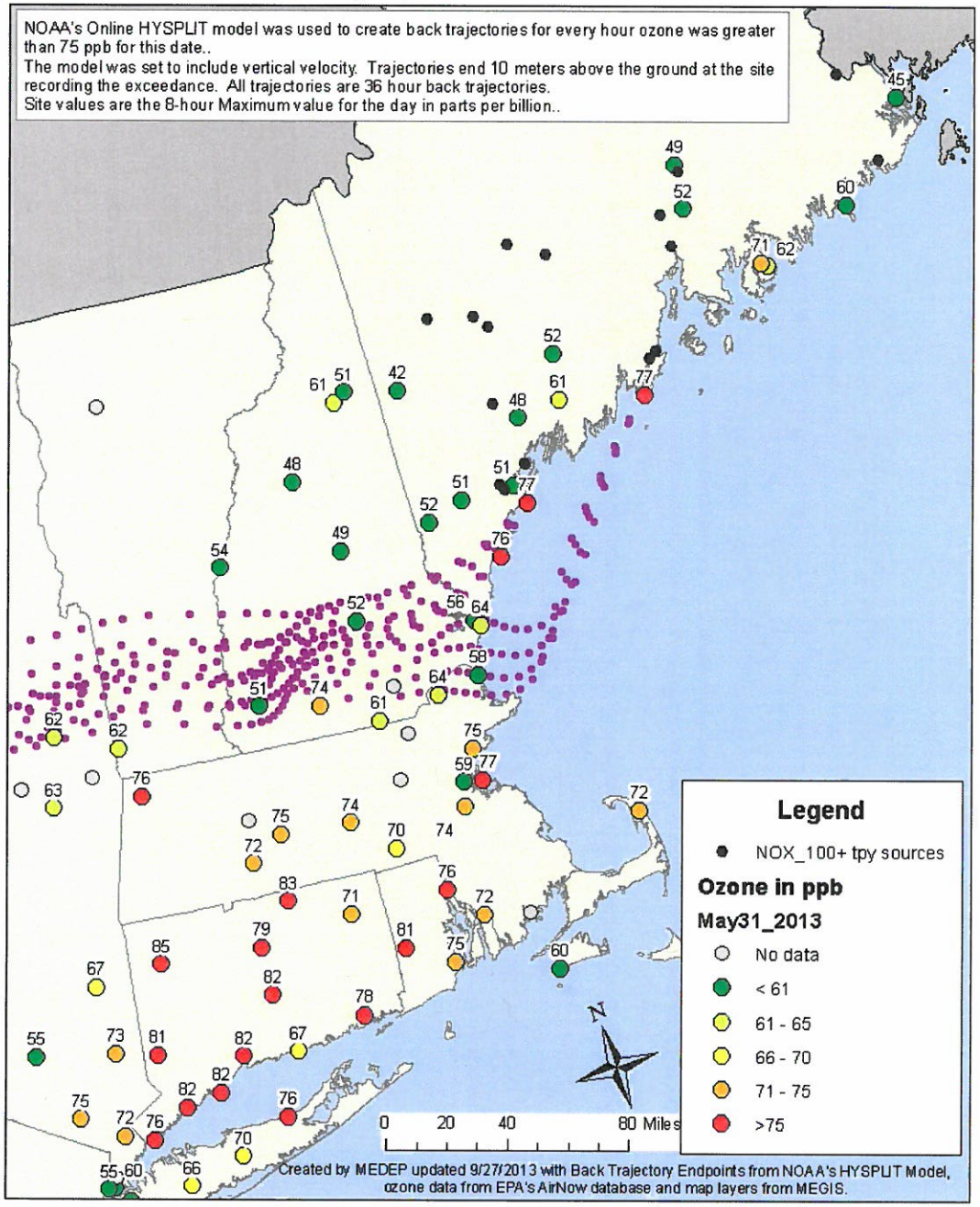
Hourly Endpoints from Back Trajectories for Maine's August 3, 2012 Ozone Exceedance



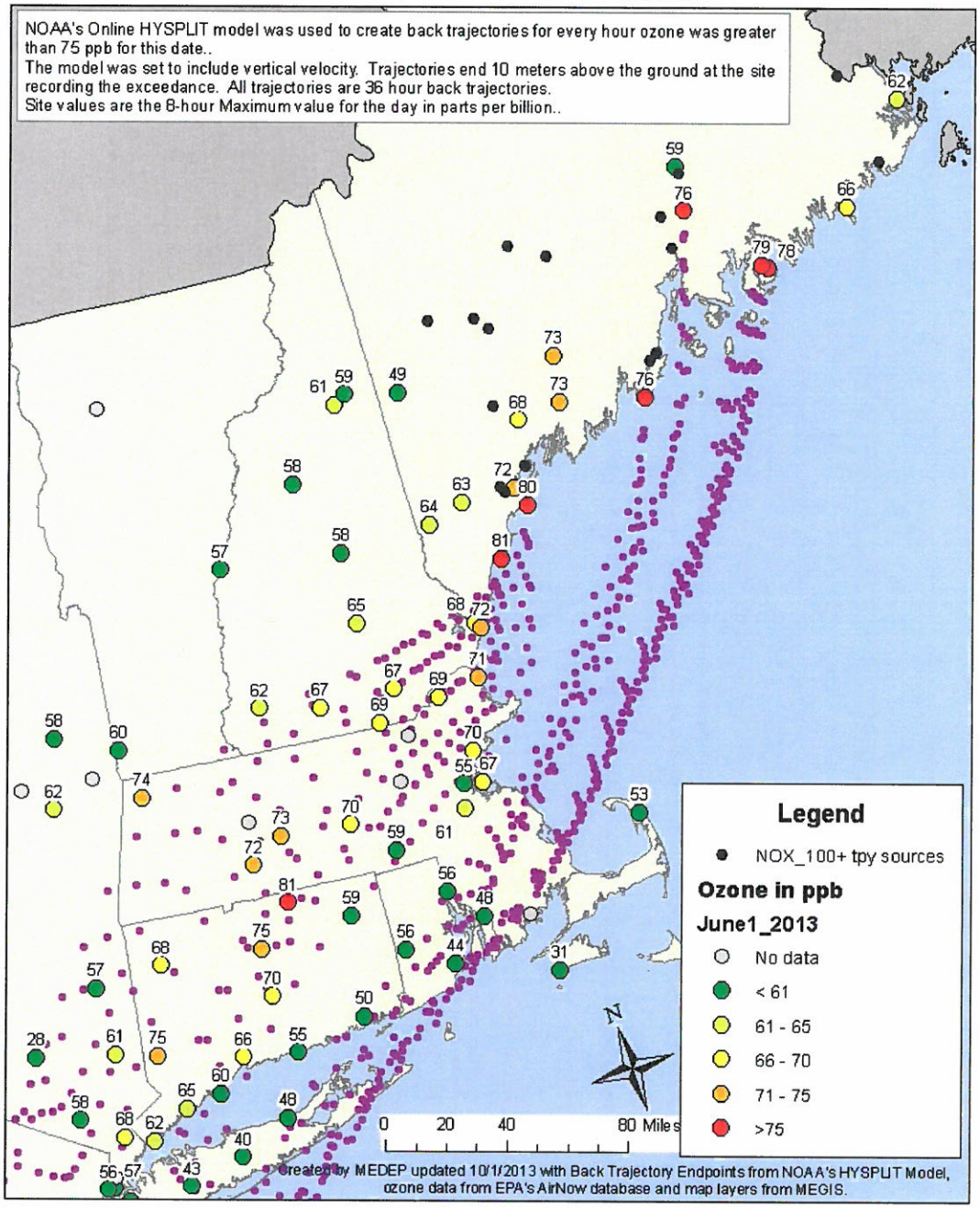
Hourly Endpoints from Back Trajectories for Maine's August 23, 2012 Ozone Exceedance



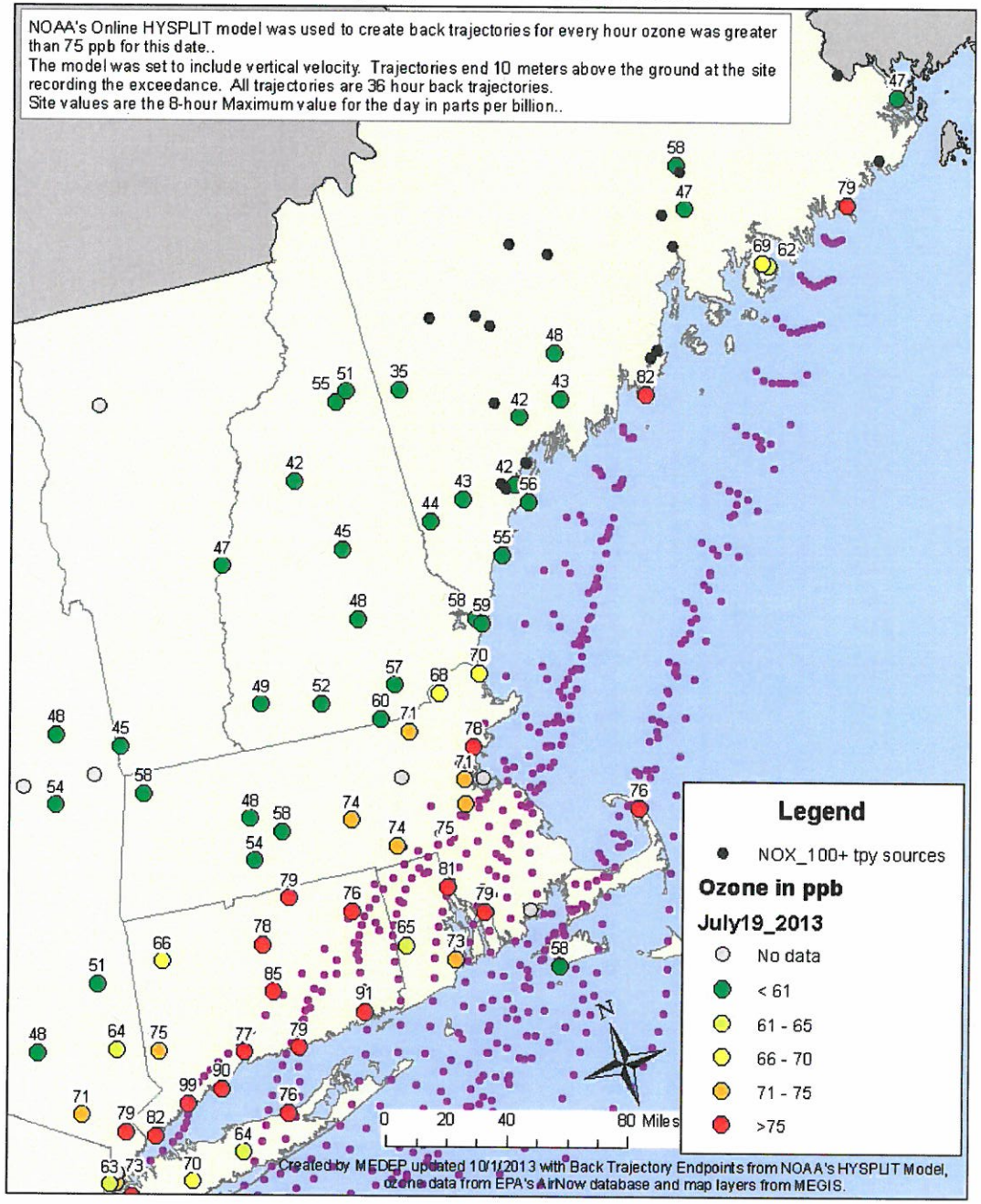
Hourly Endpoints from Back Trajectories for Maine's May 31, 2013 Ozone Exceedance



Hourly Endpoints from Back Trajectories for Maine's June 1, 2013 Ozone Exceedance



Hourly Endpoints from Back Trajectories for Maine's July 19, 2013 Ozone Exceedance



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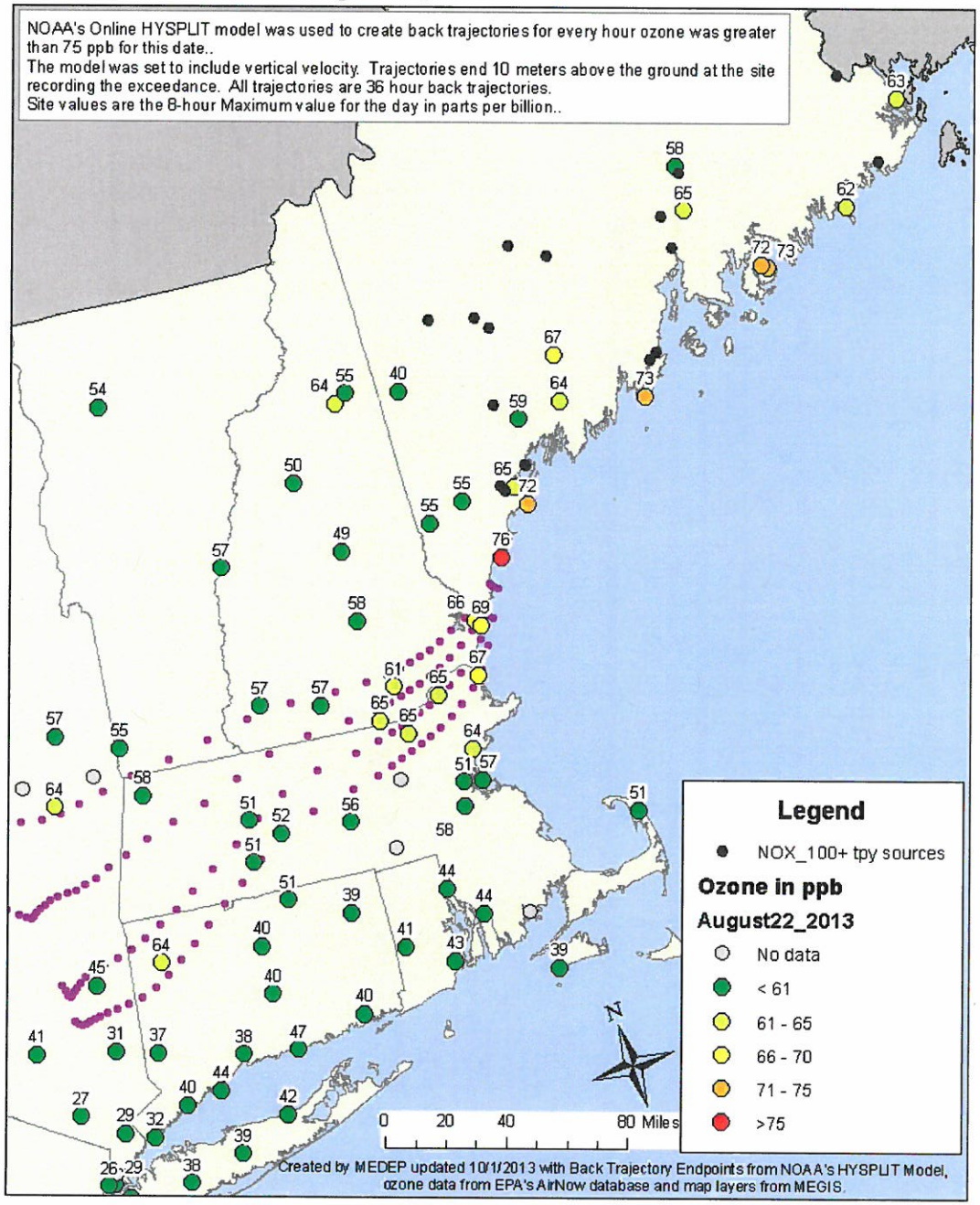
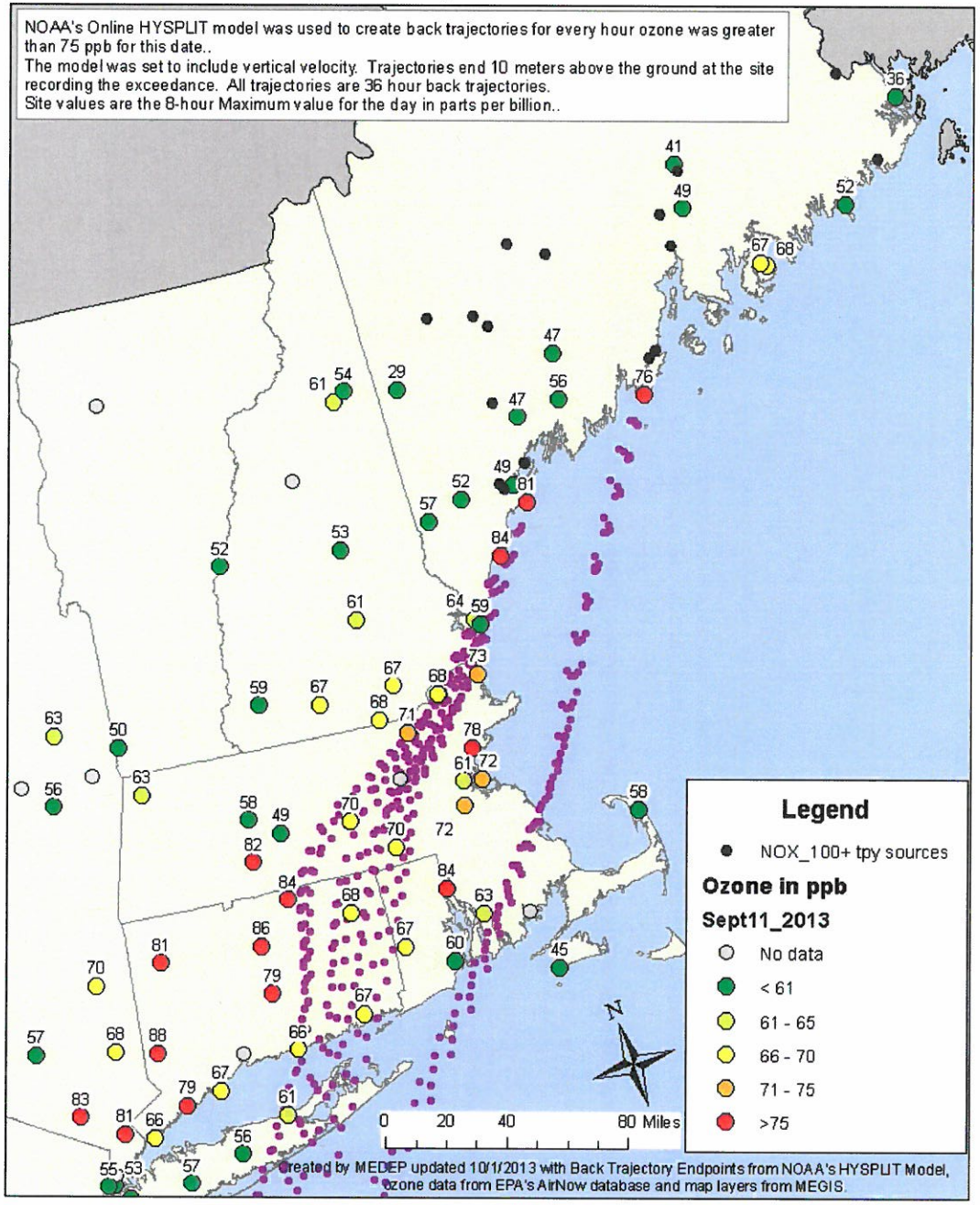
Hourly Endpoints from Back Trajectories for Maine's September 11, 2013 Ozone Exceedance