Connecticut Department of Energy and Environmental Protection

Connecticut Department of
ENERGY & ENVIRONMENTAL PROTECTION

July 25, 2016 OTR and Connecticut Ozone Exceedances

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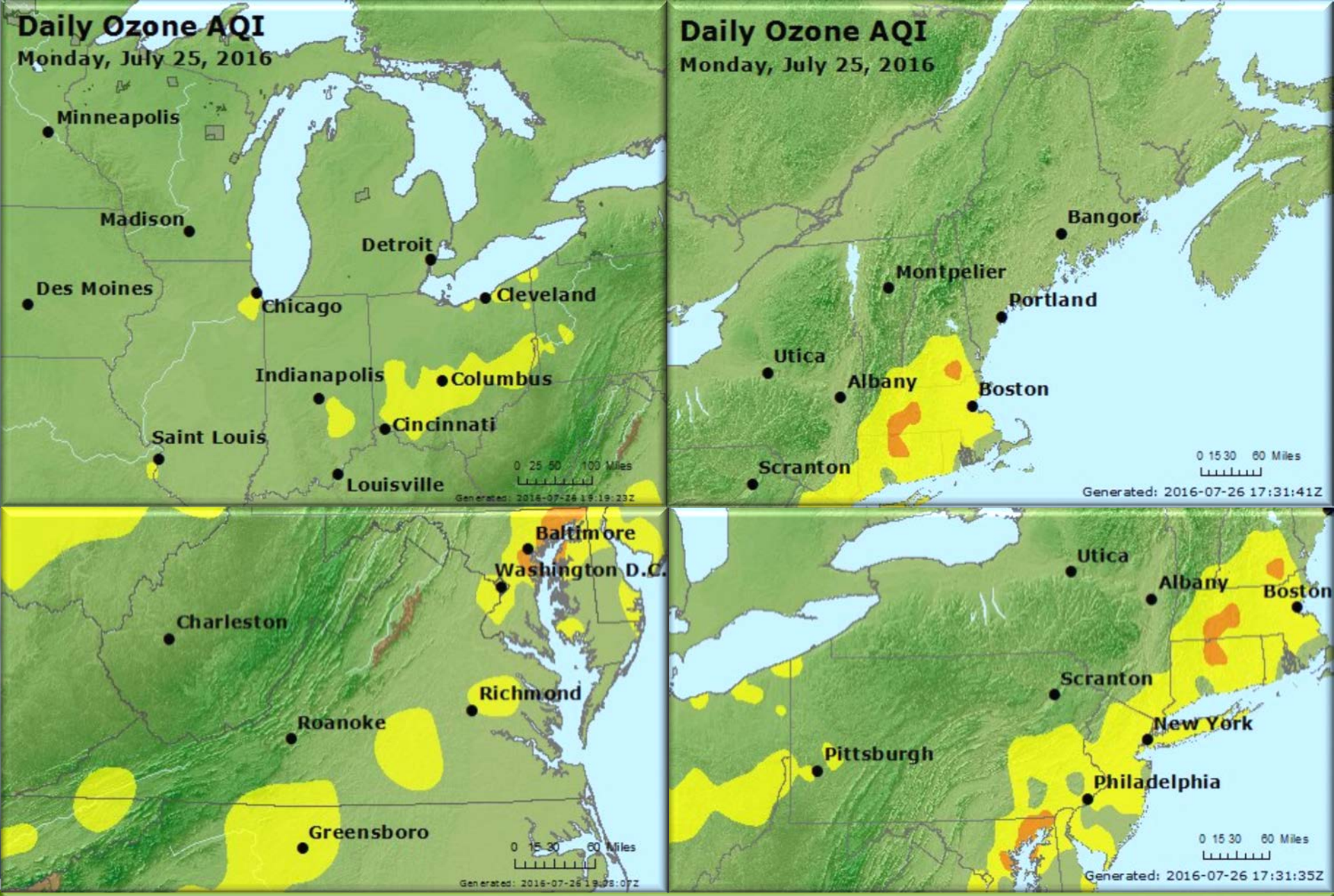
Connecticut Department of Energy and Environmental Protection

Summary

- 4 States had exceedances: MD,CT,MA and NH;
- Maryland sites had the highest ozone concentrations.
  1. 8 sites above 70 ppb ozone NAAQS, 1 site in CT
  2. 3 sites above (2008) 75 ppb ozone NAAQS, 0 sites in CT
  3. 0 sites above (1997) 84 ppb ozone NAAQS, 0 sites in CT



Regional AQI Maps

Table of OTR Monitoring Sites

- 1 site in Connecticut exceeded the 70 ppb NAAQS. Bradley Airport had a high temperature of 96° F. (12 days in July so far over 90 ° F.)

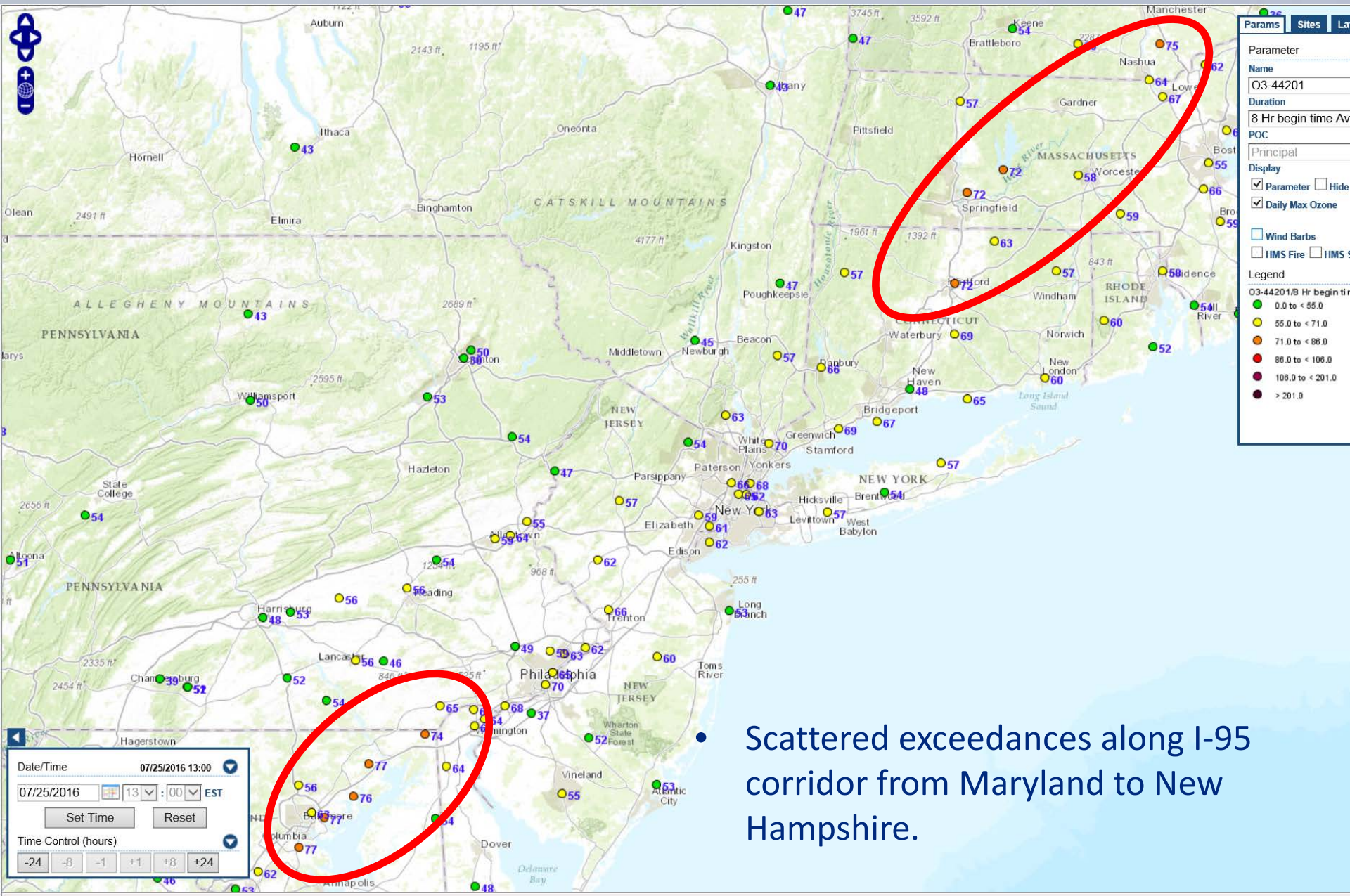
Site	Site AQS	Date (LST)	Max 8-hr Ozone ppb
Aldino	240259001	7/25/2016	77
Essex	240053001	7/25/2016	77
Edgewood	240251001	7/25/2016	76
Londonderry - M	330150018	7/25/2016	75
Fair Hill	240150003	7/25/2016	74
CHICOPEE	250130008	7/25/2016	72
East Hartford	090031003	7/25/2016	72
WARE	250154002	7/25/2016	72
Camden Spruce S	340070002	7/25/2016	70
White Plains	361192004	7/25/2016	70
Middletown	090070007	7/25/2016	69
Westport	090019003	7/25/2016	69
CHES	420450002	7/25/2016	68
Pfizer Lab	360050133	7/25/2016	68
LYNN	250092006	7/25/2016	67
Stratford	090013007	7/25/2016	67
USEPA Region 1	250170009	7/25/2016	67
Danbury	090011123	7/25/2016	66
E. Milton - Blu	250213003	7/25/2016	66
Leonia	340030006	7/25/2016	66

CT Monitoring Site Design Value Update

- Connecticut has 21 exceedance days to date
- No change to table with this episode

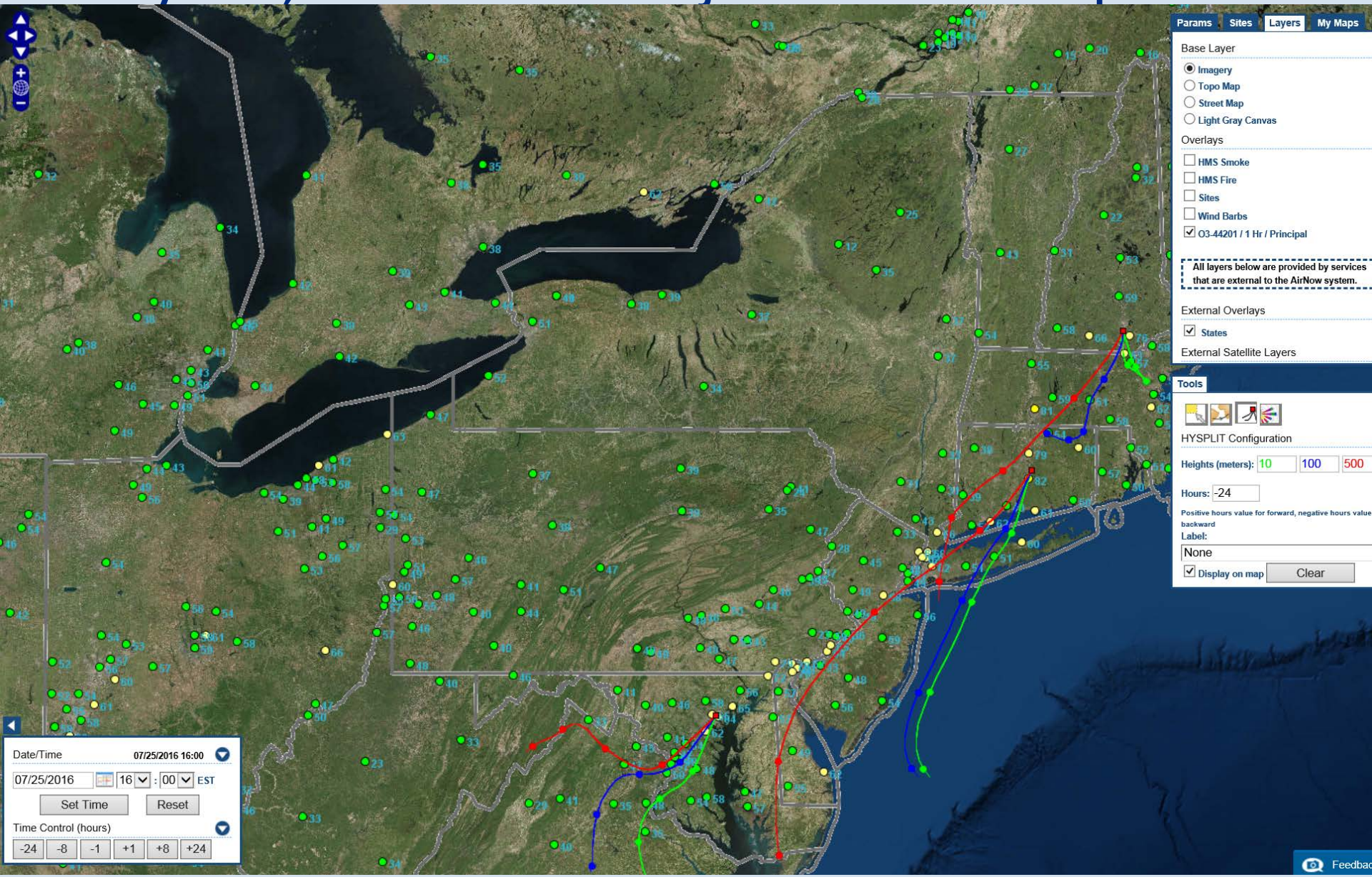
	Site Name	To Date: 2016 DV	To Date 2016 Compliance Status x = Violating NAAQS: 2015 NAAQS	2008 NAAQS	1997 NAAQS	Next Possible NAAQS in Violation (key monitor in each NA is highlighted in RED)
SWCT Portion of NYC Area	Danbury	78	x	x		Four more 102+ ppb days violates 1997 NAAQS
	Greenwich	82	x	x		Four more 93+ ppb days violates 1997 NAAQS
	Madison	76	x	x		Four more 105+ ppb days violates 1997 NAAQS
	Middletown	79	x	x		Three more 97+ ppb days violates 1997 NAAQS
	New Haven - Criscuolo Park	76	x	x		Four more 101+ ppb days violates 2008 NAAQS
	Stratford	81	x	x		Three more 95+ ppb days violates 1997 NAAQS
	Westport	85	x	x	x	**Violates all NAAQS**
Greater CT	Cornwall	72	x			Three more 86+ ppb days violates 2008 NAAQS
	East Hartford	75	x			**One more 76+ ppb day violates 2008 NAAQS**
	Groton Fort Griswold	72	x			Three more 86+ ppb days violates 2008 NAAQS
	Stafford	73	x			Three more 79+ ppb days violates 2008 NAAQS
	Abington (CASTNET)	70				One more 76+ ppb day violates 2015 NAAQS

July 25 , 2016 Peak Northeast Ozone



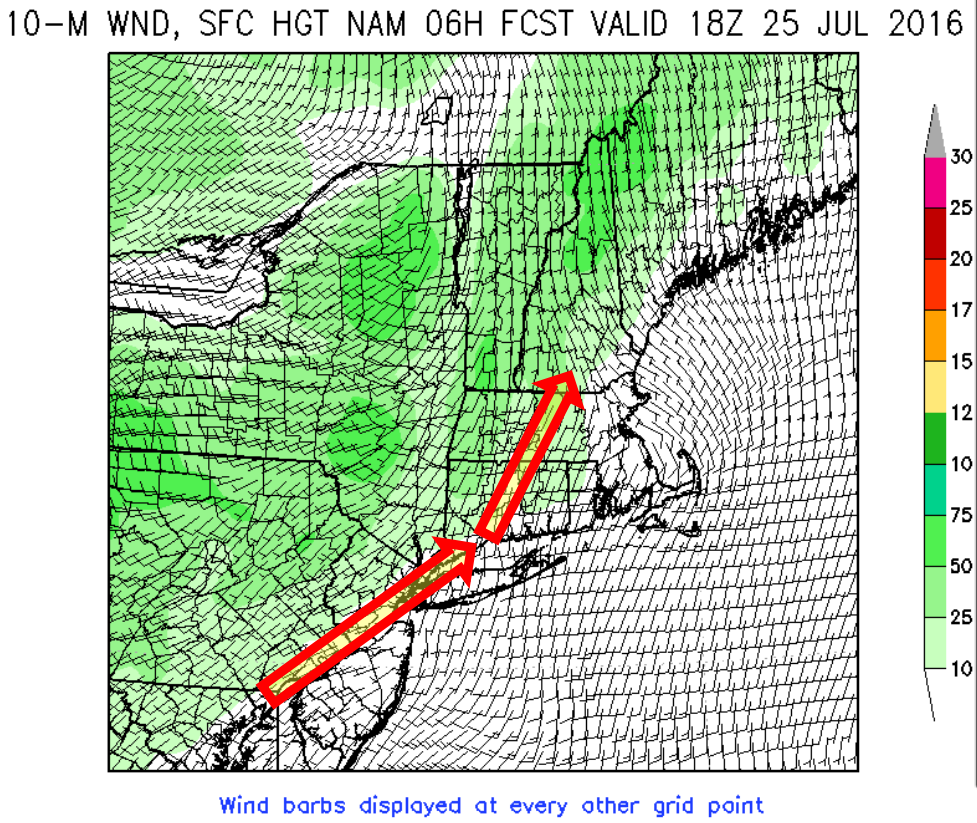
- Scattered exceedances along I-95 corridor from Maryland to New Hampshire.

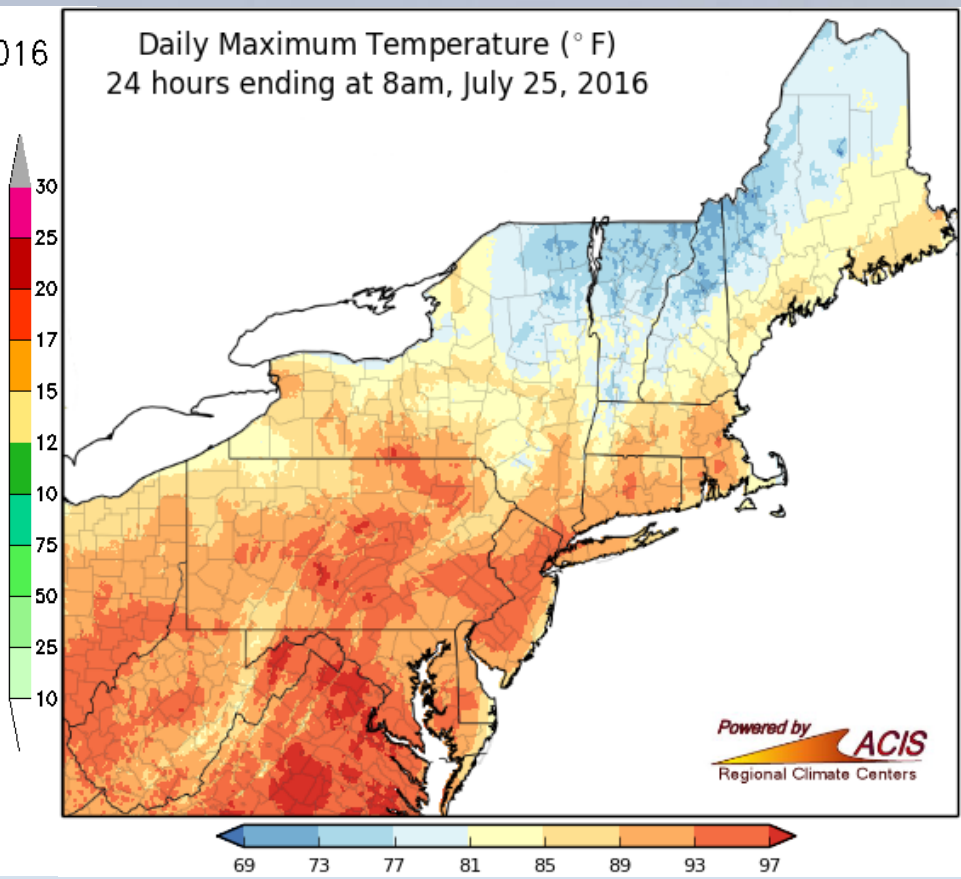
July 25 , 2016 Back Trajectories 4:00 pm EST



Low level winds (10-500 meters) were southwest and transported pollutant northeast from the I-95 corridor. Early afternoon T-storms prevented levels from reaching modeled levels

Model Winds for Northeast, 1:00 pm EST

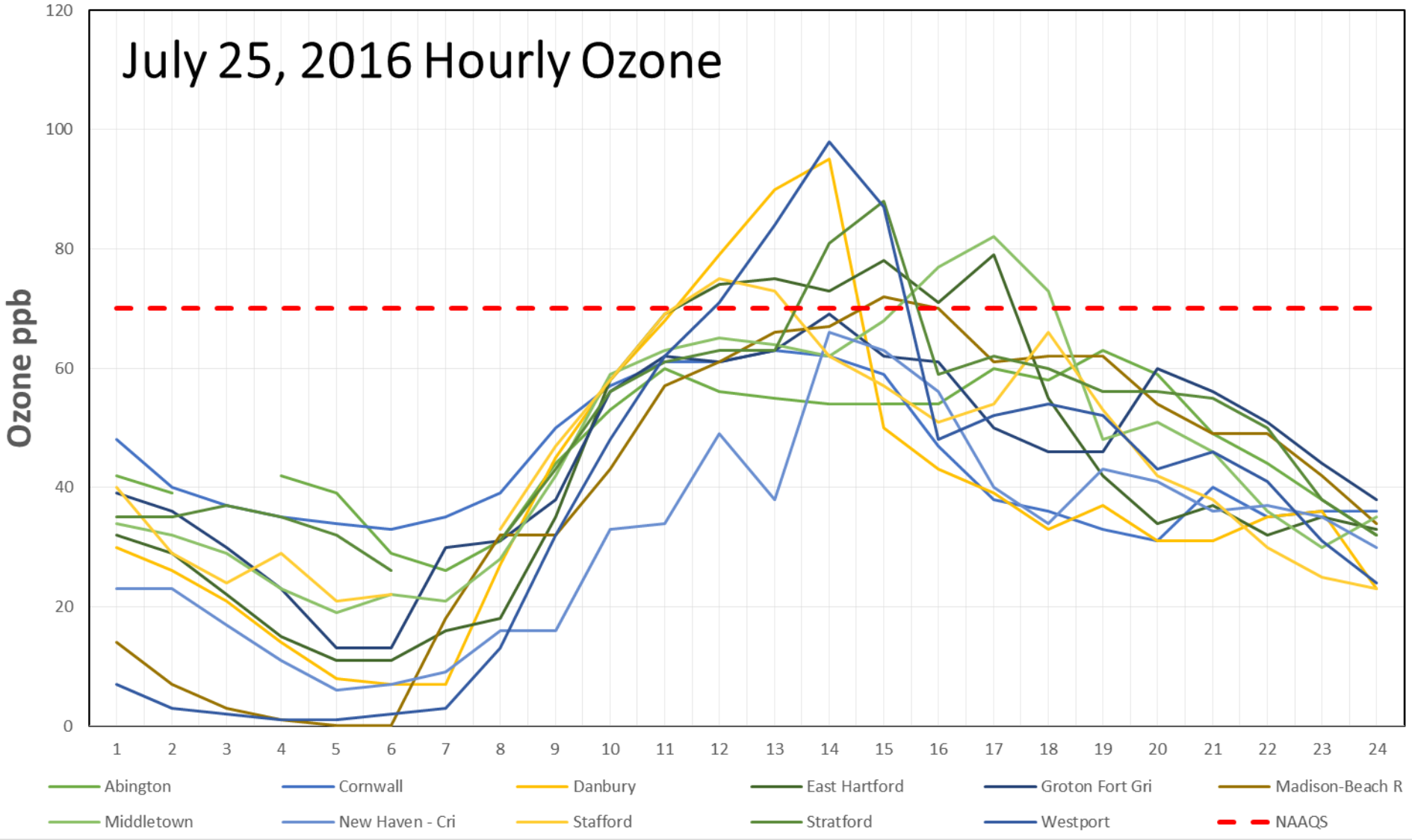




Ozone levels had the potential to be much higher due to the southwest wind flow. Most States recorded maximum temperatures into the 90's.

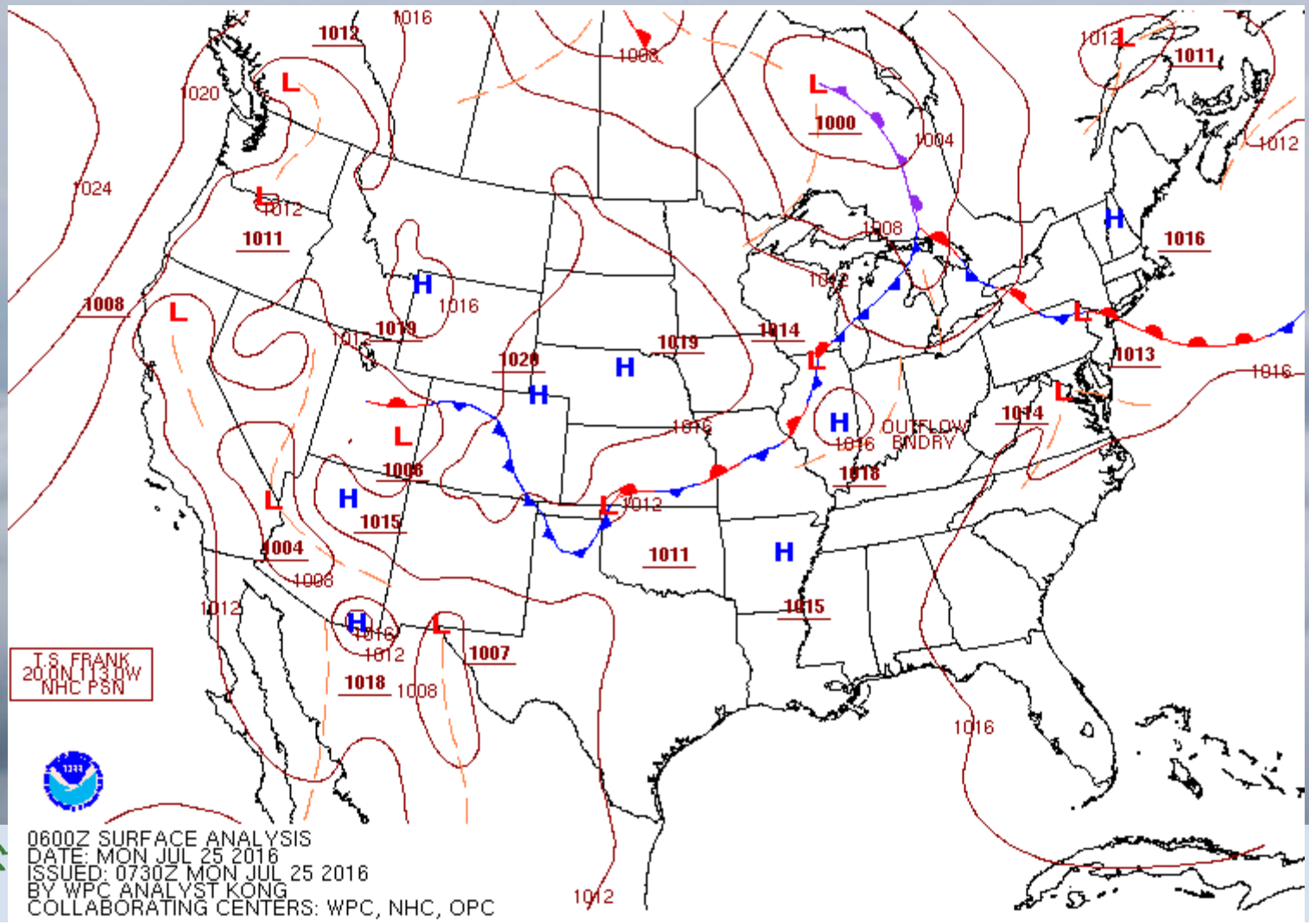
CT Ozone Monitors July 25 , 2016

Some CT sites had USG ozone levels up to 2:00 pm before the thunderstorms moved through.



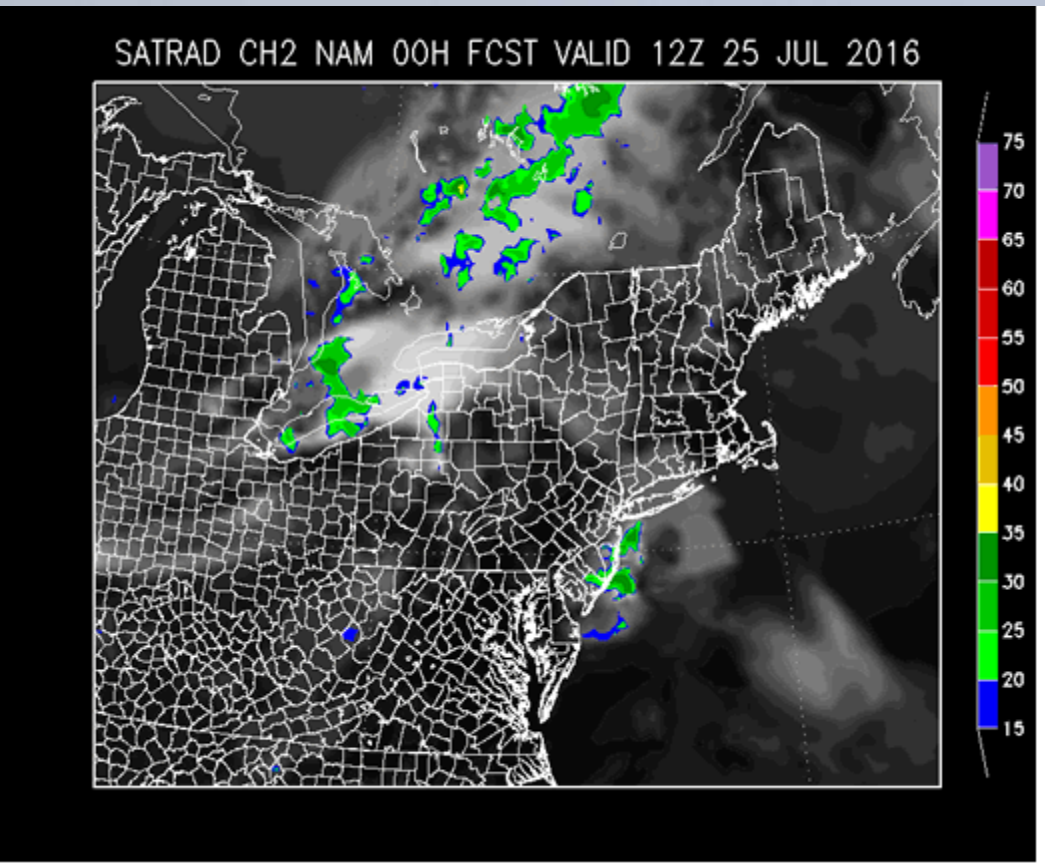
July 25 , 2016 Surface Analysis Animation

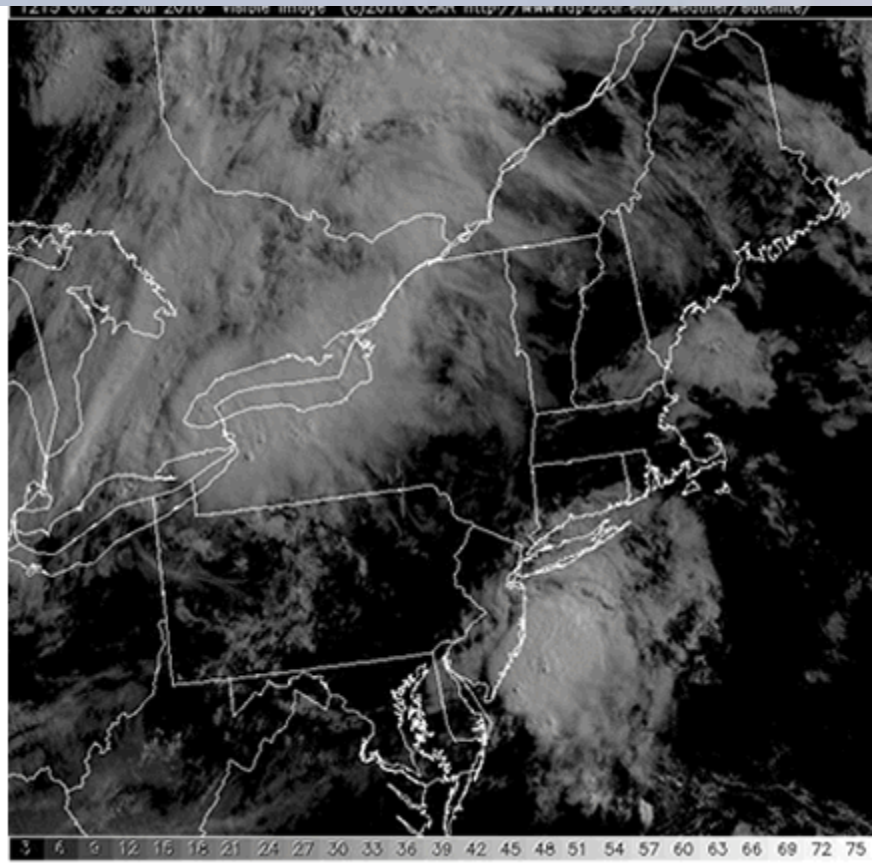
- Warm front passed through and pre-frontal trough developed near I-95 corridor, allowing southwest winds to funnel pollutants up the I-95 corridor.



July 25 , 2016 Satellite Animation

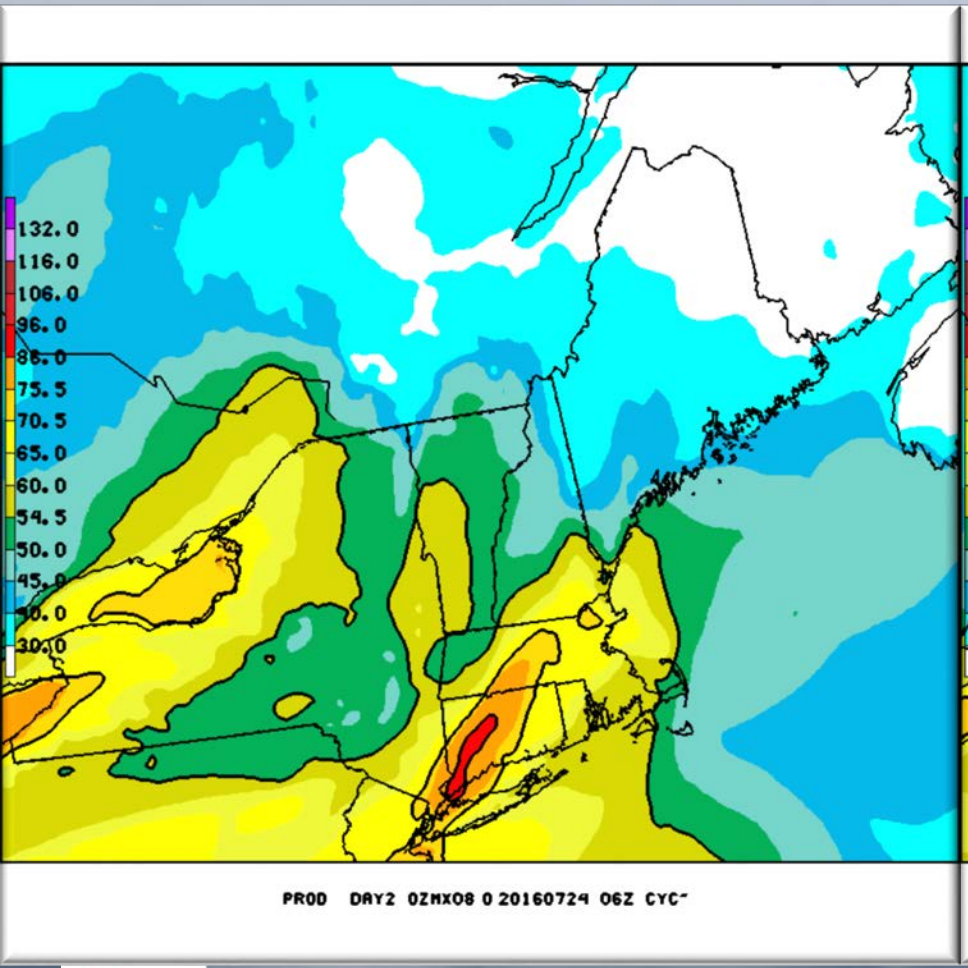
- NAM modeled clouds/precip vs. actual satellite shows that the model missed the first wave of convection, which lead to the modeled ozone over-prediction.

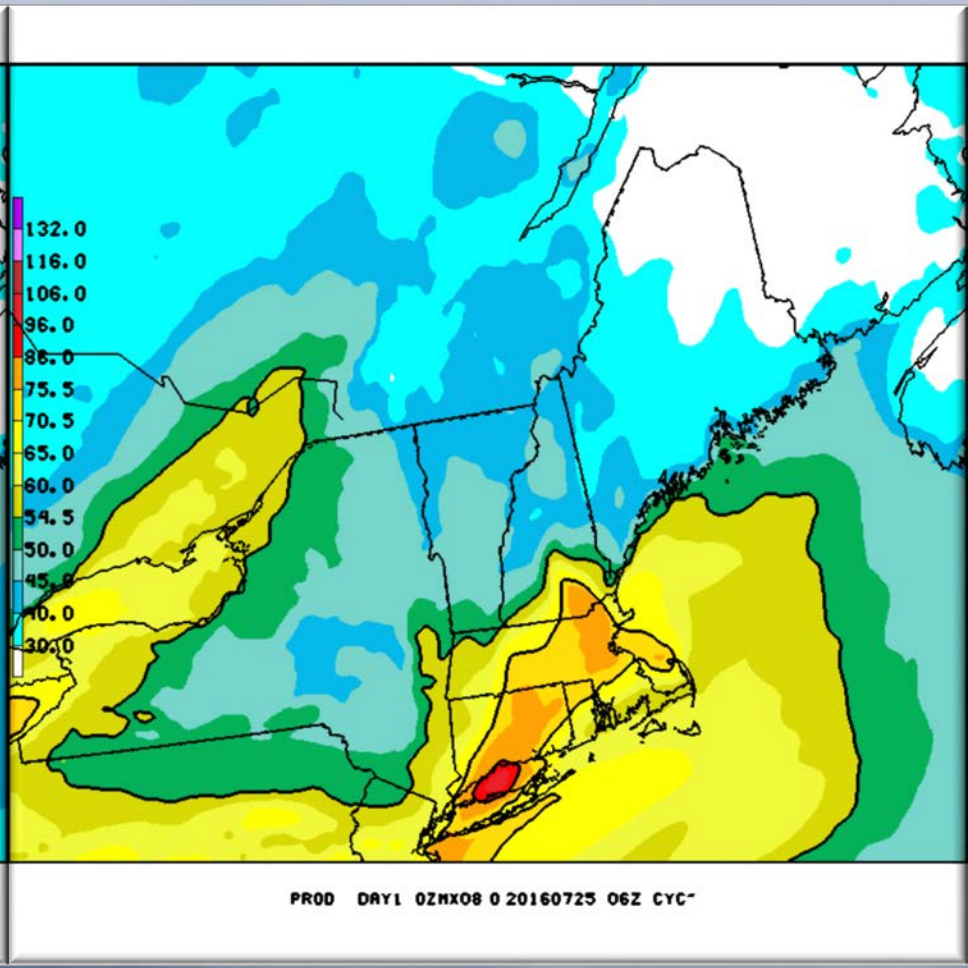




July 25 , 2016 NOAA Model Performance

- Day before and same day NOAA model showed potential for Code RED ozone levels





Conclusion

- Scattered USG event for the I-95 corridor into NH;
- Southwest winds increased as pre-frontal trough developed, which caused ozone to be funneled along I-95 corridor;
- Thunderstorms developed by early afternoon and lowered ozone levels in most areas;
- NOAA model did not model the early convection, so it subsequently over predicted the ozone levels.
- CT Forecasters predicted higher levels USG for the State since early thunderstorms were not expected.