



Connecticut Department of Energy and Environmental Protection



Connecticut Department of
**ENERGY &
ENVIRONMENTAL
PROTECTION**

August 13, 2016 OTR and Connecticut Ozone Exceedances

By Michael Geigert

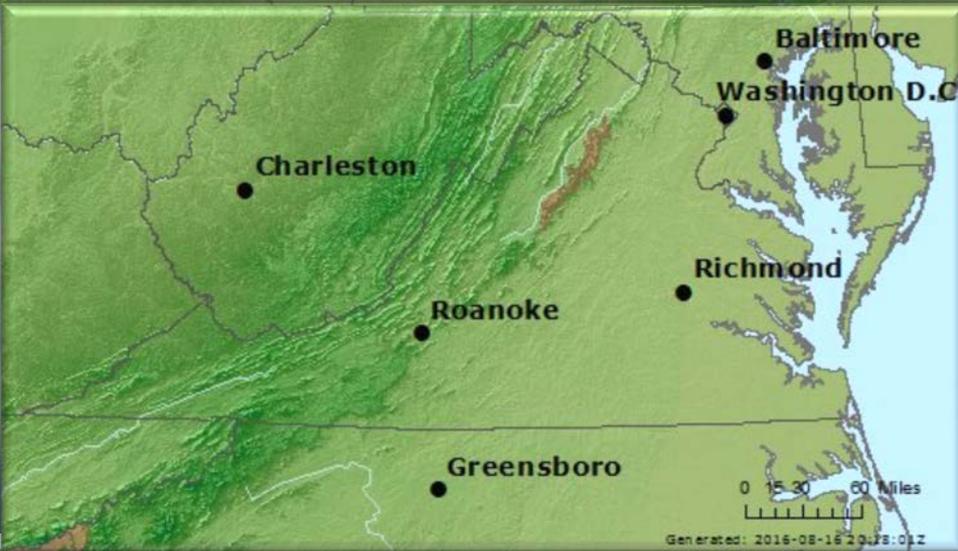


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Summary

- Only Connecticut had ozone exceedances;
- Otherwise, a clean air mass with scattered MODERATE ozone.
 1. 3 sites above 70 ppb ozone NAAQS, 3 sites in CT
 2. 2 sites above (2008) 75 ppb ozone NAAQS, 2 sites in CT
 3. 0 sites above (1997) 84 ppb ozone NAAQS, 0 sites in CT





Regional AQI Maps

Table of OTR Monitoring Sites

- 3 sites in Connecticut exceeded the 70 ppb NAAQS. Bradley Airport had a high temperature of 99° F.

Site	Site AQS	Date (LST)	Max 8-hour Ozone ppb
Greenwich	090010017	8/13/2016	77
Madison-Beach R	090099002	8/13/2016	77
Westport	090019003	8/13/2016	72
East Hartford	090031003	8/13/2016	69
Leonia	340030006	8/13/2016	69
Middletown	090070007	8/13/2016	69
Stratford	090013007	8/13/2016	69
Danbury	090011123	8/13/2016	68
White Plains	361192004	8/13/2016	66
Cornwall	090050005	8/13/2016	62
Groton Fort Gri	090110124	8/13/2016	62
Pfizer Lab	360050133	8/13/2016	62
CCNY	360610135	8/13/2016	61
Susan Wagner	360850067	8/13/2016	60
Bayonne	340170006	8/13/2016	59
IS52	360050110	8/13/2016	59
New Haven - Cri	090090027	8/13/2016	59
Queens	360810124	8/13/2016	59
NEA	421010024	8/13/2016	58
Flemington	340190001	8/13/2016	57

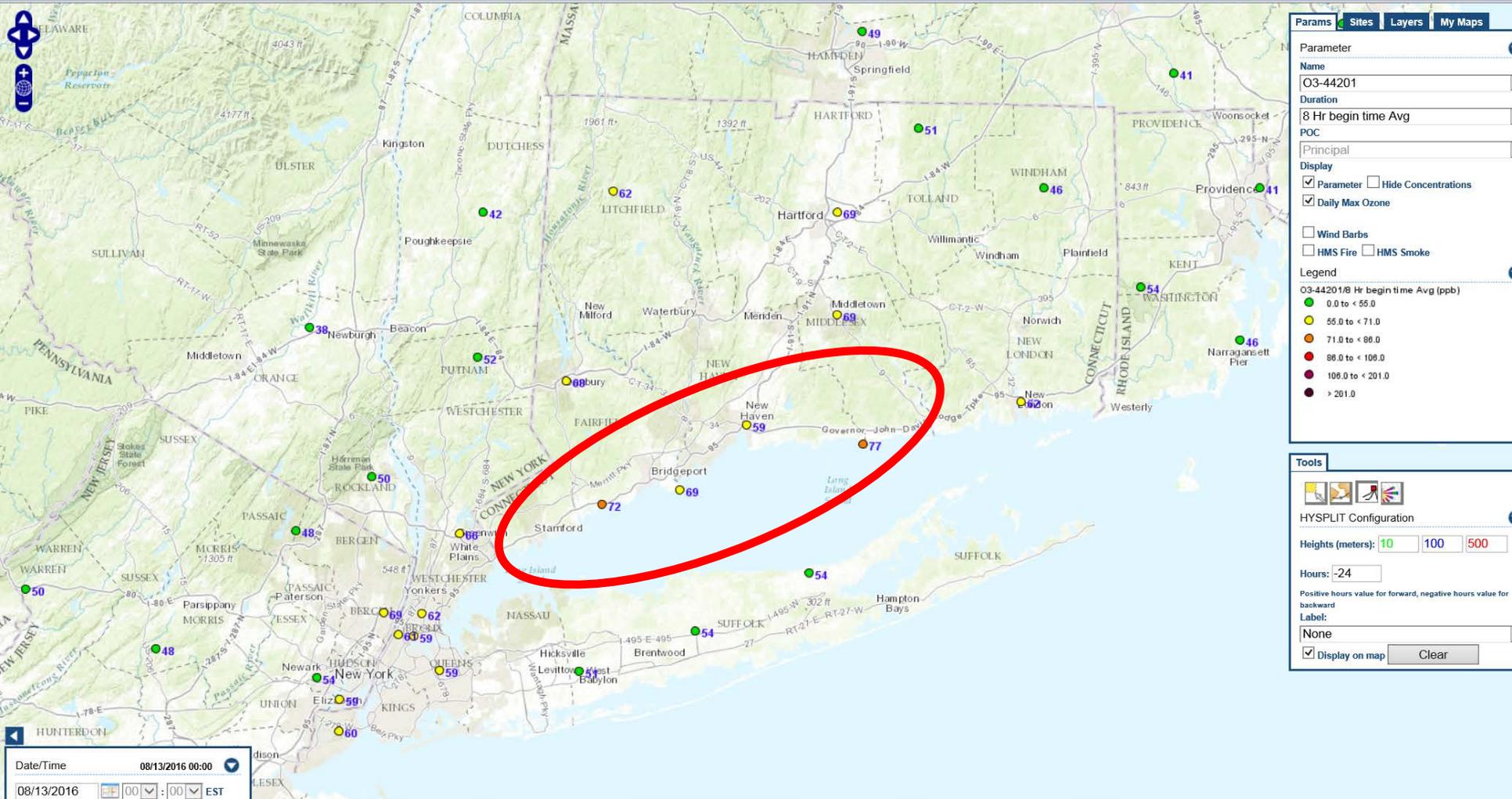


CT Monitoring Site Design Value Update

- Connecticut has 26 exceedance days to date
- No change to table with this episode

			To Date 2016 Compliance Status x = Violating NAAQS			
	Site Name	To Date: 2016 DV	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

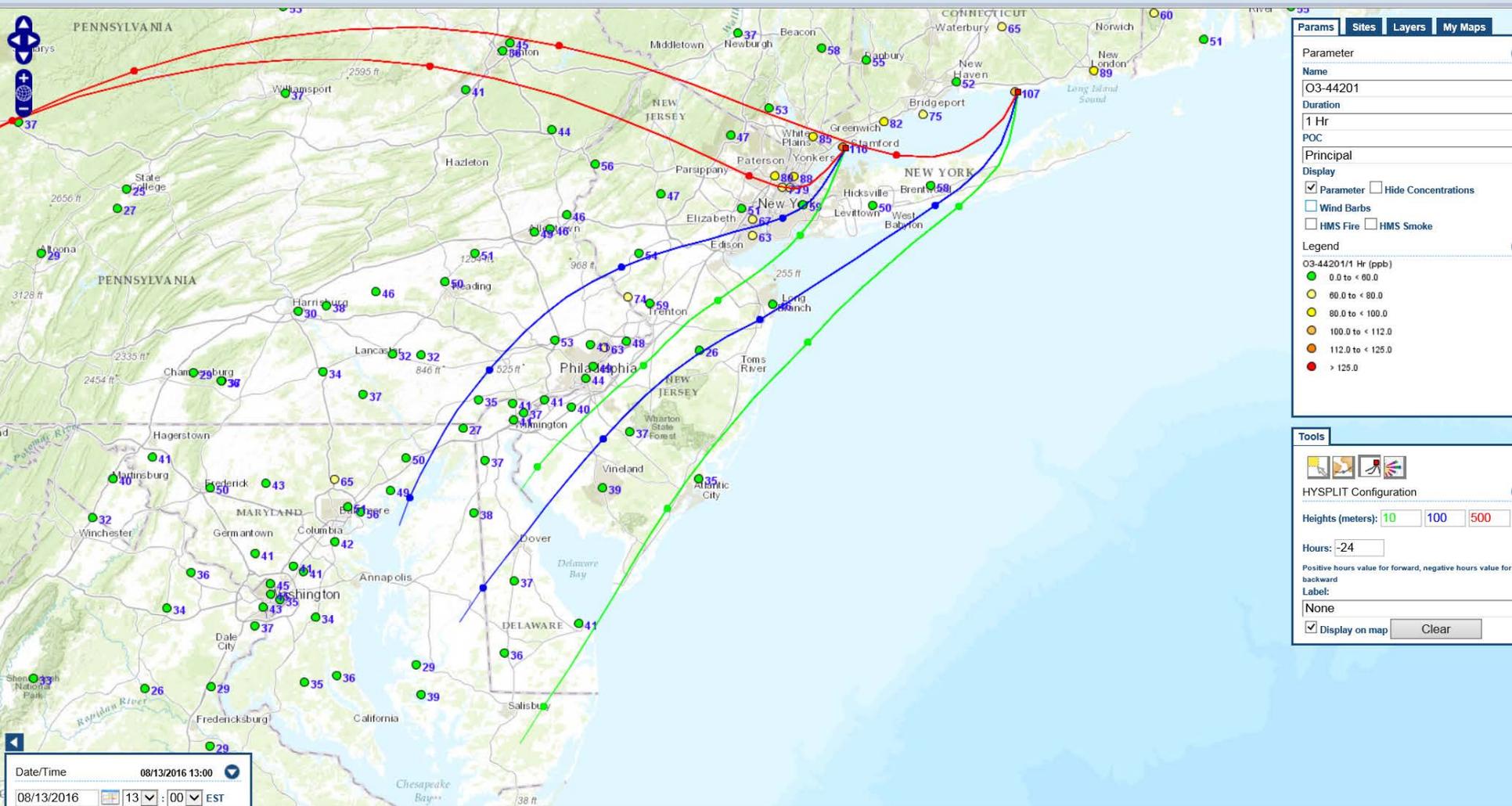
August 13, 2016 Peak Northeast Ozone



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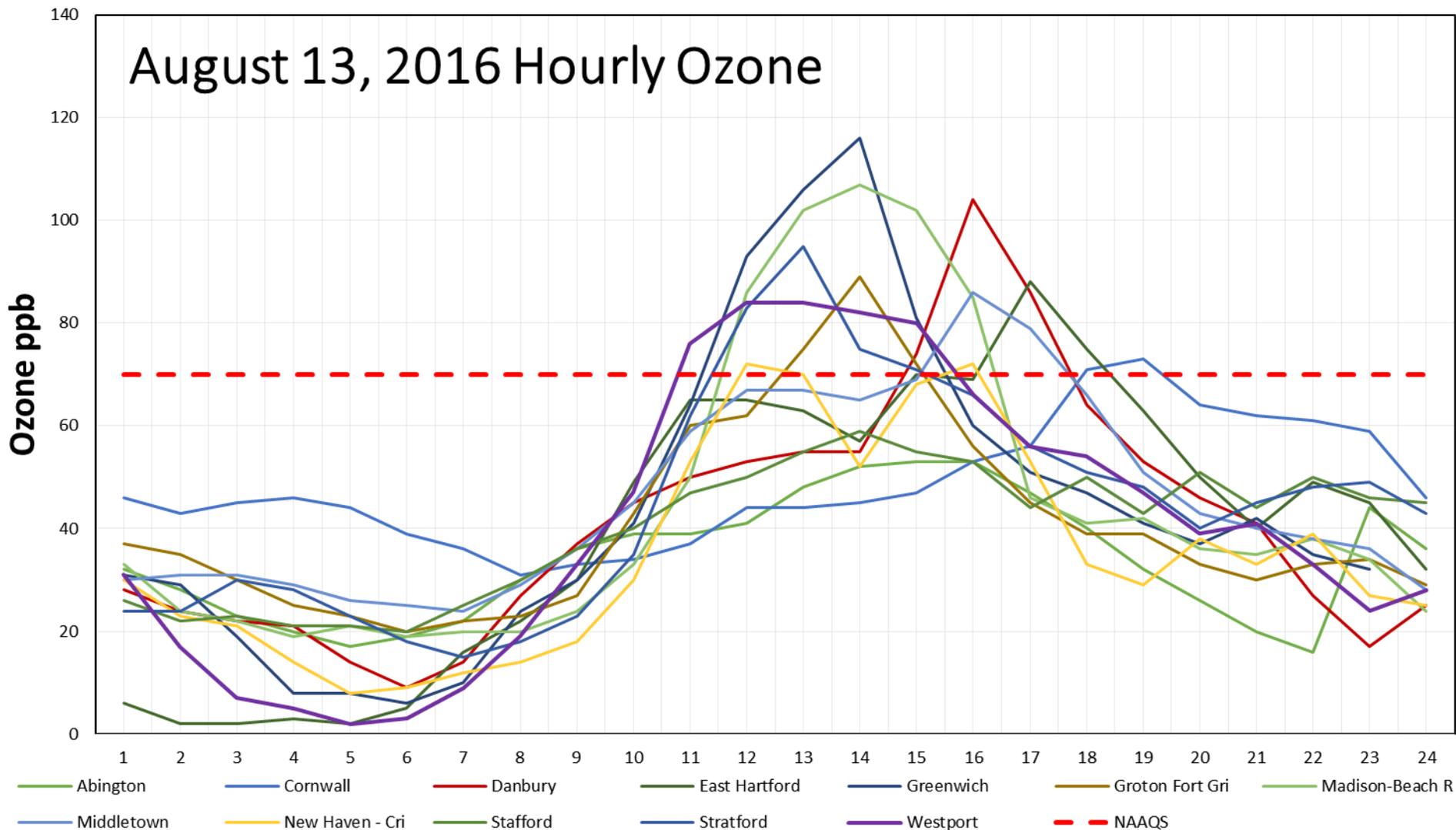
August 13, 2016 Back Trajectories 1:00 pm EST



Low level winds (10-100 meters) were southwest and 500 meter winds became southwest during the morning. This allowed pollutants from the NYC area to form ozone downwind into Connecticut.

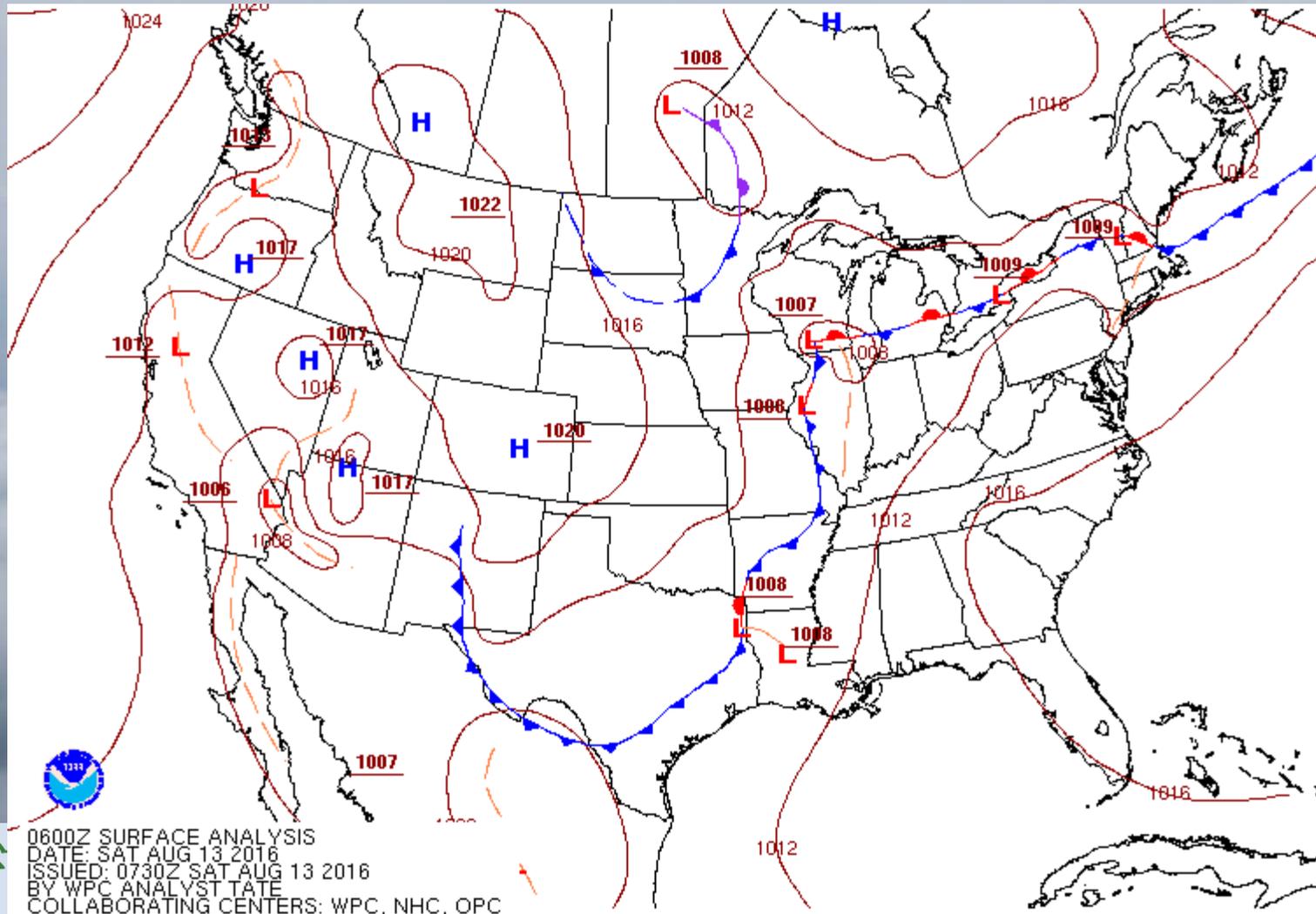
CT Ozone Monitors August 13, 2016

- The Greenwich monitor peaked at 116 ppb before sharply falling after 2:00 pm.



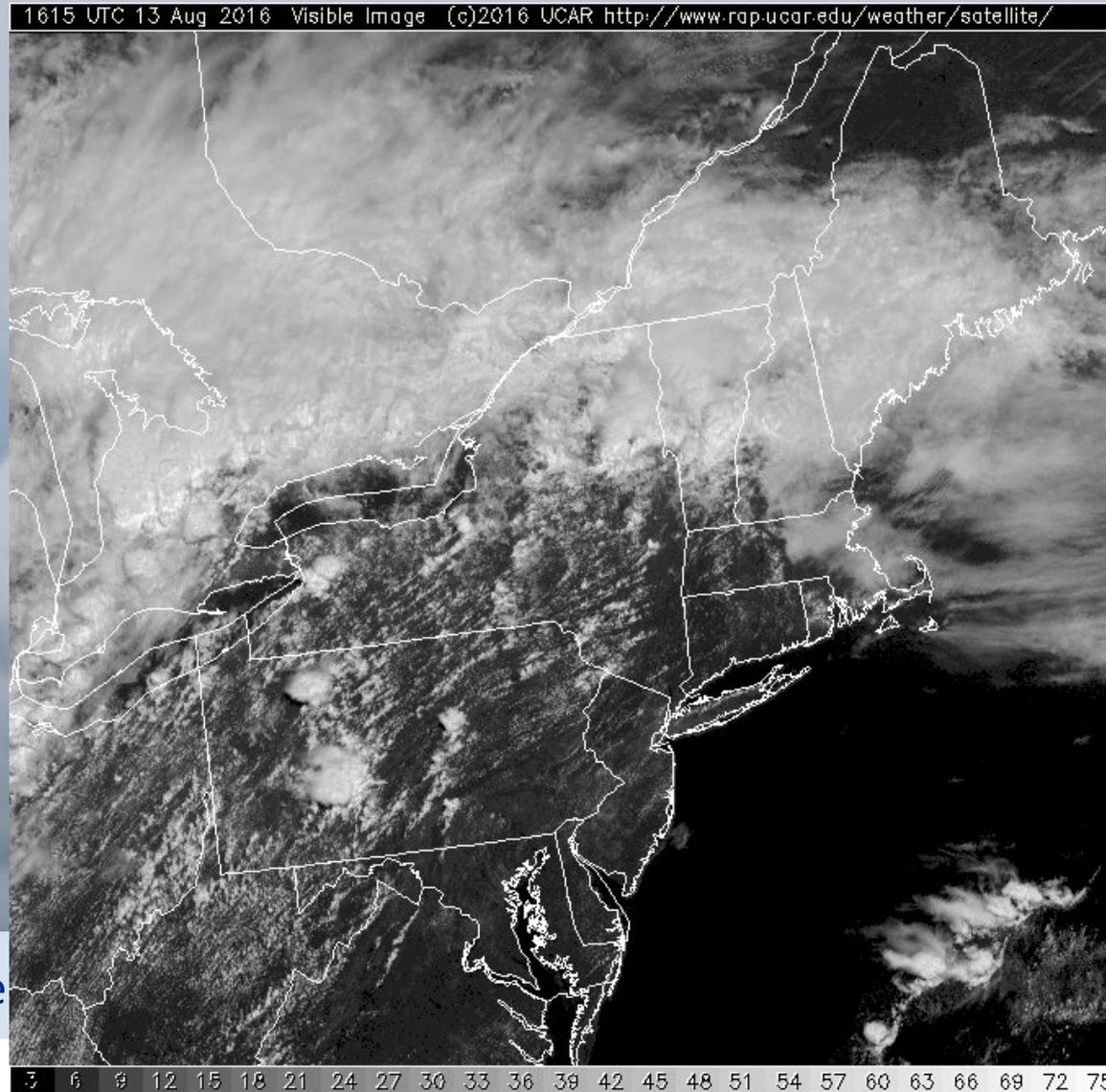
August 13 , 2016 Surface Analysis Animation

- Back-door cold front briefly passes over northeast Connecticut, but the remainder of the State stays in the hot/humid air mass.



August 13 , 2016 Satellite Animation

- Note the sea- breeze that pushes the clouds northward over the State.

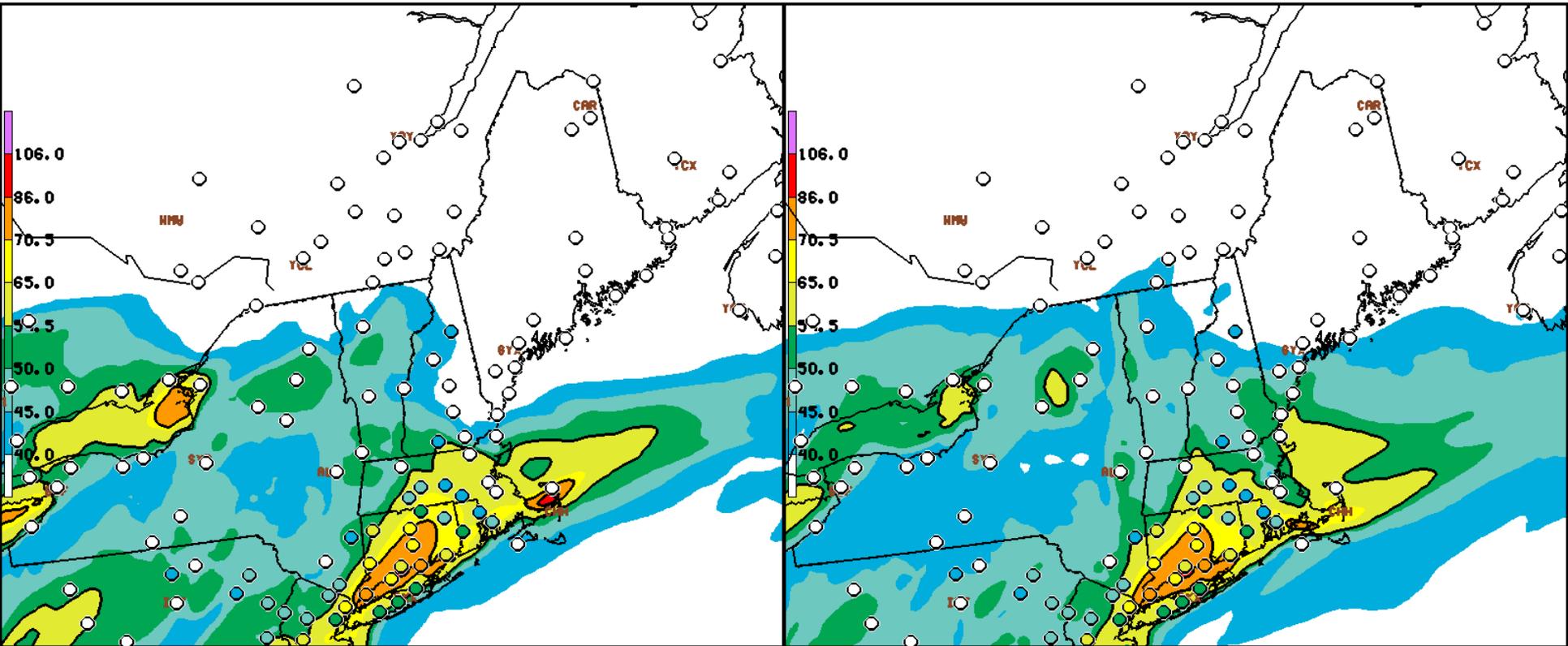


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August 13 , 2016 NOAA Model Performance

- Both model runs over-predicted the moderate ozone levels, but correctly predicted USG ozone for Connecticut.



PR00 DAY2 0ZHX08 0 20160812 06Z CYC-

PR00 DAY1 0ZHX08 0 20160813 06Z CYC-

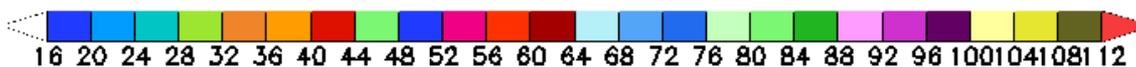
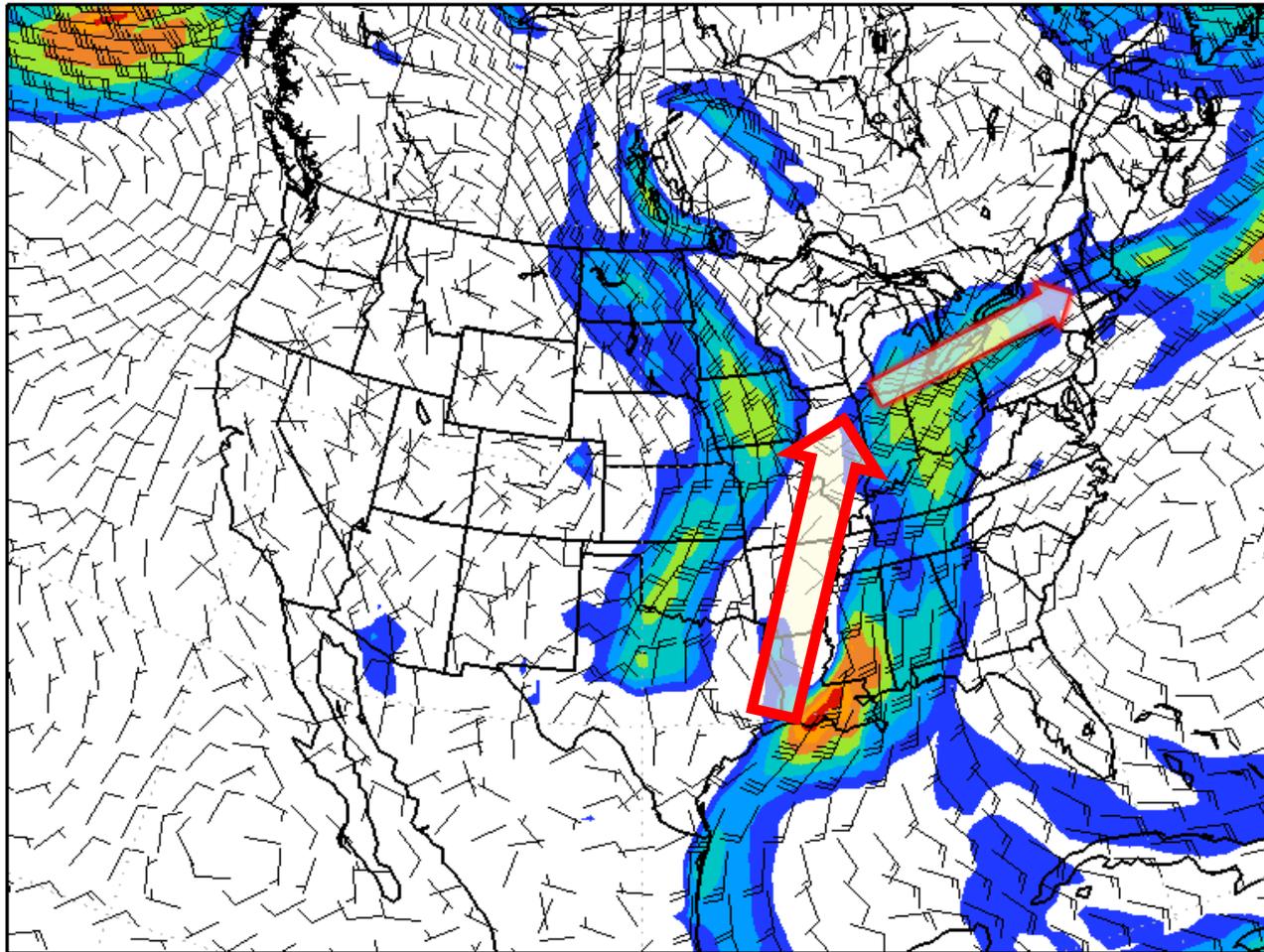


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August 13 , 2016: 850 mb winds

- Once again, clean air from the Gulf of Mexico has lowered ozone everywhere except for Connecticut.

850MB WIND NAM 00H FCST VALID 12Z 13 AUG 2016



Conclusion

- USG ozone event just for Connecticut
- Southwest winds over NYC caused ozone to form over CT for several hours;
- An unusually clean air mass over the eastern USA persisted, but Connecticut could not escape the NYC plume;
- NOAA model did well predicting USG ozone from the NYC plume over Connecticut.

