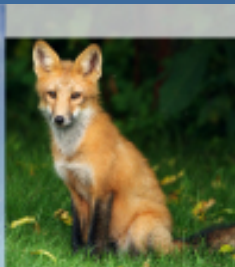




Connecticut Department of Energy and Environmental Protection



Connecticut Department of
**ENERGY &
ENVIRONMENTAL
PROTECTION**

September 14, 2016 OTR and Connecticut Ozone Exceedances

By Michael Geigert

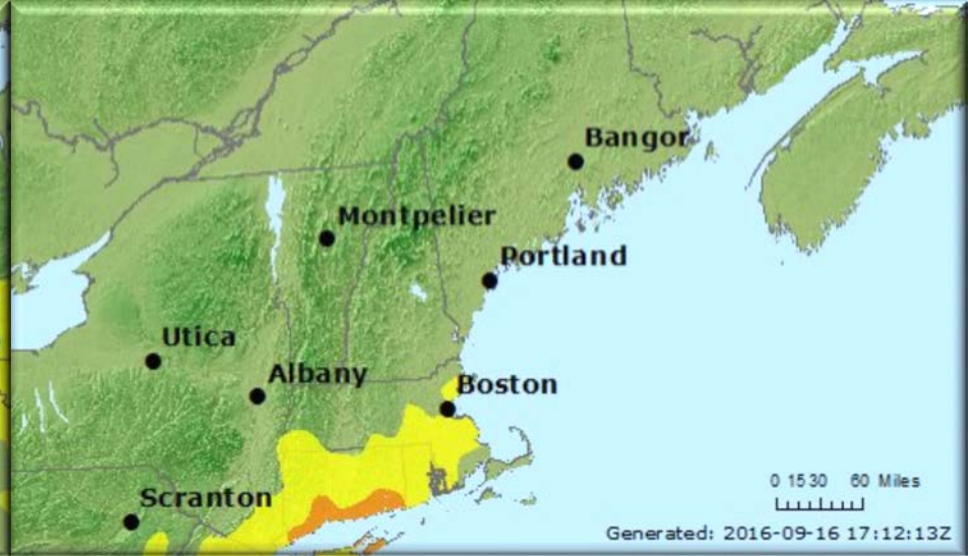


Connecticut Department of Energy and Environmental Protection

Summary

- Connecticut, Maryland, Delaware, Pennsylvania and New Jersey had ozone exceedances;
- MODERATE levels measured along the remainder of the I-95 corridor from Virginia to Massachusetts;
 1. 14 sites above 70 ppb ozone NAAQS, 5 sites in CT
 2. 3 sites above (2008) 75 ppb ozone NAAQS, 1 site in CT
 3. 0 sites above (1997) 84 ppb ozone NAAQS, 0 sites in CT





Regional AQI Maps

Table of OTR Monitoring Sites

- 5 sites in Connecticut exceeded the 70 ppb NAAQS. Bradley Airport had a high temperature of 90° F.

Agency	Site	Site AQS	Date (UTC)	Max 8-hr Ozone ppb
CT1	Madison-Beach Road	90099002	9/14/2016	80
MD1	Essex	240053001	9/14/2016	78
MD1	Edgewood	240251001	9/14/2016	77
CT1	New Haven - Criscuolo Park	90090027	9/14/2016	75
DE1	BCSP	100031010	9/14/2016	73
CT1	Groton Fort Griswold	90110124	9/14/2016	73
CT1	Stratford	90013007	9/14/2016	73
CT1	Westport	90019003	9/14/2016	73
MD1	Fair Hill	240150003	9/14/2016	72
DE1	BELLFNT2	100031013	9/14/2016	71
NJ1	Clarksboro	340150002	9/14/2016	71
NJ1	Colliers Mills	340290006	9/14/2016	71
PA1	NEWG	420290100	9/14/2016	71
PA1	YOR1	421330011	9/14/2016	71
RI1	W Greenwich	440030002	9/14/2016	70
NJ1	Ancora State Hosptial	340071001	9/14/2016	69
PA1	CHES	420450002	9/14/2016	69
CT1	Greenwich	90010017	9/14/2016	69
NY1	Riverhead	361030004	9/14/2016	69
PA1	AREN	420010001	9/14/2016	68
MD1	Calvert	240090011	9/14/2016	68
NJ1	Camden Spruce St	340070002	9/14/2016	68
PA2	NEA	421010024	9/14/2016	68
MD1	PG Equestrian Center	240338003	9/14/2016	68
MD1	Southern Maryland	240170010	9/14/2016	68
MD1	Aldino	240259001	9/14/2016	67
MD1	Furley	245100054	9/14/2016	67
MD1	Millington	240290002	9/14/2016	67
PA2	NEW	421010048	9/14/2016	67
MD1	Padonia	240051007	9/14/2016	67
OAP	Arendtsville	420019991	9/14/2016	66
DE1	LUMS 2	100031007	9/14/2016	66
NY1	Susan Wagner	360850067	9/14/2016	66



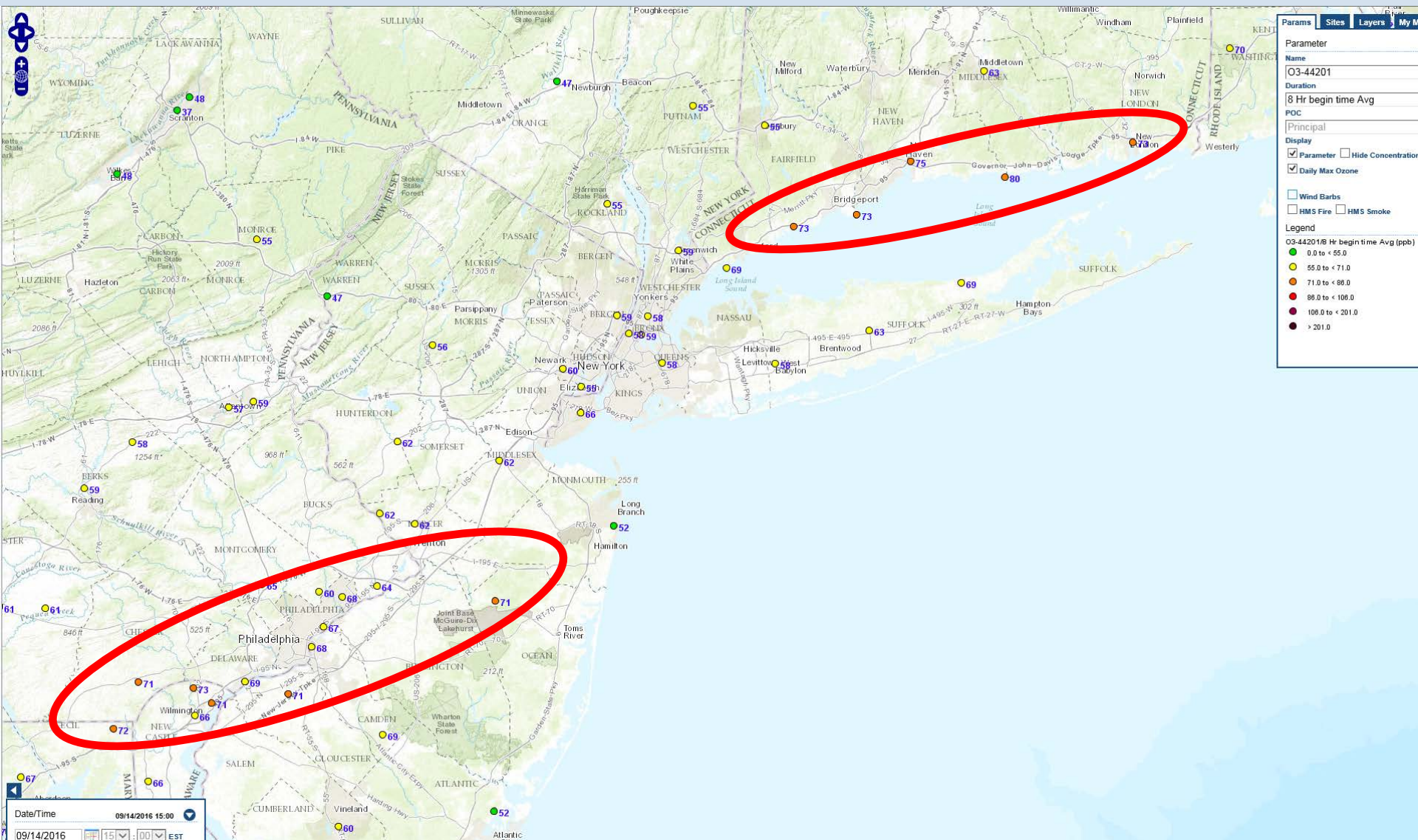
CT Monitoring Site Design Value Update

- Connecticut has 31 exceedance days to date
- No change to table with this episode

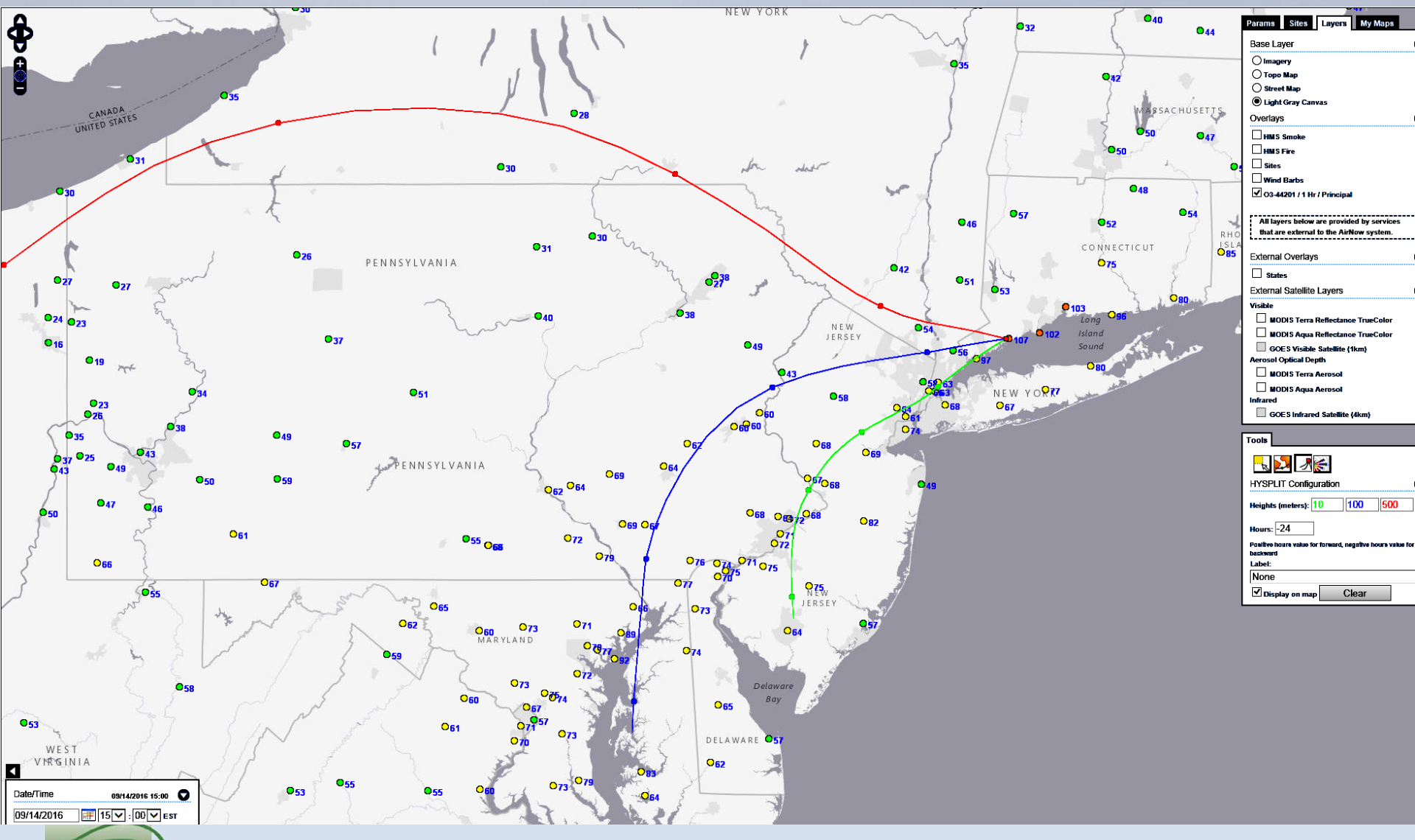
		To Date 2016 Compliance Status x = Violating NAAQS				
	Site Name	To Date: 2016 DV	2015 NAAQS	2008 NAAQS	1997 NAAQS	Next Possible NAAQS in Violation (key monitor in each NA is highlighted in RED)
SWCT Portion of NYC Area	Danbury	78	X	X		Four more 102+ ppb days violates 1997 NAAQS
	Greenwich	82	X	X		Four 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 One more 76+ ppb days violates 2008 NAAQS
	East Hartford	75	X			
	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)	68				One more 76+ ppb days violates 2015 NAAQS



September 14, 2016 Peak Northeast Ozone



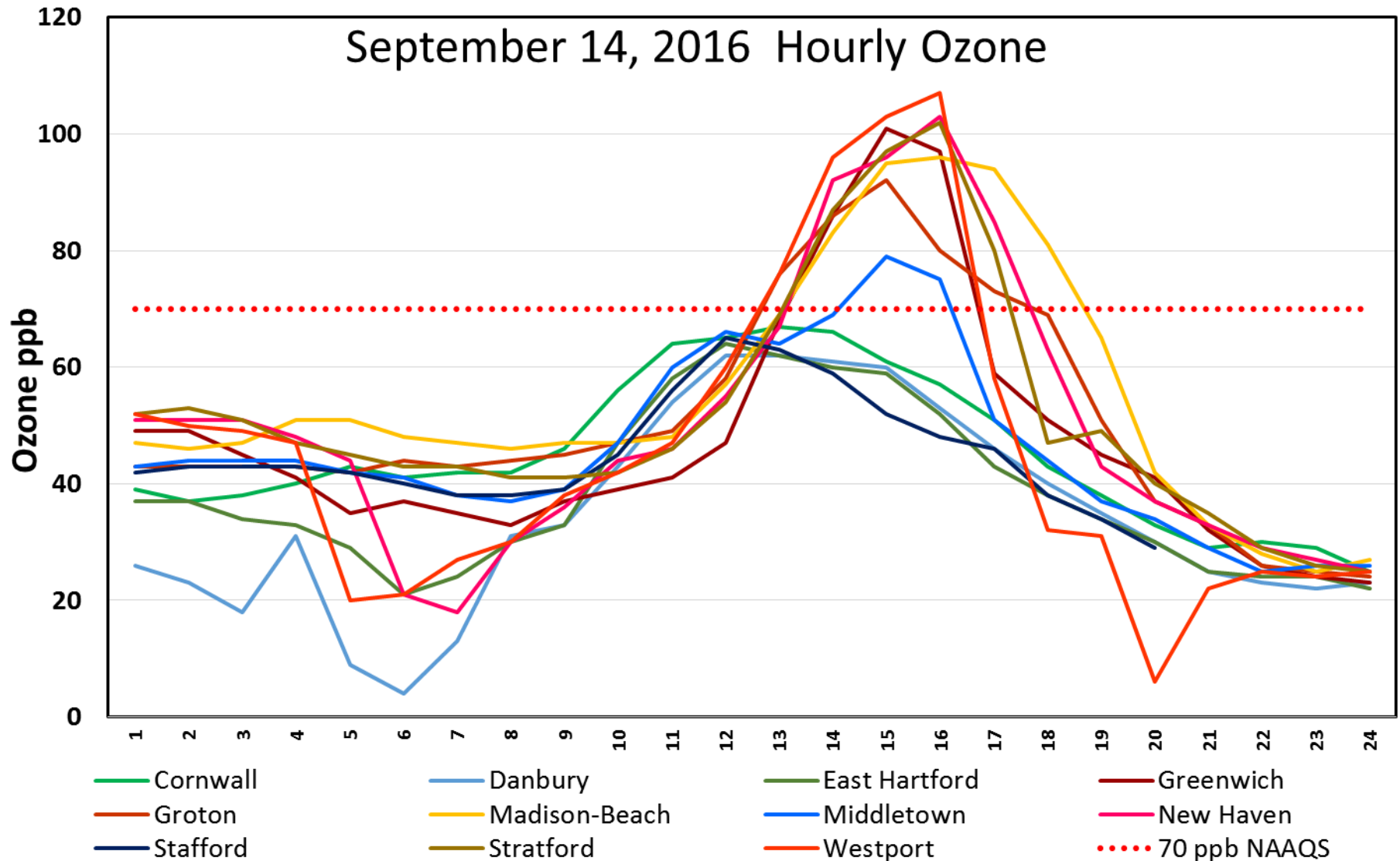
September 14, 2016 Back Trajectories 3:00 pm EST



Low level winds (100-500 meters) were southwesterly, traveling over the metro NYC area. Higher level transport was from a cleaner air mass to the northwest.

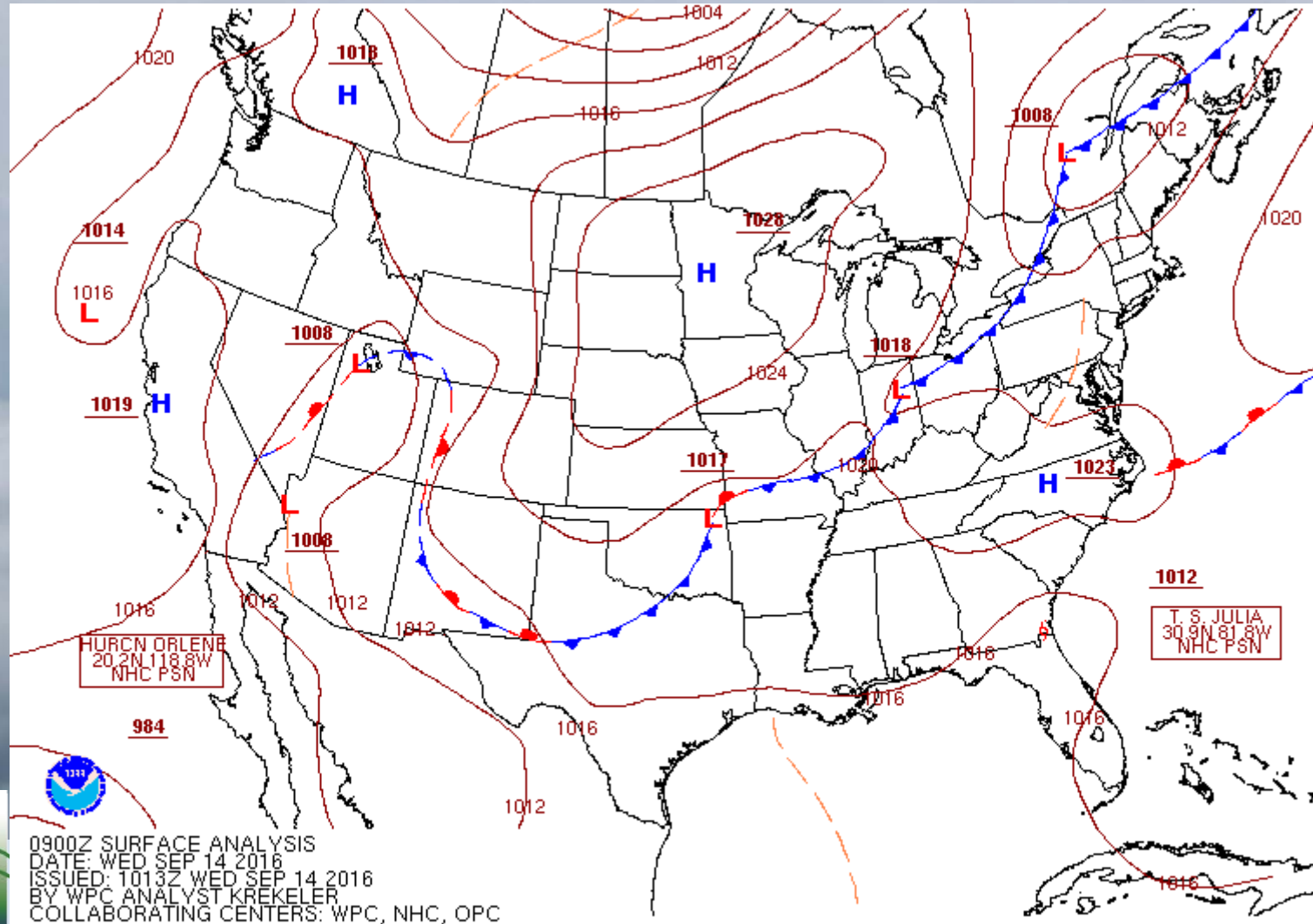
CT Ozone Monitors September 14 ,

USG ozone mainly confined to monitors along the coast. Hourly ozone peaked at 107 ppb at Westport.



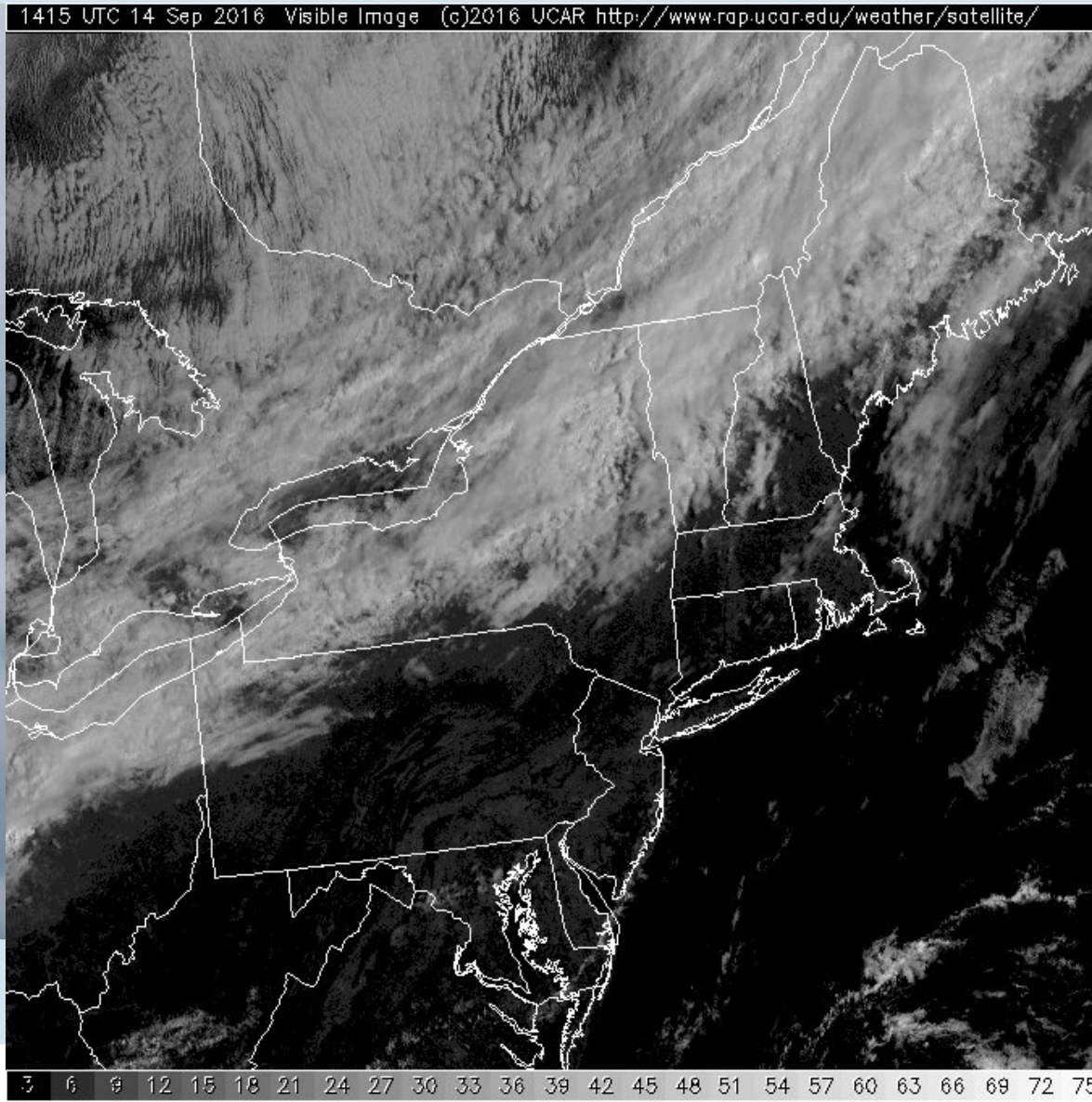
September 14 , 2016 Surface Analysis Animation

- Cold front passes over Connecticut after 5:00pm with a line of thunderstorms;
- A pre-frontal trough develops with southwest winds prior to frontal passage.



September 14 , 2016 Satellite Animation

- Skies remained sunny all day, allowing for maximum ozone production until frontal passage and precipitation.

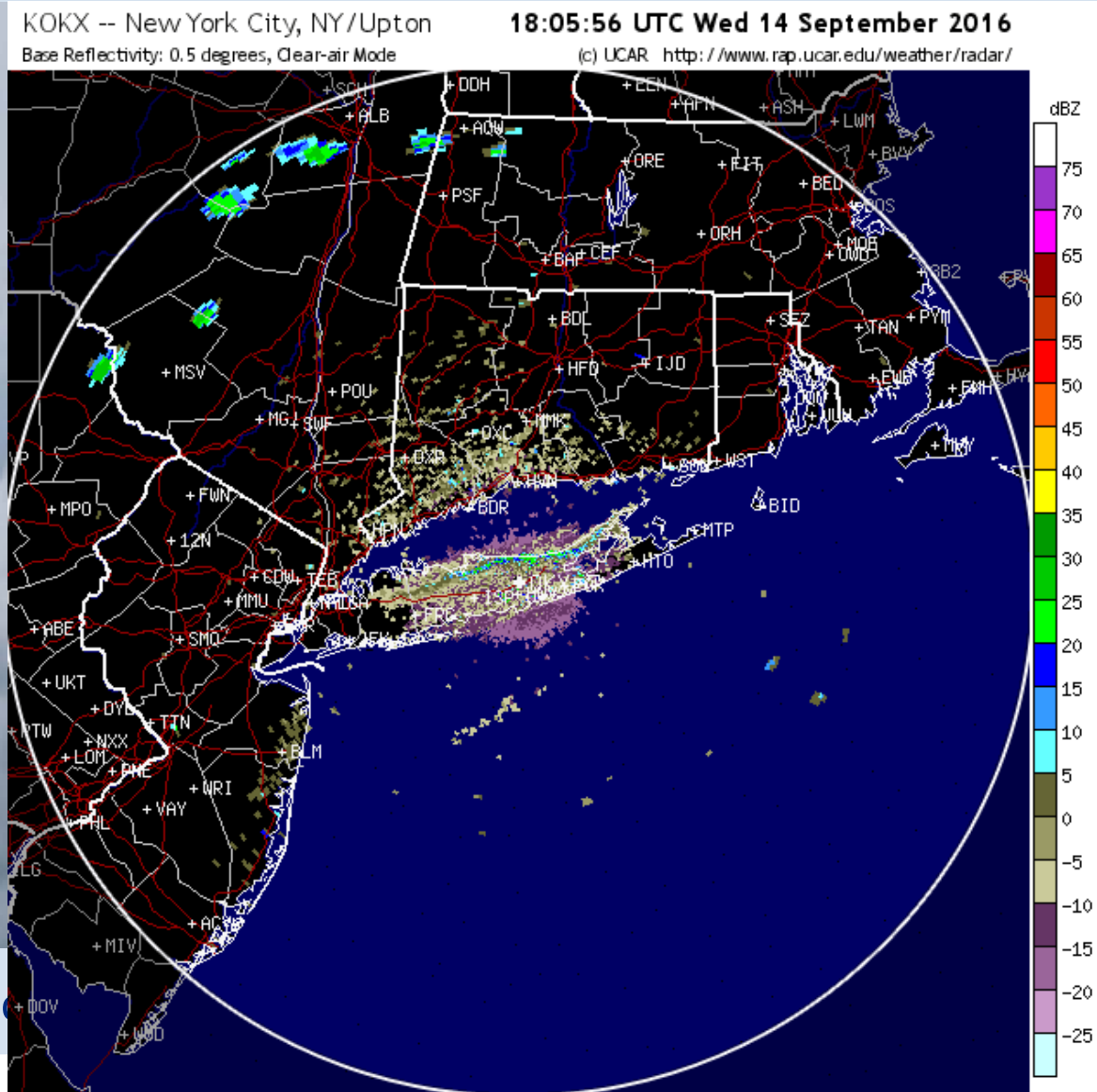


Con

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September 14 , 2016 Radar Animation

- Thunderstorms passed over Connecticut between 3:00- 7:00 pm, putting an end to the elevated ozone levels.

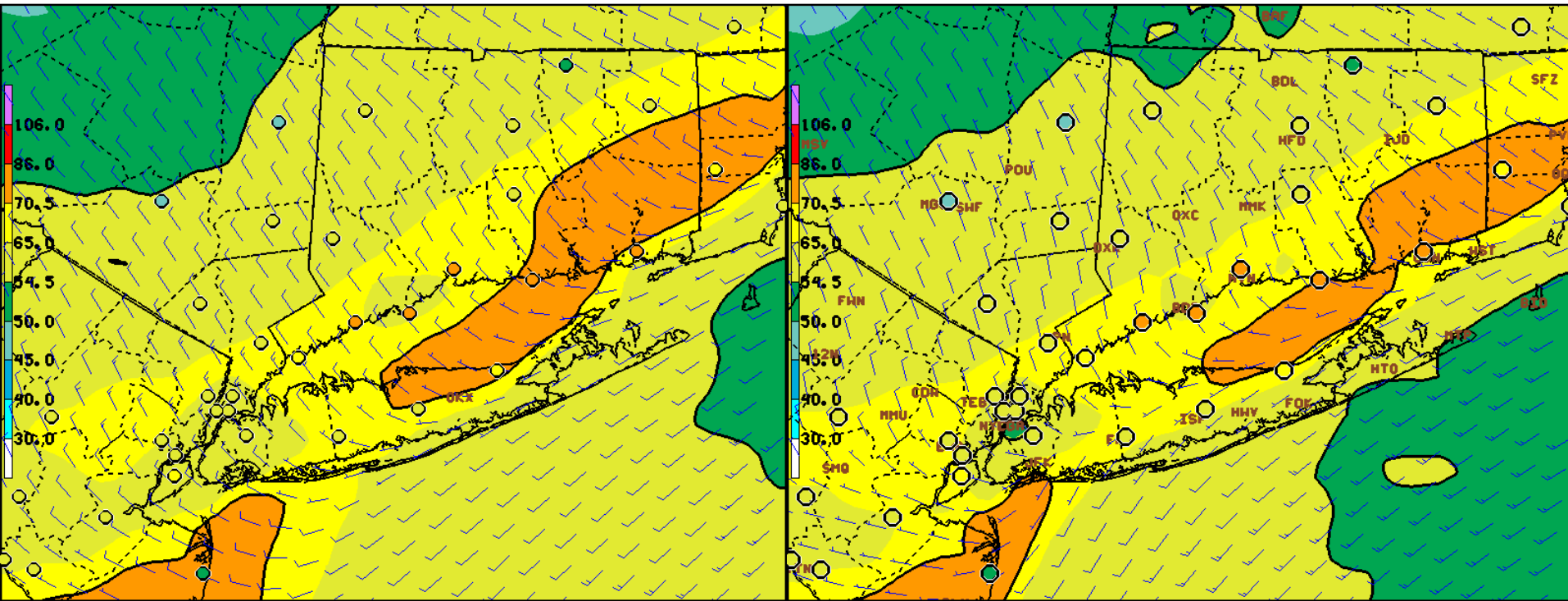


Conne

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September 14 , 2016 NOAA Model Performance

- Day before and same day NOAA model showed potential for USG ozone levels over coastal CT



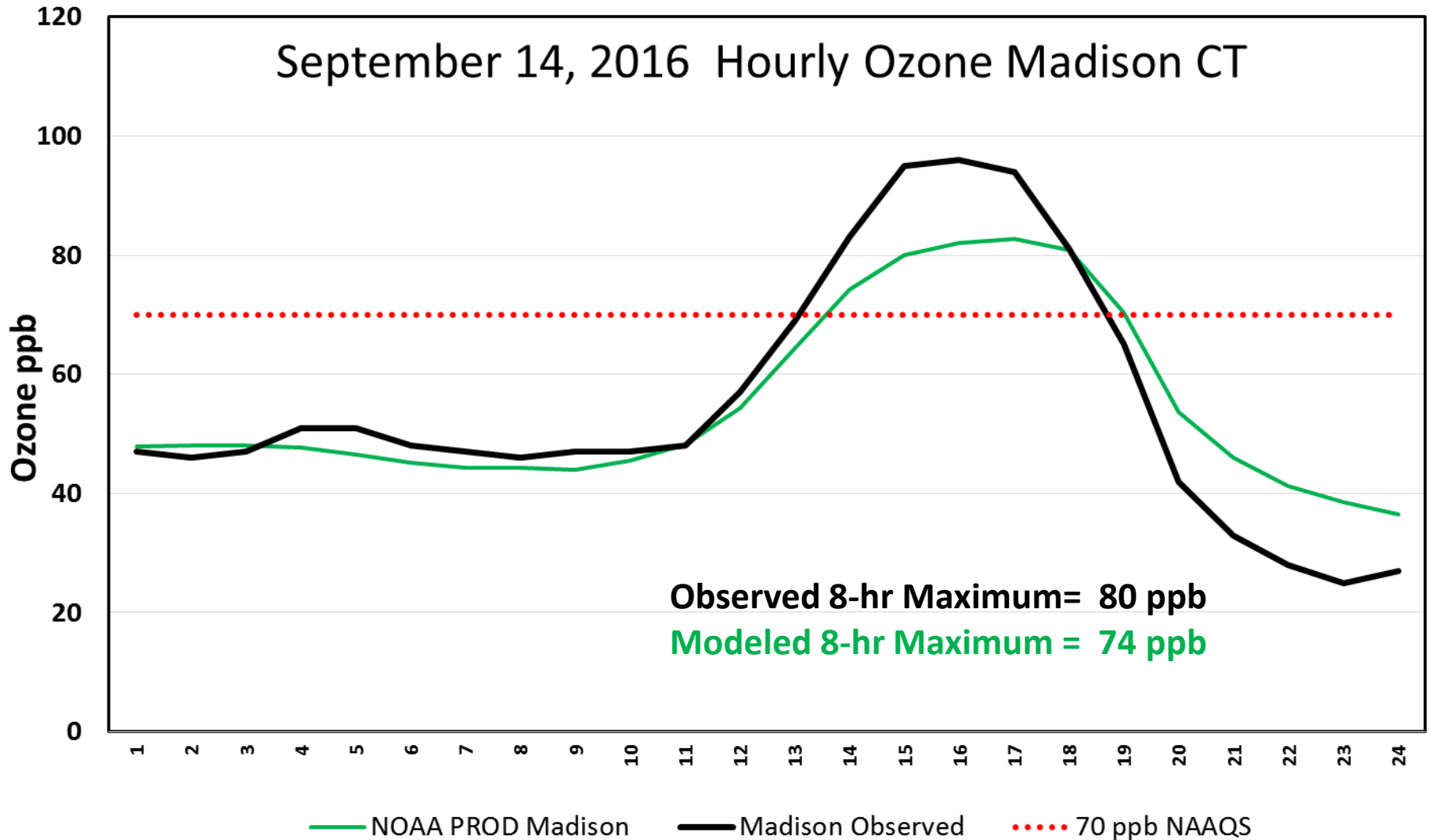
PR00 DAY2 OZMX08 0 20160913 12Z CYC-

PR00 DAY1 OZMX08 0 20160914 12Z CYC-



September 14 , 2016 NOAA Model Performance

- Day before modeled ozone at Madison CT followed observations but with a 6 ppb under-prediction



Conclusion

- Scattered USG event from Maryland to Connecticut
- Southwest winds ahead of approaching cold front allowed pollutant transport to occur along the I-95 corridor into LIS and Connecticut;
- Skies remained nearly cloud-free the entire day, which allowed ozone to reach full potential, until frontal passage around 5:00 pm;
- NOAA model did well predicting elevated ozone along the I-95 corridor and some USG levels into Connecticut.

