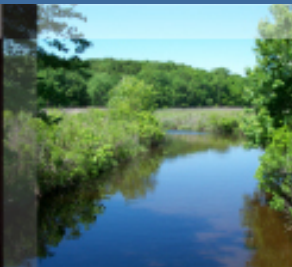
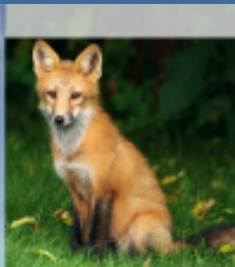




Connecticut Department of Energy and Environmental Protection



Connecticut Department of
**ENERGY &
ENVIRONMENTAL
PROTECTION**

July 21 , 2016 OTR and Connecticut Ozone Exceedances

By Michael Geigert

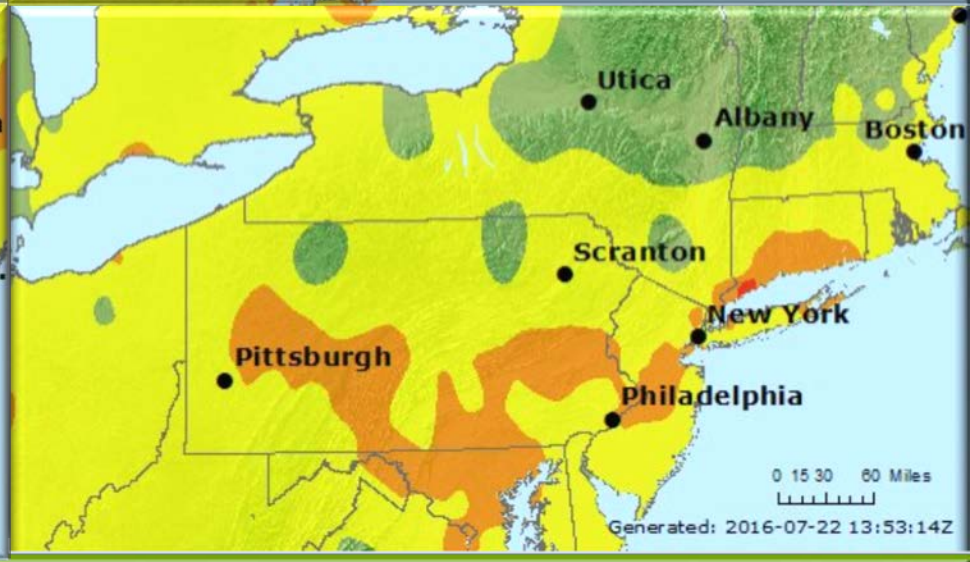
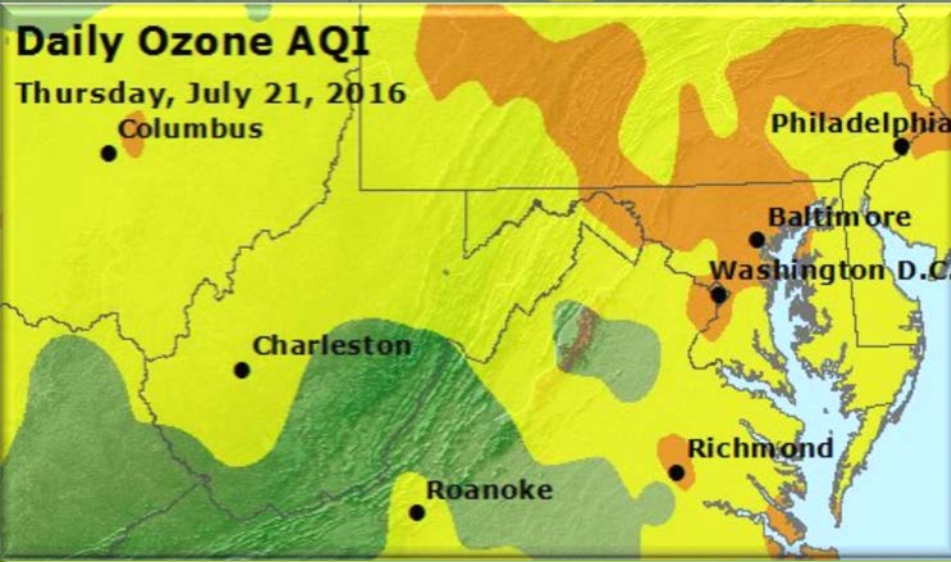
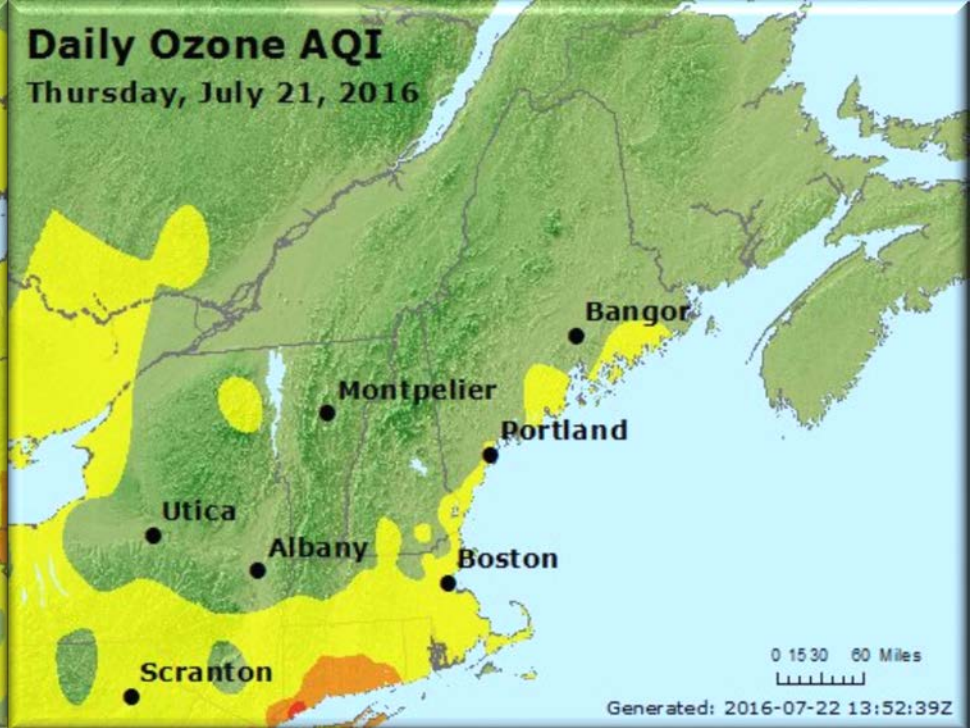


Connecticut Department of Energy and Environmental Protection

Summary

- 6 States had exceedances along the I-95 corridor to CT;
- Connecticut sites had the highest ozone concentrations with a 1-hour peak of 107 ppb in Westport.
 1. 37 sites above 70 ppb ozone NAAQS, 7 sites in CT
 2. 16 sites above (2008) 75 ppb ozone NAAQS, 5 sites in CT
 3. 2 sites above (1997) 84 ppb ozone NAAQS, 2 sites in CT





Regional AQI Maps

Table of OTR Monitoring Sites

Site AQS	Date (LST)	Site	Max 8-hour Ozone ppb
090019003	7/21/2016	Westport	87
090010017	7/21/2016	Greenwich	85
421010024	7/21/2016	NEA	81
090013007	7/21/2016	Stratford	81
420630004	7/21/2016	Strongtown	81
090090027	7/21/2016	New Haven - Cri	80
420170012	7/21/2016	BRIS	78
240339991	7/21/2016	Beltsville	78
240330030	7/21/2016	HU-Beltsville	78
090070007	7/21/2016	Middletown	78
420130801	7/21/2016	ALTO	77
240259001	7/21/2016	Aldino	77
420110011	7/21/2016	REA3	77
360850067	7/21/2016	Susan Wagner	77
420010001	7/21/2016	AREN	76
420031008	7/21/2016	Harrison Townsh	76
420770004	7/21/2016	ALLE	75
240053001	7/21/2016	Essex	75
420950025	7/21/2016	FREE	75
240210037	7/21/2016	Frederick Airpo	75
420050001	7/21/2016	KITT	75
421010048	7/21/2016	NEW	75
420019991	7/21/2016	Arendtsville	74
245100054	7/21/2016	Furley	74
240430009	7/21/2016	Hagerstown	74
090099002	7/21/2016	Madison-Beach R	74
340210005	7/21/2016	Rider Universit	74
340230011	7/21/2016	Rutgers Univers	74
420958000	7/21/2016	EAS2	73
420110006	7/21/2016	KUT2	73
240051007	7/21/2016	Padonia	73
421330011	7/21/2016	YOR1	73
240251001	7/21/2016	Edgewood	72
420431100	7/21/2016	HERS	72
340030006	7/21/2016	Leonia	72
421330008	7/21/2016	YORK	72
090110124	7/21/2016	Groton Fort Gri	71

Data for HARTFORD BRADLEY INTL AP, CT
Click column heading to sort ascending, click again to sort descending

Date	Max Temperature	Min Temperature
2016-07-01	85	62
2016-07-02	79	59
2016-07-03	84	55
2016-07-04	88	58
2016-07-05	88	67
2016-07-06	95	66
2016-07-07	91	68
2016-07-08	84	64
2016-07-09	69	62
2016-07-10	81	61
2016-07-11	80	60
2016-07-12	87	56
2016-07-13	91	67
2016-07-14	88	71
2016-07-15	94	68
2016-07-16	93	65
2016-07-17	92	69
2016-07-18	96	67
2016-07-19	84	61
2016-07-20	85	54
2016-07-21	93	56
2016-07-22	M	M

- 7 sites in Connecticut exceeded the 70 ppb NAAQS. Bradley Airport had high temperature of 93° F.

CT Monitoring Site Design Value Update

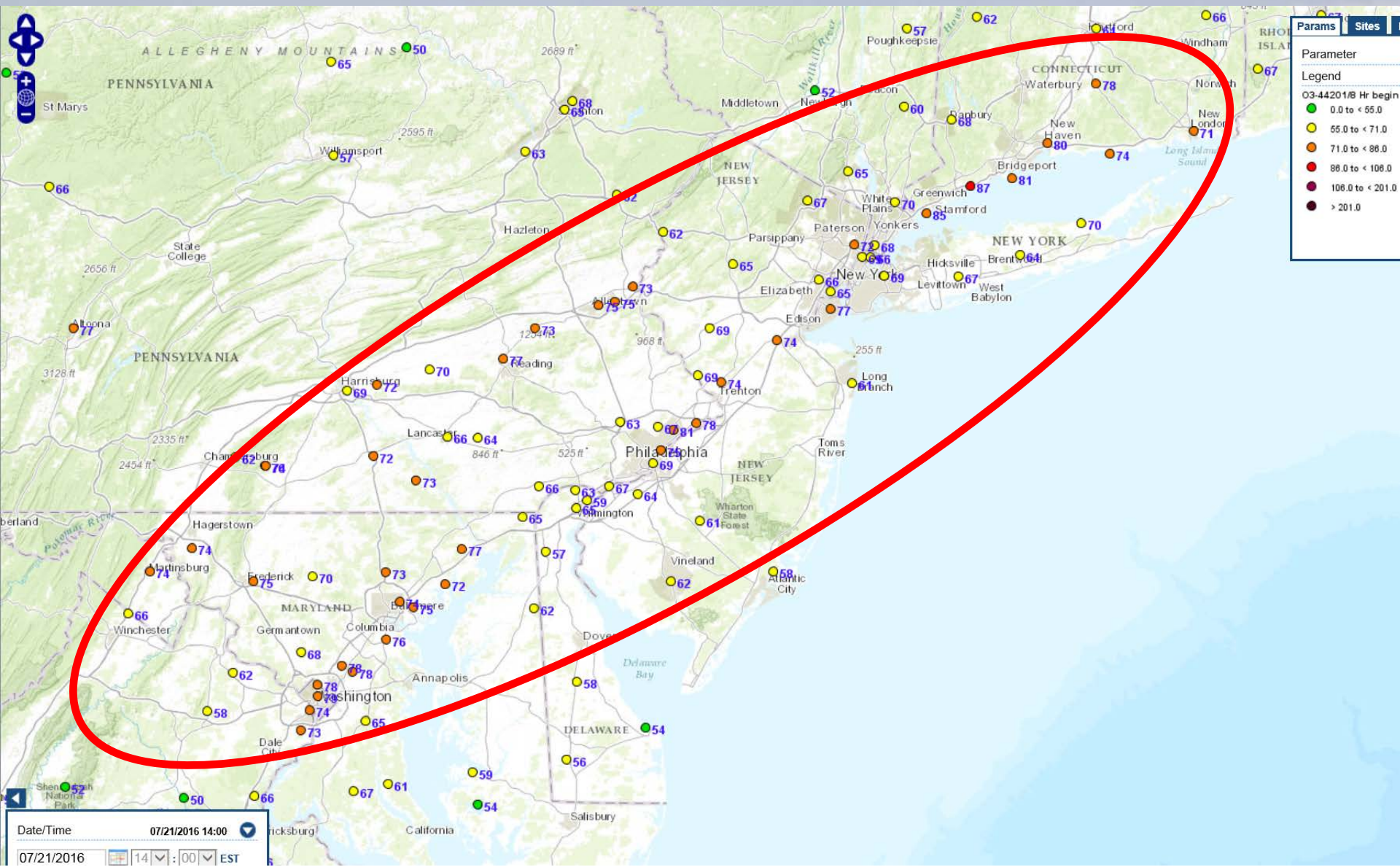
- Connecticut has 19 exceedance days to date

		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)
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		Four more 97+ ppb days violates 1997 NAAQS
New Haven - Criscuolo Park	76	x	x		Four more 101+ ppb days violates 2008 NAAQS
Stratford	80	x	x		Four more 95+ ppb days violates 1997 NAAQS
Westport	83	x	x		One more 87+ ppb days violates 1997 NAAQS
Cornwall	72	x			Three more 86+ ppb days violates 2008 NAAQS
East Hartford	74	x			Two more 76+ ppb days 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)	68				Two more 76+ ppb days violates 2015 NAAQS

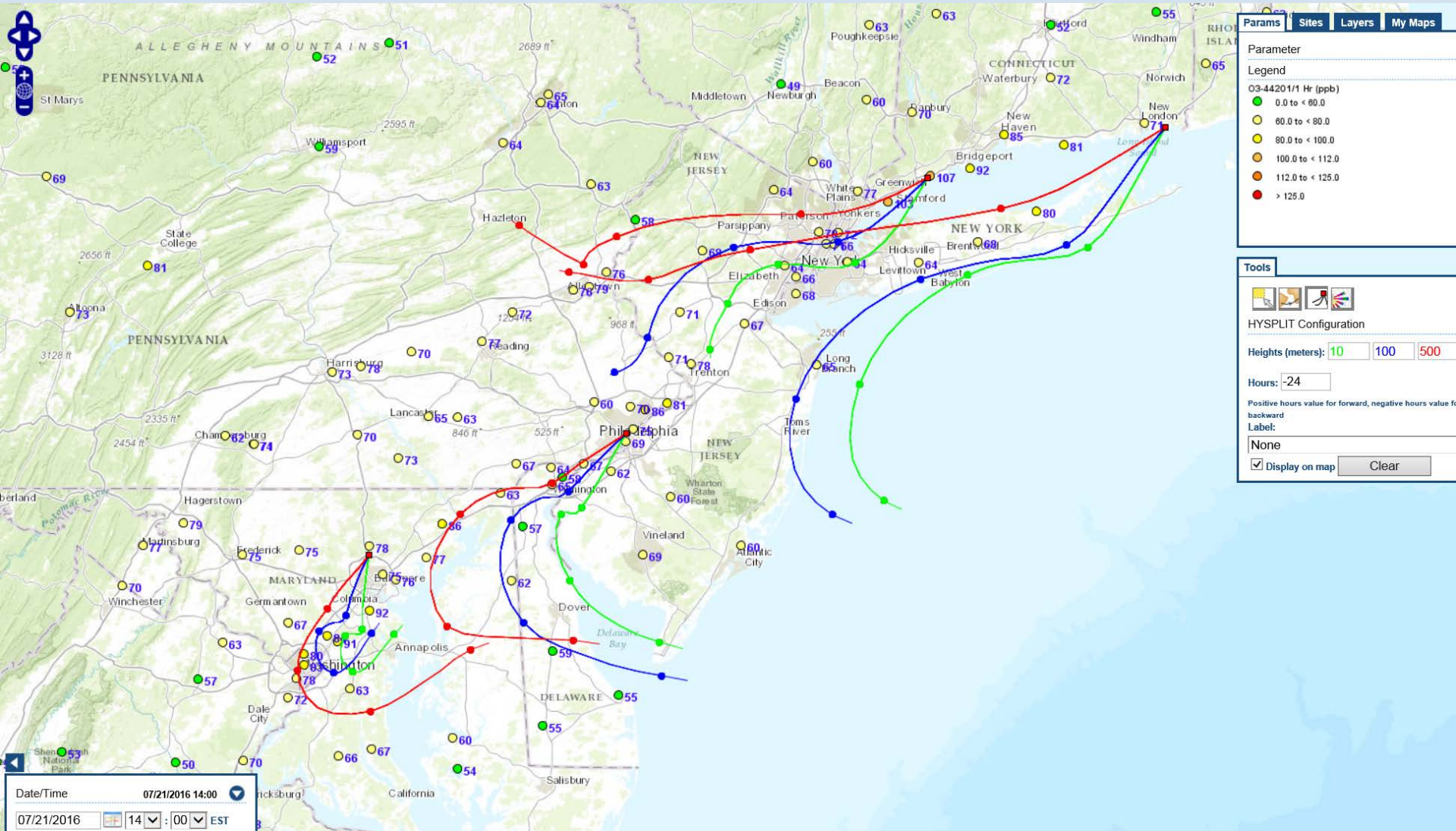


July 21, 2016 Peak Northeast Ozone

- Exceedances along I-95 corridor from Virginia through Connecticut.



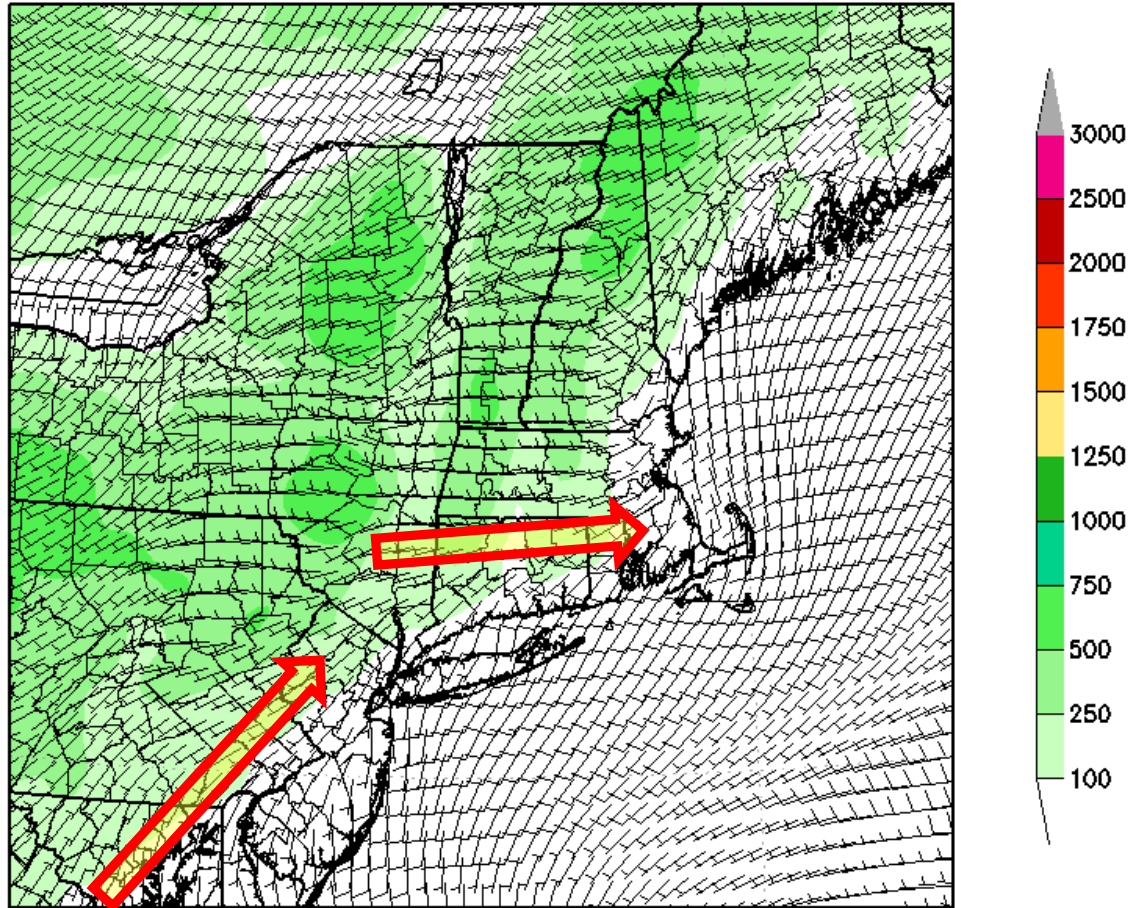
July 21, 2016 Back Trajectories 2:00 pm EST



Low level winds were light and recirculated pollutants around the I-95 corridor. Southwest winds funneled ozone into LIS and into Connecticut.

Model Winds for Northeast, 1:00 pm EST

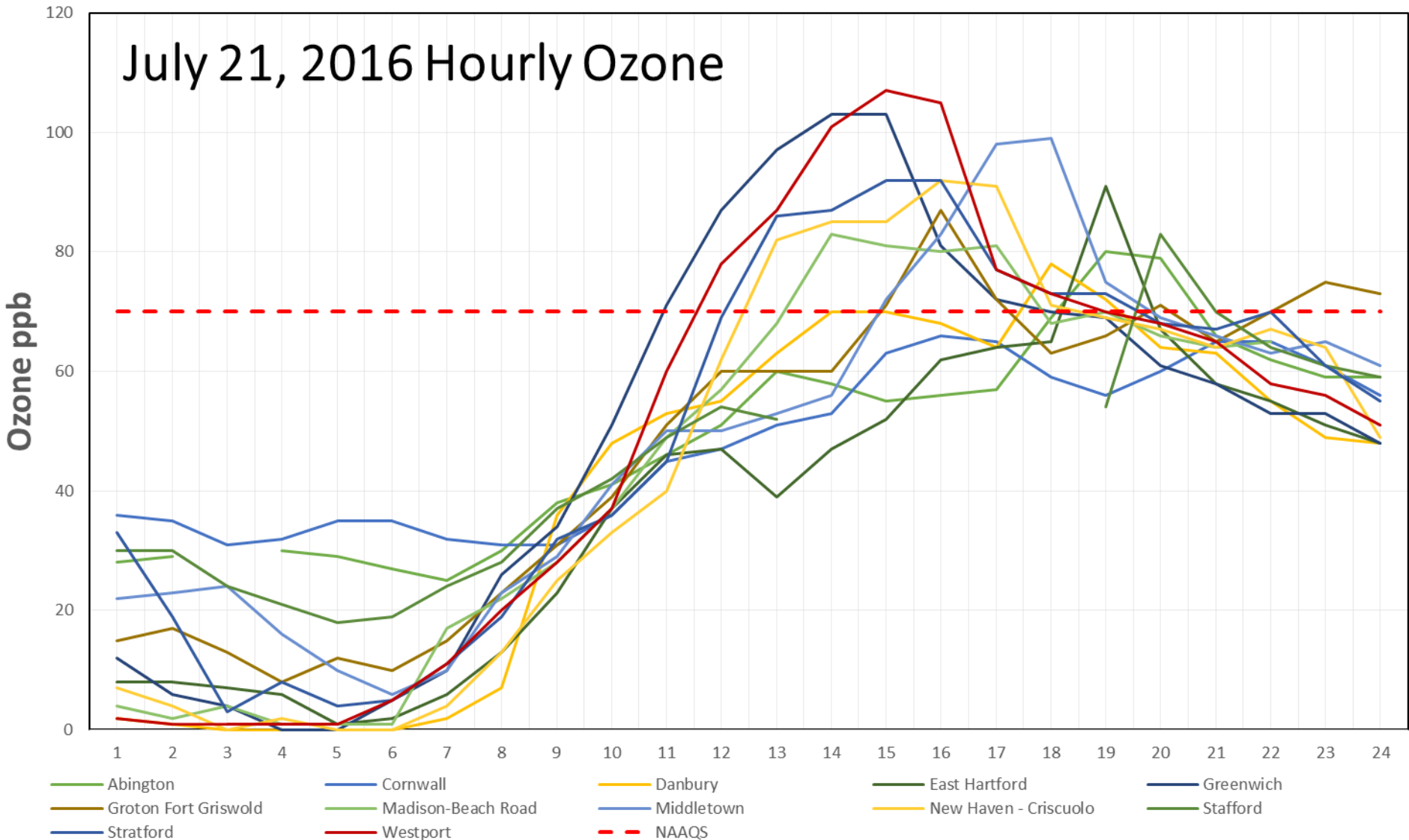
10-M WND, SFC HGT NAM 00H FCST VALID 18Z 21 JUL 2016



Wind barbs displayed at every other grid point

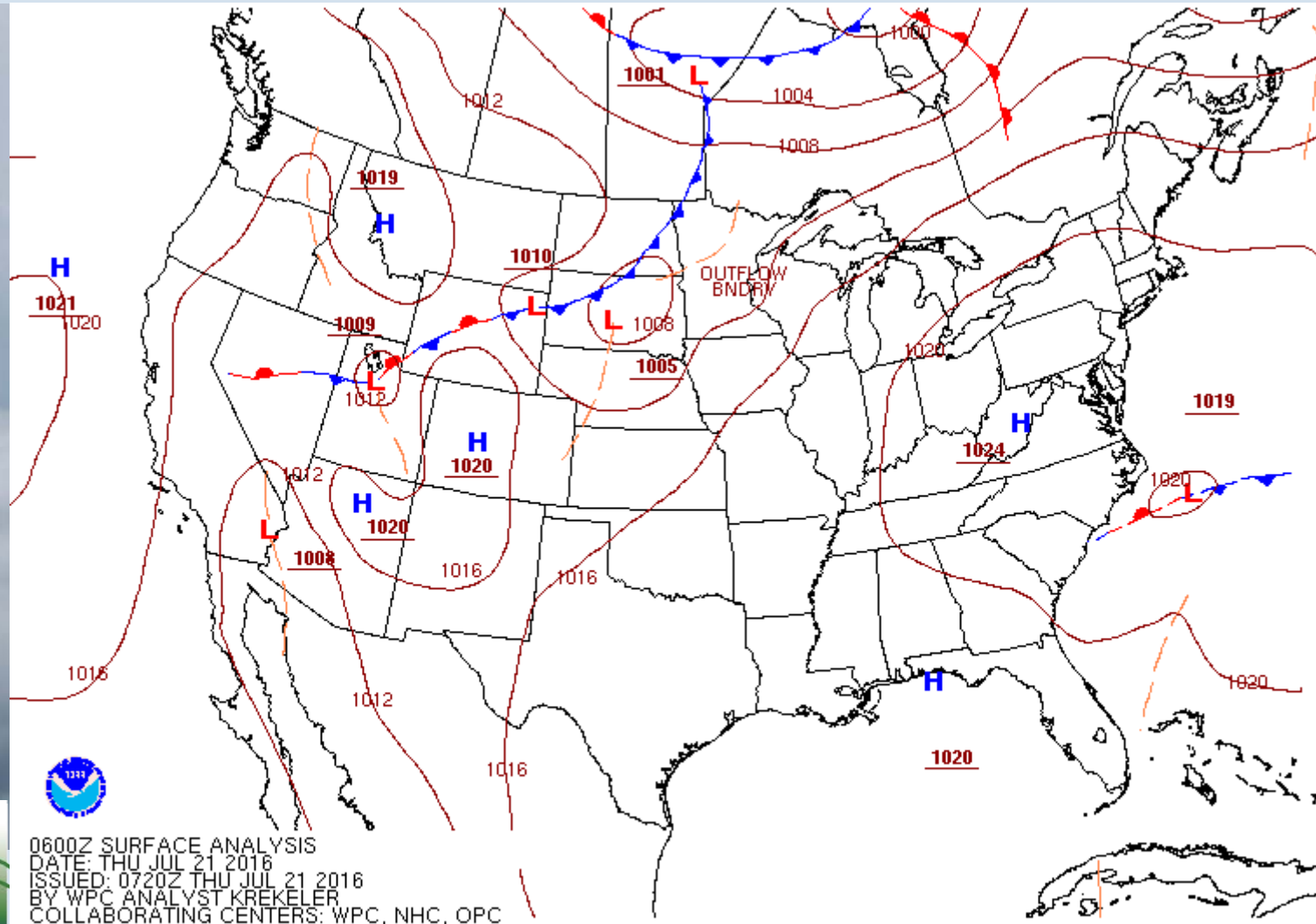
Ozone levels were rising by 1:00 EST in the Mid-Atlantic States and Connecticut due to the southwest wind flow that developed on back side of the high pressure center. States north of Connecticut were spared due to persistent westerly surface winds.

CT Ozone Monitors July 21, 2016



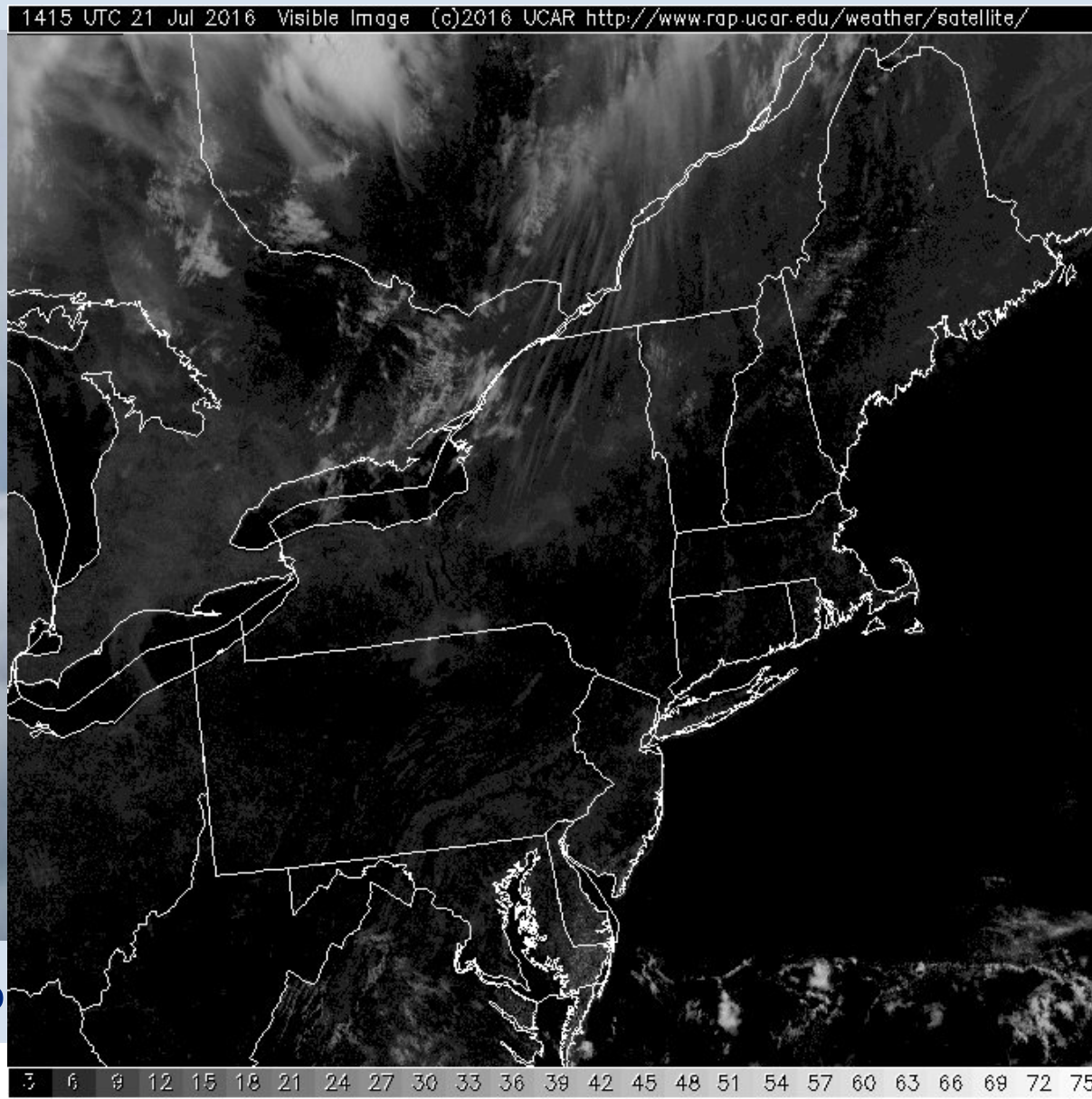
July 21, 2016 Surface Analysis Animation

- High pressure center over the mid-Atlantic States moved off shore and a southwest wind flow developed and transported ozone into coastal Connecticut.



July 21, 2016 Satellite Animation

- Abundant sunshine persists through the entire day.

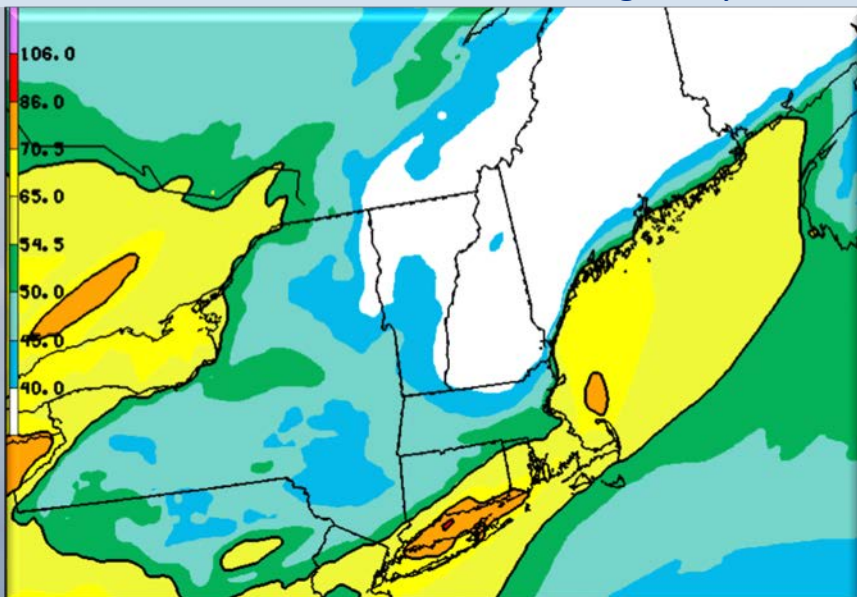


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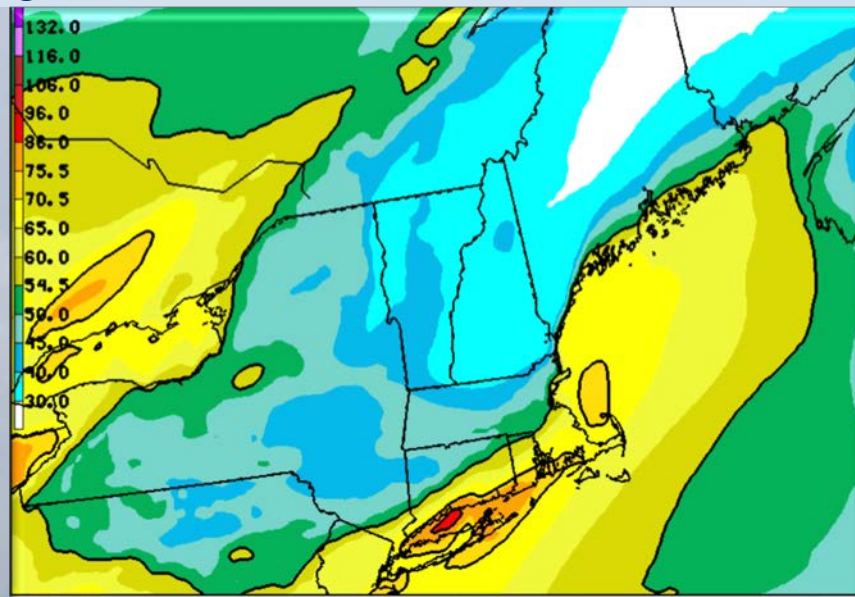
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July 21, 2016 NOAA Model Performance

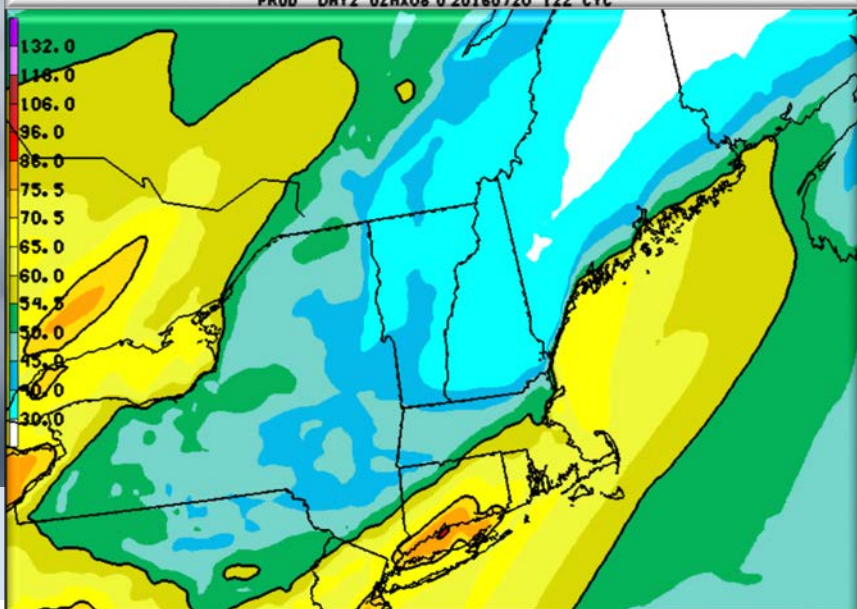
- NOAA model was consistent through 3 cycles and agreed with Barons MAQSIP



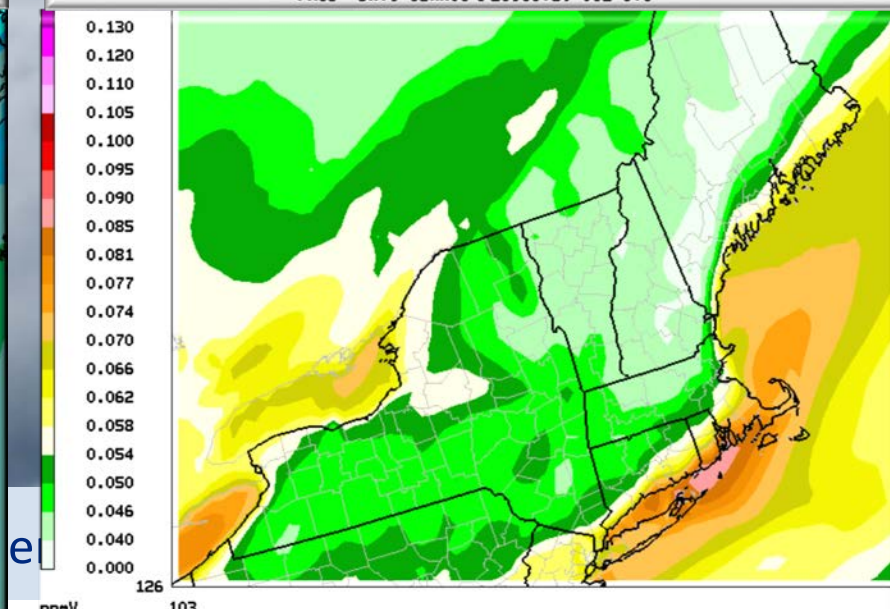
PROD DAY2 0ZHX08 0 20160720 12Z CYC~



PROD DAY1 0ZHX08 0 20160721 06Z CYC~



PROD DAY1 0ZHX08 0 20160721 12Z CYC~



July 21, 2016 06:00:00
Min= 0.034 at (155,175), Max= 0.089 at (150,136)

Conclusion

- Widespread USG event for the I-95 corridor into Connecticut;
- Southwest winds developed as high pressure moved off shore, which caused ozone to be funneled into LIS;
- Highest ozone was monitored at sites in Connecticut, aided by the NYC plume into LIS and transport up the I-95 corridor;
- NOAA model performed well in situating the USG over coastal Connecticut.
- Forecasters around the northeast had predicted high moderate because of the model tendency to over-predict in July-August.

