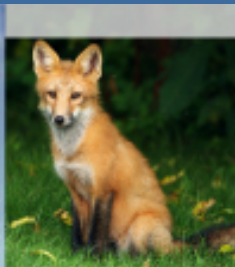




Connecticut Department of Energy and Environmental Protection



Connecticut Department of
**ENERGY &
ENVIRONMENTAL
PROTECTION**

August 12, 2016 OTR and Connecticut Ozone Exceedances

By Michael Geigert

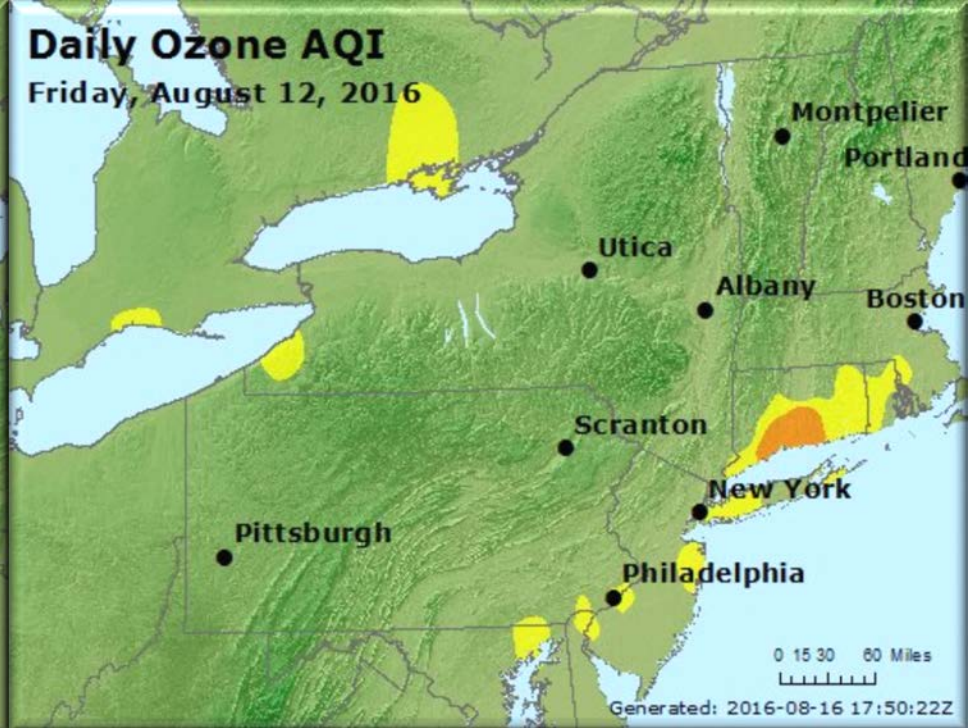


Connecticut Department of Energy and Environmental Protection

Summary

- Only Connecticut had ozone exceedances;
- Scattered MODERATE levels measured along the remainder of the I-95 corridor from Maryland to Rhode island.
 1. 4 sites above 70 ppb ozone NAAQS, 4 sites in CT
 2. 1 site 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

- 4 sites in Connecticut exceeded the 70 ppb NAAQS. Bradley Airport had a high temperature of 97° F.

| Site | Site AQS | Date (LST) | Max 8-hour Ozone ppb |
|-----------------|-----------|------------|----------------------|
| Stratford | 090013007 | 8/12/2016 | 79 |
| Madison-Beach R | 090099002 | 8/12/2016 | 75 |
| Middletown | 090070007 | 8/12/2016 | 75 |
| New Haven - Cri | 090090027 | 8/12/2016 | 73 |
| Westport | 090019003 | 8/12/2016 | 68 |
| W Greenwich | 440030002 | 8/12/2016 | 64 |
| Aldino | 240259001 | 8/12/2016 | 63 |
| NEW | 421010048 | 8/12/2016 | 61 |
| Queens | 360810124 | 8/12/2016 | 61 |
| Monmouth Univer | 340250005 | 8/12/2016 | 60 |
| Camden Spruce S | 340070002 | 8/12/2016 | 59 |
| Groton Fort Gri | 090110124 | 8/12/2016 | 59 |
| E Providence | 440071010 | 8/12/2016 | 58 |
| Greenwich | 090010017 | 8/12/2016 | 58 |
| BELLFNT2 | 100031013 | 8/12/2016 | 57 |
| Babylon | 361030002 | 8/12/2016 | 56 |
| Abington | 090159991 | 8/12/2016 | 55 |
| BCSP | 100031010 | 8/12/2016 | 55 |
| Dunkirk | 360130006 | 8/12/2016 | 55 |
| Edgewood | 240251001 | 8/12/2016 | 55 |
| NEA | 421010024 | 8/12/2016 | 55 |

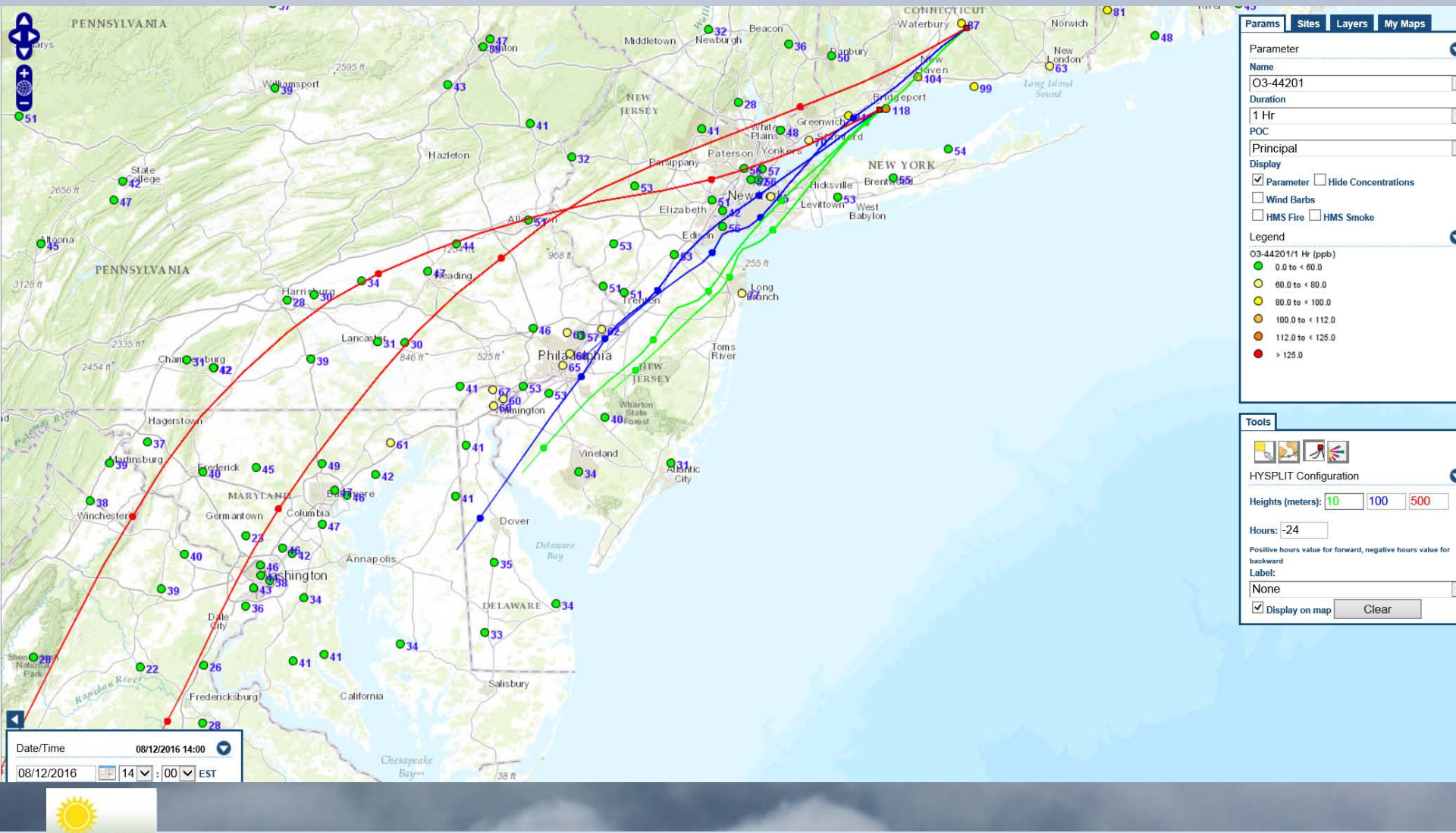


CT Monitoring Site Design Value Update

- Connecticut has 25 exceedance days to date
- No change to table with this episode

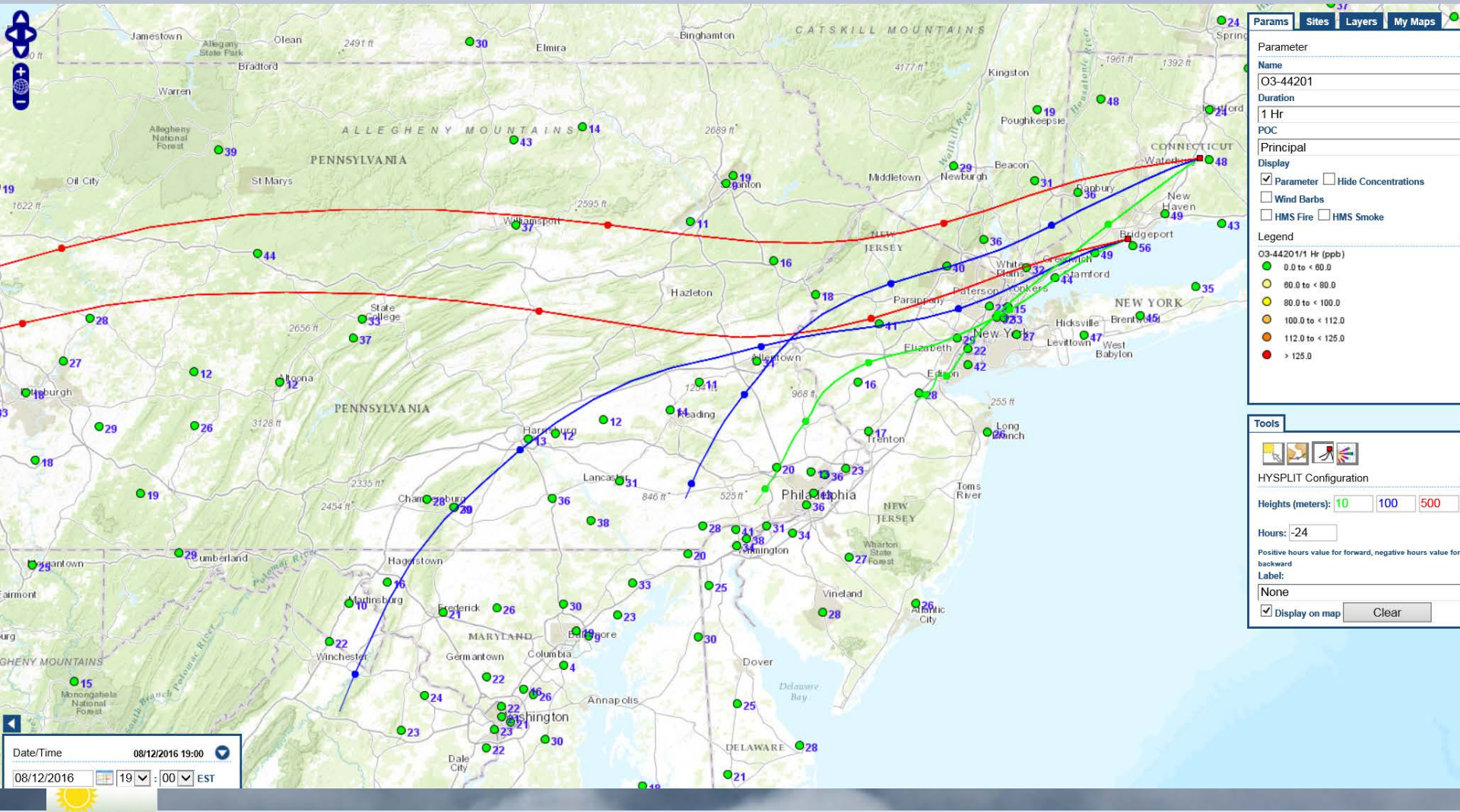
| | Site Name | To Date: 2016 DV | To Date 2016 Compliance Status x = Violating NAAQS | | | Next Possible NAAQS in Violation (key monitor in each NA is highlighted in RED) |
|-----------------------------|----------------------------|------------------------|--|---------------|---------------|---|
| | | | 2015 NAAQS | 2008 NAAQS | 1997 NAAQS | |
| 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 |

August 12, 2016 Back Trajectories 2:00 pm EST



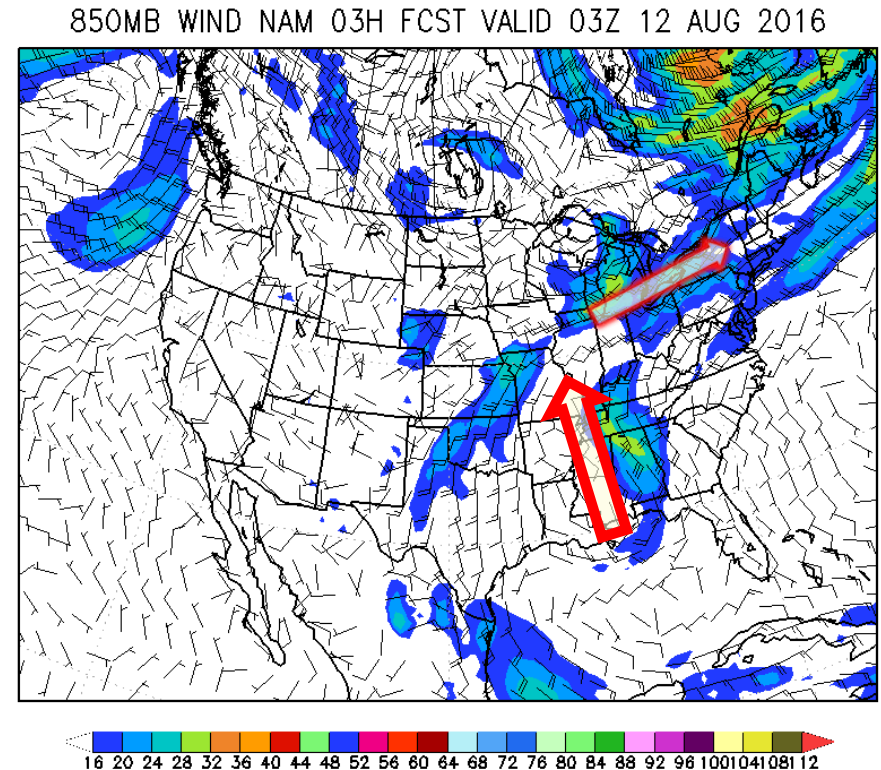
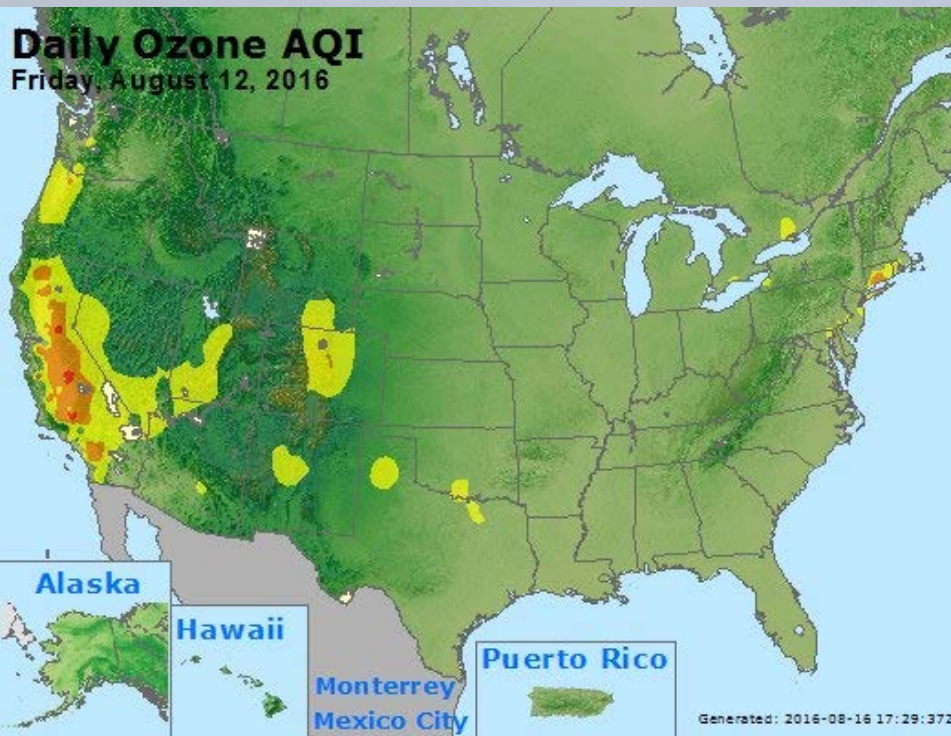
Low level winds (10-500 meters) were southwest and transported pollutant northeast from the I-95 corridor.

August 12, 2016 Back Trajectories 7:00 pm EST



By 7:00 EST, the 500 meter back trajectories had shifted to the west, as ozone levels fell sharply.

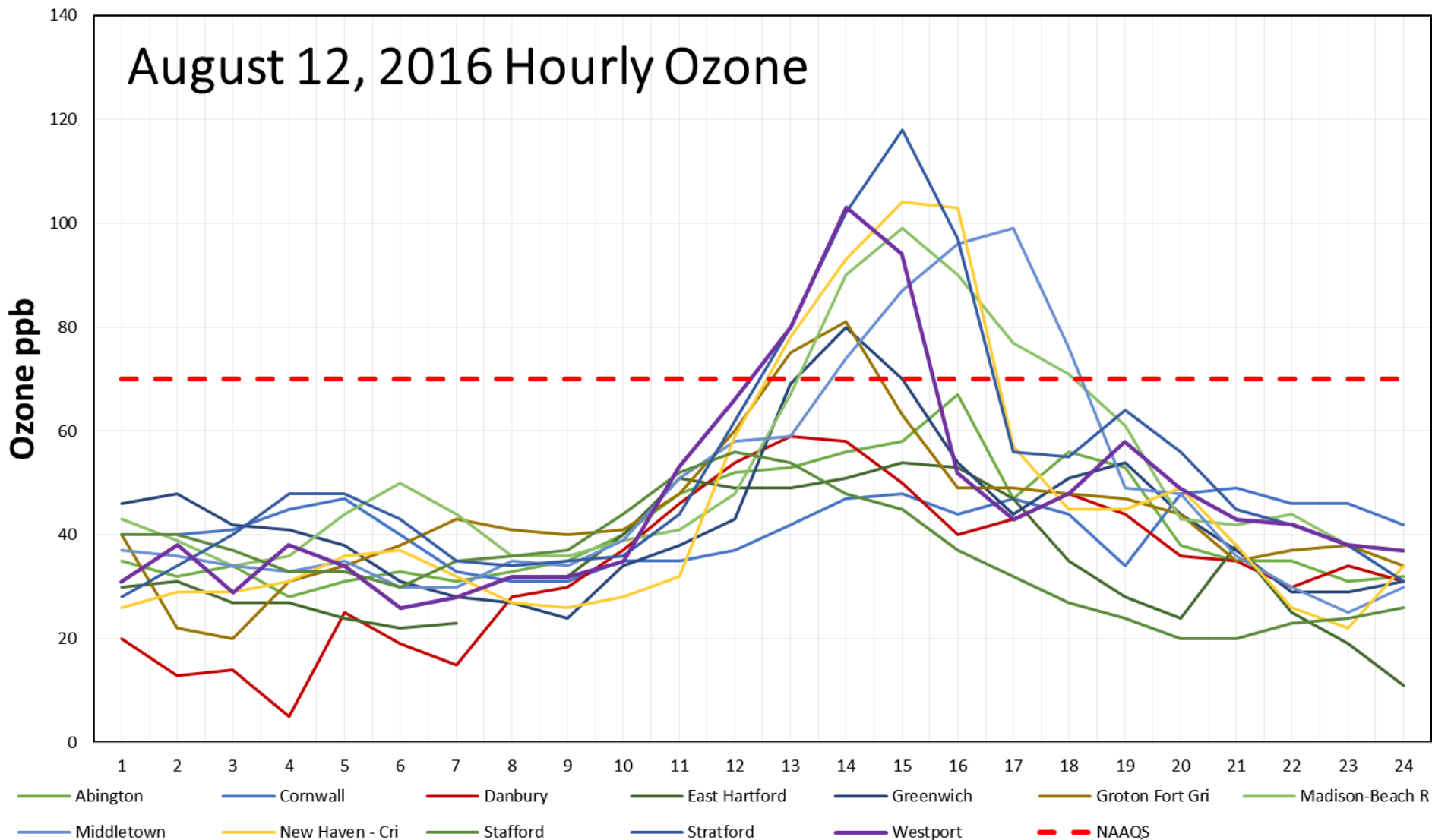
Model Winds for Northeast, 1:00 pm EST



Ozone levels were very low in the eastern USA probably due to strong 850mb jet (~5000ft) transporting clean air from the Gulf of Mexico northward. These winds took a turn to the east over Pennsylvania, which allowed it to pass over Connecticut and lower ozone levels later in the day.

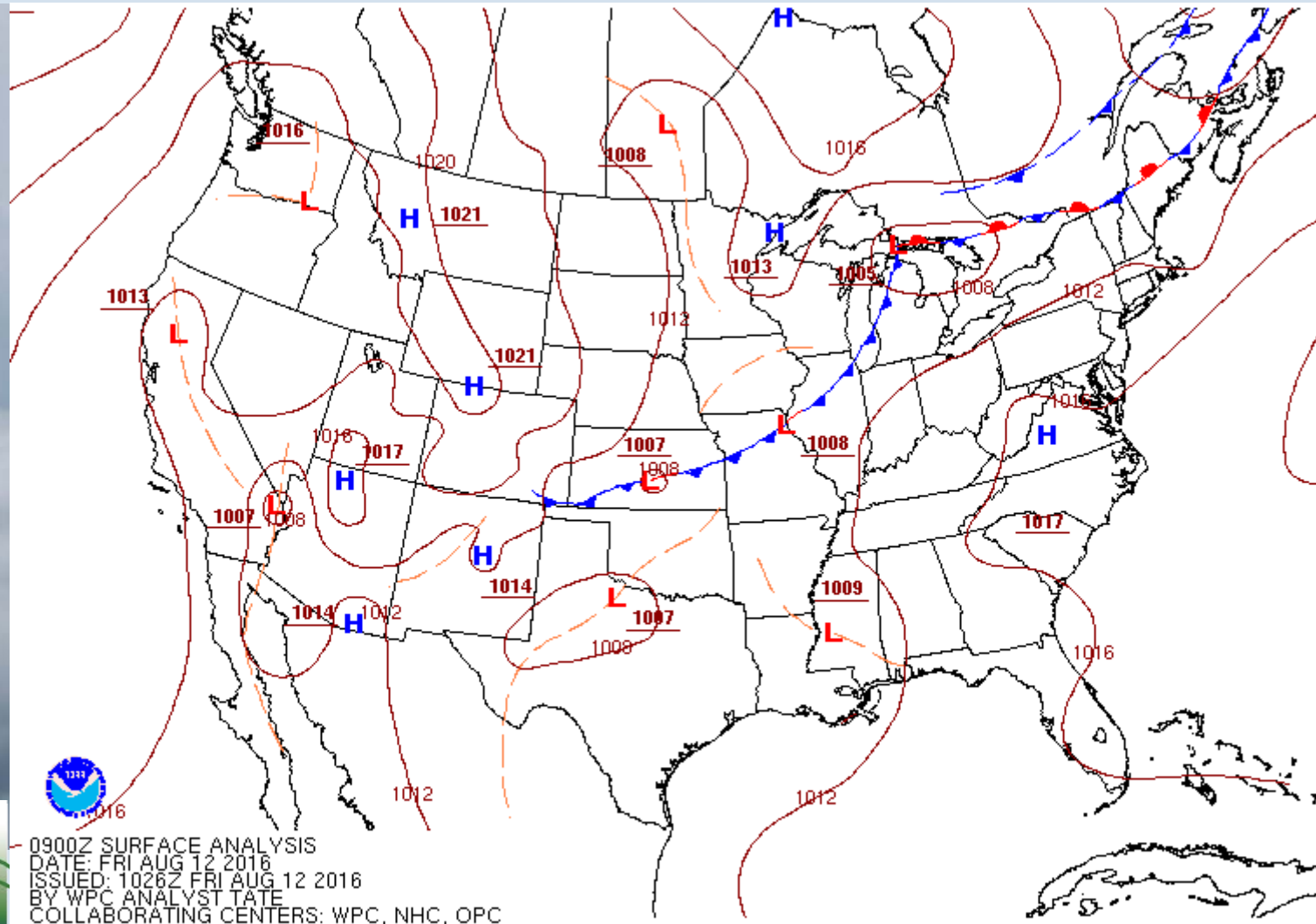
CT Ozone Monitors August 12, 2016

Ozone levels starting falling after 2:00pm from mixing with cleaner air aloft .



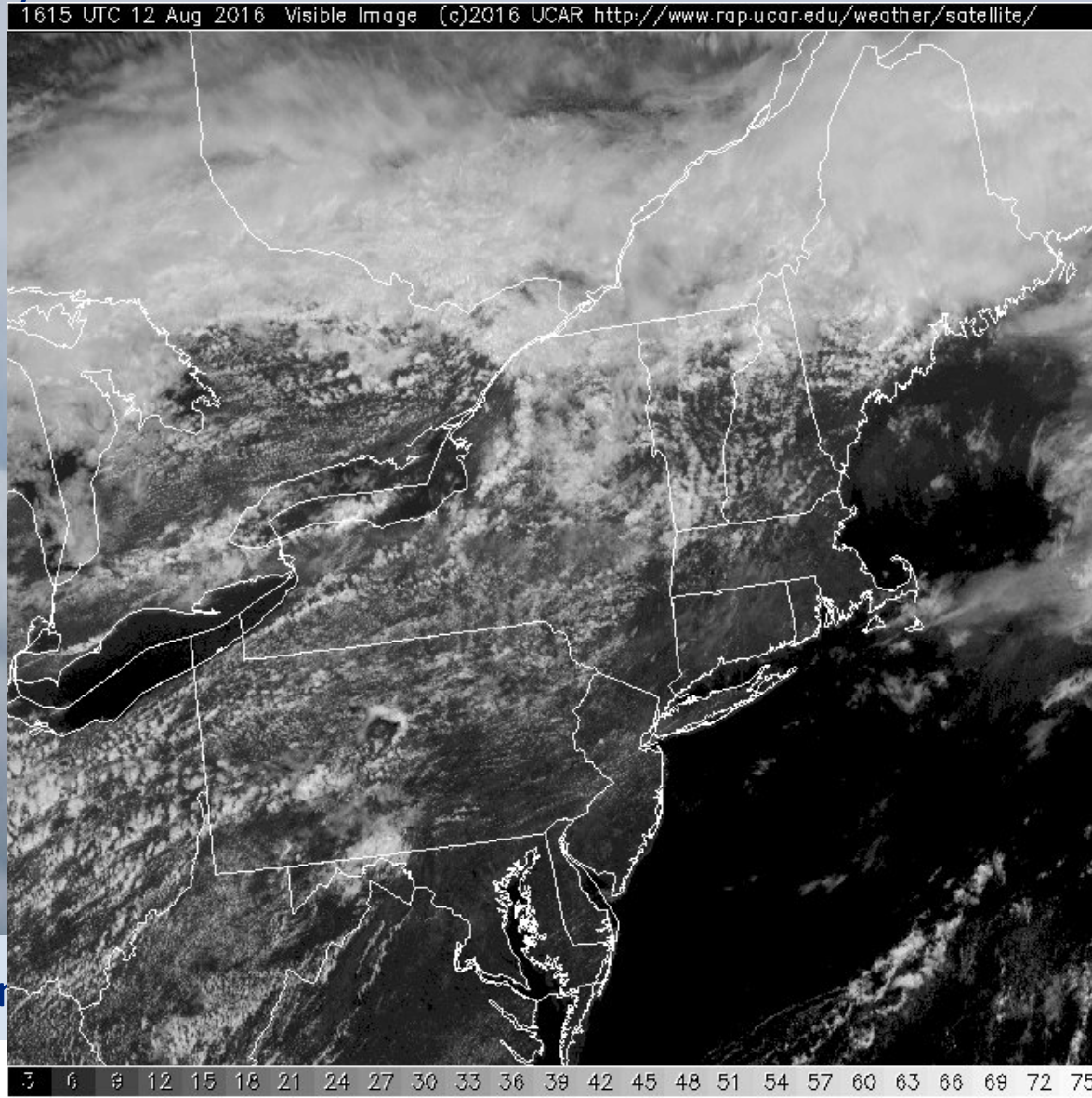
August 12 , 2016 Surface Analysis Animation

- Stationary front to the north allowed winds to turn more westerly and mix with clean air mass to the southwest later in the day.



August 12 , 2016 Satellite Animation

- Thunderstorms developed over northern Connecticut and the Mid-Atlantic States late in the day.

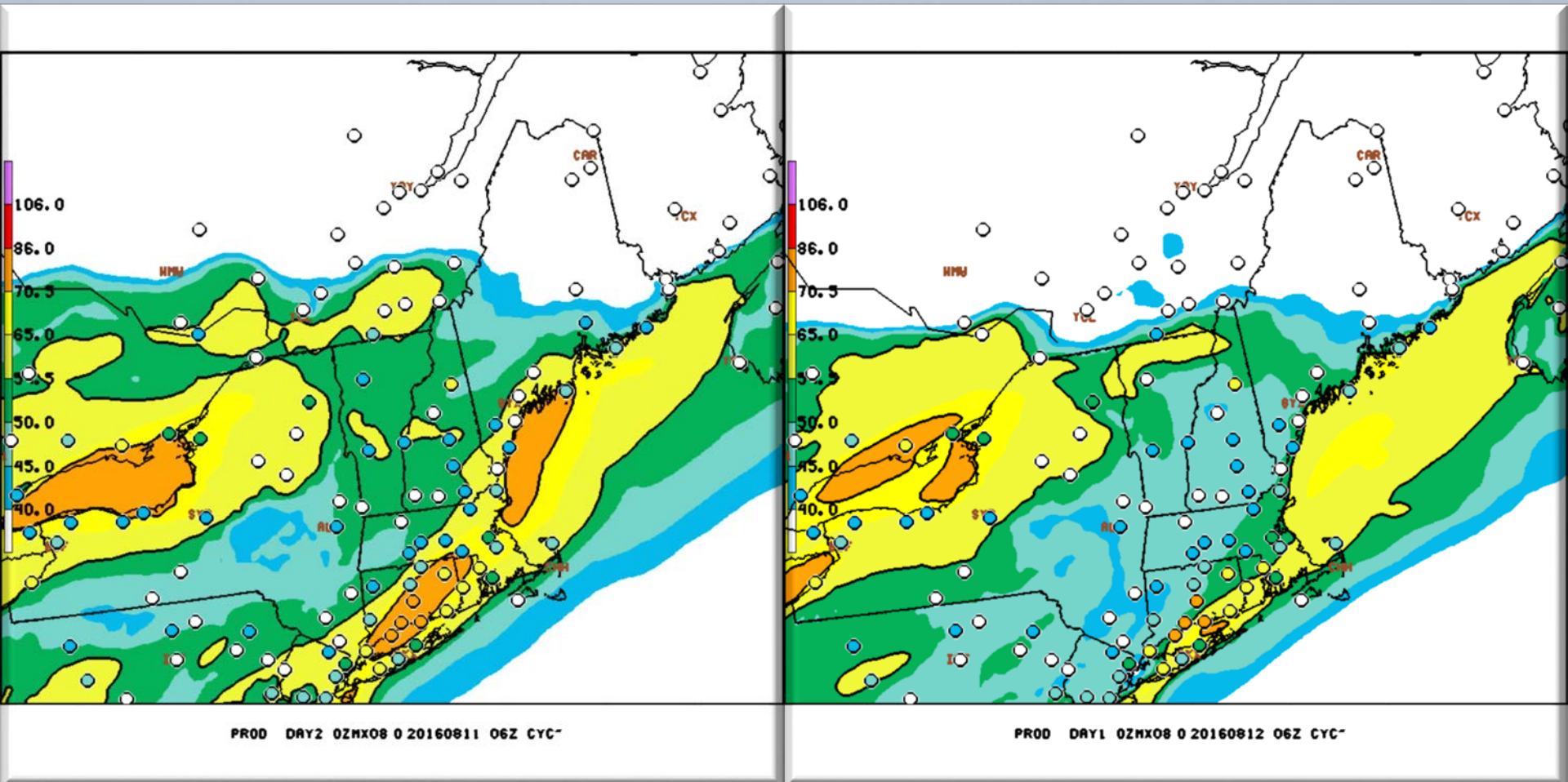


Conn

ection

August 12 , 2016 NOAA Model Performance

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



Connecticut Department of Energy and Environmental Protection

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 eventually mixed down over CT late in the day, lowering the ozone levels;
- NOAA model did well predicting USG ozone from the NYC plume over Connecticut.

