



Connecticut Department of Energy and Environmental Protection



Air Quality Planning Update

November 8, 2018
Kathleen Knight
SIPRAC



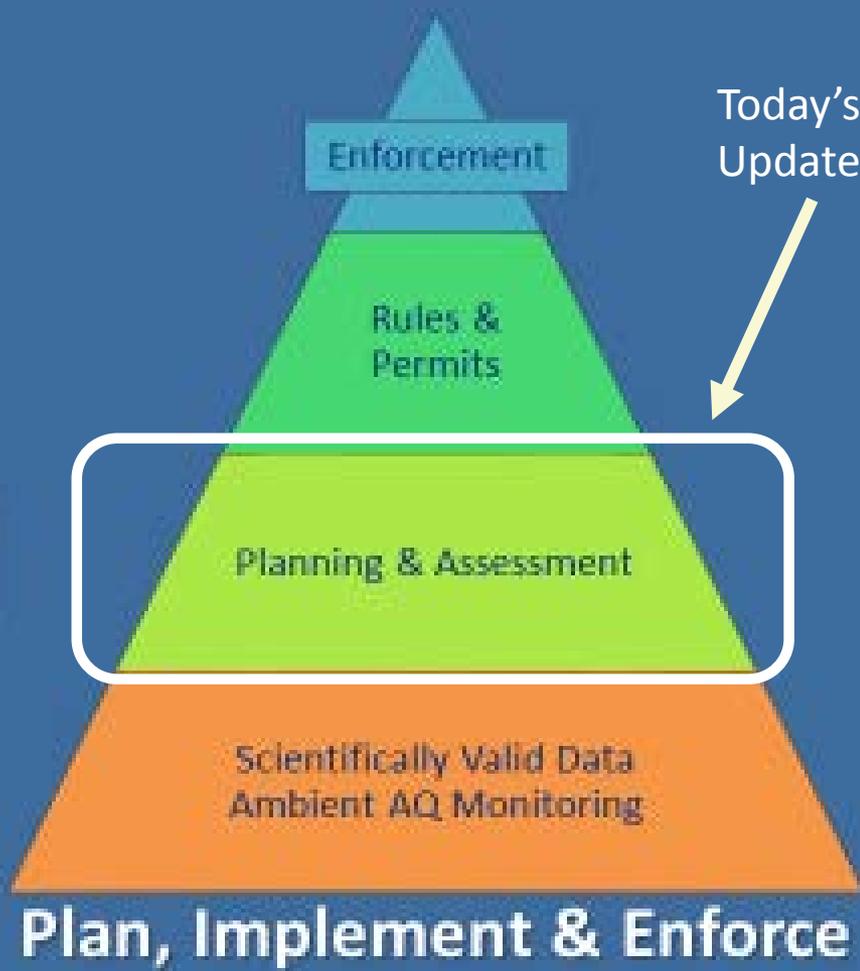
Connecticut Department of Energy and Environmental Protection

Planning Goals

- Assure their quality in Connecticut meets federal health based standards (NAAQS),
- and does not significantly contribute to nonattainment, interfere with maintenance in another state or impair visibility in a Class I area.



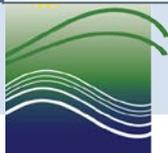
Air Quality Planning Cycle



National Ambient Air Quality Standards

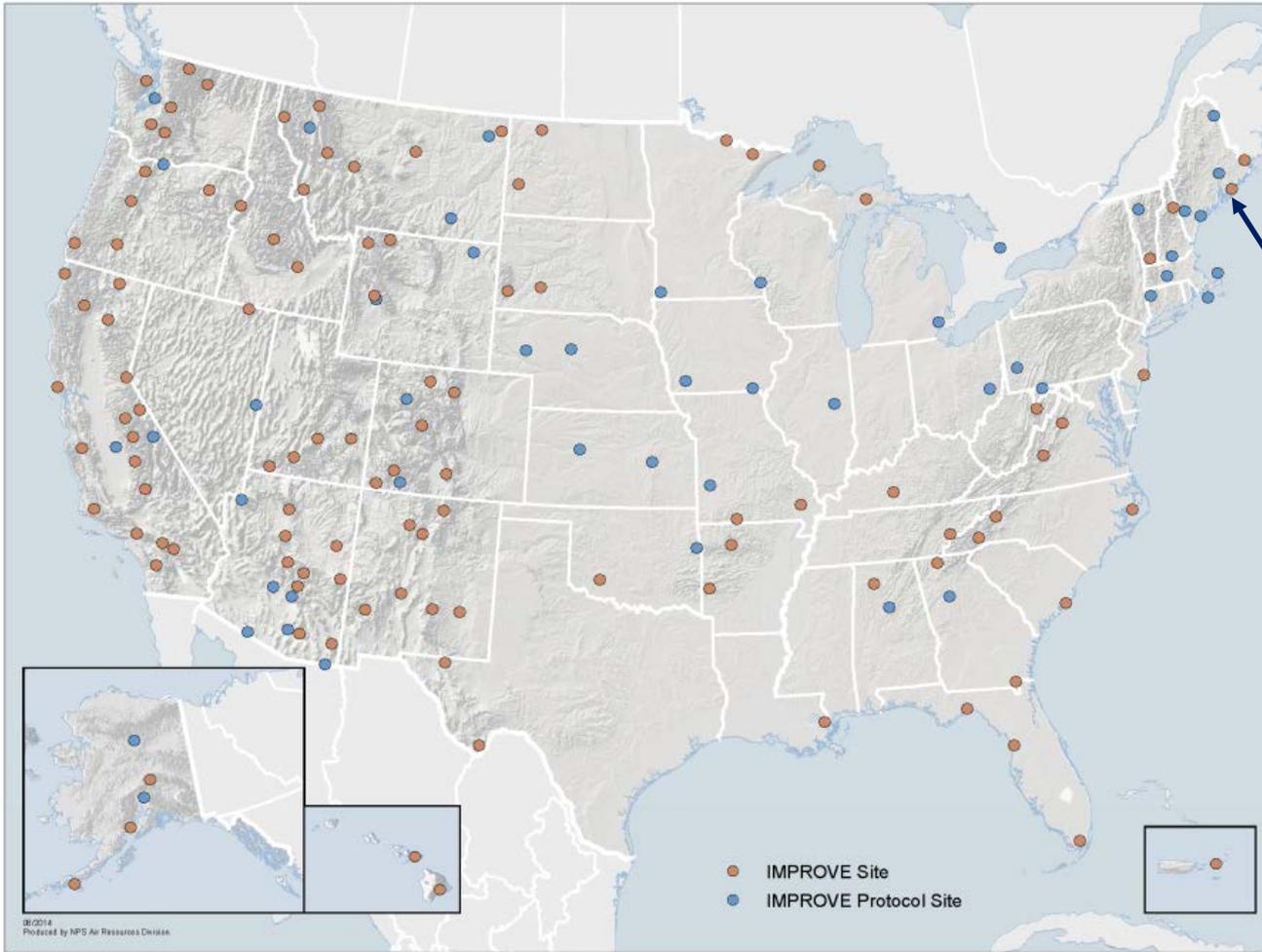
Traditionally- the NAAQS are the primary driver behind planning goals.

| Pollutant [links to historical tables of NAAQS reviews] | | Primary/ Secondary | Averaging Time | Level | Form |
|--|-------------------|-----------------------|-------------------------|---------------------------------------|---|
| Carbon Monoxide (CO) | | primary | 8 hours | 9 ppm | Not to be exceeded more than once per year |
| | | | 1 hour | 35 ppm | |
| Lead (Pb) | | primary and secondary | Rolling 3 month average | 0.15 µg/m ³ ⁽¹⁾ | Not to be exceeded |
| Nitrogen Dioxide (NO₂) | | primary | 1 hour | 100 ppb | 98th percentile of 1-hour daily maximum concentrations, averaged over 3 years |
| | | primary and secondary | 1 year | 53 ppb ⁽²⁾ | Annual Mean |
| Ozone (O₃) | | primary and secondary | 8 hours | 0.070 ppm ⁽³⁾ | Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years |
| Particle Pollution (PM) | PM _{2.5} | primary | 1 year | 12.0 µg/m ³ | annual mean, averaged over 3 years |
| | | secondary | 1 year | 15.0 µg/m ³ | annual mean, averaged over 3 years |
| | | primary and secondary | 24 hours | 35 µg/m ³ | 98th percentile, averaged over 3 years |
| | PM ₁₀ | primary and secondary | 24 hours | 150 µg/m ³ | Not to be exceeded more than once per year on average over 3 years |
| Sulfur Dioxide (SO₂) | | primary | 1 hour | 75 ppb ⁽⁴⁾ | 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years |
| | | secondary | 3 hours | 0.5 ppm | Not to be exceeded more than once per year |



Visibility Goals

Natural visibility by 2064 at Class I areas (National Parks and Wilderness Areas). Incremental Progress required for 10 yr Planning Periods.



Hazy



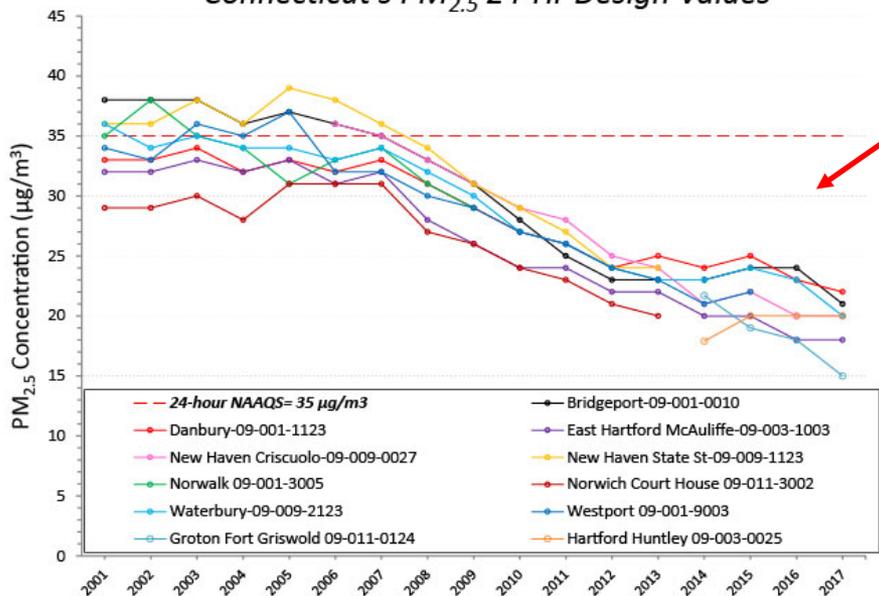
Clear



How Does CT Measure Up?

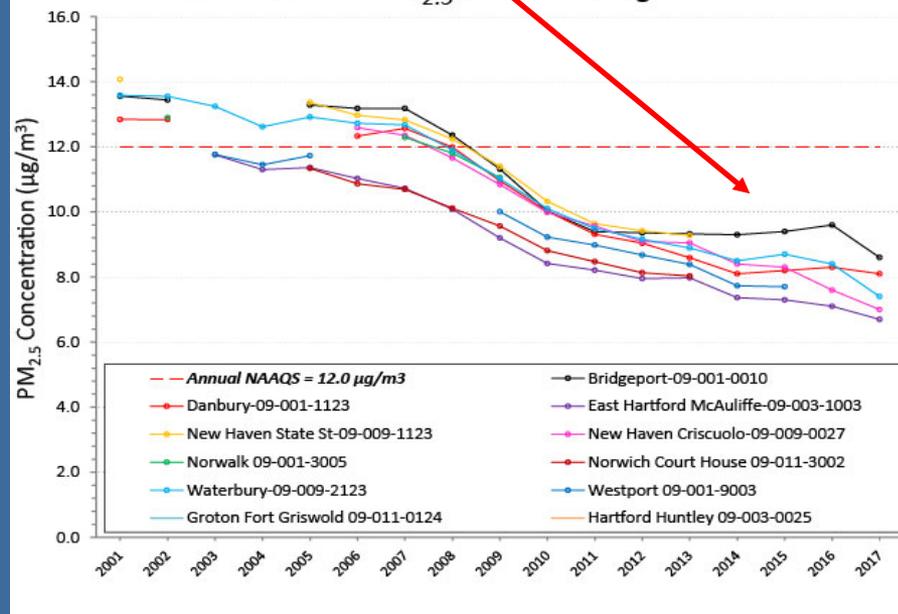
Fine Particulates

Connecticut's PM_{2.5} 24-Hr Design Values



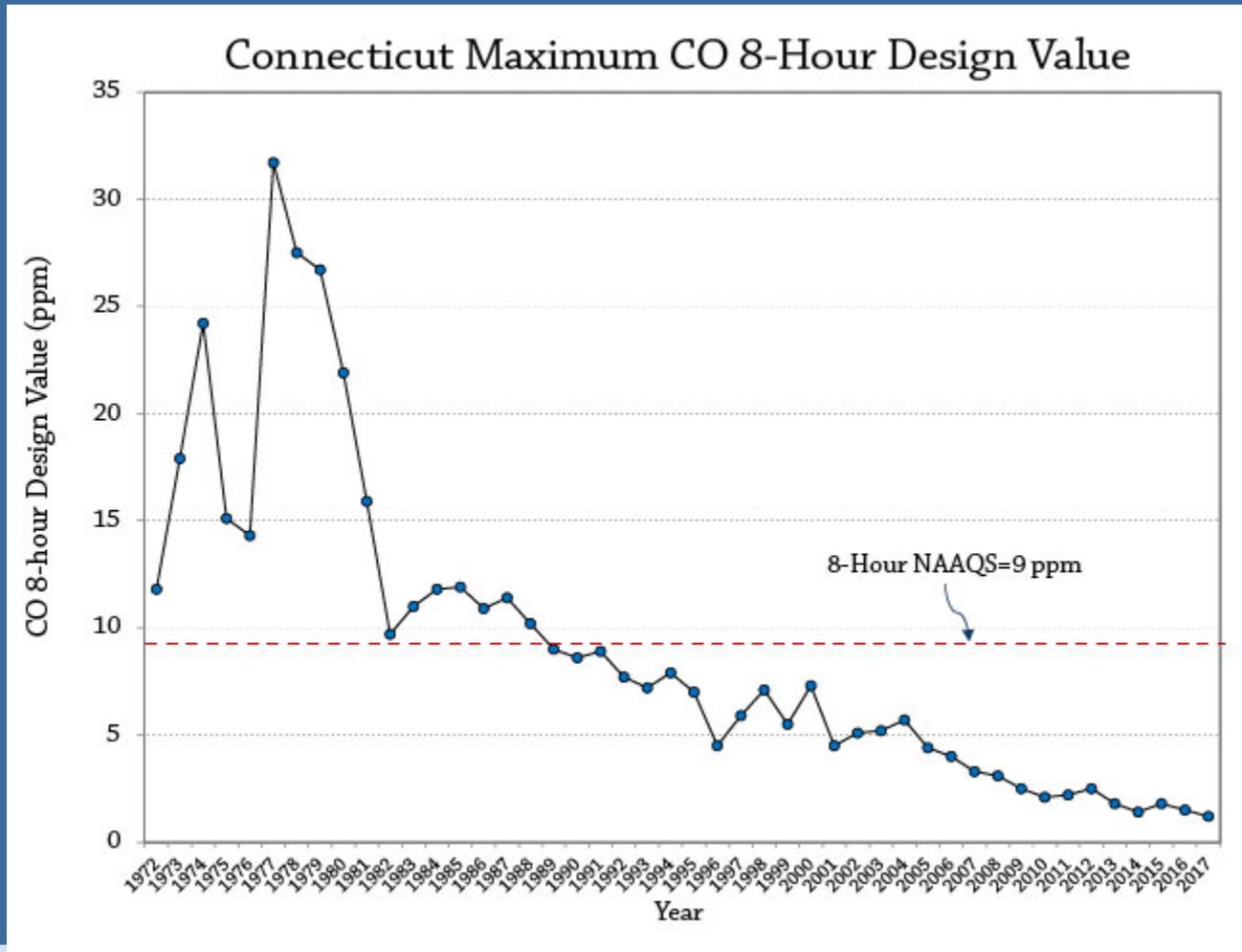
Well below both the long term and short term standard

Connecticut's PM_{2.5} Annual Design Values



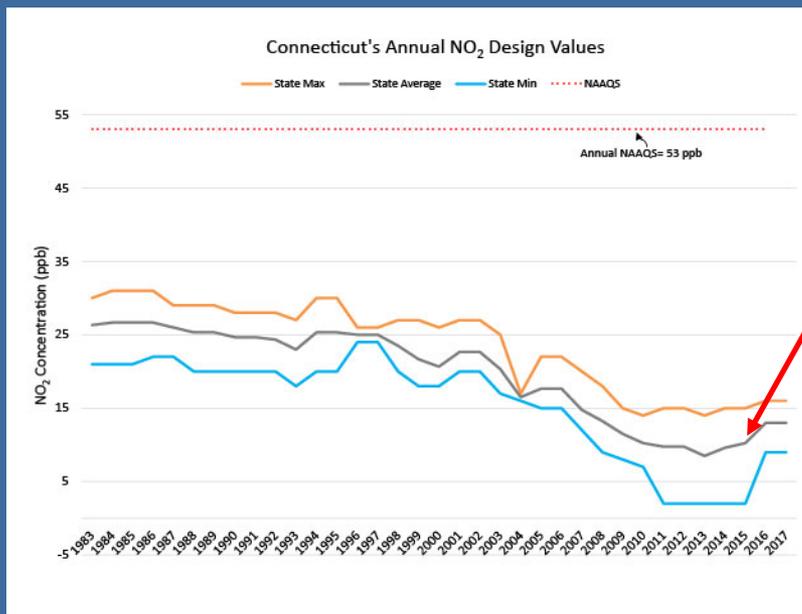
How Does CT Measure Up?

Carbon Monoxide

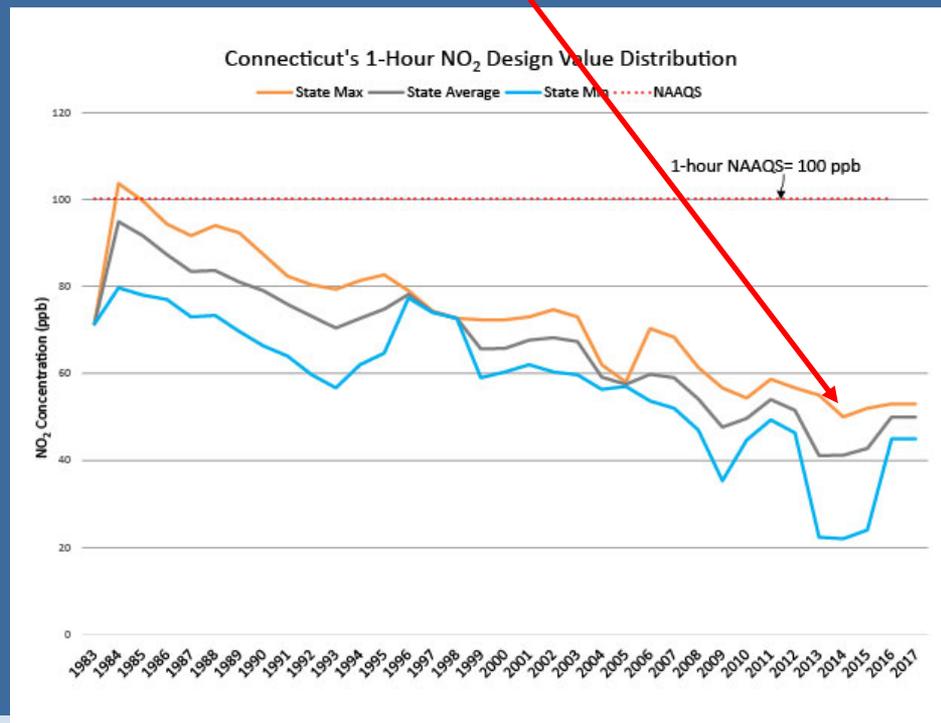


How Does CT Measure Up?

Nitrogen Dioxide

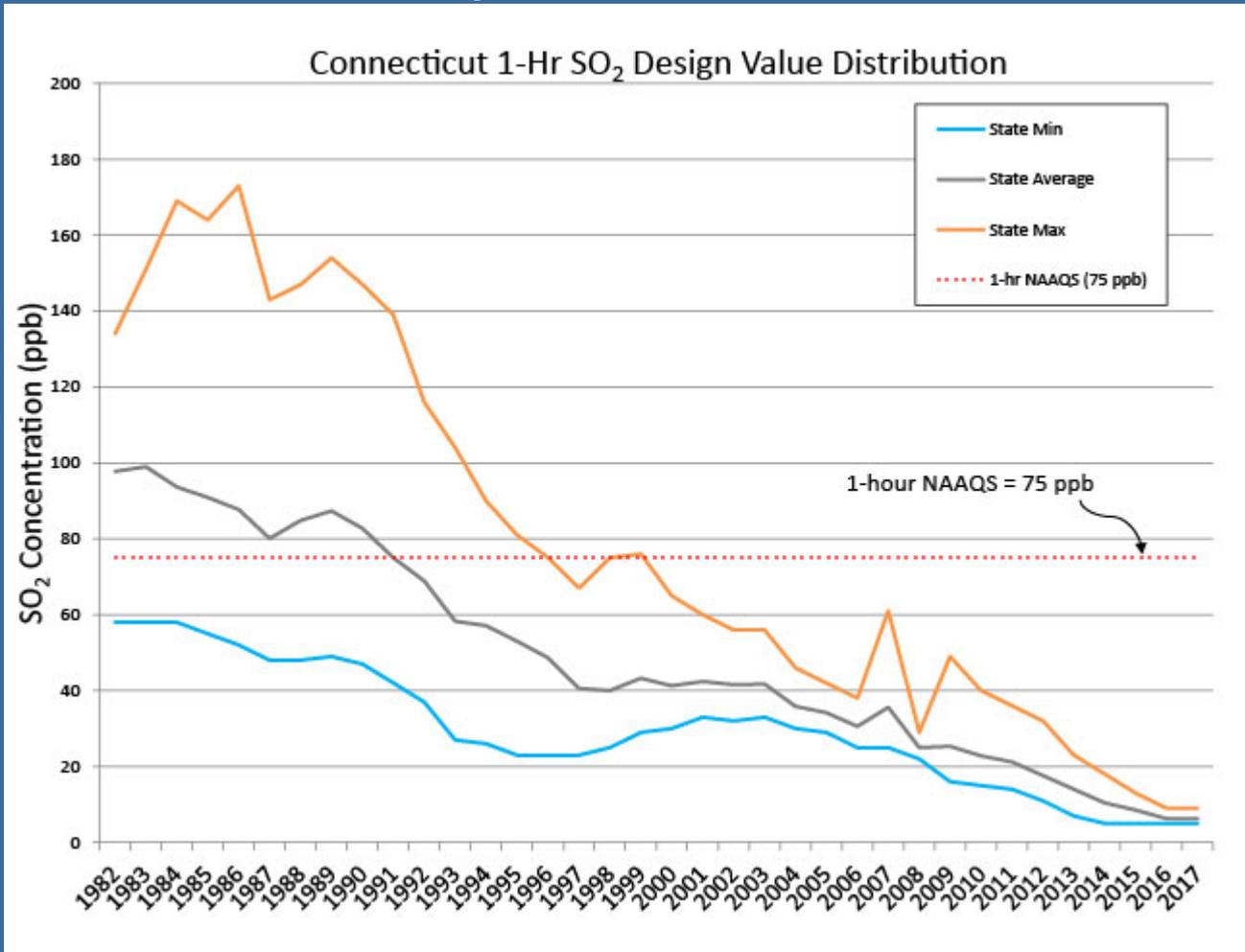


Well below both the long term and short term standard



How Does CT Measure Up?

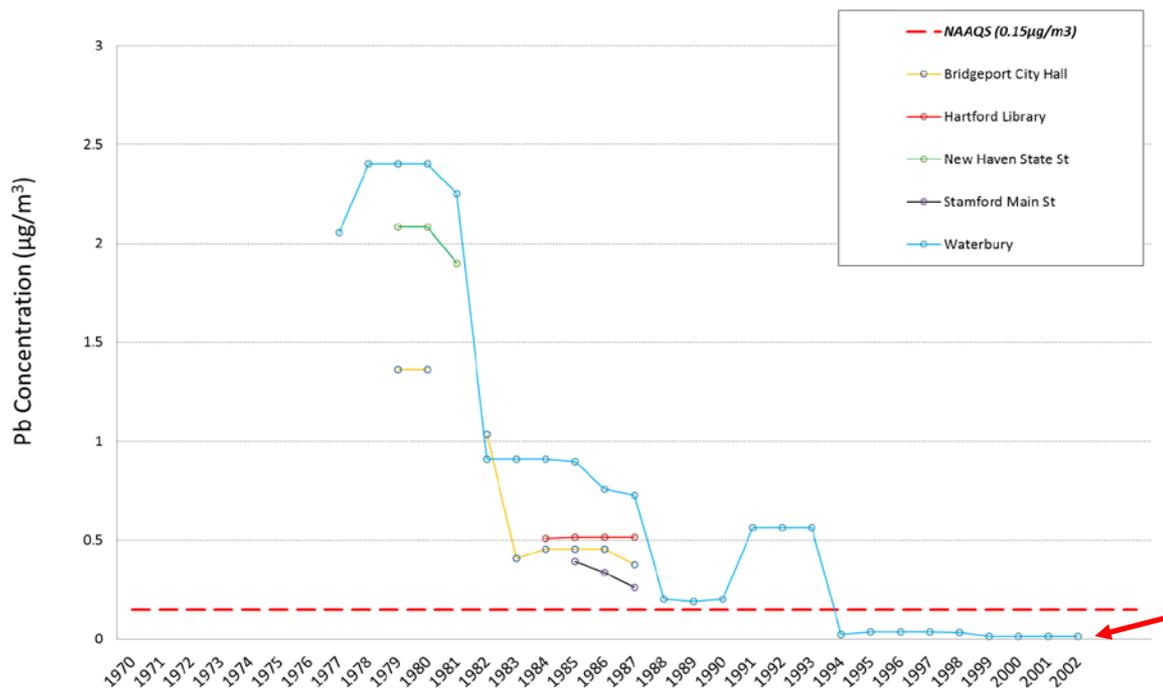
Sulfur Dioxide



How Does CT Measure Up?

Lead

Connecticut's Lead Design Value Trend



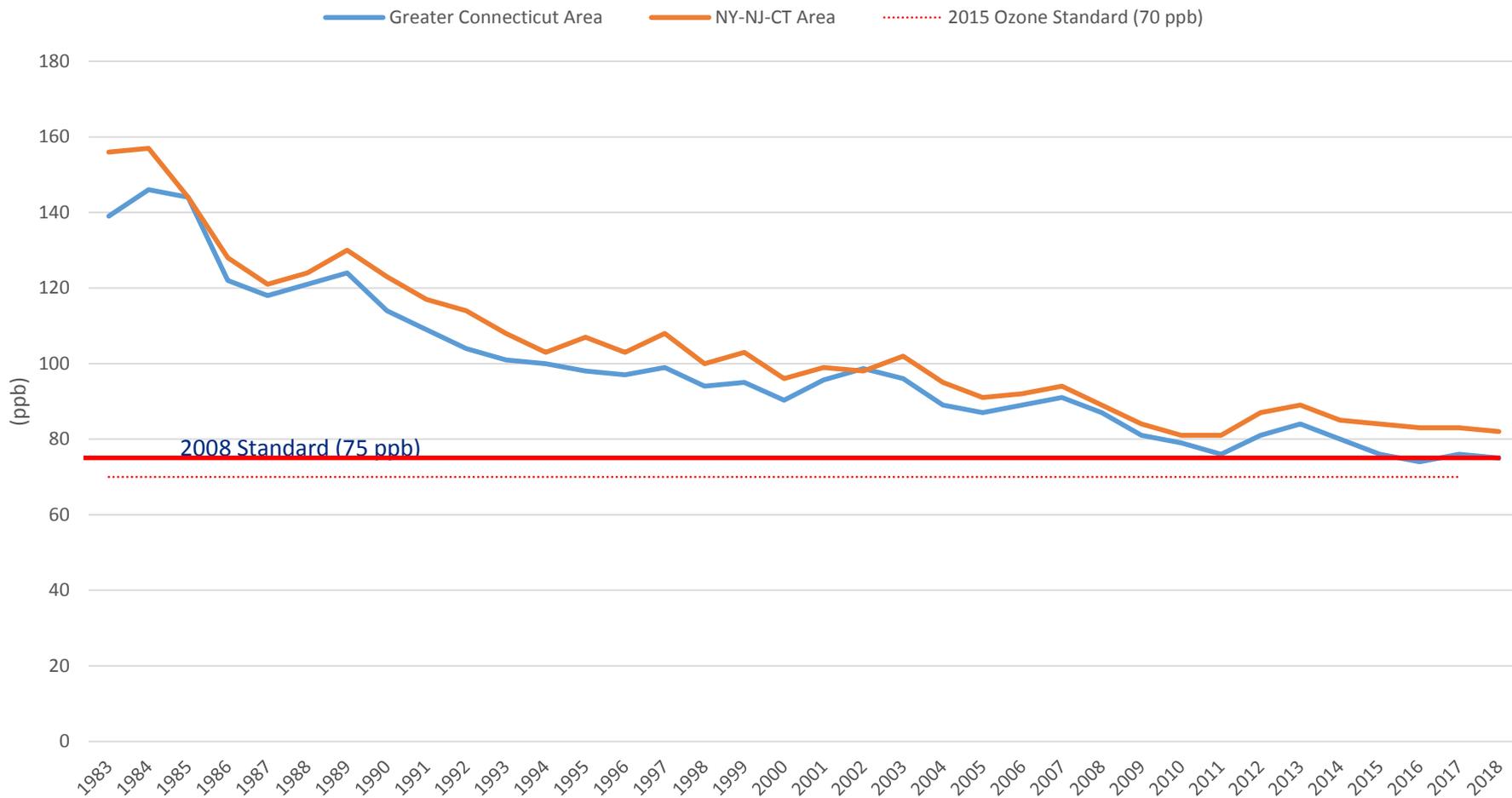
0.04 µg/m³ – 2015 Design value. This was determined to be far enough below the standard that lead specific monitoring was no longer required as of June 30, 2016.



How Does CT Measure Up?

Ozone

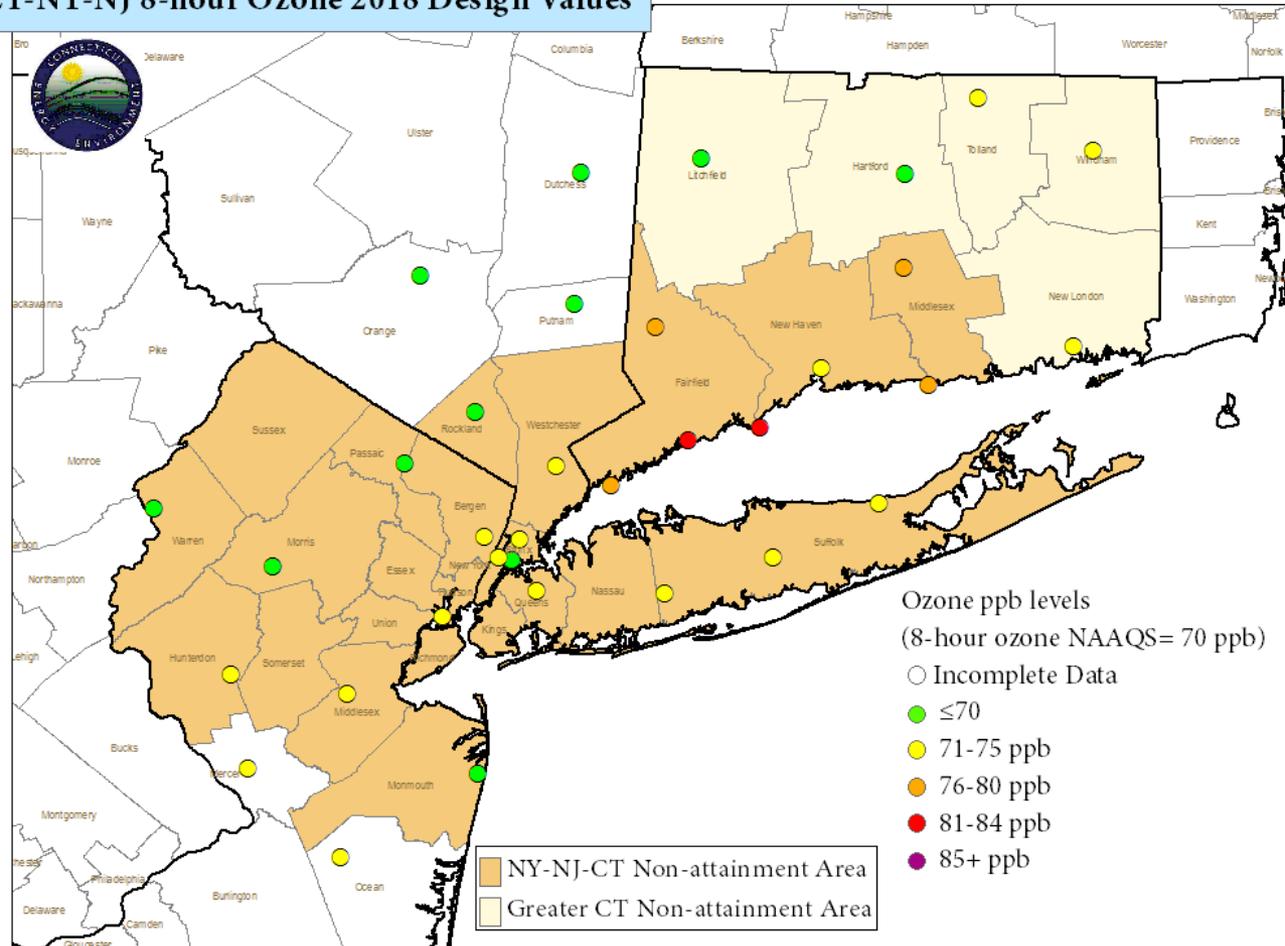
Ozone Design Values (ppb)
Connecticut's Two Nonattainment Areas



How Does CT Measure Up?

Ozone

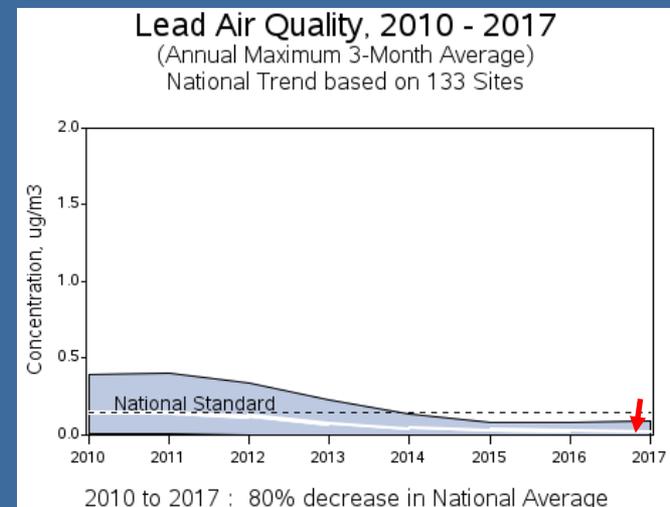
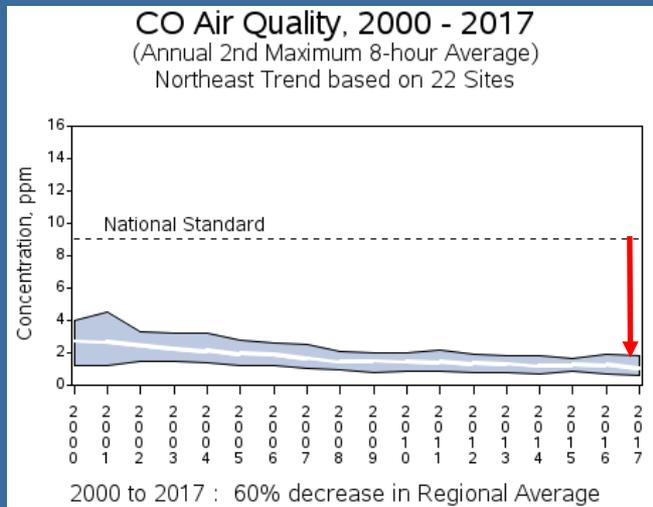
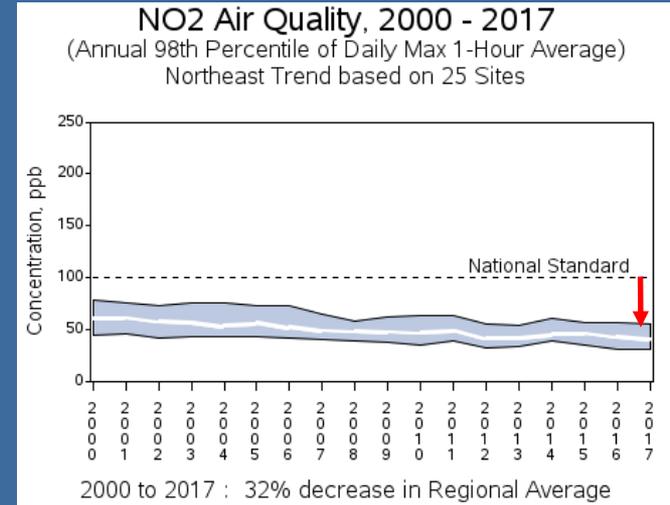
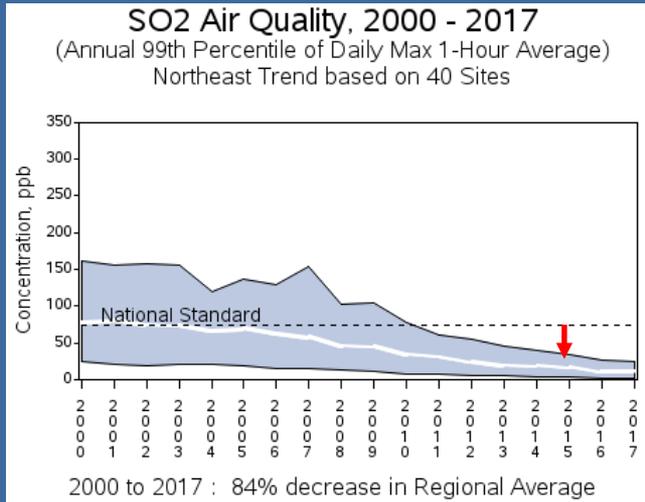
CT-NY-NJ 8-hour Ozone 2018 Design Values



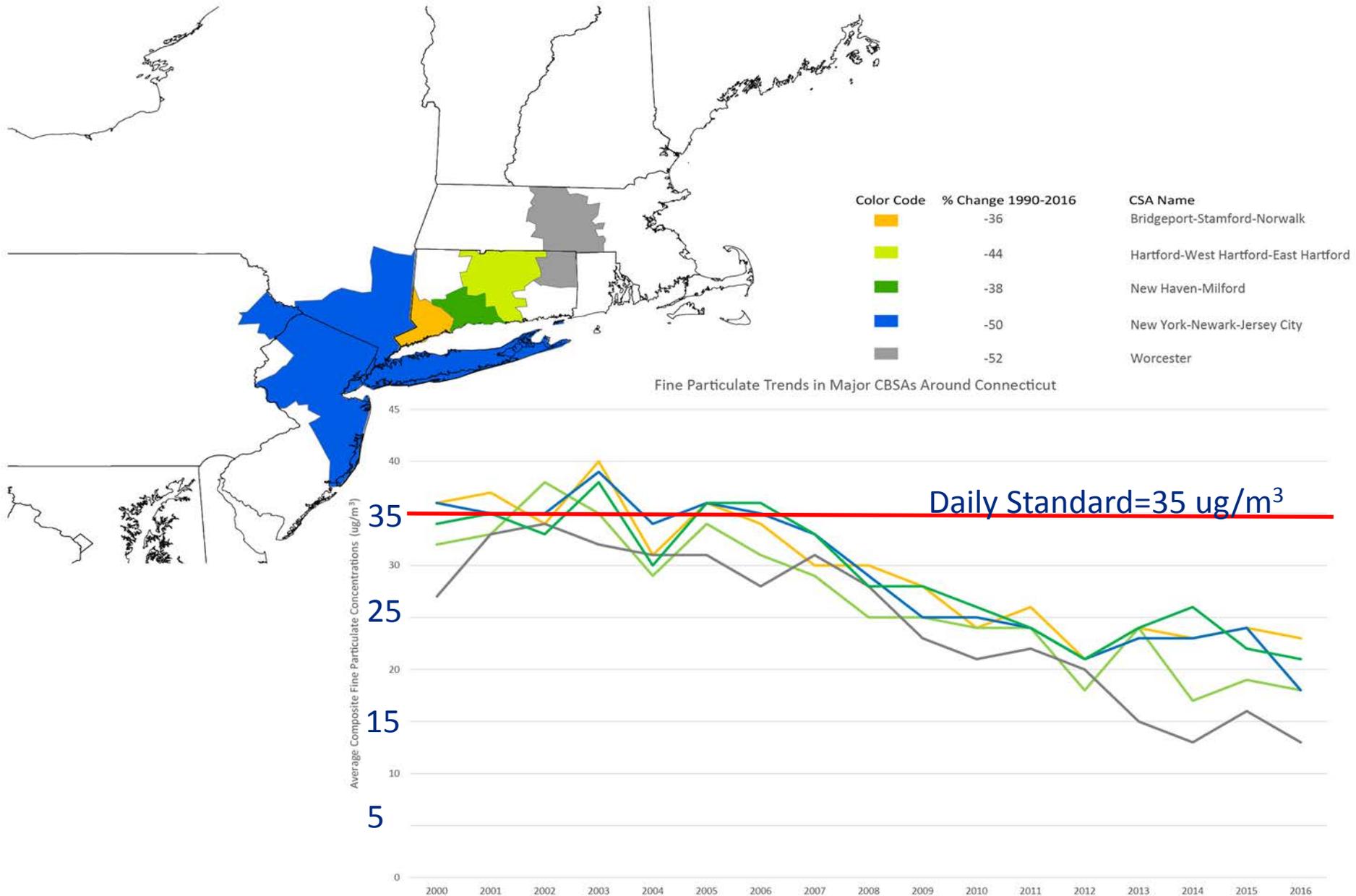
Revised November 7, 2018



How does the Region Measure up?



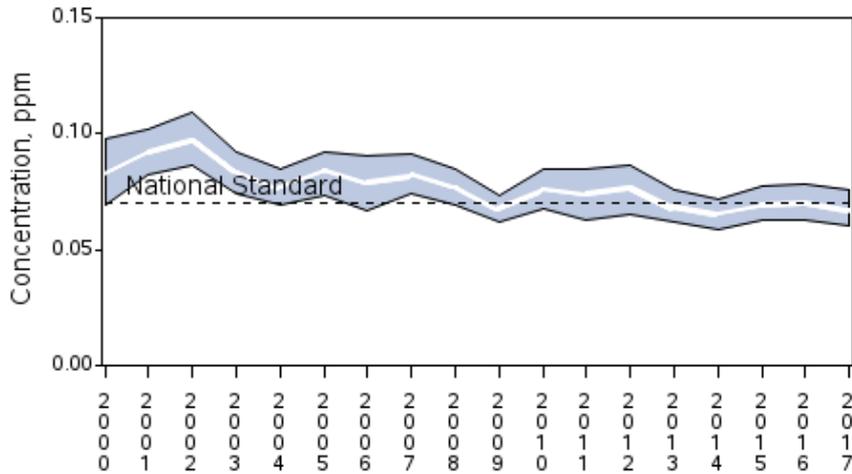
How does the Region Measure up?



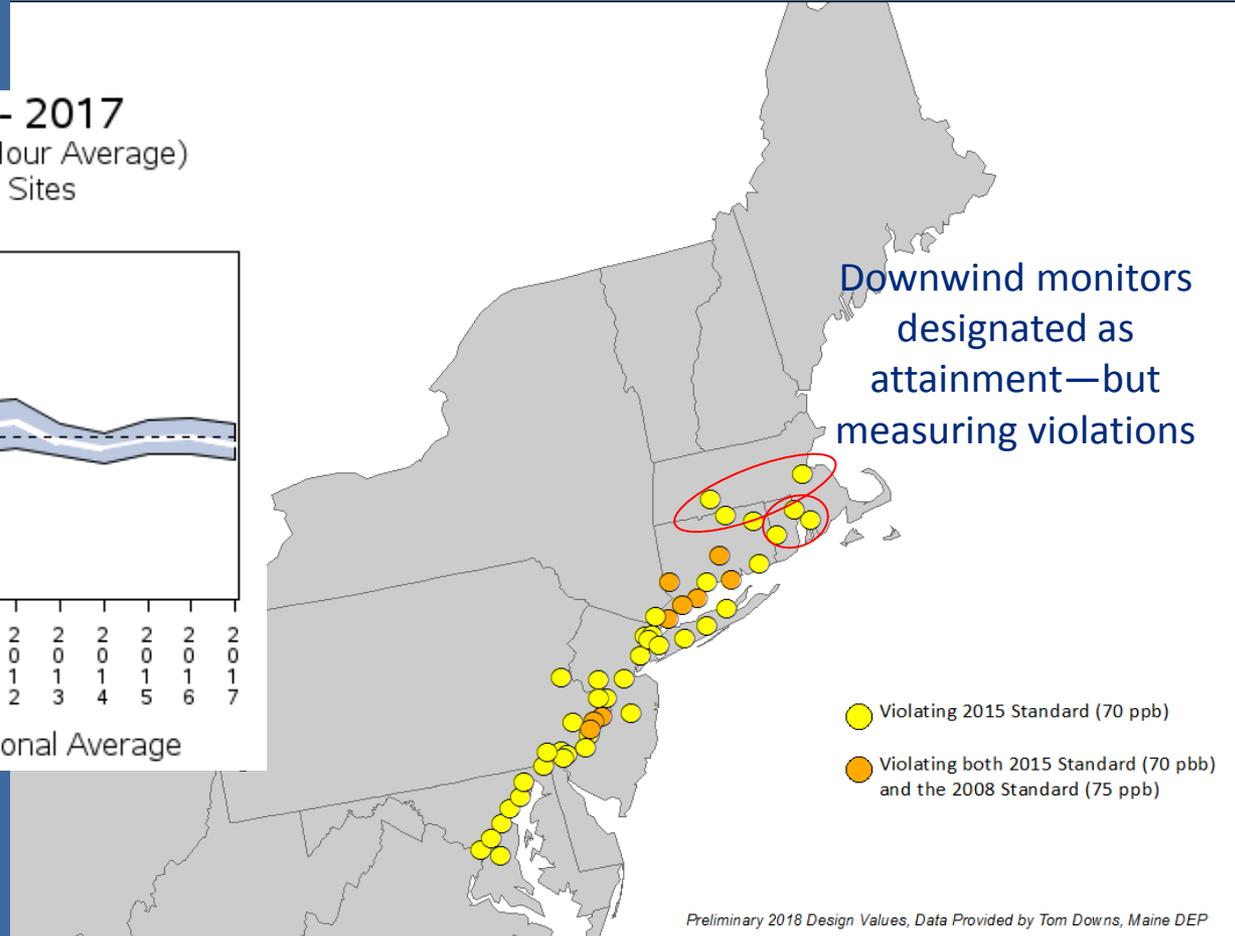
How does the Region Measure up?

Ozone Air Quality, 2000 - 2017

(Annual 4th Maximum of Daily Max 8-Hour Average)
Northeast Trend based on 121 Sites

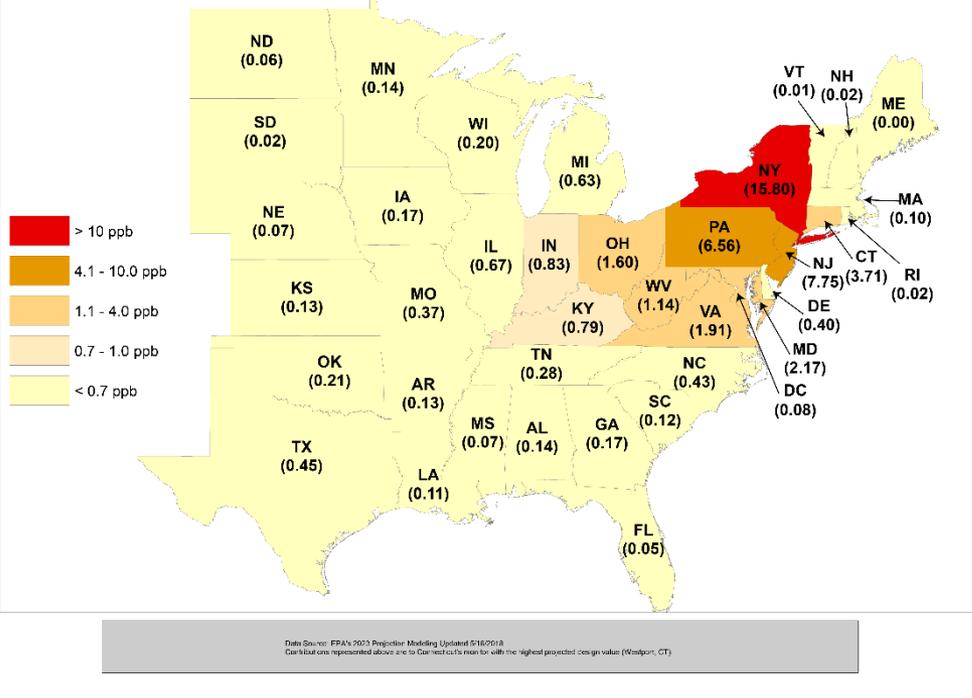


2000 to 2017 : 19% decrease in Regional Average

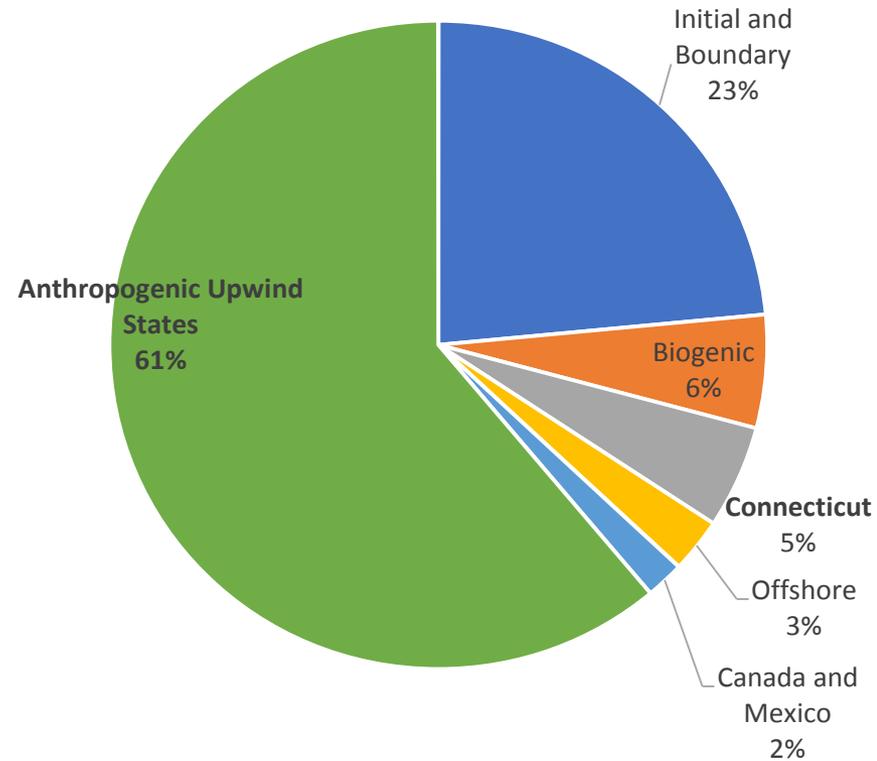


Contributions- to CT

States Contributing to Connecticut's Ozone Problem in 2023
(National Ambient Air Quality Standard = 70 ppb)



2023 Contributions to Westport, CT

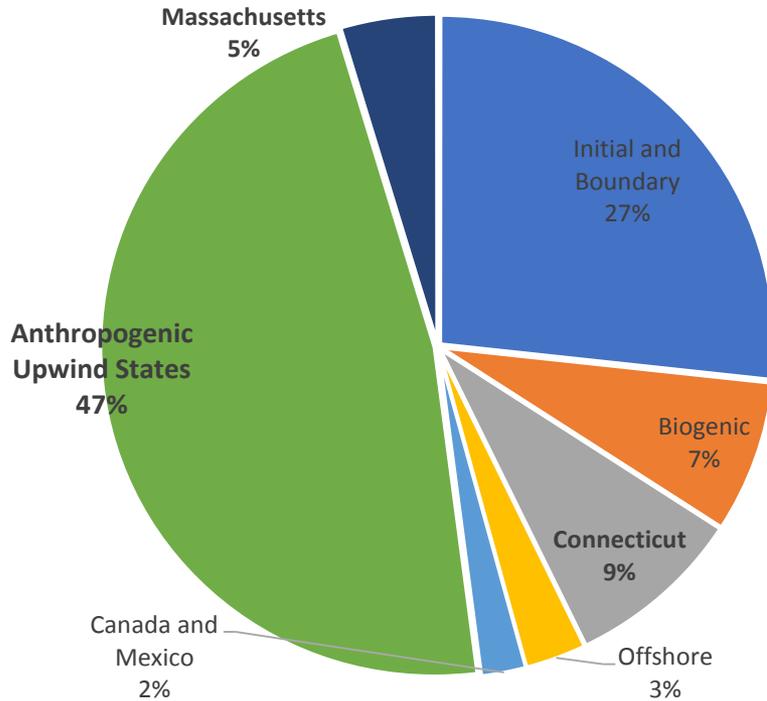


Note: This assumes projections are accurate. With each rendition of modeling to-date we find that it is under predicted once that year is measured.

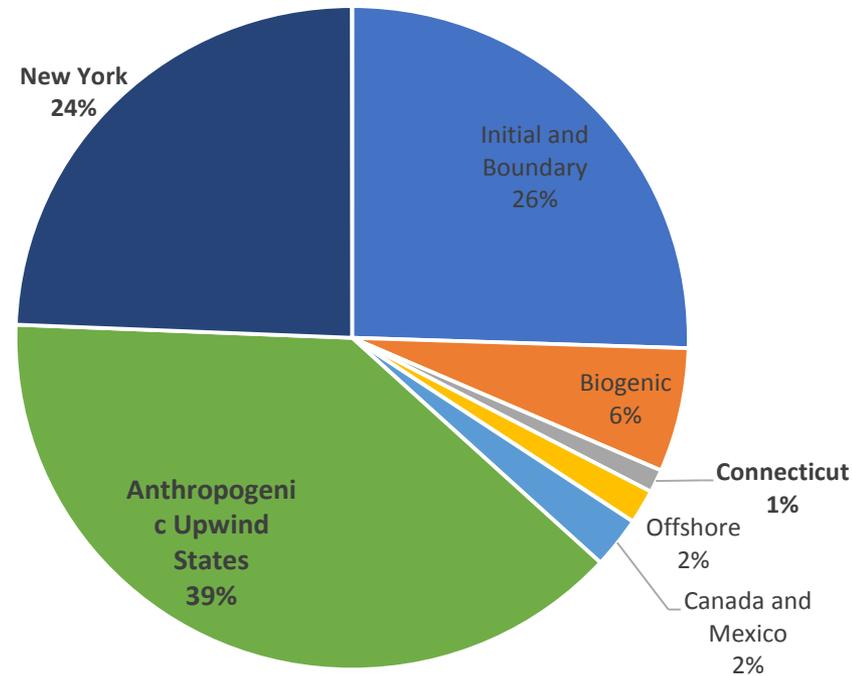


Contributions- to NY and MA

2023 Contributions to Chicopee, MA



2023 Contributions to Suffolk, NY



Upwind contributions are a significant portion of the ozone problem for Connecticut and other states.



Multi- Pollutant

Air quality may appear to be pollutant specific– However each strategy has multiple objectives.

For example:

- Ozone focused strategies also provides progress towards regional haze goals.
- 1-hour NO₂ strategies also provides progress toward to ozone goals.
- Regional haze strategies also provides progress toward ozone and particulate goals.
- Mobile strategies also provides progress towards ozone, particulate and climate goals.



The 3 Month Outlook for Planning

Note that these two slides only account for existing standards

Nov, 2018

- Submit 2015 Ozone GN SIP
- Propose Emissions and NNSR Cert

Dec, 2019

- Propose 2018 Regional Haze SIP
- [EPA Proposes Bump- Up for the 2008 Ozone NAAQS](#)

Jan, 2019

- Evaluate Bump up and Submit Comments

Feb, 2019

- Approx Submittal of Regional Haze SIP
- Approx Initiate Tri- State Planning Effort

*To track these efforts as requirements change and status are updated see:
https://www3.epa.gov/airquality/urbanair/sipstatus/reports/ct_areabypoll.html*



Connecticut Department of Energy and Environmental Protection

The 5-yr Outlook for Planning

Note that these two slides only account for existing standards

2019

- Approx RACT for 2015 NAAQS Planning
- EPA Proposes/Finalizes Bump- Up for the 2008 Ozone NAAQS

2020

- Initiate 2018 Regional Haze SIP- Lookback– Early timing will correlate with other State 2021 submittals.
- RACT SIP Submittal- (2008 NAAQS Serious & 2015 NAAQS)
- 2015 Ozone NAAQS MARGINAL Deadline (Greater CT)*
- Attainment Demonstrations for bump-up of 2008 NAAQS due.
- 2015 Ozone NAAQS Attainment Demonstrations

2021/22

- Approx RACT Implementation If Needed

2023

- Regional Haze Lookback
- PM2.5 2nd Maintenance Plan
- 2015 Ozone NAAQS Moderate Attainment Deadline (SW CT)*

Department of Energy and Environmental Protection

*Measured attainment deadline. This varies from the regulatory deadline.



EPA is Aggressively Rolling Back Rules....

Many pending changes to federal rules and policy that will impact Connecticut SIP planning and/or air quality. For example:

- [CPP to ACE](#)
- NAAQS Revision(including the next [ozone review](#))
- [SAFE](#)

Other potential impacts on SIP planning and Projections:

- Future NAAQS Reviews– Changes to Review Procedures may also impact planning.
- Incentives from other Agencies- Can alter our economic and thereby emissions and air quality projections



Summary

- Ozone is still primary focus
- Potential future actions could impact existing air quality goals and emissions targets.
- Transport remains a key element to the ozone and regional haze problem.
- Mobile sector efforts will continue to play critical role.



Questions?

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