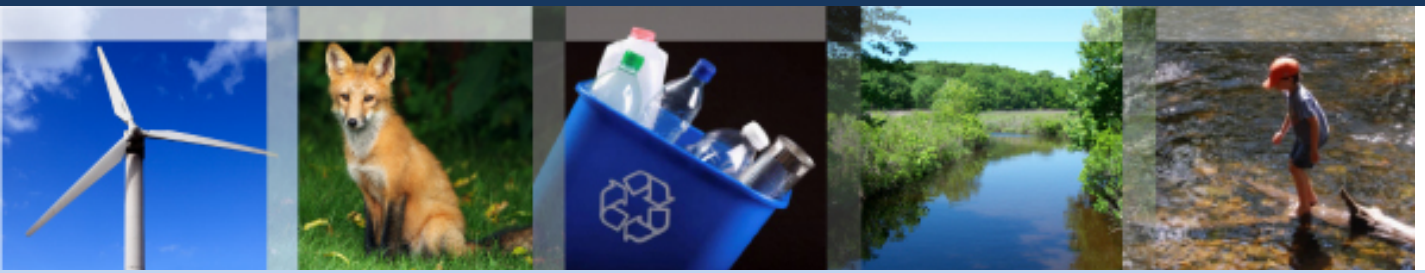
Connecticut Department of Energy and Environmental Protection



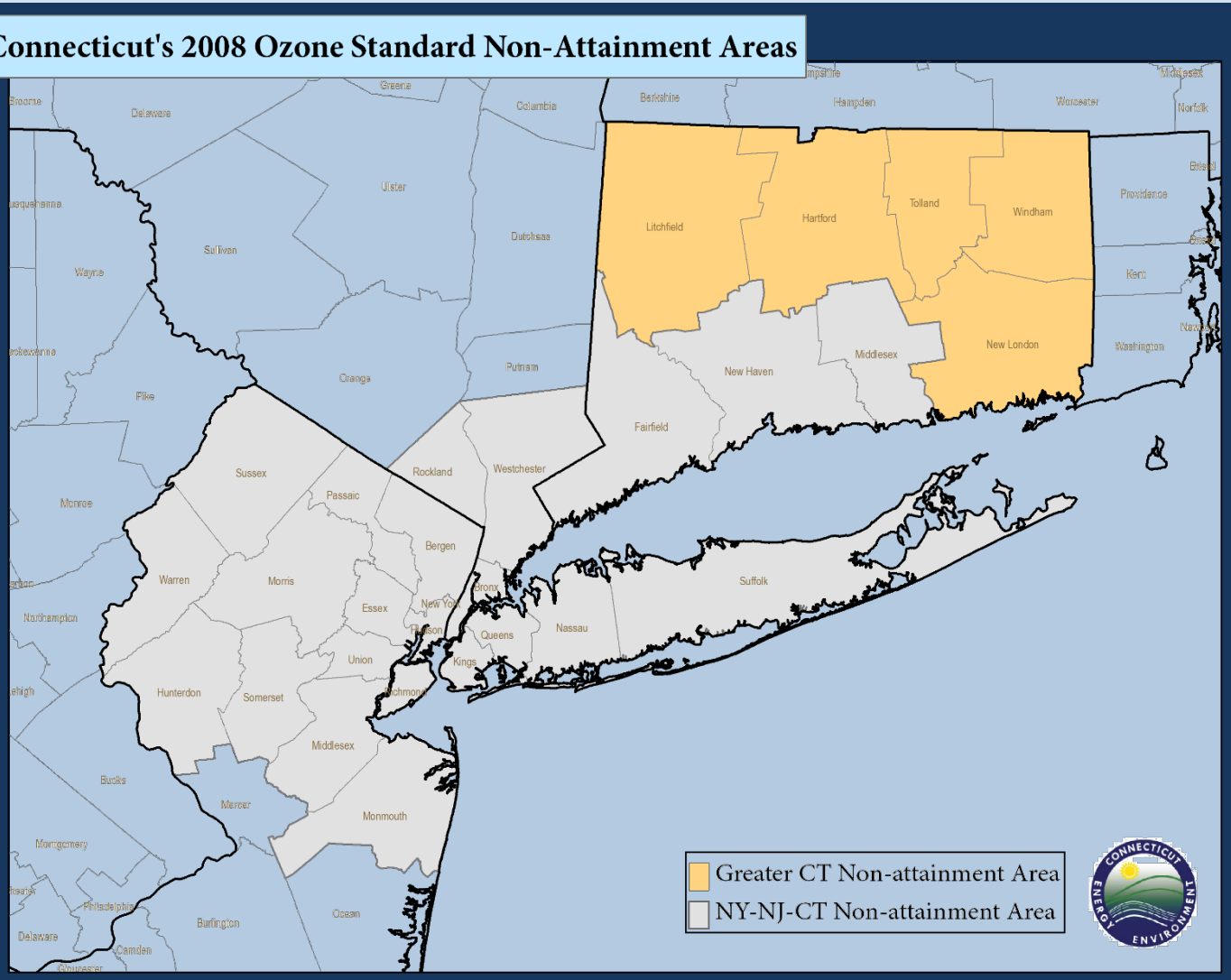
Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

Connecticut's Air Quality Challenges

September 26, 2019
SCAQMD HDDE Workshop
Paul Farrell, Director - Air Planning
Department of Energy and Environmental Protection

Our Ozone Challenge

- Connecticut - non-attainment for both the 2008 and 2015 8-hr ozone national ambient air quality standards
- 2008 Standard: Failed to attain by July 2018 and being redesignated to serious nonattainment.
- 2015 Standard: Greater CT designated marginal and NY-NJ- CT designated as moderate.
- Ozone Design Values
  - Greater CT: 75 ppb
  - NY-NJ-CT: 82 ppb



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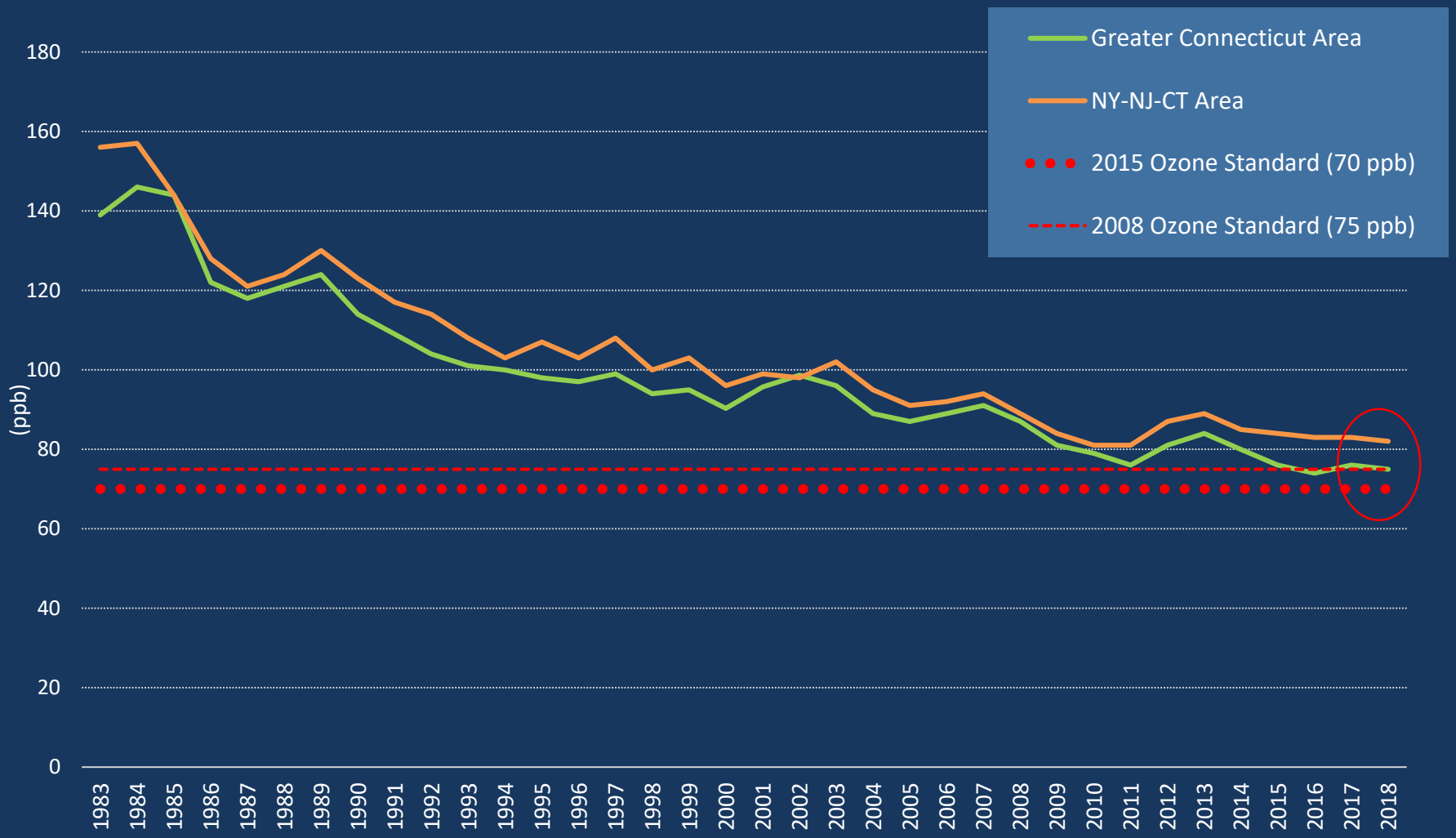
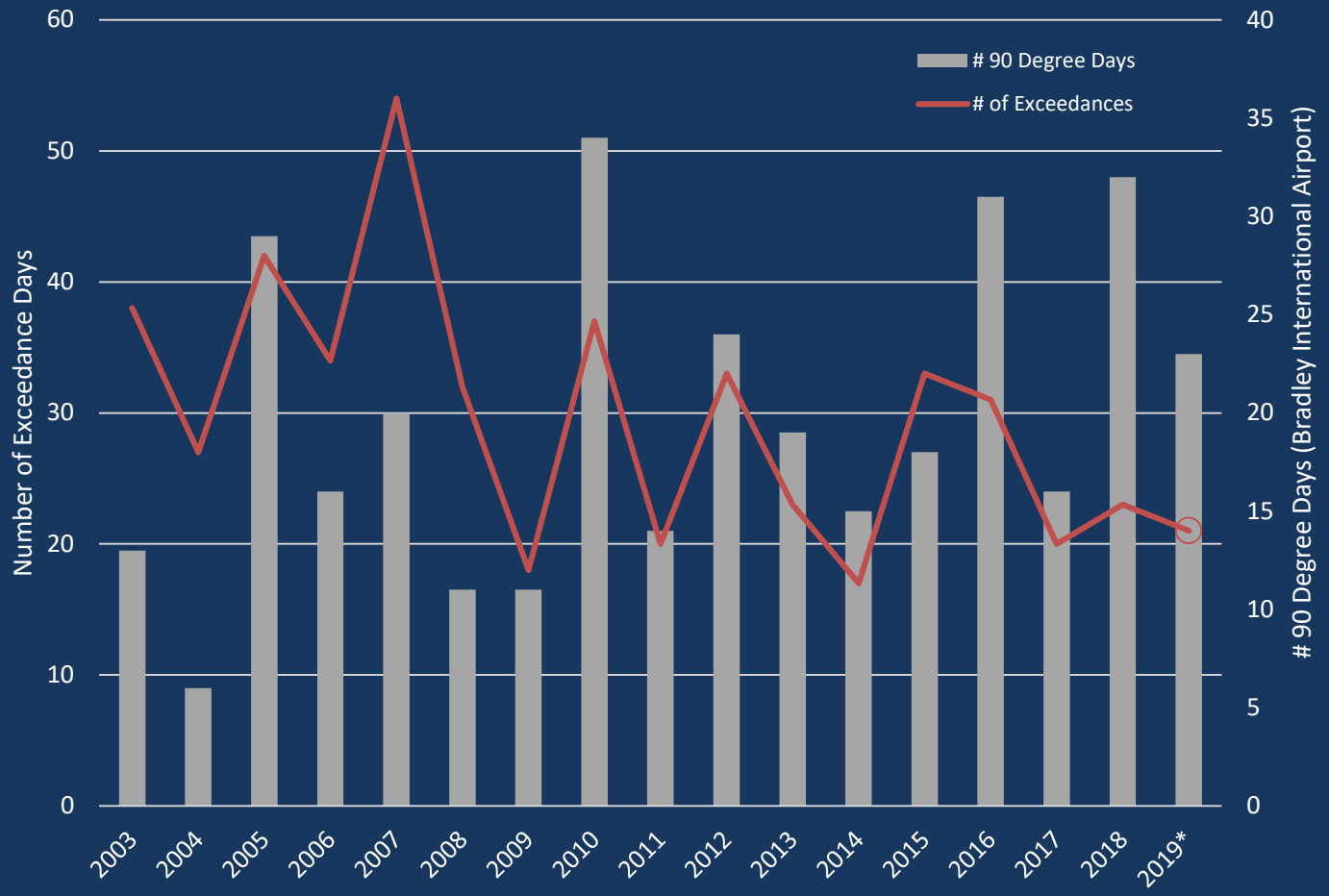
Connecticut Ozone Trends



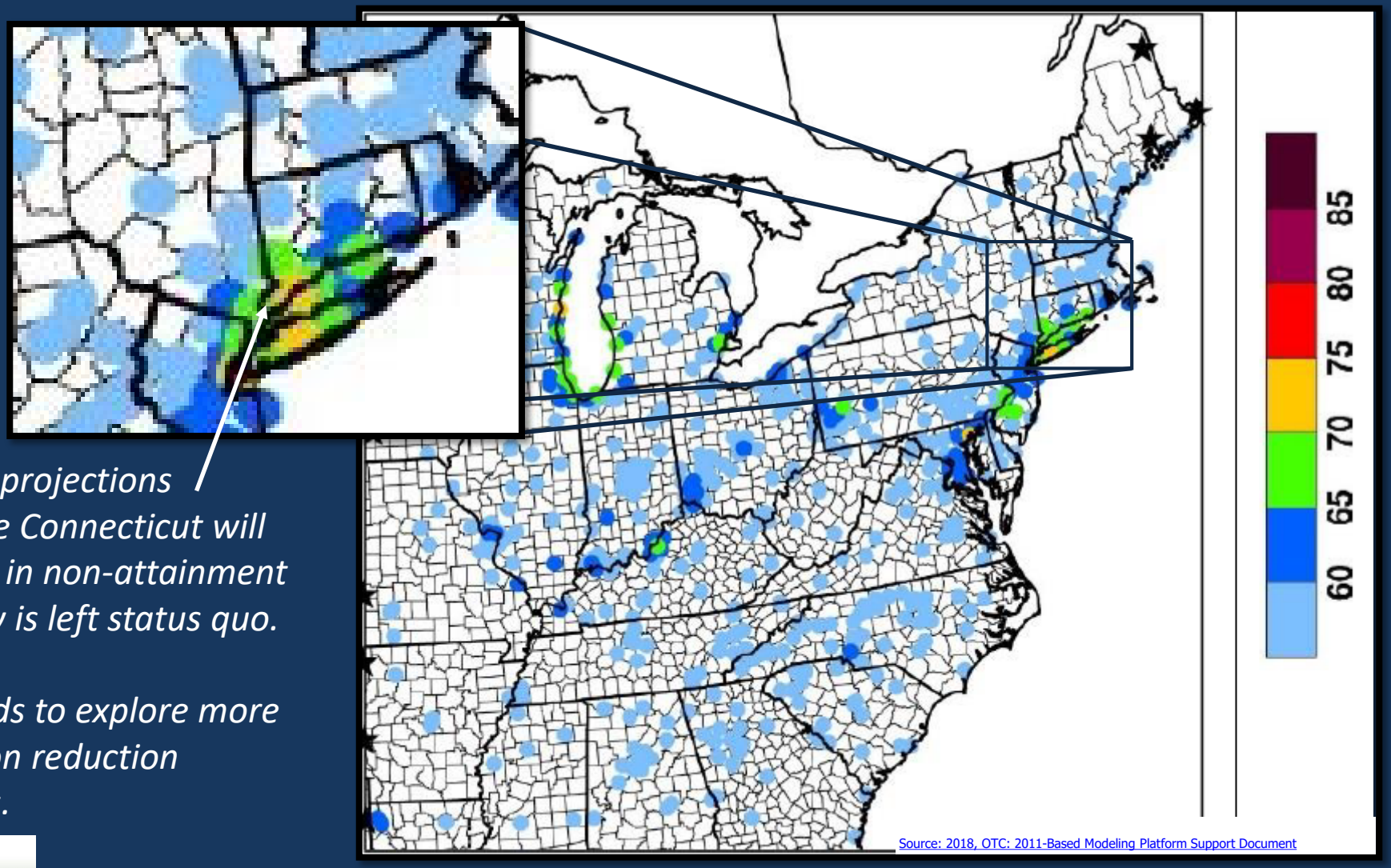
Observed Exceedance Days



Good news - number of exceedance days trending down over time

Bad news – the trend slope is flattening and continue to measure non-attainment

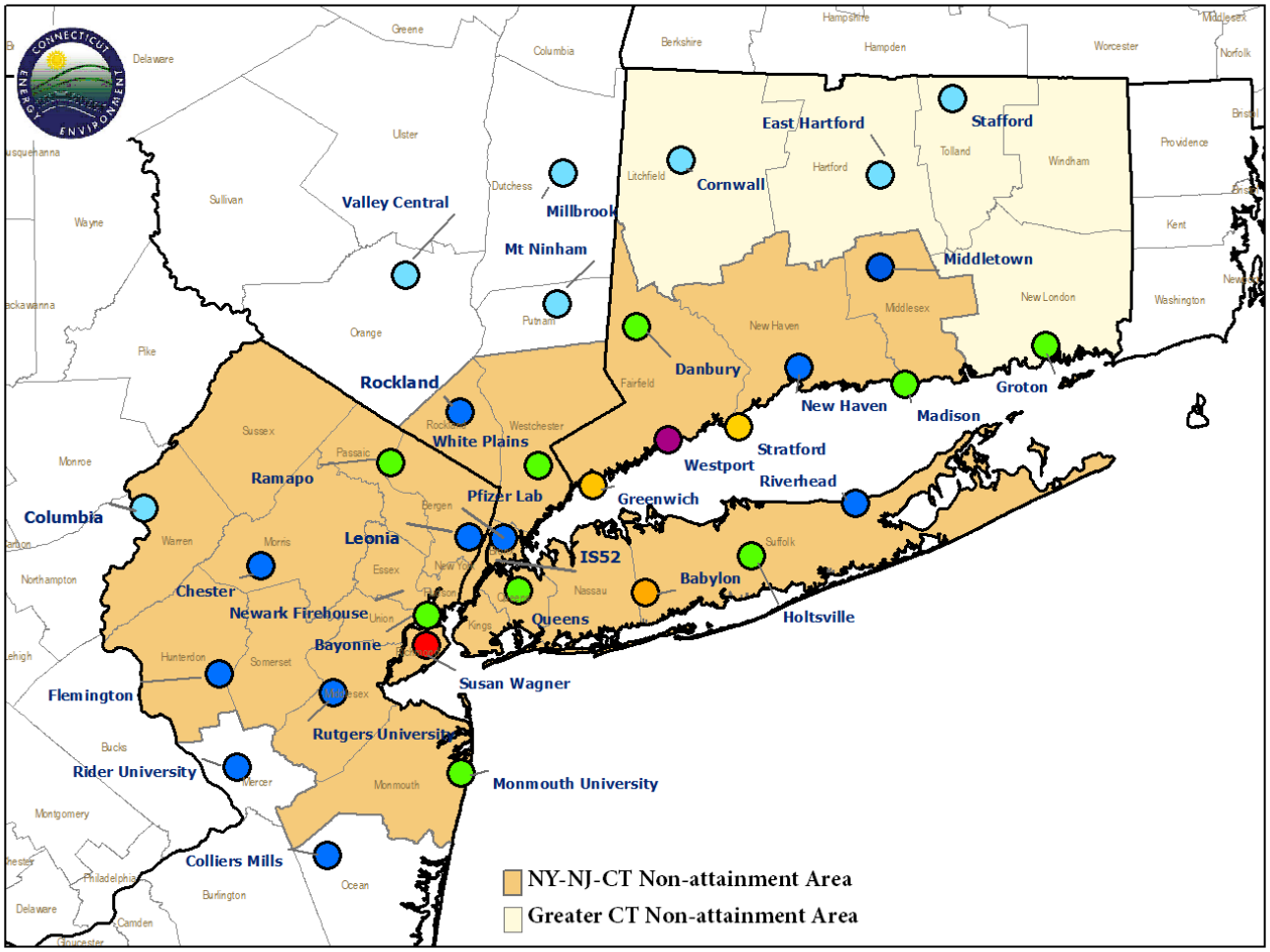
Estimated Future Ozone Levels



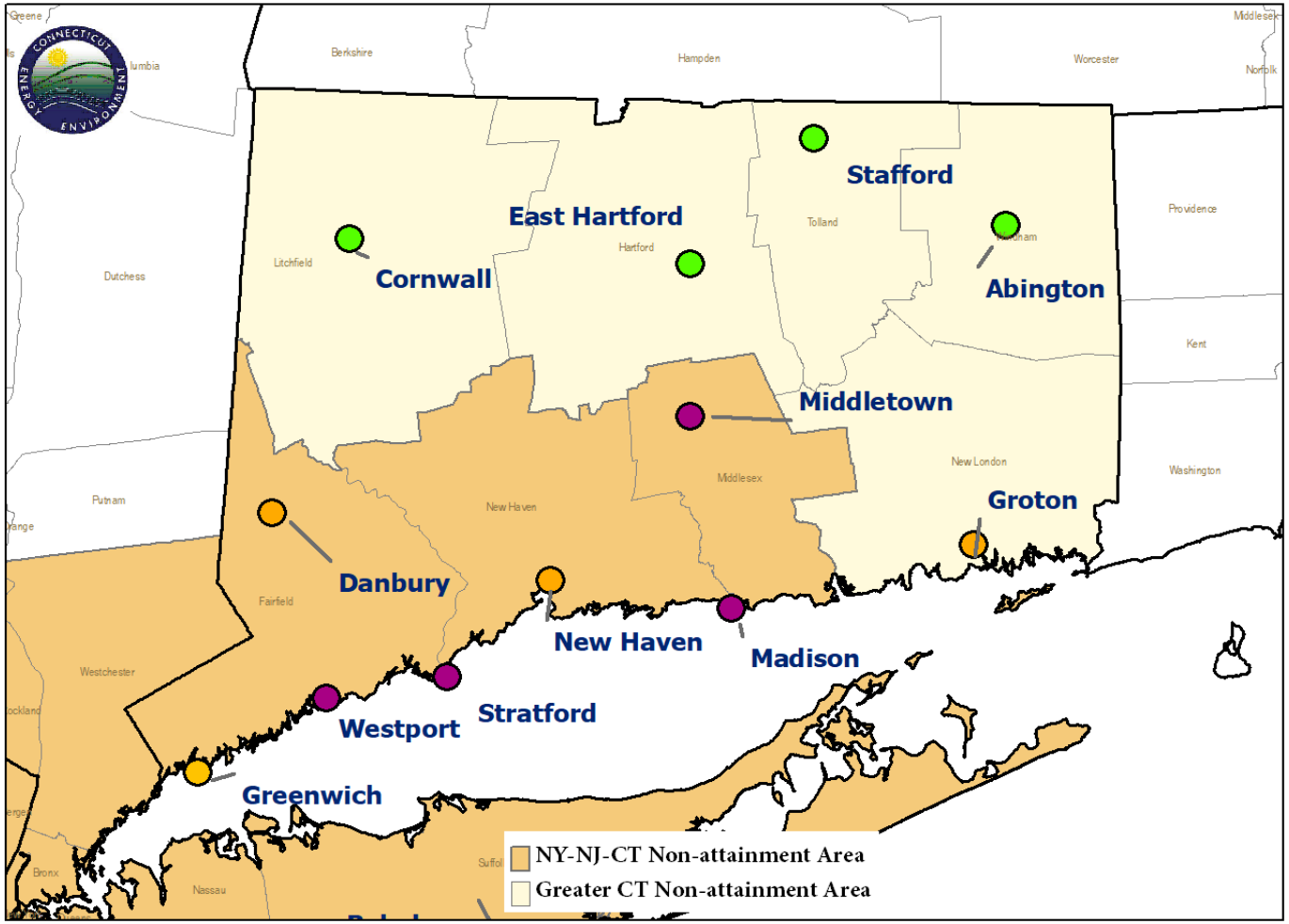
Recent projections Indicate Connecticut will remain in non-attainment if policy is left status quo.

CT needs to explore more emission reduction options.

Estimated Future Ozone Levels



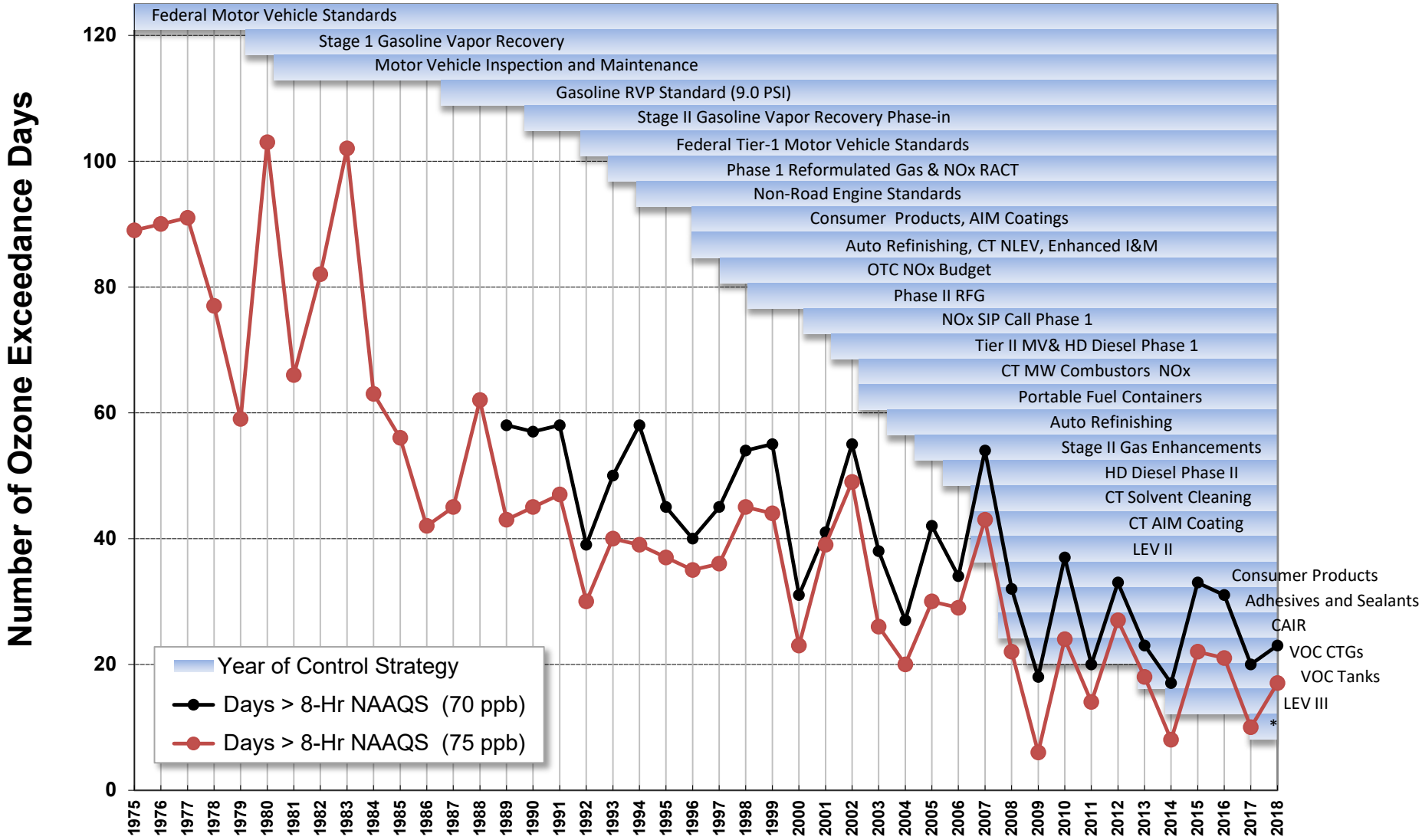
Preliminary 2019 Ozone DVs



*Data are preliminary until annual certification. Anticipated May 2020.

Revised September 18, 2019

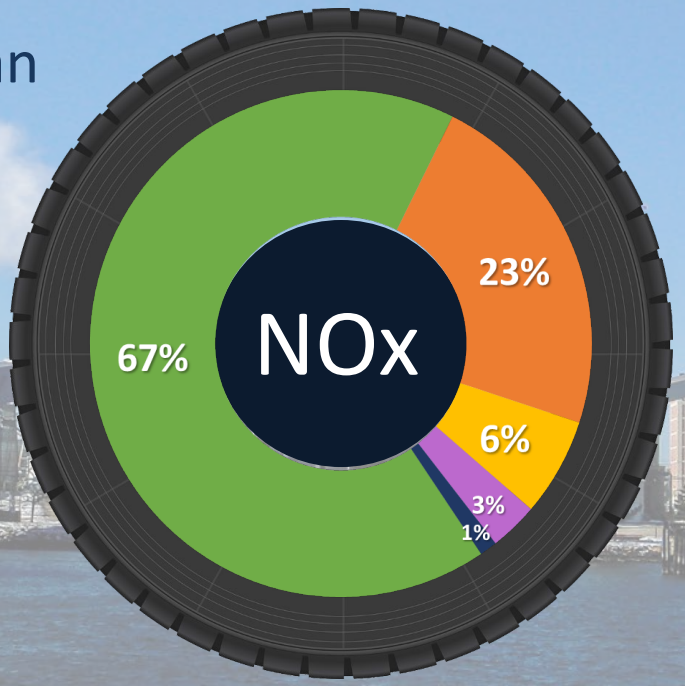
Connecticut 8-Hour (70 ppb & 75 ppb) Ozone Exceedance Day Trends and Implemented Control Strategies



*NOx RACT Fuel Burning Sources, NOX Reductions MWC and Federal Tier 3 Motor Vehilcle /Fuel Requirements

Stationary Source Efforts

- Stationary sources represent an increasingly smaller percentage of Connecticut's emissions inventory
- Stationary source control programs have reached the limits of their ability to reduce ozone precursor emissions to levels that will attain the ozone NAAQS
- Transport remains an unsolved issue and frustrated by EPA's lack of leadership



Mobile
Other Fuels
Waste Disp.
EGUs
Other

"Other Fuels" is the combination of residential, commercial and industrial fuel use.

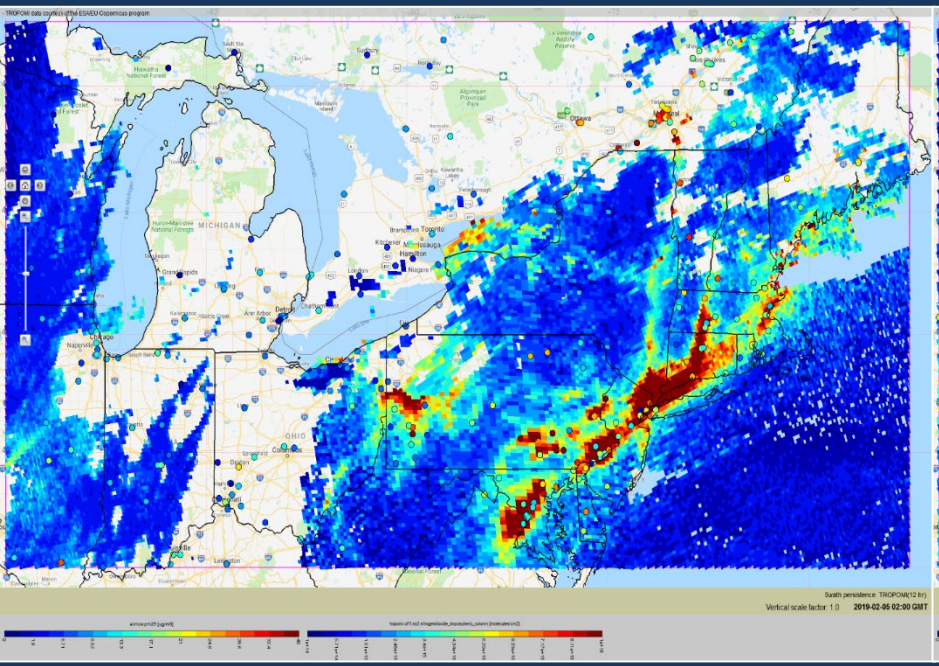
Mobile Source Efforts

- Adoption of CARB LEV and ZEV Programs in 2004/05, amended to provide new vehicle emission standards until 2025 (including 'deemed to comply' provisions)
- State-wide clean fuels requirement/RFG and ULSD
- State-wide Inspection and Maintenance Program
- Multistate ZEV MOU and related ongoing efforts
- EVConnecticut & EVSE grants
- EV incentives - CHEAPR
- On-road HDDE testing – Opacity/PM
- *NO HD New Vehicle or In-Use Standards*

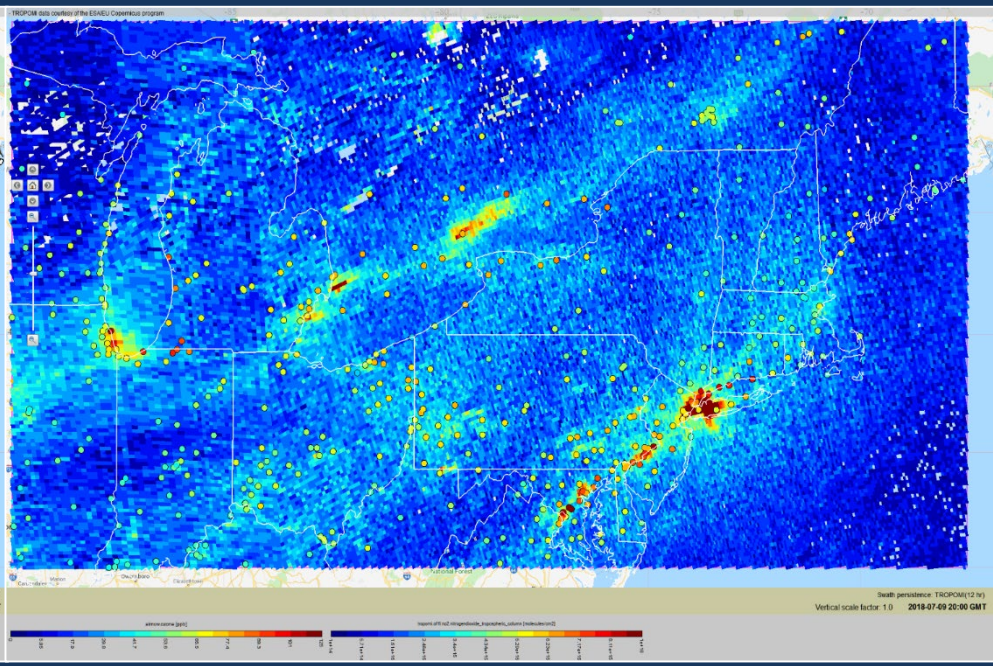
Mobile Source Regional Effects are Very Evident

TROPOMI Satellite Data

NO_2: February 4, 2019



NO_2: July 9, 2019



NO_2 throughout the winter is abundant and dominant along the I-91/95 corridor from Virginia to Massachusetts. This indicates a strong mobile source NO_x contribution.

NO_2 throughout the summer is less pronounced due to the influence of ozone production along the corridor.

Why Focus on Heavy Duty?

Today…

65% of all NOx emissions in Connecticut are emitted by mobile sources

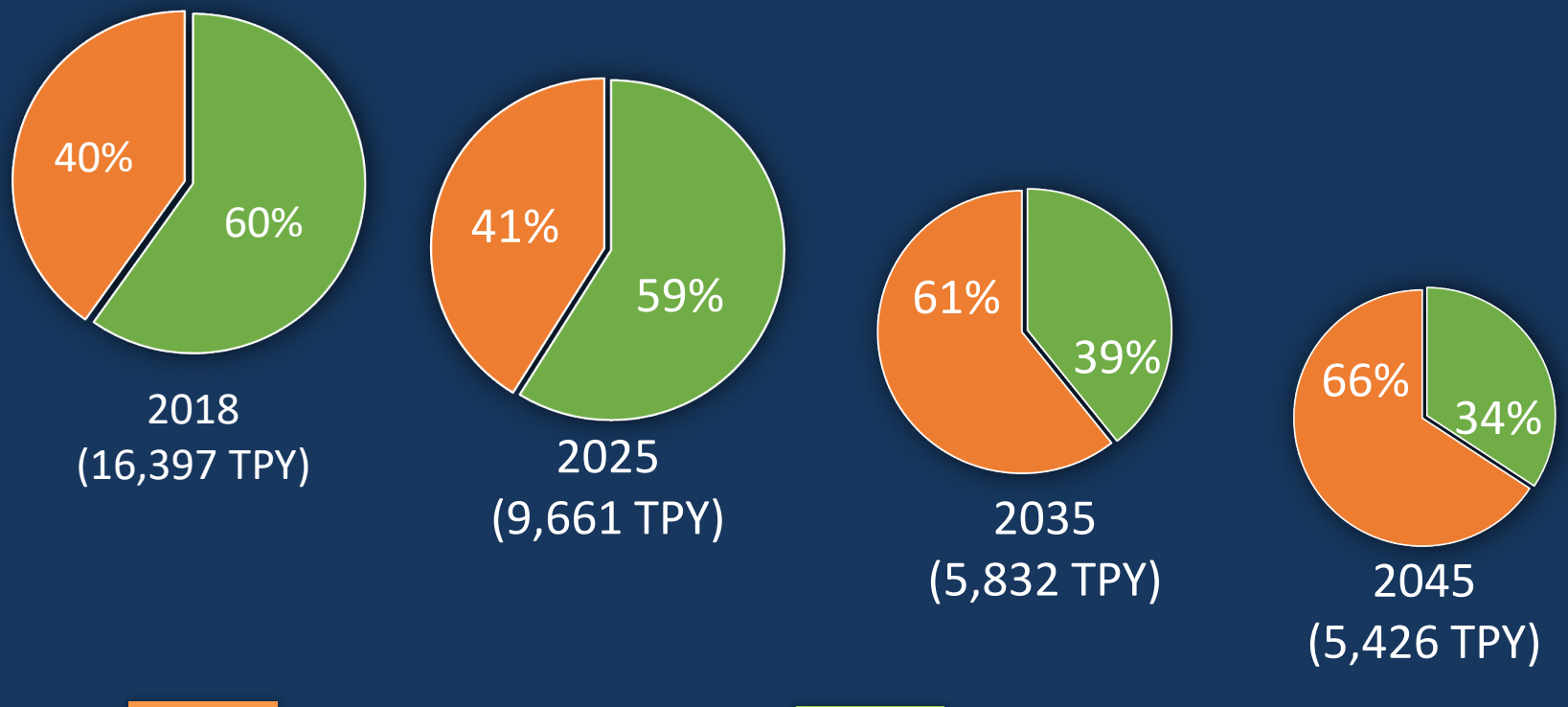
40% of those mobile source emissions are from on-road highway vehicles

40% of those on-road mobile source emissions are from heavy duty vehicles

Note: Data from NEI Tier 1 Estimates and CT local data

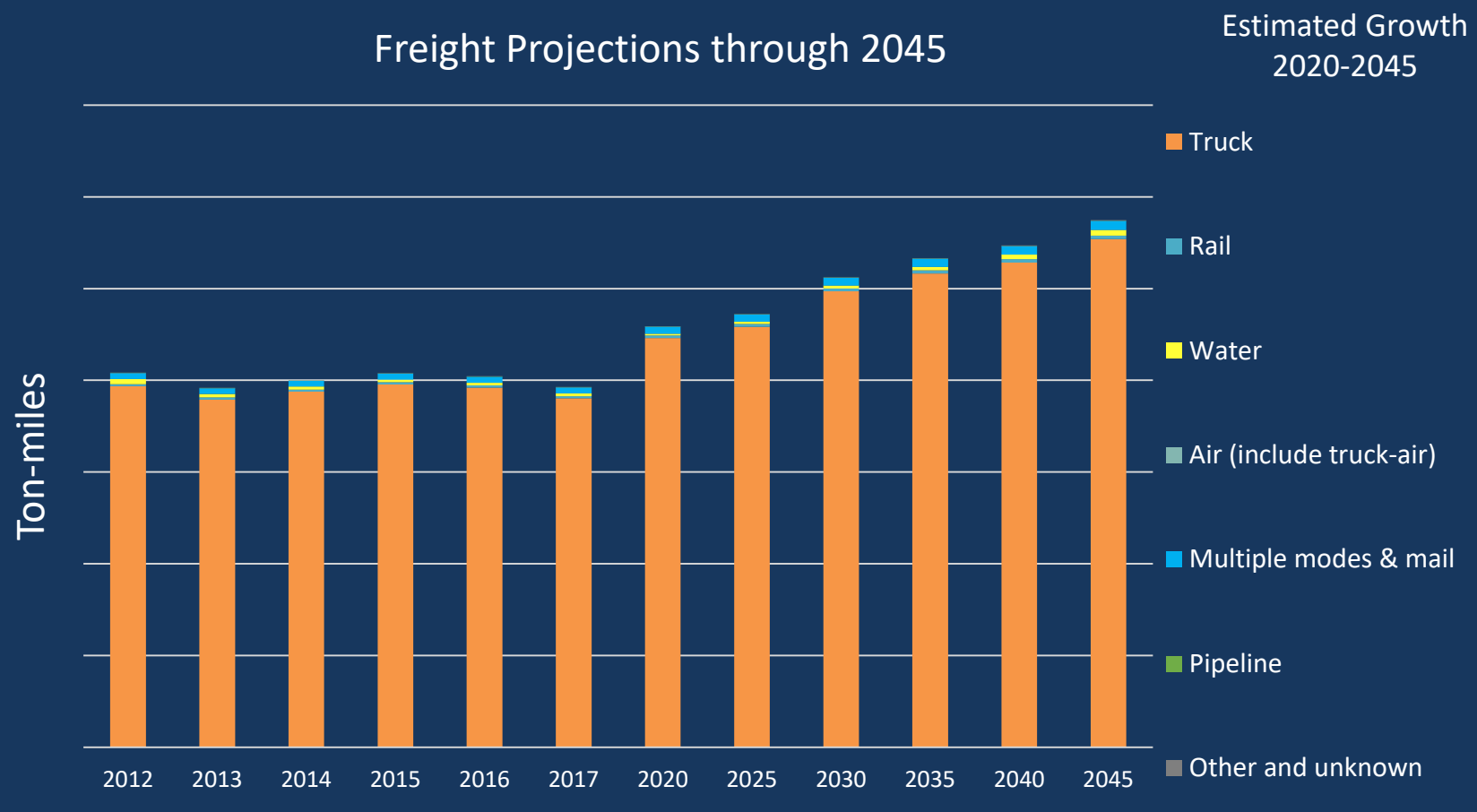
HD Vehicles – Future NOx Contribution

By 2045, Heavy Duty on-road vehicles will account for **66%** of all on-road NOx emissions in Connecticut!



Note: Estimates developed with MOVES2014b

Projected Growth in Freight

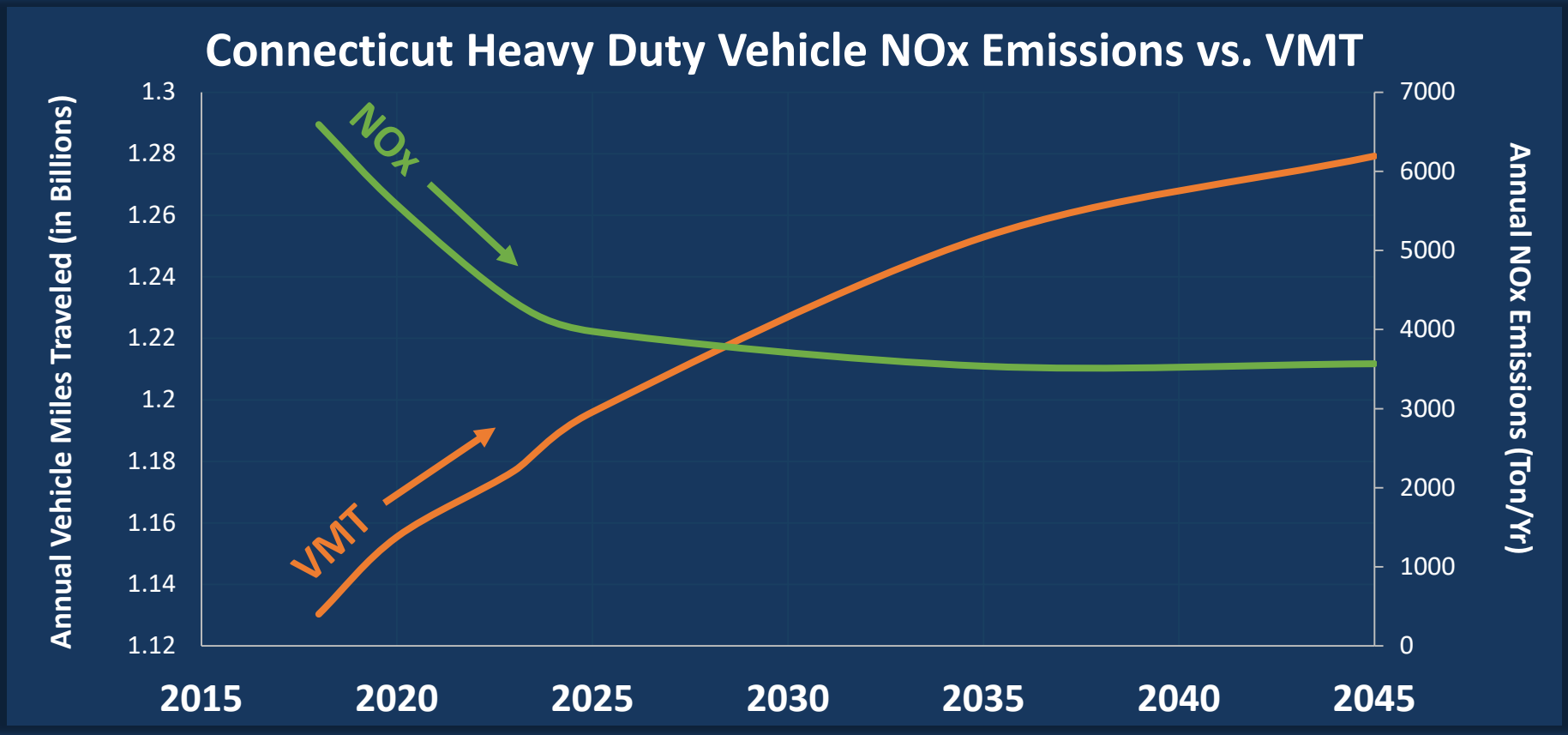


Source: Federal Highway Administration, Freight Analysis Framework Data Tabulation Tool

HD Vehicle Emissions vs VMT

NOx emissions from the HD sector are decreasing due to fleet turnover

NOx emissions plateau in future years as VMT increases & standards stagnate.



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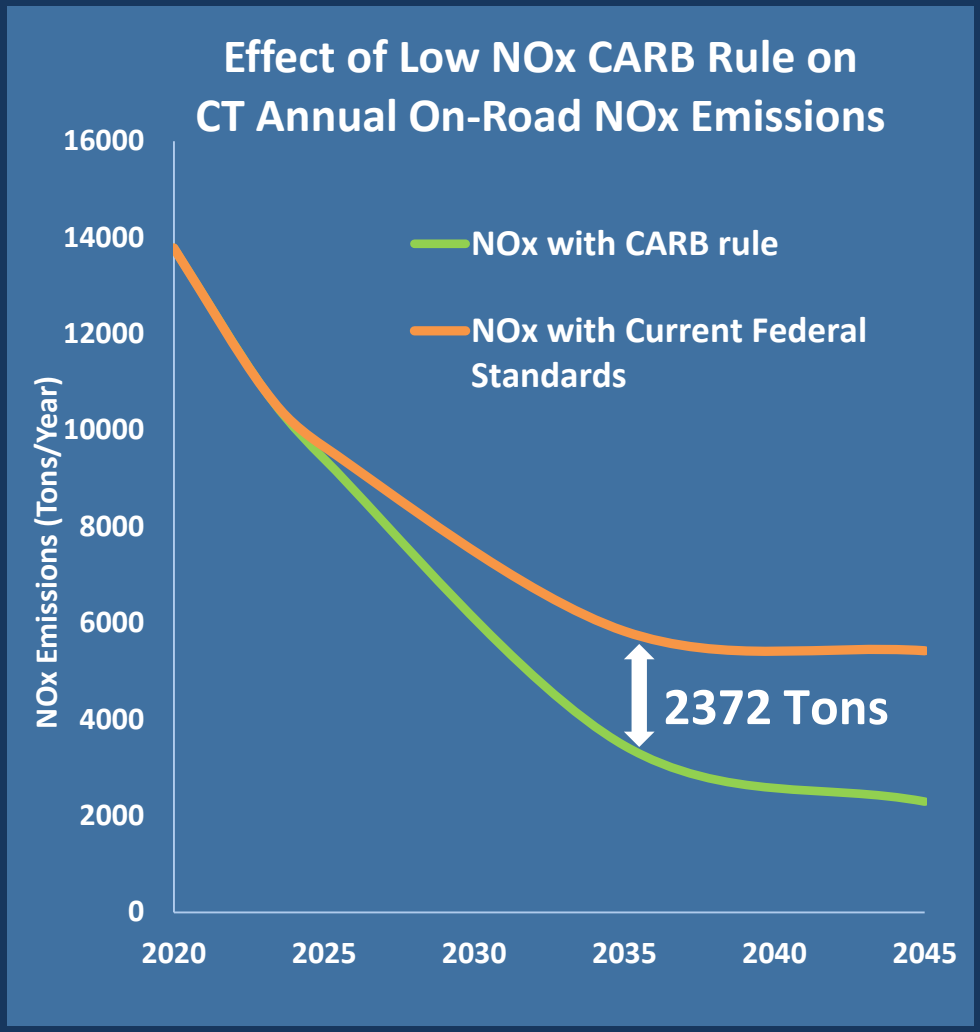
Note: Annual NOx estimate developed with MOVES2014b. This version of MOVES does not include HD GHG Phase 2 standards or any other future HD NOx rules.

CARB Heavy Duty Low NOx

- If a sufficiently stringent national standard is not forthcoming in a timely manner, Connecticut must seriously consider working towards a regional Low NOx standard – preferably in a regional context.



Note: Graph based on a very high level analysis of the CARB low NOx Rule in Connecticut

Next Steps

- Connecticut eagerly awaits opportunity to review California's HD proposal in 2019
- Intractable ozone challenge demands Connecticut's careful attention, active participation, and strong support for more stringent HD standards
- DEEP exploring proposals to authorize rules for California's HD standards

Questions?

Paul Farrell
Director Planning and Standards
Paul.Farrell@CT.Gov