

Modeling Committee Update

OTC 2020 Fall Meeting

November 18, 2020



Modeling Committee Action Plan

- 2019 Action Plan items completed:
 - 2016 year-based modeling platform
 - Emission inventory for 2016 with projections to 2023 and 2028
- 2020-21 Action Plan will include continuing work on:
 - Continue improving platform for optimal performance, including emission inventory updates
 - Tagged emission contribution modeling for 2023
 - Episodic sensitivity modeling for peak energy day (as defined by SAS) and mobile emissions (MSC)
 - Tracking seasonal ozone levels and preliminary attainment status
 - Coordination of work with state efforts including examination of emissions and best science modeling efforts
 - Tracking regional field monitoring campaigns including LISTOS (Long Island Sound Tropospheric Ozone Study) and OWLETS2 (Ozone Water-Land Environmental Transition Study)
 - Tracking the research and science to better understand how the COVID-19 pandemic has affected air quality in the OTR
- Explore need and options for developing 2026 emission inventory projection



2008 and 2015 Ozone NAAQS Attainment Dates



Ozone Timeline

Marginal Nonattainment Area
Attainment Date

Moderate Nonattainment Area
Attainment Date

Serious Nonattainment Area
Attainment Date

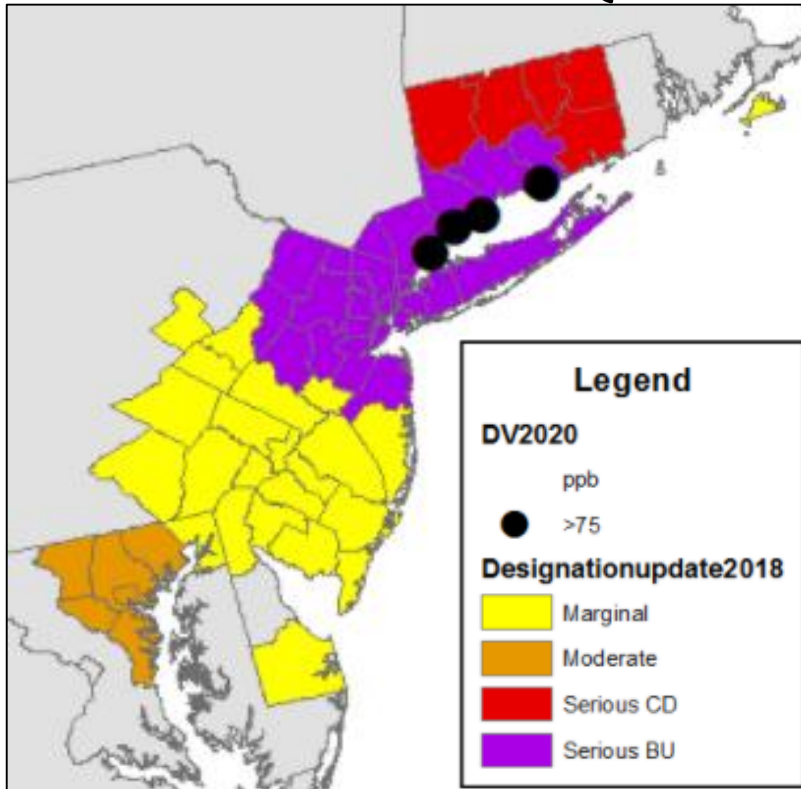
Severe-15 Nonattainment Area
Attainment Date

Extreme Classification



2020 Preliminary 8-Hour Ozone Violations

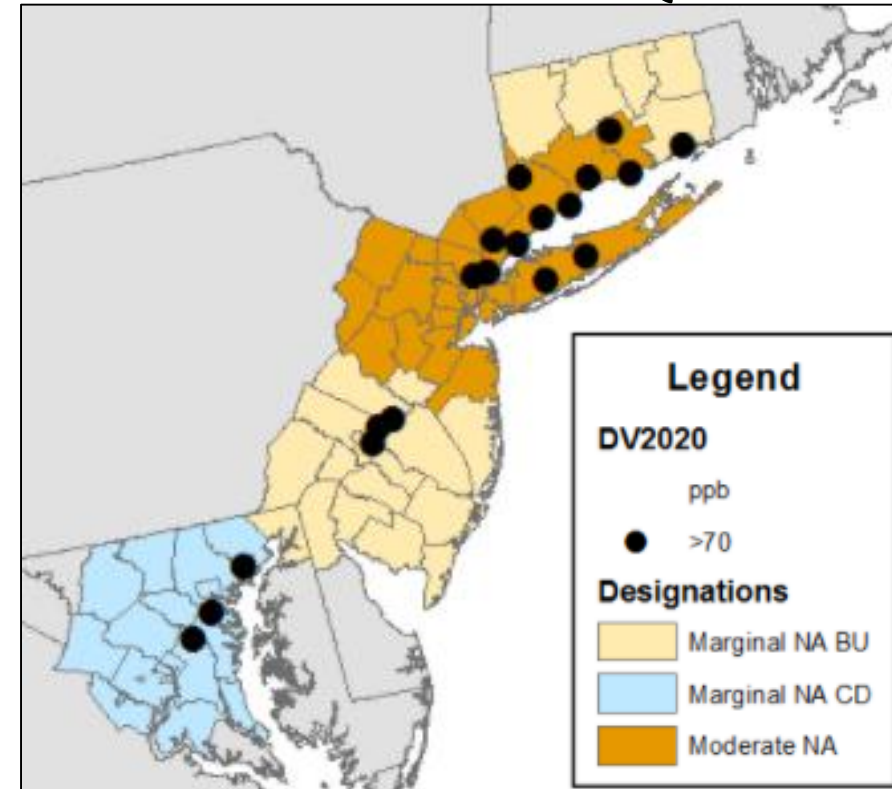
2008 NAAQS



Preliminary:

- NYC nonattainment area is not eligible for 1-year extension
- All other nonattainment areas can redesignate to attainment/maintenance

2015 NAAQS

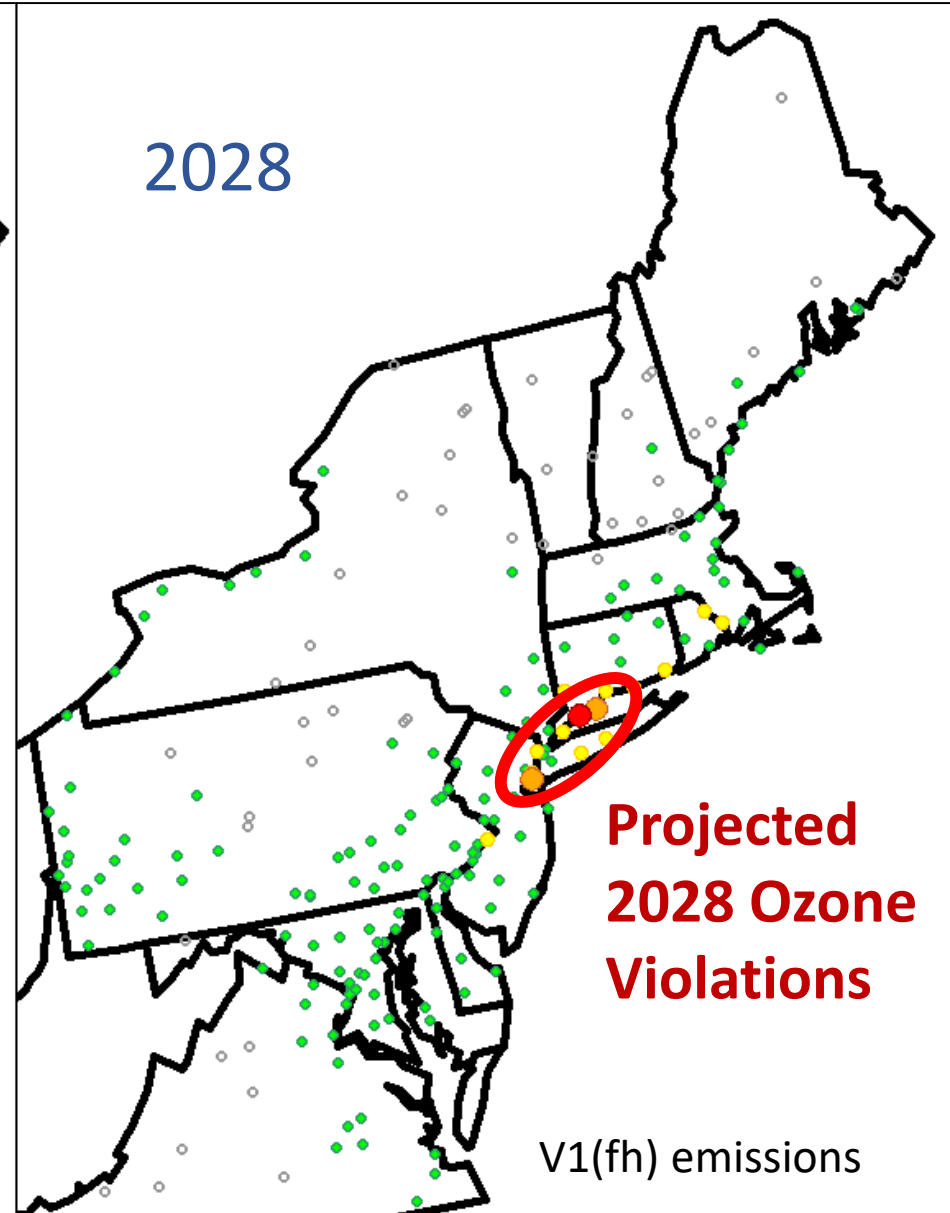
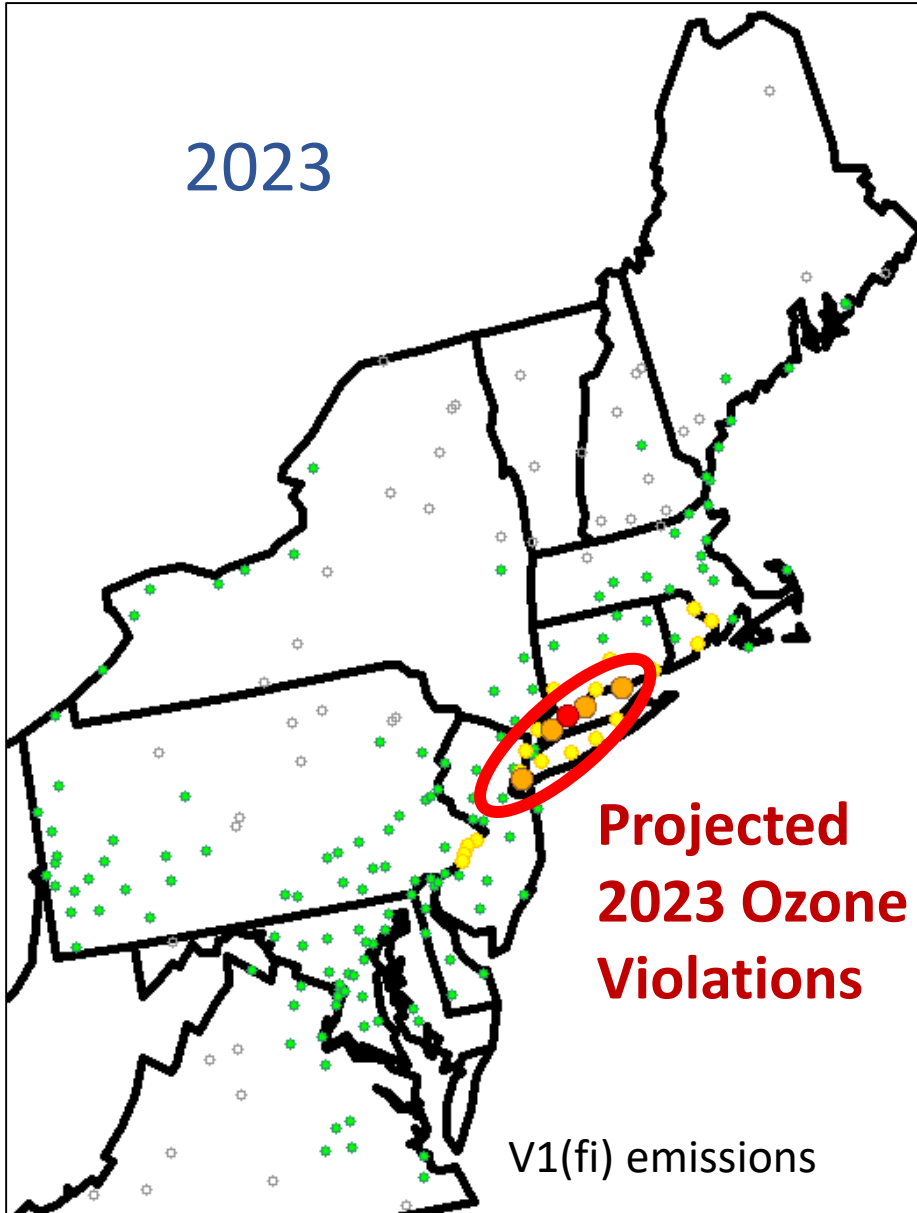
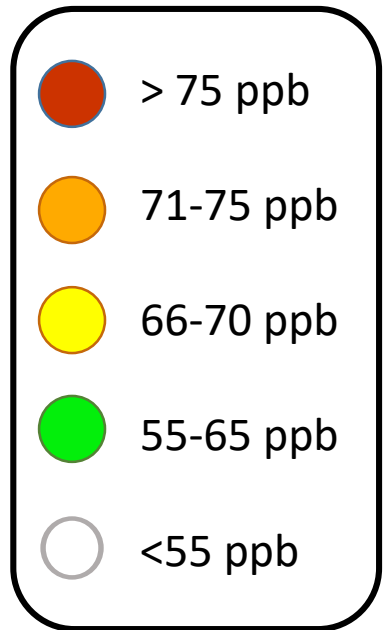


Preliminary:

- DC and Baltimore nonattainment areas are eligible for 1-year extension,
- Philadelphia and Greater CT are not eligible,
- The attainment date for NYC is August 2024.



Preliminary Runs for 2023 and 2028 Base Cases



*Preliminary CMAQ modeling
Do not cite or quote
3x3 grid cell analysis*



States Needing SIP Modeling

2008 Ozone NAAQS Timeline			
	States	Attainment Date	Model Year
Serious Nonattainment Areas	CT, NJ, NY	July 2021	2020
Potential Bump-up to Severe-15*	CT, NJ, NY	July 2027	2026
2015 Ozone NAAQS Timeline			
	States	Attainment Date	Model Year
Moderate Nonattainment Areas	CT, NJ, NY	August 2024	2023
Potential Bump-up to Moderate	CT, DE, MD, PA	August 2024	2023
Potential Bump-up to Serious**	CT, NJ, NY	August 2027	2026

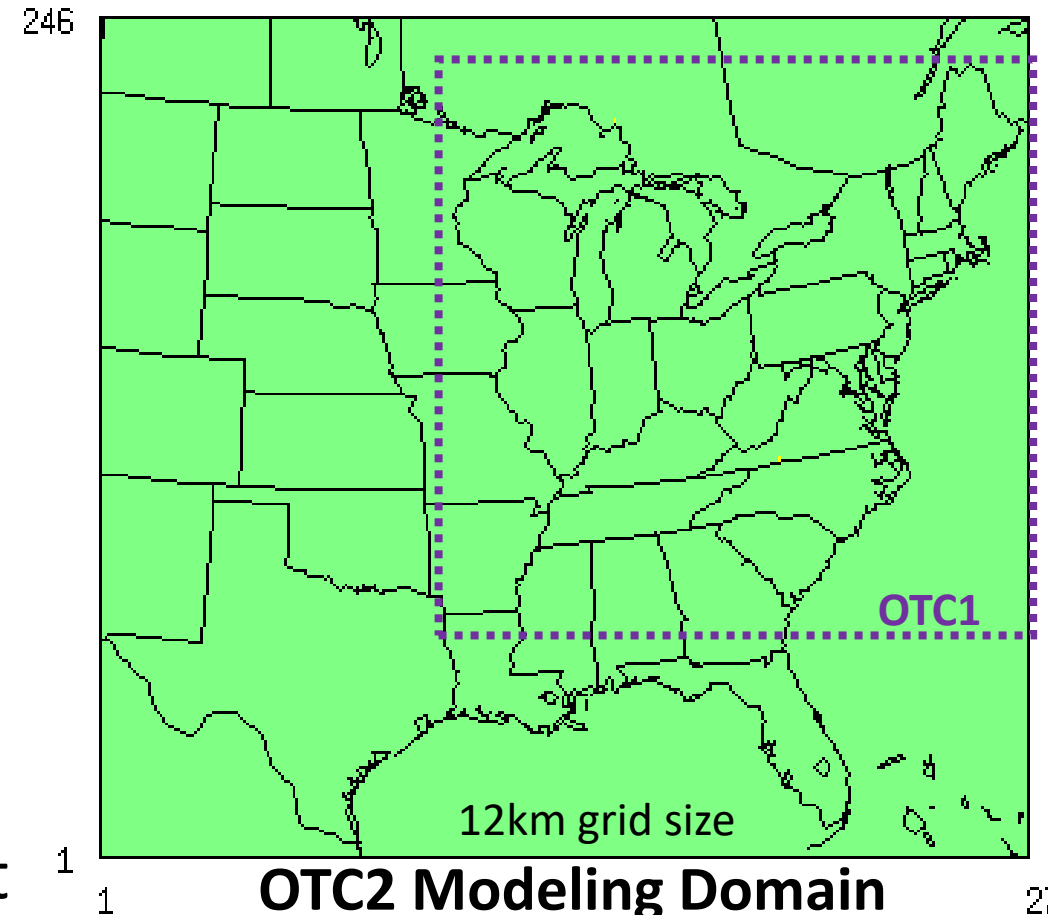
* - Based on preliminary monitoring data 2018-2020

** - Based on preliminary OTC modeling for 2023

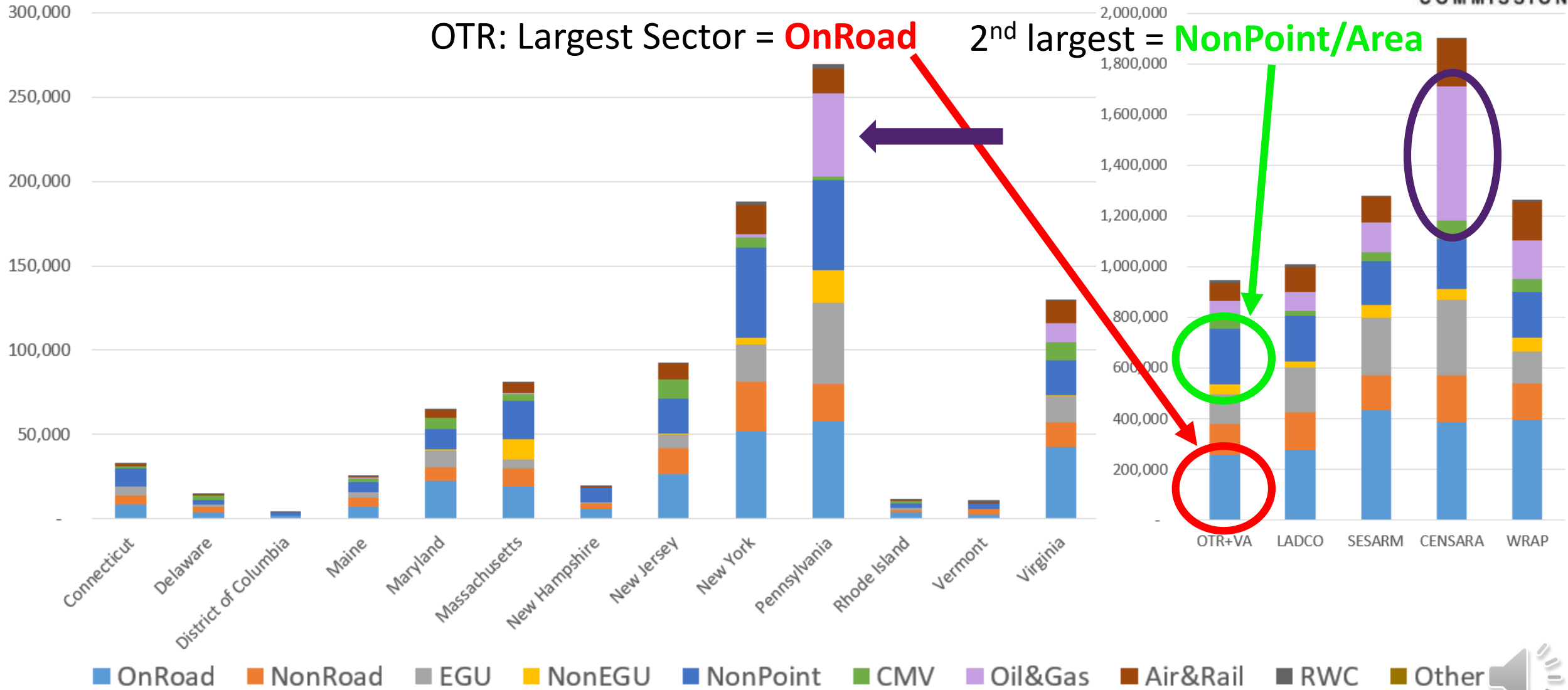


2016 Modeling Platform Update

- Enlarged 2016 modeling platform
 - Emission projections; 2023 & 2028
 - Collaborative effort between EPA and states
- CMAQ/BEIS/ERTAC main platform
 - CAMx capable
- April 1 – October 31 ozone season
 - Potential episodic modeling: 1- to 2-month period (TBD)
- Platform performance is good overall, still some over- and under-predictions at some urban coastal areas

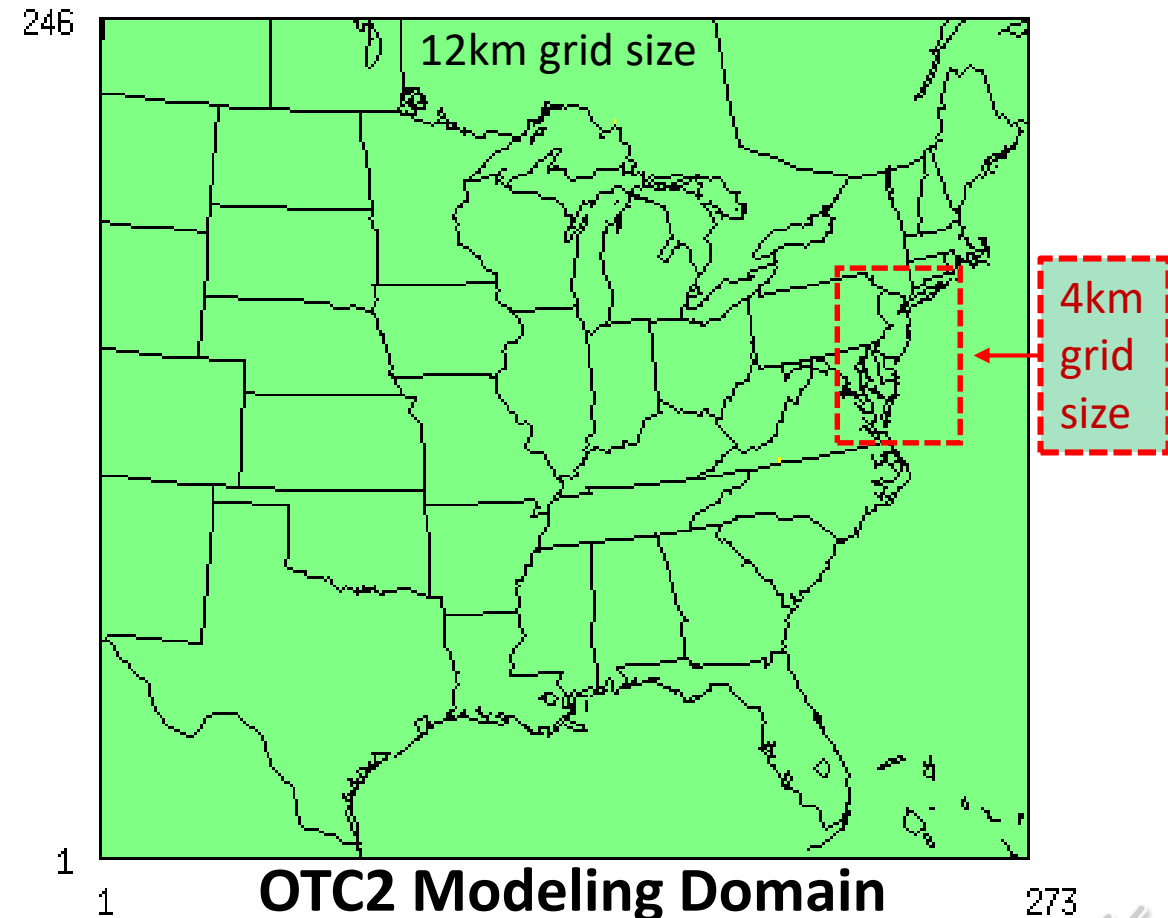


Projected 2023 (fi) NOx Emissions Inventories



2016 Modeling Scenarios

- Preliminary modeling completed performed for:
 - 2016
 - Base case
 - Biogenic sensitivity
 - IPM/ERTAC sensitivity
 - CMAQ vs CAMx
 - 2023 projected case
 - 2028 projected case
- Planned modeling:
 - 2016 4km nested grid
 - 2023 tagged emissions with CAMx
 - Mobile sources and peak energy day operations



2023 NOx Emission Tagging – In Process

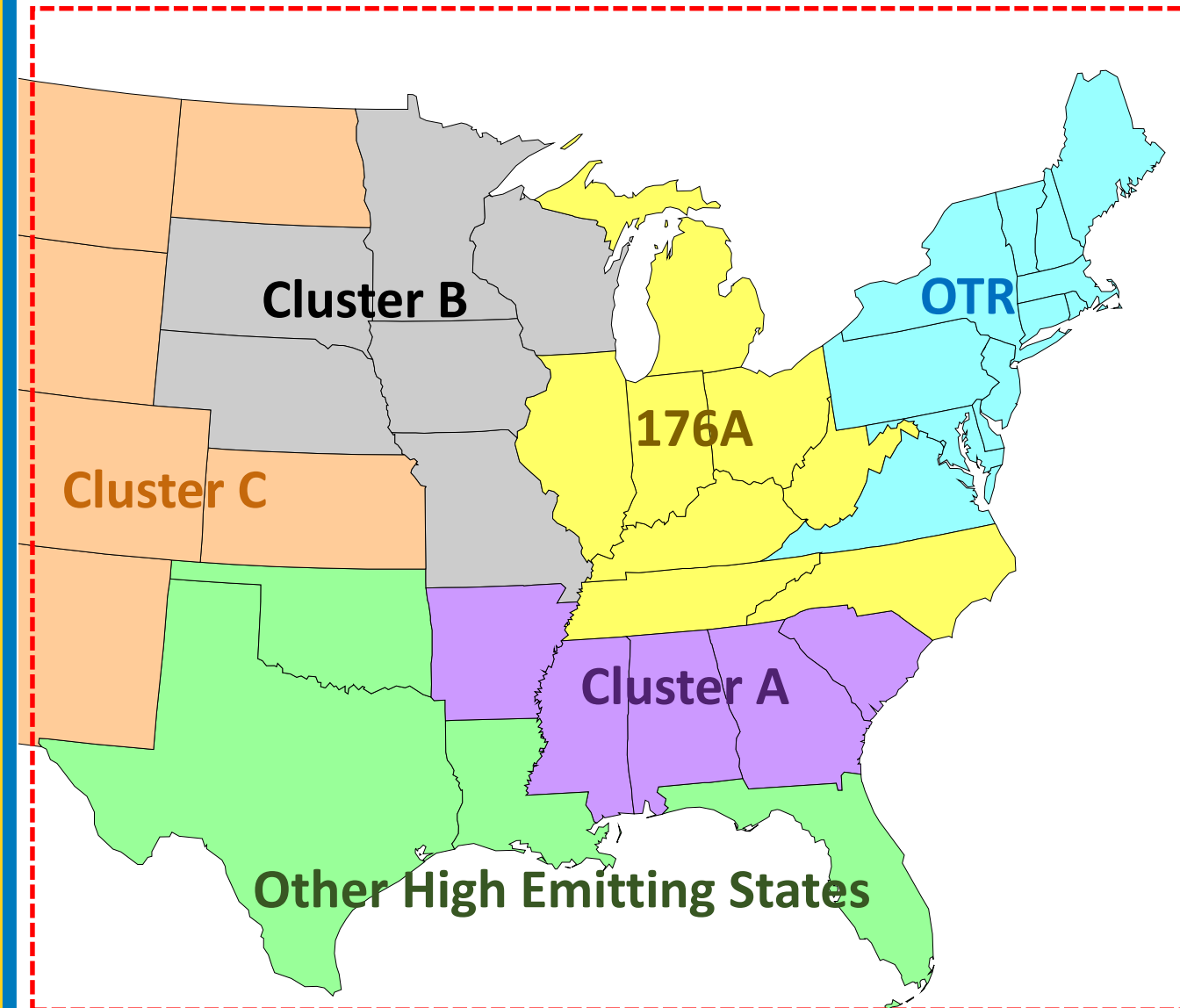
Tagging by state and by major emission sector

Sectors:

- Area-nonpoint
- EGU-ERTAC
- EGU-Peaking Unit
- NonEGU
- NonRoad-diesel
- NonRoad-nondiesel
- OnRoad-diesel
- OnRoad-nondiesel
- Oil & Gas-point
- Oil & Gas-nonpoint
- Commercial Marine Vehicles
- Rail
- Airport/Airplane up to 3000'

Broad Sectors:

- Agriculture
- Offshore CMV
- Offshore rigs
- Prescribed fire
- Biogenic
- Canada
- Mexico
- Boundary conditions
- Initial conditions
- Other



Key Points

1. All five ozone nonattainment areas will fail to attain the 2015 NAAQS (70ppb) by August 2021
 - Philadelphia and Greater Connecticut nonattainment areas are not eligible for a 1-year attainment extension
 - Baltimore and DC nonattainment areas are eligible for a 1-year extension
 - New York City nonattainment area's attainment date is not until August 2024
2. The New York City nonattainment area will fail to meet the July 2021 attainment date for the 2008 NAAQS (75ppb) and is not eligible for a 1-year extension
 - Greater Connecticut nonattainment area is currently meeting this NAAQS
3. Continued OTC modeling support is needed for at least three states and possibly up to six states
4. OTC has developed a state-of-the-art modeling platform based on the year 2016 for SIP and sensitivity modeling
5. The OTC Modeling Committee is tracking major regional field campaigns and the effects of COVID-19 on regional air quality



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