

AIR QUALITY PLANNING ACTIVITIES

Update on Air Quality/SIP Planning

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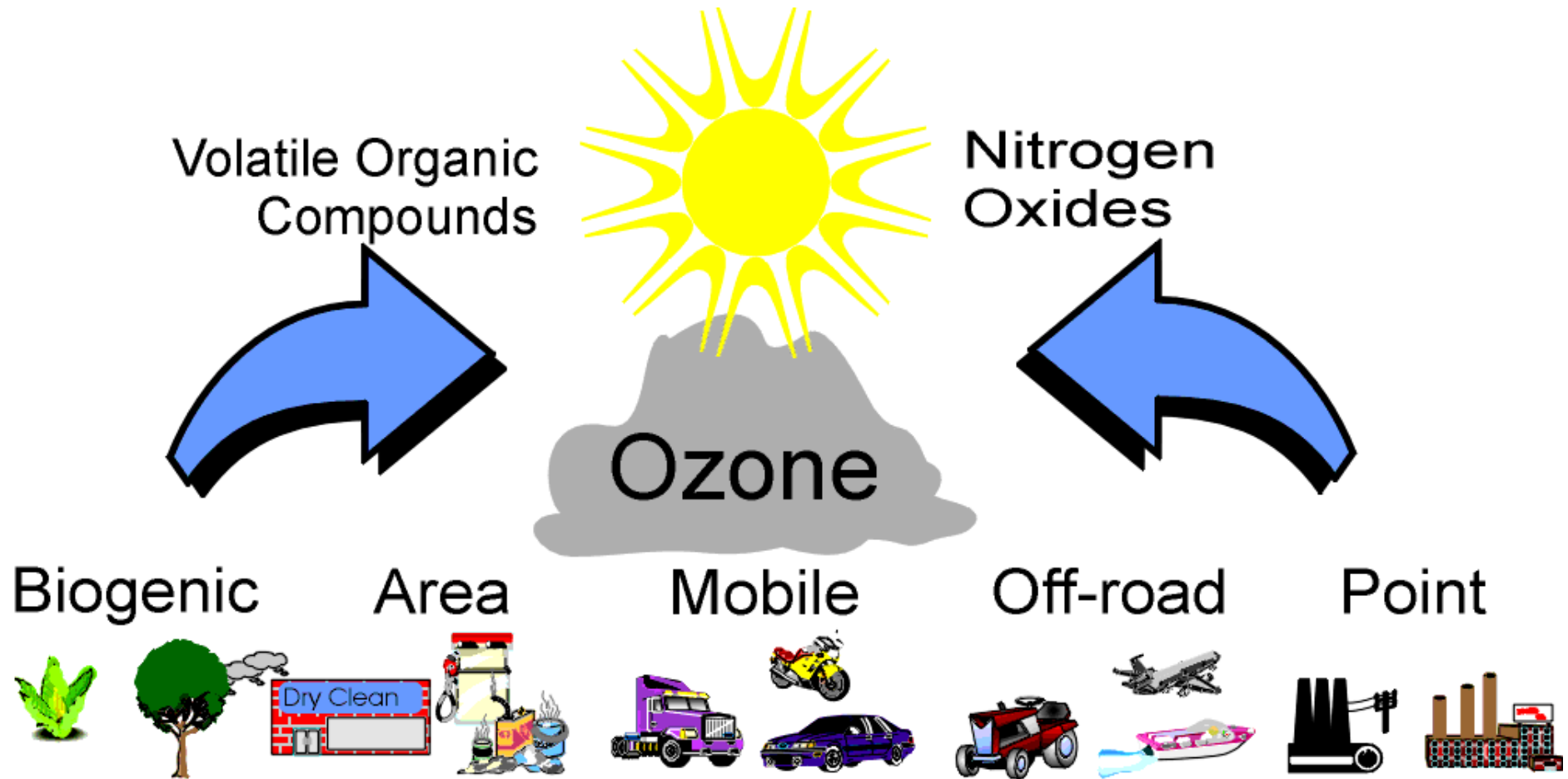


National Ambient Air Quality Standards (NAAQS)

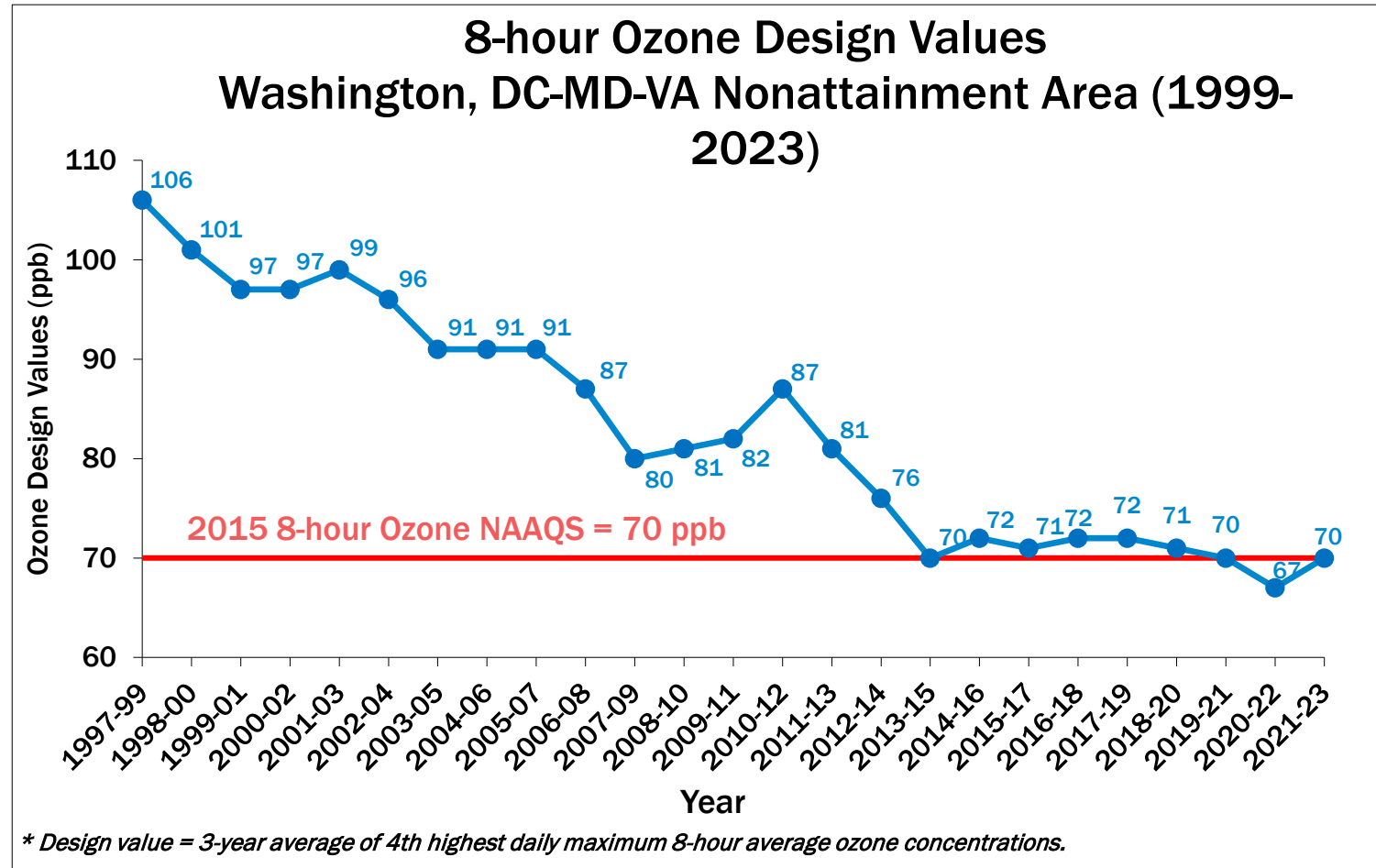
- The Clean Air Act (CAA), last amended in 1990, requires the Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for six principal air pollutants (“Criteria” air pollutants).
- Ozone (O₃), Particulate Matter (PM), Carbon Monoxide (CO), Nitrogen Dioxide (NO₂), Lead (Pb), and Sulfur Dioxide (SO₂).
- The metropolitan Washington region has achieved the standards for all criteria pollutants.
- Achieving the NAAQS is verified using regional monitoring data.
- Even after attaining the NAAQS, ongoing analyses and evaluations are required under the CAA.
- The pollutant of concern for the region is Ground Level Ozone.



How is Ground Level Ozone Formed?



Ozone Standards



Ozone Standard

- Current ozone NAAQS is the 2015 8-Hour Standard of 70 ppb.
- Promulgated in October 2015.
- Originally Washington region was classified as “marginal” nonattainment.
- The region failed to meet the NAAQS by the prescribed attainment year (2021).
- The Region was subsequently reclassified as “moderate” nonattainment and given a new NAAQS attainment date (2024).



National Capital Region
Transportation Planning Board

Metropolitan Washington Ozone Monitors

Washington, DC, MD, VA



Clean Data Determination

- On November 15, 2024, EPA published a notice of proposed rule-making in the Federal Register to grant the Washington region a “Clean Data Determination”.
 - Means the region’s air quality complies with the NAAQS.
 - Rule not finalized, expected in the first quarter of 2025.
- This is the first step to reclassifying the region as being in “attainment” of the 2015 Ozone NAAQS.
- A Redesignation Request and a Maintenance Plan need to be submitted to EPA and approved before the region can be redesignated as being in “attainment”.



What is a SIP? What is a Maintenance Plan?

- A State Implementation Plan (SIP) is a collection of regulations and documents used by a state, territory, or local air district to implement, maintain, and enforce the NAAQS and/or to fulfill other requirements of the Clean Air Act.
- A Maintenance SIP, or Maintenance Plan, outlines how an area will maintain its attainment of a federal air quality standard for 10 years into the future.
- A revision to the Maintenance Plan is required within 8 years of approval of the original Maintenance Plan to address maintenance for years 11-20 after an area is redesignated.
- A Maintenance Plan has a Contingency Element which contains actions that an area is required to take in the event that the area exceeds the attainment level of emissions.
- In an Ozone Maintenance Plan, precursor pollutants, Volatile Organic Compounds (VOC) and Nitrogen Oxides (NO_x), are evaluated instead of Ozone directly.



Elements of Redesignation Request and Maintenance Plan

Air Quality Data

- Monitor data to show compliance with the 2015 ozone standard (3-year average: 2021-2023).

Emissions Inventories (Point, Area, Non-road, On-road Mobile Sources)

- 2017 Base Year.
- 2022 Attainment Year.
- 2032 Intermediate Year.
- 2038 Final Maintenance Year (must be at least 10 years beyond EPA's official date of Redesignation for an area).



Elements of Redesignation Request and Maintenance Plan (Continued)

Motor Vehicle Emissions Budgets (MVEBs)

- Emissions ceilings for on-road mobile sources (2022, 2032, 2038).
- On-road (and non-road) mobile emissions are modeled using the EPA's MOtor Vehicle Emissions Simulator (MOVES).

Contingency Measures

- In case region exceeds the ozone standard in future, these measures would be implemented.



TPB and MWAQC

The TPB and the Metropolitan Washington Air Quality Committee (MWAQC) work together to develop the Maintenance Plan.

- I. TPB: Develops on-road mobile inventories for ozone season pollutants, VOC and NO_x, using the latest version of EPA's MOVES model, MOVES5.
- II. MWAQC: Develops inventories for other sources.
- III. TPB & MWAQC: Set MVEBs for use in future air quality conformity analyses of the region's Long-Range Transportation Plans and Transportation Improvement Programs.



Technical Tools and Methods

- Gen2/Ver. 2.4.6 Trip-Based Travel Demand Model.
- MOVES5, released in December 2024, which incorporates:
 - EPA's Light- and Medium-Duty Multi-Pollutant Rule with higher projected electric vehicle fractions and more stringent standards for carbon dioxide, particulate matter, non-methane organic gases and oxides of nitrogen.
 - EPA's Heavy-Duty Greenhouse Gas Emissions-Phase 3 Rule with higher projected EV fractions and updated energy consumption estimates for heavy-duty EVs.
 - New data on light-duty and heavy-duty brake wear emissions.
- Continue to closely monitor and assess impacts of future regulatory developments and related MOVES model versions.



Next Steps: TPB (Tentative Dates)

- Develop on-road mobile emissions inventories for analysis years 2017, 2022, 2032, and 2038 (Spring-Summer 2025).
- Coordinate with MWAQC to develop new MVEBs (Summer-Fall 2025).



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