# Intermountain West Clean Air Act Priorities

AAPCA 2025 Spring Meeting May 1, 2025



# **OZONE ISSUES**



#### **Big Picture for the Intermountain West (IMW) -Predicted Reductions in Ozone HAVE NOT Occurred**

- EPA predicted that federal and state control measures in place or underway by 2015 would result in attainment for most areas outside of California by 2025.
- Only counties in orange were predicted to have ozone pollution above 70 ppb in 2025.
- Common Question: Why hasn't attainment occurred and what can be done about it?



Map Source: Figure ES-2 from EPA's "Regulatory Impact Analysis of the Final Revisions to the National Ambient Air Quality Standards for Ground-Level Ozone", September 2015.

## **Intermountain West (IMW) Metropolitan Planning Organizations Meeting**



- Met in May 2024 What can we do to address our common ozone nonattainment challenges?
- Common challenges included:
  - Ozone Science
  - Wildfires
  - High Background Ozone
     Concentrations
  - International Transport



# **MAG's Role in Air Quality**

 Designated as the Lead Air Quality Planning Organization for Maricopa County and portions of Pinal County.





## **MAG Region**





#### **Maricopa Ozone Nonattainment Area**



- Nonattainment area is similar in size to the state of Connecticut.
- 25 urban, suburban and rural ozone monitors.
- The current ozone design value for the nonattainment area is 80 ppb.



# **Ozone Challenge – Decreasing Emissions, Increasing Concentrations**



Man-made Ozone-Season NOx Emissions in Maricopa County (lbs/day)

Man-made Ozone-Season VOC Emissions in Maricopa County (lbs/day) Ozone Concentration (ppm)

Ozone Concentration — Wildfires Excluded (ppm)



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#### **Similar Patterns Observed Across the Intermountain West**



Note: Annual statewide emissions from EPA's trend data website: <u>https://www.epa.gov/air-emissions-inventories/air-pollutant-emissions-trends-data</u>, "State Tier1 CAPS Trends (xlsx)". Emissions data does not include emissions from biogenic sources, prescribed fires, or wildfires.



#### **Uncontrollable Sources Dominate Local Ozone**

80%+ of ozone assigned to Arizona is NOT produced or controlled by Arizona residents, according to both FPA and MAG models.

#### MAG OZONE MODELING



#### EPA GOOD NEIGHBOR OZONE MODELING



Natural Sources and International Transport (Background Ozone)

Notes: EPA ozone modeling data obtained from: EPA-HQ-OAR-2021-0668-1130\_content.xlsx (included in rulemaking docket for EPA's June 5, 2023, Good Neighbor FIP, 88 FR 36654). EPA ozone contribution percentages reflect the median percentage of all monitoring stations in the Maricopa nonattainment area in 2023. MAG ozone contribution modeling was performed for 2017.



# EFFORTS UNDERWAY TO ADDRESS THE OZONE ISSUES



#### **Ozone Science - Summer 2025 GLOR Study**

- The Ground Level Ozone Research (GLOR) study was created to produce policy-relevant science to help explain the ozone problem in the MAG Region.
- Some important questions the GLOR study is designed to inform:
  - How are wildfires impacting ozone exceedances?
  - Which precursor emissions (NOx and/or VOC) are most important for ozone formation?
  - How are ozone exceedances impacted by local and transported precursor emissions and ozone?
  - Are emissions inventories accurate?
  - What are the impacts of increased heat and dryness?
- Throughout the IMW, air agencies are investing significant resources in studying ozone important studies have and will be conducted in Colorado, Nevada and Utah.
- EPA has also been involved in investigating the ozone science problem

   a predominant finding is that ozone models are consistently
   underpredicting ozone in recent years.





#### Wildfires – Paradigm Shift on Evaluation Needed



- "...the photochemical regime of our atmosphere is fundamentally shifting..."<sup>1</sup>
- Recent research estimates ozone impacts from wildfires at: 7.8 ppb (on average)<sup>2</sup> 5-25 ppb<sup>3</sup> 5-23 ppb<sup>4</sup>

Image from: "Wildfire Smoke Shrouds the U.S. West" (NASA Earth Observatory, August 2020) https://earthobservatory.nasa.gov/images/147151/wildfire-smoke-shrouds-the-us-west

- 1. "Soils, Wildfires, and Background Ozone: The Rise of a New Air Quality Photochemical Regime". AMS 2025, 105th Annual Meeting.
- 2. "Wildfire Impacts on O<sub>3</sub> in the Continental United States Using PM<sub>2.5</sub> and a Generalized Additive Model (2018-2023)". Lee and Jaffe, 2024.
- 3. "Reactive Nitrogen Partitioning Enhances the Contribution of Canadian Wildfire Plumes to US Ozone Air Quality". Lin et al., 2024.
- 4 "Source contribution to ozone pollution during June 2021 in Arizona: Insights from WRF-Chem tagged O<sub>3</sub> and CO". Guo et al., 2024.



#### **Relief From International Emissions Impacts**



Density of back-trajectories on high-ozone days (MDA8 > 70 ppb) during the 2000-2024 ozone seasons at North Phoenix, Humboldt Mountain, or Tonto National Monument.

• Policy request:

 No test that international emissions must be greater than domestic emissions.

- No test that international emissions must be higher/different on exceedance days.
  - No CAA distinction required between international manmade and natural emissions.



#### **Generation of Local Emission Reduction Credits**

- Approval of Maricopa County Rules 204 and 205 will allow for the identification of sufficient Emission Reduction Credits for the permitting of large new, or expanding, sources.
  - Allows the nonattainment to move towards attainment of the ozone standard while still allowing for economic growth.
  - Rule 204 allows for the use of ERCs from onsite equipment, warehouse truck electrification, and warehouse electrification of transport refrigeration units.
  - Rule 205 allows for the use of ERCs from mobile source captive vehicle fleets.

Industries with positive impacts on our environment



Semiconductor









#### March 2025 Meeting with EPA Administrator Lee Zeldin and Senator Mark Kelly





- Very positive meeting with EPA Administrator.
- Concerns on wildfires, international emissions, and emission reductions credits were heard and acknowledged.
- Recission of prior 179B guidance may allow many IMW areas to demonstrate attainment but for international emissions.



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