

**Final Updates to  
National Ambient Air Quality Standards  
(NAAQS)  
for Ozone**

Four Corners Air Quality Group  
November 9, 2015

# What we'll cover

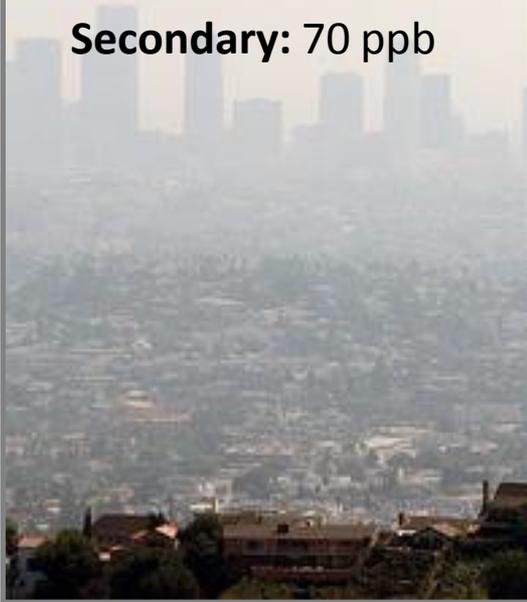


**2015 Final**

**Ozone Standards**

**Primary: 70 ppb**

**Secondary: 70 ppb**



- Updated standards
- New monitoring and data handling provisions
- Other implementation-related plans
  - Upcoming guidance/actions
  - Designations
  - Ozone transport



**The Clean Air Act** charges the EPA Administrator with setting primary standards that are *requisite* to protect public health with an adequate margin of safety.

In setting the primary standard, the Administrator:

- Examined the body of scientific evidence on ozone and health
  - Evidence expanded significantly since EPA last reviewed the ozone standards in 2008.
- Focused on new studies that have become available since 2008.
  - **New clinical studies** -- provide the most certain evidence of health effects in adults, clearly show ozone at 72 ppb can be harmful to healthy, exercising adults.
  - Clinical studies also show effects in some adults following exposures as low as 60 ppb; however, there is uncertainty that these effects are adverse.

## Primary Standard, cont.



- The Administrator also reviewed results of analyses of exposure to ozone and looked at how different levels of the standard would reduce risk.
  - Analyses take into account how people are exposed to ozone in their daily lives.
  - Focused on risks to children, particularly due to repeated exposures to ozone.
- Considered advice from the Clean Air Scientific Advisory Committee (CASAC) and public comment on the proposal.
  - CASAC concluded that the science supports a standard within a range of 70 ppb down to 60 ppb, noting that the decision about what standard provides the adequate margin of safety is a judgment left to the Administrator.

# Updated Standard – Primary (cont.)



- Based on the science, the Administrator has determined that the **2008 standard was not adequate to protect public health.**
- **Revised standard of 70 ppb:**
  - Is requisite to protect public health with an adequate margin of safety.
  - Is below the level shown to cause adverse health effects in the clinical studies.
  - Essentially eliminates exposures shown to cause adverse health effects, protecting 99.5 % of children from even single exposures to ozone at 70 ppb.
  - Substantially reduces exposures to levels lower than 70 ppb, reducing multiple exposures to 60 ppb by more than 60%.

# Secondary Standard



- EPA also is strengthening the secondary (welfare) standard to 70 ppb.
- New studies add to evidence that repeated exposure to ozone reduces growth and has other harmful effects on plants and trees. These types of effects have the potential to harm ecosystems.
- EPA determined that a standard that generally limits cumulative, seasonal exposures above a W126 index level of 17 parts per million-hours (ppm-hours) will provide requisite protection.
  - W126 = cumulative, seasonal index used to measure ozone damage to vegetation
- Analyses of data from air quality monitors show that a level of 70 ppb will limit cumulative, seasonal exposures above a W126 index of 17 ppm-hours, averaged over three years.

# Air Quality Index



AQI Category	Index Values	Breakpoints in the 2008 AQI (ppb, 8-hour average)	Updated Breakpoints (ppb, 8-hour average)
<b>Good</b>	0 - 50	0-59	0-54
<b>Moderate</b>	51 - 100	60-75	55-70
<b>Unhealthy for Sensitive Groups</b>	101 – 150	76-95	71-85
<b>Unhealthy</b>	151 – 200	96-115	86-105
<b>Very Unhealthy</b>	201 – 300	116-374	106-200
<b>Hazardous</b>	301 –500	375 to the Significant Harm Level*	201 to the Significant Harm Level*

*\*The Significant Harm Level for ozone is 600 ppb, two-hour average*

The background features a large, faded watermark of the Environmental Protection Agency (EPA) logo. The logo is circular and contains the text "UNITED STATES ENVIRONMENTAL PROTECTION AGENCY" around the perimeter. In the center is a stylized flower with a scalloped top and three leaves.

# Monitoring Updates

# Monitoring Updates



- Generally finalized as proposed:
  - Updates to the Photochemical Assessment Monitoring Stations (PAMS)
  - Extension of ozone monitoring season
  - Approved additional Federal Reference Method
  - New data handling provisions for determining compliance with the revised standards

# PAMS Network Design



- EPA is replacing the existing 20 year-old multi-site, enhanced ozone network design with an updated two-part network design.
- Simplifies implementation and provides improved network stability by delinking from designations process and relying on population size to control network size (42 sites).
- Requiring PAMS measurements to be collocated with existing NCore sites:
  - In areas with population of 1 million or more;
  - Irrespective of ozone NAAQS attainment status.
- Includes a waiver for areas with historically low ozone.



- Requires states with Moderate or above ozone non-attainment areas to develop and implement an EMP to support flexible approaches for collecting data to understand ozone issues in new and existing high ozone areas.
- Slight changes to the EMP requirement from proposal to address comments:
  - Only require EMPs in Moderate or above ozone non-attainment areas (focus resources on areas with highest ozone).

# PAMS Network, cont.



- Schedule:
  - PAMS monitoring at NCore sites will become effective by June 1, 2019.
  - EMPs submitted within two years of designations or by October 1, 2019, whichever is later.
- EPA intends to redistribute available PAMS funding to support the new requirements.

# Ozone Monitoring Seasons

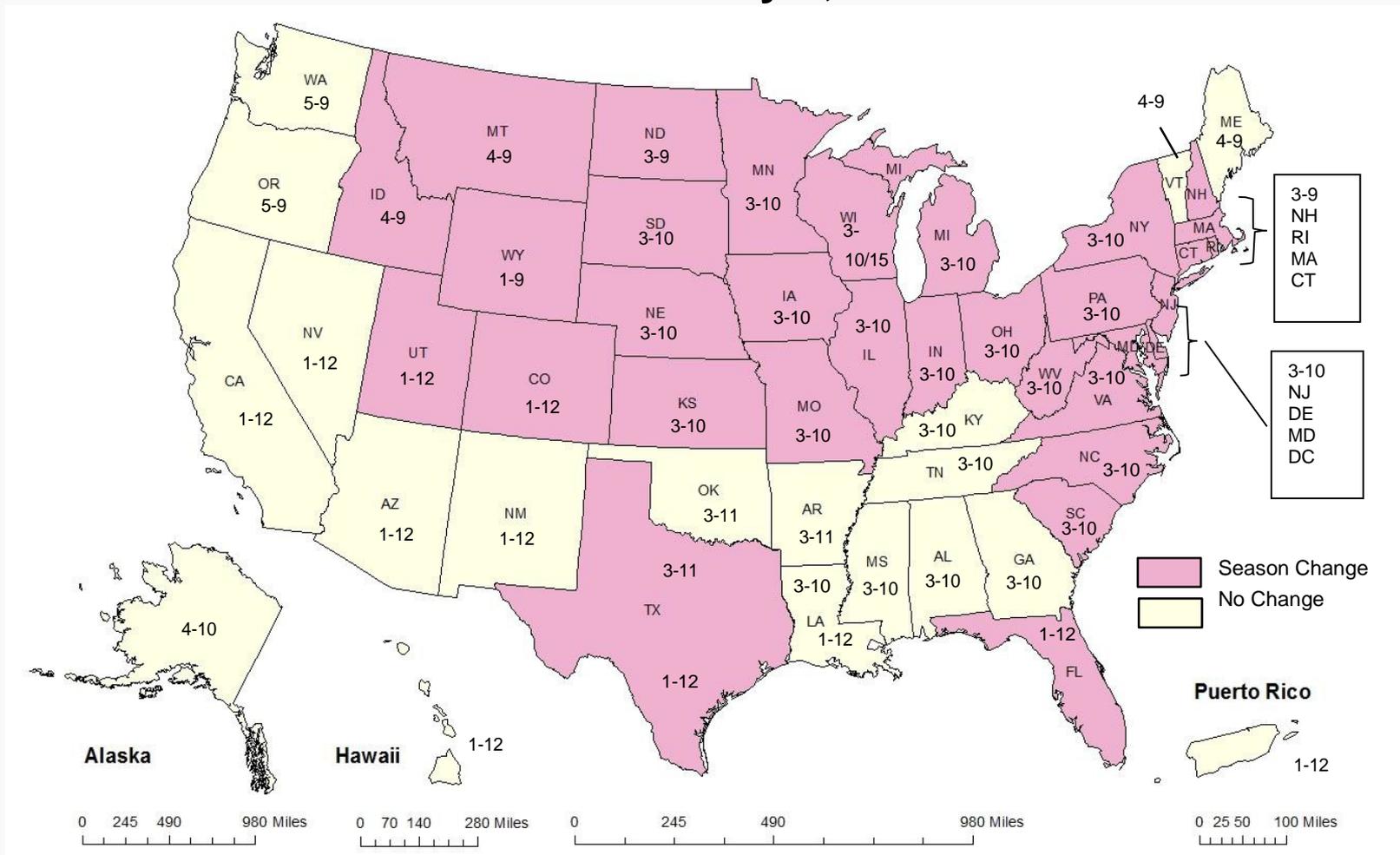


- Final rule extends ozone monitoring season for 32 states and D.C.
  - One month extension for 22 states and D.C.;
  - Additional extensions of two months to seven months for 10 states, including states where ozone can be elevated during the winter;
  - Year-round seasons for all NCore multi-pollutant sites.
- EPA Regional Administrators will still be allowed to approve changes to states' ozone monitoring seasons without rulemaking.
- Impact mitigated by the high proportion of monitors already being voluntarily operated on year-round basis.

# Ozone Monitoring Seasons



Effective January 1, 2017



# Federal Reference Method (FRM)



- Updated FRM for ozone includes an additional method that is based on advanced technology and monitoring methods.
- States are not required to replace their existing ozone monitors.
- Current FRM and Federal Equivalent (FEM) ozone monitors will continue to meet EPA requirements.

# Part 50, Appendix U



- New appendix addressing data handling provisions for determining compliance with the revised ozone NAAQS; finalized as proposed.
- Similar to Appendix P for the 2008 ozone NAAQS, except for the following elements:
  - Revisions to the procedures in Appendix P for **determining daily maximum 8-hour average concentrations**;
  - Addition of a **procedure for combining data when two or more monitoring instruments are operating at the same monitoring site**;
  - Addition of a procedure **allowing the Regional Administrator to approve “site combinations”** when monitoring sites are replaced or relocated;
  - Minor change to the **data substitution test** in Appendix P (used to determine a clear exceedance of the NAAQS in the presence of missing data).



**Implementation**

# Memo from Acting Assistant Administrator



- EPA will work state, tribal, local and federal agencies to implement the updated standards in a way that maximizes common sense, flexibility and cost-effectiveness, while following the requirements of the Clean Air Act.
- Memo issued with the revised standards, outlines the agency's plans for addressing issues related to:
  - Guidance available to agencies;
  - Ensuring major source permitting is effective and efficient;
  - Designating areas;
  - Background ozone;
  - Interstate ozone transport;
  - The challenges of reducing ozone in California;
  - Managing monitoring networks;
  - Emissions from wildland fires; and
  - Transportation planning

# Implementation-Related Rules & Guidance



- Current or draft guidance that applies to the revised NAAQS:
  - **Guidance on Infrastructure State Implementation Plan (SIP) Elements** under CAA Sections 110(a)(1) and 110(a)(2) – September 13, 2013 (<http://www.epa.gov/airquality/urbanair/sipstatus/infrastructure.html>)
  - **Draft Emissions Inventory Guidance for Implementation of Ozone [Particulate Matter] National Ambient Air Quality Standards (NAAQS) and Regional Haze Regulations** – April 2014 (<http://www3.epa.gov/ttn/chief/eidocs/eiguid/index.html>)
  - **Draft Modeling Guidance for Demonstrating Attainment of Air Quality Goals for Ozone, PM<sub>2.5</sub>, and Regional Haze** – December 2014 and **Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for Ozone, PM<sub>2.5</sub>, and Regional Haze** – April 2007 ([http://www.epa.gov/scram001/guidance\\_sip.htm](http://www.epa.gov/scram001/guidance_sip.htm))

# Implementation-Related Rules & Guidance, cont.



- Current rules that apply to the revised NAAQS:
  - **Revisions to the General Conformity Regulations** (75 FR 17254, April 5, 2010) and guidance (40 CFR part 93, subpart B and 40 CFR part 51, subpart W) (<http://www3.epa.gov/airquality/genconform/regs.html>)
  - **Transportation Conformity Rule** (77 FR 14979, March 14, 2012) and **Guidance for Transportation Conformity Implementation in Multi-Jurisdictional Nonattainment and Maintenance Areas** – February 2012 (40 CFR part 93, subpart A and 40 CFR part 51, subpart T) (<http://www3.epa.gov/otaq/stateresources/transconf/index.htm>)

# Upcoming Implementation-Related Rules/Guidance/Activities



- Area designations guidance (including rural transport areas)
- Nonattainment area classifications and attainment dates rule
- Updates to nonattainment area SIP requirements rule, including possible anti-backsliding provisions for 2008 NAAQS
- Nationwide interstate transport contribution assessment
- Updates to transportation conformity guidance
- White paper and workshop on background ozone issues
- PSD permitting:
  - Final update to Appendix W modeling guideline
  - Guidance on ozone SIL and MERPs
  - PSD offset guidance

# Area Designations



- Final area designations due Fall 2017 - based on 2014-2016 final DVs (120-day letters by June 2017).
  - Early-certified 2017 data may also be relevant to final designations.
  - We expect state designation recommendations to be based on 2013-2015 and preliminary 2016 data, including any exceptional event considerations.
  - Exceptional event demonstration submission deadlines:
    - October 1, 2016 for 2014-2015 events
    - May 31, 2017 for 2016 events
- Nonattainment area classification scheme
  - Percent-above-standard approach?
  - Voluntary reclassifications

# Rural Transport Areas



- **Clean Air Act section 182(h) defines a Rural Transport Area as:**
  - *“an ozone nonattainment area that does not include, and is not adjacent to any part of a Metropolitan Statistical Area or, where one exists, a Consolidated Metropolitan Statistical Area (as defined by the United States Bureau of the Census)”*; and
  - *An area where “the Administrator finds that sources of VOC (and, where the Administrator determines relevant, NO<sub>x</sub>) emissions within the area do not make a significant contribution to the ozone concentrations measured in the area or in other areas.”*
- Final 2008 Ozone NAAQS SIP Requirements Rule clarified that the CMSA portion is no longer a relevant restriction.
- A Rural Transport Area may be treated as satisfying the section 182 nonattainment area requirements if it makes the submissions required for Marginal areas.
  - Emissions statement rule and inventory, NSR program.

# Implementation Rules: Subpart 2

## Translation/Interpretation



- Would cover any necessary updates to the 2008 Ozone NAAQS State Implementation Plan Requirements Rule (O3 SRR).
  - Status of petitions for reconsideration and review.
- Update the SIP due dates for emissions inventories, RACT, attainment plans/demos, RFP plans, contingency measure plans, section 185 programs.
- Address ongoing implementation for 2008 NAAQS, including revoking the 2008 NAAQS and anti-backsliding provisions.

# Ozone from Background Sources



- Background ozone refers to ozone that forms from natural sources, such as wildfires or stratospheric intrusions, and from man-made pollution from sources outside the U.S.
- EPA is planning for further discussions with stakeholders on assessing areas for high background ozone and on applicable policies and tools.
- Relevant Clean Air Act provisions
  - Exceptional event exclusions
  - Area designations and rural transport areas
  - Section 179B international emissions



- Grandfathering provision: Permit can be issued under terms of compliance with the 2008 ozone NAAQS if:
  - A. the permit application was deemed complete by October 1, 2015, or
  - B. the draft permit is undergoing public comment before the effective date of NAAQS.
- Compliance demonstration tools (MERPs, SILs)
- PSD offsets
- Update to 40 CFR Appendix W to Part 51 (Guideline on Air Quality Models)

# Ozone Transport – 2008 NAAQS



- Many states still do not have approved transport SIPs for the 2008 Ozone NAAQS.
- With the Supreme Court ruling and subsequent Circuit Court rulings on CSAPR, EPA plans to move forward on transport using the CSAPR framework, updated for the 2008 NAAQS:
  - EPA is planning on a proposed “backstop” FIP rule for states in the East in November 2015. This FIP will focus on near-term EGU measures that can be in place by 2017 (for Moderate area deadline).
  - For many areas, these measures may not be all that is needed to address transport. The EPA plans to provide additional information for the 2015 ozone NAAQS.
  - EPA will work with states that want to develop SIPs in lieu of these proposed FIPs.

# Ozone Transport – 2008 NAAQS, cont.



- To support this rule, a NODA for the 2011 and 2017 emissions data along with the air quality contribution modeling to be used in the proposal was published on July 23, 2015. Comment period closed **October 23, 2015**.
  - The intent of the NODA was to give states more time to comment on the inventory and modeling data and to allow EPA more time to address those comments before a final rulemaking.
- EPA recognizes this proposal will focus on the eastern U.S. and is working with western regions and states to determine SIP requirements for states outside the rulemaking.

# Ozone Transport – 2015 NAAQS



- With the CSAPR framework established and in place, we can get a jump on transport issues for the 2015 ozone NAAQS.
- Transport SIPs are a state obligation, however, EPA recognizes that it can assist states with some of the technical analyses related to transport.
- EPA is planning to do source apportionment modeling to provide contribution information for the 2015 NAAQS to help states begin developing their 110 SIPs.
  - We intend to make this information available in Fall 2016.

# Appendix



# Designations and Implementation: Tentative Timeline



<i>Designation Schedule</i>		
	Schedule	Tentative Date
State and Tribe Recommendations	Within 1 year after NAAQS promulgation	October 1, 2016
EPA responds to state and tribal recommendations		June 1, 2017
Final Designation	Within 2 years after NAAQS promulgation (Administrator has discretion to extend the deadline by one year to collect sufficient information.)	October 1, 2017 Effective date may vary. (Air quality data years: 2014 –2016)
<i>Implementation Schedule</i>		
Infrastructure SIP	Within 3 years after NAAQS promulgation	October 2018
Attainment Plans Due	Within 36 - 48 months after designations depending on classification	October 2020-2021

<i>Attainment Schedule by Classification</i>	
Classification	Schedule*
Marginal	3 years to attain
Moderate	6 years to attain
Serious	9 years to attain
Severe	15 to 17 years to attain
Extreme	20 years to attain

\*Areas must attain as expeditiously as practical, but not later than the schedule in the table. Two one-year extensions are available in certain circumstances based on air quality.