NAAQS Update

Amy Marshall
March 22, 2016

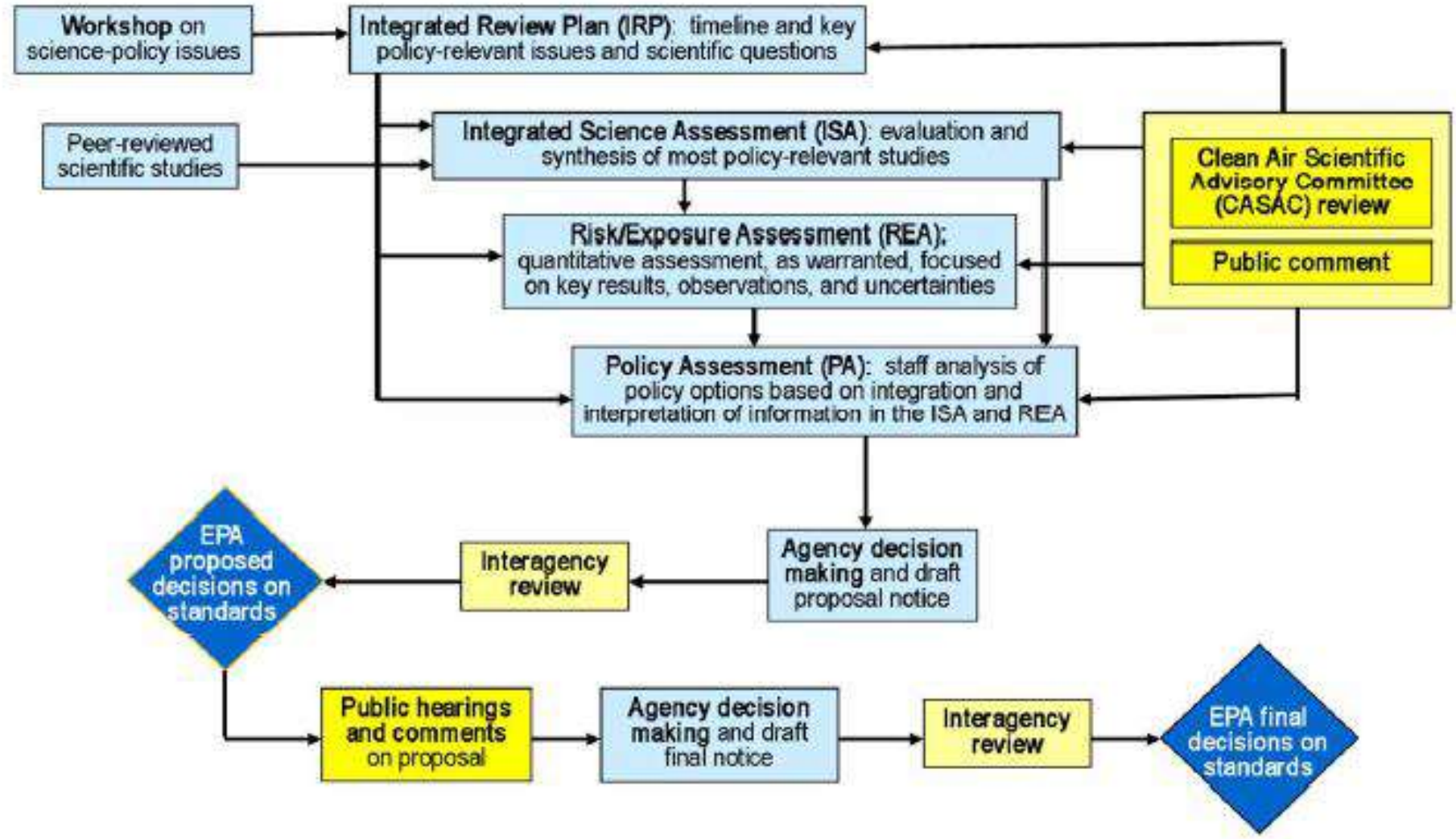
Presentation Topics

- Current NAAQS Review Schedule and Status
- Ozone NAAQS Update
- SO_2 1-hr NAAQS Update
- NAAQS Modeling Update
- Other NAAQS related news/activities

AECOM

AECOM

NAAQS Review Process



AECOM

Current NAAQS Review Status

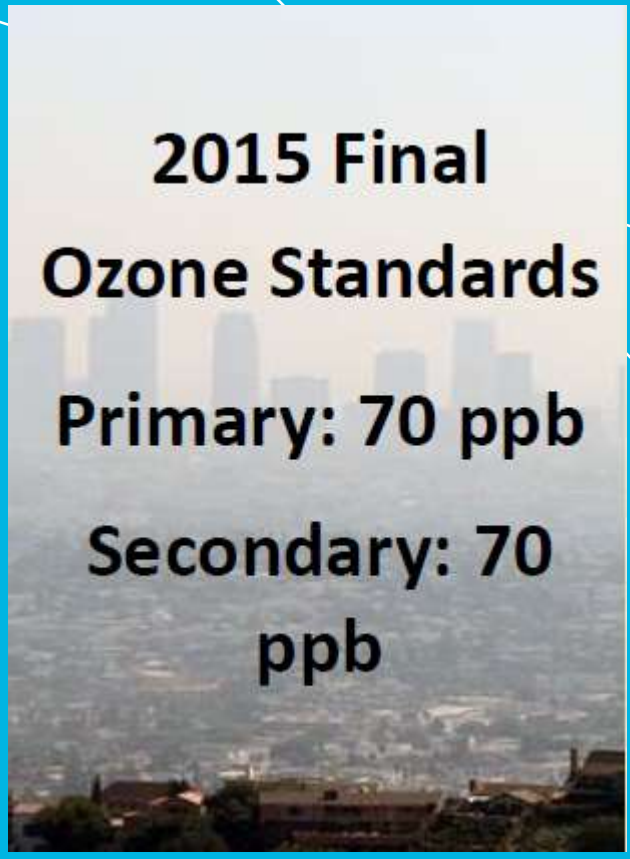
	Ozone	Lead	Primary NO_2	Primary SO_2	Secondary NO_2 and SO_2	PM	CO
Last Review Completed (final rule signed)	Mar 2008	Oct 2008	Jan 2010	Jun 2010	Mar 2012	Dec 2012	Aug 2011
Recent or Upcoming Major Milestone(s)[1]	Oct 1, 2015 [2] Final rule signed	January 5, 2015 Proposed rule published in FR April 6, 2015 Comment period closed	June 2-3, 2015 CASAC meeting to discuss 2nd draft ISA and REA Planning document August 13, 2015 CASAC teleconference to discuss letters on 2nd draft ISA and REA Planning Document	Fall 2015 1st draft ISA	Fall 2015 Draft IRP	Dec 2015 Draft IRP	TBD[3]

[As of Fall 2015]

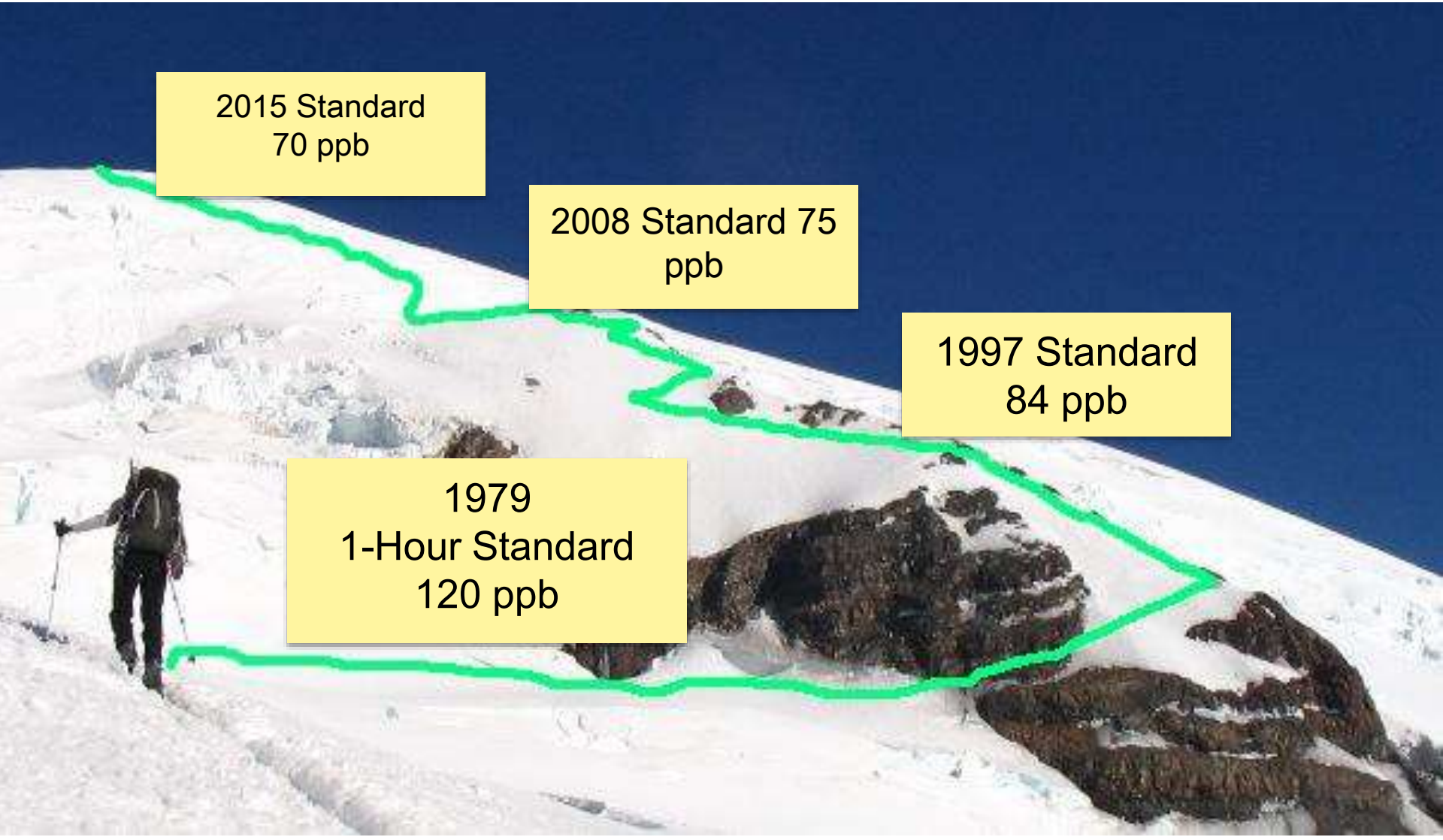
Next Review of PM NAAQS

- EPA has initiated next periodic review of PM NAAQS
  - Updating Integrated Science Assessment (December 2009)
  - Public workshop held February 9 – 11, 2015 in RTP
- EPA will develop a draft Integrated Review Plan (IRP)
  - Outline schedule, process and approaches for evaluating relevant scientific information
  - Address key policy-relevant issues
  - CASAC reviewed draft IRP in 2015
- Final IRP will outline process and schedule for conducting the PM NAAQS review
- March 10, 2015: EPA proposed rule for SIP requirements that would apply to $PM_{2.5}$ nonattainment areas

The 2015 Ozone Standard

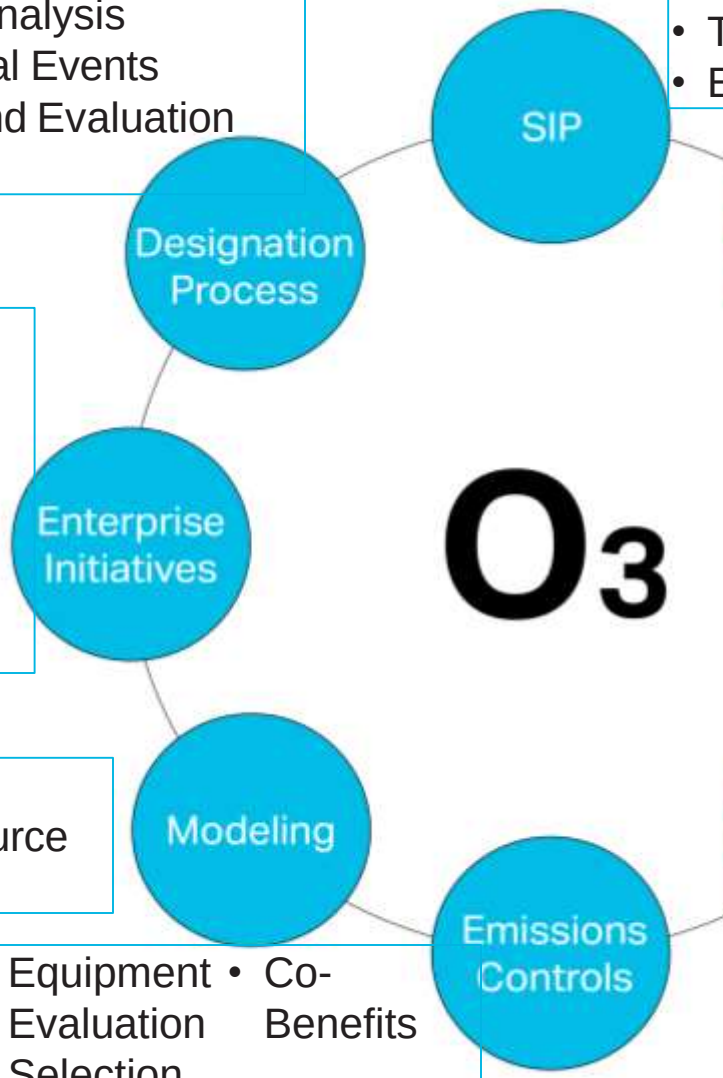


History of the Ozone National Ambient Air Quality Standards (NAAQS)



AECOM

Lower Ozone Standard: A Chain Reaction



- General Conformity
- Transportation Conformity
- Emissions Limits\Trading

- Data Analysis
- Emissions Assessment
- Alternative Control Strategies

- CSAPR
- Rural Transport Areas
- Emissions Credits\ Trading

- NNSR
- LAER
- Offsets
- Alternative Site
- Certification

- Equipment Evaluation
- Selection Process
- Co-Benefits

- MERPs
- Single Source
- Regional

- Strategy Development
- Transportation Demand Management
- Sustainability Programs

- 5-Factor Analysis
- Exceptional Events
- Background Evaluation
- Monitoring

Area Designations

Oct 1, 2016

States and tribes send area designation recommendations to EPA (based on 2013-2015 monitoring data)

Jun 1, 2017

EPA responds to state and tribal recommendations; Gives 120 days for public comments before issuing final designations

Oct 1, 2017

Designations are finalized (based on 2014-2016 monitoring data)

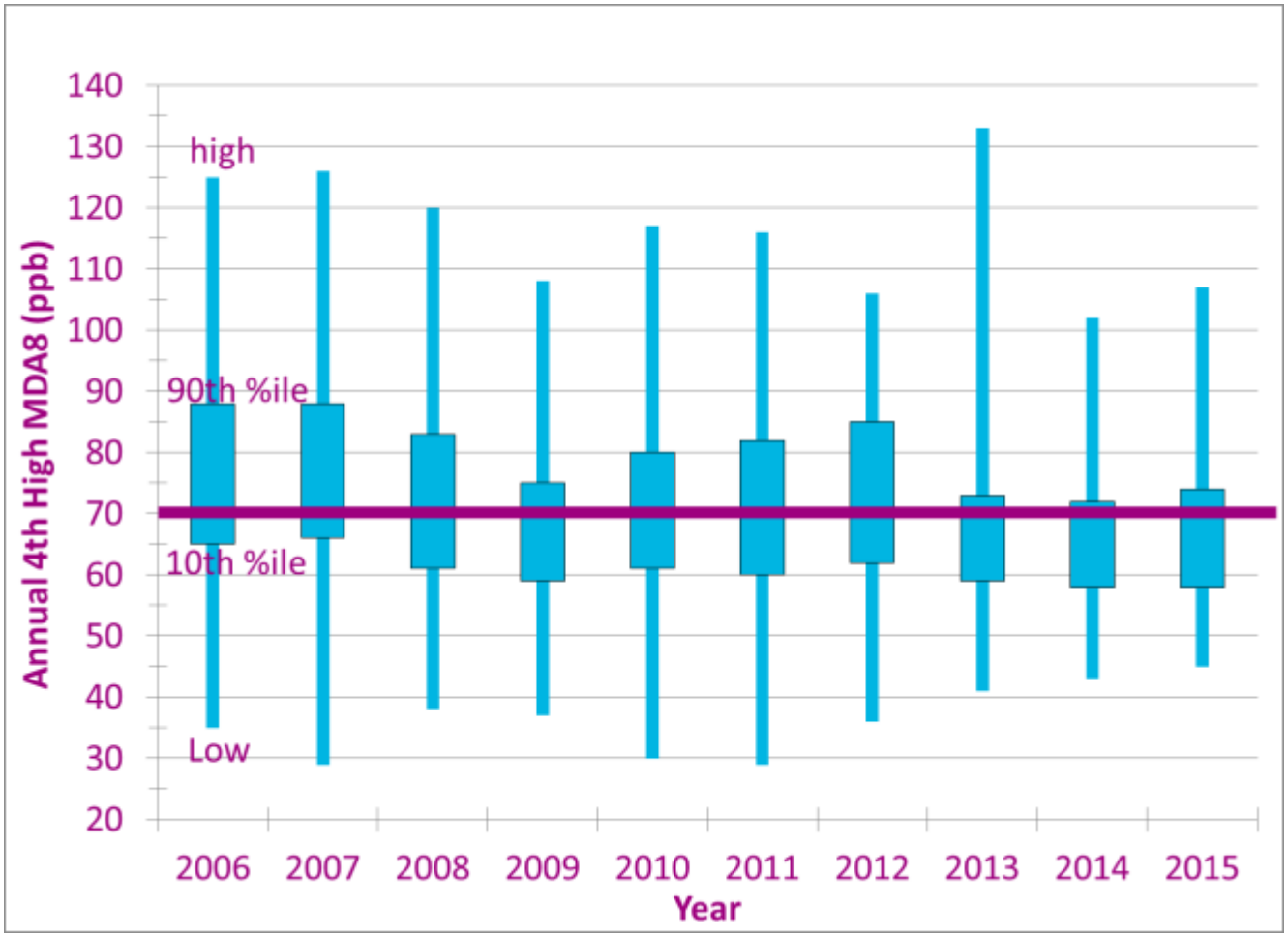
Implementation Schedule		
Infrastructure SIP	Within 3 years after NAAQS promulgation	October 2018
Attainment Plans Due	Within 36 - 48 months after designations depending on classification	October 2020-2021

Anticipated Nonattainment Classifications and Attainment Deadlines

Classification	Design Value Range (ppb)	Attainment Deadline
Marginal	71 – 81	October 1, 2020
Moderate	81 – 93	October 1, 2023
Serious	93 – 105	October 1, 2026

Most nonattainment areas outside California will be classified as “Marginal”

Ozone Trends



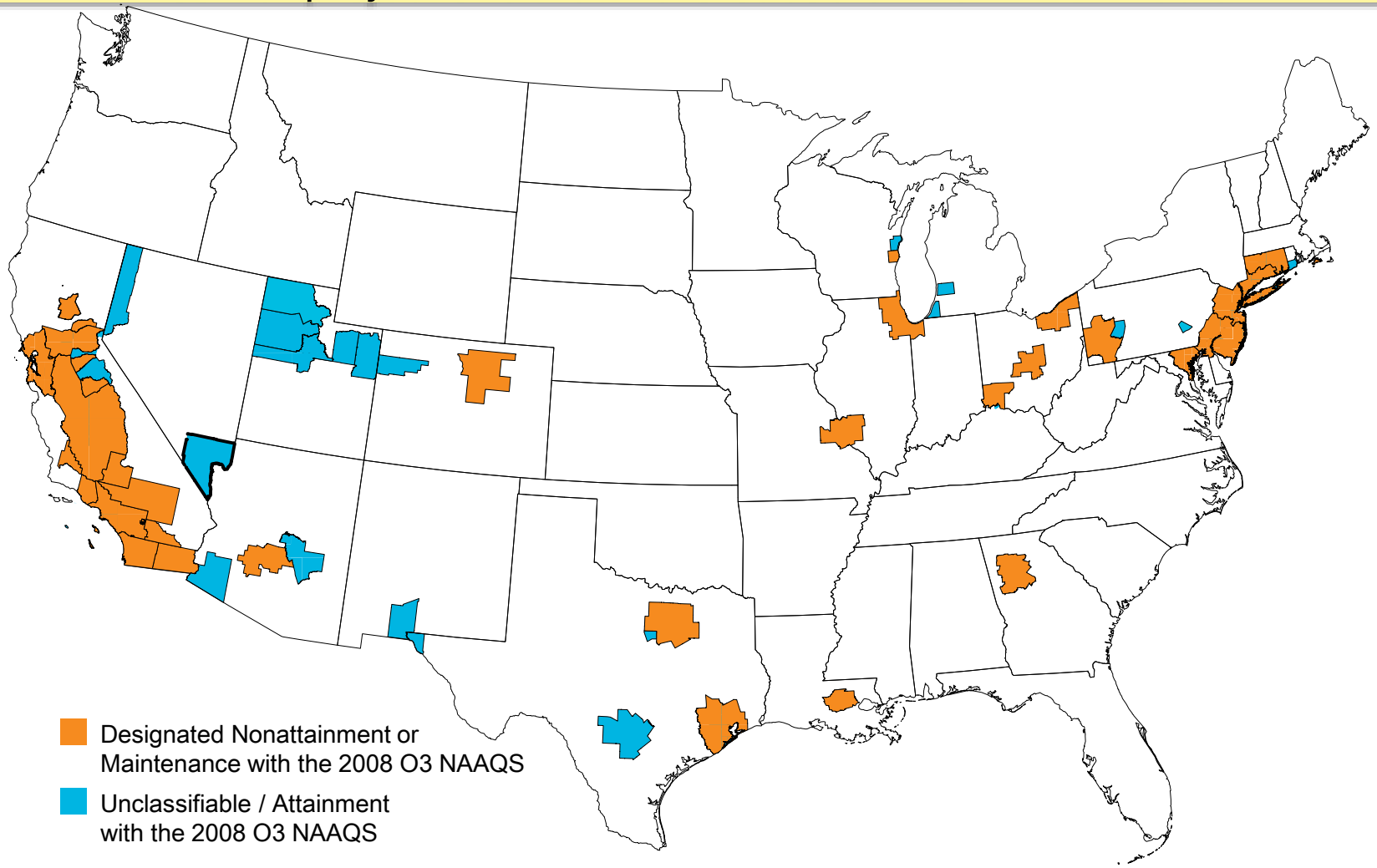
Historically low ozone levels in 2014 and 2015 will result in much fewer nonattainment areas than previously projected using monitoring data from 2010-2012 or 2011-2013

Anticipated Nonattainment Based on 2013-2015 Monitoring Data

WARNING: 2013-2015 data are incomplete and uncertified

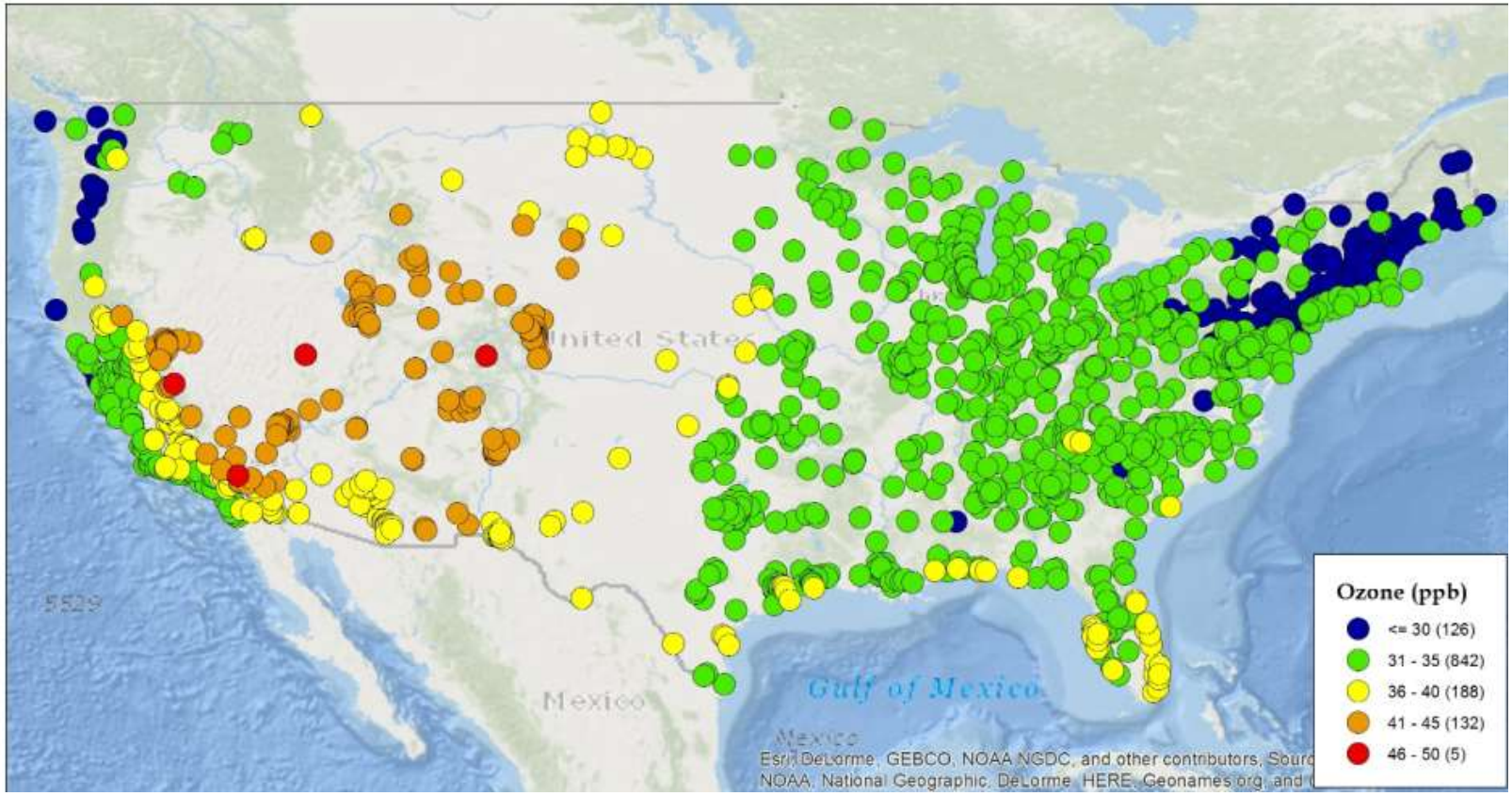
AECOM

Fewer new nonattainment areas are anticipated compared with earlier projections that were based on 2012-2014 data



Background ozone concentrations

– Background concentrations of ozone a big issue in some areas. EPA issued a white paper in December 2015 and had a workshop with regulators in Feb to discuss the issue.



Exceptional Events

- EPA took comment through Feb. 3 on its proposal for "streamlining" the rule to ease the requirements for obtaining a regulatory exemption under the exceptional events policy. To date, the exceptional events policy has been unevenly implemented by EPA's regional offices, and states have experienced long delays in processing of their requests to exclude air monitoring data gathered during such events from NAAQS compliance assessments.
- The agency has touted the exceptional events policy as one way for western states with high levels of background ozone to comply.
- Expect final later this year.

Legislative Activity

– The Ozone Standards Implementation Act of 2016 (H.R. 4775) combines elements of several previous bills. It delays implementation of the 2015 ozone standards, sets a ten-year interval for NAAQS reviews, and requires EPA to issue guidance concurrent with new standards. It also leaves the 2008 permitting requirements in effect until nonattainment areas for the new standards are designated.

Litigation

- Legal challenges to the Oct. 1 decision to revise the standard down to 70 ppb are pending in the U.S. Court of Appeals for the District of Columbia Circuit. Environmentalists are intervening on EPA's behalf to defend the agency against claims from various industry groups and some states that the agency lacked scientific justification to make the standard stricter -- but advocates are also suing and claiming that the NAAQS should be even stricter.
- Separate suit on 2015 implementation rule that vacated the 1997 standard and set out SIP requirements for 2008 standard is ongoing.

SO_2 NAAQS Update




AECOM

2010 SO_2 NAAQS Implementation

- Initial non-attainment area designations for 1-Hour SO_2 NAAQS based on violating monitors (Round 1)
  - 29 areas in 16 states designated in July 2013
- Rest of country has not been designated. Area status "deferred." Undesignated areas will be designated in three future rounds from 2016-2020
  - Round 2 – Updated designations for areas with monitor exceedances and high emitting power plants (2016)
  - Round 3 – Modeling based designations (2017)
  - Round 4 – Monitoring-based designations (2020)

AECOM

Recent Actions

- On March 20, EPA informed 28 states that certain areas within their states will be addressed in the next round of designations for 1-hr SO_2. Air quality in parts of these states may be impacted by large sources of SO_2 emissions. In addition, air quality monitors in some of these states are measuring preliminary violations of the standard. EPA is also informing seven tribes that they may be impacted by nearby sources of SO_2 emissions. The EPA intends to designate these areas as either unclassifiable/attainment, nonattainment, or unclassifiable by July 2, 2016.
- https://www3.epa.gov/airquality/sulfurdioxide/designations/stater2.html

AECOM

SO_2 Data Requirements Rule

- Final rule was signed on **August 10, 2015**. Published in the *Federal Register* (80 FR 51052) on **August 21, 2015**
- Covers sources with >2000 tpy SO_2 emissions or groups of sources.
- Under the DRR, air agencies will provide additional air quality data characterizing 1-hour peak concentrations and source-oriented impacts
- Draft technical assistance documents (TAD) provide guidance on modeling/monitoring
- More Information available at: *http://www.epa.gov/oaqps001/sulfurdioxide/implement.html*

DRR Compliance Timelines

- **January 15, 2016:** Air agencies identified sources exceeding threshold and other sources for which air quality will be characterized.
- **July 1, 2016:** For identified sources the air agency will specify which approach (monitoring, modeling or establishing an enforceable limit) it plans to use to characterize air quality.
  - Air agency also accordingly submits a monitoring plan, modeling protocols, or descriptions of planned limits on emissions of 2,000 tpy.

DRR Compliance Timelines (Continued)

- **January 2017:** Multiple deadlines in **January 2017**
  - New monitoring sites must be operational by **January 1, 2017**
  - Modeling analyses must be submitted to EPA by **January 13, 2017**
  - Documentation of federally enforceable emission limits and compliance must be submitted to EPA by **January 13, 2017**
- **December 31, 2017:** EPA completes Round 3 area designations based on modeling data
- **December 31, 2020:** EPA completes Round 4 designations for all remaining areas

AECOM

Key Decisions for Sources Subject to DRR

Notify state of selected strategy before **July 1, 2016**

- Take federally enforceable limits < 2,000 tpy by **January 13, 2017** to avoid coverage.
- If You Select Monitoring
  - Submit a monitoring plan before **July 1, 2016**
  - Start monitoring, collecting validated data by **January 1, 2017**
  - Monitor continuously for at least 3 years
- If You Select Modeling
  - Submit a modeling protocol before **July 1, 2016**
  - Demonstrate compliance with no permit modifications
    - Model with 3 years of actual emissions (CEM or well-documented estimates), actual stack height, and meteorological data
    - Submit modeling compliance demonstration by **January 13, 2017**.
  - Demonstrate compliance with lower permit limits in place by **January 13, 2017**.

Other Recent Actions

– 11 states failed to craft SIPs outlining the air pollution control measures they will enact to cut SO_2 emissions and attain the NAAQS. In a final rule released March 10 ahead of its publication in the *Federal Register*, EPA says the states that have failed to submit SIPs for the 2010 1-hour SO_2 NAAQS are Arizona, Iowa, Kentucky, Louisiana, Michigan, Montana, New Hampshire, Ohio, Pennsylvania, Tennessee and West Virginia. These states must submit a SIP or be subject to a FIP.

Modeling Update

AECOM

Overview of EPA Proposed Changes to Appendix W

- Proposed Rulemaking, "Revision to the Guideline on Air Quality Models", **July 29, 2015**
  - Proposes updates to current EPA-preferred models to address input and science issues
  - Incorporates new analytical techniques to address ozone and secondary $PM_{2.5}$
  - Updates for conducting individual source and cumulative impact analysis for NAAQS pollutants

Latest on Status of EPA Modeling Work

- Appendix W changes will likely be promulgated in the June-July 2016 time frame.
- "MERP" guidance/framework will be released with the Appendix W updates.
- SIL guidance for ozone and PM2.5 April-May 2016
- PSD for PM2.5: precursors are SO_2 and NO_x only. For NAA, also VOCs and ammonia (photochemical modeling).
- With February Model Clearinghouse memo, there is a path to get approval for the ADJ_U* option. The LOWWIND3 option in AERMOD is still not a sure thing.

New Requirements for Ozone Modeling with Permitting

- There is no EPA-approved single-source ozone model
- In the past, New Source Review permit applicants have generally not addressed project impacts on ozone, or have used a screening approach at most
- In 2012, the Sierra Club petitioned EPA to require permit applicants to specifically address impacts of new projects on ozone concentrations
- EPA has been working hard on developing such tools, and has advanced proposed options for the latest modeling guidance (July 29, 2015 proposed rule)
- Tightening of the NAAQS has provided further complications

EPA Proposed Approaches

- If new project emissions of NOx or VOCs are less than a threshold called the Model Emission Rate for Precursors (“MERP”), then no modeling demonstration is needed
- The MERPs for ozone precursors have not yet been defined
- For projects with emission rates above the MERPs, EPA has mentioned two levels of modeling approaches:
  - Relatively simple models that are “reduced forms” of more complex photochemical grid models – still not defined, but expected to be used in most situations
  - Full photochemical grid models – not expected to be required for most situations, but somewhat desirable because of lower ozone predictions and a model with more complete science

Ozone Modeling Recommendations

- Tier 1: Until MERPs are established, use published literature to determine MERPs (e.g., Baker et al., 2015 in Atmospheric Pollution Research)
- Tier 2: modeling with “reduced form” model - consider OZIPR – “Ozone Isopleth Plotting Program” or SCICHEM, a puff model with chemistry
- Tier 3: modeling with a photochemical grid model such as CMAQ or CAMx
  - The same type of model used to assess control strategies for SIPs

Anticipated EPA Policy for Single Source Ozone Modeling

- Significant Impact Levels (SILs) will be defined for ozone and $PM_{2.5}$ in April-May 2016.
  - Defining SILs is a significant action, according to Office of Management and Budget
- Appendix W changes will likely be promulgated in June-July 2016.
  - MERP guidance will be released with the Appendix W updates, likely without any provision for comment.
  - Expected that the comment period will only be 30 days to enable a final action shortly after the Appendix W updates are released.
- Expected Information Release will include:
  - a policy summary document,
  - technical support document,
  - a legal support document, and
  - webinars for stakeholders.

Other NAAQS-Related Activity




Regional Haze Update

- Revisions to Regional Haze Rule are at OMB for review. Proposed change to next SIP submittal date from 2018 to 2021.
- Texas and electric utility industry groups have filed suit against EPA opposing the agency's federal plan for curbing regional haze in national parks and wilderness areas in Texas and Oklahoma, which imposes first-time emissions controls on several Texas power plants.
- CSAPR update tomorrow

Questions?

Amy.Marshall@AECOM.com

919-461-1251

March 22, 2016

AECOM