

NAAQS Update

**CIBO Environment Committee
Meeting
June 2, 2015**

Presentation Overview

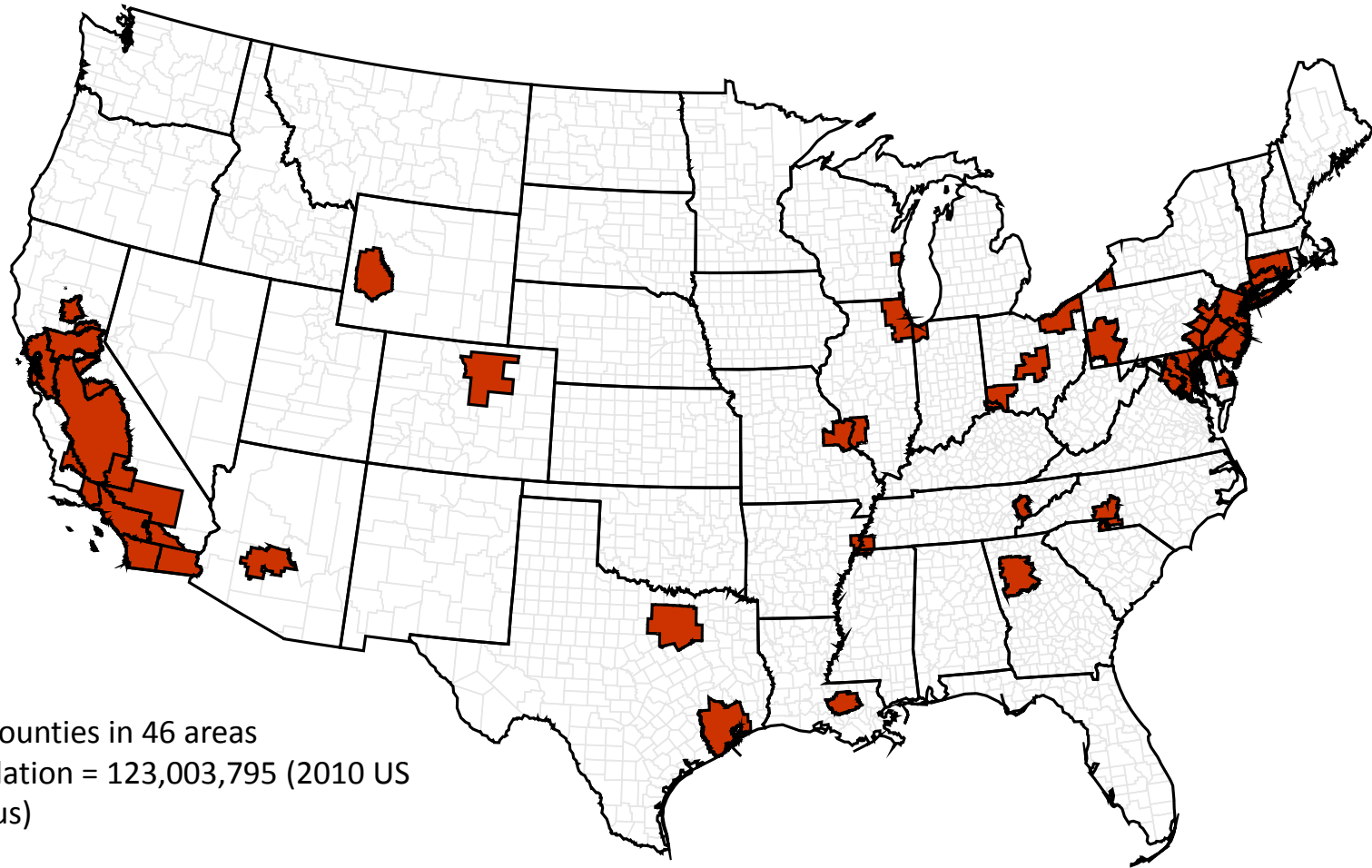
- 2008 and 2015 Ozone NAAQS Update
- 2012 PM_{2.5} NAAQS Implementation Proposal
- Implementation of the 2010 SO₂ NAAQS
- Planned “Exceptional Events” Rulemaking
- Final SSM SIP Call Rule
- NAAQS Modeling & Related Rulemaking Update
- Other NAAQS-related Work Underway with EPA

2008 Ozone NAAQS

- Revised primary 8-hour Ozone NAAQS in 2008 (75 ppb)
- Final 2008 Ozone NAAQS Classifications Rule published May 21, 2012 (77 FR 30160)
- Established air quality thresholds for each ozone nonattainment area classification, attainment deadlines and revocation of the 1997 Ozone standards for transportation conformity
 - Area designations for 2008 Ozone NAAQS effective July 20, 2012. 46 nonattainment areas, 1 unclassifiable area as follows: 36 Marginal; 3 Moderate; 2 Serious; 3 Severe; 2 Extreme

Current Designated Ozone Nonattainment Areas

As of 12/05/2013; Based on data accessed from
<http://www.epa.gov/airquality/greenbook/index.html> on 6/2/2013



227 counties in 46 areas
Population = 123,003,795 (2010 US
Census)

7 percent of US counties
39 percent of US population

Final 2008 Ozone NAAQS Implementation Rule

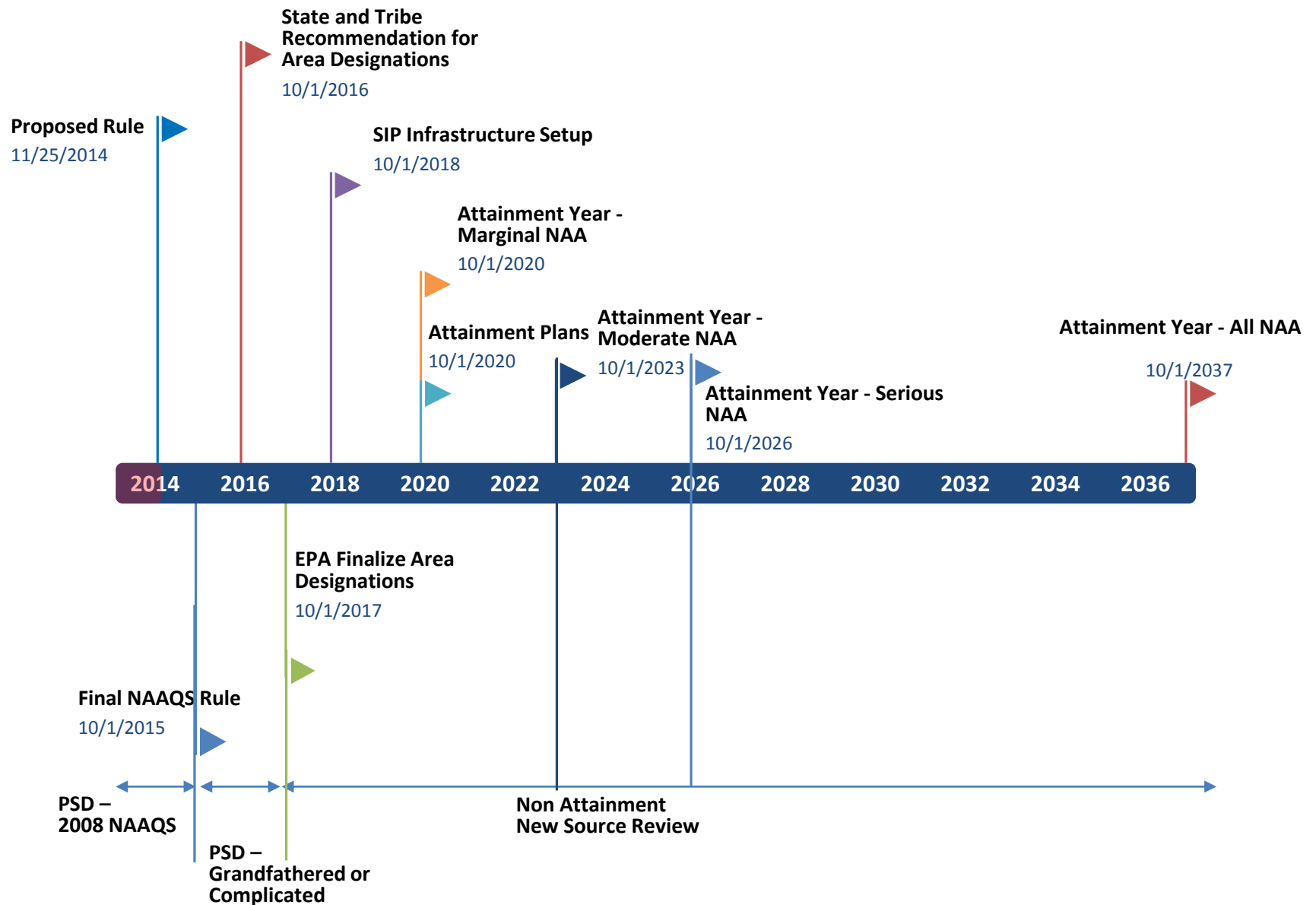
- Provides a template for implementation of the 2015 rule
- Establishes due dates for attainment plans and clarifies attainment dates for each nonattainment area according to its classification (established based on air quality thresholds)
- Provides guidance on nearly all aspects of the attainment planning requirements for designated nonattainment areas .
For example:
 - A n/a area must conduct a new RACT analysis even for sources that already have RACT limits
 - NO_x reductions cannot be substituted for VOC reductions in new n/a areas, but can for existing n/a areas
 - VOC reductions will be required even if they won't help an area attain the standard (EPA says statutory language is clear)

2015 Ozone NAAQS Proposal & Schedule

- Proposed November 25, 2014; primary ozone NAAQS: **65 to 70 ppb** (current level is 75 ppb), taking comment on lower levels including 60 ppb and on retaining the current standard. Proposed to retain the current indicator, averaging time, and form
- Proposed secondary ozone NAAQS –65-70 ppb, which EPA believes would provide the requisite protection equivalent to a seasonal W126 index of 13 to 17 ppm-hours.
- Grandfathering of in-the-pipeline PSD permit applications (*Section VII.D*)
- **Final rule to be signed by October 1, 2015**

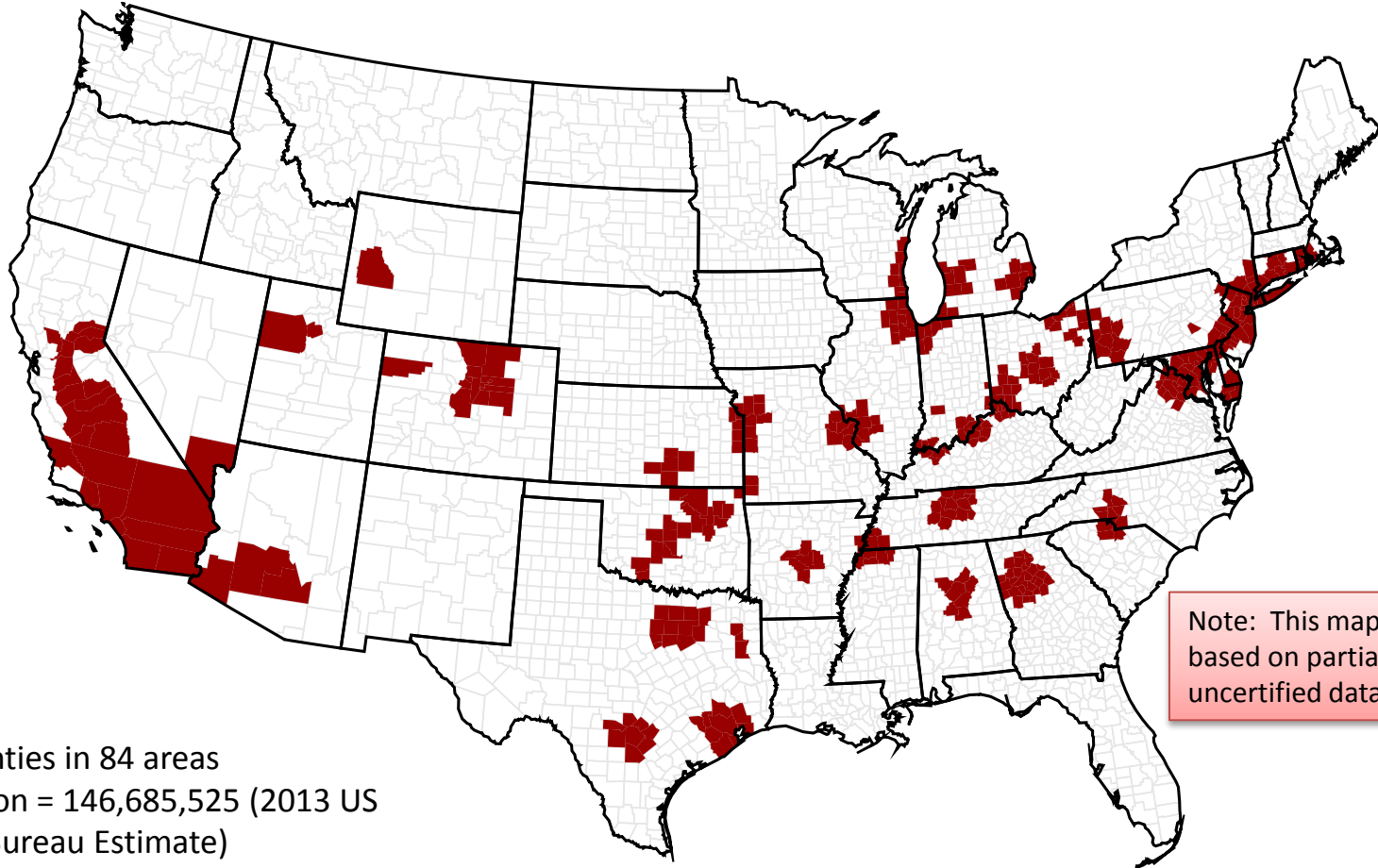
AQI Category	Index values	Current Breakpoints (2008 AQI) (ppb, 8-hour avg)	Proposed Breakpoints (ppb, 8-hour avg)
Good	0 - 50	0 - 59	0 – (49 to 54)
Moderate	51 – 100	60 – 75	(50 – 55) – (65 to 70)
Unhealthy for Sensitive Groups	101 - 150	76 - 95	(66 to 71) - 85
Unhealthy	151 - 200	96 - 115	86 - 105

Proposed Rule Timeline



Monitored Areas Not Meeting 75 ppb

As of 5/17/2014; Based on preliminary 2011-2013 data accessed from
<http://www.epa.gov/airtrends/> and <http://www.epa.gov/airdata/> on 6/2/2013



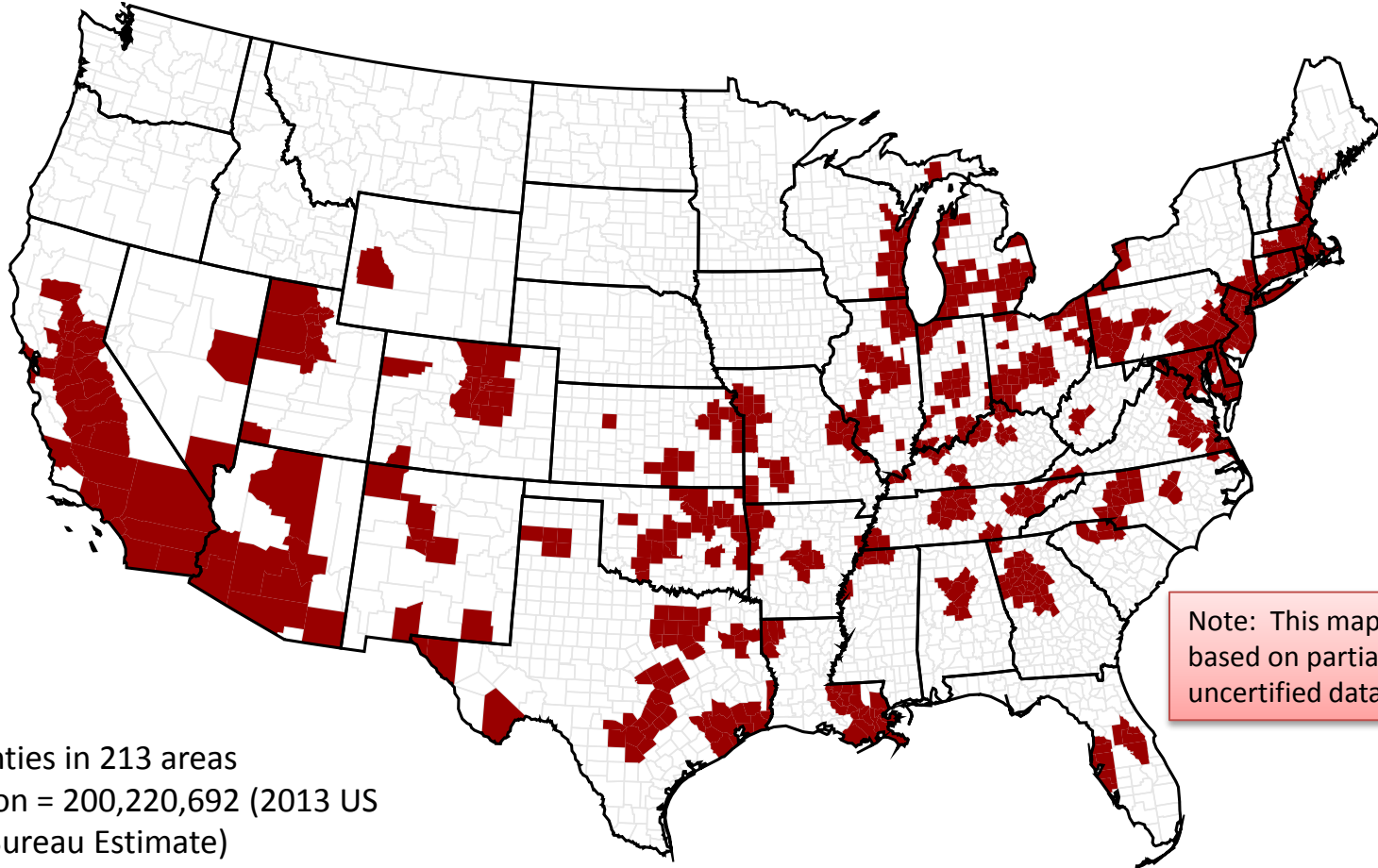
Note: This map is based on partially uncertified data

395 counties in 84 areas
Population = 146,685,525 (2013 US
Census Bureau Estimate)

13 percent of US counties
46 percent of US population

Monitored Areas Not Meeting 70 ppb

As of 5/17/2014; Based on preliminary 2011-2013 data accessed from
<http://www.epa.gov/airtrends/> and <http://www.epa.gov/airdata/> on 6/2/2014

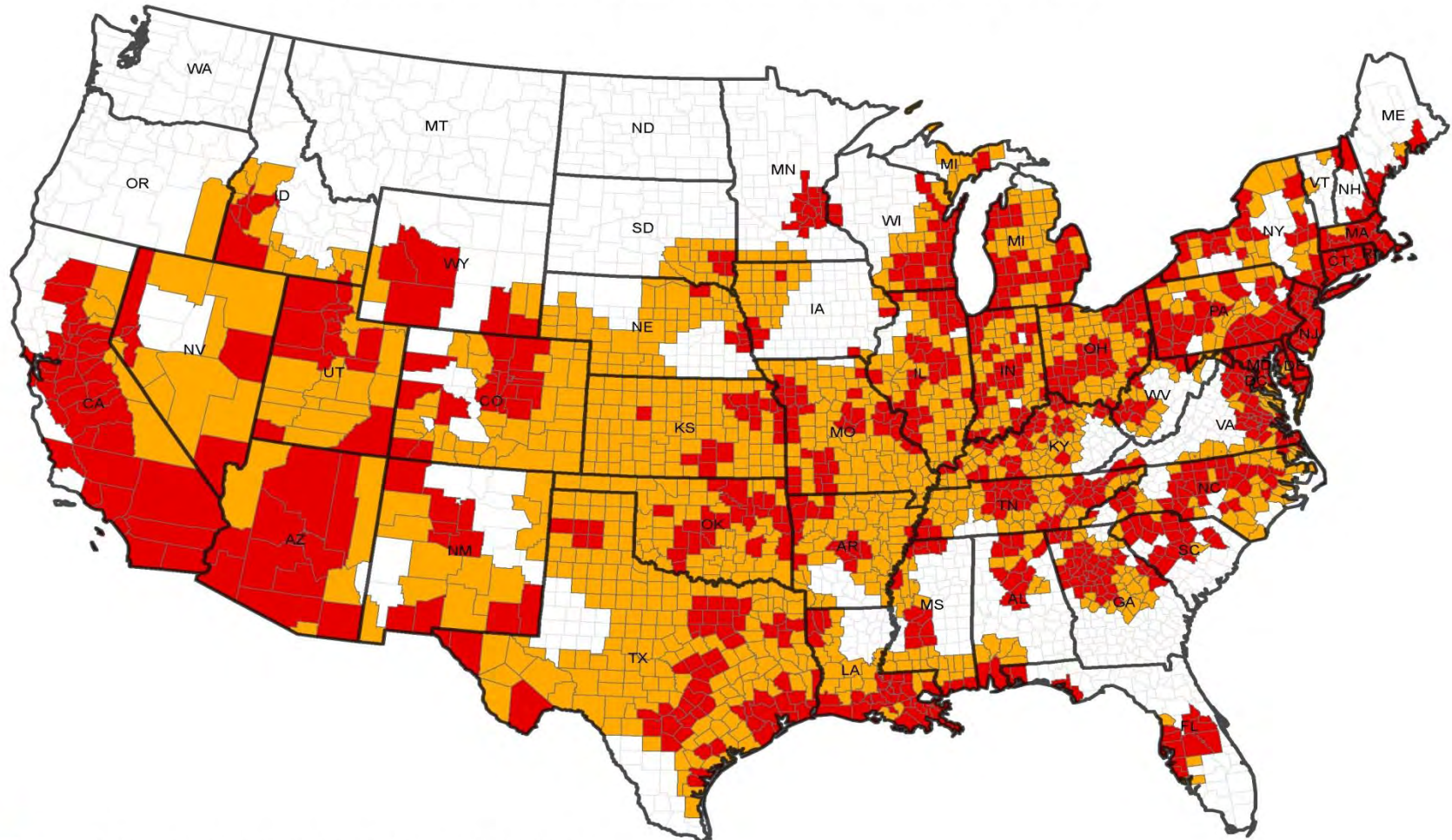


718 counties in 213 areas
Population = 200,220,692 (2013 US
Census Bureau Estimate)

23 percent of US counties
63 percent of US population

Monitored Areas Exceeding and Un-Monitored Areas Estimated To Exceed 65 ppb

Projected 8-Hour Ozone Nonattainment Areas

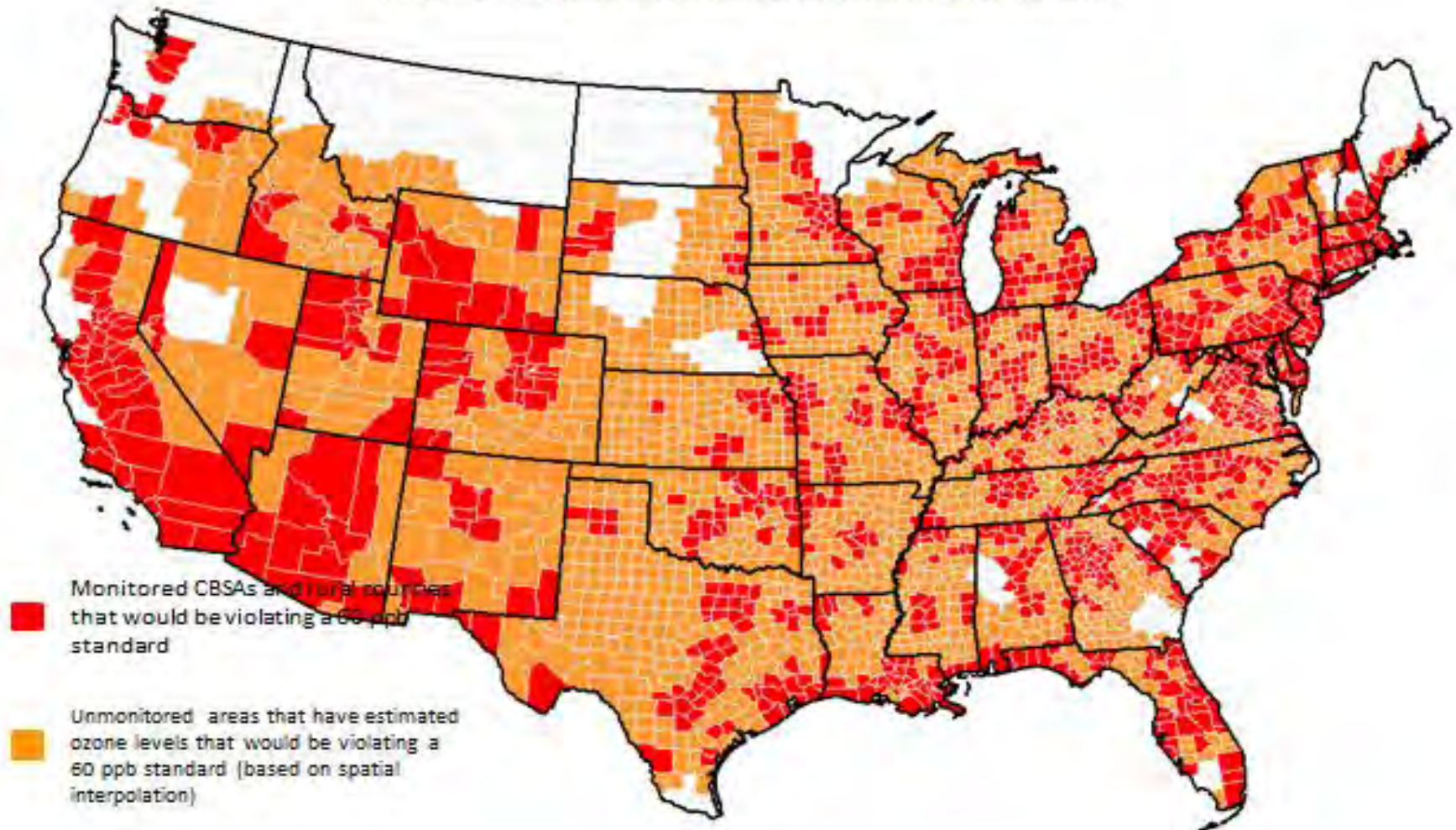


■ Monitored CBSAs and rural counties that would be violating a 65 ppb standard
■ Unmonitored areas that are anticipated to violate a 65 ppb standard based on spatial interpolation

Based on a 3-year period, 2011-2013.
Source: URS, July 7, 2014

Monitored Areas Exceeding and Un-Monitored Areas Estimated To Exceed 60 ppb

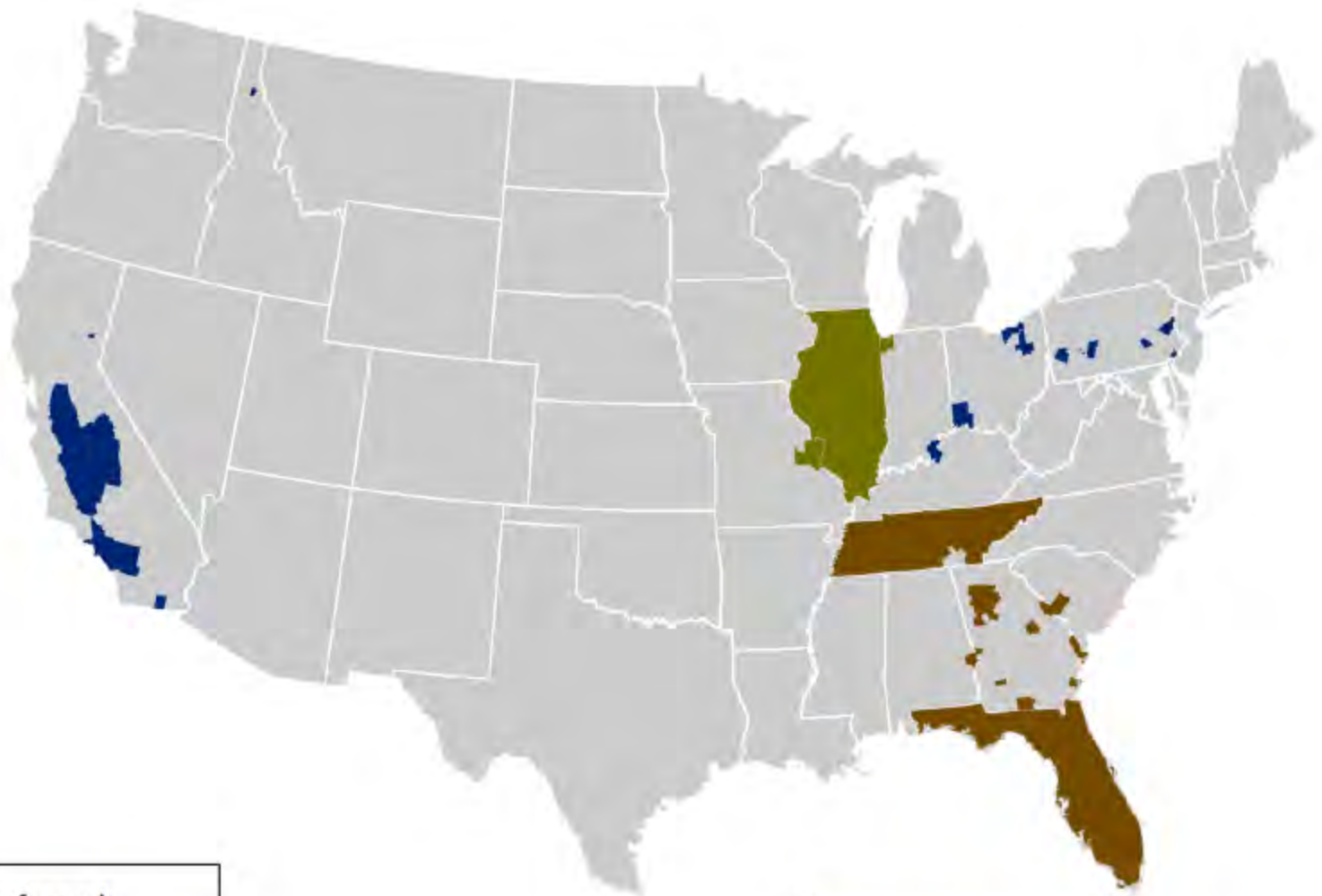
Projected 8-hr Ozone Nonattainment Areas



2012 PM_{2.5} NAAQS

- Final PM_{2.5} NAAQS rule signed December 14, 2012. Revised the primary annual PM_{2.5} standard to 12 µg/m³
- Retained secondary annual PM_{2.5} standard of 15 µg/m³ and 24-hr PM_{2.5} standards of 35 µg/m³ (and 24-hr PM₁₀ standard of 150 µg/m³)
- January 2013 DC Circuit decision regarding litigation on 2007 PM_{2.5} implementation rule and 2008 NSR rule for PM_{2.5}. Court held that EPA must implement PM_{2.5} NAAQS under subpart 4
- December 18, 2014 –Administrator signed final area designations for most areas of the country (based on 2011-2013 data). Final designations include 9 nonattainment, plus several unclassifiable area
- Effective date for designations is April 15, 2015 (90 days)
 - Supplemental final signed March 31, 2015 changed designation of several areas to attainment based on early-certified 2014 data showing attainment

2012 Annual PM2.5 Designations



Deferred
Nonattainment



2012 PM_{2.5} Implementation Schedule

Implementation schedule for initial round of designations for 2012 PM_{2.5} NAAQS:

- December 2014: Initial area designations (all nonattainment areas classified as Moderate initially)
- April 2015: Initial area designations become effective
- October 2016: Moderate area SIPs due (18 months from date of designations)
- December 2021: Moderate area attainment date (end of 6th calendar year after designations)
- December 2025: Serious area attainment date (end of 10th calendar year after designations)

Proposed 2012 PM_{2.5} NAAQS Implementation Rule

- The proposal:
 - Takes comment on approaches to clarify nonattainment implementation requirements according to subpart 4 of part D of Title I of the CAA, consistent with January 2013 D.C. Circuit Court decision
 - Would apply to all 2012 PM_{2.5} NAAQS nonattainment areas, areas designated nonattainment for the 1997 and 2006 PM_{2.5} NAAQS, and any additional areas designated nonattainment for these or future revised PM_{2.5} NAAQS
 - Addresses how subpart 4 court decision affects nonattainment NSR permitting requirements (e.g., with respect to major source threshold, precursors, etc.)

Proposed 2012 PM_{2.5} NAAQS Implementation Rule

- Key topics addressed in the proposed rule:
 - Classifications, attainment plan due dates, attainment dates, reclassifications
 - **Changes to PM_{2.5} precursor policy**
 - Moderate area attainment plan requirements
 - Serious area attainment plan requirements
 - Attainment demonstrations and unmonitored areas
 - RFP and quantitative milestones
 - Nonattainment NSR program requirements
 - Revocation of the 1997 primary annual PM_{2.5} NAAQS

New PM_{2.5} Precursor Policy

- January 2013 DC Circuit decision: all precursors (SO₂, NO_x, VOC, and ammonia) are “in” for purposes of control requirements
 - Cannot have initial presumptions that control measures are not required to be evaluated for certain precursors, as was included in 2007 implementation rules and 2008 NSR rule
- Proposal interprets the statute to mean that states must consider control measures for all four PM_{2.5} precursors from all stationary, mobile and area sources
 - This is the statutory interpretation that has been applied for PM₁₀
 - Subpart 4 section 189(e) provides a specific exception for major stationary sources of precursors where EPA determines that such sources do not “contribute significantly” to PM_{2.5} levels which exceed the standard in the area; those major sources would be exempt from “control requirements” (which EPA interprets to include requirements such as RACM, BACM, and nonattainment NSR requirements such as LAER and offsets)
- Proposal includes options that would allow a state plan to control emissions only of certain precursors where they demonstrated that the remaining precursors do not significantly contribute to nonattainment
 - Proposal also includes technical criteria for states to apply for evaluating precursors and demonstrating that a given precursor does not “contribute significantly” to ambient PM_{2.5} concentrations in an area
 - Separately addresses the lack of Significant Emissions Rates (SERs) for certain PM_{2.5} precursors for purposes of nonattainment NSR

New PM_{2.5} Precursor Policy (cont.)

- Proposed approaches for optional air agency demonstration to show that a particular precursor should be exempt from evaluation for potential control requirements in a given PM_{2.5} nonattainment area plan:
 - Two independent analyses: A) RACM/RACT analysis will determine which precursors must be controlled for expeditious attainment (i.e., for attainment planning); and B) a separate analysis would be required to determine if major stationary sources of a particular precursor can be exempted from nonattainment NSR requirements per section 189(e)
 - A single technical analysis could be conducted to demonstrate that emissions from all sources of a precursor do not significantly contribute to PM_{2.5} levels that exceed the standard. Control requirements for the precursor therefore would not be required for attainment planning or for nonattainment NSR
 - The RACM/RACT analysis will determine which precursors would not need to be controlled for expeditious attainment of the area (similar to option 1). This analysis then would be deemed to meet the section 189(e) requirement, and would define the “initial” set of precursors covered under the nonattainment NSR program. (An additional 189(e) analysis focused on contributions of another precursor emitted from major stationary sources could also be conducted by the state.)
- Proposed options for technical analysis:
 - Total contribution of precursor emissions to PM_{2.5} concentration
 - Sensitivity of PM_{2.5} concentration to increases or decreases of precursor
- EPA tells us that VOCs and ammonia are “walled off” from consideration under PSD permitting—is this permanent?

2010 SO₂ NAAQS


- EPA revised primary SO₂ standard on June 2010 (75 ppb/1-hour)
- EPA designated 29 NA areas on 8/5/13 (effective Oct. 2013)
- Technical Assistance Documents for modeling and monitoring issued December 2013
- 1-hr SO₂ NAAQS NA SIP elements guidance issued on April 24, 2014
 - www.epa.gov/airquality/sulfurdioxide/pdfs/20140423guidance.pdf
 - EPA regional offices are working to assist states with SO₂ NA areas in applying this guidance to develop SIPs, redesignate areas, etc.

SO2 Nonattainment Areas (2010 Standard)



1/30/2015

Nonattainment areas are indicated by color.
When only a portion of a county is shown in color,
it indicates that only that part of the county is within
a nonattainment area boundary.

 SO2 Nonattainment Areas

SO₂ Data Requirements Rulemaking

- In April 2014, EPA proposed requirements for air agencies to characterize SO₂ levels near sources across the country for purposes of implementing the 1-hour SO₂ NAAQS
- Proposed requirements would focus on characterizing air quality in areas with larger sources of SO₂ emissions, and include smaller sources in areas with higher population
 - –Proposal included a schedule for state and tribal air agencies to characterize air quality using modeling or monitoring, and provide that air quality data to the EPA
- Final rule anticipated summer 2015

SO₂ Data Requirements and Implementation Timeline (prior to consent decree)

Up to Jan 16, 2016: Agencies submit sources + model or monitor

Jan 16, 2016: Modeling protocols due for sources to be modeled

July 2016: Monitoring plans due for sources to be monitored

Jan 1, 2017: SO₂ monitors should be operational

Jan 13, 2017: Modeling studies should be submitted to RAs

Aug 2017: States notified of intended designations

Dec 2017: Final designation date

Aug 2019: Due date for SIPs for 2017 model-based designations

May 2020: Certification of 2019 monitoring data

Aug 2020: States notified of intended designations for remainder of
US

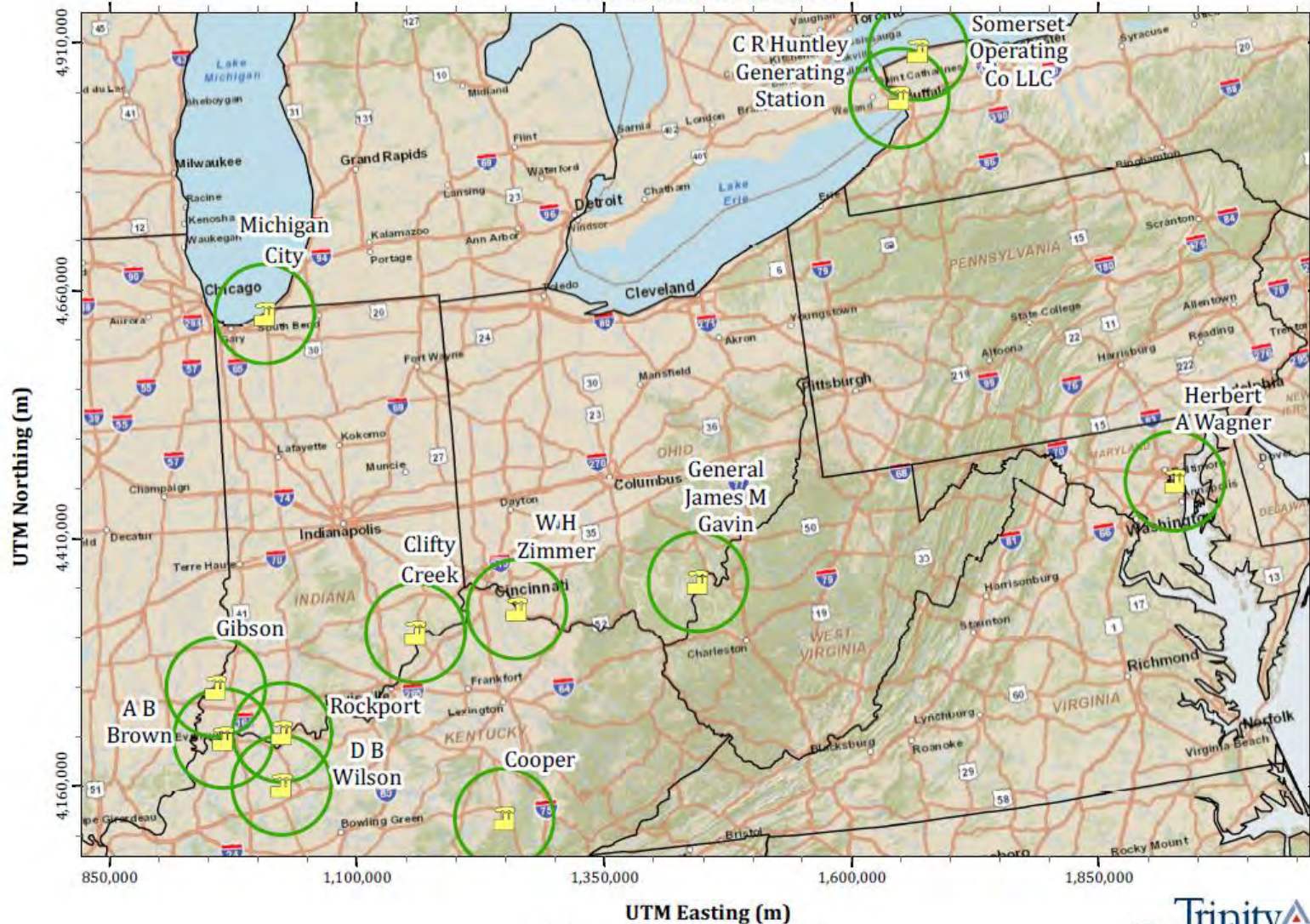
Dec 2020: Finalize all other designations

Aug 2022: Due date for SIPs for 2020 designations

2010 SO₂ NAAQS Implementation: Designations

- Consent decree entered on March 2, 2015 by U.S. District Court for Northern California “triggered” the following:
 - July 2, 2016: EPA must complete initial round of designations, with focus on large utility sources in EPA CAMD database; designations likely to be based on modeling
 - December 31, 2017: EPA must complete an additional round of designations; could be based on modeling or monitoring
 - December 31, 2020: EPA must complete all remaining designations (hopefully based on monitoring)
 - 2017 and 2020 rounds would occur consistent with EPA’s anticipated final SO₂ DRR
 - Major concern: states won’t submit anything in hope that EPA will declare areas “unclassifiable”, but if ENGOs submit “reasonable” modeling analyses EPA may be forced to act
- Two other designations lawsuits (from two state groups) were stayed pending potential settlement in Sierra Club/NRDC case; now they may be reactivated

Electric Power Plant Sources Exceeding the Emissions Thresholds Northeastern United States



All Coordinates shown in UTM Coordinates,
Zone 15, NAD83 Datum

Exceptional Events Rulemaking

- EPA is working on revisions to its exceptional events policy, which addresses issues like stratospheric ozone intrusions, emissions from wildfires, and international emissions and their impact on potential nonattainment designations. Up to now the policy has been a bust, with only 3 or 4 cases where states were able to use it; documentation is a high hurdle
- Revised policy will be more flexible and reasonable
- Schedule: proposal this Fall, final Summer 2016 in time to help states with their 2015 ozone NAAQS designations

Final SSM SIP Call

- In 2011, EPA entered into a settlement agreement to take final action on a Sierra Club petition for rulemaking concerning SIP provisions for treatment of excess emissions occurring during periods of startup, shutdown and malfunction (SSM)
- In February 2013, EPA proposed SIP calls to 36 states with certain SSM-related SIP provisions. Proposal restated and invited public comment on EPA's SSM Policy as it applies to State Implementation Plans, with one change regulating affirmative defense (AD) provisions
- In September 2014, EPA issued a supplemental proposal to address "affirmative defense" provisions for malfunctions. SNPR addressed a 2014 DC Circuit decision on EPA's cement NESHAP and its implications for SIPs and how specific SIPs may be affected
- SNPR affected provisions in SIPs for 17 states
- Rule is now out, states have 18 months from rule effective date to submit revised SIPs
- Issues: enormous burden on states, potential compliance issues for sources

PM_{2.5} and Ozone Significant Impact Levels (SILs) Rules and Appendix W Rule Revisions

- PM_{2.5} SILs proposed rule anticipated in Fall 2015
 - Establish legal and technical basis for PM_{2.5} SILs and their use in the PSD air quality analysis
 - Address significant emissions rates (SER) for SO₂ and NO_x as PM_{2.5} precursors and a new SER for ammonia (new term EPA is using: MERPs)
- Revisions to EPA's Guideline on Air Quality Models, published as Appendix W to 40 CFR Part 51 In response to Sierra Club petition grant for ozone & PM_{2.5}, and technical updates to address 1-hour NAAQS
 - Rulemaking to:
 - Incorporate new analytical techniques to address ozone and secondary PM_{2.5}
 - Provide updates for conducting individual source and cumulative impact analysis for new 1-hour NAAQS
 - Update, as appropriate, current EPA-preferred models to address input and science issues
- Proposal early June 2015 ; EPA 11th Modeling Conference will be held in RTP August 12-13th and will serve as a public hearing on App. W proposal
- Separate ozone SIL and MERPs rule in Fall, supposedly not too far behind Appendix W rule

Ongoing EPA/Industry Collaborative Work

- Revised emission factors for materials handling
- Treatment of PM_{2.5} emissions from wet stacks
- Measurement of condensable PM_{2.5}
- Blank corrections for PM_{2.5} emissions from gas-fired sources
- Model treatment of fugitive PM_{2.5} emissions
- Treatment of “ambient air” during modeling analyses
- Designation modeling approach protocols for 1-hour SO₂ NAAQS Designation

Anticipated Changes to the Guideline on Air Quality Models (Appendix W)

- Technical updates to AERMOD Model
- Possibly dropping the CALPUFF Model
- New “default options”
 - LOWWIND1/LOWWIND2
 - ADJ_U*
 - Maybe ARM2, PVMRM, OLM
- New significant emissions levels for precursor pollutants for PM_{2.5} (up to 1500 tpy)
- New inventory development guidance (old 20D may be gone)
- New guidance on double counting at background monitors
- Single source ozone model?
- Proposed Appendix W in June 2015 (?) or during 11th Modeling Conference in August (?)