

US EPA ARCHIVE DOCUMENT

**27th Annual EPA-A&WMA Information Exchange  
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# **Ozone NAAQS Implementation**

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**OAQPS**



# TOPICS

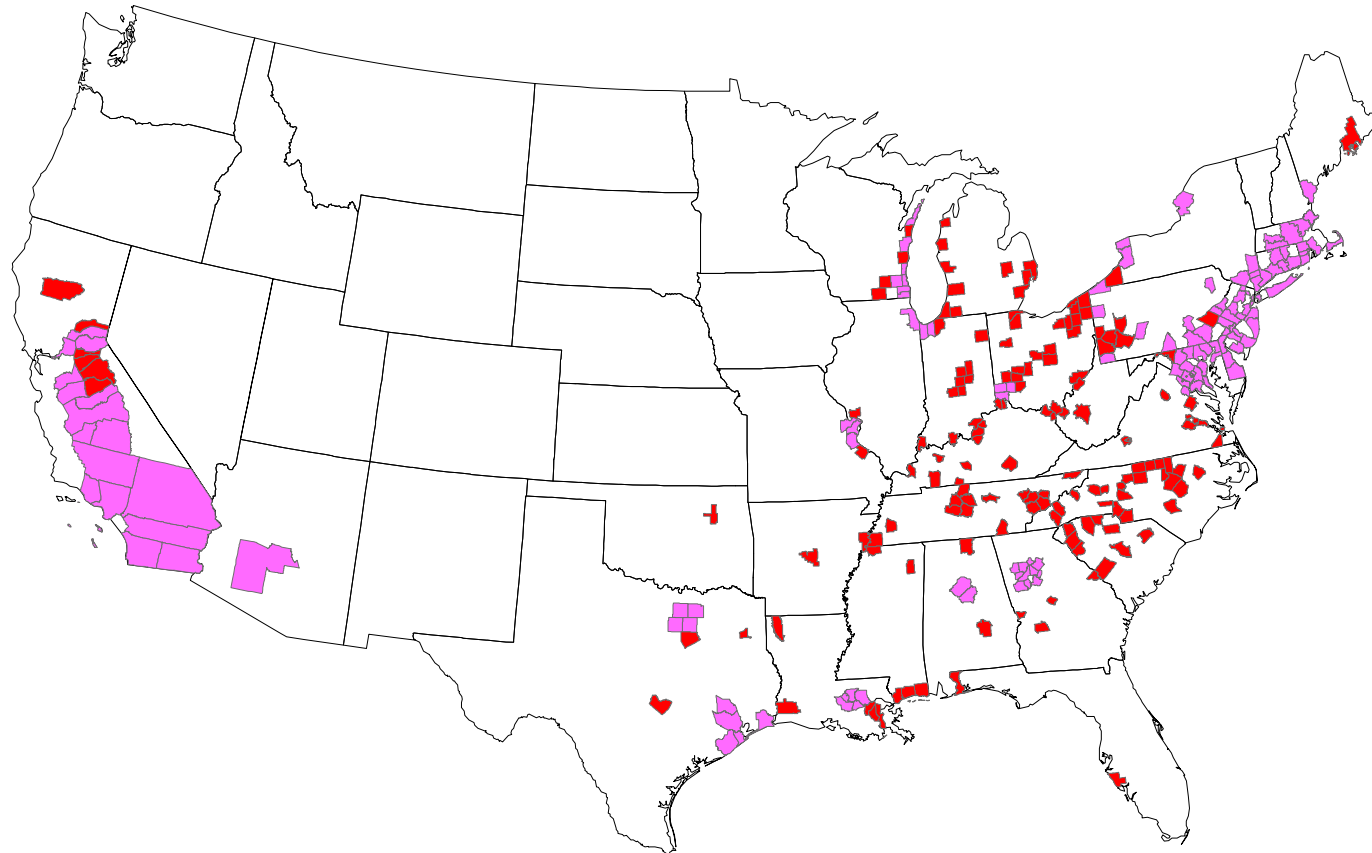
- **8-hr O3 NAAQS Implementation**
- **8-hr O3 NAAQS Designations**
- **Early Action Compacts**
- **Reactivity**






# 8-hr O<sub>3</sub> NAAQS Implementation



# Counties violating the 8-hr ozone NAAQS 1999-2001



-  There Are a Total of 291 Counties Violating the 8-hour Ozone Standard Using 1999-2001 Data
-  155 of Those Counties Are Designated Attainment for the 1-hour Standard
-  136 of Those Counties Are Designated Nonattainment for the 1-hour Standard



# CHRONOLOGY

- **7/18/97 -- Final NAAQS for O3 & PM published**
- **Nov 1998 – Draft Planning Guidance—provided for implementation under less prescriptive subpart 1 (CAA) (OMB reviewed/commented on draft)**
- **May 1999 –US Court of Appeals in DC ruled against NAAQS and implementation approach**
- **Feb. 2001 –US Supreme Court**
  - Upheld NAAQS
  - Ruled against EPA implementation approach
  - Ruled EPA can't ignore CAA subpart 2 provisions (more prescriptive than subpart 1)



# CHRONOLOGY

- **March 2002 –US Court of Appeals in DC upheld NAAQS**
- **Since Supreme Court ruling, EPA–**
  - **Developed numerous internal options for how to implement 8-hr O3 NAAQS to meet Supreme Court ruling and still provide some flexibility as we originally desired.**
  - **Held 3 public meetings on major issues with selected best options at the time**
  - **Developed draft proposed rulemaking**
- **Next step: propose rule early 2003.**



# Schedule

<b>Early 2003</b>	<b>Publish proposed implementation rule</b>
<b>April 2003</b>	<b>States provide designation recommendations</b>
<b>Late 2003</b>	<b>Publish final implementation rule</b>
<b>April 2004</b>	<b>EPA signs final nonattainment designations (effective shortly after)</b>
<b>April-May 2007</b>	<b>Nonattainment area SIPs submitted to EPA (3 years from effective date)</b>
<b>2007-2021</b>	<b>Range of attainment dates</b>





# Harmonization of 8-hr O<sub>3</sub>, PM<sub>2.5</sub>, & RH SIPs

- End of 2003—Finalize O<sub>3</sub> NAAQS implementation rule
- 2003-2004--propose and finalize PM<sub>2.5</sub> implementation rule
- 2004--Designate nonattainment and attainment areas under 8-hr ozone standard (after receiving recommendations from states). *Note: The statutory deadline for 8-hour ozone designations has passed, and EPA has negotiated settlement agreement on designations.*
- 2004--Designate nonattainment and attainment areas under PM<sub>2.5</sub> standard (after receiving recommendations from states)
- 2007--States submit plans for implementing ozone and PM<sub>2.5</sub> NAAQS (including state rules for emission reductions)

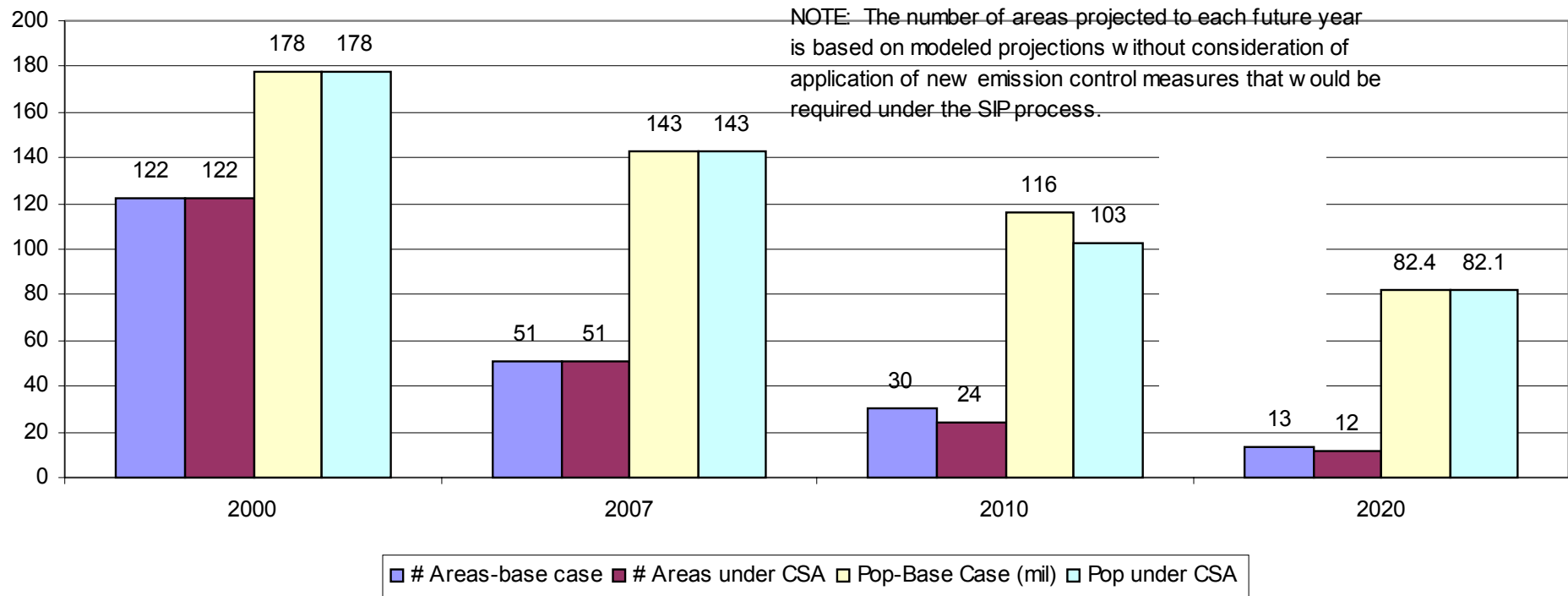


# PRINCIPLES FOR DEVELOPING PROPOSED APPROACH

- incentives for expeditious attainment of 8-hour standard
- reasonable attainment deadlines
- basic, straightforward structure--communicated easily
- consistent with CAA and Supreme Court decision
- provide flexibility to states
- emphasize national and regional measures; reduce the need for more expensive local controls
- smooth transition from 1-hr O<sub>3</sub> NAAQS to 8-hr O<sub>3</sub> NAAQS



**Figure 1**  
**8-hr O3 Nonattainment Areas & Population**  
**(projected by modeling)**



## Topics for the rule include....

- Area classification approaches ...what subpart to use
- Attainment dates
- Transition from 1-hr to 8-hr NAAQS
- Anti-backsliding
- Flexibility vs mandatory controls
- Ozone transport issues
- Modeling & attainment demonstrations
- Reasonable further progress requirements
- Reasonably available control measures/technology
- Conformity
- New Source Review
- Optimizing for O3 and PM
- Tribal issues
- Early reduction programs
- Timing of designations and classifications



## Topics for the rule ....

- We'll cover only a few today.



## RECONCILING SUBPARTS 1 AND 2; CLASSIFICATION AND ATTAINMENT DATES

- **Option 1–Classify 8-hr nonattainment areas based on 8-hr ozone (O<sub>3</sub>) design values**
  - Uses 8-hr design values–more accurately reflects the magnitude of the 8-hour ozone problem
  - All 8-hr nonattainment areas would be classified under subpart 2. In general, areas classified under subpart 2 would need to meet subpart 2 requirements for their classification level and would have attainment dates in subpart 2
  - Requires a regulatory change of subpart 2's classification table to reflect 8-hr rather than 1-hour design value thresholds.
  - Thresholds for each classification (e.g., moderate, serious, etc.) would be the same percentage above the 8-hour standard as the current statutory thresholds are above the 1-hour standard.



**TABLE 2**  
**TABLE 1 OF SUBPART 2 1-HOUR OZONE CLASSIFICATION TABLE**  
**TRANSLATION TO 8-HOUR DESIGN VALUES**

Area class		CAA design value thresholds 1-hour ozone ppm	% above 1-hour ozone <u>NAAQS</u>	Translated 8-hour design value thresholds ppm ozone	Primary standard attainment date—years after enactment (1-hour std)**
Marginal	from	0.121	0.833	0.085*	3 years
	up to	0.138	15.000	0.092	
Moderate	from	0.138	15.000	0.092	6 years
	up to	0.160	33.333	0.107	
Serious	from	0.160	33.333	0.107	9 years
	up to	0.180	50.000	0.120	
Severe-15	from	0.180	50.000	0.120	15 years
	up to	0.190	58.333	0.127	
Severe-17	from	0.190	58.333	0.127	17 years
	up to	0.280	133.333	0.187	
Extreme	equal to or above	0.280	133.333	0.187	20 years

\* The table's lowest value reflects the lowest nonattaining value, viz., 0.085 ppm.



## RECONCILING SUBPARTS 1 AND 2; CLASSIFICATION AND ATTAINMENT DATE—cont'd

- **Option 2 – Hybrid 2-step approach.**
  - Step 1: Separate areas into two groups based on whether their 1-hour design value would require them to be placed in subpart 2.
    - Group 1 <0.121 ppm
    - Group 2 ≥ 0.121 ppm
  - Step 2: Classify areas. Group 1 areas (generally, those meeting the 1-hour standard), would be regulated under subpart 1. For these areas, EPA could develop a classification scheme (see issue below). Group 2 areas would receive subpart 2 classifications according to their 8-hr ozone design value.
  - Would result in over half of the hypothetical nonattainment areas being covered by subpart 1 (with less specific SIP requirements).
  - Attainment dates for subpart 1 areas—AEAP but no later than 5 yrs from designation; can obtain add'l 5 year extension





## RECONCILING SUBPARTS 1 AND 2; CLASSIFICATION AND ATTAINMENT DATE—cont'd

- **Proposed Incentive Feature—applicable to either classification option.**
  - Allows an area to qualify for a lower classification by demonstrating it has adopted measures sufficient to meet the attainment date of the lower classification.
  - Could be done via EPA regional/national modeling or a State's demonstration using EPA-approved modeling.
  - Would solicit comment on whether the demonstration would have to be done prior to initial classification or whether it could be submitted afterward, in which case EPA would reclassify the area.



**TABLE 3  
PROPOSED CLASSIFICATION OPTIONS  
COUNTS OF HYPOTHETICAL NONATTAINMENT AREAS**

	Subpart 2						Subpart 1	Total
	Extreme	Severe-17	Severe-15	Serious	Moderate	Marginal	"Sub-marginal"	
Option 1 (8-hr DV)	0	1	1	6	53	61	0	122
Option 1 (8-hr DV)–with incentive feature*	0	1	1	6	30	84	0	122
Option 2 (hybrid--areas < 121 = submarg)	0	1	1	6	26	12	76	122
Option 2 (hybrid--areas < 121 = submarg)–with incentive feature*	0	1	1	6	21	17	76	122

\*Areas that would be moderate using their 8-hour design value but that are projected to attain by 2007 would be classified marginal.

**CURRENT 1-HR DESIGNATION/CLASSIFICATION OF 122 HYPOTHETICAL AREAS\***

NONATTAINMENT (37 AREAS)							ATTAIN./MAINT.		Total
Subpart 2						Subpart 1	Maintenance	Attainment	
Extreme	Severe-17	Severe-15	Serious	Moderate	Marginal	Submarg & other			
1	5	3	11	2	12	3	39	46	122

\* 8-hr hypothetical areas do not have the same geographic definition as the current 1-hr areas.



## RECONCILING SUBPARTS 1 AND 2; CLASSIFICATION AND ATTAINMENT DATE—cont'd

- **Classification of Subpart 1 areas**
  - Preferred Option—No classification program.
  - Would consider an overwhelming transport classification on a case-by-case basis for consistency with anticipated PM<sub>2.5</sub> classification system
    - Would allow more time to fully attain due to transport.



# TRANSITION FROM THE 1-HOUR TO THE 8-HOUR STANDARD

- **Two elements covered:**
  - The time for determining when the 1-hour ozone standard would no longer apply, and
  - How to ensure anti-backsliding after the 1-hour standard is revoked.



# TRANSITION FROM THE 1-HOUR TO THE 8-HOUR STANDARD--cont'd

- **Timeframe for revoking the 1-hour standard**
  - 40 CFR 50.9(b) currently (but being stayed due to litigation)–1-hour standard revoked after
    - all litigation on the 8-hour ozone standard is completed and
    - EPA determines that an area has air quality meeting the 1-hour standard.
  - EPA reconsidering the time at which the 1-hour standard should be revoked.
  - Transportation conformity–the most significant issues regarding the timeframe for phasing out the 1-hour ozone standard.



## TRANSITION FROM THE 1-HOUR TO THE 8-HOUR STANDARD--cont'd

- **Proposed approach: Revoke the 1-hour ozone standard 1 year after EPA designates attainment and nonattainment areas for the 8-hour O<sub>3</sub> NAAQS.**
  - Consistent with the 1-year grace period for application of conformity, and would basically have conformity apply for purposes of only one standard at a time.



# Anti-backsliding

- **Section 110(I)-- EPA may not approve a SIP revision if it interferes with any applicable requirement concerning attainment and reasonable further progress or any other requirement of the CAA**
- **Section 193 – prohibits modification of control requirements in an implementation plan in effect before 11/15/90 unless such a modification would ensure equivalent or greater emissions reductions.**



## Anti-backsliding (cont'd)

- In addition, 1991 designations and classifications were “by operation of law,” so the requirements that apply by virtue of that would continue to apply (e.g., for an area whose 1-hr classification is higher than its 8-hr classification).





# Anti-backsliding proposal

- Subpart 2 “applicable requirements” in current 1-hr O<sub>3</sub> nonattainment areas would remain applicable after 1-hr standard is revoked until—2 options being proposed:
  - **area achieves level of 1-hr std; or**
  - **area attains 8-hr std.**
- Other provisions in SIP would remain but could be revised/modified under sections 110(I) and 193



# WEB SITE

<http://www.epa.gov/ttn/naaqs/ozone/ozonetech/o3imp8hr/o3imp8hr.htm>



# Related Material

**Designations  
Early Action Compact Areas  
Reactivity**



# 8-hr O<sub>3</sub> NAAQS Designations



What's EPA told the world about NA designations ... **5 documents issued ...**

## EPA's Designation Guidance

- March 28, 2000 Seitz memo ... “8-Hour Designations”
- March 28, 2000 Seitz memo ... ”Boundary Guidance on Air Quality Designations for the 8-Hr Ozone NAAQS”
- July 18, 2000 Seitz memo ... “Guidance on 8-Hour Ozone Designations for Indian Tribes”
- January 19, 2001 Seitz memo ... “Compilation of State Recommendations and Regional Office Responses...”
- November, 2002 Holmstead memo ... “Schedule for 8-Hour Ozone designations and its effect on Early Action Compacts”



# Early Action Compacts



*What about early State and local control initiatives ...*

## Early Action Compacts (EAC)

- Compact guidance allows a community to voluntarily enter into an agreement with the State and EPA to develop a plan.
- Principles are:
  - Early planning, implementation and emission reductions leading to expeditious attainment and maintenance of 8-hour ozone NAAQS
  - Local control of the measures employed, with broad-based public input
  - State support to ensure technical integrity of the attainment plan
  - Formal incorporation of early action plan into SIP
  - Deferral of effective date of nonattainment designation and/or designation requirements if all terms of agreement are met
  - Safeguards to return areas to traditional SIP requirements if terms and milestones are not met, with appropriate credit given for reduction measures already implemented.

*To participate in 8-hr compact, area must be “attainment” and clean for 1-hr ...*

## Who is eligible to participate in an EAC?

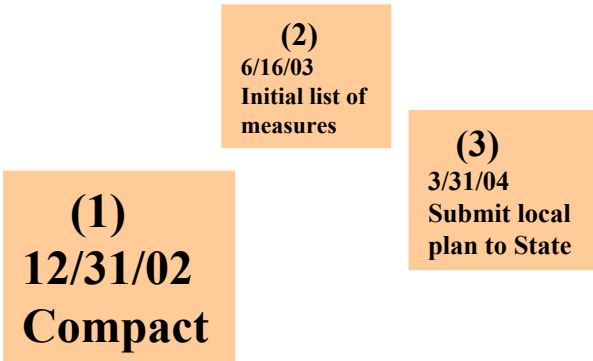
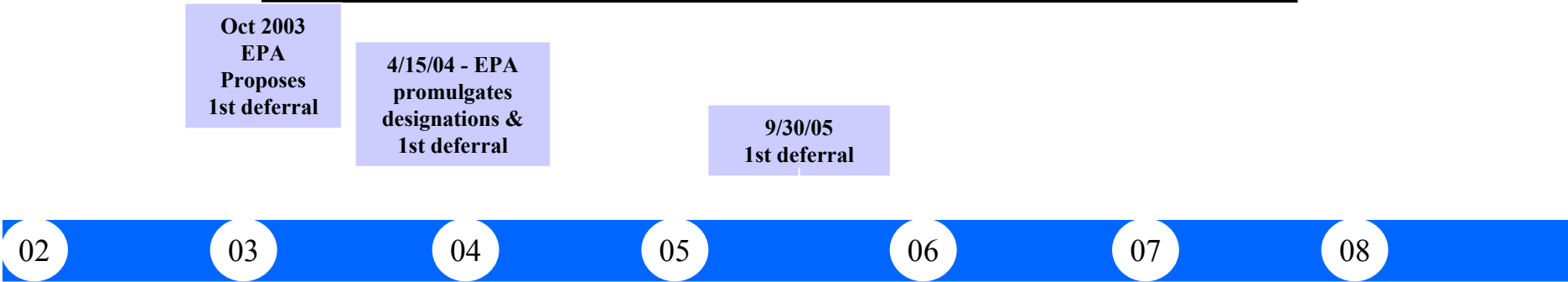
*Area may apply for “Early Action 8-hr Compact” if...*

- Currently designated attainment of the 1-hour ozone standard, and
- Air quality monitors show attainment of the 1-hour standard....but
- Air quality approaches or exceeds the 8-hour standard

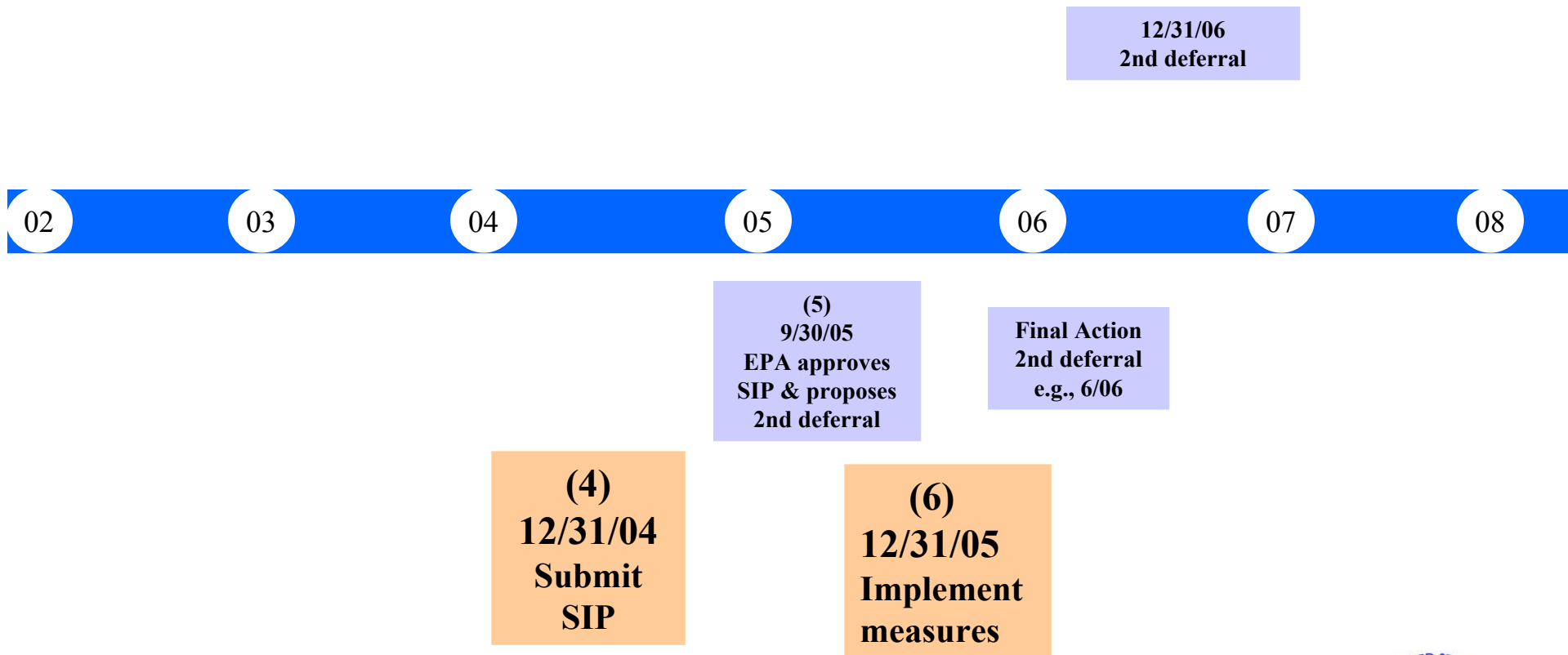
*Areas with EACs get a “rolling nonattainment designation” deferral.*



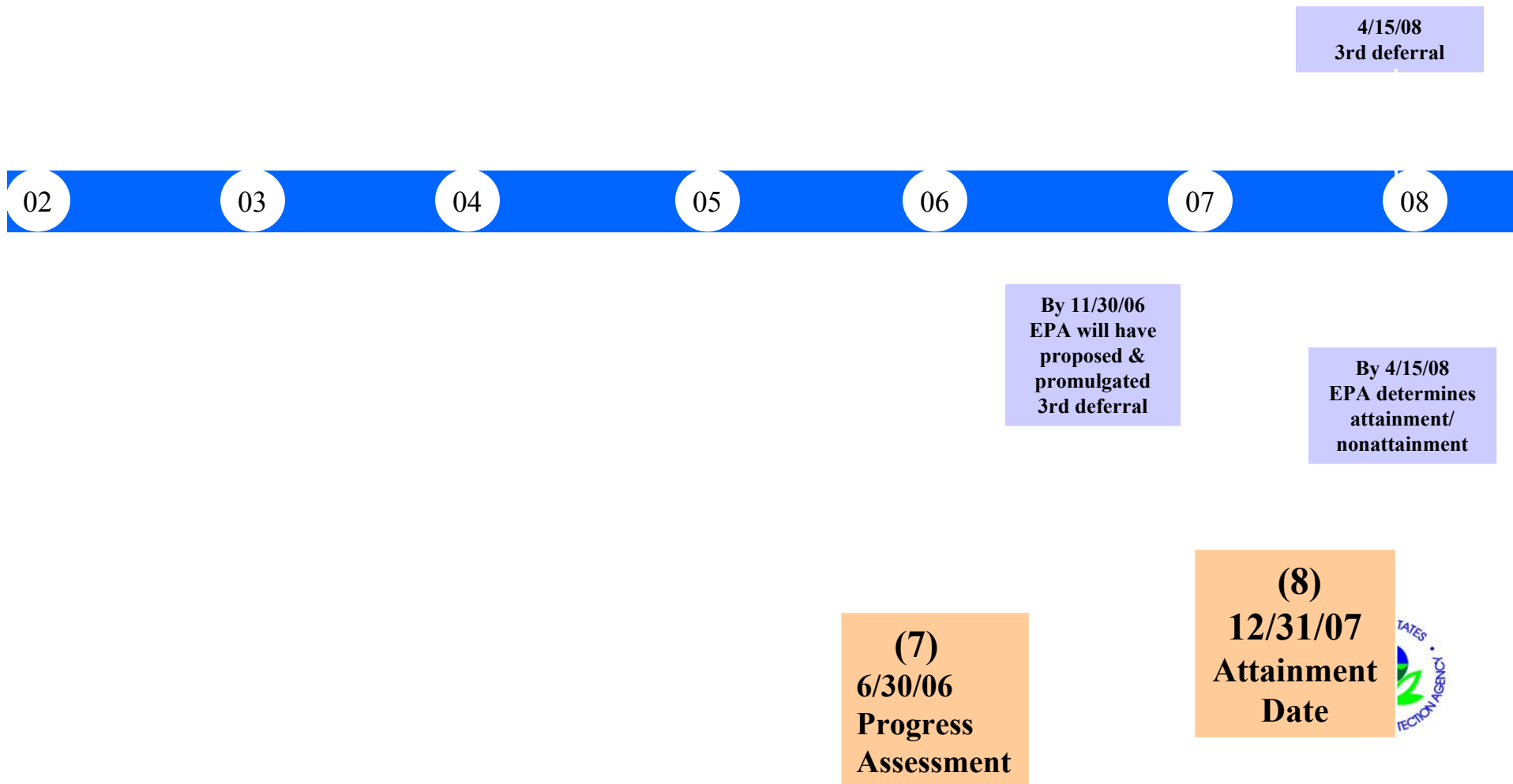
# Early Action Compact Timeline and Deferred Effective Dates for Ozone Nonattainment Designations - **First Deferral**



# Early Action Compact Timeline and Deferred Effective Dates for Ozone Nonattainment Designations - **Second Deferral**



# Early Action Compact Timeline and Deferred Effective Dates for Ozone Nonattainment Designations - **Third Deferral**



# NO<sub>x</sub> SIP Call





## Basic SIP call facts

- EPA promulgated the NOx SIP Call rule on October 27, 1998, and the final Section 126 rule on January 18, 2000
- EPA promulgated SIP call technical amendments ... 1<sup>st</sup> amendment was May 14, 1999 ...final, revised emission budgets for the NOx SIP call on March 2, 2000
- Numerous challenges followed in the U.S. Court of Appeals for the D.C. Circuit.

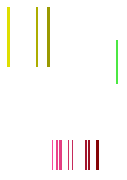


## Basic NOx SIP call facts

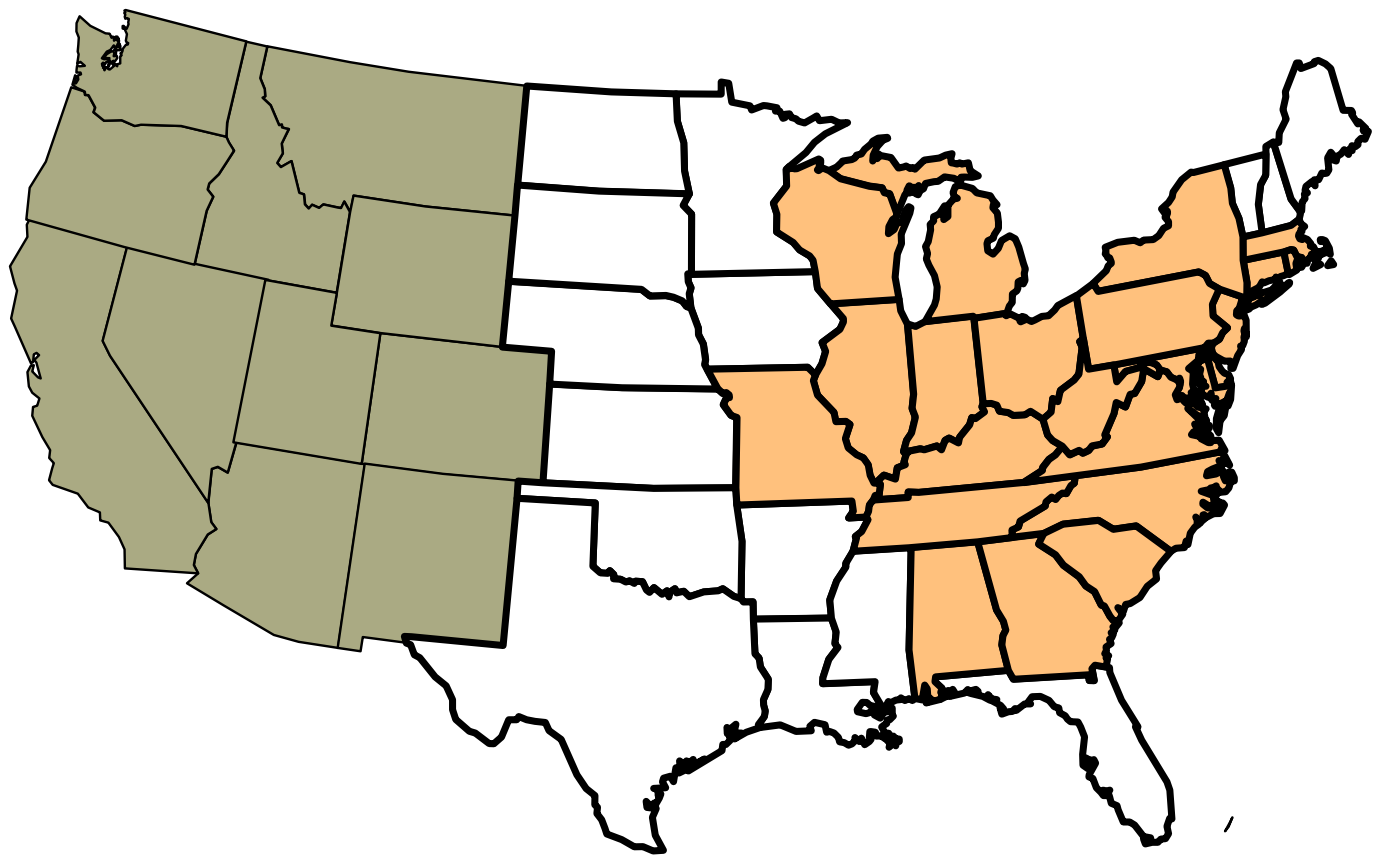
(continued)

- SIP call mandated that States submit plan revisions to EPA
- States will have the ability to meet the requirements of this rule by reducing emissions from the sources they choose
- Bulk of required NOx reductions likely to come from electric generation units (EGUs)
- Includes model NOx trading program that allows States to achieve emissions reductions in a highly cost effective manner.





## Which States got original SIP call?



-  Required to comply with NOx strategy
-  Other OTAG States



# Reactivity





# REACTIVITY

- VOC “reactivity” is important for ozone formation
- EPA’s current policy has existed since 1977
- Compounds are generally compared to the “kOH value” of ethane .... Maximum Incremental Reactivity (MIR) information can help. Compounds less reactive than ozone may be exempted.
- Reactivity Research Work Group (RRWG) performing research that could “scientifically underpin” an EPA policy update in 2003





**THE END**

