



Air Quality Regulatory Update from EPA

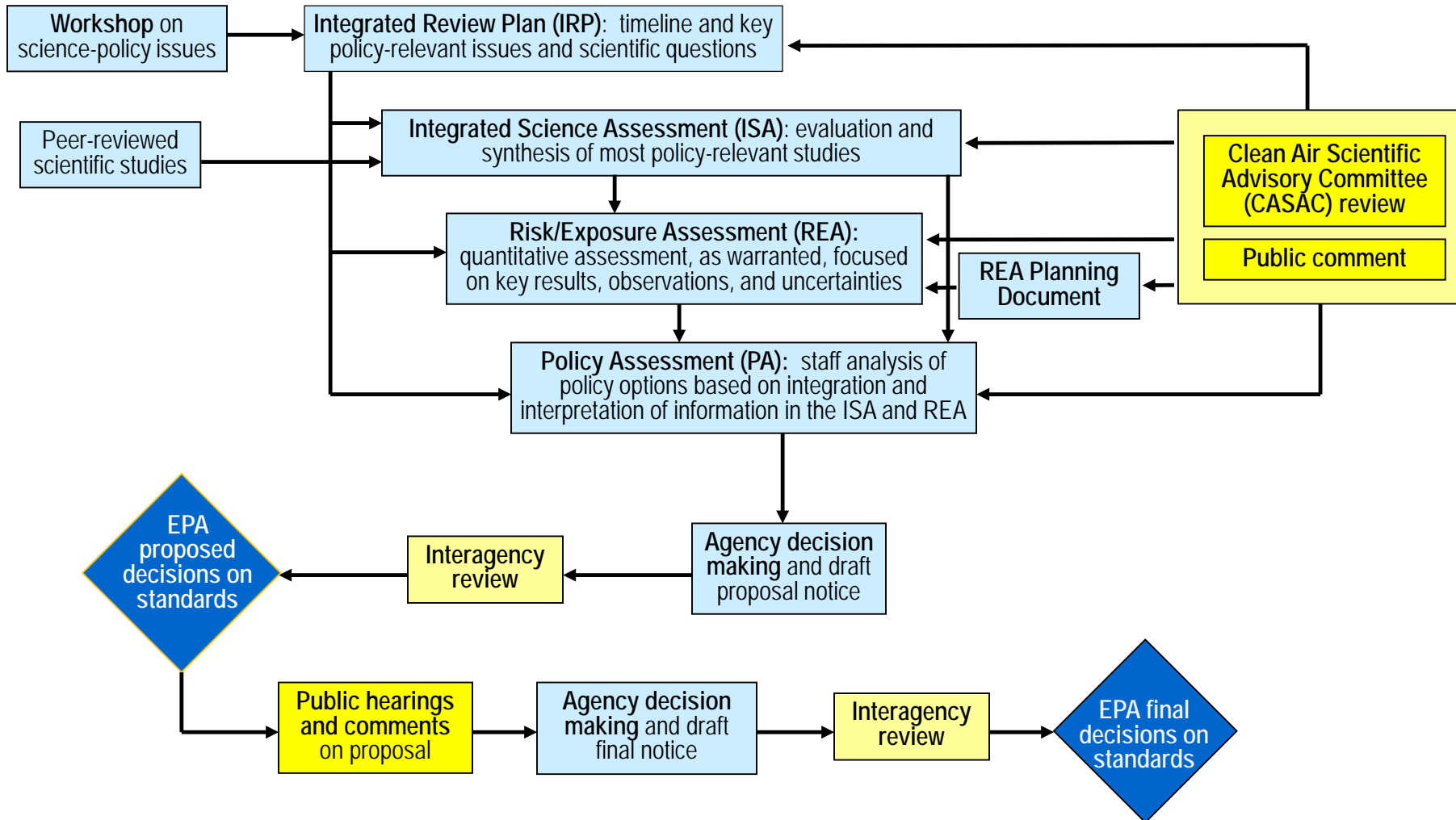
8 September 2016

- ▶ Update on EPA Air Regs
 - ▶ Ozone NAAQS
 - ▶ PM NAAQS
 - ▶ PM_{2.5} NAAQS State Implementation Plan (SIP) Requirements Rule
- ▶ Climate Change Program Update
 - ▶ Climate Indicators Report
- ▶ CAFO Update
- ▶ USDA-EPA Collaboration

Major Regulatory Programs in EPA's Air Office

- ▶ National Ambient Air Quality Standards (NAAQS)
 - ▶ Carbon Monoxide, Lead, Nitrogen Dioxide, Ozone, Particulate Pollution and Sulfur Dioxide
 - ▶ New Source Review (NSR), State Implementation Plans (SIPs)
- ▶ New Source Performance Standards (NSPS)
- ▶ National Emission Standards for Hazardous Air Pollutants (NESHAP)
 - ▶ 187 hazardous air pollutants in listed source categories
- ▶ Greenhouse Gas Reporting Program
 - ▶ EPA is prohibited from expending funds to implement Subpart JJ – Manure Management
- ▶ Renewable Fuel Standards

Overview of the Process for Reviewing NAAQS



NAAQS Reviews: Status Update

(as of September 2016)

	Ozone	Lead	Primary NO ₂	Primary SO ₂	Secondary NO ₂ and SO ₂	PM	CO
Last Review Completed (final rule signed)	Oct. 2015	Oct 2008	Jan 2010	Jun 2010	Mar 2012	Dec 2012	Aug 2011
Recent or Upcoming Major Milestone(s)¹	TBD ²	<u>Dec 2014</u> Proposed Decision <u>2016</u> Final Decision	<u>Jan 2016</u> Final ISA <u>Late Summer 2016</u> 1 st Draft PA/REA	<u>Jan 2016</u> CASAC Review of 1 st Draft ISA <u>Winter 2016/2017</u> 2 nd Draft ISA REA Planning Document	<u>Fall 2016</u> Final IRP <u>Winter 2017</u> 1 st Draft ISA REA Planning Document	<u>Fall 2016</u> Final IRP <u>Fall 2017</u> 1 st Draft ISA REA Planning Document	TBD ²

Additional information regarding current and previous NAAQS reviews is available at:

<https://www3.epa.gov/ttn/naaqs/>

¹ IRP – Integrated Review Plan; ISA – Integrated Science Assessment; REA – Risk and Exposure Assessment; PA – Policy Assessment

² TBD = to be determined

- ▶ **Final National Ambient Air Quality Standards for Ozone Rule** signed October 1, 2015 (40 FR 65292), revising the primary and secondary 8-hour ozone standards to 0.070 ppm
- ▶ The overall framework and policy approach for the previous implementation rules for the 2008 ozone NAAQS will serve as a template for implementation of the 2015 revised standard

2015 Ozone NAAQS: Intended Schedule for Implementation Rules/Guidance/Tools

Action	After NAAQS Promulgation	(Actual) and Planned Dates
EPA finalized 2015 Ozone NAAQS, Monitoring rules, Exceptional Event Demonstration Schedule, and PSD grandfathering.	Upon promulgation	(October 1, 2015)
EPA proposed Exceptional Events Rule revisions and issues draft Wildfire/Ozone Guidance		(November 10, 2015)
EPA issued Area Designations Guidance for the 2015 Ozone NAAQS	4 months	(February 25, 2016)
EPA finalizes Exceptional Events Rule revisions and issues Wildfire/Ozone Guidance		September 2016
States and tribes submit recommendations for ozone area designations to EPA	12 months	October 1, 2016
EPA provides results of interstate ozone transport modeling information	12 months	Fall 2016

2015 Ozone NAAQS: Intended Schedule for Implementation Rules/Guidance/Tools, cont.

Action	After NAAQS Promulgation	(Actual) and Planned Dates
EPA proposes nonattainment area SIP rules/guidance (including area classifications thresholds, SIP due dates, and nonattainment NSR provisions)	12 months	October 2016
EPA finalizes designations, classifications, and nonattainment area SIP rules/guidance	24 months	October 2017
States submit infrastructure and transport SIPs	36 months	October 2018
States submit attainment plans	5-6 years	2020-2021
Nonattainment area attainment dates (Marginal – Extreme)	5-22 years	2020-2037

2015 Ozone NAAQS: Upcoming Implementation- Related Rules/Guidance/Activities

- ▶ Proposed rule to update, where necessary, the existing ozone NAAQS implementation regulations targeted for October 2016; final October 2017
- ▶ PSD permitting
 - ▶ Final to Guideline on Air Quality Models (Appendix W to 40 CFR Part 51) (Fall 2016)
 - ▶ Guidance on compliance demonstration tools:
 - ▶ Ozone and PM_{2.5} significant impact levels (SILs) (posted for comment in August 2016)
 - ▶ Model emissions rates for precursors (MERPs) (Fall 2016)
- ▶ Update to transportation conformity guidance specific to areas that are nonattainment for 2015 NAAQS (Fall 2017)

- ▶ Particulate matter (PM) is extremely small particles and liquid droplets that, once inhaled, can affect the heart and lungs and cause serious health effects
- ▶ Standards for PM₁₀ and PM_{2.5}
 - ▶ Initial air quality standards for PM₁₀ were established in 1987; in 2006, the 24-hour PM₁₀ standard was retained and the annual standard was revoked
 - ▶ Initial air quality standards for PM_{2.5} were set in 1997 and revised in 2006 and 2012
- ▶ Attainment designation is based on air quality monitoring data and other factors
 - ▶ Area remains nonattainment until EPA can determine that it has attained standard
 - ▶ Currently there are 38 areas designated as nonattainment for the PM₁₀ standard and 25 areas designated as nonattainment for any of the three PM_{2.5} standards

PM Components: Coarse and Fine

Coarse Particles – PM10

Mostly direct emissions (Primary)

- Resuspended dust
- Coal/oil fly ash
- Aluminum, silica, iron-oxides
- Tire and brake wear
- Inhalable biological materials (e.g., from soils, plant fragments)



Sources:

- Resuspension of dust tracked onto roads
- Suspension from disturbed soil (farms, mines, unpaved roads)
- Construction/demolition
- Metallurgical / industrial fugitive emissions
- Biological sources

Exposure/Lifetime:

- Lifetime of hours to days
- Distribution up to 100s of km

Fine Particles – PM2.5

- 1) Direct emissions (Primary)
- 2) Transformation of gases (Secondary)

Precursor gases include:
ammonia, NO_x, SO₂, VOCs

Components:

- Ammonium sulfate
- Ammonium nitrate
- Organic & elemental carbon
- Crustal material/metals/inorganics



Sources:

- Combustion of coal, oil, gasoline, diesel, wood
- Power plants, cars, trucks, high temperature industrial processes (e.g. smelters, steel mills)
- Woodstoves, burning activities, forest fires
- Solvents
- Commercial cooking
- Fertilizer application, manure, composting

Exposure/Lifetime:

- Lifetime of days to weeks
- Distribution from urban scale to 1000s of km

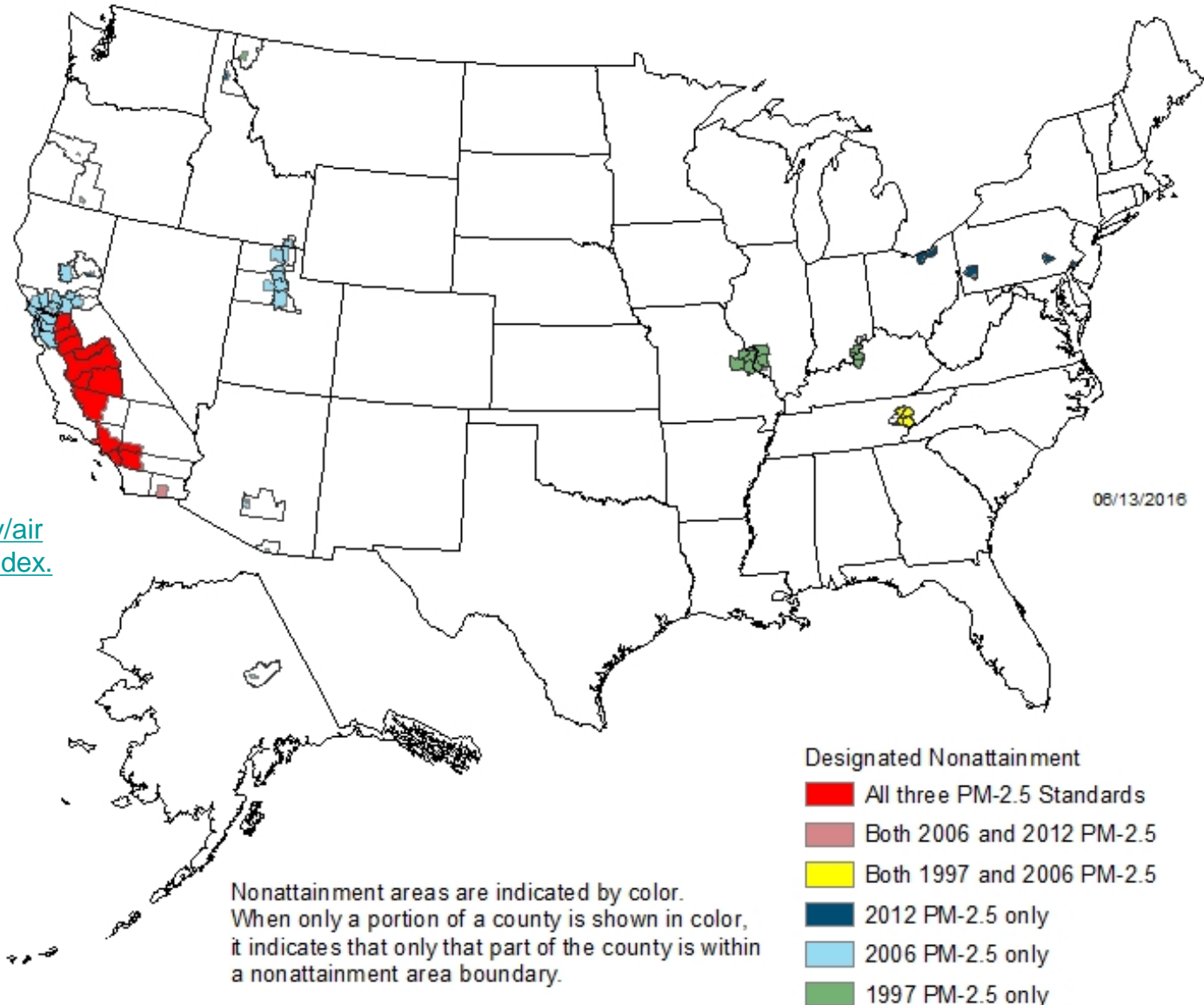


Anticipated Schedule for Current Review of PM NAAQS

Stage of Review	Major Milestone	Target Date
Planning	Release Final IRP	Fall 2016
Science Assessment	Release First Draft ISA for CASAC/public review	Mid 2017
	Release Second Draft ISA for CASAC/public review	Mid 2018
	Release Final ISA	Mid 2019
Risk/Exposure Assessments	Release REA Planning Document(s) for CASAC/public review	Mid 2017
	Develop REA(s)	2018 to 2020
Policy Assessment/ Rulemaking	Develop PA	2018 to 2020
	Proposed Rulemaking	2020
	Final Rulemaking	2021

PM_{2.5} NAAQS: Map of Nonattainment Areas

Counties Designated Nonattainment
for PM-2.5 (1997, 2006, and/or 2012 Standards)



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.

<https://www3.epa.gov/airquality/greenbook/kindex.html>

PM_{2.5} NAAQS SIP Requirements Rulemaking: Background

- ▶ Final rule published on August 24, 2016
- ▶ Outlines state implementation plan (SIP) requirements for areas that are designated nonattainment for existing and any future PM_{2.5} NAAQS
- ▶ Provides flexibility for states to adopt appropriate control requirements to attain the standard expeditiously for each unique nonattainment area
- ▶ Requirements address numerous planning issues, including:
 - ▶ Plan due dates and attainment dates
 - ▶ Process for determining control strategies, including reasonably available control measures or best available control measures (for Moderate and Severe nonattainment areas, respectively)
 - ▶ PM_{2.5} precursor policies
 - ▶ Attainment demonstrations and modeling
 - ▶ Reasonable further progress, quantitative milestones and contingency measures

PM_{2.5} NAAQS SIP Requirements Rulemaking: Background, cont.

- ▶ Rule also addresses Nonattainment New Source Review (NNSR) permitting program
 - ▶ “Major source” and “Major stationary source” definitions for PM_{2.5} and precursors in Moderate and Serious Areas
 - ▶ Significant emission rate (SER) for three precursors (SO₂, NO_x, and VOC) are prescribed in the rule. States have the flexibility to define an SER for NH₃
- ▶ 2013 D.C. Circuit Court decision held (in part) that all four PM_{2.5} precursors presumptively must be addressed in SIPs; rule was updated to reflect this decision
- ▶ Statute allows for exemption from control requirements for a precursor if sources of the precursor do not contribute significantly to PM_{2.5} levels that exceed the standard
 - ▶ Rule includes three optional precursor demonstrations that states may provide to EPA if seeking to exempt sources from attainment planning and/or NNSR control requirements
 - ▶ **Additional guidance on precursor demonstrations to be issued soon**

PM_{2.5} NAAQS: Control Measures

- ▶ States have flexibility in selecting appropriate control measures for each area for PM_{2.5} and precursors
- ▶ Need to evaluate technological feasibility and economic feasibility
- ▶ EPA encourages states developing SIPs to work with local experts (USDA, state agricultural agencies) when estimating emissions from agricultural sources and considering potential control measures
- ▶ Additional sources of information:
 - ▶ USDA/EPA best management practices
 - ▶ NRCS technical guidance
 - ▶ Non-regulatory or regulatory programs in other areas

Opportunities to Provide Input to SIPs

- ▶ States are required to publish proposed SIPs for public comment
 - ▶ Comment on emission estimates and control measures
 - ▶ Provide additional analyses
- ▶ Additional comment period occurs during EPA's rulemaking on approval/disapproval of the SIP

- ▶ Grain Elevators NSPS
 - ▶ Expect signature on final rule in late 2016
- ▶ Nutritional Yeast RTR
 - ▶ Originally promulgated in 2001: applies to yeast used in baking and nutritional food supplements March 2016: *Sierra Club v. EPA* (DC Cir.) requires RTR to be finalized by October 1, 2017
 - ▶ Proposal expected in November/December 2016
- ▶ Proposed Revisions to PSD/Title V Permitting Regulations for GHG & Establishment of a GHG Significant Emission Rate
 - ▶ Signed on August 26, 2016
 - ▶ Proposes revisions to existing PSD and title V regulations to ensure that neither the PSD nor title V rules require a source to obtain a permit solely because the source emits or has the potential to emit GHGs above the applicable thresholds
 - ▶ <https://www.epa.gov/title-v-operating-permits/current-regulations-and-regulatory-actions>

Agricultural Air Quality Conservation Measures: Reference Guide for Poultry & Livestock Production Systems

- ▶ Collaboration between USDA-NRCS and EPA
- ▶ Companion to 2012 guide for cropping systems and general land management
- ▶ Provides a broad set of conservation practices for poultry/livestock operations that may address air resource concerns
- ▶ Current Status
 - ▶ Undergoing internal revision
 - ▶ Anticipate soliciting comments in November 2016
 - ▶ Expected publication December 2016/2017

EPA's Climate Change Indicators Report (4th Edition)

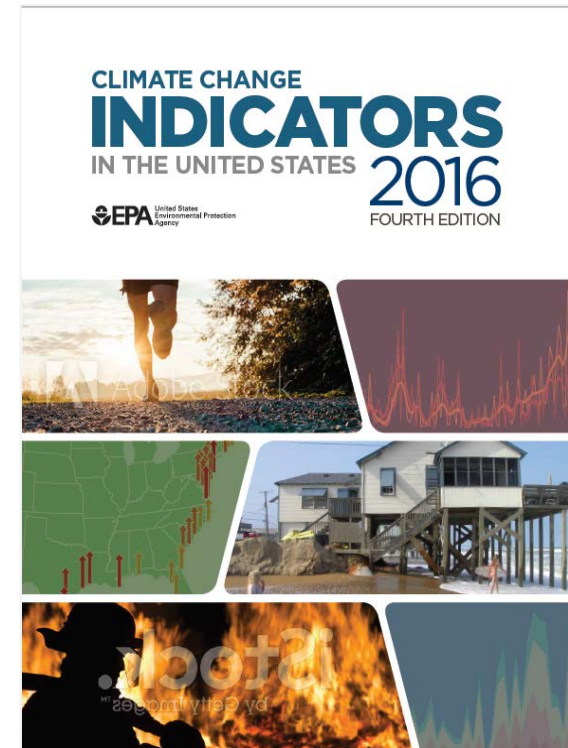
- ▶ 2016 report features 37 climate indicators including GHGs, climate, oceans, snow and ice, human health and ecosystems
- ▶ EPA partners with over 40 agencies/organizations
- ▶ Peer review of each indicator and full report

Results

- ▶ Signs of climate change growing even stronger and more compelling
- ▶ Report reiterates that climate change is a present threat and underscores the need to reduce greenhouse gas pollution and prepare for the changes underway

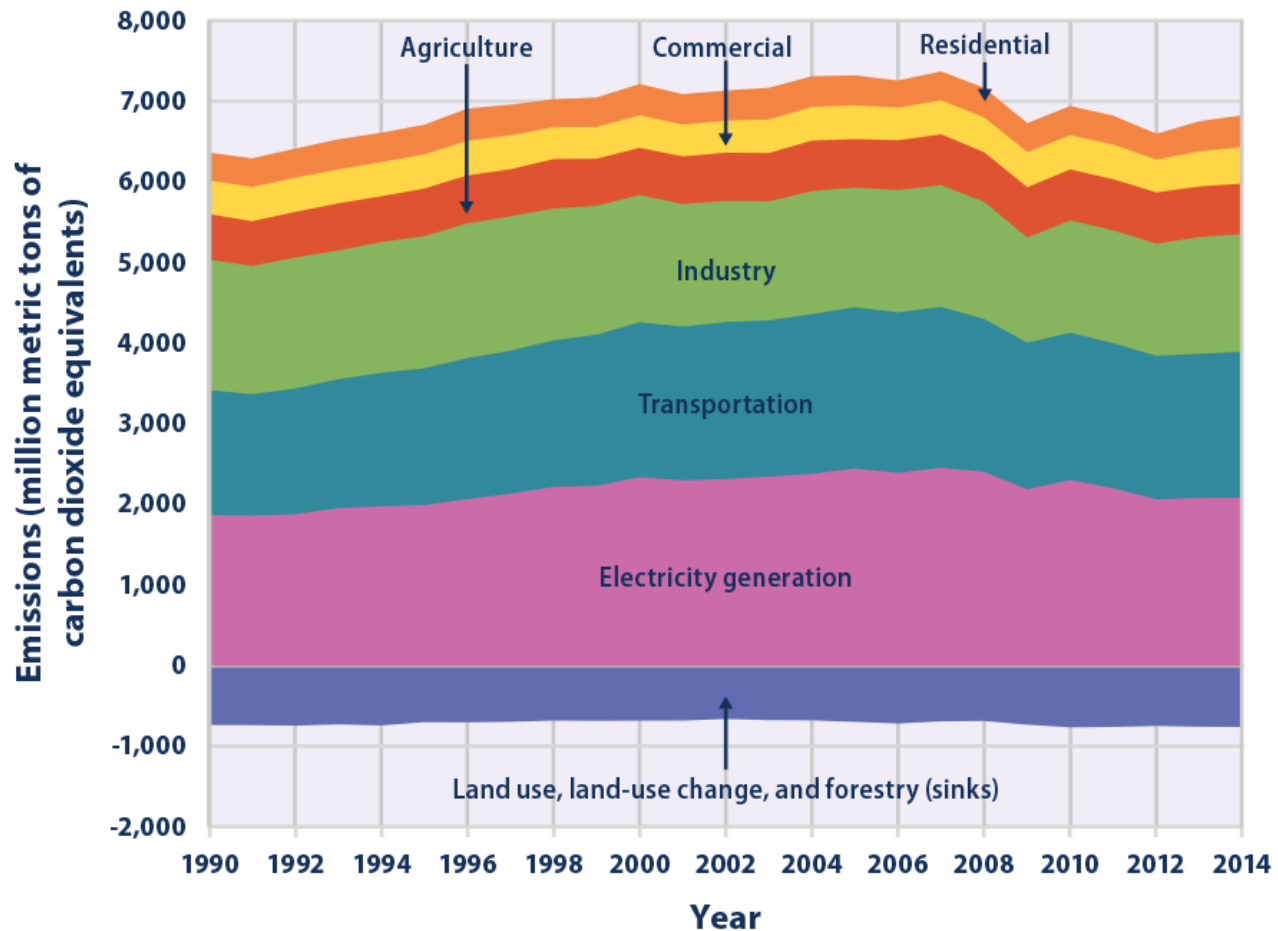
The report, downloadable figures, and technical documentation are available online:

<https://www.epa.gov/climate-indicators>



From: *Climate Change Indicators*

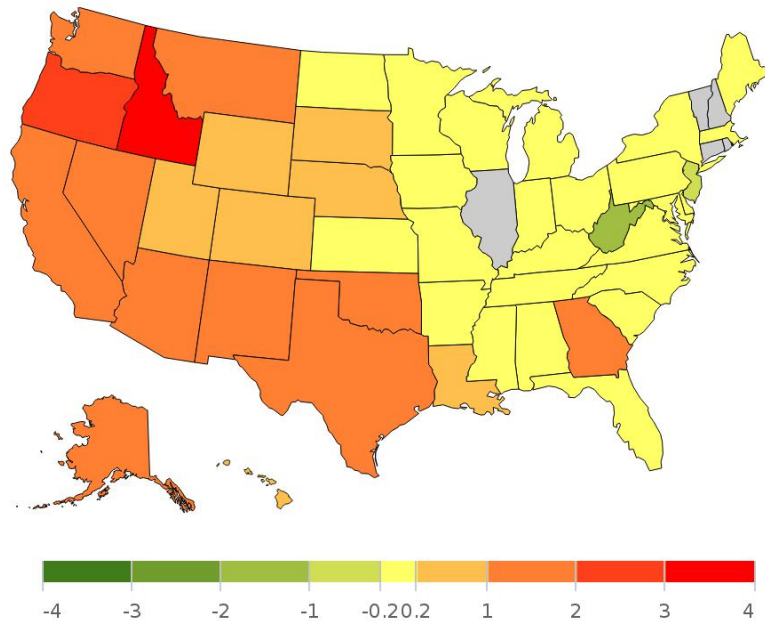
U.S. Greenhouse Gas Emissions and Sinks by Economic Sector, 1990–2014



Data source: U.S. EPA (U.S. Environmental Protection Agency). 2016. Inventory of U.S. greenhouse gas emissions and sinks: 1990–2014. EPA 430-R-16-002. www.epa.gov/climatechange/ghgemissions/usinventoryreport.html.

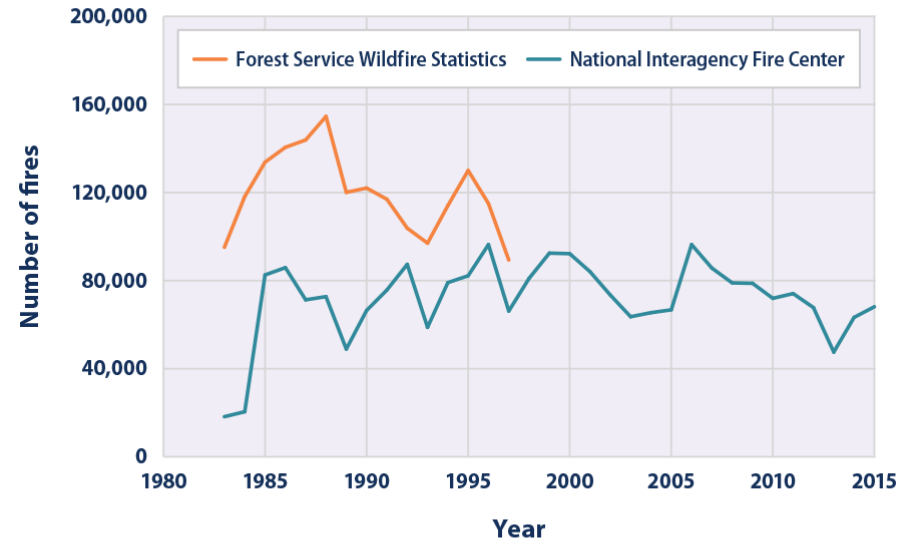
For more information, visit U.S. EPA's "Climate Change Indicators in the United States" at www.epa.gov/climate-indicators.

Figure 5. Change in Annual Burned Acreage by State Between 1984-1999 and 2000-2014



States colored light gray did not have any fires that were large enough to be included in

Wildfire Frequency in the United States, 1983–2015



Data sources:

- NIFC (National Interagency Fire Center). 2016. Total wildland fires and acres (1960–2015). Accessed March 2016. www.nifc.gov/fireInfo/fireInfo_stats_totalFires.html.
- USDA (U.S. Department of Agriculture) Forest Service. 2014. 1991–1997 wildland fire statistics. Prepared by USDA Forest Service, State and Private Forestry, Fire and Aviation Management staff, and supplemented with historical records provided by Forest Service staff, April 2014.

For more information, visit U.S. EPA's "Climate Change Indicators in the United States" at www.epa.gov/climate-indicators.

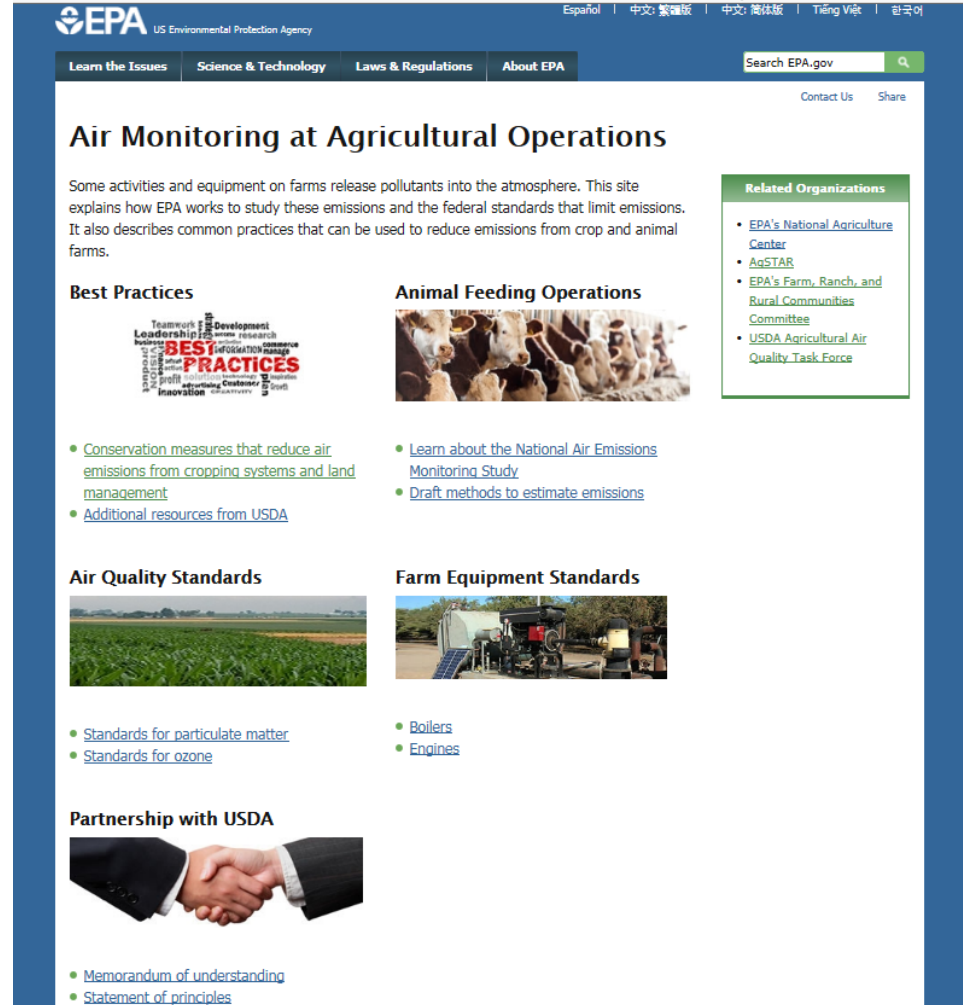
- ▶ PM Sampling
- ▶ Conservation Measures to Reduce Air Emissions from Agricultural Systems
 - ▶ Reference Guide for Cropping Systems and General Land Management
 - ▶ Reference Guide for Poultry and Livestock Production systems
- ▶ Wildland Fire Interagency Coordination
- ▶ Ammonia Workgroup
- ▶ AgSTAR program
- ▶ Numerous other activities
 - ▶ SIP Credit for Incentive Programs (SJVAPCD Rule 9610)

► Agriculture Air Quality:
<https://www.epa.gov/afos-air>

New!

► AgSTAR Program:
<https://www.epa.gov/agstar>

► EPA's National Agriculture
Center:
<https://www.epa.gov/agriculture>



The screenshot shows the EPA website page for "Air Monitoring at Agricultural Operations". The page includes a navigation bar with links for "Learn the Issues", "Science & Technology", "Laws & Regulations", and "About EPA". A search bar is located in the top right corner. The main content area features a title "Air Monitoring at Agricultural Operations" and a brief introduction. Below the introduction are four main sections: "Best Practices" (with a word cloud image), "Animal Feeding Operations" (with a photo of cows), "Air Quality Standards" (with a photo of a field), and "Farm Equipment Standards" (with a photo of farm machinery). A "Partnership with USDA" section is at the bottom, featuring a photo of two people shaking hands. A "Related Organizations" sidebar on the right lists several key entities.

Air Monitoring at Agricultural Operations

Some activities and equipment on farms release pollutants into the atmosphere. This site explains how EPA works to study these emissions and the federal standards that limit emissions. It also describes common practices that can be used to reduce emissions from crop and animal farms.

Best Practices

Animal Feeding Operations

Air Quality Standards

Farm Equipment Standards

Partnership with USDA

Related Organizations

- EPA's National Agriculture Center
- AgSTAR
- EPA's Farm, Ranch, and Rural Communities Committee
- USDA Agricultural Air Quality Task Force

Best Practices Links:

- Conservation measures that reduce air emissions from cropping systems and land management
- Additional resources from USDA

Animal Feeding Operations Links:

- Learn about the National Air Emissions Monitoring Study
- Draft methods to estimate emissions

Air Quality Standards Links:

- Standards for particulate matter
- Standards for ozone

Farm Equipment Standards Links:

- Boilers
- Engines

Partnership with USDA Links:

- Memorandum of understanding
- Statement of principles

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APPENDIX

2015 Ozone NAAQS: Anticipated Timeline for Designations Process

Milestone	Date
The EPA promulgates 2015 Ozone NAAQS rule	October 1, 2015
The EPA issues designations guidance	February 25, 2016
Air agencies submit exceptional events demonstrations for data years 2014-2015	No later than the date recommendations are due to EPA (October 1, 2016)
States and tribes submit recommendations for ozone designations (and exceptional events demonstrations for data years 2014-2015) to EPA	No later than October 1, 2016
The EPA notifies states and tribes concerning any intended modifications to their recommendations (120-day letters)	No later than June 2, 2017 (120 days prior to final ozone area designations)
The EPA publishes public notice of state and tribal recommendations and the EPA's intended modifications, if any, and initiates 30-day public comment period	On or about June 9, 2017
End of 30-day public comment period	On or about July 10, 2017
States and tribes submit additional information, if any, to respond to the EPA's modification of a recommended designation	No later than August 7, 2017
The EPA promulgates final ozone area designations	No later than October 1, 2017