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# **Air Quality Designations 101**

Initial Area Designations for the  
National Ambient Air Quality Standards

July 25, 2017

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# Key Topics

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- Clean Air Act (CAA) Designation Requirements
- CAA Designation Process and Schedule
- Evaluating State and Tribal Designation Recommendations
- Determining Nonattainment Area Boundaries
- Current Designation Processes

# What is an Air Quality Designation?

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- A designation is a label that EPA assigns to an area to describe the air quality for any of six common air pollutants for which EPA has established a National Ambient Air Quality Standard (NAAQS).
  - These pollutants are called “criteria pollutants.”
- Designation categories provided in the CAA: nonattainment, attainment, and unclassifiable.
- Designations trigger certain air quality planning and control requirements.

# National Ambient Air Quality Standards

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- EPA sets primary and secondary NAAQS for common air pollutants:
  - Ground-level ozone
  - Carbon monoxide
  - Nitrogen dioxide
  - Particulate matter
  - Lead
  - Sulfur dioxide
- Primary standards provide public health protection.
- Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.
- The CAA requires EPA to review the standards for each pollutant every five years, and if appropriate, revise the NAAQS.

# CAA Designation Requirements

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- When EPA establishes a new or revised NAAQS, the CAA requires EPA to designate all areas of the country, including Indian Country, as to whether the areas are meeting or not meeting that NAAQS (known as the initial area designations).
- CAA Section 107(d) governs the initial designations.
  - Identifies and defines the designation categories
  - Provides the process and schedule
  - Establishes interactive roles for EPA and states
- While section 107(d) specifically addresses states, EPA generally follows the same process and schedule for tribes pursuant to CAA section 301(d) Tribal Authority and the Tribal Authority Rule (TAR).

# Designation Categories

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## **CAA Categories:**

- Nonattainment Area – An area that does not meet or that contributes to a nearby area that does not meet the NAAQS.
- Attainment Area – An area that is meeting the NAAQS and is not contributing to a nearby area that does not meet the NAAQS.
- Unclassifiable Area – An area that cannot be designated based on available information as meeting or not meeting the NAAQS.

## **EPA-Developed Alternative Category:**

- For initial designations, EPA uses “Unclassifiable/Attainment” instead of Attainment.

# CAA Designation Process and Schedule

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- First step is for Governors (and participating Tribal Leaders) to submit to EPA recommendations on designations and boundaries for areas in their state (or areas of Indian Country)
  - Due no later than 1 year after promulgation of a NAAQS.
- If EPA intends to modify a state's or tribe's recommendation, we must:
  - 1) Notify the state/tribe of our intended modification no later than 120 days before promulgating final designation. (Known as a "120-day letter.")
  - 2) Provide the state/tribe an opportunity to comment on EPA's intended modifications. (We typically request comments within 60 days.)

# CAA Designation Process and Schedule (Cont.)

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- EPA is required to designate areas within 2 years of promulgation of a NAAQS.
  - However, EPA can take up to 1 additional year if the Administrator determines we have insufficient information to complete designations in 2 years.
- CAA exempts designations from notice-and-comment rulemaking.
- Final designations published in Federal Register and included in Code of Federal Regulations. (40 CFR part 81)
- Area designations are listed in regulatory tables for each state. Designations for Indian Country are included in associated state table.



# Example 2-Year Schedule

<b>Milestone/Activity</b>	<b>After NAAQS Promulgation</b>
EPA issues designation guidance	4 months
States & Tribes submit designation recommendations	1 year
EPA evaluates State & Tribal recommendations; Administrator makes preliminary designation decisions	no later than 1 year 8 months
Regional Administrators send 120-day letters notifying States & Tribes of EPA's preliminary designation decisions. Request comments in 60 days.	1 year 8 months
Deadline for public comments (if we offer 30-day public comment period on 120-day letters)	1 year 9 months
Deadline for State and Tribal comments	1 year 10 months
Administrator signs final designations	2 years

# Designation Guidance

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- Provides information on the process and schedule for designating areas for a specific NAAQS.
- Identifies important factors that EPA recommends states/tribes consider in developing their recommendations.
- Guidance also identifies a recommended geographic starting point for assessing nonattainment boundaries.
  - Varies according to the specific NAAQS, depending on the nature of the pollutant.
- Decisions on area boundaries are case-by-case. However, EPA strives for national consistency in decisions in order to have legally defensible designations.

# Additional Guidance for Designating Areas of Indian Country

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- To ensure national consistency and recognize tribal sovereignty in the designations process, EPA issued two memos in December 2011.
  - A guidance memo which describes the overall process that should be used when designating areas of Indian country.
  - A policy memo which describes the decision-making process for designating separate areas of Indian country.
    - The memo also makes it clear to tribes that there are implementation considerations for areas that are designated as separate nonattainment areas.

# Evaluating State/Tribal Recommendations

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- EPA evaluates the State and Tribal recommendations, and conducts additional area analyses, as needed, to determine whether modifications are appropriate.
- Regional Offices play central role in evaluating areas in their states and areas of Indian Country.
- EPA Administrator makes the preliminary designation decisions for the 120-day letters and the final designation decisions.

# Determining Nonattainment Area Boundaries

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- Designations focus is on defining Nonattainment Area boundaries. The Clean Air Act directs EPA to designate as nonattainment an area that is violating the NAAQS and nearby areas with emissions that contribute to the violation(s).
- Next EPA determines whether to designate remaining areas Unclassifiable/Attainment or Unclassifiable.
- For nonattainment areas, EPA recommends states/tribes base boundary recommendations on an evaluation of five factors:
  - Air quality data,
  - Emissions and emissions-related data,
  - Meteorology,
  - Geography/topography, and
  - Jurisdictional boundaries.

# Nonattainment Area Multi-Factor Analysis

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## Factor 1. Air Quality Data

- To determine a violation, EPA generally considers the 3 most recent years of certified air quality monitoring data.
- For the SO<sub>2</sub> NAAQS, air quality modeling may also be used.

## Factor 2: Emissions and Emissions-related Data



- Includes source emissions data, traffic and commuting patterns, population and degree of urbanization.
- EPA uses the latest National Emissions Inventory or other sources such as state or tribal inventories.
- Significant emissions levels in a nearby area indicate the potential for the area to contribute to observed violations.

# Nonattainment Area Multi-Factor Analysis (Cont.)

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## Factor 3. Meteorology (weather/transport patterns)

- EPA evaluates how meteorological conditions, such as weather, transport patterns, and stagnation conditions, affect the fate of emissions.
- Potential analyses include use of trajectory and source apportionment modeling, and weather information such as wind speed and frequency of wind direction.
- For designations, EPA considers only contributions from “nearby” areas.

## Factor 4: Geography/topography

- EPA examines the physical features of the land that might affect the distribution of the pollutant or precursors over the area.

# Nonattainment Area Multi-Factor Analysis (Cont.)

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## Factor 5. Jurisdictional Boundaries.

- Once the violating area and nearby contributing area are determined, we consider existing jurisdictional boundaries for the purpose of providing a clearly defined legal boundary and carrying out air quality planning for the nonattainment area.
- Examples boundaries include: counties, townships, existing nonattainment areas, Indian country.

## Technical Support Documents (TSDs) for Nonattainment Areas

- EPA prepares a TSD for each nonattainment area that details our multi-factor analysis and supports EPA's designation and boundary decisions.



# Nonattainment Area Classifications

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- Areas designated nonattainment for ozone, particulate matter or carbon monoxide are also classified at the time of designation.
- Ozone has the most complex classification system with 5 categories: Marginal, Moderate, Serious, Severe, Extreme.
- Areas with higher classifications have later attainment dates.
- CAA implementation requirements vary according to the area classification.

# Current Designation Processes

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- Currently, there are 2 designations processes underway.
  - 2010 Sulfur Dioxide (SO<sub>2</sub>) NAAQS
  - 2015 Ozone NAAQS
- Though not required by the CAA, EPA typically provides a public comment period on its intended designations.
- A state or tribe may also provide a public process on their designation recommendations prior to submitting them to EPA.

# Designations for SO<sub>2</sub> NAAQS

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- Uses monitoring and modeling to assess air quality.
- EPA is designating areas for the 2010 SO<sub>2</sub> NAAQS in 4 rounds. Rounds 2, 3, and 4 are court-ordered deadlines.
  - Rounds 1 and 2 completed in 2013 and 2016.
  - Deadline for Round 3 is December 31, 2017
  - Deadline for Round 4 is December 31, 2020.
- The current Round 3 of designations will address all remaining areas except areas where states installed and began timely operation of a new monitor under EPA's Data Requirements Rule.

# SO<sub>2</sub> Designations Schedule - Round 3

Milestone/Activity	Date
States and tribes may submit updated recommendations	By January 13, 2017
States and tribes submit modeling pursuant to SO <sub>2</sub> Data Requirements Rule	By January 13, 2017
EPA notifies states and tribes concerning any intended modifications to their recommendations (120-day letters)	About August 14, 2017
EPA publishes notice of state and tribal recommendations and EPA's intended modifications. Initiates 30-day public comment period.	About August 23, 2017
End of 30-day public comment period	About September 22, 2017
Requested deadline for states and tribes to submit any additional information regarding EPA's intended modifications.	By October 13, 2017
Administrator signs notice of final area designations	About December 14, 2017

# Ozone Designations Schedule

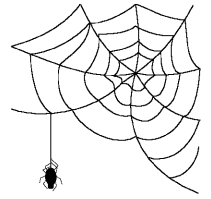
Milestone/Activity	Date
EPA promulgates 2015 Ozone NAAQS.	October 1, 2015
EPA issues designation guidance.	February 25, 2016
States & tribes submit designation recommendations.	By October 1, 2016
EPA Administrator extends the deadline for final designations by 1 year, until October 1, 2018.	June 6, 2017
EPA notifies states & tribes of any intended modifications to their designation recommendations (120-day letters).	To Be Determined
EPA publishes notice of state and tribal recommendations and EPA's intended modifications. Initiates 30-day public comment period.	To Be Determined
States and tribes submit additional information, if any, to respond to EPA's intended modifications.	To Be Determined
Administrator promulgates final area designations.	To Be Determined

# For Further Information

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- EPA provides a designation website for each criteria pollutant to share designation information.
  - Policy guidance including information on developing recommendations
  - Recommendations from states & tribes
  - EPA 120-day letters and responses from states & tribes
  - Response to comments document
  - Technical support documents
  - Designation rules and related regulatory actions
  - Maps
- Online “EPA Green Book” tracks ongoing status of nonattainment designations and redesignations.
- NAAQS website.

# Websites



## Designation Websites

- This page provides links to the designation website for each NAAQS criteria pollutant, as well as links to the NAAQS websites and implementation websites.

<https://www.epa.gov/criteria-air-pollutants>

## EPA Green Book – Nonattainment Areas for Criteria Pollutants

- <https://www.epa.gov/green-book>

## Reviewing NAAQS: Scientific and Technical Information

- <https://www.epa.gov/naaqs>

Questions?

