



OFFICE OF AIR QUALITY PLANNING AND STANDARDS

RESEARCH TRIANGLE PARK, NC 27711

January 16, 2025

MEMORANDUM

SUBJECT: Initial Area Designations for the 2024 Revised Secondary Annual Sulfur Dioxide National Ambient Air Quality Standard (Revised January 16, 2025)

FROM: Peter Tsirigotis
Director

TO: Regional Administrators, Regions 1-10

The purpose of this memorandum is to distribute non-binding guidance from the U.S. Environmental Protection Agency (EPA) on the initial area designation process as it relates to the 2024 revised secondary annual sulfur dioxide (SO₂) national ambient air quality standard (NAAQS or standard).¹ Please share this memorandum with state and Tribal agencies in your region.

This memorandum provides information on the anticipated schedule and process for initially designating areas for the purpose of implementing the 2024 revised secondary annual SO₂ NAAQS. In addition, this memorandum identifies important factors that the EPA intends to evaluate in making area designations and nonattainment area boundary decisions for this standard. The EPA recommends that states² and Tribes also consider these factors in making their recommendations for area designations and nonattainment area boundaries.

On December 10, 2024, the EPA signed a revised secondary annual SO₂ NAAQS. On December 11, 2024, the EPA posted to its website a signed version of the secondary annual SO₂ NAAQS thus effectuating the promulgation of the secondary annual SO₂ NAAQS.³ In that action, the EPA revised the secondary annual SO₂ standard, strengthening it from the current 0.5 parts per million (ppm) as a 3-hour average, not to be exceeded more than once in a year, to an annual standard with a level of 10 parts per billion (ppb), averaged over 3 years. The EPA revised the secondary annual SO₂ standard

¹ See Review of the Secondary National Ambient Air Quality Standards for Oxides of Nitrogen, Oxides of Sulfur, and Particulate Matter Final Rule ("Final Rule"), Section II.B.3.

² CAA section 302(d) defines the term "State" to mean a State, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa and includes the Commonwealth of the Northern Mariana Islands.

³ The original version of this memorandum was signed on December 10, 2024, and it was posted to EPA's website on December 11, 2024. This memorandum has since been updated to reflect the promulgation date of the secondary annual SO₂ NAAQS which was December 11, 2024. The tables in this document have been updated to reflect the promulgation date of the secondary annual SO₂ NAAQS.

based on the latest scientific evidence and advice from the EPA’s independent science advisors, the Clean Air Scientific Advisory Committee (CASAC). As a result of this NAAQS revision, the Clean Air Act (CAA) requires that the EPA designate all parts of the country with respect to the revised secondary standard. This memorandum is focused on the initial area designations process under the CAA which is triggered by any new or revised NAAQS. However, there are other CAA requirements that are also triggered by a new or revised NAAQS. These are addressed in the preamble to the final NAAQS revision. The EPA observes that implementation activities for this NAAQS may overlap with ongoing implementation for other NAAQS and to the extent this provides streamlining opportunities, the EPA encourages Air Agencies to consider those.⁴

The EPA determined in the final NAAQS rulemaking⁵ that the current SO₂ monitoring network is adequate to provide the data needed to implement the revised secondary SO₂ NAAQS.⁶ In light of this, the EPA expects that states and Tribes would recommend that areas be designated based on the most recent 3 full calendar years of certified air quality data from the existing monitoring network, which would inform the EPA’s intended designations. The EPA intends to publish design values for an annual SO₂ secondary standard in the Air Quality System (AQS) covering the years 2022-2024 in the May/June 2025 timeframe. We anticipate states and Tribes would use these design values calculated from the data years (2022-2024) as the basis for their designation recommendations. Based on our preliminary review of monitoring network data, the EPA anticipates that the vast majority of areas in the United States are likely to be attaining the revised secondary SO₂ NAAQS.⁷

Clean Air Act Area Designations Requirements

Section 107(d) of the CAA governs the process for initial area designations after the EPA establishes a new or revised NAAQS. Under CAA section 107(d), states are directed to submit designations recommendations to the EPA, by a date specified by the EPA, which cannot be sooner than 120 days after promulgation of the new or revised NAAQS and cannot be later than 1 year after the promulgation of the NAAQS. If the EPA decides that it is necessary to modify a state’s recommendation and to promulgate a designation different from a state’s recommendation, then the EPA must notify the state at least 120 days prior to promulgating the final designation, and the EPA must provide the state an opportunity to comment on the potential modification. These modifications may relate either to the designation category of an area or to the boundaries of an area, or both. The CAA requires the EPA to complete the initial area designations process within 2 years of promulgation of a new or revised NAAQS, unless the Administrator has insufficient information to make initial designations decisions in the 2-year time frame. In such circumstances, the EPA may take up to 1 additional year to make initial area designations decisions (i.e., no later than 3 years after promulgation of the standard).

⁴ For example, as described in section V.B. of the Final Rule, *supra* note 1, all States are then required to make infrastructure SIP submissions within 3 years after promulgation of a new or revised standard (unless an extension is requested and granted, as explained in the Final Rule). As the EPA noted in the same section of the Final Rule, “the timeline for submission of infrastructure SIPs for the secondary SO₂ NAAQS may overlap in part with the timeline for submission of infrastructure SIPs for the recently revised primary PM_{2.5} NAAQS [89 FR 16202 (March 6, 2024)]. Air Agencies may elect to streamline their infrastructure SIP submittal and development by combining the two distinct infrastructure SIP submissions for both NAAQS into one submission. The EPA appreciates the obligations may differ for some infrastructure elements, and simply notes that this option may represent a more streamlined approach for some areas.”

⁵ See Final Rule, Section IV.

⁶ See Ambient Air SO₂ Monitoring Network Review and Background (Watkins et al., 2024).

⁷ See Technical Analyses to Support Alternative Demonstration Approach for Proposed Secondary SO₂ NAAQS Under NSR/PSD Program, Tillerson et al., 2024 (Docket EPA-HQ-OAR-2014-0128-0041).

If a state or Tribe does not submit designations recommendations, then the EPA will promulgate the initial designations that it deems appropriate. The EPA codifies all final area designations in 40 CFR Part 81, Subpart C.

While section 107(d) of the CAA specifically addresses the designations process between the EPA and states, the EPA intends to follow the same process to the extent practicable for Tribes that choose to make initial area designations recommendations pursuant to section 301(d) of the CAA regarding Tribal authority and the Tribal Authority Rule (TAR) (63 FR 7254; February 12, 1998, codified at 40 CFR Part 49).⁸ To provide clarity and consistency, in December 2011, the EPA issued a guidance memorandum concerning collaboration between the EPA and Tribes during the designations process.⁹ In accordance with the TAR, the December 2011 Tribal designations guidance memorandum and the EPA's May 2011 Tribal Consultation Policy, the EPA intends to designate Tribal areas on the same schedule as state designations.¹⁰

Schedule for Initial Area Designations

Consistent with the schedule in CAA section 107(d)(1), state Governors are to submit, and Tribes can choose to submit, their initial designations recommendations to the EPA for the 2024 revised secondary annual SO₂ NAAQS no later than 1 year following promulgation of the revised NAAQS, or by December 11, 2025. State or Tribal recommendations should be informed by certified air quality data from the 3 most recent full calendar years of monitoring data available at that time, where it is available.

If the EPA decides it is necessary to make any modifications to a state's or Tribe's initial area designations recommendations, including area boundaries, then the EPA is required to notify the state or Tribe of this fact no later than 120 days prior to finalizing the designations. These notifications are commonly known as "120-day Letters." If a state or Tribe has additional information relevant to such an area that it wants the EPA to consider with respect to a designation recommendation that the EPA plans to modify, typically the EPA requests that such information be submitted no later than 60 days from the date of the EPA's 120-day Letter. This schedule will ensure that the EPA can fully consider any such additional information prior to issuing final designations.

Although CAA section 107(d) explicitly exempts the designations process from the notice and comment process under the Administrative Procedure Act, the EPA currently intends to consider public input in the designations process for this revised NAAQS. In recent designations actions, the EPA has typically provided no less than a 30-day public comment period immediately following publication of a Notice of Availability in the Federal Register and issuance to states and Tribes of the 120-day Letters responding to the designations recommendations from states and Tribes. Attachment 1 summarizes the anticipated designations schedule based on the CAA's procedural guides.

⁸ Tribes are not required to have "Treatment-In-A-Similar-Manner-As-A-State" (TAS) status to submit initial area designations recommendations to the EPA.

⁹ Guidance to Regions for Working with Tribes during the National Ambient Air Quality Standards (NAAQS) Designations Process. Memorandum from Stephen D. Page, Director, EPA OAQPS to Regional Administrators, Regions I-X. December 20, 2011. Available at https://www.epa.gov/sites/default/files/2017-02/documents/12-20-11_guidance_to_regions_for_working_with_tribes_naaqs_designations.pdf.

¹⁰ EPA Policy on Consultation and Coordination with Indian Tribes, May 4, 2011. Available at <https://www.epa.gov/sites/default/files/2013-08/documents/cons-and-coord-with-indian-tribes-policy.pdf>.

In the final NAAQS rulemaking, the EPA determined that revising the secondary SO₂ NAAQS is not likely to result in new disproportionate and adverse effects on communities with environmental justice concerns.¹¹ To meet EPA's environmental justice goals, the EPA plans to designate areas in a timely manner.

Identifying Nonattainment Areas

Section 107(d)(1) of the CAA directs the EPA to designate an area nonattainment if it is violating the NAAQS or if it is contributing to a violation¹² of the NAAQS in a nearby area. To start the initial area designations process, states and the EPA need to identify any areas that are violating the NAAQS. Thus, the first step in designating SO₂ nonattainment areas would be to identify air quality monitoring sites with data that show a violation of the 2024 revised secondary annual SO₂ NAAQS. For this purpose, the EPA intends to evaluate areas using the most recent complete 3 consecutive calendar years of quality-assured, certified air quality monitoring data in the EPA's AQS.¹³ Violations are identified using data from Federal Reference Method (FRM) and Federal Equivalent Method (FEM) monitors that are sited and operated in accordance with 40 CFR Part 58. Procedures for using the SO₂ air quality data to determine whether the SO₂ NAAQS are met at an ambient air quality monitoring site are given in 40 CFR Part 50 Appendix T.

It is typical that in following a 2-year designations process, state and Tribal designations recommendations are based on one set of data years while the EPA's final designations decisions are based on an overlapping, but not identical, set of data years. This is because the most recent 3 years of certified air quality data used for final designations decisions could include 1 year of data that is not yet fully available while states and Tribes are developing their designations recommendations. The EPA expects that in providing designations recommendations, states and Tribes would review air quality data from 2022 to 2024. In making final designations decisions, the EPA may rely on updated air quality data from 2023 to 2025.

Exceptional Events and Designations

Initial area designations are an action of regulatory significance described in the EPA's "Treatment of Data Influenced by Exceptional Events" Final Rule (81 FR 68216; October 3, 2016) (Exceptional Events Rule or EER) and codified at 40 CFR sections 50.1, 50.14, and 51.930. Consistent with the EER, air quality monitoring data affected by exceptional events may be excluded from use in identifying a violation of regulatory significance at a regulatory ambient air monitoring site if the data meet the criteria for exclusion, as specified in the EER.

The EPA encourages states and Tribes to contact and collaborate with the appropriate EPA Regional office after identifying any exceptional event influencing ambient air quality concentrations in a way that could affect initial area designations. If demonstrations are received, EPA Regional offices are encouraged to prioritize and expedite the review process for those claims for events in years 2022-

¹¹ See Final Rule, Section VI.J.

¹² A violation of a NAAQS occurs when a design value is over the level of the NAAQS. An exceedance of a NAAQS occurs when a metric measure from a regulatory monitor is over the level of the NAAQS.

¹³ More information on the EPA's AQS is available at <https://www.epa.gov/aqs>.

2024 that have the potential to influence the EPA's regulatory decisions for initial area designations for the 2024 revised secondary annual SO₂ NAAQS.

Nonattainment Area Analyses and Boundary Determinations

CAA section 107(d) explicitly requires that the EPA designate as nonattainment not only the area that is violating the standard at issue, but also those nearby areas that contribute to the violation(s). The EPA expects to evaluate the boundaries, as recommended by the state or Tribe, for each nonattainment area on a case-by-case basis considering the specific facts and circumstances unique to the area. As noted above, in the final NAAQS rulemaking the EPA determined that the current monitoring network is adequate to provide the data needed to implement the revised secondary SO₂ NAAQS.¹⁴ The Agency intends to designate areas using the most recent 3 full calendar years of certified air quality data from the existing monitoring network to identify the areas violating the standard and nearby areas contributing to the violation(s). In recommending boundaries, the EPA recommends that states and Tribes consider whether nearby areas have the potential to contribute to ambient air quality within the relevant, defined area.

SO₂ is a pollutant that is directly emitted by pollution sources, and resulting ambient SO₂ concentrations are generally expected to be highest relatively close to the source(s) and lower at farther distances due to dispersion. Thus, SO₂ concentration patterns differ from those resulting from photochemically-formed (secondary) pollutants such as ozone. The EPA intends to use a weight-of-evidence evaluation of five factors for each area to inform the geographic scope of a nonattainment area boundary. The five factors the EPA intends to evaluate in making initial area designations and nonattainment area boundary decisions include: air quality data, emissions and emissions-related data, meteorology, geography/topography, and jurisdictional boundaries. The EPA recommends that states and Tribes consider these factors in making their recommendations for area designations and nonattainment area boundaries. Often the analytical starting point for evaluating these factors is the county boundary associated with a violating air quality monitor, but the weight of evidence may suggest an SO₂ nonattainment area smaller than the size of a county, especially in cases where a county covers a very large geographic area.

In addition, as provided for in the December 2011 guidance titled, "Policy for Establishing Separate Air Quality Designations for Areas of Indian Country," Tribes may recommend that the EPA designate areas of Indian country separately from the adjacent state areas.¹⁵ This guidance provides for a nationally consistent approach for evaluating such designations recommendations from Tribes. The policy was designed to recognize Tribal sovereignty in air quality management matters affecting Indian country.

Unclassifiable Areas

In certain cases, there may be insufficient information to support a clear designation of nonattainment or attainment for an area. For example, the monitoring data may be incomplete, or the monitors may not be sited and operated in accordance with the regulatory requirements of 40 CFR Part 58. In such cases where there is insufficient available information to determine whether an area is meeting or not

¹⁴ See Ambient Air SO₂ Monitoring Network Review and Background, Watkins et al., 2024, (EPA-HQ-OAR-2014-0040)

¹⁵ Guidance to Regions on the EPA's Policy for Establishing Separate Air Quality Designations for Areas of Indian Country. Memorandum from Stephen D. Page, Director, EPA OAQPS to Regional Administrators, Regions I-X. December 20, 2011. Available at <https://www.epa.gov/sites/default/files/2016-02/documents/indian-country-separate-area.pdf>.

meeting the NAAQS, the CAA provides for a designation of "unclassifiable" for any such area. Any area designated unclassifiable may not include any location that is contributing to a nearby area that does not meet the revised secondary SO₂ NAAQS. In recommending boundaries for an unclassifiable area, the EPA recommends that states and Tribes provide an evaluation of whether any location within that boundary has the potential to contribute to ambient air quality in any nearby area that does not meet the secondary SO₂ NAAQS.

Attainment/Unclassifiable Areas

Once the EPA has determined the boundaries for nonattainment areas (areas that are violating the NAAQS or contributing to a nearby violation) and any unclassifiable areas (areas where there is insufficient available information to determine a violation), the EPA expects to issue intended designations of the remainder of the state as "attainment/unclassifiable." The EPA requests that states and Tribes recommend how they would like the boundaries specified for their attainment/unclassifiable areas. In designations for previous criteria pollutants states have elected to specify boundaries for the attainment/unclassifiable areas in a variety of ways, including "rest of state" or "entire state," by Air Quality Control Regions, by county, by previous nonattainment area boundaries, or by a combination of methods. Examples of these approaches can be found in 40 CFR Part 81, Subpart C.

Summary

This memorandum provides the EPA's preliminary views on the process for determining initial area designations and boundaries for the 2024 revised secondary annual SO₂ NAAQS. Recommendations contained herein are not binding on states, Tribes, the public, or the EPA. The EPA will make the designations determinations and nonattainment area boundary decisions for the 2024 revised secondary annual SO₂ NAAQS a final regulatory action(s) published in the *Federal Register*. When the EPA issues the final area designations, those decisions will be binding on states, Tribes, the public, and the EPA as a matter of law.

Two attachments to this memorandum provide additional information relevant to the anticipated initial area designations process and schedule. Attachment 1 is an anticipated timeline of important milestones in the initial area designations process for the 2024 revised secondary annual SO₂ NAAQS based on requirements found in the CAA. Attachment 2 identifies the schedule for exceptional events activities as prescribed in the EER (Table 2 of section 50.14) for initial data flagging and submission of exceptional events demonstrations.

Attachments

Attachment 1: Anticipated Timeline For 2024 Revised Secondary Annual SO₂ NAAQS Designations Process

Attachment 2: Schedule for Exceptional Events Flagging and Documentation Submission for Data to be Used in Initial Area Designations

ATTACHMENT 1

Anticipated Timeline for 2024 Revised Secondary Annual SO₂ NAAQS Initial Area Designations Process Based on CAA Requirements¹

Milestone	Date
The EPA signs <i>Federal Register</i> notice for the 2024 revised secondary annual SO ₂ NAAQS	December 10, 2024
The EPA promulgates the secondary annual SO ₂ NAAQS ²	December 11, 2024
2024 SO ₂ Design Values available	June 2025
States and Tribes submit recommendations for secondary SO ₂ NAAQS designations to the EPA	No later than December 11, 2025
2025 SO ₂ Design Values available	June 2026
The EPA notifies states and Tribes concerning any intended modifications to their recommendations (120-day Letters)	No later than August 11, 2026 (120 days prior to final secondary SO ₂ NAAQS designations)
The EPA publishes public notice of availability of state recommendations and the EPA's intended modifications, if any, and initiates 30-day public comment period	late-August 2026
End of 30-day public comment period	late-September 2026
States and Tribes submit additional information, if any, to respond to the EPA's modification of recommended designations	late-October 2026 (60 days following the publication of the notice of availability of state recommendations and the EPA's intended modifications)
The EPA promulgates final initial area designations for the 2024 secondary SO ₂ NAAQS	No later than December 11, 2026

¹ Based on the schedule outlined in Section 107(d) of the CAA.

² Promulgation of NAAQS for designations purposes is the date of signature plus widespread dissemination of the final rule.

ATTACHMENT 2

Schedule for Exceptional Events Flagging and Documentation Submission for Data to be Used in Initial Area Designations¹

Action	Data Years	CAA Date/Deadline
Secondary SO ₂ NAAQS promulgation	n/a	December 11, 2024
Initial EE notifications	2022, 2023, 2024	July 1, 2025
Final EE demonstrations	2022, 2023, 2024	No later than December 11, 2025
Governors' designation recommendations		No later than December 11, 2025
120-day letters, including EPA concurrence on EE demonstrations	2023, 2024, 2025	No later than August 11, 2026
Final designations signed by Administrator	2023, 2024, 2025	No later than December 11, 2026

¹ Submittal of exceptional events demonstrations is discretionary. This schedule is relevant to air agencies that intend to submit exceptional events demonstrations for events that have regulatory significance for the 2024 revised secondary annual SO₂ NAAQS initial area designations. The Schedule for Exceptional Events for Use in Initial Area Designations is found in full at 40 CFR 50.14(c)(2)(vi) Table 2.