

# Revision to the NAAQS for Particulate Matter

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# Presentation Agenda

- Background
- Overview of Changes
- Timeline
- Resources
- Planning Implications

## Background

# Reasons for Revision

- Reconsideration of the December 2020 decision to retain the Particulate Matter (PM) National Ambient Air Quality Standard (NAAQS).
- Available scientific evidence and technical information indicate the current primary annual PM<sub>2.5</sub> standard may not be adequate to protect public health and welfare.
- Obligation under Clean Air Act (CAA) for primary standards to be “requisite to protect public health with an adequate margin of safety.”
- Proposal involved extensive review of scientific record, public input, and EPA’s Clean Air Scientific Advisory Committee (CASAC).




## Overview of Changes

# PM<sub>2.5</sub> NAAQS Revision

- On February 7<sup>th</sup>, 2024, EPA promulgated a revision to the NAAQS for PM<sub>2.5</sub> from the current annual level of **12.0 µg/m<sup>3</sup>** to **9.0 µg/m<sup>3</sup>**.
- EPA also announced revisions to the Air Quality Index (AQI) and monitoring requirements.
- EPA is not changing the current:
  - secondary (welfare-based) annual PM<sub>2.5</sub> standard,
  - primary and secondary 24-hour PM<sub>2.5</sub> standards,
  - primary and secondary PM<sub>10</sub> standards.

## Overview of Changes

# Expected Benefits

- Advance Environmental Justice through reduction of particle pollution (disproportionate burden on communities of color and other vulnerable communities)
- With the annual PM<sub>2.5</sub> standard finalized at 9.0 µg/m<sup>3</sup>, in 2032 we expect
  -  as many as 4,200 avoided premature deaths
  -  as many as 270,000 avoided lost workdays
  -  up to \$43 billion in public health benefits

## Overview of Changes

# Monitoring Revisions

- Revise PM<sub>2.5</sub> network design criteria to include an environmental justice factor and require monitoring for at-risk communities
- For CA, no anticipated newly required sites; utilize existing sites + integrate at-risk communities into monitor relocation considerations



## Overview of Changes

# Monitoring Revisions

- Revise 40 CFR 50 App. K to allow combined site record for  $PM_{10}$ , similar to  $PM_{2.5}$ .
  - Primary monitors need to be identified for  $PM_{10}$ .
- Revise 40 CFR 58 App. E to clarify and amend siting language and waiver process.
- Addition of Tisch Cyclone as an approved second stage separator.



## Overview of Changes

# Monitoring Revisions

- Revise 40 CFR 58 App. C to allow continuous Federal Equivalent Methods (FEMs) to be calibrated using network data from collocated Federal Reference Method (FRM) and continuous FEM data.
- This would be initiated by instrument manufacturers and implemented as a national solution through firmware updates.
- Notice of Availability for AQS data with data alignment for T640/T640x. Public comment until March 15<sup>th</sup>.





## Overview of Changes

# Air Quality Index Revisions

- The AQI is EPA’s color-coded tool to help inform the public about current and daily air quality.
- The AQI converts PM<sub>2.5</sub> concentrations to a number scale from 0 to 500.
- EPA is proposing to update the lower breakpoints (50, 100, 150) and upper breakpoints (200+) to reflect the changes to the primary annual PM<sub>2.5</sub> NAAQS and the newest scientific information.

**Final Revision to AQI for PM<sub>2.5</sub>**

AQI Value	Current [µg/m <sup>3</sup> ]	Revisions [µg/m <sup>3</sup> ]
0, Good	0	0
50, Moderate	12	9
100, USG	35	35
150, Unhealthy	55	55
200, Very Unhealthy	150	125
300, Hazardous	250	225
500, Hazardous*	500	325

\*The 500 breakpoint is used in conjunction with the 300 breakpoint to calculate AQI values within the hazardous category. The approach does not use the 500 breakpoint to determine other breakpoints values.

## Timeline

# Designations and Implementation

June 2024 2023 Design Values available

By February 7, 2025 States and Tribes submit recommendations for PM<sub>2.5</sub> designations to the EPA

June 2025 2024 Design Values Available

By October 9, 2025 EPA notifies States and Tribes about any modifications to their recommendations

Mid-October 2025 EPA initiates a 30-day public comment period on recommendations and modifications

Mid-November 2025 End of public comment period

Mid-December 2025 States and Tribes submit additional information, if any, to respond to EPA

February 6, 2026 EPA promulgates final 2024 PM<sub>2.5</sub> NAAQS area designations

## Timeline

# Exceptional Events

- By January 1, 2025 Initial notifications due for 2021-2023 exceptional events
- By February 7, 2025 States and Tribes submit recommendations for PM<sub>2.5</sub> designations to the EPA
- By February 7, 2025 Exceptional events demonstrations due for 2021-2023
- By September 30, 2025 Initial notifications and exceptional events demonstrations due for 2024
- February 6, 2026 EPA promulgates final 2024 PM<sub>2.5</sub> NAAQS area designations

Resources

# Exceptional Events



EPA has developed three new resources to support Exceptional Events:

- **Data visualization and comparison tools.** Will help air agencies identify event-influenced  $PM_{2.5}$  data most likely to have regulatory significance.
- **$PM_{2.5}$  Wildfire Exceptional Events Tiering Supplement.** Information on tiering wildfire/ $PM$  events, similar to the tiering approach used for wildfire/ozone events, to help “right-size” demonstrations.
- **Prescribed Fire Demonstration Example.** EPA is working with the State of California and other collaborators to develop an approved exceptional events demonstration for a prescribed fire. Demonstration will go through public notice/comment at the state level.

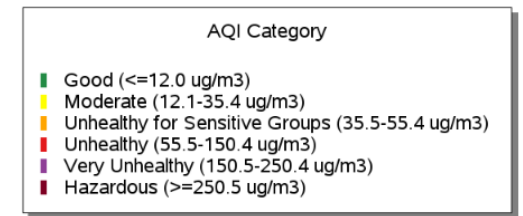
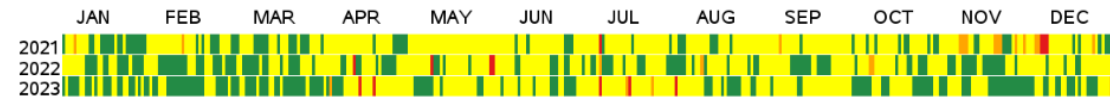
Taking public feedback through a non-regulatory docket until March 8, 2024.

## Resources

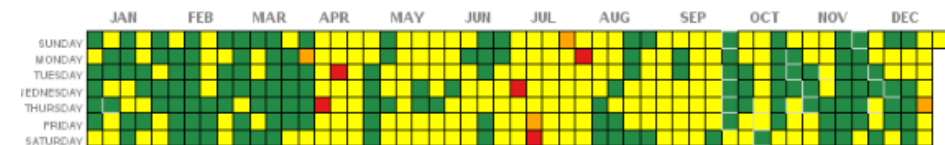
# Data Visualization

- A suite of data visualization tools are now available
- These will assist air agencies in identifying which impacted days affect design values and whether there is regulatory significance
- Graphics and data generated by these tools can be incorporated into exceptional events demonstrations
- Tools are a living resource, and will be updated based on feedback

PM2.5 Daily AQI Values, 2021 to 2023  
Riverside County, CA  
Based on ALL data, including any flagged exceptional events



PM2.5 Daily AQI Values in 2023  
Riverside County, CA  
Based on ALL data, including any flagged exceptional events



gray outline indicates AirNow data source

## Exceptional Events Design Value Tool

Select a Pollutant: PM2.5	2021-2023 Design Value: 12.5 ug/m <sup>3</sup> 2021-2023 DV Validity: TRUE
Select a NAAQS: 2024 Annual NAAQS (9 ug/m <sup>3</sup> )	2021 Annual Mean: 14.48 ug/m <sup>3</sup> 2021 Complete Quarters: 4 2022 Annual Mean: 11.49 ug/m <sup>3</sup> 2022 Complete Quarters: 4 2023 Annual Mean: 11.51 ug/m <sup>3</sup> 2023 Complete Quarters: 4

## Resources

# PM<sub>2.5</sub> Wildland Fire Tiering Document

- In September 2016, EPA issued a guidance document focused on a tiering structure for wildfire events and ozone impacts.
- This resource is a document outlining a similar tiering structure with a focus on PM<sub>2.5</sub> and wildland fires. Like the 2016 document, this document is expected to guide agencies in determining how much evidence is appropriate to support the “clear causal relationship” criterion within a demonstration.
- The tiering is conceptually similar to the tiering in the Wildfire Ozone Guidance Document.
  - 3-tiered approach (e.g., Tier 1, Tier 2, Tier 3)
  - Lower tier events (i.e., Tier 1) will generally require less evidence
  - The tiering structure is applicable to wildland fire events affecting PM<sub>2.5</sub> concentrations (annual or 24-hour standards).

## Resources

# Prescribed Fire Demonstration

- EPA has not received an exceptional events demonstration for a prescribed fire on wildland (for any NAAQS) since the Agency revised the Exceptional Events Rule in 2016.
- To provide an example demonstration, EPA worked with the US Forest Service, State of California, Placer County Air Pollution Control District, and Northern Sierra Air Quality Management District to develop an exceptional events demonstration for a prescribed fire.
- Additional Resources for Prescribed Fires
  - Prescribed Fire Demonstration Development Frequently Asked Questions (FAQ) document
  - Prescribed Fire Demonstration Template
  - Example Supplemental Analyses for Clear Causal Relationship Demonstrations

## Planning Implications

# 2020-2022 Design Values


- 2020-2022 design values show 30 counties in California exceeding the 2024 annual PM<sub>2.5</sub> NAAQS.
- This information is provided for illustrative purposes and is not intended to predict the outcome of any forthcoming designations process.
- Future designations of attainment/nonattainment will likely rely upon monitoring data collected between 2022 and 2024.





## Planning Implications

# 2020-2022 California Design Values

 Brown shading shows 2022 design values above the 2024 annual PM<sub>2.5</sub> NAAQS

County	2020-2022 PM <sub>2.5</sub> Annual Design Value (µg/m <sup>3</sup> )	Previous PM <sub>2.5</sub> Nonattainment Area?
Alameda	9.4	Yes
Butte	11.6	Yes
Calaveras	9	No
Colusa	10.5	No
Contra Costa	10	Yes
Fresno	17.5	Yes
Humboldt	7.4	No
Imperial	11.1	Yes
Inyo	8.8	No
Kern	18.8	Yes
Kings	16.6	Yes
Lake	6.6	No
Los Angeles	13.4	Yes
Madera	13.2	Yes
Marin	7.5	Yes

County	2020-2022 PM <sub>2.5</sub> Annual Design Value (µg/m <sup>3</sup> )	Previous PM <sub>2.5</sub> Nonattainment Area?
Mendocino	11.1	No
Merced	12.3	Yes
Mono	19.5	No
Monterey	6.9	No
Nevada	8.9	No
Orange	11.2	Yes
Placer	10.9	Yes
Plumas	17	Yes
Riverside	13.6	Yes
Sacramento	11.7	Yes
San Benito	6.5	No
San Bernardino	14	Yes
San Diego	10	No
San Francisco	8.2	Yes
San Joaquin	12.3	Yes

County	2020-2022 PM <sub>2.5</sub> Annual Design Value (µg/m <sup>3</sup> )	Previous PM <sub>2.5</sub> Nonattainment Area?
San Luis Obispo	8.7	No
San Mateo	7.6	Yes
Santa Barbara	8	No
Santa Clara	10.7	Yes
Santa Cruz	7.2	No
Shasta	9.3	No
Siskiyou	11.6	No
Solano	9.4	Yes
Sonoma	7.3	Yes
Stanislaus	14.3	Yes
Sutter	13.8	Yes
Tehama	9.9	No
Tulare	18.4	Yes
Ventura	7.8	No

## Links

# Available Documentation for Further Reading

- News release on 2024 PM NAAQS: <https://www.epa.gov/newsreleases/epa-finalizes-stronger-standards-harmful-soot-pollution-significantly-increasing>
- PM NAAQS home page: <https://www.epa.gov/pm-pollution/final-reconsideration-national-ambient-air-quality-standards-particulate-matter-pm>
- PM Designations Memorandum for the 2024 Revised Annual PM<sub>2.5</sub> NAAQS: <https://www.epa.gov/particle-pollution-designations/particle-pollution-designations-memorandum-and-data-2024-revised#A>
- PM2.5 Designations Mapping Tool: <https://experience.arcgis.com/experience/a2ca272ce9fc4019a88ce35b863e2cab>
- AirKnowledge Training on Designations: <https://airknowledge.gov/SI/PLAN201-SI.html>
- Notice of Availability and Opportunity to Comment on Proposed Updated to PM<sub>2.5</sub> Data from T640/T640X Monitors: <https://www.federalregister.gov/documents/2024/02/15/2024-02935/notice-of-opportunity-to-comment-on-proposed-update-of-pm25-data-from-t640t640x-pm-mass-monitors>
- Exceptional Events Data Visualization Tools: <https://www.epa.gov/air-quality-analysis/exceptional-events-analysis-and-visualization-tools>
- Exceptional Events Webinar and Non-Regulatory Docket: <https://www.epa.gov/air-quality-analysis/informational-public-webinar-new-exceptional-events-implementation-tools>

Questions?

Thank you!

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