

# Practical Implications of Proposed PM<sub>2.5</sub> NAAQS Revisions

Air & Waste Management Association  
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# Agenda

- ▶ Introduction
- ▶ Proposed NAAQS – What You Need to Know
- ▶ Current Monitoring Data Trends – Southeastern U.S.
- ▶ Direct/Practical Implications of NAAQS Changes to Industrial Sources
- ▶ So, What Do I Do With This Information?

# **Proposed NAAQS – What You Need to Know**

# National Ambient Air Quality Standards (NAAQS)

Section 109 of the Clean Air Act (CAA) requires EPA to set the NAAQS for pollutants considered harmful to public health and the environment, and identifies two types of NAAQS:

1. **Primary** standards set limits to protect public health, including the health of sensitive populations like asthmatics, children and the elderly
2. **Secondary** standards set limits to protect public welfare, including protection against visibility impairment and damage to animals, crops, vegetation and buildings

The CAA also requires USEPA review the NAAQS and the science upon which they are based **every five years** and revise the NAAQS if necessary. However, because the process is lengthy, reviews are rarely completed within that timeframe.

# Particulate Matter (PM) NAAQS History

- ▶ **1971** NAAQS addressed Total Suspended Particulates (TSP)
- ▶ **1987** NAAQS shifted to PM<sub>10</sub> – Annual and 24-hr (TSP repealed)
- ▶ **1997** Added PM<sub>2.5</sub> Annual and 24-hr NAAQS – (both PM<sub>10</sub> NAAQS remained in place)
- ▶ **2006** Strengthened PM<sub>2.5</sub> 24-hr (repealed annual PM<sub>10</sub>)
- ▶ **2012** NAAQS strengthened PM<sub>2.5</sub> annual (revoked 1997 annual PM<sub>2.5</sub> for attainment areas)
- ▶ **2020** Retained NAAQS without revision
- ▶ **2023** Proposed PM<sub>2.5</sub> NAAQS revisions

Pollutant	1997 NAAQS	2006 NAAQS	2012 NAAQS
PM <sub>10</sub> 24-hour	150 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>
PM <sub>10</sub> Annual	50 µg/m <sup>3</sup>	Revoked	
PM <sub>2.5</sub> 24-hour	65 µg/m <sup>3</sup>	35 µg/m <sup>3</sup>	35 µg/m <sup>3</sup>
PM <sub>2.5</sub> Annual	15 µg/m <sup>3</sup>	15 µg/m <sup>3</sup>	12 µg/m <sup>3</sup>

# Basis for PM<sub>2.5</sub> NAAQS Reconsideration

- ▶ “Available scientific evidence and technical information indicate that the current standards may not be adequate to protect public health and welfare”
- ▶ “We take a hard look at these standards that haven’t been updated in nine years”
- ▶ “Ensuring this review, and other upcoming NAAQS reviews, reflect the latest science and public health data”
- ▶ Develop a supplement to the final 2019 Integrated Science Assessment (ISA) taking into account the most up-to-date science

Source: <https://www.epa.gov/newsreleases/epa-reexamine-health-standards-harmful-soot-previous-administration-left-unchanged>

# Happy New Year – EPA Announced Proposal for Revised NAAQS – January 2023

- ▶ EPA Press Release Announcement – January 6, 2023
  - <https://www.epa.gov/newsreleases/epa-proposes-strengthen-air-quality-standards-protect-public-harmful-effects-soot>
- ▶ Details available online
  - Notice of proposed rulemaking
    - ◆ <https://www.govinfo.gov/content/pkg/FR-2023-01-27/pdf/2023-00269.pdf>
  - PM<sub>2.5</sub> Monitor summary documentation (2019-2021)
    - ◆ <https://www.epa.gov/system/files/documents/2023-01/Fine%20Particle%20Concentrations%20for%20Counties%20with%20Monitors.pdf>
  - Plenty of other helpful documentation

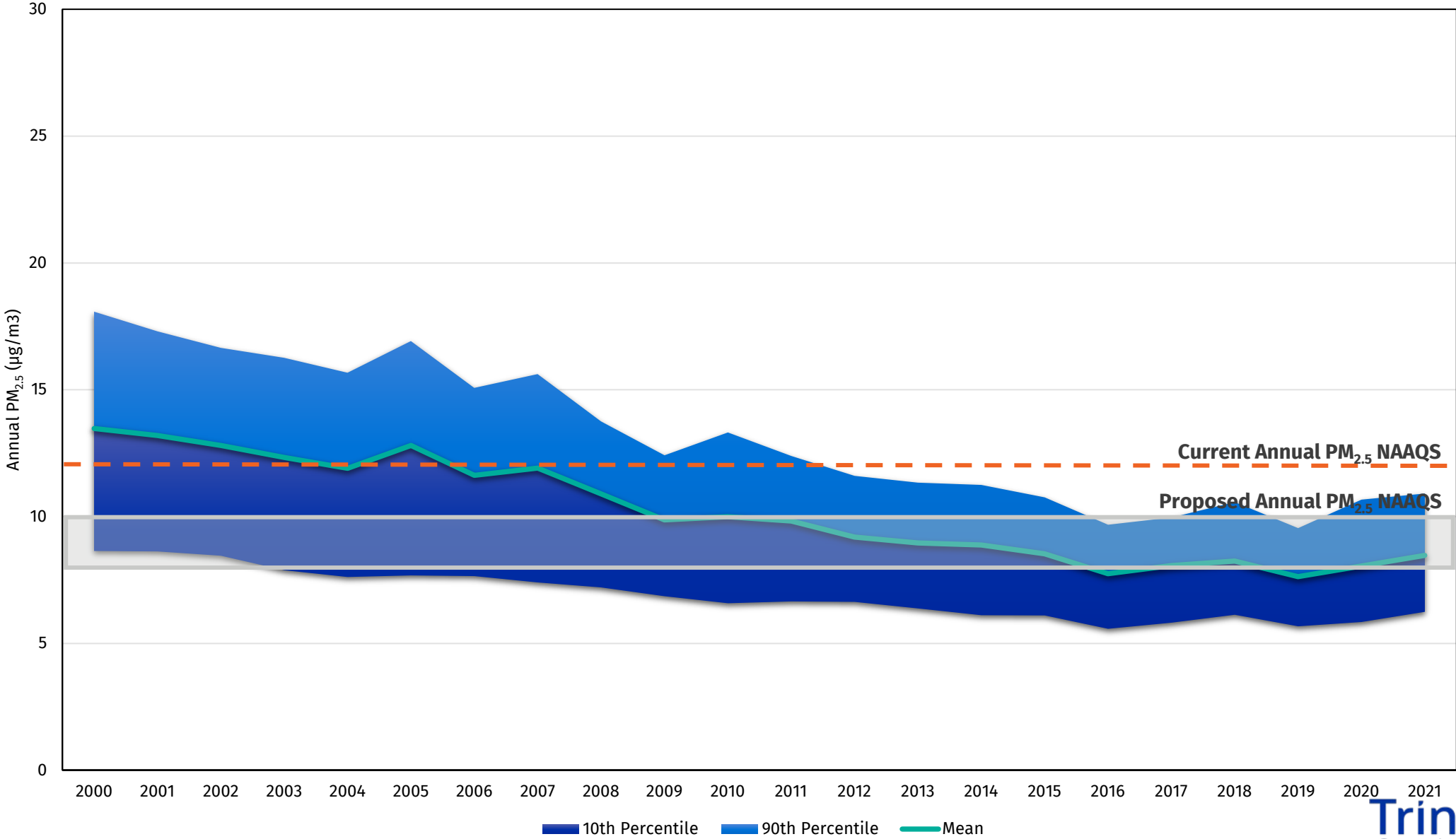
# Current PM NAAQS Review – Tabular Summary

## Recommended PM NAAQS

PM Standard	Current NAAQS	Recommended NAAQS	Final NAAQS
PM <sub>10</sub> – 24-hr	150 µg/m <sup>3</sup>	Retain	TBD
PM <sub>2.5</sub> – Annual	12 µg/m <sup>3</sup>	9-10 ug/m <sup>3</sup> and soliciting comment- 8 ug/m <sup>3</sup> or 11 ug/m <sup>3</sup>	TBD
PM <sub>2.5</sub> – 24-hr	35 µg/m <sup>3</sup>	Retain, and soliciting comment- 25 ug/m <sup>3</sup>	TBD
PM <sub>2.5</sub> – Secondary Annual	15 µg/m <sup>3</sup>	Retain	TBD



# National Trend of Annual PM<sub>2.5</sub> (2000-2021)



# Important Things to Consider (1 of 2)

- ▶ When will any final revised PM<sub>2.5</sub> NAAQS become effective?
  - Typically ~9 months from proposal – conceivable for 4<sup>th</sup> quarter 2023
- ▶ EPA designations for attainment/nonattainment due within 2 years after promulgation of revised NAAQS (potentially 4<sup>th</sup> quarter 2025)
  - Will likely consider monitoring data through 2024
  - State/local air agencies initially propose attainment/nonattainment designations for EPA's consideration/approval
  - Not necessarily just the county where the monitor is located (Metropolitan Statistical Area – MSA, Core Based Statistical Area – CBSA)

## Important Things to Consider (2 of 2)

- ▶ How will non-attainment designations impact general permitting actions?
  - New potential permitting requirements (Non-Attainment New Source Review)
  - Renewal of construction/operating permits?
  - Specific SIP provisions regarding your facility?
  - More on this item later
- ▶ How will this rulemaking impact current PSD permitting actions?
  - No grandfathering provisions (pg. 455 of pre-publication version)
  - **This means any PSD permit not final on the effective date of the NAAQS, is required to evaluate compliance with the NAAQS**
  - More on this item later

# All States' Requirements

- ▶ All states, regardless of attainment status, must submit an infrastructure SIP to EPA that includes:
  - How the state will implement, maintain, and enforce the new NAAQS
  - Due 3 years from effective date of the new NAAQS
  - NNSR permitting requirements (LAER, emissions offsets, etc.)
  - PSD Modeling challenges

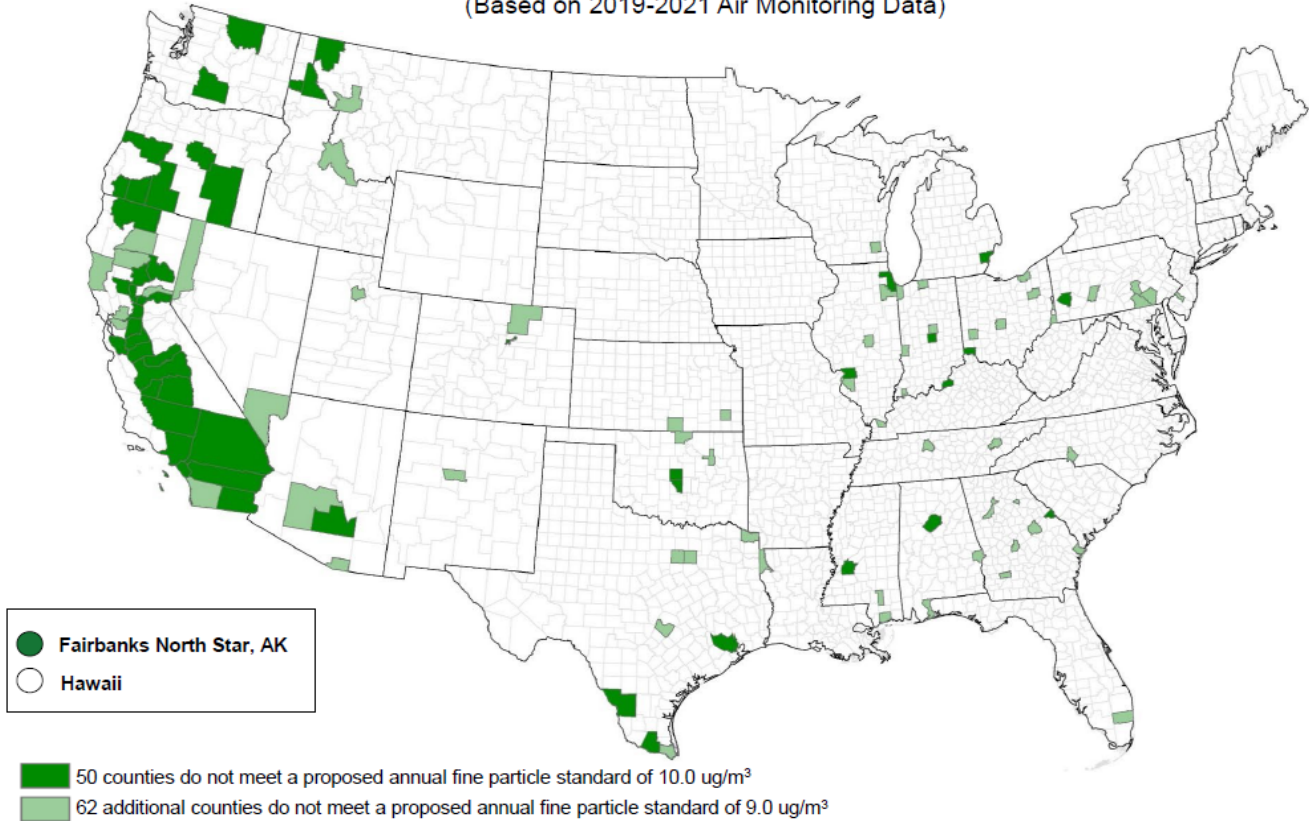


# **Current Monitoring Data Trends – Southeastern U.S. Emphasis**

# EPA Provided Data

## Current Air Monitoring Data Show Some Counties Would Not Meet Proposed Primary Fine Particle Standards

(Based on 2019-2021 Air Monitoring Data)



- Fairbanks North Star, AK
- Hawaii

- 50 counties do not meet a proposed annual fine particle standard of 10.0 ug/m<sup>3</sup>
- 62 additional counties do not meet a proposed annual fine particle standard of 9.0 ug/m<sup>3</sup>

Note: Map reflects monitored counties with complete monitoring data. See accompanying table for more detail. Future area designations (attainment/nonattainment) will not be based on these data, but likely on monitoring data collected between 2021 and 2024. Of the 112 counties with 2019-2021 design values above 9 ug/m<sup>3</sup>, 24 counties are totally or partially contained in nonattainment areas for the current PM<sub>2.5</sub> standards.

This information is provided for illustrative purposes only and is not intended to project or predict the outcome of any forthcoming designations process.

# Southeastern US – Areas of Concern

- ▶ All EPA provided data based on 2019-2021 design value data
  - Designations potentially based on 2022-2024 data, so important to realize this is projection of attainment/nonattainment – what will updated data indicate?
  - <https://www.epa.gov/system/files/documents/2023-01/Fine%20Particle%20Concentrations%20for%20Counties%20with%200Monitors.pdf>

Location	Design Value	Location	Design Value
<b>Alabama</b>		<b>Georgia</b>	
Birmingham	11 µg/m <sup>3</sup>	Augusta	11.1 µg/m <sup>3</sup>
Opelika	> 9 µg/m <sup>3</sup>	Chatham Co.	> 9 µg/m <sup>3</sup>
<b>Florida</b>		Clarke Co.	> 9 µg/m <sup>3</sup>
Fort Lauderdale	> 9 µg/m <sup>3</sup>	Albany	> 9 µg/m <sup>3</sup>
Pensacola	> 9 µg/m <sup>3</sup>	Atlanta	> 9 µg/m <sup>3</sup>
<b>Tennessee</b>		Houston Co.	> 9 µg/m <sup>3</sup>
Nashville	> 9 µg/m <sup>3</sup>	Sandersville	> 9 µg/m <sup>3</sup>
Knoxville	> 9 µg/m <sup>3</sup>		

# **Direct/Practical Implications of NAAQS Changes to Industrial Sources**



# So, You've Got a PSD Permit Application in Progress (1 of 2)

- ▶ Will you have to address the new PM<sub>2.5</sub> NAAQS?
  - If no application yet submitted – very likely since no grandfathering provisions included in current proposed rulemaking
  - Highly agency dependent – speed of issuing PSD permits and how long the application process will take



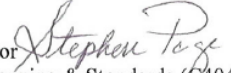
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
RESEARCH TRIANGLE PARK, NC 27711

APR - 1 2010

OFFICE OF  
AIR QUALITY PLANNING  
AND STANDARDS

## MEMORANDUM

**SUBJECT:** Applicability of the Federal Prevention of Significant Deterioration Permit Requirements to New and Revised National Ambient Air Quality Standards

**FROM:** Stephen D. Page, Director   
Office of Air Quality Planning & Standards (E404-04)

**TO:** Air Division Directors and Deputies  
Regions I - X

# So, You've Got a PSD Permit Application in Progress (2 of 2)

- ▶ Will you have to address the new PM<sub>2.5</sub> NAAQS?
  - If application already submitted, is there enough time for the agency to issue before effective date of the new NAAQS (usually 60 days after finalization/publication of Final Rule in the Federal Register)?
    - ◆ Potential effective date of any revised PM<sub>2.5</sub> NAAQS – 4<sup>th</sup> Quarter 2023
  - If application already submitted, what will the agency think about issuing a permit before finalization of a lower standard? Alternatively – what would an agency think about accepting an application at this time with a PM<sub>2.5</sub> annual NAAQS result higher than the proposed NAAQS?
    - ◆ Example – current modeling report results 9.5 µg/m<sup>3</sup>?
    - ◆ Potential agency shift to modeling under 9 µg/m<sup>3</sup>?
  - Would an agency's attitude change once rulemaking "finalized"?
  - Communication with regulatory agency/permitting authority critical at this time if you have a planned PSD permitting project to be submitted soon, or a project with an already submitted application
    - ◆ Could be very situation/location specific concerns by agencies – e.g., what is the representative ambient monitoring for area? Is modeling under the SILs appropriate?

# So, You've Got a PSD Permit – You Need to Extend the Permit...

- ▶ Not uncommon to request at least a first-time extension of the 18-month PSD permit construction window – but now the NAAQS are updated...
  - Addressed in 2014 PSD permit extension guidance
  - <https://www.epa.gov/nsr/guidance-extension-prevention-significant-deterioration-psd-permits>
  - EPA addresses on page 6 of the referenced guidance
  - Indicated as a “case-by-case” evaluation – no definitive statements one way or the other
  - Magnitude of emissions, prior modeling results, influence of precursor pollutants, etc. could all play a part in any case-by-case determination

# So, You've Got a PSD Permit to Construct – Area Becomes Non-Attainment during PSD Permit Term

- ▶ In the future, you have a PSD permit to construct (first 18 months for example) and area is designated non-attainment
  - Addressed in 2014 PSD permit extension guidance
  - <https://www.epa.gov/nsr/guidance-extension-prevention-significant-deterioration-psd-permits>
  - EPA addresses on page 7 of the referenced guidance
  - *“for the pollutant(s) for which the area changed to non-attainment, these pollutant(s) should be evaluated by the appropriate permitting authority under the applicable nonattainment NSR permit requirements prior to commencing construction if construction will be delayed beyond the 18-month deadline.”*
  - Permitting authority opinion/regulations on this topic could be important

# If You Are in the Initial Planning Phases of a PSD Project...

- ▶ What are current representative design values for annual background  $PM_{2.5}$  for the project area?
  - Is modeling under the PSD SILs feasible? Is difference in lower end of proposed NAAQS minus background greater than the SIL?
  - Could you conceivably model for the annual  $PM_{2.5}$  NAAQS demonstration under  $9 \mu\text{g}/\text{m}^3$ ?
    - ◆ If not, project could be at risk depending on where the NAAQS is finalized
    - Current EPA guidance wrinkle – you model direct  $PM_{2.5}$  even if you only trigger PSD for a precursor (e.g.,  $SO_2$  or  $NO_x$ ) – don't think you are avoiding this if PSD only for  $NO_x$  or  $SO_2$ !
      - ◆ <https://www.epa.gov/scram/guidance-ozone-and-fine-particulate-matter-permit-modeling>
- ▶ Would pre-construction monitoring be beneficial for the project?
- ▶ Communicate with your permitting authority to fully understand the risks involved! Could a permit be issued before the effective date?

# What if an Existing Facility is in Area of Concern from Current Monitoring?

- ▶ How does your level of emissions (direct  $PM_{2.5}/SO_2/NO_x$ ) compare to other sources in the area?
  - Conservatism of historic emissions estimates or permit allowable emissions?
- ▶ Would you be a source of interest for impacts to one of the  $PM_{2.5}$  monitors of interest?
  - Historic monitor speciation, versus facility  $SO_2/NO_x$  emissions
  - Confer with local permitting authority – stay in touch as issues progress, if you suspect you could be a site of interest
- ▶ Don't ignore any outreach from permitting authority regarding emissions, stack parameters, etc.
  - Such data critical, for any evaluations that permitting authorities may undertake to evaluate facility specific contributions to localized attainment issues
  - Data permitting authorities could use may be outdated/incorrect, and could have negative influences on any assessments

# What if Located in Area Heading Towards Non-Attainment?

- ▶ Keep tabs on the progress of the situation
  - How does 2022 data (finalized May 2023), and even 2023 and 2024 data, impact design values moving forward?
  - What counties/areas/facilities of interest will get pulled into non-attainment? Permitting authority review process and recommendations to EPA ~12 months after effective date of the NAAQS (late 2024/early 2025 possible)
  - If EPA intends to modify a State's recommendation, notification no later than 120 days before promulgating final decision (120-day letter)
    - ◆ Could be a public comment period for the 120 day letter of 30 days
  - Opportunity for State to respond back to EPA's modifications (~60 days)
- ▶ How much will “modeling” play into any non-attainment designations?
  - Likely agency specific depending on their capabilities
- ▶ Designations Guidance? Likely 2-4 months after Final Rule
- ▶ **Is it time to dust off those project plans!**

# So, The Area Your Facility is Located In Becomes Non-Attainment

- ▶ Understand any updated permitting requirements for the area!
  - Requirements for one non-attainment area, not necessarily the same as for another
  - What if emissions reduction credits required – but there is no bank? Could be your responsibility as the applicant to find them.
- ▶ A clear understanding of local regulations and NNSR permitting requirements is required



# So, What Do I Do With This Information?

# So, What Do I Do With All This Information!

- ▶ Keep an eye as to where things are headed!
  - Level of the finalized annual NAAQS key to potential problematic PSD permitting, how many new non-attainment areas there will be, etc.
  - Ongoing ambient  $PM_{2.5}$  monitoring key to any final non-attainment designations!
  - Is your facility in a potential area of concern!
  - Don't believe "rumors" for what the final NAAQS level will be, as those will swirl until the rulemaking is finalized
- ▶ Plan, Plan, Plan
  - Immediate action item for a PSD permit application recently submitted or to be submitted soon – evaluate ambient  $PM_{2.5}$  background levels and communicate with your permitting authority!
  - You are planning a PSD permit application in the near future – what are the risks associated with this proposed rulemaking?
  - Is it time to dust off those project plans (even minor permitting projects)?
  - Remember,  $NO_x/SO_2$  and even potentially VOC or Ammonia impacted by this rulemaking

# Questions & Discussion

The background of the slide features a close-up photograph of several hands in business attire, with index fingers pointing upwards. The image is slightly blurred, creating a sense of movement and focus on the gesture. The lighting is soft, highlighting the skin tones and the texture of the clothing sleeves.

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