$PM_{2.5}$ NAAQS Implementation

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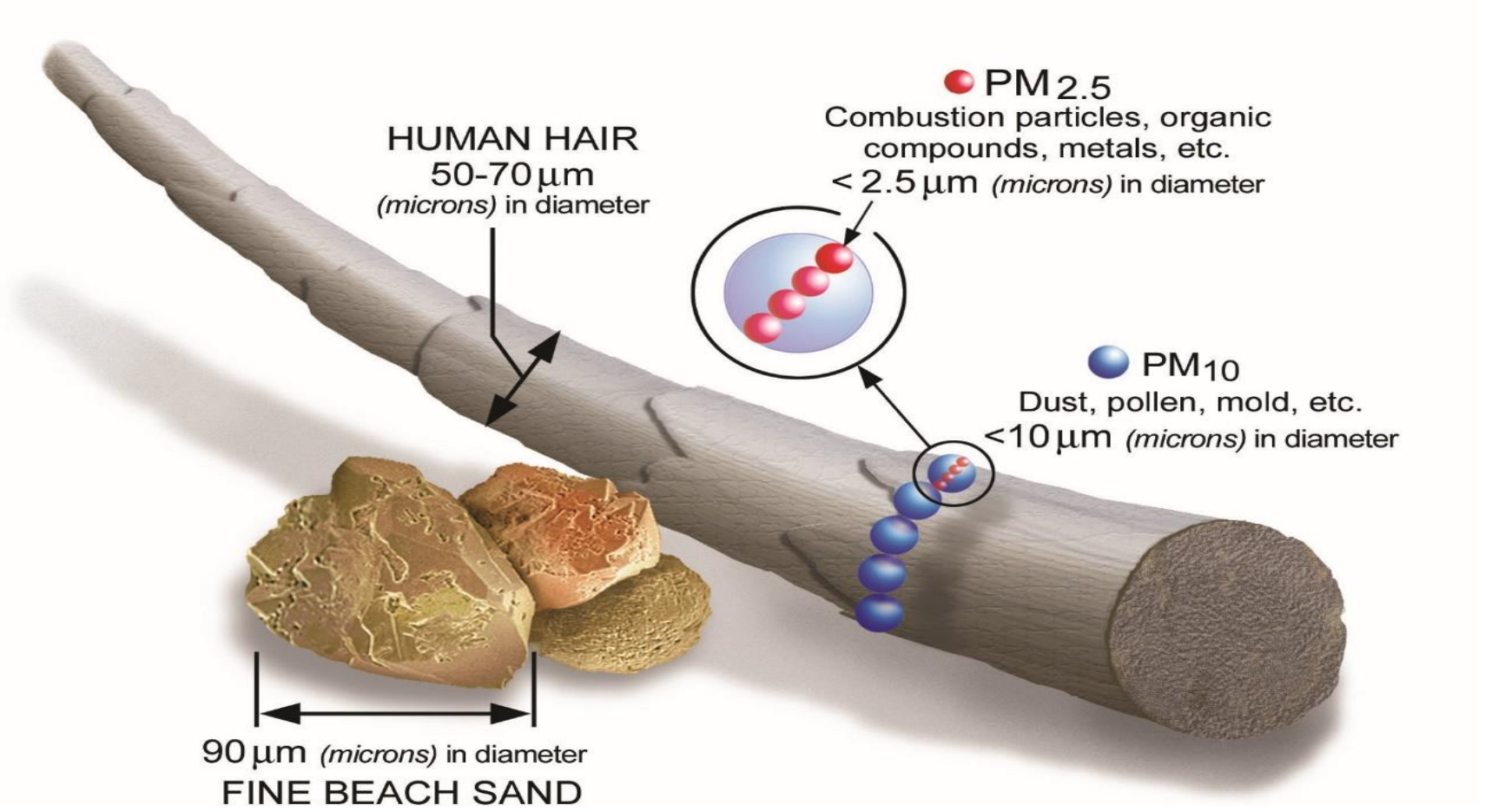
October 19, 2023

WHAT IS PARTICULATE MATTER (PM)?

Particulate Matter (PM)



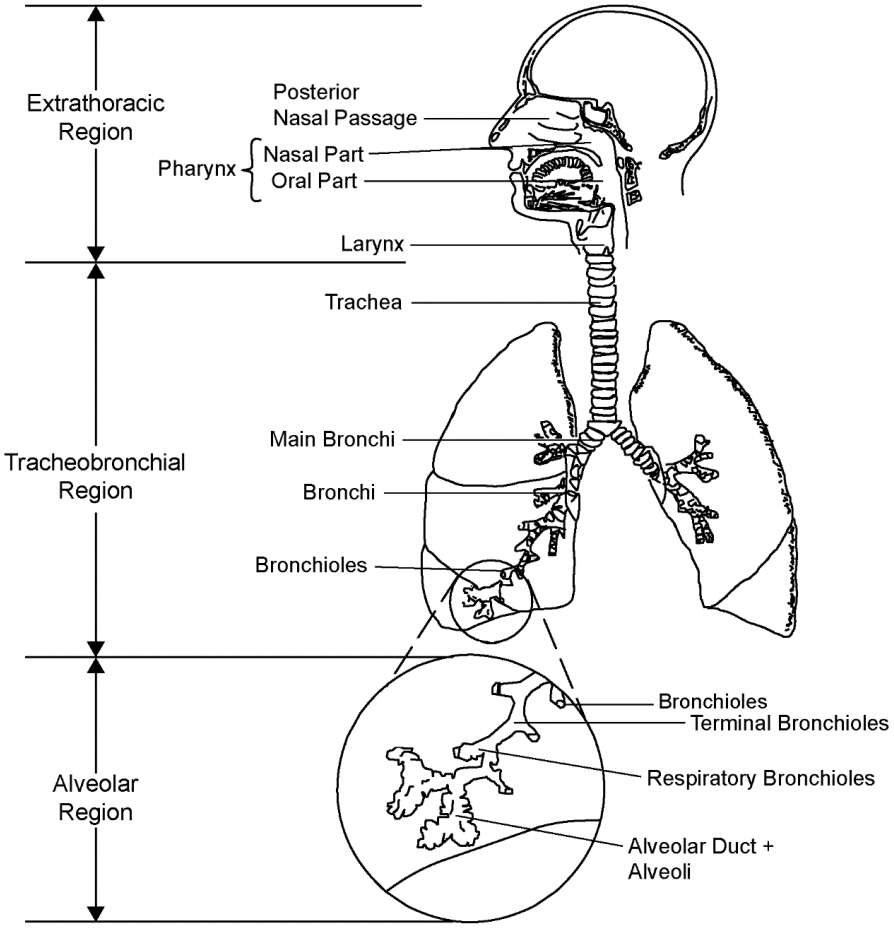
Sources of Fine Particulate Matter ($PM_{2.5}$)

- **Emitted directly**
  - Primarily combustion related
    - Mobile sources, Coal-fired power plants, Industrial processes, Wood burning stoves

- **Indirectly formed from reaction with sunlight**
  - NO_x
    - Mobile sources, Coal-fired power plants, Industrial boilers
  - SO_x
    - Coal-fired power plants, Industrial boilers
  - Ammonia
    - Coal-fired power plants, Livestock waste, Petroleum refineries, Fertilizer manufacturing
  - Volatile organic compounds (VOC)
    - Mobile, Solvents, Industrial processes

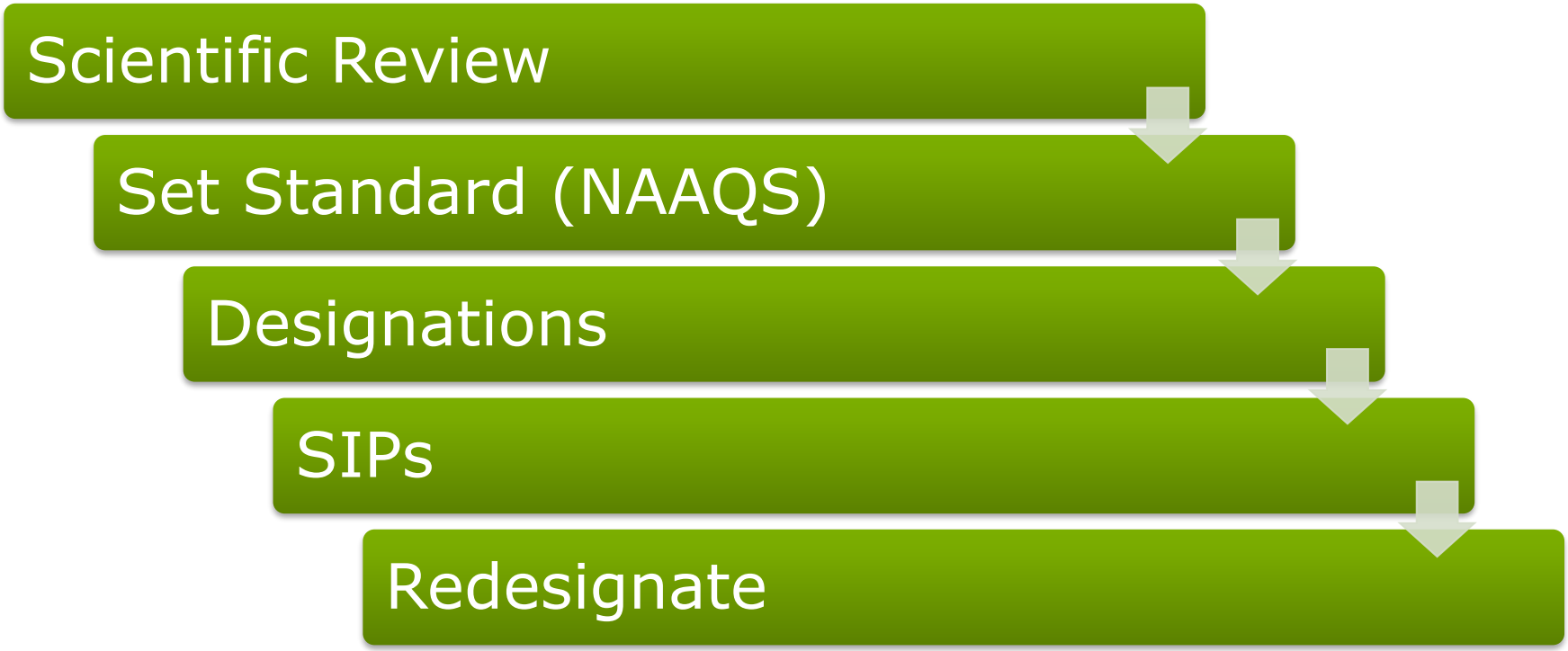
Why is PM a Public Health Concern?

- **Fine particles ($PM_{2.5}$) are of greatest health concern**
- **$PM_{2.5}$ can enter the respiratory tract and make their way into the lower parts of the lungs and other organ systems**
- **Can exacerbate pre-existing health conditions and lead to the development of some diseases (e.g., respiratory and cardiovascular) as well as premature mortality**

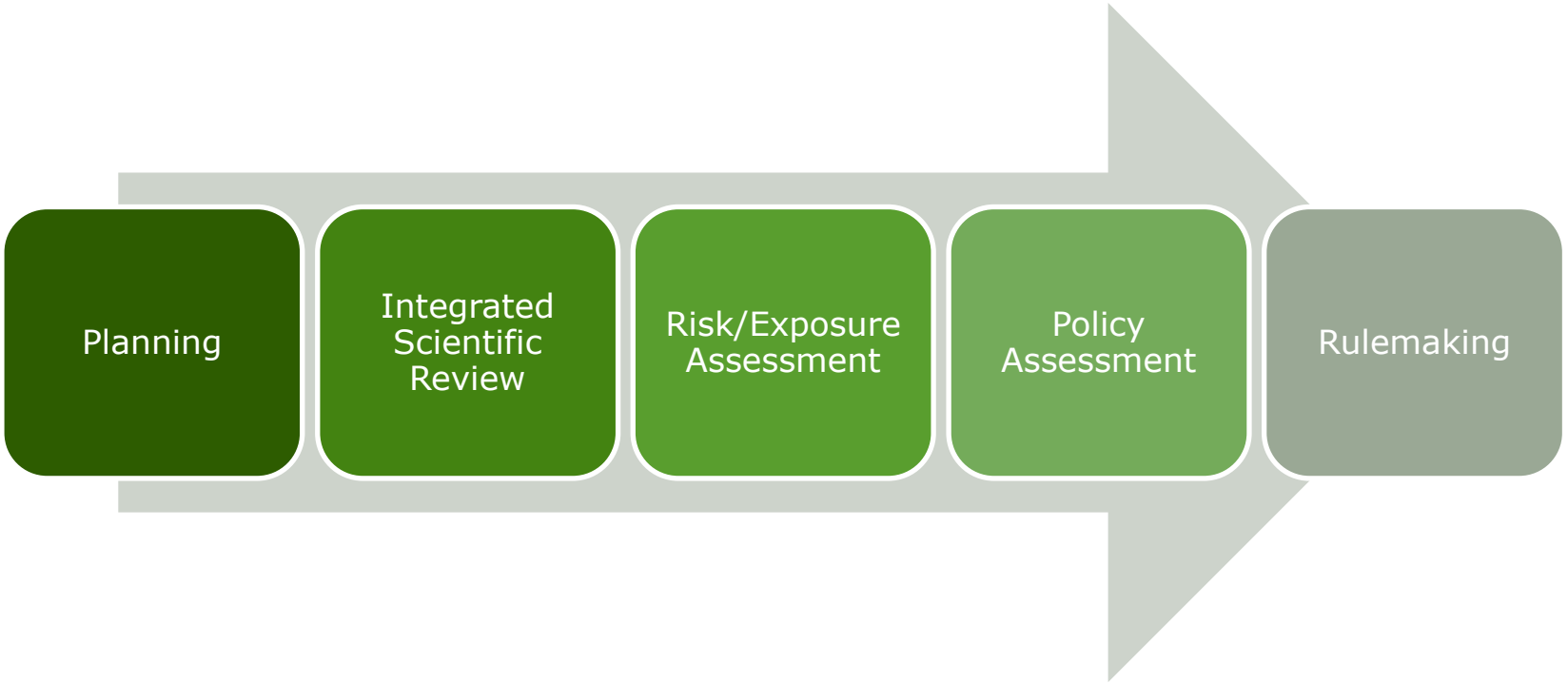


HOW DO WE REGULATING PM UNDER THE CLEAN AIR ACT?

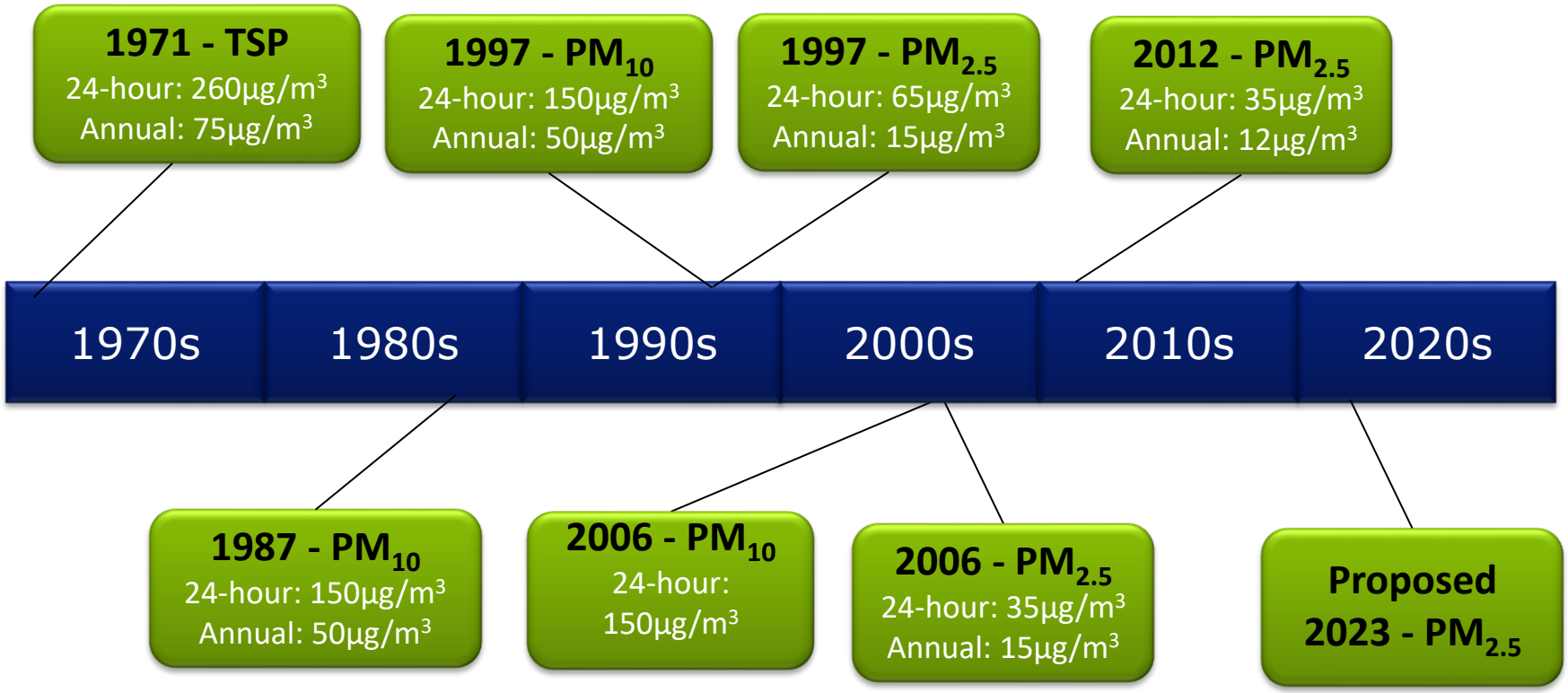
National Ambient Air Quality Standards (NAAQS), Designations, and State Implementation Plans (SIPs)



Establishing the NAAQS



History of PM Standards



WHAT ARE THE RECENT PROPOSED REVISIONS TO THE NAAQS FOR PARTICULATE MATTER?

Main Elements of the Proposal

- **EPA is proposing to revise the level of the primary (health-based) annual standard for fine particles ($PM_{2.5}$) from its current level of 12 µg/m³ to within the range of 9 – 10 µg/m³.**
  - EPA is soliciting comment on revising the level as low as 8.0 µg/m³ and up to 11.0 µg/m³.
- **EPA is proposing to retain all other PM standards:**
  - Proposing to retain the primary (health-based) and secondary (welfare-based) 24-hour $PM_{2.5}$ standards at the level of 35 µg/m³, while soliciting comment on revising the level as low as 25 µg/m³.
  - Proposing to retain the primary and secondary 24-hour PM_{10} standards.
  - Proposing to retain the secondary annual $PM_{2.5}$ standard at the level of 15 µg/m³.
- **EPA is also proposing to:**
  - Revise the Air Quality Index (AQI) to improve public communications about the risks from $PM_{2.5}$ exposures.
  - Make changes to the monitoring network to enhance protection of air quality in communities overburdened by air pollution.

Summary of Current Standards and Proposed Revisions

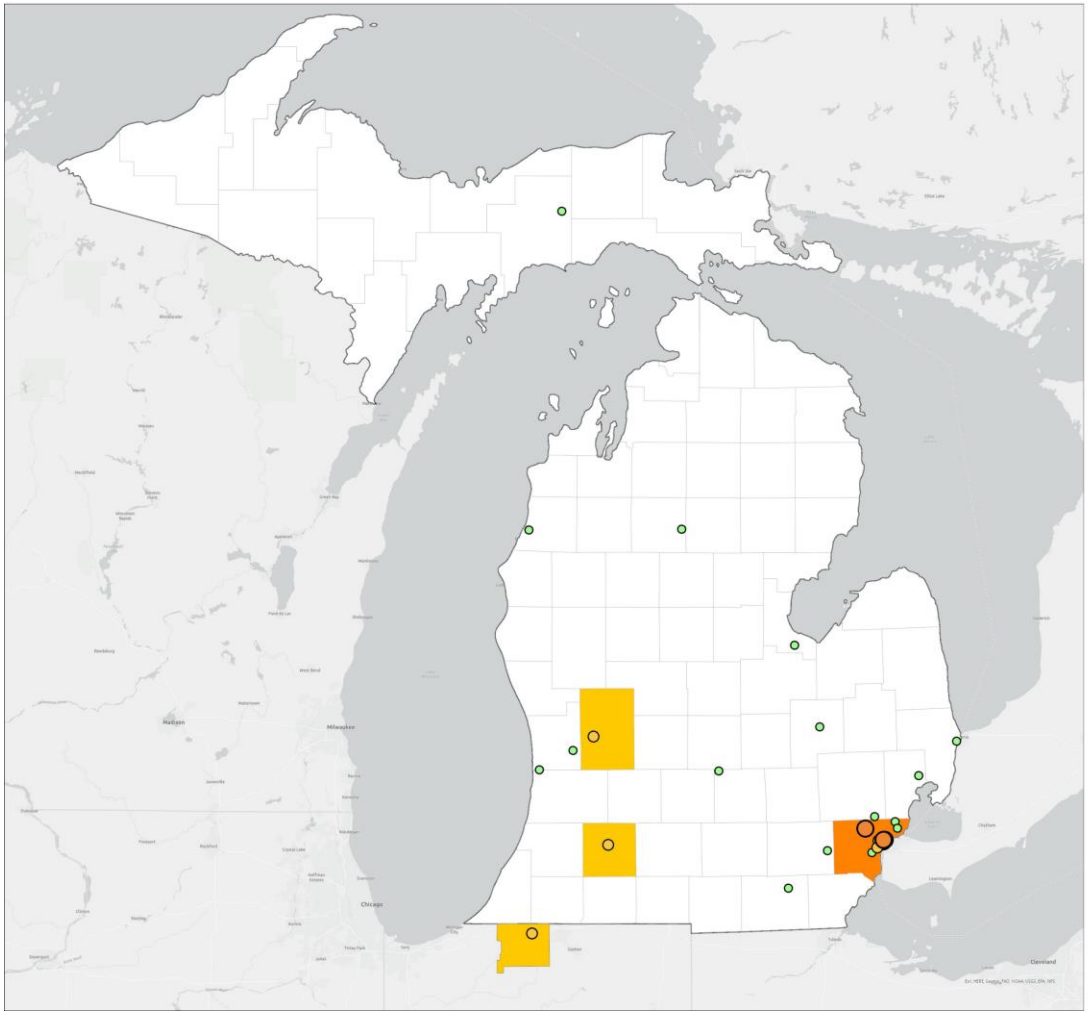
Current Standards – Last Revised in the 2012 Review*					Proposed Decisions in 2022 Reconsideration
Indicator	**Averaging Time**	**Primary/ Secondary**	**Level**	**Form**	
$PM_{2.5}$	Annual	Primary	12.0 µg/m^3	Annual arithmetic mean, averaged over 3 years	**Revise level to 9-10 µg/m^3** (Comment on 8-11 µg/m^3)
		Secondary	15.0 µg/m^3		**Retain**
	24-hour	Primary and Secondary	35 µg/m^3	98th percentile, averaged over 3 years	**Retain** (Comment on revising as low as 25 µg/m^3)
PM_{10}	24-hour	Primary and Secondary	150 µg/m^3	Not to be exceeded more than once per year on average over a 3-year period	**Retain**

WHAT WILL THIS MEAN FOR MICHIGAN?

Designations/Implementation Timeline

- **Stationary source permitting**
  - Prevention of Significant Deterioration (attainment area permitting) applies with respect to a new standard in all areas of the U.S. designated attainment for the pollutant upon the effective date of the new standard.
  - Nonattainment New Source Review applies in areas designated nonattainment for the pollutant, which includes any areas newly designated nonattainment at/after the effective date of nonattainment designations.
- **Within 2 years after a final NAAQS:**
  - For areas with available information, EPA must "designate" areas as meeting (attainment areas) or not meeting (nonattainment areas) the final NAAQS.
  - EPA considers the most recent air quality monitoring data and input from states and tribes.
- **Within 3 years after a final NAAQS:**
  - Clean Air Act section 110 requires all states to submit state implementation plan revisions to show they have the basic air quality management program components in place to implement the final NAAQS.
  - Good Neighbor Plans (also know as interstate transport) are a component of this.
- **Within 18 months after the effective date of designations:**
  - Nonattainment area $PM_{2.5}$ state implementation plans are due.
  - The attainment date for the area would be 6 years from the effective date of designations.

Design Values in Michigan



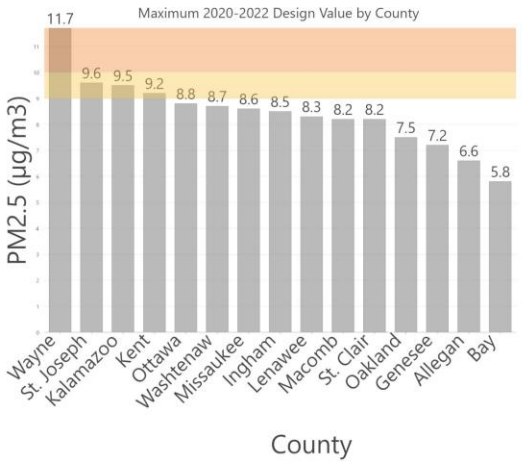
Fine Particulate Matter - 2020-2022 Design Values in Michigan

Design Value (µg/m3) by Site

- ≤ 9.00
- 9.01 - 10.00
- ≥ 10.01

Maximum DV by County

- ≤ 9.00
- 9.01 - 10.00
- ≥ 10.01

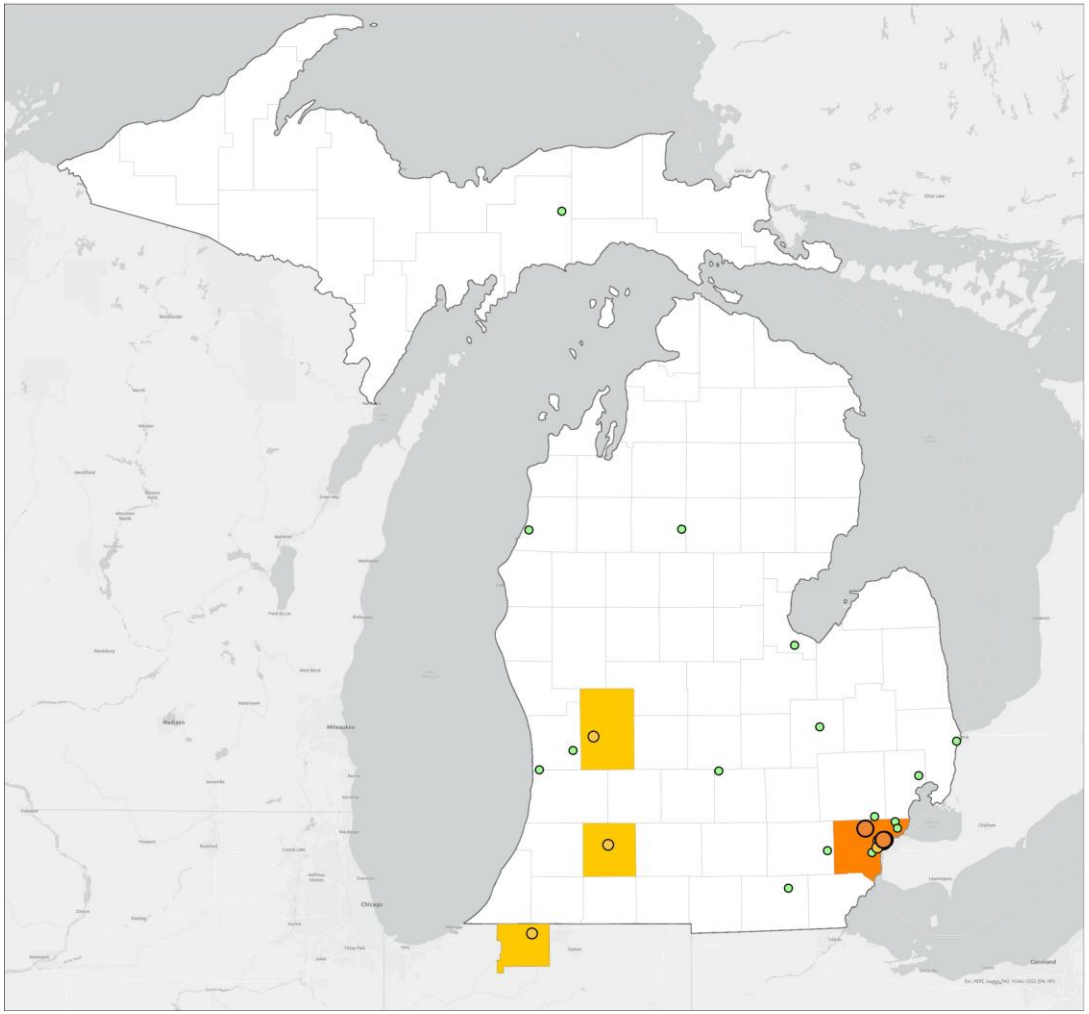


Control Strategies

- **Mobile Source Rules**
  - Clean Cars and Passenger Trucks
  - Clean Heavy-Duty Trucks and Buses
  - Mobile Source Air Toxics Rule
  - Clean Non-road Diesel Engines and Equipment
  - Locomotive and Marine Diesel Standards
  - Motor Vehicle Emission Standards
  - Co-Benefits of Inflation Reduction Act and Bilateral Infrastructure Law
- **Trading Programs for $PM_{2.5}$**
  - Acid Rain (1995)
  - NO_X SIP Call (1998)
  - CAIR (2005)
  - CSAPR (2011)
- **Reasonably Available Control Measures (RACM)/ Reasonably Available Control Technology (RACT)**
  - Emission controls that are economically and technologically feasible
  - Determined by State Agencies as part of their attainment planning requirements

WHAT ABOUT THE WILDFIRE SMOKE THIS SUMMER?

Design Values in Michigan



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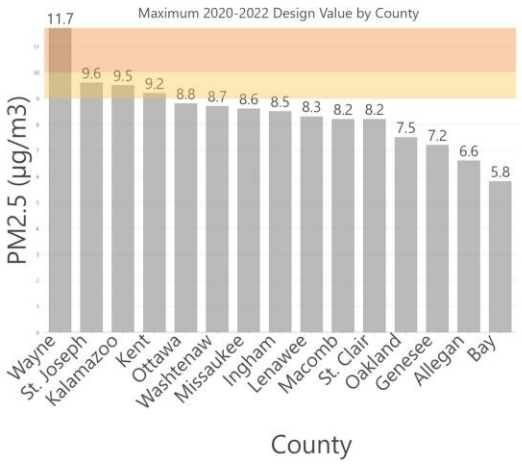
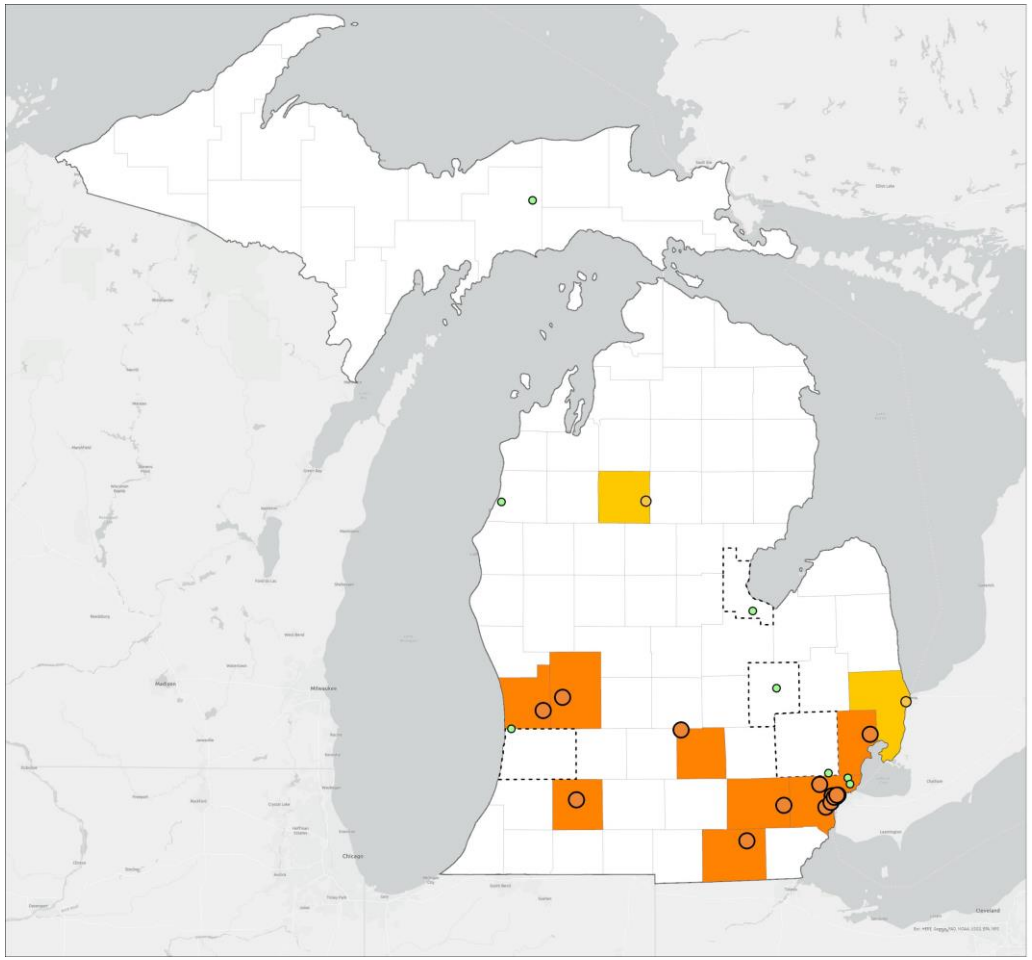


Estimated 2023 Design Values for Michigan



Fine Particulate Matter - Average Concentration in Michigan from Jan. 2021 - Jun. 2023

3-Year Average Value (µg/m3) by Site

2021-2023 Average Annual Mean as of June 6 2023

- ≤ 9.0
- 9.1 - 10.0
- ≥10.1

Maximum 3-Year Average Value by County

- ≤ 9.0
- 9.1 - 10.0
- ≥10.1

EPA's Exceptional Event Policy

- **Exceptional Events**
  - Unusual or naturally occurring events that can affect air quality but cannot be reasonably controlled by tribal, state, or local air agencies.
  - Examples: Prescribed and wildfires, high wind dust events, volcanic activity
- **EPA's Exceptional Event Policy**
  - Ensures that air quality measurements are properly evaluated and characterized with regard to their causes.
  - Identifies reasonable actions that state, local and tribal air quality agencies should take to address the air quality and public health impacts caused by these types of events.
  - Avoids imposing unreasonable planning requirements on air quality agencies related to violations of the NAAQS due to exceptional events, and
  - Ensures that the use of air quality data, whether afforded special treatment or not, is subject to full public disclosure and review.

QUESTIONS?