

Updates to the PM_{2.5} Standard

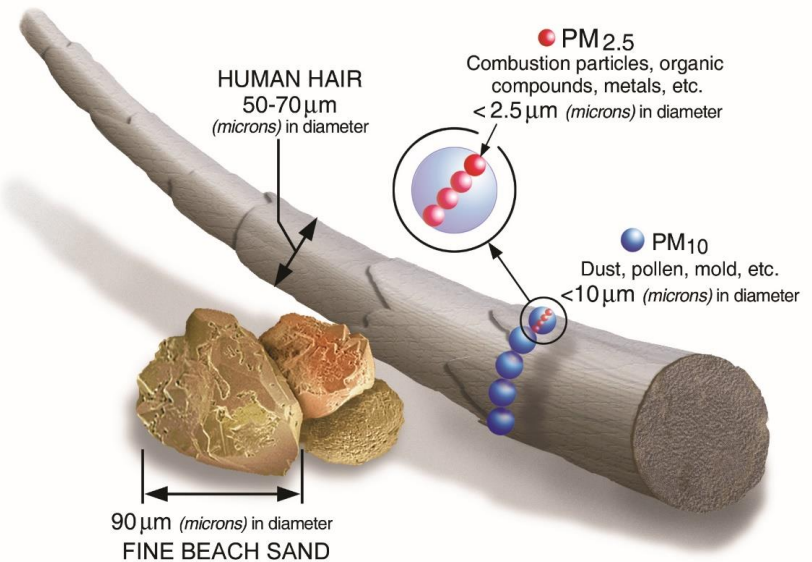
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Development Unit

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PM_{2.5} Refresher

- Particulate matter or PM is a mixture of solid particles and liquid droplets found in the air.
- PM_{2.5} consists of fine inhalable particles with a diameter of 2.5 micrometers or smaller
- Sources of PM_{2.5}: smokestacks, automobiles, wildfires, etc.



Revising the NAAQS



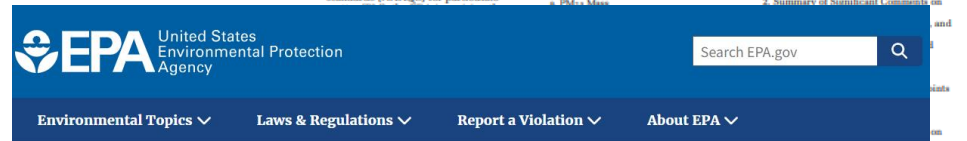
- Planning period
- Science assessment
- Risk assessment
- Policy assessment
- Rulemaking
- Revised NAAQ Standard

Revised PM_{2.5} Standard

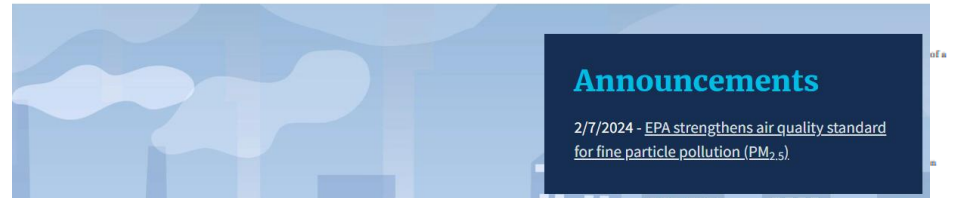
- Final Rule
 - Promulgation: Feb. 6, 2024
 - Publication Date: March 6, 2024
 - Effective: May 6, 2024
- Annual PM_{2.5} standard
 - 12 µg/m³ (2012)
 - 9 µg/m³ (2024)
- 24-hour PM_{2.5} standard
 - Unchanged at 35 µg/m³ (2006)

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<p>ENVIRONMENTAL PROTECTION AGENCY 40 CFR Parts 50, 53, and 58</p> <p>[EPA-HQ-OAR-2015-0072; FRL-8635-02-OAR]</p> <p>RIN 2060-AV52</p> <p>Reconsideration of the National Ambient Air Quality Standards for Particulate Matter</p> <p>AGENCY: Environmental Protection Agency (EPA).</p> <p>ACTION: Final rule.</p> <p>SUMMARY: Based on the Environmental Protection Agency's (EPA's) reconsideration of the air quality criteria and the national ambient air quality standards (NAAQS) for particulate</p>	<p>Table of Contents</p> <p>The following topics are discussed in this preamble:</p> <p>Executive Summary</p> <p>I. Background</p> <p>A. Legislative Requirements</p> <p>B. Related PM Control Programs</p> <p>C. Review of the Air Quality Criteria and Standards for Particulate Matter</p> <p>1. Reviews Completed in 1971 and 1987</p> <p>2. Review Completed in 1997</p> <p>3. Review Completed in 2006</p> <p>4. Review Completed in 2012</p> <p>5. Review Initiated in 2014</p> <p>a. 2020 Proposed and Final Decisions</p> <p>b. Reconsideration of the 2020 PM NAAQS</p> <p>Final Action:</p> <p>D. Air Quality Information</p> <p>1. Distribution of Particle Size in Ambient Air</p> <p>2. Sources and Emissions Contributing to PM in the Ambient Air</p> <p>3. Monitoring of Ambient PM</p> <p>4. Ambient Concentrations and Trends at PM_{2.5} Sites</p>	<p>1. Background on the Current Standard</p> <p>2. Overview of Health Effects Evidence</p> <p>a. Nature of Effects</p> <p>i. Mortality</p> <p>ii. Cardiovascular Effects</p> <p>iii. Respiratory Effects</p> <p>iv. Cancer</p> <p>v. Metabolic Effects</p> <p>vi. Nervous System Effects</p> <p>B. Conclusions on the Primary PM_{2.5} Standard</p> <p>1. CASAT Advice</p> <p>2. Basis for the Proposed Decision</p> <p>3. Comments on the Proposed Decision</p> <p>4. Administrator's Conclusions</p> <p>C. Decisions on the Primary PM_{2.5} Standard</p> <p>IV. Communication of Public Health</p> <p>A. Air Quality Index Overview</p> <p>B. Air Quality Index Category Breakpoints for PM_{2.5}</p> <p>1. Summary of Proposed Revisions</p> <p>a. Air Quality Index Values of 50, 100, and 150</p> <p>b. Air Quality Index Values of 200 and Above</p> <p>2. Summary of Significant Comments on</p>
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Particulate Matter (PM) Pollution

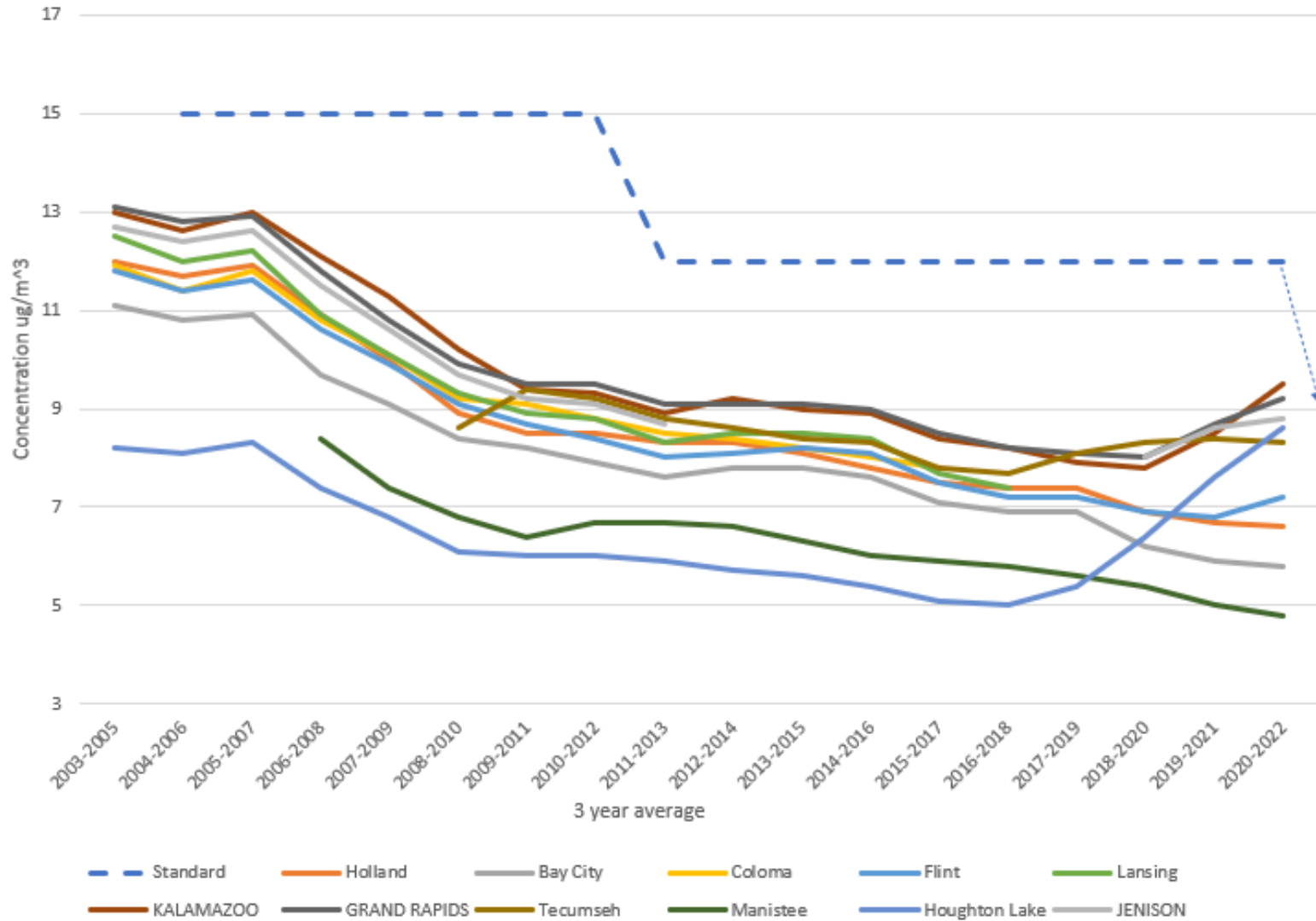


of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Mail Code C530-04, Research Triangle Park, NC 27711; telephone: (919) 541-3037; fax: (919) 541-5315; email: perlmutt.lars@epa.gov.

SUPPLEMENTARY INFORMATION:

<p>II. Revisions to the NAAQS for PM_{2.5} Standard</p> <p>A. Introduction</p>	<p>2. Basis for the Proposed Decision</p> <p>3. Comments on the Proposed Decision</p> <p>4. Administrator's Conclusions</p> <p>C. Decisions on the Primary PM_{2.5} Standard</p> <p>III. Revisions to Decisions on the Primary PM_{2.5} Standard</p> <p>A. Introduction</p>	<p>VI. Interpretation of the NAAQS for PM_{2.5}</p> <p>A. Amendments to Appendix K: Interpretation of the NAAQS for Particulate Matter</p> <p>B. Amendments to Appendix N: Interpretation of the NAAQS for PM_{2.5}</p> <p>VII. Amendments to Ambient Monitoring and Quality Assurance Requirements</p>
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Three Year Annual PM_{2.5} Average



Implementation of the NAAQS



Designations

- Determine which areas of the state are not meeting the revised NAAQS



Planning

- Develop strategies for improving air quality + SIP development

Designations

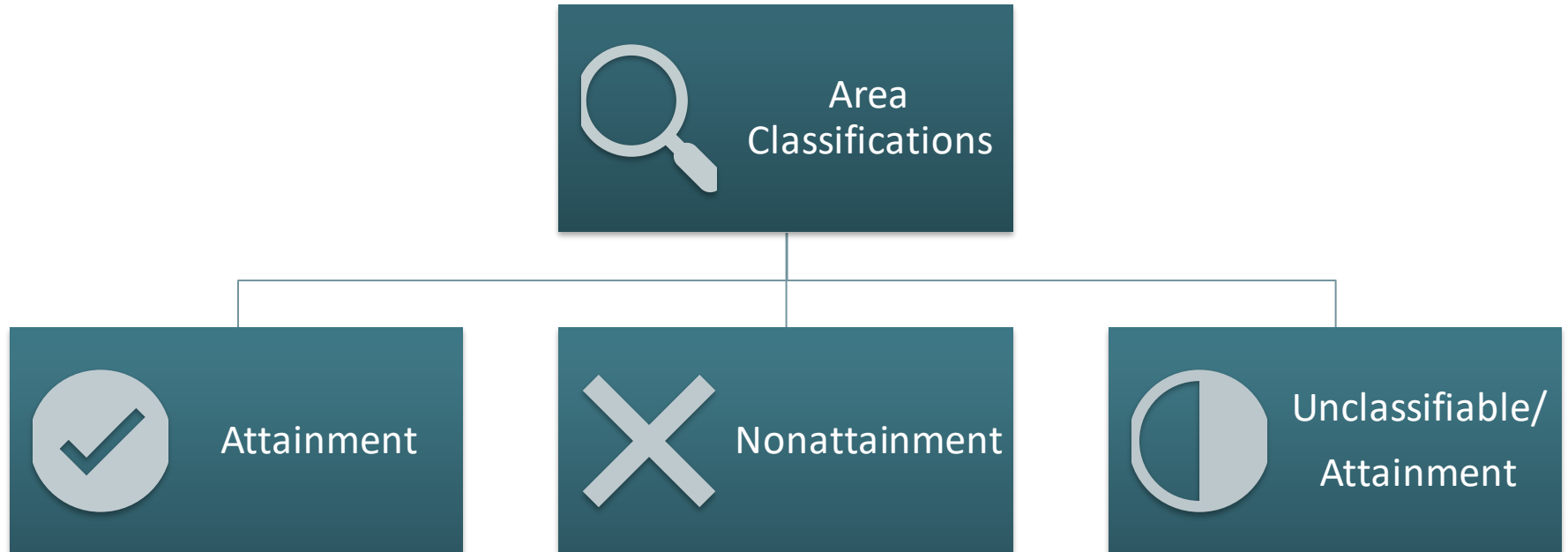
All PM_{2.5} nonattainment areas are initially classified as Moderate.

Nonattainment is determined based on a 3-year average of monitoring values.

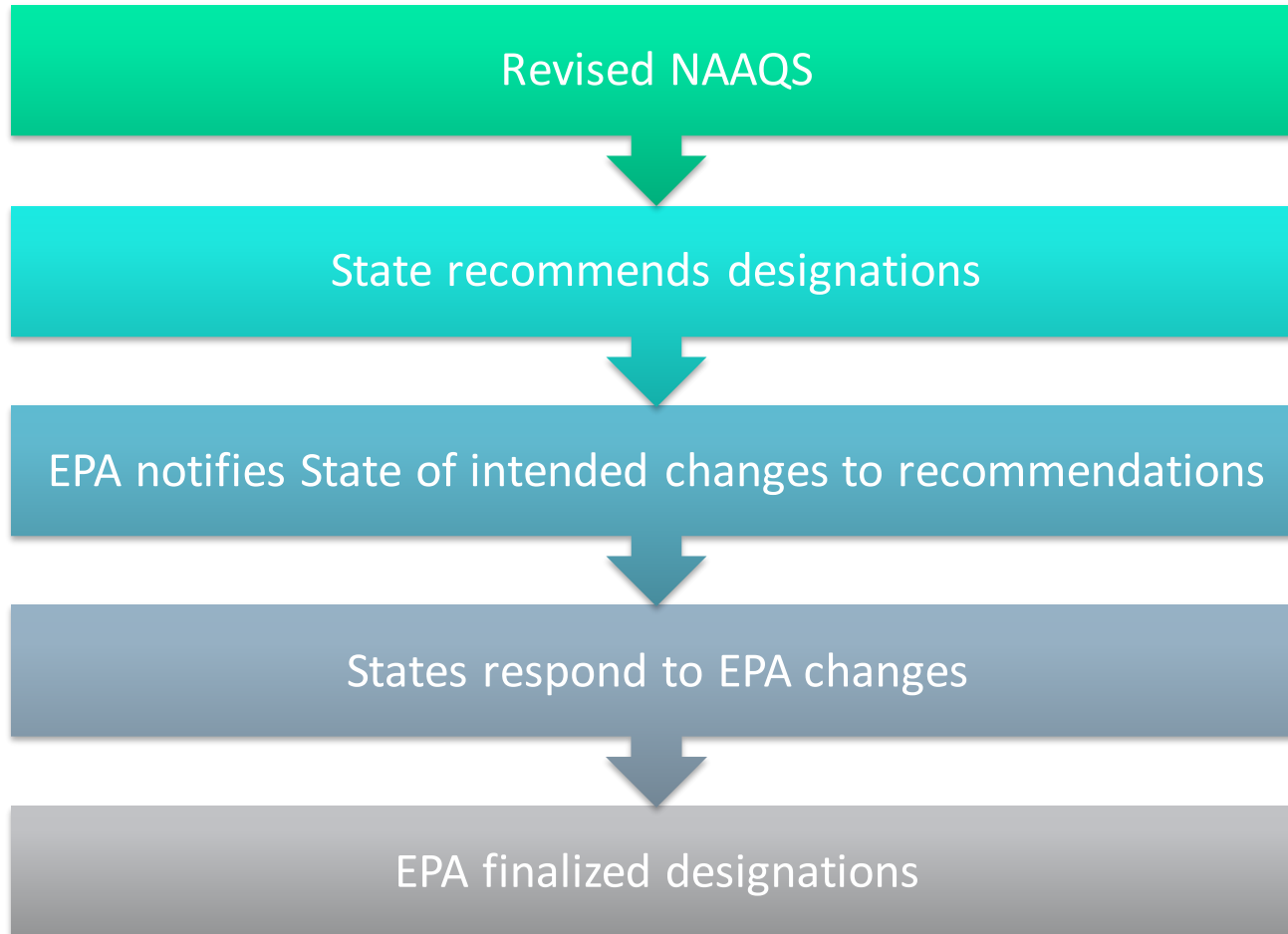
EGLE is basing recommendations on 2021-2023 monitoring values.

EPA basing final designations on 2022-2024 monitoring values.

Designations – Area Classifications



Designation Process

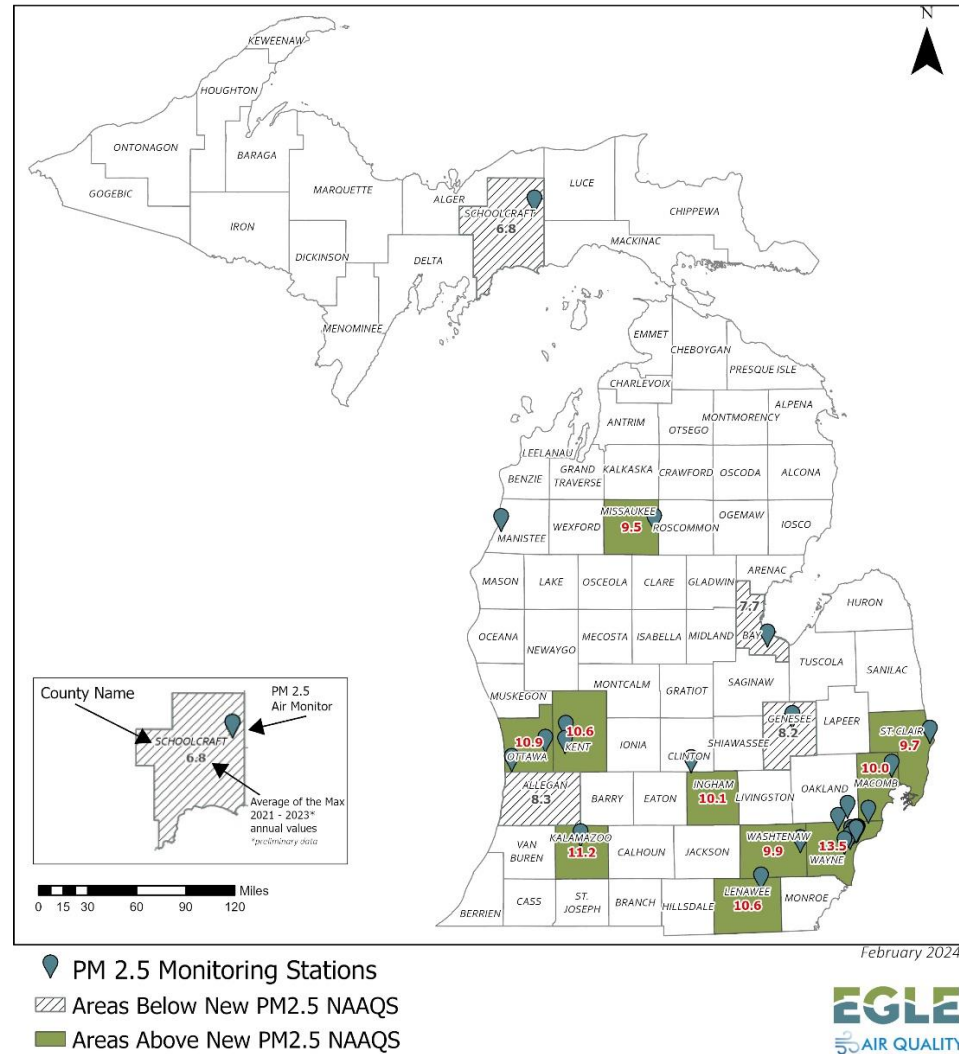


Current Exceedances of the New Annual PM 2.5 NAAQS

Data is based on the maximum annual PM 2.5 emissions averaged over 3 years using preliminary data for 2021 - 2023 and does not serve to represent any official designations.

Designations

- Monitoring data was validated May 1 *(not reflected in this map)*
- EPA adjustments for Teledyne monitors occurred mid-May *(not reflected in this map)*
- Review and certification of monitoring data adjustments completed end of May *(not reflected in this map)*
- Exceptional Events may impact monitoring numbers.

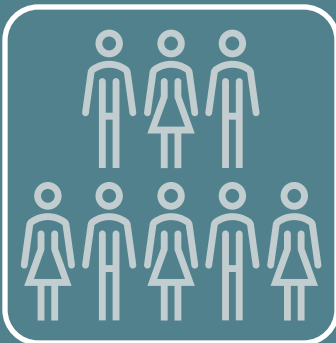


Designations - Boundary Lines

We will know more about where we will “draw” the boundary lines after analysis



Designations will take into consideration core-based statistical areas (CBSAs).



CBSAs

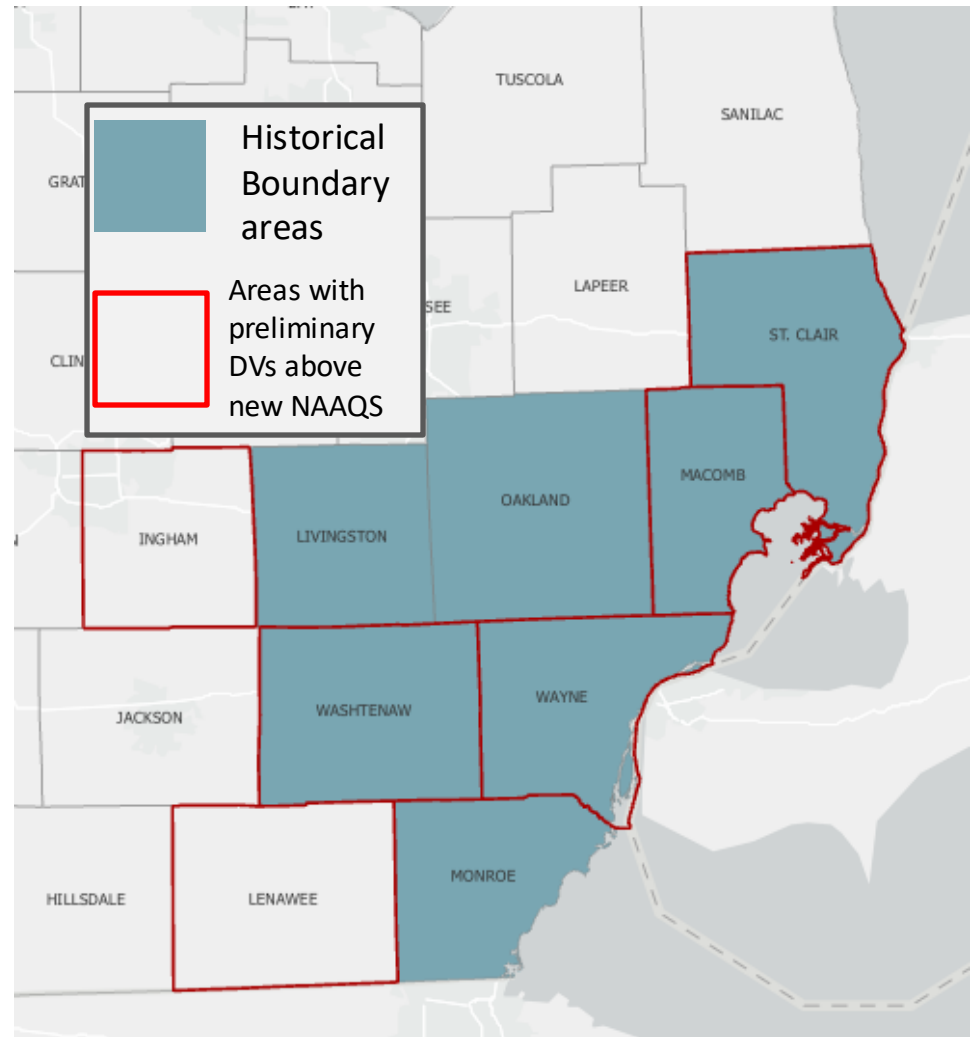
- 2020 US Census data
- Area containing a substantial population
- Adjacent communities having a high degree of economic and social integration with that area

Designations - Boundary Lines

Historical

1997 & 2006 standard
nonattainment areas:

- Livingston
- Macomb
- Monroe
- Oakland
- St. Clair
- Washtenaw
- Wayne

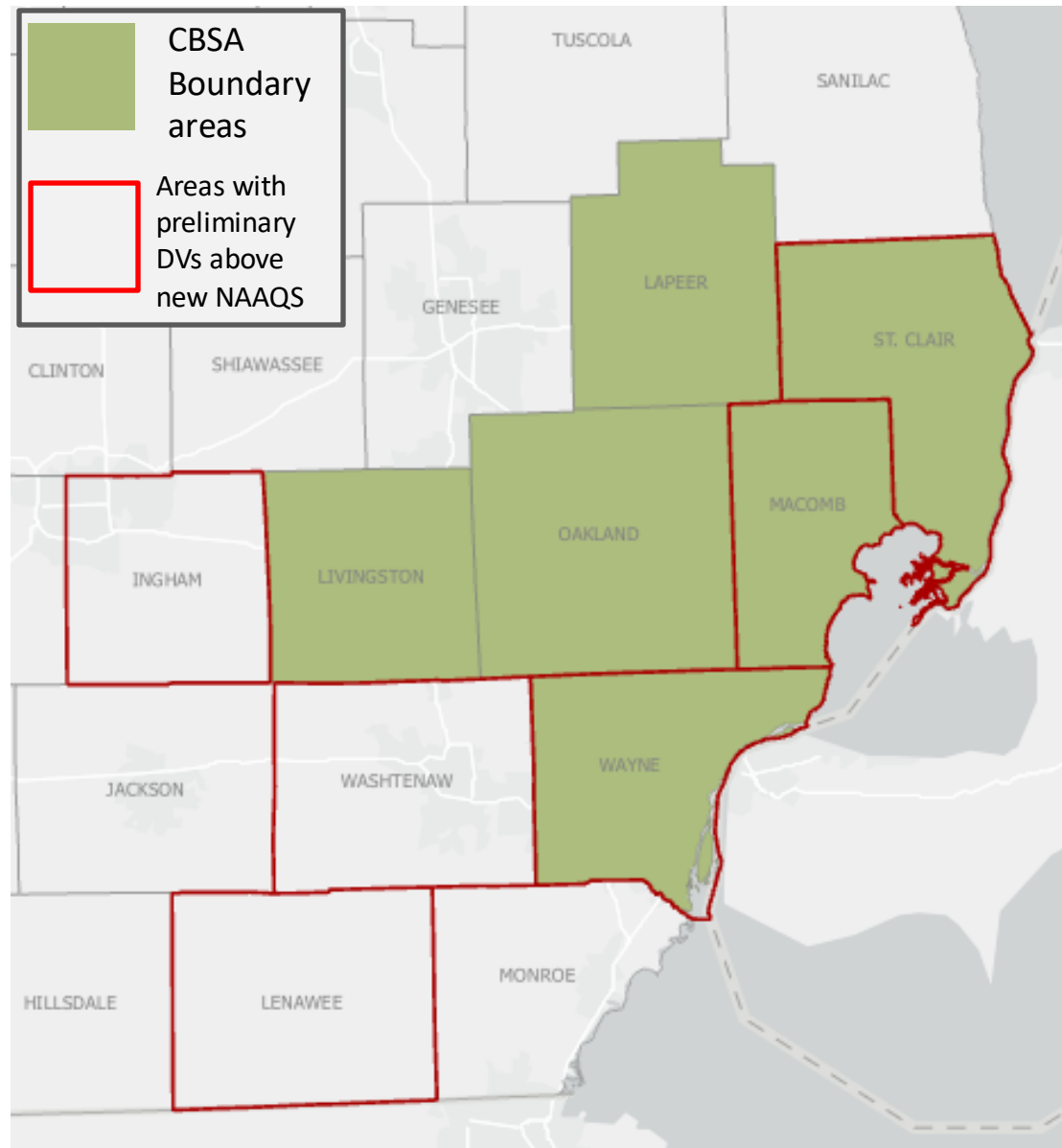


Designations - Boundary Lines

Southeast Michigan US. Census July 2023 CBSA

CBSA: Detroit-Warren-Dearborn

- Lapeer
- Livingston
- Macomb
- Oakland
- St. Clair
- Wayne

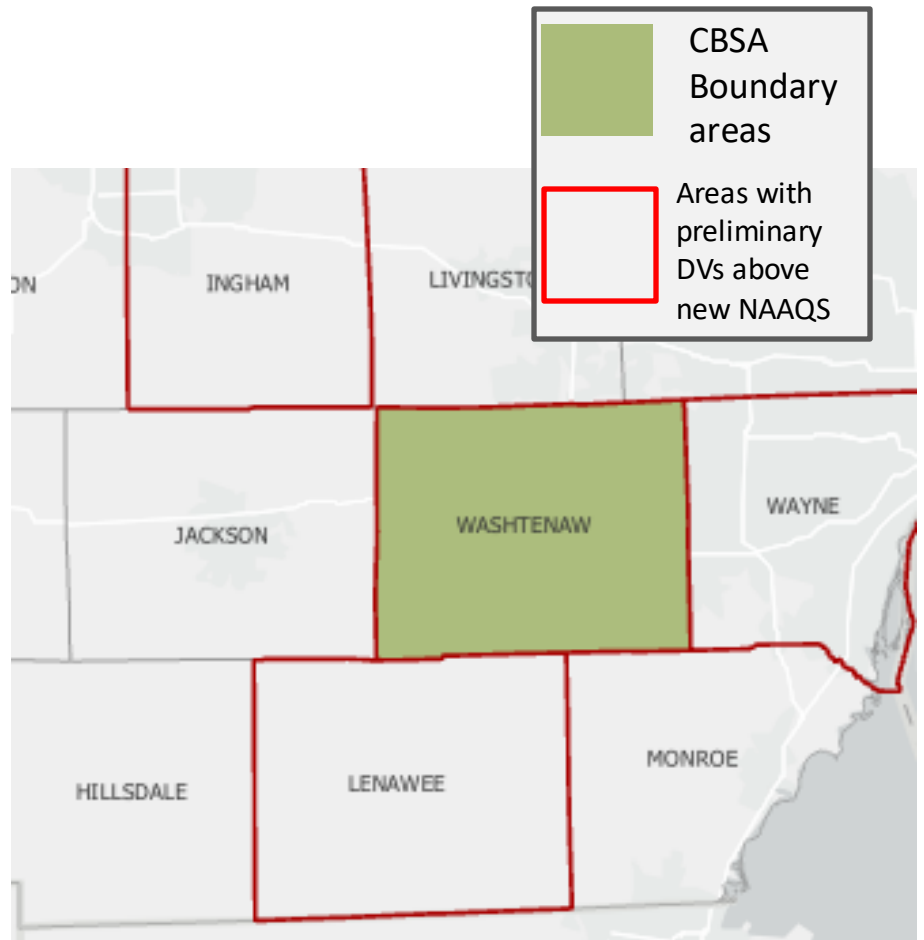


Designations - Boundary Lines

Southeast Michigan US. Census July 2023 CBSA

CBSA: Ann Arbor

- Washtenaw

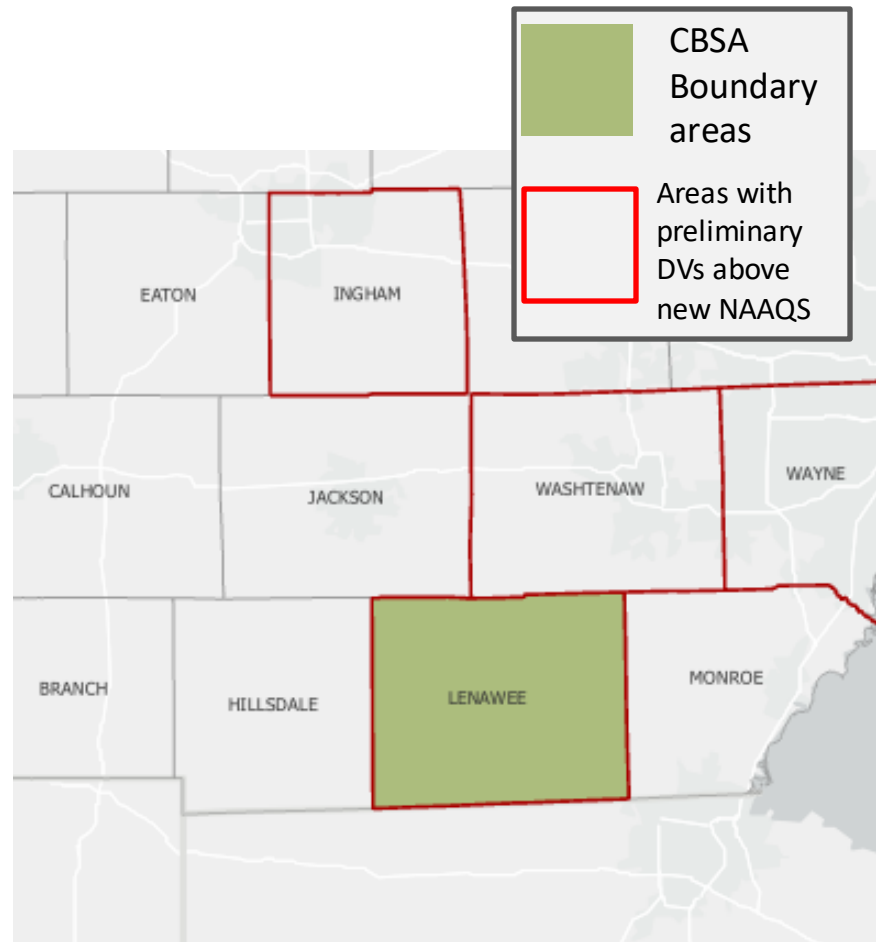


Designations - Boundary Lines

Southeast Michigan US. Census July 2023 CBSA

CBSA: Adrian

- Lenawee



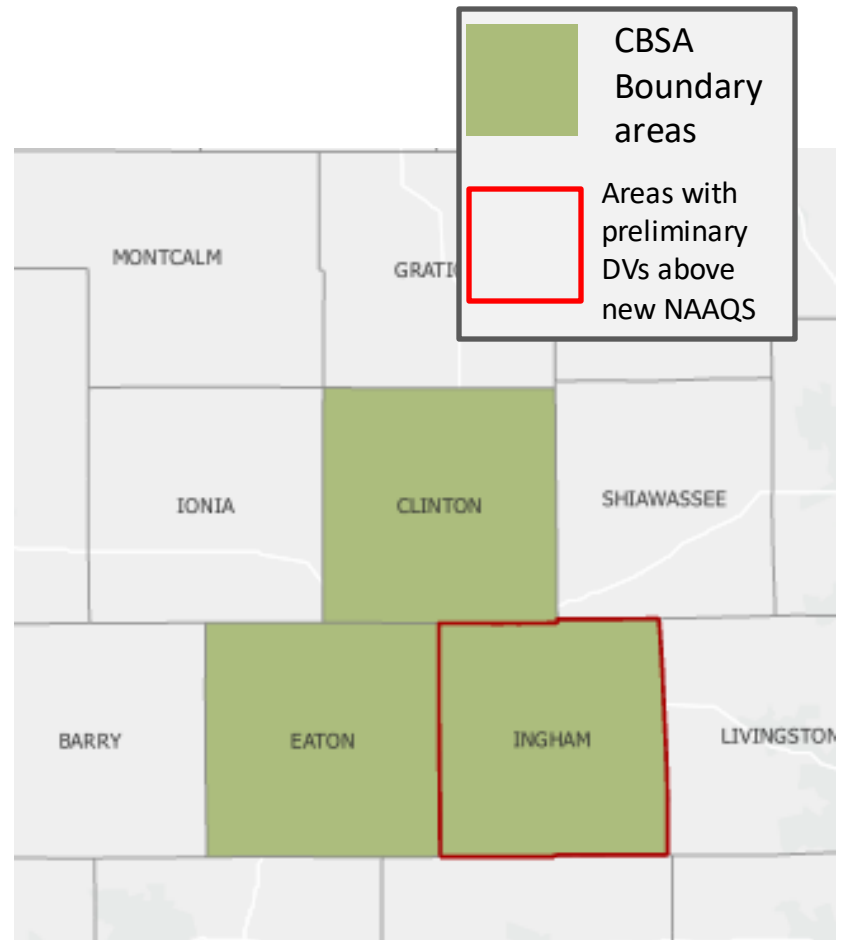
Designations - Boundary Lines

Central Michigan

US. Census July 2023 CBSA

CBSA: Lansing-East Lansing

- Ingham
- Eaton
- Clinton



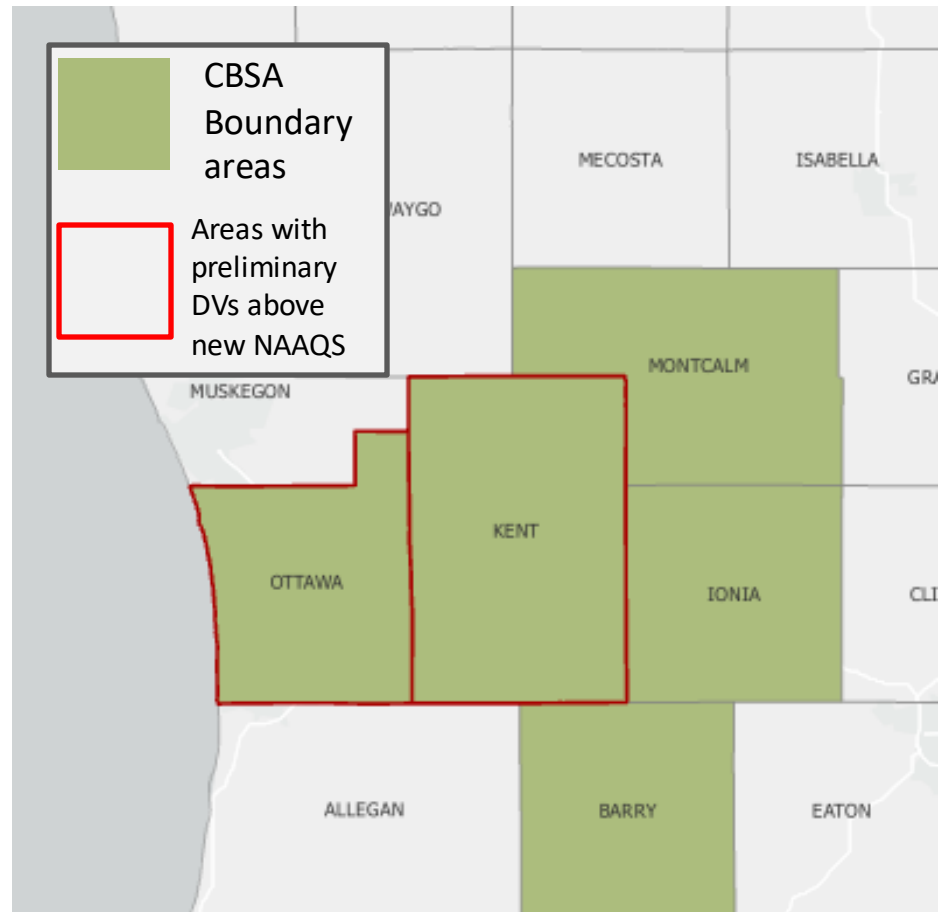
Designations - Boundary Lines

West Michigan

US. Census July 2023 CBSA

CBSA: Grand Rapids-Wyoming-Kentwood

- Kent
- Ottawa
- Montcalm
- Ionia
- Barry

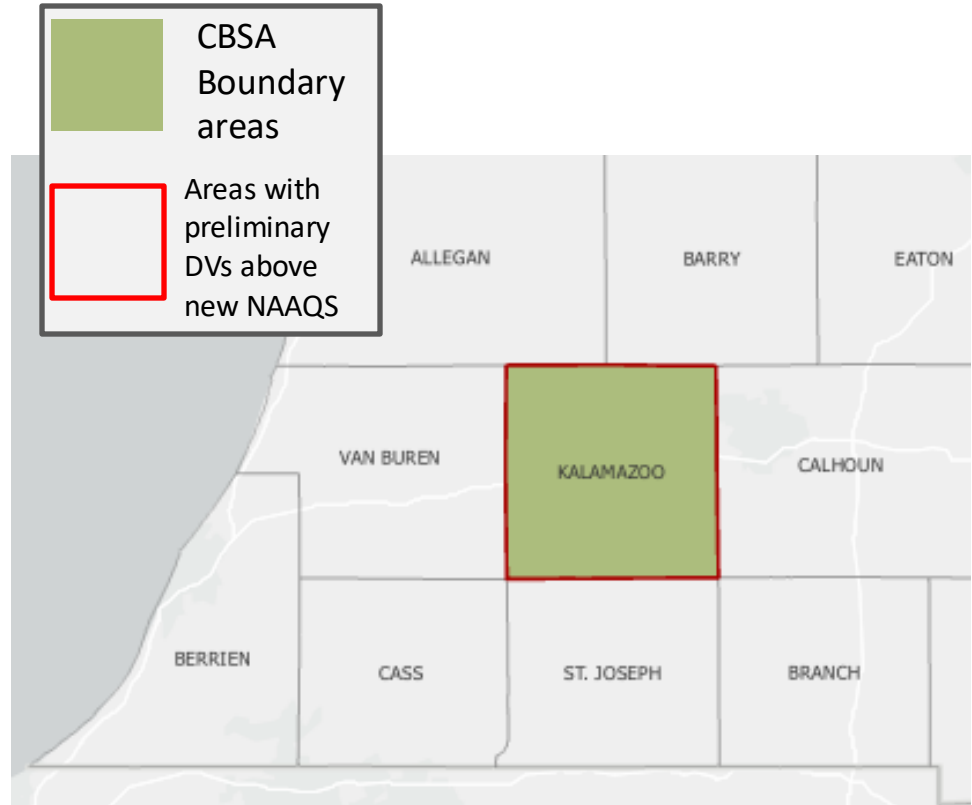


Designations - Boundary Lines

Southwest Michigan US. Census July 2023 CBSA

CBSA: Kalamazoo-Portage

- Kalamazoo

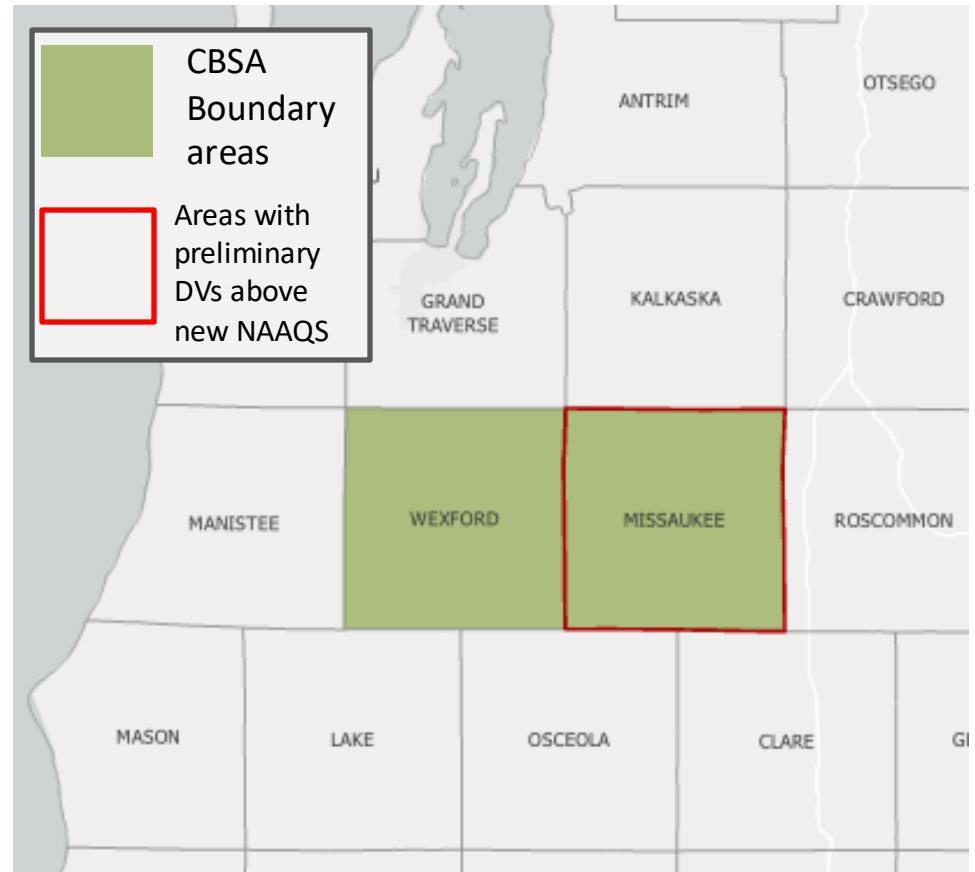


Designations - Boundary Lines

Northern Michigan US. Census July 2023 CBSA

CBSA: Cadillac

- Missaukee
- Wexford



2024

2025

2026

2027

2028

2029

2030

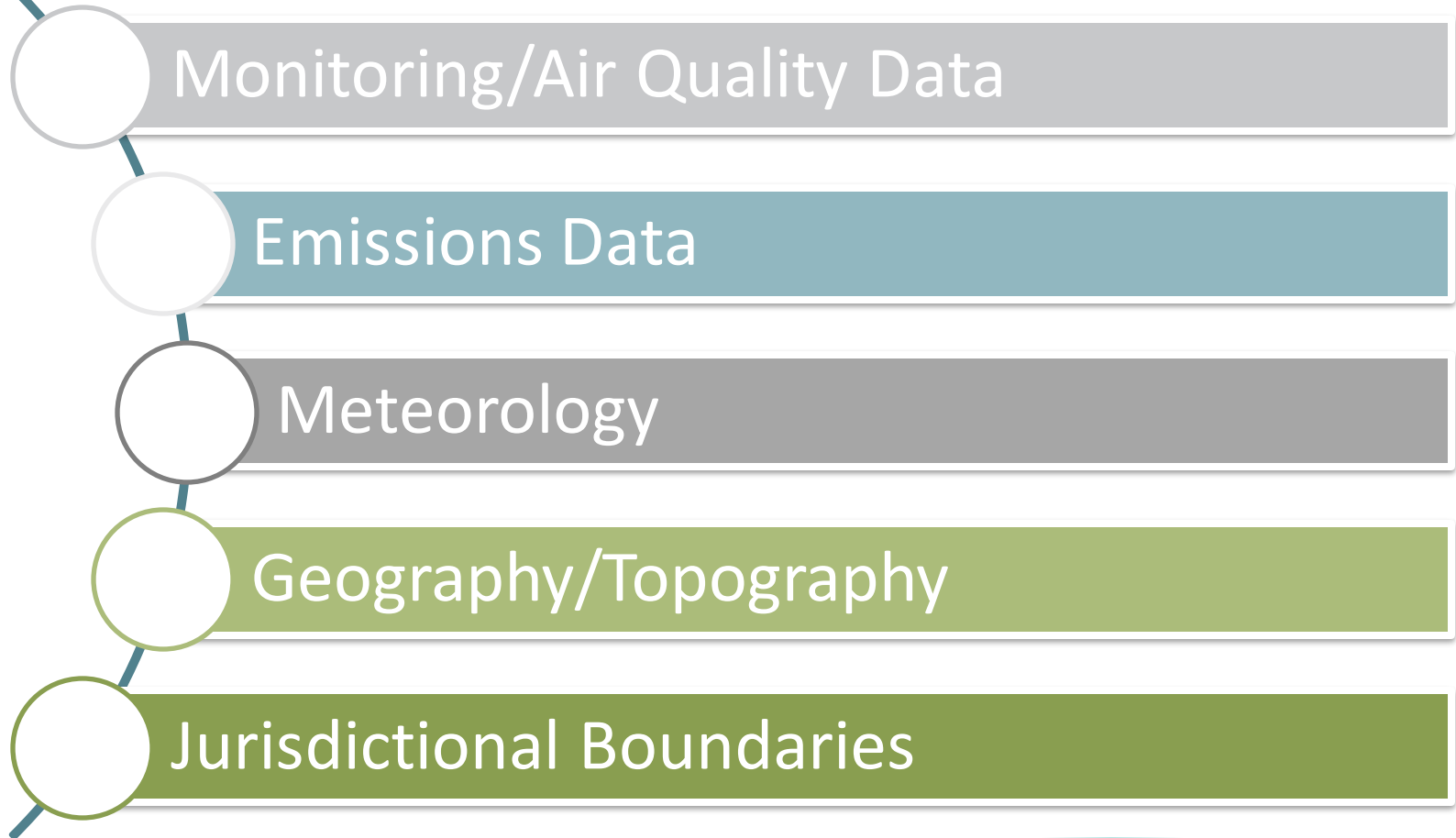
2031

2032

Designations & Attainment Timing

- **February 7, 2025:** EGLE must submit recommended designations within 1 year of the promulgation of the revised standard.
- **February 7, 2026:** The USEPA issues designations within 2 years of the promulgation of the revised standard (the USEPA has an option for a 1-year extension).
- **December 2032 (projected):** Attainment date for moderate areas is the end of the 6th calendar year after the effective date of designation.

Designation - 5 Factor Analysis



Air Quality Data

Design Values

Design Value
Trends

Chemical
Speciation

Urban
Increment
Analyses

Emissions Data

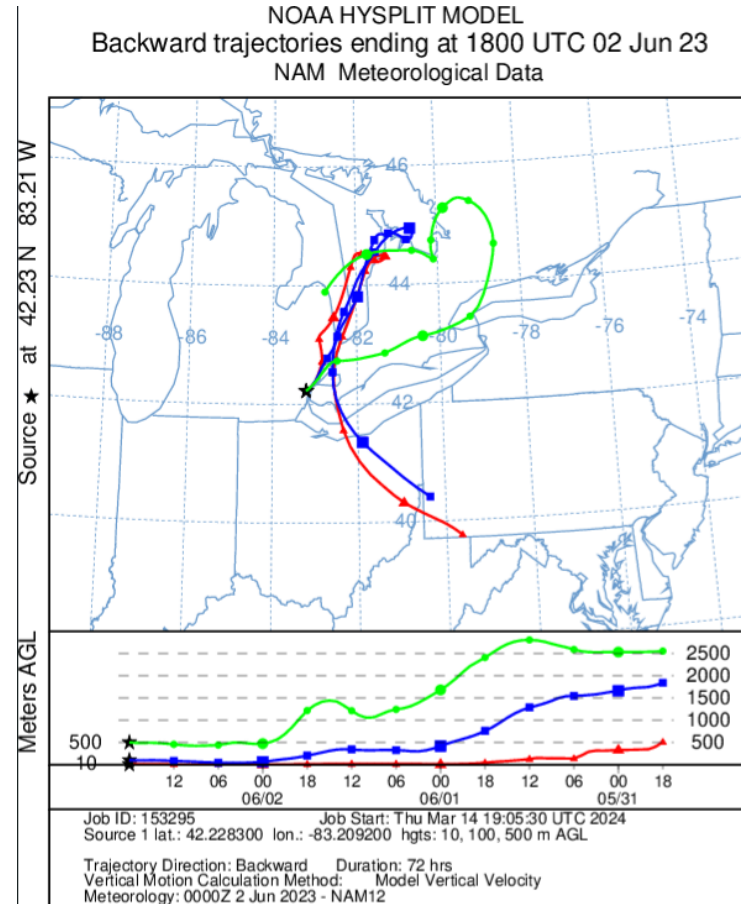
Point and nonpoint source emissions

Population density

Traffic and commuting patterns

Other Data

- Meteorological:
 - HYSPLIT trajectories
- Geography:
 - Topographic maps
- Jurisdictional boundaries:
 - Counties
 - MPOs



General Tentative Timeline

TASK	2024											2025	
	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
PM2.5 NAAQS Promulgation													
Initial Research													
Five Factor Analysis													
Designation Recommendation Drafting													
Engagement and Outreach													
Designation Recommendation Submittal													

Thank you!

Questions?

Michigan Department of
Environment, Great Lakes, and Energy

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