Environmental Protection Agency

Steubenville (39-081-0017)

2025-2026 Ohio EPA Air Monitoring Network Plan

Ohio EPA
Division of Air Pollution Control
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Acronyms and Glossary

AADT	Annual Average Daily Traffic
AMNP	Air Monitoring Network Plan
AQI	Air Quality Index
AQS	Air Quality System
ATMP	Air Toxics Monitoring Program
BAM	Beta Attenuation Monitor
CAA	Clean Air Act
CBSA	Core Based Statistical Area
CDO	Central District Office
CFR	Code of Federal Regulations
CSA	Combined Statistical Area
CSN	Chemical Speciation Network
CO	Carbon Monoxide
DAPC	Division of Air Pollution Control
DO	District Office
DRR	Data Requirement Rule
DV	Design Value
EIS	Emission Inventory System
FDMS	Filter Dynamic Measurement System
FEM	Federal Equivalent Method
FID	Flame Ionization Detector
FR	Federal Register
FRM	Federal Reference Method
GC	Gas Chromatograph
GC/MS	Gas Chromatograph / Mass Spectrometry
ICP/MS	Inductive Coupled Plasma / Mass Spectrometry
LAA	Local Air Agency
LADCO	Lake Michigan Air Directors Consortium
MOA	Memorandum of Agreement
MSA	Metropolitan Statistical Area
MTAPCA	Mahoning-Trumbull Air Pollution Control Agency
NAAQS	National Ambient Air Quality Standard
NATA	National Air Toxics Assessment
NATTS	National Air Toxics Trends Station
NCore	National Core multi-pollutant monitoring stations
NEDO	Northeast District Office
NEI	National Emissions Inventory
NO	Nitric Oxide
NO_2	Nitrogen Dioxide
NO_X	Oxides of Nitrogen
NOy	Total Reactive Nitrogen Oxides
NWDO	Northwest District Office
O_3	Ozone
OAQPS	Office of Air Quality Planning and Standards
Ohio EPA	Ohio Environmental Protection Agency
Ohio PQAO	Ohio Primary Quality Assurance Organization
Pb	Lead
$PM_{2.5}$	Particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers
PM_{10}	Particulate matter with an aerodynamic diameter less than or equal to 10 micrometers
$PM_{10-2.5}$	Particulate matter with an aerodynamic diameter less than or equal to 10 micrometers, and greater than or equal to 2.5 micrometers
PAMS	Photochemical Assessment Monitoring Station
ppb	parts per billion
ppm	parts per million
PWEI	Population Weighted Emissions Index
RAPCA	Regional Air Pollution Control Agency

Acronyms and Glossary

QA	Quality Assurance
QC	Quality Control
SASS	Speciation Air Sampling System
SEDO	Southeast District Office
SHARP	Synchronized Hybrid Ambient Real-time Particulate
SLAMS	State or Local Air Monitoring Stations
SO_2	Sulfur Dioxide
SWOAQA	Southwest Ohio Air Quality Agency
SPM	Special Purpose Monitor
STN	Speciation Trends Network
TEOM	Tapered Element Oscillating Microbalance
TRI	Toxic Release Inventory
TSP	Total Suspended Particulate
$\mu g/m^3$	micrograms per cubic meter
U.S. EPA	United States Environmental Protection Agency
U.V.	Ultraviolet
VOC	Volatile Organic Compounds
VSCC	Very Sharp Cut Cyclone
WVDEP	West Virginia Department of Environmental Protection

Explanations

AQS contains ambient air pollution data collected by U.S. EPA, state, local, and tribal air pollution control agencies from over thousands of monitors. AQS also contains meteorological data, descriptive information about each monitoring station (including its geographic location and its operator), and data quality assurance/quality control information. Each monitoring site in AQS has an identification number. In the AQS identification number, the first two digits refers to the state (39 is Ohio), the next three digits is the county (ex. '035' Cuyahoga), and the last four digits designate a specific site within the county.

PM is particulate matter. PM_{10} means particulate matter of 10 microns in diameter or smaller. A micron is one millionth of a meter. $PM_{2.5}$ is particulate matter 2.5 millionths of a meter in diameter or smaller. PM_{10} is coarse particulate matter and $PM_{2.5}$ is fine particulate matter. $PM_{2.5}$ sequential FRM samplers test for $PM_{2.5}$ and can hold multiple samples for sequential sampling.

Monitoring instruments used for comparing to the NAAQS are designated as FRM or Federal Equivalent Methods (FEM); however; not all FEM instruments are used for comparison to the NAAQS. For example, some $PM_{2.5}$ FEM instruments may be used for AQI purposes only. Some $PM_{2.5}$ FEM instruments are operated in a manner to categorize them as non-FEM instruments, and in those cases, are not comparable to the NAAQS. In addition, Ohio EPA operates one site, Yankee (39-017-0020) that has been approved to be excluded from the annual $PM_{2.5}$ NAAQS (80 FR 18535).

Sites (or monitors at a site) that are designated as industrial or designated as SPM are typically not included in meeting monitoring requirements.

AQI is an index for reporting daily air quality. It tells you how clean or polluted your air is, and what associated health effects might be a concern for you. The AQI focuses on health effects that you may experience within a few hours or days after breathing polluted air. U.S. EPA calculates the AQI for five major air pollutants regulated by the CAA: ground-level ozone, particle pollution (also known as particulate matter), carbon monoxide, sulfur dioxide, and nitrogen dioxide. All SLAMS continuous ozone and $PM_{2.5}$ monitors in Ohio report to the AQI.

Collocated or "colo" indicates a site with duplicate samplers for quality assurance purposes. Data is statistically compared from the two samplers for the same days. Duplicate samplers may sample at a 1 in 6-day schedule or possibly at a 1 in 12-day schedule.

U.V. photometric is a method of detection for ozone concentrations.

U.V. fluorescence is a method of detection for sulfur dioxide concentrations.

TSP metals is the method of collecting total suspended particulate by drawing an air sample through a filter media that is analyzed at a laboratory for airborne metals including lead, arsenic, cadmium, chromium, nickel, zinc, manganese and beryllium and sometimes particulate mercury. Analysis is by ICP Emission Spectroscopy or Graphic Furnace Atomic Absorption.

BAM and TEOM are methods of detection for fine particulates.

Broadband Spectroscopy is a method of detection for both coarse and fine particulates.

NAAQS

With authorization from the CAA, U.S. EPA established NAAQS for six criteria pollutants that endanger public health and welfare. Table 1 displays the current NAAQS for the following criteria pollutants: PM_{10}, $PM_{2.5}$, ozone, NO_2, SO_2, CO and lead.

In some cases, NAAQS are separated into two types: primary and secondary standards. A primary standard sets the level of air pollution where public health is protected. A secondary standard sets the level where the public welfare is protected due to air pollution damage to crops, animals, vegetation and materials.

These standards undergo a scientific review by U.S. EPA every five years to ensure they remain protective of public health and welfare in accordance with the CAA.

Table 1. NAAQS

			Level	
Pollutant	**Averaging Time**	**Form**	**Primary***	**Secondary***
PM_{10}	24-hour	Not to be exceeded more than once per year on average over 3 years	150 µg/m³	150 µg/m³
$PM_{2.5}$	1-year	Annual mean, averaged over 3 years	9.0 µg/m³	15.0 µg/m³
	24-hour	98th percentile, averaged over 3 years	35 µg/m³	35 µg/m³
Ozone	8-hour	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years	0.070 ppm	0.070 ppm
NO_2	1-hour	98th percentile of 1-hour daily maximum concentrations, average over 3 years	100 ppb	none
	1-year	Annual mean	53 ppb	53 ppb
SO_2	1-hour	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years	75 ppb	none
	3-hour	Not to be exceeded more than once per year	none	0.5 ppm
CO	8-hour	Not to be exceeded more than once per year	9 ppm	none
	1-hour	Not to be exceeded more than once per year	35 ppm	none
Lead	Rolling 3-month average	Not to be exceeded	0.15 µg/m³	0.15 µg/m³

*Primary NAAQS are established for protection of public health; secondary NAAQS are established for protection of public welfare.

1.0 Introduction and Requirements

As required by 40 CFR 58.10, Ohio EPA is providing the 2025-2026 AMNP to the U.S. EPA Region 5. This document addresses the Ohio air monitoring network, as it exists as of July 1, 2025, and as it is expected or anticipated to be modified through December 31, 2026. Ohio's air monitoring network as presented in this report meets all the applicable requirements of 40 CFR Part 58 including the requirements of Appendices A, B, C, and D.

1.1 Priorities

The Ohio EPA, DAPC, is responsible for regulating air quality to protect public health and the environment in the State of Ohio. As part of achieving these goals, Ohio EPA DAPC, with four DOs and eight LAAs, operates and maintains an extensive network of monitoring sites that collect air quality data in each of the numerous metropolitan areas and in many rural areas. Much of the monitoring sites are in urban areas where the majority of the population resides. There are over 100 monitoring sites operating in Ohio with over 265 parameters sampling on an hourly or intermittent 24-hour basis.

The Ohio EPA monitors six criteria pollutants: ozone, $PM_{2.5}$, PM_{10}, SO_2, NO_2, CO and lead. Other pollutants that are monitored by Ohio EPA which are not associated with NAAQS include metals, $PM_{10-2.5}$, toxics, VOC, carbonyls, $PM_{2.5}$ speciated compounds, and ozone precursors. In addition, meteorological data are collected at some sites to support the monitoring and aid in air quality modeling analyses.

The following designations describe the various types of monitors at the sites within Ohio's air monitoring network:

- SLAMS: For parameters (pollutants and/or meteorological data) addressed by 40 CFR Part 58. The SLAMS make up the ambient air quality monitoring sites that are primarily needed for NAAQS comparisons but may serve other data purposes.
- SPM: Not all monitors and monitoring sites in the air quality monitoring network are included in the SLAMS network. In order to provide monitoring for complaint studies, modeling verification, or compliance status, certain monitors are reserved for short-term studies and designated as SPM. These monitors are not necessarily committed to any one location or for any specified time period. They may be located as separate monitoring sites or be included at SLAMS locations. Monitoring data may be reported to U.S. EPA, provided that the monitors and sites conform to all requirements as if they are a part of the SLAMS network. Monitors in this category are included in the network plan but are not used to determine compliance with the NAAQS. However, if an SPM is operated for over 24 months, in accordance with 40 CFR 58.20(c) it is eligible for comparison to the relevant NAAQS, unless demonstrated otherwise by the state or local air agency (herein referred to as "agency"). Appendix A identifies the start date of all Ohio SPMs. In accordance with 40 CFR 58.20, the purposes for each SPM monitor is included in Appendix A. All Ohio SPM monitors reporting to the AQS meet the requirements of 40 CFR Part 58, Appendix A and Appendix E. In addition, all Ohio FRM/FEM SPMs meet the requirements of 40 CFR 58.11 and 40 CFR 58.12.
- Industrial: A monitor that is operated (in total or partially) by a private industry entity rather than under the control of a state, local or tribal government. The private industry entity may choose to contract with a local government organization for the operation of the monitor.

- NCore: NCore is a multi-pollutant network that integrates several advanced measurement systems for particles, pollutant gases and meteorology. Most NCore stations have been operating since the formal start of the network on January 1, 2011.
- Near Road: Located near busy roadways, near road sites measure the peak hourly concentrations of CO, NO_2 and/or $PM_{2.5}$ in urban areas with MSA populations greater than 1 million people.
- PAMS: PAMS monitoring is enhanced monitoring of ozone, NOx, VOCs, and meteorology to obtain more comprehensive and representative data on ozone air pollution.

Monitors should be sited and operated to support U.S. EPA's monitoring objectives of providing data to the public in a timely manner, to support compliance with the NAAQS and emissions strategy development, and to support research. To accomplish this, monitors are sited to monitor: 1) areas of expected high concentrations, 2) areas of high population density, 3) areas with significant sources, 4) general background concentration, and 5) areas of regional transport of a pollutant. However, not all air pollutants need to have sites for all categories.

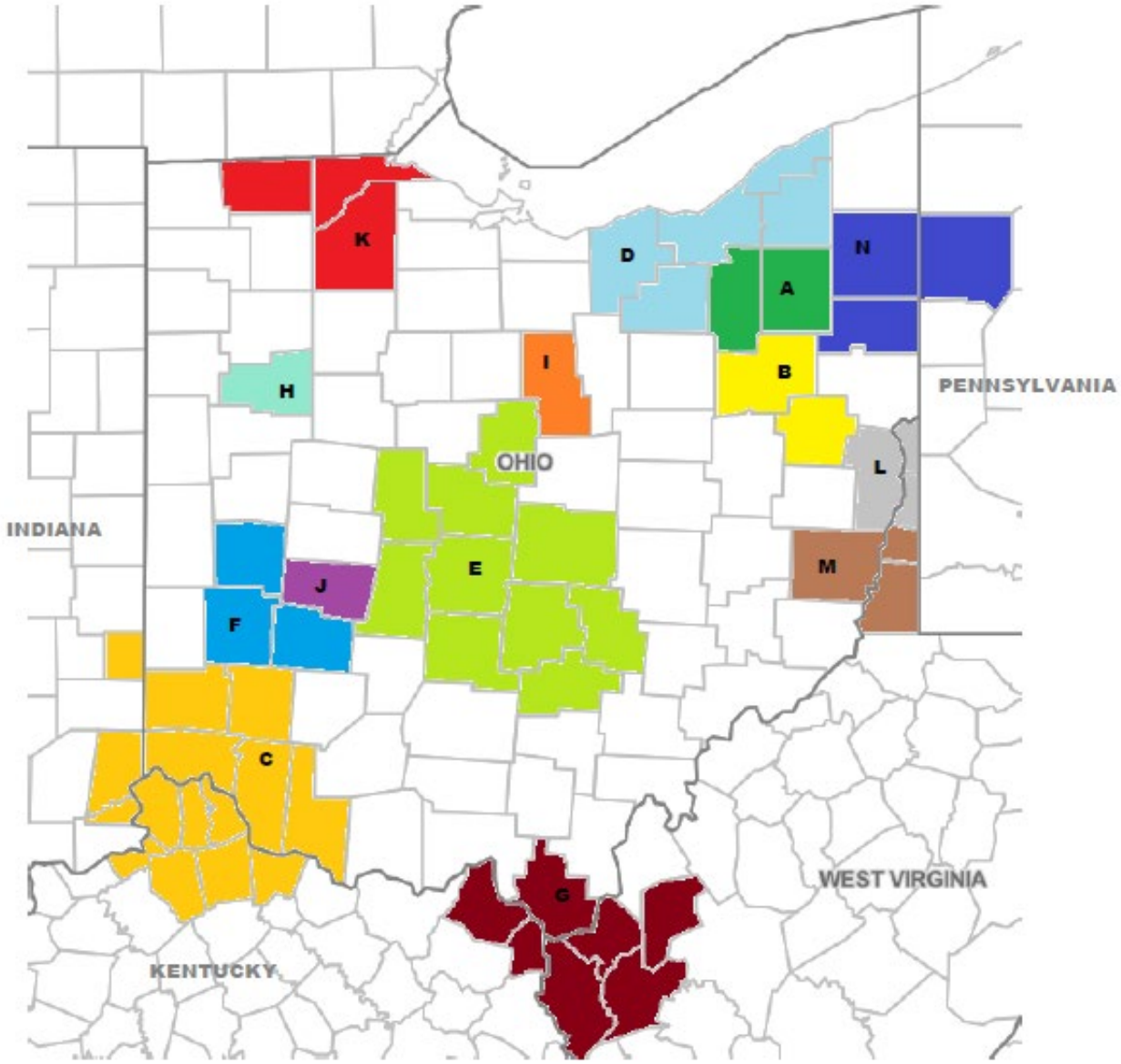
The minimum number of monitoring sites required for each of the U.S. EPA criteria pollutants is established in the federal regulations in 40 CFR Part 58, Appendix D. The minimum number of required sites is often dependent on the population count within large and small statistical areas. These areas are referred to as MSA, micropolitan-statistical areas, CBSA, and CSA. A CBSA associated with at least one urbanized area of 50,000 population or greater is termed an MSA. A CBSA associated with at least one urbanized cluster of at least 10,000 population but less than 50,000 is termed a micropolitan statistical area.

The Ohio air monitoring network meets, or in most cases exceeds, the applicable minimum network requirements. In one area where Ohio shares a CBSA or MSA with a neighboring state, the Wheeling MSA, Ohio will only meet the minimum requirements by relying on a monitor located in the neighboring state, West Virginia. Therefore, Ohio is working on a memorandum of agreement with the WVDEP. In all other areas where Ohio shares a CBSA or MSA with a neighboring state, Ohio meets or exceeds the minimum requirements without the need to rely on a neighboring state's monitor(s). Figure 1 below displays the geographical boundaries of full and partial MSAs in Ohio. Additional MSA information including the latest U.S. Census population estimates per county can be found in Appendix B.

In addition to the monitors operated by Ohio as described in this plan, U.S. EPA operates three Clean Air Status and Trends Network (CASTNET) sites in Ohio:

- 39-121-8001 St. Johns Rd., Quaker City (PM_{10} Local, PM coarse & ozone)
- 39-017-9991 Miami University, Oxford (ozone)
- 39-047-9991 Deer Creek State Park, Mt. Sterling (ozone)

Figure 1. Ohio MSAs



A. Akron MSA
B. Canton-Massillon MSA
C. Cincinnati MSA
D. Cleveland-Elyria MSA
E. Columbus MSA
F. Dayton MSA
G. Huntington-Ashland MSA
H. Lima MSA
I. Mansfield MSA
J. Springfield MSA
K. Toledo MSA
L. Weirton-Steubenville MSA
M. Wheeling MSA
N. Youngstown-Warren-Boardman MSA

1.2 Quality Assurance/Quality Control

A fundamental consideration for all air monitoring projects and sites is that the monitoring locations meet U.S. EPA's requirements as specified in 40 CFR Part 58, Appendices D & E and that the agencies are available to operate and maintain the sites and equipment, to provide sample analyses, and for data collection and reporting.

Ohio EPA also operates and maintains a QA/QC program in accordance with U.S. EPA requirements and guidelines as specified in 40 CFR Part 58. The purpose of this program is to assure the quality and validity of the data collected. The QA/QC program includes but is not limited to the following activities:

- Instrument performance audits;
- Monitor siting evaluations;
- Precision and span checks;
- Instrument bias determinations;
- Flow rate audits;
- Instrument air flow leak checks; and
- Data validation.

To comply with U.S. EPA's independent QA requirements, Ohio EPA, including the DOs and LAAs participates in the National Performance Audit and the Performance Evaluation Programs for criteria pollutant monitoring and performance. Additionally, inter-laboratory comparisons are performed periodically for air toxics monitoring.

1.3 Ohio Primary Quality Assurance Organizations

A PQAO refers to a monitoring organization that is responsible for a set of stations that monitor the same pollutant and for which data quality assessments can be pooled. Each criteria pollutant sampler/monitor at a monitoring station in the SLAMS and SPM networks is associated with one PQAO.

There is one PQAO operating in Ohio. This PQAO includes all of Ohio EPA's DOs and the LAAs. As discussed in the 2024-2025 AMNP, Ohio EPA was developing a request to restructure from three PQAOs to one PQAO. Ohio EPA submitted this consolidation request to U.S. EPA on November 15, 2024. U.S. EPA granted approval of this request on December 18, 2024. The newly formed PQAO is known as Ohio PQAO (AQS PQAO code 1459) and took effect on January 1, 2025 (see Appendix F).

2.0 Proposed Network for 2025-2026

This report presents the proposed AMNP for 2025-2026. Appendix A contains details regarding each monitor that comprises Ohio's proposed 2025-2026 network, including indications of changes that have, will, or may occur to the network through December 31, 2026. This section identifies a summary of all proposed network changes for the various pollutants. Section 3.0 provides greater detail of the changes for each pollutant being monitored, including how Ohio meets the minimum monitoring requirements for monitoring that pollutant.

2.1 Summary of Proposed Network Modifications

A critical component of this report is to identify the network changes that have taken place since Ohio's 2024-2025 AMNP and the changes that are planned or anticipated for the remainder of 2025 and 2026.

It should be noted when proposing what the monitoring network might look like a year from now, unplanned site changes occur to monitoring networks each year. Changes or temporary interruptions of sampling may occur because of events such as building or roof maintenance, construction, change of ownership of the site, or other changes at the site that require moving the instruments. Some changes that may not be planned could include adding sites to investigate complaints or for a new or proposed facility. Planned network changes may not be implemented due to unforeseen circumstances, such as the inability to secure a new site or because of other constraints.

In accordance with 40 CFR 58.10(c), if a $PM_{2.5}$ FRM monitoring site were lost due to circumstances beyond Ohio's control, a replacement site would be established if the lost site exceeded the NAAQS or if it is the "design value site" for a particular MSA. In this case, all possible efforts would be made to find a new site that is physically close to the lost site and has a similar scale and monitoring objective. However, if the "design value site" for that MSA is still operational, Ohio EPA may not establish a replacement site if remaining $PM_{2.5}$ sites are sufficient to determine compliance with the $PM_{2.5}$ NAAQS.

All proposed site and parameter changes to the approved monitoring network are made in consultation with, and, when necessary, approval of the U.S. EPA Region 5 air monitoring staff. Ohio EPA retains the right to install, operate and discontinue operation of ambient air quality monitors for special projects that go beyond federal minimum requirements without federal approval.

All monitoring changes that have occurred since Ohio's 2024-2025 AMNP and all planned, proposed and potential network changes are summarized in Table 2 below. Additional details on these changes can be found in the specific pollutant sections under Section 3.0. None of these changes involve relocating or deleting a site or monitor where a design value is in violation of any NAAQS.

Table 2. Summary of Network Changes

Pollutant	Location	AQS Site No.	Site Name	Action/Change	When
Changes highlighted in 2024-2025 AMNP that were approved (when required) and completed					
None					
Unexpected changes that were necessary, requested independently, and completing/completed					
O_3	Mayfield	39-035-5002	Mayfield	Site discontinued	April 22, 2025
VOCs	Hopedale	39-067-0005	Hopedale	SPM site discontinued.	July 1, 2024
Unexpected changes that were necessary and completed; Approval not required					
SO_2	Cleveland	39-035-0038	St. Theodosius	Instrument changed from Teledyne API T100 to Serinus Ecotect 50.	January 10, 2025
NO_2	Cleveland	39-035-0073	Cleveland Near Road	Instrument changed from Thermo 42i to Teledyne API T200.	October 19, 2024
O_3	Waterville	39-095-0027	Waterville	Instrument changed from Teledyne API T400 to Thermo 49i.	September 4, 2024

Pollutant	Location	AQS Site No.	Site Name	Action/Change	When
O_3	Vienna	39-115-0011	TCSE	Instrument changed from Teledyne API T400 to Thermo 49iQ.	March 15, 2024
SO_2	Akron	39-153-0017	East HS	Instrument changed from Teledyne T100 to Thermo 43iQ.	October 23, 2024
$PM_{2.5}$ Chemical Speciation	Akron	39-153-0017	East HS	Added Chemical Speciation monitoring at site with a Met One SASS and URG 3000N.	January 1, 2025
O_3	Akron	39-153-0026	North HS	Instrument changed from Thermo 49iQ to Teledyne API T400.	June 18, 2024
Proposed changes that are requested in the 2025-2026 AMNP and will need approval before being completed					
$PM_{2.5}$	Columbus	39-049-0040	Jackson Pike WWTP	Requesting data exclusion for the annual NAAQS because of siting criteria difficulties.	TBD
Proposed changes that will be completed or are under consideration; Approval not required					
O_3	Springfield	39-023-0001	Springfield Well Fd	Anticipate replacing current instrument with a Teledyne API N400.	TBD
VOCs	Cincinnati	39-061-0047	Kibby	Anticipate site discontinuing after facility shutdown.	TBD
O_3	Dayton	39-113-0037	Eastwood	Anticipate replacing current instrument with a Teledyne API N400.	TBD
Proposed changes that are under consideration and will be requested outside of 2025-2026 AMNP; Approval will be required					
PM, SO_2, NO_2	Shadyside	39-013-0006	Shadyside	Anticipate site discontinuing due to siting criteria difficulties.	TBD
PM, Pb/Metals	Columbus	39-049-0040	Jackson Pike WWTP	Anticipate site relocating due to siting criteria difficulties.	TBD
PM, O_3, NO_2, SO_2, CO, VOCs, Black Carbon, PAMS	Cincinnati	39-061-0040	Taft NCore PAMS	Anticipate site relocating due to building/property ownership changes.	TBD

3.0 Pollutant Specific Proposed Network for 2025-2026

3.1 Ozone Network

Ohio currently operates 47 ozone SLAMS sites as identified in Appendix A. As discussed below, 21 sites are required in certain MSAs based upon a combination of population and concentration levels. Ohio monitoring meets the requirements for 20 of these MSAs and West Virginia monitoring meets the requirement for one of these MSAs[1]. Ohio operates 42 sites, a surplus of 22 sites, within these MSAs and the remaining five in counties not in an MSA. The monitors are operated from March 1st through October 31st, in accordance with 40 CFR Part 58, Appendix D, Section 4.1(i). However, ozone monitors at Ohio's NCore sites in Cleveland, Cincinnati and in Preble County collect measurements year-round. As discussed below, Ohio exceeds the minimum requirements under 40 CFR Part 58, Appendix D, Section 4.1.

3.1.1 Population/Concentration Requirements

Table 3 below identifies the minimum ozone monitoring sites as required under 40 CFR Part 58, Appendix D, Table D-2. Minimum monitoring requirements for ozone are based on population and whether the design value is less than 85% of the NAAQS or greater than 85% of the NAAQS. Since the NAAQS for ozone is 0.070 ppm of ozone, 85% of the NAAQS is 0.059 ppm (truncated). The total number of ozone sites needed to support the basic monitoring objectives of public data reporting, air quality mapping, compliance, and understanding ozone-related atmospheric processes include more sites than these minimum numbers required.

Table 3. SLAMS Minimum Ozone Monitoring Requirements

MSA population[1,2]	Most recent 3-year design value concentrations ≥85% of any O_3 NAAQS[3]	Most recent 3-year design value Concentrations <85% of any O_3 NAAQS[3,4]
>10 million	4	2
4-10 million	3	1
350,000-<4 million	2	1
50,000-<350,000[5]	1	0

1 Minimum monitoring requirements apply to the Metropolitan Statistical Area (MSA)
2 Population based on latest available census figures.
3 The ozone (O3) National Ambient Air Quality Standards (NAAQS) levels and forms are defined in 40 CFR part 50.
4 These minimum monitoring requirements apply in the absence of a design value.
5 Metropolitan Statistical Areas (MSA) must contain an urbanized area of 50,000 or more population.

Ohio currently operates 47[2] SLAMS ozone monitoring sites, exceeding the minimum 21 sites required. Ohio's analysis can be found in Appendix B and is summarized below in Table 4. Full details on each site can be found in Appendix A.

[1]One of the required monitors is in another state in a shared MSA, the Wheeling MSA. The required monitor is located in West Virginia. Ohio EPA and West Virginia Department of Environmental Protection (WVDEP) established a memorandum of agreement (MOA) to account for this monitor as part of Ohio's network plan to meet minimum monitoring requirements. The MOA is referenced in Appendix C.

[2] In addition to the 47 SLAMS sites operated by Ohio EPA, one ozone monitor is operated by WVDEP and is represented as such in Appendix A.

Table 4. Ohio's SLAMS Ozone Monitoring Network

Area Name	2023 MSA Population	2025-2026 Monitors	AQS Site No.	Site Name	Design Value <85% of NAAQS	Urban Area with Pop. >= 50,000	No. Required Monitors	Monitors Exceeding Requirement
Monitors in MSAs With Populations >= 50,000								
Akron, OH	698,398	2	39-133-1001	Lake Rockwell	No	Yes	2	0
			39-153-0026	North HS				
Canton-Massillon, OH	399,474	3	39-151-0016	Malone Univ	No	Yes	2	1
			39-151-0022	Brewster				
			39-151-4005	Alliance				
Cincinnati OH-KY-IN	2,278,452	7	39-017-0018	Middletown Airport	No	Yes	2	5
			39-017-0023	Crawford Woods				
			39-025-0022	Batavia				
			39-061-0006	Sycamore				
			39-061-0010	Colerain				
			39-061-0040*	Taft NCore PAMS				
			39-165-0007	Lebanon				
Cleveland-Elyria, OH	2,062,087	8	39-035-0034	District 6	No	Yes	2	6
			39-035-0060	GT Craig NCore PAMS				
			39-035-0064	Berea BOE				
			39-055-0004	Notre Dame				
			39-085-0003	Eastlake				
			39-085-0007	Paineville				
			39-093-0018	Sheffield				
			39-103-0004	Chippewa				
Columbus, OH	2,180,271	6	39-041-0002	Delaware	No	Yes	2	4
			39-049-0029	New Albany				
			39-049-0081	Maple Canyon				
			39-089-0005	Heath				
			39-089-0008	Reynoldsburg				
			39-097-0007	London				
Dayton, OH	814,363	3	39-057-0006	Xenia	No	Yes	2	1
			39-109-0005	Miami East HS				
			39-113-0037	Eastwood				
Huntington-Ashland, WV-KY-OH	352,261	2	39-087-0011	Wilgus	No	Yes	1	1
			39-087-0012	ODOT Ironton				
Lima, OH	100,838	1	39-003-0009	Lima	No	Yes	1	0
Mansfield, OH	125,064	0	n/a	n/a	No	Yes	0	0
Springfield, OH	134,610	2	39-023-0001	Springfield Well Fd	No	Yes	1	1
			39-023-0003	Mud Run				
Toledo, OH	639,944	4	39-095-0024	Erie	No	Yes	2	2
			39-095-0027	Waterville				
			39-095-0035	Cooley				
			39-173-0003	Bowling Green				
Weirton-Steubenville, WV-OH	113,544	1	39-081-0017	Steubenville	No	Yes	1	0
Wheeling WV-OH^	135,517	0	n/a	n/a	No	Yes	1	0
Youngstown-Warren-Boardman, OH-PA	534,472	3	39-099-0015	Youngstown State	No	Yes	2	1
			39-155-0011	TCSE				
			39-155-0013	Kinsman Maintenance				
Totals		**42**					**21**	**22**
Monitors in all Other Areas								
Ashtabula County	n/a	1	39-007-1001	Conneaut				
Washington County		1	39-167-0004	Marietta WTP				
Knox County		1	39-083-0003	Centerburg WWTP				
Preble County		1	39-135-1001	Preble NCore				
Clinton County		1	39-027-1002	Wilmington				
Totals		**5**						
Grand Totals		**47**						

* Site will relocate, with approval, during 2025-2026.

^Ohio EPA does not operate an ozone monitor in this MSA. However, WVDEP operates an ozone monitor (54-069-0010, Warwood) which fulfils the requirement for the MSA. In July of 2023 Ohio EPA and WVDEP established an MOA to formally acknowledge this monitor as part of Ohio's air monitoring network to satisfy Ohio's minimum required monitors for the MSA. See section 3.1 in the Network Plan document for more details.

3.1.2 Photochemical Assessment Monitoring Stations (PAMS)

In accordance with 40 CFR 58.10, 40 CFR Part 58, Appendix B, Section 4.0 and 40 CFR Part 58, Appendix D, Section 5.0, PAMS are established to obtain more comprehensive data in areas with high levels of ozone pollution by also monitoring NOx and VOCs. More extensive monitoring of meteorological measurements is also conducted. In October 2015, U.S. EPA promulgated a more stringent air quality standard for ozone. As a result, 40 CFR Part 58, Appendix D, Section 5.0 was amended to require that PAMS stations be set up at all NCore sites located in CBSAs whose population is greater than or equal to one million people. In Ohio there are three NCore sites: Cleveland (MSA 2023 population 2,062,087), Cincinnati (MSA 2023 population 2,278,452), and Preble County (not in a CBSA). Therefore, the new rule required Cleveland and Cincinnati NCore sites to have a PAMS operational by the monitoring deadline of June 1, 2019.

On January 8, 2020, U.S. EPA issued final rulemaking to delay the start date for PAMS monitoring until June 1, 2021 (85 FR 834). Ohio EPA fully implemented PAMS monitoring by June 1, 2021 in accordance with U.S. EPA's rulemaking extension. The PAMS monitoring season occurs each year from June 1st through August 31st.

Ohio's PAMS monitoring network consists of two sites, Cleveland, and Cincinnati NCore PAMS (39-035-0060 and 39-061-0040, respectively). Specific details about each site can be found in Appendix A.

3.1.3 Enhanced Monitoring Plan

An Enhanced Monitoring Plan (EMP) is required for states with 8-hour ozone NAAQS nonattainment areas designated moderate and above. In accordance with 40 CFR part 58, Appendix D, paragraph 5(h), States shall submit to U.S. EPA an EMP two years following the effective date of a classification of moderate or above. Effective November 7, 2022, U.S. EPA reclassified the Cleveland marginal 8-hour ozone nonattainment area to moderate (87 FR 194). The nonattainment area consists of seven counties (Cuyahoga, Lake, Lorain, Geauga, Medina, Portage, and Summit).

Ohio EPA has developed an EMP for the Cleveland moderate nonattainment area with a submittal deadline of November 7, 2024. In accordance with U.S. EPA's "Technical Note- Guidance for Developing Enhanced Monitoring Plans" Ohio EPA's EMP has investigated the necessity for enhancing the monitoring program in this area, such as additional ozone sites; additional nitrogen dioxide, nitrogen oxide, and/or nitric oxide sites; additional VOC measurements; and enhanced upper air measurements. Ohio EPA has evaluated our network to identify if enhancements are needed in the above referenced nonattainment area. The full Cleveland ozone nonattainment EMP can be found in Appendix D.

3.1.4 Ozone Network Modifications

Changes below do not require U.S. EPA approval unless otherwise stated. All ozone monitoring changes that have occurred since Ohio's 2024-2025AMNP and all planned, proposed and potential ozone network changes through December 31, 2026 include:

Ohio EPA anticipates replacing the Thermo 49i instrument at Springfield (39-023-0001) with a Teledyne API N400 instrument.

On April 22, 2025, Ohio EPA discontinued the Mayfield (39-035-5002) site located at 6116 Wilson Mills Road, Mayfield. Ohio EPA was notified by building owners of extensive building construction

that would impact the location of the ozone monitor and removal of the monitor was required as quickly as possible. Ohio EPA submitted a discontinuation request to U.S. EPA on April 21, 2025. This request was approved by U.S. EPA on DATE (see Appendix F).

Ohio EPA anticipates the need to relocate the Taft NCore PAMS site (39-061-0040) due to building/property ownership changes. Ohio EPA is currently evaluating relocation options and will submit a separate relocation request at a later date.

On September 4, 2024, Ohio EPA replaced the Teledyne API T400 instrument at Waterville (39-095-0027) with a Thermo 49i instrument.

Ohio EPA anticipates replacing the Thermo 49iQ instrument at Eastwood (39-113-0037) with a Teledyne API N400 instrument.

On March 15, 2024, Ohio EPA replaced the Teledyne API T400 instrument at TCSE (39-115-0011) with a Thermo 49iQ instrument.

On June 18, 2024, Ohio EPA replaced the Thermo 49iQ instrument at North HS (39-153-0026) with a Teledyne API T400 instrument.

3.2 $PM_{2.5}$ Network

Ohio currently operates 37[3] $PM_{2.5}$ SLAMS sites as identified in Appendix A. As discussed in Section 3.2.1 below, 20 of these sites are required in certain MSAs based upon a combination of population and concentration levels. Ohio operates 33 sites within our MSAs; three in MSAs that do not require monitoring and 30 in MSAs requiring monitoring. In addition, Ohio operates four sites in counties not in an MSA. Section 3.2.3 below identifies collocated monitors also required at these sites.

Ohio also operates 41 continuous $PM_{2.5}$ sites, as identified in Appendix A. As discussed in Section 3.2.4 below, 13 are required in certain MSAs based upon the number of $PM_{2.5}$ SLAMS sites required. Ohio operates 34 sites within the required MSAs and six sites in MSAs with no required monitors. The remaining site is in a county not in an MSA.

As discussed below for each of these requirements, Ohio meets or exceeds the minimum requirements under 40 CFR Part 58, Appendix D, Section 4.7 in all MSAs except Akron and Dayton. On March 6, 2024, U.S. EPA finalized rulemaking (89 FR 16202) to lower the annual $PM_{2.5}$ NAAQS from 12.0 µg/m^3 to 9.0 µg/m^3. Due to the tightening of the $PM_{2.5}$ annual standard one additional SLAMS monitor is now required in the Akron and Dayton MSAs. Ohio EPA currently operates one SLAMS monitor in each of these counties. At the time of this report, Ohio EPA is working on the necessary steps to establish an additional $PM_{2.5}$ monitor in the above mentioned MSAs. Further siting details are provided in Section 3.2.6 below.

Furthermore, the March 6th rulemaking also established the requirement for states to provide additional analysis to demonstrate that MSAs requiring three SLAMS monitors meet all siting requirements by July 1, 2025. Ohio currently has three MSAs that require three SLAMS monitors (Cincinnati, OH-KY-IN, Cleveland-Elyria, and Columbus). All three MSAs operate more than three air monitors. Ohio EPA evaluated all applicable sites against the new requirements and has determined that each MSA is meeting siting requirements.

3.2.1 Population/Concentration Requirements

Table 5 below identifies the minimum number of $PM_{2.5}$ SLAMS monitoring sites required under 40 CFR Part 58, Appendix D, Table D-5. Minimum monitoring requirements for $PM_{2.5}$ are based on population and whether the design value is less than 85% of the NAAQS or greater than or equal to 85% of the NAAQS. 85% of the annual and short-term NAAQS are 7.7 µg/m^3 and 29.8 µg/m^3 respectively. Design values are the three-year averages of the calculated annual and the 98th percentile of the 24-hour average concentrations recorded from the highest-reading monitor in each attainment or nonattainment area or state county.

[3] The 37 sites are presented in Appendix A with their specific details. In addition to the 37 sites operating at the time of this report two industrial sites (not included in meeting monitoring requirements) exist in the state and are represented as such in Appendix A.

Table 5. SLAMS Minimum $PM_{2.5}$ Monitoring Requirements

MSA population[1,2]	Most recent 3-year design value ≥85% of any PM2.5 NAAQS[3]	Most recent 3-year design value <85% of any PM2.5 NAAQS[3,4]
> 1,000,000	3	2
500,000-1,000,000	2	1
50,000-<500,000[5]	1	0

1 Minimum monitoring requirements apply to the Metropolitan Statistical Area (MSA).
2 Population based on latest available census figures.
3 The $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS) levels and forms are defined in 40 CFR part 50.
4 These minimum monitoring requirements apply in the absence of a design value.
5 Metropolitan Statistical Areas (MSA) must contain an urbanized area of 50,000 or more populations.

Table 6 shows Ohio is operating 33 SLAMS $PM_{2.5}$ monitoring sites in required MSAs at the time of this report, which exceeds the 20 minimum number of required sites based on population and concentration. Ohio's analysis can be found in Appendix B and full details on each site can be found in Appendix A.

In addition, Ohio operates four SLAMS sites not required based upon population and concentration and has designated one of those sites as a regional transport site and one as a regional background site. The majority of SLAMS sites monitor use FRMs; however, the Sycamore (39-061-0006) and Cincinnati Near Road (39-061-0048) sites each have a continuous FEM instrument designated as the primary monitor.

40 CFR Part 58, Appendix D, Section 4.7.1(b) establishes the hierarchy for siting monitors. In accordance with Section 4.7.1(b)(1), at least one site is a neighborhood-measurement scale or larger in an area of expected maximum concentration. In accordance with Section 4.7.1(b)(2), each CBSA with a population of 1,000,000 or more persons (i.e. Cleveland, Columbus and Cincinnati) has at least one $PM_{2.5}$ collocated at a near road NO_2 station. If an additional monitor is required, it is located in an area of poor air quality in accordance with Section 4.7.1(b)(3).

40 CFR 58.12(d) establishes operating schedule requirements for filterable $PM_{2.5}$ samplers. As shown in Table 6, all filterable $PM_{2.5}$ samplers operate on a 1 in 3 sample frequency, meeting the requirements, with the exception of the Lima (39-003-0009) site, where the operating schedule requirements are considered not applicable as the minimum site requirements for the MSA is met without this site. U.S. EPA approved this sampling schedule deviation on November 28, 2022 and issued a clarifying e-mail to correct an error in the approval letter on December 21, 2022.

Table 6. Ohio's SLAMS $PM_{2.5}$ Monitoring Network

Area Name	2023 MSA Population	2025-2026 Monitors	AQS Site No.	Site Name	Sample Frequency	Measurement Scale	Primary Method (Code)	Collocated Monitor	Design Value <85% of NAAQS	Urban Area with Pop. >= 50,000	No. Required Monitors	Monitors Exceeding Requirement
Monitors in MSAs With Populations >= 50,000												
Akron, OH	698,398	1	39-153-0017	East HS	1 in 3	Neighborhood	FRM (145)	FRM (145)	No	Yes	2	0
Canton-Massillon, OH	399,474	2	39-151-0017	Canton Fire St8	1 in 3	Neighborhood	FRM (142)	FRM (142)	No	Yes	1	1
			39-151-0020	Canton	1 in 3	Neighborhood	FRM (142)					
Cincinnati OH-KY-IN	2,278,452	7	39-017-0015	Ohio Bell	1 in 3	Neighborhood	FRM (142)		No	Yes	3	4
			39-017-0022	BPG	1 in 3	Neighborhood	FRM (142)					
			39-061-0006	Sycamore	Continuous	Neighborhood	FEM (170)					
			39-061-0014	Carthage	1 in 3	Neighborhood	FRM (142)	FRM (142)				
			39-061-0040	Taft NCore PAMS	1 in 3	Neighborhood	FRM (142)					
			39-061-0042	Lower Price Hill	1 in 3	Neighborhood	FRM (142)					
			39-061-0048***	Cincinnati Near Road	Continuous	Microscale	FEM (170)	FRM (142)				
Cleveland-Elyria, OH	2,062,087	8	39-035-0034	District 6	1 in 3	Urban	FRM (145)		No	Yes	3	5
			39-035-0038	St. Theodosius	1 in 3	Neighborhood	FRM (145)	FRM (145)				
			39-035-0045	Cleveland Fire St13	1 in 3	Neighborhood	FRM (145)					
			39-035-0060	GT Craig NCore PAMS	1 in 3	Neighborhood	FRM (145)					
			39-035-0065	Harvard Yards	1 in 3	Neighborhood	FRM (145)					
			39-035-0073***	Cleveland Near Road	1 in 3	Microscale	FRM (145)					
			39-085-0007	Painesville	1 in 3	Urban	FRM (142)					
			39-103-0004	Chippewa	1 in 3	Neighborhood	FRM (145)					
Columbus, OH	2,180,271	4	39-049-0034	Fairgrounds	1 in 3	Neighborhood	FRM (145)	FRM (145)	No	Yes	3	1
			39-049-0038***	Smoky Row Near Road	1 in 3	Microscale	FRM (145)					
			39-049-0040	Jackson Pike WWTP	1 in 3	Neighborhood	FRM (145)					
			39-049-0081	Maple Canyon	1 in 3	Neighborhood	FRM (145)					
Dayton, OH	814,363	1	39-113-0038	Sinclair	1 in 3	Neighborhood	FRM (145)	FRM (145)	No	Yes	2	0
Huntington-Ashland, WV-KY-OH	352,261	1	39-087-0012	ODOT Ironton	1 in 3	Neighborhood	FRM (145)		Yes	Yes	0	1
Lima, OH	100,838	1	39-003-0009	Lima	1 in 6****	Neighborhood	FRM (145)		Yes	Yes	0	1
Mansfield, OH	125,064	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	0	0
Springfield, OH	134,610	1	39-023-0005	Springfield Fire St1	1 in 3	Neighborhood	FRM (145)		No	Yes	1	0
Toledo, OH	639,944	3	39-095-0024	Erie	1 in 3	Neighborhood	FRM (145)		No	Yes	2	1
			39-095-0026	RAPS	1 in 3	Neighborhood	FRM (145)					
			39-095-1003	Eastside Pump St	1 in 3	Neighborhood	FRM (145)					
Weirton-Steubenville, WV-OH	113,544	1	39-081-0017	Steubenville	1 in 3	Neighborhood	FRM (145)	FRM (145)	No	Yes	1	0
Wheeling WV-OH	135,517	1	39-013-0006	Shadyside	1 in 3	Neighborhood	FRM(145)		Yes	Yes	0	1
Youngstown-Warren-Boardman, OH-PA	534,472	2	39-099-0015	Youngstown State	1 in 3	Neighborhood	FRM (142)		No	Yes	2	0
			39-155-0014	Laird Eng Bldg	1 in 3	Neighborhood	FRM (142)					
Totals		**33**									**20**	**15**
Monitors in all Other Areas												
Athens County	n/a	1	39-009-0003*	Gifford	1 in 3	Regional	FRM (145)				1	0
Scioto County	n/a	2	39-145-0013	Portsmouth WTP	1 in 3	Middle	FRM (145)				0	1
			39-145-0015	East Haverhill	1 in 6	Neighborhood	FRM (142)				0	1
Preble County	n/a	1	39-135-1001**	Preble NCore	1 in 3	Regional	FRM (145)				1	0
Totals		**4**									**2**	**2**
Grand Totals		**37**									**22**	**17**

* Regional background site (40 CFR Part 58, Appendix D, Section 4.7.3).
** Regional transport site (40 CFR Part 58, Appendix D, Section 4.7.3).
*** PM2.5 collocated at a Near Road NO2 station (40 CFR Part 58, Appendix D, Section 4.7.1(b)(2)).
****Minimum site requirements for the MSA are met without this site, so 40 CFR 58.12(d) operating schedule requirements are considered not applicable.

3.2.2 Regional Background and Transport Requirements

In addition to the minimum number of required SLAMS sites based on population and concentration, each state is required to operate a regional background and a regional transport site in accordance with 40 CFR Part 58, Appendix D, Section 4.7.3. In Ohio, our NCore site (Preble NCore, 39-135-1001) in Preble County near the Indiana border is designated as the state's regional transport site. In Ohio, the regional background site (Gifford, 39-009-0003) is located in Athens County next to Gifford Forest.

In general, a regional transport site should include an area where transport between or upwind of Ohio is expected to occur. Ohio selected the Preble NCore site as it is a rural area on the southwest border of Ohio where it would not be influenced by local sources and would represent emissions transported into Ohio based on the predominant wind patterns entering the state (southwest winds). In general, a regional background site should include an area distant from source areas. The Athens County site was selected because it is distant from sources that could impact the monitor and is located in a state forest in an area of the state dominated by state and national forests.

3.2.3 $PM_{2.5}$ Quality Control Collocation

According to 40 CFR Part 58, Appendix A, Section 3.2.3, for each distinct monitoring method designation (FRM or FEM) used in a PQAO, 15 percent of the primary monitors of each method designation must be collocated with a quality control monitor. A primary monitor designated as an FRM shall be collocated with a quality control monitor having the same FRM designation. For each primary monitor designated as an FEM, fifty percent of the monitors designated for collocation (or the first in only one collocation is necessary) shall be collocated with an FRM quality control monitor, and fifty percent shall be collocated with a monitor having the same method designation as the FEM primary monitor. 40 CFR Part 58, Appendix A, Section 3.2.3.4 requires collocated quality control monitors to sample on a 1 in 12 day schedule.

Fifty percent of the collocated quality control monitors should be deployed at sites where sampled pollutant concentrations for $PM_{2.5}$ are plus or minus 20 percent of either the annual or 24-hour NAAQS. The remainder of quality control monitors can be located at the state PQAO's discretion. If a monitoring organization has no sites where annual average or daily concentrations are within plus or minus 20 percent of the annual NAAQS or 24-hour NAAQS, then 50 percent of the collocated quality control monitors should be deployed at those sites where the annual mean concentrations or 24-hour concentrations are among the highest reading sites in the network. The remainder of quality control monitors can be located at the state PQAO's discretion.

Ohio's $PM_{2.5}$ collocation network is presented in Table 7. The collocated $PM_{2.5}$ monitors in Ohio meet all quality control collocation requirements as specified in 40 CFR Part 58, Appendix A, Section 3.2.3.

As shown in Table 7, at least 15 percent of primary monitors are collocated with a quality control monitor in Ohio's one PQAO. Primary FRM monitors are collocated with an FRM monitor of the same method. At least fifty percent of the primary FEM monitors are collocated with an FRM quality control monitor. All collocated quality control monitors sample at a 1 in 6 frequency or greater, exceeding the requirement.

For Ohio's one PQAO there are eight sites with collocated monitors and at least fifty percent of the collocated quality control monitors are deployed at sites where sampled pollutant concentrations for PM2.5 are within plus or minus 20 percent of either the annual or 24-hour NAAQS. In fact, all sites are within plus or minus 20 percent of the annual NAAQS.

Within the one PQAO, Ohio EPA operates three different method codes 142, 145, and 170.

- Two collocated monitors are required for method code 142, these monitors are located at Carthage (39-061-0014) and Canton Fire St8 (39-151-0017). Both sites rank as the second highest for the annual NAAQS and fourth and third for the 24-hour NAAQS, respectively.

- For method code 145, four collocated sites are required and there are five collocated sites in operation: St. Theodosius (39-035-0038), Fairgrounds (39-049-0034), Steubenville (39-081-0017), Sinclair (39-113-0038), and East HS (39-153-0017). While there are sites operating instruments under the 145 method code with higher annual or 24-hour NAAQS than the previous mentioned collocated sites, all five collocated sites are located among the highest reading sites for either the annual or 24-hour NAAQS, meeting the requirement. The consolidation to one PQAO realigned the breakdown of site by method code thus realigning the design value ranking. Ohio EPA will continue to evaluate the collocation requirements for this method code and will make adjustments as necessary in the future.

- There are two FEM sites in Ohio operating under method code 170 and require one collocated site. This collocated site is located at Cincinnati Near Road (39-061-0048) and is the highest reading site for both the annual and 24-hour NAAQS.

Table 7. Ohio's $PM_{2.5}$ Quality Control Collocation Monitors by PQAO

PQAO	Primary Method (Code)	No. SLAMS Sites	No. Collocated Required	AQS Site No.	Site Name	Collocated Monitor	2022-2024 Annual DV	2022-2024 24-hr DV	Within 20% of NAAQS (Annual, 24-hr)	Collocated Sample Frequency
OPQAO	FRM (145)	24	4	39-003-0009	Lima		7.2	22	Y, N	
				39-009-0003	Gifford		5.8	15	N, N	
				39-013-0006	Shadyside		7.4	16	Y, N	
				39-023-0005	Springfield Fire St1		8.3	22	Y, N	
				39-035-0034	District 6		7.2	17	Y, N	
				39-035-0038	St. Theodosius	FRM (145)	9.7	26	Y, N	1 in 6
				39-035-0045	Cleveland Fire St13		8.4	18	Y, N	
				39-035-0060	GT Craig NCore PAMS		10.0	27	Y, N	
				39-035-0065	Harvard Yards		11.2	28	Y, Y	
				39-035-0073	Cleveland Near Road		7.7	23	Y, N	
				39-049-0034	Fairgrounds	FRM (145)	9.0	22	Y, N	1 in 6
				39-049-0038	Smoky Row Near Road		8.9	25	Y, N	
				39-049-0040	Jackson Pike WWTP		9.3	21	Y, N	
				39-049-0081	Maple Canyon		8.4	22	Y, N	
				39-081-0017	Steubenville	FRM (145)	8.9	21	Y, N	1 in 6
				39-087-0012	ODOT Ironton		7.5	19	Y, N	
				39-095-0024	Erie		10.2	23	Y, N	
				39-095-0026	RAPS		7.8	22	Y, N	
				39-095-1003	Eastside Pump St		9.4	25	Y, N	
				39-103-0004	Chippewa		7.4	21	Y, N	
				39-113-0038	Sinclair	FRM (145)	8.4	23	Y, N	1 in 6
				39-135-1001	Preble NCore		7.7	21	Y, N	
				39-145-0013	Portsmouth WTP		7.5	22	Y, N	
				39-153-0017	East HS	FRM (145)	8.2	21	Y, N	1 in 6
	FRM (142)	11	2	39-017-0015	Ohio Bell		9.1	25	Y, N	
				39-017-0022	BPG		10.3	28	Y, Y	
				39-061-0014	Carthage	FRM (142)	9.3	22	Y, N	1 in 6
				39-061-0040	Taft NCore PAMS		8.5	21	Y, N	
				39-061-0042	Lower Price Hill		8.7	22	Y, N	
				39-085-0007	Painesville		6.8	21	N, N	
				39-099-0015	Youngstown State		8.3	21	Y, N	
				39-145-0015	East Haverhill		7.9	23	Y, N	
				39-151-0017	Canton Fire St8	FRM (142)	9.3	23	Y, N	1 in 6
				39-151-0020	Canton		8.7	23	Y, N	
				39-155-0014	Laird Eng Bldg		8.3	21	Y, N	
	FEM (170)	2	1	39-061-0006	Sycamore		7.9	21	Y, N	
				39-061-0048	Cincinnati Near Road	FRM (142)	9.3	22	Y, N	1 in 6

3.2.4 $PM_{2.5}$ Continuous Network

40 CFR Part 58, Appendix D, Section 4.7.2 requires continuous $PM_{2.5}$ analyzers in each MSA be equal to at least one-half (round up) of the minimum required SLAMS monitoring sites as identified in Table 6. At least one of the required continuous analyzers in each MSA must be collocated with one of the required FRM/FEM monitors, unless at least one of the required FRM/FEM monitors is itself a continuous FEM in which case no collocation requirement applies.

Table 8 shows Ohio is operating 34 sites in required MSAs and six sites in MSAs with no required monitors at the time of this report, which exceeds the 13 minimum number of required sites. One

additional site is operated in an area that is not an MSA for a total of 41[4] SLAMS sites. Ohio's analysis can be found in Appendix B and full details on each site can be found in Appendix A.

[4]In addition to the 41 sites operating at the time of this report, two industrial sites exist in the state and are represented as such in Appendix A.

Table 8. Ohio's $PM_{2.5}$ Continuous Monitoring Network

MSAs	SLAMS Monitors Required	Continuous Monitors Required	Continuous Monitors Operated	AQS Site No.	Site Name	FEM or non-FEM	Primary at site?	Monitors Exceeding Requirement
Monitors in MSAs With Populations >= 50,000								
Akron, OH	2	1	1	39-153-0017	East HS	FEM	no	0
Athens, OH	0	0	1	39-009-0003	Gifford	FEM	no	1
Canton-Massillon, OH	1	1	1	39-151-0017	Canton Fire St8	FEM	no	1
			1	39-151-0020	Canton	FEM	no	
Cincinnati OH-KY-IN	3	2	1	39-017-0015	Ohio Bell	FEM	no	8
			1	39-017-0022	BPG	FEM	no	
			1	39-025-0022	Batavia	non-FEM	no	
			1	39-061-0006	Sycamore	FEM	yes	
			1	39-061-0010	Colerain	non-FEM	no	
			1	39-061-0014	Carthage	FEM	no	
			1	39-061-0040	Taft NCore PAMS	FEM	no	
			1	39-061-0042	Lower Price Hill	FEM	no	
			1	39-061-0048	Cincinnati Near Road	FEM	yes	
			1	39-165-0007	Lebanon	non-FEM	no	
Cleveland-Elyria, OH	3	2	1	39-035-0034	District 6	FEM	no	6
			1	39-035-0038	St. Theodosius	FEM	no	
			1	39-035-0045	Cleveland Fire St13	FEM	no	
			1	39-035-0060	GT Craig NCore PAMS	FEM	no	
			1	39-035-0065	Harvard Yards	FEM	no	
			1	39-035-0073	Cleveland Near Road	FEM	no	
			1	39-085-0007	Painesville	FEM	no	
			1	39-103-0004	Chippewa	FEM	no	
Columbus, OH	3	2	1	39-049-0029	New Albany	non-FEM	no	3
			1	39-049-0034	Fairgrounds	FEM	no	
			1	39-049-0038	Smoky Row Near Road	FEM	no	
			1	39-049-0040	Jackson Pike WWTP	FEM	no	
			1	39-049-0081	Maple Canyon	FEM	no	
Dayton, OH	2	1	1	39-113-0038	Sinclair	FEM	no	0
Huntington-Ashland, WV-KY-OH	0	0	1	39-087-0012	ODOT Ironton	FEM	no	1
Lima, OH	0	0	1	39-003-0009	Lima	FEM	no	1
Mansfield, OH	0	0	0	n/a	n/a	n/a	no	0
Portsmouth, OH	0	0	1	39-145-0013	Portsmouth WTP	FEM	no	2
			1	39-145-0015	East Haverhill	FEM	no	
Springfield, OH	1	1	1	39-023-0005	Springfield Fire St1	FEM	no	0
Toledo, OH	2	1	1	39-095-0024	Erie	FEM	no	2
			1	39-095-0026	RAPS	FEM	no	
			1	39-095-1003	Eastside Pump St	FEM	no	
Weirton-Steubenville, WV-OH	1	1	1	39-081-0017	Steubenville	FEM	no	0
Wheeling, WV-OH	0	0	1	39-013-0006	Shadyside	FEM	no	1
Youngstown-Warren-Boardman, OH-PA	2	1	1	39-099-0015	Youngstown State	FEM	no	1
			1	39-155-0014	Laird Eng Bldg	FEM	no	
Totals	**20**	**13**	**40**					**27**
Monitors in all Other Areas								
Preble County	n/a	n/a	1	39-135-1001	Preble NCore	FEM	no	1
Totals			**1**					**1**
Grand Totals			**41**					**28**

Some $PM_{2.5}$ continuous monitors are considered FEM instruments while others are non-FEM. A monitor may be a non-FEM unit because it either never qualified as an FEM (as manufactured) or because the unit is not operated in a manner to categorize them as an FEM instrument. Non-FEM units are not comparable to the NAAQS. Generally, FEM units are comparable to the NAAQS although some historical periods of data may be excluded from comparison when requested by a state and approved by U.S. EPA. As identified in Table 8, Ohio currently has 36 FEM SLAMS monitors. The remaining four monitors are non-FEM monitors.

U.S. EPA developed a comparability assessment tool which compares pollutant concentrations collected in any one year between the hourly instrument and the collocated filter-based instruments. This tool is used for Ohio sites to make statistical comparisons to determine the suitability of comparison to the NAAQS. Ohio has performed a number of comparability assessment studies during the last plan period and will continue assessing comparability of our continuous instruments during future plan periods as a part of our continued efforts to improve comparability performance.

When a state deems a site is sufficiently comparable, the state may choose to designate their FEM monitor as primary for the site. Currently two sites have FEM monitors designated as primary (Cincinnati Near Road, 39-061-0048 and Sycamore, 39-061-0006). Ohio is not proposing any additional FEM monitors be designated as primary as a part of this plan period. However, after ample comparison, Ohio EPA will likely decide to designate additional FEM monitors as primary at sites throughout Ohio in 2026. Ohio EPA will request any FEM primary monitor changes via a separate request to U.S. EPA, if warranted, before the next AMNP.

3.2.5 $PM_{2.5}$ Chemical Speciation Network

As part of the $PM_{2.5}$ NAAQS review completed in 1997, U.S. EPA established a $PM_{2.5}$ CSN consisting of STN sites and supplemental speciation sites. The CSN is a component of the national $PM_{2.5}$ monitoring network; however, CSN data are not used for NAAQS comparison. CSN data are used for multiple objectives, including:

- The assessment of trends;
- The development of effective SIPs and determination of regulatory compliance;
- The development of emission control strategies and tracking progress of control programs;
- Aiding in the interpretation of health studies by linking effects to $PM_{2.5}$ constituents;
- Characterizing annual and seasonal spatial variation of aerosols; and
- Comparison to chemical speciation data collected from the Interagency Monitoring of Protected Visual Environments (IMPROVE) network.

U.S. EPA implemented the CSN in 2000. In 2014, a nationwide assessment was conducted of the CSN to create an optimized network that meets primary monitoring objectives. In Ohio, this resulted in U.S. EPA terminating funding for the speciation sites in Columbus, Toledo, Youngstown and Portsmouth. Subsequently, U.S. EPA committed to financially supporting two additional speciation monitors (Harvard Yards, 39-035-0065 and Southerly WWTP, 39-035-0076) that were added in the Cleveland area in 2017 under the multipurpose grant.

Ohio EPA operates 10 $PM_{2.5}$ chemical speciation monitors as identified in Table 9 below. The GT Craig NCore PAMS site (39-035-0060) is the only STN site in Ohio with the remainder being supplemental CSN sites. The operation of two of the supplemental CSN sites, Harvard Yards (39-035-

0065) and Southerly WWTP (39-035-0076) are not funded by the Section 103 grant. Full details on these sites can be found in Appendix A.

The GT Craig NCore PAMS site (39-035-0060) operates on a 1 in 3 sample frequency in accordance with the operating schedule requirements for STN monitors established in 40 CFR 58.12(d)(3).

Table 9. Ohio's $PM_{2.5}$ Chemical Speciation Monitoring Network

CBSA Name or non-MSA	AQS Site No.	Site Name	Sampling Began	Sampling Frequency	Collocated (Y/N)
Akron, OH	39-153-0017	East HS	1/1/2025	1 in 6	N
Canton-Massillon, OH	39-151-0017	Canton Fire St8	1/6/2005	1 in 6	N
Cincinnati, OH-KY-IN	39-061-0040	Taft NCore PAMS	12/12/2003	1 in 3	N
Cleveland-Elyria, OH	39-035-0038	St. Theodosius	1/8/2002	1 in 6	N
Cleveland-Elyria, OH	39-035-0060	GT Craig Ncore PAMS (STN)	12/26/2000	1 in 3	Y
Cleveland-Elyria, OH	39-035-0065	Harvard Yards	1/1/2017	1 in 6	N
Cleveland-Elyria, OH	39-035-0076	Southerly WWTP	8/5/2017	1 in 6	N
Dayton, OH	39-113-0038	Sinclair	1/1/2007	1 in 6	N
Preble County	39-135-1001	Preble NCore	1/1/2011	1 in 3	N
Weirton-Steubenville	39-081-0017	Steubenville	12/1/2013	1 in 6	N
State Totals	**10 sites**				**1 collocated**

3.2.6 $PM_{2.5}$ Network Modifications

Changes below do not require U.S. EPA approval unless otherwise stated. All $PM_{2.5}$ monitoring changes that have occurred since Ohio's 2024-2025AMNP and all planned, proposed and potential $PM_{2.5}$ network changes through December 31, 2026 include:

Ohio EPA is in the process of submitting a separate request to U.S. EPA to discontinue the Shadyside (39-013-0006) site. This site monitors $PM_{2.5}$, PM_{10}, SO_2, and NO_2. This site is located in a field along a dirt and gravel roadway at 2 Ball Park Road, Shadyside. Over time, the surrounding area businesses have acquired additional storage piles that lie near the monitoring site. In addition, at the end of the dirt road there are several actively used baseball fields. This monitoring site has been heavily impacted by dust, especially road dust during the baseball season. In the most recent U.S. EPA Technical System Audit (TSA), this site was identified as having siting issues due to these surrounding dust sources. This site was initially established in 2015 as a preconstruction prevention of significant deterioration (PSD) monitoring site. Due to significant delays in the industrial facility's ability to commence construction, this PSD monitoring site has continued to operate much longer than necessary. The facility no longer has construction plans for this area and this site is no longer necessary for its initial intended purpose. As a result, Ohio EPA will be requesting to discontinue monitoring at this location via a separate submittal letter.

At the time of this report, Ohio EPA is evaluating relocating the Jackson Pike (39-049-0040) site. This site is currently located at a wastewater treatment plant (2104 Jackson Pike, Columbus) and monitors $PM_{2.5}$, PM_{10} and Pb/Metals. In the most recent U.S. EPA TSA, the site was identified as having siting issues. These siting issues are in part due to changes to the overall area such as a growing footprint from the wastewater treatment plant and nearby gravel lots. The growing footprint can be seen below in satellite images from May 2022 and March 2025. Ohio EPA will

consult with U.S. EPA as we move forward with evaluating possible new site locations and will submit a separate request at a later date.

Image 1. Jackson Pike Site (39-049-0040) May 2022

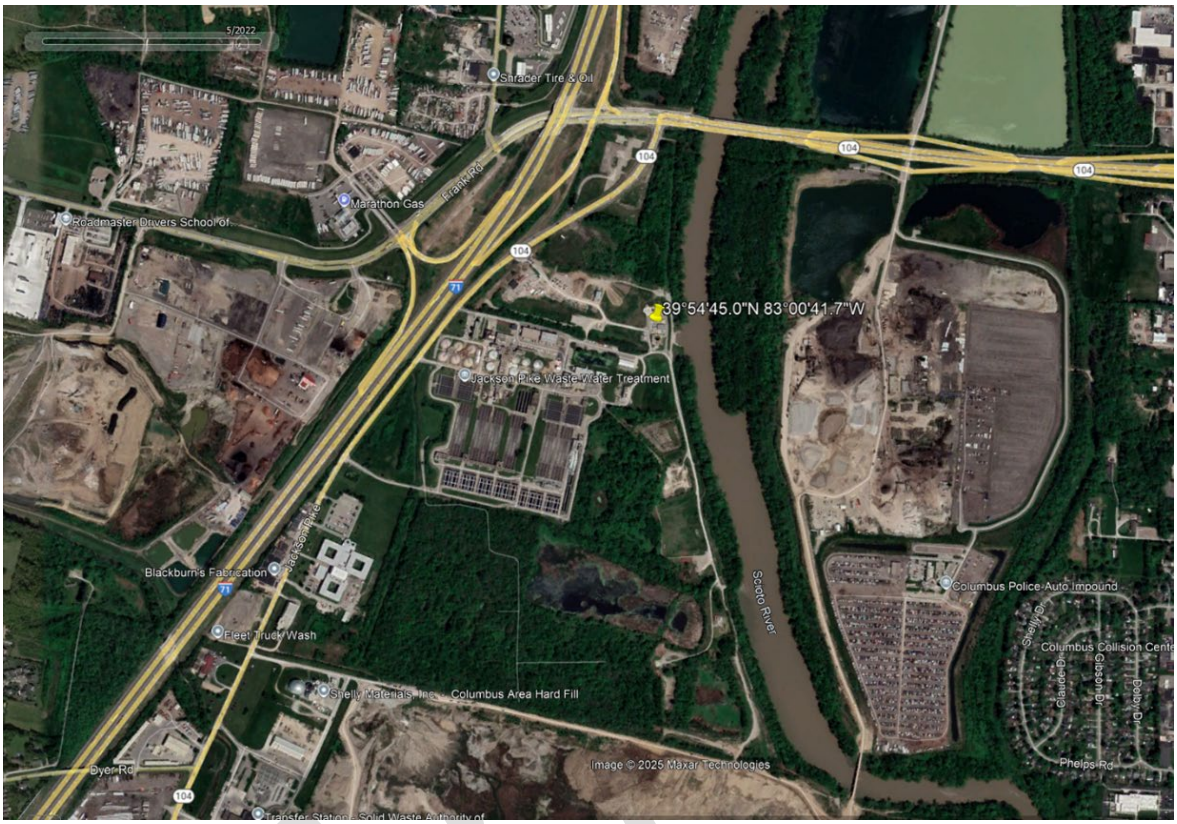


Image 2. Jackson Pike Site (39-049-0040) March 2025

In the meantime, Ohio EPA is requesting to exempt Jackson Pike $PM_{2.5}$ data from comparison to the $PM_{2.5}$ annual NAAQS under 40 CFR part 58.30. As mentioned above, there have been changes to the overall area surrounding this location since the site was established in May 2022 and the site is no longer an accurate representation of an area-wide airshed. The TSA findings also highlighted that the site is not properly spaced from minor unpaved areas and therefore is not representative of the neighborhood scale as intended. Because the Jackson Pike site is not meeting siting criteria for its intended monitoring purpose Ohio EPA would like $PM_{2.5}$ data to be exempt from the annual NAAQS until this site can be discontinued and a new replacement monitoring location is established.

As discussed in Section 3.2, the Akron and Dayton MSAs now each require one additional SLAMS monitor. Ohio EPA is working to secure siting locations and other operational necessities to begin new $PM_{2.5}$ monitoring for both MSAs. For the Akron MSA, Ohio EPA is working on adding a $PM_{2.5}$ monitor at the North HS (39-153-0026) site located at 985 Gorge Blvd., Akron, in Summit County. For the Dayton MSA, Ohio EPA is in discussion with the City of Dayton to establish a $PM_{2.5}$ site at the Dayton Water Treatment Plant located at 3210 Chuck Wagner Lane, Dayton, in Montgomery County. Ohio EPA will continue to communicate with U.S. EPA as these locations are established to insure they meet all siting criteria.

Ohio EPA anticipates the need to relocate the Taft NCore PAMS site (39-061-0040) due to building/property ownership changes. Ohio EPA is currently evaluating relocation options and will submit a separate relocation request at a later date.

On January 1, 2025, Ohio EPA added $PM_{2.5}$ chemical speciation monitoring at East HS (39-153-0017).

3.3 PM_1 Network

PM_1 is ultrafine particulate matter with a diameter of less than <1 µm. Combustion sources are the primary cause of PM_1.

Ohio EPA currently operates three continuous PM_1 monitors in the more urban areas of Ohio.

Table 10. Ohio's PM_1 Network

AQS Site No.	Site Name	Started
39-035-0060	GT Craig NCore PAMS	3/4/2023
39-049-0038	Smoky Row Near Road	1/1/2023
39-061-0040	Taft NCore PAMS*	1/1/2023
*Site will relocate, with approval, during 2025-2026.		

3.3.1 PM_1 Network Modification

Changes below do not require U.S. EPA approval unless otherwise stated. All PM_1 monitoring changes that have occurred since Ohio's 2024-2025 AMNP and all planned, proposed and potential PM_1network changes through December 31, 2026 include:

Ohio EPA anticipates the need to relocate the Taft NCore PAMS site (39-061-0040) due to building/property ownership changes. Ohio EPA is currently evaluating relocation options and will submit a separate relocation request at a later date.

3.4 PM_{10} Network

Ohio currently operates 25[5] PM_{10} sites as identified in Appendix A. PM_{10} monitors sample particulates that are less than 10 microns in diameter. The particle size collected in the instruments contrast the much smaller particle size collected in $PM_{2.5}$ instruments. As discussed below, 10 to 22 of these sites are required in certain MSAs based upon a combination of population and concentration levels. Ohio operates 20 sites within these MSAs with the remaining five sites outside of the MSAs. As discussed below, Ohio meets, and often exceeds, the minimum sites required under 40 CFR Part 58, Appendix D, Section 4.6.

3.4.1 Population/Concentration Requirements

40 CFR Part 58, Appendix D, Section 4.6, Table D-4 requires Ohio operate PM_{10} sites in accordance with the following requirements.

[5] The 25 sites are presented in Appendix A with their specific details. In addition to the 25 sites operating at the time of this report, five industrial sites exist in the state and are also represented as such in Appendix A.

Table 11. Minimum PM_{10} Monitoring Requirements [1]

Population category	High concentrations[2]	Medium concentrations[3]	Low concentrations[4,5]
>1,000,000	**6-10**	**4-8**	**2-4**
500,000-1,000,000	**4-8**	**2-4**	**1-2**
250,000-500,000	**3-4**	**1-2**	**0-1**
100,000-250,000	**1-2**	**0-1**	**0**

1 Selection of urban areas and actual numbers of stations per area within the ranges shown in this table will be jointly determined by U.S. EPA and the state Agency.
2 High concentration areas are those for which ambient PM_{10} data show ambient concentrations exceeding the PM_{10} NAAQS by 20 percent or more.
3 Medium concentration areas are those for which ambient PM_{10} data show ambient concentrations exceeding 80 percent of the PM_{10} NAAQS.
4 Low concentration areas are those for which ambient PM_{10} data show ambient concentrations less than 80 percent of the PM_{10} NAAQS.
5 These minimum monitoring requirements apply in the absence of a design value.

The number of PM_{10} sites required is based on population in MSAs and the level of concentrations that are measured in these areas. Ohio does not have any high or medium concentration areas. All SLAMS monitoring shows values less than 80% of the PM_{10} NAAQS (120 µg /m^3). There was one monitor in the Columbus, MSA (39-049-0040) that experienced an isolated incident with an ambient concentration over 120 µg /m^3, the threshold that could require consideration under the medium concentration category. This monitor began operating in May 2022 and has had one ambient 1st max over the 120 µg /m^3. The form of the PM_{10} NAAQS is "not to be exceeded more than once per year on average over 3 years". For this review, Ohio EPA continues to evaluate the Columbus area against the low concentration metric because one value over 120 µg /m^3 is allowed on average over three years. This site does not have three full years of data available at the time of this report. Based on the low concentration category defined in Table 11 above, Ohio is required to operate between 10 and 22 PM_{10} sites. As can be seen in Table 12 below, Ohio operates 20 sites in these areas. Ohio's analysis can be found in Appendix B with details on each site in Appendix A.

Table 12. Ohio's PM_{10} Monitoring Network

Area Name	2023 MSA Population	2025-2026 Monitors	AQS Site No.	Site Name	Continuous or Filterable?	No. Required Monitors	New Monitors Needed
Monitors in MSAs With Populations > 100,000							
Akron, OH	698,398	1	39-153-0017	East HS	Continuous	1-2	0
Canton-Massillon, OH	399,474	1	39-151-0017	Canton Fire St8	Continuous	0-1	0
Cincinnati OH-KY-IN	2,278,452	2	39-017-0015	Ohio Bell	Continuous	2-4	0
			39-061-0040	Taft NCore PAMS	Continuous		
Cleveland-Elyria, OH	2,062,087	4	39-035-0038	St. Theodosius	Continuous	2-4	0
			39-035-0045	Cleveland Fire St13	Continuous		
			39-035-0060	GT Craig NCore PAMS	Continuous		
			39-035-0065	Harvard Yards	Continuous		
Columbus, OH	2,078,725	3	39-049-0034	Fairgrounds	Continuous	2-4	0
			39-049-0040	Jackson Pike WWTP	Continuous		
			39-049-0081	Maple Canyon	Continuous		
Dayton, OH	814,363	1	39-113-0038	Sinclair	Continuous	1-2	0
Huntington-Ashland, WV-KY-OH	352,261	1	39-087-0012	ODOT Ironton	Filterable	0-1	0
Lima, OH	100,838	0	n/a	n/a	n/a	0	0
Mansfield, OH	125,064	0	n/a	n/a	n/a	0	0
Springfield, OH	134,610	0	n/a	n/a	n/a	0	0
Toledo, OH	639,944	1	39-095-0024	Erie	Continuous	1-2	0
Weirton-Steubenville, WV-OH	113,544	1	39-081-0017	Steubenville	Continuous	0	0
Wheeling, WV-OH	135,517	1	39-013-0006	Shadyside	Continuous	0	0
Youngstown-Warren-Boardman, OH-PA	534,472	4	39-099-0015	Youngstown State	Continuous	1-2	0
			39-155-0006	Warren WWTP	Filterable		
			39-155-0014	Laird Eng Bldg	Continuous		
			39-155-0015	Girard WWTP	Filterable		
Total		**20**				10-22	0
All Other Monitors							
Columbiana County	n/a	2	39-029-0020	East Liverpool WTP	Filterable	n/a	n/a
			39-029-0023	Eastside Elem	Filterable		
Scioto County		2	39-145-0013	Portsmouth WTP	Continuous		
			39-145-0015	East Haverhill	Continuous		
Preble County		1	39-135-1001	Preble NCore	Continuous		
Total		**5**					
State Totals		**25**					

3.4.2 PM_{10} Monitor Collocation

The number of filterable (filter-based) PM_{10} collocated monitors must be at least 15 percent of the total number of filterable PM_{10} sites operating within any PQAO (values of 0.5 and greater round up). In addition, each PQAO must have at least one collocated quality control monitor (if the total number of monitors is less than three). The collocation requirements apply only to filterable monitors and not continuous monitors.

Table 13 demonstrates that Ohio currently meets the monitor collocation requirement in accordance with 40 CFR Part 58, Appendix A, Section 3.3.4. All collocated sites meeting the requirement use sampling and analytical methods consistent with the primary sampler and all sample at a frequency of no less than 1 in 6 days.

Table 13. Ohio's PM_{10} Filterable Collocation Monitors by PQAO

Ohio PQAO	No. PM_{10} Filterable Sites	No. Collocated Required	No. of Collocated Monitors	Collocated AQS Site No.	Collocated Site Name
NEDO	4		1	39-029-0023	Eastside Elem
Portsmouth	1		1	39-087-0012	ODOT Ironton
State Total	**5***	**2**	**2**		

*This number is 20 less than the total number of PM_{10} monitors in the network (see table above) because collocation requirements apply only to filterable monitors and the following sites operate only continuous instruments: East HS, Canton Fire St8, Ohio Bell, Taft NCore PAMS, St. Theodosius, Cleveland Fire St13, GT Craig NCore PAMS, Harvard Yards, Fairgrounds, Jackson Pike WWTP, Maple Canyon, Sinclair, Erie, Steubenville, Shadyside, Youngstown State, Laird Eng Bldg, Portsmouth WTP, East Haverhill, and Preble NCore.

3.4.3 PM_{10} Network Modifications

Changes below do not require U.S. EPA approval unless otherwise stated. All PM_{10} monitoring changes that have occurred since Ohio's 2024-2025 AMNP and all planned, proposed and potential PM_{10} network changes through December 31, 2026 include:

Ohio EPA is in the process of submitting a separate request to U.S. EPA to discontinue the Shadyside (39-013-0006) site. This site monitors $PM_{2.5}$, PM_{10}, SO_2, and NO_2. This site is located in a field along a dirt and gravel roadway at 2 Ball Park Road, Shadyside. Over time, the surrounding area businesses have acquired additional storage piles that lie near the monitoring site. In addition, at the end of the dirt road there are several actively used baseball fields. This monitoring site has been heavily impacted by dust, especially road dust during the baseball season. In the most recent U.S. EPA Technical System Audit (TSA), this site was identified as having siting issues due to these surrounding dust sources. This site was initially established in 2015 as a preconstruction prevention of significant deterioration (PSD) monitoring site. Due to significant delays in the industrial facility's ability to commence construction, this PSD monitoring site has continued to operate much longer than necessary. The facility no longer has construction plans for this area and this site is no longer necessary for its initial intended purpose. As a result, Ohio EPA will be requesting to discontinue monitoring at this location via a separate submittal letter.

At the time of this report, Ohio EPA is evaluating relocating the Jackson Pike (39-049-0040) site. This site is currently located at a wastewater treatment plant (2104 Jackson Pike, Columbus) and monitors $PM_{2.5}$, PM_{10} and Pb/Metals. In the most recent U.S. EPA TSA, the site was identified as having siting issues. These siting issues are in part due to changes to the overall area such as a growing footprint from the wastewater treatment plant and nearby gravel lots. Ohio EPA will consult with U.S. EPA as we move forward with evaluating possible new site locations and will submit a separate request at a later date.

Ohio EPA anticipates the need to relocate the Taft NCore PAMS site (39-061-0040) due to building/property ownership changes. Ohio EPA is currently evaluating relocation options and will submit a separate relocation request at a later date.

3.5 SO_2 Network

Ohio currently operates 19[6] SO_2 SLAMS sites as identified in Appendix A. All SO_2 sites measure hourly and 5-minute maximum averages. As discussed below, two of these sites are required based upon a PWEI (with three sites "qualifying" as PWEI sites). The remainder of the sites, 16 are monitors that exceed the minimum required under 40 CFR Part 58, Appendix D, Section 4.4 and four of those sites are required under U.S. EPA's DRR. Ohio's analysis can be found in Appendix B and is summarized below in Table 14. Full details on each site can be found in Appendix A.

Table 14. Ohio's SO_2 Monitoring Network

AQS Site No.	Site Name	Requirement
Monitors Qualifying as Required Monitors		
39-049-0034	Fairgrounds	PWEI - Columbus, OH CBSA
39-053-0004	Cheshire Elem	DRR
39-053-0005	Ridge	DRR
39-053-0006	Guiding Hand	DRR
39-061-0010	Colerain	PWEI - Cincinnati, OH-KY-IN CBSA
39-061-0040	Taft NCore PAMS^	PWEI - Cincinnati, OH-KY-IN CBSA (NCore)
54-053-0001	Lakin WV	DRR
	Total	7
All Other Monitors		
39-003-0009	Lima	n/a
39-013-0006	Shadyside	
39-035-0038	St. Theodosius	
39-035-0060	GT Craig NCore PAMS*	
39-035-0065	Harvard Yards	
39-081-0017	Steubenville	
39-085-0007	Painesville	
39-087-0012	ODOT Ironton	
39-095-0008	Collins Park WTP	
39-099-0015	Youngstown State	
39-135-1001	Preble NCore*	
39-153-0017	East HS	
	Total	12
	State Total	19

*40 CFR Part 58, Appendix D, Section 4.4, SO2 monitoring requirements, does not require SO2 monitoring at NCore sites although 40 CFR Part 58, Appendix D, Section 3.0, NCore monitoring requirements, does. This section of the AMNP is dedicated to showing Ohio EPA meets the requirements of Section 4.4. Table 14 does acknowledge SO2 monitoring occurs at the Preble NCore site in the "all other monitors" section but this monitor is not a "required monitor" for the purpose of Section 4.4.

^ Site will relocate, with approval, during 2025-2026.

[6] 19 sites are presented in Appendix A with their specific details. In addition to the 19 sites operating at the time of this report, seven industrial sites exist in the state (not included in meeting monitoring requirements) and are also represented as such in Appendix A.

3.5.1 Population Weighted Emissions Index Sites

40 CFR Part 58, Appendix D, Section 4.4, requires that each state calculate the PWEI for each CBSA within the state, or shared with another state, for use in identifying sites for the SO_2 monitoring network due to U.S. EPA's revision to the SO_2 NAAQS promulgated in 2010. These PWEI must be calculated and re-evaluated each year using the latest available population census and emission inventories. For this plan period, population was updated from 2022 to the 2023 estimates from the U.S. Census Bureau. Emissions from the 2020 were used for this planning period, as this is the most recent emissions inventory available. For any CBSA with a calculated PWEI value equal to or greater than 1,000,000, a minimum of three SO_2 monitors are required within that CBSA. For any CBSA with a calculated PWEI value equal to or greater than 100,000, but less than 1,000,000, a minimum of two SO_2 monitors are required within that CBSA. For any CBSA with a calculated PWEI value equal to or greater than 5,000, but less than 100,000, a minimum of one SO_2 monitor is required within that CBSA.

The minimum PWEI monitoring requirements can be satisfied by an existing or new SO_2 site that is sited within the boundaries of the parent CBSA provided the site is one of the following station types: population exposure, highest concentration, source impacts, general background, or regional transport. SO_2 monitors at NCore stations can be counted towards satisfying the minimum monitoring requirements if that monitor is located within a CBSA. Any monitor that is sited outside of a CBSA to assess the highest concentration resulting from the impact of significant sources or source categories existing within that CBSA shall be allowed to count towards minimum monitoring requirements for that CBSA.

The two CBSAs, the Cincinnati, OH-KY-IN CBSA and the Columbus, OH CBSA, require one PWEI monitors, each. As can be seen in Table 14, the Cincinnati OH-KY-IN CBSA has two monitors in Hamilton County (both population exposure and one being an NCore site). Also seen in Table 14, the Columbus, OH CBSA has one monitor in Franklin County (population exposure). Therefore, current SO_2 monitoring in both areas fulfills the PWEI requirements. Ohio's PWEI analysis can be found in Appendix B. Appendix A provides the full details for these sites.

3.5.2 Data Requirement Rule Sites

On August 21, 2015, U.S. EPA promulgated the DRR (80 FR 51052). Under the DRR, states are required to characterize concentrations of SO_2 from emission sources with actual annual emissions of 2,000 tons or more. The state can accomplish this either through air monitoring or air quality modeling. The results of any monitoring or modeling may be used in future determinations of attainment status. In order to use the option for monitoring, the monitoring network was required to begin operation by January 1, 2017. Ohio EPA elected to use ambient air quality monitoring to characterize air quality around two adjacent power plant sources that emit more than 2,000 tons a year. These are Lightstone Generation LLC's General James M. Gavin and the Ohio Valley Electric Corporation (OVEC) Kyger Creek power plants. A DRR monitoring network was installed in late 2016 and began operating January 1, 2017. The network consists of four sites each equipped with SO_2 monitors and two sites with 10-meter meteorological sampling towers. Three SO_2 sites are operated by OVEC and their contractor, Shell Engineering. The fourth site in Cheshire near the Gavin Power Plant is operated by Ohio EPA. All four sites are designated as a SLAMS site. The entire network is located along the Ohio River in Gallia County. Table 14 above identifies the four sites and details for the sites can be found in Appendix A.

Ohio EPA reviews emissions on an annual basis to determine if additional sources warrant analysis under the DRR. When warranted, Ohio EPA will address any sources that will have characterization through air monitoring as a part of Ohio's AMNP.

3.5.3 SO_2 Network Modifications

Changes below do not require U.S. EPA approval unless otherwise stated. All SO_2 monitoring changes that have occurred since Ohio's 2024-2025 AMNP and all planned, proposed and potential SO_2 network changes through December 31, 2026 include:

Ohio EPA is in the process of submitting a separate request to U.S. EPA to discontinue the Shadyside (39-013-0006) site. This site monitors $PM_{2.5,}$ $PM_{10,}$ SO_2, and NO_2. This site is located in a field along a dirt and gravel roadway at 2 Ball Park Road, Shadyside. Over time, the surrounding area businesses have acquired additional storage piles that lie near the monitoring site. In addition, at the end of the dirt road there are several actively used baseball fields. This monitoring site has been heavily impacted by dust, especially road dust during the baseball season. In the most recent U.S. EPA Technical System Audit (TSA), this site was identified as having siting issues due to these surrounding dust sources. This site was initially established in 2015 as a preconstruction prevention of significant deterioration (PSD) monitoring site. Due to significant delays in the industrial facility's ability to commence construction, this PSD monitoring site has continued to operate much longer than necessary. The facility no longer has construction plans for this area and this site is no longer necessary for its initial intended purpose. As a result, Ohio EPA will be requesting to discontinue monitoring at this location via a separate submittal letter.

On January 10, 2025, Ohio EPA replaced the Teledyne API T100 instrument at St. Theodosius (39-035-0038) with a Serinus Ecotec 50 instrument.

Ohio EPA anticipates the need to relocate the Taft NCore PAMS site (39-061-0040) due to building/property ownership changes. Ohio EPA is currently evaluating relocation options and will submit a separate relocation request at a later date.

On October 23, 2024, Ohio EPA replaced the Teledyne T100 instrument at East HS (39-153-0017) with a Thermo 43iQ instrument.

3.6 NO_2 Network

Ohio currently operates seven NO_2 SLAMS sites as identified in Appendix A. As discussed below, three of these sites are based upon area-wide requirements and three of these sites are based upon near road requirements. The remaining site is not a required monitor and exceeds the minimum requirements under 40 CFR Part 58, Appendix D, Section 4.3. Table 15 presents Ohio's NO_2 network.

Table 15. Ohio's NO_2 Monitoring Network

AQS Site No.	Site Name	Requirement
Required Monitors		
39-035-0060	GT Craig NCore PAMS	Area Wide Cleveland-Elyria CBSA > 1,000,000
39-035-0073	Cleveland Near Road	Cleveland-Elyria CBSA
39-049-0034	Fairgrounds	Area Wide Columbus CBSA > 1,000,000
39-049-0038	Smoky Row Near Road	Columbus CBSA
39-061-0040	Taft NCore PAMS*	Area Wide Cincinnati CBSA > 1,000,000
39-061-0048	Cincinnati Near Road	Cincinnati CBSA
	Total	6
All Other Monitors		
39-013-0006	Shadyside	n/a
	Total	1
	State Total	7
* Site will relocate, with approval, during 2025-2026.		

3.6.1 Area-Wide Sites

40 CFR Part 58, Appendix D, Section 4.3.3 specifies minimum area-wide monitoring requirements. Area-wide monitoring must be conducted in CBSAs with populations of 1,000,000 or more. In these areas, a minimum of one monitor is required and should be sited to capture the expected highest concentrations at a neighborhood or larger spatial scale. Ohio operates area-wide NO_2 monitors at the NCore sites in Cleveland (GT Craig NCore PAMS, 39-035-0060) and Cincinnati (Taft NCore PAMS, 39-061-0040). In Columbus, to meet this requirement, a NO_2 monitor is operated at the Fairgrounds (39-049-0034) site.

3.6.2 Near Road Sites

40 CFR Part 58, Appendix D, Section 4.3.2 specifies minimum near road NO_2 monitoring requirements. Ohio is required to operate three near road sites. Near road NO_2 monitoring requirements are based on population of CBSAs and AADT counts of road segments within the CBSAs. One monitor is required in CBSAs with 1,000,000 or more people near a road with high AADT counts. Near road monitors are to be located to capture maximum one-hour concentrations at a micro-spatial scale. The near road sites in Ohio meet these requirements and are in the following areas: Cleveland (Cleveland Near Road, 39-035-0073), Columbus (Smoky Row Near Road, 39-049-0038) and Cincinnati (Cincinnati Near Road, 39-061-0048). These locations were selected based, in part, upon the AADT at these sites being 168,200, 142,361 and 131,242 respectively. Ohio's analysis can be found in Appendix B and details of each site can be found in Appendix A.

In addition, a second near road NO_2 monitoring station is required for any CBSA with a population of 2,500,000 persons or more, or in any CBSA with a population of 1,000,000 or more persons that has one or more roadway segments with 250,000 or greater AADT counts. Ohio does not have locations that prompt this requirement.

3.6.3 NO_2 Network Modifications

Changes below do not require U.S. EPA approval unless otherwise stated. All NO_2 monitoring changes have occurred since Ohio's 2024-2025 AMNP and all planned, proposed and potential NO_2 network changes through December 31, 2026.

Ohio EPA is in the process of submitting a separate request to U.S. EPA to discontinue the Shadyside (39-013-0006) site. This site monitors $PM_{2.5,}$ $PM_{10,}$ SO_2, and NO_2. This site is located in a field along a dirt and gravel roadway at 2 Ball Park Road, Shadyside. Over time, the surrounding area businesses have acquired additional storage piles that lie near the monitoring site. In addition, at the end of the dirt road there are several actively used baseball fields. This monitoring site has been heavily impacted by dust, especially road dust during the baseball season. In the most recent U.S. EPA Technical System Audit (TSA), this site was identified as having siting issues due to these surrounding dust sources. This site was initially established in 2015 as a preconstruction prevention of significant deterioration (PSD) monitoring site. Due to significant delays in the industrial facility's ability to commence construction, this PSD monitoring site has continued to operate much longer than necessary. The facility no longer has construction plans for this area and this site is no longer necessary for its initial intended purpose. As a result, Ohio EPA is requesting to discontinue monitoring at this location.

On October 19, 2024, Ohio EPA replace the Thermo 42i instrument at Cleveland Near Road (39-035-0073) with a Teledyne API T200 instrument.

Ohio EPA anticipates the need to relocate the Taft NCore PAMS site (39-061-0040) due to building/property ownership changes. Ohio EPA is currently evaluating relocation options and will submit a separate relocation request at a later date.

3.7 CO Network

Ohio currently operates seven CO SLAMS sites as identified in Appendix A. As discussed below, three of these sites are required based upon near road siting requirements. The remainder of the sites, four, are monitors that exceed the minimum required under 40 CFR Part 58, Appendix D, Section 4.2[7]. Table 16 below identifies the CO network in Ohio.

[7]40 CFR Part 58, Appendix D, Section 4.2, CO monitoring requirements, does not require CO monitoring at NCore sites although 40 CFR Part 58, Appendix D, Section 3.0, NCore monitoring requirements, does. This section of the AMNP is dedicated to showing Ohio EPA meets the requirements of Section 4.2. Table 16 does acknowledge CO monitoring occurs at NCore sites in the "all other monitors" section but these monitors are not "required monitors" for the purpose of Section 4.2.

Table 16. Ohio's CO Monitoring Network

AQS Site No.	Site Name	Requirement
Required Monitors		
39-035-0073	Cleveland Near Road	Near-road site
39-049-0038	Smoky Row Near Road	Near-road site
39-061-0048	Cincinnati Near Road	Near-road site
	Total	3
All Other Monitors		
39-035-0051	Galleria	n/a
39-035-0060	GT Craig NCore PAMS	
39-061-0040	Taft NCore PAMS*	
39-135-1001	Preble NCore	
	Total	4
	State Total	7
* Site will relocate, with approval, during 2025-2026.		

3.7.1 CO Near Road Sites

40 CFR Part 58, Appendix D, Section 4.2.1 requires one CO monitor to be collocated with any required NO_2 near-road monitor in CBSAs having a population of 1,000,000 or more persons. There is one CO monitor at each of Ohio's three near road sites. These sites are located in the Cleveland, Columbus and Cincinnati CBSAs and identified in Table 16 above. Ohio's analysis can be found in Appendix B.

3.7.2 CO Network Modifications

Changes below do not require U.S. EPA approval unless otherwise stated. All CO monitoring changes that have occurred since Ohio's 2024-2025 AMNP and all planned, proposed and potential CO network changes through December 31, 2026 include:

Ohio EPA anticipates the need to relocate the Taft NCore PAMS site (39-061-0040) due to building/property ownership changes. Ohio EPA is currently evaluating relocation options and will submit a separate relocation request at a later date.

3.8 Pb Network

Ohio currently operates 9[8] Pb SLAMS sites as identified in Appendix A. As discussed below, five of these sites are based upon source-oriented monitoring and four sites are based upon population monitoring. Table 17 shows Ohio's Pb network. Note that all Pb sites also include metals analysis.

[8] Details of the 9 sites are presented in Appendix A.

Table 17. Ohio's Pb Monitoring Network

AQS Site No.	Site Name	Monitoring Objective Notes
39-029-0019	Port Authority	Population
39-029-0020	East Liverpool WTP	Population
39-029-0023	Eastside Elem	Source-oriented
39-035-0038	St. Theodosius	Population
39-035-0049	Ferro	Source-oriented
39-049-0040	Jackson Pike WWTP	Population
39-051-0001	Delta	Source-oriented
39-151-0024	Republic Steel	Source-oriented (shutdown facility)
39-151-0025	Republic Community	Source-oriented (shutdown facility)
Statewide Totals	**9**	

3.8.1 Source-Oriented Pb Monitoring and Waivers

In 2008, U.S. EPA revised the NAAQS for Pb. In the 2008 rulemaking (referred to as "first round"), U.S. EPA set minimum monitoring requirements for source-oriented monitoring. 40 CFR Part 58, Appendix D, Section 4.5(a) requires agencies to conduct ambient air Pb monitoring near Pb sources which are expected to or have been shown to contribute to a maximum Pb concentration exceeding the NAAQS, taking into account the logistics and potential for population exposure. However, the level of emissions at which Pb monitoring is required has changed over time.

Beginning in 2010, facilities with actual emissions of Pb greater than one ton per year were required to be monitored. Facilities with actual emissions of Pb greater than 0.70 ton per year were required to be modeled to determine if they would exceed more than 50% of the new Pb standard. States could request a waiver for monitoring if it was shown the Pb source would not contribute to a maximum Pb concentration in ambient air in excess of 50 percent of the NAAQS (based on historical monitoring data, modeling, or other means). Once a source was determined to require monitoring, Ohio EPA used dispersion modeling to determine the appropriate location for siting.

With respect to source-oriented monitoring for the first round of Pb monitoring, Ohio EPA reviewed current emissions inventories and found several sources with actual emissions greater than one ton per year. The following sources were modeled for monitor placement and monitoring commenced in 2010: American Spring Wire in Cuyahoga County (39-035-0072[9]), Ellwood Engineering Castings in Trumbull County (39-155-0012[10]), Nucor Marion Steel in Marion County (39-101-0003[11]), and TimkenSteel in Stark County (39-151-0017[12]). Two sources were identified with actual emissions of Pb greater than 0.7 ton per year but less than one ton per year. These sources, Lightstone Generation LLC-Gavin Power Plant in Gallia County and Bunting Bearings in Fulton County, were modeled and their impacts were less than 50% of the NAAQS. However, Bunting Bearings was already a monitored source with exceedances of the revised Pb NAAQS and

[9] Due to low monitoring concentrations this site was approved by U.S. EPA for discontinuance as part of Ohio's 2016-2017 Monitoring Network Plan.
[10] Due to low monitoring concentrations this site was approved by U.S. EPA for discontinuance as part of Ohio's 2014-2015 Monitoring Network Plan.
[11] A second site, 39-101-0004, also monitors Pb at Nucor; however, this monitor is a special purpose monitor and not a required monitor for the 2008 Pb NAAQS.
[12] Due to low monitoring concentrations this site was approved by U.S. EPA for discontinuance as part of Ohio's 2014-2015 Monitoring Network Plan.

monitoring continues at this site (Delta, 39-051-0001) although not required by the Pb monitoring rule.

Subsequently, in December 2010, U.S. EPA strengthened the Pb monitoring rule ("round two") to require source-oriented monitors for sources greater than 0.50 ton per year. Again, states could request a waiver with a proper demonstration. For this round, Ohio EPA reviewed current emissions inventories and found the following three facilities with Pb emissions exceeding 0.50 ton per year, not currently being monitored: Lightstone Generation LLC- Gavin Power Plant in Gallia County, Severstal Warren Steel Facility (now BDM) in Trumbull County, and I. Schumann in Cuyahoga County. All facilities were determined to have less than a 50 percent impact of the Pb standard and waivers were requested, and granted, for each facility. These were presented in Ohio's 2011-2012 AMNP. In 2012, BDM demolished the steel facility and operations ceased in 2012. Therefore, BDM is no longer reviewed annually.

Waivers for the remaining two facilities were granted based upon modeling of actual emissions. Ohio EPA reviewed actual emissions from the TRI, Ohio's annual EIS, and the NEI for years 2005 to 2009 when performing the original modeling. The highest reported emissions from that period for each facility was used in the waiver modeling in order to be conservative. The following presents the actual emissions which produced the following modeling results to compare to half of the Pb NAAQS (0.075 µg/m^3):

- Gavin –modeled 0.80 tons per year of Pb emissions and obtained a result of 0.00742 µg/m^3 inclusive of background.
- I.Schumann - modeled 0.79 tons per year of Pb emissions and obtained a result of 0.0270 µg/m^3 inclusive of background.

All waivers (which can be found in Appendix G) must be renewed once every five years as part of this network assessment. Ohio performed a review in the 2022-2023 AMNP by analyzing reported emissions from 2016 to 2020. Ohio determined the waivers should remain approved. The next five-year review of the waivers will be conducted as part of the 2027-2028 AMNP.

On an annual basis, Ohio EPA works with U.S. EPA in reviewing the latest emissions inventories to determine if additional sources warrant monitoring (or a waiver) in accordance with the Pb NAAQS source-oriented monitoring requirements. These inventories include the most recent versions of the NEI (2020), TRI (2023), and Ohio's EIS (2023) that were available at the time this report was developed. Ohio EPA reviewed current emissions inventories and determined no new sources exceed the 0.50 ton per year threshold.

3.8.2 Pb Collocation Network

The number of Pb monitors that must be collocated with the same measurement method must be at least 15 percent of the total number of filterable Pb sites operating within any PQAO (values of 0.5 and greater round up). In addition, each PQAO must have at least one collocated quality control monitor (if the total number of monitors is less than three). All collocated sites meet the requirement to use sampling and analytical methods consistent with the primary sampler and all sample at a frequency of no less than 1 in 6 days. Table 18 demonstrates Ohio is meeting the monitor collocation requirement in accordance with 40 CFR Part 58, Appendix A, Section 3.4.4.

Table 18. Ohio's Pb Collocation Monitors Using the Same Measurement Method by PQAO

Ohio PQAO	No. Pb Sites	No. Collocated Required	# Collocated	Collocated AQS Site No.	Collocated Site Name
Canton	2		1	39-151-0024	Republic Steel
Cleveland	2		0	n/a	n/a
NEDO	3		0	n/a	n/a
SEDO	0		0	n/a	n/a
CDO	1		0	n/a	n/a
NWDO	1		1	39-051-0001	Delta
State Total	**9**	**2**	**2**		

3.8.3 Pb Network Modifications

Changes below do not require U.S. EPA approval unless otherwise stated.
All Pb monitoring changes that have occurred since Ohio's 2024-2025 AMNP and all planned, proposed and potential Pb network changes through December 31, 2026 include:

At the time of this report, Ohio EPA is evaluating relocating the Jackson Pike (39-049-0040) site. This site is currently located at a wastewater treatment plant (2104 Jackson Pike, Columbus) and monitors $PM_{2.5}$, PM_{10} and Pb/Metals. In the most recent U.S. EPA TSA, the site was identified as having siting issues. These siting issues are in part due to changes to the overall area such as a growing footprint from the wastewater treatment plant and nearby gravel lots. Ohio EPA will consult with U.S. EPA as we move forward with evaluating possible new site locations and will submit a separate request at a later date.

3.9 Toxics Network

Ohio operates a network of air toxics monitors as part of a state-wide ATMP. This ATMP sampling network is modeled after programs and methodologies recommended by U.S. EPA. The emphasis has been on urban toxics monitoring for VOC and heavy metals.

The main focus of the ATMP is on urban monitoring to identify major risk areas where people live. In this effort, sampling has concentrated on VOCs such as benzene, chloroform, styrene and toluene and metals such as arsenic, beryllium, cadmium, chromium, iron, Pb, manganese, nickel and zinc.

3.9.1 Toxics Sampling and Analysis

Ohio will continue to conduct, except where otherwise indicated, sampling and analysis at the 15[13] monitoring sites listed in Table 19.

Table 19. Ohio's Toxics Monitoring Network

AQS Site No.	Site Name	VOCs	Metals	Monitoring Objective Notes
39-017-0019	Amanda Elem	x		Source-oriented
39-017-0020	Yankee	x		Source-oriented
39-029-0019	Port Authority		x	Source-oriented
39-029-0020	East Liverpool WTP		x	Source-oriented
39-029-0023	Eastside Elem		x	Source-oriented
39-035-0038	St. Theodosius	x	x	Population
39-035-0049	Ferro		x	Source-oriented
39-035-0060	GT Craig NCore PAMS	x		Population
39-049-0034	Fairgrounds	x		Population
39-049-0040	Jackson Pike WWTP		x	Population
39-061-0040*	Taft NCore PAMS	x		Population
39-061-0047^	Kibby	x		Population
39-081-0017	Steubenville	x		Population
39-151-0024	Republic Steel		x	Source-oriented
39-151-0015	Republic Community		x	Source-oriented
Statewide Totals	**15^^**			
*Site will relocate, with approval, during 2025-2026.				
^Anticipate site discontinuing after facility shutdown, approval not required.				
^^ Totals will be one less after anticipated facility/site shutdown.				

3.9.2 Toxics Network Modification

Changes below do not require U.S. EPA approval unless otherwise stated. All toxics monitoring changes that have occurred since Ohio's 2024-2025 AMNP and all planned, proposed and potential air toxics network changes through December 31, 2026 include:

Ohio EPA anticipates the need to relocate the Taft NCore PAMS site (39-061-0040) due to building/property ownership changes. Ohio EPA is currently evaluating relocation options and will submit a separate relocation request at a later date.

Ohio EPA has been notified that the facility near the Kibby site (39-061-0047), located in Cincinnati, would be scaling down operations before a formal shutdown. Ohio EPA will continue to operate the Kibby site until the facility has ceased operations and for a period of time afterwards before discontinuing monitoring at this location. Due to the location being an industrial site (not SLAMS), U.S. EPA approval for this discontinuation is not required. Ohio EPA will memorialize this discontinuation, when it occurs, in a future AMNP.

On July 1, 2024, Ohio EPA discontinued the Hopedale (39-067-0005) site. This was an industrial site thus did not require U.S. EPA approval for discontinuation.

[13] Total will be one less after anticipated facility/site shutdown.

4.0 NCore Monitoring Network

NCore is a multi-pollutant approach to air monitoring that provides support to integrating air quality management data needs. NCore sites are intended to support multiple objectives, with a greater emphasis on assessment of the impact-abatement control measures on improving air quality. Air pollution data from the national NCore network can be used to supplement data collected by researchers working on health-effect assessments and atmospheric processes, or for monitoring methods-development work.

Each state is required to operate at least one NCore site. States with many MSAs, like Ohio, often have multiple air sheds with unique characteristics. Therefore, states like Ohio were required to establish 1-2 additional sites in order to account for unique situations. Ohio operates one urban NCore site in each Cleveland and Cincinnati and one rural NCore site as a regional transport site in Preble County near the Ohio-Indiana border.

NCore sites are required under 40 CFR Part 58, Appendix D, Section 3.0 to measure the following pollutants; $PM_{2.5}$ particle mass using continuous and integrated filter base samplers, speciated $PM_{2.5}$, $PM_{10-2.5}$ particle mass, ozone, SO_2, CO, nitrogen oxides (NO/NOy), total reactive nitrogen oxides (NO_y), and meteorological monitoring (wind speed, wind direction, relative humidity, and ambient temperature). Ozone is to be measured year-round and many of the other monitoring instruments are to be trace-level units designed to reliably measure much lower pollutant concentrations.

Ohio's three NCore sites identified in Table 20 began operating in 2011. Appendix A provides the details regarding parameters monitored at each NCore site demonstrating Ohio meets all of the requirements.

Table 20. Ohio's NCore Monitoring Network

AQS Site No.	Site Name	MSA	Measurement Scale
39-035-0060	GT Craig NCore PAMS	Cleveland-Elyria	Neighborhood
39-061-0040*	Taft NCore PAMS	Cincinnati, OH-KY-IN	Neighborhood
39-135-1001	Preble NCore	Non-MSA	Regional
*Site will relocate, with approval, during 2025-2026.			

4.1 NCore Network Modification

Changes below do not require U.S. EPA approval unless otherwise stated. All NCore monitoring changes have occurred since Ohio's 2024-2025 AMNP and all planned, proposed and potential NCore network changes through December 31, 2026 include:

Ohio EPA anticipates the need to relocate the Taft NCore PAMS site (39-061-0040) due to building/property ownership changes. Ohio EPA is currently evaluating relocation options and will submit a separate relocation request at a later date.

5.0 SEDO Community Scale Grant Project

Ohio EPA received funding from U.S. EPA to conduct a Community Scale Air Toxics monitoring project near Hopedale in Harrison County. The purpose of the project was to characterize near-source

concentrations of criteria and toxic pollutants from Ohio's oil and gas industry. This allowed Ohio EPA to assess emission reduction measures, and to characterize risk for the most highly impacted populations. Ohio EPA concluded this project on October 1, 2022 and discontinued all monitoring except VOCs and meteorology. On July 1, 2024, Ohio EPA concluded the remaining parameters (VOCs and meteorology). This was an industrial site thus did not require U.S. EPA approval for discontinuation.

6.0 Black Carbon Monitoring Network

Black Carbon is a solid form of mostly pure carbon which absorbs solar radiation (light) at all wavelengths. It is formed by incomplete combustion of fossil fuels, biofuels, or biomass. Black Carbon is one of the types of particles which constitute PM and is one of the key components of soot.

Ohio EPA operates four continuous black carbon monitors.

Table 21. Ohio Black Carbon Monitoring Network

AQS Site No.	Site Name	Started
39-049-0038	Smoky Row Near Road	5/26/2017
39-061-0040	Taft NCore PAMS*	10/1/2018
39-061-0048	Cincinnati Near Road	1/1/2016
39-153-0017	East HS	6/29/2023
* Site will relocate, with approval, during 2025-2026.		

6.1 Black Carbon Network Modification

Changes below do not require U.S. EPA approval unless otherwise stated. All Black Carbon monitoring changes that have occurred since Ohio's 2024-2025 AMNP and all planned, proposed and potential Black Carbon network changes through December 31, 2026 include:

Ohio EPA anticipates the need to relocate the Taft NCore PAMS site (39-061-0040) due to building/property ownership changes. Ohio EPA is currently evaluating relocation options and will submit a separate relocation request at a later date.

7.0 5-Year Regional Network Assessment

Along with the AMNP, every five years U.S. EPA requires states to complete a regional network assessment in accordance with 40 CFR 59.10(d). Ohio collaborates with other Region 5 states (Illinois, Indiana, Michigan, Minnesota and Wisconsin) with the guidance of the LADCO to develop the Regional Network Assessment. The purpose of the regional assessment is to provide a detailed evaluation of the regional air monitoring network, reevaluate the types of pollutants monitored and the network's objectives and costs. The assessment also provides network history, spatial analysis of ambient air monitoring data and reviews the placement of monitors based on changes in land use and populations.

The results of the 2025 Regional Network Assessment can be found on LADCO's websites at: https://storymaps.arcgis.com/stories/4956ef55f1314c3da31bca444a7a55ea

8.0 Public Review and Comment

The annual monitoring network plan must be made available for public inspection for at least thirty days prior to submission to U.S. EPA. For the 2025-2026 AMNP submittal, this document was placed on Ohio EPA's website on to begin the public review period. The comment period was also noticed in Ohio's Weekly Review. The comment period closed on June 3, 2025. <No comments/Comments were received>. Appendix H contains a copy of the public notice.

This document can be accessed at the following link:
https://epa.ohio.gov/divisions-and-offices/air-pollution-control/reports-and-data/air-monitoring

For questions about the Ohio Air Monitoring Network please contact:
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