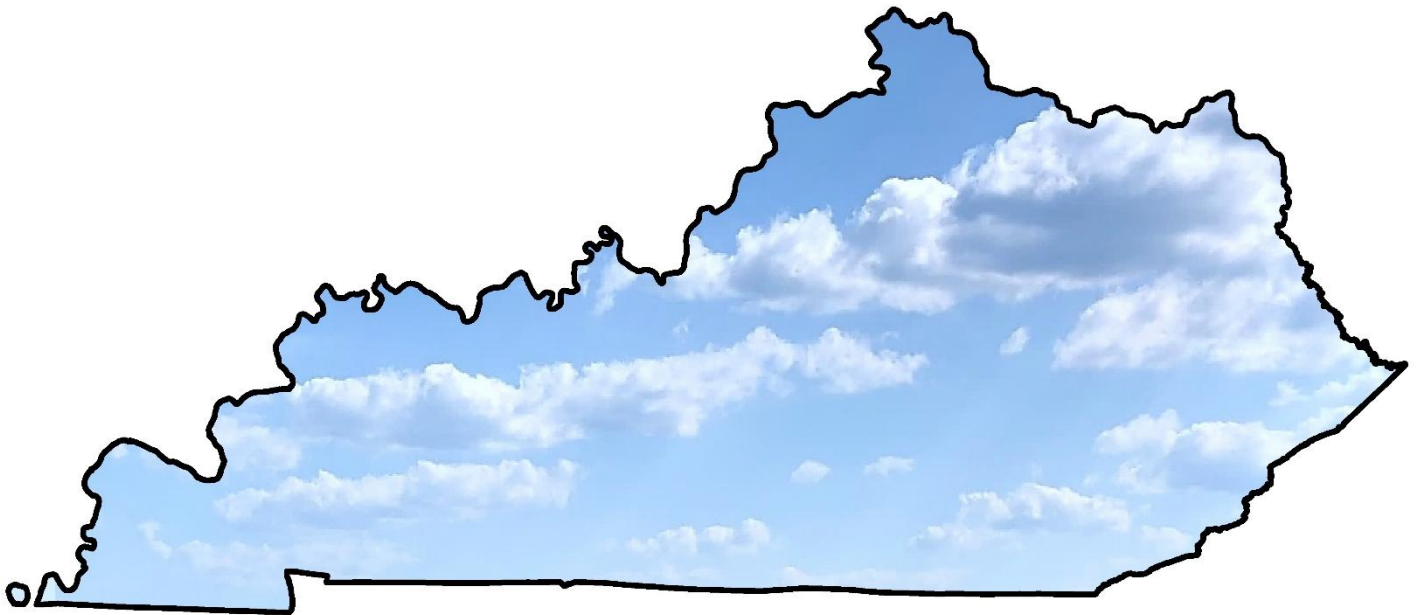


Kentucky Annual Ambient Air Monitoring Network Plan 2026



Commonwealth of Kentucky
Energy & Environment Cabinet
Department for Environmental Protection
Division for Air Quality
300 Sower Boulevard
Frankfort, Kentucky 40601

Certification

By the signatures below, the Kentucky Division for Air Quality certifies that the information contained in this Surveillance Network document for sampling year 2026 is complete and accurate at the time of submittal to EPA Region 4. However, due to circumstances that may arise during the sampling year, some network information may change. A notification of change and a request for approval will be submitted to EPA Region 4 at that time, following a 30-day public comment period.

Signature: _____

Michael Kennedy
Division Director, Kentucky Division for Air Quality

Date: _____

Signature: _____

Wayne Bray
Manager, Technical Services Branch

Date: _____

Signature: _____

Jenna Nall
Environmental Scientist

Date: _____

Public Notification and Comment Period

In accordance with 40 C.F.R. 58.10(a)(1), the Kentucky Energy and Environment Cabinet shall make the annual monitoring network plan available for public inspection for at least 30 days prior to submission to the US EPA. The annual monitoring network plan details the operation and location of ambient air monitors operated by the Kentucky Division for Air Quality (KDAQ), Louisville Metro Air Pollution Control District (LMAPCD), and the National Park Service (NPS).

Equal Opportunity

This is a publication of the Kentucky Division for Air Quality, part of the Department for Environmental Protection, Energy and Environment Cabinet. The Cabinet does not discriminate on the basis of race, color, national origin, sex, age, religion, or disability and provides, on request, reasonable accommodations including auxiliary aids and services necessary to afford an individual with a disability an equal opportunity to participate in all services, programs, and activities.

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Table 1: List of Acronyms

Acronym	Explanation	Acronym	Explanation
AADT	Annual Average Daily Traffic	NAREL	National Air and Radiation Environmental Laboratory
AEM	Automated Equivalent Method	NATTS	Nation Air Toxics Trends Stations
ANP	Annual Network Plan	NEI	National Emissions Inventory
API	Advanced Pollution Instrumentation	NIST	National Institute of Standards and Technology
AQI	Air Quality Index	NO	Nitric oxide
AQS	Air Quality System	NO ₂	Nitrogen Dioxide
CASTNET	Clean Air Status and Trends Network	NO _x	Nitrogen Oxides
CBSA	Core Based Statistical Area	NO _y	Total Reactive Nitrogen
CFR	Code of Federal Regulations	NPS	National Park Service
CO	Carbon Monoxide	O ₃	Ozone
CSA	Combined Statistical Area	PAH	Polycyclic Aromatic Hydrocarbons
CSN	Chemical Speciation Network	PAMS	Photochemical Assessment Monitoring Stations
DoIT	Department of Information Technology	Pb	Lead
DRR	Data Requirements Rule	PM	Particulate Matter
EPA	Environmental Protection Agency	POC	Parameter Occurrence Code
FEM	Federal Equivalent Method	PTFE	Polytetrafluoroethylene
FRM	Federal Reference Method	PWEI	Population Weighted Emissions Index
GPS	Global Positioning System	RA	Regional Administrator
H ₂ S	Hydrogen Sulfide	SAMWG	Standing Air Monitoring Working Group
KDAQ	Kentucky Division for Air Quality	SLAMS	State and Local Air Monitoring Stations
LED	Light Emitting Diodes	SO ₂	Sulfur Dioxide
LMAPCD	Louisville Metro Air Pollution Control District	SPM	Special Purpose Monitor
MOA	Memorandum of Agreement	TAPI	Teledyne Advanced Pollution Instrumentation
MRM	Manual Reference Method	Tpy	Tons Per Year
MSA	Metropolitan Statistical Area	USCB	United States Census Bureau
NAAQS	National Ambient Air Quality Standards	VOC	Volatile Organic Compounds

Introduction

The Kentucky Division for Air Quality (KDAQ) has operated an air quality monitoring network in the Commonwealth since July 1967. The Louisville Metro Air Pollution Control District (LMAPCD), a local agency, has maintained a sub-network in its area of jurisdiction since January 1956. Since that time, the networks have been expanded in accordance with United States Environmental Protection Agency's (US EPA) regulations.

In October 1975, the US EPA established a work group to critically review and evaluate current air monitoring activities at that time. This group was named the Standing Air Monitoring Working Group (SAMWG). The review by the SAMWG indicated several areas where deficiencies existed which needed correction. The principal areas needing correction were: an excess of monitoring sites in some areas to assess air quality; existing regulations that did not allow for flexibility to conduct special purpose monitoring studies; and data reporting that was untimely and incomplete. These deficiencies were primarily caused by a lack of uniformity in station locations and probe siting, sampling methodology, quality assurance practices, and data handling procedures.

In August 1978, recommendations developed by SAMWG, to remedy the deficiencies in the existing monitoring activities, were combined with the new requirements of Section 319 of the Clean Air Act. Section 319 provided for the development of uniform air quality monitoring criteria and methodology; reporting of a uniform air quality index in major urban areas; and the establishment of an air quality monitoring system nationwide which utilized uniform monitoring criteria and provided for monitoring stations in major urban areas that supplement state-monitoring. The combination of the recommendations and requirements were included in a proposed revision to air monitoring regulations.

In May 1979, air monitoring regulations were finalized by the US EPA requiring certain modifications and additions to be included in the State Implementation Plan for air quality surveillance. These regulations require each state to operate a network of monitoring stations designated as State and Local Air Monitoring Stations (SLAMS) that measure ambient concentrations of air pollutants for which standards have been established. The SLAMS designation contains provisions concerning the conformity to specific siting and monitoring criteria not previously required. The regulations also provide for an annual review of the monitoring network to insure objectives are being met and to identify needed modification.

The current overall network consists of 30 air monitoring stations, operated by KDAQ, LMAPCD, and the National Park Service (NPS). The Commonwealth's SLAMS network monitors criteria pollutants for comparison to the National Ambient Air Quality Standards (NAAQS). In addition to a SLAMS network, KDAQ's air monitoring network includes special purpose monitors (SPM) for air toxics and meteorological data.

The annual monitoring network description, as provided for in 40 CFR Part 58.10, Annual monitoring network plan and periodic network assessment, must contain the following information for each monitoring station in the network:

1. The Air Quality System (AQS) site identification number for existing stations.
2. The location, including the street address and geographical coordinates, for each monitoring station.
3. The sampling and analysis method used for each measured parameter.
4. The operating schedule for each monitor.
5. Any proposal to remove or move a monitoring station within a period of eighteen months following the plan submittal.
6. The monitoring objective and spatial scale of representativeness for each monitor.
7. The identification of any site that is suitable for comparison against the PM_{2.5} NAAQS.
8. The Metropolitan Statistical Area (MSA), Core-Based Statistical Area (CBSA), Combined Statistical Area (CSA), or other area represented by the monitor.

The following document constitutes the Kentucky ambient air monitoring network description and is organized into four main parts:

1. Station Description Format: An outline of the designations, parameters, monitoring methods, and the basis for site selection.
2. Network Summaries: Presenting the total number of sites and monitors in each region and for the state. Also included is a listing of all proposed changes to the current network.
3. Air Monitoring Station Description: Each air monitor station is described in detail as per the outline in (1) above.
4. Appendices: Additional information relating to the ambient air monitoring network.

Modification to the network as determined by an annual review process will be made each year to maintain a current network description document.

Summary of Network Changes 2026 – Kentucky Division for Air Quality

During the 2026-2027 monitoring year, KDAQ will operate a total of 66 instruments and one meteorological station located at 24 ambient air monitoring sites in 23 Kentucky counties. LMAPCD will operate an additional 29 instruments and five meteorological stations in Jefferson County. When combined with the air monitoring site operated by the National Park Service (NPS) at Mammoth Cave National Park, the total ambient air monitoring network will consist of 96 instruments and 7 meteorological stations, located at 30 sites across 25 counties of the Commonwealth.

KDAQ proposes making the changes below to the ambient air monitoring network. Changes to the LMAPCD network are detailed in Appendix E.

Eastern Kentucky University (21-151-0005)

The Eastern Kentucky University (EKU) site is changing from micro scale to middle scale, effective July 1, 2026. This change stems from updated language in the CFR about siting criteria and discussion with EPA. The site also has a waiver request for road distances in Appendix K.

Maximum PM_{2.5} Concentration Sites

According to 40 CFR Part 58 Appendix D 4.7.1 (b)(1) “At least one monitoring station is to be sited at neighborhood or larger scale in an area of expected maximum concentration.” Maximum PM_{2.5} have been added to the following sites:

Table 2: Kentucky Maximum PM_{2.5} Concentration Sites

MSA	Site Name	Site ID
Bowling Green, KY	Ed Spear Park	21-227-0009
Clarksville, TN-KY	Pennyrile Forest	21-047-0007
Elizabethtown, KY	Freeman Lake	21-093-0007
Lexington-Fayette, KY	Lexington Primary	21-067-0012
Owensboro, KY	Meadow Lands	21-059-0015
Paducah, KY-IL	Paducah Transit	21-145-1027

The following MSAs have PM_{2.5} sites with higher concentrations in neighboring states: Cincinnati, OH-KY-IN, Huntington-Ashland, WV-KY-OH, and Louisville/Jefferson County, KY-IN. As such, Kentucky sites in these MSAs will not have a maximum PM_{2.5} designated site. Changes above are effective July 1, 2026.

Emergency Episode Monitoring

KDAQ has removed language on emergency episode monitoring. The language was antiquated and not consistent with current practices or monitoring requirements.

Memorandum of Agreement

KDAQ is currently working on updating the Memoranda of Agreement (MOA) with Illinois, Indiana, and Ohio.

- Appendix B – Memorandum of Agreement for the Cincinnati, OH-KY-IN MSA is out of date. KDAQ has been working with Ohio and Indiana on updating the MOA
- Appendix C – The Memorandum of Agreement for the Evansville, IN-KY MSA is not officially terminated, but the MSA no longer exists. The MOA will be terminated.
- A new MOA for the Paducah, KY-IL MSA is in progress.

Table 3: 2026 Air Monitoring Stations Summary

Statistical Area Name	Site Count	Filter Based PM _{2.5}	Continuous PM _{2.5}	PM ₁₀	Continuous PM ₁₀	SO ₂	NO ₂	NO _y	CO	O ₃	Pb	VOC	Carbonyl	PAH	PM _{2.5} Speciation	Carbon Speciation	Black Carbon	H ₂ S	RadNet	Met
Bowling Green, KY (Metropolitan)	2		2							2										1
Cincinnati-, OH-KY-IN (Metropolitan)	2	2	1			1	1			2										
Clarksville, TN-KY (Metropolitan)	1		1							1										
Elizabethtown, KY (Metropolitan)	1	1	1							1										
Huntington-Ashland, WV-KY-OH (Metropolitan)	4		2	4		2	1			3		2	2	1						1
Lexington-Fayette, KY (Metropolitan)	2		2	1		2	1			2									1	
Louisville/Jefferson County, KY-IN (Metropolitan)	7	2	5		2	3	2	1	2	6		2	1		1	1	1	1	1	5
Owensboro, KY (Metropolitan)	1		1			1	1			1										
Paducah, KY-IL (Metropolitan)	2		1			1	1			2									1	
Franklin, KY (Micropolitan)	1									1										
Henderson, KY (Micropolitan)	1					1														
Middlesborough, KY (Micropolitan)	1		1							1										
Pikeville, KY (Micropolitan)	1		1							1										
Richmond-Berea, KY (Micropolitan)	1										2									
Somerset, KY (Micropolitan)	1		1							1										
Hancock County (Not in CBSA)	1									1										
Perry County (Not in CBSA)	1		1							1										
KDAQ Totals	24	3	15	5	0	8	5	0	0	21	2	2	2	1	0	0	0	0	2	1
LMAPCD Totals	5	2	5	0	2	3	2	1	2	4	0	2	1	0	1	1	1	1	1	5
NPS Totals	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Total Network	30	5	20	5	2	11	7	1	2	26	2	4	3	1	1	1	1	1	3	7

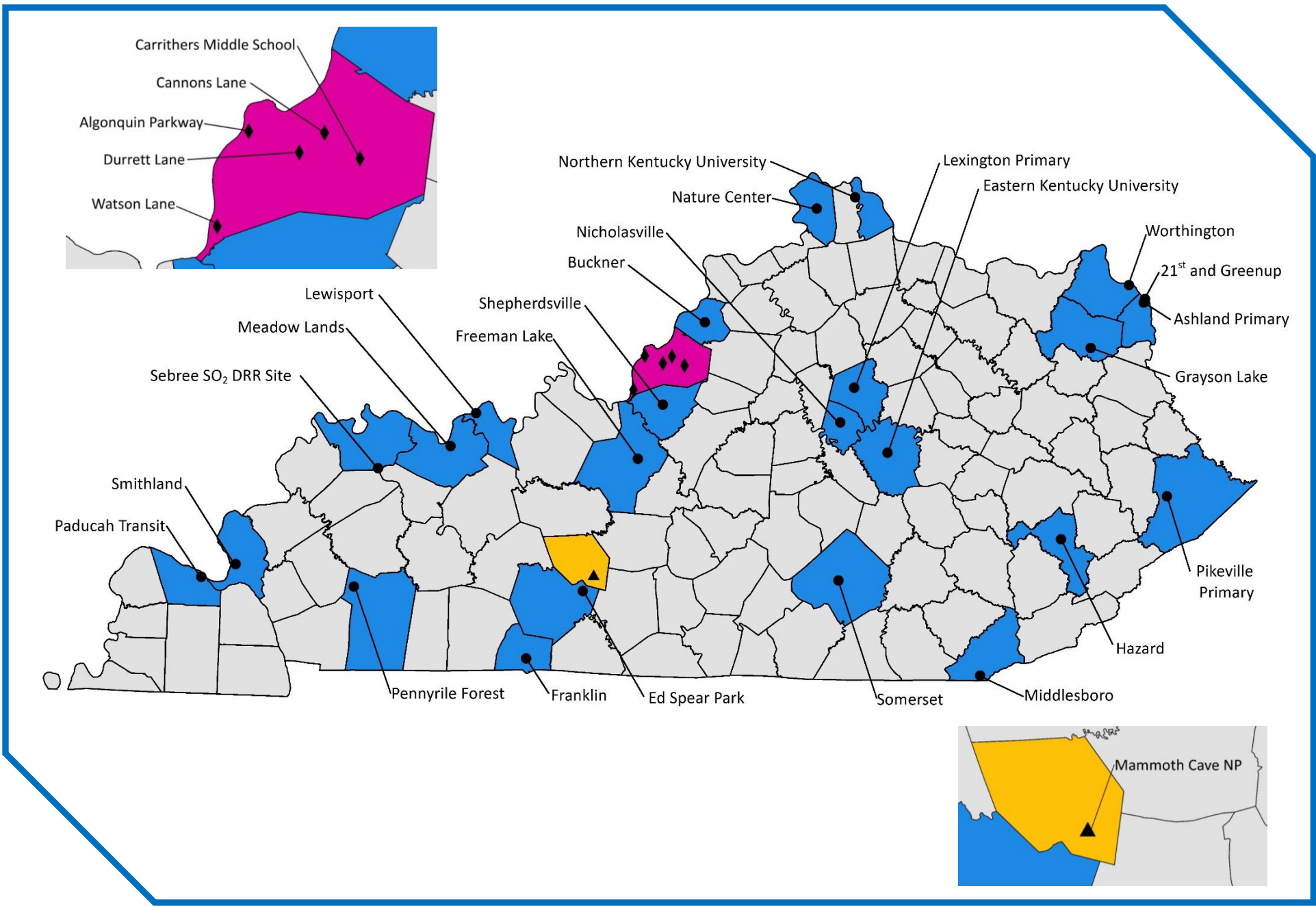


Figure 1: 2026 Ambient Air Monitoring Network

Station Description Format

AQS Site Identification Information

Pertinent, specific siting information for each site and monitor is stored in the US EPA's AQS data system. This information includes the exact location of the site, local and regional population, description of the site location, monitor types, and monitoring objectives. This site and monitor information is routinely updated whenever there is a change in site characteristics or pollutants monitored.

Network Station Description

The network station descriptions contained in this document include the following information:

1. Site Description

Specific information is provided to show the location of the monitoring equipment at the site, the CBSA in which the site is located, the AQS identification number, the GPS coordinates, and the conformance of monitors and monitor-probes to siting criteria.

2. Date Established

The date that each existing monitoring station was established is shown in the description. For proposed air monitoring stations, the date that the station is expected to be in operation is included in the annual Summary of Network Changes.

3. Site Approval Status

Each monitoring station in the existing network has been reviewed with the purpose of determining whether it meets all design criteria for inclusion in the SLAMS network. Stations that do not meet the criteria will either be relocated in the immediate area or, when possible, re-sited at the present location. KDAQ may also seek an exemption from certain criteria from the US EPA.

4. Monitoring Objectives

The monitoring network was designed to provide information to be used as a basis for the following actions:

- a. To determine compliance with ambient air quality standards and to plan measures in order to attain these standards.
- b. To observe pollution trends throughout a region including rural areas and report progress made toward meeting ambient air quality standards.
- c. To provide a database for the evaluation of the effects of air quality on population, land use, and transportation planning; to provide a database for the development and evaluation of air dispersion models.

5. Monitoring Station Designations, Monitor Types, and Network Affiliations

The Annual Network Surveillance document must describe the types of monitors that are used to collect ambient data. Most monitors described in the air quality surveillance network are designated as SLAMS, but some monitors fulfill other requirements. Additionally, monitors may be associated with additional networks beyond the state air program or may be used to fulfill multiple network design requirements.

- a. **State and Local Air Monitoring Stations (SLAMS):** Requirements for air quality surveillance systems provide for the establishment of a network of monitoring stations designated as SLAMS that measure ambient concentrations of pollutants for which standards have been established. These stations must meet requirements that relate to four major areas: quality assurance, monitoring methodology, sampling interval, and siting of instruments.
- b. **Special Purpose (SPM and SPM-Other):** Not all monitors and monitoring stations in the air quality surveillance network are included in the SLAMS network. In order to allow the capability of providing monitoring for complaint studies, modeling verification and compliance status, certain monitors are reserved for short-term studies and are designated as either Special Purpose Monitors (SPM) or Other Special Purpose Monitors (SPM-Other).
- c. **NCore:** NCore is a multi pollutant network that integrates several advanced measurement systems for particulates, pollutant gases and meteorology.
- d. **Air Quality Index (AQI):** The AQI is a method of reporting that converts pollutant concentrations to a simple number scale of 0-500. Intervals on the AQI scale are related to potential health effects of the daily measured concentrations of major pollutants. AQI reporting is required for all metropolitan statistical areas with a population exceeding 350,000. However, KDAQ provides this service to the general public for multiple areas within the state. KDAQ prepares the index twice daily for release to the public from the pollutant data reported from the selected sites in locations across Kentucky. The ambient air data establishing the AQI is subject to quality assurance procedures and is not considered official.
- e. **EPA:** Monitor operated by the EPA or an EPA contractor. Monitors may be eligible for comparisons against the NAAQS and are typically a part of the CASTNET network.
- f. **Non-EPA Federal:** Monitors operated by Federal agencies outside of the US EPA (such as the National Park Service) are designated as Non-EPA Federal monitors. These monitors are typically used for special studies, but the data may also be eligible for comparisons against the NAAQS.
- g. **Population Weighted Emissions Index (PWEI):** On June 22, 2010, the US EPA released a new SO₂ Final Rule and a set of monitoring requirements. The requirements use a Population Weighted Emissions Index (PWEI) that is calculated for each Core-Based

Statistical Area (CBSA). The PWEI is calculated by multiplying the population of each CBSA and the total amount of SO₂, in tons per year, that is emitted within the CBSA based upon county level data from the National Emissions Inventory (NEI). The result is then divided by one million to provide the PWEI value, which is expressed in a unit of million persons-tons per year. PWEI requirements technically apply to the MSA and are not monitor specific. Any SO₂ used to fulfill MSA PWEI requirements must first and foremost be designated as SLAMS.

- h. **Regional Administrator 40 (RA-40):** On February 9, 2010, the US EPA released a new NO₂ Final Rule and a new set of monitoring requirements. Under the new monitoring regulations, the EPA Regional Administrator must collaborate with agencies to establish or designate 40 NO₂ monitoring locations, with a primary focus on protecting susceptible and vulnerable populations. RA-40 NO₂ monitors are SLAMS monitors foremost.
- i. **Maximum Ozone Concentration:** Each Metropolitan Statistical Area (MSA) must have at least one ozone monitor designated to record maximum expected ozone concentrations. These monitors are first and foremost SLAMS (or SLAMS-like) monitors.
- j. **Maximum PM_{2.5} Concentration:** Each MSA, for which a PM_{2.5} monitor is required, is to have at least one site at neighborhood or larger scale in an area of expected maximum concentration.

Monitoring Methods

All sampling and analytical procedures used for NAAQS compliance in the air-monitoring network conform to Federal reference (FRM) or equivalent (FEM) methods. In case there is no federal method, procedures are described in the Kentucky Air Quality Monitoring and Quality Assurance Manuals.

1. Particulate Matter 10 Microns in Size (PM₁₀)

All PM₁₀ samplers operated by KDAQ are certified as either FRM or FEM samplers and are operated according to the requirements set forth in 40 CFR 50 and 40 CFR 53. Intermittent samplers typically collect a 24-hour sample every sixth day on 46.2 mm PTFE filters. However, certain sites may collect samples more frequently to address local air quality concerns. Filters are sent to a contract laboratory, where they are weighed before and after a sample run. The gain in weight in relation to the volume of air sampled is calculated in micrograms per cubic meter (ug/m³). The PTFE filters are to be equilibrated before each weighing for a minimum of 24 hours at 20-23 degrees C mean temperature and a 30-40% mean relative humidity.

For continuous PM₁₀ monitoring, LMAPCD uses Teledyne API T640x for PM₁₀ NAAQS compliance and PM_{coarse} monitoring. TAPI T640x monitors collect PM_{2.5}, PM₁₀, and PM_{10-2.5 (coarse)} data continuously via the principle of broadband particle-scattering spectroscopy. During sampling, ambient air is pulled into an inlet at a rate of 16.7 lpm and through a sample

conditioner, prior to being introduced to a particle sensor equipped with a polychromatic (broadband) LED. Particles in the sample reflect light from the LED, which is measured by the analyzer and used to calculate the particle-mass of the sample.

2. Particulate Matter 2.5 Microns in Size (PM_{2.5})

The Division currently operates continuous Teledyne-API (TAPI) T640 continuous PM_{2.5} spectroscopy monitors and manual intermittent samplers for monitoring particulate matter 2.5 microns in size (PM_{2.5}). All PM_{2.5} samplers and monitors operated by KDAQ are certified as either reference or equivalent methods. All FRM manual intermittent samplers are operated per the requirements set forth in 40 CFR 50, Appendix L. Samples are collected on 46.2 mm PTFE filters over a 24-hour sampling period, with airflow maintained at 16.7 liters per minute. Filters are sent to a contract laboratory, where they are weighed before and after a sample run. The gain in weight in relation to the volume of air sampled is calculated in micrograms per cubic meter (ug/m³). Samples must be retrieved within 177 hours of the end of the sample run and are kept cool (4 degrees C or cooler) during transit to the contract laboratory. The PTFE filters are to be equilibrated before each weighing for a minimum of 24 hours at a controlled atmosphere of 20-23 degrees C mean temperature and 30-40% mean relative humidity. Filters must be used within thirty days of initial weighing. Filters must be re-weighed within thirty days of the end of the sample run and must be kept at 4 degrees C or cooler.

TAPI T640 monitors collect PM_{2.5} data continuously via the principle of broadband particle-scattering spectroscopy. The TAPI T640 is designated as a FEM for PM_{2.5}. During sampling, ambient air is pulled into an inlet at a rate of 5.0 lpm and through a sample conditioner, prior to being introduced to a particle sensor equipped with a polychromatic (broadband) LED. Particles in the sample reflect light from the LED, which is measured by the analyzer and used to calculate the particle-mass of the sample.

LMAPCD uses Teledyne API T640 and T640x for NAAQS compliance monitoring. Continuous PM_{2.5} T640s are used to provide 24-hour daily reporting for the AQI. The data obtained from continuous FEMs may or may not be used for comparison to the NAAQS. A statement on the use of continuous FEM PM_{2.5} monitors is included in the appendices of this document.

3. PM_{2.5} Speciation and Carbon Speciation Sampling and Analysis

In addition to operating PM_{2.5} samplers that determine only PM_{2.5} mass values, LMAPCD also operates PM_{2.5} speciation samplers that collect samples that are analyzed to determine the chemical makeup of PM_{2.5}. Samples are collected on a set of two filters, one comprised of Teflon and one comprised of nylon, over a 24-hour sampling period. The filters are composed of either Teflon or nylon in order to collect specific types of toxic pollutants. A second instrument collects a sample on a quartz filter over a 24-hour sampling period. The quartz filter is used to collect a speciated carbon sample.

After collection, the samples are shipped in ice chests to an EPA contract laboratory for analysis. At the laboratory, the samples are analyzed using optical and electron microscopy, thermal-optical analysis, ion chromatography, and x-ray fluorescence to determine the

presence and level of specific toxic compounds. Sample results are entered in the AQS data system.

4. Sulfur Dioxide (SO₂)

Instruments used to continuously monitor sulfur dioxide levels in the atmosphere employ the UV fluorescence method. The continuous data output from the instrument is transmitted by telemetry for entry into an automated central data system.

Calibration of these instruments is done dynamically using certified gas mixtures containing a known concentration of sulfur dioxide gas. This gas is then diluted in a specially designed apparatus to give varying known concentrations of sulfur dioxide. These known concentrations are supplied to the instruments, which are adjusted so that instrument output corresponds with the specific concentrations. Calibration curves are prepared for each instrument and each data point is automatically compared to this curve before entry into the data acquisition system.

5. Carbon Monoxide (CO)

Continuous monitoring for carbon monoxide is performed by use of the non-dispersive infrared correlation method. Data is transmitted by telemetry for entry in an automated central data acquisition system.

Calibration of the instrument is performed periodically by using nitrogen or zero air to establish the zero baseline and NIST or NIST traceable gas mixtures of carbon monoxide in air. The span is checked daily using a certified mixture of compressed gas containing approximately 45 parts per million carbon monoxide.

6. Ozone (O₃)

Ozone is monitored using the UV photometry methods. The continuous data output from the instrument is transmitted by telemetry for entry into an automated central data acquisition system.

Monitors are calibrated routinely using an ozone generator, which is calibrated using the ultra violet photometry reference method. Calibration curves are prepared for each instrument and each data point is automatically compared to this curve before entry into the data acquisition system.

7. Nitrogen Dioxide (NO₂)

KDAQ uses the chemiluminescence method for monitoring the nitrogen dioxide level in the ambient air. The continuous data output from the instrument is transmitted by telemetry for entry into an automated central data acquisition system.

LMAPCD utilizes the Cavity-Attenuated Phase-Shift (CAPS) spectroscopy method as well as chemiluminescence to measure nitrogen dioxide and total reactive nitrogen (NO/NO_y) respectively.

Calibration of these instruments is done dynamically using NIST certified gas mixtures of nitric oxide. Through the use of dilution apparatus, varying concentrations are produced and supplied to the monitors, thus producing a specific calibration curve for each instrument. Each data point is automatically compared to this curve before entry into the data acquisition system.

8. Lead (Pb)

To determine lead concentrations, KDAQ uses high volume particulate samplers, which collect samples of suspended particulates onto 8 x 10 glass fiber filters. The samplers use a brushless motor and a critical flow orifice in order to achieve a sampling flow rate between 1.10 and 1.70 cubic meters per minute (m³/min) over the course of 24 hours. Upon collection, the filters are sent to an US EPA certified laboratory for analysis. The sample filters are cut into strips, acid digested according to 40 CFR Part 50, Appendix G, and analyzed by Inductively Coupled Plasma with Mass Spectroscopy Detection (ICP-MS).

9. Air Toxics

Air toxics samples are classified into four categories: metals, volatile organic compounds (VOC), polycyclic aromatic hydrocarbons (PAH), and carbonyls.

- a. Metal samples are collected on 46.2 mm PTFE filters over a 24-hour period from the PM₁₀ monitoring method. The filter is weighed before and after the sample run by a contract laboratory. The gain in weight in relation to the volume of air sampled is used to calculate the concentration in micrograms per cubic meter (ug/m³). The filter is then delivered to a separate US EPA contract laboratory for analysis by inductively coupled plasma/mass spectrometer analysis.
- b. VOC samples are collected in a passivated vacuum canister. Ambient air is pulled into the canister over a 24-hour sampling period. The sample is shipped to an US EPA contract laboratory for analysis via gas chromatography. Additionally, LMAPCD operates a continuous automatic gas chromatographs, which continuously monitor for various VOCs and hazardous air pollutants.
- c. PAH samples are collected by a hi-volume air sampler over a 24-hour period. The sample is collected on a polyurethane foam filter cartridge. After sampling, the filter cartridge is packed on ice and shipped to a US EPA contract laboratory for analysis via gas chromatography/mass spectrometry.
- d. Carbonyl samples are collected on a DNPH cartridge. An ambient air stream flows through the cartridge at a one-liter per minute flow rate for a 24-hour sampling period.

The cartridge is packed on ice and shipped to an US EPA contract laboratory for high-pressure liquid chromatography analysis.

10. Black Carbon

LMAPCD plans to incorporate a black carbon monitor at the Durrett Lane (Near-Road) site to better characterize particulate carbon species. The analysis is performed at 7 optical wavelengths spanning the range from the near-infrared (950 nm) to the near-ultraviolet (370 nm). The sequencing of illumination and analysis is performed on a 1-Hz time base, yielding the complete spectrum of aerosol optical absorption with one data line every second.

The optical performance of the monitor is validated by a 'Neutral Density Optical Filter Kit', consisting of four precision optical elements whose absorbance is traceable to fundamental standards. Software routines measure the optical intensities at all wavelengths and compare the analysis at the instant with the original reference values.

11. RadNet

The US EPA RadNet fixed air station consists of a high-volume sampler that pulls ambient air through a 4-inch diameter filter at a rate of 1,000 liters per minute. Filters are collected twice each week. The instrument also consists of two radiation detectors that continuously measure gamma and beta radiation from particulates collected on the air filter. Data is recorded to the monitor's CPU and is sent hourly to the National Air and Radiation Environmental Laboratory (NAREL) for evaluation.

The RadNet network, which has stations in each State, has been used to track environmental releases of radioactivity from nuclear weapons tests and nuclear accidents. RadNet also documents the status and trends of environmental radioactivity. In general, data generated from RadNet provides the information base for making decisions necessary to ensure the protection of public health. The system helps the EPA determine whether additional sampling or other actions are needed in response to particular releases of radioactivity to the environment. RadNet can also provide supplementary information on population exposure, radiation trends, and other aspects of releases. Data is published by NAREL in a quarterly report entitled *Environmental Radiation Data*. While KDAQ and LMAPCD operate the monitors, all other aspects, including maintenance and data responsibility, are handled by the US EPA. For more information, please visit the US EPA's RadNet website: epa.gov/radnet.

Quality Assurance Status

The Division for Air Quality and LMAPCD both have an extensive quality assurance program to ensure that all air monitoring data collected is accurate and precise. KDAQ staff members audit air monitors on a scheduled basis, including those operated by the Louisville Metro Air Pollution Control District and the National Park Service, to ensure that each instrument is calibrated and operating properly.

Agencies audit their data monthly and verify that the data reported by each instrument is recorded accurately in the computerized database.

Scale of Representativeness

Each station in the monitoring network must be described in terms of the physical dimensions of the air parcel nearest the monitoring station throughout which actual pollutant concentrations are reasonably similar. Area dimensions or scales of representativeness used in the network description are:

1. **Micro scale** - defines the concentration in air volumes associated with area dimensions ranging from several meters up to about 100 meters.
2. **Middle scale** - defines the concentration typical of areas up to several city blocks in size with dimensions ranging from about 100 meters to 0.5 kilometers.
3. **Neighborhood scale** - defines the concentrations within an extended area of a city that has relatively uniform land use with dimensions in the 0.5 to 4.0 kilometers.
4. **Urban scale** - defines an overall city-sized condition with dimensions on the order of 4 to 50 kilometers.
5. **Regional Scale** - defines air quality levels over areas having dimensions of 50 to hundreds of kilometers.

The scale of representativeness is closely related to the type of air monitoring site and the objectives of that site. There are six basic types of sites supported by the ambient air monitoring network:

1. To determine the highest concentrations expected to occur in the area covered by the network.
2. To determine representative concentrations in areas of high population density.
3. To determine the impact on ambient pollution levels of significant sources or source categories.
4. To determine the extent of regional transport of pollutants.
5. To determine general background concentration levels.
6. To determine impacts on visibility, vegetation damage, or other welfare-based concerns.

The design intent in siting stations is to correctly match the area dimensions represented by the sample of monitored air with the area dimensions most appropriate for the monitoring objective of the station. The following relationship of these six basic site types and the scale of representativeness are appropriate when siting monitoring stations:

1. Highest Concentration: Micro, Middle, and Neighborhood scale
2. Population Oriented: Neighborhood and Urban scale
3. Source Impact: Micro, Middle, and Neighborhood scale

4. Regional Transport & General Background: Neighborhood and Regional scale
5. Welfare-based Impacts: Urban and Regional scale

Data Processing and Reporting

All ambient air quality data collected by KDAQ are stored on a server located at the main office building of Commonwealth Office of Technology at 101 Cold Harbor Drive, Frankfort, Kentucky. The server runs a full database back up every night and keeps an hourly transaction log. After each month of data has passed all quality assurance checks, the data is transmitted via telemetry to the US EPA's national data storage system known as AQS.

All ambient air quality and meteorological data collected by LMAPCD are stored on a server maintained by Louisville Metro's Department of Information Technology (DoIT) located at 410 South 5th Street in Louisville, KY. The server runs a full database back up every night and those data are stored at an offsite facility for disaster recovery purposes.

Statistical data summaries generated from the AQS database are compiled to produce the Ambient Air Quality Annual Report. This report may be accessed on the [KDAQ website](#).

Air Monitoring Station Descriptions

Bowling Green, KY

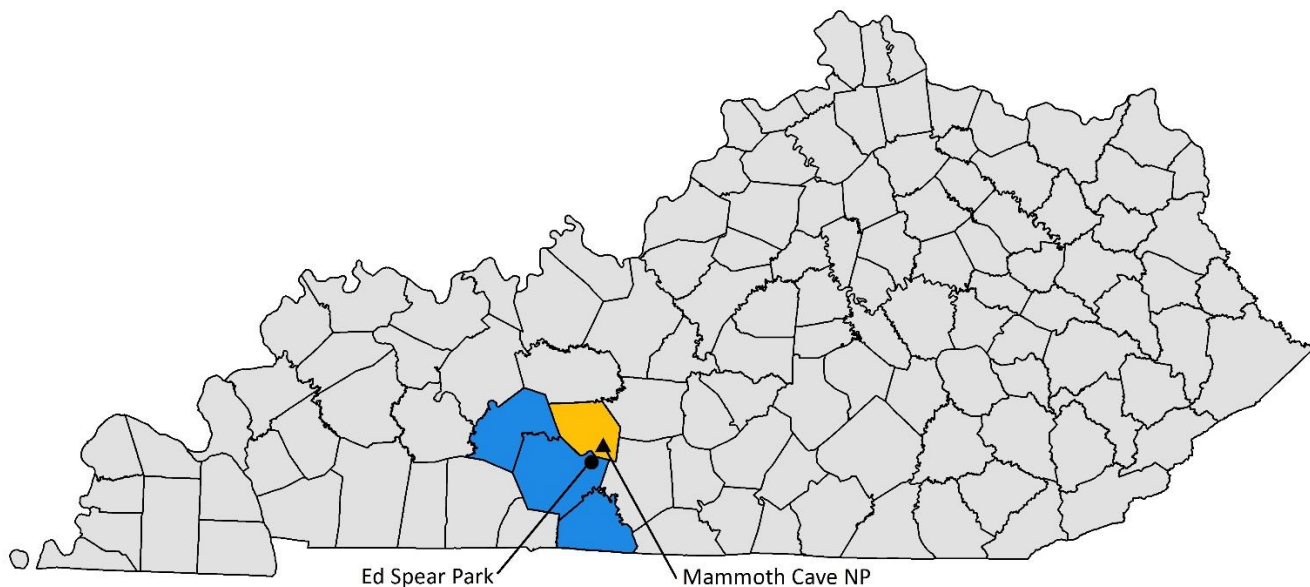


Figure 2: Kentucky Sites in the Bowling Green MSA

Table 4: Kentucky Monitors in the Bowling Green MSA

Site Name County AQS ID	PM _{2.5}	PM _{2.5} Continuous	PM ₁₀	PM ₁₀ Continuous	SO ₂	NO ₂	NO _y	O ₃	CO	Pb	VOC	Carbonyl	PAH	PM _{2.5} Speciation	Black Carbon	RadNet	Met
Mammoth Cave NP Edmonson 21-061-0501								1									1
Ed Spear Park Warren 21-227-0009		2						1									
Total		2						2									1

Mammoth Cave NP

CSA/MSA: Bowling Green-Glasgow-Franklin, KY CSA; Bowling Green, KY MSA

401 KAR 50:020 Air Quality Region: South Central Kentucky Intrastate (105)

Site Name: Mammoth Cave NP

AQS Site ID: 21-061-0501

Location: Alfred Cook Road, Park City, KY 42160

County: Edmonson

GPS Coordinates: 37.13182, -86.147944 (NAD83)

Date Established: August 1, 1997

Inspection Date: November 17, 2025

Inspection By: KDAQ Personnel



Figure 3: Mammoth Cave National Park Air Monitoring Site

Mammoth Cave National Park was established as one of 156 mandatory Federal Class I Areas nationwide under the Clean Air Act Amendments of 1977. Class I Areas are imparted with the highest level of air quality protections, especially regarding visibility degradation (haze). The Division maintains a cooperative relationship with Mammoth Cave National Park and frequently includes the site's data in air quality analyses. Additionally, the ozone monitor is designated as the "Maximum Ozone Concentration" monitor for the Bowling Green, KY MSA. However, KDAQ does not operate the site nor certify the annual data. While the park conducts a variety of air quality studies, only certain data is reported to the EPA's AQS database.

Table 5: Mammoth Cave Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	9.74	CASTNET Maximum O ₃ Non-EPA Federal Transport	Automated Equivalent Method utilizing UV photometry analysis	Continuously
Meteorological	12.73	Non-EPA Federal	AQM grade instruments for wind speed, wind direction, humidity, barometric pressure, and temperature	Continuously

Area Representativeness:

This site represents a regional scale for ozone.



Figure 4: Mammoth Cave NP Regional Scale

Ed Spear Park

CSA/MSA: Bowling Green-Glasgow-Franklin, KY CSA; Bowling Green, KY MSA

401 KAR 50:020 Air Quality Region: South Central Kentucky Intrastate (105)

Site Name: Ed Spear Park (Smiths Grove)

AQS Site ID: 21-227-0009

Location: 226 Sunset Avenue, Smiths Grove, KY 42171

County: Warren

GPS Coordinates: 37.04926, -86.21487 (NAD83)

Date Established: May 3, 2012

Inspection Date: November 17, 2025

Inspection By: KDAQ Personnel

Site Approval Status: Site and monitors meet all design criteria for the monitoring network.



Figure 5: Ed Spear Park Air Monitoring Shelter

This monitoring site was established as a replacement for the Oakland (Warren County) air monitoring station (21-227-0008). In October 2010, the Oakland site was found to be sitting within the doline of a sinkhole and was discontinued. Monitoring was established at the new Ed Spear Park site in May 2012. Inspections found the sample lines and equipment to be in good condition. The sample inlets are 39 meters from the nearest road. The site meets the requirements of 40 CFR 58, Appendices A, C, D, E, and G.

Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards. It is also the maximum PM_{2.5} site for the MSA. While not required for the CBSA, the site also provides levels of ozone and particulate matter for daily index reporting.

Quality Assurance Status:

All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Table 6: Ed Spear Park Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	4.10	SLAMS AQI	UV photometry	Continuously March 1- October 31
FEM PM _{2.5} Continuous	4.67	SLAMS AQI Maximum PM _{2.5}	Broadband Spectroscopy	Continuously
Collocated FEM PM _{2.5} Continuous	4.68	SLAMS	Broadband Spectroscopy	Continuously

Area Representativeness:

This site represents population exposure on a neighborhood scale for particulates. This site also represents population exposure on an urban scale for ozone.

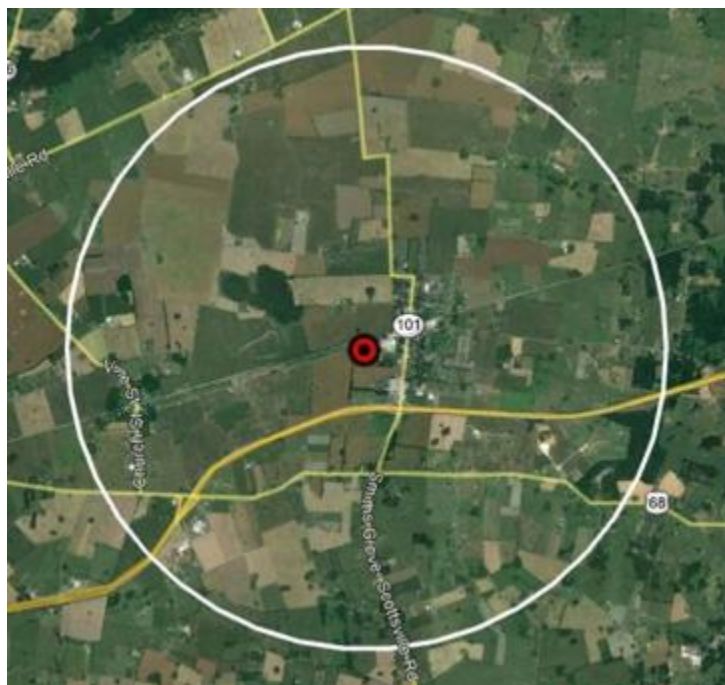


Figure 6: Ed Spear Park Neighborhood Scale

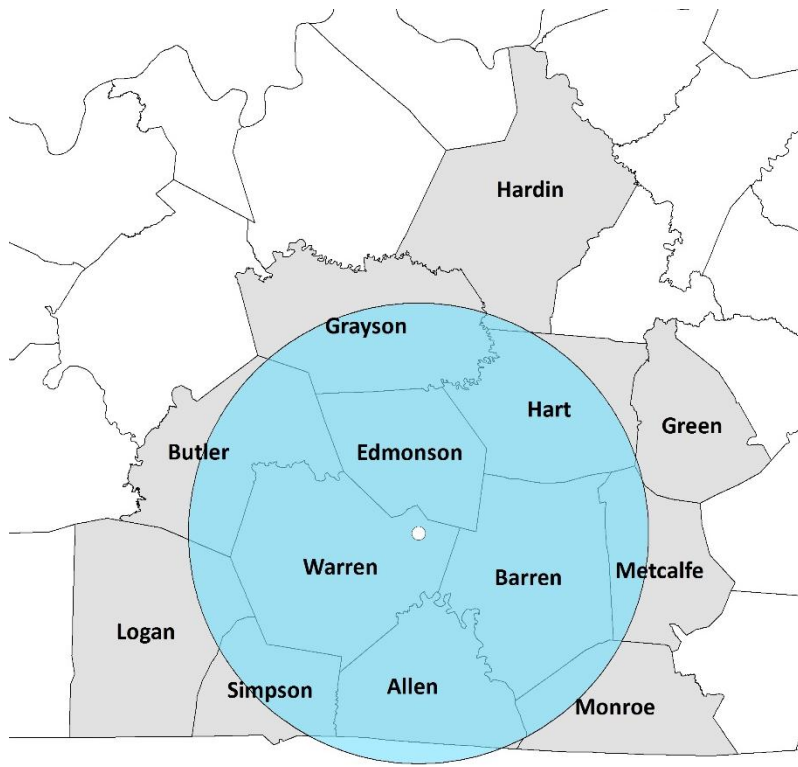


Figure 7: Ed Spear Park Urban Scale

Cincinnati, OH-KY-IN

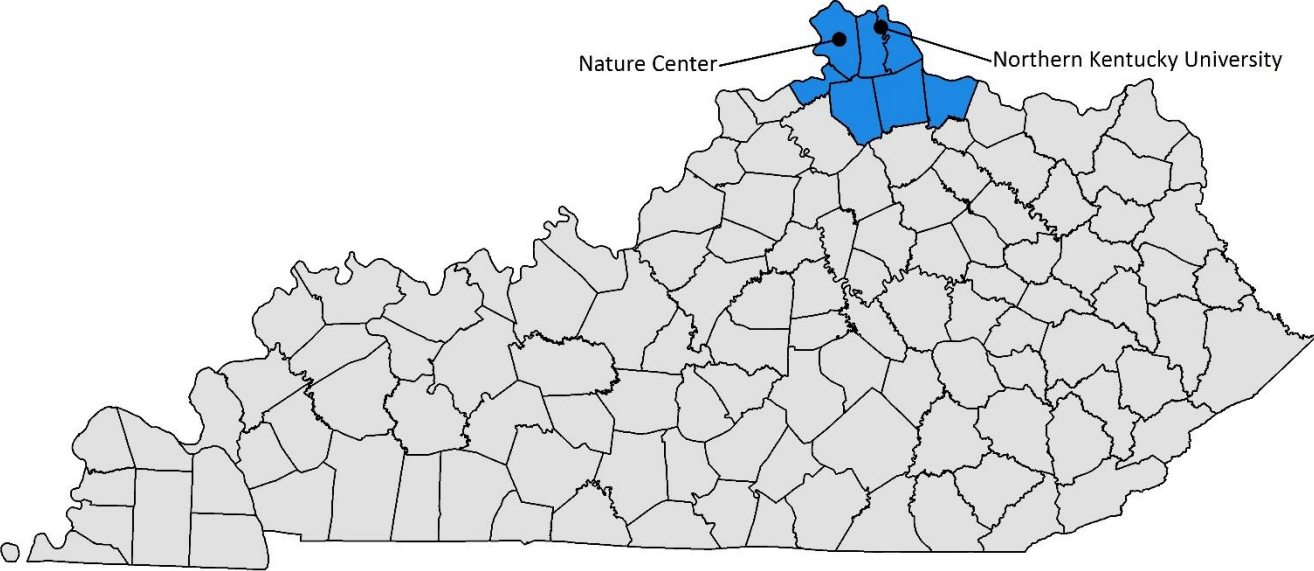


Figure 8: Kentucky Sites in the Cincinnati, OH-KY-IN MSA

Table 7: Kentucky Monitors in the Cincinnati, OH-KY-IN MSA

Site Name County AQS ID	PM _{2.5}	PM _{2.5} Continuous	PM ₁₀	PM ₁₀ Continuous	SO ₂	NO ₂	NO _y	O ₃	CO	Pb	VOC	Carbonyl	PAH	PM _{2.5} Speciation	Black Carbon	RadNet	Met
Nature Center Boone 21-015-0008								1									
Northern Kentucky University Campbell 21-037-3002	2	1			1	1		1									
Total	2	1			1	1		2									

Nature Center

CSA/MSA: Cincinnati-Wilmington, OH-KY-IN CSA; Cincinnati, OH-KY-IN MSA

401 KAR 50:020 Air Quality Region: Metropolitan Cincinnati (Ohio) Interstate (079)

Site Name: Nature Center

AQS Site ID: 21-015-0008

Location: 9101 Camp Ernst Rd, Union, KY 41091

County: Boone

GPS Coordinates: 38.9674434, -84.7213627(NAD 83)

Date Established: April 13, 2022

Inspection Date: October 23, 2025

Inspection By: KDAQ Personnel

Site Approval Status: Site and monitor meet all design criteria for the monitoring network.



Figure 9: Nature Center Air Monitoring Shelter

This monitoring site was established as a replacement for East Bend (21-015-0003) due to siting issues that could not be resolved. The site is located on the grounds of the Boone County Extension Environmental and Nature Center. A Kentucky Mesonet station is located approximately 45 meters SSW from the air monitoring shelter. The sample inlet is approximately 29 meters from the nearest road. Upon inspection, the sample line and monitor were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices A, C, D, E, and G.

Monitoring Objective:

The monitoring objective is to determine compliance with National Ambient Air Quality Standards.

Quality Assurance Status:

All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Table 8: Nature Center Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.86	SLAMS AQI	UV photometry	Continuously March 1- October 31

Area Representativeness:

This site will represent the upwind background levels on an urban scale for ozone.

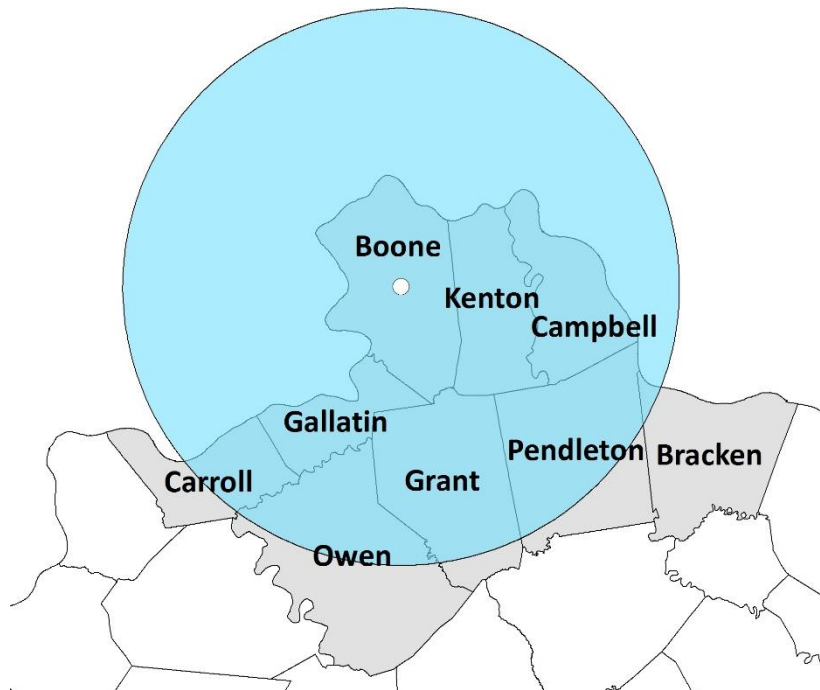


Figure 10: Nature Center Urban Scale

Northern Kentucky University

CSA/MSA: Cincinnati-Wilmington, OH-KY-IN CSA; Cincinnati, OH-KY-IN MSA

401 KAR 50:020 Air Quality Region: Metropolitan Cincinnati (Ohio) Interstate (079)

Site Name: Northern Kentucky University (NKU)

AQS Site ID: 21-037-3002

Location: 524A John's Hill Road, Highland Heights, KY 41076

County: Campbell

GPS Coordinates: 39.021834, -84.474436 (NAD 83)

Date Established: August 1, 2007

Inspection Date: October 23, 2025

Inspection By: KDAQ Personnel

Site Approval Status: Site and monitors meet all design criteria for the monitoring network.



Figure 11: Northern Kentucky University Monitoring Shelter

The monitoring site is a stationary equipment shelter located on farmland owned by Northern Kentucky University in Highland Heights, Kentucky. The sample inlets are 450 meters from the nearest road, which is Interstate 275. Upon inspection, the sample lines and monitors were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices A, C, D, E, and G.

Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards and to provide pollution levels for daily index reporting.

Quality Assurance Status:

All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Table 9: Northern Kentucky University Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.83	SLAMS AQI	UV photometry	Continuously March 1- October 31
AEM Sulfur Dioxide	3.81	SLAMS	UV fluorescence	Continuously
AEM Nitrogen Dioxide (NO ₂ , NO, NO _x)	3.80	SLAMS	Chemiluminescence	Continuously
FRM PM _{2.5}	4.65	SLAMS	Gravimetric	24-hours every third day
Collocated FRM PM _{2.5}	4.65	SLAMS	Gravimetric	24-hours every sixth day
FEM PM _{2.5} Continuous	4.63	SLAMS AQI	Broadband Spectroscopy	Continuously

Area Representativeness:

This site represents population exposure for nitrogen dioxide, ozone, and sulfur dioxide on an urban scale. This site also represents population exposure on a neighborhood scale for particulate matter.

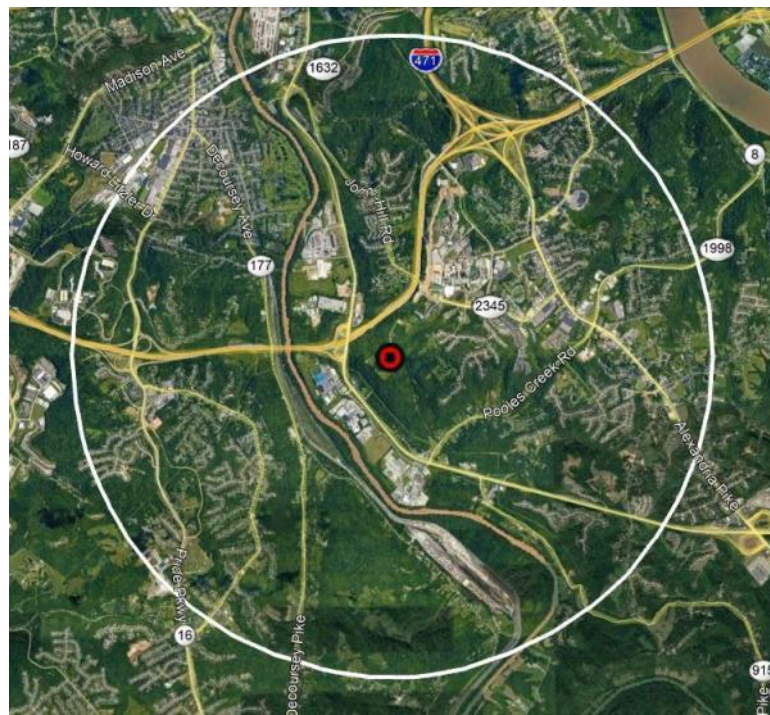


Figure 12: Northern Kentucky University Neighborhood Scale

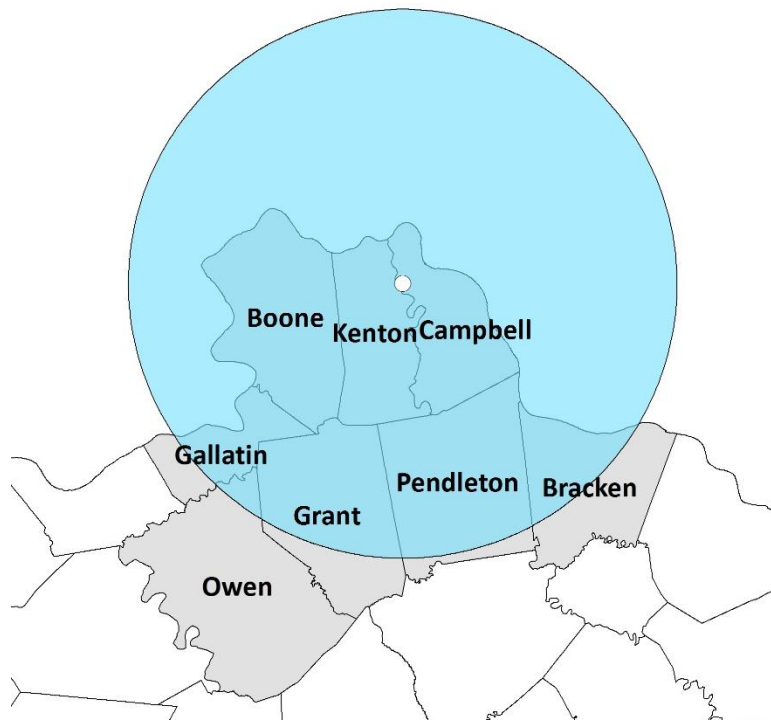


Figure 13: Northern Kentucky University Urban Scale

Clarksville, TN-KY

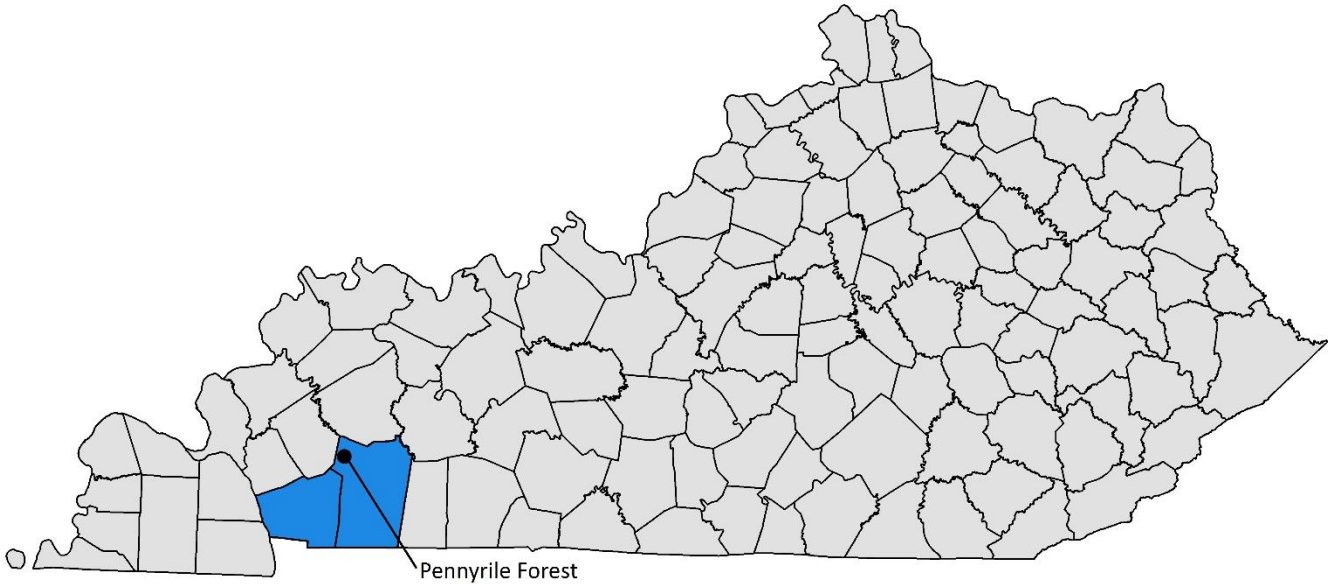


Figure 14: Kentucky Sites in the Clarksville, TN-KY MSA

Table 10: Kentucky Monitors in the Clarksville, TN-KY MSA

Site Name County AQS ID	PM _{2.5}	PM _{2.5} Continuous	PM _{1.0}	PM _{1.0} Continuous	SO ₂	NO ₂	NO _y	O ₃	CO	Pb	VOC	Carbonyl	PAH	PM _{2.5} Speciation	Black Carbon	RadNet	Met
Pennyrile Forest Christian 21-047-0007		1						1									
Total		1						1									

Pennyrile Forest

CSA/MSA: Clarksville, TN- KY MSA

401 KAR 50:020 Air Quality Region: Paducah - Cairo Interstate (072)

Site Name: Pennyrile Forest

AQS Site ID: 21-047-0007

Location: Pennyrile Forest State Park Rd. and Bainbridge Rd., Dawson Springs, KY 42408

County: Christian

GPS Coordinates: 37.0578182, -87.6498089 (NAD 83)

Date Established: December 19, 2025

Inspection Date: January 13, 2026

Inspection By: KDAQ Personnel

Site Approval Status: Site and monitors meet design criteria for the monitoring network.



Figure 15: Pennyrile Forest Air Monitoring Shelter

The monitoring site is a stationary equipment shelter in a field on Pennyrile State Forest property. This site is a replacement for Hopkinsville (21-047-0006) which was relocated due to increased traffic along an adjacent gravel road. The nearest road is approximately 35 m away. As 40 CFR Part 58 Appendix E does not state road distance requirements for region scale particulates, KDAQ has been directed to reference *Guidance for Network Design and Optimum Site Exposures for PM_{2.5} and PM₁₀*, "Regional-scale sites are best located in rural areas away from local sources, and at higher elevations. National parks, national wilderness areas, and many state and county parks and reserves are appropriate areas for regional-scale sites." The site meets the criteria listed above and requirements of 40 CFR 58, Appendices A, C, D, E, and G.

Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards and to determine levels of interstate regional transport of fine particulate matter and ozone. It is also the maximum PM_{2.5} and ozone site for the MSA.

Quality Assurance Status:

All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Table 11: Pennyrile Forest Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.83	SLAMS AQI Maximum O ₃ Transport	UV photometry	Continuously March 1- October 31
FEM PM _{2.5} Continuous	4.64	SLAMS AQI Maximum PM _{2.5} Transport	Broadband Spectroscopy	Continuously

Area Representativeness:

This site represents population exposure on a regional scale for ozone and PM_{2.5}.

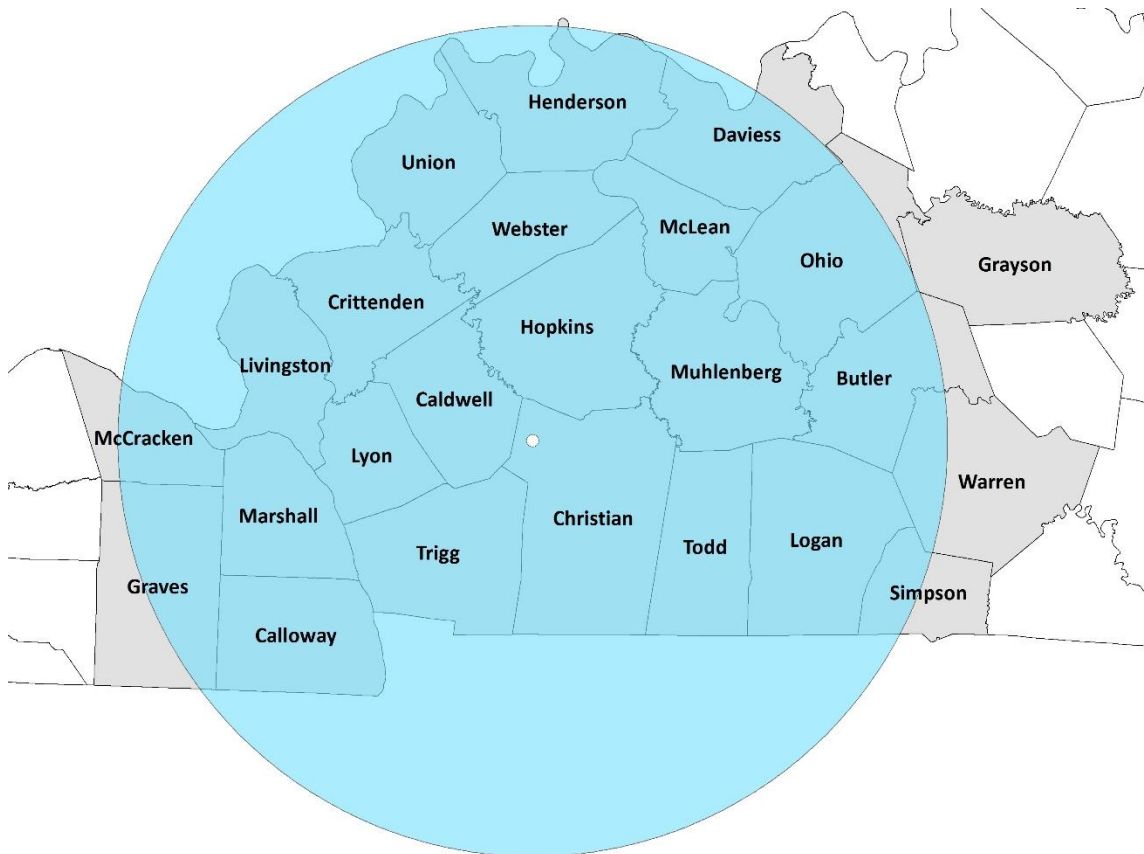


Figure 16: Pennyrile Forest Regional Scale

Elizabethtown, KY



Figure 17: Elizabethtown, KY Monitoring Sites

Table 12: Elizabethtown, KY Monitors

Site Name County AQS ID	PM _{2.5}	PM _{2.5} Continuous	PM ₁₀	PM ₁₀ Continuous	SO ₂	NO ₂	NO _y	O ₃	CO	Pb	VOC	Carbonyl	PAH	PM _{2.5} Speciation	Black Carbon	RadNet	Met
Freeman Lake Hardin 21-093-0007	1	1						1									
Total	1	1						1									

Freeman Lake

CSA/MSA: Louisville/Jefferson County - Elizabethtown, KY-IN CSA; Elizabethtown, KY MSA

401 KAR 50:020 Air Quality Region: North Central Kentucky Interstate (104)

Site Name: Freeman Lake

AQS Site ID: 21-093-0007

Location: Freeman Lake Park, 140 Freeman Lake Park Road, Elizabethtown, KY, 42701

County: Hardin

GPS Coordinates: 37.7145134, -85.8708227 (NAD 83)

Date Established: March 1, 2025

Inspection Date: September 26, 2025

Inspection By: KDAQ Personnel

Site Approval Status: Site and monitors meet all design criteria for the monitoring network.



Figure 18: Freeman Lake Air Monitoring Shelter

The monitoring site is a stationary equipment shelter located on the grounds of Freeman Lake Park. The site is located on the southside of the lake, near a water treatment plant that is no longer in operation. The sample inlets are approximately 182 meters from the nearest road. This site was formally Elizabethtown (21-093-0006) which had to be relocated due to land development. The site meets requirements of 40 CFR 58, Appendices A, C, D, E, and G.

Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards. It is also the maximum PM_{2.5} site for the MSA.

Quality Assurance Status:

All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Table 13: Freeman Lake Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.83	SLAMS AQI Maximum O ₃	UV photometry	Continuously March 1- October 31
FEM PM _{2.5} Continuous	4.65	SLAMS AQI Maximum PM _{2.5}	Broadband Spectroscopy	Continuously
Collocated FRM PM _{2.5}	4.70	SLAMS	Gravimetric	24-hours every sixth day

Area Representativeness:

This site will represent population exposure on a neighborhood scale for particulates and population exposure on an urban scale for ozone.

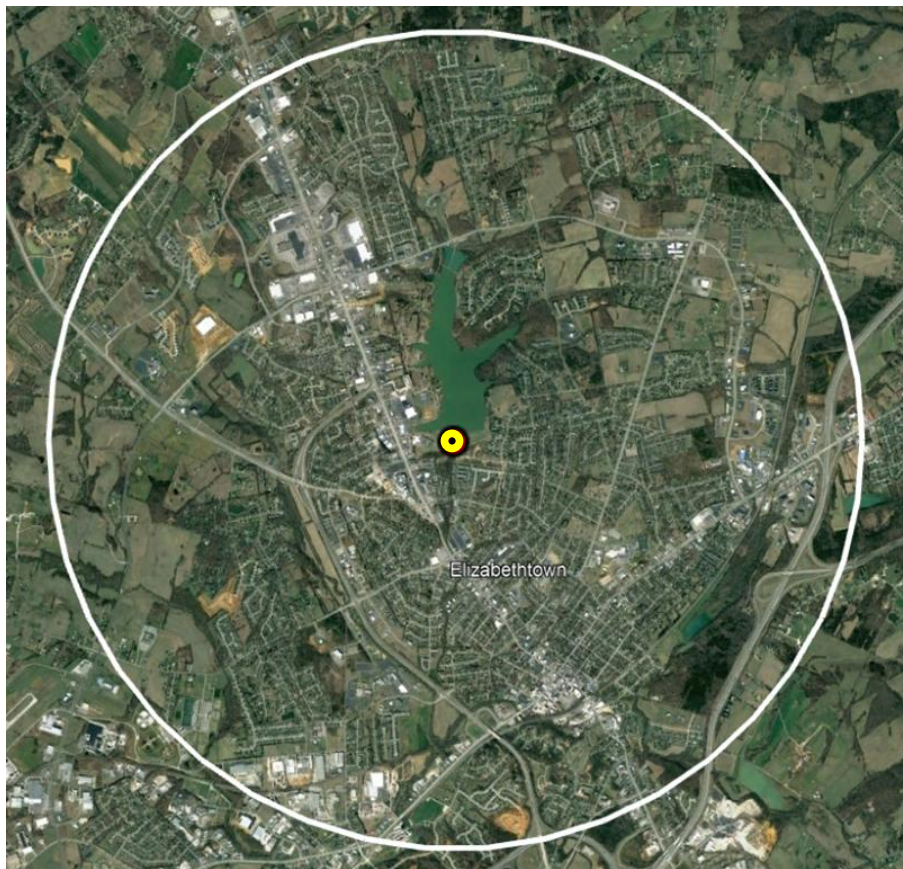


Figure 19: Freeman Lake Neighborhood Scale



Figure 20: Freeman Lake Urban Scale

Huntington-Ashland, WV-KY-OH

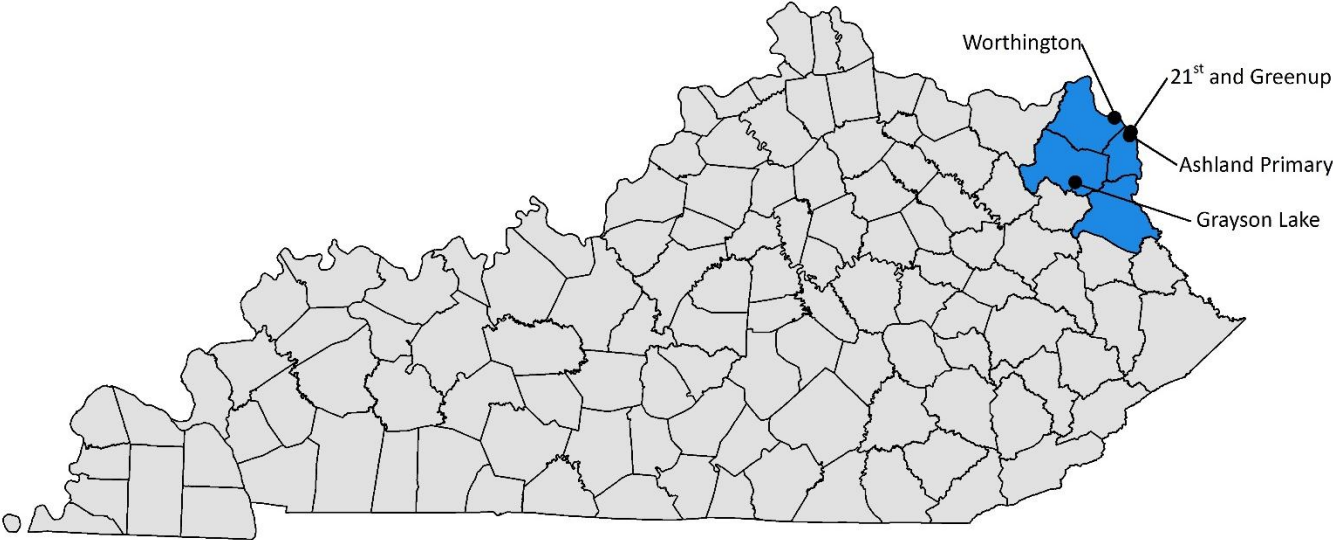


Figure 21: Kentucky Sites in the Huntington-Ashland, WV-KY-OH MSA

Table 14: Kentucky Monitors in the Huntington-Ashland MSA

Site Name County AQS ID	PM _{2.5}	PM _{2.5} Continuous	PM ₁₀	PM ₁₀ Continuous	SO ₂	NO ₂	NO _y	O ₃	CO	Pb	VOC	Carbonyl	PAH	PM _{2.5} Speciation	Black Carbon	RadNet	Met
21 st & Greenup Boyd 21-019-0002			2														
Ashland Primary Boyd 21-019-0017		1			1	1		1									
Grayson Lake Carter 21-043-0500		1	2					1			2	2	1				1
Worthington Greenup 21-089-0007					1			1									
Total		2	4		2	1		3			2	2	1				1

21st and Greenup

CSA/MSA: Charleston-Huntington-Ashland, WV-OH-KY CSA; Huntington-Ashland, WV-KY-OH MSA
401 KAR 50:020 Air Quality Region: Huntington (WV)-Ashland (KY)-Portsmouth-Ironton (OH) Interstate (103)

Site Name: 21st and Greenup

AQS Site ID: 21-019-0002

Location: 121 22nd Street, Ashland, KY 41101

County: Boyd

GPS Coordinates: 38.47676, -82.63137 (NAD 83)

Date Established: April 2, 1978

Inspection Date: October 9, 2025

Inspection By: KDAQ Personnel

Site Approval Status: Site and monitors meet all design criteria for the monitoring network.



Figure 22: 21st and Greenup Air Monitoring Site

The monitoring site is located on the west end of the roof of the Valvoline Oil complex building in Ashland, Kentucky. The building is one story tall. The sample inlets are 38 meters from the nearest road. Upon inspection, the sample inlets and monitors were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices A, C, D, and E.

Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards and to measure concentrations of a sub-group of air toxics.

Quality Assurance Status:

All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Table 15: 21st and Greenup Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
FRM PM ₁₀	6.20	SLAMS	Gravimetric	24-hours every sixth day
- Metals PM ₁₀	6.20	SPM-Other	Determined from the PM ₁₀ sample using EPA method IO 3.5	Same as PM ₁₀
Collocated FRM PM ₁₀	6.20	SLAMS	Gravimetric	24-hours every twelfth day
- Collocated Metals PM ₁₀	6.20	SPM-Other	Determined from the PM ₁₀ sample using EPA method IO 3.5	24-hours; six samples per year

Area Representativeness:

The site represents maximum concentration on a middle scale for particulates and metals.



Figure 23: 21st and Greenup Middle Scale

Ashland Primary

CSA/MSA: Charleston-Huntington-Ashland, WV-OH-KY CSA; Huntington-Ashland, WV-KY-OH MSA
401 KAR 50:020 Air Quality Region: Huntington (WV)-Ashland (KY)-Portsmouth-Ironton (OH) Interstate (103)

Site Name: Ashland Primary (FIVCO)

AQS Site ID: 21-019-0017

Location: FIVCO Health Department, 2924 Holt Street, Ashland, KY 41101

County: Boyd

GPS Coordinates: 38.459347, -82.640386 (NAD 83)

Date Established: January 1, 1999

Inspection Date: October 9, 2025

Inspection By: KDAQ Personnel

Site Approval Status: Site and monitors meet all design criteria for the monitoring network.



Figure 24: Ashland Primary Air Monitoring Shelter

The monitoring site is a stationary equipment shelter located on the grounds of the health department building in Ashland, Kentucky. The sample inlets are 60 meters from the nearest road. Upon inspection, the sample lines and monitors were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices A, C, D, E, and G.

Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards and to provide pollutant levels for daily air quality index reporting.

Quality Assurance Status:

All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Table 16: Ashland Primary Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.85	SLAMS AQI Maximum O ³	UV photometry	Continuously March 1 – October 31
AEM Sulfur Dioxide	3.85	SLAMS	UV fluorescence	Continuously
AEM Nitrogen Dioxide (NO ₂ , NO, NO _x)	3.85	SLAMS	Chemiluminescence	Continuously
FEM PM _{2.5} Continuous	4.74	SLAMS AQI	Broadband spectroscopy	Continuously

Area Representativeness:

This site represents population exposure on a neighborhood scale for ozone, and sulfur dioxide. This site also represents maximum concentrations on a middle scale for particulates, as well as an urban scale for nitrogen dioxide.

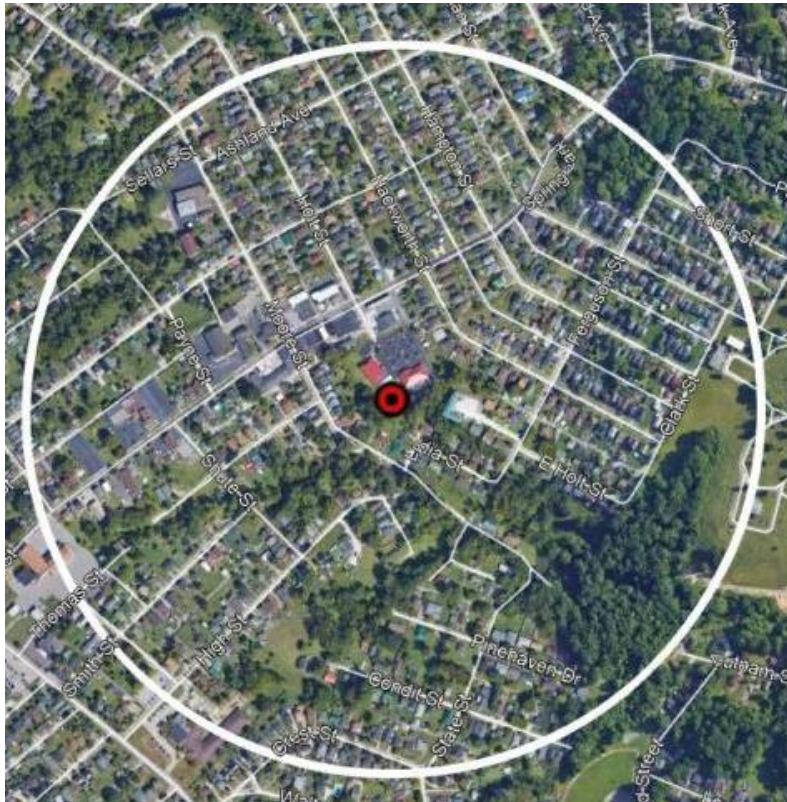


Figure 25: Ashland Primary Middle Scale

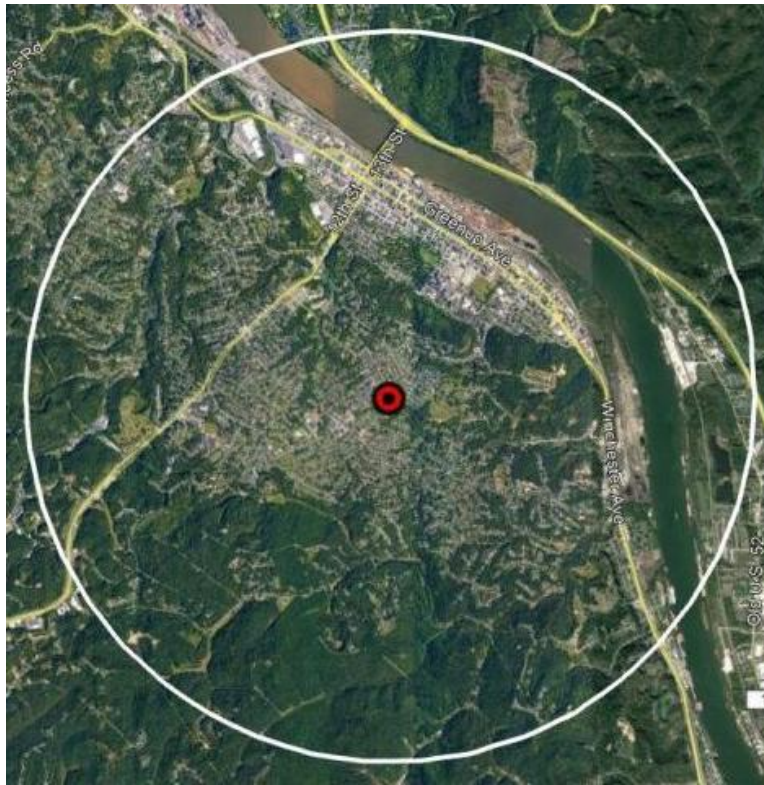


Figure 26: Ashland Primary Neighborhood Scale

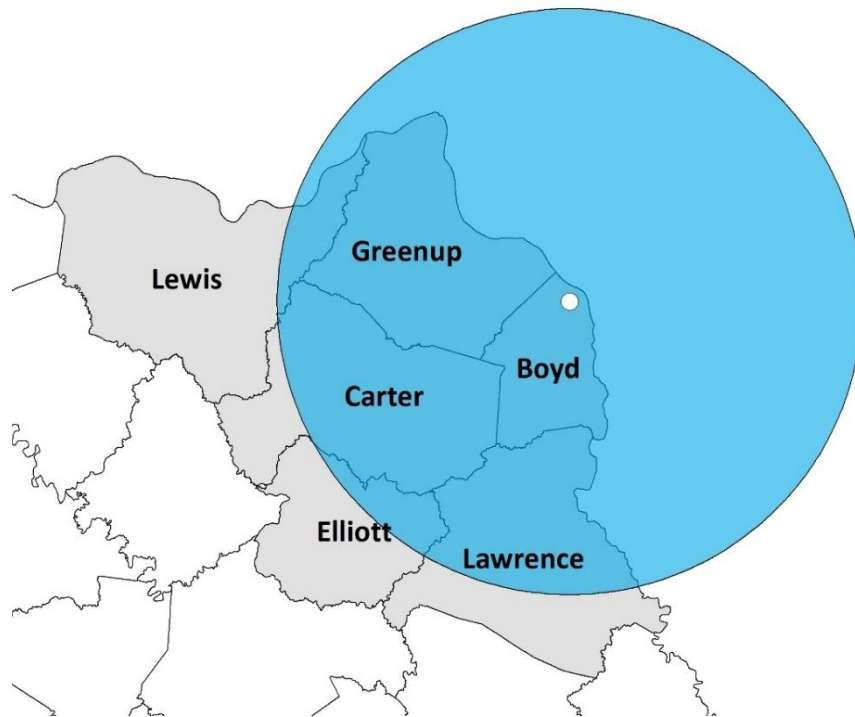


Figure 27: Ashland Primary Urban Scale

Grayson Lake

CSA/MSA: Charleston-Huntington-Ashland, WV-OH-KY CSA; Huntington-Ashland, WV-KY-OH MSA
401 KAR 50:020 Air Quality Region: Huntington (WV)-Ashland (KY)-Portsmouth-Ironton (OH) Interstate (103)

Site Name: Grayson Lake

AQS Site ID: 21-043-0500

Location: Camp Robert Webb, 1486 Camp Webb Road, Grayson Lake, KY 41143

County: Carter

GPS Coordinates: 38.238876, -82.988059 (NAD 83)

Date Established: May 13, 1983

Inspection Date: October 9, 2025

Inspection By: KDAQ Personnel

Site Approval Status: Site and monitors meet all design criteria for the monitoring network.



Figure 28: Grayson Lake Air Monitoring Site

The monitoring site is a stationary equipment shelter in a fenced area located in a remote section of Camp Webb in Grayson, Kentucky. The nearest road is a service road to the site and is 106 meters from the site. Upon inspection, the sample lines and monitors were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices A, C, D, E, and G.

Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards; to determine background levels of PM_{2.5} and PM₁₀; to provide ozone data upwind of the Ashland area; and to measure rural concentrations of a sub-group of air toxics for use in a national air toxics assessment.

Quality Assurance Status:

All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Table 17: Grayson Lake Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.70	SLAMS AQI	UV photometry	Continuously March 1 – October 31
FEM PM _{2.5} Continuous	4.71	SLAMS AQI	Broadband spectroscopy	Continuously
FRM PM ₁₀	2.20	SLAMS	Gravimetric	24-hours every sixth day
- Metals PM ₁₀	2.20	NATTS SPM-Other	Determined from the PM ₁₀ samples using EPA method IO 3.5	Same as PM ₁₀
Collocated PM ₁₀	2.20	SLAMS	Gravimetric	24-hours every twelfth day
- Collocated metals PM ₁₀	2.20	NATTS SPM-Other	Determined from the PM ₁₀ samples using EPA method IO 3.5	24-hours; six samples per year
Volatile Organic Compounds	4.16	NATTS SPM-Other	EPA method TO-15.	24-hours every sixth day
- Duplicate Volatile Organic Compounds	4.16	NATTS SPM-Other	EPA method TO-15. Collected via same sampling system as primary VOCs.	24-hours; six samples per year
Polycyclic Aromatic Hydrocarbons	2.11	NATTS SPM-Other	EPA method TO-13A	24-hours every sixth day
Carbonyls	4.20	NATTS SPM-Other	EPA method TO-11A	24-hours every sixth day
- Duplicate Carbonyls	4.20	NATTS SPM-Other	EPA method TO-11A. Collected via same sampling system as primary carbonyls.	24-hours; six samples per year
Meteorological	13.09	Other	AQM grade instruments for wind speed, wind direction, and temperature	Continuously

Area Representativeness:

The site represents background levels on an urban scale for particulates and air toxics. This site also represents upwind/background levels on a regional scale for ozone.

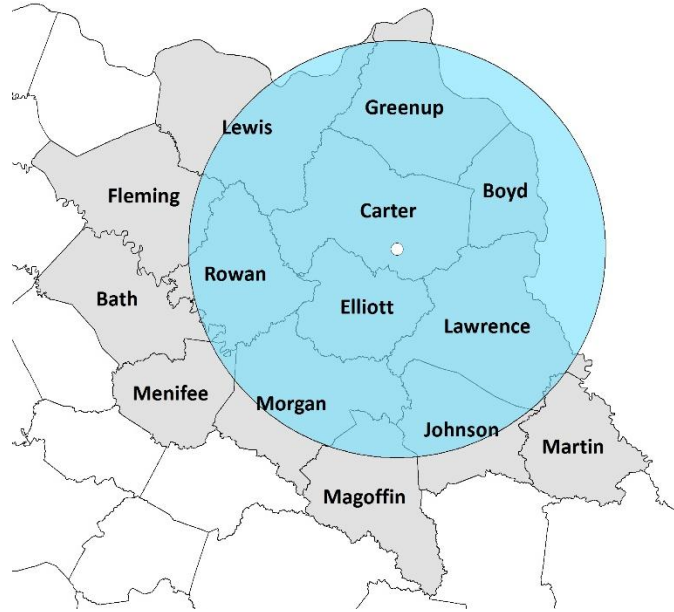


Figure 29: Grayson Lake Urban Scale



Figure 30: Grayson Lake Regional Scale

Worthington

CSA/MSA: Charleston-Huntington-Ashland, WV-OH-KY CSA; Huntington-Ashland, WV-KY-OH MSA
401 KAR 50:020 Air Quality Region: Huntington (WV)-Ashland (KY)-Portsmouth-Ironton (OH) Interstate (103)

Site Name: Worthington

AQS Site ID: 21-089-0007

Location: Scott Street & Center Avenue, Worthington, KY 41183

County: Greenup

GPS Coordinates: 38.548156, -82.731156 (NAD 83)

Date Established: October 12, 1980

Inspection Date: October 9, 2025

Inspection By: KDAQ Personnel

Site Approval Status: Site and monitors meet all design criteria for the monitoring network.



Figure 31: Worthington Air Monitoring Shelter

The monitoring site is a stationary equipment shelter located on the grounds of a water tower near the intersection of Scott Street and Center Avenue in Worthington, Kentucky. The sample inlets are 19 meters from the nearest road. Upon inspection, the sample lines and monitors were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices A, C, D, E, and G.

Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards.

Quality Assurance Status:

All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Table 18: Worthington Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	4.19	SLAMS AQI	UV photometry	Continuously March 1 – October 31
AEM Sulfur Dioxide	4.19	SLAMS	UV fluorescence	Continuously

Area Representativeness:

This site represents population exposure on a neighborhood scale for ozone and sulfur dioxide.



Figure 32: Worthington Neighborhood Scale

Lexington-Fayette, KY

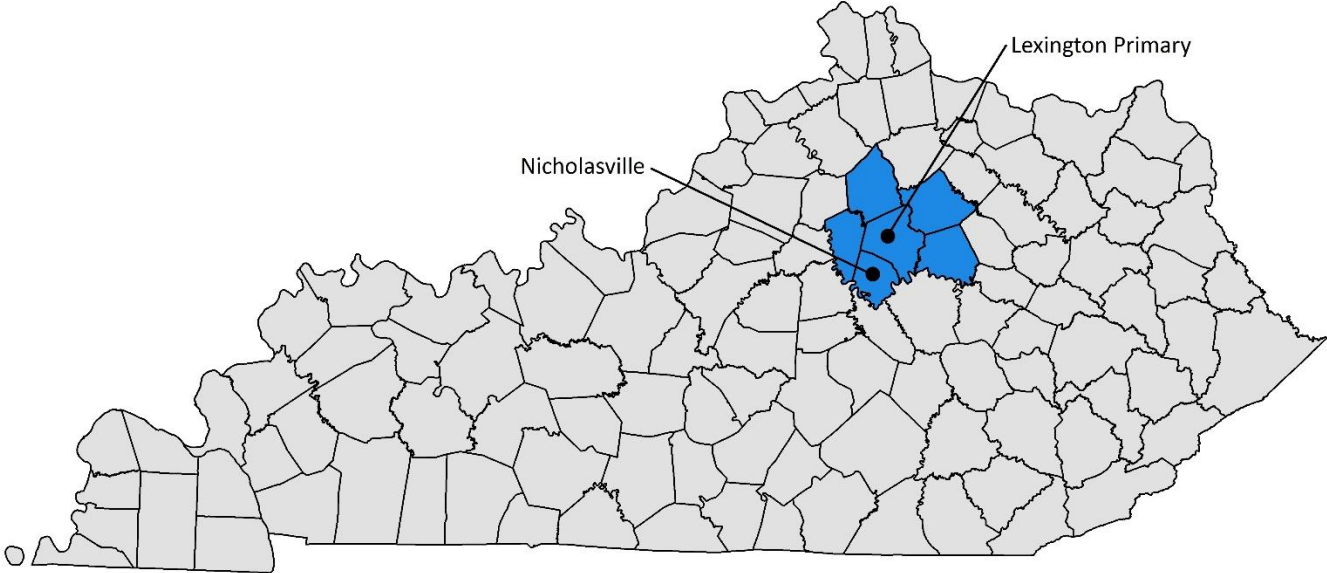


Figure 33: Lexington-Fayette, KY MSA Sites

Table 19: Lexington-Fayette, KY Monitors

Site Name County AQS ID	PM _{2.5}	PM _{2.5} Continuous	PM ₁₀	PM ₁₀ Continuous	SO ₂	NO ₂	NO _y	O ₃	CO	Pb	VOC	Carbonyl	PAH	PM _{2.5} Speciation	Black Carbon	RadNet	Met
Lexington Primary Fayette 21-067-0012		1	1		1	1		1								1	
Nicholasville Jessamine 21-113-0001		1			1			1									
Total		2	1		2	1		2								1	

Lexington Primary

CSA/MSA: Lexington-Fayette--Richmond--Frankfort, KY CSA; Lexington-Fayette, KY MSA

401 KAR 50:020 Air Quality Region: Bluegrass Intrastate (102)

Site Name: Lexington Primary (Newtown)

AQS Site ID: 21-067-0012

Location: Fayette County Health Department, 650 Newtown Pike, Lexington, KY 40508

County: Fayette

GPS Coordinates: 38.065056, -84.497556 (NAD 83)

Date Established: November 8, 1979

Inspection Date: September 3, 2025

Inspection By: KDAQ Personnel

Site Approval Status: Site and monitors meet all design criteria for the monitoring network.



Figure 34: Lexington Primary Air Monitoring Site

The monitoring site is a stationary equipment shelter located on the grounds of the Fayette County Health Department building in Lexington, Kentucky. The sample inlets are 132 meters from the nearest road. Upon inspection, the sample lines and monitors were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices A, C, D, E, and G.

Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards and to provide pollutant levels for daily air quality index reporting. It is also the maximum PM_{2.5} and ozone site for the MSA.

Additionally, the nitrogen dioxide monitor has been approved as a RA-40 monitor. According to CFR, each EPA Regional Administrator is required to collaborate with agencies to establish or designate 40 NO₂ monitoring locations, with a primary focus on protecting susceptible and vulnerable populations.

Quality Assurance Status:

All quality assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Table 20: Lexington Primary Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	4.00	SLAMS AQI Maximum O ₃	UV photometry	Continuously March 1- October 31
AEM Sulfur Dioxide	3.98	SLAMS	UV fluorescence	Continuously
AEM Nitrogen Dioxide (NO ₂ , NO, NO _x)	4.00	SLAMS (RA-40)	Chemiluminescence	Continuously
FEM PM _{2.5} Continuous	4.90	SLAMS AQI Maximum PM _{2.5}	Broadband Spectroscopy	Continuously
PM10	4.73	SLAMS	Gravimetric	24-hours every sixth day
- PM10 Metals	4.73	SPM-Other	Determined from the PM10 sample using EPA method IO 3.5	Same as PM10
Radiation	1.32	RadNet	RadNet fixed stationary monitor, manual and automated methods	Continuous & 2 weekly filters

Area Representativeness:

This site represents population exposure on a neighborhood scale for particulates, sulfur dioxide and ozone. This site also represents population exposure on an urban scale for nitrogen dioxide.

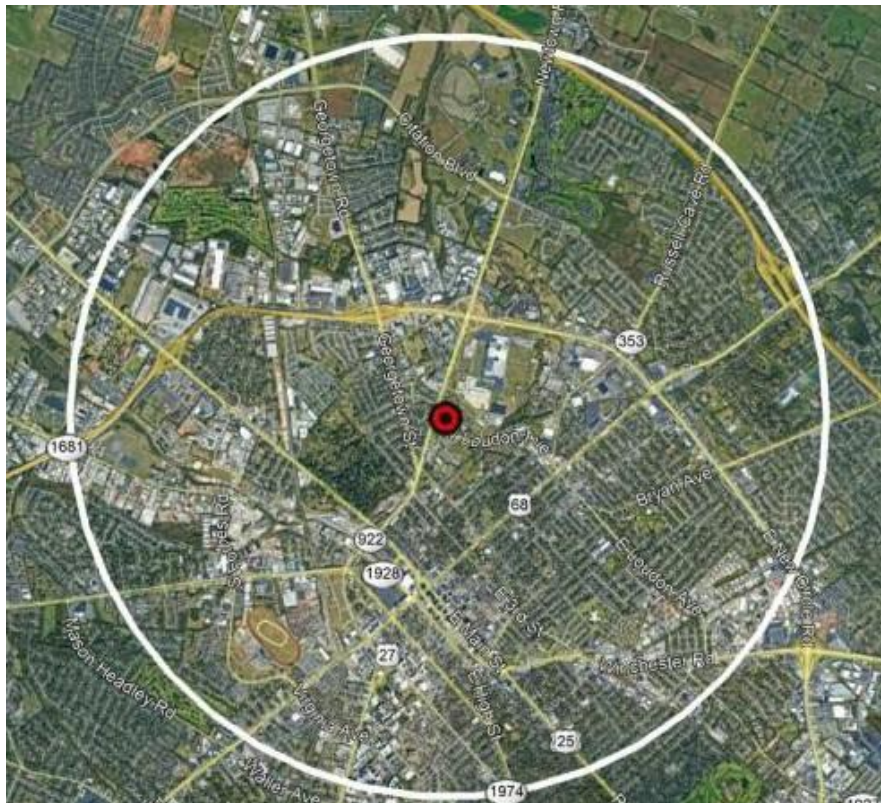


Figure 35: Lexington Primary Neighborhood Scale

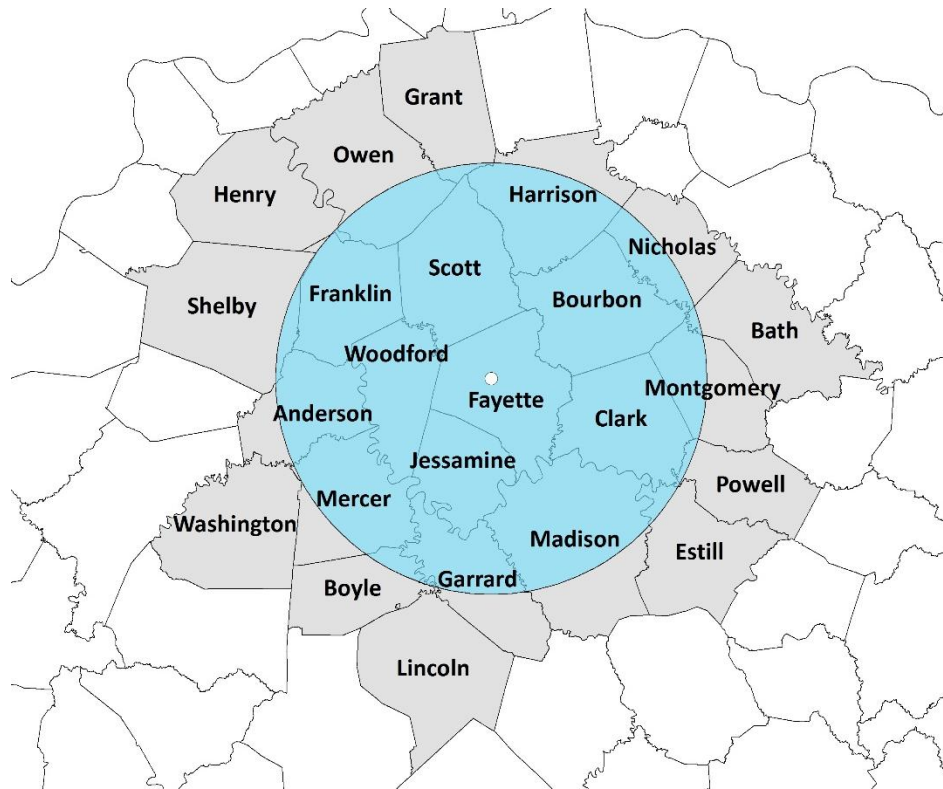


Figure 36: Lexington Primary Urban Scale

Nicholasville

CSA/MSA: Lexington-Fayette--Richmond--Frankfort, KY CSA; Lexington-Fayette, KY MSA

401 KAR 50:020 Air Quality Region: Bluegrass Intrastate (102)

Site Name: Nicholasville

AQS Site ID: 21-113-0001

Location: KYTC Maintenance Garage, 260 Wilson Drive, Nicholasville, KY 40356

County: Jessamine

GPS Coordinates: 37.89147, -84.58825 (NAD 83)

Date Established: August 1, 1991

Inspection Date: September 3, 2025

Inspection By: KDAQ Personnel

Site Approval Status: Site and monitors meet all design criteria for the monitoring network.



Figure 37: Nicholasville Air Monitoring Shelter

The monitoring site is a stationary equipment shelter located on the grounds of the Kentucky Transportation Cabinet garage in Nicholasville, Kentucky. The sample inlets are 82 meters from the nearest road. Upon inspection, the sample inlets and monitors were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices A, C, D, E, and G.

Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards and to provide ozone data upwind of the Lexington area.

Quality Assurance Status:

All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Table 21: Nicholasville Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.89	SLAMS AQI	UV photometry	Continuously March 1 – October 31
AEM Sulfur Dioxide	3.91	SLAMS	UV fluorescence	Continuously
FEM PM _{2.5} Continuous	4.57	SLAMS AQI	Broadband Spectroscopy	Continuously

Area Representativeness:

The site represents population exposure on a neighborhood scale for particulates. This site also represents population exposure on an urban scale for ozone and sulfur dioxide.



Figure 38: Nicholasville Neighborhood Scale

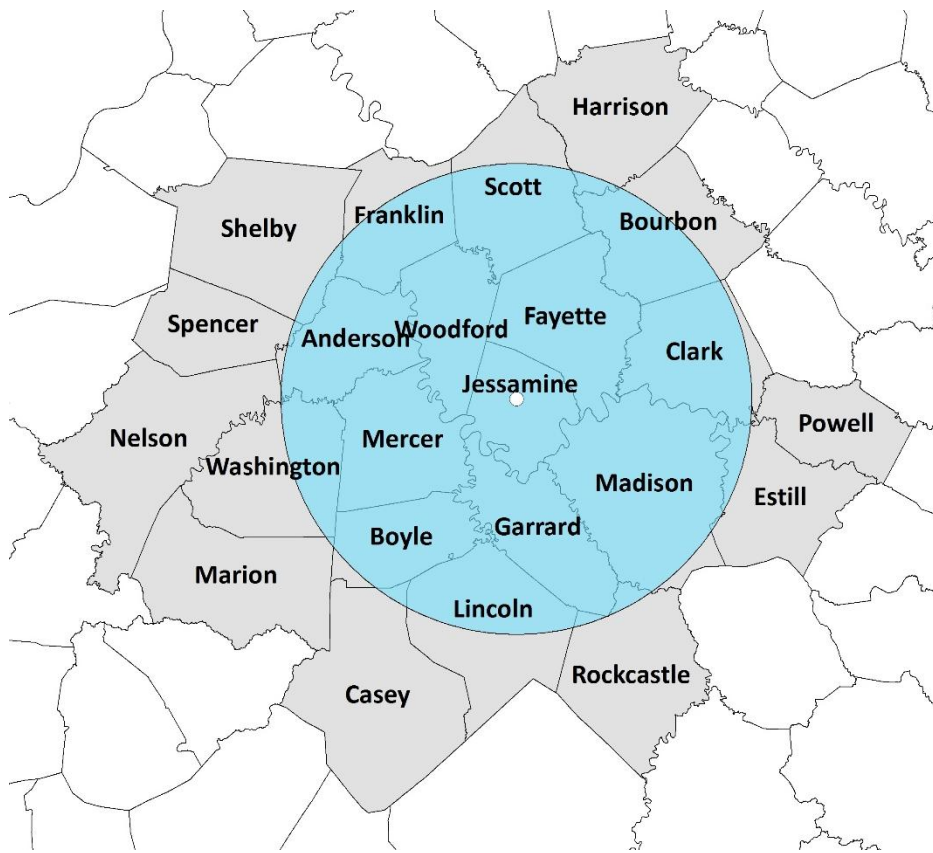


Figure 39: Nicholasville Urban Scale

Louisville/Jefferson County, KY-IN

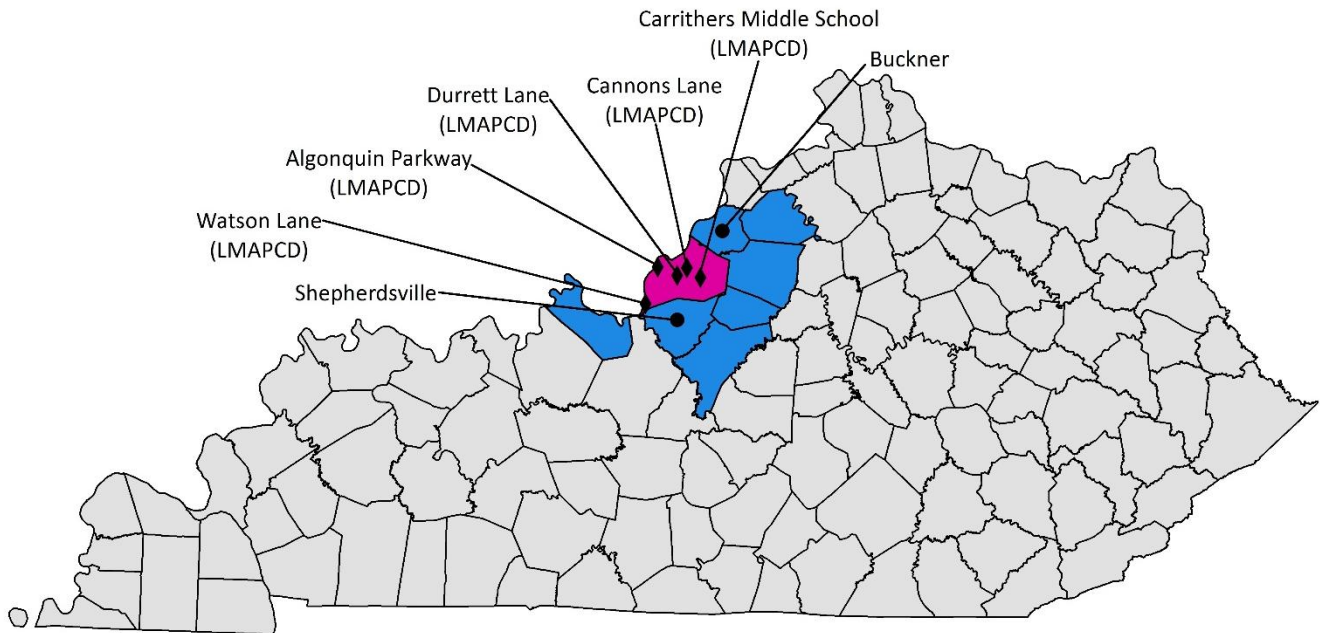


Figure 40: Kentucky Sites in the Louisville/Jefferson County, KY-IN MSA

Table 22: Kentucky Monitors in the Louisville/Jefferson County, KY-IN MSA

Site Name County AQS ID	PM _{2.5}	PM _{2.5} Continuous	PM ₁₀	PM ₁₀ Continuous	SO ₂	NO ₂	NO _y	O ₃	CO	Pb	VOC	Carbonyl	PAH	PM _{2.5} Speciation	Carbon Speciation	Black Carbon	H ₂ S	RadNet	Met
Shepherdsville Bullitt 21-029-0006								1											
Buckner Oldham 21-185-0004								1											
Watson Lane Jefferson 21-111-0051		1			1			1											1
Cannons Lane Jefferson 21-111-0067	1	1		1	1	1	1	1	1		1	1		1	1			1	1
Durrett Lane Jefferson 21-111-0075	1	1				1			1							1			1
Carrithers Middle School Jefferson 21-111-0080		1						1											1
Algonquin Parkway Jefferson 21-111-1041		1		1	1			1			1						1		1
Total	2	5		2	3	2	1	6	2		2	1		1	1	1	1	1	5

Shepherdsville

CSA/MSA: Louisville/Jefferson County--Elizabethtown, KY-IN CSA; Louisville/Jefferson County, KY-IN MSA

401 KAR 50:020 Air Quality Region: North Central Kentucky Intrastate (104)

Site Name: Shepherdsville

AQS Site ID: 21-029-0006

Location: East Joe B. Hall Avenue & Carpenter Streets, Shepherdsville, KY 40165

County: Bullitt

GPS Coordinates: 37.986275, -85.711899 (NAD 83)

Date Established: January 30, 1992

Inspection Date: September 26, 2025

Inspection By: KDAQ Personnel

Site Approval Status: Site and monitors meet all design criteria for the monitoring network.



Figure 41: Shepherdsville Air Monitoring Shelter

The monitoring site is a stationary equipment shelter located in a fenced-in area near the intersection of Second and Carpenter Streets in Shepherdsville, Kentucky. The sample inlets are 58 meters from the nearest road. Upon inspection, the sample lines and monitors were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices A, C, D, E, and G.

Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards.

Quality Assurance Status:

All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Table 23: Shepherdsville Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.96	SLAMS AQI	UV photometry	Continuously March 1- October 31

Area Representativeness:

This site represents population exposure on an urban scale for ozone.

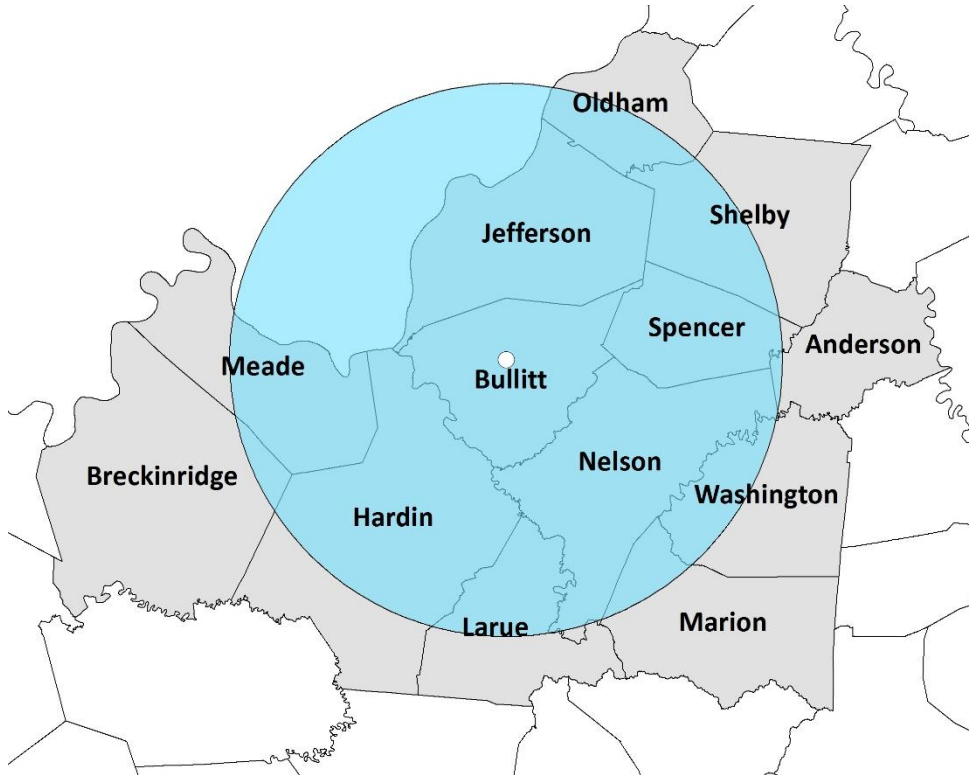


Figure 42: Shepherdsville Urban Scale

Buckner

CSA/MSA: Louisville/Jefferson County--Elizabethtown, KY-IN CSA; Louisville/Jefferson County, KY-IN MSA

401 KAR 50:020 Air Quality Region: North Central Kentucky Intrastate (104)

Site Name: Buckner

AQS Site ID: 21-185-0004

Location: KYTC Maintenance Facility, 1601 South Hwy 393, LaGrange, KY 40031

County: Oldham

GPS Coordinates: 38.4001911, -85.444291 (NAD 83)

Date Established: May 1, 1981

Inspection Date: September 26, 2025

Inspection By: KDAQ Personnel

Site Approval Status: Site and monitor meet all design criteria for the monitoring network.



Figure 43: Buckner Air Monitoring Shelter

The monitoring site is a stationary equipment shelter located on the grounds of the Kentucky Transportation Cabinet Highway garage in Buckner, Kentucky. The sample inlet is 51 meters from the nearest road. Upon inspection, the sample line and monitor were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices A, C, D, E, and G.

Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards.

Quality Assurance Status:

All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Table 24: Buckner Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.95	SLAMS AQI	UV photometry	Continuously March 1- October 31

Area Representativeness:

This site represents maximum concentrations on an urban scale.

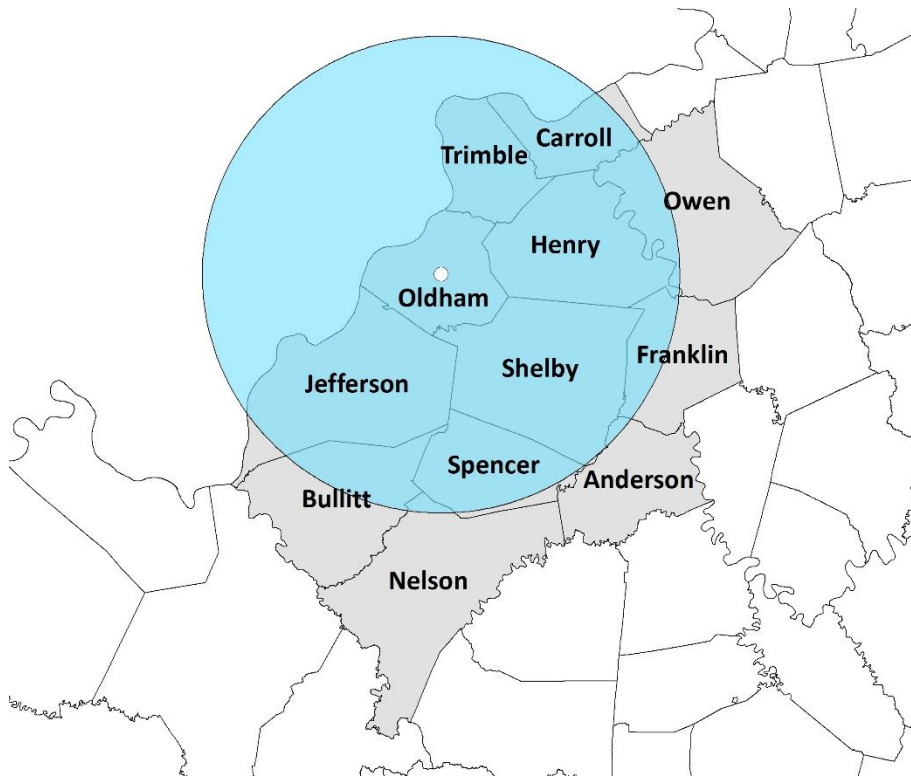


Figure 44: Buckner Urban Scale

Watson Lane

CSA/MSA: Louisville/Jefferson County--Elizabethtown, KY-IN CSA; Louisville/Jefferson County, KY-IN MSA

401 KAR 50:020 Air Quality Region: Louisville Interstate (078)

Site Name: Watson Lane

AQS Site ID: 21-111-0051

Location: 7201 Watson Lane, Louisville, KY 40272

County: Jefferson

GPS Coordinates: 38.06091, -85.89804 (NAD 83)

Date Established: July 16, 1992

Inspection Date: October 14, 2025

Inspection By: APCD Quality Assurance Staff

Site Approval Status: Site and monitors meet all design criteria for the monitoring network and are in compliance with 40 CFR Part 58 Appendices A, C, D, and E.



Figure 45: Watson Lane Air Monitoring Shelter

The monitoring site is a stationary equipment shelter located on the grounds of the former Watson Lane Elementary School in Louisville, Kentucky. The site is situated in the southwestern portion of Louisville and is located approximately 1.5 km to the northeast of the LG&E Mill Creek Power Plant. This site serves as the maximum concentration site for Sulfur Dioxide, provides representative measurements of PM_{2.5}, and also serves as a downwind representation of ozone from the urban core under northeasterly flows.

Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards and to provide pollution levels for daily index reporting.

Quality Assurance Status:

All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Table 25: Watson Lane Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.1	SLAMS AQI	UV photometry	Continuously March 1- October 31
AEM Sulfur Dioxide	3.0	SLAMS AQI	UV fluorescence	Continuously
FEM PM _{2.5} Continuous	4.4	SLAMS AQI	Broadband Spectroscopy	Continuously
Wind Speed and Direction (Meteorological)	5.8	Other	AQM grade instruments for wind speed and wind direction.	Continuously

Area Representativeness:

This site represents population exposure on a neighborhood scale for ozone and particulates. This site also represents maximum concentrations on a neighborhood scale for SO₂.

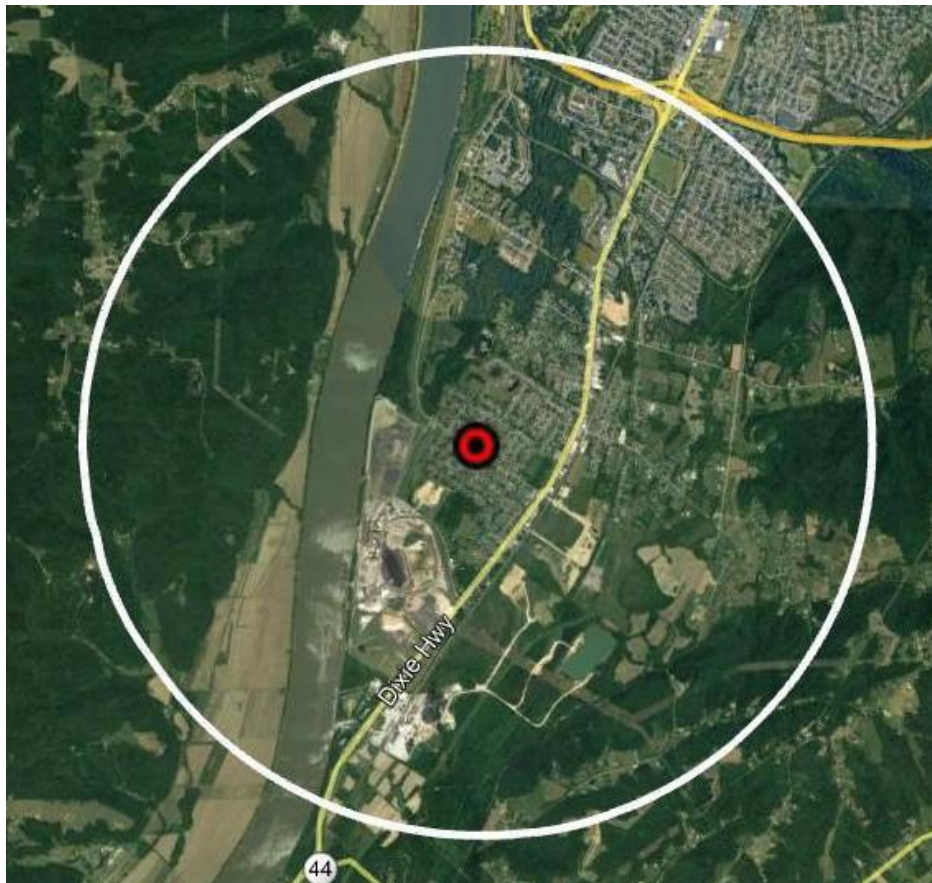


Figure 46: Watson Lane Neighborhood Scale

Cannons Lane

CSA/MSA: Louisville/Jefferson County--Elizabethtown, KY-IN CSA; Louisville/Jefferson County, KY-IN MSA

401 KAR 50:020 Air Quality Region: Louisville Interstate (078)

Site Name: Cannons Lane (CLAMS)

AQS Site ID: 21-111-0067

Location: Bowman Field, 2730 Cannons Lane, Louisville, KY 40204

County: Jefferson

GPS Coordinates: 38.2288760, -85.654520 (NAD 83)

Date Established: July 1, 2008

Inspection Date: October 15 & 22, 2025

Inspection By: APCD Quality Assurance Staff

Site Approval Status: EPA SLAMS approval on December 22, 2008; EPA NCore approval on October 30, 2009. Aside from the damaged Met tower, site and monitors meet all design criteria for the monitoring network and are in compliance with 40 CFR Part 58 Appendices A, C, D, and E.



Figure 47: Cannons Lane Air Monitoring Site

The site is located in the northeast quadrant of Jefferson County, about 9 km from the urban core of Metro Louisville. The site is adjacent to the Bowman Field Airport and the property is leased by LMAPCD. The site was originally established as a SLAMS site in 2008, became an NCore site in 2009, and became a PAMS site in 2021. In December 2010, a solar electric array was installed which was designed to produce approximately 6,300 kWh of electricity per year.

Table 26: Cannons Lane Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
Carbon Monoxide	3.8	NCore SLAMS AQI	Automated Reference Method utilizing trace level non-dispersive infrared analysis.	Continuously
Nitrogen Dioxide (NO ₂)	3.8	NCore SLAMS PAMS AQI	Cavity Attenuated Phase Shift Spectrometry	Continuously
Total Reactive Nitrogen (NO/NO _y)	3.5	NCore PAMS	Automated method utilizing trace level chemiluminescence analysis.	Continuously
AEM Ozone	3.8	NCore PAMS SLAMS AQI Maximum O ₃	UV photometry	Continuously
Sulfur Dioxide	3.8	NCore SLAMS AQI	Automated Equivalent Method utilizing trace level UV fluorescence analysis.	Continuously
FEM PM _{2.5} and PM ₁₀ Continuous -PM _{Coarse} (PM ₁₀ -PM _{2.5})	4.8	NCore SLAMS AQI	Broadband Spectroscopy	Continuously
PM _{2.5} Speciation	2.0	NCore CSN	Multi-Species manual collection method utilizing thermal optical ion chromatography, gravimetric, and X-ray fluorescence.	24-hours every third day
PM _{2.5} Carbon Speciation	2.2	NCore CSN	Multi-species manual collection method utilizing thermal optical and gravimetric analyses.	24-hours every third day
FRM PM _{2.5} Collocated	4.6	NCore SLAMS QA Collocated	Manual reference method utilizing gravimetric analysis	24-hours every third day
Volatile Organic Compounds	4.2	PAMS	Automatic gas chromatograph with flame ionization detection	Continuously
Carbonyls	4.2	PAMS	DNPH Cartridge using TO-11A analysis	Three 8-hour samples every third day June 1—August 31
Wind Speed and Direction (Meteorological)	5.4	NCore PAMS	Air Quality Measurements approved instrumentation for wind speed, and wind direction.	Continuously
Temperature and RH (Meteorological)	2.6	NCore PAMS	Air Quality Measurements approved instrumentation for temperature and humidity.	Continuously
Barometric Pressure (Meteorological)	4.0	PAMS	Air Quality Measurements approved instrumentation for barometric pressure.	Continuously
Ceilometer (Meteorological)	4.0	PAMS	Pulsed diode laser light detection and ranging (LIDAR).	Continuously
Solar Radiation (Meteorological)	4.3	PAMS	Air Quality Measurements approved instrumentation for solar radiation.	Continuously
UV Solar (Meteorological)	4.4	PAMS	Air Quality Measurements approved instrumentation for UV Solar.	Continuously
Rain Gauge (Meteorological)	1.4	PAMS	Air Quality Measurements approved instrumentation for precipitation.	Continuously
Radiation	2.6	RadNet	RadNet fixed station air monitor, manual and automated methods	Continuously + 2 weekly filters

Monitoring Objective:

The NCore Network addresses the following monitoring objectives:

- timely reporting of data to the public through AIRNow, air quality forecasting, and other public reporting mechanisms
- support development of emission strategies through air quality model evaluation and other observational methods
- accountability of emission strategy progress through tracking long-term trends of criteria and non-criteria pollutants and their precursors
- support long-term health assessments that contribute to ongoing reviews of the National Ambient Air Quality Standards (NAAQS)
- compliance through establishing nonattainment/attainment areas by comparison with the NAAQS
- support multiple disciplines of scientific research, including public health, atmospheric, and ecological.

Quality Assurance Status:

All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:

The air monitoring equipment at the Cannon's Lane NCore station is specifically located at the urban and neighborhood scales. These scales are generally the most representative of the expected population exposures that occur throughout metropolitan areas.

Table 27: Spatial Scale for Cannons Lane Monitors

Pollutant	Spatial Scale	Comments
Ozone	Neighborhood	4 km radius
Carbon Monoxide	Neighborhood	4 km radius
Particulates	Neighborhood	4 km radius
NO _x /NO _y	Neighborhood and Urban	10 km radius
SO ₂	Urban	50 km radius
Radiation	Urban	50 km radius

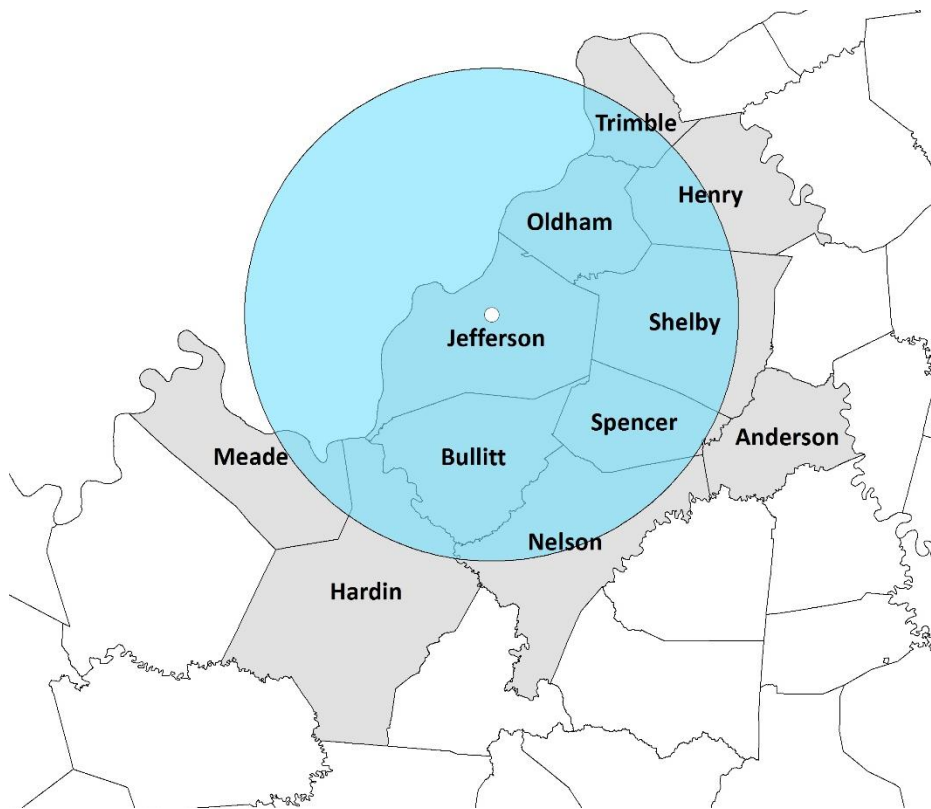


Figure 50: Cannons Lane Urban Scale

Durrett Lane

CSA/MSA: Louisville/Jefferson County--Elizabethtown, KY-IN CSA; Louisville/Jefferson County, KY-IN MSA

401 KAR 50:020 Air Quality Region: Louisville Interstate (078)

Site Name: Durrett Lane (Near Road)

AQS Site ID: 21-111-0075

Location: 1517 Durrett Lane, Louisville, KY 40213

County: Jefferson

GPS Coordinates: 38.193632, -85.711950 (NAD 83)

Date Established: January 1, 2014

Inspection Date: October 21, 2025

Inspection By: APCD Quality Assurance Staff

Site Approval Status: Site and monitors meet all design criteria for the monitoring network and are in compliance with 40 CFR Part 58 Appendices A, C, D, and E.



Figure 51: Durrett Lane Air Monitoring Site

On February 9, 2010, the EPA released a new NO₂ Final Rule and a new set of monitoring requirements. Under the new monitoring requirements, State and Local agencies are required to establish near-road monitoring stations based upon core based statistical area (CBSA) populations and traffic metrics. The Louisville/Jefferson County, KY-IN MSA is required to establish not only a near-road nitrogen dioxide monitor, but also near-road PM_{2.5} and carbon monoxide monitors. In response, LMAPCD has established a multi-pollutant near-road site that includes instrumentation to measure nitrogen dioxide, PM_{2.5}, carbon monoxide, and meteorology. The specific site was chosen following the development of a formal site proposal and a 30-day comment public period in April 2013. Data collection at the site began in January 2014. More information regarding near-road monitoring can be found in the appendices of this Annual Network Plan.

Monitoring Objective:

The monitoring objective will be to determine compliance with National Ambient Air Quality Standards for nitrogen dioxide, carbon monoxide, and particulate matter.

Quality Assurance Status:

All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Table 28: Durrett Lane Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Nitrogen Dioxide (NO ₂)	3.4	SLAMS AQI	Cavity Attenuated Phase Shift Spectroscopy	Continuously
Carbon Monoxide	3.4	SLAMS AQI	Automated Reference Method utilizing trace-level non-dispersive infrared analysis	Continuously
FEM PM _{2.5} Continuous	4.2	SLAMS AQI	Broadband Spectroscopy	Continuously
FRM PM _{2.5} Collocated	4.3	SLAMS	Manual Reference Method utilizing gravi-metric analysis	24-hours every third day
Wind Speed and Direction	10.0	Other	AQM grade instruments for wind speed and wind direction	Continuously
Temperature and RH	2.1	Other	AQM grade instruments for temperature and humidity	Continuously
Black Carbon	4.0	SPM	Wavelength Dual Spot Optical Absorption	Continuously

Area Representativeness:

The site represents maximum concentrations for CO and NO₂ on a micro scale and PM_{2.5} on a middle scale

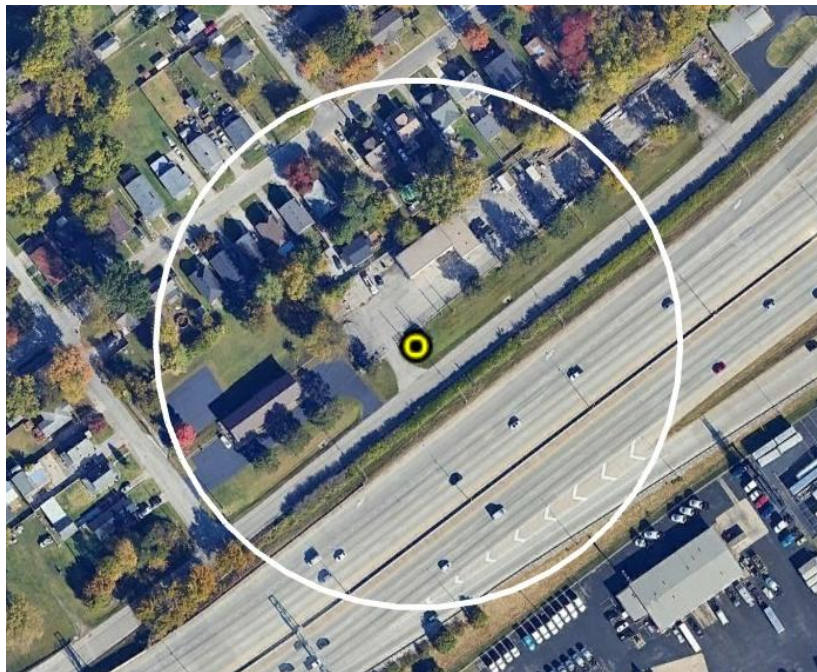


Figure 52: Durrett Lane Micro Scale

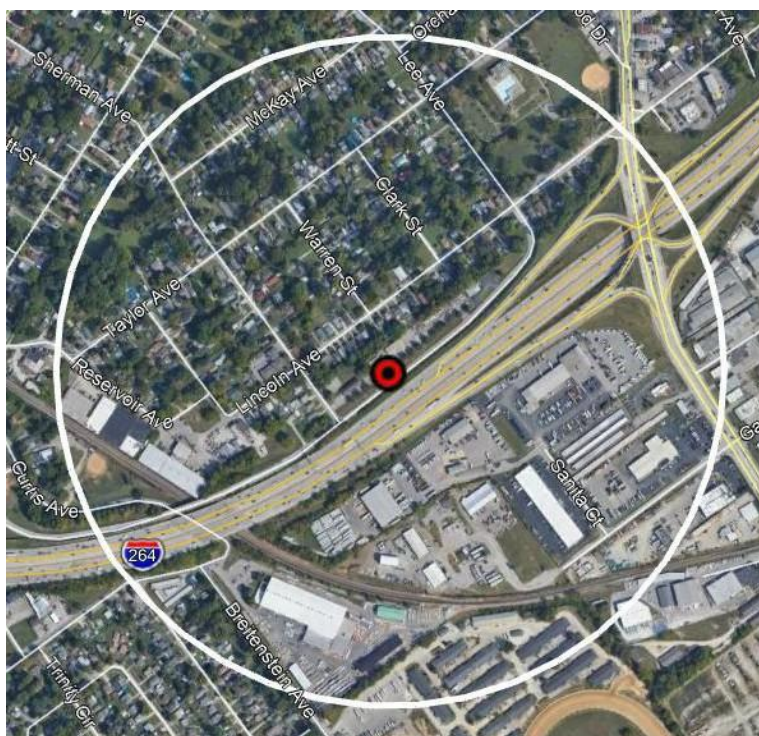


Figure 53: Durrett Lane Middle Scale

Carrithers Middle School

CSA/MSA: Louisville/Jefferson County--Elizabethtown, KY-IN CSA; Louisville/Jefferson County, KY-IN MSA

401 KAR 50:020 Air Quality Region: Louisville Interstate (078)

Site Name: Carrithers Middle School

AQS Site ID: 21-111-0080

Location: 4320 Billtown Road, Louisville, KY 40291

County: Jefferson

GPS Coordinates: 38.182435, -85.574361 (WGS)

Date Established: January 9, 2018

Inspection Date: October 14, 2025

Inspection By: APCD Quality Assurance Staff

Site Approval Status: Site and monitors meet all design criteria for the monitoring network and are in compliance with 40 CFR Part 58 Appendices A, C, D, and E.



Figure 54: Carrithers Middle School Air Monitoring Shelter

Due to Jefferson County Public School's plan for significant modification to the Bates Elementary property, the Bates site was retired in early 2018. A new site was established on the grounds of Carrithers Middle School, which is located three miles to the north of the Bates Elementary School site. The instrumentation from Bates was transferred to Carrithers and the new site became operational on 1/9/2018.

Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards and to provide pollution levels for daily index reporting.

Quality Assurance Status:

All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Table 29: Carrithers Middle School Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.6	SLAMS AQI	UV Photometry	Continuously March 1- October 31
FEM PM _{2.5} Continuous	4.4	SLAMS AQI	Broadband Spectroscopy	Continuously
Wind Speed and Direction (Meteorological)	6.0	Other	AQM grade instruments for wind speed and wind direction	Continuously
Temperature and RH (Meteorological)	4.2	Other	AQM grade instruments for temperature and humidity	Continuously

Area Representativeness:

This site represents population exposure on a neighborhood scale for ozone and fine particulates.

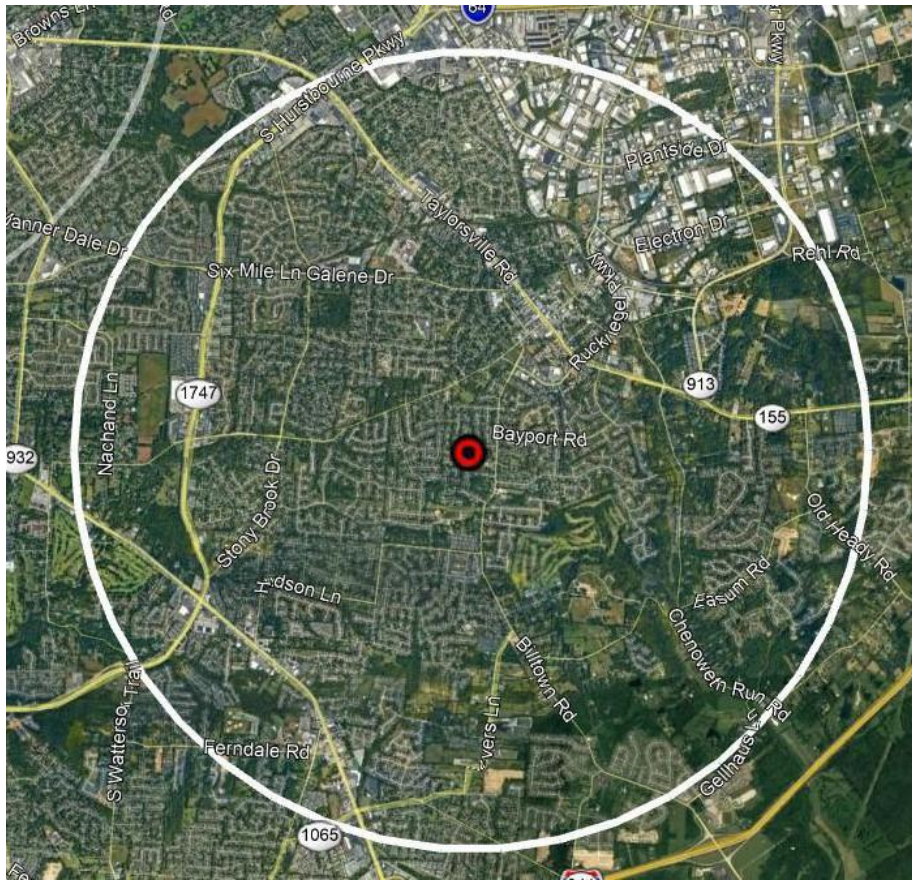


Figure 55: Carrithers Middle School Neighborhood Scale

Algonquin Parkway

CSA/MSA: Louisville/Jefferson County--Elizabethtown, KY-IN CSA; Louisville/Jefferson County, KY-IN MSA

401 KAR 50:020 Air Quality Region: Louisville Interstate (078)

Site Name: Algonquin Parkway

AQS Site ID: 21-111-1041

Location: 4201 Algonquin Parkway, Louisville, KY 40211

County: Jefferson

GPS Coordinates: 38.23158, -85.82675 (NAD 83)

Date Established: April 13, 1978

Inspection Date: October 13, 2025

Inspection By: APCD Quality Assurance Staff

Site Approval Status: Site and monitor meet all design criteria for the monitoring network and are in compliance with 40 CFR Part 58 Appendices A, C, D, and E.



Figure 56: Algonquin Parkway Air Monitoring Shelter

The monitoring site is a stationary equipment shelter located on the grounds of the Firearms Training Center in Louisville, Kentucky. The site is situated in West Louisville and is located directly to the northeast of the Rubbertown industrial area. LMAPCD replaced the existing shelter with a new, larger shelter in September, 2017 to house a continuous Toxics Monitor (Auto GC) and to accommodate additional instruments that were transferred from the nearby Southwick Community Center site (now retired). Additional particulate and gaseous instruments have been installed at the Algonquin Parkway site since 2017, which has allowed for a better characterization of air quality and meteorological conditions in West Louisville. The name of this site was changed from Firearms Training to Algonquin Parkway in 2020.

Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards, to provide pollution levels for daily index reporting, and to characterize VOC concentrations.

Quality Assurance Status:

All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Table 30: Algonquin Parkway Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.6	SLAMS AQI	UV Photometry	Continuously March 1- October 31
FEM PM _{2.5} and PM ₁₀ Continuous	4.2	SLAMS AQI	Broadband Spectroscopy	Continuously
AEM Sulfur Dioxide	3.8	SLAMS AQI	UV Fluorescence	Continuously
Volatile Organic Carbon	3.7	SPM	Automatic gas chromatograph with flame ionization detection	Continuously
Hydrogen Sulfide	3.7	SPM	UV Fluorescence	Continuously
Wind Speed and Direction (Meteorological)	9.0	SLAMS	AQM grade instruments for wind speed and wind direction	Continuously
Temperature and RH (Meteorological)	1.9	SLAMS	AQM grade instruments for temperature and humidity	Continuously

Area Representativeness:

This site represents population exposure on a neighborhood scale for particulates, ozone, and sulfur dioxide.

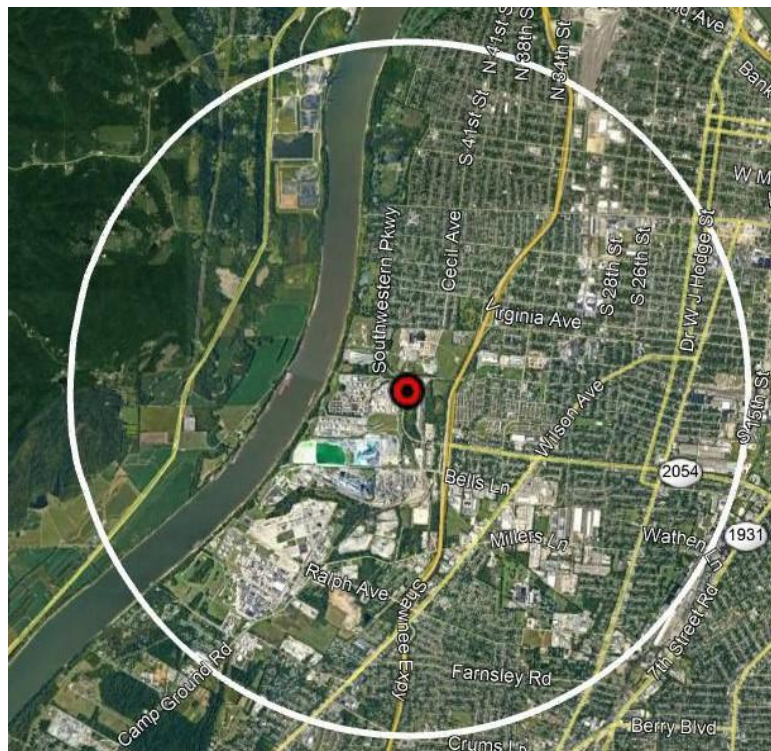


Figure 57: Algonquin Parkway Neighborhood Scale

Owensboro, KY

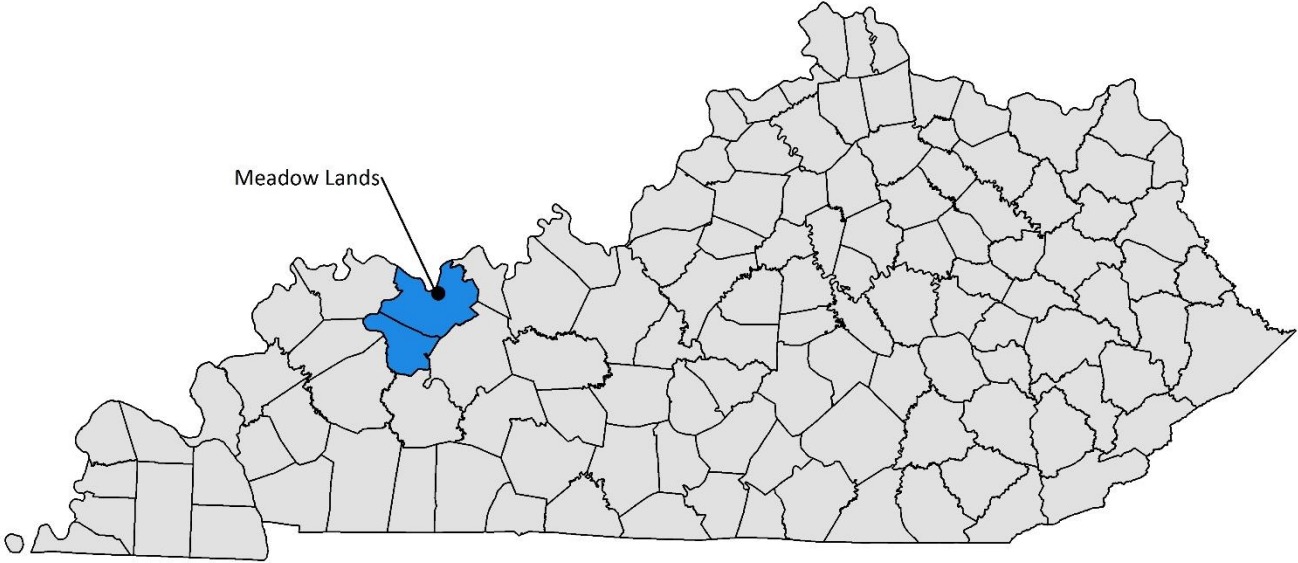


Figure 58: Owensboro, KY Sites

Table 31: Owensboro, KY Monitors

Site Name County AQS ID	PM _{2.5}	PM _{2.5} Continuous	PM ₁₀	PM ₁₀ Continuous	SO ₂	NO ₂	NO _x	O ₃	CO	Pb	VOC	Carbonyl	PAH	PM _{2.5} Speciation	Black Carbon	RadNet	Met
Meadow Lands Davies 21-059-0015		1			1	1		1									
Total		1			1	1		1									

Meadow Lands

CSA/MSA: Owensboro, KY MSA

401 KAR 50:020 Air Quality Region: Evansville-Owensboro-Henderson Interstate (077)

Site Name: Meadow Lands (Owensboro)

AQS Site ID: 21-059-0015

Location: Meadow Lands Elementary School, 3500 Hayden Rd, Owensboro, KY 42303

County: Daviess

GPS Coordinates: 37.7716709, -87.0558193 (NAD 83)

Date Established: November 21, 2024

Inspection Date: October 1, 2025

Inspection By: KDAQ Personnel

Site Approval Status: Site and monitors meet all design criteria for the monitoring network.



Figure 59: Meadow Lands Air Monitoring Shelter

The monitoring site is a stationary equipment shelter located on the grounds of Meadow Lands Elementary School. The sample inlets are 131 meters from the nearest road. The site meets requirements established by 40 CFR 58, Appendices A, C, D, E, and G. This site was previously Owensboro Primary (21-059-0005), which had to be relocated due to land development plans.

Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards. It is also the maximum PM_{2.5} and ozone site for the MSA.

Quality Assurance Status:

All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Table 32: Meadow Lands Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	4.61	SLAMS AQI Maximum O ₃	UV photometry	Continuously March 1- October 31
AEM Sulfur Dioxide	4.62	SLAMS	UV fluorescence	Continuously
AEM Nitrogen Dioxide (NO ₂ , NO, NO _x)	4.58	SLAMS	Chemiluminescence	Continuously
FEM PM _{2.5} Continuous	4.64	SLAMS AQI Maximum PM _{2.5}	Broadband Spectroscopy	Continuously

Area Representativeness:

This site represents population exposure on a neighborhood scale for particulates, ozone, and sulfur dioxide. This site also represents population exposure on an urban scale for nitrogen dioxide.

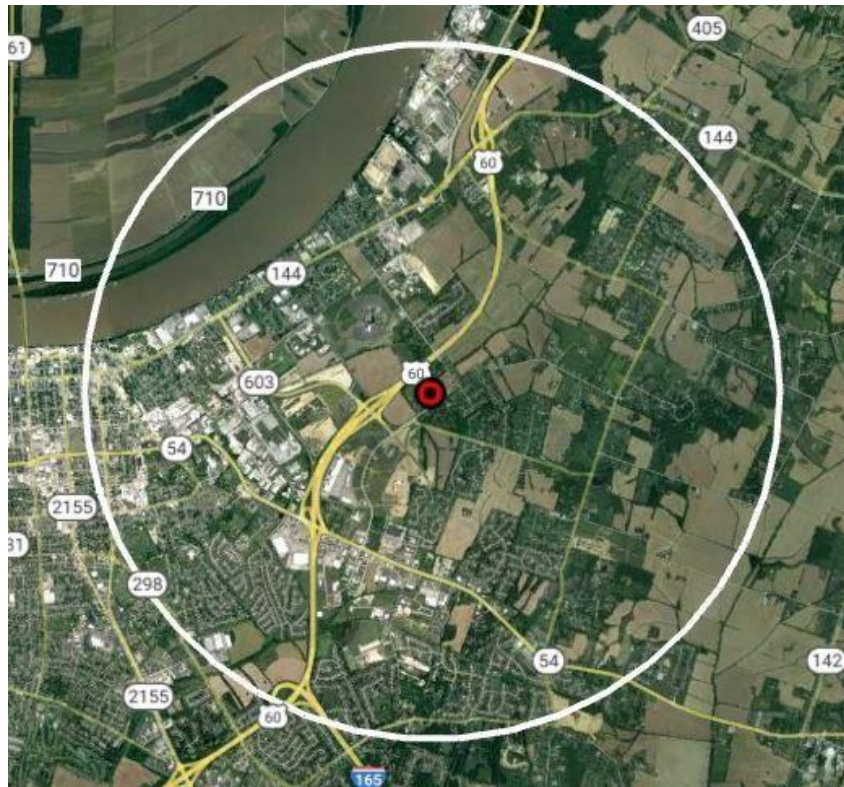


Figure 60: Meadow Lands Neighborhood Scale

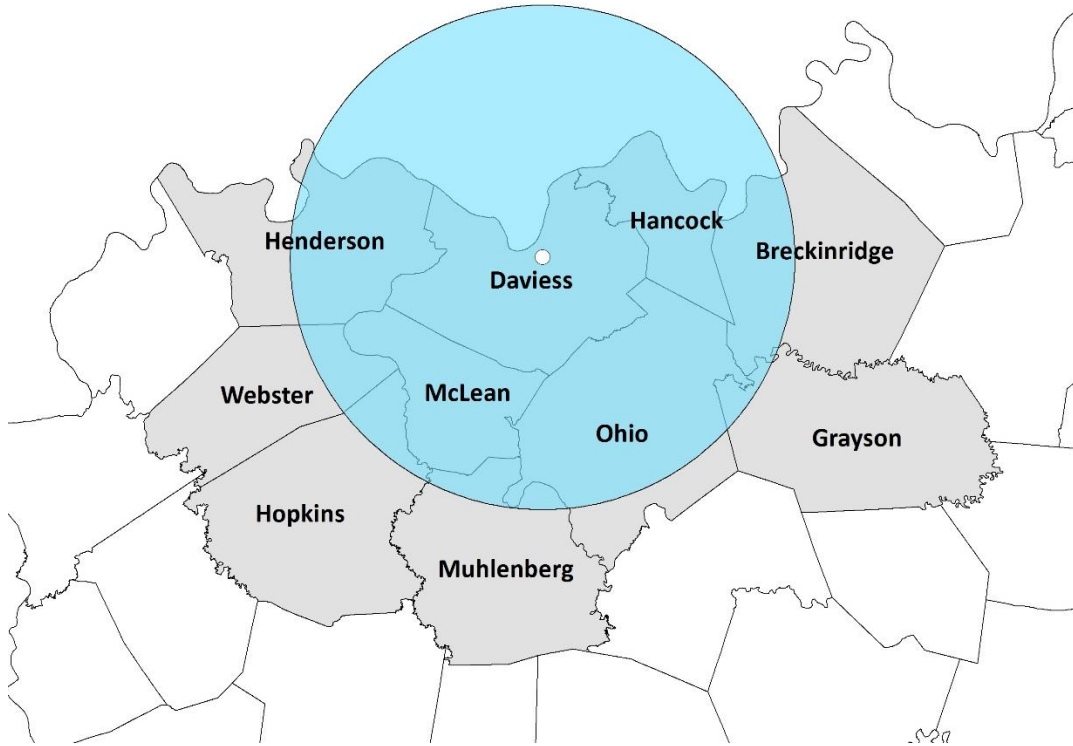


Figure 61: Meadow Lands Urban Scale

Paducah, KY-IL

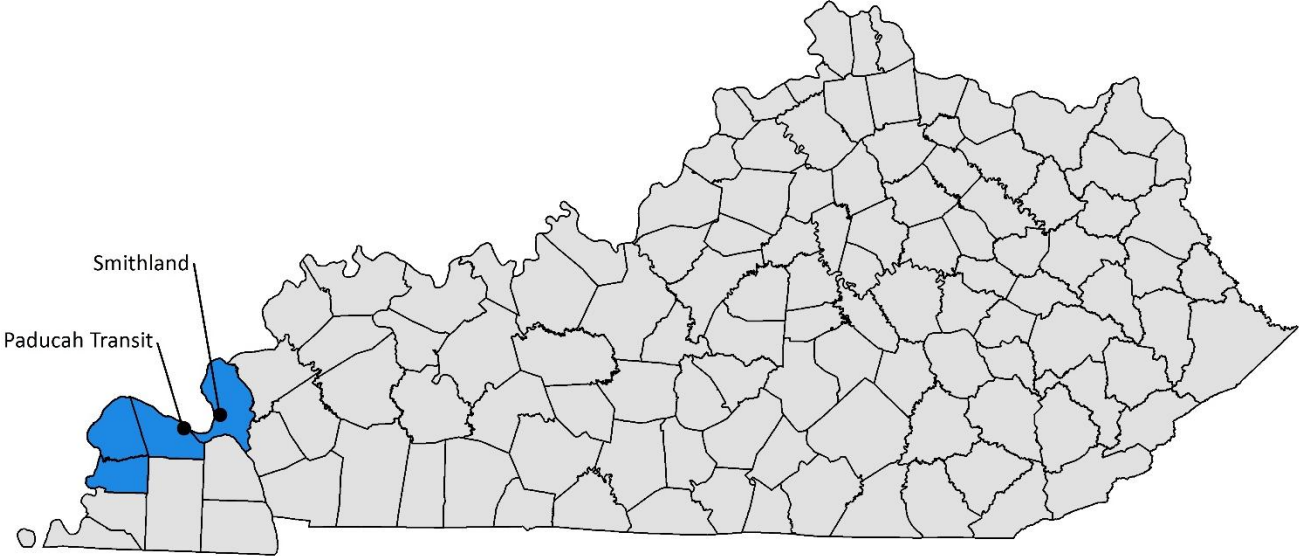


Figure 62: Kentucky Sites in the Paducah, KY-IL MSA

Table 33: Kentucky Monitors in the Paducah, KY-IL MSA

Site Name County AQS ID	PM _{2.5}	PM _{2.5} Continuous	PM ₁₀	PM ₁₀ Continuous	SO ₂	NO ₂	NO _y	O ₃	CO	Pb	VOC	Carbonyl	PAH	PM _{2.5} Speciation	Black Carbon	RadNet	Met
Smithland Livingston 21-139-0003								1								1	
Paducah Transit McCracken 21-145-1027		1			1	1		1									
Total		1			1	1		2								1	

Smithland

CSA/MSA: Paducah-Mayfield, KY-IL CSA; Paducah, KY-IL MSA

401 KAR 50:020 Air Quality Region: Paducah-Cairo Interstate (072)

Site Name: Smithland

AQS Site ID: 21-139-0003

Location: Livingston County Road Dept., 730 State Drive, Smithland, KY 42081

County: Livingston

GPS Coordinates: 37.155417, -88.393972 (NAD 83)

Date Established: April 1, 1988

Inspection Date: November 14, 2025

Inspection By: KDAQ Personnel

Site Approval Status: Site and monitors meet all design criteria for the monitoring network.



Figure 63: Smithland Air Monitoring Site

The monitoring site is a stationary equipment shelter located on the grounds of the Livingston County Road Dept. facility in Smithland, Kentucky. The sample inlets are 136 meters from the nearest road. Upon inspection, the sample lines and monitors were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices A, C, D, E, and G.

Monitoring Objective:

The monitoring objective is to determine compliance with National Ambient Air Quality Standards.

Quality Assurance Status:

All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Table 34: Smithland Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.87	SLAMS AQI Maximum O ₃	UV photometry	Continuously March 1- October 31
Radiation	1.34	RadNet	RadNet fixed stationary monitor, manual and automated methods	Continuously & 2 weekly filters

Area Representativeness:

This site represents maximum concentrations on an urban scale.

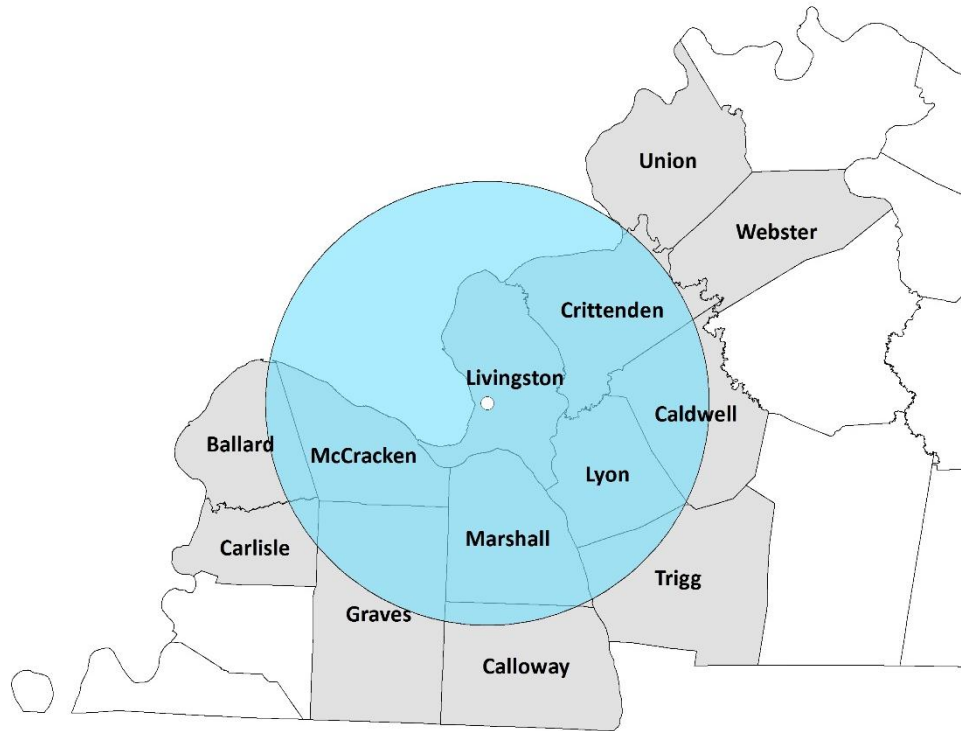


Figure 64: Smithland Urban Scale

Paducah Transit

CSA/MSA: Paducah-Mayfield, KY-IL CSA; Paducah, KY-IL MSA

401 KAR 50:020 Air Quality Region: Paducah-Cairo Interstate (072)

Site Name: Paducah Transit

AQS Site ID: 21-145-1027

Location: 920 Harrison Street, Paducah, KY 42001

County: McCracken

GPS Coordinates: 37.08727, -88.60801 (NAD 83)

Date Established: January 10, 2023

Inspection Date: November 14, 2025

Inspection By: KDAQ Personnel

Site Approval Status: Site and monitors meet design criteria for the monitoring network.



Figure 65: Paducah Transit Air Monitoring Shelter

The monitoring site is a stationary equipment shelter located on the grounds of Paducah Area Transit System in Paducah, Kentucky. The sample inlets are 30 meters from the nearest road. The site meets the requirements established by 40 CFR 58, Appendices A, C, D, E, and G. This site was formally Jackson Purchase (21-145-1024). The property owners were expanding operations and the site had to be relocated as quickly as possible. Paducah Transit is 2.8 miles NW of the Jackson Purchase site.

Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards. It is also the maximum PM_{2.5} site for the MSA. While not required for the CBSA, the site also provides pollutant levels for daily air quality index reporting.

Quality Assurance Status:

All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Table 35: Paducah Transit Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	4.11	SLAMS AQI	UV photometry	Continuously March 1- October 31
AEM Sulfur Dioxide	4.28	SLAMS	UV fluorescence	Continuously
AEM Nitrogen Dioxide (NO ₂ , NO, NO _x)	4.27	SLAMS	Chemiluminescence	Continuously
FEM PM _{2.5} Continuous	4.77	SLAMS AQI Maximum PM _{2.5}	Broadband Spectroscopy	Continuously

Area Representativeness:

This site represents population exposure on a neighborhood scale for ozone, particulates, and sulfur dioxide. This site also represents population exposure on an urban scale for nitrogen dioxide.

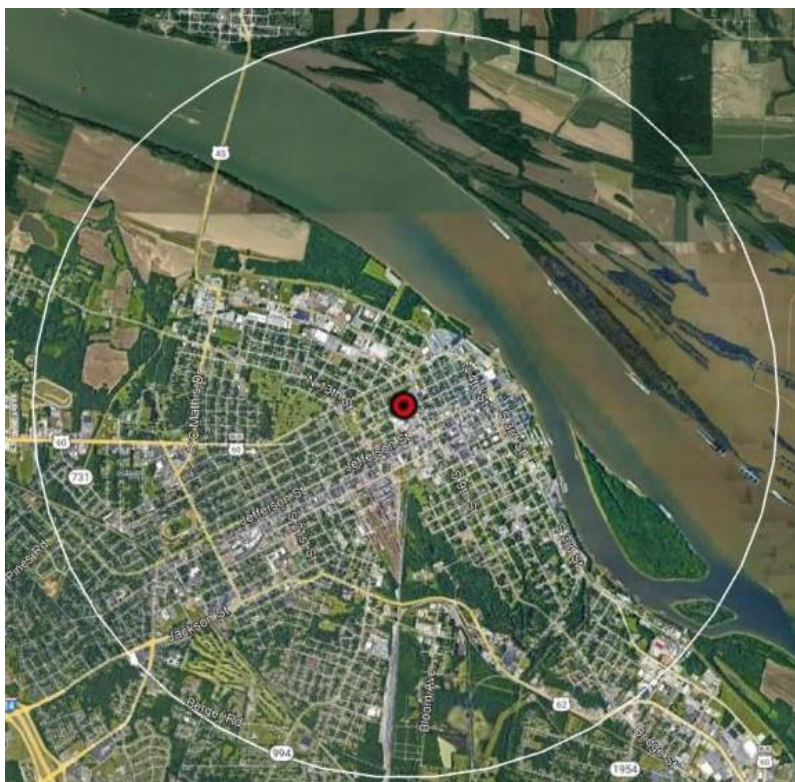


Figure 66: Paducah Transit Neighborhood Scale

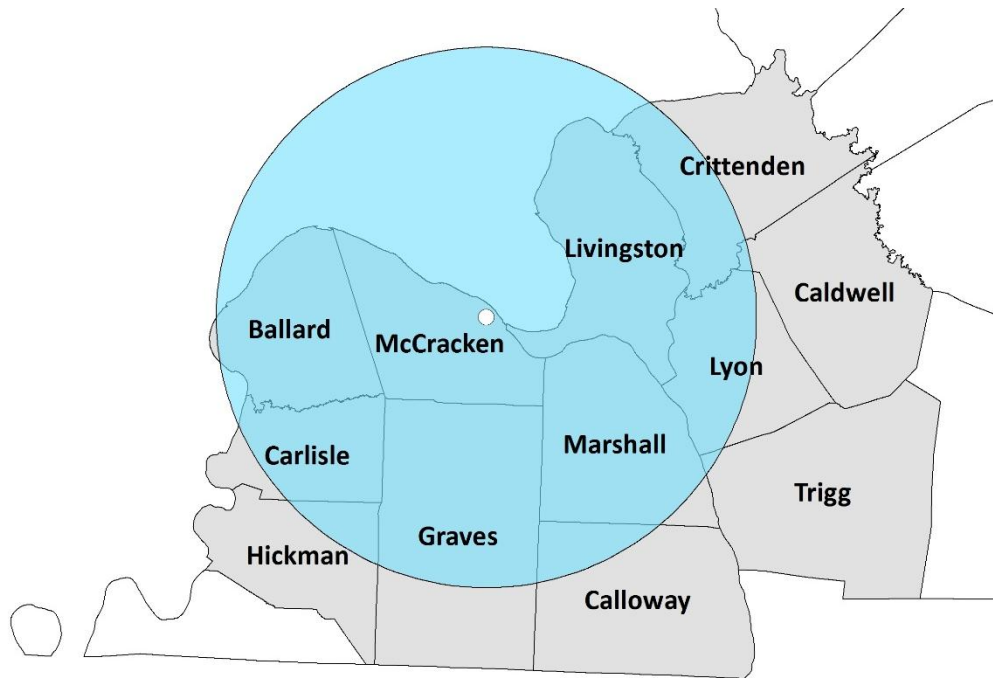


Figure 67: Paducah Transit Urban Scale

Micropolitan Statistical Areas

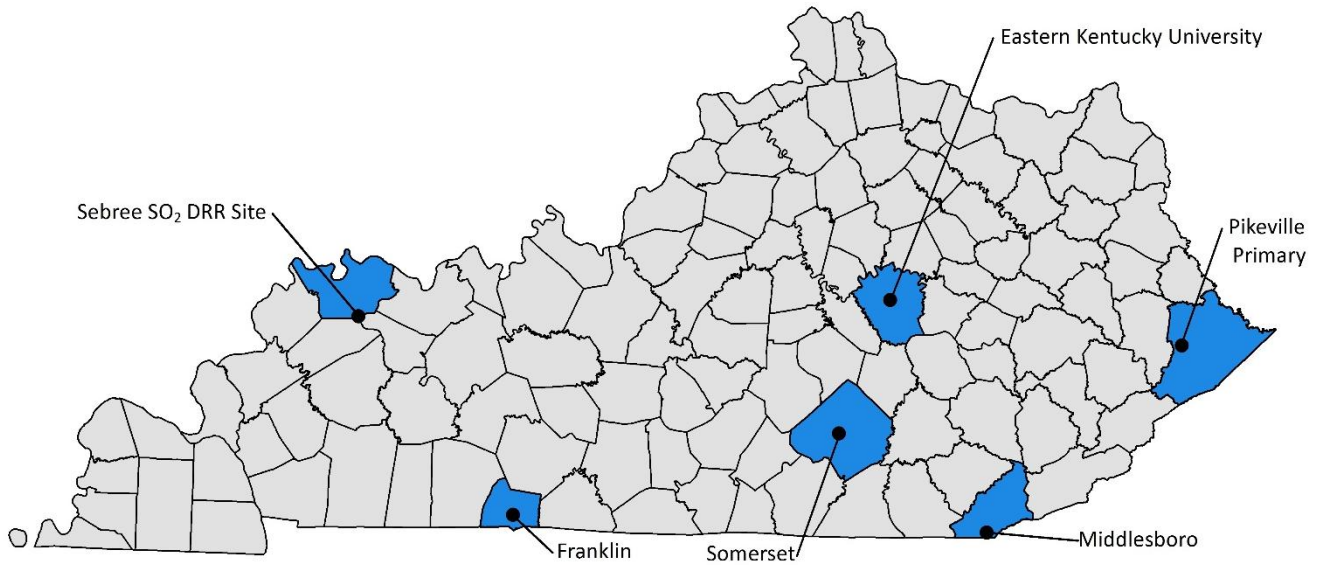


Figure 68: Kentucky Micropolitan Monitoring Sites

Table 36: Kentucky Micropolitan Monitors

Site Name County AQS ID	PM _{2.5}	PM _{2.5} Continuous	PM ₁₀	PM ₁₀ Continuous	SO ₂	NO ₂	NO _x	O ₃	CO	Pb	VOC	Carbonyl	PAH	PM _{2.5} Speciation	Black Carbon	RadNet	Met
Middlesboro Bell 21-103-0002		1						1									
Sebree SO ₂ DRR Henderson 21-101-1011					1												
Eastern Kentucky University Madison 21-151-0005										2							
Pikeville Primary Pike 21-195-0002		1						1									
Somerset Pulaski 21-199-0003		1						1									
Franklin Simpson 21-213-0004								1									
Total		3			1			4		2							

Middlesboro

CSA/MSA: Middlesborough-Corbin, KY CSA; Middlesborough, KY Micropolitan Statistical Area

401 KAR 50:020 Air Quality Region: Appalachian Intrastate (101)

Site Name: Middlesboro

AQS Site ID: 21-013-0002

Location: Middlesboro Airport, 1420 Dorchester Avenue, Middlesboro, KY 40965

County: Bell

GPS Coordinates: 36.608475, -83.736939 (NAD 83)

Date Established: February 14, 1992

Inspection Date: November 6, 2025

Inspection By: KDAQ Personnel

Site Approval Status: Site and monitors meet all design criteria for the monitoring network.



Figure 69: Middlesboro Air Monitoring Shelter

The monitoring site is a stationary equipment shelter located on the grounds of the Middlesboro Airport in Middlesboro, Kentucky. The sample inlets are 96 meters from the nearest road. Upon inspection the sample lines and monitors were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices A, C, D, E, and G.

Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards and to provide information on the transport of ozone into the region.

Quality Assurance Status:

All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Table 37: Middlesboro Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	4.05	SLAMS AQI	UV photometry	Continuously March 1- October 31
FEM PM _{2.5} Continuous	4.93	SLAMS AQI	Broadband Spectroscopy	Continuously

Area Representativeness:

The site represents population exposure on a neighborhood scale for particulates and ozone.

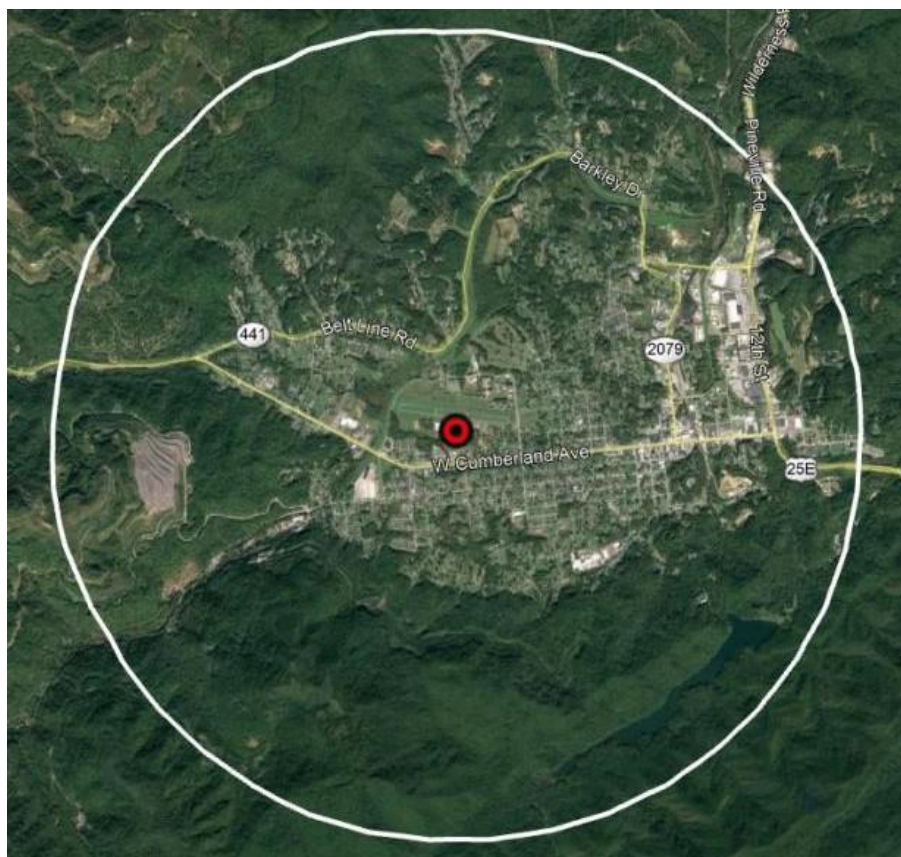


Figure 70: Middlesboro Neighborhood Scale

Sebree SO₂ DRR Site

CSA/MSA: Evansville-Henderson, IN-KY CSA; Henderson, KY Micropolitan Statistical Area

401 KAR 50:020 Air Quality Region: Evansville-Owensboro-Henderson Interstate (077)

Site Name: Sebree SO₂ DRR Site

AQS Site ID: 21-101-1011

Location: Alcan Aluminum Road

County: Henderson

GPS Coordinates: 37.654391, -87.511424 (NAD 83)

Date Established: January 1, 2017

Inspection Date: October 1, 2025

Inspection By: KDAQ Personnel

Site Approval Status: Site and monitor meet design criteria for the monitoring network.



Figure 71: Sebree Air Monitoring Shelter

On August 10, 2015, the EPA finalized requirements in 40 CFR 51, Subpart BB requiring air pollution control agencies to monitor ambient sulfur dioxide (SO₂) concentrations in areas with large sources of sulfur dioxide emissions in order to assist in the implementation for the one-hour SO₂ National Ambient Air Quality Standard (NAAQS). Known as the “Data Requirements Rule (DRR),” this action established that, at a minimum, agencies must characterize air quality around sources that emit 2,000 tons per year (tpy) or more of sulfur dioxide. The site meets the requirements of 40 CFR 58, Appendices A, C, D, and E.

As allowed by the DRR, an ambient air monitoring site has been established near Sebree, Kentucky, to characterize maximum hourly sulfur dioxide concentrations in the immediate vicinity of the Big Rivers Electric Corporation and Century Aluminum Sebree, LLC facilities. The site is located at the intersection of Alcan Aluminum Road and a facility coal-truck access road, approximately 1/2 mile south of State Route 2678.

Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards.

Quality Assurance Status:

All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Table 38: Sebree Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Sulfur Dioxide	3.82	SLAMS	UV fluorescence	Continuously

Area Representativeness:

This site represents population exposure on a neighborhood scale for sulfur dioxide.

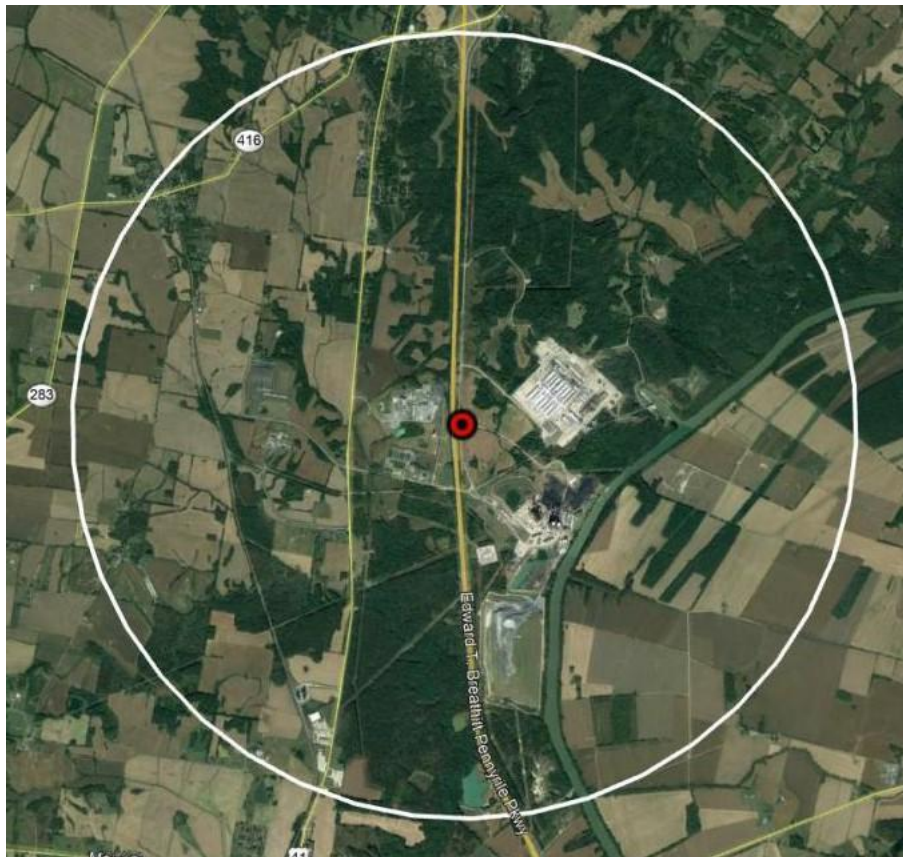


Figure 72: Sebree Neighborhood Scale

Eastern Kentucky University

CSA/MSA: Lexington-Fayette--Richmond--Frankfort KY CSA; Richmond-Berea, KY Micropolitan Statistical Area

401 KAR 50:020 Air Quality Region: Bluegrass Intrastate (102)

Site Name: Eastern Kentucky University (EKU)

AQS Site ID: 21-151-0005

Location: Eastern Kentucky University, Van Hoose Drive, Richmond, KY 40475

County: Madison

GPS Coordinates: 37.73636, -84.29167 (NAD 83)

Date Established: March 10, 2012

Inspection Date: September 3, 2025

Inspection By: KDAQ Personnel

Site Approval Status: The site scale is being modified and no longer meets road distance limits. A waiver request is included in Appendix K.



Figure 73: Eastern Kentucky University Air Monitoring Site

The site is located behind the Gentry Facilities Services building and is adjacent to Eastern Kentucky University's athletic fields. The sample inlets are approximately 3.0 meters from the nearest road. Upon inspection, the sample inlet and monitor were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices A, C, and D. The site is changing scale, thus does not meet road distance requirements for Appendix E. A waiver request is located in Appendix K of this document.

Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards.

Quality Assurance Status:

All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Table 39: Eastern Kentucky University Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
FRM Lead	2.21	SLAMS	High volume air sampler. Analysis via ICP-MS.	24-hours every sixth day
Collocated FRM Lead	2.22	SLAMS	High volume air sampler. Analysis via ICP-MS.	24-hours every twelfth day

Area Representativeness:

This site represents source impacts on a middle scale for lead.



Figure 74: Eastern Kentucky University Middle Scale

Pikeville Primary

CSA/MSA: Pikeville, KY Micropolitan Statistical Area

401 KAR 50:020 Air Quality Control Region: Appalachian Intrastate (101)

Site Name: Pikeville Primary

AQS Site ID: 21-195-0002

Location: KYTC District Office, 109 Loraine Street, Pikeville, KY 41501

County: Pike

GPS Coordinates: 37.482575, -82.535319 (NAD 83)

Date Established: May 1, 1994

Inspection Date: September 10, 2025

Inspection By: KDAQ Personnel

Site Approval Status: Site and monitors meet all design criteria for the monitoring network.



Figure 75: Pikeville Primary Air Monitoring Shelter

The monitoring site is a stationary equipment shelter located behind the KYTC District Office building in Pikeville, KY. The sample inlets are 96 meters from the nearest road. Upon inspection the sample lines and monitors were found to be in good condition. This site meets the requirements of 40 CFR 58, Appendices A, C, D, E, and G.

Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards. While not required, the site also provides pollutant levels for daily air quality index reporting.

Quality Assurance Status:

All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Table 40: Pikeville Primary Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.65	SLAMS AQI	UV photometry	Continuously March 1 – October 31
FEM PM _{2.5} Continuous	4.66	SLAMS AQI	Broadband Spectroscopy	Continuously

Area Representativeness:

The site represents population exposure on a neighborhood scale for particulates. This site also represents population exposure on an urban scale for ozone.

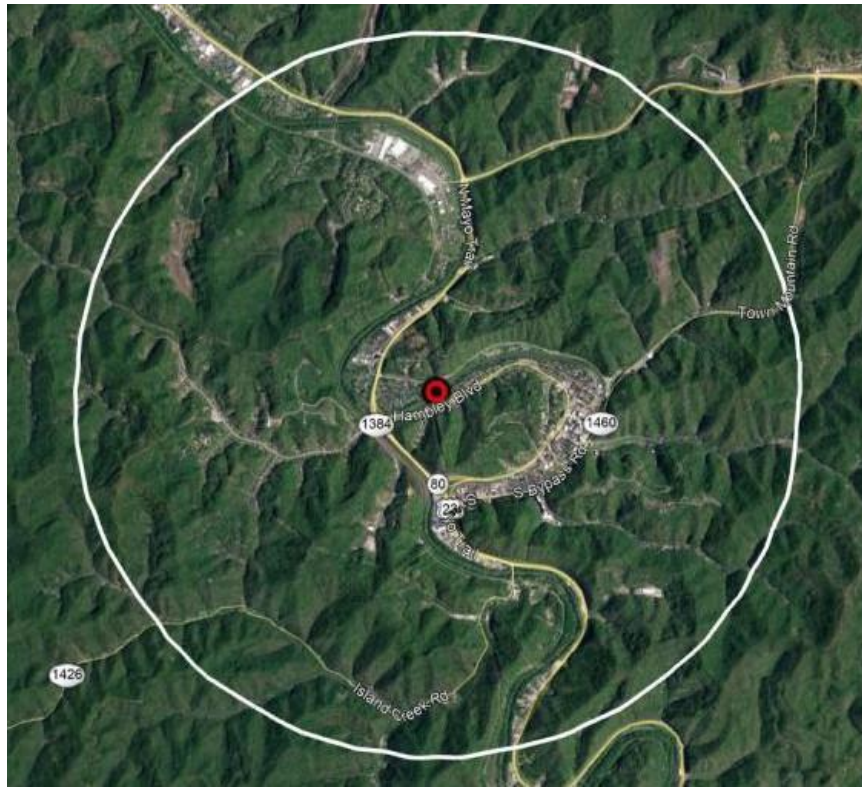


Figure 76: Pikeville Primary Neighborhood Scale

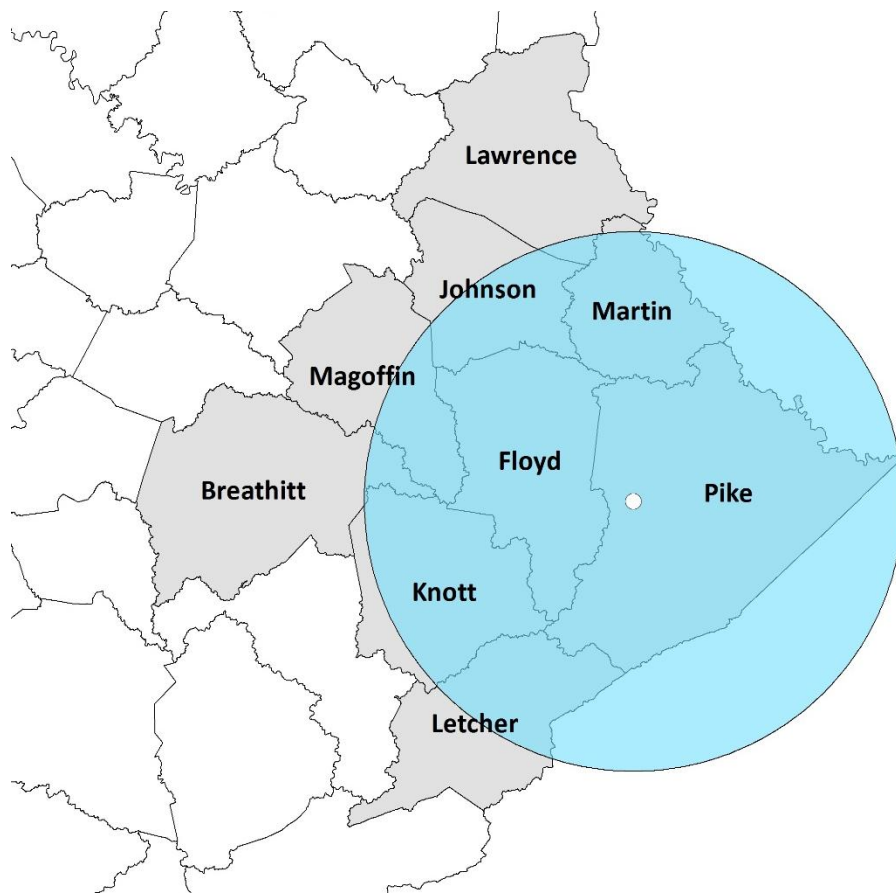


Figure 77: Pikeville Primary Urban Scale

Somerset

CSA/MSA: Somerset, KY Micropolitan Statistical Area

401 KAR 50:020 Air Quality Control Region: South Central Kentucky Intrastate (105)

Site Name: Somerset

AQS Site ID: 21-199-0003

Location: Somerset Gas Company Warehouse, 305 Clifty Street, Somerset, KY 42501

County: Pulaski

GPS Coordinates: 37.097952, -84.611534 (NAD 83)

Date Established: February 14, 1992

Inspection Date: November 6, 2025

Inspection By: KDAQ Personnel

Site Approval Status: A waiver request for road distance was approved in 2025. A reevaluation is pending after tree removal.



Figure 78: Somerset Air Monitoring Shelter

The monitoring site is a stationary equipment shelter located on the grounds of the Somerset Gas Company Warehouse on Clifty Street in Somerset, KY. The inlets are around 10 m from the closest road, requiring a waiver request for the site. It was renewed and approved with the 2025 Network Plan. The site was obstructed by trees, but one tree was removed in October 2025 and another on 4/30/26. The site is awaiting reassessment after tree removal, otherwise, the site meets the requirements of 40 CFR 58, Appendices A, C, D, E, and G.

Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards.

Quality Assurance Status:

All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Table 41: Somerset Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	4.41	SLAMS AQI	UV photometry	Continuously March 1 – October 31
FEM PM _{2.5} Continuous	4.76	SLAMS AQI	Broadband Spectroscopy	Continuously

Area Representativeness:

The site represents population exposure on an urban scale for ozone. This site also represents population exposure on a neighborhood scale for particulates.

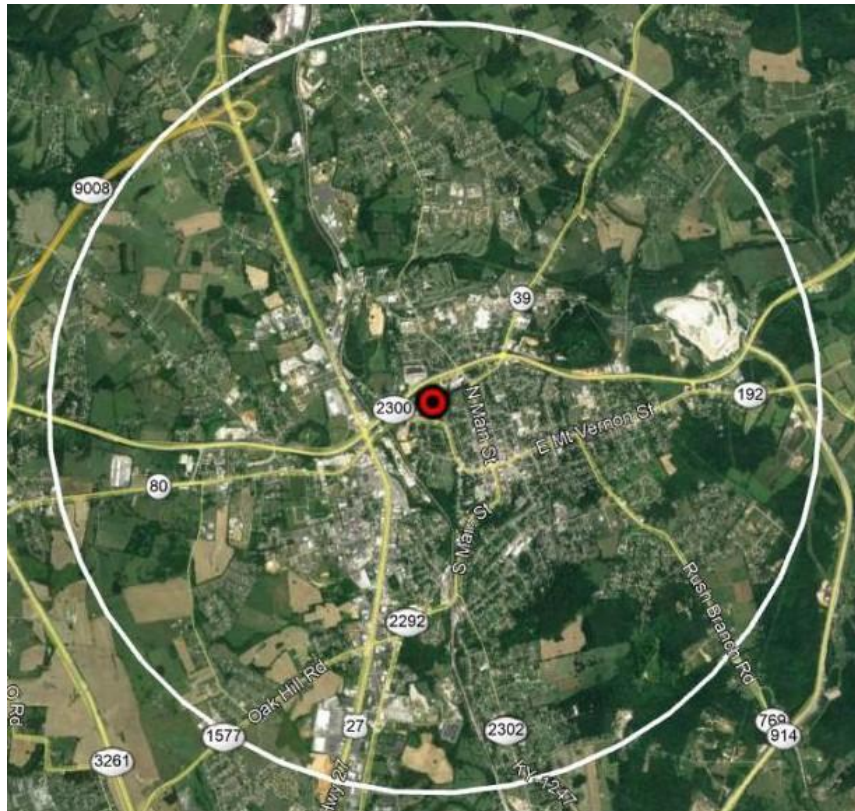


Figure 79: Somerset Neighborhood Scale



Figure 80: Somerset Urban Scale

Franklin

CSA/MSA: Bowling Green-Glasgow-Franklin, KY CSA, Franklin, KY Micropolitan Statistical Area

401 KAR 50:020 Air Quality Control Region: South Central Kentucky Intrastate (105)

Site Name: Franklin

AQS Site ID: 21-213-0004

Location: KYTC Maintenance Facility, 573 Harding Road (KY1008), Franklin, KY 42134

County: Simpson

GPS Coordinates: 36.708607, -86.566284 (NAD 83)

Date Established: June 19, 1991

Inspection Date: November 17, 2025

Inspection By: KDAQ Personnel

Site Approval Status: Site and monitors meet all design criteria for the monitoring network.



Figure 81: Franklin Air Monitoring Shelter

The monitoring site is a stationary equipment shelter located on the grounds of the KYTC Garage on Harding Road (KY1008) in Franklin, Kentucky. The sample inlet is 42.5 meters from the nearest road. Upon inspection, the sample line and monitor were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices A, C, D, E, and G.

Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards; to measure ozone levels upwind of Bowling Green; and to provide data on interstate ozone transport.

Quality Assurance Status:

All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Table 42: Franklin Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.92	SLAMS AQI	UV photometry	Continuously March 1 – October 31

Area Representativeness:

The site represents population exposure on an urban scale.

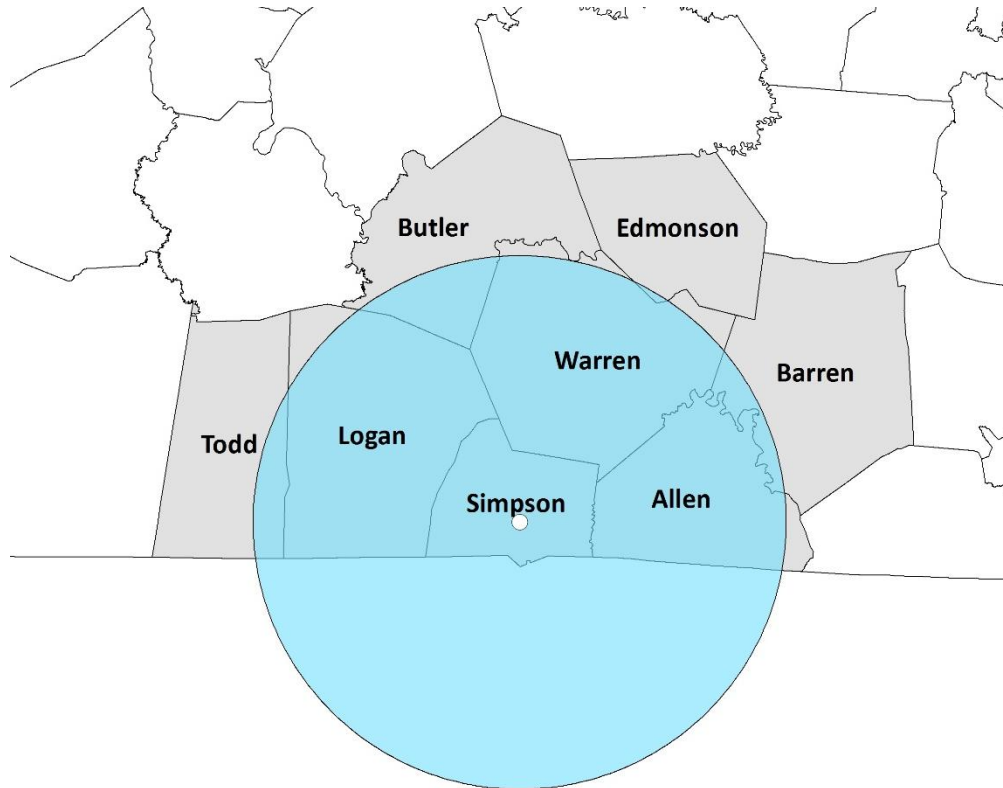


Figure 82: Franklin Urban Scale

Not in a Metropolitan or Micropolitan Statistical Area

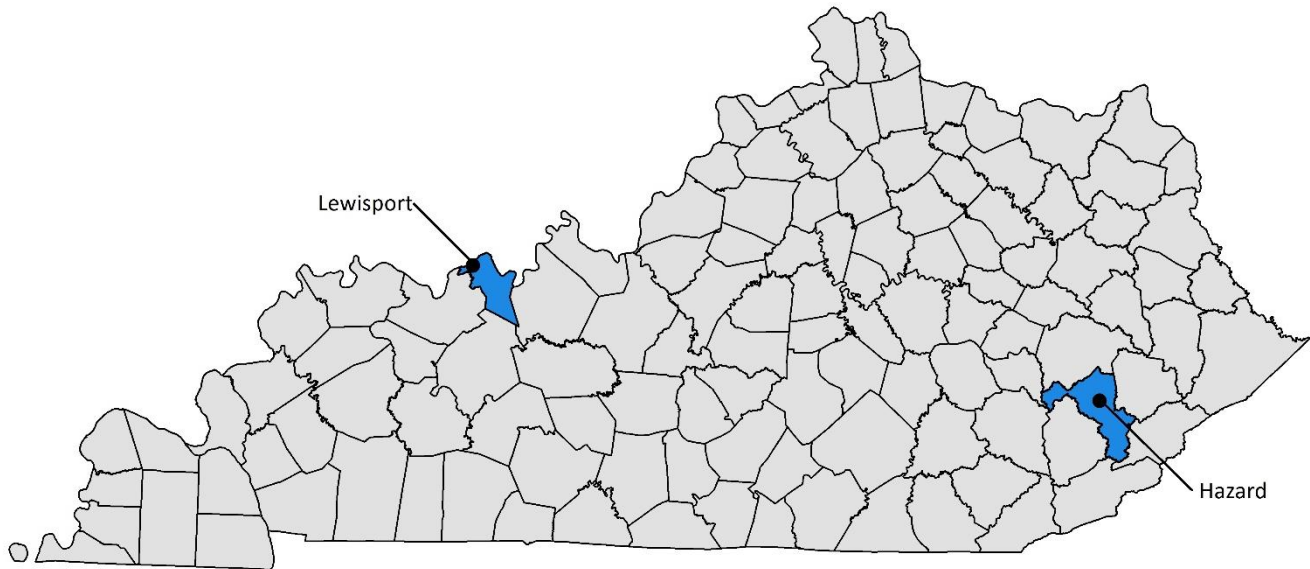


Figure 83: Kentucky sites not in a Metropolitan or Mircopolitian Statistical Area

Table 43: Kentucky Monitors not in a Metropolitan or Micropolitan Area

Site Name County AQS ID	PM _{2.5}	PM _{2.5} Continuous	PM ₁₀	PM ₁₀ Continuous	SO ₂	NO ₂	NO _y	O ₃	CO	Pb	VOC	Carbonyl	PAH	PM _{2.5} Speciation	Black Carbon	RadNet	Met
Hazard Perry 21-193-0003		1						1									
Lewisport Hancock 21-091-0012								1									
Total		1						2									

Lewisport

CSA/MSA: Not in a MSA - Rural

401 KAR 50:020 Air Quality Region: Evansville-Owensboro-Henderson Interstate (077)

Site Name: Lewisport

AQS Site ID: 21-091-0012

Location: Community Center Drive & First Street, Lewisport, KY 42351

County: Hancock

GPS Coordinates: 37.938316, -86.897194 (NAD 83)

Date Established: September 5, 1980

Inspection Date: October 1, 2025

Inspection By: KDAQ Personnel

Site Approval Status: Site and monitor meet all design criteria for the monitoring network.



Figure 84: Lewisport Air Monitoring Shelter

The monitoring site is a stationary equipment shelter located on the athletic fields of the former Lewisport Consolidated Elementary School in Lewisport, Kentucky. The sample inlet is 56 meters from the nearest road. Upon inspection, the sample line and monitor were found to be in good condition. The site meets the requirements of 40 CFR 58, Appendices A, C, D, E, and G.

Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards

Quality Assurance Status:

All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Table 44: Lewisport Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.70	SLAMS AQI	UV photometry	Continuously March 1 – October 31

Area Representativeness:

This site represents maximum concentrations on an urban scale.



Figure 85: Lewisport Urban Scale

Hazard

CSA/MSA: Not in a MSA - Rural

401 KAR 50:020 Air Quality Control Region: Appalachian Intrastate (101)

Site Name: Hazard

AQS Site ID: 21-193-0003

Location: Perry County Horse Park, 354 Perry Park Road, Hazard, KY 41701

County: Perry

GPS Coordinates: 37.283247, -83.209311 (NAD 83)

Date Established: April 1, 2000

Inspection Date: September 10, 2025

Inspection By: KDAQ Personnel

Site Approval Status: A waiver request for road distance was renewed and approved in 2025. Site and monitors meet design criteria.



Figure 86: Hazard Air Monitoring Shelter

The monitoring site is a stationary equipment shelter located on the grounds of Perry County Park in Hazard, Kentucky. The sample inlets are just over 10 meters from the nearest road and a waiver request was approved by EPA. Otherwise, this site meets the requirements of 40 CFR 58, Appendices A, C, D, E, and G. The area near the shelter has been used as a temporary FEMA site after historic flooding in 2022 and 2025.

Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards.

Quality Assurance Status:

All Quality Assurance procedures have been implemented in accordance with 40 CFR 58, Appendix A.

Table 45: Hazard Monitors

Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Ozone	3.71	SLAMS AQI	UV photometry	Continuously March 1 – October 31
FEM PM _{2.5} Continuous	4.67	SLAMS AQI	Broadband Spectroscopy	Continuously

Area Representativeness:

The site represents population exposure on a neighborhood scale for particulates and urban for ozone.

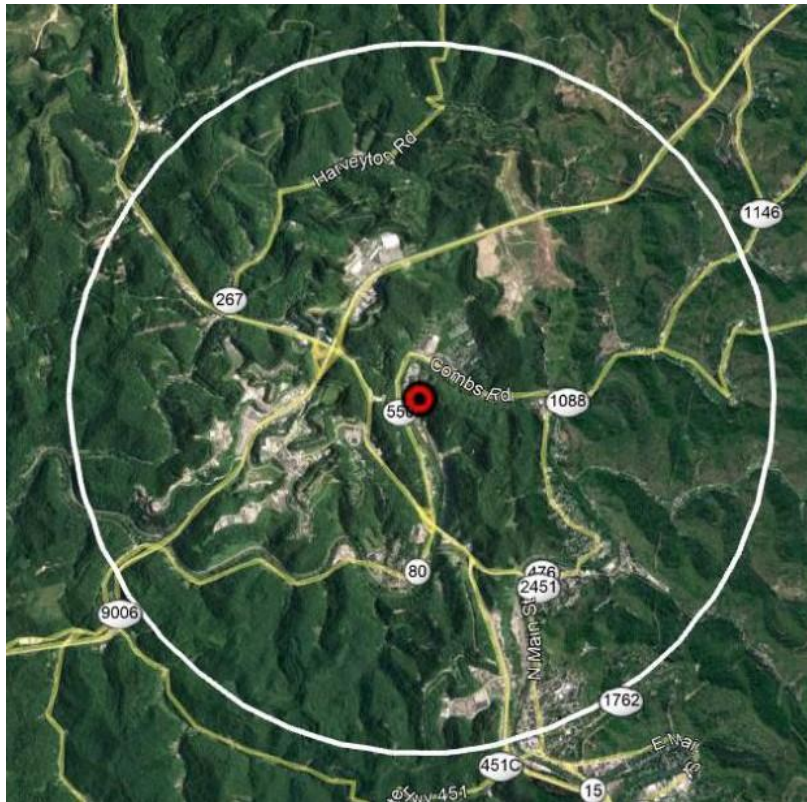


Figure 87: Hazard Neighborhood Scale

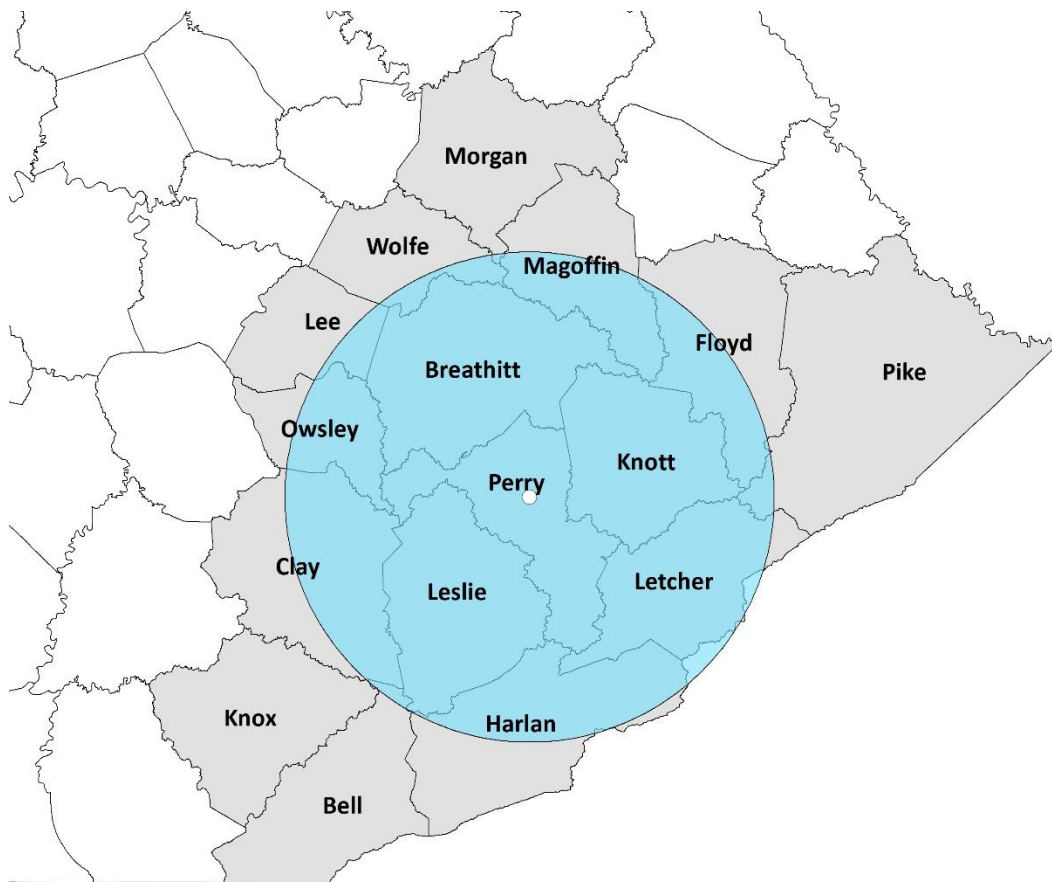


Figure 88: Hazard Urban Scale

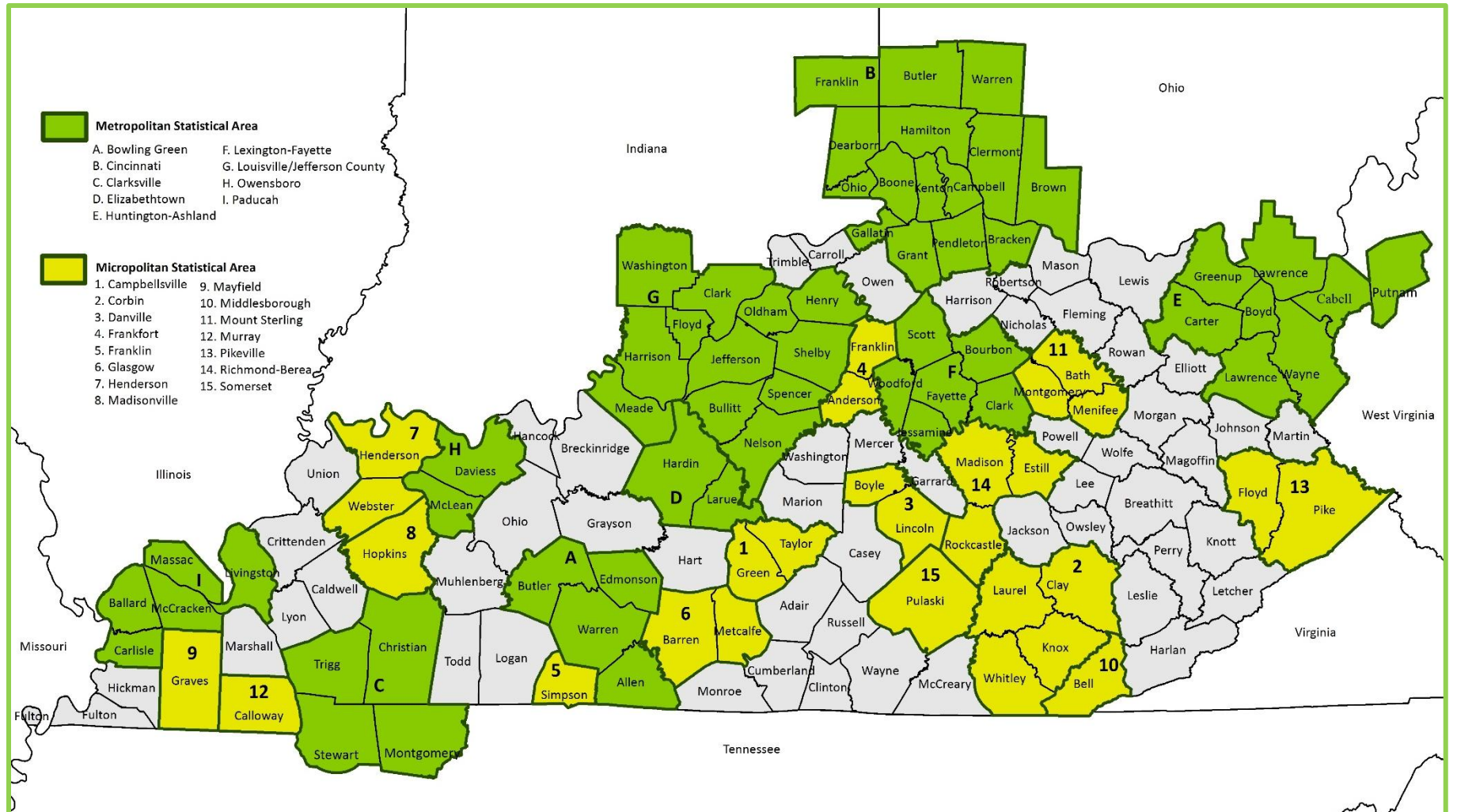


Figure A2: Kentucky Core Based Statistical Areas

Table A1: CBSA - Metropolitan Statistical Areas

CBSA Title	CBSA Code	County	State	State Code	County Code	County Population	CBSA Population
Bowling Green, KY	14540	Allen	KY	21	003	22,536	197,180
Bowling Green, KY	14540	Butler	KY	21	031	12,520	197,180
Bowling Green, KY	14540	Edmonson	KY	21	061	12,749	197,180
Bowling Green, KY	14540	Warren	KY	21	227	149,375	197,180
Cincinnati, OH-KY-IN	17140	Dearborn	IN	18	029	51,609	2,312,858
Cincinnati, OH-KY-IN	17140	Franklin	IN	18	047	23,286	2,312,858
Cincinnati, OH-KY-IN	17140	Ohio	IN	18	115	5,994	2,312,858
Cincinnati, OH-KY-IN	17140	Boone	KY	21	015	145,316	2,312,858
Cincinnati, OH-KY-IN	17140	Bracken	KY	21	023	8,511	2,312,858
Cincinnati, OH-KY-IN	17140	Campbell	KY	21	037	95,441	2,312,858
Cincinnati, OH-KY-IN	17140	Gallatin	KY	21	077	8,840	2,312,858
Cincinnati, OH-KY-IN	17140	Grant	KY	21	081	26,181	2,312,858
Cincinnati, OH-KY-IN	17140	Kenton	KY	21	117	175,779	2,312,858
Cincinnati, OH-KY-IN	17140	Pendleton	KY	21	191	14,800	2,312,858
Cincinnati, OH-KY-IN	17140	Brown	OH	39	015	44,397	2,312,858
Cincinnati, OH-KY-IN	17140	Butler	OH	39	017	400,128	2,312,858
Cincinnati, OH-KY-IN	17140	Clermont	OH	39	025	216,977	2,312,858
Cincinnati, OH-KY-IN	17140	Hamilton	OH	39	061	838,418	2,312,858
Cincinnati, OH-KY-IN	17140	Warren	OH	39	165	257,181	2,312,858
Clarksville, TN-KY	17300	Christian	KY	21	047	70,115	349,001
Clarksville, TN-KY	17300	Trigg	KY	21	221	14,512	349,001
Clarksville, TN-KY	17300	Montgomery	TN	47	125	249,935	349,001
Clarksville, TN-KY	17300	Stewart	TN	47	161	14,439	349,001
Elizabethtown, KY	21060	Hardin	KY	21	093	113,482	128,666
Elizabethtown, KY	21060	Larue	KY	21	123	15,184	128,666
Huntington-Ashland, WV-KY-OH	26580	Boyd	KY	21	019	47,751	365,965
Huntington-Ashland, WV-KY-OH	26580	Carter	KY	21	043	26,149	365,965
Huntington-Ashland, WV-KY-OH	26580	Greenup	KY	21	089	35,213	365,965
Huntington-Ashland, WV-KY-OH	26580	Lawrence	KY	21	127	15,765	365,965
Huntington-Ashland, WV-KY-OH	26580	Lawrence	OH	39	087	55,710	365,965
Huntington-Ashland, WV-KY-OH	26580	Cabell	WV	54	011	91,183	365,965
Huntington-Ashland, WV-KY-OH	26580	Putnam	WV	54	079	56,885	365,965
Huntington-Ashland, WV-KY-OH	26580	Wayne	WV	54	099	37,309	365,965
Lexington-Fayette, KY	30460	Bourbon	KY	21	017	20,243	535,174
Lexington-Fayette, KY	30460	Clark	KY	21	049	37,888	535,174
Lexington-Fayette, KY	30460	Fayette	KY	21	067	329,751	535,174
Lexington-Fayette, KY	30460	Jessamine	KY	21	113	57,147	535,174
Lexington-Fayette, KY	30460	Scott	KY	21	209	62,262	535,174
Lexington-Fayette, KY	30460	Woodford	KY	21	239	27,883	535,174
Louisville/Jefferson County, KY-IN	31140	Clark	IN	18	019	130,451	1,402,509
Louisville/Jefferson County, KY-IN	31140	Floyd	IN	18	043	82,153	1,402,509
Louisville/Jefferson County, KY-IN	31140	Harrison	IN	18	061	40,437	1,402,509
Louisville/Jefferson County, KY-IN	31140	Washington	IN	18	175	28,383	1,402,509
Louisville/Jefferson County, KY-IN	31140	Bullitt	KY	21	029	86,454	1,402,509
Louisville/Jefferson County, KY-IN	31140	Henry	KY	21	103	16,447	1,402,509
Louisville/Jefferson County, KY-IN	31140	Jefferson	KY	21	111	795,222	1,402,509
Louisville/Jefferson County, KY-IN	31140	Meade	KY	21	163	30,699	1,402,509
Louisville/Jefferson County, KY-IN	31140	Nelson	KY	21	179	49,036	1,402,509
Louisville/Jefferson County, KY-IN	31140	Oldham	KY	21	185	70,986	1,402,509
Louisville/Jefferson County, KY-IN	31140	Shelby	KY	21	211	51,243	1,402,509
Louisville/Jefferson County, KY-IN	31140	Spencer	KY	21	215	20,998	1,402,509

CBSA Title	CBSA Code	County	State	State Code	County Code	County Population	CBSA Population
Owensboro, KY	36980	Daviess	KY	21	059	104,898	113,962
Owensboro, KY	36980	McLean	KY	21	149	9,064	113,962
Paducah, KY-IL	37140	Massac	IL	17	127	13,502	102,259
Paducah, KY-IL	37140	Ballard	KY	21	007	7,594	102,259
Paducah, KY-IL	37140	Carlisle	KY	21	039	4,747	102,259
Paducah, KY-IL	37140	Livingston	KY	21	139	8,863	102,259
Paducah, KY-IL	37140	McCracken	KY	21	145	67,553	102,259

CBSA 2025 population estimate data obtained from the US Census Bureau. Annual Resident Population Estimates and Estimated Components of Resident Population Change for Metropolitan and Micropolitan Statistical Areas and Their Geographic Components for the United States: April 1, 2020 to July 1, 2025 (CBSA-EST2025-ALLDATA). Accessed 4/13/26.

Table A2: CBSA - Micropolitan Statistical Areas

CBSA Title	CBSA Code	County	State	State Code	County Code	County Population	CBSA Population
Campbellsville, KY	15820	Green	KY	21	087	11,644	38,407
Campbellsville, KY	15820	Taylor	KY	21	217	26,763	38,407
Corbin, KY	18340	Clay	KY	21	051	19,465	150,040
Corbin, KY	18340	Knox	KY	21	121	29,532	150,040
Corbin, KY	18340	Laurel	KY	21	125	63,746	150,040
Corbin, KY	18340	Whitley	KY	21	235	37,297	150,040
Danville, KY	19220	Boyle	KY	21	021	31,632	56,980
Danville, KY	19220	Lincoln	KY	21	137	25,353	56,980
Frankfort, KY	23180	Anderson	KY	21	005	25,225	77,874
Frankfort, KY	23180	Franklin	KY	21	073	52,649	77,874
Franklin, KY	23190	Simpson	KY	21	213	20,788	20,788
Glasgow, KY	23980	Barren	KY	21	009	45,641	56,224
Glasgow, KY	23980	Metcalfe	KY	21	169	10,583	56,224
Henderson, KY	25775	Henderson	KY	21	101	44,255	57,184
Henderson, KY	25775	Webster	KY	21	233	12,929	57,184
Madisonville, KY	31580	Hopkins	KY	21	107	45,127	45,127
Mayfield, KY	32460	Graves	KY	21	083	37,050	37,050
Middlesborough, KY	33180	Bell	KY	21	013	22,829	22,829
Mount Sterling, KY	34460	Bath	KY	21	011	13,176	48,428
Mount Sterling, KY	34460	Menifee	KY	21	165	6,430	48,428
Mount Sterling, KY	34460	Montgomery	KY	21	173	28,822	48,428
Murray, KY	34660	Calloway	KY	21	035	39,421	39,421
Pikeville, KY	38210	Floyd	KY	21	071	34,401	89,122
Pikeville, KY	38210	Pike	KY	21	195	54,721	89,122
Richmond-Berea, KY	40080	Estill	KY	21	065	13,962	131,806
Richmond-Berea, KY	40080	Madison	KY	21	151	101,696	131,806
Richmond-Berea, KY	40080	Rockcastle	KY	21	203	16,148	131,806
Somerset, KY	43700	Pulaski	KY	21	199	67,384	67,384

CBSA 2025 population estimate data obtained from the US Census Bureau. Annual Resident Population Estimates and Estimated Components of Resident Population Change for Metropolitan and Micropolitan Statistical Areas and Their Geographic Components for the United States: April 1, 2020 to July 1, 2025 (CBSA-EST2025-ALLDATA). Accessed 4/13/26.

Appendix B – Memorandum of Agreement, Cincinnati, OH-KY-IN MSA

MEMORANDUM OF AGREEMENT ON AIR QUALITY MONITORING FOR CRITERIA POLLUTANTS FOR THE CINCINNATI OH-KY-IN METROPOLITAN STATISTICAL AREA (MSA)

Participating Agencies:

Kentucky Department for Environmental Protection (KDEP)
Division for Air Quality (DAQ)

Hamilton County Department of Environmental Services (HCDOES)

Indiana Department of Environmental Management (IDEM)
Office of Air Quality (OAQ)

PURPOSE/OBJECTIVES/GOALS

The purpose of this Memorandum of Agreement (MOA) is to establish the Cincinnati OH-KY-IN Metropolitan Statistical Area (MSA) Criteria Pollutant Air Quality Monitoring Agreement among KDEP, IDEM, and HCDOES to collectively meet United States Environmental Protection Agency (EPA) minimum monitoring requirements for particles of an aerodynamic diameter of 10 micrometers and less (PM10), particles of an aerodynamic diameter of 2.5 micrometers and less (PM2.5), and ozone; as well as other criteria pollutant air quality monitoring deemed necessary to meet the needs of the MSA as determined reasonable by all parties. According to 40 CFR Part 58, Appendix D, the Cincinnati OH-KY-IN MSA minimum monitoring requirements (based on a population of 2,172,000) are (2) ozone monitors, (2-4) PM-10 monitors, (3) FRM PM-2.5 monitors, and (2) collocated continuous PM-2.5 monitors with the FRM PM-2.5 monitors. This MOA will formalize and reaffirm the collective agreement in order to provide adequate criteria pollutant monitoring for the Cincinnati OH-KY-IN MSA as required by 40 CFR 58 Appendix D, Section 2(e).

PM2.5 MSA monitoring network includes:

County	Federal Reference Method PM2.5	Continuous PM2.5	Speciation PM2.5	Collocated PM2.5
Campbell County, KY KDEP	1	1	0	0
Boone County, KY KDEP	0	0	0	0
Hamilton County, OH HCDOES	4	2	1	1
Butler County, OH HCDOES	2	0	0	1
Clermont County, OH HCDOES	1	1	0	0
Warren County, OH HCDOES	1	1	0	0
Franklin County, IN IDEM	0	0	0	0
Dearborn County, IN IDEM	0	0	0	0
Ohio County, IN IDEM	0	0	0	0

Criteria Air Pollutant MSA monitoring network includes:

County	PM10	O ₃	NO _x /NO/NO ₂	CO	SO ₂
Campbell County, KY KDEP	0	1	1	0	1
Boone County, KY KDEP	0	1	0	0	0
Hamilton County, OH HCDOES	3	3	1	1	1
Butler County, OH HCDOES	2	2	0	0	0
Clermont County, OH HCDOES	0	1	0	0	0
Warren County, OH HCDOES	0	1	0	0	0
Franklin County, IN IDEM	0	0	0	0	0
Dearborn County, IN IDEM	0	0	0	0	0
Ohio County, IN IDEM	0	0	0	0	0

RESPONSIBILITIES/ACTIONS

Each of the parties to this Agreement is responsible for ensuring that its obligations under the MOA are met. As conditions warrant, the affected agencies may conduct telephone conference calls, meetings, or other communications to discuss monitoring activities for the MSA. Each affected agency shall inform the other affected agencies via telephone or email of any monitoring changes occurring within its jurisdiction of the MSA at its earliest convenience, after learning of the need for the change or making the changes. Such unforeseen changes may include evictions from monitoring sites, destruction of monitoring sites due to natural disasters, or any occurrences that result in an extended (greater than one quarter) or permanent change in the monitoring network.

LIMITATIONS

- All commitments made in this MOA are subject to the availability of appropriated funds and each agency's budget priorities. Nothing in this MOA obligates KDEP, IDEM, or HCDOES to expend appropriations or to enter into any contract, assistance agreement, interagency agreement or other financial obligation.
- This MOA is neither a fiscal nor a funds obligation document. Any endeavor involving reimbursement or contribution of funds between parties to this agreement will be handled in accordance with applicable laws, regulations, and procedures, and will be subject to separate agreements that will be affected in writing by representatives of the parties.
- This MOA does not create any right or benefit enforceable by law or equity against KDEP, IDEM, or HCDOES, their officers or employees, or any other person. This MOA does not apply to any entity outside KDEP, IDEM, or HCDOES.
- No proprietary information or intellectual property is anticipated to arise out of this MOA.

TERMINATION

This Memorandum of Agreement may be revised upon the mutual consent of KDEP, IDEM, and HCDOES. Each party reserves the right to terminate this MOA. A thirty (30) day written notice must be given prior to the date of termination.

APPROVALS

We agree with the provisions outlined in this Memorandum of Agreement and commit our agencies to implement them in a spirit of cooperation and mutual support.

Kentucky Department for Environmental Protection
Division for Air Quality

BY: John Lyons

TITLE: Director, Division for Air Quality

DATE: 5/13/10

Hamilton County Department of Environmental Services

BY: Cory Chadwick

TITLE: Director

DATE: 5/13/10

Indiana Department of Environmental Management
Office of Air Quality

BY: Keith Baugues

TITLE: Assistant Commissioner, Office of Air Quality

DATE: 5/19/10

Appendix C – Memorandum of Agreement, Evansville, IN-KY MSA

MEMORANDUM OF AGREEMENT ON AIR QUALITY MONITORING FOR CRITERIA POLLUTANTS FOR THE EVANSVILLE, IN-HENDERSON, KY METROPOLITAN STATISTICAL AREA (MSA)

Participating Agencies:

Kentucky Department for Environmental Protection (KDEP)
Division for Air Quality (DAQ)

Indiana Department of Environmental Management (IDEM)
Office of Air Quality (OAQ)

PURPOSE/OBJECTIVES/GOALS

The purpose of this Memorandum of Agreement (MOA) is to establish the Evansville, IN-Henderson, KY Metropolitan Statistical Area (MSA) Criteria Pollutant Air Quality Monitoring Agreement among KDEP and IDEM to collectively meet United States Environmental Protection Agency (EPA) minimum monitoring requirements for particles of an aerodynamic diameter of 10 micrometers and less (PM 10), particles of an aerodynamic diameter of 2.5 micrometers and less (PM2.5), and ozone; as well as other criteria pollutant air quality monitoring deemed necessary to meet the needs of the MSA as determined reasonable by all parties. According to 40 CFR Part 58, Appendix D, the Evansville, IN-Henderson, KY MSA minimum monitoring requirements (based on a population of 350,000) are (2) ozone monitors, (0-1) PM-10 monitors, (1) FRM PM-2.5 monitor, and (1) collocated continuous PM-2.5 monitor with the FRM pm-2.5 monitor. This MOA will formalize and reaffirm the collective agreement in order to provide adequate criteria pollutant monitoring for the Evansville, IN-Henderson, KY MSA as required by 40 CFR 58 Appendix D, Section 2, (e).

PM 2.5 MSA monitoring network includes:

County	Federal Reference Method PM2.5	Continuous PM2.5	Speciation PM2.5	Collocated PM2.5
Henderson County, KY KDEP	1	1	0	0
Vanderburgh County, IN IDEM	3	1	1	1

Criteria Air Pollutant MSA monitoring network includes:

County	PM10	O ₃	NO _x /NO/NO ₂	CO	SO ₂
Henderson County, KY KDEP	1	1	0	0	1
Vanderburgh County, IN IDEM	1	2	1	1	1

RESPONSIBILITIES/ACTIONS

Each of the parties to this Agreement is responsible for ensuring that its obligations under the MOA are met. As conditions warrant, the affected agencies may conduct telephone conference calls, meetings, or other communications to discuss monitoring activities for the MSA. Each affected agency shall inform the other affected agencies via telephone or email of any monitoring changes occurring within its jurisdiction of the MSA at its earliest convenience, after learning of the need for the change or making the changes. Such unforeseen changes may include evictions from monitoring sites, destruction of monitoring sites due to natural disasters, or any occurrences that result in an extended (greater than one quarter) or permanent change in the monitoring network.

LIMITATIONS

- All commitments made in this MOA are subject to the availability of appropriated funds and each agency's budget priorities. Nothing in this MOA obligates KDEP or IDEM to expend appropriations or to enter into any contract, assistance agreement, interagency agreement or other financial obligation.
- This MOA is neither a fiscal nor a funds obligation document. Any endeavor involving reimbursement or contribution of funds between parties to this agreement will be handled in accordance with applicable laws, regulations, and procedures, and will be subject to separate agreements that will be affected in writing by representatives of the parties.
- This MOA does not create any right or benefit enforceable by law or equity against KDEP or IDEM, their officers or employees, or any other person. This MOA does not apply to any entity outside KDEP or IDEM.
- No proprietary information or intellectual property is anticipated to arise out of this MOA.

TERMINATION

This Memorandum of Agreement may be revised upon the mutual consent of KDEP and IDEM. Each party reserves the right to terminate this MOA. A thirty (30) day written notice must be given prior to the date of termination.

APPROVALS

We agree with the provisions outlined in this Memorandum of Agreement and commit our agencies to implement them in a spirit of cooperation and mutual support.

Kentucky Department for Environmental Protection
Division for Air Quality

BY: John. S. Lyons

TITLE: Director, Division for Air Quality

DATE: 5/14/10

Indiana Department of Environmental Management
Office of Air Quality

BY: Keith Baugues

TITLE: Assistant Commissioner, Office of Air Quality

DATE: 5/24/10

Appendix D – Memorandum of Agreement, Clarksville, TN- KY MSA

April 7, 2025

Mr. Michael Kennedy, PE
 Director
 Kentucky Division for Air Quality
 Kentucky Department for Environmental Protection
 300 Sower Boulevard
 2nd Floor
 Frankfort, KY 40601

Dear Mr. Kennedy:

The United States Environmental Protection Agency’s (EPA) monitoring regulations found in 40 CFR Part 58, Appendix D states in part “The EPA recognizes that there may be situations where the EPA Regional Administrator and the affected State or local agencies may need to augment or divide the overall MSA/CSA monitoring responsibilities and requirements among these various agencies to achieve an effective network design. Full monitoring requirements apply separately to each affected State or local agency without an agreement between the affected agencies and the EPA Regional Administrator.” This revision of the CFR also describes the minimum monitoring requirements for the NAAQS pollutants. Tennessee and Kentucky share the Clarksville, TN-KY MSA, which is comprised of Trigg and Christian counties in Kentucky, and Montgomery and Stewart counties in Tennessee.

CBSA Code	Geographic Area	Legal/Statistical Area Description	2023 Pop Estimate	2020 Census
17300	Clarksville, TN-KY	Metropolitan Statistical Area	340495	320518

The Tennessee Division of Air Pollution Control (TDAPC) currently operates one (1) PM2.5 FEM continuous monitor at the Clarksville site (47-125-2001) in Montgomery County, TN. This site provides sufficient characterization of the particulate air quality in the entire Clarksville, TN-KY MSA and complies with the population and concentration-based monitoring requirements identified in the regulations found at 40 CFR 58, Appendix D.

The Kentucky Division for Air Quality (KDAQ) currently operates one (1) continuous PM2.5 FEM monitor and one (1) seasonal ozone monitor at the Hopkinsville site (21-047-0006) in Christian County, KY. This site is being relocated within the MSA with a proposed start date of July 1, 2025. The new location at Pennyryle Forest (21-047-0007) in Christian County, KY, will continue to operate one (1) continuous PM2.5 FEM monitor and one (1) seasonal ozone monitor. This site characterizes the air quality in the entire Clarksville, TN-KY MSA and complies with the requirements for both population concentration-based monitoring identified in 40 CFR Part 58, Appendix D.



The Tennessee Division of Air Pollution Control invites the Kentucky Division for Air Quality to participate in Tennessee's annual ambient air monitoring network review. Tennessee commits to notifying Kentucky in advance of any proposed monitor relocations or shutdowns in the Clarksville, TN-KY MSA. We respectfully request that Kentucky provide similar advanced notice to Tennessee regarding any proposed changes to monitoring sites within the Clarksville, TN-KY MSA. If you have technical questions, contact Bradley King at 615-417-1254 or Bradley.King@tn.gov. I may be contacted at 615-426-9250 or Michelle.B.Walker@tn.gov.

Sincerely,

Michelle W. Owenby

Michelle Walker Owenby
Director
Division of Air Pollution Control
Tennessee Department of Environment and Conservation



Andy Beshear
GOVERNOR

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

300 Sower Boulevard
Frankfort, Kentucky 40601
Phone: (502) 564-2150
Fax: 502-564-4245

Rebecca Goodman
SECRETARY

Anthony R. Hatton
COMMISSIONER

May 5, 2025

Ms. Michelle Walker Owenby
Director
Division of Air Pollution Control
Tennessee Department of Environment and Conservation
Davy Crockett Tower, 7th Floor
500 James Robertson Parkway
Nashville, TN 37243

Dear Ms. Owenby:

In a letter from your office dated April 7, 2025, the Tennessee Division of Air Pollution Control (TDAPC) operates a continuous PM_{2.5} monitor in order to meet the minimum network design requirements stated in 40 CFR 58, Appendix D for the Clarksville, TN-KY metropolitan statistical area (MSA). The Kentucky Division for Air Quality (KDAQ) appreciates TDAPC’s cooperation and appreciates the invitation to participate in TDAPC’s annual air monitoring review.

KDAQ currently operates one (1) continuous PM_{2.5} FEM monitor and one (1) continuous ozone monitor at the Hopkinsville site (21-047-0006) in Christian County, KY. This site is being relocated within Christian County with a proposed start date of July 1, 2025. The new location at Pennyriple Forest (21-047-0007) will continue to operate one (1) continuous PM_{2.5} FEM monitor and one (1) continuous ozone monitor.

In accordance with Table D-2 and D-5 of 40 CFR 58, Appendix D, one (1) ozone monitor and one (1) PM_{2.5} monitor is required to be operated in the Clarksville, TN-KY MSA, based upon currently available population estimates from the US Census Bureau, as well as 2022-2024 ozone and PM_{2.5} design values.

Geographic Area	Code	2024 USCB Population Est.	2022-2024 3-Year O ₃ DV	2022-2024 3-Year PM _{2.5} DV
Christian County, KY	21-047	71,006	0.065	7.9
Trigg County, KY	21-221	14,559	0.059 (CASTNET)*	-
Montgomery County, TN	47-125	246,025	-	6.7
Stewart County, TN	47-161	14,365	-	-
Clarksville, TN-KY MSA	17300	345,955	0.065	7.9

**Does not meet data completeness requirements*

Ms. Michelle Walker Owenby

May 5, 2025

Page 2

To satisfy regulatory requirements, KDAQ operates one (1) ozone monitor and one (1) PM_{2.5} monitor at the Pennyrile site. KDAQ appreciates and accepts TDAPC's offer to participate in its annual ambient air monitoring network review. KDAQ will provide advanced notice of any changes to the two (2) Kentucky monitors included in the Clarksville, TN-KY MSA. If you have further questions or concerns, please contact Jenna Nall at jenna.nall@ky.gov.

Sincerely,

A handwritten signature in black ink that reads "Michael Kennedy". The signature is written in a cursive, flowing style.

Michael Kennedy,
Director

MK/jln

Electronic cc:

-Bradly King, TDAPC

-Wayne Bray, KDAQ

Appendix E – LMAPCD Ambient Air Monitoring Network 2026



Louisville Metro Air Pollution Control District’s Proposed Changes to the Ambient Air Quality Monitoring Network

May 2026

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LMAPCD Proposed Network Changes – Overview

The Louisville Metro Air Pollution Control District (LMAPCD) is not proposing any significant changes to the criteria pollutant ambient monitoring network during the 2026 Network Planning period (July 2026 through June 2027), but there are a few minor items that serve to update some metadata and provide clarifications on previously existing networks. The air monitoring network used to determine compliance with the National Ambient Air Quality Standards (NAAQS) is expected to remain stable for the next 12-18 months. However, some changes / modifications may occur for instrumentation that is used for non-NAAQS monitoring. This document serves to provide general information about LMAPCD’s ambient air monitoring network, updates on proposed changes mentioned in prior network plans, and anticipated changes for the next 12-18 months. Additional details and clarifications on various aspects of the monitoring network are presented below.

Particulate Matter Network & Intended Use of PM_{2.5} Monitors

As discussed in prior network plans, LMAPCD continues to use Teledyne API T640 or T640x PM_{2.5} FEM monitors as the primary method for determining compliance with the PM_{2.5} NAAQS. LMAPCD also operates two filter-based samplers, but these samplers serve as collocated monitors to assess and evaluate the comparability between continuous methods and filter-based methods. Table 1 serves to clarify the intended use of LMAPCD’s PM_{2.5} data.

PM _{2.5} Monitors Operated by LMAPCD – Current								
Site Name	AQS ID	Parameter Code	POC	Monitor Type	Method	Primary Monitor?	Compare to NAAQS?	Eligible for AQI?
Watson Lane	21-111-0051	88101	3	SLAMS	API T640	Yes	Yes	Yes
Cannons Lane	21-111-0067	88101	3	SLAMS	API T640x	Yes	Yes	Yes
Cannons Lane	21-111-0067	88101	1	Colloc	Thermo 2025i	No	Yes	NA
Carrithers Middle School	21-111-0080	88101	3	SLAMS	API T640	Yes	Yes	Yes
Durrett Lane	21-111-0075	88101	3	SLAMS	API T640	Yes	Yes	Yes
Durrett Lane	21-111-0075	88101	1	Colloc	Thermo 2025i	No	Yes	NA
Algonquin Parkway	21-111-1041	88101	3	SLAMS	API T640x	Yes	Yes	Yes

Table 1 - List of LMAPCD PM_{2.5} monitors that are currently in place and will remain in place for the foreseeable future.

Durrett Lane Near Road Spatial Scale Updates & Clarifications

As part of the 2025 Five Year Network Assessment, APCD re-evaluated the spatial scales for criteria pollutant data collected at the Durrett Lane Near Road site. During that assessment, APCD had proposed that ‘Microscale’ may serve as a better representation of air quality measurements at Durrett Lane given that ambient air quality measurements within a near road environment are expected to change considerably between 15 meters and 100 meters from the edge of the road. This proposed microscale approach seemed consistent with the Monitoring Objectives and Spatial Scale descriptions within 40 CFR Part 58 Appendix D (e.g. microscale represents areas up to 100 meters). However, after further evaluation of emissions characteristics near the site and further review of 40 CFR Part 58 Appendix D section 4.7.1 and 40 CFR Part 58 Appendix E section 2.5.3, it was determined that the Microscale representation would be appropriate for NO₂ and CO, but may not be appropriate for PM_{2.5}. This

determination was based on the fact that mobile sources are the dominant source of CO and NO2 emissions near the site (with CO and NO2 concentrations likely decreasing significantly with distance from the site), but PM2.5 emissions near the site include a broader mix of sources¹. As such, PM2.5 concentrations are not expected to decrease as significantly with distance from the site. Furthermore, additional review of 40 CFR Part 58 Appendix E section 2.5.3 indicates that a microscale designation for PM2.5 may only be applicable if the PM2.5 monitor is located <15 meters from the edge of the major roadway². In summary, APCD plans to change the spatial scale for CO and NO2 from middle scale to microscale, but retain middle scale for PM2.5.

Photochemical Assessment Monitoring Station (PAMS)

While procurement, staffing, and technical challenges remain for APCD’s PAMS program, APCD has demonstrated strong technical knowledge and have made significant contributions to the PAMS national workgroup technical discussions. Despite some initial delays with PAMS data reporting, APCD monitoring staff have made significant strides in the reporting of PAMS data. Carbonyls data have been reported to AQS for the 2022, 2023, 2024, and 2025 PAMS seasons. Hourly VOC data from Cannons Lane have been reported to AQS for the 2022, 2023, and 2024 PAMS seasons. APCD has had partial success submitting ceilometer data to the Unified Ceilometer Network (UCN) via the manual file upload process, but continues to see some intermittent technical challenges and significant communication delays with the UCN technical support. Table 2 provides a listing of all required PAMS parameters and their status as of May 2026. LMAPCD continues to work as diligently as possible to operate the PAMS instrumentation and evaluate the data so that meaningful, valid data can be collected and reported to EPA’s AQS database.

Status of PAMS Parameters at APCD’s Cannons Lane NCore Site			
<i>Required PAMS Measurement</i>	<i>Instrumentation</i>	<i>Instrument Status</i>	<i>Data Reporting Status</i>
Hourly VOCs	CAS / Chromatotec Auto GC	Operational	Delayed
Carbonyls	ATEC 8000-2 Carbonyl Sampler	Operational	Current
Hourly Ozone	Teledyne API T400 or N400	Operational	Current
True NO2	Teledyne API T500U	Operational	Current
NOy	Teledyne API T200U NOy	Operational	Current
Ambient Temp	RM Young 41382 Temp/RH Probe	Operational	Current
Wind	RM Young 85000 Ultrasonic	Operational	Current
Ambient Pressure	RM Young 61302V	Operational	Current
Precipitation	Met One 370 Tipping Bucket	Operational	Current
Hourly Mixing Height	Vaisala Ceilometer CL51	Operational	Delayed
Solar Radiation	Eppley PS Pyranometer	Operational	Current
UV Radiation	Eppley TUVB Radiometer	Operational	Current

Table 2 - List of PAMS parameters required by 40 CFR Part 58 Appendix D and the status of those parameters at APCD’s Cannons Lane NCore site.

¹ In addition to PM2.5 concentrations having more of a regional influence, APCD has observed (and measured) likely instances of residential burning at / around the Durrett Lane site.

² Durrett Lane PM2.5 monitor is located 28 meters from edge of major roadway (with approximate annual average daily traffic count of 169,200).

Enhanced Ozone Monitoring

While the regulatory status of ozone for the Louisville CBSA is complex, per EPA Region 4's review of the 2025 Annual Network plan, the area may be subject to the enhanced monitoring plan requirements laid out in 40 CFR Part 58 Appendix D Section 5(h). APCD's monitoring network is already meeting or exceeding many of the enhanced ozone monitoring requirements and recommendations. This includes the following enhanced ozone monitoring related activities, which already are, and have been, in operation:

- Operation of four ozone monitors in the APCD network and a collective network of eight ozone monitors in the CBSA. The eight ozone sites in the Louisville CBSA is four times greater than the required amount.
- Operation of two Auto GCs for speciated VOC measurements, both of which operate outside of the June through August PAMS season
- Operation of a ceilometer beyond the June through August PAMS season
- Operation of an NOy analyzer beyond the June through August PAMS season
- Collection and reporting of meteorological data such as rainfall, atmospheric pressure, solar radiation, and ultraviolet solar radiation data beyond the June through August PAMS season.

APCD believes these extra monitoring efforts for ozone, ozone precursors, and meteorology meet the requirements of an enhanced ozone monitoring plan.

Air Toxics Monitoring

LMAPCD also performs Air Toxics monitoring at the Algonquin Parkway site using similar technology to that of the Consolidated Analytical System's (CAS) Chromatotec Auto GC that is used for PAMS monitoring of hourly VOCs. The Auto GC at Algonquin Parkway underwent numerous upgrades in previous years and significant effort has been put forth to improve the system and sync it with LMAPCD's central data collection system and database. Routine collection and validation of a subset of Volatile Organic Compounds (VOCs) began in July 2020. The Auto GC system technology continues to experience some limitations in assessing all Toxics compounds of interest. Furthermore, LMAPCD continues to experience some data management challenges due to the combined volume of data from the Algonquin Parkway Auto GC and Cannons Lane Auto GC. This data management challenge along with the significant time and resources needed to produce data of sufficient quality have resulted in some gaps and delays in the reporting of these data.

Black Carbon Monitoring at Durrett Lane Near Road Site

The Magee Scientific AE33 Aethalometer was installed at the Durrett Lane Near Road site in June 2022 and the instrument underwent initial evaluation and performance testing. Development of QA/QC procedures and necessary data post processing procedures occurred throughout 2023 and a preliminary determination of valid data commenced in September 2023. While SOPs are still in development, along with refinements to the QA/QC process and data post processing techniques, the confidence in the quality of the data continues to increase. When it has been determined that the data collection and data validation process is providing quality data, the data will be made more widely available.

Meteorological Measurements, Low-Cost Sensors, and Special Projects

LMAPCD continues to explore and evaluate air quality monitoring needs of the Louisville community beyond the regulatorily required monitoring. While LMAPCD believes additional monitoring may be necessary at times to better characterize air quality throughout Louisville, projects such as these are dependent on available funding, staffing, and necessary monitoring resources. Below is a summary/update of some air monitoring projects that LMAPCD has pursued in the past or plans to pursue in the near future.

Hydrogen Sulfide Monitoring at Algonquin Parkway Site

LMAPCD installed a continuous Hydrogen Sulfide (H₂S) monitor at the Algonquin Parkway site in June 2024 to characterize H₂S concentrations in the vicinity of the Morris Forman Water Quality Treatment Center in West Louisville. LMAPCD utilizes the Teledyne API T101 H₂S analyzer which provides hourly averaged H₂S concentrations. This H₂S monitor is considered a special purpose monitor (SPM) and has been helpful in relating odors to quantifiable H₂S concentrations.

Rubbertown Air Toxics & Health Action Project

As part of the EPA EJG2G Grant Program and in coordination with other partners, LMAPCD planned to collect additional air quality samples in the vicinity of Rubbertown to further characterize air quality conditions in this area beginning in early 2025 for a 12-month study. Pollutants targeted to be measured included VOCs, formaldehyde, and speciated metal components from particulate samples. In March 2025, EPA terminated the remaining funding, but not before an Aeris Mira Pico formaldehyde analyzer had been procured. APCD has continued to determine the efficacy of making continuous formaldehyde measurements with this instrument.

Low Cost Sensor Projects & Meteorological Measurements

LMAPCD was granted a Sensor Collocation Shelter by EPA Region 4 that can be used to collocate low-cost sensors with federally approved methods at the Cannons Lane NCore site. This collocation shelter was installed in May 2022 and has remained in place. LMAPCD has also installed some low-cost sensors at the Durrett Lane Near Road site for general evaluation purposes. These sensors, purchased through an EPA IRA Grant, include the Purple Air Flex (PM), Clarity Node S (PM and NO₂), and Clarity/Aethlabs black carbon module. Durrett Lane and Cannons Lane sites allow for collocation of low-cost sensors with federally approved methods to help assess the accuracy of low-cost sensors. LMAPCD will continue to pursue or support low-cost sensor opportunities, as resources and funding allow, to help respond to community needs or to screen areas for future air monitoring network needs or source specific hot spots.

As time and resources allow, LMAPCD continues to evaluate the accuracy and robustness of meteorological measurements that are used to support air quality measurements at LMAPCD's sites. Some of the meteorological instrumentation is aging and may require replacement or repair. The LMAPCD air monitoring team also continues to evaluate quality control / quality assurance procedures associated with meteorological measurements.

Since many of these meteorological instruments and low-cost sensors are not required State and Local Air Monitoring Station (SLAMS) monitors for NAAQS compliance, these networks will be evaluated, upgraded, and improved upon as time and resources allow.

Conclusion

Much of the information presented in this document is intended to provide clarifications on minor network modifications and updates on previously proposed changes. Table 3 provides a summary of the number of ambient air quality monitoring sites in operation for each pollutant group within the Louisville MSA. As indicated in Table 3, the Louisville MSA continues to meet/exceed the EPA minimum monitoring requirements through the collective efforts of the Indiana Department of Environmental Management (IDEM), KDAQ, and the LMAPCD. It should also be noted that the operation of ambient air quality monitors by the LMAPCD alone meets the EPA minimum monitoring requirements for the Louisville MSA.

Louisville / Jefferson County MSA Monitoring Requirements												
	O ₃	PM _{2.5}	PM ₁₀	PM _c	PM _{BC}	CSN	SO ₂	NO ₂	CO	Toxics	PAMS	H ₂ S
# Sites Required by CFR	2	3	2-4	1	0	0	1	2	2	0	1	0
# Current Sites	8(4)	7(5)	3(2)	1(1)	2(1)	2(1)	4(3)	2(2)	2(2)	2(1)	1(1)	1(1)
# Sites After proposed Changes	8(4)	7(5)	3(2)	1(1)	2(1)	2(1)	4(3)	2(2)	2(2)	2(1)	1(1)	1(1)

Table 3 - Summary of monitoring requirements in Louisville / Jefferson County MSA compared to number of monitors / sites before and after proposed network changes. Numbers in parenthesis represents number of sites that APCD operates (versus total number in MSA).

Appendix F - KDAQ Intended Use of Continuous PM_{2.5} FEMs

Historically, continuous PM_{2.5} monitors that are designated as Federal Equivalent Methods (FEMs) have been excluded from comparisons to the NAAQS, as long as these monitors were specified as special-purpose monitors (SPMs). Data from these monitors were used for reporting of the AQI. Monitors could remain designated as SPMs for a period of two years of operation at each site. However, after that two-year period, the data were eligible for comparison to the NAAQS, regardless of monitor type designation.

In December 2012, a new PM NAAQS and set of monitoring rules were finalized. These new monitoring rules amended the previous requirement to compare all data from FEMs collected after a period of two-years to the NAAQS. Instead, agencies could operate a continuous PM_{2.5} FEM for longer than two years and could elect to exclude the data from NAAQS-comparisons, provided that the monitor did not meet certain performance specifications. Data from monitors established for less than two years and designated as SPM remain ineligible for attainment decisions.

Specifically, the final rule allows certain continuous PM_{2.5} FEM data to be excluded if:

- the monitor does not meet performance criteria when compared to the data collected from collocated Federal Reference Methods (FRMs);
- the monitoring agency requests exclusion of data; and,
- the EPA Regional Office approves exclusion of the data.

Regardless of whether an exclusion is sought, each agency must address the use of all continuous PM_{2.5} FEMs in the network. Each monitor must be properly referenced by a set of parameter codes, primary monitor designations, and monitor types.

KDAQ will operate 15 FEM PM_{2.5} continuous T640 monitors in the field; of which, all 15 are eligible for NAAQS comparisons. The following sites have T640 monitors:

- Freeman Lake
- Northern Kentucky University
- Ashland Primary
- Grayson Lake
- Meadow Lands
- Paducah Transit
- Pikeville Primary
- Smiths Grove (Primary and Collocated)
- Lexington Primary
- Nicholasville
- Hazard
- Pennyrile Forest
- Somerset
- Middlesboro

KDAQ will operate a total of 15 FEM PM_{2.5} continuous T640 monitors in the field during the 2026-2027 monitoring year, all of which will be usable for NAAQS determinations. All NAAQS-eligible monitors are designated as SLAMS. The tables that follow provide a summary of KDAQ's use of the T640 continuous PM_{2.5} FEMs, collocation scenarios, and dates of operation.

Scenario 1: Continuous PM_{2.5} FEM is eligible for NAAQS comparisons and is collocated with a filter-based FRM

Scenario 2: Continuous PM_{2.5} FEM is eligible for NAAQS comparisons and is collocated with a filter-based FRM.

Scenario 3: Continuous PM_{2.5} FEMs are collocated and are eligible for NAAQS comparisons.

Scenario 4: Continuous PM_{2.5} FEMs will be eligible for NAAQS comparisons during monitoring year. No other PM_{2.5} monitors are located on site.

Table F1: Scenario 1 - Northern Kentucky University (21-037-3002)

FEM Parameter	FEM Pollution Occurrence Code (POC)	FEM Monitor Type	Primary Monitor	Collocated Monitor	FEM used for substitutions of missing primary data?	FEM used for NAAQS comparisons?	FEM eligible for AQI?	Date FEM Installed at Site	Date FEM Eligible for NAAQS Comparisons
PM _{2.5} Local Conditions (88101)	POC 3	SLAMS	Filter-Based FRM (POC 1)	Continuous FEM (POC 3)	Yes	Yes	Yes	2/12/2018	2/13/2020

Table F2: Scenario 2- Freeman Lake (21-093-0007)

FEM Parameter	FEM Pollution Occurrence Code (POC)	FEM Monitor Type	Primary Monitor	Collocated Monitor	FEM used for substitutions of missing primary data?	FEM used for NAAQS comparisons?	FEM eligible for AQI?	Date FEM Installed at Site	Date FEM Eligible for NAAQS Comparisons
PM _{2.5} Local Conditions (88101)	POC 3	SLAMS	Continuous FEM (POC 3)	Filter-Based FRM (POC 2)	Yes	Yes	Yes	3/3/2025	3/3/2025

Table F3: Scenario 3- Smiths Grove Primary and Collocated (21-227-0009)

FEM Parameter	FEM Pollution Occurrence Code (POC)	FEM Monitor Type	Primary Monitor	Collocated Monitor	FEM used for substitutions of missing primary data?	FEM used for NAAQS comparisons?	FEM eligible for AQI?	Date FEM Installed at Site	Date FEM Eligible for NAAQS Comparisons
PM _{2.5} Local Conditions (88101)	POC 3	SLAMS	Continuous FEM (POC 3)	Continuous FEM (POC 4)	Yes	Yes	Yes	2/12/2018	2/13/2020

Table F4: Scenario 4 – Multiple Sites

Site Name and AQS ID	FEM Parameter	FEM Pollution Occurrence Code (POC)	FEM Monitor Type	Primary Monitor	Collocated Monitor	FEM used for substitutions of missing primary data?	FEM used for NAAQS comparisons?	FEM eligible for AQI?	Date FEM Installed at Site	Date FEM Eligible for NAAQS Comparisons
Middlesboro (21-013-0002)	PM _{2.5} Local Conditions (88101)	POC 3	SLAMS	Continuous FEM (POC 3)	n/a	n/a	Yes	Yes	1/1/2021	1/1/2021
Ashland Primary (21-019-0017)	PM _{2.5} Local Conditions (88101)	POC 3	SLAMS	Continuous FEM (POC 3)	n/a	n/a	Yes	Yes	7/26/2017	7/27/2019
Grayson Lake (21-043-0500)	PM _{2.5} Local Conditions (88101)	POC 3	SLAMS	Continuous FEM (POC 3)	n/a	n/a	Yes	Yes	1/1/2022	1/1/2022
Pennyrile Forest (21-047-0007)	PM _{2.5} Local Conditions (88101)	POC 3	SLAMS	Continuous FEM (POC 3)	n/a	n/a	Yes	Yes	12/19/2025	12/19/2025
Meadow Lands (21-059-0015)	PM _{2.5} Local Conditions (88101)	POC 3	SLAMS	Continuous FEM (POC 3)	n/a	n/a	Yes	Yes	11/21/2024	11/21/2024
Lexington Primary (21-067-0012)	PM _{2.5} Local Conditions (88101)	POC 3	SLAMS	Continuous FEM (POC 3)	n/a	n/a	Yes	Yes	12/4/2018	12/4/2018
Nicholasville (21-113-0001)	PM _{2.5} Local Conditions (88101)	POC 3	SLAMS	Continuous FEM (POC 3)	n/a	n/a	Yes	Yes	1/1/2025	1/1/2025
Paducah Transit (21-145-1027)	PM _{2.5} Local Conditions (88101)	POC 3	SLAMS	Continuous FEM (POC 3)	n/a	n/a	Yes	Yes	1/10/2023	1/10/2023
Hazard (21-193-0003)	PM _{2.5} Local Conditions (88101)	POC 3	SLAMS	Continuous FEM (POC 3)	n/a	n/a	Yes	Yes	2/28/2019	1/1/2021
Pikeville Primary (21-195-0002)	PM _{2.5} Local Conditions (88101)	POC 3	SLAMS	Continuous FEM (POC 3)	n/a	n/a	Yes	Yes	2/8/2018	2/9/2020
Somerset (21-199-0003)	PM _{2.5} Local Conditions (88101)	POC 3	SLAMS	Continuous FEM (POC 3)	n/a	n/a	Yes	Yes	1/1/2021	1/1/2021

Appendix G – Calvert City Special-Purpose Monitoring

With the cooperation of EPA, KDAQ has established a special-purpose monitoring study of volatile organic compounds (VOCs) near Calvert City, KY. The measurement goal of the study was to estimate the 24-hour concentrations of VOCs in ambient air, over the course of one-year of sampling, with a focus on five pollutants of interest:

- Ethylene Dichloride
- Vinyl Chloride
- 1,3-Butadiene
- Acrylonitrile
- Benzene

VOC sampling consisted of twenty-four-hour samples collected in 6-liter stainless steel canisters (sub atmospheric) on a predetermined sampling frequency. Samples were analyzed for the full suite of Tier I and Tier II VOCs by EPA's national contract laboratory, Eastern Research Group. Monitoring and analysis of samples were conducted in accordance with EPA Method TO-15. Data collected for the one-year sampling period was used to conduct a health-risk assessment by EPA.

To determine the best potential locations for ambient monitoring sites near the Calvert City Industrial Complex, KDAQ and EPA utilized air dispersion modeling conducted by EPA Region 4. The modeling was performed with KDAQ emissions data from 2013-2017 for ethylene dichloride and vinyl chloride. Ultimately, it was determined that the study would necessitate that three sites be established in the vicinity of Calvert City. Additionally, EPA and KDAQ agreed that the study would incorporate meteorological instrumentation and collocated VOC sampling for precision estimates.

KDAQ began collecting VOC samples on October 24, 2020. Since the QAPP required one full year of sampling, with at least 12 complete months, EPA and KDAQ agreed that the risk assessment should encompass data collected between October 24, 2020, and December 31, 2021. However, the meteorological instrumentation was shut down on December 31, 2021, due to safety concerns. KDAQ currently has no plans to collect meteorological data but will continue to monitor VOCs in the Calvert City area. Additional information about the risk study can be found on [EPA's site about Calvert City](#).

Table G1: Calvert City Study Sites and Monitors

Site/AQS ID/ Coordinates	Objective	Sampling Instru- ments	Sampling Media	Monitor Type	Sampling Schedule	Monitor Purpose
LWD (LWD) 21-157-0021 37.047906, -88.338347	Maximum Expected Ethylene Dichloride Concentration	Xonteck 911a	6-Liter stainless steel canister	Primary and collocated	Primary-every 6 days; Collocated every 12 days	Characterization of maximum EDC concentration
Johnson-Riley Road (JRR) 21-157-0020 37.041179, -88.35188	Maximum Expected Vinyl Chloride Concentration	Xonteck 911a	6-Liter stainless steel canister	Primary	Every 6 days	Characterization of maximum vinyl chloride concentration
Calvert City Elementary (CCE) 21-157-0018 37.026746, -88.343747	High Air Toxics Concentration in Area of Expected Population Exposure	Xonteck 911a	6-Liter stainless steel canister	Primary	Every 6 days	Characterization of air quality in more heavily populated area

Appendix H – Near-Road Monitoring

Appendix D 40 CFR Part 58 requires one near-road monitor in CBSAs with a population of 1,000,000 or more. A second near-road monitor is required in CBSAs that have a population greater than 2,500,000, or have a population of 500,000 or greater and have a traffic segment with an AADT of 250,000 or more. Based upon population estimates and AADT counts, near-road monitors are required in two CBSAs. Neither require a second near-road monitor at this time.

Table H1: Near-Road Monitoring Requirements

CBSA Name (500,000 or more people)	2025 CBSA Population Estimate*	Highest Road Segment 2-Way AADT for CBSA**	Number of Monitors Required in CBSA
Cincinnati-Middletown, OH-KY-IN	2,312,858	196,929	1
Louisville-Jefferson County, KY-IN	1,402,509	175,095	1

*CBSA 2025 population estimate data obtained from the US Census Bureau. Annual Resident Population Estimates and Estimated Components of Resident Population Change for Metropolitan and Micropolitan Statistical Areas and Their Geographic Components for the United States: April 1, 2020 to July 1, 2025 (CBSA-EST2025-ALLDATA). Accessed 4/13/26.

**Source: KYTC Traffic Database. http://datamart.business.transportation.ky.gov/EDSB_SOLUTIONS/CTS/.

The determination of the final locations of near-road monitoring locations within these CBSAs was a cooperative effort between multiple State and Local Agencies. The exact location of each site was determined using the following criteria: fleet mix, roadway design, traffic congestion patterns, local topography, meteorology, population exposure, employee and public safety, and site logistics.

The requirement for a near-road site in the Cincinnati, OH-KY-IN MSA is fulfilled by a Memorandum of Agreement (MOA). The site is located and operated by Ohio.

The near-road site in the Louisville/Jefferson County, KY-IN MSA has been established and is operated by the Louisville Metro Air Pollution Control District (LMAPCD). Specifics regarding this site are included in the site detail pages of this Annual Network Plan.

Appendix I – Kentucky SO₂ PWEI Values

Section 4.4 of Appendix D to 40 CFR Part 58, requires that a population weighted emissions index (PWEI) be calculated by States for each core based statistical area (CBSA) in order to determine the minimum number of SO₂ monitors required. Monitors satisfy minimum requirements if the monitor is sited within the boundaries of the CBSA and is one of the following site types: population exposure, maximum concentration, source-oriented, general background, or regional transport. PWEI based monitors were originally required to be established in the Annual Network Plan (ANP), which was to be submitted to the EPA no later than July 1, 2011. New monitors were to be operational no later than January 2013.

The PWEI is calculated by multiplying the population of each CBSA and the total amount of SO₂, in tons per year, that is emitted within the CBSA, based upon aggregated county level emissions data from the National Emissions Inventory (NEI). The result is then divided by one million to provide the PWEI value, which is ex-pressed in a unit of million persons-tons per year.

The minimum number of monitors required are:

- 3 monitors in CBSAs with index values of 1,000,000 or more;
- 2 monitors in CBSAs with index values less than 1,000,000 but greater than 100,000; and
- 1 monitor in CBSAs with index values greater than 5,000.

Additionally, the EPA Regional Administrator (RA) may at their discretion require additional SO₂ monitors, beyond the minimum number required by PWEI calculations. Additional monitors may be required in situations where an area has the potential to violate or contribute to a violation, in areas that are impacted by sources that cannot be modeled, and in areas with sensitive populations. Kentucky currently does not have any Regional Administrator required SO₂ monitors.

Based upon Kentucky’s calculated PWEI values, the following CBSAs require SO₂ monitors:

Table I1: PWEI and SO₂ Monitoring Requirements

Kentucky CBSAs	PWEI* (10 ⁶ persons-tons per year)	Number of SO ₂ Monitors Required	Number of SO ₂ Monitors Present	Kentucky Site Name	Site ID
Cincinnati-Middletown, OH-KY-IN	78,560.5	1	6 ^{**}	Northern Kentucky University	21-037-3002
Louisville-Jefferson County, KY-IN	8,550.3	1	4 ^{***}	Algonquin Parkway (LMAPCD)	21-111-1041
				Watson Lane (LMAPCD)	21-111-0051
				Cannons Lane (LMAPCD)	21-111-0067

* PWEI calculated from 2024 USCB Population Estimates and 2020 NEI.

** Additional monitors operated by Ohio.

*** Monitors operated by the Louisville Metro Air Pollution Control District

Appendix J – EPA CASTNET Stations in Kentucky

The Clean Air Status and Trends Network (CASTNET) is a nation-wide, long-term monitoring network designed to measure acidic pollutants and ambient ozone concentrations in rural areas. CASTNET is managed by the U.S. Environmental Protection Agency (EPA) and operated as a cross-agency partnership with Tribal, federal, state, and local agencies. While each partner agency may have an independent mission, every CASTNET site is operated following consistent, well-established methods. The CASTNET federal sponsors (EPA, National Park Service, and Bureau of Land Management) provide site infrastructure and equipment, training, quality assurance activities, and data to reduce the burden on network partners that operate the sites. More information can be found on the [CASTNET site](#).

KDAQ does not operate nor serve as the Primary Quality Assurance Organization for any site in the CASTNET network. However, KDAQ does maintain a cooperative relationship with the staff of Mammoth Cave National Park. At the request of KDAQ, the NPS has designated the ozone monitor as the “Maximum O₃ Concentration” site for the Bowling Green, KY MSA. More information about the Mammoth Cave site can be found in the site detail pages of the Annual Network Plan.

Table J1: CASTNET Ozone Monitors in Kentucky

Monitor ID	Monitor Name	County/ Metropolitan Statistical Area	Designation	Monitoring Scale
21-061-0501	Mammoth Cave National Park	Edmonson/ Bowling Green, KY MSA	CASTNET Non-EPA Federal Maximum O ₃ Concentration*	Regional
21-175-9991	Crockett	Morgan/ Not in a MSA	CASTNET EPA	Regional
21-229-9991	Mackville (POC 1)	Washington/ Not in a MSA	CASTNET EPA	Regional
21-229-9991	Mackville Collocated (POC 2)	Washington/ Not in a MSA	CASTNET- QA Collocated** EPA	Regional

* Maximum Ozone Concentration Site for the Bowling Green, KY MSA

**Not usable for NAAQS comparisons

Appendix K – Waiver Request

Eastern Kentucky University (21-151-0005)

The Eastern Kentucky University (EKU) site was established on March 10, 2012. It was originally a temporary site with one lead sampler to evaluate the adequacy of the Mayfield Elementary (21-151-0003) lead site. Modeling demonstrated that the EKU site was located within the expected area of maximum concentration while Mayfield Elementary was not within maximum concentration (Figure K1). Sample results from both sites confirmed the modeling. Due to modeling and sampling results, EKU gained a second sampler in 2016 while Mayfield Elementary was shut down on 1/1/2018.

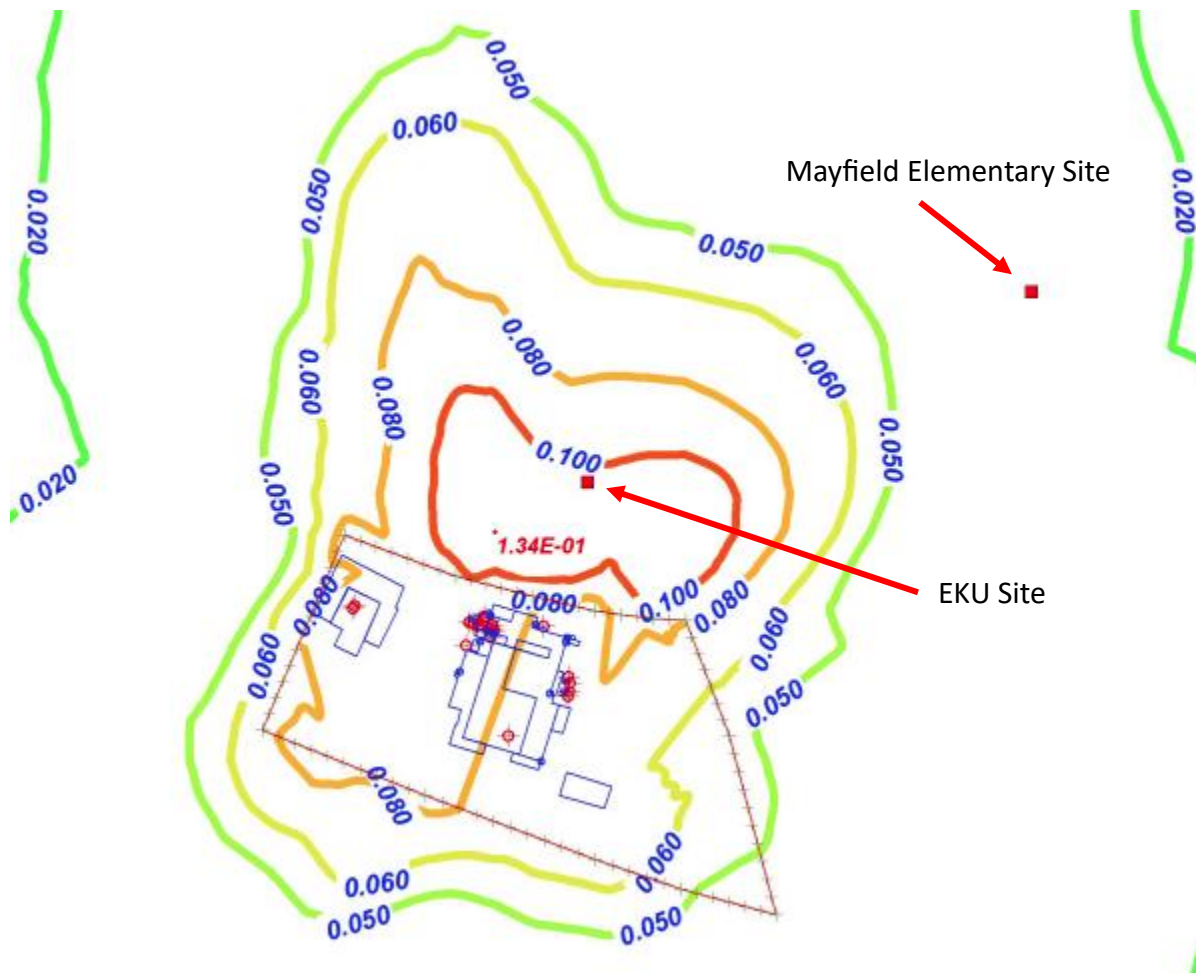


Figure K1: Lead modeling from 2013 showing the EKU site within the highest deposition area and the Mayfield Elementary site in a lower deposition area. The sites are approximately 0.64km away.

The site is equipped with a primary and collocated high volume lead sampler. The site is located behind the Gentry Facilities Services Building and adjacent to the athletic fields on Eastern Kentucky University's campus. The samplers are on a small patch of grass between the parking area of the service building and Paul Van Hoose Drive. This road is 6.2 m from the primary sampler and 3.07 m from the collocated sampler. Enersys, the source of ambient air lead emissions, sits roughly 190 m southwest of the EKU lead site.

As per 40 CFR part 58 Appendix E, "Beginning January 1, 2024, microscale sites of any air pollutant shall have no trees or shrubs located at or above the line-of-sight fetch between the probe and the source under investigation, e.g., a roadway or a stationary source". There are numerous trees between the samplers and the facility (Figure K2 and K3). After discussion with EPA, the best course of action was to change the scale from micro to middle as it is impracticable to remove all trees between the source and the samplers. The samplers cannot be moved as there is not another location within the area of expected maximum concentration that can meet all siting requirements.

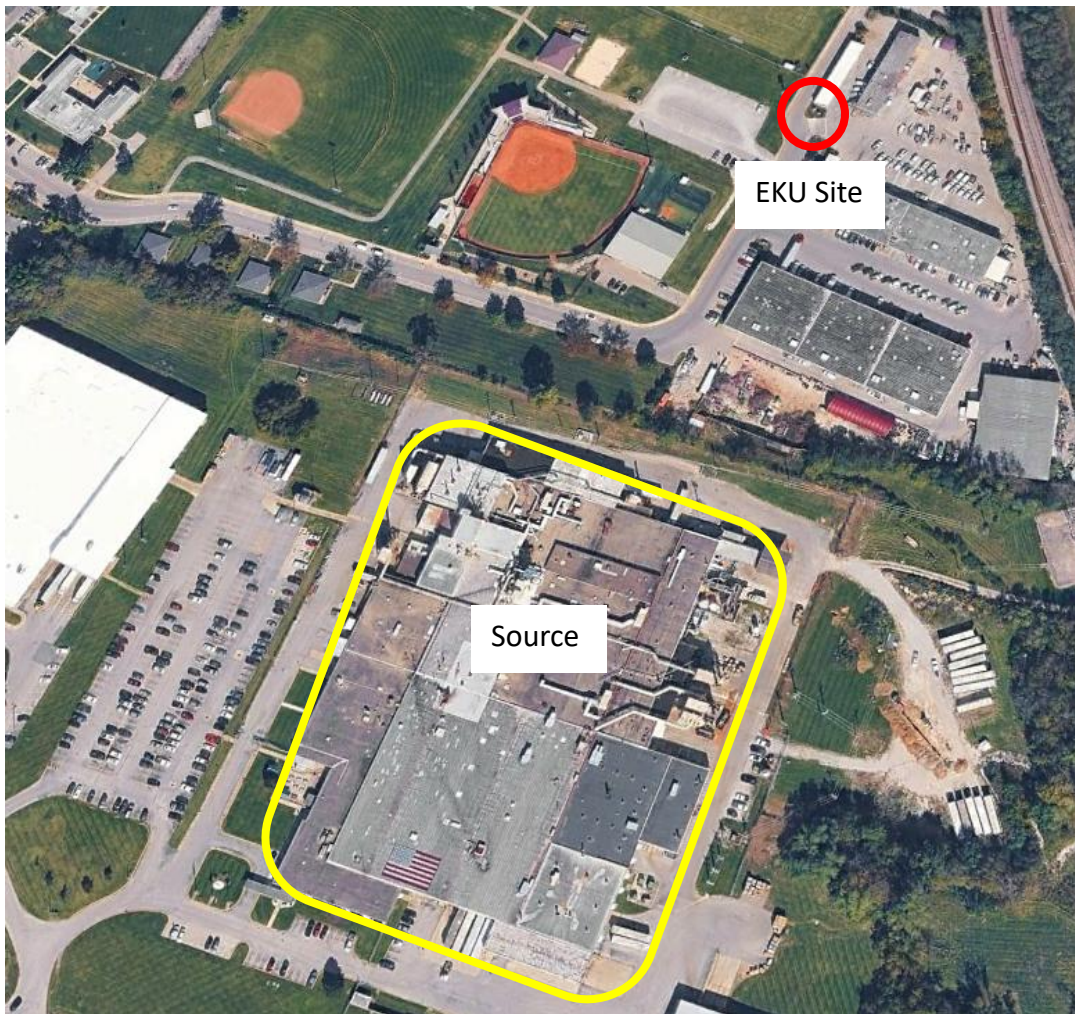


Figure K2: Google Earth image showing the EKU site, circled in red, and the source outlined in yellow. Multiple trees can be seen between the site and the course.



Figure K3: Picture taken from the EKU site looking towards lead source. Multiple trees can be seen between the site and the source.

With consultation from EPA, the EKU site scale is changing from micro to middle. With this change, the site no longer meets road distance requirements. There is not an official average daily traffic count for Paul Van Hoose Drive. As the road near the site acts as access to the EKU Facility Service buildings, traffic is minimal.

The EKU site is in the area of maximum concentration for lead, road traffic is minimal, and relocation is not an option. Therefore, KDAQ is requesting a waiver for minimum road distance requirements stated in 40 CFR Part 58, Appendix E, Figure E-1 for the primary and collocated lead samplers at the EKU site.

Appendix L – Notice of Public Comment Period

Kentucky Annual Ambient Air Monitoring Network Plan 2026

In accordance with 40 C.F.R. 58.10(a)(1), the Kentucky Energy and Environment Cabinet will make the annual monitoring network plan available for public inspection for at least 30 days prior to submission to the U.S. EPA. The annual monitoring network plan details the operation and location of ambient air monitors operated by the Kentucky Division for Air Quality, Louisville Metro Air Pollution Control District (LMAPCD), and the National Park Service.

The public comment period relating to the annual monitoring network will begin May 21, 2026 and will conclude on June 20, 2026. Copies of the annual monitoring plan are available for public inspection at the locations listed below. Any individual requiring copies may submit a request to the Division for Air Quality in writing, by telephone, or by electronic mail. Requests for copies should be directed to the contact person. In addition, an electronic version of the proposed annual monitoring network plan and relevant attachments can be downloaded from the [Division for Air Quality's Public Notice site](#).

Again, to be considered part of the record, comments must be received by June 20, 2026. Comments should be sent directly to the contact person. CONTACT PERSON: Ms. Jenna Nall, Environmental Scientist Advisor, Division for Air Quality, 300 Sower Boulevard, 2nd Floor, Frankfort, Kentucky 40601. Phone: (502) 782-7353; Email: jenna.nall@ky.gov

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Regional Offices

KDAQ/Frankfort Regional Office

300 Sower Boulevard
Frankfort, KY 40601

Ashland Regional Office

1550 Wolohan Drive, Suite 1
Ashland, KY 41102

Bowling Green Regional Office

2642 Russellville Road
Bowling Green, KY 42101

Florence Regional Office

8020 Veterans Memorial Drive, Suite 110
Florence, KY 41042

Hazard Regional Office

1332 S. KY Hwy 15, Suite 100
Hazard, KY 41701

LMAPCD

701 W. Ormsby Ave., Suite 303
Louisville, KY 40203

London Regional Office

875 S. Main Street
London, KY 40741

Owensboro Regional Office

3032 Alvey Park Drive W, Suite 700
Owensboro, KY 42303

Paducah Regional Office

130 Eagle Nest Drive
Paducah, KY 42003

Index – KDAQ Air Monitoring Stations by Regional Office

Table 46: KDAQ Air Monitoring Stations by Regional Office

Region	Site Name	AQS ID	County	Page
Hazard	Hazard	21-193-0003	Perry	109
Hazard	Pikeville Primary	21-195-0002	Pike	98
Frankfort, Bluegrass Area	Lexington Primary (Newtown)	21-067-0012	Fayette	56
Frankfort, Bluegrass Area	Nicholasville	21-113-0001	Jessamine	59
Frankfort, Bluegrass Area	Eastern Kentucky University (EKU)	21-151-0005	Madison	96
Florence	Nature Center	21-015-0008	Boone	32
Florence	Northern Kentucky University (NKU)	21-037-3002	Campbell	34
Owensboro	Meadow Lands (Owensboro)	21-059-0015	Daviess	82
Owensboro	Lewisport	21-091-0012	Hancock	107
Owensboro	Sebree SO ₂ DRR Site	21-101-1011	Henderson	94
Ashland	21 st and Greenup	21-019-0002	Boyd	45
Ashland	Ashland Primary (FIVCO)	21-019-0017	Boyd	47
Ashland	Grayson Lake	21-043-0500	Carter	50
Ashland	Worthington	21-089-0007	Greenup	53
Frankfort, North Central Area	Shepherdsville	21-029-0006	Bullitt	63
Frankfort, North Central Area	Freeman Lake	21-093-0007	Hardin	41
Frankfort, North Central Area	Buckner	21-185-0004	Oldham	65
Paducah	Pennyriple Forest	21-047-0007	Christian	38
Paducah	Smithland	21-139-0003	Livingston	86
Paducah	Paducah Transit	21-145-1027	McCracken	88
Bowling Green	Franklin	21-213-0004	Simpson	104
Bowling Green	Ed Spear Park (Smiths Grove)	21-227-0009	Warren	28
London	Middlesboro	21-013-0002	Bell	92
London	Somerset	21-199-0003	Pulaski	101