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GOVERNOR

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

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April 29, 2024

Sarah C. Taft, Ph.D., Acting Director
Air and Radiation Division
U.S. Environmental Protection Agency, Region 4
Atlanta Federal Center
61 Forsyth Street
Atlanta, Georgia 30303-8960

Dear Ms. Taft:

The Kentucky Division for Air Quality (Division) respectfully submits this addendum to the 2023 Annual Ambient Air Monitoring Network Plan, submitted to the U.S Environmental Protection Agency (EPA) on June 30, 2023. The addendum details the relocation of three sites: Owensboro Primary (21-059-0005), Elizabethtown (21-093-0006), and Jackson Purchase (21-145-1024).

The Owensboro Primary site, located in Daviess County, had to be shut down on August 7, 2023, due to land development. The Division is currently in the process of relocating the site on the property of Meadow Lands Elementary School, located at 3500 Hayden Road, Owensboro, KY. Procurement of proper building certification for the shelter has held off site establishment.

The Elizabethtown site has yet to move but will be relocated due to land development. The Division plans on relocating the site to Freeman Lake Park, 140 Freeman Lake Park Road, Elizabethtown, KY.

The Jackson Purchase site, located in McCracken County, had to be shut down due to new property owners expanding their operation. The Division was fortunate in that we were able to stay in operation until we had a new site secured. The Jackson Purchase site was shut down in December 2022 and began sampling at the new site in January 2023. The relocated Jackson Purchase site is Paducah Transit (21-145-1027) located at 920 Harrison Street, Paducah, KY. Paducah Transit was included in the 2023 Network Plan, but was never added to the 2022 Network Plan as an addendum. Paducah Transit is included to formally address the relocation.

All relocated sites will operate the same monitors as their previous counterparts and are located within three miles of their original locations. The Division requests linking the data

Ms. Sarah C. Taft
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between the Owensboro and Elizabethtown sites. The Division is currently evaluating the data between Jackson Purchase and Paducah Transit and does not request linking the two sites at this time.

The addendum is available for inspection during the public comment period at <https://eec.ky.gov/Environmental-Protection/Air/Pages/Public-Notices.aspx>. The finalized 2023 Annual Ambient Air Monitoring Network Plan and the addendum is available on the Division's website at <https://eec.ky.gov/Environmental-Protection/Air/Pages/Division-Reports.aspx>. The addendum will be available for public comment in accordance with 40 CFR 58.10 from April 29, 2024, to May 29, 2024. If you have any questions about the network or this addendum, please contact Ms. Jenna Nall, Environmental Scientist, at (502) 782-7353.

Sincerely,



Michael Kennedy, Director
Kentucky Division for Air Quality

MK/jn

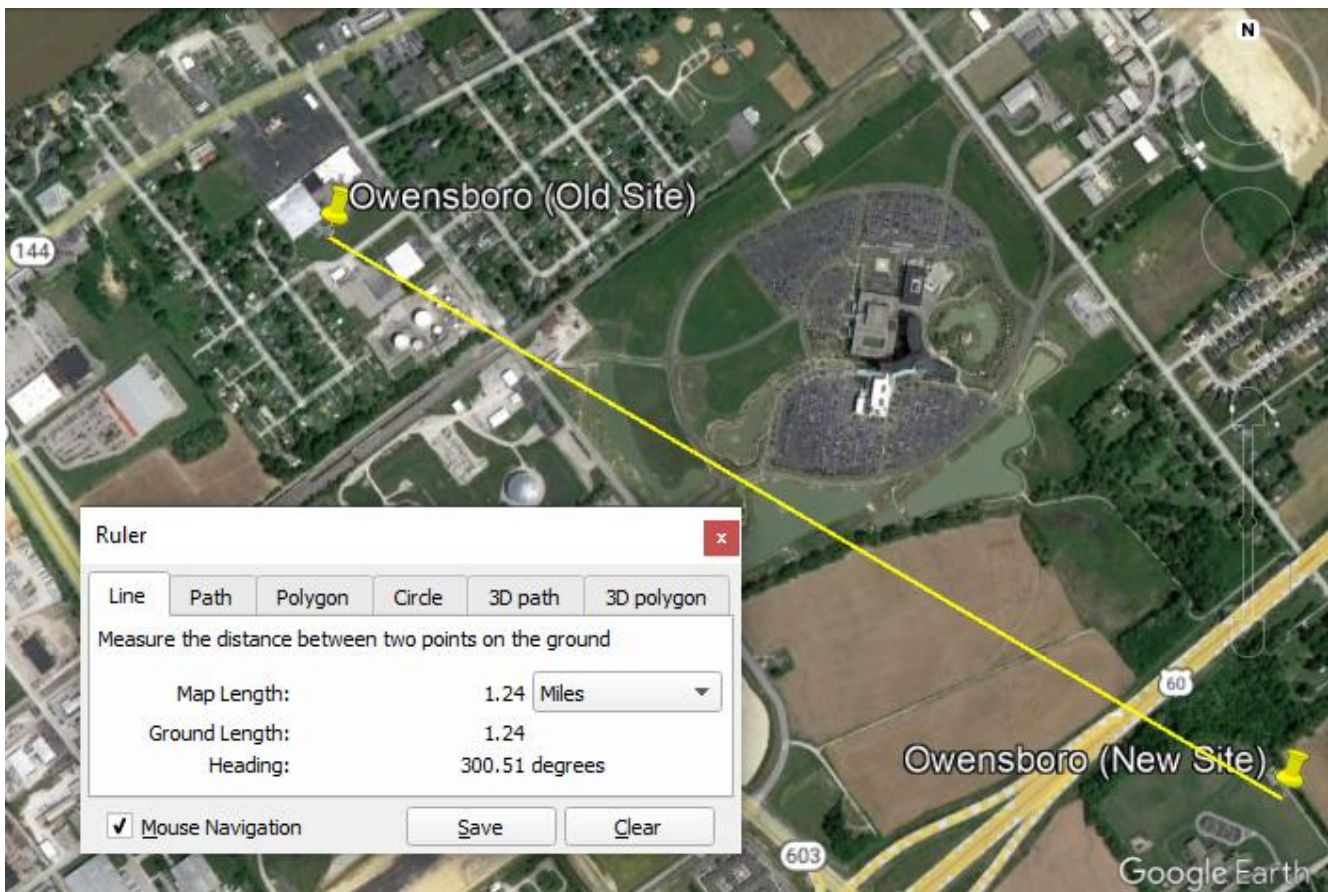
Electronic cc:

- Katy Lusky, USEPA Region IV
- Daniel Garver, USEPA Region IV
- Ryan Brown, USEPA Region IV
- Katherine Meiser, USEPA Region IV
- Anthony Bedel, USEPA Region IV
- Rickard Toomey, Mammoth Cave NP
- Billy DeWitt, LMAPCD
- Bryan Paris, LMAPCD
- Rick Shewekah, KDAQ
- Wayne Bray, KDAQ

Kentucky Annual Ambient Air Monitoring Network Plan 2023 Addendum

Owensboro Primary (21-059-0005), located in Davies County, has to be relocated due to the property being developed. The Kentucky Division for Air Quality (KDAQ) is currently working on securing the paperwork needed to relocate the site on the grounds of Meadow Lands Elementary School, located at 3500 Hayden Road, Owensboro, KY. Due to the expedited property development at Owensboro Primary and the new site's approval being delayed, Owensboro Primary had to be shut down on August 7, 2023.

The new site is approximately 1.24 miles southeast of the old site. The new site will continue to monitor ozone, sulfur dioxide, nitrogen dioxide, and PM_{2.5}. Since the two locations are in close proximity and will be monitoring the same pollutants, KDAQ requests linking the data.



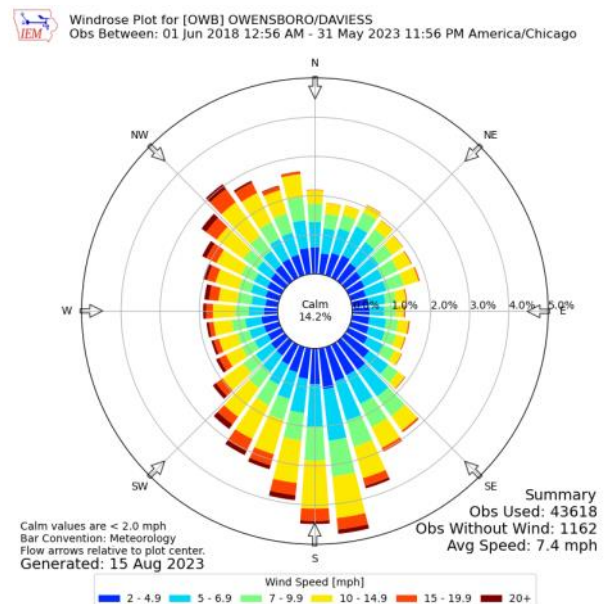
Google Earth image showing the distance and direction between the old and new Owensboro sites.

Kentucky Annual Ambient Air Monitoring Network Plan 2023 Addendum



Google Earth image showing the proposed site location on the grounds of Meadow Lands Elementary School.

The proposed station location is represented by the red rectangle in the above Google Earth image. The inlets will be roughly 16 m from the gravel driveway, 22 m from the tree line east of the site, and 130 m from Hayden Road. There are two rows of trees. The closest row of trees are roughly 7 m in height. The back row has trees that range up to 15 m in height but are 30 m or more away from the proposed shelter location. The closest road is Hayden Road, at 130m, with an annual average daily traffic of 1,612. US-60 is 277m away with an annual average daily traffic count of 16,283. A cellular tower is located north of the site and the Meadow Lands School building is southwest. A wind rose for the Owensboro/Davies County area was created using Iowa Environmental Mesonet (IEM) custom wind roses. It shows a predominantly south southeast wind direction.



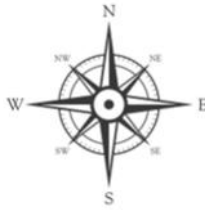
Wind rose obtained from https://www.mesonet.agron.iastate.edu/sites/dyn_windrose.phtml?station=OWB&network=KY_ASOS

Kentucky Annual Ambient Air Monitoring Network Plan 2023 Addendum

Proposed site relocation for Owensboro Primary (21-059-0005):
Meadow Lands Elementary School, 3500 Hayden Rd, Owensboro, KY 42303



Approximate
Cardinal
Direction



Kentucky Annual Ambient Air Monitoring Network Plan 2023 Addendum

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: TBD

Inspection Date: TBD

Inspection By: TBD

Site Approval Status: TBD



Due to land development plans, Owensboro Primary (21-059-0005) has to be relocated. KDAQ is currently working on establishing the new site. The monitoring site will be a stationary equipment shelter located on the grounds of Meadow Lands Elementary School in Owensboro, Kentucky. Meadow Lands is approximately 1.24 miles southeast of Owensboro Primary. The new site will retain all monitors and designations from the Owensboro Primary site.

Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards; to detect emergency pollution levels of criteria pollutants for activation of emergency control procedures. While not required for the CBSA, the site also provide levels of pollutants for daily index reporting.

Monitors				
Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Nitrogen Dioxide (NO ₂ , NO, NO _x)	TBD	SLAMS EPISODE	Chemiluminescence	Continuously
AEM Ozone	TBD	SLAMS EPISODE AQI	UV Photometry	Continuously March 1 – October 31
FEM PM _{2.5} Continuous	TBD	SLAMS EPISODE AQI	Broadband Spectroscopy	Continuously
AEM Sulfur Dioxide	TBD	SLAMS EPISODE	UV Fluorescence	Continuously

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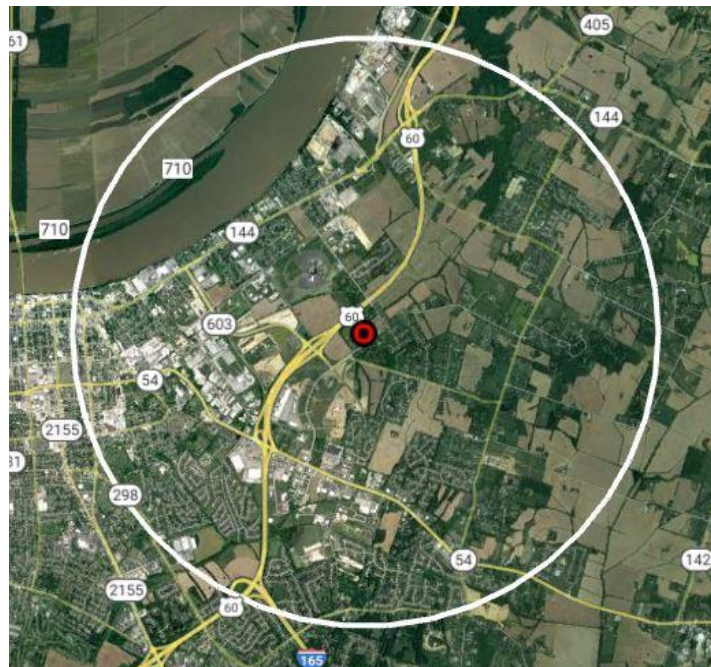
Quality Assurance Status:

All Quality Assurance procedures will be implemented in accordance with 40 CFR 58, Appendix A.

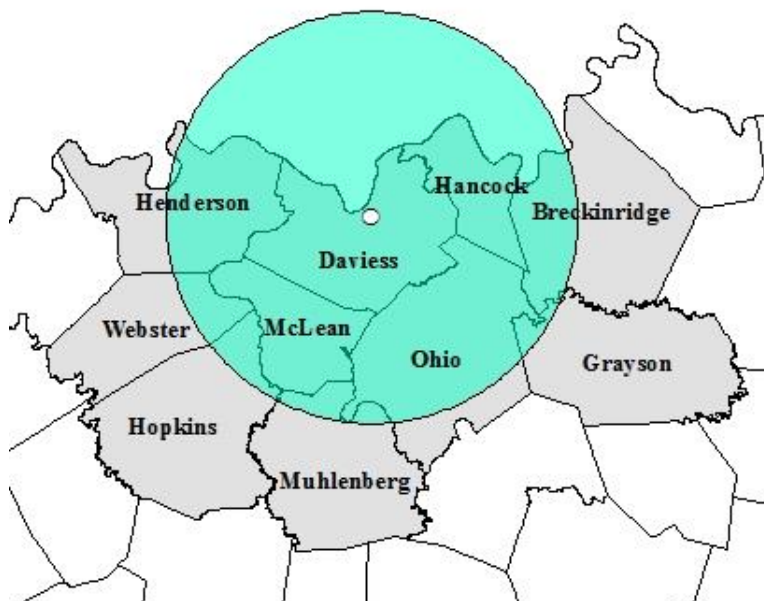
Area Representativeness:

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

Neighborhood Scale: Ozone, Sulfur Dioxide, Particulates



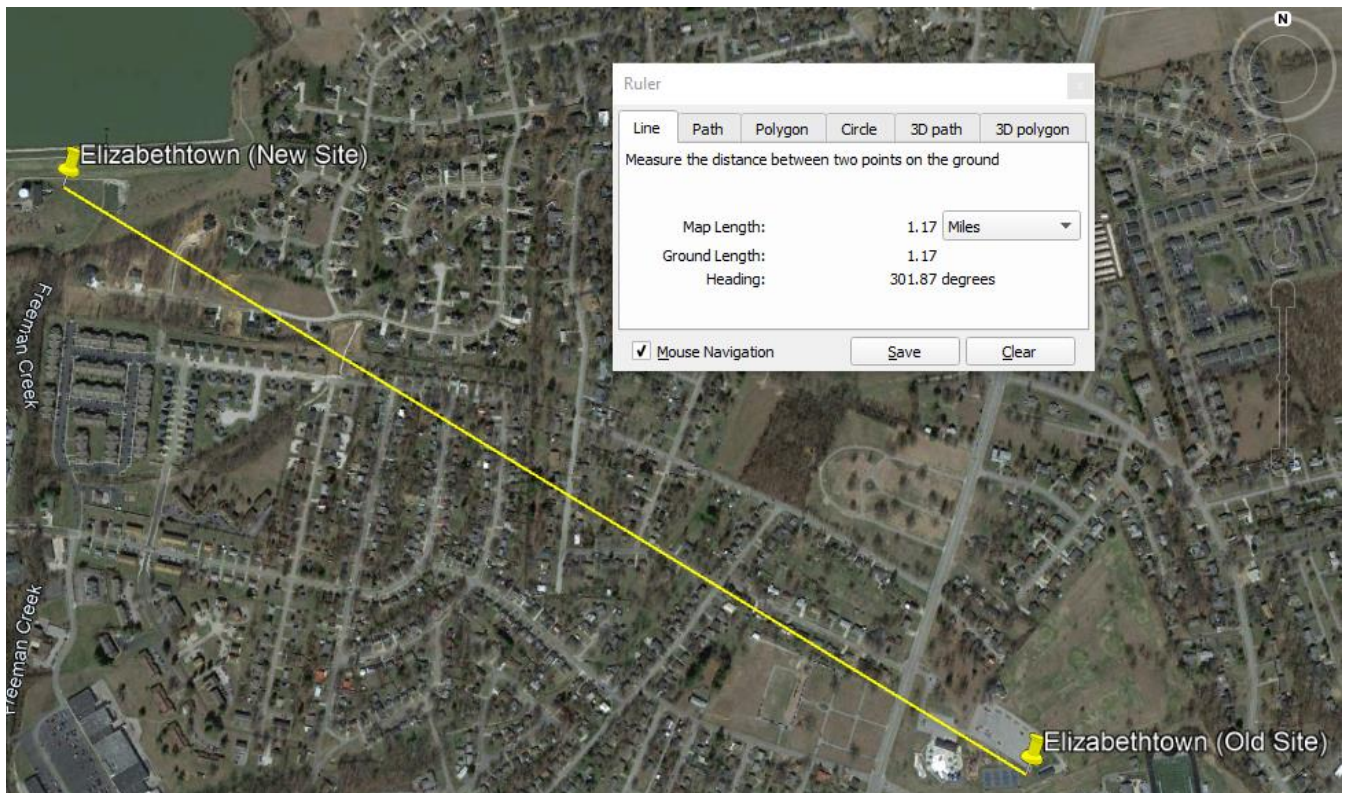
Urban Scale: Nitrogen Dioxide



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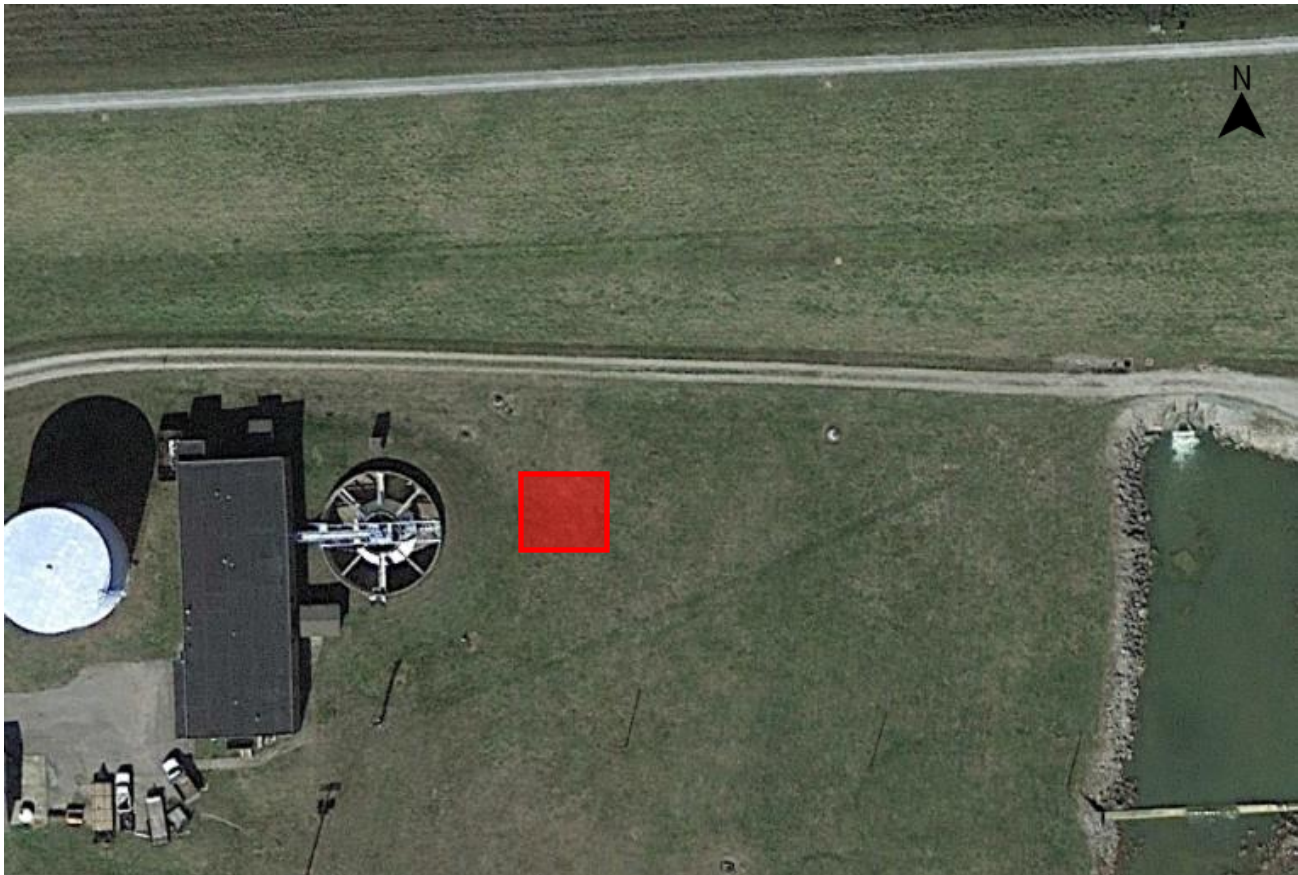
Elizabethtown (21-093-0006), located in Hardin County, has to be relocated due to new development on the property. KDAQ has been working with Elizabethtown Parks and Recreation on relocating the air monitoring site. The site will move from American Legion Park to Freeman Lake.

The new site is approximately 1.17 miles northwest of the old site. The new site will continue to monitor ozone and PM_{2.5} (continuous and intermittent). Since the two locations are in close proximity and will be monitoring the same pollutants, KDAQ requests linking the data.



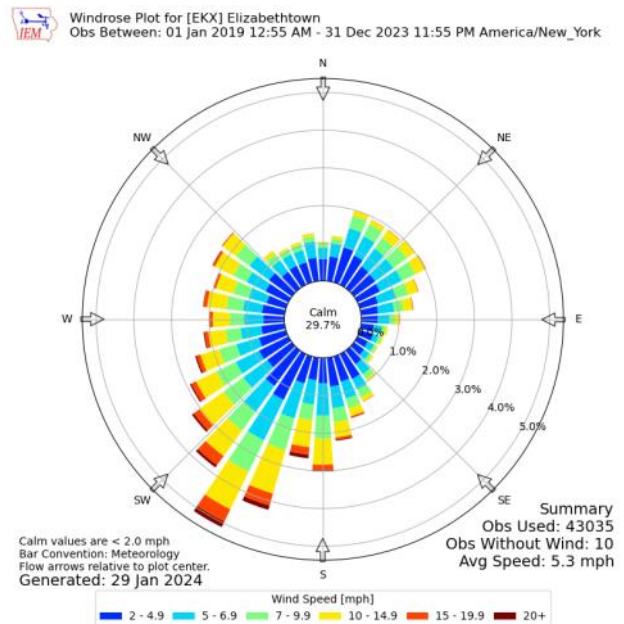
Google Earth image showing the distance and direction between the old and new Elizabethtown sites.

Kentucky Annual Ambient Air Monitoring Network Plan 2023 Addendum



Google Earth image showing the proposed site location on the grounds of Freeman Lake Park.

The proposed station location is represented by the red square in the above Google Earth image. The north side of the fence will be 15.8m from the gravel drive, which has restricted vehicle access. From the center point of the site, the closest structure is 4.6m in height and 17.2m in distance. The building is 8.6m in height and 36.2m in distance. The cylindrical building is 16m in height and 58m in distance. The dam, north of the site, is roughly 10m in height and 55m away. The closest road is a cul-de-sac, Freeman Lake Road (182m). The closest major road is North Dixie Highway at 525m with an annual average daily traffic count of 17,394. A wind rose for Elizabethtown was created using Iowa Environmental Mesonet (IEM) custom wind roses. It shows a predominantly southwest wind direction.



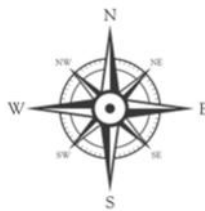
Wind rose obtained from https://www.mesonet.agron.iastate.edu/sites/dyn_windrose.phtml?station=EKX&network=KY_ASOS

Kentucky Annual Ambient Air Monitoring Network Plan 2023 Addendum

Proposed site relocation for Elizabethtown (21-093-0006):
Freeman Lake Park, 140 Freeman Lake Park Road, Elizabethtown, KY, 42701



Approximate
Cardinal
Direction



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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

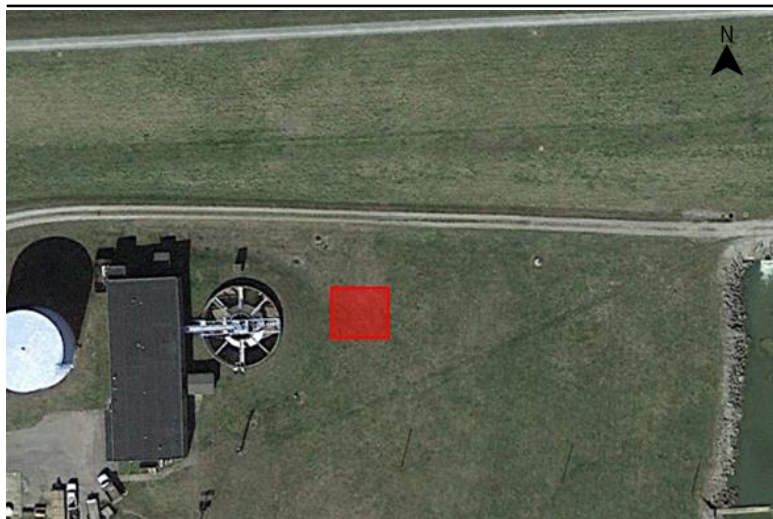
GPS Coordinates: 37.7145134, -85.8708227 (NAD 83)

Date Established: TBD

Inspection Date: TBD

Inspection By: TBD

Site Approval Status: TBD



Due to land development, the Elizabethtown site (21-093-0006) is being relocated to Freeman Lake Park. The new location is at the southside of the lake, near a water treatment plant that is no longer in operation. The Freeman Lake site is approximately 1.17 miles northwest of the Elizabethtown site. The new site will retain all monitors and designations from the current Elizabethtown site.

Monitoring Objective:

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

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

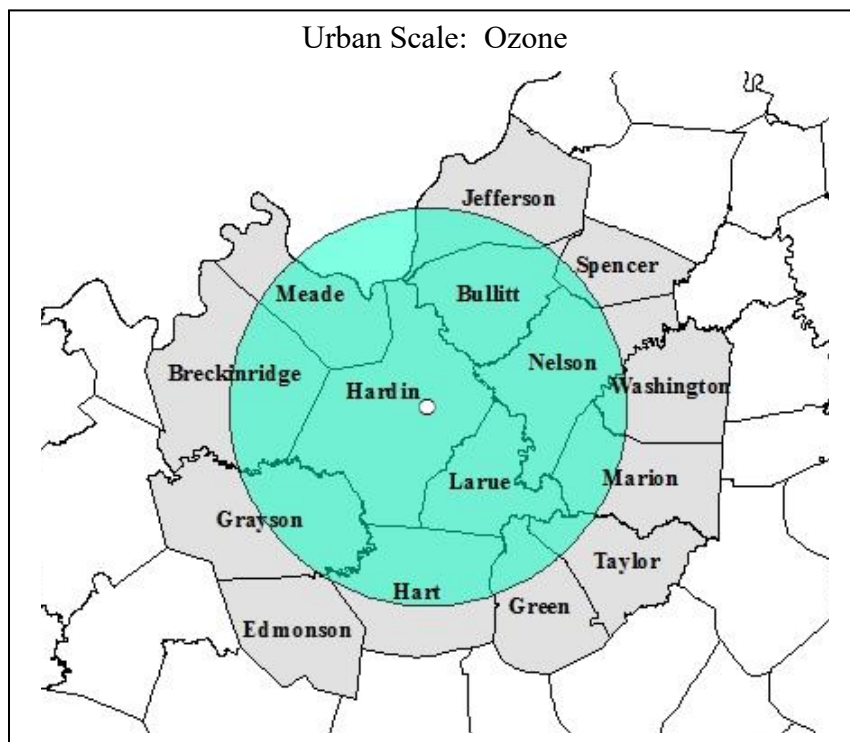
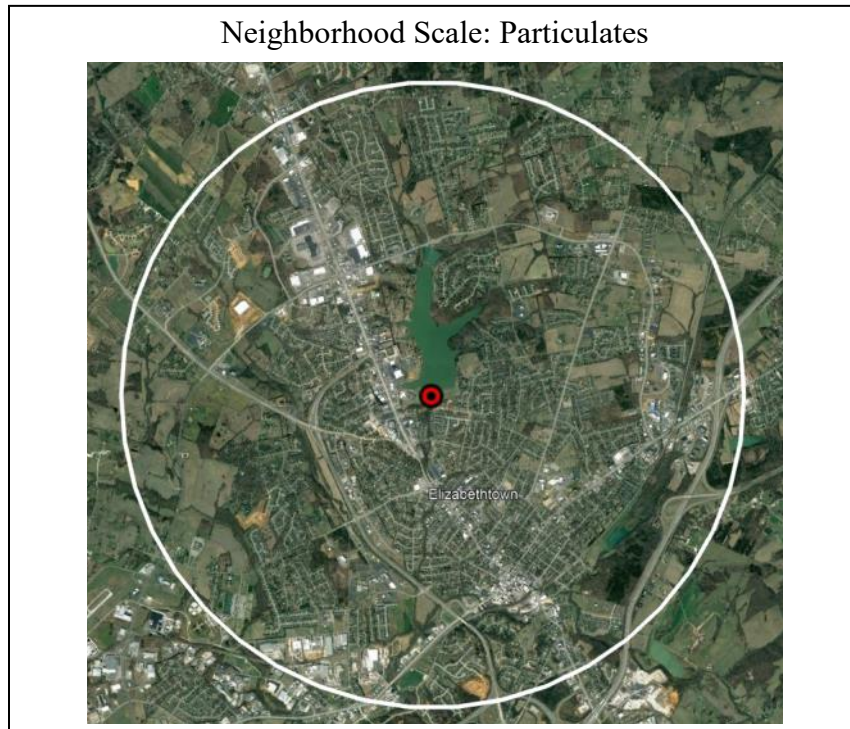
Kentucky Annual Ambient Air Monitoring Network Plan 2023 Addendum

Quality Assurance Status:

All Quality Assurance procedures will be implemented in accordance with 40 CFR 58, Appendix A.

Area Representativeness:

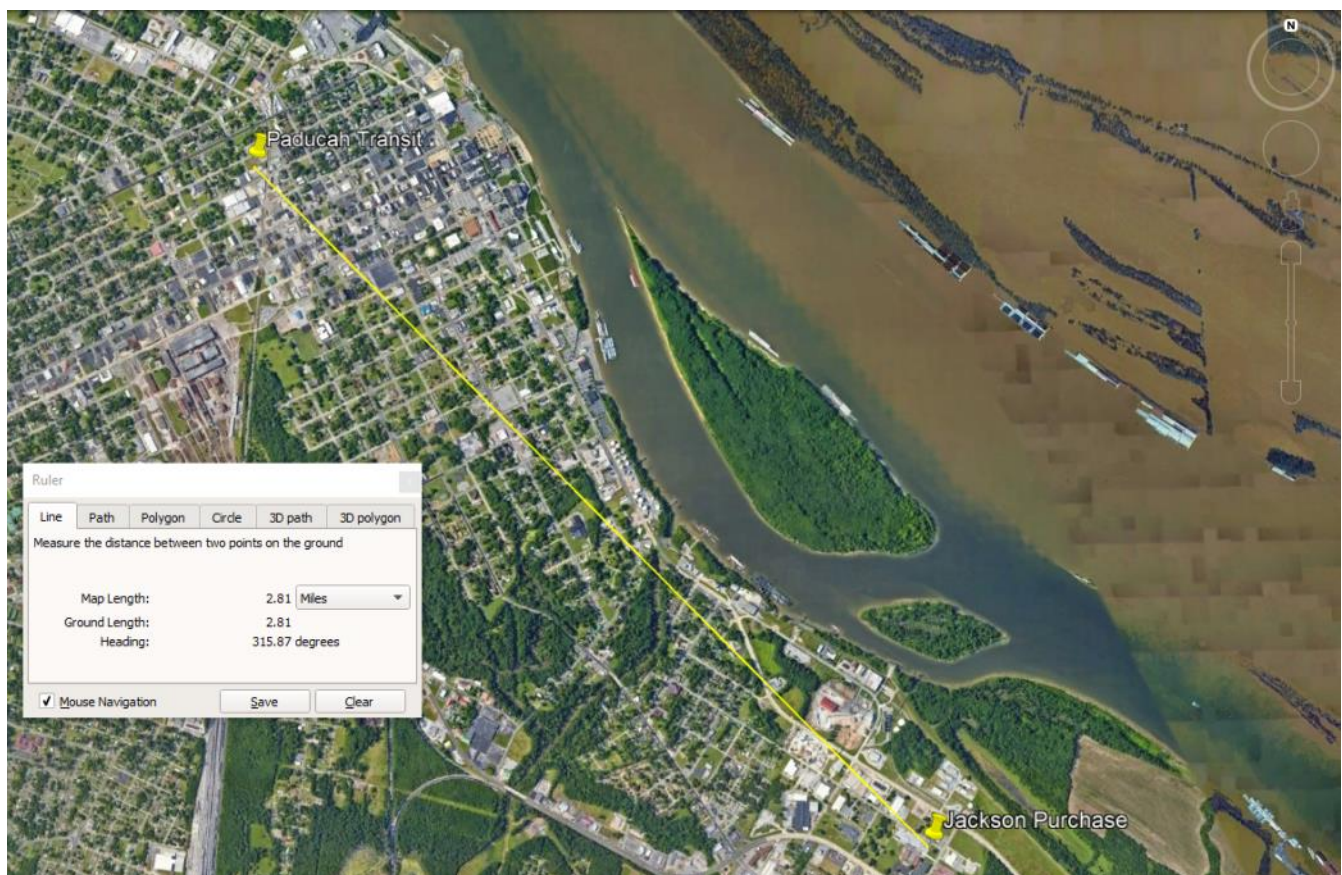
This site will represent population exposure on a neighborhood scale for particulates and population exposure on an urban scale for ozone.



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Jackson Purchase (21-145-1024), located in McCracken County, had to be relocated due to the new property owners expanding their operations. The KDAQ has relocated the site on the grounds of The Paducah Area Transit System (PATS) on 920 Harrison Street, Paducah, KY. Sampling was shut down in December 2022 at Jackson Purchase and began in January 2023 at Paducah Transit. Paducah Transit was included in the 2023 Network Plan, but was never added to the 2022 Network Plan as an addendum. Paducah Transit is included in this 2023 addendum to formally address the relocation.

Paducah Transit is approximately 2.81 miles northwest of Jackson Purchase. Paducah Transit continues to monitor ozone, sulfur dioxide, nitrogen dioxide, and PM_{2.5}. KDAQ is currently evaluating the data between Jackson Purchase and Paducah Transit and does not request linking the two sites at this time.



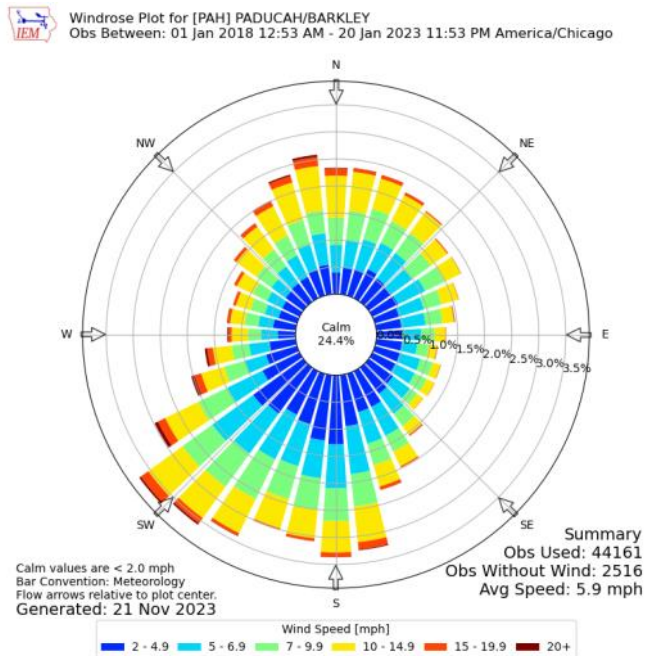
Google Earth image showing the distance and direction between the Jackson Purchase and Paducah Transit sites.

Kentucky Annual Ambient Air Monitoring Network Plan 2023 Addendum



Google Earth image of Paducah Transit.

Paducah Transit is shown in the Google Earth image above. The closest road is North 10th Street, approximately 30m from the samplers. The closest tree is approximately 54m from the monitors and 17.7m tall. The closest road with a traffic count is Martin Luther King Jr. Drive, approximately 170m away, with an annual average daily traffic of 4,854. A wind rose for the Paducah area was created using Iowa Environmental Mesonet (IEM) custom wind roses. It shows a predominantly southwest wind direction.



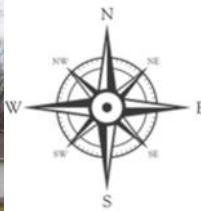
Wind rose obtained from https://www.mesonet.agron.iastate.edu/sites/dyn_windrose.phtml?station=PAH&network=KY_ASOS

Kentucky Annual Ambient Air Monitoring Network Plan 2023 Addendum

Site relocation for Jackson Purchase (21-145-1024):
920 Harrison Street, Paducah, KY 42001



Approximate
Cardinal
Direction



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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 16, 2023

Inspection By: Jenna Nall and Lisa Hicks

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



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 2.81 miles NW of the Jackson Purchase site.

Monitoring Objective:

The monitoring objectives are to determine compliance with National Ambient Air Quality Standards and to detect elevated pollutant levels for activation of emergency control procedures for nitrogen dioxide, ozone, and sulfur dioxide. While not required for the CBSA, the site also provides pollutant levels for daily air quality index reporting.

Monitors				
Monitor Type	Inlet Height (meters)	Designation	Analysis Method	Frequency of Sampling
AEM Nitrogen Dioxide (NO ₂ , NO, NO _x)	4.26	SLAMS EPISODE	Chemiluminescence	Continuously
AEM Sulfur Dioxide	4.27	SLAMS EPISODE	UV Fluorescence	Continuously
FEM PM _{2.5} Continuous	4.8	SLAMS AQI	Broadband Spectroscopy	Continuously
AEM Ozone	4.12	SLAMS AQI EPISODE	UV Photometry	Continuously March 1-October 31

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Quality Assurance Status:

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

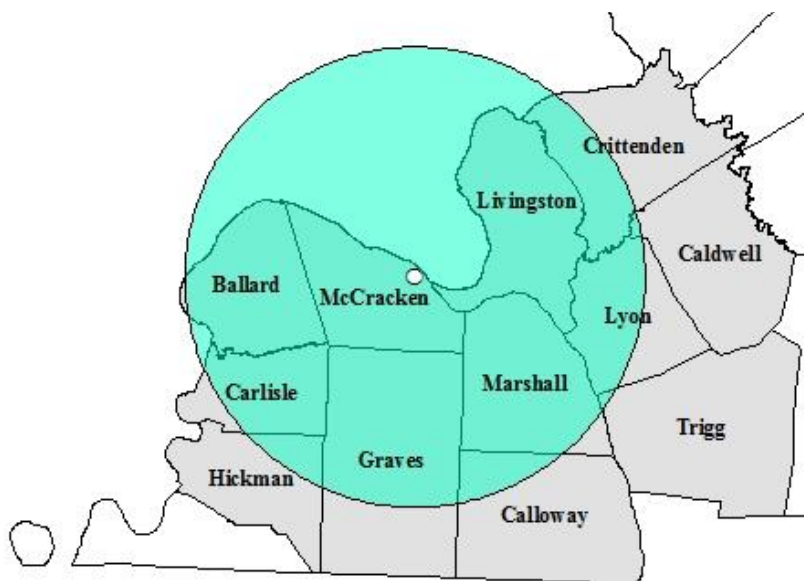
Area Representativeness:

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.

Neighborhood Scale: Ozone, Particulates, Sulfur Dioxide



Urban Scale: Nitrogen Dioxide



Kentucky Annual Ambient Air Monitoring Network Plan 2023 Addendum

NOTICE OF PUBLIC COMMENT PERIOD KENTUCKY DIVISION FOR AIR QUALITY AMBIENT AIR MONITORING NETWORK ADDENDUM

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 Kentucky Division for Air Quality is proposing a modification to the 2023 annual monitoring network plan, which was originally published for a 30 day comment period on May 23, 2023, and subsequently submitted to the U.S. EPA on June 30, 2023.

The public comment period relating to the proposed addendum will begin April 29, 2024 and will conclude on May 29, 2024. Copies of the annual monitoring plan and this addendum 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 website at:

<https://eec.ky.gov/Environmental-Protection/Air/Pages/Public-Notices.aspx>

Again, to be considered part of the record, comments must be received by May 29, 2024. 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

The Energy and Environment Cabinet does not discriminate on the basis of race, color, national origin, sex, age, religion, or disability and provides, upon request, reasonable accommodation 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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Ashland, KY 41102

Bowling Green Regional Office
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Bowling Green, KY 42101

Frankfort Regional Office
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Frankfort, KY 40601

Hazard Regional Office
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Hazard, KY 41701

London Regional Office
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London, KY 40741

Paducah Regional Office
130 Eagle Nest Drive
Paducah, KY 42003

Florence Regional Office
8020 Veterans Mem Dr., Suite 110
Florence, KY 41042

Owensboro Regional Office
3032 Alvey Park Dr., Suite 700
Owensboro, KY 42303