Allegheny County Health Department
Air Quality Program
Monitoring Section
301 39th Street, Building 7
Pittsburgh, PA 15201

2019 Annual Monitoring Network Plan

July 1, 2018

KAREN HACKER, M.D., M.P.H., DIRECTOR
ALLEGHENY COUNTY HEALTH DEPARTMENT
542 FOURTH AVENUE. • PITTSBURGH, PA 15219 PHONE (412) 687-ACHD (2243)
• FAX (412) 578-8325 • WWW.ACHD.NET

Contents

List of Figures and Tables

1.0 Annual Air Monitoring Network Plan Requirements

The Allegheny County Health Department Air Quality Program Monitoring Section has prepared the 2019 Annual Monitoring Network Plan and disseminated the Public Comment Version on May 1, 2018. Every effort has been made to document all air monitoring performed in Allegheny County. The body of the plan discusses the regulatory requirements for our SLAMS sites, whereas the appendices present information not required by the plan. The appendices are included to be transparent about the non-SLAMS monitoring performed in Allegheny County. Monitoring data generated by ACHD is available upon request.

40 CFR Part 58, §58.10 contains the annual monitoring network plan requirements. Each year on July 1, the plan is to be submitted to the USEPA Regional (Region III) Administrator. A summary of the applicable requirements that parallels and condenses the regulatory text follows.

§58.10 (a) requires each agency to prepare an annual plan for an air quality surveillance system that consists of a network of SLAMS monitoring stations that can include FRM, FEM, and ARM monitors that are part of SLAMS, NCORE, CSN, PAMS, and SPM stations. Prior to submittal, the plan must be made available for public inspection and comment for at least 30 days. In addition, the plan shall include:

1. A statement of whether the operation of each monitor meets the requirements of Appendices A, B, C, D, and E of 40CFR58, where applicable.
2. Any proposed SLAMS network modifications (including new or discontinued monitoring sites, new determinations that data are not of sufficient quality to be compared to the NAAQS and changes in identification of monitors as suitable or not suitable for comparison against the annual $PM_{2.5}$ NAAQS). The EPA Regional Administrator has 120 days to approve or disapprove the plan.
3. A plan for making Photochemical Assessment Monitoring Stations (PAMS) measurements as required in 40CFR58, Appendix D, Paragraph 5(a). The PAMS Network Description of Appendix D may be used to meet this requirement. The plan shall provide for the required PAMS measurements to begin by June 1, 2019.
4. An Enhanced Monitoring Plan for O_3 in accordance with the requirements of 40CFR58, Appendix D, Paragraph 5(h). The EMP shall be submitted to the EPA Regional Administrator no later than October 1, 2019.

§58.10 (b) requires that the plan must contain the following information for each existing and proposed site:

1. The Air Quality System (AQS) site identification number.
2. The location, including street address and geographical coordinates.
3. The sampling and analysis method(s) for each measured parameter.
4. The operating schedules for each monitor.
5. Any proposals to remove or move a monitoring station within a period of 18 months following plan submittal.
6. The monitoring objective and spatial scale of representativeness for each monitor.
7. The identification of any sites that are suitable and sites that are not suitable for comparison against the annual $PM_{2.5}$ NAAQS (as described in §58.30).

8. The Metropolitan Statistical Area (MSA), Core Based Statistical Area (CBSA), Combined Statistical Area (CSA) or other area represented by the monitor.
9. The designation of any lead (Pb) monitors as either source-oriented or non-source-oriented.
10. The identification of required NO_2 monitors as near-road, area-wide, or vulnerable and susceptible population monitors.
11. The identification of any $PM_{2.5}$ FEMs and/or ARMs used in the monitoring agency's network where the data are not of sufficient quality such that data are not to be compared to the NAAQS.

§58.10 (c) requires that the plan must document the process for obtaining public comment and include any comments received through the public notification process within their submitted plan.

§58.10 (d) The local agency shall perform and submit to the EPA Regional Administrator an assessment of the air quality surveillance system every 5 years to determine, at a minimum, if the network meets the monitoring objectives defined in Appendix D, whether new sites are needed, whether existing sites are no longer needed and can be terminated and whether new technologies are appropriate for incorporation into the ambient air monitoring network. The network assessment must consider the ability of existing and proposed sites to support air quality characterization for areas with relatively high populations of susceptible individuals and, for any sites that are being proposed for discontinuance, the effect on data users other than the agency itself, such as nearby states and tribes or health effects studies. The agency must submit a copy of this 5-year assessment along with a revised annual network plan. The assessments are due every five years beginning July 1, 2010. The assessment is a separate document that was last prepared in 2015.

§58.10 (e) All proposed additions and discontinuations of SLAMS monitors in annual monitoring network plans and periodic network assessments are subject to approval according to §58.14.

2.0 Changes Since the Last Air Monitoring Network Plan

2.1 Monitor Reductions

2.1.1 Lead Monitoring

Bridgeville and Lawrenceville sites were discontinued as there are no point sources which emit greater than 0.5 tons per year. EPA approval allowed the sampling to end after 2017.

2.2 Monitoring Additions

2.2.1 PAMS Sensors

In anticipation of PAMS, meteorological measurements made at the Lawrenceville site now include atmospheric pressure, precipitation, solar radiation and UV radiation. The sensors became operable on September 1, 2017. Data from these sensors are being submitted to AQS, effective January 1, 2018. The Department plans to operate these sensors on a year-round basis.

2.2.2 South Fayette Year-Round Ozone

The existing seasonal ozone monitor at South Fayette began operating as a year-round monitor on January 1, 2018. The change in periodicity was a result of the atypical pattern of ozone at this monitoring site. Ozone concentrations were showing signs of departure from the expected diurnal trend. Specifically, overnight concentrations of ozone at South Fayette were not returning to the comparatively lower levels being seen at Harrison and Lawrenceville.

2.2.3 Liberty $PM_{2.5}$ FEM

A Thermo Scientific 5014i $PM_{2.5}$ FEM monitor was installed at the Liberty site during November 2017. This continuous monitor will be operated as a special purpose monitor for one year. If the 5014i correlates acceptably with the daily filter based $PM_{2.5}$ FRM data generated at that site, it will be designated as SLAMS monitor and additionally it will be used to determine the air quality index.

2.3 Monitoring Waivers

$PM_{2.5}$ SLAMS monitoring at Clairton and North Park operate on a 1 in 6-day schedule. By approval of the 2018 Annual Network Plan, EPA granted a waiver to operate at this sampling frequency versus the SLAMS requirement of a minimum 1 in 3-day schedule. Allegheny County Design Values can be influenced by $PM_{2.5}$ data from these two monitoring sites.

3.0 Proposed Changes to the Air Monitoring Network

3.1 Monitor Reductions

3.1.1 Avalon $PM_{2.5}$ FRM Sampling Frequency

ACHD plans reduce the sampling frequency of the Avalon $PM_{2.5}$ FRM monitor. This monitor is a secondary collocated monitor that supports the primary $PM_{2.5}$ FEM continuous monitor at that site. The FRM sampling frequency will be reduced from every three days to every six days, which is consistent with the other $PM_{2.5}$ FRM collocated samplers in the network.

3.2 Monitor Additions

3.2.1 PAMS (Photochemical Assessment Monitoring Stations)

ACHD plans to adopt the network design criteria as contained in 40CFR58, Appendix D, Section 5. PAMS monitoring is required at NCORE sites in Core Based Statistical Areas (CBSAs) with a population of 1,000,000 people or more. The Lawrenceville NCORE site is required to measure the PAMS parameters by June 1, 2019. The PAMS monitoring season is three months long (June, July and August). PAMS measurements will include:

- **Hourly Volatile Organic Compounds** using a specifically designed dual column gas chromatograph.
- **Carbonyls** using EPA method TO-11a, DNPH cartridge sampling with subsequent laboratory analysis. Required sampling frequency is every three days at 8-hour intervals.
- **True NO_2 (continuous)** using a new type of monitor that eliminates interference from other oxides of nitrogen species. This monitor will have a USEPA equivalent method designation for ambient NO_2 monitoring.
- **Hourly Mixing Height** using a ceilometer, an instrument that employs an upward facing laser coupled with a lidar receiver to determine atmospheric inversion height on an hourly basis.
- **Meteorological Monitoring** using atmospheric pressure, precipitation, solar radiation and UV radiation sensors. Wind speed, wind direction, ambient temperature and relative humidity are also required, but are currently operated as an NCORE monitoring site requirement.

For information about the national PAMS network see:

https://www3.epa.gov/ttn/amtic/pamsmain.html

3.2.2 EMP (Enhanced Monitoring Plan)

Ozone is a regional pollutant, and Pennsylvania is part of the Ozone Transport Region (OTR), a group of northeast states from Virginia to Maine that are jointly addressing the ozone problem. As required in 40CFR58, Appendix D, Section 5(h), states in the OTR must develop an Enhanced Monitoring Plan (EMP) detailing enhanced O_3 and O_3 precursor monitoring activities to be performed. At a minimum, the EMP shall be reassessed and approved as part of the 5-year network assessments required under 40 CFR 58.10(d). The Department is required to conduct its next 5-year network assessment during 2020, to be included in the Annual Network Plan for 2021.

An effective EMP would involve the cooperation of the state of Pennsylvania as well as bordering states, since the ozone concentrations are affected by transport and secondary atmospheric reactions. The Department's portion of Pennsylvania's proposed EMP is to commence after the 2020 PAMS season, continue indefinitely and include the following activities:

1. Operate all three existing ozone monitoring sites on a year-round basis, commenced 11/01/2017

2. Operate the PAMS true NO_2 monitor on a year-round basis, planned for 9/1/2020

3. Year-round speciated VOC and carbonyl sampling and analysis will continue at Flag Plaza on a 1 in 6-day frequency (See Section 10.10)

4. Operate the PAMS ceilometer on a year-round basis, planned for 9/1/2020

5. Continue to operate NO_2/NO_X chemiluminescence monitor at the Harrison ozone monitoring site on a year-round basis

6. Operate PAMS required meteorological sensors on a year-round basis, commenced 1/1/2017

In addition to the parameters mentioned, the Lawrenceville PAMS site is a candidate location for citing a PANDORA spectrometer. The EPA will ultimately decide which candidate sites will be chosen for PANDORA installation and operation. Adequate sky exposure, geographic distribution, suitable topography and compatible internet access are factors that will be considered. The PANDORA Spectrometer was developed by NASA to measure total atmospheric column concentrations of formaldehyde, ozone, sulfur dioxide, BrO, NO_2, and H_2O every 80 seconds. These data can be used to cross reference satellite data and ground comparison. For information about PANDORA, see the following webpage:

https://acd-ext.gsfc.nasa.gov/Projects/Pandora/index.html

4.0 Air Monitoring Network Summary

Figure 4 and Table 4 are provided as overviews of the air monitoring network and presented here to show at a glance the numbers and general types of air monitors currently maintained by the Air Quality Program as well as the general location of each fixed monitoring site. To view live and recent data for all continuous monitors listed in the table, see the Air Quality Program website;

http://www.achd.net/air/air.html

Figure 4 Air Monitoring Network Map

Table 4 Air Monitoring Network Summary (SLAMS and EPA Required Monitors)

	SO_2	CO	NO_2	NO_y	O_3	PM_{10}	$PM_{2.5}$	PM coarse	Air Toxics
Lawrenceville NCORE	CT	CT		CT	C		C I(1), IQA(6) SPC(3)	C	
Liberty	CT					C I(3), IQA(6)	C, CN I(1), IQA(6) SPC(6)		
North Braddock	C					C	I(3)		
South Fayette	C				C	I(6)	I(3)		
Clairton						I(6)	I(6)		
Avalon	C						IQA(3), C		
Flag Plaza		C				C			T15(6) T11(6)
Glassport						C			
Lincoln						C	CN		
Manchester						I(6)			
Harrison			C		C		I(3)		
North Park							I(6)		
Parkway East Near Road		CT	CT				C		Aeth(C)
	SO_2	CO	NO_2	NOy	O_3	PM_{10}	$PM_{2.5}$	PM coarse	Air Toxic
Total	C = 3 CT = 2	C = 1 CT = 2	C = 1 CT=1	CT = 1	C = 3	C = 5 I = 4 IQA=1	C = 3 CN = 2 I = 7 IQA = 3 SPC=2	C = 1	I = 2 C=1

Tabular Summary Key

I = Intermittent or Filter-Based **C** = Continuous **SPC** = PM2.5 Speciation
T = Trace Level Monitor **(1), (3), or (6)** = Sampling Frequency [for example, (**3**) means every third day]
T15 = SUMMA TO15 **T11** = Carbonyl TO11 **Aeth** = **Aethalometer**: Black Carbon, Ultraviolet PM
QA = Collocated QA monitor
N = Non-FEM **c**ontinuous PM2.5 monitor (can be used for purposes of determining the AQI)

5.0 Appendix A Requirements

40CFR58, Appendix A specifies the minimum quality system requirements applicable to SLAMS and other monitor types whose data are intended to be used to determine compliance with the NAAQS. ACHD is the Primary Quality Assurance Organization (PQAO) for this data set. A PQAO is also responsible for demonstrating data quality. ACHD has developed a quality system that is described and approved in quality management plans (QMP) and quality assurance project plans (QAPP). The purpose of these documents is to ensure that the monitoring results provide data of adequate quality for the intended monitoring objectives.

ACHD performs the requisite measurement quality checks that are used to assess data quality. ACHD also performs an internal second level audit as an added measure of the data quality. Data from these checks is submitted to the AQS within the same time frame as routinely-collected ambient concentration data. In addition to performing QA and QC checks, ACHD participates in external performance evaluation programs (which are independent assessments) and technical systems audit conducted by the EPA.

Regarding all data generated by the criteria pollutant monitors described in this network review, no later than May 1 of each year, ACHD submits a letter certifying accuracy and reliability of each previous calendar year's criteria air pollutant monitoring data reported to AQS to the Mid Atlantic Regional Administrator in hard copy. An electronic copy of this information will also be sent to the Mid-Atlantic Region Associate Director, Office of Air Monitoring and Planning.

ACHD's data certification will contain all required reports and will be accompanied with a statement from a responsible official who certifies that;

- All ambient concentration data and quality assurance data have been reported to the AQS database.
- The ambient data are accurate to the best of his or her knowledge taking into consideration all applicable quality assurance findings.

6.0 Appendix B Requirements

40CFR58, Appendix B specifies the minimum quality assurance requirements for the control and assessment of the quality of the ambient air monitoring data submitted to a PSD reviewing authority or the EPA by an organization operating an air monitoring station, or network of stations, operated to comply with Part 51 New Source Review (NSR) - Prevention of Significant Deterioration (PSD).

At present, Appendix B requirements are not applicable since there is no PSD monitoring performed by ACHD nor performed by an external PSD PQAO within the county.

7.0 Appendix C Requirements

Appendix C specifies the criteria pollutant monitoring methods (manual methods or automated analyzers) which must be used in SLAMS, NCORE stations (a subset of SLAMS) and PAMS (to be located at the NCORE site and considered to be another subset of SLAMS).

All criteria pollutant monitoring methods in the air monitoring network used for making NAAQS decisions at a SLAMS site are reference (FRM) or equivalent (FEM) methods. The FRM or FEM designation acceptance tests are performed by the manufacturer in accordance with the requirements of 40CFR50 and 40CFR53.

Methods employed at the Lawrenceville NCORE multipollutant site are either reference or equivalent methods. NCORE multipollutant parameters include SO_2, CO, NO_y, O_3, $PM_{2.5}$ and $PM_{10-2.5}$ (aka PM_{coarse}, Coarse PM or PM_c). NO_y and PM_c do not have an associated NAAQS.

Methods to be employed at the proposed Lawrenceville PAMS site will be either reference or equivalent methods (where applicable). PAMS FEM monitoring parameters include O_3 and true NO_2. PAMS monitoring which do not have FEM nor FRM designation include methods for meteorological measurements and speciated VOC monitoring methodologies which are specified in PAMS guidance documents.

- Meteorological monitoring guidance is provided in QA Handbook, Volume IV – Meteorological Measurements found at https://www3.epa.gov/ttn/amtic/qalist.html.

- The Compendium of Methods for the Determination of Toxic Organic (https://www3.epa.gov/ttn/amtic/airtox.html#compendium) can be found on EPA's website. Carbonyl sampling and analysis is based upon TO-11A and the automated gas chromatography method is based upon TO-15.

8.0 Appendix D Requirements

Appendix D describes monitoring objectives and general criteria to be applied in establishing the required SLAMS ambient air quality monitoring stations and for choosing general locations for additional monitoring sites. Appendix D also describes specific requirements for the number and location of FRM, FEM, and ARM sites for specific pollutants, NCORE multipollutant sites, PM_{10} mass sites, $PM_{2.5}$ mass sites, chemically-speciated $PM_{2.5}$ sites, and O_3 precursor measurement sites (PAMS). These criteria are used by EPA to evaluate the adequacy of the ACHD monitoring network.

The ACHD monitoring network provides air pollution data to the public in a timely manner, supports compliance with ambient air quality standards and emissions strategy development and supports air pollution research studies. The location of the monitors in the network were chosen to correctly match the spatial scale represented by the sample of monitored air with the spatial scale most appropriate for the monitoring site type, air pollutant to be measured and the monitoring objective.

General monitoring requirements are based on population density of the monitoring area. For Allegheny County, the Pittsburgh MSA (metropolitan statistical area) is referenced. The latest census (2010) determined the population of the Pittsburgh MSA to be 2,356,285 people. Some monitoring requirements are also based on individual pollutant design values, which are concentrations derived from past data generated by SLAMS monitors in Allegheny County. Air Quality Design Values (DV) referenced in this section are based on tables available at:

http://www.epa.gov/airtrends/values.html

Each state is required to operate at least one NCORE site. States may delegate this requirement to a local agency. The NCORE location is leveraged with other multipollutant air monitoring sites including the proposed PAMS site, CSN monitoring and monitoring performed by academia. Site leveraging includes using the same monitoring platform and equipment to meet the objectives of the variety of programs where possible and advantageous.

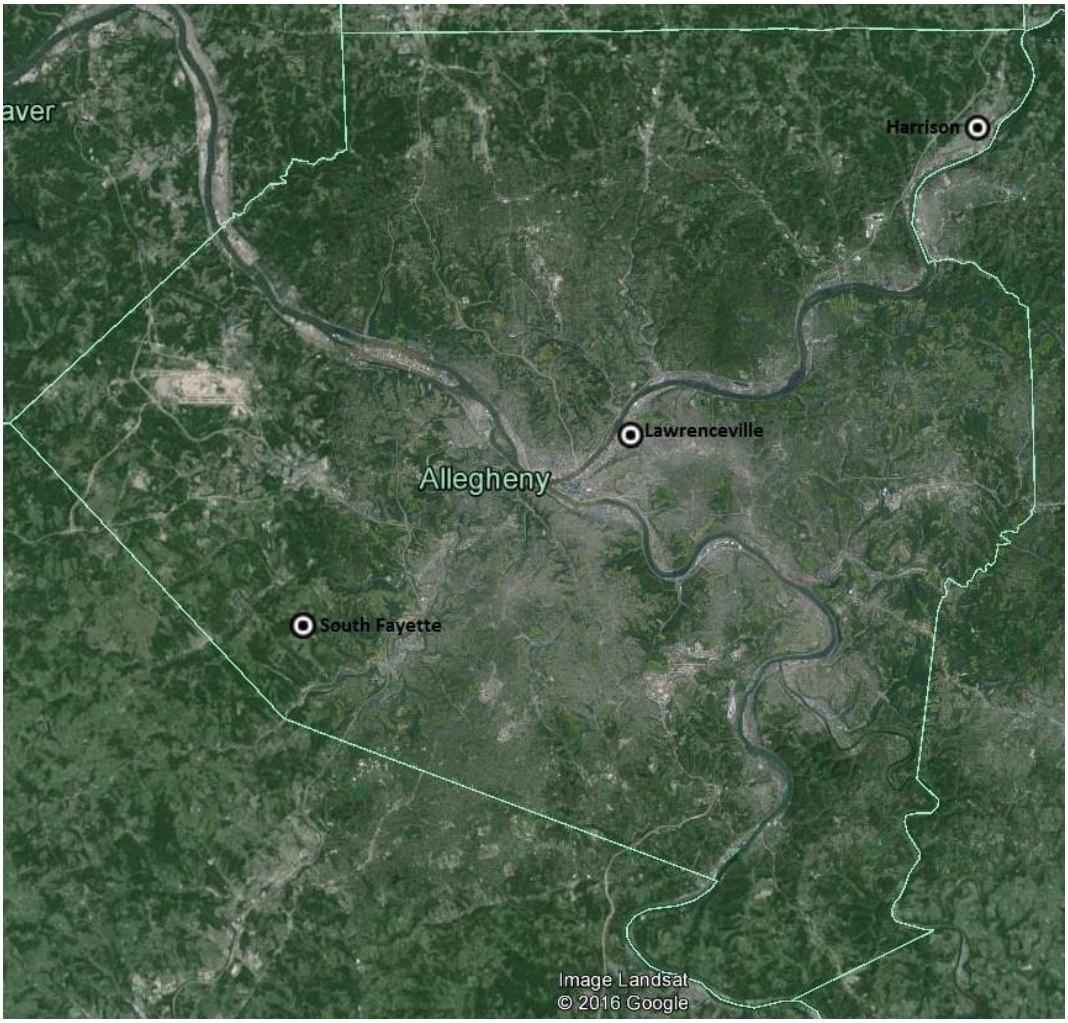
Pollutant specific design criteria for SLAMS sites are codified in 40CFR58, Appendix D, Section 4. EPA updates this document routinely in response to NAAQS revisions and in response to evolving air monitoring network objectives. SLAMS sites are intended to address specific air quality management interests, and as such, are frequently single-pollutant measurement sites. The following sections parallel the CFR citations and provide the current, applicable requirements for each criteria pollutant.

8.1 Ozone Design Criteria

Ozone (O_3) monitoring requirements are determined by the MSA population and ozone design value, as specified in Table D-2 of 40CFR58, Appendix D.

- Based on the population of the Pittsburgh MSA and the latest ozone design value, which is greater than 85% of the ozone NAAQS, ACHD is required to operate two ozone monitors. ACHD satisfies this requirement by operating three ozone monitors.
- Each NCORE site must operate an ozone monitor. ACHD satisfies this requirement by operating an ozone monitor at the Lawrenceville NCORE site.
- Within an ozone network, at least one ozone site for each MSA must be designed to record the maximum concentration for that metropolitan area. The maximum concentration monitor site should be selected in a direction from the city that is most likely to observe the highest ozone concentrations, more specifically, downwind during periods of photochemical activity. The Harrison monitor is assigned this designation.

Figure 8.1 Ozone Monitoring Map

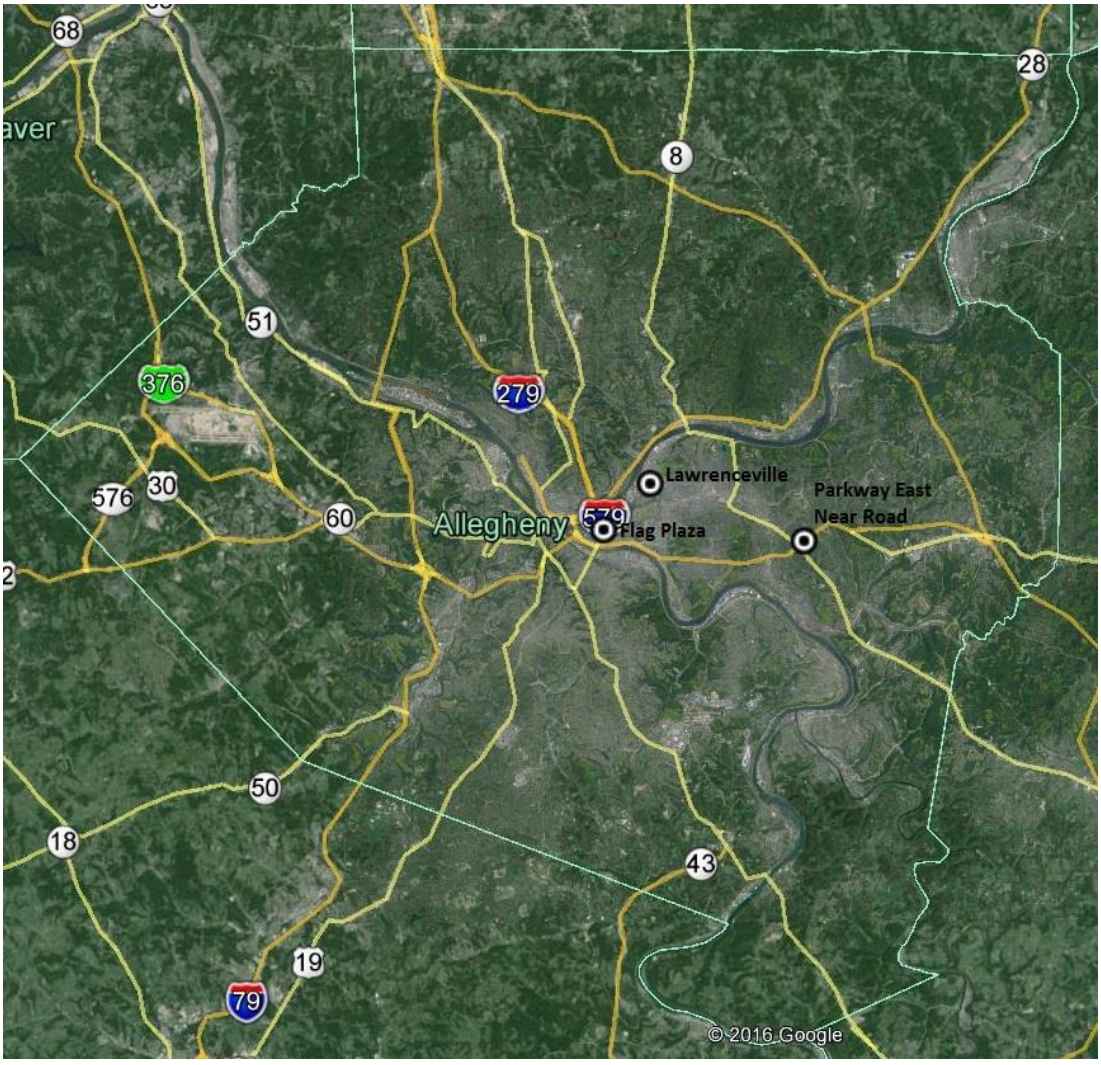


8.2 Carbon Monoxide Design Criteria

EPA revised the minimum monitoring requirements for carbon monoxide (CO) on August 12, 2011 (40CFR58, Appendix D). Applicable requirements are;

- One CO monitor is required to be collocated with a near road NO_2 monitor in urban areas having a population of 1 million or more. ACHD included a CO monitor in the initial configuration of the Parkway East Near Road monitoring site, which was operational on 09/01/2014.
- One CO monitor is required at each NCORE site. ACHD has operated a trace level CO monitor at the Lawrenceville NCORE site since 4/1/2010.
- ACHD operates an additional CO monitor at Flag Plaza. This site is in the Pittsburgh central business district and the CO monitor is operated to access impact from mobile emissions in this congested area. This monitor is in operation to satisfy a CO maintenance plan that will expire after calendar year 2022.

Figure 8.2 CO Monitors and Major Roadways Map



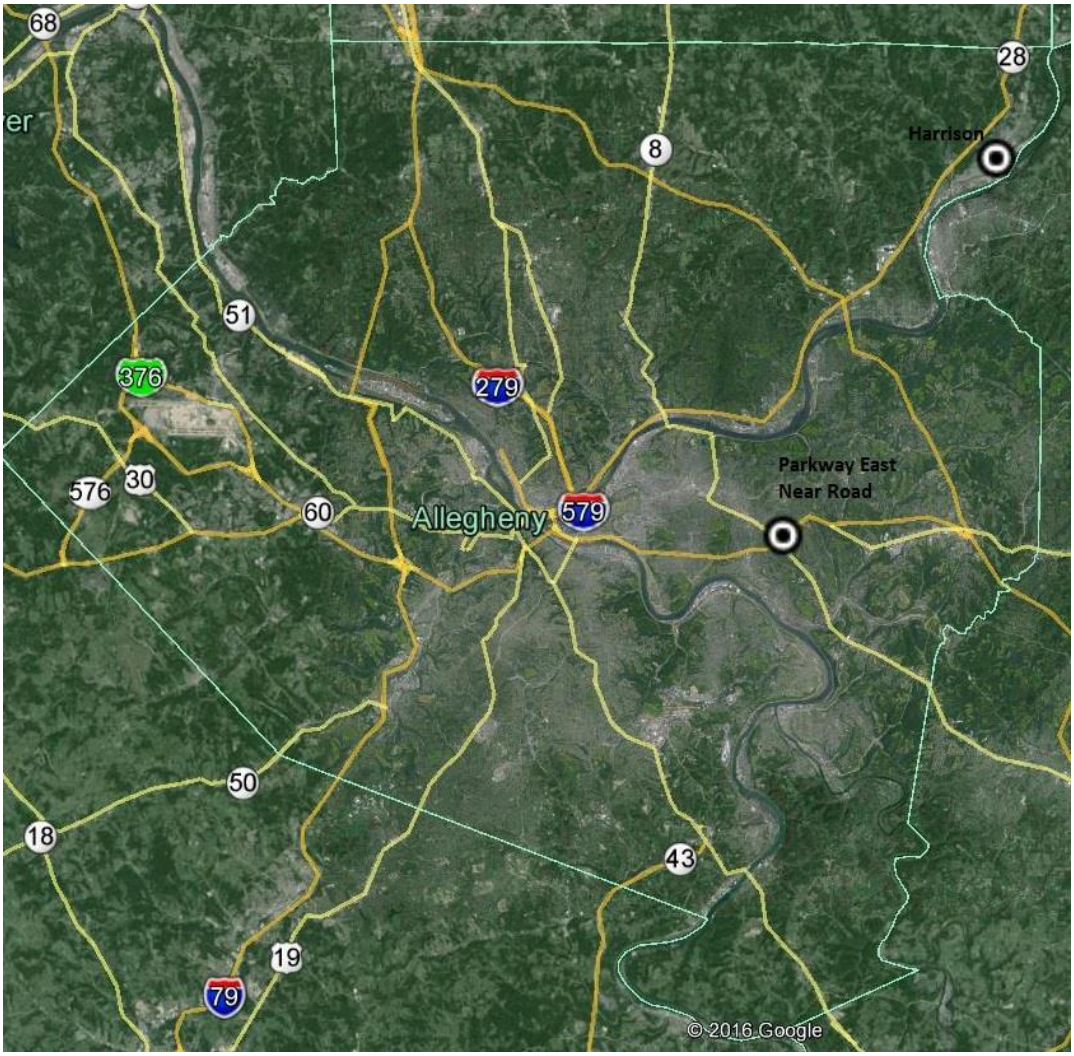
Allegheny County Health Department

8.3 Nitrogen Dioxide Design Criteria

On January 22, 2010, EPA strengthened the health-based NAAQS for NO_2 by setting a new 1-hour NAAQS at 100 ppb. The existing annual average NAAQS of 53 ppb was retained. In addition, EPA revised the NO_2 monitoring requirements in urban areas. Applicable requirements are as follows;

- One near road NO_2 monitoring site is required in an MSA with a population $\geq$ 500,000 and < 2,500,000 people. Near-road NO_2 monitoring characterizes the maximum expected hourly NO_2 concentration due to mobile source emissions on major roadways.
- One area wide NO_2 monitor in MSA's with a population > 1 million. The Harrison NO_2 monitor has been in operation at the current location since 02/12/2014.
- Although not shown on the map, the Lawrenceville NCORE site performs NOy measurements. NOy measurements produce conservative estimates for NO_2. In addition, the PAMS site (Lawrenceville) will be required to measure true NO_2 in 2019.

Figure 8.3 Nitrogen Dioxide Monitors and Major Roadways Map

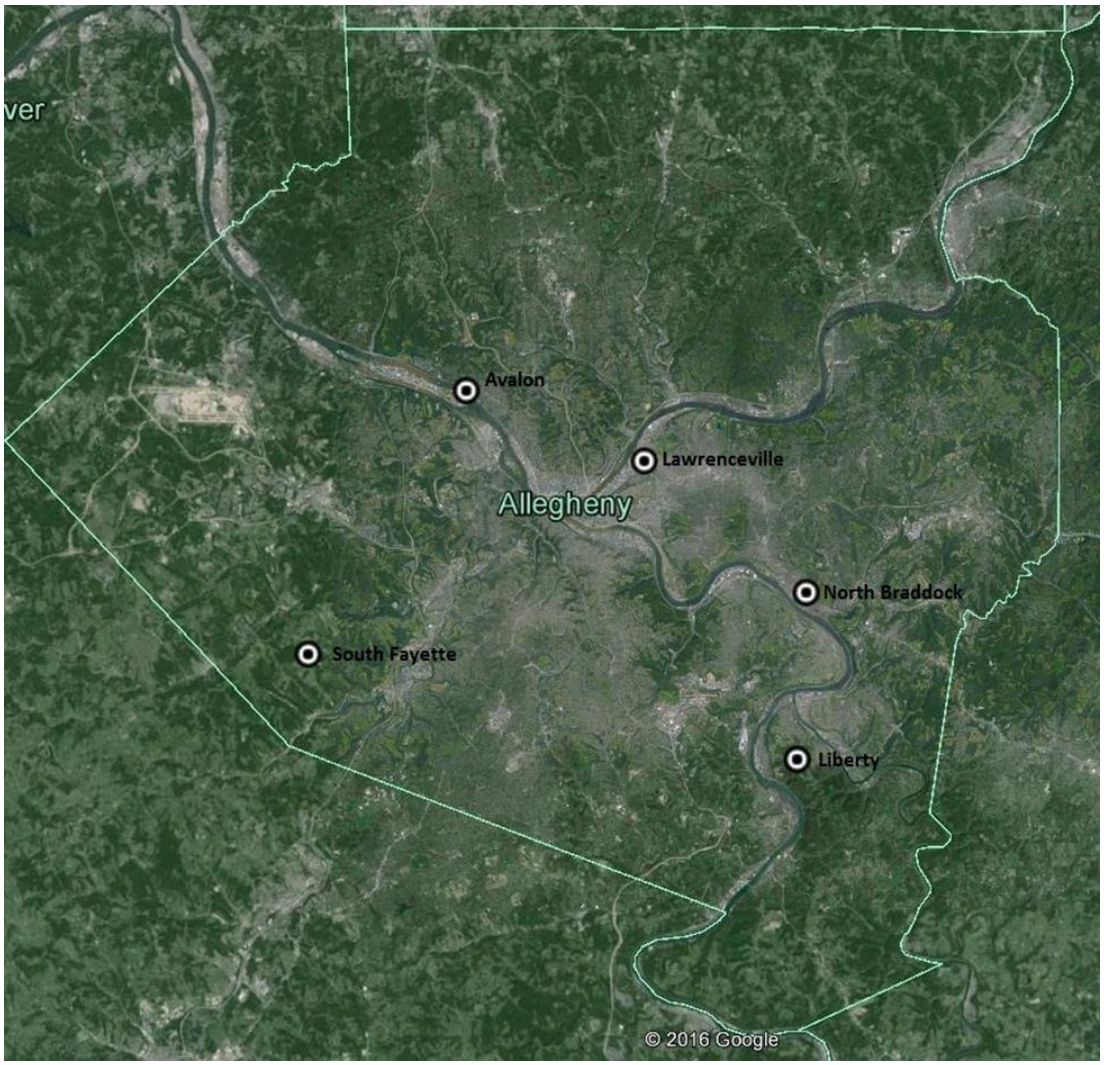


8.4 Sulfur Dioxide Design Criteria

The minimum number of required SO_2 monitors in each MSA is proportional to the product of the total amount of SO_2 emissions in the MSA and its population as specified in 40CFR58, Appendix D, Section 4.4. The resulting value is defined as the Population Weighted Emissions Index (PWEI). Using the ACHD 2014 emission inventory aggregate SO_2 emissions and 2010 census data for the Pittsburgh MSA, the PWEI is calculated at 20,096. SO_2 requirements are as follows;

- For any MSA with a calculated PWEI value equal to or greater than 5,000, but less than 100,000, a minimum of one SO_2 monitor is required within that CBSA. ACHD exceeds this minimum requirement with a total of five SO_2 monitors.
- Each NCORE station must operate an SO_2 monitor. ACHD included an SO_2 monitor as part of the initial configuration of the Lawrenceville NCORE site.

Figure 8.4 Sulfur Dioxide Monitors



8.5 Lead (Pb) Design Criteria

40CFR58, Appendix D, Paragraph 4.5 states that local agencies are required to conduct ambient air Pb monitoring near Pb sources which are expected to or have been shown to contribute to a maximum Pb concentration in ambient air in excess of the NAAQS, considering the logistics and potential for population exposure. At a minimum, there must be one source-oriented SLAMS site located to measure the maximum Pb concentration in ambient air resulting from each non-airport Pb source which emits 0.50 or more tons per year and from each airport which emits 1.0 or more tons per year based on either the most recent National Emission Inventory (http://www.epa.gov/ttn/chief/eiinformation.html) or other scientifically justifiable methods and data (such as improved emissions factors or site-specific data) taking into account logistics and the potential for population exposure.

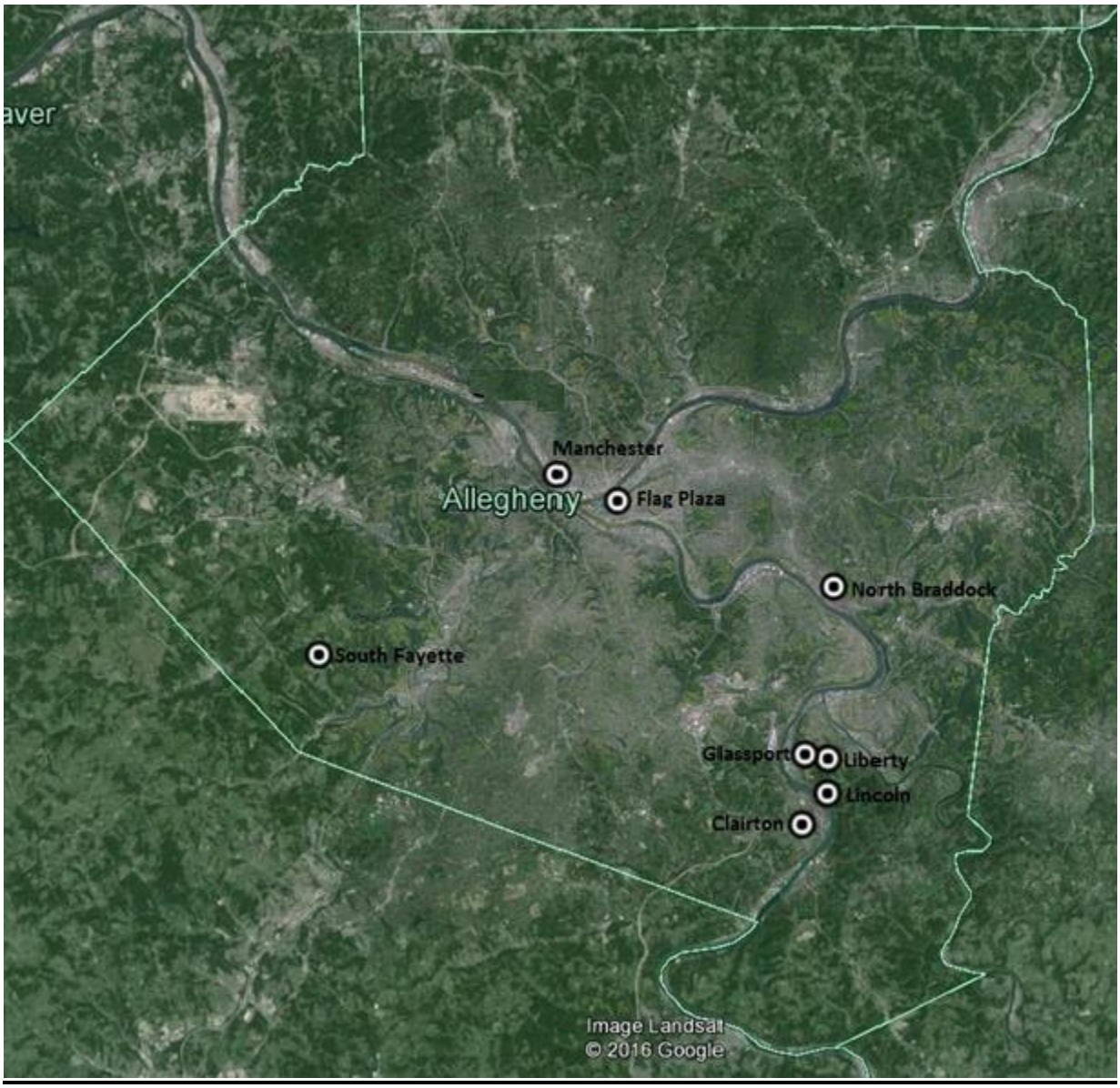
No lead monitoring is performed in Allegheny County. Bridgeville and Lawrenceville sites were discontinued as there are no point sources which emit greater than 0.5 tons per year. EPA approval of the 2018 Annual Network Plan allowed the sampling to end after 2017.

8.6 PM_{10} Design Criteria

The number of required PM_{10} monitors in each MSA is determined by the MSA population and design value, as specified in Table D-4 of Appendix D to 40CFR58.

- The Pittsburgh MSA has ambient PM_{10} concentrations well below 80% of the PM_{10} NAAQS. Table D-4 indicates that 2 to 4 sites must monitor for PM_{10}. ACHD exceeds this requirement with 8 sites that monitor PM_{10}.
- Collocated sampling for PM_{10} is only required for manual samplers. A minimum of 15%, or at least one manual PM_{10} monitor must be collocated as specified in 40CFR58, Appendix A. The Liberty site meets this requirement.

Figure 8.6 PM_{10} Monitoring Map



8.7 Fine Particulate Matter ($PM_{2.5}$) Design Criteria

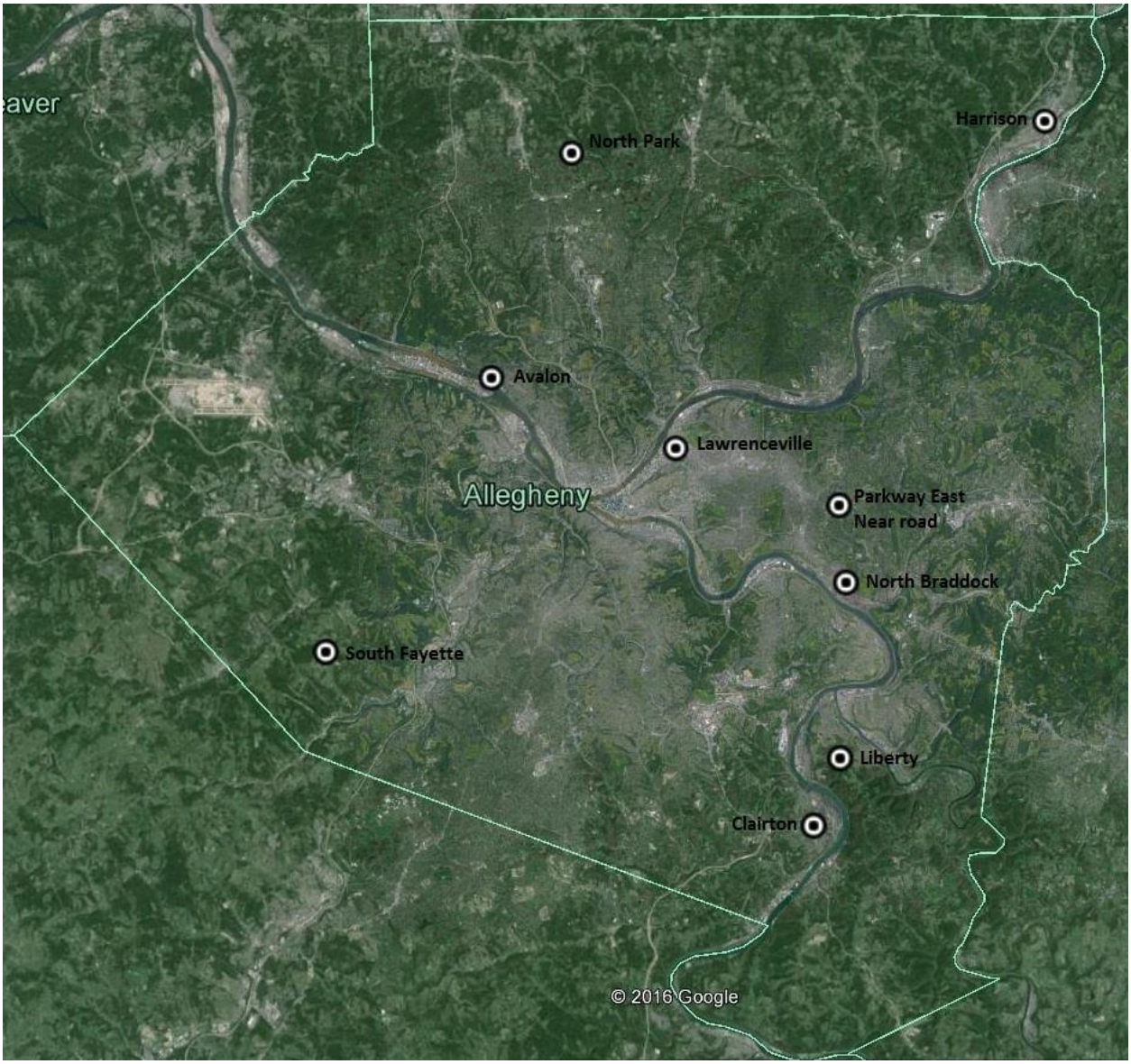
The number of required $PM_{2.5}$ monitors in each MSA is determined by the MSA population and design value, as specified in Table D-5 of 40CFR58, Appendix D.

- Pittsburgh MSA $PM_{2.5}$ 24 hour and annual design values are > 85% of the NAAQS, requiring a minimum of 3 $PM_{2.5}$ sites. ACHD exceeds this requirement with 9 sites that monitor $PM_{2.5}$.
- Regarding FRM samplers (eight sites), a minimum of 15%, or at least one, of the $PM_{2.5}$ monitoring sites must be collocated (rounded to one). ACHD exceeds this requirement by having collocated monitors at Liberty and Lawrenceville (two) sites.
- At least one site (15% is required) that features a primary $PM_{2.5}$ FEM monitor must also operate a collocated $PM_{2.5}$ FRM sampler (40CFR58, Appendix A). This requirement is met at the Avalon site. Avalon and Parkway East have the same $PM_{2.5}$ FEM model.
- At least one half of the minimum number of sites per MSA must operate continuous $PM_{2.5}$ monitors, requiring ACHD to operate 2 continuous $PM_{2.5}$ monitors. ACHD operates 4 continuous $PM_{2.5}$ monitors (Liberty, Lawrenceville, Avalon and Parkway East). See Section 10 for each site's detailed information.
- For MSA's above 1,000,000 people, at least one $PM_{2.5}$ monitor must be at a near road site. ACHD conducts continuous $PM_{2.5}$ monitoring at the Parkway East near road site.
- Each monitoring agency shall continue to conduct chemical speciation monitoring and analyses at sites designated to be part of the $PM_{2.5}$ Speciation Trends Network (STN). ACHD continues to conduct $PM_{2.5}$ speciation at Liberty and Lawrenceville sites.
- Each NCORE site must monitor $PM_{2.5}$. ACHD satisfies this requirement at the Lawrenceville NCORE site using daily filter-based monitoring.
- The required monitoring sites must be located to represent area-wide air quality. These will typically be either neighborhood or urban scale, although micro or middle scale may be appropriate in some urban areas. At least one monitoring site must be neighborhood scale or greater in an area of expected maximum concentration and one site must be sited in an area of poor air quality. At least one $PM_{2.5}$ site must monitor for regional background and at least one $PM_{2.5}$ site must monitor for regional transport. Table 8 shows the $PM_{2.5}$ network site scales and objectives.

Table 8 $PM_{2.5}$ Monitor Scales and Objectives

Site Name	Measurement Scale	Monitor Objective
Lawrenceville	Urban	Population Exposure
Liberty	Neighborhood	Population Exposure, Highest Concentration
North Braddock	Neighborhood	Population Exposure
Harrison Township	Neighborhood	Population Exposure
South Fayette	Neighborhood	Population Exposure, Regional Transport, Upwind Background
Clairton	Neighborhood	Population Exposure, Welfare concerns
Avalon	Neighborhood	Population Exposure
North Park	Neighborhood	Population Exposure, Regional Background
Parkway East Near Road	Microscale	Population Exposure, Source Oriented

Figure 8.7 $PM_{2.5}$ Monitor Map



8.8 Coarse Particulate Matter Design Criteria

The only required monitors for $PM_{10-2.5}$ are those required at NCORE Stations. Note that no NAAQS exists for coarse particulate matter.

Coarse PM monitoring at the Lawrenceville NCORE site employs 2 continuous beta attenuation monitors (BAM). The paired units and the internal algorithms have designation as an approved FEM for PM_c. One unit measures $PM_{2.5}$ and the other PM_{10}. Both units measure separately, but are interconnected to share the data. The internal software calculates the PM_c value. The PM_{10} (master unit) internal memory retains the hourly values of $PM_{2.5}$, PM_{10}, $PM_{10-2.5}$ and other meta data.

9.0 Appendix E Requirements

40CFR58, Appendix E contains specific location criteria applicable to SLAMS, NCORE-, and PAMS ambient air quality monitoring probes, inlets and optical paths after the general location has been selected based on the monitoring objectives and spatial scale of representation discussed in Appendix D. Adherence to these siting criteria is necessary to ensure the uniform collection of compatible and comparable air quality data.

Appendix E specifies probe and monitoring path siting criteria for ambient air quality monitoring. The key components of Appendix E include the following:

- Horizontal and Vertical Placement
- Spacing from Minor Sources
- Spacing from Obstructions
- Spacing from Trees
- Spacing from Roadways
- Cumulative Interferences on a Monitoring Path
- Maximum Monitoring Path Length
- Probe Material and Pollutant Sample Residence Time
- Waiver Provisions.

Discussion of Appendix E requirements will be contained in the next section.

10 Detailed Air Monitoring Site Descriptions

The following air monitoring network description discusses each monitoring site in detail. The first information block is labeled with the site name. Inside of the block is listed site specific information as follows:

- **Street Address**
- **AQS #** - unique 9-digit number used to identify the state, county and site in the AQS data base.
- **Municipality** where site is located.
- **MSA**- Metropolitan Statistical Area.
- **Latitude (N), Longitude (W)** – Site coordinates, given in WGS84 datum coordinates.
- **Comments**- Specific site information of importance.

The next blocks are designed to list details of each monitor at the site. Each monitor present at the time of the review is assigned its own block. The following information is listed:

Sensor Type – The name of the pollutant measured by the sampler and to provide further detail, FEM or FRM designation.

Sensor Network Designation – The name of the designated network:

- SLAMS - State or Local Ambient Air Monitoring Station that has EPA reference or equivalent method designation, including Primary, Secondary or Tertiary level of importance, where more than one sensor type is at the site. Waiver provisions.
- OTHER – Monitor that does not have EPA designated reference or equivalent status

Sensor Purpose Description– The purpose of the sensor:

- Population Exposure, such as the Air Quality Index
- Regulatory Compliance with Federal or State regulation
- Research/Scientific Monitoring
- Specific Location Characterization
- Quality Assurance (Collocated)

Sample Frequency – Specifies how often a sample is taken.

- Continuous (also referred to as "Hourly") - operates 24/7; applies predominately to gaseous analyzers, although some particulate samplers (TEOM, BAM, Aethalometer) operate continuously.
- Daily – a discrete sample is taken every day; applies to manual method particulate or toxics samplers.
    - Every Third Day - Manual method samplers that run every third day.
    - Every Sixth Day – Manual method or toxics samplers that run every sixth day.

Appendix A QA Assessment – A "**YES**" indicates the sensor is maintained in accordance with the Quality Assurance (QA) requirements specified in 40CFR58, Appendix A.

Monitor Start Date – Specifies the start date for the current AQS pollutant parameter code. Note that AQS method codes may change, usually due to a change of manufacturer or monitor model employed at the site.

Appendix C Monitoring Classification – Each ambient air monitor is classified using the EPA "List of Designated Reference and Equivalent Methods"

- Reference Method – a method of sampling that is specified in 40CFR53.
- Equivalent Method – a method that is designated as equivalent to the reference method, in accordance with 40CFR53 and 40CFR50.
- Automated – after sampling, the analysis results are available immediately.
- Manual - after sampling, a separate analysis at a laboratory is necessary.
- N/A – appears where there is no reference or equivalent method.

Appendix C Monitoring Method – Each ambient air monitor is classified by a specific method number.

Monitoring Method Description – Table 10 provides details about each type of sampler and analyzer utilized in the air monitoring network.

Probe Height - Distance from ground level that ambient air is sampled. 40CFR58, Appendix E lists acceptable probe heights for individual measurement parameters and spatial scales.

Residence Time - The amount of time that ambient air remains in contact with a probe line or manifold, considering total manifold and probe line inner volume and monitor flow rate. Residence time is applicable to reactive gas monitors that use probe lines or manifolds to deliver ambient air to the monitor. Section 7.2.1 of the QA Handbook Volume II recommends a probe residence time of ten seconds or less as optimal and over 20 seconds as unacceptable due to sample concentration loss at higher residence times.

Appendix D Design Criteria – Appendix D requires a certain number of samplers per geographic area. A "**YES**" indicates that the number of monitors in that area meets or exceeds the requirement of 40CFR58, Appendix D.

Appendix D Scale – The specific "spatial scales of representation" describes the physical dimensions of the air parcel around the monitoring station throughout which actual pollutant concentrations are reasonably similar.

- Microscale - Areas with dimensions up to about 100 meters
- Middle scale - Areas with dimensions from 100 meters to 0.5 kilometers
- Neighborhood - Areas with dimensions from 0.5 to 4.0 kilometers and uniform land use
- Urban scale - Areas with dimensions from 4 to 50 kilometers
- Regional - Areas with dimensions ranging from tens to hundreds of kilometers and usually a rural area of reasonably homogeneous geography without large sources
- National and Global Scales - Measurement scales that represent concentrations characterizing the nation and the globe.

Appendix D Objective – Describes the purpose/objective for monitoring at a site.

- Extreme Downwind
- General/Background Concentration
- Highest Concentration
- Maximum Ozone Concentration
- Maximum Precursor Emissions
- Population Exposure
- Regional Transport
- Source Oriented
- Quality Assurance
- Welfare Related

Appendix E Siting Criteria – Describes certain criteria applicable to ambient air quality sampling probes and monitoring paths, such as distances from trees, obstructions, traffic lanes, etc. A "**YES**" indicates that the sensor at the given site meets or exceeds the requirements of 40CFR58, Appendix E.

Table 10 Monitoring Parameters and Methods

Parameter	Mfg	Model #	Parameter Code	Method Code	Description
$PM_{2.5}$ FRM	R&P	2025	88101	145	Low Volume Sampler (filter) VSCC, very sharp cut cyclone
$PM_{2.5}$ FEM	Thermo	5014i	88101	183	Beta Attenuation Instrumental
	Met One	1020	88101	170	Beta Attenuation Instrumental
PM_{10} FRM	Tisch	TE-6070	81102	141	High Volume Sampler (filter)
PM_{10} FEM	R&P	1400	81102	79	Gravimetric Instrumental (TEOM)
	Met One	1020	81102	122	Beta Attenuation Instrumental
$PM_{2.5}$ Speciation	Met One SASS	SASS	multiple	812	Trace metals, Sulfate, Nitrate
	URG	3000N	multiple	812	Organic/Inorganic Carbon
PM coarse	Met One	1020 (pair)	86101	185	Beta Attenuation Instrumental
Carbon Monoxide	TAPI	300A/E	42101	93	Gas Filter Correlation
Carbon Monoxide (trace)	TAPI	300 EU	42101	593	Gas Filter Correlation
Nitrogen Dioxide	TAPI	200A/E	42602	99	Chemiluminescence
Nitrogen Dioxide (trace)	TAPI	200EU	42602	599	Chemiluminescence
Reactive Oxides of Nitrogen (NOy)	TAPI	200EU/501	42600	699	Chemiluminescence
Sulfur Dioxide	Ecotech	9850	42401	92	Ultra Violet Fluorescent
	Thermo	43i	42401	60	Ultra Violet Fluorescent
Sulfur Dioxide (trace)	TAPI	100EU	42401	600	Pulsed Fluorescent
Ozone	Ecotech	10	44201	187	Ultra Violet Absorption
	Thermo	49	44201	47	Ultra Violet Absorption
Black Carbon	TAPI	633	84313	894	Aethalometer Instrumental
Air Toxics (VOC)	na	na	multiple	150	6-liter SS canister / TO-15 lab analysis
AIR Toxics (Carbonyl)	na	na	multiple	102	DNPH cartridge / TO-11 lab analysis

10.1 Lawrenceville

Address	Allegheny County Health Department 301 39th Street, Building 7 Pittsburgh, PA 15201		
AQS#	42-003-0008	MSA	Pittsburgh
Latitude (N)	40.465420	Longitude (W)	-79.960757
Comments	This is a population-based, community oriented monitoring site that is an urban area downwind of Central Business District. The Lawrenceville monitoring site was selected as a $PM_{2.5}$ National Trends Site, later as an NCORE site and as the proposed PAMS site in 2019. The most significant local pollution is generated from mobile sources, but light industry scattered throughout the area is also a contributing factor. Lawrenceville is a core $PM_{2.5}$ site that is used to determine compliance with national standards.		

Sensor Type	**Ozone**	Appendix C Method Code	47
Network Designation	SLAMS	Probe Height Residence Time	12 Meters 6.0 Seconds
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Hourly	Appendix D Scale	Urban
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Start Date	1/1/1978	Appendix E Siting Criteria	Yes

Sensor Type	**$PM_{10-2.5}$ (coarse)**	Appendix C Method Code	185
Network Designation	Other / (NCORE)	Probe Height	12 Meters
Purpose	Research/Scientific Monitoring	Appendix D Design Criteria	Yes
Sample Frequency	Hourly	Appendix D Scale	Urban
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Start Date	4/1/2011	Appendix E Siting Criteria	Yes

Sensor Type	**$PM_{2.5}$** FRM	Appendix C Method Code	145
Network Designation	SLAMS Primary	Probe Height	12 Meters
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Daily	Appendix D Scale	Urban
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Start Date	02/23/1999	Appendix E Siting Criteria	Yes

Sensor Type	**$PM_{2.5}$** FRM	Appendix C Method Code	145
Network Designation	SLAMS Secondary	Probe Height	12 Meters
Purpose	QA/Co-located Monitor	Appendix D Design Criteria	Yes
Sample Frequency	Every six days	Appendix D Scale	Urban
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure / Quality Assurance
Monitor Start Date	1/1/2005	Appendix E Siting Criteria	Yes

Sensor Type	**$PM_{2.5}$** FEM	Appendix C Method Code	170
Network Designation	SLAMS Tertiary	Probe Height	12 Meters
Purpose	AQI Reporting	Appendix D Design Criteria	Yes
Sample Frequency	Hourly	Appendix D Scale	Urban
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Start Date	08/07/2015	Appendix E Siting Criteria	Yes

Sensor Type	**$PM_{2.5}$ Speciation**	Appendix C Method Code	812
Network Designation	Other (CSN)	Probe Height (m)	12 Meters
Purpose	Research/Scientific Monitoring	Appendix D Design Criteria	Yes
Sample Frequency	Every Three Days	Appendix D Scale	Not Assigned
Appendix A QA Assessment	Yes	Appendix D Objectives	Unknown
Monitor Start Date	6/30/2001	Appendix E Siting Criteria	Yes

Sensor Type	**Carbon Monoxide**	Appendix C Method Code	593
Network Designation	SLAMS	Probe Height Residence Time	12 Meters 8.9 Seconds
Purpose	Population Exposure	Appendix D Design Criteria	Yes
Sample Frequency	Hourly	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Start Date	4/1/2010	Appendix E Siting Criteria	Yes

Sensor Type	**Sulfur Dioxide**	Appendix C Method Code	600
Network Designation	SLAMS	Probe Height Residence Time	12 Meters 13.5 Seconds
Purpose	Population Exposure	Appendix D Design Criteria	Yes
Sample Frequency	Hourly	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Start Date	4/1/2010	Appendix E Siting Criteria	Yes

Sensor Type	**Total Reactive Oxides of Nitrogen (NO_y)**	Appendix C Method Code	699
Network Designation	Other (NCORE)	Probe Height Residence Time	12 Meters 14.7 Seconds
Purpose	Research/Scientific Monitoring	Appendix D Design Criteria	Yes
Sample Frequency	Hourly	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Start Date	4/2/2010	Appendix E Siting Criteria	Yes

Lawrenceville Area Information

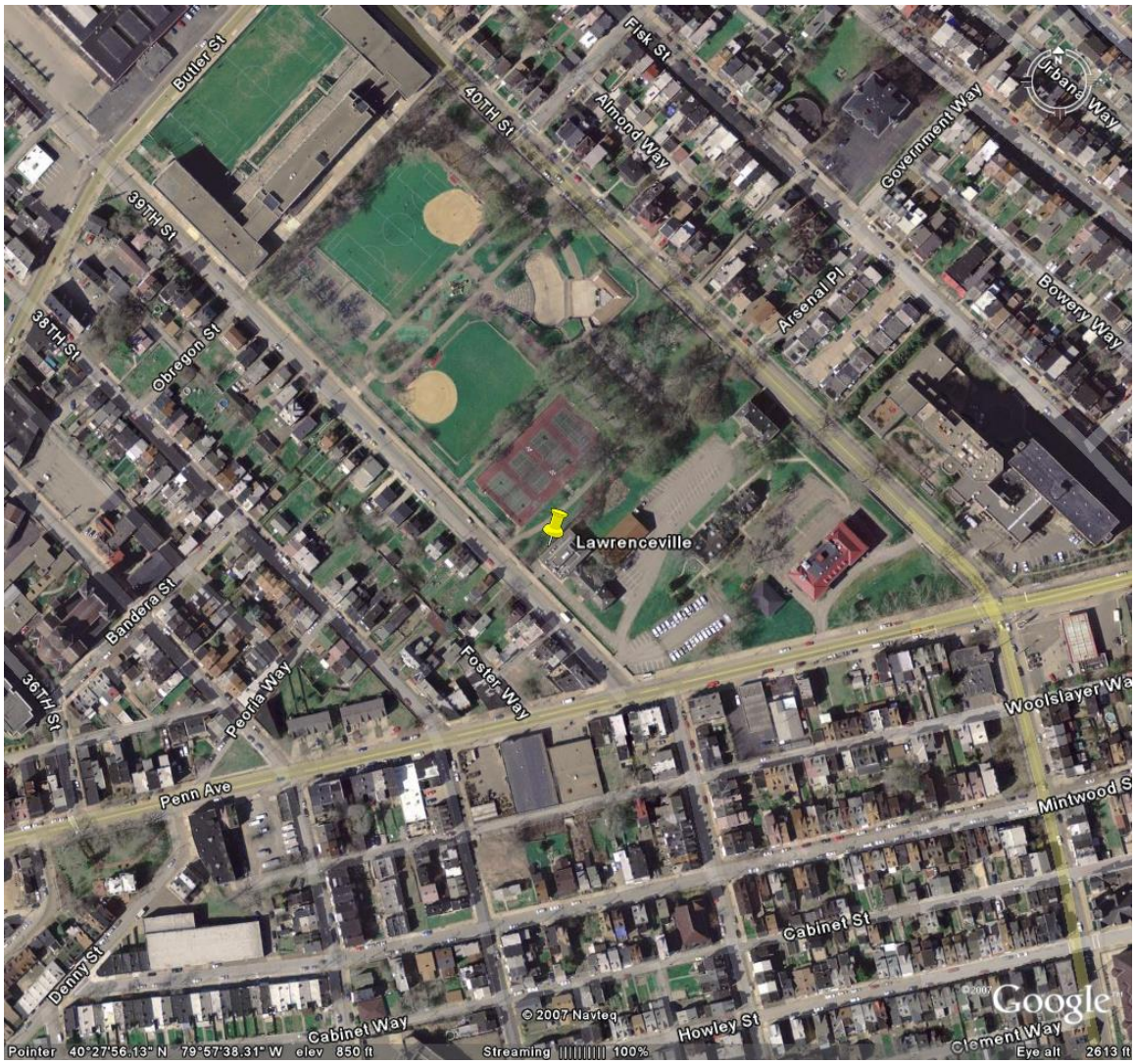
Street Name	**Traffic Count (AADT)**
39th Street (20 m)	Unavailable
Penn Avenue (86 m)	7,785 (PennDot 2015)
Butler Street (343 m)	7,371 (PennDot 2014)

Direction	**Predominant Land Use (Industry, Residential, Commercial or Agriculture)**
North	Residential
East	Residential
South	Residential
West	Residential

Direction	**Obstructions**	**Height (m)**	**Distance (m)**
North			
East			
South	Wall	1	2 to 3 m
West			

Direction	Topographic Features (hills, valleys, rivers, etc.)	General Terrain (flat, rolling, rough)
North		Flat
East		Flat
South		Flat
West		Flat

Figure 10.1 Lawrenceville Location Map



10.2 Liberty

Address	South Allegheny High School 2743 Washington Blvd McKeesport, PA 15133		
AQS#	42-003-0064	MSA	Pittsburgh
Latitude (N)	40.323768	Longitude (W)	-79.868062
Comments	This site is in a suburban area about 3 km downwind of the US Steel Clairton Coke Works. The area around this monitoring site has a long history of higher than average levels of $PM_{2.5}$, PM_{10} and sulfur dioxide. Significant ambient levels of benzene have also been measured and documented at this site. Liberty is a core $PM_{2.5}$ site that is used to determine compliance with national standards. At the request of US Steel, telemetry devices have been installed on the PM_{10}, $PM_{2.5}$ and SO_2 monitors that transmit continuous readings via radio signals to a location within the US Steel facility. Other transmitters are also in use: Lincoln PM_{10} monitor, Glassport PM_{10} monitor and North Braddock SO_2 monitor and sonic anemometer. This real-time data allows US Steel to minimize fugitive emissions and to adjust production levels to keep particulate levels and gaseous emissions within allowable ambient levels in downwind communities.		

Sensor Type	**$PM_{2.5}$** Non-FEM	Appendix C Method Code	716
Network Designation	Other (AQI)	Probe Height	8 Meters
Purpose	Population Exposure	Appendix D Design Criteria	Yes
Sample Frequency	Hourly	Appendix D Scale	Neighborhood, Highest Concentration
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Start Date	11/19/1999	Appendix E Siting Criteria	Yes

Sensor Type	**$PM_{2.5}$** FRM	Appendix C Method Code	145
Network Designation	SLAMS Primary	Probe Height	8 Meters
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Daily	Appendix D Scale	Neighborhood, Highest Concentration
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Start Date	1/23/1999	Appendix E Siting Criteria	Yes

Sensor Type	**$PM_{2.5}$** FRM	Appendix C Method Code	145
Network Designation	SLAMS Secondary	Probe Height	8 Meters
Purpose	QA/Co-located Monitor	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days	Appendix D Scale	Neighborhood, Highest Concentration
Appendix A QA Assessment	Yes	Appendix D Objectives	Quality Assurance
Monitor Start Date	1/1/2005	Appendix E Siting Criteria	Yes

Sensor Type	**$PM_{2.5}$** FEM	Appendix C Method Code	183
Network Designation	SPM	Probe Height	8 meters
Purpose	Regulatory Compliance Tertiary	Appendix D Design Criteria	Yes
Sample Frequency	Hourly	Appendix D Scale	Neighborhood, Highest Concentration
Appendix A QA Assessment	Yes	Appendix D Objectives	Neighborhood, Highest Concentration
Monitor Start Date	11/01/2017	Appendix E Siting Criteria	Yes

Sensor Type	**PM_{10}** FRM	Appendix C Method Code	141
Network Designation	SLAMS Primary	Probe Height	8 Meters
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Every Three Days	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Start Date	1/1/2005	Appendix E Siting Criteria	Yes

Sensor Type	**PM_{10}** FRM	Appendix C Method Code	141
Network Designation	SLAMS Secondary	Probe Height	8 Meters
Purpose	QA/Co-located Monitor	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure / Quality Assurance
Monitor Start Date	4/21/1987	Appendix E Siting Criteria	Yes

Sensor Type	**PM_{10}** FEM	Appendix C Method Code	79
Network Designation	SLAMS Tertiary	Probe Height	8 Meters
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Hourly	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Start Date	1/1/1992	Appendix E Siting Criteria	Yes

Sensor Type	**$PM_{2.5}$ Speciation**	Appendix C Method Code	Multiple
Network Designation	Other (CSN)	Probe Height	8 Meters
Purpose	Research/Scientific Monitoring	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days	Appendix D Scale	Unassigned
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Start Date	10/6/2003	Appendix E Siting Criteria	Yes

Sensor Type	**Sulfur Dioxide**	Appendix C Method Code	600
Network Designation	SLAMS	Probe Height Residence Time	8 Meters 11.5 Seconds
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Hourly	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Start Date	1/1/1969	Appendix E Siting Criteria	Yes

Liberty Area Information

Street Name	Traffic Count (AADT)
Washington Blvd. (283 m)	2080 (PennDot 2013)

Direction	Predominant Land Use (Industry, Residential, Commercial or Agriculture)
North	Residential
East	Residential
South	Residential
West	Residential

Direction	Obstructions	Height (m)	Distance (m)
North			
East			
South			
West			

Direction	Topographic Features (hills, valleys, rivers, etc.)	General Terrain (flat, rolling, rough)
North	Valley	Rough
East		Rolling
South	Valley	Rolling
West		Rolling

Figure 10.2 Liberty Location Map

10.3 Lincoln

Address	Bellbridge Road Elizabeth, PA 15037		
AQS#	42-003-7004	MSA	Pittsburgh
Latitude (N)	40.308219	Longitude (W)	- 79.869134
Comments	This site is at an elevated location, directly across the Monongahela River and downwind from the US Steel Clairton Coke Works. Although this area is not populated, it is upwind of populated areas and it is modeled to be the maximum impact area of the coke works' air emissions.		

Sensor Type	**PM_{10}** FEM	Appendix C Method Code	79
Network Designation	SLAMS	Probe Height	5 Meters
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Hourly	Appendix D Scale	Middle
Appendix A QA Assessment	Yes	Appendix D Objectives	Highest Concentration
Monitor Start Date	1/15/1993	Appendix E Siting Criteria	Yes

Lincoln Area Information

Street Name	Traffic Count (AADT)
Lincoln Blvd. (238 m)	6931 (PennDot 2014)
Bellbridge Rd. (428 m)	2203 (PennDot 2014)

Direction	Predominant Land Use (Industry, Residential, Commercial or Agriculture)
North	Residential
East	Residential
South	Industrial
West	Industrial

Direction	Obstructions	Height (m)	Distance (m)
North			
East			
South			
West			

Direction	Topographic Features (hills, valleys, rivers, etc.)	General Terrain (flat, rolling, rough)
North	Valley	Rolling
East	Valley	Rolling
South	Hills	Rough
West	River	Rough

Figure 10.3 Lincoln Location Map

10.4 Glassport

Address	Water Tower on High Street Glassport, PA 15045		
AQS#	42-003-3006	MSA	Pittsburgh
Latitude (N)	40.326008	Longitude (W)	-79.881703
Comments	Located in a residential area, this site is population oriented and is impacted by the US Steel Clairton Coke Works, the Irvin Works and other sources in the Monongahela river valley. Glassport High Street is the site of the County's last documented exceedance of the federal 24-hour PM_{10} standard of 150 $\mu g/m^3$ (October, 1997).		

Sensor Type	**PM_{10}** FEM	Appendix C Method Code	79
Network Designation	SLAMS	Probe Height	2 Meters
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Hourly	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Start Date	1/6/1995	Appendix E Siting Criteria	Yes

Glassport Area Information

Street Name	Traffic Count (AADT)
High Street (8m)	Unavailable
Scenic Street (53m)	Unavailable
Washington Blvd (140m)	2080 (PennDot 2013)
Pacific Ave. (202m)	4450 (PennDot 2012)

Direction	Predominant Land Use (Industry, Residential, Commercial or Agriculture)
North	Residential
East	Residential
South	Residential
West	Residential

Direction	Obstructions	Height (m)	Distance (m)
North	Water Tower	25	9
East			
South			
West			

Direction	Topographic Features (hills, valleys, rivers, etc.)	General Terrain (flat, rolling, rough)
North		Flat
East		Flat
South		Flat
West		Flat

Figure 10.4.1 Glassport Location Map

Figure 10.4.2 Liberty, Lincoln and Glassport Location Map

10.5 North Braddock

Address	North Braddock Borough Building 600 Anderson Street Braddock, PA 15104		
AQS#	42-003-1301	MSA	Pittsburgh
Latitude (N)	40.402328	Longitude (W)	-79.860973
Comments	This suburban site is population oriented. The area around this site is impacted by the US Steel Edgar Thomson Works, which is a basic steel production facility, located about 1.5 km away from the monitoring site. North Braddock is a core $PM_{2.5}$ site that is used to determine compliance with national standards.		

Sensor Type	**$PM_{2.5}$** FRM	Appendix C Method Code	145
Network Designation	SLAMS	Probe Height	7 Meters
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Every Three Days	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Start Date	1/30/1999	Appendix E Siting Criteria	Yes

Sensor Type	**PM_{10}** FEM	Appendix C Method Code	122
Network Designation	SLAMS	Probe Height	7 Meters
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Hourly	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Start Date	1/1/2011	Appendix E Siting Criteria	Yes

Sensor Type	**Sulfur Dioxide**	Appendix C Method Code	92
Network Designation	SLAMS	Probe Height Residence Time	7 Meters 14.4 Seconds
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Hourly	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure, Highest Concentration
Monitor Start Date	1/1/2014	Appendix E Siting Criteria	Yes

North Braddock Area Information

Street Name	Traffic Count (AADT)
Bell Avenue (13 m)	2882 (PennDot 2012)
Anderson St. (40 m)	Unavailable
Braddock Ave. (370 m)	6349 (PennDot 2015)

Direction	Predominant Land Use (Industry, Residential, Commercial or Agriculture)
North	Residential
East	Residential
South	Residential, Industry
West	Residential

Direction	Obstructions	Height (m)	Distance (m)
North			
East			
South			
West			

Direction	Topographic Features (hills, valleys, rivers, etc.)	General Terrain (flat, rolling, rough)
North	Hills	Rolling
East	Hills	Rolling
South	River	Rolling
West		Rolling

Figure 10.5 North Braddock Location Map

10.6 Harrison

Address	Highlands Senior High School 1500 Pacific Avenue Natrona Heights, PA 15065		
AQS#	42-003-1008	MSA	Pittsburgh
Latitude (N)	40.617488	Longitude (W)	-79.727664
Comments	This suburban site is population-based and community oriented. This is a core $PM_{2.5}$ site used to determine compliance with national standards. This ozone monitoring site is positioned downwind of the Pittsburgh Central Business District and is expected to demonstrate maximum ozone concentrations. The nitrogen oxides monitor adds significant value to the ozone data.		

Sensor Type	**$PM_{2.5}$** FRM	Appendix C Method Code	145
Network Designation	SLAMS	Probe Height	8 Meters
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Every Three Days	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Start Date	2/13/1999	Appendix E Siting Criteria	Yes

Sensor Type	**Ozone**	Appendix C Method Code	47
Network Designation	SLAMS Primary	Probe Height Residence Time	10 Meters 4.5 Seconds
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Hourly	Appendix D Scale	Urban
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure, Highest Concentration
Monitor Start Date	2/12/2014	Appendix E Siting Criteria	No

Sensor Type	**Oxides of Nitrogen**	Appendix C Method Code	99
Network Designation	SLAMS	Probe Height Residence Time	10 Meters 14.7 Seconds
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Hourly	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Start Date	2/12/2014	Appendix E Siting Criteria	No

Harrison Area Information

Street Name / Distance	Traffic Count (AADT)
Idaho Ave (31m)	Unavailable
Pacific Ave (103m)	Unavailable
Freeport Road (326 m)	8018 (PennDot 2008)

Direction	Predominant Land Use (Industry, Residential, Commercial or Agriculture)
North	Residential
East	Residential
South	Residential
West	Industrial

Direction	Obstructions	Height (m)	Distance (m)
North	Wall	3	20
East			
South			
West			

Direction	Topographic Features (hills, valleys, rivers, etc.)	General Terrain (flat, rolling, rough)
North		Flat
East		Rough
South	Valley	Rough
West	Valley	Rolling

Figure 10.6 Harrison Location Map

10.7 South Fayette

Address	South Fayette Elementary School 3640 Old Oakdale Road McDonald, PA 15057		
AQS#	42-003-0067	MSA	Pittsburgh
Latitude (N)	40.375644	Longitude (W)	-80.169943
Comments	This suburban site is population-based and is the regional transport site for O_3, SO_2 and $PM_{2.5}$. Located in the western portion of the county, this site monitors pollution levels entering the County on prevailing winds. South Fayette is a core $PM_{2.5}$ site that is used to determine compliance with national standards. The elevation of this site might suggest that elevated overnight ozone concentrations (atypical) are due to stratospheric intrusion.		

Sensor Type	**$PM_{2.5}$** FRM	Appendix C Method Code	145
Network Designation	SLAMS	Probe Height	8 Meters
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Every Three Days	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure, Regional Transport, Upwind Background
Monitor Start Date	1/1/1995	Appendix E Siting Criteria	Yes

Sensor Type	**PM_{10}** FRM	Appendix C Method Code	141
Network Designation	SLAMS	Probe Height	8 Meters
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	General/Background
Monitor Start Date	3/27/1987	Appendix E Siting Criteria	Yes

Sensor Type	**Sulfur Dioxide**	Appendix C Method Code	60
Network Designation	SLAMS	Probe Height Residence Time	8 Meters 10.2 Seconds
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Hourly	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	General/Background
Monitor Start Date	7/1/1980	Appendix E Siting Criteria	Yes

Sensor Type	**Ozone**	Appendix C Method Code	187
Network Designation	SLAMS	Probe Height Residence Time	8 Meters 10.2 Seconds
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Hourly	Appendix D Scale	Regional
Appendix A QA Assessment	Yes	Appendix D Objectives	General/Background, Regional Transport
Monitor Start Date	1/1/1980	Appendix E Siting Criteria	Yes

South Fayette Area Information

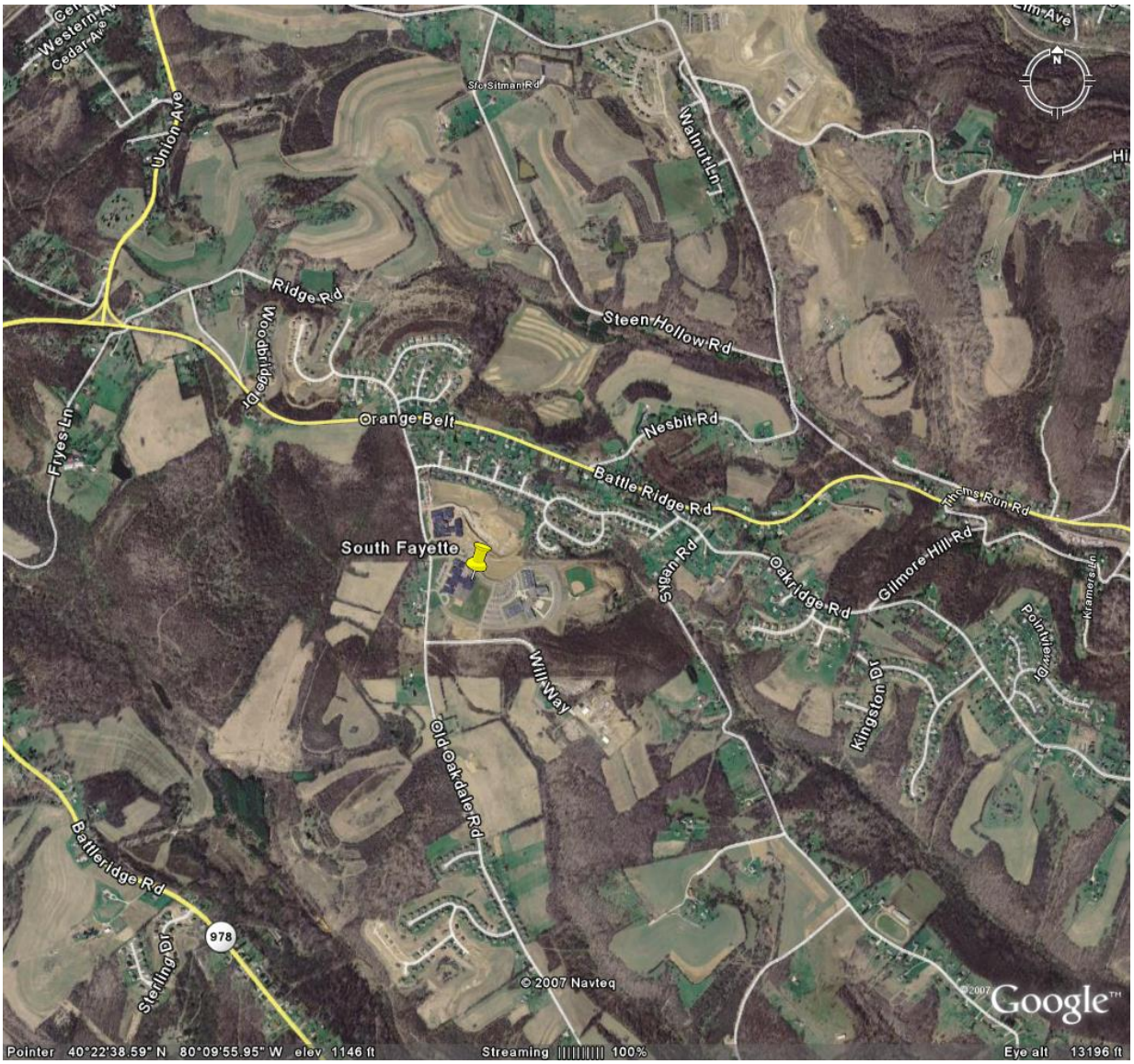
Street Name / Distance	Traffic Count (AADT)
Old Oakdale Rd. (142m)	Unavailable
Cannon Gate Dr. (377m)	Unavailable
Battle Ridge Rd. (554m)	5194 (PennDot 2014)

Direction	Predominant Land Use (Industry, Residential, Commercial or Agriculture)
North	Residential
East	Residential
South	Agriculture
West	Agriculture

Direction	Obstructions	Height (m)	Distance (m)
North			
East			
South			
West			

Direction	Topographic Features (hills, valleys, rivers, etc.)	General Terrain (flat, rolling, rough)
North		Rolling
East		Rolling
South		Rolling
West		Rolling

Figure 10.7 South Fayette Location Map



10.8 Clairton

Address	Clairton Education Center 501 Waddel St. Clairton, PA 15025		
AQS#	42-003-3007	MSA	Pittsburgh
Latitude (N)	40.294341	Longitude (W)	-79.885331
Comments	This is a population-oriented, suburban site that is located within an environmental justice area. Site selection was based on this location being within the Monongahela Valley and generally upwind of the USX Clairton Coke Works. During times of temperature inversions and atypical wind direction, the coke works and other sources in the Monongahela River valley impact this site.		

Sensor Type	**$PM_{2.5}$** FRM	Appendix C Method Code	145
Network Designation	SLAMS	Probe Height	8 Meters
Purpose	Population Exposure	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days Waiver Provision	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure, Welfare Concerns
Monitor Start Date	1/1/2001	Appendix E Siting Criteria	Yes

Sensor Type	**PM_{10}** FRM	Appendix C Method Code	141
Network Designation	SLAMS	Probe Height	8 Meters
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure, Welfare Concerns
Monitor Start Date	4/8/1992	Appendix E Siting Criteria	Yes

Clairton Area Information

Street Name / Distance	Traffic Count (AADT)
Large Ave (29m)	Unavailable
Waddell Ave. (64m)	Unavailable
6th St. (144m)	Unavailable
Saint Clair Ave. (158m)	1763 (PennDot 2012)

Direction	Predominant Land Use (Industry, Residential, Commercial or Agriculture)
North	Residential
East	Residential
South	Commercial
West	Residential

Direction	Obstructions	Height (m)	Distance (m)
North			
East			
South			
West			

Direction	Topographic Features (hills, valleys, rivers, etc.)	General Terrain (flat, rolling, rough)
North	valley	rolling
East	valley	rolling
South		flat
West	valley	rolling

Figure 10.8 Clairton Location Map

10.9 Avalon

Address	520 Orchard Ave. Avalon, PA 15202		
AQS#	42-003-0002	MSA	Pittsburgh
Latitude (N)	40.499767	Longitude (W)	-80.071337
Comments	This is a population-oriented, suburban site previously impacted by the PM and SO_2 Shenango Coke Works' emissions. Many odor and air pollution complaints were from communities near this monitoring site. However, Shenango Coke Works permanently ceased operations in 2016. As a result, the 2016 1-hour SO_2 DV is half the 2010 DV. Avalon is a core $PM_{2.5}$ site that is used to determine compliance with national standards.		

Sensor Type	**$PM_{2.5}$** FEM	Appendix C Method Code	183
Network Designation	SLAMS Primary	Probe Height	5 Meters
Purpose	Regulatory Compliance Primary Monitor	Appendix D Design Criteria	Yes
Sample Frequency	Hourly	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Start Date	1/1/2017	Appendix E Siting Criteria	Yes

Sensor Type	**$PM_{2.5}$** FRM	Appendix C Method Code	145
Network Designation	SLAMS Secondary	Probe Height	5 Meters
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Every Three Days	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure Quality Assurance
Monitor Start Date	6/8/2011	Appendix E Siting Criteria	Yes

Sensor Type	**Sulfur Dioxide**	Appendix C Method Code	60
Network Designation	SLAMS	Probe Height Probe Residence	6 Meters 16.2 Seconds
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Hourly	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Start Date	1/1/2006	Appendix E Siting Criteria	Yes

Avalon Area Information

Street Name / Distance	Traffic Count (AADT)
Spruce St. (7m)	Unavailable
Orchard Ave. (33m)	Unavailable
South Birmingham Ave. (50m)	Unavailable
Ohio River Blvd. (59m)	14,140 (PennDot 2012)

Direction	Predominant Land Use (Industry, Residential, Commercial or Agriculture)
North	Residential
East	Residential
South	Commercial
West	Residential

Direction	Obstructions	Height (m)	Distance (m)
North	Building	2	30
East	Building	4	20
South	Building	3	43
West	Building	4	15

Direction	Topographic Features (hills, valleys, rivers, etc.)	General Terrain (flat, rolling, rough)
North	Hill	Rolling
East		Flat
South	River	Flat
West		Flat

Figure 10.9 Avalon Location Map

10.10 Flag Plaza

Address	Boy Scouts of America Building 1275 Bedford Avenue Pittsburgh, PA 15219		
AQS#	42-003-0031	MSA	Pittsburgh
Latitude (N)	40.443367	Longitude (W)	-79.990293
Comments	This is an urban-based site located at the Central Business District boundary limits. It is in a downwind position between the Central Business District and a densely populated environmental justice area.		

Sensor Type	**PM_{10}** FEM	Appendix C Method Code	79
Network Designation	SLAMS	Probe Height	10 Meters
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Hourly	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Start Date	4/26/1992	Appendix E Siting Criteria	Yes

Sensor Type	**Carbon Monoxide**	Appendix C Method Code	93
Network Designation	SLAMS	Probe Height Residence Time	10 Meters 9.5 Seconds
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Hourly	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Start Date	5/5/2003	Appendix E Siting Criteria	Yes

Sensor Type	**Air Toxics** VOCs/SUMMA canister	Appendix C Method Code	150
Network Designation	Other	Probe Height	10 Meters
Purpose	Population Exposure	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days	Appendix D Scale	Not Assigned
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Start Date	1/1/1995	Appendix E Siting Criteria	Yes

Sensor Type	**Air Toxics** Carbonyls/DNPH cartridge	Appendix C Method Code	102
Network Designation	Other	Probe Height	10 Meters
Purpose	Population Exposure	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days	Appendix D Scale	Not assigned
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Start Date	1/1/1995	Appendix E Siting Criteria	Yes

Flag Plaza Area Information

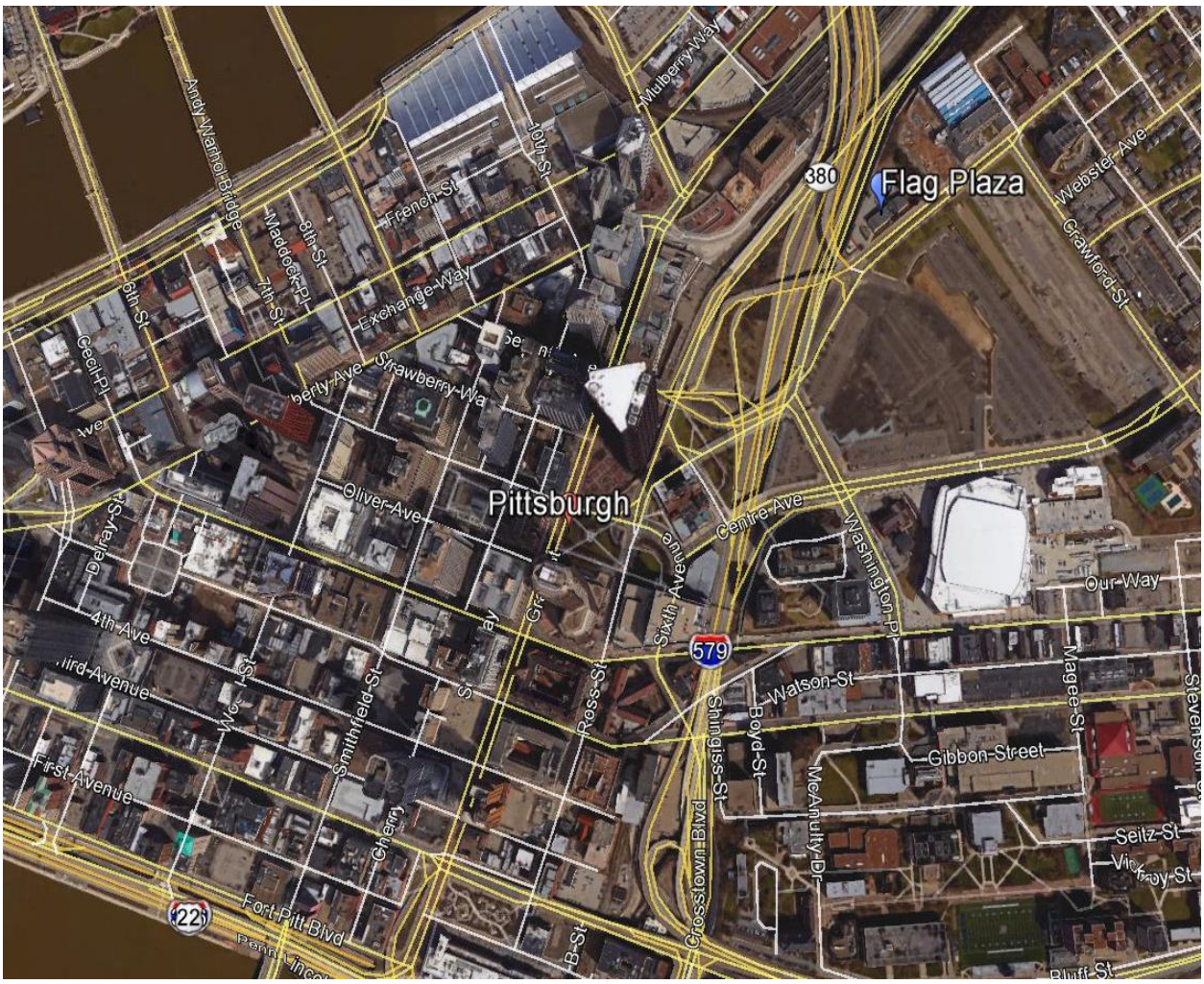
Street Name / Distance	Traffic Count (AADT)
Bedford Ave (17m)	5220 (PennDot 2015)
Rt. 579 (65m)	46,422 (PennDot 2012)
Bigelow Blvd. (105m)	20,221 (PennDot 2015)

Direction	Predominant Land Use (Industry, Residential, Commercial or Agriculture)
North	Commercial
East	Residential
South	Commercial
West	Commercial

Direction	Obstructions	Height (m)	Distance (m)
North			
East			
South			
West	Building	5	130

Direction	Topographic Features (hills, valleys, rivers, etc.)	General Terrain (flat, rolling, rough)
North	River	Flat
East	City	Flat
South	City	Rough
West	City	Rough

Figure 10.10 Flag Plaza Location Map



10.11 Manchester

Address	Manchester Elementary School 1612 Manhattan Street Pittsburgh, PA 15233		
AQS#	42-003-0092	MSA	Pittsburgh
Latitude (N)	40.456427	Longitude (W)	-80.026740
Comments	Located to the northwest of downtown Pittsburgh, this population oriented suburban site is also an environmental justice area. Sources of influences are numerous, as this community is located near various warehouse/light-industrial facilities along Ohio River valley. There is also a significant contribution by mobile sources.		

Sensor Type	**PM_{10}** FRM	Appendix C Method Code	141
Network Designation	SLAMS	Probe Height	7 Meters
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days	Appendix D Scale	Neighborhood, Welfare Concerns
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Start Date	10/24/1989	Appendix E Siting Criteria	Yes

Manchester Area Information

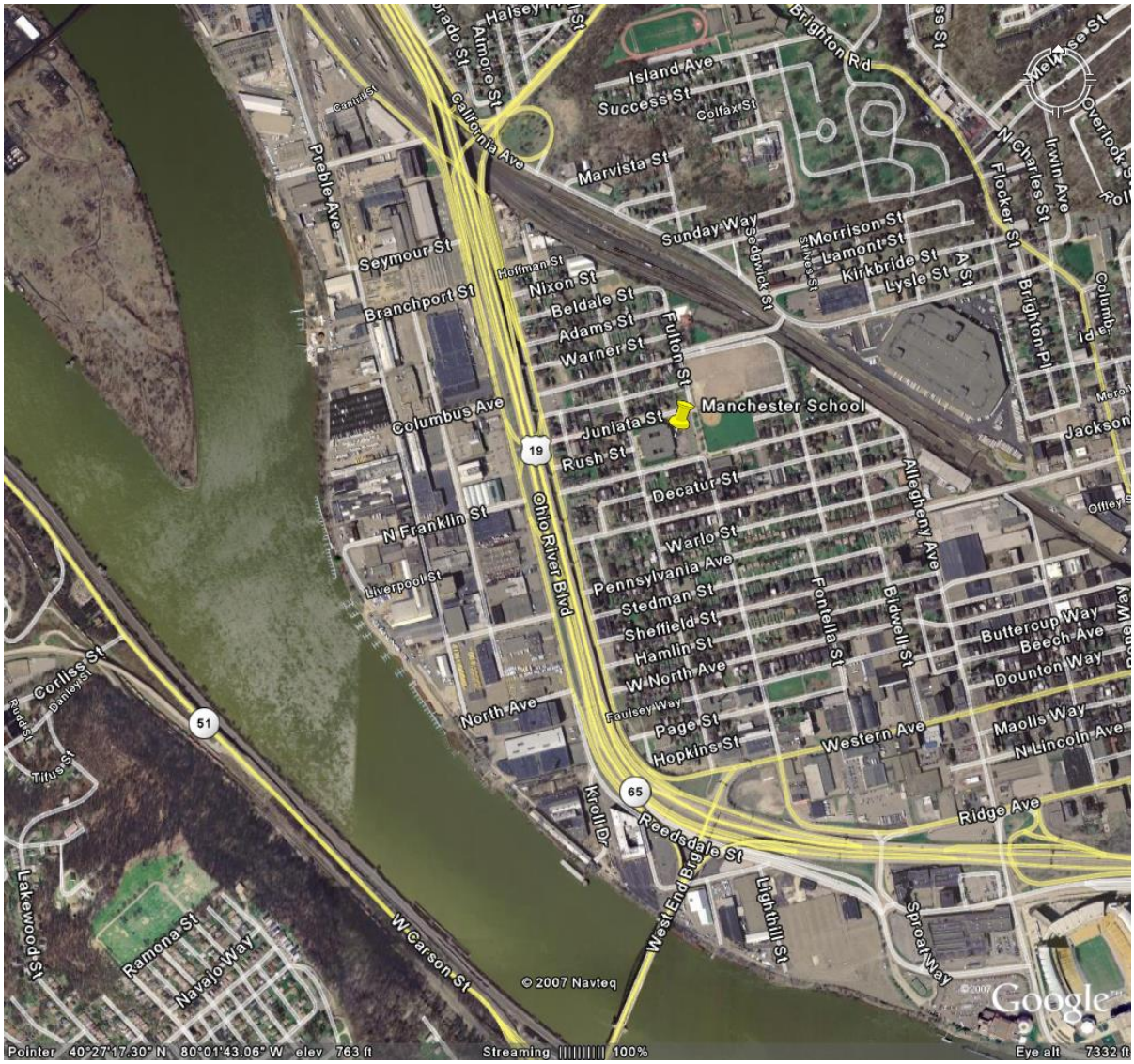
Street Name / Distance	Traffic Count (AADT)
Manhattan St (50m)	Unavailable
Chateau St (220m)	8565 (PennDot 2011)
Ohio River Blvd. (253)	29,100 (PennDot 2010)

Direction	Predominant Land Use (Industry, Residential, Commercial or Agriculture)
North	Residential
East	Residential
South	Residential
West	Residential

Direction	Obstructions	Height (m)	Distance (m)
North			
East			
South			
West			

Direction	Topographic Features (hills, valleys, rivers, etc.)	General Terrain (flat, rolling, rough)
North		Flat
East	Hills	Flat
South		Flat
West	River	Flat

Figure 10.11 Manchester Location Map



10.12 North Park

Address	North Park Golf Course 10200 Kummer Road Wexford, PA 15090		
AQS#	42-003-0093	MSA	Pittsburgh
Latitude (N)	40.606624	Longitude (W)	-80.021669
Comments	Located in the northern residential portion of the County and outside of industrialized river valleys, this suburban site was created as a $PM_{2.5}$ background site and to provide for even geographical distribution of the $PM_{2.5}$ monitoring network.		

Sensor Type	**$PM_{2.5}$** FRM	Appendix C Method Code	145
Network Designation	SLAMS	Probe Height	5 Meters
Purpose	Population Exposure	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days Waiver Provision	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure, Regional Background
Monitor Start Date	3/25/1999	Appendix E Siting Criteria	Yes

North Park Area Information

Street Name / Distance	Traffic Count (AADT)
Kummer Rd. (229m)	3583 (PennDot 2014)
Pierce Mill Rd. (580m)	2397 (PennDot 2011)

Direction	Predominant Land Use (Industry, Residential, Commercial or Agriculture)
North	Agriculture
East	Agriculture
South	Residential
West	Residential

Direction	Obstructions	Height (m)	Distance (m)
North			
East			
South			
West			

Direction	Topographic Features (hills, valleys, rivers, etc.)	General Terrain (flat, rolling, rough)
North		Rolling
East		Rolling
South		Rolling
West		Rolling

Figure 10.12 North Park Location Map

10.13 Parkway East

Address	Hosanna House Event Center 400 Sherwood Road Pittsburgh, PA 15221		
AQS#	42-003-1376	MSA	Pittsburgh
Latitude (N)	40.437430	Longitude (W)	-79.863572
Comments	This site was installed to comply with NO_2 design criteria. Monitor inlets sample air at 18 meters from the nearest traffic lane of Route 376 (Parkway East). This location was approved by EPA as a near road monitoring site that measures population exposure to roadway emissions. Concentration data for CO and NO_2 are near network maximums.		

Sensor Type	**Oxides of Nitrogen (NO_2)** Trace Level	Appendix C Method Code	599
Network Designation	SLAMS	Probe Height Residence Time	3 Meters 5.3 Seconds
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Hourly	Appendix D Scale	Microscale
Appendix A QA Assessment	Yes	Appendix D Objectives	Highest Concentration
Monitor Start Date	9/1/2014	Appendix E Siting Criteria	Yes

Sensor Type	**Carbon Monoxide (CO)** Trace Level	Appendix C Method Code	593
Network Designation	SLAMS	Probe Height Residence Time	3 Meters 3.2 Seconds
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Hourly	Appendix D Scale	Microscale
Appendix A QA Assessment	Yes	Appendix D Objectives	Highest Concentration
Monitor Start Date	9/1/2014	Appendix E Siting Criteria	Yes

Sensor Type	**Black Carbon Monitor** 7-channel Aethalometer	Appendix C Method Code	894
Network Designation	Other	Probe Height (m)	4 Meters
Purpose	Research/Scientific Monitoring	Appendix D Design Criteria	Yes
Sample Frequency	Hourly	Appendix D Scale	Microscale
Appendix A QA Assessment	Yes	Appendix D Objectives	Highest Concentration
Monitor Start Date	9/1/2014	Appendix E Siting Criteria	Yes

Sensor Type	**$PM_{2.5}$** FEM	Appendix C Method Code	183
Network Designation	SLAMS	Probe Height	4 meters
Purpose	Regulatory Compliance Primary Monitor	Appendix D Design Criteria	Yes
Sample Frequency	Hourly	Appendix D Scale	Microscale
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure, Source Oriented
Monitor Start Date	1/1/2016	Appendix E Siting Criteria	Yes

Parkway East Area Information

Street Name / Distance	Traffic Count (AADT)
Penn Lincoln Parkway, Rt. I-376 (18 m)	75,971 (PennDot 2014)

Direction	Predominant Land Use (Industry, Residential, Commercial or Agriculture)
North	Residential
East	Residential
South	Residential
West	Residential

Direction	Obstructions	Height (m)	Distance (m)
North			
East	Trees	15	33
South			
West			

Direction	Topographic Features (hills, valleys, rivers, etc.)	General Terrain (flat, rolling, rough)
North		Rolling
East	Hill	Rough
South		Rolling
West		Rolling

Figure 10.13 Parkway East Location Map

11.0 GLOSSARY OF TERMS AND ABBREVIATIONS

NAAQS	National Ambient Air Quality Standards. These standards apply only to the six criteria pollutants
Criteria Pollutants	Air pollutants considered harmful to public health and the environment (carbon monoxide, nitrogen dioxide, sulfur dioxide, ozone, lead, particulate matter: PM_{10}, $PM_{2.5}$)
FRM	Federal Reference Method. Primary measurement methods designated by the USEPA for measurement of criteria pollutants and determination of compliance with NAAQS.
FEM	Federal Equivalent Method. Secondary methods approved by the USEPA for measurement of criteria pollutants and determination of compliance with NAAQS.
TSP	Total Suspended Particles. TSP samplers are filter based, operate at a high flow rate and have no particle sizing device. An FRM monitoring method further analyzed for metals.
PM_{10}	All suspended particles equal to or smaller than 10 microns.
$PM_{2.5}$	All suspended particles equal to or smaller than 2.5 microns. Also frequently referred to as fine particulates.
PM (coarse)	All suspended particulates smaller than10 microns but larger than 2.5 microns, also often referred to as $PM_{10\text{-}2.5}$. EPA has not assigned a NAAQS to this parameter as of the date of this document.
Lead (Pb)	Lead Monitoring. Laboratory analysis of TSP filters. This analysis is performed according to the federal reference method for lead monitoring.
Speciation	$PM_{2.5}$ speciation monitor. Multiple filter based samples which yield a breakdown of $PM_{2.5}$ composition. Analytes include heavy metals, sulfates, nitrates and various species of carbon. Analysis is conducted by the US EPA national contract lab.
Aethalometer	A continuous monitor designed to measure diesel mobile emissions by quantifying black carbon particles. This is a research instrument and does not determine compliance with NAAQS.
Benzene	C_6H_6. A six carbon aromatic ring known to be a carcinogen. Emitted by mobile and industrial sources in Allegheny County.
PAMS	Photochemical Assessment Monitoring Stations
VSCC	Very Sharp Cut Cyclone. An particulate sizing device for use with $PM_{2.5}$ FRM and FEM monitors. The VSCC is commonly used to accomplish the final $PM_{2.5}$ size cut in low flow (16.7 lpm), continuous particulate monitors.
CO	Carbon Monoxide. Measured using a continuous automated analyzer.
SO_2	Sulfur Dioxide. Measured using a continuous automated analyzer.
NO_x	Oxides of nitrogen, including nitric oxide and nitrogen dioxide. Measured using a continuous automated analyzer.

NO_y	Total reactive nitrogen. A collective name for oxidized forms of nitrogen in the atmosphere such as nitric oxide (NO), nitrogen dioxide (NO_2), nitric acid (HNO_3), and numerous short lived and reactive organic nitrates (but **not** NH_3). These compounds play important roles in atmospheric ozone and ultra-fine particle formation.
O_3	Ozone. Measured using a continuous automated analyzer.
NCORE	National Core Monitoring Network, consisting of multi-pollutant ambient air monitoring sites, and specializing in $PM_{2.5}$ and associated precursor gases. These sites will be known as "CORE" sites starting 2019.
Near Road	Monitoring site designed to measure peak exposure to roadway emissions. Required monitoring parameters are NO_2, CO and $PM_{2.5}$. Installation of near road monitoring sites were required by revisions to the NO_2 NAAQS during 2010.
SPM	Special Purpose Monitor. An SPM is defined as any network monitor that the agency has designated as a special purpose monitor in its annual monitoring network plan and in AQS. SPMs do not count when showing compliance with the minimum requirements for the number and siting of monitors of various types.
TEOM	(Tapered Element Oscillating Microbalance) this technology is used by the Thermo-Scientific model 1400ab continuous particulate monitor, which has FEM designation for PM_{10} measurement. This monitor is also used as a $PM_{2.5}$ non-regulatory monitor (e.g., AQI purposes) by adding a VSCC.
BAM	Beta Attenuation Monitor. This technology is used by the Met One BAM1020 and the Thermo Scientific 5014i continuous particulate monitors, both which have FEM designation for PM_{10} measurement and for $PM_{2.5}$ measurement with the addition of a VSCC.
Sonic Anemometer	A method to measure wind speed and wind direction that uses ultrasonic sound waves to precisely measure wind speed and wind direction. This method features much better accuracy, sensitivity and longevity as compared to the traditional "cup and vane" wind sensing method. The sonic anemometers utilized by the department are heated to avoid ice accumulation on the sensors.
AADT	Annual Average Daily Traffic count. This is the unit of measure used in this report to indicate vehicular traffic density as received from Penn Dot (Pennsylvania Department of Transportation), and represents the daily two-way traffic count averaged over a calendar year for the indicated roadway segment. The year that the data was collected is included for each count.
TO15	A method of air toxics sampling employed a Flag Plaza air monitoring site. Operated every 6 days for 24 hours, the sample is collected into a special prepared stainless steel canister and is then sent to the laboratory at the Maryland Department of the Environment for analysis. The analysis tests for 62 volatile organic compounds.
TO11	A method of air toxics sampling employed a Flag Plaza air monitoring site. Operated every 6 days for 24 hours, the sample is collected into a 2,4-DNPH (dinitrophenylhydrazine) cartridge and is analyzed by Philadelphia Air Monitoring Section Laboratory. This procedure has been written specifically for the sampling and analysis of formaldehyde, the most important carbonyl that participates in ozone formation. However, the analysis also yields acetone, propionaldehyde acetaldehyde, benzaldehyde, methyl ethyl ketone and methyl isobutyl ketone results

12.0 Public Comment Period

This network review was available for public comment as required by 40 CFR Part 58 §58.10. Comments were accepted by e-mail and conventional mail until the close of business on June 5, 2018. All comments received as well as ACHD responses are included in the final version submitted to EPA Region III no later than July 1, 2018.

Submit comments by e-mail → darrell.stern@alleghenycounty.us

Submit comments by conventional mail →

Darrell Stern
301 39th Street, Building 7
Pittsburgh, PA 15201

12.1 Allegheny County Health Department Press Release

The Allegheny County Health Department issued a press release on May 1, 2018 to inform the public of the annual network plan comment period. The press release provides a web link to the draft annual network plan and explains how to submit written comments during the comment period.

Figure 12.1 Allegheny County Health Department Press Release

ALLEGHENY COUNTY
ALWAYS INSPIRING

FOR IMMEDIATE RELEASE
May 1, 2018

Contact: Ryan Scarpino
Public Health Information Officer
412-578-8312 (office)
412-339-7995 (cell)
Ryan.Scarpino@AlleghenyCounty.us

Health Department Seeks Comment on Annual Air Monitoring Network Plan

PITTSBURGH – The Allegheny County Health Department (ACHD) is requesting public comment on its 2019 Air Monitoring Network Plan, an annual report which provides a detailed description of how and where air pollution is monitored in Allegheny County.

The 2019 Air Monitoring Network Plan is a document required by the U.S. Environmental Protection Agency. It provides the specific location of each monitoring station, siting criteria, monitoring methods and objectives, frequency of sampling, pollutants measured at each station, and aerial photographs showing their physical location.

The network includes the following 13 locations: Avalon, Clairton, Glassport, Harrison, Liberty, Lincoln, North Braddock, South Fayette; three locations within the City of Pittsburgh (Flag Plaza in downtown Pittsburgh, Lawrenceville and Manchester) as well as sites in North Park and near the Parkway East (I-376) in Wilkinsburg. Additional special study projects are also described.

One or more of the following pollutants is measured at each site; sulfur dioxide, carbon monoxide, nitrogen oxides, total reactive nitrogen, ozone, PM10, PM2.5 and air toxics.

The complete report is posted in the Air Quality Program's section of the Health Department's website.

All correspondence must include first and last name and a complete mailing address. Comments will be accepted until **4:30 p.m.** on **Tuesday**, **June 5**.

Comments may be submitted via e-mail to darrell.stern@alleghenycounty.us or by mail to:

Allegheny County Health Department
Attention: Darrell Stern
Air Quality Program
301 39th Street
Pittsburgh, PA 15201

# # #

Allegheny County
Health Department

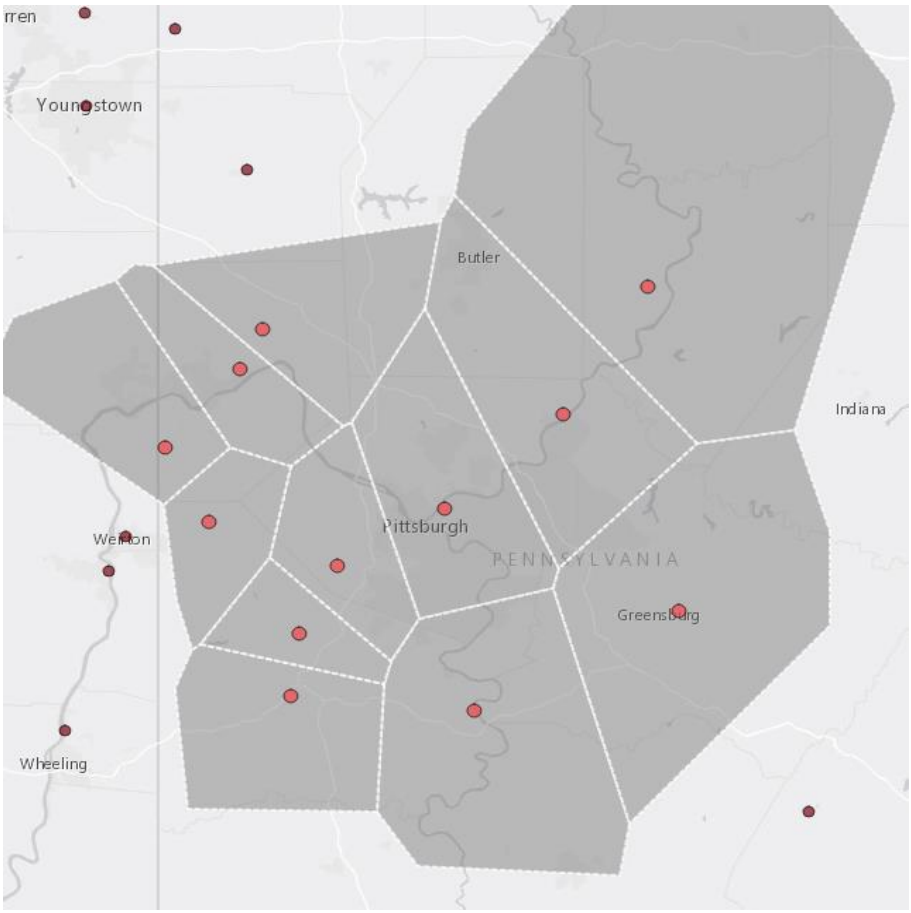
13.0 Public Comments and Responses

13.1 Group Against Smog and Pollution (GASP)

Comments in this section were extracted from a document as received by the Department during the public comment period. The document, authored by the Group Against Smog and Pollution (GASP), is included in unedited form in Appendix B. For this section, every effort was made to summarize the major points and principles presented in the received document.

1. The spatial coverage of the current ozone monitor network is inadequate. Although the current network of ozone monitors exceeds the minimum number of monitoring sites, these sites fail to be protective of all Allegheny County's citizens. An additional ozone SLAMS monitoring location must be added to address this deficiency.

   Response: Department concludes that the current ozone network is sufficient and continues to effectively protect and inform the residents of Allegheny County. Regarding the termination of PaDEP's Murrysville ozone monitor, the network assessment tool was used to recalculate the Voronoi polygons and the result is shown below. The polygon area occupied by the discontinued monitor is subsumed by the other polygons on the map, showing that the current monitoring coverage is sufficient.



The updated air monitoring network assessment tools are available at the following locations;

https://github.com/LADCO/NetAssessApp

https://ladco.shinyapps.io/NetAssessApp

2. The PAMS plan must be explained in greater detail. Plan must clarify with greater specificity the monitoring parameters included in "PAMS Monitoring Season" and the dates during which those species will be monitored. ACHD should consider extending the PAMS Monitoring Season beyond the minimal requirement of only monitoring June, July and August. ACHD must consider more-closely mirroring the ozone season date range (March through October) so that it can collect data that can "provide an air quality database that will assist air pollution control agencies in evaluating, tracking the progress of, and, if necessary, refining control strategies for attaining the ozone NAAQS.

   Response: In consideration of this comment, more detail has been added to section 3.2.1., further explaining details of the PAMS required monitor additions.

   The Enhanced Monitoring Plan dictates that most of the PAMS monitors and all network ozone monitors will operate on a year-round basis. Only hourly VOC measurements and every three-day carbonyl sampling at the Lawrenceville PAMS site will be limited to the official PAMS season. Expanding these monitoring activities to encompass the official ozone season or even year-round may be considered in the future, based on available funds, personnel resources and the level of success experienced during initial operation of the continuous gas chromatograph. Year-round, every six-day VOC and carbonyl sampling (24-hour average concentrations) is currently conducted and will continue at the Flag Plaza site in Downtown Pittsburgh and data is available upon request.

3. The EMP notes must be explained in greater detail. the suggested compliance activities in the Draft Plan do not appear to comply with the spirit of the requirement. The goal is *enhanced* monitoring "activities deemed important to understanding the [ozone] problems in the state." The Draft Plan section addressing the EMP only lists activities that ACHD is already conducting now. ACHD should clarify the point of Section 3.2.2 in the Draft Plan as well as consider actions it could take beyond those it is taking now or required to take to comply with PAMS requirements to ensure ambient ozone concentrations continue to decline throughout the County.

   Response: The Department feels that Allegheny County's portion of the Pennsylvania State EMP is adequate and satisfies the requirements as detailed in 40CFR58, Appendix D, Paragraph 5(h). The listed activities of the EMP in section 3.2.2 are above and beyond requirements for a SLAMS network. The Department has proactively initiated some of the proposed EMP elements these during recent years in the spirit understanding the local ozone concentrations. Additional enhanced monitoring activities may be considered for the future.

4. ACHD should consider installing a SLAMS monitor for $PM_{2.5}$ at street level in Downtown Pittsburgh to ensure that all areas of the County, including Downtown Pittsburgh, attain the NAAQS for PM2.5. The monitoring network might be missing the $PM_{2.5}$ impact on the commuting, downtown dwelling, and general riverside-recreating populations of the County.

   Response: ACHD acknowledges that Downtown Pittsburgh was identified as a possible location for special purpose or unofficial $PM_{2.5}$ surveillance by the ACHD Network Assessment (July 2015) as well as other studies by CMU and Pitt. Due to air monitor siting criteria required by 40CFR58 Appendix E, the highest $PM_{2.5}$ concentration areas identified by the CMU and Pitt studies would not be acceptable for a SLAMS $PM_{2.5}$ monitor due to restricted air flow, distance to roadways and distance to obstructions, and therefore such a monitor could not be compared to $PM_{2.5}$ NAAQS. ACHD continues to evaluate locations for potential $PM_{2.5}$ surveillance.

   The Department currently refers to the Parkway East $PM_{2.5}$ monitor to track roadway emissions in Allegheny County. The 2012 $PM_{2.5}$ NAAQS was amended to allow a microscale $PM_{2.5}$ monitor at each near road site. The near road $PM_{2.5}$ monitor at the Parkway East site (Section 10.13) is only 18 meters from the nearest traffic lanes of one of the busiest and most congested roadways in Allegheny County. This site features a microscale, continuous $PM_{2.5}$ Federal Equivalent Monitor that satisfies siting criteria of 40 CFR Part 58 Appendix E and is an approved SLAMS monitor. The inclusion of continuous $PM_{2.5}$ black carbon analyzer (diesel particulate matter), carbon monoxide monitor, nitrogen dioxide and meteorological equipment at the Parkway East site adds value in understanding roadway emissions independent of air flow obstructions that could skew monitoring results.

5. Termination of the Lawrenceville Toxic Metals Study would be especially troublesome. ACHD should guarantee that this study will continue into the foreseeable future.

   Response: The Department does not plan to terminate the Lawrenceville Toxic Metals Study during 2019. However, it is not possible to guarantee continued operation of this monitor since it is located on private property. Although concentrations of manganese vary from day to day, the 12-month running average is below published chronic exposure limits. All individual sampling day results are far below acute exposure limits. The regularly updated data report is posted on the Department's Air Quality webpage.

6. Despite Cheswick Power Station ("Cheswick") being the County's largest single stationary source of SO_2 for the past seven years, ACHD does not monitor concentrations of SO_2 in the immediate downwind vicinity of Cheswick.

Response: EPA guidance specifies that either modeling or monitoring can be used for air quality characterization. The area surrounding the Cheswick power plant is being addressed via a modeling demonstration as part of "Round 3" of the 2010 SO2 NAAQS. At the end of 2017, EPA designated the remainder of the county outside of the Allegheny, PA nonattainment area as "unclassifiable" (not enough information to make a determination of attainment), due to modeling that was not fully regulatory and a modeled limit that was not included in a federally enforceable permit. The modeling effort and permit revision(s) will be continued in the effort to redesignate this portion of the county to "attainment/unclassifiable" (meeting the standard and not contributing to a violation of the standard).

13.2 Clean Air Council

Comments in this section were extracted from a document as received by ACHD during the public comment period. The document, authored by the Clean Air Council, is included in unedited form in Appendix C. For this section, every effort was made to summarize the major points and principles presented in the received document.

1. The Department should strengthen its existing monitoring program for air toxics in the Mon Valley. According to the most recent assessment, there is a high cancer risk in the area near the Clairton coke oven facility.

   Response: The Department supports the need for an air toxics study in the industrialized portion of the Monongahela River Valley, although discussion for plans of special studies is outside of the scope of this document. The Air Monitoring Subcommittee is an appropriate forum to discuss special studies. Air toxics sampling is currently carried out every three days at the South Allegheny High School and data is available upon request. See Appendix A, A3.1 and A3.3 for more details on sampling methods employed.

2. Table 4 (Air Monitoring Network Summary) - In this Table, there is no indication that the Department is conducting air toxics monitoring at the Clairton, Liberty, and North Braddock monitors. With respect to the identified air toxics monitoring at Flag Plaza and Parkway East, the Department does not discuss either of them. This is a concern because the Flag Plaza monitor is located near an environmental justice community. The Department should identify the nature of the air toxics monitoring and explain its significance for residents and communities.

   Response: Flag Plaza air toxics sampling is listed as method TO15 and TO11 with a frequency of every 6 days. Parkway East site employs a continuous $PM_{2.5}$ black carbon aethalometer that quantifies diesel particulate matter (DPM). The glossary of terms (section 11.0) describes these methods in more detail. These methods are not included in Appendix A, Special Studies, because they are permanent components of the monitoring network as included in the operational grant workplan as supplied by EPA Region 3. Air toxics sampling is not currently conducted at North Braddock or Clairton air monitoring sites. See Appendix A, Special Studies for more details.

3. On the pages of the Draft 2019 Plan (Section 10, Detailed Monitoring Site Descriptions) that provide descriptions of individual monitors, the Department does not provide any information regarding the nature of the air toxics monitoring, whether it is characterized as a Special Study Project or not. With respect to the identified air toxics monitoring at Flag Plaza and Parkway East, the Department does not discuss either of them.

   Response: See the answer to the previous question. Section 10.0 is used to list SLAMS and EPA required monitors that are permanent components of the network. Special study monitoring details, while outside of the intended purpose of this document, are included in Appendix A for informational purposes.

4. The Department should conduct a study of hazardous air pollutants in the area near the Cheswick Generating Station, measuring hydrochloric acid, hydrogen fluoride, and other hazardous air pollutants as released from the facility.

   Response: The Department will consider such a special study. However, discussion of plans for special studies is outside of the scope of this document. The Air Monitoring Subcommittee is an appropriate forum to discuss special studies.

5. The Department should make the daily reports of concentration data on its website more useful for public use. The Department does not include hazardous air pollutant data from Flag Plaza or other sites or for any special studies that the Department is conducting. The data should remain on the website, rather than being replaced each day. The Department should also provide an explanation to help residents and communities understand the data and health effects of the hazardous air pollutants. The Department should provide context to make the document more useful for all residents and communities viewing this information, not just those with expertise in public health. This type of explanation would also be beneficial for criteria pollutants.

   Response: The Department will consider these comments as the website is improved and updated. The Daily Air Quality Index (AQI) is intended to simplify the daily data and to apply risk factors for going outside and given times, however improvements will be considered for the daily data report. Unfortunately, non-continuous data that requires laboratory analysis cannot be added to the daily continuous data report due to the inherent delays of weeks or months until laboratory results are received and analyzed. Examples of this type of data includes TO15, TO11 and charcoal tube data as well as filter based particulate samples. The Department will consider the value of posting non-continuous air monitoring data as a separate document. Summaries of all non-continuous and continuous data as can be found on the Air Quality website as Annual Reports.

6. In its discussion of Special Study Projects, the Department should restore language that states that "[d]ata is available to the public upon request."

   Response: In consideration of this comment, the suggested language has been added to each activity for which data is available to the public upon request.

7. The Department should clarify the nature and extent of passive VOC sampling. SUMMA canisters can passively measure a more comprehensive suite of pollutants than the Radiello brand passive samplers that are still in use by the Department. If SUMMA canisters are no longer being used by the Department for passive VOC sampling, the Department should explain why this method is no longer being employed.

   Response: Passive SUMMA canister sampling is not currently employed by the Department, although this method may be considered in the future. Active SUMMA canister sampling coupled with analytical method TO15 is employed at the Flag Plaza site (see section 10.10 and 11.0, glossary), allowing a consistent, mass flow controlled sample flow rate during the entire 24-hour sampling event. The Department prefers this configuration when using the SUMMA canister sampling method.

   Radiello passive samplers (see appendix A, section 3.2) are suitable for determination of long term trends since they can collect one sample over 30 days or more. The sample media is inexpensive and requires no electrical power, allowing multiple sampling locations in remote areas where other methods would not be feasible. The analytical set of compounds may be changed or increased. The Department has chosen a set of analytes of local concern. Limiting the number of analytes reduces analytical costs, maximizing the number of possible monitoring locations while remaining within budgetary limitations.

8. The Department should install and operate a sulfur dioxide monitor at the Glassport location. When it was operating, the levels of sulfur dioxide were much higher than those at the Liberty monitor. Should the Department suggest that air quality is improving based on data collected at the Liberty monitor, it is important for the public to remember that the Department discontinued the operation of the Glassport monitor, and that this monitor at this location could become material to whether the area is determined to be in attainment.

   Response: The proposed SO_2 State Implementation Plan (SIP) for the Allegheny, PA Nonattainment Area (NAA) was submitted to the EPA during September 2017. Modeling performed as a requirement of this SIP was designed to represent air quality at all receptor locations within the 22 municipalities in the NAA. The modeling was carefully reviewed for performance compared to current and historical data at all locations, including the former Glassport site. The types of industrial operations closest to this location have not changed much since the site was terminated. ACHD concludes that constructing a new air monitoring site at the remote, historical Glassport location would not likely change any monitoring or modeling analyses for the Glassport area. Last, CMU's ongoing Computational Fluid Dynamics (CFD) study promises to provide additional insight for SO_2 short-term monitoring and modeling for Glassport and the surrounding area.

9. The Department should install an additional monitor near the Grandview Golf Course, which would improve the reliability of air modeling results. The maximum modeled SO_2 level, as modeled in the proposed 2017 SO2 SIP revision, was located on the Grandview Golf Course, in North Braddock. *See* Proposed SO2 SIP Revision, page 20.

   Response: Similar to the previous response, modeling performed for the proposed SO_2 SIP for the Allegheny, PA NAA was designed to represent air quality at all receptor locations within the in NAA, including unmonitored areas in Braddock and North Braddock. The Department concludes that modeling is sufficient for characterization of SO_2 in these areas.

10. Sulfur dioxide emissions from Cheswick Generating Station are not properly accounted for; the Department should install an additional monitor to measure the impact of these emissions.

    Response: See Section 13.1, question #6

13.3 South Allegheny Middle/High School Students

The Department wishes to commend and thank the following South Allegheny School District students for their thoughtful comments and encourages their future interest in local air quality and the science of air monitoring. For current air monitoring data as well as information about air pollution monitoring and air quality regulations, please see Allegheny County Health Department's Air Quality webpage:

https://www.alleghenycounty.us/Health-Department/Programs/Air-Quality/Air-Quality.aspx

1. I understand that Allegheny County is setting up a new air monitoring plan but what gives?? Don't forget about Liberty, Lincoln, Glassport, Clairton. As it states in the TRIB on May 1 of this year it says the station that is the worst is in my own Liberty Boro! It is not meeting U.S Environmental Protection Act standards for sulfur dioxide or for particulate matter that is 2.5 microns less- small enough to harm human lungs. My mom is about to have my baby sister, I would hate to have her come into this world knowing that she could get a disease or cancer from living it a place I am comfortable with. I hope this comes to your attention. (South) Allegheny is being left with nothing while Lawrenceville and Avalon are getting monitors. It has come to my attention that (South) Allegheny doesn't get much. With all due respect, I value my future and everyone's around me. Please and Thank you. I'm Fourteen at South Allegheny Middle/Senior High School, I'm an activist.

Response: Allegheny County is currently in non-attainment for the $PM_{2.5}$ annual standard and an industrialized portion of the Monongahela River Valley has been designated as non-attainment for sulfur dioxide as well. Although no new monitors are being proposed for the Monongahela River Valley during 2019, this area is already well represented by air monitoring sites which will continue to operate. As can be seen on Table 4 of this plan, monitoring sites are currently operating at South Allegheny High School (Liberty), Glassport, Lincoln, North Braddock and Clairton. The Department dedicates considerable resources to monitoring the air and regulating the major air pollution sources in this area. Leveraging data generated by these monitoring sites, plans are being put into place to bring Allegheny County into attainment of all national ambient air quality standards, and to reduce the emission of hazardous air pollutants.

2. I am a student at South Allegheny Middle/Senior high school. In our reading class, we learned about our poor air quality. Today we read the article in the Trib(une Review) called "Allegheny Country Seeks Public Input on New Air Monitoring System." I had some concerns about Liberty's air monitoring system it has been brought to my attention that we don't meet EPA standards. I want to know if your "plan" to improve our air monitoring system includes actual updates to the system such as new technologies. I was also wondering if there is a way to see the data that you have on our air so we can be educated on it. Thank you for your time and consideration.

   Response: Please refer to section 13.3 for a link to Allegheny County Health Department's Air Quality webpage, where you can view live hourly data from the continuous monitors operating in Allegheny County, including those at South Allegheny High School.

   The Air Quality Program uses approved USEPA reference and equivalent monitors to determine compliance with National Ambient Air Quality Standards. Recently a new continuous $PM_{2.5}$ beta attenuation monitor was installed at Liberty (see section 2.2.3), which is a USEPA equivalent method for $PM_{2.5}$ and provides hourly averaged data. Note that the daily filter based $PM_{2.5}$ USEPA reference method also used at Liberty can only provide 24-hour average data and has a delay due to the required laboratory analysis.

   The Air Quality webpage shows the continuously updated Air Quality Index (AQI) for several sites, including Liberty. An older, nonequivalent continuous $PM_{2.5}$ monitor is currently used to generate AQI data for Liberty. If the new $PM_{2.5}$ beta attenuation monitor correlates with the Liberty filter based reference method data for one year, it will replace the older continuous $PM_{2.5}$ monitor and will be used to produce more accurate data for the Liberty AQI and to determine compliance with the air quality standards. Eventually, beta attenuation monitors may replace filter based sampling altogether, freeing up staff and laboratory time for other pursuits while providing more useful hourly data.

3. My name is (omitted), I am a student of South Allegheny middle/high school. I believe that our district and area should be included in the plan. It has come to our attention that we are not meeting the standards for sulfur dioxide levels and it is unsafe. We should be

notified or warned when the air quality is especially bad. Please take this email into consideration.

Response: See the response to question # 2 above. The Air Quality Index on the Air Quality website provides current, color coded air assessments at a glance and live data for each continuous monitor in the monitoring network is also posted and continuously updated.

13.4 Allegheny County Residents

1. I just wanted to pass along my two cents in regard to the new air monitoring plan in Allegheny County. I feel like there should be monitors downwind from the Cheswick/Springdale Coal fired power plant owned by NRG Energy.

   As one of the last remaining coal fired power plants in existence it needs to be monitored; recently we (Allegheny County) have been given straight F's for our air quality and the Cheswick plant is a big contributor. The plant releases sulfur dioxide, nitrogen oxides, mercury, and particulates such as soot. For years residents nearby have complained about black coal dust that constantly coats their homes and properties.

   We deserve clean air and clean water (this plant also violates the clean water act.) Please require frequent testing downwind from the Cheswick Power Station.

   Verona PA

   Response: See response to section 13.1, question #6. The area surrounding the Cheswick power plant is being addressed via a modeling demonstration as part of "Round 3" of the 2010 SO_2 NAAQS.

2. Please keep the parameters as strict as possible. Here in Braddock and North Braddock, we literally cannot breathe. There are days we cannot even go outside at all. Even if you stay inside on the terrible days, you choke to death in your house. I cannot describe the horrors of living by Edgar Thompson Steel Mill. Every single day, I feel closer to death.

   North Braddock, PA

   Response: The Department's State Implementation Plan (SIP) is being submitted to the EPA to bring Allegheny County into attainment of $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS). The North Braddock area is included in the Monongahela Valley SO_2 nonattainment area and is subject to a SIP that was submitted to the EPA during September 2017 and is designed to reduce concentrations of SO_2 in your area to levels below the NAAQS.

Appendix A Special Study Projects

A1: Introduction

ACHD frequently conducts investigations and studies using techniques that produce quantifiable results by methods that may not be classified by the USEPA as approved reference or equivalent methods. Often these investigations originate as responses to citizen concerns or complaints. This section briefly describes special studies that are currently ongoing or have been discontinued within the past year. Data from these studies is not submitted to the AQS database, however much of it is available for review on the ACHD webpage or also may be available upon public request.

A2: HAP Metals Sampling

A2.1 Lawrenceville NCORE Site Metals

Since 2013, HAP metals are measured at the Lawrenceville NCORE site on a routine and ongoing basis. The sampler is a high-volume TSP sampler that uses high purity quartz filters. Sampling frequency is every six days and each sample is collected for 24 hours. Analysis is conducted by the West Virginia DEP's Guthrie Laboratory using an ICP/MS analytical method. The analysis includes Be, Cr, Mn, Ni, As, Cd and Pb. Data is available upon request.

A2.2 Lawrenceville Toxic Metals Study

A special study was initiated on 04/30/2011 in Lawrenceville in response to public concern about local exposure to toxic metals potentially being released into the community by McConway & Torley, LLC. Corporate headquarters are located at 109 49th Street, Pittsburgh PA. Activities at this industrial site include an electric arc furnace and a steel foundry that casts railcar couplings.

ACHD conducts air sampling on McConway & Torley property using a USEPA reference method PM_{10} sampler and high purity quartz filters. Sampling is conducted every three days and each sample operates for 24 hours at 40 cfm. The filter is analyzed by a contracted laboratory. The exposed sample filters are analyzed for manganese, lead and chromium. Updated reports are available on the ACHD webpage.

A2.3 Kopp Glass Metals

Upon request by the USEPA, this study was conducted from April 1, 2017 through October 13, 2017 on the property of Kopp Glass, located in Swissvale PA. The initial sampler was located to the northwest of the plant, approximately 283 feet from the main stack to determine emissions of HAP metals during normal operating conditions at the plant. An additional sampler was added on July 30, 2017 and was located to the east southeast of the plant and 205 feet from the main stack. Both samplers were configured to collect PM_{10} filter samples over a 24-hour period. The exposed samples, along with all relevant flow and sample volume data, were shipped to the EPA

contract laboratory (ERG) for analysis by ICP-MS for various HAP metals including Cd, Pb, Co, Mn, Se, As and Cr.

The EPA is currently analyzing the data from this study and will release the final report once completed.

A3 Volatile Organic Compound (VOC) Sampling

A3.1 Charcoal Tube Sampling

Charcoal tube sampling is used by ACHD routinely to measure ambient concentrations of targeted VOC's. 24 hour samples are collected at Liberty every three days and at Avalon every six days using sampling pumps calibrated to 1 liter per minute. The exposed sorbent tubes are sent to the Allegheny County Medical Examiner's Laboratory for analysis by a GC/FID method for benzene, ethyl benzene, toluene, xylenes and naphthalene. Charcoal tube samples are also collected by field staff using battery powered personal samplers for shorter durations and higher flow rates during odor investigations, usually in response to citizen complaints. Data is available upon request.

A3.2 Passive VOC Sampling

ACHD uses Radiello brand passive samplers to conduct long term surveillance of targeted air toxic compounds including benzene, ethylbenzene, toluene, xylenes, styrene, n-hexane, and naphthalene. Passive sampling requires no electrical power, sampler maintenance or flow calibrations. The small size and low cost of the sampling enclosure and sampling media allows for multiple sampling locations in remote locations. Exposure time of the sampling media is variable. Longer duration provides for greater sensitivity and shorter duration provides for higher resolution. ACHD decided on a 2-week exposure period for recent applications. After exposure, the sampling media is sent to a contracted laboratory for analysis. Passive VOC sampling is conducted at the Avalon site, and future air toxics studies may include this sampling method. Data is available upon request.

A3.3 Benzo[a]pyrene Monitoring

Benzo[a]pyrene is a polycyclic aromatic hydrocarbon that is a known human carcinogen and is potentially emitted by the metallurgical coking industry. ACHD currently monitors for this compound using an in-house developed method, analyzing PM_{10} high volume quartz filter samples using high pressure liquid chromatography (HPLC). PM_{10} filters from the Liberty air monitoring site are analyzed for benzo[a]pyrene since this site is impacted by emissions from the Clairton Coke Works. South Fayette station PM_{10} filters are also analyzed for benzo[a]pyrene to serve as an upwind background site. Benzo[a]pyrene was also monitored at the Avalon station until the PM_{10} sampler was removed from the site as of January 2017, in response to the permanent shutdown of Shenango Coke Works, which potentially impacted the Avalon station and the nearby community. Data is available upon request.

A4 Hydrogen Sulfide

Hydrogen Sulfide is an odorous compound that has a very low odor threshold concentration. Expectedly, numerous ongoing community odor complaints are common near industries that release hydrogen sulfide. Traditionally, ACHD has measured H_2S at monitoring sites impacted by the metallurgical coking industry. Hydrogen sulfide is routinely and continuously measured at the Liberty and Avalon air monitoring sites. Recent hourly hydrogen sulfide data is available on the Air Quality Program's portion of the ACHD website and historic data is available to the public upon request. The Department references ambient H_2S standards as listed in the Pennsylvania Code, Title 25, Chapter 131.3 (24-hour average not to exceed 0.005 ppm, 1-hour average not to exceed 0.1 ppm). Data is available upon request. Current data may be obtained from the Air Quality webpage.

A5 Settled Particulate

Total settled particulate, also commonly referred to as dustfall, is collected and quantified in various locations in Allegheny County using ASTM method D 1793, which yields monthly average concentrations. This simple method is employed in response to complaints of heavy dust deposits in communities. Currently five collectors are maintained at Natrona Heights, Colllier Township and West Deer Township. The Department references settled particulate standards as listed in the Pennsylvania Code, Title 25, Chapter 131.3 (12-month average not to exceed 0.8 mg/cm^2/month, 30-day average not to exceed 1.5 mg/cm^2/month). Data is available upon request.

Appendix B

Unedited Comment Document

Group Against Smog and Pollution (GASP)

COMMENTS OF GROUP AGAINST SMOG & POLLUTION REGARDING THE ALLEGHENY COUNTY HEALTH DEPARTMENT'S ("ACHD") AIR MONITORING NETWORK PLAN FOR 2019 ("DRAFT PLAN")

The Clean Air Act ("CAA") requires each state implementation plan to "provide for establishment and operation of appropriate devices, methods, systems, and procedures necessary to … monitor, compile, and analyze data on ambient air quality."[1] Title 40 of the Code of Federal Regulations, Part 58, specifies requirements for conducting "Ambient Air Quality Surveillance" capable of producing data to support "the State Implementation Plans (SIP), national air quality assessments, and policy decisions."[2] In addition to compliance monitoring, objectives for a monitoring network also include providing "air pollution data to the general public in a timely manner" and supporting "air pollution research studies."[3] Part 58 establishes "[m]inimum ambient air quality monitoring network requirements"[4] but expressly notes, "[t]he total number of monitoring sites that will serve the variety of data needs will be substantially higher than these minimum requirements provide."[5]

I. Ozone Monitoring

On April 11, 2017, Acting Secretary of the Pennsylvania Department of Environmental Protection ("DEP") Patrick McDonnell submitted a letter to Cecil Rodrigues, Acting Regional Director of the U.S. Environmental Protection Agency ("EPA"), Region III, stating "the

---

1 42 U.S.C. § 7410(a)(2)(B).

2 40 C.F.R. § 58.2(a)(5).

3 Office of Air Quality Planning and Standards, *Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II: Ambient Air Quality Monitoring Programs* § 1.0 (U.S.E.P.A Pub. No. EPA-454/B-17-001) (2017); *see also* 40 C.F.R. Part 58, App. D § 1.1.

4 40 C.F.R. § 58.2(a)(5).

5 40 C.F.R. Part 58, App. D § 1.1.2.

Pittsburgh-Beaver Valley Area and Indiana County now measure at or below the ozone concentration of 70 ppb based on the most recent three years of air monitoring data. They are, therefore, attaining the 2015 … [National Ambient Air Quality Standard ('NAAQS')] for ozone."[6] The EPA accepted Mr. McDonnell's recommendation and on November 16, 2017, proposed listing Allegheny County as having attained the 2015 NAAQS for ozone.[7] However, Allegheny County obtained attainment status by the thinnest of margins; a mere one part per billion higher would have resulted in nonattainment.[8] In addition, Allegheny County remains a part of the Ozone Transport Region, which imposes certain standards as if the County was considered in Moderate Nonattainment.[9] All told, reaching attainment is a laudable accomplishment but significant work remains to continue the downward trend and protect the health and welfare of Allegheny County residents.

A. <u>The spatial coverage of the current ozone monitor network is inadequate</u>

To accomplish the three major monitoring network objectives outlined in the introductory paragraph above,[10] Part 58, Appendix D § 1.1.1 lists six types of monitoring sites required.[11] By way of the Draft Plan details for the Harrison, Lawrenceville, and South Fayette monitoring sites as well as the polygons shown on the attached excerpt from ACHD's most recent Five-Year

---

6 *Available at* http://files.dep.state.pa.us/Air/AirQuality/AQPortalFiles/Regulations%20and%20Clean%20Air%20Plans/attain/Ozonedes/Final_Draft_Letter_to_EPA_2015_NAAQS_Revision.pdf.

7 82 Fed. Reg. 54232, 54271 (November 16, 2017).

8 80 Fed. Reg. 65292 (October 26, 2015).

9 42 U.S.C. § 7511c; *see also* 83 Fed. Reg. 25776, 25780, Table 1 (June 4, 2018) (listing the threshold limits of the varying degrees of ozone nonattainment).

10 See also 40 C.F.R. Part 58, Appendix D § 1.1(a)-(c).

11 Of particular interest here are Appendix D §§ 1.1.1(a),(c), & (f): "Sites located to determine the highest concentrations expected to occur in the area covered by the network, … to determine the impact of significant sources or source categories on air quality, … [and] to measure …other welfare-based impacts."

Monitoring Network Assessment, it appears that the ozone network adequately monitors Allegheny County.[12] Unfortunately, these representations fail to consider four critical factors that render a portion of southern and eastern Allegheny County along the Monongahela River and the border with Westmoreland County in need of additional ozone monitoring.

First, the ACHD ozone network monitors do not cover the referenced portion of Allegheny County.[13] The third page of Exhibit "A" shows that the polygons associated with DEP monitoring sites at Murrysville and Charleroi cover this area. Although this arrangement might otherwise be acceptable, it is wholly inadequate, in part, because DEP terminated the Murrysville monitoring site three years ago.[14] Thus, all of the area within Allegheny County formerly associated with that monitor is not being monitored.[15]

Second, regarding the portion of Allegheny County within the polygon associated with DEP's Charleroi monitoring site, the monitor's location appears to render it inadequate for task at hand. The attached wind-roses from ACHD's most recent Five-Year Monitoring Network Assessment show that prevailing winds for Southern Allegheny County are almost entirely southwesterly.[16] Given this wind pattern, it is not clear how a monitor located due-south of Allegheny County's southern-most point would be able to characterize air quality within

---

[12] Draft Plan §§ 10.1, 10.6, and 10.7; *see attached* Exhibit "A".

[13] *See attached* Exhibit "B" (the second page of Exhibit "A" highlighting the Southern and Eastern portion of Allegheny County not covered by the ozone monitors at South Fayette, Lawrenceville, or Harrison).

[14] *See attached* Exhibit "C" (showing excerpts from the 2014 and 2015 DEP Air Monitoring Plans verifying the termination of the Murrysville monitoring site; highlighting added).

[15] *See attached* Exhibit "D" (showing the portion of Eastern Allegheny County formerly covered by DEP's Murrysville monitor).

[16] *See attached* Exhibit "E".

Allegheny County.[17] Although this concern might have previously been addressed by the distant but downwind Murrysville monitor, that is no longer the case.

Third, the area in question contains significant sources of the primary ozone precursors VOC and NOx. For the years 2010 through 2015, four of the top six stationary sources of NOx for all of Allegheny County were in or near the area in question and three of the top four in 2016.[18] For the same time period, the top two stationary sources for the entire County of VOC were in this area.[19] In addition, the area in question contains numerous industrial sites and facilities, which have attendant additional sources of NOx and VOC such as diesel locomotives, barges, and heavy truck traffic. There are simply too many sources of ozone precursors in this area to rely on background or transport-oriented monitors to adequately characterize the ambient ozone concentrations.

Fourth and finally, several census tracts in or near this area are listed in ACHD's Environmental Justice Index as being in Moderate to Highest need.[20] The legacy of adverse health impacts in this area caused by industrial activity and pollution combined with the current economic and health status of the residents weigh heavily in favor of a robust monitoring program.

The monitoring network for ozone is a critical component of reducing ambient ozone concentrations in Allegheny County. Although the current network of ozone monitors exceeds

---

[17] *See attached* Exhibit "F" (showing the portion of Southern Allegheny County to be covered by DEP's Charleroi monitor).

[18] *See attached* Exhibit "G" (showing NOx data reported on the DEP eFACTS website (highlighting added): https://www.ahs.dep.pa.gov/eFACTSWeb/criteria_facilityemissions.aspx).

[19] *See attached* Exhibit "H" (showing VOC data reported on the DEP eFACTS website (highlighting added): https://www.ahs.dep.pa.gov/eFACTSWeb/criteria_facilityemissions.aspx).

[20] See attached Exhibit "I" (ACHD's Allegheny County Environmental Justice Index; available at http://www.achd.net/air/index.php).

the minimum number of monitoring sites, these sites fail to be protective of all Allegheny County's citizens. An additional ozone SLAMS monitoring location must be added to address this deficiency.

B. The PAMS plan must be explained in greater detail

Per the requirements of Part 58, Appendix D § 5(a), ACHD must "collect and report [Photochemical Assessment Monitoring Stations] (PAMS) measurements at … [its Lawrenceville] NCore site" beginning June 1, 2019. ACHD's "plan for making … PAMS measurements … shall be submitted to the EPA Regional Administrator no later than July 1, 2018."[21] Although Section 3.2.1 of the Draft Plan states that ACHD will make monitor additions to comply with the required PAMS measurements detailed in Appendix D § 5, the Draft Plan does not state clearly if the "Monitor Addition" listed in Section 3.2.1 are meant to qualify as the required Plan submission noted above. In addition, several other details regarding compliance with the PAMS requirements are somewhat vague.

For example, Appendix D § 5(b) lists "PAMS measurements" as including "(5) Hourly averaged ambient temperature; (6) Hourly vector-averaged wind direction; (7) Hourly vector-averaged wind speed; (8) Hourly average atmospheric pressure; (9) Hourly averaged relative humidity; (10) Hourly precipitation; … (12) Hourly averaged solar radiation; and (13) Hourly averaged ultraviolet radiation." The Draft Plan notes in Section 2.3 that date for all of these parameters "are being submitted to AQS, effective January 1, 2018." Yet, the Draft Plan states that "[t]he PAMS monitoring season will be three months long (June, July and August)."[22] The

---

21 40 C.F.R. § 58.10(a)(10).

22 Draft Plan § 3.2.1.

Draft Plan must clarify if the atmospheric parameters being recorded currently outside of "PAMS Monitoring Season" will continue year-round or be limited to "PAMS Monitoring Season" once the full PAMS program is implemented. In addition, there appears to be some overlap between NCore and PAMS requirements with respect to monitoring nitrogenated species. Again, the Draft Plan must clarify with greater specificity the monitoring parameters included in "PAMS Monitoring Season" and the dates during which those species will be monitored.

On the topic of the proposed dates of PAMS Monitoring Season, the Draft Plan states that the ACHD plans to comply with the PAMS requirements by monitoring for the least amount of time allowable: "At a minimum, the monitoring agency shall collect the required PAMS measurements during the months of June, July, and August."[23] Understanding that ACHD will face cost increases for operating the additional PAMS monitoring equipment and that Part 58 notes the "optimum size of a particular network involves trade-offs among data needs and available resources,"[24] ACHD should consider extending the PAMS Monitoring Season. For SLAMS site ozone monitoring, the required "Ozone Monitoring Season" for Pennsylvania is March through October.[25] In light of Allegheny County being so close to nonattainment for the 2015 ozone NAAQS and monitoring oddities such as "the atypical pattern of ozone at …[the South Fayette] monitoring site,"[26] ACHD must consider more-closely mirroring the Ozone Season date range so that it can collect data that can "provide an air quality database that will

---

[23] Appendix D § 5(g); *see also* Draft Plan § 3.2.1.

[24] 40 C.F.R. Part 58, App. D § 1.1.2.

[25] 40 C.F.R. Part 58, App. D Table D-3.

[26] Draft Plan § 2.2.2.

assist air pollution control agencies in evaluating, tracking the progress of, and, if necessary, refining control strategies for attaining the ozone NAAQS."[27]

C. The EMP notes must be explained in greater detail

Allegheny County is located in the Ozone Transport Region, as noted *supra*, and as such will be required to "develop and implement an Enhanced Monitoring Plan (EMP) detailing enhanced [ozone] and [ozone] precursor monitoring activities to be performed."[28] Although the EMP is not due until October 1, 2019, the Draft Plan gave a summary of ACHD's planned compliance with the EMP in Section 3.2.2. As was the case with the PAMS Plan, ACHD must clarify if this submission is meant to satisfy the requirement of a EMP submission under 40 C.F.R. 58.10(a)(10). In addition, the suggested compliance activities in the Draft Plan do not appear to comply with the spirit of the requirement. The goal is *enhanced* monitoring "activities deemed important to understanding the [ozone] problems in the state."[29] The Draft Plan section addressing the EMP only lists activities that ACHD is already conducting now. ACHD should clarify the point of Section 3.2.2 in the Draft Plan as well as consider actions it could take beyond those it is taking now or required to take to comply with PAMS requirements to ensure ambient ozone concentrations continue to decline throughout the County.

---

[27] US EPA, Photochemical Assessment Monitoring Stations: Background, *available at* https://www3.epa.gov/ttn/amtic/pamsmain.html.

[28] 40 C.F.R. Part 58, App. D § 5(h).

[29] *See* 40 C.F.R. Part 58, App. D §§ 5(h)(1) – (4) (note that the activity examples listed here include "additional … monitors" as well as "additional… measurements" and "enhanced … measurements.")

II. Particulate Matter Monitoring

"In the last 20 years [particulate matter] has reemerged as the dominant issue in the air pollution community, overtaking [ozone], as the pressing air pollution health issue."[30] Accordingly, maintaining and expanding the County's particulate matter monitoring network is vital to protecting the health of Allegheny County's residents. ACHD-supported research recently established a significant spatial variation in concentrations of particulate matter less than 2.5 microns in diameter ("$PM_{2.5}$") in Downtown Pittsburgh.[31] Now ACHD must now follow up and continue to monitor exposures to the tens of thousands of people that pass through the Downtown area daily.

An air toxics study performed between 2005 and 2008 for ACHD by researchers from Carnegie Mellon University determined that a "hotspot" for diesel particulate matter in the ambient air exists in Downtown Pittsburgh.[32] The study concluded that concentrations of diesel particulate matter in Downtown's ambient air were high enough that they pose a statistically significant cancer risk.[33] As a follow up, ACHD, in conjunction with the University of Pittsburgh's Graduate School of Public Health, conducted a second study focused on characterizing diesel emissions in Downtown Pittsburgh.[34] This second study showed unhealthy levels of $PM_{2.5}$ present at street level Downtown, most likely as the result of heavy bus traffic,

---

30 Curtis D. Klaassen, ed., *Toxicology: The Basic Science of Poisons*, at 1253 (8th ed. 2013).

31 Brett J. Tunno et al, *Characterizing Spatial Variation in Diesel Particulate Matter Across Downtown Pittsburgh* (2016).

32 Allen Robinson, et al., *Air Toxics in Allegheny County: Sources, Airborne Concentrations, and Human Exposure*, ACHD Agreement # 36946 (March 2009).

33 *Id.*

34 Tunno et al, *supra*.

and that concentrations in the "downtown canyons" can vary significantly over very short distances.[35]

ACHD should consider installing a SLAMS monitor for $PM_{2.5}$ at street level in Downtown Pittsburgh to ensure that all areas of the County, including Downtown Pittsburgh, attain the NAAQS for $PM_{2.5}$. The Downtown area and adjacent river corridors likely have the highest concentrations of bus, heavy truck, idling car, rail, and barge traffic in the County. Yet, the closest $PM_{2.5}$ monitors to Downtown are in Avalon and Lawrenceville. It is possible that these two monitors are representative of ambient air concentrations for $PM_{2.5}$ under normal circumstances but they both sit significantly above river-level and inversions are commonplace. As such, the monitoring network might be missing the $PM_{2.5}$ impact on the commuting, downtown dwelling, and general riverside-recreating populations of the County. Such a monitor would also help inform additional needed control measures if the NAAQS are not being attained.

III. Special Purpose Monitoring

To the extent practicable, ACHD should continue with all additional monitoring that it conducts voluntarily in response to concerns raised by the public.[36] These additional projects and the public information they generate are indispensable to protecting public health.

In particular, termination of the Lawrenceville Toxic Metals Study[37] would be especially troublesome. As the attached graphs indicates,[38] the special purpose monitor at this site continues to show unexplained spikes of manganese and as well as a slight up-tick in the one-

---

35 *Id.*

36 This includes all Special Studies Projects listed in Appendix "A" of the Draft Plan.

37 ACHD, *Lawrenceville Toxic Metals Study*, April 23, 2018; *available a*t http://www.achd.net/air/pubs/pdf/042318_LawrencevilleToxicMetals.pdf

38 *See attached* Exhibit "J" (showing plots of data taken from the *Metals Study*, *supra*).

year rolling-average. ACHD should guarantee that this study will continue into the foreseeable future that it will properly notice and take comment on any proposed alterations to the monitoring program.

IV. Sulfur Dioxide Monitoring

ACHD currently operates five SO_2 monitors: South Fayette Township, Avalon, Lawrenceville, North Braddock, and Liberty.[39] Two of the five monitors – North Braddock and Liberty – are located near an existing major source of SO_2 and integral to the SO_2 nonattainment area SIP.[40] The Lawrenceville SO2 monitor is required because it is an NCore site.[41] That leaves two SO_2, monitors – Avalon and South Fayette – left to fulfill the monitoring objectives set forth in Part 58, Appendix D.

ACHD's Air Quality Annual Data Summary for 2017 shows that over the past several years – in particular after the closure of Shenango Coke – both the Avalon and South Fayette SO_2 monitors show readings far below the SO_2 NAAQS.[42] Yet, in spite of Cheswick Power Station ("Cheswick") being the County's largest single stationary source of SO_2 for the past seven years,[43] ACHD does not monitor concentrations of SO_2 in the immediate downwind vicinity of Cheswick.

---

[39] Draft Plan § 8.4.

[40] ACHD's SO_2 monitor in Liberty Borough is downwind from U.S. Steel's Clairton and Irvin Works; the SO_2 monitor in North Braddock is downwind from U.S. Steel's J. Edgar Thomson Works. These monitors are in an SO_2 nonattainment area defined by EPA in 75 Fed. Reg. 47191 (August 5, 2013).

[41] 40 C.F.R. § 58.1 (*see* definition of "NCore").

[42] *See attached* Exhibit "K".

[43] *See attached* Exhibit "L" (showing SOx data reported on the DEP eFACTS website (highlighting added): https://www.ahs.dep.pa.gov/eFACTSWeb/criteria_facilityemissions.aspx).

ACHD's choice to comply with the Data Requirements Rule for the 2010 SO_2 NAAQS[44] by using air quality modeling to characterize 1-hour concentrations of SO_2 downwind of Cheswick does not excuse the need to install and operate an SO_2 monitor downwind of Cheswick. More importantly, the Draft Plan's lack of a Cheswick monitor means that ACHD cannot provide timely air pollution data to the public, a clear and unambiguous objective of a well-designed monitoring network.[45] An SO_2 monitor near Cheswick can provide such data, and is thus necessary to protect public health. Finally, ACHD currently possess two SO_2 monitors that continually show only minor levels of SO_2. After years of making this comment, it is time for ACHD to monitor – not model – Cheswick's SO_2 emissions.

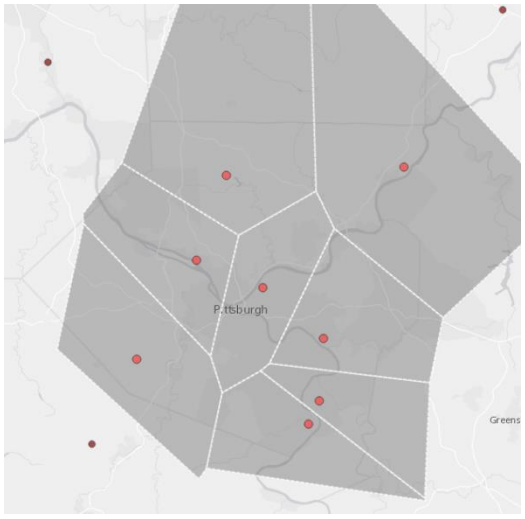
[44] The final Data Requirements Rule was published at 80 Fed. Reg. 51052 (Aug. 21, 2015). Cheswick appears to be the only source in Allegheny County to which the Data Requirements Rule applies because it is not located in a designated non-attainment area and had actual SO_2 emissions of more than 2,000 tons (in 2014). *See* 40 C.F.R. § 51.1200 (defining "Applicable source").

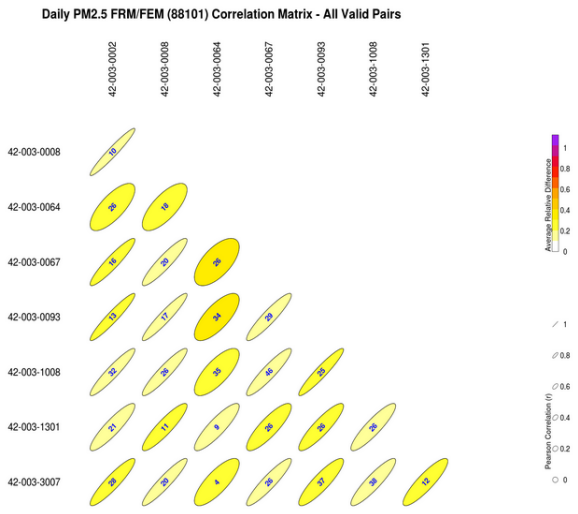
[45] Office of Air Quality Planning and Standards, *supra*, § 6.0.

Exhibit A

Allegheny County Health Department
Air Quality Program
301 39th St., Bldg. # 7
Pittsburgh, PA 15201

2015 Five-Year Monitoring Network Assessment





July 1, 2015

6. Ozone (O_3) Analysis

6.1. Area Served

The areas served polygons for ozone monitors in Allegheny County are shown on the map in Figure 6-1 below with Allegheny County sites labeled. The population and area in square miles are displayed in Table 6-1.

Figure 6-1. Allegheny County Ozone Monitoring Network

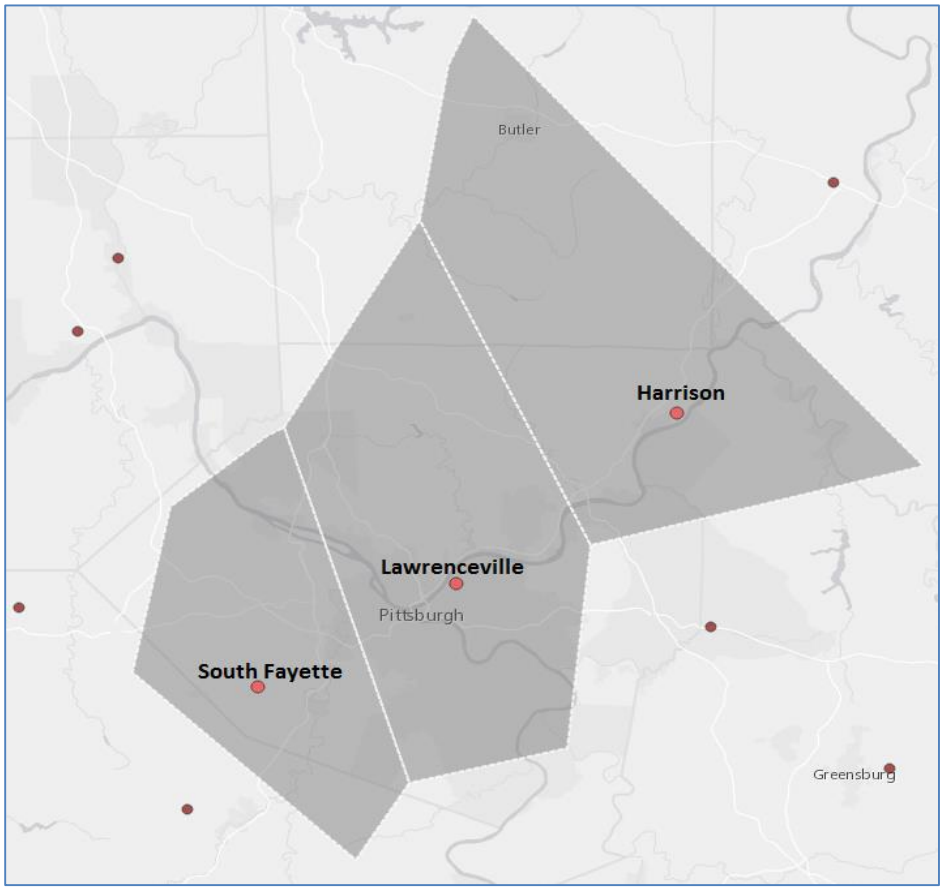
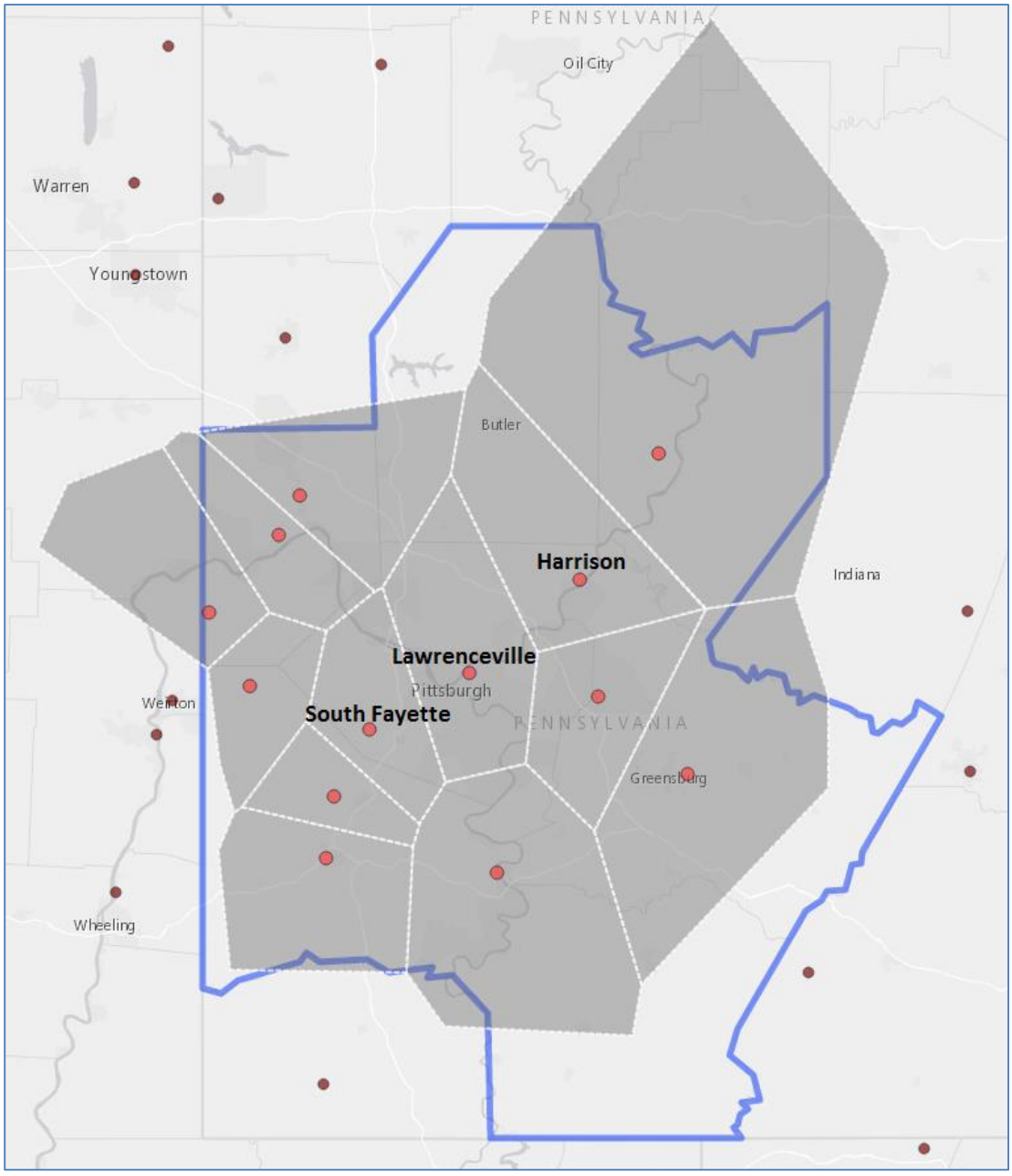


Figure 6-1. Area Served Demographics for Allegheny County Monitors

AQS Site ID	Site Name	Total Population	Area- Miles^2
42-003-0008	Lawrenceville	801,804	341
42-003-0067	South Fayette	231,584	213
42-003-1005	Harrison	202,969	396

Figure 6-2 displays the area polygons for southwestern Pennsylvania with the blue polygon highlighting the Pittsburgh CBSA and ACHD's ozone sights labeled. This dense coverage is necessary to survey the Pittsburgh-Beaver Valley Ozone Nonattainment Area.

Figure 6-2. Southwestern Pennsylvania Ozone Network



Figures 6-3, 6-4, and 6-5 contain area served demographics for each area served polygons. Harrison and South Fayette have similar ages in the area served demographics. Lawrenceville has a different distribution with a sizable portion of people aged 20 to 29.

Exhibit B

6. Ozone (O_3) Analysis

6.1. Area Served

The areas served polygons for ozone monitors in Allegheny County are shown on the map in Figure 6-1 below with Allegheny County sites labeled. The population and area in square miles are displayed in Table 6-1.

Figure 6-1. Allegheny County Ozone Monitoring Network

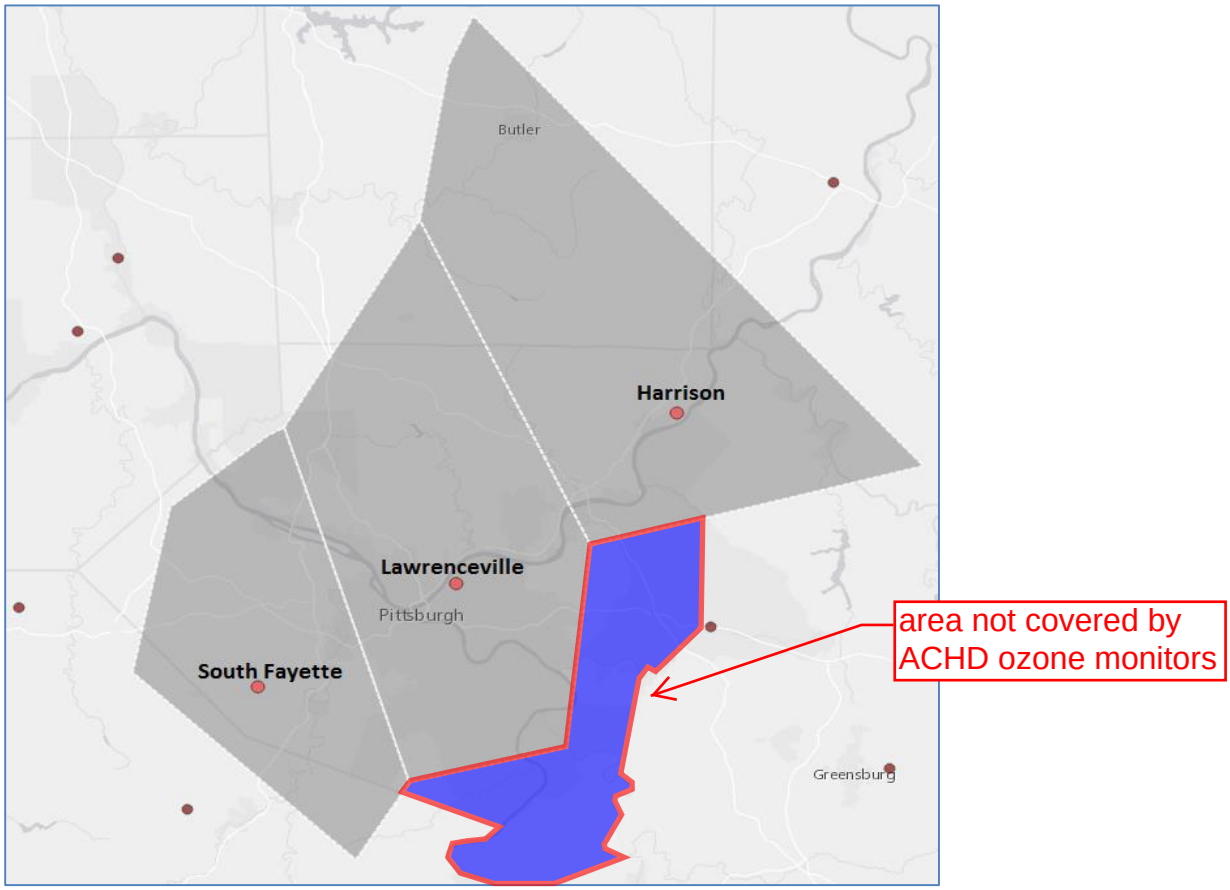


Figure 6-1. Area Served Demographics for Allegheny County Monitors

AQS Site ID	Site Name	Total Population	Area- Miles^2
42-003-0008	Lawrenceville	801,804	341
42-003-0067	South Fayette	231,584	213
42-003-1005	Harrison	202,969	396

Exhibit C

Commonwealth of Pennsylvania Department of Environmental Protection 2014 Annual Ambient Air Monitoring Network Plan

July 2014

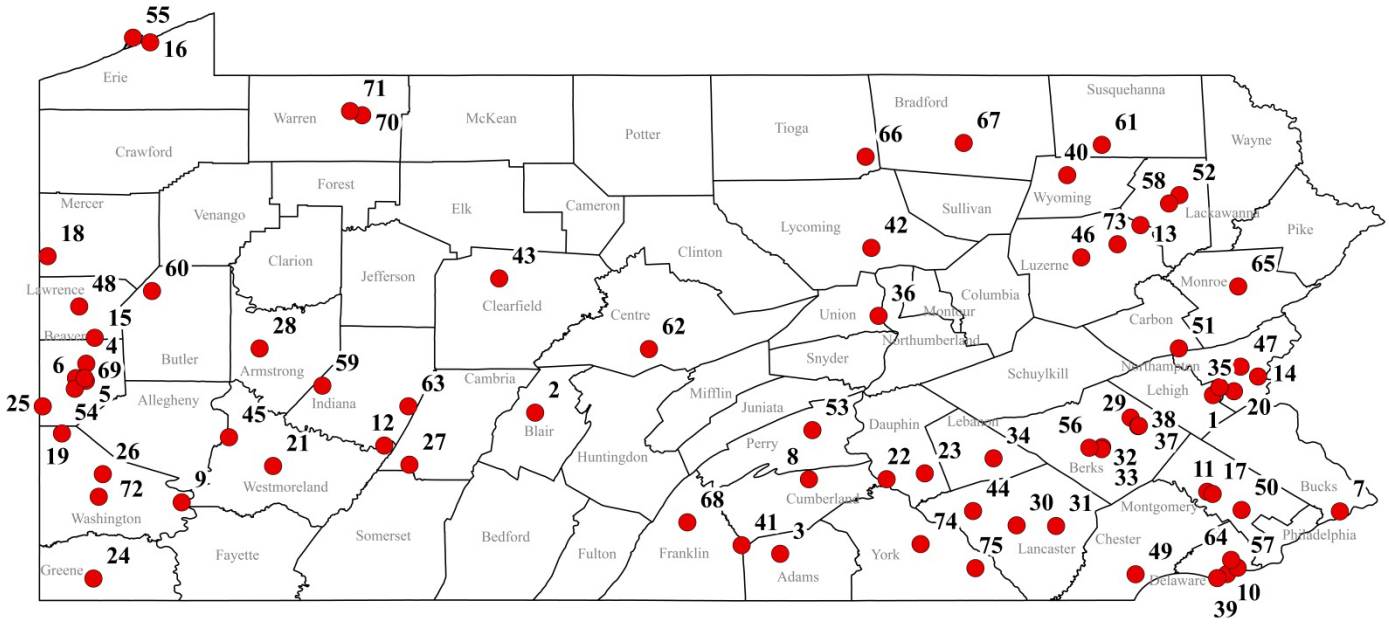
Tom Corbett, Governor
Commonwealth of Pennsylvania

E. Christopher Abruzzo, Secretary
Department of Environmental Protection

Commonwealth of Pennsylvania's Air Monitoring Network Sites

The map shown below in Figure 3 displays the site locations of all ambient air monitoring stations in the Commonwealth's Ambient Air Monitoring Network. Table 3 on the following page lists the parameters monitored at each location.

Figure 3. Map of PA DEP Air Monitoring Network



MAP ID	SITENAME	MAP ID	SITENAME	MAP ID	SITENAME	MAP ID	SITENAME
1	ALLENTOWN	20	FREEMANSBURG	39	MARCUS HOOK	58	SCRANTON
2	ALTOONA	21	GREENSBURG	40	MEHOOPANY	59	SHELOCTA
3	ARENDTSVILLE	22	HARRISBURG	41	METHODIST HILL	60	SLIPPERY ROCK
4	BEAVER FALLS	23	HERSHEY	42	MONTOURSVILLE	61	SPRINGVILLE
5	BEAVER VALLEY	24	HOLBROOK	43	MOSHANNON	62	STATE COLLEGE
6	BRIGHTON TWP	25	HOOKSTOWN	44	MT JOY	63	STRONGSTOWN
7	BRISTOL	26	HOUSTON	45	MURRYSVILLE	64	SWARTHMORE
8	CARLISLE	27	JOHNSTOWN	46	NANTICOKE	65	SWIFTWATER
9	CHARLEROI	28	KITTANNING	47	NAZARETH	66	TIOGA COUNTY
10	CHESTER	29	KUTZTOWN	48	NEW CASTLE	67	TOWANDA
11	COLLEGEVILLE	30	LANCASTER	49	NEW GARDEN	68	UPPER STRASBURG
12	CONEMAUGH	31	LANCASTER DOWNWIND	50	NORRISTOWN	69	VANPORT
13	DURYEA	32	LAURELDALE NORTH	51	PALMERTON	70	WARREN EAST
14	EASTON	33	LAURELDALE SOUTH	52	PECKVILLE	71	WARREN OVERLOOK
15	ELLWOOD CITY	34	LEBANON	53	PERRY COUNTY	72	WASHINGTON
16	ERIE	35	LEHIGH VALLEY	54	POTTER TOWNSHIP	73	WILKES BARRE
17	EVANSBURG UNITED METHODIST	36	LEWISBURG	55	PRESQUE ISLE	74	YORK
18	FARRELL	37	LYONS BORO	56	READING AIRPORT	75	YORK DOWNWIND
19	FLORENCE	38	LYONS PARK	57	RIDLEY PARK		

Site and Monitoring Activity Anticipated within the Next 18 Months

The Department is proposing numerous changes to its air monitoring network over the next eighteen months. Those changes are briefly described below in Table 5.

Table 5. Summary of Proposed Changes to the PA DEP Air Monitoring Network 2014-2015

Pollutant Network/ Site	Proposed Changes
Site Terminations	• Discontinue Perry County site (Ozone, SO_2 and NO_2) • Discontinue Nanticoke (Luzerne County) site – Ozone • Discontinue Murrysville site – Ozone
Site Relocations	• Move Beaver Valley (Beaver County) site from location in Beaver Valley Mall to location offsite • Move Scranton (Lackawanna County) site from location on PSU-Worthington campus to Marywood University
Near-road NO_2 Site Installation Plan	• Install Harrisburg (Dauphin County) prior to Dec. 2014 • Install Allentown (Lehigh County) prior to Jun. 2015 • Install Scranton (Lackawanna County) prior to Dec. 2015 • Install Lancaster (Lancaster County) prior to Jun. 2016 • Tentative equipment configuration – NO_2/NOx, CO, $PM_{2.5}$, BC/Aethalometer, Meteorology and possibly traffic count
Modifications to Ozone Network	• Install ozone monitor at Arendtsville (Adams County)
Modifications to the $PM_{2.5}$ Network	• Install $PM_{2.5}$ monitor at the Tioga County site • Install $PM_{2.5}$ and $PM_{2.5}$ speciation monitors at the Marcus Hook (Delaware County) site • Install $PM_{2.5}$ speciation monitor at Chester (Delaware County) site • Discontinue $PM_{2.5}$ speciation monitors at State College (Centre County) and York (York County) sites • Update spatial scale for the $PM_{2.5}$ monitor at Scranton (Lackawanna County) from "urban" to "neighborhood"
Modifications to the CO Network	Refocus the CO Network on Near-road monitoring while keeping some monitors in underrepresented areas of the Commonwealth • Discontinue CO monitoring at Bristol (Bucks County), Freemansburg (Northampton County), Houston (Washington County), New Castle (Lawrence County) and Reading (Berks County) sites • Install CO monitors at Allentown (Lehigh County) and Harrisburg (Dauphin County) NO_2 near-road sites
Modifications to the PM_{10} Network	• Discontinue PM_{10} monitoring at Harrisburg (Dauphin County) and Reading (Berks County) sites
Modifications to the SO_2 Network	• Install SO_2 monitor at Arendtsville (Adams County) regional background site • Change the spatial scale of the Warren East (Warren County) SO_2 monitor from "neighborhood" to "micro-scale"
Modification to the NO_2 Network	• Designate NO_2 monitor at Houston (Washington County) site as a SLAMS monitor
Modifications to the Air Toxics Network	• Complete Washington County Marcellus shale monitoring study data collection at end of 2014. • Keep the primary Washington County Marcellus study site as a permanent site and rename as "Houston" • Discontinue Ozone, CO, $PM_{2.5}$ and H_2S SPM monitoring at Houston site • Continue ambient VOC monitoring at Springville Site for at least one year. • Establish new VOC monitoring site in Mehoopany (Wyoming County)
Miscellaneous	• Change spatial scale H_2S monitor at Warren East site (Warren County) from "neighborhood" to "micro-scale"

Commonwealth of Pennsylvania Department of Environmental Protection 2015 Annual Ambient Air Monitoring Network Plan

July 2015

Tom Wolf, Governor
Commonwealth of Pennsylvania

John Quigley, Secretary
Department of Environmental Protection

www.dep.state.pa.us

Changes to Monitoring Sites and Monitors in 2014-2015

The Department has completed several modifications to its air monitoring network in the 2014-2015 time period. Those changes are briefly described below in Table 4 (relating to a Summary of Changes to the PA DEP Air Monitoring Network in 2014-2015).

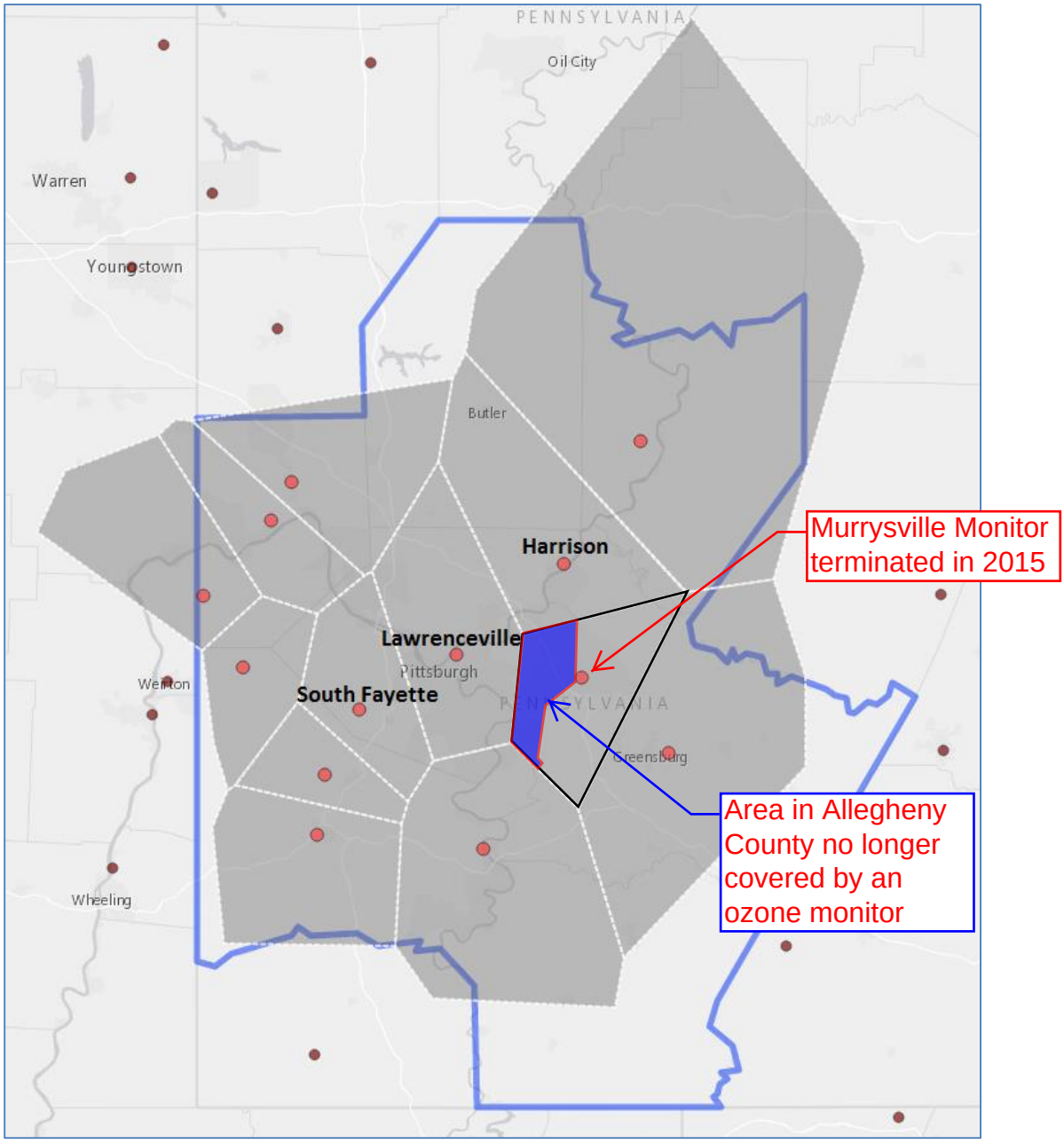
Table 4. Summary of Changes to the PA DEP Air Monitoring Network in 2014-2015

Site Terminations
1) Discontinued Perry County site (Ozone, SO_2 and NO_2) 2) Discontinued Nanticoke (Luzerne County) site – Ozone 3) Discontinued Murrysville site – Ozone
Site Relocations
1) Moved Beaver Valley (Beaver County) monitoring site from location in Beaver Valley Mall to location offsite 2) Moved Scranton (Lackawanna County) monitoring site from location on PSU-Worthington campus to Marywood University and Updated spatial scale for the $PM_{2.5}$ monitor from "urban" to "neighborhood"
Modifications to the Ozone Network
1) Installed ozone monitor at Arendtsville (Adams County) monitoring site. 2) Discontinued ozone monitoring at the Nanticoke (Luzerne County), Murrysville (Westmoreland County) and Perry County sites, due to the termination of monitoring activities at those sites.
Modifications to the SO_2 Network
1) Installed SO_2 monitor at Arendtsville (Adams County) regional background site 2) Discontinued SO_2 monitoring at the Perry County monitoring site due to site termination
Modifications to the NO_2 Network
1) Designated NO_2 monitor at Houston (Washington County) monitoring site as a SLAMS monitor 2) Discontinued NO_2 monitoring at Perry County due to the termination of monitoring activities
Modifications to the CO Network
1) Discontinued CO monitoring at Bristol (Bucks County), Freemansburg (Northampton County), Houston (Washington County), New Castle (Lawrence County) and Reading (Berks County) sites
Modifications to the $PM_{2.5}$ Network
1) Installed $PM_{2.5}$ monitor at the Tioga County monitoring site 2) Installed $PM_{2.5}$ and $PM_{2.5}$ speciation monitors at the Marcus Hook (Delaware County) site 3) Installed $PM_{2.5}$ speciation monitor at Chester (Delaware County) site 4) Due to loss of EPA funding, discontinued speciation monitoring at Erie (Erie County), Harrisburg (Dauphin County), Reading Airport (Berks County), Scranton (Lackawanna County), State College (Centre County) and York (York County)
Modifications to the PM_{10} Network
1) Discontinued PM_{10} monitoring at Harrisburg (Dauphin County) and Reading (Berks County) sites
Modifications to the Air Toxics Network
1) Completed Washington County Marcellus shale monitoring study data collection at end of 2013. 2) Keep the primary Washington County Marcellus study site as a permanent site and renamed as "Houston" 3) Discontinued Ozone, CO, $PM_{2.5}$,H_2S and Methane/Nonmethane SPM monitoring at Houston site

Exhibit D

Figure 6-2 displays the area polygons for southwestern Pennsylvania with the blue polygon highlighting the Pittsburgh CBSA and ACHD's ozone sights labeled. This dense coverage is necessary to survey the Pittsburgh-Beaver Valley Ozone Nonattainment Area.

Figure 6-2. Southwestern Pennsylvania Ozone Network

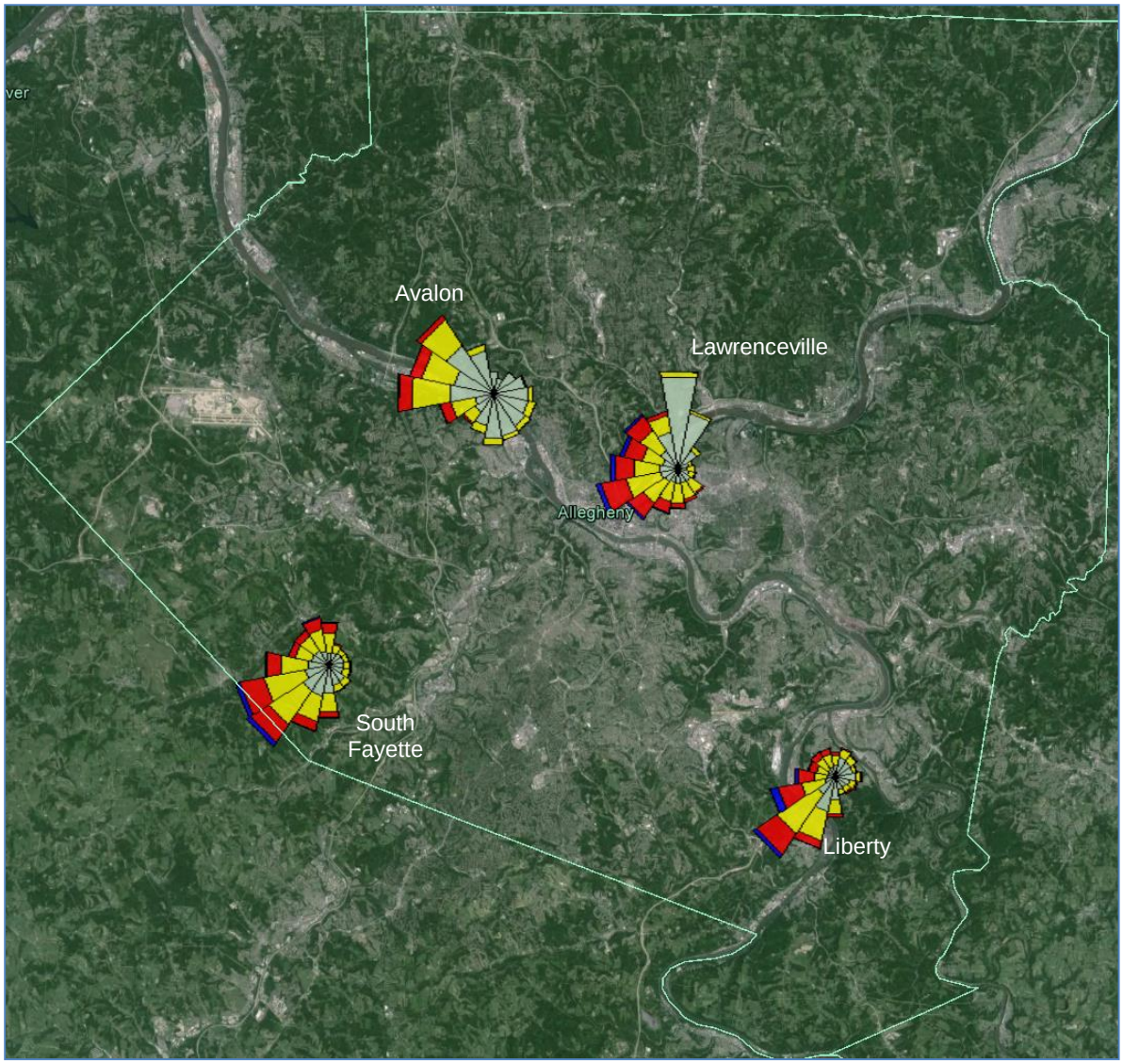


Figures 6-3, 6-4, and 6-5 contain area served demographics for each area served polygons. Harrison and South Fayette have similar ages in the area served demographics. Lawrenceville has a different distribution with a sizable portion of people aged 20 to 29.

Exhibit E

Figure 13-1 below shows wind roses by local ACHD site in Google Earth. Wind roses indicate frequencies of hourly wind direction and wind speed.

Figure 13-1. ACHD Site Wind Roses, 2010-2014, Aerial View

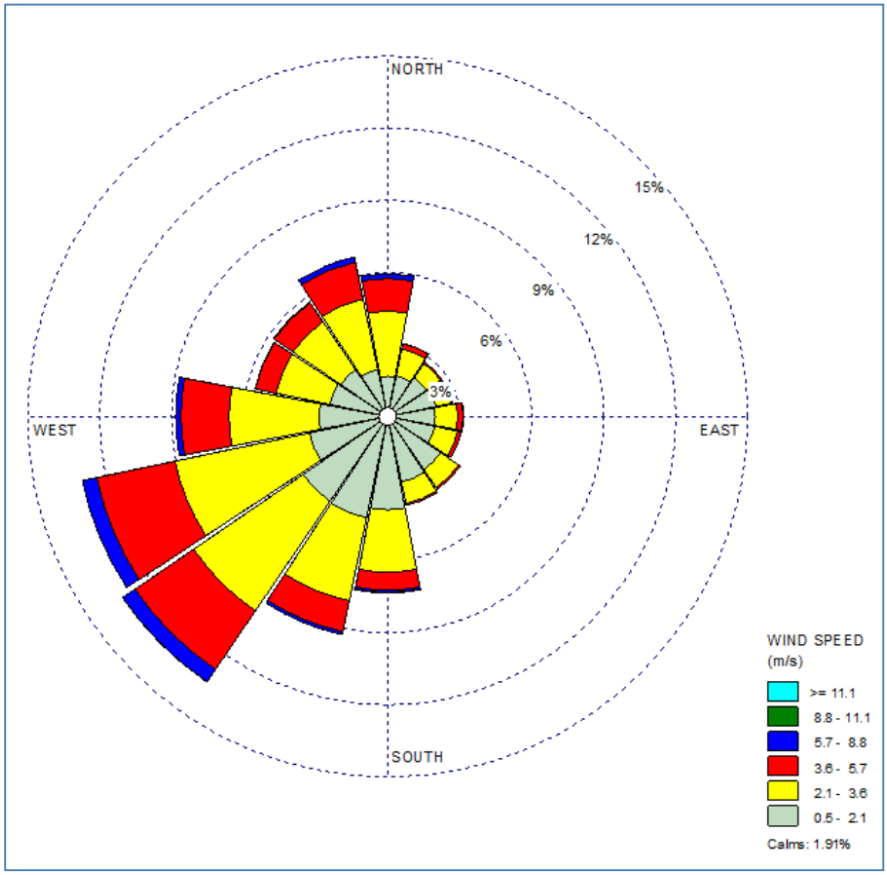


Note: Wind roses shown here are based on wind data from 2010-2014, generated by the WRPLOT program.

South Fayette

South Fayette lies at a high elevation of 1235 feet and shows similar wind patterns to the National Weather Service Pittsburgh International Airport (PIT) site. It exhibits regional flow like the PIT site but at lower overall wind speeds, possibly due to different height or positioning above ground.

Figure 13-5. South Fayette Wind Rose (2010-2014)

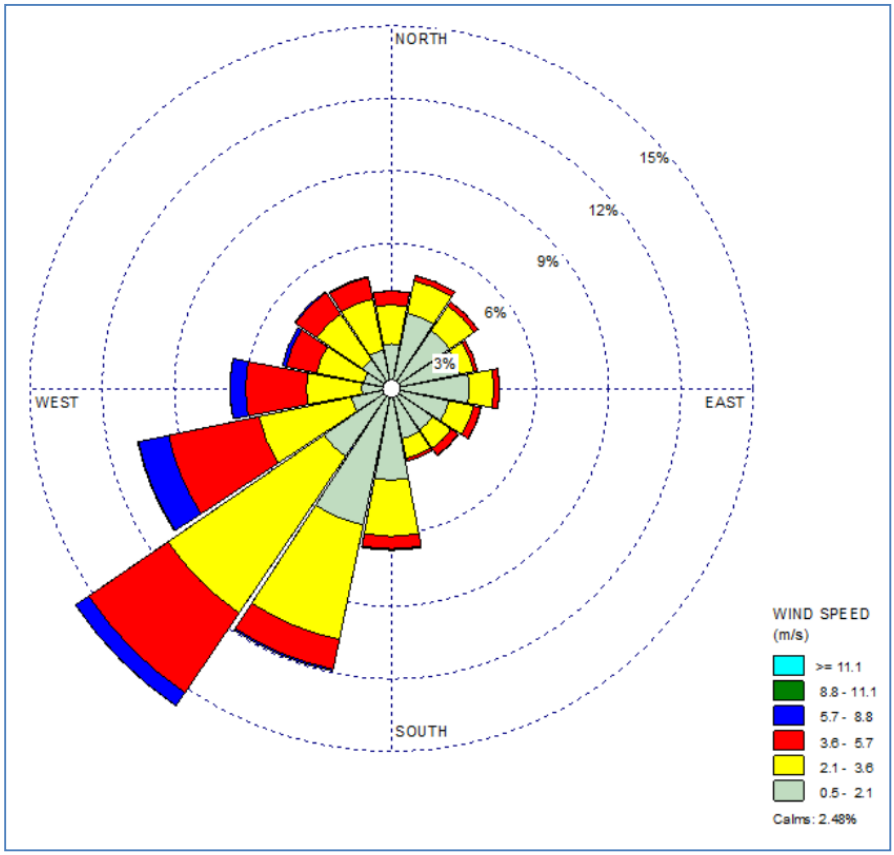


South Fayette shows regional southwesterly winds.

Liberty

Liberty lies at an elevation of 1061 feet between the Monongahela and Youghiogheny river valleys. It exhibits mostly regional flow and is adequate for characterizing plateau wind in the Liberty area.

Figure 13-3. Liberty Wind Rose (2010-2014)

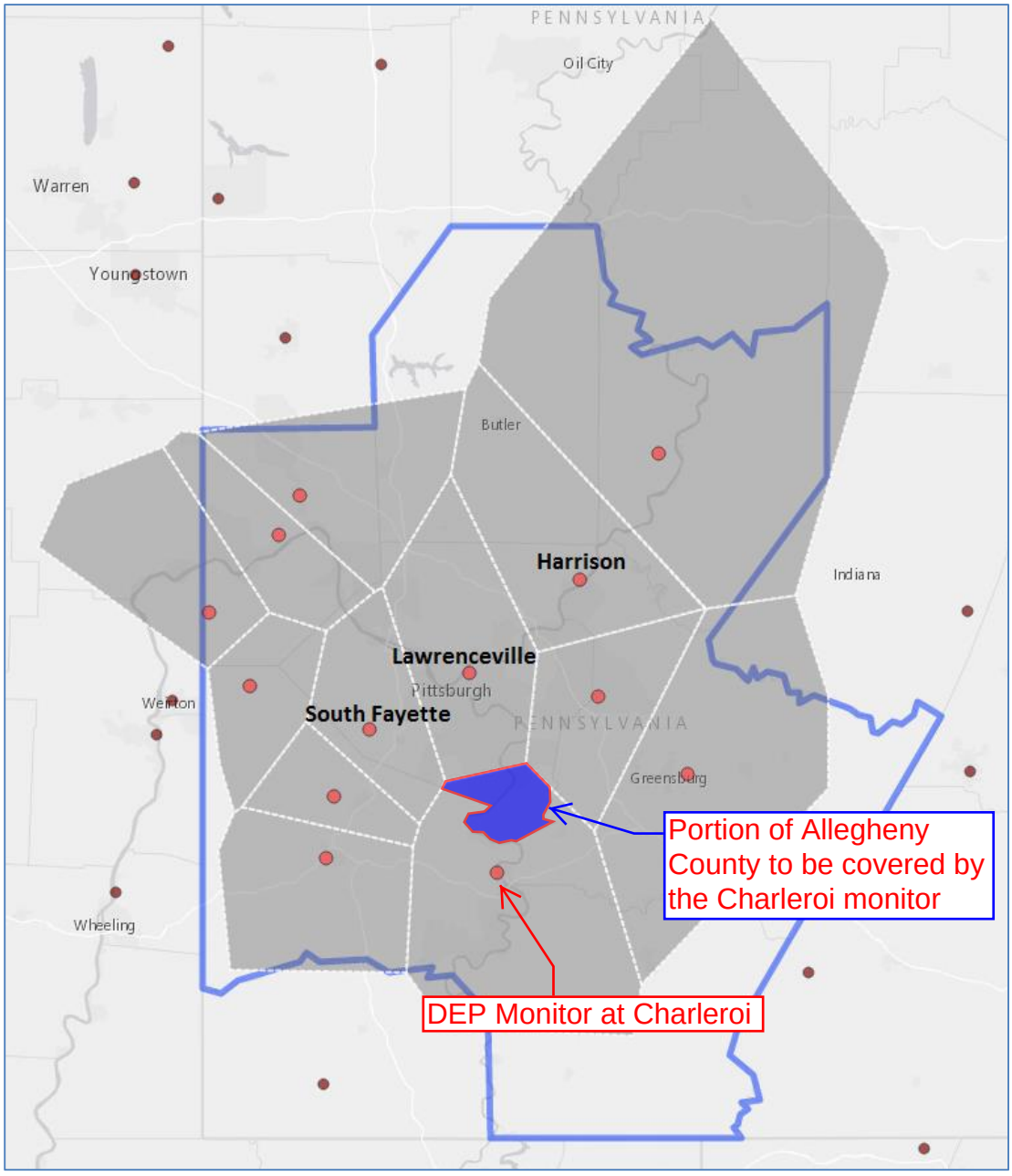


Liberty exhibits mainly southwesterly winds that are indicative of prevailing winds across the county.

Exhibit F

Figure 6-2 displays the area polygons for southwestern Pennsylvania with the blue polygon highlighting the Pittsburgh CBSA and ACHD's ozone sights labeled. This dense coverage is necessary to survey the Pittsburgh-Beaver Valley Ozone Nonattainment Area.

Figure 6-2. Southwestern Pennsylvania Ozone Network



Figures 6-3, 6-4, and 6-5 contain area served demographics for each area served polygons. Harrison and South Fayette have similar ages in the area served demographics. Lawrenceville has a different distribution with a sizable portion of people aged 20 to 29.

Exhibit G

- **eFACTS on the Web**
- **DEP Information**
  - About DEP
  - DEP Home
- **Search eFACTS**
  - Authorization Search
  - Client Search
  - Facility Search
  - Inspection Search
  - Mammography Search
  - Name Search
  - Pollution Prevention
  - Sites by County/Municipality
  - Site Search
- **Reports**
  - Emission Summary
  - Facility Emissions
- **Other Sites**
  - eMapPA
  - eNotice
  - EPA ECHO
  - EPA Envirofacts
  - Permits, Licensing, and Certification
  - The PA Code

Facility Emissions Report

Year: **2010**
County: **Allegheny**
Pollutant: **Nitrogen Oxides**
Top Records: **25**

Primary Facility ID	Primary Facility Name	Tons/Year
737439	USS/CLAIRTON WORKS	3248.9168
737442	NRG MIDWEST LP/CHESWICK	2523.244
737350	GUARDIAN IND CORP/JEFFERSON HILLS	939.5297
737318	US STEEL CORP/IRVIN PLT	753.05
737435	SHENANGO INC/SHENANGO COKE PLT	382.789
737436	USS CORP/EDGAR THOMSON WORKS	265.11
737434	ATI FLAT ROLLED PRODUCTS HOLDINGS, LLC/BRACKENRIDGE	249.19
737263	BAY VALLEY FOODS LLC/PGH	137.46
737275	PGH ALLEGHENY CNTY THERMAL LTD/PGH	98.55
737446	BELLEFIELD BOILER PLT/PGH	82.71
737306	KELMAN BOTTLES LLC/GLENSHAW	77.7209
737336	ALLIED WASTE SVC OF PA/MSW LDFL	67.6566
737364	ALLEGHENY ENERGY SUPPLY/SPRINGDALE	61.4
737248	UNIVERSAL STAINLESS & ALLOY PROD/BRIDGEVILLE	56.7407
737440	ALLEGHENY CNTY SANI AUTH/ALLEGHENY CNTY SANI	45.45
737414	AVC/WALL COMPRESSOR STA	43.056
737280	CHAMBERS DEV CO INC/MONROEVILLE	41.44
737332	EASTMAN CHEM RESINS INC/JEFFERSON SITE	38.628
737443	GE CONSUMER PROD LIGHTING/BRIDGEVILLE GLASS PLT	36.952
737357	NRG ENERGY CTR PGH LLC/PGH	34.93
737289	PGH IAP ARS/911 WING AIR RESERVE STA	31.7801
737348	PEOPLES NATURAL GAS CO/CREIGHTON COMP STA	30.5555
737293	GALVTECH/PGH	30.3183
737351	DOMINION PEOPLES/DICE COMP STA	29.58
737315	LANE MCKEES ROCK ASPHALT PLT/MCKEES ROCK	23.6789

Total Emissions for Selected Records: 9330.4360
Total Emissions for Selected Area: 9895.8160

Run report again

- **eFACTS on the Web**
- **DEP Information**
  - About DEP
  - DEP Home
- **Search eFACTS**
  - Authorization Search
  - Client Search
  - Facility Search
  - Inspection Search
  - Mammography Search
  - Name Search
  - Pollution Prevention
  - Sites by County/Municipality
  - Site Search
- **Reports**
  - Emission Summary
  - Facility Emissions
- **Other Sites**
  - eMapPA
  - eNotice
  - EPA ECHO
  - EPA Envirofacts
  - Permits, Licensing, and Certification
  - The PA Code

Facility Emissions Report

Year: **2011**
County: **Allegheny**
Pollutant: **Nitrogen Oxides**
Top Records: **25**

Primary Facility ID	Primary Facility Name	Tons/Year
737442	NRG MIDWEST LP/CHESWICK	3294.213
737439	USS/CLAIRTON WORKS	3074.8931
737350	GUARDIAN IND CORP/JEFFERSON HILLS	978.4449
737318	US STEEL CORP/IRVIN PLT	762.0572
737435	SHENANGO INC/SHENANGO COKE PLT	426.3849
737436	USS CORP/EDGAR THOMSON WORKS	275.1224
737434	ATI FLAT ROLLED PRODUCTS HOLDINGS, LLC/BRACKENRIDGE	254.7
737263	BAY VALLEY FOODS LLC/PGH	211.59
737275	PGH ALLEGHENY CNTY THERMAL LTD/PGH	88.6348
737446	BELLEFIELD BOILER PLT/PGH	77.08
737336	ALLIED WASTE SVC OF PA/MSW LDFL	75.7521
737440	ALLEGHENY CNTY SANI AUTH/ALLEGHENY CNTY SANI	74.6525
737248	UNIVERSAL STAINLESS & ALLOY PROD/BRIDGEVILLE	60.0682
737414	AVC/WALL COMPRESSOR STA	42.5037
737364	ALLEGHENY ENERGY SUPPLY/SPRINGDALE	40.066
737280	CHAMBERS DEV CO INC/MONROEVILLE	38.32
737332	EASTMAN CHEM RESINS INC/JEFFERSON SITE	36.975
737348	PEOPLES NATURAL GAS CO/CREIGHTON COMP STA	33.4312
737357	NRG ENERGY CTR PGH LLC/PGH	33.3876
737443	GE CONSUMER PROD LIGHTING/BRIDGEVILLE GLASS PLT	30.8128
737293	GALVTECH/PGH	30.1516
737289	PGH IAP ARS/911 WING AIR RESERVE STA	27.2382
737356	GOTTLIEB INC/NEVILLE ISLAND	23.9408
737432	DUQUESNE UNIVERSITY/PGH	21.2187
737351	DOMINION PEOPLES/DICE COMP STA	21.1

Total Emissions for Selected Records: 10032.7400
Total Emissions for Selected Area: 10594.1900

Run report again

- **eFACTS on the Web**
- **DEP Information**
  - About DEP
  - DEP Home
- **Search eFACTS**
  - Authorization Search
  - Client Search
  - Facility Search
  - Inspection Search
  - Mammography Search
  - Name Search
  - Pollution Prevention
  - Sites by County/Municipality
  - Site Search
- **Reports**
  - Emission Summary
  - Facility Emissions
- **Other Sites**
  - eMapPA
  - eNotice
  - EPA ECHO
  - EPA Envirofacts
  - Permits, Licensing, and Certification
  - The PA Code

Facility Emissions Report

Year: **2012**
County: **Allegheny**
Pollutant: **Nitrogen Oxides**
Top Records: **25**

Primary Facility ID	Primary Facility Name	Tons/Year
737442	NRG MIDWEST LP/CHESWICK	4484.3891
737439	USS/CLAIRTON WORKS	3428.2015
737318	US STEEL CORP/IRVIN PLT	754.7081
737350	GUARDIAN IND CORP/JEFFERSON HILLS	486.2857
737435	SHENANGO INC/SHENANGO COKE PLT	391.3833
737436	USS CORP/EDGAR THOMSON WORKS	259.1159
737434	ATI FLAT ROLLED PRODUCTS HOLDINGS, LLC/BRACKENRIDGE	233.1
737263	BAY VALLEY FOODS LLC/PGH	152.73
737364	ALLEGHENY ENERGY SUPPLY/SPRINGDALE	108.4
737275	PGH ALLEGHENY CNTY THERMAL LTD/PGH	81.3994
737440	ALLEGHENY CNTY SANI AUTH/ALLEGHENY CNTY SANI	72.4084
737446	BELLEFIELD BOILER PLT/PGH	62.5808
737248	UNIVERSAL STAINLESS & ALLOY PROD/BRIDGEVILLE	55.3497
737280	CHAMBERS DEV CO INC/MONROEVILLE	40.82
737357	NRG ENERGY CTR PGH LLC/PGH	35.4987
737351	DOMINION PEOPLES/DICE COMP STA	33.81
737332	EASTMAN CHEM RESINS INC/JEFFERSON SITE	33.809
737348	PEOPLES NATURAL GAS CO/CREIGHTON COMP STA	29.7209
737336	ALLIED WASTE SVC OF PA/MSW LDFL	28.08
737371	STD FORGED PROD LLC/MCKEES ROCKS FORGINGS PLT 112	27.474
737293	GALVTECH/PGH	26.71
737356	GOTTLIEB INC/NEVILLE ISLAND	25.6531
737414	AVC/WALL COMPRESSOR STA	23.06
737294	LINDY PAVING INC/2ND AVE PLT	20.1188
737259	LIBERTAS COPPER LLC/LEETSDALE	19.9761

Total Emissions for Selected Records: 10914.7800
Total Emissions for Selected Area: 11350.6100

Run report again

- **eFACTS on the Web**
- **DEP Information**
  - About DEP
  - DEP Home
- **Search eFACTS**
  - Authorization Search
  - Client Search
  - Facility Search
  - Inspection Search
  - Mammography Search
  - Name Search
  - Pollution Prevention
  - Sites by County/Municipality
  - Site Search
- **Reports**
  - Emission Summary
  - Facility Emissions
- **Other Sites**
  - eMapPA
  - eNotice
  - EPA ECHO
  - EPA Envirofacts
  - Permits, Licensing, and Certification
  - The PA Code

Facility Emissions Report

Year: **2013**
County: **Allegheny**
Pollutant: **Nitrogen Oxides**
Top Records: **25**

Primary Facility ID	Primary Facility Name	Tons/Year
737442	NRG MIDWEST LP/CHESWICK	5333.6534
737439	USS/CLAIRTON WORKS	3760.7424
737318	US STEEL CORP/IRVIN PLT	753.6115
737350	GUARDIAN IND CORP/JEFFERSON HILLS	469.8803
737435	SHENANGO INC/SHENANGO COKE PLT	391.809
737436	USS CORP/EDGAR THOMSON WORKS	320.458
737434	ATI FLAT ROLLED PRODUCTS HOLDINGS, LLC/BRACKENRIDGE	221.7
737263	BAY VALLEY FOODS LLC/PGH	145.038
737364	ALLEGHENY ENERGY SUPPLY/SPRINGDALE	125.2
737336	ALLIED WASTE SVC OF PA/MSW LDFL	77.07
737440	ALLEGHENY CNTY SANI AUTH/ALLEGHENY CNTY SANI	73.1879
737275	PGH ALLEGHENY CNTY THERMAL LTD/PGH	68.94
737446	BELLEFIELD BOILER PLT/PGH	66.722
737248	UNIVERSAL STAINLESS & ALLOY PROD/BRIDGEVILLE	48.2632
737357	NRG ENERGY CTR PGH LLC/PGH	38.6663
737351	DOMINION PEOPLES/DICE COMP STA	33.71
737293	GALVTECH/PGH	30
737443	GE CONSUMER PROD LIGHTING/BRIDGEVILLE GLASS PLT	29.4908
737332	EASTMAN CHEM RESINS INC/JEFFERSON SITE	27.28
737371	STD FORGED PROD LLC/MCKEES ROCKS FORGINGS PLT 112	26.252
740093	TECH MET INC/GLASSPORT	26.2415
737348	PEOPLES NATURAL GAS CO/CREIGHTON COMP STA	26.0528
737259	LIBERTAS COPPER LLC/LEETSDALE	25.9565
737356	GOTTLIEB INC/NEVILLE ISLAND	24.9614
737438	MCCONWAY & TORLEY LLC/STEEL CASTINGS MFG	20.748

Total Emissions for Selected Records: 12165.6300
Total Emissions for Selected Area: 12543.0200

Run report again

- **eFACTS on the Web**
- **DEP Information**
  - About DEP
  - DEP Home
- **Search eFACTS**
  - Authorization Search
  - Client Search
  - Facility Search
  - Inspection Search
  - Mammography Search
  - Name Search
  - Pollution Prevention
  - Sites by County/Municipality
  - Site Search
- **Reports**
  - Emission Summary
  - Facility Emissions
- **Other Sites**
  - eMapPA
  - eNotice
  - EPA ECHO
  - EPA Envirofacts
  - Permits, Licensing, and Certification
  - The PA Code

Facility Emissions Report

Year: **2014**
County: **Allegheny**
Pollutant: **Nitrogen Oxides**
Top Records: **25**

Primary Facility ID	Primary Facility Name	Tons/Year
737442	NRG MIDWEST LP/CHESWICK	6101.357
737439	USS/CLAIRTON WORKS	3794.7794
737318	US STEEL CORP/IRVIN PLT	707.679
737350	GUARDIAN IND CORP/JEFFERSON HILLS	520.8444
737435	SHENANGO INC/SHENANGO COKE PLT	385.2731
737436	USS CORP/EDGAR THOMSON WORKS	358.0455
737434	ATI FLAT ROLLED PRODUCTS HOLDINGS, LLC/BRACKENRIDGE	284.5
737364	ALLEGHENY ENERGY SUPPLY/SPRINGDALE	136
737440	ALLEGHENY CNTY SANI AUTH/ALLEGHENY CNTY SANI	77.2927
737275	PGH ALLEGHENY CNTY THERMAL LTD/PGH	69.6274
737336	ALLIED WASTE SVC OF PA/MSW LDFL	61.8545
737446	BELLEFIELD BOILER PLT/PGH	55.8186
737263	BAY VALLEY FOODS LLC/PGH	46.8836
737443	GE CONSUMER PROD LIGHTING/BRIDGEVILLE GLASS PLT	44.6187
737332	EASTMAN CHEM RESINS INC/JEFFERSON SITE	40.866
737357	NRG ENERGY CTR PGH LLC/PGH	39.38
737248	UNIVERSAL STAINLESS & ALLOY PROD/BRIDGEVILLE	33.3081
737371	STD FORGED PROD LLC/MCKEES ROCKS FORGINGS PLT 112	27.252
737356	GOTTLIEB INC/NEVILLE ISLAND	24.541
737259	LIBERTAS COPPER LLC/LEETSDALE	22.8827
737348	PEOPLES NATURAL GAS CO/CREIGHTON COMP STA	21.889
737293	GALVTECH/PGH	21.83
737432	DUQUESNE UNIVERSITY/PGH	19.4365
740093	TECH MET INC/GLASSPORT	18.6555
737438	MCCONWAY & TORLEY LLC/STEEL CASTINGS MFG	14.9673

Total Emissions for Selected Records: 12929.5800
Total Emissions for Selected Area: 13189.7000

Run report again

- **eFACTS on the Web**
- **DEP Information**
  - About DEP
  - DEP Home
- **Search eFACTS**
  - Authorization Search
  - Client Search
  - Facility Search
  - Inspection Search
  - Mammography Search
  - Name Search
  - Pollution Prevention
  - Sites by County/Municipality
  - Site Search
- **Reports**
  - Emission Summary
  - Facility Emissions
- **Other Sites**
  - eMapPA
  - eNotice
  - EPA ECHO
  - EPA Envirofacts
  - Permits, Licensing, and Certification
  - The PA Code

Facility Emissions Report

Year: **2015**
County: **Allegheny**
Pollutant: **Nitrogen Oxides**
Top Records: **25**

Primary Facility ID	Primary Facility Name	Tons/Year
737439	USS/CLAIRTON WORKS	3714.3833
737442	NRG MIDWEST LP/CHESWICK	3494.2892
737318	US STEEL CORP/IRVIN PLT	421.7651
737435	SHENANGO INC/SHENANGO COKE PLT	331.1577
737436	USS CORP/EDGAR THOMSON WORKS	302.01
737350	GUARDIAN IND CORP/JEFFERSON HILLS	287.3705
737434	ATI FLAT ROLLED PRODUCTS HOLDINGS, LLC/BRACKENRIDGE	215.1
737364	ALLEGHENY ENERGY SUPPLY/SPRINGDALE	128.1
737440	ALLEGHENY CNTY SANI AUTH/ALLEGHENY CNTY SANI	81.9971
737336	ALLIED WASTE SVC OF PA/MSW LDFL	65.5059
737275	PGH ALLEGHENY CNTY THERMAL LTD/PGH	62.1705
737446	BELLEFIELD BOILER PLT/PGH	58.3318
737357	NRG ENERGY CTR PGH LLC/PGH	44.5691
737263	BAY VALLEY FOODS LLC/PGH	35.8904
737348	PEOPLES NATURAL GAS CO/CREIGHTON COMP STA	35.2231
737332	EASTMAN CHEM RESINS INC/JEFFERSON SITE	32.6259
737248	UNIVERSAL STAINLESS & ALLOY PROD/BRIDGEVILLE	31.138
737443	GE CONSUMER PROD LIGHTING/BRIDGEVILLE GLASS PLT	28.7551
737371	STD FORGED PROD LLC/MCKEES ROCKS FORGINGS PLT 112	26.5701
737356	GOTTLIEB INC/NEVILLE ISLAND	24.2482
737293	GALVTECH/PGH	22.18
737259	LIBERTAS COPPER LLC/LEETSDALE	20.7408
737432	DUQUESNE UNIVERSITY/PGH	18.6946
737438	MCCONWAY & TORLEY LLC/STEEL CASTINGS MFG	18.5853
759769	SUPERIOR APPALACHIAN PIPELINE/FRAZER	16.909

Total Emissions for Selected Records: 9518.3100
Total Emissions for Selected Area: 9785.1650

Run report again

- **eFACTS on the Web**
- **DEP Information**
  - About DEP
  - DEP Home
- **Search eFACTS**
  - Authorization Search
  - Client Search
  - Facility Search
  - Inspection Search
  - Mammography Search
  - Name Search
  - Pollution Prevention
  - Sites by County/Municipality
  - Site Search
- **Reports**
  - Emission Summary
  - Facility Emissions
- **Other Sites**
  - eMapPA
  - eNotice
  - EPA ECHO
  - EPA Envirofacts
  - Permits, Licensing, and Certification
  - The PA Code

Facility Emissions Report

Year: **2016**
County: **Allegheny**
Pollutant: **Nitrogen Oxides**
Top Records: **25**

Primary Facility ID	Primary Facility Name	Tons/Year
737442	NRG MIDWEST LP/CHESWICK	4223.0601
737439	USS/CLAIRTON WORKS	1932.088
737318	US STEEL CORP/IRVIN PLT	432.043
737436	USS CORP/EDGAR THOMSON WORKS	429.4436
737434	ATI FLAT ROLLED PRODUCTS HOLDINGS, LLC/BRACKENRIDGE	166.7
737364	ALLEGHENY ENERGY SUPPLY/SPRINGDALE	153.3
737275	PGH ALLEGHENY CNTY THERMAL LTD/PGH	62.723
737446	BELLEFIELD BOILER PLT/PGH	61.3746
737357	NRG ENERGY CTR PGH LLC/PGH	42.5462
737332	EASTMAN CHEM RESINS INC/JEFFERSON SITE	34.84
737263	BAY VALLEY FOODS LLC/PGH	33.473
737248	UNIVERSAL STAINLESS & ALLOY PROD/BRIDGEVILLE	33.2149
737443	GE CONSUMER PROD LIGHTING/BRIDGEVILLE GLASS PLT	30.0897
737336	ALLIED WASTE SVC OF PA/MSW LDFL	26.73
737293	GALVTECH/PGH	25.3
737356	GOTTLIEB INC/NEVILLE ISLAND	24.4543
737348	PEOPLES NATURAL GAS CO/CREIGHTON COMP STA	22.0261
737259	LIBERTAS COPPER LLC/LEETSDALE	19.8633
737438	MCCONWAY & TORLEY LLC/STEEL CASTINGS MFG	18.9171
737371	STD FORGED PROD LLC/MCKEES ROCKS FORGINGS PLT 112	17.5044
737251	NEVILLE CHEM CO/PGH	16.0915
737375	METALTECH/PGH	14.7
737432	DUQUESNE UNIVERSITY/PGH	14.5124
737314	PPG IND INC/SPRINGDALE	13.6292
740093	TECH MET INC/GLASSPORT	13.0059

Total Emissions for Selected Records: 7861.6290
Total Emissions for Selected Area: 8071.1740

Run report again

Exhibit H

- **eFACTS on the Web**
- **DEP Information**
  - About DEP
  - DEP Home
- **Search eFACTS**
  - Authorization Search
  - Client Search
  - Facility Search
  - Inspection Search
  - Mammography Search
  - Name Search
  - Pollution Prevention
  - Sites by County/Municipality
  - Site Search
- **Reports**
  - Emission Summary
  - Facility Emissions
- **Other Sites**
  - eMapPA
  - eNotice
  - EPA ECHO
  - EPA Envirofacts
  - Permits, Licensing, and Certification
  - The PA Code

Facility Emissions Report

Year: **2010**
County: **Allegheny**
Pollutant: **Volatile Organic Compounds**
Top Records: **25**

Primary Facility ID	Primary Facility Name	Tons/Year
737439	USS/CLAIRTON WORKS	316.9644
737332	EASTMAN CHEM RESINS INC/JEFFERSON SITE	115.287
737435	SHENANGO INC/SHENANGO COKE PLT	109.524
737251	NEVILLE CHEM CO/PGH	100.9
737434	ATI FLAT ROLLED PRODUCTS HOLDINGS, LLC/BRACKENRIDGE	97.935
737318	US STEEL CORP/IRVIN PLT	60.43
737383	GULF OIL LP/NEVILLE IS FUEL TERM	43.7589
737329	ACN PGH LLC/GIBSONIA	39.841
737436	USS CORP/EDGAR THOMSON WORKS	39.7
737314	PPG IND INC/SPRINGDALE	37.976
737288	PGH TERM CORP/CORAOPOLIS TERM	37.4988
737285	KINDER MORGAN TRANSMIX/INDIANOLA PLT	33.6
737356	GOTTLIEB INC/NEVILLE ISLAND	28.3152
737248	UNIVERSAL STAINLESS & ALLOY PROD/BRIDGEVILLE	27.7453
737320	PGH TERM CORP/NEVILLE ISLAND TERM	24.691
737283	SUNOCO PARTNERS MKT & TERM/PGH TERM	23.98
737364	ALLEGHENY ENERGY SUPPLY/SPRINGDALE	23.61
737292	ALLEGHENY CNTY AIRPORT AUTH/PGH INTL AIRPORT	23.2438
744880	MATTHEWS INTL BRONZE DIV/PGH	21.08
737350	GUARDIAN IND CORP/JEFFERSON HILLS	20.8952
737336	ALLIED WASTE SVC OF PA/MSW LDFL	16.9211
737250	BASIC CARBIDE CORP/BUENA VISTA	16.9116
737441	AMER BRIDGE HOLDING CO/CORAOPOLIS	15.7781
737297	PPG IND/CHEM TECH CTR	13.5374
737412	HOECHSTETTER PRINTING/COMMERCIAL LITHO PRINTING	13.405

Total Emissions for Selected Records: 1303.5290
Total Emissions for Selected Area: 1638.6670

Run report again

- **eFACTS on the Web**
- **DEP Information**
  - About DEP
  - DEP Home
- **Search eFACTS**
  - Authorization Search
  - Client Search
  - Facility Search
  - Inspection Search
  - Mammography Search
  - Name Search
  - Pollution Prevention
  - Sites by County/Municipality
  - Site Search
- **Reports**
  - Emission Summary
  - Facility Emissions
- **Other Sites**
  - eMapPA
  - eNotice
  - EPA ECHO
  - EPA Envirofacts
  - Permits, Licensing, and Certification
  - The PA Code

Facility Emissions Report

Year: **2011**
County: **Allegheny**
Pollutant: **Volatile Organic Compounds**
Top Records: **25**

Primary Facility ID	Primary Facility Name	Tons/Year
737439	USS/CLAIRTON WORKS	325.5268
737332	EASTMAN CHEM RESINS INC/JEFFERSON SITE	111.8015
737435	SHENANGO INC/SHENANGO COKE PLT	99.5427
737251	NEVILLE CHEM CO/PGH	90.6084
737434	ATI FLAT ROLLED PRODUCTS HOLDINGS, LLC/BRACKENRIDGE	61.6
737318	US STEEL CORP/IRVIN PLT	60.6204
737436	USS CORP/EDGAR THOMSON WORKS	41.381
737314	PPG IND INC/SPRINGDALE	40.348
737329	ACN PGH LLC/GIBSONIA	38.8329
737285	KINDER MORGAN TRANSMIX/INDIANOLA PLT	38.2673
737288	PGH TERM CORP/CORAOPOLIS TERM	36.2494
737356	GOTTLIEB INC/NEVILLE ISLAND	34.2153
737383	GULF OIL LP/NEVILLE IS FUEL TERM	29.8957
737248	UNIVERSAL STAINLESS & ALLOY PROD/BRIDGEVILLE	29.6072
737292	ALLEGHENY CNTY AIRPORT AUTH/PGH INTL AIRPORT	27.7399
737283	SUNOCO PARTNERS MKT & TERM/PGH TERM	24.28
737320	PGH TERM CORP/NEVILLE ISLAND TERM	23.7971
737250	BASIC CARBIDE CORP/BUENA VISTA	22.9023
737350	GUARDIAN IND CORP/JEFFERSON HILLS	19.3216
744880	MATTHEWS INTL BRONZE DIV/PGH	17.625
737364	ALLEGHENY ENERGY SUPPLY/SPRINGDALE	15.489
737441	AMER BRIDGE HOLDING CO/CORAOPOLIS	14.0683
737412	HOECHSTETTER PRINTING/COMMERCIAL LITHO PRINTING	13.921
737264	KOPPERS INC/CLAIRTON PLT	13.4067
737336	ALLIED WASTE SVC OF PA/MSW LDFL	12.341

Total Emissions for Selected Records: 1243.3890
Total Emissions for Selected Area: 1572.0930

Run report again

- **eFACTS on the Web**
- **DEP Information**
  - About DEP
  - DEP Home
- **Search eFACTS**
  - Authorization Search
  - Client Search
  - Facility Search
  - Inspection Search
  - Mammography Search
  - Name Search
  - Pollution Prevention
  - Sites by County/Municipality
  - Site Search
- **Reports**
  - Emission Summary
  - Facility Emissions
- **Other Sites**
  - eMapPA
  - eNotice
  - EPA ECHO
  - EPA Envirofacts
  - Permits, Licensing, and Certification
  - The PA Code

Facility Emissions Report

Year: **2012**
County: **Allegheny**
Pollutant: **Volatile Organic Compounds**
Top Records: **25**

Primary Facility ID	Primary Facility Name	Tons/Year
737439	USS/CLAIRTON WORKS	249.4661
737332	EASTMAN CHEM RESINS INC/JEFFERSON SITE	113.9349
737251	NEVILLE CHEM CO/PGH	93.75
737435	SHENANGO INC/SHENANGO COKE PLT	87.211
737318	US STEEL CORP/IRVIN PLT	62.0093
737434	ATI FLAT ROLLED PRODUCTS HOLDINGS, LLC/BRACKENRIDGE	58.9
737288	PGH TERM CORP/CORAOPOLIS TERM	37.1056
737356	GOTTLIEB INC/NEVILLE ISLAND	36.759
737314	PPG IND INC/SPRINGDALE	33.317
737383	GULF OIL LP/NEVILLE IS FUEL TERM	32.6037
737436	USS CORP/EDGAR THOMSON WORKS	32.4105
737248	UNIVERSAL STAINLESS & ALLOY PROD/BRIDGEVILLE	31.6299
737329	ACN PGH LLC/GIBSONIA	27.0169
737250	BASIC CARBIDE CORP/BUENA VISTA	26.8054
737285	KINDER MORGAN TRANSMIX/INDIANOLA PLT	26.4366
737281	BUCKEYE PIPE LINE CO/CORAOPOLIS	24.8752
737292	ALLEGHENY CNTY AIRPORT AUTH/PGH INTL AIRPORT	23.2995
737320	PGH TERM CORP/NEVILLE ISLAND TERM	22.5684
737283	SUNOCO PARTNERS MKT & TERM/PGH TERM	20.5166
737297	PPG IND/CHEM TECH CTR	19.3218
744880	MATTHEWS INTL BRONZE DIV/PGH	18.738
737350	GUARDIAN IND CORP/JEFFERSON HILLS	16.6576
737364	ALLEGHENY ENERGY SUPPLY/SPRINGDALE	16.56
737276	LIBERTY PULTRUSIONS/WEST MIFFLIN	13.3417
737259	LIBERTAS COPPER LLC/LEETSDALE	12.7236

Total Emissions for Selected Records: 1137.9580
Total Emissions for Selected Area: 1401.2110

Run report again

- **eFACTS on the Web**
- **DEP Information**
  - About DEP
  - DEP Home
- **Search eFACTS**
  - Authorization Search
  - Client Search
  - Facility Search
  - Inspection Search
  - Mammography Search
  - Name Search
  - Pollution Prevention
  - Sites by County/Municipality
  - Site Search
- **Reports**
  - Emission Summary
  - Facility Emissions
- **Other Sites**
  - eMapPA
  - eNotice
  - EPA ECHO
  - EPA Envirofacts
  - Permits, Licensing, and Certification
  - The PA Code

Facility Emissions Report

Year: **2013**
County: **Allegheny**
Pollutant: **Volatile Organic Compounds**
Top Records: **25**

Primary Facility ID	Primary Facility Name	Tons/Year
737439	USS/CLAIRTON WORKS	307.322
737332	EASTMAN CHEM RESINS INC/JEFFERSON SITE	105.66
737435	SHENANGO INC/SHENANGO COKE PLT	92.603
737251	NEVILLE CHEM CO/PGH	85.8816
737318	US STEEL CORP/IRVIN PLT	70.2923
737434	ATI FLAT ROLLED PRODUCTS HOLDINGS, LLC/BRACKENRIDGE	57.4
737288	PGH TERM CORP/CORAOPOLIS TERM	46.4214
737436	USS CORP/EDGAR THOMSON WORKS	39.9408
737356	GOTTLIEB INC/NEVILLE ISLAND	35.751
737314	PPG IND INC/SPRINGDALE	32.3337
737285	KINDER MORGAN TRANSMIX/INDIANOLA PLT	30.4003
737383	GULF OIL LP/NEVILLE IS FUEL TERM	30.0527
737320	PGH TERM CORP/NEVILLE ISLAND TERM	27.5664
737364	ALLEGHENY ENERGY SUPPLY/SPRINGDALE	24.71
737250	BASIC CARBIDE CORP/BUENA VISTA	23.3858
737292	ALLEGHENY CNTY AIRPORT AUTH/PGH INTL AIRPORT	21.0153
737248	UNIVERSAL STAINLESS & ALLOY PROD/BRIDGEVILLE	19.918
737351	DOMINION PEOPLES/DICE COMP STA	18.46
737281	BUCKEYE PIPE LINE CO/CORAOPOLIS	17.9098
737283	SUNOCO PARTNERS MKT & TERM/PGH TERM	16.7859
737336	ALLIED WASTE SVC OF PA/MSW LDFL	13.372
737348	PEOPLES NATURAL GAS CO/CREIGHTON COMP STA	12.684
737440	ALLEGHENY CNTY SANI AUTH/ALLEGHENY CNTY SANI	11.9576
737259	LIBERTAS COPPER LLC/LEETSDALE	11.9042
737350	GUARDIAN IND CORP/JEFFERSON HILLS	11.8051

Total Emissions for Selected Records: 1165.5330
Total Emissions for Selected Area: 1410.3670

Run report again

- **eFACTS on the Web**
- **DEP Information**
  - About DEP
  - DEP Home
- **Search eFACTS**
  - Authorization Search
  - Client Search
  - Facility Search
  - Inspection Search
  - Mammography Search
  - Name Search
  - Pollution Prevention
  - Sites by County/Municipality
  - Site Search
- **Reports**
  - Emission Summary
  - Facility Emissions
- **Other Sites**
  - eMapPA
  - eNotice
  - EPA ECHO
  - EPA Envirofacts
  - Permits, Licensing, and Certification
  - The PA Code

Facility Emissions Report

Year: **2014**
County: **Allegheny**
Pollutant: **Volatile Organic Compounds**
Top Records: **25**

Primary Facility ID	Primary Facility Name	Tons/Year
737439	USS/CLAIRTON WORKS	291.1533
737332	EASTMAN CHEM RESINS INC/JEFFERSON SITE	106.265
737318	US STEEL CORP/IRVIN PLT	92.3155
737435	SHENANGO INC/SHENANGO COKE PLT	87.6268
737251	NEVILLE CHEM CO/PGH	81.3982
737434	ATI FLAT ROLLED PRODUCTS HOLDINGS, LLC/BRACKENRIDGE	63.7
737288	PGH TERM CORP/CORAOPOLIS TERM	46.8071
737383	GULF OIL LP/NEVILLE IS FUEL TERM	35.151
737356	GOTTLIEB INC/NEVILLE ISLAND	35.126
737348	PEOPLES NATURAL GAS CO/CREIGHTON COMP STA	33.2478
737314	PPG IND INC/SPRINGDALE	27.487
737320	PGH TERM CORP/NEVILLE ISLAND TERM	25.6266
737250	BASIC CARBIDE CORP/BUENA VISTA	24.78
737364	ALLEGHENY ENERGY SUPPLY/SPRINGDALE	23.23
737285	KINDER MORGAN TRANSMIX/INDIANOLA PLT	22.982
737248	UNIVERSAL STAINLESS & ALLOY PROD/BRIDGEVILLE	22.6247
737436	USS CORP/EDGAR THOMSON WORKS	22.164
737292	ALLEGHENY CNTY AIRPORT AUTH/PGH INTL AIRPORT	21.9634
737281	BUCKEYE PIPE LINE CO/CORAOPOLIS	19.7746
737396	TUBE CITY IMS/SLAG PROCESSING	15.87
737388	PGH ELEC INSULATION INC/MUNHALL	15.7915
737351	DOMINION PEOPLES/DICE COMP STA	15.7853
737316	LINDY PAVING INC/NEVILLE ISLAND	14.7559
737297	PPG IND/CHEM TECH CTR	13.6452
737276	LIBERTY PULTRUSIONS/WEST MIFFLIN	12.7056

Total Emissions for Selected Records: 1171.9760
Total Emissions for Selected Area: 1411.5350

Run report again

- **eFACTS on the Web**
- **DEP Information**
  - About DEP
  - DEP Home
- **Search eFACTS**
  - Authorization Search
  - Client Search
  - Facility Search
  - Inspection Search
  - Mammography Search
  - Name Search
  - Pollution Prevention
  - Sites by County/Municipality
  - Site Search
- **Reports**
  - Emission Summary
  - Facility Emissions
- **Other Sites**
  - eMapPA
  - eNotice
  - EPA ECHO
  - EPA Envirofacts
  - Permits, Licensing, and Certification
  - The PA Code

Facility Emissions Report

Year: **2015**
County: **Allegheny**
Pollutant: **Volatile Organic Compounds**
Top Records: **25**

Primary Facility ID	Primary Facility Name	Tons/Year
737439	USS/CLAIRTON WORKS	189.7618
737332	EASTMAN CHEM RESINS INC/JEFFERSON SITE	117.5313
737435	SHENANGO INC/SHENANGO COKE PLT	88.1771
737251	NEVILLE CHEM CO/PGH	62.6565
737434	ATI FLAT ROLLED PRODUCTS HOLDINGS, LLC/BRACKENRIDGE	49.8
737318	US STEEL CORP/IRVIN PLT	47.8587
737364	ALLEGHENY ENERGY SUPPLY/SPRINGDALE	43.93
737288	PGH TERM CORP/CORAOPOLIS TERM	39.3973
737356	GOTTLIEB INC/NEVILLE ISLAND	34.6891
737314	PPG IND INC/SPRINGDALE	33.4901
737383	GULF OIL LP/NEVILLE IS FUEL TERM	28.375
737285	KINDER MORGAN TRANSMIX/INDIANOLA PLT	23.7662
737320	PGH TERM CORP/NEVILLE ISLAND TERM	23.4253
737292	ALLEGHENY CNTY AIRPORT AUTH/PGH INTL AIRPORT	21.583
737436	USS CORP/EDGAR THOMSON WORKS	20.7201
737281	BUCKEYE PIPE LINE CO/CORAOPOLIS	19.8197
737348	PEOPLES NATURAL GAS CO/CREIGHTON COMP STA	16.5148
737248	UNIVERSAL STAINLESS & ALLOY PROD/BRIDGEVILLE	16.4227
737316	LINDY PAVING INC/NEVILLE ISLAND	14.8711
737297	PPG IND/CHEM TECH CTR	14.5726
737250	BASIC CARBIDE CORP/BUENA VISTA	14.2371
737438	MCCONWAY & TORLEY LLC/STEEL CASTINGS MFG	12.8156
737276	LIBERTY PULTRUSIONS/WEST MIFFLIN	12.776
737336	ALLIED WASTE SVC OF PA/MSW LDFL	12.0933
740334	BROUDY PRINTING INC/PGH	11.6208

Total Emissions for Selected Records: 970.9051
Total Emissions for Selected Area: 1181.7500

Run report again

- **eFACTS on the Web**
- **DEP Information**
  - About DEP
  - DEP Home
- **Search eFACTS**
  - Authorization Search
  - Client Search
  - Facility Search
  - Inspection Search
  - Mammography Search
  - Name Search
  - Pollution Prevention
  - Sites by County/Municipality
  - Site Search
- **Reports**
  - Emission Summary
  - Facility Emissions
- **Other Sites**
  - eMapPA
  - eNotice
  - EPA ECHO
  - EPA Envirofacts
  - Permits, Licensing, and Certification
  - The PA Code

Facility Emissions Report

Year: **2016**
County: **Allegheny**
Pollutant: **Volatile Organic Compounds**
Top Records: **25**

Primary Facility ID	Primary Facility Name	Tons/Year
737439	USS/CLAIRTON WORKS	152.2289
737332	EASTMAN CHEM RESINS INC/JEFFERSON SITE	123.1349
737251	NEVILLE CHEM CO/PGH	64.4802
737364	ALLEGHENY ENERGY SUPPLY/SPRINGDALE	49.23
737434	ATI FLAT ROLLED PRODUCTS HOLDINGS, LLC/BRACKENRIDGE	45.9
737314	PPG IND INC/SPRINGDALE	40.5836
737356	GOTTLIEB INC/NEVILLE ISLAND	34.9958
737318	US STEEL CORP/IRVIN PLT	34.1767
737336	ALLIED WASTE SVC OF PA/MSW LDFL	25.56
737383	GULF OIL LP/NEVILLE IS FUEL TERM	25.0642
737288	PGH TERM CORP/CORAOPOLIS TERM	24.9689
737436	USS CORP/EDGAR THOMSON WORKS	24.4467
737292	ALLEGHENY CNTY AIRPORT AUTH/PGH INTL AIRPORT	24.2679
737283	SUNOCO PARTNERS MKT & TERM/PGH TERM	23.5141
737285	KINDER MORGAN TRANSMIX/INDIANOLA PLT	20.654
737320	PGH TERM CORP/NEVILLE ISLAND TERM	20.219
737248	UNIVERSAL STAINLESS & ALLOY PROD/BRIDGEVILLE	19.1514
737353	US AIRWAYS MAINTENANCE BASE/PGH	16.91
737281	BUCKEYE PIPE LINE CO/CORAOPOLIS	16.6005
737348	PEOPLES NATURAL GAS CO/CREIGHTON COMP STA	15.1766
737316	LINDY PAVING INC/NEVILLE ISLAND	13.9011
737250	BASIC CARBIDE CORP/BUENA VISTA	13.7105
737276	LIBERTY PULTRUSIONS/WEST MIFFLIN	13.0471
737435	SHENANGO INC/SHENANGO COKE PLT	11.752
737351	DOMINION PEOPLES/DICE COMP STA	11.4383

Total Emissions for Selected Records: 865.1124
Total Emissions for Selected Area: 1049.8700

Run report again

Exhibit I

Allegheny County
Environmental Justice Index

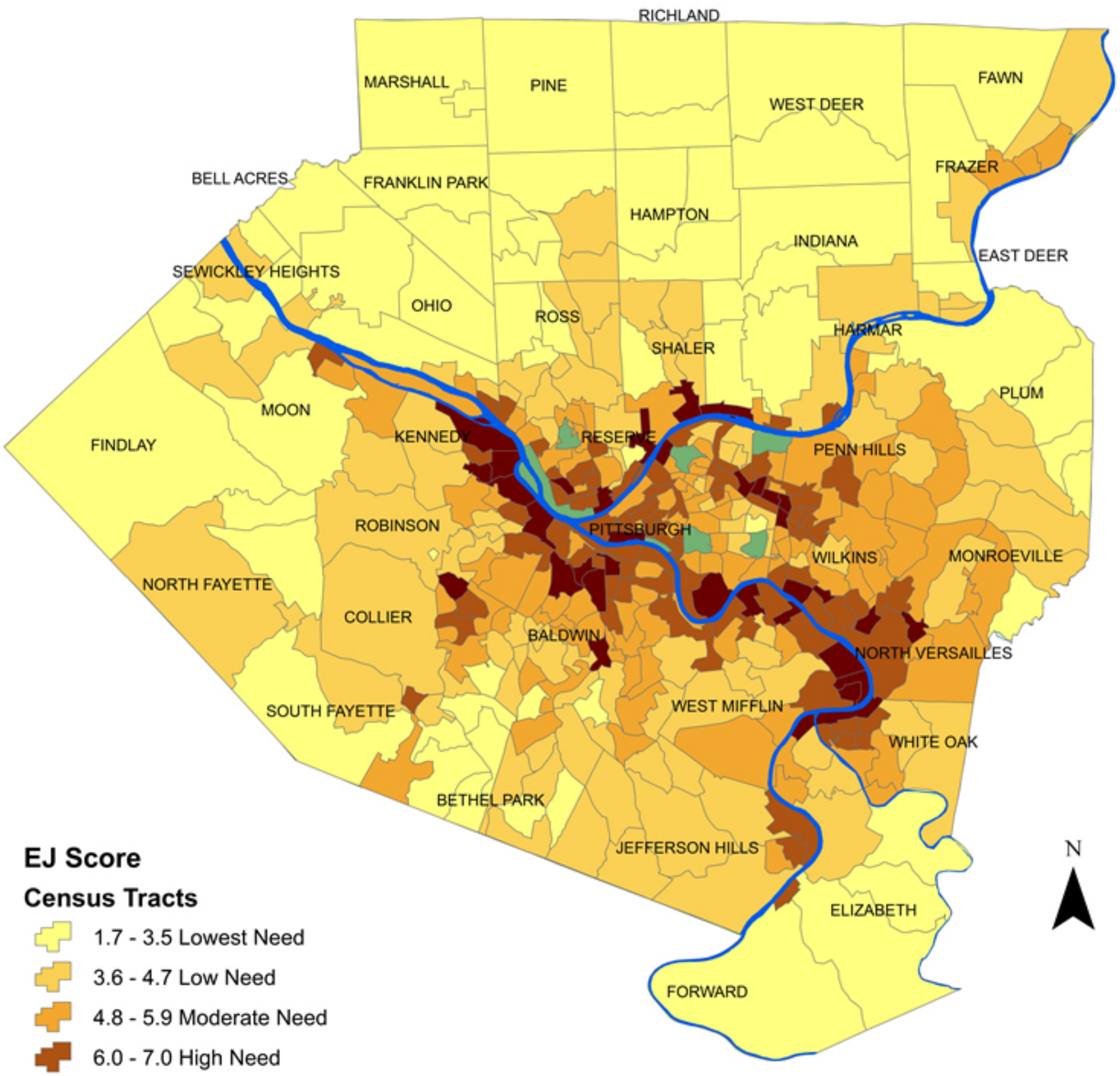
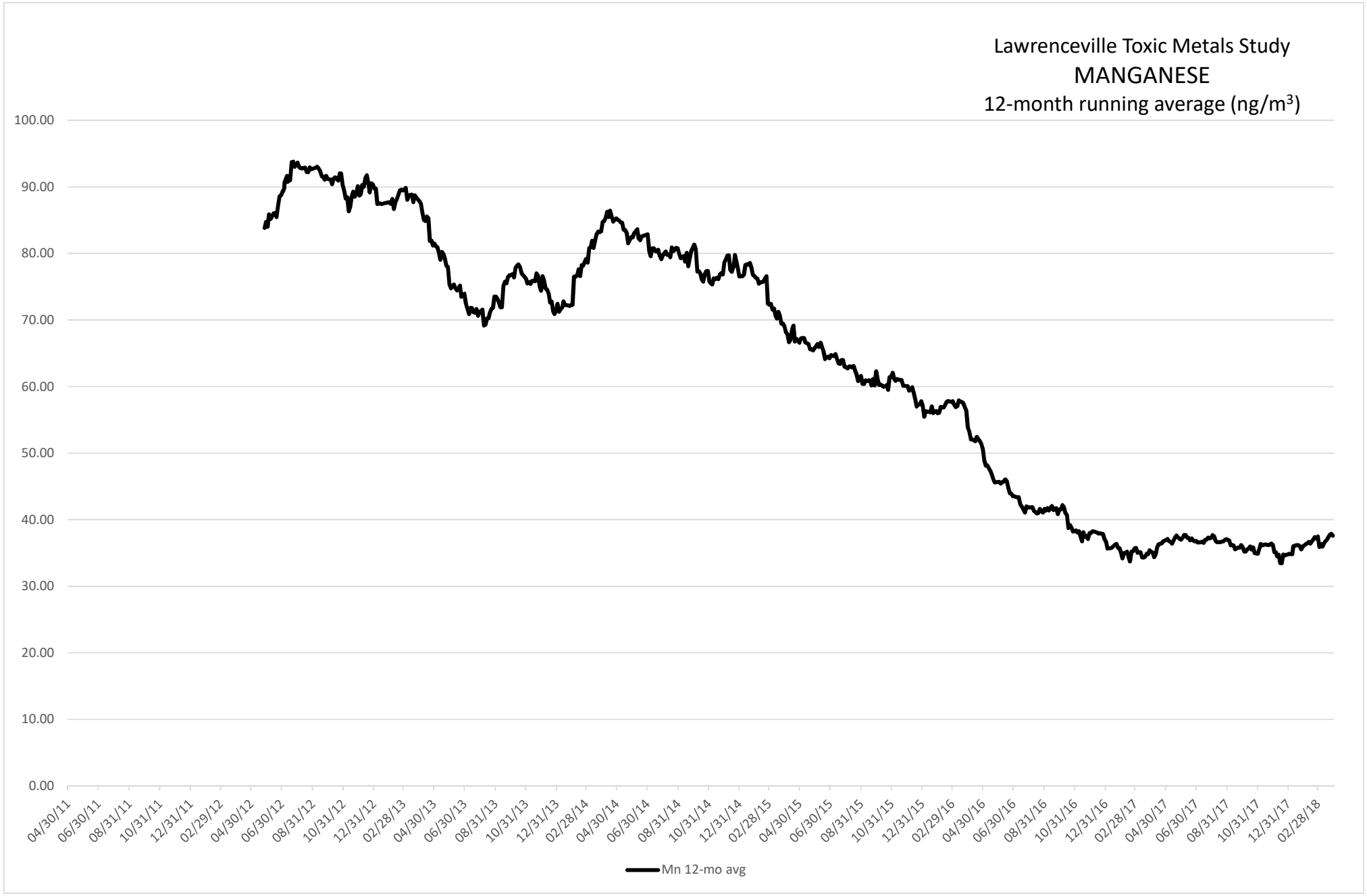


Exhibit J


Lawrenceville Toxic Metals Study
MANGANESE
12-month running average (ng/m³)
100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
04/30/11
06/30/11
08/31/11
10/31/11
12/31/11
02/29/12
04/30/12
06/30/12
08/31/12
10/31/12
12/31/12
02/28/13
04/30/13
06/30/13
08/31/13
10/31/13
12/31/13
02/28/14
04/30/14
06/30/14
08/31/14
10/31/14
12/31/14
02/28/15
04/30/15
06/30/15
08/31/15
10/31/15
12/31/15
02/29/16
04/30/16
06/30/16
08/31/16
10/31/16
12/31/16
02/28/17
04/30/17
06/30/17
08/31/17
10/31/17
12/31/17
02/28/18
Mn 12-mo avg

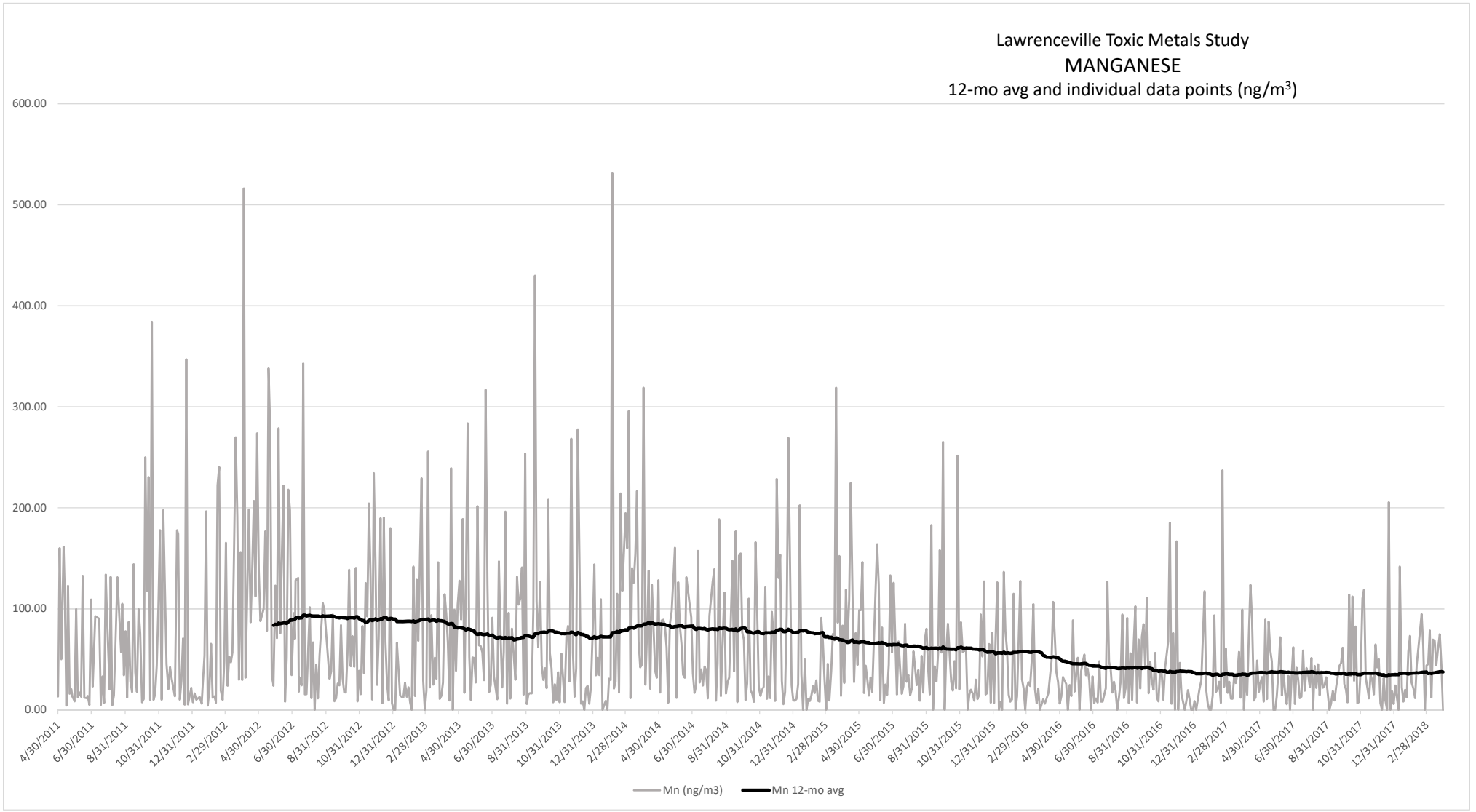

Lawrenceville Toxic Metals Study
MANGANESE
12-mo avg and individual data points (ng/m3)
600.00
500.00
400.00
300.00
200.00
100.00
0.00
4/30/2011
6/30/2011
8/31/2011
10/31/2011
12/31/2011
2/29/2012
4/30/2012
6/30/2012
8/31/2012
10/31/2012
12/31/2012
2/28/2013
4/30/2013
6/30/2013
8/31/2013
10/31/2013
12/31/2013
2/28/2014
4/30/2014
6/30/2014
8/31/2014
10/31/2014
12/31/2014
2/28/2015
4/30/2015
6/30/2015
8/31/2015
10/31/2015
12/31/2015
2/29/2016
4/30/2016
6/30/2016
8/31/2016
10/31/2016
12/31/2016
2/28/2017
4/30/2017
6/30/2017
8/31/2017
10/31/2017
12/31/2017
2/28/2018
Mn (ng/m3)
Mn 12-mo avg

Exhibit K

Allegheny County Health Department
Air Quality Program
301 39th St., Bldg. #7
Pittsburgh, PA 15201

Air Quality
Annual Data Summary

Criteria Pollutants and Selected Other Pollutants

for
2017

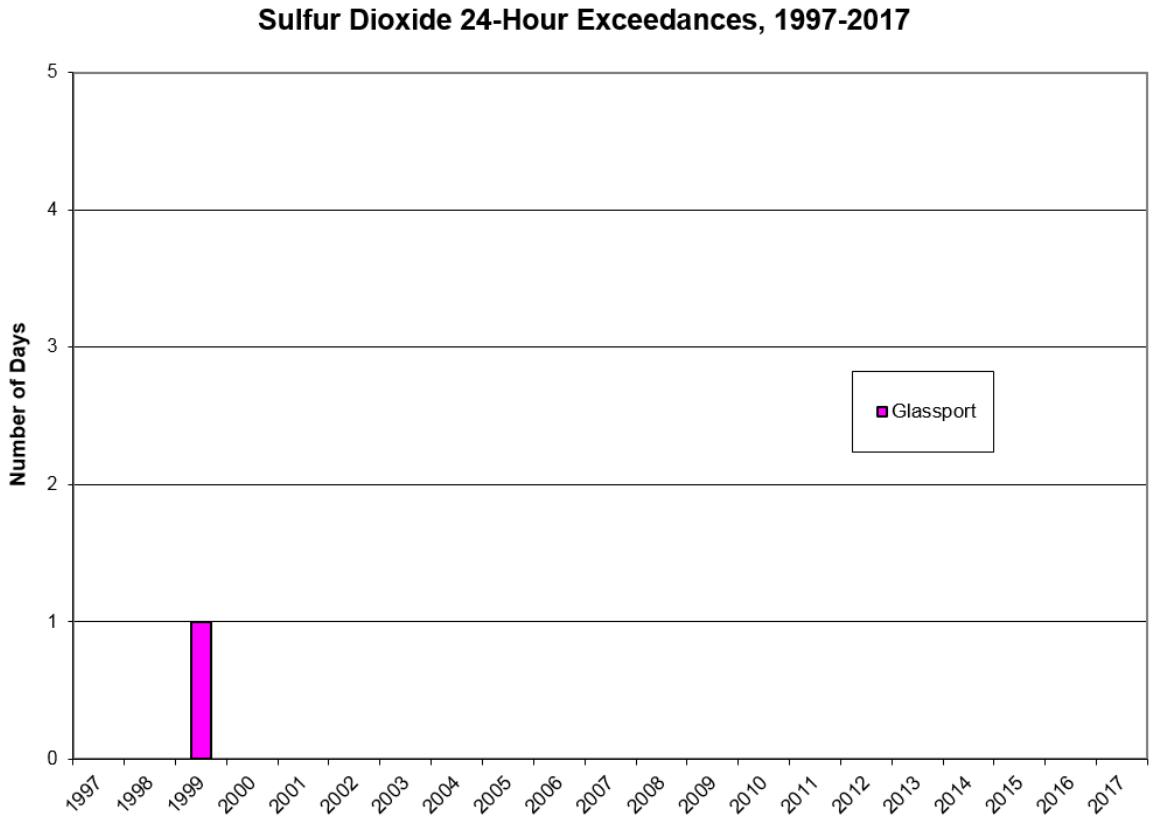
Sulfur Dioxide (SO_2)

Sulfur dioxide is monitored at five sites in the County, mostly in industrial areas. The South Fayette monitor is used as a background monitor, providing a measurement of SO_2 entering Allegheny County from the southwest. The former primary federal standards were 0.14 ppm (24-hour average) and 0.03 ppm (annually); the new 1-hour primary federal standard of 75 ppb was promulgated in 2010. To attain this standard, the 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor must not exceed 75 ppb. Maximums and averages for 2017 are shown in the table below, with 2016 values shown in gray. Exceedances in 2017 are shown in red. The NCore trace gas analyzer for SO_2 at Lawrenceville started operation in 2010 and Stowe was discontinued in 2011. The North Braddock SO_2 gas analyzer started operation in 2014.

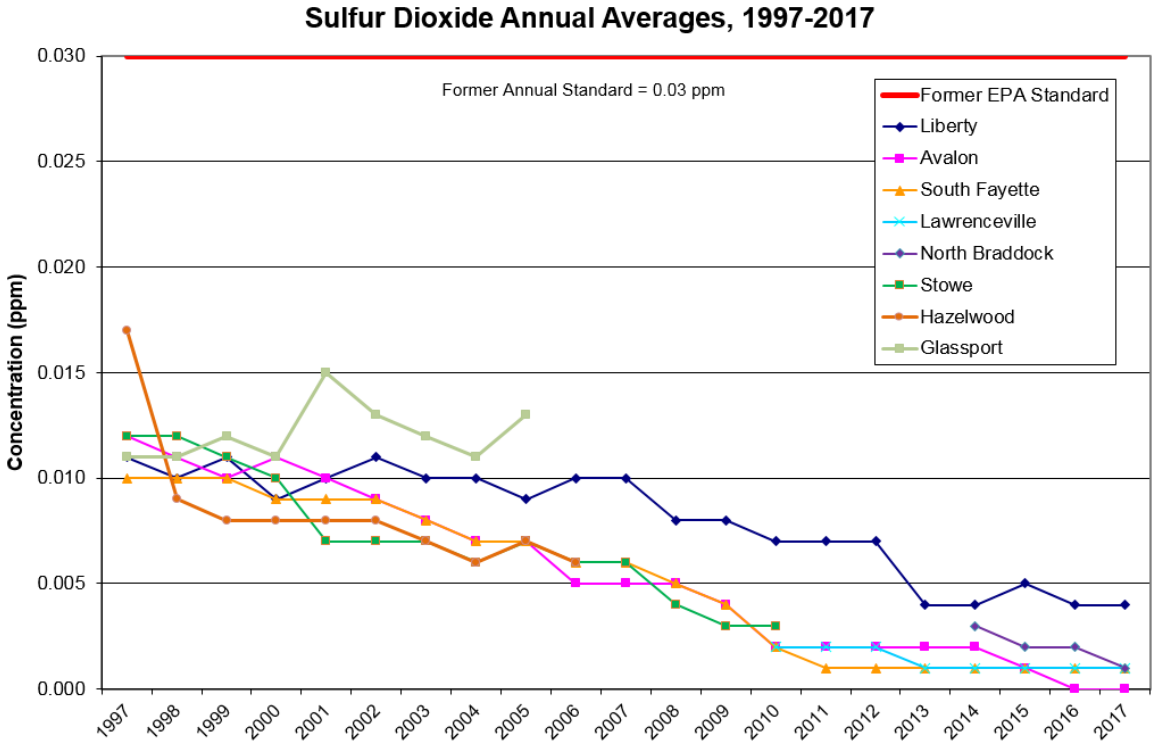
	Former 24-Hour Std. = 0.14 ppm		Former Annual Std. = 0.03 ppm	
Site	2016 24-Hour Maximum	**2017 24-Hour Maximum**	2016 Average	**2017 Average**
Liberty	0.029	0.032	0.004	0.004
North Braddock	0.019	0.023	0.002	0.001
South Fayette	0.006	0.004	0.001	0.001
Lawrenceville	0.005	0.003	0.001	0.001
Avalon	0.009	0.002	0.000	0.000

	1-Hour Std. = 75 ppb				
Site	2016 1-Hour Maximum	**2017 1-Hour Maximum**	2014-2016 99th percentile	**2015-2017 99th percentile**	**2017 Exceedances**
Liberty	171	163	94	97	18
North Braddock	69	127	64	55	3
Avalon	40	6	30	21	0
Lawrenceville	19	15	17	14	0
South Fayette	15	19	16	12	0

SO_2 24-hour exceedances are shown on the following page for 1997-2017. The former 24-hour standard can be exceeded once per year. Glassport was the last site to exceed the 24-hour standard in 1999.



SO_2 annual average trends are shown below for 1997-2017.



SO_2 one-hour design value trends are shown below for 2005-2017.

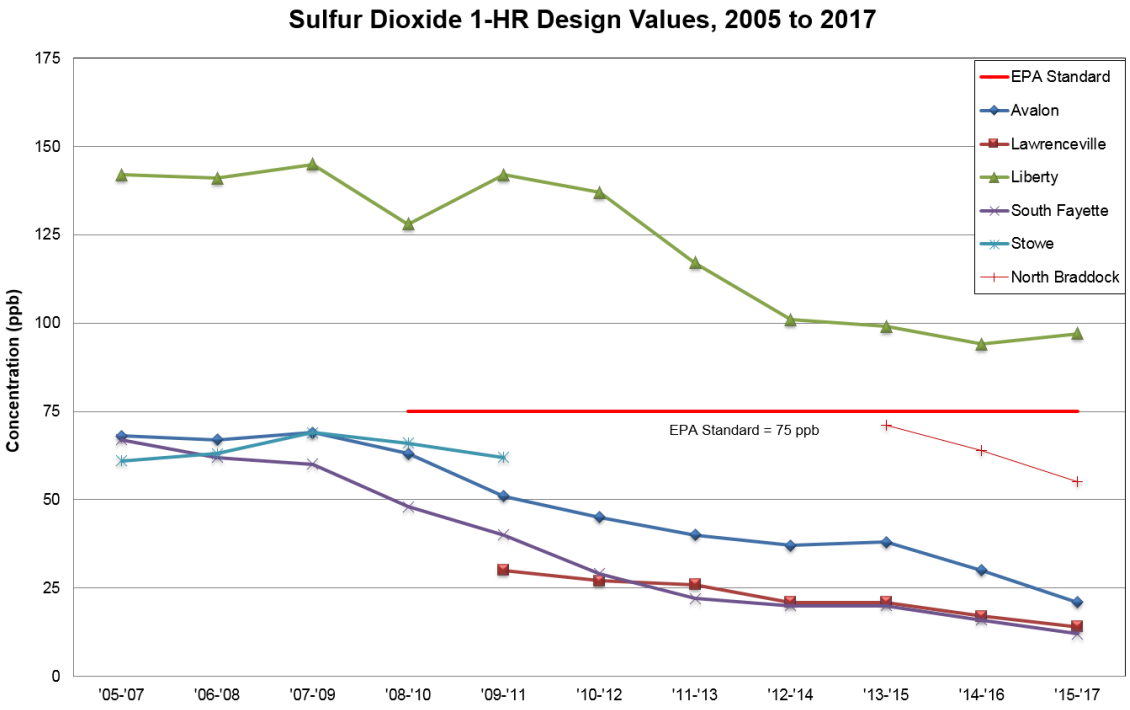


Exhibit L

- **eFACTS on the Web**
- **DEP Information**
  - About DEP
  - DEP Home
- **Search eFACTS**
  - Authorization Search
  - Client Search
  - Facility Search
  - Inspection Search
  - Mammography Search
  - Name Search
  - Pollution Prevention
  - Sites by County/Municipality
  - Site Search
- **Reports**
  - Emission Summary
  - Facility Emissions
- **Other Sites**
  - eMapPA
  - eNotice
  - EPA ECHO
  - EPA Envirofacts
  - Permits, Licensing, and Certification
  - The PA Code

Facility Emissions Report

Year: **2010**
County: **Allegheny**
Pollutant: **Sulfur Oxides**
Top Records: **20**

Primary Facility ID	Primary Facility Name	Tons/Year
737442	NRG MIDWEST LP/CHESWICK	11806.7898
737439	USS/CLAIRTON WORKS	1350.4008
737436	USS CORP/EDGAR THOMSON WORKS	828.93
737318	US STEEL CORP/IRVIN PLT	428.97
737435	SHENANGO INC/SHENANGO COKE PLT	418.532
737263	BAY VALLEY FOODS LLC/PGH	288.97
737350	GUARDIAN IND CORP/JEFFERSON HILLS	59.1611
737434	ATI FLAT ROLLED PRODUCTS HOLDINGS, LLC/BRACKENRIDGE	58.24
737306	KELMAN BOTTLES LLC/GLENSHAW	27.9163
737323	REDLAND BRICK INC/HARMAR PLT	21.378
737248	UNIVERSAL STAINLESS & ALLOY PROD/BRIDGEVILLE	13.5908
737315	LANE MCKEES ROCK ASPHALT PLT/MCKEES ROCK	13.2
737336	ALLIED WASTE SVC OF PA/MSW LDFL	11.3335
737399	HARSCO METALS BRI LLC/BRADDOCK	8.03
737247	LANE CONSTR CORP/BRIDGEVILLE PLT	6.9572
737438	MCCONWAY & TORLEY LLC/STEEL CASTINGS MFG	5.384
737280	CHAMBERS DEV CO INC/MONROEVILLE	4.7
737356	GOTTLIEB INC/NEVILLE ISLAND	3.6197
737433	NRG POWER MIDWEST L.P./BRUNOT ISLE POWER PLT	2.2201
737364	ALLEGHENY ENERGY SUPPLY/SPRINGDALE	1.82

Total Emissions for Selected Records: 15360.1400
Total Emissions for Selected Area: 15380.0000

Run report again

- **eFACTS on the Web**
- **DEP Information**
  - About DEP
  - DEP Home
- **Search eFACTS**
  - Authorization Search
  - Client Search
  - Facility Search
  - Inspection Search
  - Mammography Search
  - Name Search
  - Pollution Prevention
  - Sites by County/Municipality
  - Site Search
- **Reports**
  - Emission Summary
  - Facility Emissions
- **Other Sites**
  - eMapPA
  - eNotice
  - EPA ECHO
  - EPA Envirofacts
  - Permits, Licensing, and Certification
  - The PA Code

Facility Emissions Report

Year: **2011**
County: **Allegheny**
Pollutant: **Sulfur Oxides**
Top Records: **20**

Primary Facility ID	Primary Facility Name	Tons/Year
737442	NRG MIDWEST LP/CHESWICK	9290.3083
737439	USS/CLAIRTON WORKS	1467.5136
737436	USS CORP/EDGAR THOMSON WORKS	1279.0017
737318	US STEEL CORP/IRVIN PLT	418.6888
737435	SHENANGO INC/SHENANGO COKE PLT	371.6533
737263	BAY VALLEY FOODS LLC/PGH	313.17
737350	GUARDIAN IND CORP/JEFFERSON HILLS	73.2626
737323	REDLAND BRICK INC/HARMAR PLT	42.073
737434	ATI FLAT ROLLED PRODUCTS HOLDINGS, LLC/BRACKENRIDGE	32.7
737336	ALLIED WASTE SVC OF PA/MSW LDFL	18.5144
737248	UNIVERSAL STAINLESS & ALLOY PROD/BRIDGEVILLE	14.2459
737247	LANE CONSTR CORP/BRIDGEVILLE PLT	9.7711
737315	LANE MCKEES ROCK ASPHALT PLT/MCKEES ROCK	9.6051
737438	MCCONWAY & TORLEY LLC/STEEL CASTINGS MFG	8.438
737399	HARSCO METALS BRI LLC/BRADDOCK	6.6563
737280	CHAMBERS DEV CO INC/MONROEVILLE	5.89
737356	GOTTLIEB INC/NEVILLE ISLAND	4.3741
737306	KELMAN BOTTLES LLC/GLENSHAW	3.5002
737382	KELLY RUN SANI/MSW LDFL	2.55
737443	GE CONSUMER PROD LIGHTING/BRIDGEVILLE GLASS PLT	2.1371

Total Emissions for Selected Records: 13374.0500
Total Emissions for Selected Area: 13392.7000

Run report again

eFACTS on the Web
DEP Information
- About DEP
- DEP Home

Search eFACTS
- Authorization Search
- Client Search
- Facility Search
- Inspection Search
- Mammography Search
- Name Search
- Pollution Prevention
- Sites by County/Municipality
- Site Search

Reports
- Emission Summary
- Facility Emissions

Other Sites
- eMapPA
- eNotice
- EPA ECHO
- EPA Envirofacts
- Permits, Licensing, and Certification
- The PA Code

Facility Emissions Report

Year: **2012**
County: **Allegheny**
Pollutant: **Sulfur Oxides**
Top Records: **20**

Primary Facility ID	Primary Facility Name	Tons/Year
737442	NRG MIDWEST LP/CHESWICK	1910.8427
737439	USS/CLAIRTON WORKS	1742.2268
737436	USS CORP/EDGAR THOMSON WORKS	1430.7219
737318	US STEEL CORP/IRVIN PLT	635.1116
737263	BAY VALLEY FOODS LLC/PGH	268.2219
737435	SHENANGO INC/SHENANGO COKE PLT	254.6068
737350	GUARDIAN IND CORP/JEFFERSON HILLS	82.6771
737434	ATI FLAT ROLLED PRODUCTS HOLDINGS, LLC/BRACKENRIDGE	31.8
737323	REDLAND BRICK INC/HARMAR PLT	28.216
737336	ALLIED WASTE SVC OF PA/MSW LDFL	15.41
737248	UNIVERSAL STAINLESS & ALLOY PROD/BRIDGEVILLE	14.9057
737438	MCCONWAY & TORLEY LLC/STEEL CASTINGS MFG	9.243
737399	HARSCO METALS BRI LLC/BRADDOCK	7.8572
737315	LANE MCKEES ROCK ASPHALT PLT/MCKEES ROCK	7.1673
737364	ALLEGHENY ENERGY SUPPLY/SPRINGDALE	6.65
737280	CHAMBERS DEV CO INC/MONROEVILLE	5.5
737247	LANE CONSTR CORP/BRIDGEVILLE PLT	5.1724
737356	GOTTLIEB INC/NEVILLE ISLAND	4.6994
737382	KELLY RUN SANI/MSW LDFL	2.687
737294	LINDY PAVING INC/2ND AVE PLT	1.6421

Total Emissions for Selected Records: 6465.3590
Total Emissions for Selected Area: 6477.8990

Run report again

- **eFACTS on the Web**
- **DEP Information**
  - About DEP
  - DEP Home
- **Search eFACTS**
  - Authorization Search
  - Client Search
  - Facility Search
  - Inspection Search
  - Mammography Search
  - Name Search
  - Pollution Prevention
  - Sites by County/Municipality
  - Site Search
- **Reports**
  - Emission Summary
  - Facility Emissions
- **Other Sites**
  - eMapPA
  - eNotice
  - EPA ECHO
  - EPA Envirofacts
  - Permits, Licensing, and Certification
  - The PA Code

Facility Emissions Report

Year: **2013**
County: **Allegheny**
Pollutant: **Sulfur Oxides**
Top Records: **20**

Primary Facility ID	Primary Facility Name	Tons/Year
737442	NRG MIDWEST LP/CHESWICK	1686.3993
737439	USS/CLAIRTON WORKS	1637.1483
737436	USS CORP/EDGAR THOMSON WORKS	1454.0281
737318	US STEEL CORP/IRVIN PLT	507.4236
737435	SHENANGO INC/SHENANGO COKE PLT	285.1264
737263	BAY VALLEY FOODS LLC/PGH	208.7961
737350	GUARDIAN IND CORP/JEFFERSON HILLS	70.3772
737434	ATI FLAT ROLLED PRODUCTS HOLDINGS, LLC/BRACKENRIDGE	31
737336	ALLIED WASTE SVC OF PA/MSW LDFL	18.932
737323	REDLAND BRICK INC/HARMAR PLT	15.8
737248	UNIVERSAL STAINLESS & ALLOY PROD/BRIDGEVILLE	9.7568
737438	MCCONWAY & TORLEY LLC/STEEL CASTINGS MFG	7.632
737364	ALLEGHENY ENERGY SUPPLY/SPRINGDALE	7.49
737315	LANE MCKEES ROCK ASPHALT PLT/MCKEES ROCK	5.8121
737356	GOTTLIEB INC/NEVILLE ISLAND	4.5705
737443	GE CONSUMER PROD LIGHTING/BRIDGEVILLE GLASS PLT	2.7181
737280	CHAMBERS DEV CO INC/MONROEVILLE	2.24
737382	KELLY RUN SANI/MSW LDFL	1.99
737294	LINDY PAVING INC/2ND AVE PLT	1.6651
737316	LINDY PAVING INC/NEVILLE ISLAND	1.2522

Total Emissions for Selected Records: 5960.1590
Total Emissions for Selected Area: 5970.5630

Run report again

- **eFACTS on the Web**
- **DEP Information**
  - About DEP
  - DEP Home
- **Search eFACTS**
  - Authorization Search
  - Client Search
  - Facility Search
  - Inspection Search
  - Mammography Search
  - Name Search
  - Pollution Prevention
  - Sites by County/Municipality
  - Site Search
- **Reports**
  - Emission Summary
  - Facility Emissions
- **Other Sites**
  - eMapPA
  - eNotice
  - EPA ECHO
  - EPA Envirofacts
  - Permits, Licensing, and Certification
  - The PA Code

Facility Emissions Report

Year: **2014**
County: **Allegheny**
Pollutant: **Sulfur Oxides**
Top Records: **20**

Primary Facility ID	Primary Facility Name	Tons/Year
737442	NRG MIDWEST LP/CHESWICK	4445.4142
737439	USS/CLAIRTON WORKS	1511.7339
737436	USS CORP/EDGAR THOMSON WORKS	1329.0207
737318	US STEEL CORP/IRVIN PLT	715.9371
737435	SHENANGO INC/SHENANGO COKE PLT	275.8858
737350	GUARDIAN IND CORP/JEFFERSON HILLS	108.8668
737434	ATI FLAT ROLLED PRODUCTS HOLDINGS, LLC/BRACKENRIDGE	33.7
737323	REDLAND BRICK INC/HARMAR PLT	30.86
737336	ALLIED WASTE SVC OF PA/MSW LDFL	17.6921
737263	BAY VALLEY FOODS LLC/PGH	12.751
737364	ALLEGHENY ENERGY SUPPLY/SPRINGDALE	8.16
737315	LANE MCKEES ROCK ASPHALT PLT/MCKEES ROCK	7.6452
737248	UNIVERSAL STAINLESS & ALLOY PROD/BRIDGEVILLE	7.4463
737356	GOTTLIEB INC/NEVILLE ISLAND	4.4906
737438	MCCONWAY & TORLEY LLC/STEEL CASTINGS MFG	2.4176
737382	KELLY RUN SANI/MSW LDFL	2.41
737280	CHAMBERS DEV CO INC/MONROEVILLE	2.09
737443	GE CONSUMER PROD LIGHTING/BRIDGEVILLE GLASS PLT	1.7974
737316	LINDY PAVING INC/NEVILLE ISLAND	1.1762
737294	LINDY PAVING INC/2ND AVE PLT	1.1475

Total Emissions for Selected Records: 8520.6440
Total Emissions for Selected Area: 8528.7540

Run report again

- **eFACTS on the Web**
- **DEP Information**
  - About DEP
  - DEP Home
- **Search eFACTS**
  - Authorization Search
  - Client Search
  - Facility Search
  - Inspection Search
  - Mammography Search
  - Name Search
  - Pollution Prevention
  - Sites by County/Municipality
  - Site Search
- **Reports**
  - Emission Summary
  - Facility Emissions
- **Other Sites**
  - eMapPA
  - eNotice
  - EPA ECHO
  - EPA Envirofacts
  - Permits, Licensing, and Certification
  - The PA Code

Facility Emissions Report

Year: **2015**
County: **Allegheny**
Pollutant: **Sulfur Oxides**
Top Records: **20**

Primary Facility ID	Primary Facility Name	Tons/Year
737442	NRG MIDWEST LP/CHESWICK	1690.1639
737436	USS CORP/EDGAR THOMSON WORKS	1357.1297
737439	USS/CLAIRTON WORKS	1250.115
737318	US STEEL CORP/IRVIN PLT	406.446
737435	SHENANGO INC/SHENANGO COKE PLT	331.8324
737350	GUARDIAN IND CORP/JEFFERSON HILLS	57.3109
737323	REDLAND BRICK INC/HARMAR PLT	35.79
737434	ATI FLAT ROLLED PRODUCTS HOLDINGS, LLC/BRACKENRIDGE	28.5
737336	ALLIED WASTE SVC OF PA/MSW LDFL	17.7306
737364	ALLEGHENY ENERGY SUPPLY/SPRINGDALE	8.03
737248	UNIVERSAL STAINLESS & ALLOY PROD/BRIDGEVILLE	5.2708
737356	GOTTLIEB INC/NEVILLE ISLAND	4.4347
737438	MCCONWAY & TORLEY LLC/STEEL CASTINGS MFG	3.5194
737280	CHAMBERS DEV CO INC/MONROEVILLE	3.063
737443	GE CONSUMER PROD LIGHTING/BRIDGEVILLE GLASS PLT	2.368
737382	KELLY RUN SANI/MSW LDFL	1.52
737294	LINDY PAVING INC/2ND AVE PLT	1.2693
737316	LINDY PAVING INC/NEVILLE ISLAND	1.2167
737440	ALLEGHENY CNTY SANI AUTH/ALLEGHENY CNTY SANI	1.1254
737383	GULF OIL LP/NEVILLE IS FUEL TERM	0.9212

Total Emissions for Selected Records: 5207.7580
Total Emissions for Selected Area: 5214.4470

Run report again

eFACTS on the Web
DEP Information
- About DEP
- DEP Home

Search eFACTS
- Authorization Search
- Client Search
- Facility Search
- Inspection Search
- Mammography Search
- Name Search
- Pollution Prevention
- Sites by County/Municipality
- Site Search

Reports
- Emission Summary
- Facility Emissions

Other Sites
- eMapPA
- eNotice
- EPA ECHO
- EPA Envirofacts
- Permits, Licensing, and Certification
- The PA Code

Facility Emissions Report

Year: **2016**
County: **Allegheny**
Pollutant: **Sulfur Oxides**
Top Records: **20**

Primary Facility ID	Primary Facility Name	Tons/Year
737442	NRG MIDWEST LP/CHESWICK	2090.741
737436	USS CORP/EDGAR THOMSON WORKS	1480.3888
737439	USS/CLAIRTON WORKS	889.7542
737318	US STEEL CORP/IRVIN PLT	201.5014
737434	ATI FLAT ROLLED PRODUCTS HOLDINGS, LLC/BRACKENRIDGE	31.4
737435	SHENANGO INC/SHENANGO COKE PLT	27.9101
737323	REDLAND BRICK INC/HARMAR PLT	24.11
737336	ALLIED WASTE SVC OF PA/MSW LDFL	12.19
737364	ALLEGHENY ENERGY SUPPLY/SPRINGDALE	9.16
737248	UNIVERSAL STAINLESS & ALLOY PROD/BRIDGEVILLE	6.2304
737399	HARSCO METALS BRI LLC/BRADDOCK	5.901
737356	GOTTLIEB INC/NEVILLE ISLAND	4.474
737438	MCCONWAY & TORLEY LLC/STEEL CASTINGS MFG	2.5199
737280	CHAMBERS DEV CO INC/MONROEVILLE	2.18
737382	KELLY RUN SANI/MSW LDFL	1.85
737443	GE CONSUMER PROD LIGHTING/BRIDGEVILLE GLASS PLT	1.387
737294	LINDY PAVING INC/2ND AVE PLT	1.1769
737316	LINDY PAVING INC/NEVILLE ISLAND	1.141
737432	DUQUESNE UNIVERSITY/PGH	0.7496
737376	CHILDRENS HOSP OF PGH/LAWRENCEVILLE	0.7402

Total Emissions for Selected Records: 4795.5060
Total Emissions for Selected Area: 4800.7480

Run report again

Appendix C

Unedited Comment Document

Clean Air Council

CLEAN AIR COUNCIL

Allegheny County Health Department
Annual Air Monitoring Network Plan for 2019

June 5, 2018

Written Comments by Clean Air Council

Clean Air Council ("the Council") appreciates the opportunity to submit these written comments regarding the proposed 2019 Air Monitoring Network plan dated May 1, 2018 ("Draft 2019 Plan").

The Council is a non-profit environmental organization headquartered at 135 South 19th Street, Suite 300, Philadelphia, Pennsylvania, 19103. The Council maintains an office in Pittsburgh. For 50 years, the Council has worked to improve air quality across Pennsylvania. The Council has members throughout the Commonwealth who support its mission to protect everyone's right to breathe clean air, including members in Allegheny County. The Council has approximately 8,000 paying members and 30,000 activists.

1. <u>The Department Should Strengthen its Existing Monitoring Program for Air Toxics in the Mon Valley</u>.

A. Air Toxics Continue to Have a Significant and Lasting Effect on the Mon Valley and Pittsburgh

Air quality in Allegheny County is adversely affected not only by criteria pollutants, but also by hazardous air pollutants ("HAPs"), or air toxics. This is a particularly bad problem in the Monongahela Valley region, due to the significant amount of coke oven emissions from the Clairton Coke Works. *See* University of Pittsburgh PRETA Report, http://www.chec.pitt.edu/documents/PRETA/CHEC%20PRETA%20HAPs%20Report.pdf. For the year 2016, the Clairton facility released 5.5 tons of benzene in fugitive emissions and 7 tons of benzene in stack emissions. *See* EPA Toxic Release Inventory, https://oaspub.epa.gov/enviro/tris_control_v2.tris_print?tris_id=15025SSCLR400ST&pPrev=1.

In 2014, the Clairton facility contributed over half of benzene emissions in the county. 2014 Annual Air Emissions Inventory, page 19, http://www.achd.net/air/pubs/pdf/2014_Emissions_Inventory_Report.pdf.

Hazardous air pollutants at the Clairton facility also include other organic air pollutants and metallic air pollutants. *See* Toxic Ten Report, Penn Environment, dated October 26, 2015, available at https://pennenvironment.org/sites/environment/files/reports/Toxic%20Ten%20vWeb.pdf, page 17, Table 4.

The Clairton facility has had a history of noncompliance with emissions limitations. In 2014, the Department announced that a recently installed Battery C at the facility had been in daily violation of pollution limits since its inception in 2012. *Id*. at 18. Coke oven gas emissions are categorically listed as a hazardous air pollutant under the Clean Air Act. 42 U.S.C 7412(b). Even if it is in compliance with coke oven regulations, the regulations tolerate a certain number of leaking doors and lids, which allow for emissions of air toxics into the community. Therefore, the Clairton facility contributes to hazardous air pollutants in the community.

EPA's National Air Toxics Assessment provides risk assessment data for communities throughout the nation. https://gispub.epa.gov/NATA/. This assessment is based on "risks associated with chronic (relatively long-term) exposures to the inhalation of air toxics at the population level." Technical Support Document, https://www.epa.gov/sites/production/files/2015-12/documents/2011-nata-tsd.pdf, Section 1.2, page 2. EPA states that "NATA results are useful for prioritizing air toxics and emission sources, identifying locations of interest that require additional investigation, providing a starting point for local-scale assessments, focusing community efforts to reduce local emissions of air toxics, and informing the design of new monitoring programs or the re-design of existing ones." *Id.*

According to the most recent assessment, there is a high cancer risk in the area near the Clairton coke oven facility. The following are sample Total Cancer Risks in the Clairton area:

Area	**Total Cancer Risk**
Eden Park	122 in one million
Liberty	112 in one million

Clairton	108 in one million
Versailles	104 in one million
McKeesport	102 in one million
Riverton	102 in one million
Port Vue	95 in one million
Lincoln	94 in one million
Dravosburg	92 in one million

In contrast, the Total Cancer Risk at Flag Plaza in downtown Pittsburgh is 65 in a million. (The Department conducts air toxics monitoring for VOCs and carbonyls at Flag Plaza, and it has been doing air toxics monitoring at Flag Plaza for 23 years. Draft 2019 Plan, page 9, Table 4, pages 58-59). Therefore, the Total Cancer Risk near the Clairton facility is nearly twice as high as that at Flag Plaza.

Point sources (stationary sources, or industrial facilities) make a significant contribution to these risk levels near the Clairton facility. For example, in the case of Liberty, the point source contribution is 80 in a million, which is over 70% of the Total Cancer Risk of 112 in a million. *Id.* In contrast, at Flag Plaza in downtown Pittsburgh, the point source contribution is 16 in a million, less than 25% of the Total Cancer Risk of 65 in a million.

While significant, the Clairton Coke Works is only the third largest stationary source of hazardous air pollutants in the County, according to 2014 reported data. *See* Toxic Ten Report, page 34. The largest source is Carpenter Powder Products in Bridgeville, and the second largest source is the Cheswick Power Plant in Springdale. *Id.*

B. The Department Should Expand its Air Toxics Monitoring and Make the Information More Accessible to the Public.

The residents and communities in the Clairton area have long been complaining about an elevated incidence of illness and disease, and seeking support from the Department. This was highlighted in a news article published one year ago. *See* Julie Grant, Allegheny Front, Can a Town Prove That Its Health Problems Are Caused by Pollution?, June 2, 2017, https://www.alleghenyfront.org/can-a-town-prove-that-itshealth-problems-are-caused-by-pollution/.

The Council commends the Department for making some effort to study hazardous air pollutants from stationary sources in the Mon Valley. In the Special Study Projects section of the Draft 2019 Plan, the Department refers to a number of monitoring activities at Liberty, including 24-hour passive sorbent tube sampling, targeted sampling for benzo[a]pyrene, and monitoring for hydrogen sulfide. *See* Draft 2019 Plan, pages 72-73, Section A3.1, A3.3, A4. But some of the Department's descriptions of these projects provide little explanation of their purpose. *See* Draft 2019 Plan, page 71-73 (discussions regarding Lawrenceville, Kopp Glass, and Clairton monitors). The Department should provide more background for residents and communities.

In addition, the Department's effort to conduct air toxics monitoring in the Mon Valley appears to be limited. In the tabular summary of air toxics monitoring, the only air toxics monitoring that is identified relate to the Flag Plaza and Parkway East locations. *See* Draft 2019 Plan, page 9, Table 4 (Air Monitoring Network Summary). In this Table, there is no indication that the Department is conducting air toxics monitoring at the Clairton, Liberty, and North Braddock monitors. *See id.* This is consistent with last year's proposed plan. *See* Air Monitoring Network Plan for 2018, dated July 1, 2017 ("Draft 2018 Plan"), page 9, Table 4 (Air Monitoring Network Summary). Finally, on the Department's current webpage relating to air toxics studies, there is no mention of any current study of toxics in the Mon Valley. *See* http://www.achd.net/air/reports.html (visited on June 5, 2018).

With respect to the identified air toxics monitoring at Flag Plaza and Parkway East, the Department does not discuss either of them. This is a concern because the Flag Plaza monitor is located near an environmental justice community. *See* Draft 2019 Plan, page 58 ("It is in a downwind position between the Central Business District and a densely populated environmental justice area."). The Department should identify the nature of the air toxics monitoring and explain its significance for residents and communities.

In addition, on the pages of the Draft 2019 Plan that provide descriptions of individual monitors, the Department does not provide any information regarding the nature of the air toxics monitoring, whether it is characterized as a Special Study Project or not. For example, there is no discussion regarding air toxics at the Liberty monitor, despite the fact that "[s]ignificant ambient levels of benzene have also been measured and documented at this site." *See* Draft 2019 Plan, page 33. In addition, the Department provides no meaningful discussion of air toxics monitoring at Flag Plaza-only information indicating that the Department is monitoring for VOCs and carbonyls, and the purpose is to monitor for population exposure. *See id.*, page 58-59.

Making these changes would help better demonstrate what monitoring efforts are taking place, and allow residents and communities to keep track of information regarding air toxics in their neighborhoods.

The large amount of emissions of hazardous air pollutants from the Cheswick Generating Station are an additional reason why the Department should install a monitoring station near Springdale (*See* discussion in Comment 4, below). *See* https://oaspub.epa.gov/enviro/tris_control_v2.tris_print?tris_id=15024CHSWCPITTS&pPrev=1 (identifying hydrochloric acid, hydrogen fluoride, and other hazardous air pollutants as releases from the facility). The Department should conduct a study of hazardous air pollutants in the area near this facility. It does not appear that the Department is doing this. *See* Draft 2019 Plan, page 9 (Table 4), pages 70-73.

C. The Department Should Make the Daily Reports of Concentration Data on its Website More Useful for Public Use.

The Department currently posts daily reports of air quality data on the Department's website. *See* http://www.achd.net/airqual/DailySummary.PDF. The Department includes data on criteria pollutants from all monitors in the county. But the Department does not include hazardous air pollutant data from the Flag Plaza site, even though they are listed as part of the monitoring network in the Draft 2019 Plan.

In addition, the Department does not include hazardous air pollutant data from other sites. The Department should include all monitoring data in this daily summary, so that residents and communities may have a better understanding of air quality.

The Department should include monitoring data from any studies the Department is currently conducting. Although such data are available on request, they would be more helpful if posted to the daily summary as a matter of course, as they become available. The data should remain on the website, rather than being replaced each day. This is particularly important given the significant hazardous air pollutant emissions in the county, and the elevated incidence of illness and disease in the community near Clairton.

The Department should also provide an explanation to help residents and communities understand the data and health effects of the hazardous air pollutants. The Department should provide context to make the document more useful for all residents and communities viewing this information, not just those with expertise in public health. This type of explanation would also be beneficial for criteria pollutants.

The Clean Air Fund is an underutilitized fund that provides a resource for the Department to expand its existing commitment to studying air toxics in the Mon Valley. The need to gather information in the Mon Valley fits the very purpose of the fund. *See* Allegheny County Air Pollution regulations, Section 2109.09(a) ("The Clean Air Fund is specifically for the disbursement of such funds solely to support activities related to the improvement of air quality within Allegheny County and to support activities which will increase or improve knowledge concerning air pollution, its causes, its effects, and the control thereof.").

Consequently, the Department should expand its air toxics monitoring in the Mon Valley, and there is money available to do this.

2. The Department Should Amend Language in the Section of the Proposed Plan Relating to Special Study Projects.

A. In its discussion of Special Study Projects, the Department should restore language that states that "[d]ata is available to the public upon request."

In several sections relating to the Special Study Projects, the Department has deleted language stating that "[d]ata is available upon request." First, it did this for monitoring for Lawrenceville NCORE site metals. *See* Draft 2019 Plan, page 71, Section A2.1 (deleted). *See* Draft 2018 Plan, page 70, Section A2.1 (former language is contained in the last sentence). Second, it did this for charcoal tube sampling at the Liberty monitor. *See* Draft 2019 Plan, page 72, Section A3.1 (deleted). *See* Draft 2018 Plan, page 71, Section A3.1 (former language is contained in the last sentence). Finally, it did this for benzo(a)pyrene monitoring at the Liberty monitor. *See* Draft 2019 Plan, page 72, Section A3.3 (deleted). *See* Draft 2018 Plan, page 73, Section A3.3 (former language is contained in the last sentence). The Department provides no explanation for why this information was deleted.

Consistent with the purpose of informing residents and communities of the nature of the air pollution problems they face, the Department should reinstate this language.

B. The Department should clarify the nature and extent of passive VOC sampling.

In contrast to the proposed air monitoring network plan last year, in the present proposal the Department leaves out last year's language that states that it "employs sixliter SUMMA canisters to conduct passive sampling when a larger list of target compounds is desired." The omitted paragraph goes on to describe SUMMA canister operation and states that it uses EPA Method TO-15 to analyze for "over 60 compounds." *See* Draft 2019 Plan, page 72, Section A3.2. *See* Draft 2018 Plan, pages 71-72, Section A3.2. The Department should explain why this language was deleted in the 2019 draft.

SUMMA canisters can passively measure a more comprehensive suite of pollutants than the Radiello brand passive samplers that are still in use by the Department. If SUMMA canisters are no longer being used by the Department for passive VOC sampling, the Department should explain why this method is no longer being employed.

The Council recommends that SUMMA canisters and Method TO-15 still be used in the Department's passive VOC sampling in conjunction with the Radiello brand passive samplers.

3. <u>The Department Should Install and Operate a Sulfur Dioxide Monitor at the Glassport Location</u>.

The Department did not adequately address the Council's comments on this issue when it commented on the Draft 2018 Plan last year.

The Department discontinued this monitor in 2016 under the rationale that it was deteriorating and difficult to reach. But this monitor was operated for a number of years, demonstrating that it is in fact feasible to operate a monitor at this location.

More importantly, when it was operating the levels of sulfur dioxide were much higher than those at the Liberty monitor. Should the Department suggest that air quality is improving based on data collected at the Liberty Monitor, it is important for the public to remember that the Department discontinued the operation of the Glassport monitor, and that this monitor at this location could become material to whether the area is determined to be in attainment.

While EPA prefers air modeling over air monitoring for purposes of sulfur dioxide attainment demonstrations (forecasting of attainment in the future), this does not apply to attainment determinations (verification of attainment in the past). See Final Rule, Primary National Ambient Air Quality Standard for Sulfur Dioxide, 75 FR 35, 520, 35, 553 (June 20, 2010) ("EPA is still considering how monitoring and modeling data would be used together in specific situations to define attainment and nonattainment boundaries and under what circumstances it may be appropriate to rely on monitoring data alone to make attainment determinations.")

In addition, the regulatory formula for calculating the design value (and therefore, determining whether an area is in attainment) necessarily involves actual data from an ambient air quality monitoring site. 40 C.F.R. part 50, Appendix T-Interpretation of the Primary National Ambient Air Quality Standards for Oxides of Sulfur (Sulfur Dioxide), Section 5(a) (Calculation Procedures for the 1-hour Primary SO2 NAAQS), 5(b) (actual formula). Accordingly, the failure to reactivate the Glassport monitor may become relevant to an accurate determination of air quality in this area.

The Department should install and operate a sulfur dioxide monitor at Glassport.

4. <u>The Department Should Install an Additional Monitor Near the Grandview Golf Course, Which Would Improve the Reliability of Air Modeling Results</u>.

The Department did not adequately address the Council's comments on this issue when it commented on the Draft 2018 Plan last year.

The maximum modeled SO2 level, as modeled in the proposed 2017 SO2 SIP revision, was located on the Grandview golf course, in North Braddock. *See* Proposed SO2 SIP Revision, page 20. The level at this location was higher than the level at the nearest SO2 monitoring station approximately 2000 feet away in North Braddock, to the southwest. In order to capture the maximum SO2 concentration downwind from the industrial facilities, the Department should install an additional monitor near the Grandview golf course property.

The Department conducted a performance evaluation of the dispersion model for only one site, the Liberty monitor. *See* Appendix G of proposed SO2 SIP Revision. The Department did this because the Liberty monitor was the only monitor showing nonattainment. A performance evaluation at an additional monitor near the Grandview golf course would provide improved data for evaluating attainment with the national ambient air quality standard. It would also provide better data for evaluating the effectiveness of future models.

The Department has acknowledged that the complex terrain of the Mon Valley makes air modeling more difficult. Being able to conduct performance testing at additional monitored locations would increase the confidence that a model is able to perform well under various conditions and in various areas. This is especially true where the maximum modeled SO2 impact is located far away from the air monitor reflecting nonattainment, as in the present case.

The Department should install an additional monitor near the Grandview golf course, which would improve the reliability of the air monitoring network and future air modeling efforts.

5. Sulfur Dioxide Emissions from Cheswick Generating Station are not Properly Accounted for; the Department Should Install an Additional Monitor to Measure the Impact of these Emissions.

The Department did not adequately address the Council's comments on this issue when it commented on the Draft 2018 Plan last year.

The Council believes that the reading of the sulfur dioxide do not reflect an actual account of the sulfur dioxide emissions in Allegheny County. Specifically, there is no monitoring station for sulfur dioxide near Springdale, where the Cheswick Generating Station is located. This power plant is the largest source of sulfur dioxide in the County.

The Council and other environmental groups have submitted several comments about this deficiency in connection with the Department's revision to the annual monitoring network. *See* Draft 2018 Plan, pages 67-69, 72, Appendix A, Sections 1, 2, and 5, http://www.achd.net/air/publiccomment2017/ANP2018_final.pdf. To date, the Department has not adequately addressed those concerns.

Thank you for your consideration of the comments of the Council.

_____ Joseph Otis Minott, Esq.
Christopher D. Ahlers, Esq.
Clean Air Council

135 S. 19th St., Suite 300
Philadelphia, PA 19103
215-567-4004 x118
joe_minott@cleanair.org
cahlers@cleanair.org