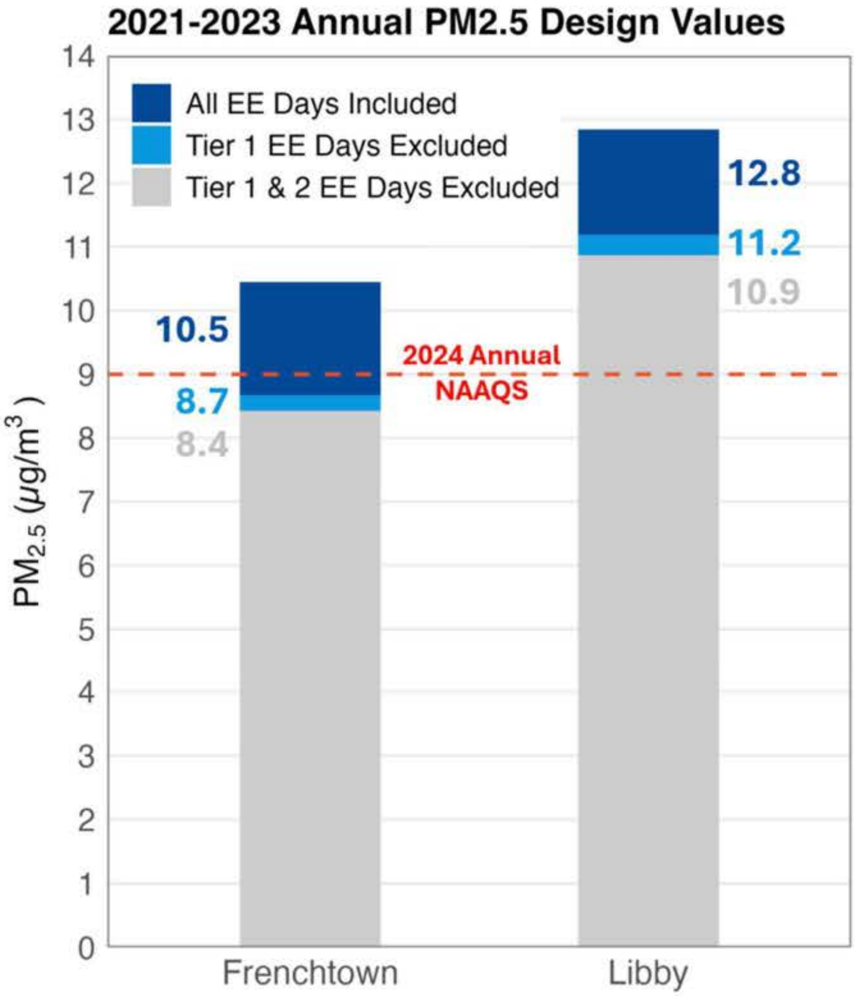
Figure 6 identifies the design values for the Frenchtown and Libby ambient monitors excluding only wildfire exceptional event days that were requested for exclusion (i.e., R-flagged data only, both Tier 1 and Tier 2 days)[2] in MT DEQ's 2021-2023 Exceptional Event Demonstration.

Figure 6 – Wildfire Exceptional Event Contribution to $PM_{2.5}$ Design Values for Libby and Frenchtown Monitors 2021-2023



Frenchtown

The Frenchtown monitor was not originally sited for the purpose of representing outdoor ambient air quality in a regional airshed. The site, which has monitored $PM_{2.5}$ continuously since November 2009, was originally a source-oriented SPM monitor. The site was selected specifically to evaluate potential air quality impacts from the nearby Smurfit-Stone Container

[2] See the following document for a discussion of exceptional events and tiering: US EPA. (2024). *PM2.5 Wildland Fire Exceptional Events Tiering Document*. Available at: final-pm-fire-tiering-4-30-24.pdf (epa.gov)

Mill. Smurfit-Stone produced liner-board and pulp wood products for nearly 53 years in Frenchtown beginning in 1957. Plant operations ceased in 2010, and the former mill site is currently being remediated through the Federal Superfund program. Even after Smurfit-Stone shutdown, the Frenchtown monitor remained situated on a narrow strip of land between Interstate 90 and a rail line; the location does not meet federal siting criteria[3] for spacing from a roadway for a regional scale particulate monitor. The Frenchtown $PM_{2.5}$ monitor is, however, in attainment status for the design value period of 2021-2023 with exceptional events removed, and set to attain the revised annual $PM_{2.5}$ standard for the year 2024, without the need for exclusion of exceptional events.

[3] 40 CFR Appendix E to Part 58—Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring

IV. Nonattainment Area

The only area in Montana to be designated "nonattainment" for the 2024 revised annual $PM_{2.5}$ standard is the town of Libby. Libby is a small, rural community nestled in a mountain valley in the northwest corner of Montana. Libby is the county seat of Lincoln County – a large, rural county with a total area of 3,675 square miles and a population of 19,687, for a density of just over five people per square mile. The population of Libby proper is approximately 2,775, based on 2020 U.S. census data. There has been no significant rise or decline in population in the last four decades. The vast majority of Lincoln County consists of forested land owned by either the U.S. Forest Service or private timber companies.

The current regulatory ambient air monitor in Libby (a continuous Beta Attenuation Monitor, Libby-Courthouse Annex, AQS ID 30-053-0018) has continuously monitored $PM_{2.5}$ and reported hourly data at the neighborhood scale since August 2011. Previous monitoring efforts at the site began as early as 1986. Episodic, filter-based, $PM_{2.5}$ sampling (i.e., 24-hour samples collected every 3 days) was conducted from January 1999 through 2011 using different equipment and methods. National Chemical Speciation Network (CSN) $PM_{2.5}$ supplemental monitoring was conducted at the site from 2002 through 2008.

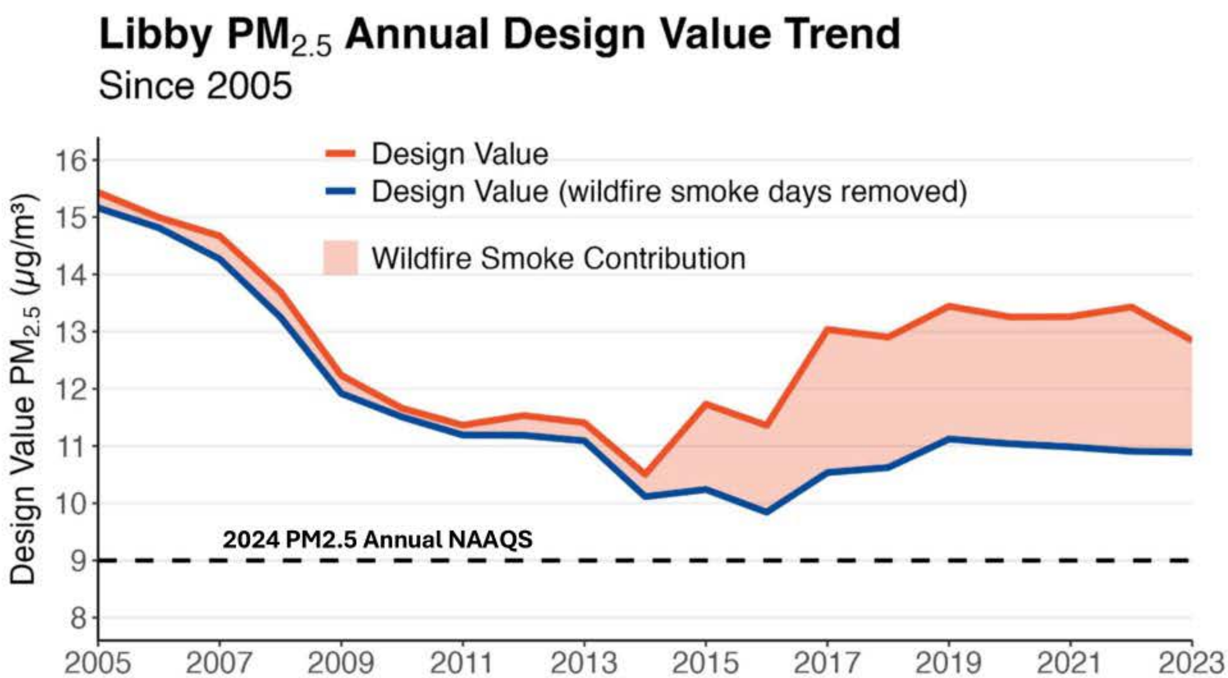
The town of Libby is considered an EJ disadvantaged community because it meets more than one burden threshold and the associated socioeconomic threshold per EPA's CEJST screening tool. Libby is above the 90th percentile for the following EJ burden thresholds: expected population loss rate, projected flood risk, projected wildfire risk, energy cost, $PM_{2.5}$ in the air, heart disease, low life expectancy, lack of indoor plumbing, proximity to superfund sites. It is also in the 82nd percentile for low-income communities. The area in and around Libby includes the Libby Asbestos and Libby Groundwater Federal Superfund sites that contribute to its classification as a disadvantaged community. These burdens and socioeconomic factors, including the fact that there is no natural gas pipeline routed to the community, have made it challenging for citizens to transition away from woodstove use for residential heating.

$PM_{2.5}$ background concentrations in Libby are elevated compared to other locations in Lincoln County, and compared to other locations in the state, due to pervasive residential woodstove use, and because the valley's restricted airshed limits atmospheric mixing, often trapping pollutants at the surface in a stagnant boundary layer. Surrounding topographic and geographic features create favorable conditions for local cold air drainage into the valley bottom. Cold air pooling creates frequent vertical temperature inversions that concentrate and confine pollutants to stable air layers at populated elevations. Despite these challenges, PM concentrations in this area have steadily dropped over the last few decades due to factors such as woodstove changeout programs, limitations/restrictions on open burning, and improved efficiency of vehicles over time. However, the revised 2024 annual $PM_{2.5}$ NAAQS limit of 9.0 $\mu g/m^3$ approaches background concentrations for Libby, and highlights the natural/environmental obstacles to good air quality the community contends with.

Five-Factor Analysis

Air Quality Data – Over the past nineteen years, measured $PM_{2.5}$ concentrations (with exceptional events included) at the regulatory ambient air monitor in Libby have generally decreased, with 3-year design values ranging from 10.5 $\mu g/m^3$ (2014) to 15.4 $\mu g/m^3$ (2005). A moderately increasing (but also highly variable) trend in design values over the last decade is largely attributable to the growing impact of wildfires in the Western U.S. and Canada. As illustrated in Figure 7, $PM_{2.5}$ contribution from wildfire smoke has intensified over the last two decades. When all monitor data flagged for wildfire exceptional events (those days with and without EPA concurrence) are removed, the design values since 2014 establish an average baseline of 10.5 $\mu g/m^3$.

Figure 7 – Libby 3-Year Design Value Trend With and Without Wildfire Smoke Contribution[4]



A review of historical daily average $PM_{2.5}$ concentrations measured at the Libby monitor between 2005-2023 reveals a distinct seasonal pattern (Figure 8 below). From May to October, wildfire emissions have caused historical average daily concentrations, in some cases, to exceed 25 $\mu g/m^3$, yet with wildfire exceptional event days excluded, background average

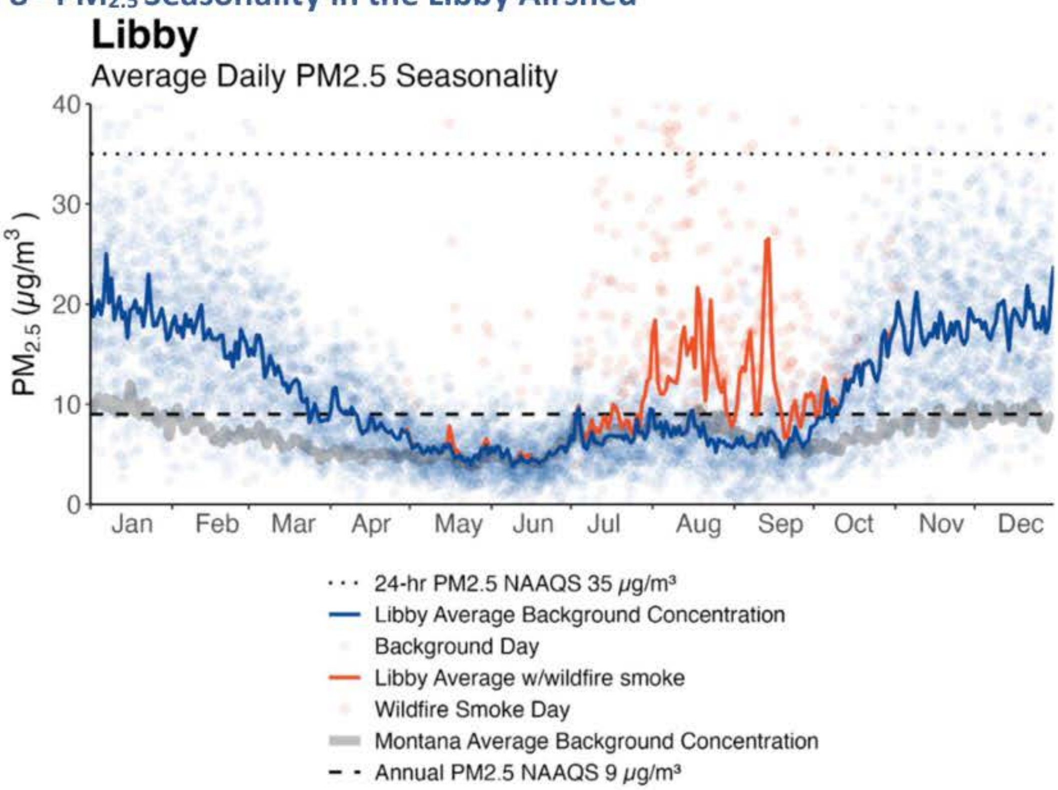
---

[4] Design values are presented as the final year of the 3-year design value period (i.e., the 2005 design value in this figure represents data for 2003-2005), so data beginning with 2003 are represented. From 2003 to August 2011, the Libby regulatory monitor (30-053-0018) data comes from 24-hour filter samples that were collected every 3 days. Continuous, regulatory, 1-hour sampling began in August 2011. The years of 2003 and 2011 only have 2 and 3 complete data quarters, respectively, though sampling was conducted in portions of all 4 quarters.

concentrations are generally between 4 and 7 µg/m^3, owing to optimal atmospheric ventilation in the summer months. Late July to mid-September is typically peak wildfire smoke season in Libby, however, the record-breaking Canadian wildfire season of 2023 caused measurable impacts at the Libby monitor in May 2023, which can also be seen in Figure 8.

While impacts from wildfire smoke can be severe at times, background (i.e., every day) $PM_{2.5}$ concentrations can also be quite high in Libby. A seasonal shift is observed beginning in October of every year. $PM_{2.5}$ concentrations typically increase steadily into November and remain elevated until March or early April when they return to typical warm season background values of ~4-7 µg/m^3. During the winter months, peak average daily $PM_{2.5}$ concentrations often exceed 20 µg/m^3. As will be discussed in detail below, seasonal temperature variability plays a major role in dictating local meteorology. The rate and source of $PM_{2.5}$ emissions also coincide with the transition into and out of winter. Most notably, the primary source of $PM_{2.5}$ in Libby is woodstove smoke which increases annually as the demand for residential heat rises with the onset of fall and winter. The beginning of the observed seasonal rise in $PM_{2.5}$ concentration also coincides with the beginning of fall open burning season (September 1 to November 30 annually) in MT, and trails off with the end of spring open burning season (March 1 annually).

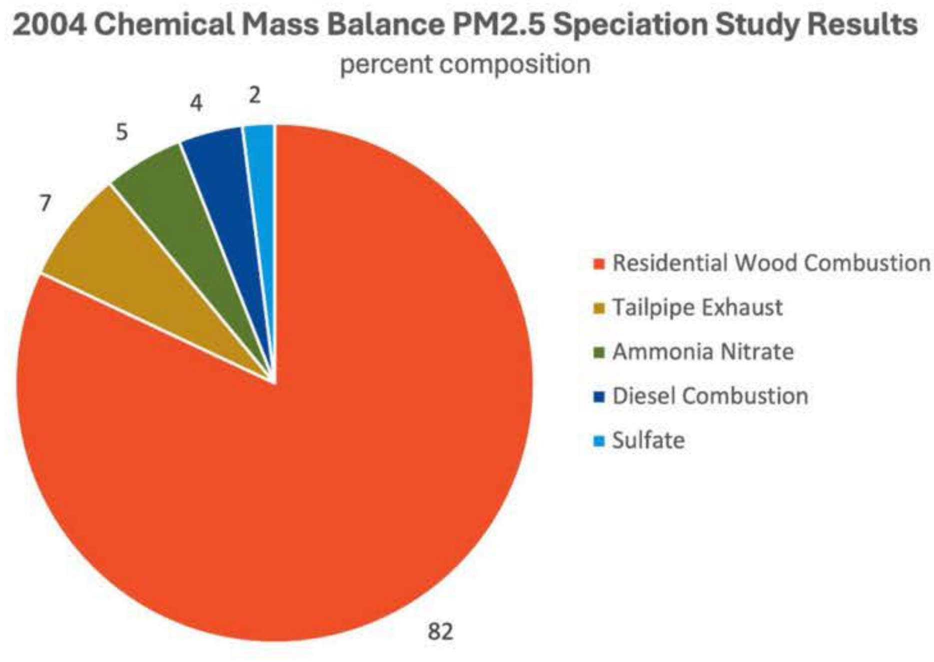
Figure 8 –$PM_{2.5}$ Seasonality in the Libby Airshed[5]



[5] Utilizes all available continuous monitoring data (24-hr bulk averages of 1-hour sampling) from the Libby monitor (AQS ID 30-053-0018) dating back to November 2005; hourly continuous sampling at Libby operated under a non-regulatory status from November 2005 to August 2011.

Emissions related data – MT DEQ investigated the composition of $PM_{2.5}$ during a previous chemical mass balance (CMB) study. The CMB study was a 4-month wintertime study conducted from November 11, 2003, through February 27, 2004, to cover a period of peak air quality concern in Libby. Additional analyses, including polar organic compounds and polycyclic aromatic hydrocarbon (PAH) analyses, and carbon 14 (14C) analyses were conducted as part of the CMB study to provide chemical fingerprinting to trace the emission sources. The CMB study identified the following emission sources as contributing to the area's $PM_{2.5}$: residential wood combustion (82%), tailpipe exhaust (7%), ammonia nitrate (5%), diesel combustion (4%), and sulfate (2%; see also Figure 9). Since this study was conducted twenty years ago, we know that tailpipe and exhaust emissions have decreased, to some extent, due to the advancements in motor vehicle technology. When compared to more current pollutant speciation data, the majority of $PM_{2.5}$ emissions in Libby still stem from residential wood smoke due to the town's propensity for atmospheric inversions and poor ventilation.

Figure 9 – Speciated $PM_{2.5}$ 2003/2004 CMB Study Results



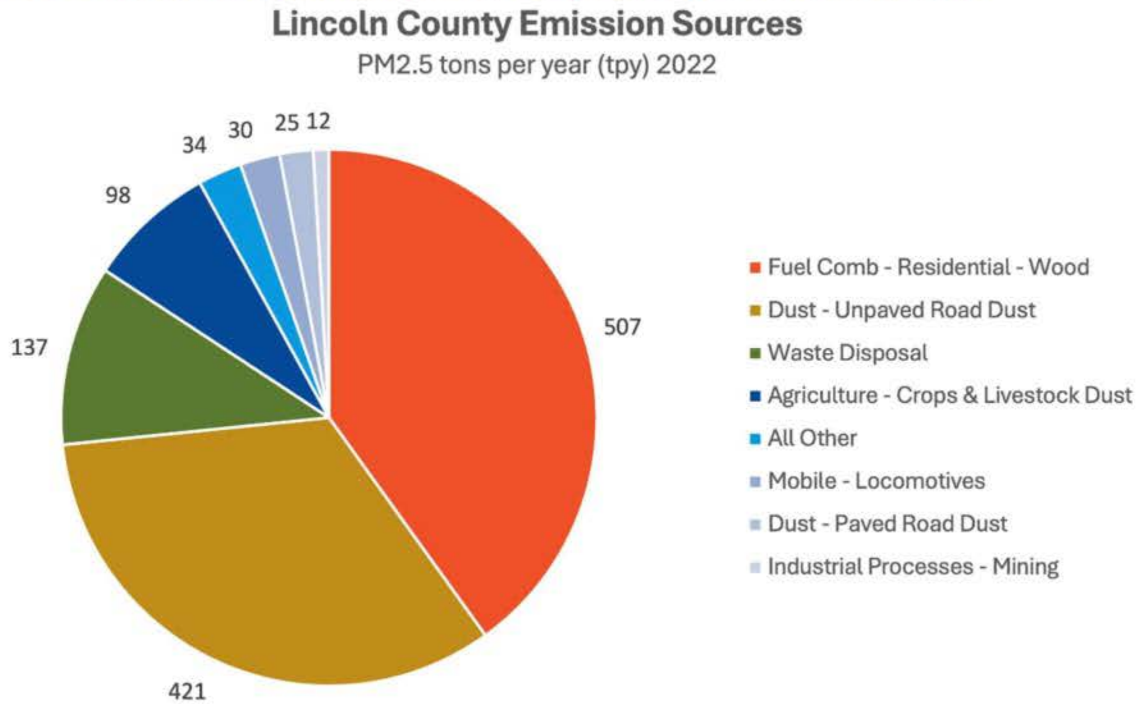
Recently, state agencies and the EPA have developed a national-scale emissions inventory that includes aggregated county-level emissions data representative of the year 2022.[6] The 2022v1 Emissions Modeling Platform (EMP) contains the most up-to-date, quality-assured emissions inventory data available for the Libby area; that data is shown below in Figure 10. Unlike the Libby CMB study that precisely identified the percent composition of $PM_{2.5}$ within the local airshed, the EMP quantifies $PM_{2.5}$ emissions by source across all of Lincoln County. Therefore, differences in the relative proportion of emission sources between the earlier CMB results and

[6] 2022v1 Emissions Modeling Platform | US EPA

the more recent EMP dataset do not necessarily reflect a change in the emission sources most impactful to Libby. However, the EMP does establish a modern baseline of county-wide emissions that, in the absence of a more recent CMB speciation study, provides an estimation of the most concerning regional $PM_{2.5}$ sources.

Based on the EMP results, the largest source of $PM_{2.5}$ emissions in Lincoln County in 2022 was residential wood combustion (507 tons per year (tpy)), which corroborates with the earlier CMB study results. The next greatest contributing source of $PM_{2.5}$ emissions was dust from unpaved roads, though it's likely that most of the 421 tpy of dust reported for Lincoln County would've been generated on rural unpaved roads outside Libby city limits. Highlighting this likelihood is the fact that the 2003/2004 CMB study did not find unpaved road dust as being a significant contributor to PM pollution in Libby at all. Of course, during the study's November to February timeline, unpaved road dust may have been seasonally less abundant due to roads being damp or snow/ice-covered. Even so, on paved roads, sand was used in tandem with snow-clearing operations during the CMB study and found to be a negligible[7] source of $PM_{2.5}$, despite being a significant contributor to Libby's PM_{10} Nonattainment Area (NAA) inventory.[8]

Figure 10 – County-Level Emissions Based on the 2022v1 EMP Results

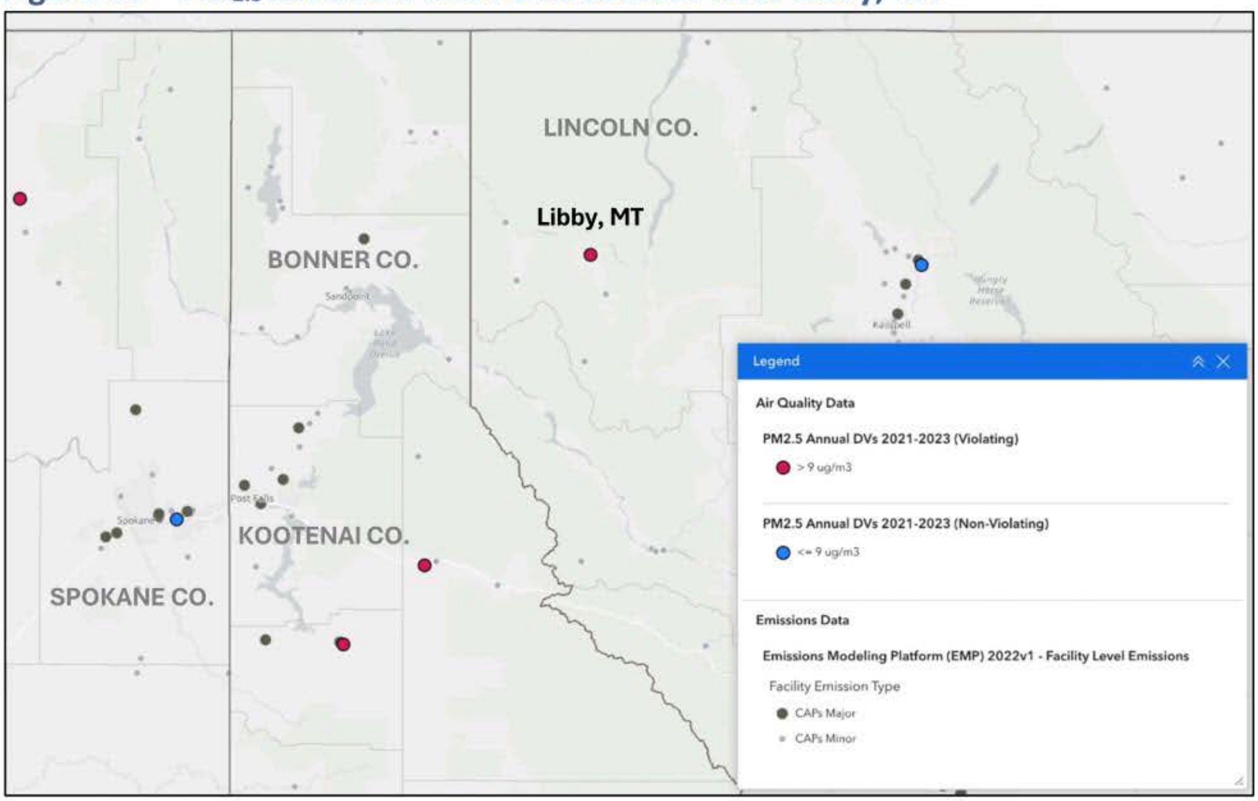


[7] Ward, T. J., Rinehart, L. R., & Lange, T. (2006). The 2003/2004 Libby, Montana PM2. 5 source apportionment research study. *Aerosol Science and Technology*, *40*(3), 166-177.
[8] 75 FR 55713

Industrial facility emissions are not included in the county-level EMP inventory because they are reported separately in the National Emissions Inventory. In many parts of the U.S., industrial point-source pollution contributes significantly to $PM_{2.5}$ concentrations measured at a monitor; this is not true for Libby. Within Lincoln County, there are no major industrial emitters, a label that applies to any facility that emits 100 tpy or more of any criteria air pollutant (CAP)[9], or 25 tpy or more of any combination of hazardous air pollutants (HAPs)[10].

There are a handful of major facilities located across state lines in Idaho's Bonner and Kootenai Counties, as well as Washington's Spokane County, that have the potential to affect Libby if the emissions are high enough, and meteorological conditions are just right (Figure 11, gray dots). However, due to the relatively low potential to emit from these sources, the overland transport distances involved, and the isolated nature of Libby's airshed, MT DEQ does not believe these facilities significantly contribute to Libby's design value for the $PM_{2.5}$ annual standard.

Figure 11 – $PM_{2.5}$ Monitors and Point Sources Near Libby, MT[11]



One way to estimate the relative impact potential of a source at a monitor is to perform a Q/d analysis where Q is emissions as tpy and d is distance in kilometers. As emissions are

---

[9] 42 USC §7602

[10] 42 USC §7412

[11] Map provided by EPA's PM2.5 Designations Mapping Tool. Available at: PM2.5 Designations Mapping Tool, US EPA, OAR, OAQPS

transported downwind, they disperse into the atmosphere and become less concentrated. Thus, either low emissions and/or greater distances result in lower Q/d values. Table 2 identifies all facilities in Lincoln (MT), Bonner (ID), Kootenai (ID), and Spokane (WA) Counties ranked from highest to lowest Q/d for direct $PM_{2.5}$ emissions. Only facilities with the top ten Q/d values are listed. Similarly, Table 3 enumerates facilities in these same counties ranked by Q/d for combined oxides of nitrogen (NO_x) and sulfur dioxide (SO_2) emissions; NO_x and SO_2 are considered precursor emissions to secondary $PM_{2.5}$ formation.

Table 2 – $PM_{2.5}$ Point Sources Near Libby, MT

EIS Facility ID	State-County	Facility Name	NAICS Description	Pollutant	Distance (km)	Distance (mi)	2022 Emissions (tons)	Q/d (tons/km)
7321511	ID-Kootenai	PLUMMER FOREST PRODUCTS, INC. - POST FALLS	Reconstituted Wood Product Manufacturing	PM25-PRI	126	79	84.70	0.67
6299311	WA-Spokane	Inland Empire Paper	Paper Mills	PM25-PRI	150	93	50.94	0.34
14495011	MT-Lincoln	SCHNACKENBERG & NELSON FUNERAL HOME	Funeral Homes and Funeral Services	PM25-PRI	0	0	0.14	0.33
6439011	WA-Spokane	Kaiser Trentwood	Aluminum Sheet, Plate, and Foil Manufacturing	PM25-PRI	146	91	33.66	0.23
9763911	ID-Kootenai	IDAHO FOREST GROUP LLC - CHILCO	Sawmills	PM25-PRI	107	66	15.15	0.14
15472711	ID-Kootenai	AVISTA CORP	Fossil Fuel Electric Power Generation	PM25-PRI	117	73	11.57	0.10
9763211	ID-Kootenai	Coeur DAlene Air Term	Airport Operations	PM25-PRI	116	72	9.04	0.08
946211	ID-Bonner	GAS TRANSMISSION NORTHWEST, LLC - COMPRESSOR STATION 04, SAMUELS	Pipeline Transportation of Natural Gas	PM25-PRI	69	43	4.72	0.07
9770511	ID-Bonner	IDAHO FOREST GROUP LLC - RILEY CREEK-LACLEDE	Sawmills	PM25-PRI	93	58	4.63	0.05
6647111	WA-Spokane	Waste To Energy	Solid Waste Combustors and Incinerators	PM25-PRI	168	105	6.90	0.04

Table 3 – $PM_{2.5}$ Precursor Emission (NO_x+SO_2) Point Sources Near Libby, MT

EIS Facility ID	State-County	Facility Name	NAICS Description	Pollutant	Distance (km)	Distance (mi)	2022 Emissions (tons)	Q/d (tons/km)
946211	ID-Bonner	GAS TRANSMISSION NORTHWEST, LLC - COMPRESSOR STATION 04, SAMUELS	Pipeline Transportation of Natural Gas	NOx+SO2	69	43	232.37	3.37
6647111	WA-Spokane	Waste To Energy	Solid Waste Combustors and Incinerators	NOx+SO2	168	105	327.53	1.95
8354611	ID-Kootenai	GAS TRANSMISSION NORTHWEST, LLC - COMPRESSOR STATION 05, ATHOL	Pipeline Transportation of Natural Gas	NOx+SO2	104	64	170.33	1.64
14472511	WA-Spokane	YARDLEY	Support Activities for Rail Transportation	NOx+SO2	155	96	149.02	0.96
9770511	ID-Bonner	IDAHO FOREST GROUP LLC - RILEY CREEK-LACLEDE	Sawmills	NOx+SO2	93	58	76.46	0.83
6439011	WA-Spokane	Kaiser Trentwood	Aluminum Sheet, Plate, and Foil Manufacturing	NOx+SO2	146	91	117.72	0.80
9029811	WA-Spokane	Spokane Intl	Airport Operations	NOx+SO2	172	107	121.20	0.71
6299311	WA-Spokane	Inland Empire Paper	Paper Mills	NOx+SO2	150	93	82.40	0.55
15472711	ID-Kootenai	AVISTA CORP	Fossil Fuel Electric Power Generation	NOx+SO2	117	73	57.55	0.49
7321511	ID-Kootenai	PLUMMER FOREST PRODUCTS, INC. - POST FALLS	Reconstituted Wood Product Manufacturing	NOx+SO2	126	79	61.68	0.49

For direct $PM_{2.5}$ emissions, all facilities have a Q/d well under 1, and precursor emission totals (NOx + SO_2) indicate that Q/d is under 4 for all facilities. Additionally, all facilities but one are ≥69 km away. For reference, Federal Land Manager (FLM) guidance presumes any facility with a Q/d ≤10 at a distance ≥50 km does not have an adverse impact on an area.[12] This guidance specifically relates to visibility impairment in Federal Class 1 parks and wilderness areas, but given that even the most significant direct emitter of $PM_{2.5}$ is less than 7% of the FLM Q/d threshold, it's clear that facility emissions in Spokane, Kootenai, and Bonner Counties are unlikely to contribute significantly to $PM_{2.5}$ concentrations measured at the Libby monitor.

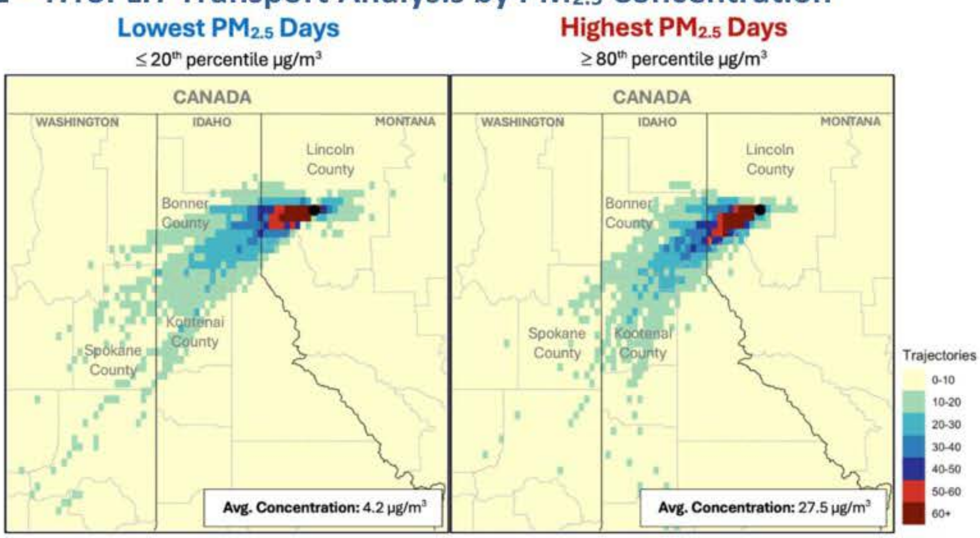
[12] U.S. Department of the Interior. (2010). *Federal Land Managers' Air Quality Related Values Work Group (FLAG) Phase 1 Report*. Available at: FLAG Air Quality Phase 1 report.pdf

Atmospheric transport analyses also suggest that Libby's violation of the 2024 annual $PM_{2.5}$ NAAQS is driven by local emissions rather than interstate transport. EPA's Office of Air Quality Planning and Standards (OAQPS) HYSPLIT[13] tool was used to create backward trajectories that represent atmospheric transport to the Libby monitor on every day of the 2021-2023 design value period. Two separate backward trajectories, one in the morning and one in the afternoon, were run for each day, for a duration of 24 hours. Initial inspection of the morning vs. afternoon transport patterns revealed no discernible difference, so trajectories were binned based on daily $PM_{2.5}$ concentration for each trajectory. Figure 12 compares atmospheric transport on the lowest 20% of $PM_{2.5}$ concentration days versus the highest 20% of $PM_{2.5}$ concentration days. Two trajectories were run per day for the highest and lowest 20% of concentration days from 2021-2023; therefore, each concentration-binned dataset is comprised of 438 individual trajectories. Trajectory density was calculated for a 1/10th-degree grid and mapped over state and county boundaries.

This analysis demonstrates there is very little difference in atmospheric transport between days with low $PM_{2.5}$ concentrations and those with high $PM_{2.5}$ concentrations. The difference in $PM_{2.5}$ concentrations was significant, 4.2 $\mu g/m^3$ vs. 27.5 $\mu g/m^3$, yet the transport pattern was the same. On both the highest and lowest $PM_{2.5}$ days, average transport was dominated by southwesterly flow and intersected Spokane, Kootenai, and Bonner Counties where most of the industrial activity in this region is concentrated.

Since transport on the best air quality days (lowest $PM_{2.5}$ concentrations) also passed over these industrial facilities during the 2021-2023 period, it can again be concluded that those facilities did not meaningfully contribute to elevated $PM_{2.5}$ concentrations at the Libby monitor.

Figure 12 – HYSPLIT Transport Analysis by $PM_{2.5}$ Concentration



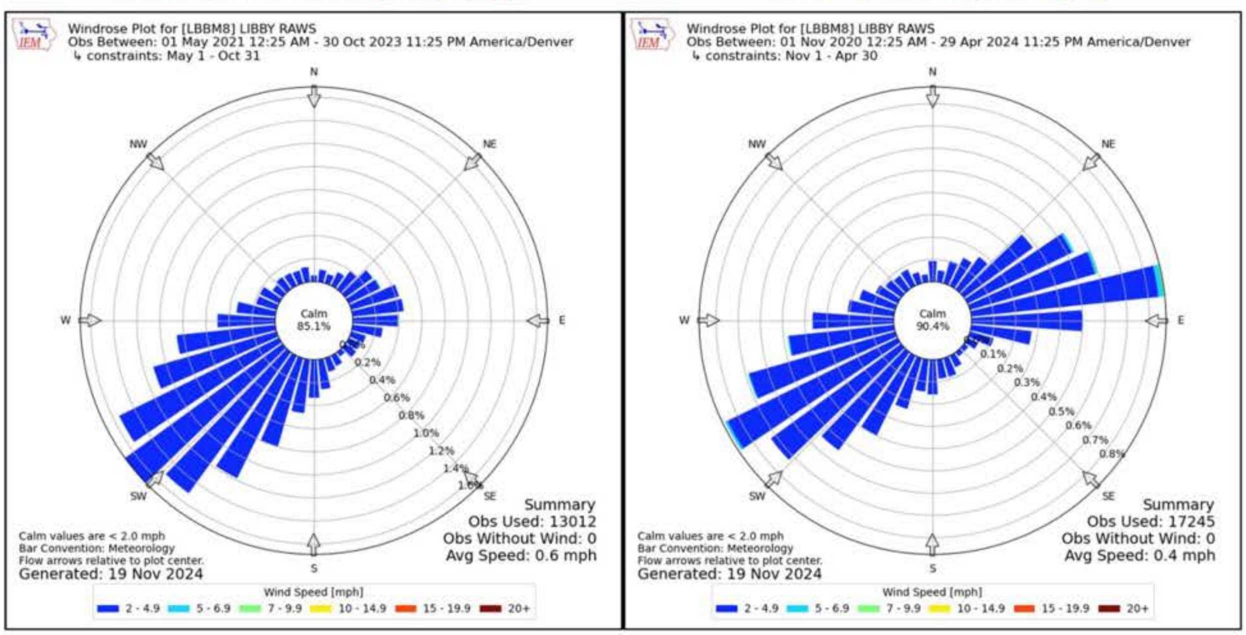
[13] NOAA's HYSPLIT (formerly Hybrid Single Particle Lagrangian Integrated Transport) model. Accessible at: https://www.arl.noaa.gov/hysplit/

Meteorology - Libby has a continental climate with warm summers and cold winters. Year-round Libby experiences very little wind because of its protected location surrounded by steep mountainous topography. In the winter months, between 2021 and 2023, winds were calm in Libby over 90% of the time. Colder air is denser and heavier than warmer air and it pools in the Libby Valley bottom, creating layers of stable air known as temperature inversions. As a result, smoke from residential heating by woodstoves and, $PM_{2.5}$ from other sources, often become trapped in Libby for consecutive days, and even weeks, at a time. The combination of suppressed winter atmospheric ventilation and increased $PM_{2.5}$ contributions from woodstove smoke often creates poor seasonal air quality conditions in the Libby Valley.

Like the HYSPLIT transport results discussed above, seasonal wind data from the U.S. Forest Service Remote Automated Weather Station (RAWS, National Weather Service ID: LBBM8), 2021-2023 reveals little variability across the year (Figure 13). During wildfire season, typically May through October annually, prevailing wind direction in Libby was southwesterly, and rarely, if ever, reached five miles per hour. Even during the warmest months of the year, winds were calm 85% of the time. Cool season (November through April) winds were still largely southwesterly, but east- to northeasterly winds were slightly more prevalent. Given that calm winds were measured 90% of the time during the cooler season, and wind speeds never reached seven miles per hour, a seasonal difference in winds is not significant.

Figure 13 – Libby, MT 2021-2023 Seasonal Wind Patterns[14]

WILDFIRE SEASON (May-Oct) **COOL SEASON (Nov-Apr)**



---

[14] Data and figures provided by Iowa State University's Iowa Environmental Mesonet (IEM). Accessible at: https://mesonet.agron.iastate.edu/sites/locate.php?network=MT_DCP

The seasonal covariance between mixing height and $PM_{2.5}$ concentrations at Libby is significant, which underscores how local airshed meteorology dominantly influences particulate emissions compared to regional meteorology, as shown in Figure 14 below. Mixing height is defined as the "thickness" of the air above ground level that is mixed by buoyant turbulence caused by solar heating of the surface of the earth. As the ground absorbs solar radiation, air near the surface warms, causing it to become less dense relative to the cooler air above it. The warmer, less dense air rises, while cool dense air sinks to replace it, and in turn, the cooler air also begins to warm creating convective motion of air. Throughout the day, surface and atmospheric heat builds, and the buoyant mixing process gradually elevates the mixing height to its peak level in the mid-afternoon. When the sun begins to set, and surface heating deceases, atmospheric mixing also shuts down, resulting in a very stable (laminar) boundary layer with mixing heights often only a few hundred feet above ground level.

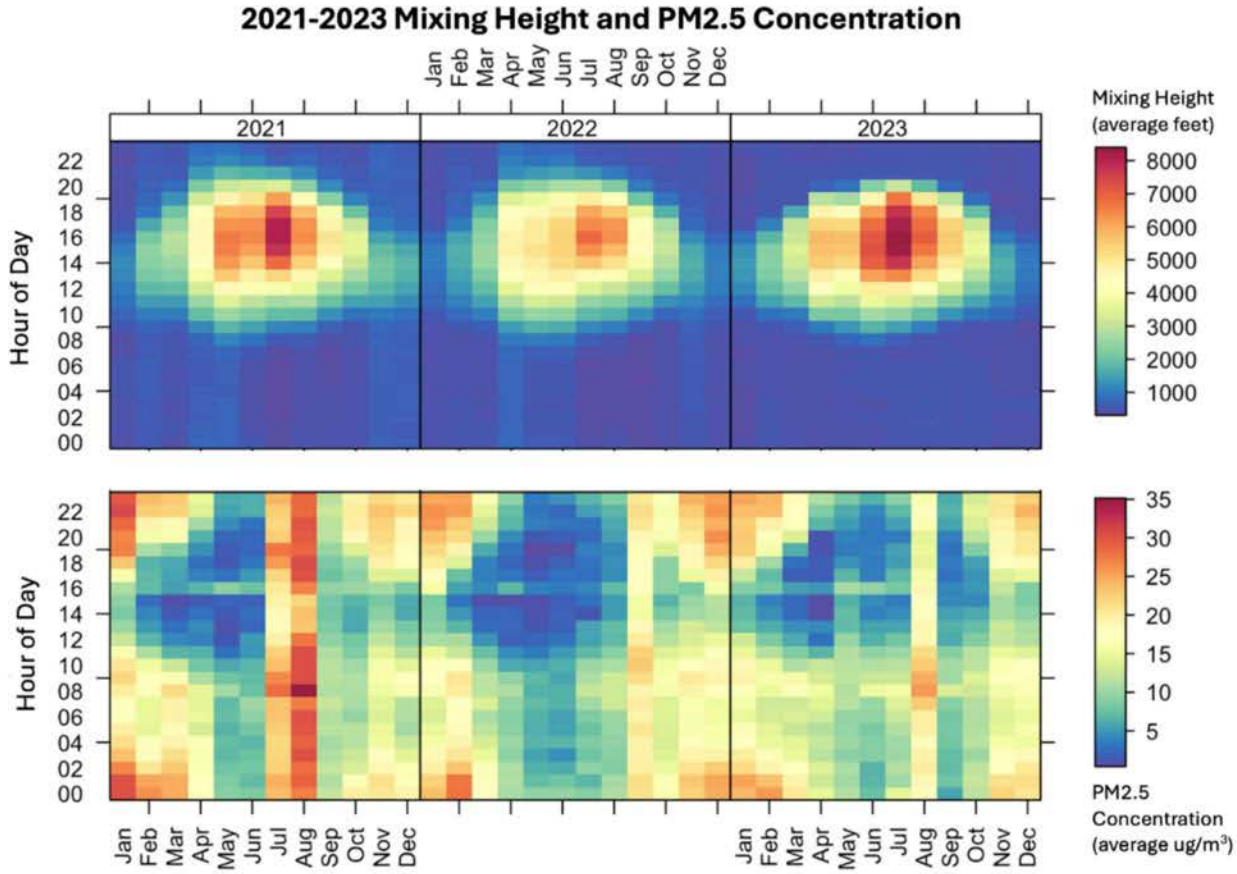
This diurnal mixing pattern is critically important for dispersing ambient pollutants in complex terrain such as that surrounding Libby. When mixing heights are low at night, particulates emitted at the surface (e.g., residential wood smoke) into the boundary layer remain trapped until mixing heights rise again and convective turnover in the atmosphere allows pollutants to disperse and be transported away from their sources. In Libby, however, mixing heights only consistently reach heights above the surrounding terrain seasonally between the months of May and October. While nighttime mixing heights are relatively consistent across the year, daytime mixing heights exhibit extreme seasonal variability.

Figure 14 (below) demonstrates the relationship between mixing height and $PM_{2.5}$ concentrations, highlighting the significance and interplay of both diurnal and seasonal factors. The top pane represents mixing height in feet above ground level (AGL), and the bottom pane represents average $PM_{2.5}$ concentrations in $\mu g/m^3$. The mixing height and concentration data are mapped as a grid, such that the x-axis represents both the months and the years of 2021-2023, and the y-axis for each variable represents the hour of the day (hours 00-24).

During the winter months, mixing heights remain below ~1,000-2,000 feet across all hours of the day in Libby, but as winter transitions into spring and summer, peak average mixing height increases to over 7,000 feet around 4pm (hour 16) daily. The average $PM_{2.5}$ concentration (bottom pane) exhibits an inverse relationship to mixing height. When the mixing height is high, $PM_{2.5}$ is low, and vice versa. From November through March of each year, nighttime $PM_{2.5}$ concentrations often averaged more than 20 $\mu g/m^3$. Not only is the meteorology during this time of year the *least* favorable for dispersing (diluting) pollution, but it's also the time of year when residential wood combustion is at its highest. The combination of these factors creates an air quality problem unique to this small rural mountain valley community.

The only inconsistencies in the inverse relationship noted above occurred primarily in July-August 2021, September 2022, and August 2023. In each case, these were the months of peak wildfire smoke transport to the Libby Valley.

Figure 14 – Libby Airshed Mixing Height and $PM_{2.5}$ Diurnal Trends[15,16]



Geography - In Montana, there are two major air basins, in a general sense. The eastern two-thirds of the state is characterized by semi-arid rolling prairies with little vertical relief. In contrast, the physical geography of the western side of the state, where Libby is located, is dominated by deep mountainous valleys punctuated by steep mountainous terrain that greatly affects the transport and concentrations of ambient $PM_{2.5}$, as described above.

Topography – The mountains around Libby have a history of influencing the fate of transport emissions and $PM_{2.5}$ concentrations, causing local air stagnation episodes. The Libby Valley floor sits at an elevation of 2,069 feet along the Kootenai River, which represents a low point in the state of Montana. Surrounded by smaller valleys to the west, south, and east, Libby's airshed is confined by mountain features in all directions. Most notably, the Cabinet Mountain Range is located just a few miles southwest of Libby and reaches an elevation of 8,738' at Snowshoe Peak (13 miles southwest). Additionally, the Purcell Mountains to the north rise to 6,000 feet,

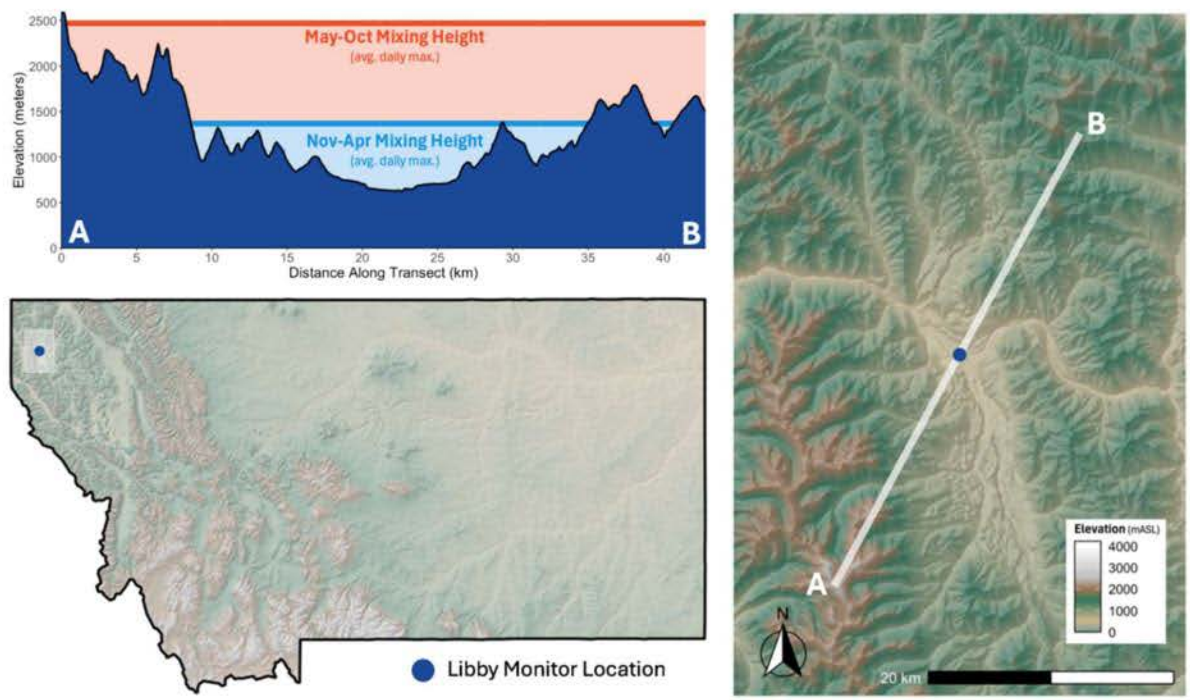
[15] Mixing height data provided by the National Blend of Models (NBM) archived data. Data represents modeled mixing height at point LBBM8 (USFS Libby RAWS). Data available at: https://noaa-nbm-grib2-pds.s3.amazonaws.com/index.html

[16] $PM_{2.5}$ data accessed via EPA's Air Quality System (AQS).

and the Salish Mountains to the east extend to 6,000 feet. These steep valley walls limit and channel air flows. During predominant calm wind conditions, temperature inversions easily develop, trapping cold air and pollution at the valley floor. This confined airshed limits $PM_{2.5}$ dispersion because it's susceptible to diurnal inversions and poor ventilation under high-pressure atmospheric ridge patterns. Given these unique topographic characteristics, pollution in the Libby area can more easily accumulate, leading to extended periods of elevated $PM_{2.5}$.

Figure 15 provides a comparison of average daily maximum mixing heights along a cross-section of the Libby Valley. This example demonstrates how dramatically the Libby airshed physically shrinks during the cold season. From November through April 2021-2023, the average daily maximum mixing height in Libby was only 2,420 feet AGL (738 mAGL), but during the months of May to October, the average daily maximum mixing height increased to 6,035 feet AGL (1,839 mAGL).[17] The figure below necessarily simplifies mixing height as a straight horizontal line. In reality, mixing height is a complex metric that contours a 3-dimensional landscape. This simplified example is provided to illustrate the strength of the seasonal effect on mixing heights and the degree to which surrounding terrain can confine air and pollutants within the Libby Valley.

Figure 15 – Mixing Heights, Topography and Geography of Libby, MT



[17] Libby sits at an elevation of 2,070 ft AGL or 631 mAGL

Figure 16 depicts what MT DEQ considers the Libby Valley "major impact area" (red), which includes the valley floor up to 3,000 feet of elevation. 3,000 feet elevation is a significant margin because pollution under that threshold can become more easily trapped on the valley floor, especially in wintertime due to inversions. In fact, the November-April seasonal average mixing height is nearly identical to the 3,000 feet isoline, sitting at 3,084 feet of elevation (1,014 feet AGL). Times of the year when poor dispersion is anticipated, like shoulder seasons and winter, MT DEQ places restrictions on open burning below 2,500 feet elevation in the Libby area to limit accumulation of $PM_{2.5}$ emissions in the boundary layer. The areas surrounding Libby above 3,000 ft (the portion in Figure 16 not highlighted) have much better atmospheric mixing and are in turn less prone to inversions, and experience much less impact from woodstove smoke and other emissions. Emissions injected at higher heights will also remain above the stable boundary layer, not ever reaching the populated valley bottom.

Figure 16 – Libby Valley Highlighted to 3,000 Feet of Elevation

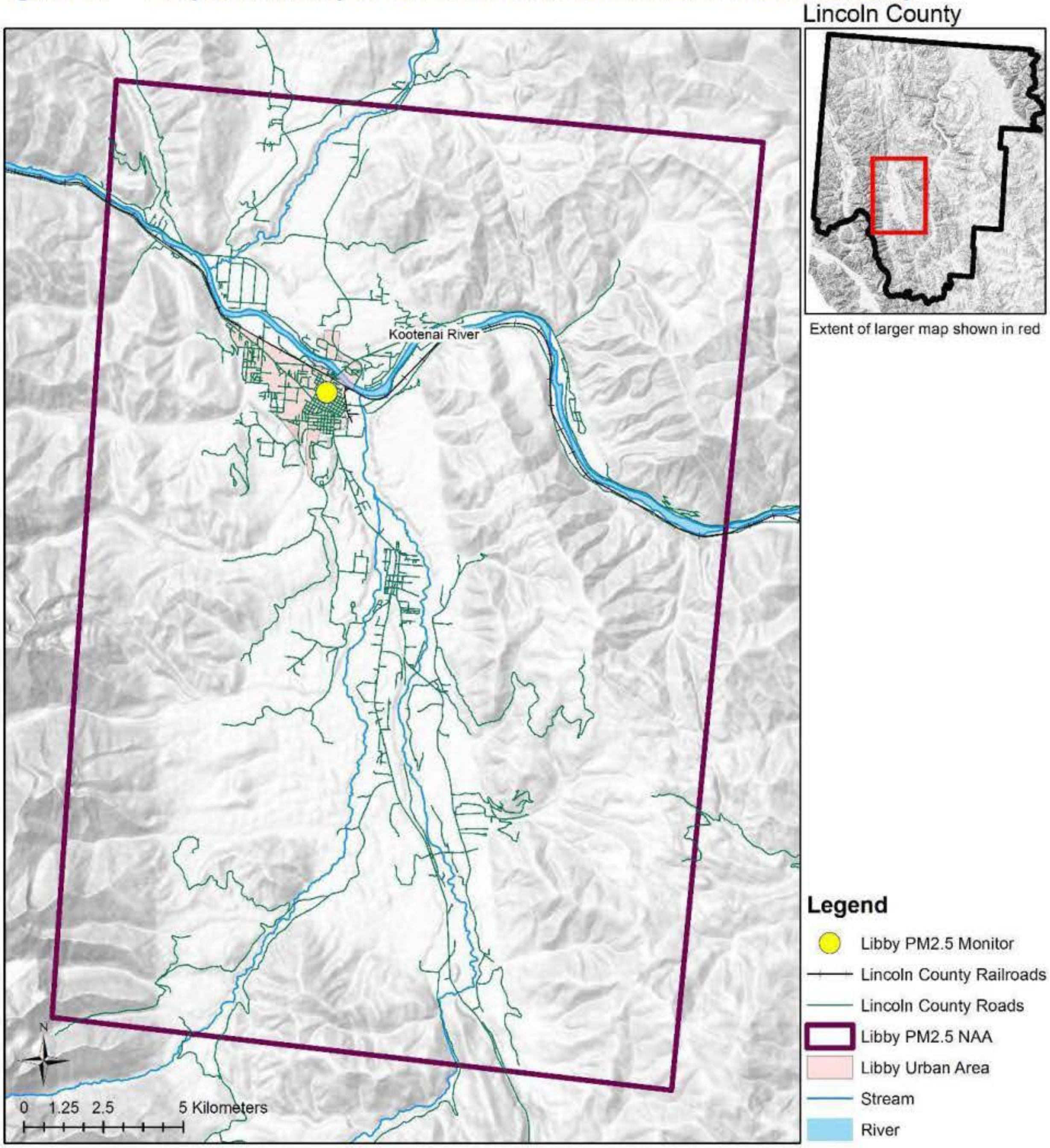
Figure 16 provides an important comparison to the previous/historical Libby $PM_{2.5}$ nonattainment area boundary (Figure 17). The primary impact zone defined in this document (i.e., the area under 3,000 feet elevation that is prone to elevated $PM_{2.5}$ concentrations) is contained nearly perfectly within the previous Libby nonattainment boundary.

As the impacted area identified through the current, independent, five-factor analysis process aligns with the extent of the previous Libby nonattainment area, MT DEQ proposes utilizing the earlier established boundaries to define the new nonattainment area for the 2024 revised $PM_{2.5}$ annual NAAQS.

Boundaries – Figure 17 (below) shows the proposed nonattainment area boundary which encompasses the commercial and residential neighborhoods of Libby, including nearby communities that extend along the valley floor, and much of the neighboring mountainsides. MT DEQ proposes to adopt this boundary that has historical precedent and properly represents the impacted area. The Libby $PM_{2.5}$ nonattainment area boundary MT DEQ proposes, based on the evidence provided, is rectangularly shaped and based on the Universal Transverse Mercator (UTM) system. The coordinate corners of this nonattainment polygon are:

- 600,000mE, 5,370,000mN;
- 620,000mE, 5370,000mN;
- 620,000mE, 5340,000mN; and
- 600,000mE, 5,340,000mN.

Figure 17 – Proposed Libby 2024 $PM_{2.5}$ Nonattainment Area Boundary



V. Conclusion

Through the continued implementation of a robust $PM_{2.5}$ ambient air quality monitoring network, and the five-factor analysis process with supporting evidence provided in this document, the State of Montana has determined that an initial designation of “attainment” is appropriate for the following nine counties: Silver Bow, Flathead, Missoula, Ravalli, Lewis and Clark, Custer, Richland, Yellowstone, and Fergus. The only area to be designated “nonattainment” in the state is the Libby Valley, which resides within Lincoln County. The remaining forty-six Montana counties should initially be designated as “unclassifiable” for the 2024 revised annual $PM_{2.5}$ NAAQS.

ROY COOPER
Governor
MARY PENNY KELLEY
Secretary
MICHAEL ABRACZINSKAS
Director

NORTH CAROLINA
Environmental Quality

December 23, 2024

Jeaneanne Gettle, Acting Regional Administrator
USEPA Region 4
Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303-8960

Subject: North Carolina's Recommendations for Air Quality Designations for the 2024 Revised Primary Annual Fine Particle Standard

Dear Ms. Gettle:

I am writing on behalf of Governor Roy Cooper to recommend air quality designation status and related boundaries of areas in North Carolina for the primary annual fine particulate matter ($PM_{2.5}$) national ambient air quality standard (NAAQS), pursuant to Section 107(d)(1)(A) of the Clean Air Act (CAA), as amended. In this letter I summarize the status of North Carolina's $PM_{2.5}$ air quality relative to the revised standard, the Exceptional Events demonstration being prepared to support an attainment designation for two monitors, public engagement efforts, and my conclusions and recommendations.

North Carolina is committed to protecting the health of our citizens and solving our air quality problems. We believe that improving our air quality is critical to the health of our citizens and to our future growth, prosperity and quality of life. We look forward to a continued dialogue with you and your staff as we work together to implement the 2024 $PM_{2.5}$ NAAQS.

Status of North Carolina's $PM_{2.5}$ Air Quality Relative to the Revised Standard

On February 7, 2024, the United States Environmental Protection Agency (EPA) promulgated a revised primary annual $PM_{2.5}$ NAAQS (89 FR 16202). The EPA strengthened the primary annual $PM_{2.5}$ standard from 12.0 micrograms per cubic meter ($\mu g/m^3$) to 9.0 $\mu g/m^3$; while retaining the existing 24-hour coarse particle (PM_{10}) standard at 150 $\mu g/m^3$; the existing 24-hour $PM_{2.5}$ standard at 35 $\mu g/m^3$; and the current suite of secondary particulate matter (PM) standards. The CAA Section 107(d)(1)(A) requires states to submit area designation recommendations to EPA no later than 1 year after the promulgation of a new or revised NAAQS. The EPA has recommended that states base its boundary recommendations for the revised annual $PM_{2.5}$ standard using air quality data from the three most recent years of certified monitoring data (2021-2023).[1]

[1] Memorandum from Goffman, Joseph, Assistant Administrator, to Regional Administrators, Regions 1-10, Initial Area Designations for the 2024 Revised Primary Annual Fine Particle National Ambient Air Quality Standard, February 7, 2024, https://www.epa.gov/system/files/documents/2024-02/pm-naaqs-designations-memo_2.7.2024-_-jg-signed.pdf.

North Carolina operates a robust PM monitoring network with years of measurement, quality-assurance, and data analysis experience. Figure 1 shows the design values (based on the certified 2021-2023 ambient monitoring data) for regulatory monitors in North Carolina. As shown in Figure 1, all monitors in North Carolina are below the annual $PM_{2.5}$ NAAQS except for the Remount Road monitor (371190045) in Mecklenburg County and Lexington Water Tower monitor (370570002) in Davidson County which each have a rounded design value of 9.2 $\mu g/m^3$. The North Carolina Division of Air Quality (DAQ) reviewed the monitoring data and determined that Canadian wildfire smoke-laden air masses significantly increased $PM_{2.5}$ concentrations measured by these two monitors during four multi-day events in June and July of 2023. These events were significant enough to increase the three-year average design value for each of the two $PM_{2.5}$ monitors to slightly above the revised standard.

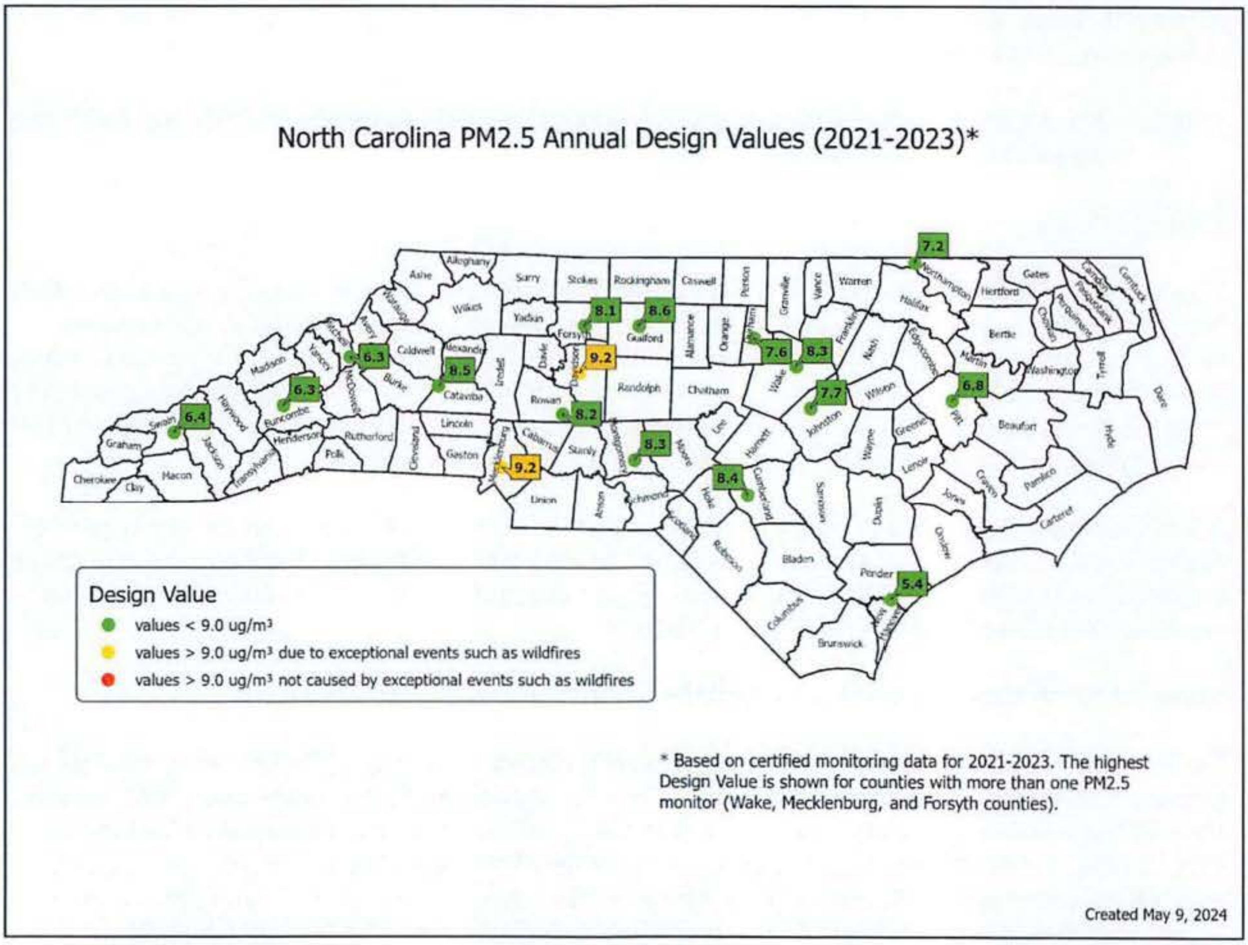


Figure 1. Map of North Carolina $PM_{2.5}$ Monitors and 2021-2023 Design Values ($\mu g/m^3$)

Exceptional Events Demonstration for Mecklenburg and Davidson County $PM_{2.5}$ Monitors

The DAQ initiated communication with EPA Region 4's exceptional events staff in July 2024 to present the current status, analyses, and strategy for requesting data exclusion for the Mecklenburg and Davidson County $PM_{2.5}$ monitors. Based on guidance from EPA Region 4 staff, on September 11, 2024, the DAQ prepared and submitted to EPA an "*Initial Notification of Potential Exceptional Event Submission for the*

Revised Primary Annual $PM_{2.5}$ National Ambient Air Quality Standard (NAAQS)." On November 1, 2024, EPA Region 4 staff responded via email to the initial notification submittal confirming that the initial notification meets the requirements of 40 CFR 50.14(c)(2)(i) and it is appropriate for the DAQ to submit a full Exceptional Events demonstration.

In accordance with EPA's Exceptional Events Rule (40 CFR 50.14(c)(3)), the DAQ is finalizing an Exceptional Events demonstration that shows that Canadian wildfire smoke significantly increased $PM_{2.5}$ concentrations on certain days in June and July 2023 and that if it were not for these exceptional events, the design value for the two monitors would be below the revised standard.[2] The DAQ posted the Exceptional Events demonstration for a 30-day comment period and will finalize and submit the document by February 7, 2025.

$PM_{2.5}$ Monitoring Network

The DAQ has reviewed North Carolina's $PM_{2.5}$ monitoring network and determined that the network complies with the requirements for measuring compliance with the revised standard.[3] The DAQ and local air program agencies will address future changes to the monitoring network by revising the Annual Network Plan in accordance with EPA monitoring network rules and quality assurance/quality control procedures. In addition, long-term changes to the network will be proposed through the Five-Year Network Assessment to evaluate projected needs of the ambient air monitoring program. Both the Annual Network Plan and Five-Year Network Assessment are issued for public comment and public comments received are addressed in the final submittals of these work products to EPA.

Public Engagement

Beginning in summer 2024, the DAQ engaged in a variety of stakeholder outreach through information sessions, online resources, virtual and in-person presentations, and community events especially targeting Mecklenburg and Davidson counties. The DAQ helped stakeholders learn about DAQ's ongoing work related to $PM_{2.5}$ and the revised standard and understand how to better protect their health by using the Division's air quality forecasts and resources. The DAQ also met and partnered with health groups, environmental groups, and local governments to further share $PM_{2.5}$-related information with residents. In addition, the DAQ is engaging with the state's forest and wildland managers to coordinate smoke management planning to minimize impacts on local communities and impacts on air quality.

The DAQ has been committed to being transparent with the public regarding the use of the Exceptional Events Rule and informing and engaging with stakeholders during the attainment designation process. For example, the Department's Environmental Justice team developed an Environmental Justice Impact Analysis that assessed the exposure and health outcomes for communities in proximity to $PM_{2.5}$ monitoring stations that are above the revised standard due to exceptional events. Based on the findings of this Environmental Justice analysis, the DAQ made informational resources available in Spanish, provided a statewide virtual event in English and Spanish, and conducted targeted outreach during the

---

[2] During June and July 2023, Canadian wildfire smoke also contributed to elevated design values for many other monitors in North Carolina; however, the design values are below the revised NAAQS and therefore not eligible for inclusion in an Exceptional Events demonstration at this time.

[3] The local air program agencies include the Forsyth County Office of Environmental Assistance and Protection, Mecklenburg County Air Quality, and Asheville-Buncombe Air Quality Agency (Buncombe County). The current 2024-2024 Annual Monitoring Network Plans and the 2020 Five-Year Network Assessment are available on the DAQ website at: https://www.deq.nc.gov/about/divisions/air-quality/air-quality-monitoring/annual-network-plan.

public comment period for the Exceptional Events demonstration. This Environmental Justice analysis was guided by EPA's *Final Regulatory Impact Analysis for the Reconsideration of the National Ambient Air Quality Standards for Particulate Matter.*[4] The DAQ plans continued outreach to communities to help them learn more about air quality and what steps they can take to better protect their health.

Conclusions and Recommendations

It is North Carolina's recommendation that, because there is no evidence of violations other than those monitors impacted by the 2023 Canadian wildfires, all counties in North Carolina be designated as "attainment" for the revised primary annual $PM_{2.5}$ standard, as listed in Table 1. Based on the technical analyses presented in the Exceptional Events demonstration that the DAQ will submit to EPA by February 7, 2025, the DAQ is requesting that EPA approve the Exceptional Event demonstration and exclude the days documented as highly impacted by Canadian wildfire smoke from the design value for the Mecklenburg and Davidson county $PM_{2.5}$ monitors to show attainment of the revised primary annual $PM_{2.5}$ standard. The EPA's approval of the Exceptional Event demonstration would support an attainment designation for the Mecklenburg and Davidson county $PM_{2.5}$ monitors.

If you should have any questions, please contact Randy Strait of my staff at (919) 707-8721 or randy.strait@deq.nc.gov.

Sincerely,

Mary Penny Kelley

Mary Penny Kelley
Secretary, NCDEQ

MAA/rps

cc: Sushma Masemore, NCDEQ
Michael A. Abraczinskas, NCDAQ
Denisse Diaz, USEPA
Lynorae Benjamin, USEPA
Jane Spann, USEPA
Weston Freund, USEPA
Simone Jarvis, USEPA
Katy Lusky, USEPA
Darren Palmer, USEPA
Rick Gillam, USEPA
Taylor Hartsfield, DAQ
Randy Strait, DAQ
Tammy Manning, DAQ
Jonathan Navarro, DAQ
Jordan Root, DAQ
Sara Kreuser, DAQ
Bradley McLamb, DAQ
Davis Murphy, DAQ
Patrick Butler, DAQ
Jeremy Pope, DAQ
Melinda Wolanin, DAQ
William Barnette, Forsyth County Office of Environmental Assistance and Protection
Ashley Featherstone, Asheville-Buncombe Air Quality Agency
Leslie Rhodes, Mecklenburg County Air Quality Agency

[4] EJ 2020 Glossary. Environmental Protection Agency (EPA). https://www.epa.gov/environmentaljustice/ej-2020-glossary.

Table 1. North Carolina Designation Recommendations for 2024 Primary Annual $PM_{2.5}$ National Ambient Air Quality Standard

Designated Area	Recommended Designation Status
Alamance County	Attainment
Alexander County	Attainment
Alleghany County	Attainment
Anson County	Attainment
Ashe County	Attainment
Avery County	Attainment
Beaufort County	Attainment
Bertie County	Attainment
Bladen County	Attainment
Brunswick County	Attainment
Buncombe County	Attainment
Burke County	Attainment
Cabarrus County	Attainment
Caldwell County	Attainment
Camden County	Attainment
Carteret County	Attainment
Caswell County	Attainment
Catawba County	Attainment
Chatham County	Attainment
Cherokee County	Attainment
Chowan County	Attainment
Clay County	Attainment
Cleveland County	Attainment
Columbus County	Attainment
Craven County	Attainment
Cumberland County	Attainment
Currituck County	Attainment
Dare County	Attainment
Davidson County	Attainment
Davie County	Attainment
Duplin County	Attainment
Durham County	Attainment
Edgecombe County	Attainment
Forsyth County	Attainment

Designated Area	Recommended Designation Status
Franklin County	Attainment
Gaston County	Attainment
Gates County	Attainment
Graham County	Attainment
Granville County	Attainment
Greene County	Attainment
Guilford County	Attainment
Halifax County	Attainment
Harnett County	Attainment
Haywood County	Attainment
Henderson County	Attainment
Hertford County	Attainment
Hoke County	Attainment
Hyde County	Attainment
Iredell County	Attainment
Jackson County	Attainment
Johnston County	Attainment
Jones County	Attainment
Lee County	Attainment
Lenoir County	Attainment
Lincoln County	Attainment
Macon County	Attainment
Madison County	Attainment
Martin County	Attainment
McDowell County	Attainment
Mecklenburg County	Attainment
Mitchell County	Attainment
Montgomery County	Attainment
Moore County	Attainment
Nash County	Attainment
New Hanover County	Attainment
Northampton County	Attainment
Onslow County	Attainment
Orange County	Attainment
Pamlico County	Attainment
Pasquotank County	Attainment

Designated Area	Recommended Designation Status
Pender County	Attainment
Perquimans County	Attainment
Person County	Attainment
Pitt County	Attainment
Polk County	Attainment
Randolph County	Attainment
Richmond County	Attainment
Robeson County	Attainment
Rockingham County	Attainment
Rowan County	Attainment
Rutherford County	Attainment
Sampson County	Attainment
Scotland County	Attainment
Stanly County	Attainment
Stokes County	Attainment
Surry County	Attainment
Swain County	Attainment
Transylvania County	Attainment
Tyrrell County	Attainment
Union County	Attainment
Vance County	Attainment
Wake County	Attainment
Warren County	Attainment
Washington County	Attainment
Watauga County	Attainment
Wayne County	Attainment
Wilkes County	Attainment
Wilson County	Attainment
Yadkin County	Attainment
Yancey County	Attainment

NORTH
Dakota
Be Legendary.

Office of the Governor

GOVERNOR KELLY ARMSTRONG

February 7, 2025

Regional Administrator
U.S. EPA, Region 8
1595 Wynkoop Street
Denver, CO 80202-1129

RE: North Dakota Initial Designation Recommendation for the 2024 Revised Primary Annual $PM_{2.5}$ National Ambient Air Quality Standard

Dear Regional Administrator,

On February 7, 2024, the United States Environmental Protection Agency (EPA) promulgated a revised primary annual $PM_{2.5}$ National Ambient Air Quality Standard (NAAQS), established at 9.0 $\mu g/m^3$. As set forth in the final rule, EPA requested that States submit an initial $PM_{2.5}$ designation recommendation to the EPA no later than February 7, 2025.

The North Dakota Department of Environmental Quality (NDDEQ) operates an extensive ambient air quality monitoring network with sites located across the State. Data collected from the North Dakota monitoring network forms the foundation for this recommendation. The NDDEQ has verified and entered the monitoring data into the EPA's Air Quality System (AQS) and has determined the monitoring data to be complete. NDDEQ notes that, despite receiving EPA's approval as a Federal Equivalent Method (FEM), the Teledyne T640/T640X continuous monitors consistently measure $PM_{2.5}$ levels approximately 20% higher than collocated filter-based Federal Reference Method (FRM) monitors. EPA has been made aware of this problem by several states. The enclosure provides additional information.

As set forth by EPA, the State of North Dakota's initial designation recommendation is based on data from 2021-2023, the three most recent years of available monitoring data. The EPA final designation decisions are expected to be based on 2022-2024 monitoring data. In addition to the high FEM monitor bias, the three-year design values relied upon for the State initial designation recommendations and EPA final designation decisions are significantly increased due to unusually high periods of wildfire smoke in 2021, 2023, and 2024. The wildfire smoke was outside the regulatory control and jurisdictional borders of the NDDEQ. The wildfire smoke impacts paired with the revised primary annual $PM_{2.5}$ NAAQS, required increased workload for the State of North Dakota to prepare Exceptional Event Demonstrations for 2023 and 2024. Exceptional Event data was submitted to EPA for concurrence which identified $PM_{2.5}$ monitored concentrations impacted by an Exceptional Event and with concurrence are excluded from the data record and EPA final designation decisions. The enclosures provide additional information regarding monitoring data that was influenced by wildfire smoke as well as the 2021-2023 annual design values with and without wildfire smoke events.

Based on extensive review of the 2021-2023 monitoring data as well as the additional information regarding 2021 wildfire smoke impacted monitoring data and with requested EPA concurrence on all 2023 Exceptional Event impacted monitoring data, it is recommended that the entire State of North Dakota be designated as attainment for the revised primary annual 2024 $PM_{2.5}$ National Ambient Air Quality Standard.

If you have any questions, please contact Jim Semerad or David Stroh with the Division of Air Quality within the NDDEQ at (701) 328-5188.

Sincerely,

Kelly Armstrong
Governor

C: L. David Glatt, Director, NDDEQ
Jim Semerad, Director, NDDEQ Division of Air Quality
Director, U.S. EPA Region 8 Air and Radiation Program

Enc.

Enclosures for North Dakota Initial Designation Recommendation
2024 Revised Primary Annual $PM_{2.5}$ National Ambient Air Quality Standard

$PM_{2.5}$ Annual Mean Concentrations

$PM_{2.5}$ Annual Design Values

$PM_{2.5}$ T640/T640X Federal Equivalent Method Monitor Data

Canadian Wildfire Smoke Particulate Matter Exceptional Event Demonstration – North Dakota – May-September 2023

Wildfire Smoke Particulate Matter Exceptional Event Demonstration – North Dakota –2024

2021 Wildfire Smoke Impacted $PM_{2.5}$ Monitoring Data

$PM_{2.5}$ Annual Mean Concentrations

Monitor	County	$PM_{2.5}$ Annual Mean* $\mu g/m^3$		
		2021	2022	2023
Painted Canyon (TRNP-SU)	Billings	5.42	5.53	7.37
Lostwood NWR	Burke	6.96	5.37	10.53
Bismarck Residential	Burleigh	8.68	6.98	10.75
Fargo NW	Cass	9.83	6.45	11.37
Lake Ilo NWR	Dunn	7.18	4.83	9.26
TRNP-NU	McKenzie	6.91	4.34	7.71
Beulah North	Mercer	6.95	4.60	8.31
Hannover	Oliver	8.18	6.40	9.42
Ryder	Ward	7.65	4.88	9.22

* Wildfire Smoke Events Included

$PM_{2.5}$ Annual Design Values

Monitor	County	2021-2023 $PM_{2.5}$ Annual Design Value $\mu g/m^3$		
		Wildfire Smoke Events		
		Included	2023 Excluded	2021 & 2023 Excluded
Painted Canyon (TRNP-SU)	Billings	6.1	5.5	5.4
Lostwood NWR	Burke	7.6	6.4	6.0
Bismarck Residential	Burleigh	8.8	7.8	7.3
Fargo NW	Cass	9.2	8.5	7.7
Lake Ilo NWR	Dunn	7.1	6.1	5.7
TRNP-NU	McKenzie	6.3	5.5	5.2
Beulah North	Mercer	6.6	5.9	5.6
Hannover	Oliver	8.0	7.0	6.5
Ryder	Ward	7.3	6.2	5.7

$PM_{2.5}$ T640/T640X Federal Equivalent Method Monitor Data

A technical problem is that, despite receiving EPA's approval as a FEM, the Teledyne T640/T640X continuous monitors consistently measure $PM_{2.5}$ levels approximately 20% higher than collocated filter-based FRM monitors.[1]

In the 2023 Annual Ambient Air Monitoring Data Certification letter[2] to U.S. EPA, North Dakota acknowledged EPA's implementation of an alignment algorithm to update previously collected $PM_{2.5}$ T640/T640X FEM monitor data in EPA's AQS[3]. Within this Initial Designation Recommendation, as well as North Dakota's Canadian Wildfire Smoke Particulate Matter Exceptional Event Demonstration – May-September 2023[4] the $PM_{2.5}$ data at Lostwood NWR, Bismarck NCORE, Fargo NW, Lake Ilo, TRNP-NU, Beulah North, Hannover, and Ryder reflect the alignment algorithm developed by Teledyne and implemented in the Teledyne firmware update July of 2023, as well as retroactively implemented by EPA in AQS.

While the alignment algorithm resulted in an improvement in the T460/T640X FEM $PM_{2.5}$ monitor bias compared to FRM monitors, it did not sufficiently correct the bias. Unfortunately, the bias is so significant that, for the revised primary annual 2024 $PM_{2.5}$ NAAQS the ongoing bias could lead to an area being designated nonattainment based on T640/T640X FEM monitored data while the area would have been designated attainment based on FRM monitored concentrations.[5]

Aside from NDDEQ's ongoing concern regarding the T640/T640X FEM monitor bias, the NDDEQ has requested that the EPA concur with the exclusion of 2023 $PM_{2.5}$ Exceptional Event concentrations from the data record such that all sites in North Dakota will demonstrate attainment of both the $PM_{2.5}$ 24-hour and annual NAAQS. (See North Dakota's Canadian Wildfire Smoke Particulate Matter Exceptional Event Demonstration – May-September 2023[6].) Additionally, the 2021-2023 $PM_{2.5}$ monitoring data, excluding 2021 and 2023 wildfire smoke impacted monitoring data, supports an initial designation recommendation that the entire State of North Dakota be designated as attainment for the revised primary annual $PM_{2.5}$ NAAQS.

---

[1] https://cleanairact.org/wp-content/uploads/2024/06/AAPCA-Article-EM-June-2024-Final_updated.pdf
[2] https://www.deq.nd.gov/AQ/Notices/EE/2023CanadianWildfireEEDemonstration_DRAFT.pdf, See Appendix B.
[3] Air Quality System (AQS) – U.S. EPA's computer database and information system of ambient air quality data.
[4] https://www.deq.nd.gov/AQ/Notices/EE/2023CanadianWildfireEEDemonstration_DRAFT.pdf
[5] https://cleanairact.org/wp-content/uploads/2024/12/AAPCA-Letter-Regarding-Teledyne-Bias-FINAL-12-20-24.pdf
[6] https://www.deq.nd.gov/AQ/Notices/EE/2023CanadianWildfireEEDemonstration_DRAFT.pdf

Canadian Wildfire Smoke Particulate Matter Exceptional Event Demonstration – North Dakota – May-September 2023

From mid-May through mid-September of 2023, smoke from wildfires across Canada directly affected the air quality in North Dakota. The 2023 Canadian wildfires produced particulate matter (PM) emissions that are outside the regulatory control and jurisdictional borders of the NDDEQ, which regulates air pollution on state land within the State of North Dakota.

The U.S. EPA's Treatment of Data Influenced by Exceptional Events (Exceptional Event Rule) (40 CFR § 50.14) details what air regulatory agencies must demonstrate in order to exclude exceptional event-related concentrations from regulatory determinations.

The NDDEQ prepared the Canadian Wildfire Smoke Particulate Matter Exceptional Event Demonstration – North Dakota – May-September 2023[7], which addressed all required components of a request to exclude exceptional event-related data, as detailed in 40 CFR § 50.14. As set forth for the revised primary annual $PM_{2.5}$ NAAQS designation process, EPA requested that States submit their 2023 Exceptional Event Demonstrations to the agency no later than February 7, 2025. The State of North Dakota is submitting to EPA Region 8 the Canadian Wildfire Smoke Particulate Matter Exceptional Event Demonstration – North Dakota – May-September 2023 concurrent with the North Dakota Initial Designation Recommendation for the 2024 Revised Primary Annual $PM_{2.5}$ National Ambient Air Quality Standard. With submittal of the 2023 Exceptional Event Demonstration to EPA Region 8, the NDDEQ has requested that the EPA concur with the exclusion of 2023 $PM_{2.5}$ Exceptional Event concentrations from the data record such that all sites in North Dakota will demonstrate attainment of both the $PM_{2.5}$ 24-hour and annual NAAQS.

Wildfire Smoke Particulate Matter Exceptional Event Demonstration – North Dakota – 2024

From May through November of 2024, smoke from wildfires across Canada and the United States directly affected the air quality in North Dakota. The 2024 wildfires produced PM emissions that are outside the regulatory control and jurisdictional borders of the NDDEQ, which regulates air pollution on state land within the State of North Dakota.

The NDDEQ will prepare the Wildfire Smoke Particulate Matter Exceptional Event Demonstration – North Dakota – 2024 to address all required components of a request to exclude exceptional event-related data, as detailed in 40 CFR § 50.14. As set forth for the revised primary annual $PM_{2.5}$ NAAQS designation process, EPA requested that States submit 2024 Exceptional Event Demonstrations to the EPA no later than September 30, 2025.

---

[7] https://www.deq.nd.gov/AQ/Notices/EE/2023CanadianWildfireEEDemonstration_DRAFT.pdf

2021 Wildfire Smoke Impacted $PM_{2.5}$ Monitoring Data

EPA's Area Designations Memorandum for the 2024 Revised Annual $PM_{2.5}$ National Ambient Air Quality Standards and Tribal Guidance[8] states that

> States and Tribes need not submit completed exceptional events demonstrations for data years that will not be relied upon by the EPA in making final designations decisions, however, they are expected to clearly indicate to the EPA if they believe that any air quality data they rely on in their area designations recommendations were influenced by exceptional events.

As specified in EPA's Area Designations Memorandum, the NDDEQ did not prepare an exceptional event demonstration for 2021 wildfire smoke impacted $PM_{2.5}$ monitoring data. While 2021 is a monitoring data year the State of North Dakota must rely upon for the initial designation recommendation (2021-2023), 2021 will not be a year EPA relies upon in making final designation decisions (2022-2024). As such, the NDDEQ considers this Enclosure for the North Dakota Initial Designation Recommendation 2024 Revised Primary Annual $PM_{2.5}$ National Ambient Air Quality Standard, to provide to EPA all components to clearly indicate that 2021 wildfire smoke impacted $PM_{2.5}$ monitoring data relied upon in the initial designation recommendation were influenced by wildfire smoke exceptional events.

All nine North Dakota air monitoring sites were impacted by smoke from wildfires across Canada and the United States from early-April through mid-October 2021, causing daily $PM_{2.5}$ concentrations to exceed the level of the 24-hour $PM_{2.5}$ NAAQS of 35 $\mu g/m^3$ and new 2024 $PM_{2.5}$ Annual NAAQS of 9.0 $\mu g/m^3$. The 2021 wildfires produced particulate matter emissions that are outside the regulatory control and, in all but one instance, outside the jurisdictional borders of the NDDEQ, which regulates air pollution on state land within the State of North Dakota.

The 2021 wildfire smoke impacts include 30 dates at nine $PM_{2.5}$ monitors for a total of 94 $PM_{2.5}$ monitor event days. The following table summarizes the daily $PM_{2.5}$ concentrations that exceeded the level of the 24-hour $PM_{2.5}$ NAAQS as a result of the 2021 wildfire smoke impacts.

[8] https://www.epa.gov/system/files/documents/2024-02/pm-naaqs-designations-memo_2.7.2024-_-jg-signed.pdf

Date of Event	Type of Event	AQS Flag(s)	Monitor (AQS ID)	Monitor Name	$PM_{2.5}$ Concentration ($\mu g/m^3$)	Notes
4/5/2021	Wildfires	IT	38-053-0002	TRNP-NU	51.4	2021 Wildfire Smoke - North Dakota TRNP NU Horse Pasture Wildfire
5/20/2021	Wildfires	IF	38-053-0002	TRNP-NU	50.4	2021 Wildfire Smoke - Canada
	Wildfires	IF	38-101-0003	Ryder	36.7	
7/6/2021	Wildfires	IF	38-017-1004	Fargo NW	58.6	2021 Wildfire Smoke - Canada
7/12/2021	Wildfires	IF	38-017-1004	Fargo NW	40.5	2021 Wildfire Smoke - Canada
7/13/2021	Wildfires	IF	38-017-1004	Fargo NW	53.3	2021 Wildfire Smoke - Canada
7/14/2021	Wildfires	IF	38-015-0003	Bismarck Residential	42.3	2021 Wildfire Smoke - Canada
	Wildfires	IF	38-017-1004	Fargo NW	76.9	
	Wildfires	IF	38-065-0002	Hannover	39.3	
7/15/2021	Wildfires	IT, IF	38-017-1004	Fargo NW	85.8	2021 Wildfire Smoke - US & Canada
7/16/2021	Wildfires	IT, IF	38-017-1004	Fargo NW	52.9	2021 Wildfire Smoke - US & Canada
7/20/2021	Wildfires	IF	38-017-1004	Fargo NW	56.2	2021 Wildfire Smoke - Canada
7/21/2021	Wildfires	IF	38-017-1004	Fargo NW	70.9	2021 Wildfire Smoke - Canada
7/24/2021	Wildfires	IT, IF	38-025-0004	Lake Ilo NWR	35.6	2021 Wildfire Smoke - US & Canada
7/25/2021	Wildfires	IT, IF	38-015-0003	Bismarck Residential	39.0	2021 Wildfire Smoke - US & Canada
	Wildfires	IT, IF	38-025-0004	Lake Ilo NWR	42.3	
	Wildfires	IT, IF	38-053-0002	TRNP-NU	38.8	
	Wildfires	IT, IF	38-057-0004	Beulah North	39.3	
	Wildfires	IT, IF	38-065-0002	Hannover	43.5	
7/29/2021	Wildfires	IF	38-017-1004	Fargo NW	79.2	2021 Wildfire Smoke - Canada
7/30/2021	Wildfires	IT, IF	38-007-0002	Painted Canyon (TRNP-SU)	53.1	2021 Wildfire Smoke - US & Canada
	Wildfires	IT, IF	38-015-0003	Bismarck Residential	99.4	
	Wildfires	IT, IF	38-017-1004	Fargo NW	134.4	
	Wildfires	IT, IF	38-025-0004	Lake Ilo NWR	72.9	
	Wildfires	IT, IF	38-057-0004	Beulah North	60.2	
	Wildfires	IT, IF	38-065-0002	Hannover	71.0	
	Wildfires	IT, IF	38-101-0003	Ryder	54.6	

Date of Event	Type of Event	AQS Flag(s)	Monitor (AQS ID)	Monitor Name	$PM_{2.5}$ Concentration ($\mu g/m^3$)	Notes
7/31/2021	Wildfires	IT, IF	38-015-0003	Bismarck Residential	56.3	2021 Wildfire Smoke - US & Canada
	Wildfires	IT, IF	38-017-1004	Fargo NW	75.9	
	Wildfires	IT, IF	38-065-0002	Hannover	35.2	
8/1/2021	Wildfires	IT, IF	38-013-0004	Lostwood NWR	55.3	2021 Wildfire Smoke - US & Canada
	Wildfires	IT, IF	38-015-0003	Bismarck Residential	79.1	
	Wildfires	IT, IF	38-017-1004	Fargo NW	49.4	
	Wildfires	IT, IF	38-025-0004	Lake Ilo NWR	41.7	
	Wildfires	IT, IF	38-057-0004	Beulah North	56.1	
	Wildfires	IT, IF	38-065-0002	Hannover	65.7	
	Wildfires	IT, IF	38-101-0003	Ryder	62.8	
8/2/2021	Wildfires	IT, IF	38-015-0003	Bismarck Residential	35.0	2021 Wildfire Smoke - US & Canada
	Wildfires	IT, IF	38-017-1004	Fargo NW	68.0	
	Wildfires	IT, IF	38-057-0004	Beulah North	37.4	
	Wildfires	IT, IF	38-065-0002	Hannover	40.4	
	Wildfires	IT, IF	38-101-0003	Ryder	41.4	
8/3/2021	Wildfires	IT, IF	38-015-0003	Bismarck Residential	40.1	2021 Wildfire Smoke - US & Canada
	Wildfires	IT, IF	38-017-1004	Fargo NW	44.1	
	Wildfires	IT, IF	38-065-0002	Hannover	37.2	
	Wildfires	IT, IF	38-101-0003	Ryder	36.9	
8/4/2021	Wildfires	IT, IF	38-015-0003	Bismarck Residential	35.0	2021 Wildfire Smoke - US & Canada
8/5/2021	Wildfires	IT, IF	38-013-0004	Lostwood NWR	47.1	2021 Wildfire Smoke - US & Canada
	Wildfires	IT, IF	38-015-0003	Bismarck Residential	40.1	
	Wildfires	IT, IF	38-017-1004	Fargo NW	45.0	
	Wildfires	IT, IF	38-057-0004	Beulah North	37.8	
	Wildfires	IT, IF	38-065-0002	Hannover	42.0	
	Wildfires	IT, IF	38-101-0003	Ryder	46.3	

Date of Event	Type of Event	AQS Flag(s)	Monitor (AQS ID)	Monitor Name	$PM_{2.5}$ Concentration ($\mu g/m^3$)	Notes
8/6/2021	Wildfires	IT, IF	38-013-0004	Lostwood NWR	43.6	2021 Wildfire Smoke - US & Canada
	Wildfires	IT, IF	38-015-0003	Bismarck Residential	50.1	
	Wildfires	IT, IF	38-017-1004	Fargo NW	48.8	
	Wildfires	IT, IF	38-053-0002	TRNP-NU	36.2	
	Wildfires	IT, IF	38-057-0004	Beulah North	40.9	
	Wildfires	IT, IF	38-065-0002	Hannover	48.8	
	Wildfires	IT, IF	38-101-0003	Ryder	47.3	
8/7/2021	Wildfires	IT, IF	38-065-0002	Hannover	38.4	2021 Wildfire Smoke - US & Canada
8/15/2021	Wildfires	IT, IF	38-025-0004	Lake Ilo NWR	37.2	2021 Wildfire Smoke - US & Canada
	Wildfires	IT, IF	38-053-0002	TRNP-NU	43.1	
8/16/2021	Wildfires	IT, IF	38-007-0002	Painted Canyon (TRNP-SU)	61.7	2021 Wildfire Smoke - US & Canada
	Wildfires	IT, IF	38-013-0004	Lostwood NWR	99.4	
	Wildfires	IT, IF	38-015-0003	Bismarck Residential	50.0	
	Wildfires	IT, IF	38-025-0004	Lake Ilo NWR	101.4	
	Wildfires	IT, IF	38-053-0002	TRNP-NU	99.9	
	Wildfires	IT, IF	38-057-0004	Beulah North	81.9	
	Wildfires	IT, IF	38-065-0002	Hannover	84.2	
	Wildfires	IT, IF	38-101-0003	Ryder	86.3	
8/17/2021	Wildfires	IT, IF	38-007-0002	Painted Canyon (TRNP-SU)	41.2	2021 Wildfire Smoke - US & Canada
	Wildfires	IT, IF	38-013-0004	Lostwood NWR	36.1	
	Wildfires	IT, IF	38-025-0004	Lake Ilo NWR	52.7	
	Wildfires	IT, IF	38-053-0002	TRNP-NU	53.7	
	Wildfires	IT, IF	38-057-0004	Beulah North	49.7	
	Wildfires	IT, IF	38-065-0002	Hannover	56.2	
	Wildfires	IT, IF	38-101-0003	Ryder	49.4	
9/10/2021	Wildfires	IT, IF	38-025-0004	Lake Ilo NWR	37.2	2021 Wildfire Smoke - US & Canada

Date of Event	Type of Event	AQS Flag(s)	Monitor (AQS ID)	Monitor Name	$PM_{2.5}$ Concentration ($\mu g/m^3$)	Notes
10/2/2021	Wildfires	IF	38-013-0004	Lostwood NWR	52.9	2021 Wildfire Smoke - Canada
	Wildfires	IF	38-015-0003	Bismarck Residential	42.0	
	Wildfires	IF	38-101-0003	Ryder	43.7	
10/3/2021	Wildfires	IF	38-015-0003	Bismarck Residential	81.7	2021 Wildfire Smoke - Canada
	Wildfires	IF	38-065-0002	Hannover	54.6	
	Wildfires	IF	38-101-0003	Ryder	44.8	
10/7/2021	Wildfires	IF	38-013-0004	Lostwood NWR	39.8	2021 Wildfire Smoke - Canada
10/8/2021	Wildfires	IF	38-007-0002	Painted Canyon (TRNP-SU)	37.1	2021 Wildfire Smoke - Canada
	Wildfires	IF	38-013-0004	Lostwood NWR	50.9	
	Wildfires	IF	38-015-0003	Bismarck Residential	44.9	
	Wildfires	IF	38-025-0004	Lake Ilo NWR	72.9	
	Wildfires	IF	38-053-0002	TRNP-NU	61.4	
	Wildfires	IF	38-057-0004	Beulah North	57.7	
	Wildfires	IF	38-065-0002	Hannover	71.4	
	Wildfires	IF	38-101-0003	Ryder	72.5	

STATE OF NEBRASKA

Jim Pillen
Governor

OFFICE OF THE GOVERNOR
P.O. Box 94848 • Lincoln, Nebraska 68509-4848
Phone: (402) 471-2244 • jim.pillen@nebraska.gov

January 22, 2025

Mr. Eward Chu
Deputy Regional Administrator
U.S. EPA, Region VII
11201 Renner Boulevard
Lenexa, KS 66219

Dear Mr. Chu:

In accordance with Section 107(d)(1) of the Clean Air Act, I am submitting designation recommendations and supporting documentation for the revised $PM_{2.5}$ Primary Annual National Ambient Air Quality Standard (NAAQS), promulgated on March 6, 2024, which became effective on May 6, 2024. I hereby recommend that all areas (counties) in the State of Nebraska be designated **"attainment/unclassifiable"**, with the exception of Gage county, which I recommend be designated **"unclassifiable"**.

Nebraska monitors $PM_{2.5}$ at eight locations in the state. The attached documentation describes these locations and compares annual air quality data for the most recent consecutive three-year period (2021-2023) to the revised 2024 $PM_{2.5}$ Primary Annual NAAQS of 9.0 $\mu g/m^3$ and the previous annual standard of 12.0 $\mu g/m^3$.

- The certified monitoring data for this period demonstrate that the annual mean averaged over three years, known as the Design Value (DV), for each of Nebraska's monitoring sites (except the Homestead NHP site) is in attainment with the revised primary annual $PM_{2.5}$ standard, as shown in the attached Nebraska $PM_{2.5}$ Annual Design Values.
- Preliminary design values included in Nebraska's 2024 Ambient Air Monitoring Network Plan indicated that all monitoring sites demonstrate attainment with the previous annual standard.

Thus far, preliminary monitoring data for 2024 indicate continued compliance with this standard, and further support my recommended designations.

The Homestead NHP monitoring site (Gage county) lacks a valid DV for 2021-2023 because data did not meet the completeness requirements outlined in 40 CFR Part 50, Appendix N. For this reason, I recommend the designation of **"unclassifiable"** for the Homestead NHP site; when a valid DV is assigned to this site, I intend to submit a revised designation recommendation.

If there are any questions regarding my recommendations, please feel free to contact Steve Goans (402-471-2580, steve.goans@nebraska.gov) or Tracy Wharton (402-471-6410, tracy.wharton@nebraska.gov).

Sincerely,

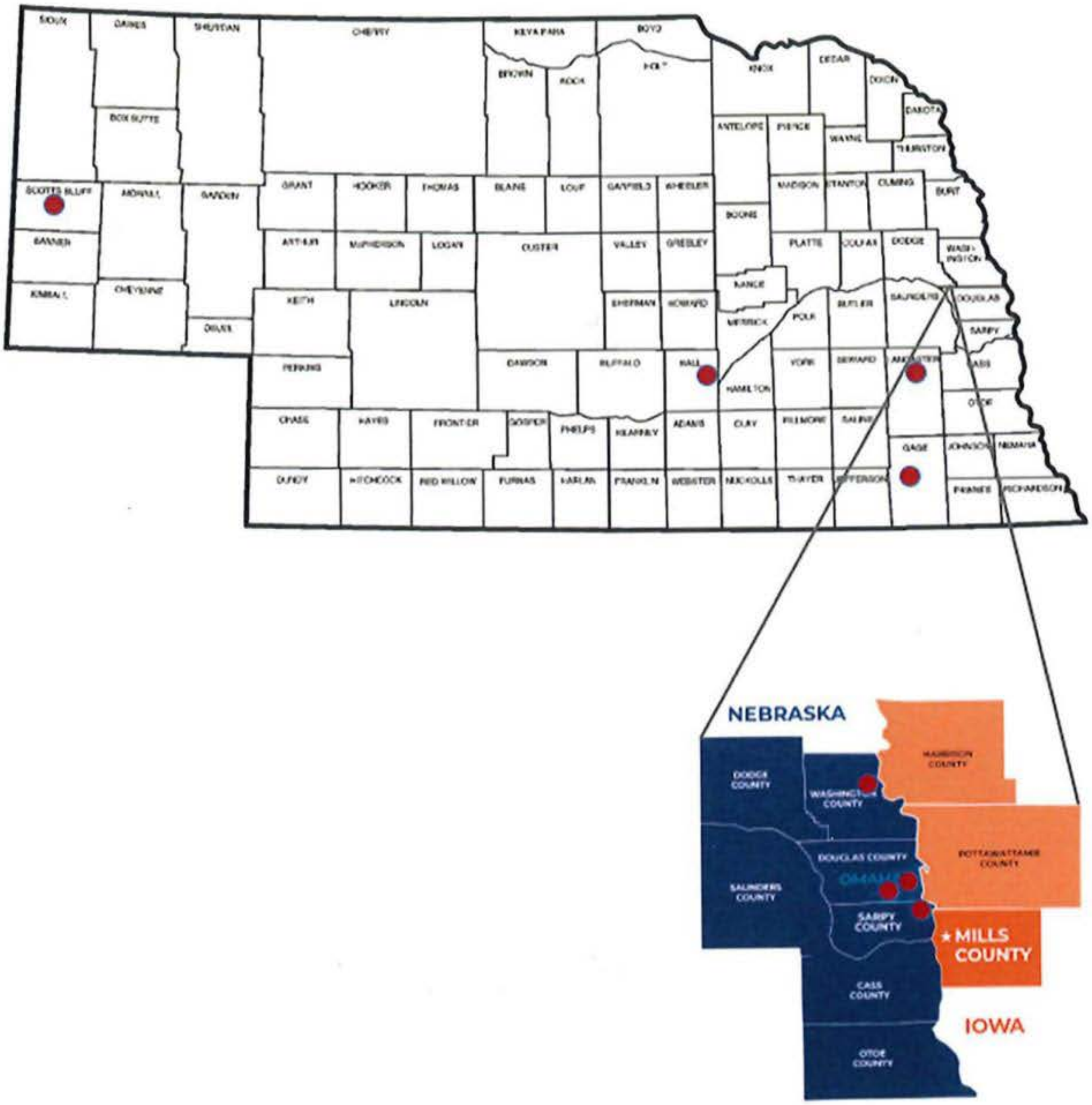
Jim Pillen

Jim Pillen
Governor

cc:
Dana Skelley, Air and Radiation Division, U.S. EPA, Region VII
Kara Valentine, Interim Director, Nebraska Department of Environment and Energy
Brian Brim, Legal Division, NDEE

ATTACHMENTS
Fine Particulate Matter (PM2.5) Monitoring Sites in Nebraska
Nebraska PM2.5 Annual Design Values
Nebraska Preliminary Design Values

Fine Particulate Matter (PM2.5) Monitoring Sites in Nebraska



Omaha-Council Bluffs Metropolitan Statistical Area (Nebraska portion)

4102 Woolworth Avenue, Omaha (NCORE)
9225 Berry Street, Omaha
2912 Coffey Avenue, Bellevue
2242 Wright Street, Blair

Other Nebraska Counties

3140 N Street, Lincoln (Lincoln-Lancaster County Health Department)
24405 SW 75 Road, Beatrice (Homestead National Historical Park)
3305 W Old Potash Highway, Grand Island (Grand Island DOT)
Highway 26 & 5th Avenue, Scottsbluff (Scottsbluff Senior High School)

Nebraska PM2.5 Annual Design Values

Source: EPA's Design Value Interactive Tool, https://www.epa.gov/air-trends/design-value-interactive-tool

Nebraska Preliminary Design Values

PM2.5 Annual Design Values

Site Details | Site Trends | NAA Trends | Violating Not In NAA

State Name	County Name	AQS Site ID	Local Site Name	Street Address	CBSA	2023 Design Value	DV Valid	Exceeds Standard
Nebraska	Cass	31-025-0002		CITY SANITATION BLDG (WEEPING WATER)	Omaha-Council Bluffs, NE-IA		N	I
Nebraska	Douglas	31-055-0019	4102 Woolworth Ave. on Healthcenter Warehouse	DOUGLAS COUNTY HOSP 42ND & WOOLWORTH	Omaha-Council Bluffs, NE-IA	7.1	Y	N
Nebraska	Douglas	31-055-0052	ON TOP OF ELEMENTARY SCHOOL	9225 BERRY	Omaha-Council Bluffs, NE-IA	8.1	Y	N
Nebraska	Hall	31-079-0004	Grand Island Senior High	2124 NORTH LAFAYETTE	Grand Island, NE		N	I
Nebraska	Hall	31-079-0005	Grand Island NDOT	3305 W Old Potash Hwy	Grand Island, NE	6.8	Y	N
Nebraska	Lancaster	31-109-0022	ON ROOF OF HEALTH DEPARTMENT	3140 N ST LINCOLN	Lincoln, NE	7.2	Y	N
Nebraska	Sarpy	31-153-0007	ON GOLDEN HILLS ELEMENTARY ROOF	2912 COFFEY AVE BELLEVUE	Omaha-Council Bluffs, NE-IA	7.8	Y	N
Nebraska	Scotts Bluff	31-157-0003	ON ROOF OF PUBLIC LIBRARY	1809 3RD AVE SCOTTSBLUFF	Scottsbluff, NE		N	I
Nebraska	Scotts Bluff	31-157-0004	Scottsbluff Senior High School	Highway 26 & 5th Avenue	Scottsbluff, NE	4.6	Y	N
Nebraska	Washington	31-177-0002	ON ROOF OF GOOD SHEPARD LUTHERAN HOME	2242 WRIGHT STREET	Omaha-Council Bluffs, NE-IA	6.6	Y	N

Source: Nebraska Draft 2024 Ambient Air Quality Monitoring Network Plan, June 4, 2024
http://dee.ne.gov/Publica.nsf/PubsForm.xsp?documentId=6B9D62318FBF5E1486258B1D00425B36&action=openDocument

Table B-6b: $PM_{2.5}$ - Annual Average Data [1]

Site	2021	2022	2023	Design Value [1]	% NAAQS
Omaha MSA & Montgomery Co., IA [4]					
Omaha NCore [2]	7.5	5.9	7.8	7.1	59%
9225 Berry St.; Omaha	8.5	6.6	9.1	8.1	67%
2912 Coffey Ave., Bellevue	8.8	6.7	8.0	7.8	65%
2242 Wright St., Blair	7.9	4.4	7.6	6.6	55%
3130 C Ave., Council Bluffs, IA [3]	8.9	7.5	9.7	8.7	73%
Montgomery Co., IA (outside Omaha MSA) [3][4]	7.4	6.1	8.1	7.2	60%
Lincoln MSA					
3140 N Street, Lincoln	7.1	6.0	8.5	7.2	60%
Sioux City MSA					
901 Floyd Blvd, Sioux City, IA [3]	9.1	7.0	9.7	8.6	72%
1005 N Crawford Rd., Clay Co., SD [5]		6.0	8.7		
Other Nebraska Sites					
Beatrice [6]	11.0	5.3	7.2	7.8	65%
Grand Island	7.4	5.7	7.5	6.9	57%
Scottsbluff	5.0	3.2	5.4	4.5	38%

Notes and Explanations:

(1) EPA AQS data retrieval 3/31/23. The Design Values are the 3-year average of the annual average values. To determine attainment status, the Design Values are compared to the 12 μg/m^3 NAAQS. Concentrations are in units of μg/m^3. Annual values and Design Values that do not meet completeness requirements are shown in red; ND = No data.

(2) Omaha NCore is a multi-pollutant monitoring site located at 4102 Woolworth Street.

(3) The Council Bluffs, Montgomery Co., and Sioux City IA sites are operated by the IA DNR

(4) The Montgomery County, IA site is located outside the Omaha MSA at Viking Lake State Park, ~18 miles east of the Mills-Montgomery County line and ~ 45 miles SE of the I-29/I-80 intersection.

(5) A Union Co., SD site was operated in the Sioux City MSA by the South Dakota Department of Agriculture & Natural Resources and closed in October 2021. In 2022 the site was relocated to Clay County, 10 miles from the Union Co. site and just outside the Sioux City MSA.

(6) The Beatrice site is located at Homestead National Historical Park, 3 miles west of town. Monitoring at the site began in 2021.

STATE OF NEW HAMPSHIRE
OFFICE OF THE GOVERNOR

KELLY A. AYOTTE
Governor

January 16, 2025

Ms. Karen McGuire
Acting Regional Administrator
EPA Region 1
5 Post Office Square – Suite 100
Boston, MA 02109-3912

RE: Designation of New Hampshire's Attainment Area Status under the Revised Fine Particulate Matter ($PM_{2.5}$) Standard

Dear Ms. McGuire:

On February 7, 2024, the U.S. Environmental Protection Agency (EPA) strengthened the primary annual $PM_{2.5}$ NAAQS from 12 $\mu g/m^3$ to 9 $\mu g/m^3$. The primary and secondary 24-hr $PM_{2.5}$ standards, as well as the secondary annual $PM_{2.5}$ standard and primary and secondary PM_{10} standards were unchanged. Table 1 contains certified and quality-assured data for $PM_{2.5}$ for the three most recent years representing the annual mean, averaged over three years as specified in EPA guidance also issued on February 7, 2024. No portion of New Hampshire was found to be at risk for exceeding the revised annual $PM_{2.5}$ standard.

Table 1 New Hampshire Design Values for $PM_{2.5}$ 2021-2023

Location/ Reference Method	Monitor ID	2021 Annual Mean Value ($\mu g/m^3$)	2022 Annual Mean Value ($\mu g/m^3$)	2023 Annual Mean Value ($\mu g/m^3$)	Design Value (2021-2023) (ug/m^3)	$PM_{2.5}$ NAAQS (ug/m^3)
Green Street, Laconia	330012004	4.88	4.37	5.12	4.8	9.0
Water Street, Keene	330050007	7.56	5.86	7.49	7.0	
Lebanon Airport, Lebanon	330090010	5.30	4.51	5.45	5.1	
Miller State Park, Peterborough	330115001	3.75	3.37	4.47	3.9	
Pierce Island, Portsmouth	330150014	5.70	5.31	5.91	5.6	
Moose Hill School, Londonderry	330150018	5.39	4.77	5.58	5.2	

107 North Main Street, State House - Rm 208, Concord, New Hampshire 03301
Telephone (603) 271-2121 • FAX (603) 271-7640
Website: http://www.governor.nh.gov/ • Email: governorayotte@nh.gov
TDD Access: Relay NH 1-800-735-2964

Note: The $PM_{2.5}$ monitor in Laconia was recently moved from the Green Street location to a new location at 379 Main Street. $PM_{2.5}$ data collection at the 379 Main Street monitor began on April 18, 2024.

Therefore, in accordance with Section 107(d) of the Clean Air Act, I hereby request that New Hampshire be designated as in attainment with the 2024 primary National Ambient Air Quality Standard (NAAQS) for $PM_{2.5}$. Since all areas of New Hampshire currently attains the standard, I propose that the entire State of New Hampshire be designated as in attainment with the primary annual $PM_{2.5}$ NAAQS as noted in Table 2. I believe there is sufficient data to support a full designation of attainment throughout the state and that a designation of unclassified for any area of the state is unnecessary. My recommendation is fully compliant with Section 107(d)(1)(A) of the Clean Air Act.

Table 2 Proposed Designation of Areas for Annual $PM_{2.5}$ NAAQS

Designated Area	Designation Type	Designation Classification
New Hampshire – All portions	Attainment	NA

Thank you for your consideration of these recommendations. If you have any questions regarding this determination, please contact Robert R. Scott, Commissioner of the NH Department of Environmental Services, at (603) 271-2958.

Sincerely,

Kelly A. Ayotte

Kelly A. Ayotte
Governor

ec: Robert R. Scott, Commissioner, NHDES *(robert.r.scott@des.nh.gov)*
Craig Wright, Director, NHDES Air Resources Division *(craig.a.wright@des.nh.gov)*
Eric Wortman, EPA Region 1 *(wortman.eric@epa.gov)*

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF THE COMMISSIONER
401 East State Street
P.O. Box 402, Mail Code 401-07
Trenton, New Jersey 08625-0402
Tel. (609) 292-2885 • Fax (609) 292-7695
www.nj.gov/dep

PHILIP D. MURPHY
Governor

TAHESHA L. WAY
Lt. Governor

SHAWN M. LATOURETTE
Commissioner

February 6, 2025

Via eSIP
Michael Martucci, Regional Administrator
U.S. Environmental Protection Agency
Region 2
290 Broadway
New York, NY 10007-1866

Re: New Jersey Area Designation Recommendation for 2024 Revised Primary Annual Fine Particle ($PM_{2.5}$) National Ambient Air Quality Standard

Dear Regional Administrator Martucci,

I was glad to make your acquaintance on February 4, 2025 and look forward to working together to build upon the strong relationship that the New Jersey Department of Environmental Protection (NJDEP) and Region 2 of the U.S. Environmental Protection Agency (USEPA) have developed over many years of partnership. As I mentioned briefly during our initial meeting, the State of New Jersey is proud of its efforts to reduce fine particulate matter ($PM_{2.5}$) pollution and is pleased to submit the within National Ambient Air Quality Standard (NAAQS) attainment recommendation for USEPA consideration.

On February 7, 2024, USEPA promulgated a revised primary annual $PM_{2.5}$ NAAQS of 9.0 micrograms per cubic meter (µg/m3). Section 107(d)(1)(A) of the federal Clean Air Act requires that each state submit its recommendations for areas to be designated attainment, nonattainment, or unclassifiable, no later than one year after USEPA promulgates a new or revised NAAQS.

In accordance with the Clear Air Act, the State of New Jersey hereby recommends that the entire State be designated as in attainment of the revised primary annual $PM_{2.5}$ NAAQS of $9.0 \mu g/m^3$ and that all New Jersey counties be excluded from any potential nonattainment counties in their combined statistical areas (CSAs) and core based statistical area (CBSA). New Jersey makes these recommendations because it is expected that all monitors in New Jersey will demonstrate attainment and meet the revised annual primary $PM_{2.5}$ NAAQS of $9.0 \mu g/m^3$ with certified, ambient air quality monitoring data from 2022 to 2024. At this time, the 2024 data is preliminary until the data undergoes quality assurance review and is submitted to USEPA.

New Jersey conducted its $PM_{2.5}$ NAAQS analysis in accordance with USEPA guidance and based on certified monitoring data up to 2023. The State's analysis is attached to this letter.

New Jersey is part of the New York-Newark (NY-NJ-CT-PA) CSA, the Philadelphia-Reading-Camden (PA-NJ-DE-MD) CSA, and the Allentown-Bethlehem-East Stroudsburg (PA-NJ) CSA. Notably, current monitoring data is not representative of New Jersey's ambient air quality due to the transport of wildfire smoke from Canada and the western United States during 2021 and 2023. Due to the influence of these wildfires, two monitoring sites in New Jersey measured above the standard in 2023 at Camden County (Camden Spruce Street monitor) and Union County (Elizabeth Lab monitor). New Jersey has submitted an Exceptional Event Analysis to USEPA for the 2023 Canadian wildfires and is awaiting concurrence to exclude the data from design value calculations for compliance with the 2024 $PM_{2.5}$ NAAQS. While the 2021 monitoring data is incorporated into New Jersey's analysis as part of the 2023 certified design values, the 2021 monitoring data and impacts from the 2021 wildfires are not relevant with respect to determining compliance with the standard based on 2024 design values, which are calculated with data from 2022, 2023 and 2024.

Importantly, New Jersey has implemented significant multi-pollutant air quality control measures across the state that have reduced and will continue to reduce emissions of $PM_{2.5}$ and its precursors. Furthermore, the last coal-fired power plants in New Jersey (Logan Generating Plant and Carneys Point Generating Plant) ceased operations in 2022, which will have a significant beneficial impact on future air quality. New Jersey's actions have resulted in a historical decreasing trend of fine particulate matter air pollution that is anticipated to continue into the future, which benefits human health and the environment.

Should USEPA wish to discuss New Jersey's $PM_{2.5}$ recommendations, we invite you to contact Francis C. Steitz, Director of the NJDEP Division of Air Quality at (609) 940-5707 or francis.steitz@dep.nj.gov.

Sincerely,

Shawn M. LaTourette
Commissioner

Attachment

c: *via email (letter only)*
Matthew Laurita, Acting Director, Air and Radiation Division, USEPA Region 2
Kirk Wieber, Chief, Air Programs Branch, USEPA Region 2
Ken Fradkin, Supervisor, Air Planning, USEPA Region 2
Paul Baldauf, Assistant Commissioner for Air, Energy & Materials Sustainability, NJDEP
Francis C. Steitz, Director, Division of Air Quality, NJDEP-AEMS
Kenneth Ratzman, Assistant Director, Division of Air Quality, NJDEP-AEMS
Kristina Miles, Esq., Deputy Attorney General, NJ Dept. of Law & Public Safety, Division of Law

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MICHELLE LUJAN GRISHAM
GOVERNOR

JAMES C. KENNEY
CABINET SECRETARY

January 24, 2025

W. Scott Mason IV
Regional Administrator
U.S. EPA, Region 6
1201 Elm St., Ste. 500
Mail Code: 6MM-A
Dallas, Texas 75270

Re: Revised 2024 $PM_{2.5}$ National Ambient Air Quality Standard Attainment Designation Recommendation

Dear Administrator Mason:

On behalf of Governor Michelle Lujan Grisham of the State of New Mexico, I am submitting this letter to you pursuant to Clean Air Act (CAA) Section 107(d)(1) to fulfill the initial area designation recommendation that is required of all states within one year following a new or revised National Ambient Air Quality Standard (NAAQS). On February 7, 2024, the U.S. Environmental Protection Agency promulgated a revised primary annual NAAQS for particulate matter with an aerodynamic diameter of 2.5 micrometers or less in size ($PM_{2.5}$) that reduced the standard from 12.0 $\mu g/m^3$ to 9.0 $\mu g/m^3$ (89 FR 16202, March 6, 2024).

The New Mexico Environment Department (NMED) evaluated 2021 through 2023 ambient monitoring data with respect to the revised $PM_{2.5}$ NAAQS and finds that all counties within its jurisdiction are in attainment or unclassifiable. Please accept this attainment designation recommendation to meet CAA Section 107(d)(1)(A)(ii) and (iii). I recommend for all areas within New Mexico to be classified as attainment/unclassifiable of the revised $PM_{2.5}$ NAAQS within the jurisdiction of NMED.

If your staff have any questions regarding this petition, please contact Cindy Hollenberg, Air Quality Bureau Chief, at Cindy.Hollenber@env.nm.gov.

Sincerely,

James C. Kenney
Cabinet Secretary

cc: Cindy Hollenberg, Air Quality Bureau Chief, NMED

Docusign Envelope ID: 0170F184-E635-4DFF-B964-C49887969217

February 6, 2025

Scott Mason IV, Regional Administrator
U.S. Environmental Protection Agency, Region VI
1201 Elm Street, Ste. 500
Mail Code: 6MM-A
Dallas, TX 75270

Re: Revised 2024 $PM_{2.5}$ National Ambient Air Quality Standard Attainment Designation Recommendation

Dear Administrator Mason:

Pursuant to Clean Air Act (CAA) Section 107(d)(1), Albuquerque-Bernalillo County submits this letter to fulfill the initial area designation recommendation that is required of all states within one year following a new or revised National Ambient Air Quality Standard (NAAQS). On February 7, 2024, the U.S. Environmental Protection Agency promulgated a revised primary annual NAAQS for particulate matter 2.5 microns aerodynamic diameter or less in size ($PM_{2.5}$) from 12.0 $\mu g/m^3$ to 9.0 $\mu g/m^3$(89 FR 16202, March 6, 2024).

The City of Albuquerque Environmental Health Department (EHD) evaluated 2021 through 2023 ambient monitoring data with respect to the revised $PM_{2.5}$ NAAQS and finds that its jurisdiction is in attainment or unclassifiable. Please accept this attainment designation recommendation to meet CAA Section 107(d)(1)(A)(ii) and (iii). I recommend that Albuquerque-Bernalillo County be classified as attainment/unclassifiable for the revised $PM_{2.5}$ NAAQS. The design value summary for 2021-2023 is attached.

Should you have any questions or comments, please contact Paul Rogers, City of Albuquerque EHD Director, at 505-768-2606 or progers@cabq.gov.

Respectfully,

DocuSigned by:
James Kenney 2/12/2025 | 7:59 PM PST
55675B6F3B62408...

James Kenney
NMED Cabinet Secretary

cc: Cindy Hollenberg, Bureau Chief, Air Quality Bureau, New Mexico Environment Department
Michelle Miano, Division Director, Environmental Protection Division, New Mexico Environment Department
Joseph Galewsky, Chair, Albuquerque – Bernalillo County Air Quality Control Board
Paul Rogers, Director, City of Albuquerque Environmental Health Department
Terrance Smith, Air Quality Program Deputy Director, City of Albuquerque Environmental Health Department

Dwayne Salisbury, Monitoring Division Manager, Air Quality Program, City of Albuquerque Environmental Health Department
Catalina Lehner, Control Strategies Division Manager, Air Quality Program, Albuquerque Environmental Health Department
Bianca Borg, Regional Planning Program Manager, Mid Region Council of Governments

Attachment A: Albuquerque-Bernalillo County PM 2.5 design values (2021-2023)

Local Site Name	**2021-2023 Annual Design Value (µg/m3) [1,2]**
Del Norte	5.2
Jefferson	7.4
South Valley	8.0
Foothills	4.2
North Valley	7.8

NEVADA DIVISION OF
ENVIRONMENTAL PROTECTION

STATE OF NEVADA
Department of Conservation & Natural Resources
Joe Lombardo, *Governor*
James A. Settelmeyer, *Director*
Jennifer L. Carr, *Administrator*

February 2, 2025

Mr. Matthew Lakin
Director, Air & Radiation Division
ORA-1, USEPA Region 9
75 Hawthorne Street
San Francisco, CA 94105

RE: Recommended Designations for the Primary Annual $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS) (89 Federal Register 16202, February 7, 2024)

Dear Mr. Lakin,

On February 7, 2024, the U.S Environmental Protection Agency (EPA) announced a final rule to strengthen the nation's National Ambient Air Quality Standards (NAAQS) for fine particulate pollution less than or equal to 2.5 microns, also known as $PM_{2.5}$. EPA finalized the primary (health-based) annual $PM_{2.5}$ standard at 9.0 micrograms per cubic meter ($\mu g/m^3$) to reflect new science on harm to public health caused by fine particle pollution. The Nevada Division of Environmental Protection (NDEP) acknowledges that the 24-hour Primary Standard had no change and remains at 35 $\mu g/m^3$.

On behalf of Governor Lombardo, as his appointed designee, pursuant to Section 107(d)(1) of the 1990 Clean Air Act, NDEP is submitting this letter requesting that the State of Nevada be designated "attainment" or "unclassifiable" for the Annual $PM_{2.5}$ NAAQS, as follows:

- Hydrographic Area 104 (Carson City), Attainment
- Hydrographic Area 105 (Douglas County), Attainment
- Hydrographic Areas 85 and 87 (Washoe County), Attainment
- Hydrographic Areas 212, 222 and 164A (Clark County), Attainment
- All other hydrographic areas in the State of Nevada, Unclassifiable

The Northern Nevada Public Health Air Quality Management Division (AQMD) has reviewed 2021-2023 data and determined that Hydrographic Areas 85 and 87 in Washoe County is in attainment of the revised annual $PM_{2.5}$ standard. All other Hydrographic Areas within Washoe County are to be designated as unclassifiable. A copy of AQMD's letter with supporting data is enclosed. Attached is also an Exception Events Demonstration that is being submitted concurrently with AQMD's Initial Designation Recommendation letter.

Similarly, the Clark County Department of Environment and Sustainability, Division of Air Quality (DAQ) has reviewed 2021-2023 data and determined that Hydrographic Areas 212, 222 and 164A in Clark County are in attainment of the revised annual $PM_{2.5}$ standard. Additionally, DAQ is recommending a designation of "unclassifiable" for the remaining portions of Clark County. A copy of DAQ's letter with supporting data is enclosed.

The Nevada Division of Environmental Protection has two $PM_{2.5}$ monitors that operate in Carson City and Douglas County with three recent years of complete and certified data indicate attainment for the annual NAAQS for $PM_{2.5}$ in the years 2021, 2022 and 2023. Hydrographic Area 104 is represented by the Carson City Armory monitoring site with an annual $PM_{2.5}$ design value of 7.5 μg/m^3. Hydrographic area 105 is represented by the Ranchos Aspen Park monitoring site in Douglas County, with an annual $PM_{2.5}$ design value of 8.4 μg/m^3, which are represented in Table 1. There are no other $PM_{2.5}$. monitoring sites within NDEPs jurisdiction. The NDEP therefore requests that all other hydrographic areas under NDEPs jurisdiction be designated as unclassifiable.

Table 1. Annual PM2.5 Design Values for 2021–2023

Annual Standard = 9.0 μg/m^3						
Site Name	**Site Code**	**Hydrographic Area**	**2021**	**2022**	**2023**	**2021–2023 Design Value**
Carson City Armory	32-510-0020	104	12.0	5.7	4.8	7.5 μg/m^3
Ranchos Aspen Park	32-005-0007	215	13.2	6.1	6.1	8.4 μg/m3

***Source: EPA Air Quality System**

Please contact Andrew Tucker, Chief, at (775)-687-9340, if you have any questions or require additional clarification.

Sincerely,

Jennifer Carr
Jennifer Carr (Jan 30, 2025 18:28 PST)

Jennifer L. Carr, PE, CPM, CEM
Administrator

ec :
Anita Lee, USEPA Region 9, Air & Radiation Division
Ben Leers, USEPA Region 9, Air & Radiation Division
Karina Oconner, USEPA Region 9, Air & Radiation Division
Chase McNamara, Office of the Governor
James A. Settelmeyer, Director, DCNR
Jeffrey Kinder, Deputy Administrator, NDEP
Danilo Dragoni, Deputy Administrator, NDEP
Andrew Tucker, Chief, Bureau of Air Quality Planning, NDEP
Ken McIntyre, Supervisor, NDEP
Francisco Vega, Director, NNPH
Craig Petersen, Supervisor, NNPH
Marci Henson, Director, DAQ
Ted Lendis, Planning Manager, DAQ

NEW YORK STATE
Department of Environmental Conservation

KATHY HOCHUL
Governor

SEAN MAHAR
Interim Commissioner

February 7, 2025

Mr. Michael Martucci
Regional Administrator
U.S. Environmental Protection Agency, Region 2
290 Broadway, 26th Floor
New York, NY 10007-1866

Dear Regional Administrator Martucci:

On behalf of the Governor of the State of New York, I am submitting to the U.S. Environmental Protection Agency (EPA) "New York State Department of Environmental Conservation Designation Recommendation for the 2024 Fine Particulate Matter National Ambient Air Quality Standard." On February 7, 2024 EPA promulgated a revised primary annual Fine Particulate Matter ($PM_{2.5}$) National Ambient Air Quality Standard (NAAQS), strengthening the standard from 12.0 micrograms per cubic meter (μg/m^3) to 9.0 μg/m^3; retaining the existing 24-hour $PM_{2.5}$ standard at 35 μg/m^3; retaining the existing 24-hour PM_{10} (coarse particle) standard at 150 μg/m^3; and retaining the current suite of secondary PM standards.

Based on a review of statewide monitoring data, New York is recommending that all areas in the State be designated as attainment for the revised primary annual $PM_{2.5}$ NAAQS (2024). Supporting data is included in the tables in the enclosed document.

The proposed designation recommendation underwent a public review period. A public notice was posted in the Environmental Notice Bulletin on December 24, 2024 with a 30-day public comment period. No comments were received.

The following documents are enclosed:

1) "New York State Department of Environmental Conservation Designation Recommendation for the 2024 Fine Particulate Matter National Ambient Air Quality Standard"
2) Notice of Public Comment Period as published in the ENB on July 31, 2024

Please contact Mr. Robert Bielawa or Mr. Daniel Goss at (518) 402-8396 if you have any questions.

Sincerely,

Christopher M. LaLone, P.E.
Director, Division of Air Resources

Enclosures

c: R. Ruvo, EPA Region 2
R. Bielawa
D. Goss

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION DESIGNATION RECOMMENDATION FOR THE 2024 FINE PARTICULATE MATTER NATIONAL AMBIENT AIR QUALITY STANDARD

A. Introduction

On February 7, 2024, the United States Environmental Protection Agency (EPA) promulgated a revised primary annual Fine Particulate Matter ($PM_{2.5}$) National Ambient Air Quality Standard (NAAQS), strengthening the standard from 12.0 micrograms per cubic meter ($\mu g/m^3$) to 9.0 $\mu g/m^3$; retained the existing 24-hour $PM_{2.5}$ standard at 35 $\mu g/m^3$; retained the existing 24-hour PM_{10} (coarse particle) standard at 150 $\mu g/m^3$; and retained the current suite of secondary PM standards.

States can choose to submit their initial designations recommendations to the EPA for the revised 2024 revised primary annual $PM_{2.5}$ NAAQS no later than 1 year following promulgation of the revised NAAQS, or by February 7, 2025. This document is New York State's initial designation recommendation.

B. Background

EPA established NAAQS for six criteria air pollutants, including particulate matter (PM) to protect the public health and welfare. EPA describes PM as "a complex mixture of extremely small particles and liquid droplets…made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles."[1]

$PM_{2.5}$ (i.e., PM with an aerodynamic diameter less than or equal to 2.5 micrometers) is produced by combustion, including vehicle exhaust, and by chemical reactions of gases such as sulfur dioxide (SO_2), nitrogen oxides (NO_x), volatile organic compounds (VOCs), and ammonia (NH_3). Adverse health effects from breathing air with high $PM_{2.5}$ concentrations include premature death, increased respiratory symptoms and disease, chronic bronchitis, and decreased lung function—particularly for individuals with asthma.

In 1997, EPA introduced the first $PM_{2.5}$ NAAQS.[2] The first $PM_{2.5}$ NAAQS was set at 15 micrograms per cubic meter ($\mu g/m^3$), based on an annual arithmetic mean over three years; and at 65 $\mu g/m^3$, based on the 98th percentile of 24-hour values averaged over three years. These are known as the annual and 24-hour standards, respectively. The New York-N. New Jersey-Long Island, NY-NJ-CT area is currently designated as a "Maintenance" area for the 1997 annual NAAQS. The New York-N. New Jersey-Long Island, NY-NJ-CT area consists of the following

---

[1] U.S. Environmental Protection Agency, "Particulate Matter" webpage, www.epa.gov/pm/

[2] **Federal Register** / Vol. 62, No. 138, p. 38652; published July 18, 1997

counties in New York State: Suffolk, Nassau, Richmond, Kings, Queens, New York, Bronx, Westchester, and Rockland, and Orange. No other areas in New York State are designated "non-attainment" or "maintenance."

In 2006, EPA revised the 24-hour NAAQS, lowering it from 65 μg/m^3 to 35 μg/m^3.[3] At that time, EPA retained the annual NAAQS of 15 μg/m^3. The New York-N. New Jersey-Long Island, NY-NJ-CT area is currently designated as a "Maintenance" area for the 2006 24-hour annual NAAQS. The New York-N. New Jersey-Long Island, NY-NJ-CT area consists of the following counties in New York State: Suffolk, Nassau, Richmond, Kings, Queens, New York, Bronx, Westchester, and Rockland, and Orange. No other areas in New York State are designated "non-attainment" or "maintenance."

In 2012, EPA revised the annual $PM_{2.5}$ NAAQS, lowering it from 15 μg/m^3 to 12.0 μg/m^3. At that time, EPA retained the 24-hour $PM_{2.5}$ NAAQS of 35 μg/m^3. No areas in New York State are designated "nonattainment" or "maintenance" for the 2012 $PM_{2.5}$ annual or 24-hr NAAQS.

On February 7, 2024, EPA revised the annual $PM_{2.5}$ NAAQS, lowering it from 12.0 μg/m^3 to 9.0 μg/m^3.[4] At that time, EPA retained the 24-hour $PM_{2.5}$ NAAQS of 35 μg/m^3.

C. EPA Guidance on Area Designations for the 2024 PM2.5 NAAQS

NYSDEC used the February 7, 2024 EPA Memorandum entitled "Initial Areas Designations for the 2024 Revised Primary Annual Fine Particle National Ambient Air Quality Standard" to develop this designation recommendation. As a framework for area-specific analyses, the EPA intends to use, and recommends that states base their nonattainment area boundary recommendations on, an evaluation of information relevant to five factors: air quality data, emissions-related data, meteorology, geography/topography, and jurisdictional boundaries. However, NYSDEC contends that general meteorology, geography/topography, and jurisdictional boundary parameters have not changed from those used in previous area designations for the $PM_{2.5}$ NAAQS. Consequently, NYSDEC is relying solely on air quality and emissions related data in this designation recommendation.

D. Identifying Nonattainment Areas

Section 107(d)(1) of the CAA directs EPA to designate an area "nonattainment" if it is violating the NAAQS or if it is contributing to a violation of the NAAQS in a nearby area. For this purpose, the EPA intends to evaluate areas using the most recent complete 3 consecutive calendar years of quality-assured, certified air quality data in the EPA's Air Quality System (AQS).

---

[3] **Federal Register** / Vol. 71, No. 200, p. 61144; published October 17, 2006

[4] Federal Register :: Reconsideration of the National Ambient Air Quality Standards for Particulate Matter

The following tables present 2023 $PM_{2.5}$ Design Values using actual monitoring data from 2021, 2022, and 2023 from EPA's Air Trends website as retrieved on October 8, 2024.[5] Only valid data from EPA certified monitors in the State and monitors in the NY-NJ-CT maintenance area are included.

Table 1: New York; 2023 Design Value; $PM_{2.5}$ 24-Hour NAAQS of 35 μg/m^3

New York County Name	AQS Site ID	Local Site Name	2023 Design Value (μg/m^3)
Albany	360010005	Albany County Health Dept	20
Albany	360010012	Loudonville	19
Bronx	360050110	IS 52	20
Bronx	360050133	Pfizer Lab Site	21
Chautauqua	360130006	Dunkirk	19
Erie	360290002	Amherst	22
Erie	360290005	Buffalo	19
Erie	360290023	Buffalo Near-Road	20
Essex	360310003	Whiteface Base	12
Kings	360470122	JHS 126	20
Monroe	360550015	Rochester Near-Road	17
Monroe	360551007	Rochester 2	19
New York	360610079	IS 45	22
Onondaga	360671015	East Syracuse	19
Orange	360710002	Newburgh	20
Queens	360810124	Queens College 2	22
Queens	360810125	Queens College Near Road	19
Richmond	360850055	Richmond Post Office	27
Steuben	361010003	Pinnacle State Park	20
Suffolk	361030002	Babylon	19

[5] Air Quality Design Values | US EPA

Table 2: New York; 2023 Design Value; $PM_{2.5}$ Annual NAAQS of 9.0 μg/m^3

New York County Name	AQS Site ID	Local Site Name	2023 Design Value (μg/m^3)
Albany	360010005	Albany County Health Dept.	6.8
Albany	360010012	Loudonville	6.2
Bronx	360050110	IS 52	7.9
Bronx	360050133	Pfizer Lab Site	7.7
Chautauqua	360130006	Dunkirk	6.7
Erie	360290002	Amherst	7.2
Erie	360290005	Buffalo	7.4
Erie	360290023	Buffalo Near-Road	7.7
Essex	360310003	Whiteface Base	4.0
Kings	360470122	JHS 126	8.0
Monroe	360550015	Rochester Near-Road	7.2
Monroe	360551007	Rochester 2	6.5
New York	360610079	IS 45	7.8
Onondaga	360671015	East Syracuse	6.1
Orange	360710002	Newburgh	6.6
Queens	360810124	Queens College 2	8.1
Queens	360810125	Queens College Near Road	7.9
Richmond	360850055	Richmond Post Office	8.3
Steuben	361010003	Pinnacle State Park	5.9
Suffolk	361030002	Babylon	7.0

Table 3: New Jersey; 2023 Design Value; $PM_{2.5}$ 24-Hour NAAQS of 35 μg/m^3

New Jersey County Name	AQS Site ID	Local Site Name	2023 Design Value (μg/m^3)
Bergen	340030010	Fort Lee Near Road	24
Hudson	340171003	Jersey City Firehouse	21
Middlesex	340230011	Rutgers University	21
Morris	340273001	Chester	20
Union	340390004	Elizabeth Lab	23
Union	340392003	Rahway	21

Table 4: New Jersey; 2023 Design Value; $PM_{2.5}$ Annual NAAQS of 9.0 μg/m^3

New Jersey County Name	AQS Site ID	Local Site Name	2023 Design Value (μg/m^3)
Bergen	340030010	Fort Lee Near Road	8.5
Hudson	340171003	Jersey City Firehouse	7.8
Middlesex	340230011	Rutgers University	8.4
Morris	340273001	Chester	6.1
Union	340390004	Elizabeth Lab	9.4*
Union	340392003	Rahway	7.8

*New York is developing its designation recommendation with the premise that the current 2023 design value at Elizabeth Lab in Union County, New Jersey will be adjusted downward, below the NAAQS, when Exceptional Events are considered; and that 2024 design values will confirm that the current 2023 design value is an exception.

Table 5: Connecticut; 2023 Design Value; $PM_{2.5}$ 24-Hour NAAQS of 35 µg/m^3

Connecticut County Name	AQS Site ID	Local Site Name	2023 Design Value (µg/m^3)
Fairfield	090010010	Roosevelt School-Bridgeport	21
Fairfield	090011123	Western Conn State Univ	21
New Haven	090090027	Criscuolo Park-New Haven	20
New Haven	090092123	Meadow And Bank Streets	20

Table 6: Connecticut; 2023 Design Value; $PM_{2.5}$ Annual NAAQS of 9.0 µg/m^3

Connecticut County Name	AQS Site ID	Local Site Name	2023 Design Value (µg/m^3)
Fairfield	090010010	Roosevelt School-Bridgeport	7.4
Fairfield	090011123	Western Conn State Univ	7.0
New Haven	090090027	Criscuolo Park-New Haven	7.2
New Haven	090092123	Meadow And Bank Streets	7.4

E. Control Measures

The downward trend in particulate emissions is a result of the permanent and enforceable reductions that occur statewide from the many state and federal air quality regulations. Recent updates to New York's regulations include revisions to 6 NYCRR Part 205 – Architectural and Industrial Maintenance Coatings that imposes VOC limits on paints and sealants. While VOC reductions primarily contribute to reductions in ozone formation, they can also play a role in reducing secondary PM formation. Part 205 was submitted on October 14, 2020 and approved by EPA into the SIP on October 3, 2022.

Revisions to 6 NYCRR Part 227 include Subpart 227-3, Ozone season NO_x limits for turbines which establishes more stringent limits on simple-cycle and combined-cycle turbines during the ozone season. Subpart 227-1, also applying to stationary turbine installations, lowers PM emission limits for all existing and new stationary combustion installations that either predate or are not subject to federal New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP) rules. Subpart 227-1 was submitted on March 26, 2021 and approved by EPA into the SIP on June 5, 2023.

Another significant new rule is the update to 6 NYCRR Part 218 – Emission Standards for Motor Vehicles, incorporating the latest of California's Advanced Clean Cars, Advanced Clean Trucks, and Heavy-Duty Omnibus regulations. These programs have been adopted by NYSDEC and will take effect starting in model year 2025 for light duty trucks and model year 2026 for heavy-duty vehicles and passenger cars. A SIP revision was submitted to EPA on January 26, 2024 and approval is still pending.

F. Conclusion

NYSDEC is recommending that New York State in its entirety be designated attainment for the 2024 $PM_{2.5}$ Annual and 24-hour NAAQS based on the information and data contained herein.

ENB PUBLISH DATE: 12/24/2024

Statewide - New York State Department of Environmental Conservation Designation Recommendation for the 2024 Fine Particulate Matter National Ambient Air Quality Standard

Public Notice

New York State Department of Environmental Conservation, Designation Recommendation for The 2024 Fine Particulate Matter National Ambient Air Quality Standard - Correction of Comment Deadline

Notice is hereby given that the New York State Department of Environmental Conservation (NYSDEC) plans to submit "New York State Department of Environmental Conservation Designation Recommendation for the 2024 Fine Particulate Matter National Ambient Air Quality Standard" to the United States Environmental Protection Agency (EPA) and is providing a 30-day period for the public to comment on the planned submittal.

On February 7, 2024, EPA promulgated a revised primary annual Fine Particulate Matter ($PM_{2.5}$) National Ambient Air Quality Standard (NAAQS), strengthening the standard from 12.0 micrograms per cubic meter (μg/m^3) to 9.0 μg/m^3; retained the existing 24-hour $PM_{2.5}$ standard at 35 μg/m^3; retained the existing 24-hour PM_{10} (coarse particle) standard at 150 μg/m^3; and retained the current suite of secondary PM standards.

States can choose to submit their initial designation recommendation to the EPA for the revised 2024 revised primary annual $PM_{2.5}$ NAAQS no later than 1 year following promulgation of the revised NAAQS, or by February 7, 2025. "New York State Department of Environmental Conservation Designation Recommendation for the 2024 Fine Particulate Matter National Ambient Air Quality

Standard," that recommends a designation of "attainment" statewide for the 2024 $PM_{2.5}$ NAAQS <https://dec.ny.gov/environmental-protection/air-quality/plans>, can be found at https://dec.ny.gov/environmental-protection/air-quality/plans <https://dec.ny.gov/environmental-protection/air-quality/plans> under the Particulate Matter 2.5 ($PM_{2.5}$) tab.

Written comments must be submitted by 5:00 p.m. on January 17, 2025, to the contact listed below.

Primary Contact

Daniel Goss
NYS DEC - Division of Air Resources
625 Broadway,
Albany, NY 12233-3251

Phone: (518) 402-8396
dar.sips@dec.ny.gov

This Page Covers

New York State

Department of Environmental Conservation </>

February 4, 2025

Ms. Debra Shore
Regional Administrator
U.S. EPA, Region 5
77 West Jackson Blvd.
Chicago, Illinois 60604

Re: Ohio's Recommended Designations for the 2024 Annual $PM_{2.5}$ Standard

Dear Administrator Shore:

The Ohio Environmental Protection Agency (Ohio EPA) is submitting its recommendations for designations within Ohio for the revised 2024 annual $PM_{2.5}$ standard. Certified ambient data for the 2021 to 2023 period have been evaluated to determine which areas within Ohio are not attaining the newly revised standard. This document serves to satisfy the option for States to propose initial area designations, as outlined in section 107(d) of the Clean Air Act.

The designation recommendations are based on the most current certified $PM_{2.5}$ monitoring data, along with U.S. EPA's guidance "Memorandum on the Area Designations for the 2024 Revised Annual $PM_{2.5}$ NAAQS" (February 7, 2024). This guidance recommends that states use the "five factor analysis" for designations, taking into consideration the Core Based Statistical Area (CBSA) or Combined Statistical Area (CSA) (which includes two or more adjacent CBSAs) associated with the violating monitor(s). Under this guidance, these areas would serve as the starting point or "presumptive" boundary for evaluating each nonattainment area. Ohio EPA is using this approach in our recommendations. This document evaluates meteorology, emissions, and air-quality data, population density and degree of urbanization, traffic and commuting patterns, and growth rates and patterns to support the recommended status of each area.

Ohio EPA is using 2021 to 2023 certified ambient data to evaluate the attainment status of each area for initial designations. However, for final designations, 2022 to 2024 ambient data will be used to determine the attainment status of areas associated with the violating monitor(s). Ohio EPA has also submitted Exceptional Events demonstrations for monitoring sites heavily affected by the Canadian wildfire smoke days in June to August 2023. Ohio EPA believes that without the influence of the wildfire smoke, some monitoring sites in Ohio would not be violating the revised standard and therefore these events have regulatory significance. Ohio EPA's recommended designations account for these demonstrations, which were worked on concurrently with this document.

Several counties within and adjacent to previous nonattainment boundaries were evaluated to determine what, if any, adjustments needed to be made to the recommendations. Below are the historical nonattainment areas for $PM_{2.5}$ and the identification of the specific counties that are included in Ohio's recommended designations under the newly revised 2024 annual $PM_{2.5}$ standard.

CSAs	Counties in the CSA	Historical 1997 Nonattainment Counties	Historical 2012 Nonattainment Counties	Recommended Nonattainment Counties for 2024 NAAQS
Cincinnati-Wilmington-Maysville OH-KY-IN	Butler Hamilton Clermont Brown Clinton Warren Union (IN) Franklin (IN) Dearborn (IN) Ohio (IN) Boone (KY) Kenton (KY) Campbell (KY) Gallatin (KY) Grant (KY) Pendleton (KY) Bracken (KY) Mason (KY)	Butler Warren Clermont Hamilton Dearborn (IN) Boone (KY) Kenton (KY) Campbell (KY)		Butler Hamilton
Dayton-Springfield-Kettering OH	Darke Shelby Miami Montgomery Greene Clark Champaign	Montgomery Greene Clark		
Charleston-Huntington-Ashland WV-KY-OH	Scioto Lawrence Gallia Mason (WV) Jackson (WV) Lincoln (WV) Boone (KY) Clay (WV) Wayne (WV) Putnam (WV) Kanawha (WV)	Scioto Lawrence Gallia Mason (WV) Wayne (WV) Cabell (WV) Boyd (KY) Lawrence (KY) Adams		

	Cabell (WV) Boyd (KY) Greenup (KY) Carter (KY)			
Columbus-Marion-Zanesville OH	Franklin Delaware Licking Fairfield Pickaway Hocking Perry Morrow Madison Union Ross Knox Marion Logan Muskingum Guernsey	Franklin Delaware Licking Fairfield Coshocton		
Cleveland-Akron-Canton OH	Lake Cuyahoga Geauga Lorain Medina Summit Portage Ashtabula Stark Caroll Wayne Huron Erie Tuscarawas	Lake Cuyahoga Medina Summit Portage Ashtabula Stark Lorain	Cuyahoga Lorain	Cuyahoga Stark-*unclassifiable*
Pittsburgh-New Castle-Weirton PA-OH-WV	Jefferson Hancock (WV) Brooke (WV) Belmont Ohio (WV) Marshall (WV) Washington (PA) Beaver (PA) Allegheny (PA) Butler (PA)	Jefferson Hancock (WV) Brooke (WV) Belmont Ohio (WV) Marshall (WV)		Jefferson

	Fayette (PA) Westmoreland (PA) Armstrong (PA)			
Parkersburg-Marietta-Vienna WV-OH	Washington Wood (WV) Wirt (WV)	Washington Wood (WV) Pleasants (WV)		
Toledo-Findlay-Tiffin OH	Lucas Ottawa Wood Fulton Henry Hancock Sandusky Seneca			

Ohio EPA held a 30-day public comment period from November 12, 2024 to December 20, 2024. No public hearing was requested, and no comments were received during the public comment period.

We appreciate the opportunity to provide these initial recommendations and will continue to work cooperatively with U.S. EPA Region 5 staff as we both review new ambient data and U.S. EPA prepares their comments, due 120 days prior to the promulgation of the final designations.

Ohio EPA is submitting this SIP via U.S. EPA's State Planning Electronic Collaboration System (SPeCS). If you have questions, please contact Jennifer Van Vlerah in our Division of Air Pollution Control at (614) 644-3696.

Sincerely,

Anne M. Vogel
Director, Ohio Environmental Protection Agency

Cc: Bob Hodanbosi, Chief, Division of Air Pollution Control, Ohio EPA

Ohio’s Recommended Designations for the 2024 Revised Primary Annual $PM_{2.5}$ NAAQS

The Ohio Environmental Protection Agency
Division of Air Pollution Control
Air Quality Evaluation and Planning Section
February 2025

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

D. Ohio's HYSPLIT Density Maps
E. Ohio's Exemption Request for Yankee (39-017-0020) from comparison to the 2012 PM2.5 annual NAAQS
F. Public Notice

CSAs	Counties in the CSA	Historical 1997 Nonattainment Counties	Historical 2012 Nonattainment Counties	Recommended Nonattainment Counties for 2024 NAAQS
Cincinnati-Wilmington-Maysville OH-KY-IN	Butler Hamilton Clermont Brown Clinton Warren Union (IN) Franklin (IN) Dearborn (IN) Ohio (IN) Boone (KY) Kenton (KY) Campbell (KY) Gallatin (KY) Grant (KY) Pendleton (KY) Bracken (KY) Mason (KY)	Butler Warren Clermont Hamilton Dearborn (IN) Boone (KY) Kenton (KY) Campbell (KY)		Butler Hamilton
Dayton-Springfield-Kettering OH	Darke Shelby Miami Montgomery Greene Clark Champaign	Montgomery Greene Clark		
Charleston-Huntington-Ashland WV-KY-OH	Scioto Lawrence Gallia Mason (WV) Jackson (WV) Lincoln (WV) Boone (KY) Clay (WV) Wayne (WV) Putnam (WV) Kanawha (WV) Cabell (WV) Boyd (KY)	Scioto Lawrence Gallia Mason (WV) Wayne (WV) Cabell (WV) Boyd (KY) Lawrence (KY) Adams		

	Greenup (KY) Carter (KY)			
Columbus-Marion-Zanesville OH	Franklin Delaware Licking Fairfield Pickaway Hocking Perry Morrow Madison Union Ross Knox Marion Logan Muskingum Guernsey	Franklin Delaware Licking Fairfield Coshocton		
Cleveland-Akron-Canton OH	Lake Cuyahoga Geauga Lorain Medina Summit Portage Ashtabula Stark Caroll Wayne Huron Erie Tuscarawas	Lake Cuyahoga Medina Summit Portage Ashtabula Stark Lorain	Cuyahoga Lorain	Cuyahoga Stark-*unclassifiable*
Pittsburgh-New Castle-Weirton PA-OH-WV	Jefferson Hancock (WV) Brooke (WV) Belmont Ohio (WV) Marshall (WV) Washington (PA) Beaver (PA) Allegheny (PA) Butler (PA)	Jefferson Hancock (WV) Brooke (WV) Belmont Ohio (WV) Marshall (WV)		Jefferson

	Fayette (PA) Westmoreland (PA) Armstrong (PA)			
Parkersburg-Marietta-Vienna WV-OH	Washington Wood (WV) Wirt (WV)	Washington Wood (WV) Pleasants (WV)		
Toledo-Findlay-Tiffin OH	Lucas Ottawa Wood Fulton Henry Hancock Sandusky Seneca			

Background

On February 27, 2024, U.S. EPA strengthened the 2012 primary annual $PM_{2.5}$ standard, lowering it from 12.0 µg/m^3 to 9.0 µg/m^3, and retained the existing 2006 24-hour $PM_{2.5}$ of 35 µg/m^3 (89 FR 16202).

Under Clean Air Act (CAA) Section 107(d), U.S. EPA is required to make designations after a State submits recommendations. This document is Ohio's recommendations for designations of the 2024 annual $PM_{2.5}$ standard. These recommendations are due to U.S. EPA by February 7, 2025, and use the three-most recent years of air quality data available at the time, 2021 to 2023. Following this recommendation, U.S. EPA intends to notify States (via a "120-day letter") by October 9, 2025, and to finalize designations, after a public comment period, by February 6, 2026. It is expected that U.S. EPA will make final designations considering air quality data from 2022 to 2024. This additional year of data may result in changes to Ohio's recommendations. Ohio EPA will work with U.S. EPA to make any warranted adjustments to our recommendations within this document.

Based on the air quality data, and the five-factor analysis discussed below, Ohio is recommending designations of unclassifiable/attainment, unclassifiable and nonattainment. The remainder of this document discusses the method used for Ohio's recommendations for unclassifiable and nonattainment areas and the resulting analysis. Ohio is recommending all other counties in the State be designated as unclassifiable/attainment. U.S. EPA has historically used the "unclassifiable/attainment" category for areas that monitor attainment and for areas that do not have monitors and there is no reason to believe they are not attainment or are contributing to nearby violations.

An Explanation of Ohio EPA's Five-Factor Analysis for Unclassifiable and Nonattainment Recommendations

U.S. EPA's guidance "Initial Area Designations for the 2024 Revised Primary Annual Fine Particle National Ambient Air Quality Standard" (February 7, 2024) (herein referred to as "Designation Guidance") states that each area evaluated should be assessed on a case-by-case basis considering the specific facts and circumstances unique to the area. A nonattainment area must include not only the area that is violating the standard but also nearby areas that contribute to the violation. This area of analysis begins with an evaluation of the entire urbanized area, starting with the Core Based Statistical Area/Combined Statistical Area (CBSA/CSA) that contains the violating monitor(s). Ohio's CBSA/CSA boundaries are provided by the U.S EPA

$PM_{2.5}$ Designations Mapping Tool. In all cases below, Ohio EPA is focusing on recommendations based upon an analysis of the Metropolitan Statistical Area (MSA) and in some cases, surrounding counties. Boundary recommendations should be based on an evaluation of the five factors discussed in the Designation Guidance, as well as any other relevant factors or circumstances specific to a particular area.

The five designation factors used to determine nearby areas of influence are:

1. Air quality data
2. Emissions and emissions-related data
3. Meteorology
4. Geography/topography, and
5. Jurisdictional boundaries

The analyses methods for each factor are described below and the actual analysis for each nonattainment area is provided in the section entitled "Recommendations for Unclassifiable or Nonattainment."

Factor 1: Air Quality Data

The annual revised standard is 9.0 $\mu g/m^3$. Ohio EPA operates a large network of Federal Reference Method (FRM) and Federal Equivalent Method (FEM) $PM_{2.5}$ monitors, primarily located in the expected high $PM_{2.5}$ concentration areas with additional attention to more highly populated areas as well. Included in the FRM/FEM network is a subset of monitoring sites which also monitor $PM_{2.5}$ species (sulfate, nitrate, organic carbon, elemental carbon and 'crustal' or 'other'). Many of Ohio's speciation monitors are co-located monitors to target the highest reading FRM/FEM monitors in the area. In some cases, though, the co-located speciation monitor is located in a more rural or less industrialized area.

The air quality analysis begins by looking at the design value of each monitoring site. The design value is the 3-year average, from 2021-2023, of the annual mean concentrations. Other air quality analyses that can help determine appropriate boundaries include:

- The amount by which monitored levels exceed the standard may indicate the magnitude of emissions contributing to the exceedance and whether there may be influences from surrounding areas.
- Focused analysis of monitors within and across urban areas and monitors in the surrounding suburban and rural areas to understand exceedance variabilities in the urban area monitors.

- Trends in monitoring values (and design values) in the area.
- The magnitude of quarterly, or even daily, average $PM_{2.5}$ concentrations over the course of each year may provide clues regarding contributing sources.
- Monthly and seasonal profiles of daily average $PM_{2.5}$ concentrations may provide an indication of whether seasonal conditions exist.
- Identifying the chemical components of $PM_{2.5}$ mass (speciation) may give insight into the types of emission sources that are contributing to exceedances, and therefore, the extent of a nonattainment boundary. Speciated data can be synthesized using an urban increment analysis, emissions data analysis and meteorological analysis.[1] $PM_{2.5}$ mass concentrations are generally higher in urban areas, due to locally generated and directly emitted $PM_{2.5}$ and are often referred to as the "urban increment" or "urban excess." An urban increment analysis can also be designed to differentiate local contributions from regional contributions and intra-urban differences.

All air monitoring data is retrieved from the U.S. EPA's Air Quality System (AQS) at http://www.epa.gov/ttn/airs/airsaqs/ and is presented in micrograms per cubic meter ($\mu g/m^3$) in all tables. The three-year averages for monitors that are violating the standard are bolded, italicized red numbers. Monitoring sites that have less than 75 percent capture in at least one quarter are highlighted orange cells. AQS data retrieval sheets are provided in Appendix A. The state and local air monitoring stations (SLAMS) data certification report for calendar year 2021, 2022, and 2023 are provided in Appendix B.

Data included in factor 1 are also provided by U.S. EPA's designations tools for the 2024 revised annual $PM_{2.5}$ standard:

> https://www.epa.gov/particle-pollution-designations/particle-pollution-designations-memorandum-and-data-2024-revised

This web site provides access to a wide variety of factor 1 data resources, including:

- CSN speciation data for 2020-2022
- IMPROVE speciation data for 2020-2022
- PM2.5 Design Values 2021-2023 with Urban Increments

The following tables (tables 1 and 2) summarize all the air quality data for Ohio monitoring sites from 2012 to 2023. In some case, these tables will contain more monitor locations than those identified in the unclassifiable or nonattainment area analysis because of the historical nature

[1] Any analysis of speciation data follows the procedures outlined in the Designation Guidance

of the data. Monitoring sites included in the unclassifiable or nonattainment area analysis include only those operational during the 2021-2023 design value period.

Table 1: Ohio's Average Annual $PM_{2.5}$ Concentrations (2012 - 2023)

County	SITEID	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Allen	39-003-0009	10.0	9.9	9.5	9.7	7.5	7.6	8.3	7.4	5.4	6.9	7.1	8.5
Athens	39-009-0003	8.7	8.1	7.8	7.6	6.2	6.3	6.7	6.4	6.1	6.2	5.5	6.8
Belmont	39-013-0006				8.7	8.3	7.7	7.7	8.7	7.1	8.1	6.7	8.5
Butler	39-017-0003	11.2	11.1	11.3	10.3	9.7							
	39-017-0015					9.8	9.3	9.4	9.3	8.9	9.8	8.4	10.5
	39-017-0016	10.8	10.7	10.7	9.5	9.2	8.5	8.7	8.7	8.1	8.8	7.8	
	39-017-0019	11.4	11.0	11.2	10.2	9.3	8.7	8.8	9.2	8.4	9.4	8.0	10.1
	39-017-0020[2]	13.9	13.3	12.9	11.8	11.6	10.3	10.9	11.9	10.4	11.6	9.9	12.0
	39-017-0022				12.1	10.9	10.3	10.2	10.8	9.8	11.0	9.5	12.1
Clark	39-023-0005	10.4	10.1	10.0	9.0	8.4	8.1	9.6	9.8	7.4	9.1	7.5	9.8
Cuyahoga	39-035-0034	9.3	9.5	9.6	9.20	7.80	7.8	7.9	7.2	6.8	7.5	6.7	8.4
	39-035-0038	12.3	12.2	12.3	11.8	10.0	9.9	9.5	9.1	8.8	9.8	8.9	11.2
	39-035-0045	11.4	11.2	11.4	11.0	9.4	9.8	9.5	9.2	8.8	9.9	8.2	8.9
	39-035-0060	13.2	12.1	11.9	12.3	9.6	9.7	9.9	10.2	7.9	9.7	8.8	11.9
	39-035-0065	12.3	11.4	12.5	13.3	10.7	11.2	11.1	10.8	10.4	12.7	11.0	12.8
	39-035-0073						7.3	7.9	8.2	8.4	8.8	7.6	9.1
	39-035-1002	9.7	9.2	9.7	9.1	7.8	8.1	7.8	7.4	5.9	7.5	6.5	
Franklin	39-049-0024	10.7	10.1	10.1	10.0	8.7	8.3	8.1					
	39-049-0025	10.7	10.2	11.5									
	39-049-0029	9.9	9.8	10.9	9.5	7.0							
	39-049-0034							9.9	8.8	7.7	9.1	7.7	10.3
	39-049-0038						8.8	9.1	9.7	7.8	9.3	7.9	10.7
	39-049-0039			9.0	10.4	8.4	8.2	8.6	8.2				
	39-049-0040											8.7	10.2
	39-049-0081	10.1	9.8	10.3	9.8	8.0	8.2	8.5	8.7	8.2	9.0	7.3	9.9
Greene	39-057-0005	9.6	9.7	9.8	8.3	7.8	7.4	8.1					
Hamilton	39-061-0006	10.3	10.1	10.3	9.3	8.8	8.8	9.3	9.0	8.7	10.2	8.6	8.9
	39-061-0010	10.6	10.5	10.4	9.2	8.8	8.2						
	39-061-0014	12.1	11.6	11.3	10.7	10.1	9.5	9.4	9.2	9.9	10.0	8.7	10.9
	39-061-0040	10.5	10.6	10.4	9.2	8.8	8.8	9.8	9.5	8.6	9.1	7.6	10.0

Insufficient data

County	SITEID	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023

[2] Annual NAAQS exclusionary (80 FR 18537)

Hamilton	39-061-0042	11.7	11.5	11.2	10.1	9.5	8.8	9.2	8.7	8.7	9.8	8.1	10.1
	39-061-0048			12.9			10.9	12.4	11.9	10.3	10.8	9.7	9.8
Harrison	39-067-0004							7.3					
	39-067-0005							6.5	7.6	6.5	7.9	7.0	
Jefferson	39-081-0017	11.0	9.9	12.1	12.1	11.0	8.9	8.7	9.0	8.9	11.1	9.1	9.8
	39-081-0021		7.6	10.6	9.6	7.6	8.2	8.8					
	39-081-1001	10.0	11.0										
Lake	39-085-0007	9.0	8.6	8.7	8.1	6.8	7.2	7.0	6.5	6.2	6.9	6.2	8.5
Lawrence	39-087-0012	10.9	9.1	7.5	7.3	6.7	6.6	6.4	6.7	7.3	8.2	7.1	8.5
Lorain	39-093-3002	9.5	8.8	9.1	8.2	7.0	7.6	7.8	7.2	6.7	7.6		
Lucas	39-095-0024	10.0	9.6	10.5	10.1	8.6	8.3	8.6	8.1	7.9	8.6	6.6	9.8
	39-095-0026	9.9	9.6	10.3	9.6	8.2	8.1	8.0	7.7	7.3	8.4	6.9	9.1
	39-095-0028	10.0	9.5	10.6	10.0	8.2	10.2						
	39-095-1003						8.5	8.9	8.8	9.5	8.9	8.7	10.5
Mahoning	39-099-0005	10.6	10.9	9.9	11.0	7.9	8.0	8.5	7.4				
	39-099-0014	10.1	9.7	9.8	10.2	8.0	7.9	7.8	8.3	7.9	8.8		
	39-099-0015										7.7	7.8	9.9
Medina	39-103-0004	9.3	9.1	8.6	10.1	7.6	7.8	7.5	8.1	6.5	6.9	6.3	9.1
Montgomery	39-113-0032	10.7	10.3	11.1									
	39-113-0038			8.7	9.6	8.9	8.3	8.2	9.0	9.0	9.3	7.9	9.8
Portage	39-133-0002	9.3	8.9	9.0	8.9	7.1	7.4	7.3	7.6	6.9	7.3	6.4	
Preble	39-135-1001	9.3	9.7	9.2	8.4	7.5	7.3	8.7	8.3	7.4	7.9	7.1	9.0
Scioto	39-145-0013	9.8	9.0	8.2	8.5	8.3	6.9	7.1	6.7	6.6	7.1	6.8	8.7
	39-145-0015									6.8	7.1	7.1	8.8
Stark	39-151-0017	11.9	11.6	11.7	11.4	9.3	9.4	9.1	9.3	8.3	9.4	8.2	11.0
	39-151-0020	10.4	10.7	10.6	10.5	8.2	8.3	8.8	9.6	8.7	9.4	7.9	10.3
Summit	39-153-0017	10.8	10.4	10.8	12.5	9.7	8.4	8.8	8.7	8.8	8.6	7.9	9.3
	39-153-0023	10.0	9.9	10.0	9.7	7.8	8.0	7.7	8.1	7.5	8.7	6.8	11.2
Trumbull	39-155-0005	9.3	9.8	10.3	10.5								
	39-155-0014					7.5	8.2	7.8	7.2	6.2	8.7	7.3	10.1

Source: U.S. EPA AQS

Insufficient data

Table 2: Ohio's 3-Year Annual Average $PM_{2.5}$ Concentrations (2012 - 2023)

County	SITEID	2012-2014	2013-2015	2014-2016	2015-2017	2016-2018	2017-2019	2018-2020	2019-2021	2020-2022	2021-2023
Allen	39-003-0009	9.8	9.7	8.9	8.3	7.8	7.8	7.0	6.6	6.4	7.5
Athens	39-009-0003	8.2	7.8	7.2	6.7	6.4	6.5	6.4	6.2	5.9	6.1
Belmont	39-013-0006		8.7	8.5	8.2	7.9	8.0	7.8	8.0	7.3	7.8
Butler	39-017-0003	11.2	10.9	10.4	10.0	9.7					
	39-017-0015			9.8	9.6	9.5	9.3	9.2	9.3	9.0	***9.6***
	39-017-0016	10.7	10.3	9.8	9.1	8.8	8.6	8.5	8.5	8.2	8.3
	39-017-0019	11.2	10.8	10.2	9.4	8.9	8.9	8.8	9.0	8.6	***9.1***
	39-017-0020[3]	13.4	12.7	12.1	11.2	10.9	11.0	11.1	11.3	10.7	***11.2***
	39-017-0022		12.1	11.5	11.1	10.5	10.4	10.2	10.5	10.1	***10.9***
Clark	39-023-0005	10.2	9.7	9.1	8.5	8.7	9.2	8.9	8.8	8.0	8.8
Cuyahoga	39-035-0034	9.5	9.4	8.9	8.2	7.8	7.6	7.3	7.1	7.0	7.5
	39-035-0038	12.3	12.1	11.4	10.6	9.8	9.5	9.1	9.2	9.2	***10.0***
	39-035-0045	11.3	11.2	10.6	10.1	9.6	9.5	9.2	9.3	9.0	9.0
	39-035-0060	12.4	12.1	11.2	10.5	9.7	9.9	9.3	9.3	8.8	***10.2***
	39-035-0065	12.0	12.4	12.2	11.7	11.0	11.0	10.8	11.3	11.4	***12.2***
	39-035-0073				7.3	7.6	7.8	8.2	8.5	8.2	8.5
	39-035-1002	9.5	9.3	8.9	8.3	7.9	7.8	7.0	6.9	6.6	7.0
Franklin	39-049-0024	10.3	10.1	9.6	9.0	8.4	8.2	8.1			
	39-049-0025	10.8	10.9	11.5							
	39-049-0029	10.2	10.1	9.2	8.3	7.0					
	39-049-0034					9.9	9.3	8.8	8.5	8.2	9.0
	39-049-0038				8.8	8.9	9.2	8.8	8.9	8.3	***9.3***
	39-049-0039	9.0	9.7	9.3	9.0	8.4	8.3	8.4	8.2		
	39-049-0040									8.7	***9.4***
	39-049-0081	10.1	10.0	9.4	8.7	8.2	8.5	8.5	8.7	8.2	8.7
Greene	39-057-0005	9.7	9.3	8.6	7.8	7.8	7.7	8.1			
Hamilton	39-061-0006	10.2	9.9	9.5	9.0	9.0	9.0	9.0	9.3	9.2	***9.2***
	39-061-0010	10.5	10.0	9.4	8.7	8.5	8.2				
	39-061-0014	11.7	11.2	10.7	10.1	9.7	9.4	9.5	9.7	9.5	***9.9***
	39-061-0040	10.5	10.1	9.4	8.9	9.1	9.4	9.3	9.1	8.5	8.9

Insufficient data ***X.X*** Violating monitor

County	SITEID	2012-2014	2013-2015	2014-2016	2015-2017	2016-2018	2017-2019	2018-2020	2019-2021	2020-2022	2021-2023
Hamilton	39-061-0042	11.5	11.0	10.3	9.5	9.2	8.9	8.9	9.1	8.9	***9.3***

[3] Annual NAAQS exclusionary (80 FR 18537)

	39-061-0048	12.9	12.9	12.9	10.9	11.7	11.8	11.6	11.0	10.3	***10.1***
Harrison	39-067-0004					7.3	7.3	7.3			
	39-067-0005					6.5	7.1	6.9	7.3	7.1	7.4
Jefferson	39-081-0017	11.0	11.4	11.8	10.7	9.5	8.8	8.8	9.7	9.7	***10.0***
	39-081-0021	9.1	9.3	9.3	8.5	8.2	8.5	8.8			
	39-081-1001	10.5	11.0								
Lake	39-085-0007	8.7	8.5	7.9	7.4	7.0	6.9	6.6	6.5	6.4	7.2
Lawrence	39-087-0012	9.2	8.0	7.1	6.8	6.6	6.6	6.8	7.4	7.5	7.9
Lorain	39-093-3002	9.1	8.7	8.1	7.6	7.5	7.5	7.2	7.2	7.2	7.6
Lucas	39-095-0024	10.0	10.1	9.8	9.0	8.5	8.3	8.2	8.2	7.7	8.3
	39-095-0026	10.0	9.8	9.4	8.6	8.1	7.9	7.7	7.8	7.5	8.1
	39-095-0028	10.1	10.0	9.6	9.4	9.2	10.2				
	39-095-1003				8.5	8.7	8.7	9.1	9.1	9.1	***9.4***
Mahoning	39-099-0005	10.5	10.6	9.6	9.0	8.2	8.0	8.0	7.4		
	39-099-0014	9.9	9.9	9.3	8.7	7.9	8.0	8.0	8.3	8.3	8.8
	39-099-0015								7.7	7.8	8.5
Medina	39-103-0004	9.0	9.3	8.8	8.5	7.6	7.8	7.3	7.2	6.6	7.4
Montgomery	39-113-0032	10.7	10.7	11.1							
	39-113-0038	8.7	9.1	9.1	8.9	8.5	8.5	8.8	9.1	8.8	9.0
Portage	39-133-0002	9.1	8.9	8.3	7.8	7.3	7.4	7.3	7.3	6.9	6.9
Preble	39-135-1001	9.4	9.1	8.4	7.7	7.8	8.1	8.1	7.9	7.5	8.0
Scioto	39-145-0013	9.0	8.6	8.3	7.9	7.4	6.9	6.8	6.8	6.8	7.6
	39-145-0015							6.8	6.9	7.0	7.7
Stark	39-151-0017	11.7	11.6	10.8	10.1	9.3	9.3	8.9	9.0	8.6	***9.4***
	39-151-0020	10.6	10.6	9.7	9.0	8.4	8.9	9.0	9.2	8.6	***9.2***
Summit	39-153-0017	10.7	11.2	11.0	10.2	9.0	8.6	8.8	8.7	8.4	8.6
	39-153-0023	10.0	9.9	9.2	8.5	7.8	7.9	7.8	8.1	7.7	8.9
Trumbull	39-155-0005	9.8	10.2	10.4	10.5						
	39-155-0014			7.5	7.9	7.8	7.7	7.1	7.4	7.4	8.7

Source: U.S. EPA AQS

Insufficient data ***X.X*** Violating monitor

Exceptional Events

From June to August in the summer of 2023, there were several days where smoke from Canadian wildfires was present in Ohio. This caused many sites across the state to have high daily $PM_{2.5}$ values, for those days in the summer, and overall led to higher trending design values for 2023 than what was observed in previous years. Ohio EPA is submitting "Exceptional Events" demonstrations for 2023 wildfire smoke-driven $PM_{2.5}$ episodes to the U.S. EPA regarding these wildfire smoke days; however, these demonstrations were being worked on concurrently with these recommendations. Therefore, the design values in table 1 and table 2 above still include the wildfire smoke days with high $PM_{2.5}$ values and in some cases do not reflect the design values Ohio EPA is using to inform the final designations for Ohio unclassifiable or nonattainment areas.

Columbus Area

As can be seen in table 2 above and table 3 below, there is one violating monitoring site (39-049-0038) in Franklin County. Historically, Franklin County was part of the 1997 annual $PM_{2.5}$ nonattainment area along with Delaware, Licking, Fairfield, and Coshocton Counties. This monitoring site is the only site in this CSA with violating 2021-2023 design values. The surrounding counties do not have $PM_{2.5}$ monitoring.

On January 6, 2025, Ohio EPA submitted to U.S. EPA an exceptional events demonstration requesting the exclusion of seven $PM_{2.5}$ daily values at monitoring site 39-049-0038 affected by regulatorily significant wildfire smoke events. If U.S. EPA approves these exclusions, the new 2021-2023 annual design value at this site would be attaining at 9.0 $\mu g/m^3$. Site 39-049-0040 has insufficient data for computing a valid 2021-2023 annual design value and therefore will not be used for designation purposes. This monitoring site began operating in May of 2022 leading to the invalid 2021-2023 design value. Ohio EPA also requested the exclusion of certain $PM_{2.5}$ daily values at monitoring sites 39-049-0034, 39-049-0040, and 39-049-0081 due to impacts from the regulatorily significant wildfire smoke events; however, those additional demonstrations do not impact the outcome of Ohio's recommendations contained within.

Therefore, Ohio EPA is including Franklin County in Ohio's request for unclassifiable/attainment designations.

Table 3: Annual Average (µg/m³) for Franklin County Monitoring Sites (before and after the Exceptional Events (EE) Demonstration)

		Annual Averages			2021-2023 3-Year Annual Average	
County	**Site ID**	**2021**	**2022**	**2023**	**Before EE**	**After EE**
Franklin OH	39-049-0034	9.1	7.7	10.3	9.0	8.7
	39-049-0038	9.3	7.9	10.7	***9.3***	9.0
	39-049-0040		8.7	10.2	9.4	9.4
	39-049-0081	9.0	7.3	9.9	8.7	8.5

Source: U.S. EPA AQS

Insufficient data ***X.X*** Violating monitor

Toledo Area

As can be seen from table 2 and table 4, there is one violating monitoring site (39-095-1003) in Lucas County. Historically, Lucas County has not been a part of any $PM_{2.5}$ nonattainment areas, and surrounding counties do not contain $PM_{2.5}$ monitoring sites.

On December 9, 2024, Ohio EPA submitted to U.S. EPA an exceptional events demonstration requesting the exclusion of two $PM_{2.5}$ daily values at monitoring site 39-095-1003 affected by regulatorily significant wildfire smoke events. If U.S. EPA approves these exclusions, the new 2021-2023 annual design value at this site would be 9.0 µg/m³. As part of this exceptional events demonstration, Ohio EPA also requested the exclusion of certain $PM_{2.5}$ daily values at monitoring sites 39-095-0024 and 39-095-0026 due to impacts from the regulatorily significant wildfire smoke events; however, those additional demonstrations do not impact the outcome of Ohio's recommendations contained within.

Therefore, Ohio EPA is including Lucas County in Ohio's request for unclassifiable/attainment designations.

Table 4: Annual Average (µg/m³) for Lucas County Monitoring Sites (before and after the Exceptional Events (EE) Demonstration)

		Annual Averages			2021-2023 3-Year Annual Average	
County	**Site ID**	**2021**	**2022**	**2023**	**Before EE**	**After EE**
Lucas OH	39-095-0024	8.6	6.6	9.8	8.3	8.0
	39-095-0026	8.4	6.9	9.1	8.1	7.8
	39-095-1003	8.9	8.7	10.5	***9.4***	9.0

Source: U.S. EPA AQS

Insufficient data ***X.X*** Violating monitor

Factor 2: Emissions and Emissions-Related Data

The analysis for factor 2 looks at $PM_{2.5}$-related emissions from areas nearby to an exceeding monitoring site to determine their contribution. Emissions data are derived from the 2022 EMP data[4] which is a modeling platform data set generated from the 2020 National Emissions Inventory (NEI) and projected to 2022. This data set was generated through a collaborative between states and U.S. EPA and is a widely used data set for state implementation purposes. Emissions reductions that may occur beyond those in these inventories that are due to permanent and enforceable emissions controls that will be in place in time for attainment are also discussed.

This analysis looks at emissions of identified sources, and their magnitude, of direct $PM_{2.5}$, the major components of direct $PM_{2.5}$ (organic carbon, elemental carbon, crustal material and/or individual trace metal compounds), primary nitrate and primary sulfate, and precursor gaseous pollutants (e.g., SO_2, NO_x, total VOC and NH_3).

Analyzing the magnitude and special extent of emissions can further inform the urban/rural air monitoring analysis. Furthermore, combining these analyses with meteorological analysis can further inform the degree of contribution from nearby areas.

Also included in this analysis are current population and population growth, population density and degree of urbanization along with traffic and commuting patterns. Local trends in population growth and patterns may indicate the probable location and magnitude of emissions sources that contribute to nonattainment. The 2022 EMP includes emissions for smaller stationary area and mobile source emissions. Analyzing population density, degree of urbanization, and transportation arteries may provide an indication of the spatial extent emissions from area and mobile sources. Analyzing traffic and commuting patterns, such as analyzing the number and percent of total commuters in each county commuting to counties with violating monitoring sites and analyzing the total vehicle miles traveled (VMT), may help assess the influence of mobile source emissions in an area.

Data used for population, county trends, degree of urbanization, commuting patterns, and county VMTs was provided by the following sources:

- Ohio populations and county profiles - Ohio Department of Development, County Trends and Profiles for 2022, https://development.ohio.gov/about-us/research/county/county-trends

[4] https://www.epa.gov/air-emissions-modeling/2022v1-emissions-modeling-platform

- Other state populations - U.S. Department of Commerce, Economics and Statistics Administrations, U.S. Census Bureau, 2022 American Community Survey 5-year Estimates https://data.census.gov/table/ACSDP5Y2022.DP05?q=2022%20state%20population
- Ohio VMT data by county - Ohio Department of Transportation, Programs, Technical Services, Traffic Monitoring, Archived DVMT Reports by Year, 2022 data, https://www.dot.state.oh.us/TechnicalServices/Pages/DVMT-Archived-Reports-SC.aspx
- Kentucky VMT data by county - Kentucky Transportation Cabinet, Division of Planning, Roadway Information and Data, Daily Vehicles Miles Traveled (DVMT) and Mileage Reports for 2022, https://transportation.ky.gov/Planning/Pages/Roadway-Information-and-Data.aspx
- Indiana VMT data by county - Indiana Department of Transport, Historic VMT by County (1992-2022), https://www.in.gov/indot/resources/traffic-data/
- West Virginia VMT data by county – provided upon contact with the West Virginia Department of Transportation, Information technology Division, Highway Programming and Analytics Unit (Appendix C)
- Commuter Data - U.S. Department of Commerce, Economics and Statistics Administrations, U.S. Census Bureau, Residence County to Workplace County Commuting Flows for the United States and Puerto Rico Sorted by Workplace Geography: 5-year ACS 2016-2020 https://www.census.gov/data/tables/2020/demo/metro-micro/commuting-flows-2020.html
- All other information – U.S. EPA 2024 $PM_{2.5}$ designations tools

Factor 3: Meteorology

The meteorology review looks at wind data gathered at stations in and near Ohio by the National Weather Service (NWS). Figures presented for factor 3 indicate the annual average winds for the NWS site. This data may also suggest that emissions in some directions relative to the violation may be more prone to contribute than emissions from other directions.

Wind rose meteorology data included in factor 3 are provided by AERMET surface data and then created using the WRPLOT View application.

HYSPLIT (Hybrid Single-Particle Lagrangian Integrated Trajectory) model density maps (Appendix D) included in factor 3 were provided by U.S. EPA. The density maps, along with a copy of Attachment 4 “Preparing and Running a HYSPLIT Modeling Analysis for Evaluating Nonattainment Area Boundaries for the 2024 Revised Primary Annual $PM_{2.5}$ NAAQS Designations” from the Designations Guidance, can be found at:

https://www.epa.gov/particle-pollution-designations/particle-pollution-designations-memorandum-and-data-2024-revised

Factor 4: Geography/topography

The geography and topography analysis looks at physical features that might have an effect on the airshed, and therefore, the distribution of particulate matter over an area. Ohio does not have significant topographic features that significantly influence the regional transport of pollutants within the multi-county study areas.

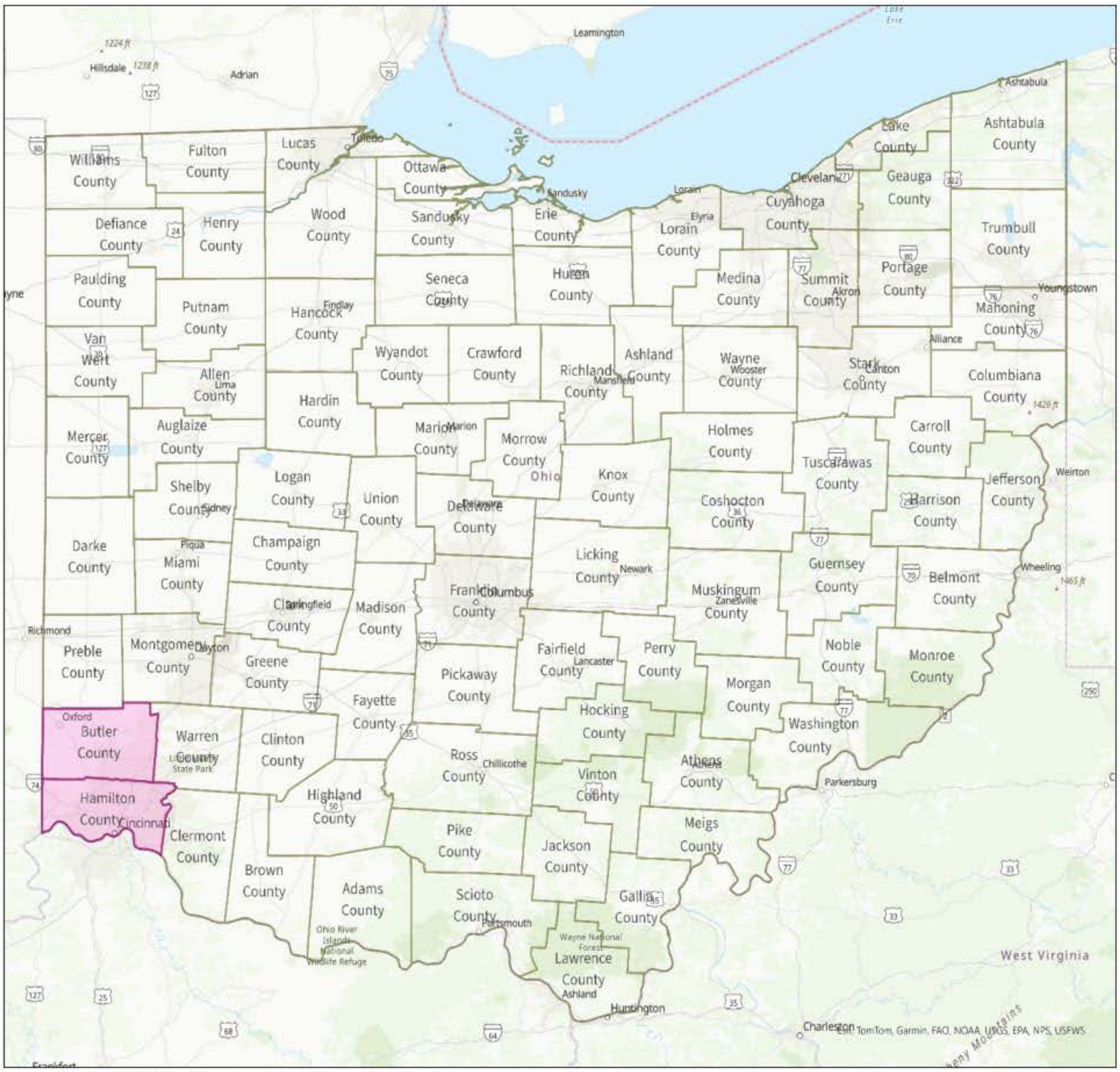
Factor 5: Jurisdictional Boundaries

The analysis of jurisdictional boundaries looks at the planning and organizational structure of an area to determine if the implementation of controls in a potential nonattainment area can be carried out in the cohesive manner.

Recommendations for Unclassifiable or Nonattainment Areas

Cincinnati-Wilmington-Maysville OH-KY-IN CSA

Figure 1: Cincinnati-Wilmington-Maysville OH-KY-IN CSA Recommended Nonattainment Area – Ohio Portion Only

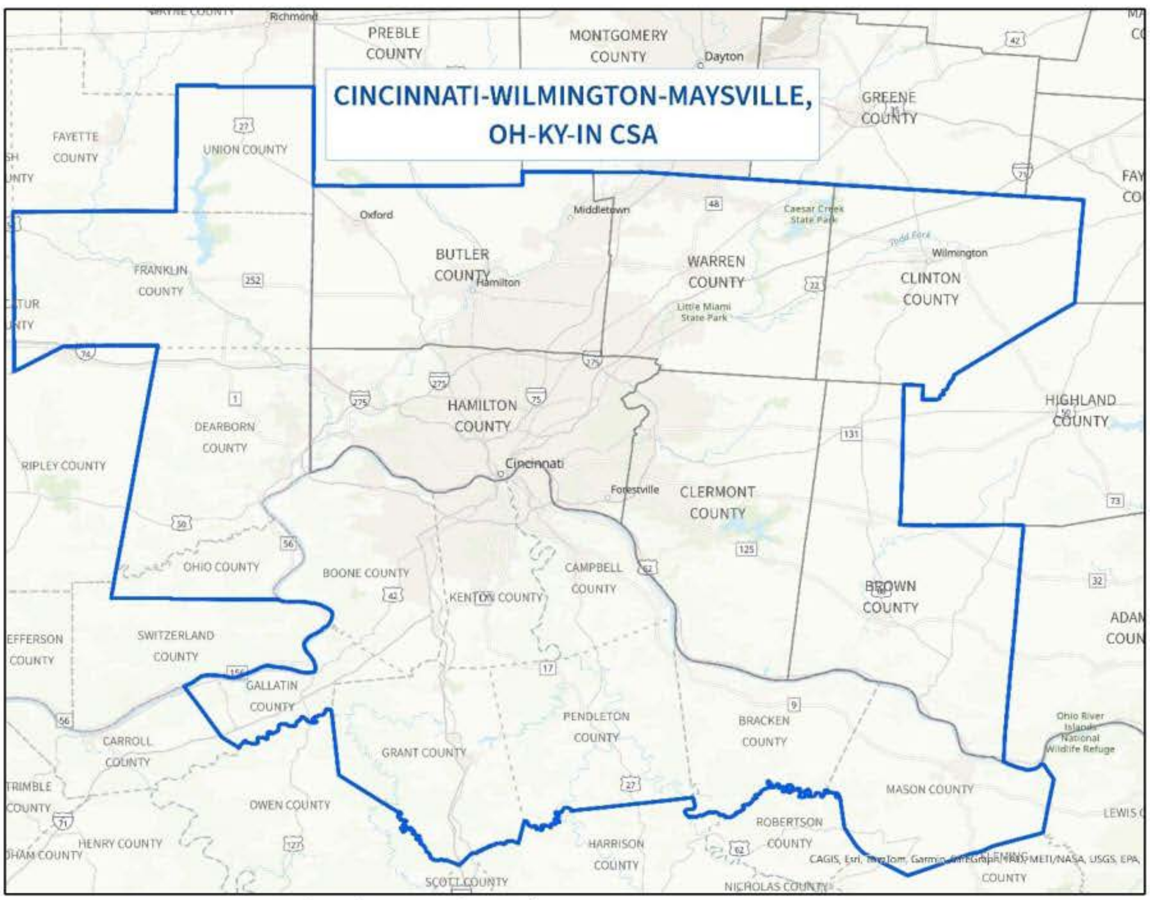


Source: U.S. EPA $PM_{2.5}$ Designations Mapping Tool

DISCUSSION

There are four Ohio counties in this historic 1997 annual $PM_{2.5}$ standard nonattainment area: Butler, Clermont, Hamilton, and Warren Counties. In addition to Ohio counties, Boone, Kenton and Campbell Counties in Kentucky and partial Dearborn County in Indiana were a part of this 1997 annual $PM_{2.5}$ standard nonattainment area. Ohio EPA recommends designating Butler and Hamilton Counties as nonattainment for the Ohio portion of the Cincinnati-Wilmington-Maysville OH-KY-IN CSA. After considering the five factors, Ohio EPA does not recommend adding any additional contributing Ohio counties to this area.

Figure 2: Cincinnati-Wilmington-Maysville OH-KY-IN CSA



Source: U.S. EPA $PM_{2.5}$ Designations Mapping Tool

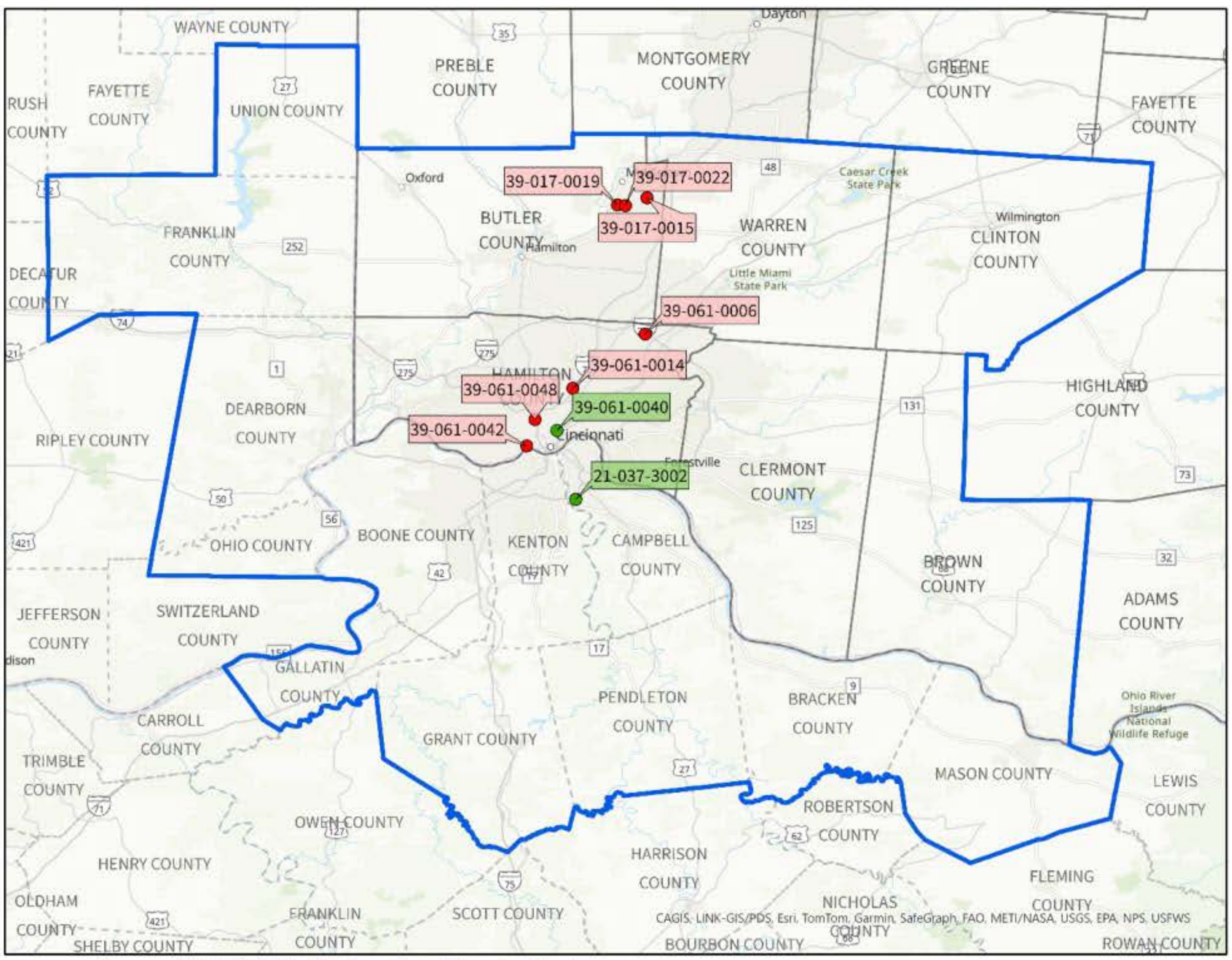
There are three violating monitoring sites in Butler County and four violating monitoring sites in Hamilton County (figure 3). Butler and Hamilton Counties are part of the Cincinnati-Maysville-Wilmington CSA (shown in figure 2 above) and the Cincinnati MSA. The CSA also includes Clermont, Brown, Clinton, and Warren Counties in Ohio; Gallatin, Grant, Pendleton, Boone, Kenton, Mason, Campbell, and Bracken Counties in Kentucky; and Ohio, Dearborn, Franklin, and Union Counties in Indiana.

Ohio EPA will not be analyzing any additional counties adjacent to the CSA counties. Counties to the north are part of the historical Dayton-Springfield $PM_{2.5}$ nonattainment area, which is attaining the newly revised standard. The counties to the east of Brown and Clinton Counties will not be analyzed because historically those counties have been excluded from the nonattainment area. Ohio EPA will analyze Brown and Clinton Counties as part of the Cincinnati-Wilmington-Maysville CSA with respect to the new standard.

AIR QUALITY DATA

For the 2021-2023 period, there are nine Ohio monitoring sites and one Kentucky monitoring site in this area.

Figure 3: Cincinnati-Wilmington-Maysville OH-KY-IN CSA Monitoring Sites



Source: U.S. EPA $PM_{2.5}$ Designations Mapping Tool

As can be seen in table 5, monitoring sites 39-017-0015, 39-017-0019 and 39-017-0022 in Butler County and monitoring sites 39-61-0006, 39-061-0014, 39-061-0042, and 39-061-0048 in

Hamilton County are violating the standard based on 2021-2023 air quality data. The design value for this area is 10.9 µg/m³. As can be seen from tables 1 and 2, air quality trends have historically declined in this area with the exception of 2023 data influenced by wildfire events.

Table 5: Annual Average (µg/m³) for Analysis Area Monitoring Sites (KY and OH)

		Annual Averages			3-year Annual Average
County	**Site ID**	**2021**	**2022**	**2023**	**2021 - 2023**
Butler OH	39-017-0015	9.8	8.4	10.5	***9.6***
	39-017-0019	9.4	8.0	10.1	***9.1***
	39-017-0022	11.0	9.5	12.1	***10.9***
Hamilton OH	39-061-0006	10.2	8.6	8.9	***9.2***
	39-061-0014	10.0	8.7	10.9	***9.9***
	39-061-0040	9.1	7.6	10.0	8.9
	39-061-0042	9.8	8.1	10.1	***9.3***
	39-061-0048	10.8	9.7	9.8	***10.1***
Campbell KY	21-037-3002	7.6	6.7	8.5	7.6

Source: U.S. EPA AQS

Insufficient data ***X.X*** Violating monitor

Ohio monitoring site 39-017-0020 is shown in table 1 above but is not included in the analysis presented in this section. This monitoring site is one of three sites monitoring the Middletown Coke Company facility in Butler County. Previously, Ohio requested in the 2015 Air Monitoring Network Plan (AMNP) to exempt this site from comparison to the annual $PM_{2.5}$ standard. U.S EPA approved this exemption on April 15, 2015 (80 FR 18537). Furthermore, with the installation of a FEM monitor at site 39-017-0020 in 2021, Ohio EPA submitted, and U.S. EPA approved a request to also exclude this site's newly installed FEM monitor from the annual $PM_{2.5}$ standard.[5] Therefore, the data collected by site 39-017-0020 will not be used to inform a decision regarding attainment or nonattainment of the newly revised annual $PM_{2.5}$ standard.

[5] A copy of Ohio EPA's correspondence with the Region 5 U.S. EPA office regarding the aforementioned exclusion can be found in appendix E attached to this document

As can be seen in table 6, there is one speciation monitor located in Hamilton County, co-located at site 39-061-0040.

Table 6: Cincinnati Area Speciation Monitoring Sites

Site ID	Annual Averages	Speciation Monitor SANDWICH Mass					Site Design Value
		Sulfate	Nitrate	Organic Carbon	Elemental Carbon	Crustal	
39-061-0040 Hamilton County	2020	1.23	1.17	1.90	0.59	0.40	8.6
	2021	1.32	1.37	2.29	0.67	0.43	9.1
	2022	1.09	1.24	1.75	0.79	0.45	7.6
	2020-2022 3-year average	1.21	1.26	1.98	0.69	0.43	8.5

Source: CSN speciation data (SANDWICHED) from https://www.epa.gov/particle-pollution-designations/particle-pollution-designations-memorandum-and-data-2024-revised#A

Organic carbon dominates at the monitoring site with a fairly equal amount of sulfate and nitrate that also has a significant presence. Historically sulfate was more dominant than nitrate.[6] This may be an indication of the significant shutdown of coal fired power plants in the area.

[6] https://dam.assets.ohio.gov/image/upload/epa.ohio.gov/Portals/27/sip/Designations_2012_PM2.5_standard_Final.pdf

The 2021-2023 urban increments (UI) in table 7 have also been calculated for the three of the violating monitoring sites.

Table 7: Cincinnati-Wilmington-Maysville CSA Urban Increments

2021-2023 Averages		Organic Carbon UI	Elemental Carbon UI	Nitrates UI	Sulfates UI	Crustal UI
Butler 39-017-0015	Quarter 1	1.05	0.44	1.52	0.29	0.06
	Quarter 2	1.64	0.76	0.00	0.12	0.00
	Quarter 3	1.61	0.72	0.00	-0.20	0.06
	Quarter 4	1.08	0.64	0.32	0.06	0.19
	Annual	1.34	0.65	0.45	0.06	0.08
Butler 39-017-0019	Quarter 1	1.05	0.44	1.52	0.29	0.06
	Quarter 2	1.64	0.76	0.00	0.12	0.00
	Quarter 3	1.61	0.72	0.00	-0.20	0.06
	Quarter 4	1.08	0.64	0.32	0.06	0.19
	Annual	1.34	0.65	0.45	0.06	0.08
Butler 39-017-0022	Quarter 1	1.05	0.44	1.52	0.29	0.06
	Quarter 2	1.64	0.76	0.00	0.12	0.00
	Quarter 3	1.61	0.72	0.00	-0.20	0.06
	Quarter 4	1.08	0.64	0.32	0.06	0.19
	Annual	1.34	0.65	0.45	0.06	0.08
Hamilton 39-061-0014	Quarter 1	1.24	0.44	1.33	0.14	0.01
	Quarter 2	0.88	0.49	0.00	0.16	-0.03
	Quarter 3	1.53	0.57	0.00	0.04	0.04
	Quarter 4	1.42	0.52	0.42	0.12	0.09
	Annual	1.27	0.49	0.45	0.12	0.03
Hamilton 39-061-0040	Quarter 1	1.24	0.40	1.33	0.14	0.01
	Quarter 2	0.88	0.49	0.00	0.16	-0.03
	Quarter 3	1.53	0.57	0.00	0.04	0.04
	Quarter 4	1.42	0.52	0.42	0.12	0.09
	Annual	1.27	0.49	0.45	0.12	0.03
Hamilton 39-061-0042	Quarter 1	1.24	0.40	1.33	0.14	0.01
	Quarter 2	0.88	0.49	0.00	0.16	-0.03
	Quarter 3	1.53	0.57	0.00	0.04	0.04
	Quarter 4	1.42	0.52	0.42	0.12	0.09
	Annual	1.27	0.49	0.45	0.12	0.03
Hamilton 39-061-0048	Quarter 1	1.24	0.40	1.33	0.14	0.01
	Quarter 2	0.88	0.49	0.00	0.16	-0.03
	Quarter 3	1.53	0.57	0.00	0.04	0.04
	Quarter 4	1.42	0.52	0.42	0.12	0.09
	Annual	1.27	0.49	0.45	0.12	0.03

Source: https://www.epa.gov/particle-pollution-designations/particle-pollution-designations-memorandum-and-data-2024-revised

Organic carbon UI is high throughout the year, much higher than the other species, at all monitoring sites. There is a higher nitrates UI at all monitoring sites in quarter 1. Crustal UI is higher during quarter 3 across all monitoring sites. For elemental carbon, the UI is higher in quarter 2 for the Butler County monitoring sites, but higher in quarter 3 for the Hamilton County monitoring sites. Sulfates UI is higher in quarter 1 for the Butler County monitoring sites and higher in quarter 2 for the Hamilton County monitoring sites.

EMISSIONS AND EMISSIONS RELATED DATA

Emission trends

Table 8 presents emissions data for the Cincinnati-Wilmington-Maysville OH-KY-IN CSA. The most significant emissions in the Cincinnati-Wilmington-Maysville OH-KY-IN CSA emanate from Hamilton County and then from Clermont and Butler Counties. Together, Hamilton, Butler, and Clermont Counties emissions account for 44% of the analysis area's total emissions: 46% of $PM_{2.5}$, 51% of NO_X, 38% of NH_3, 77% of SO_2, and 32% of VOC emissions. For each pollutant listed, Hamilton County is the top emitter of all the counties in the analysis area, responsible for 24% of the total area emissions. Clermont County is the second highest emitter, followed closely by Butler County. Clermont County is located to the east of Hamilton County and the violating monitoring sites.

All counties have relatively high VOC emissions dominated by the non-point source sectors which are primarily biogenics and then, consumer solvents.

Setting aside VOC emissions dominated by biogenics, Kentucky and Indiana have low emissions with the exception of high SO_2 and NO_X emissions from Mason (KY) County. The remaining Ohio counties emissions are relatively lower than Butler, Hamilton, and Clermont Counties.

Warren County located to the northeast of the violating monitoring sites, has low emissions, except for NO_x, which is largely on road emissions.

In Hamilton County, the majority of $PM_{2.5}$ emissions are from non-point sources, especially from the construction and paved road dust sectors. In Butler County, the majority of $PM_{2.5}$ emissions are also from non-point sources especially from residential wood fuel and then paved road dust sectors. In Clermont County, the majority of $PM_{2.5}$ emissions are from non-point sources especially from residential wood fuel and then waste disposal sectors.

In Hamilton, Butler and Clermont Counties, the majority of NO_x and SO_2 emissions are from point sources as will be discussed below. As noted above, Warren County NO_x emissions are most significantly from on road emissions and SO_2 emissions are very low.

Table 8: Cincinnati-Wilmington-Maysville OH-KY-IN CSA Counties 2022 Emissions Data (TPY)

Hamilton	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	871.25	67.61	40.15	87.00	2.49	674.00	8,301.18	50.98	17,122.98	682.30
Nonpoint	3,230.94	1,020.25	106.50	40.45	6.15	2,057.60	2,270.18	542.21	61.20	13,803.83
Non-Road	150.44	60.78	41.94	4.10	0.92	42.65	1,484.50	4.78	1.98	1,470.59
On Road	144.42	40.23	51.52	5.61	0.25	46.81	4,186.38	466.50	19.25	2,399.74
Total	4,397.05	1,188.87	240.11	137.16	9.81	2,821.06	16,242.25	1,064.47	17,205.40	18,356.47
Butler	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	591.24	169.78	24.44	115.71	6.82	274.49	2,648.77	121.49	2,014.86	626.94
Nonpoint	1,769.25	620.56	75.32	19.28	5.61	1,048.48	1,438.09	491.15	39.71	9,157.16
Non-Road	53.68	22.31	13.60	1.22	0.28	16.26	483.79	1.48	0.62	581.58
On Road	52.61	14.78	19.34	1.84	0.09	16.57	1,445.83	161.49	6.75	1,004.00
Total	2,466.79	827.43	132.70	138.05	12.80	1,355.80	6,016.47	775.61	2,061.94	11,369.68
Clermont	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	324.64	12.36	13.71	32.31	0.25	266.00	3,695.41	1.97	6,286.08	111.51
Nonpoint	1,322.16	450.68	60.45	12.38	3.29	795.35	599.06	233.33	34.33	9,552.87
Non-Road	31.99	13.25	8.31	0.75	0.18	9.49	307.54	0.89	0.36	401.41
On Road	32.41	9.17	12.39	1.13	0.06	9.66	907.30	99.03	4.17	594.99
Total	1,711.19	485.46	94.86	46.57	3.78	1,080.50	5,509.32	335.22	6,324.93	10,660.77
Warren	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	113.29	11.67	1.77	11.86	1.59	86.40	612.09	1.38	22.69	357.12
Nonpoint	1,379.43	469.15	64.03	14.63	3.38	828.25	753.25	274.77	38.94	8,898.91
Non-Road	40.42	16.09	11.97	1.20	0.27	10.88	442.14	1.29	0.52	437.55
On Road	41.84	11.91	16.63	1.87	0.08	11.35	1,351.63	130.61	5.63	695.42
Total	1,574.99	508.82	94.40	29.56	5.32	936.88	3,159.11	408.06	67.78	10,388.99
Clinton	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	42.07	4.72	1.00	1.41	0.14	34.80	99.62	0.00	10.62	183.92
Nonpoint	605.89	116.40	13.98	4.44	1.59	469.49	444.17	450.81	6.26	5,316.60
Non-Road	12.77	4.66	4.79	0.52	0.12	2.67	176.57	0.35	0.15	112.88
On Road	15.13	4.32	6.77	0.78	0.03	3.22	577.27	38.45	1.65	201.76
Total	675.85	130.10	26.54	7.15	1.88	510.18	1,297.62	489.61	18.68	5,815.17
Brown	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	11.33	2.92	0.59	0.71	0.14	6.97	20.39	0.30	22.93	16.37

Nonpoint	676.77	164.85	21.70	5.77	4.17	480.28	387.03	178.40	9.86	8,272.40
Non-Road	9.10	3.30	3.55	0.39	0.09	1.77	138.64	0.29	0.11	93.11
On Road	9.12	2.63	4.01	0.35	0.02	2.11	295.21	23.64	0.98	164.84
Total	706.32	173.70	29.85	7.22	4.42	491.13	841.27	202.63	33.87	8,546.73
Kenton KY	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	24.56	30.21	3.24	6.16	0.11	48.24	98.36	0.00	0.51	234.90
Nonpoint	820.52	234.78	26.75	5.99	2.42	441.61	633.51	144.05	21.14	4,385.20
Non-Road	21.72	11.64	8.45	0.81	0.19	7.86	172.31	0.58	0.23	249.52
On Road	40.36	10.71	17.48	2.14	0.08	9.94	1,321.77	94.19	4.24	491.85
Total	907.16	287.34	55.92	15.10	2.80	507.65	2,225.95	238.82	26.12	5,361.46
Boone KY	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	269.90	60.06	11.83	25.84	0.85	253.83	3,203.33	8.11	1,937.64	1,257.28
Nonpoint	887.84	245.70	29.89	7.28	3.51	462.99	673.37	204.70	26.69	5,696.37
Non-Road	28.99	19.88	10.56	1.69	0.20	17.73	207.62	0.67	0.29	420.00
On Road	43.58	11.60	19.42	2.55	0.09	9.92	1,528.12	100.69	4.63	474.54
Total	1,230.30	337.24	71.70	37.36	4.65	744.47	5,612.43	314.17	1,969.24	7,848.19
Campbell KY	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	105.06	40.12	5.76	20.77	1.60	65.49	95.92	0.00	1.66	282.24
Nonpoint	571.84	166.74	21.04	4.46	2.36	319.82	404.80	124.43	15.16	4,106.52
Non-Road	9.53	5.46	4.67	0.48	0.11	3.43	104.92	0.31	0.12	129.35
On Road	20.50	5.59	8.99	1.01	0.04	4.87	655.91	49.39	2.21	271.11
Total	706.93	217.91	40.46	26.72	4.11	393.61	1,261.54	174.13	19.16	4,789.22
Grant KY	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	6.71	4.45	0.50	1.31	0.02	10.03	11.57	0.00	0.80	21.79
Nonpoint	336.38	70.03	9.80	2.96	2.85	212.29	422.93	144.37	6.16	5,179.28
Non-Road	3.27	3.23	3.42	0.37	0.09	1.75	27.82	0.08	0.03	61.89
On Road	18.87	5.16	9.96	1.05	0.05	2.66	741.92	33.09	1.58	149.99
Total	365.23	82.87	23.68	5.69	3.01	226.73	1,204.23	177.54	8.56	5,412.95
Mason KY	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	190.17	8.17	5.92	32.56	0.16	150.03	3,977.13	5.50	3,959.82	224.34
Nonpoint	408.18	62.88	8.08	4.00	5.96	265.01	362.65	251.97	6.26	3,475.39
Non-Road	3.08	3.01	3.14	0.40	0.08	1.89	48.47	0.11	0.05	46.86
On Road	5.44	1.52	2.48	0.22	0.01	1.20	169.19	11.29	0.48	75.59

Total	606.86	75.58	19.62	37.18	6.21	418.13	4,557.44	268.87	3,966.61	3,822.17
Pendleton KY	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	85.03	9.52	1.79	9.65	0.44	83.95	1,087.39	0.00	666.40	176.97
Nonpoint	329.31	50.16	6.97	2.19	2.37	171.19	289.57	115.17	8.29	4,823.20
Non-Road	1.67	1.63	1.77	0.21	0.05	0.94	20.70	0.05	0.02	18.67
On Road	2.86	0.81	1.34	0.11	0.01	0.59	88.89	5.41	0.24	53.35
Total	418.88	62.12	11.87	12.16	2.87	256.67	1,486.56	120.63	674.94	5,072.20
Bracken KY	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	11.76	3.37	0.20	0.21	0.01	10.32	3.72	0.00	0.02	15.84
Nonpoint	201.57	35.25	4.75	2.09	2.97	145.43	247.04	141.25	1.95	3,881.42
Non-Road	2.31	1.93	2.22	0.25	0.06	0.98	37.48	0.09	0.03	38.85
On Road	2.66	0.79	1.31	0.09	0.01	0.47	90.97	5.33	0.22	45.25
Total	218.30	41.34	8.48	2.64	3.05	157.20	379.21	146.67	2.22	3,981.36
Gallatin KY	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	984.50	42.94	6.68	62.00	2.99	887.43	815.50	0.00	426.74	113.39
Nonpoint	239.67	32.62	5.07	1.44	1.24	107.36	212.29	61.16	6.56	2,856.25
Non-Road	1.37	1.66	1.90	0.21	0.05	0.84	25.59	0.05	0.02	37.03
On Road	9.81	2.70	5.18	0.56	0.03	1.35	391.84	17.78	0.84	69.14
Total	1,235.35	79.92	18.83	64.21	4.31	996.98	1,445.23	79.00	434.17	3,075.81
Dearborn IN	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	133.27	40.87	6.11	27.86	2.16	56.27	792.77	59.78	96.07	3,357.65
Nonpoint	497.04	164.37	22.95	4.67	1.87	303.17	362.66	109.21	98.53	5,516.84
Non-Road	7.81	3.10	2.36	0.24	0.05	2.06	85.00	0.24	0.09	75.02
On Road	16.65	4.67	7.24	0.82	0.03	3.88	587.22	42.65	1.83	244.73
Total	654.76	213.01	38.66	33.59	4.11	365.38	1,827.66	211.87	196.53	9,194.25
Franklin IN	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	0.10	0.04	0.01	0.01	0.00	0.05	0.09	0.00	0.02	0.20
Nonpoint	360.85	101.55	14.08	3.34	2.90	238.98	315.15	319.20	42.93	6,370.41
Non-Road	9.11	3.48	3.11	0.32	0.08	2.12	118.76	0.25	0.10	85.70
On Road	5.63	1.61	2.46	0.25	0.01	1.30	189.99	14.06	0.60	99.98
Total	375.69	106.68	19.66	3.92	2.99	242.45	624.00	333.52	43.65	6,556.30
Ohio IN	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

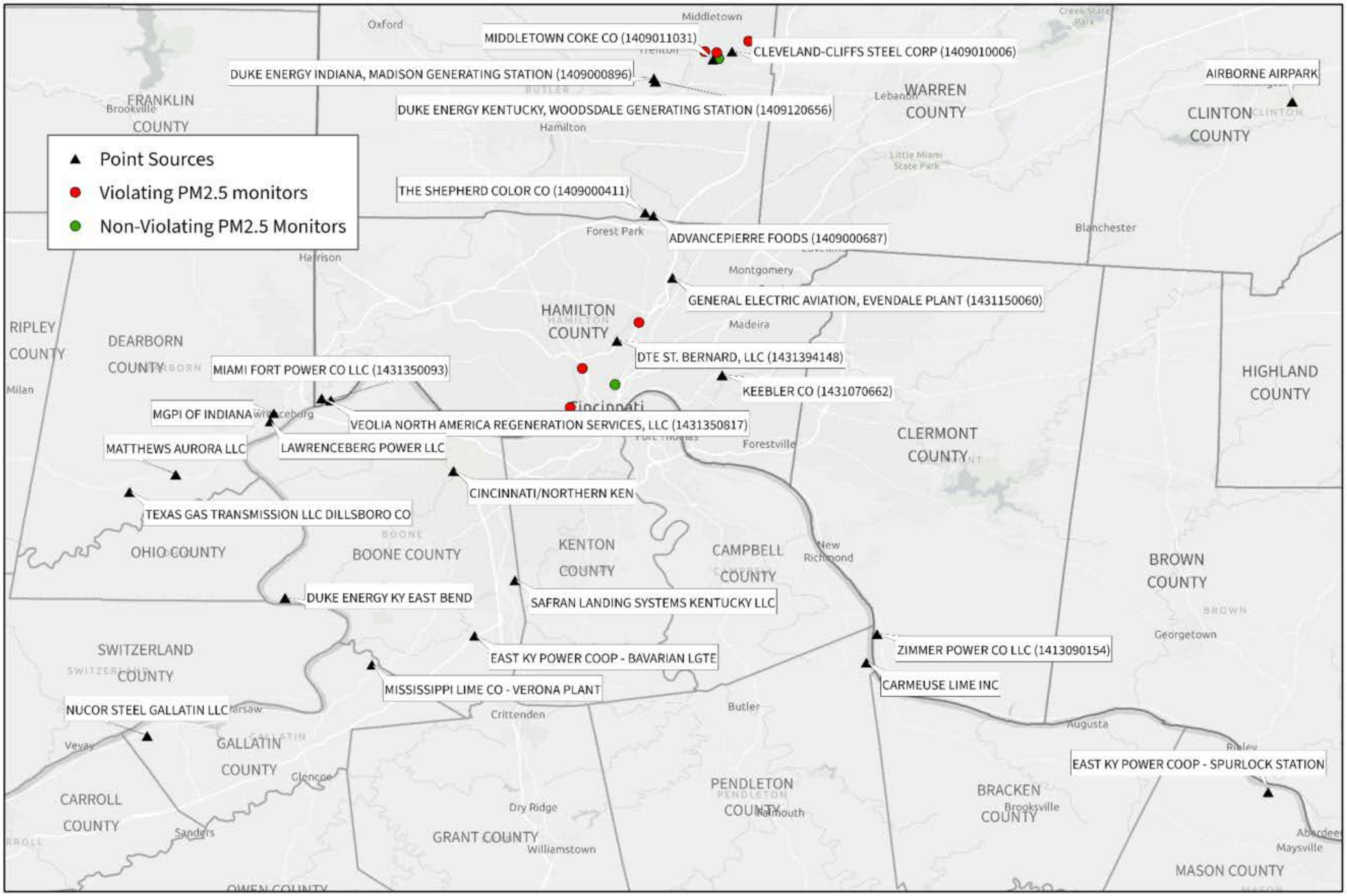
Nonpoint	100.24	36.74	4.51	0.85	0.72	57.43	91.01	203.61	4.74	2,603.40
Non-Road	1.34	0.52	0.44	0.04	0.01	0.32	16.22	0.04	0.01	12.64
On Road	1.00	0.29	0.43	0.04	0.00	0.24	30.99	2.41	0.10	22.76
Total	102.58	37.55	5.38	0.93	0.73	57.99	138.21	206.06	4.86	2,638.80
Union IN	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	1.73	0.36	0.01	0.00	0.00	1.36	0.00	0.00	0.00	24.38
Nonpoint	147.95	31.91	4.43	1.04	0.71	109.86	214.78	125.64	12.85	2,753.89
Non-Road	4.91	1.87	1.71	0.18	0.04	1.11	66.48	0.14	0.05	64.59
On Road	1.69	0.49	0.74	0.07	0.00	0.38	56.40	4.39	0.19	29.51
Total	156.27	34.63	6.89	1.29	0.75	112.71	337.67	130.18	13.09	2,872.36

TOTALS	PM2.5	*OC*	*EC*	*Sulfate*	*Nitrate*	*Other*	NOx	NH3	SO2	VOC
Hamilton	4,397.05	1,188.87	240.11	137.16	9.81	2,821.06	16,242.25	1,064.47	17,205.40	18,356.47
Butler	2,466.79	827.43	132.70	138.05	12.80	1,355.80	6,016.47	775.61	2,061.94	11,369.68
Clermont	1,711.19	485.46	94.86	46.57	3.78	1,080.50	5,509.32	335.22	6,324.93	10,660.77
Warren	1,574.99	508.82	94.40	29.56	5.32	936.88	3,159.11	408.06	67.78	10,388.99
Clinton	675.85	130.10	26.54	7.15	1.88	510.18	1,297.62	489.61	18.68	5,815.17
Brown	706.32	173.70	29.85	7.22	4.42	491.13	841.27	202.63	33.87	8,546.73
Kenton KY	907.16	287.34	55.92	15.10	2.80	507.65	2,225.95	238.82	26.12	5,361.46
Boone KY	1,230.30	337.24	71.70	37.36	4.65	744.47	5,612.43	314.17	1,969.24	7,848.19
Campbell KY	706.93	217.91	40.46	26.72	4.11	393.61	1,261.54	174.13	19.16	4,789.22
Grant KY	365.23	82.87	23.68	5.69	3.01	226.73	1,204.23	177.54	8.56	5,412.95
Mason KY	606.86	75.58	19.62	37.18	6.21	418.13	4,557.44	268.87	3,966.61	3,822.17
Pendleton KY	418.88	62.12	11.87	12.16	2.87	256.67	1,486.56	120.63	674.94	5,072.20
Bracken KY	218.30	41.34	8.48	2.64	3.05	157.20	379.21	146.67	2.22	3,981.36
Gallatin KY	1,235.35	79.92	18.83	64.21	4.31	996.98	1,445.23	79.00	434.17	3,075.81
Dearborn IN	654.76	213.01	38.66	33.59	4.11	365.38	1,827.66	211.87	196.53	9,194.25
Franklin IN	375.69	106.68	19.66	3.92	2.99	242.45	624.00	333.52	43.65	6,556.30
Ohio IN	102.58	37.55	5.38	0.93	0.73	57.99	138.21	206.06	4.86	2,638.80
Union IN	156.27	34.63	6.89	1.29	0.75	112.71	337.67	130.18	13.09	2,872.36

Source: 2022 EMP from https://www.epa.gov/air-emissions-modeling/2022v1-emissions-modeling-platform

The following figure 4 and table 9 show the higher emitting point sources in the area.

Figure 4: Location of Cincinnati-Wilmington-Maysville OH-KY-IN CSA Point Sources



Source: 2022 EMP from https://www.epa.gov/air-emissions-modeling/2022v1-emissions-modeling-platform

As seen in table 9 below, the most significant $PM_{2.5}$ emissions come from Nucor Steel in Gallatin (KY) and Miami Fort Power in Hamilton Counties. Miami Fort Power also has the highest NO_X and SO_2 emissions, followed by Zimmer Power in Clermont County and East KY Power Coop in Mason (KY). Miami Fort Power is located to the west-southwest of the violating sites in Hamilton County and is located to the southwest of all the violating sites (shown in figure 4 above). Considering all the point sources from the counties in the analysis area, Lawrenceberg Power in Dearborn (IN) County has the most significant NH_3 emissions and MGPI of Indiana in Dearborn (IN) County has the most significant VOC emissions. Both of these sources are located to the east-southeast of the violating Ohio monitoring sites.

Table 9: Cincinnati-Wilmington-Maysville OH-KY-IN CSA Point Source Emissions for 2022 (TPY)

	PM2.5	
Gallatin Co KY	Nucor Steel Gallatin LLC	863.72
Hamilton Co OH	Miami Fort Power Company LLC (1431350093)	699.96
Butler Co OH	Cleveland-Cliffs Steel Company (1409010006)	406.84
Clermont Co OH	Zimmer Power Company LLC (1413090154)	321.63
Mason Co KY	East KY Power Coop – Spurlock Station	138.70
Gallatin Co KY	Mississippi Lime Co – Verona Plant	114.14
Boone Co KY	Duke Energy KY East Bend	112.32
	NOx	
Hamilton Co OH	Miami Fort Power Company LLC (1431350093)	7,412.79
Clermont Co OH	Zimmer Power Company LLC (1413090154)	3,691.71
Mason Co KY	East KY Power Coop – Spurlock Station	3,220.65
Boone Co KY	Duke Energy KY East Bend	2,176.13
Butler Co OH	Cleveland-Cliffs Steel Company (1409010006)	1,771.97
Pendleton Co KY	Carmeuse Lime Inc	993.72
Boone Co KY	Cincinnati/Northern Ken	779.50
Gallatin Co KY	Nucor Steel Gallatin LLC	507.19
Warren Co OH	Eastern Gas Transmission and Storage – Lebanon Station (1483000144)	400.90
Gallatin Co KY	Mississippi Lime Co – Verona Plant	300.83
Dearborn Co IN	Lawrenceberg Power LLC	293.54
Dearborn Co IN	Texas Gas Transmission LLC Dillsboro Co	266.75
Butler Co OH	Middletown Coke Company (1409011031)	238.05
Dearborn Co IN	MGPI of Indiana	159.23
Hamilton Co OH	General Electric Aviation, Evendale Plant (1431150060)	151.56
Butler Co OH	Duke Energy Indiana, Madison Generating Station (1409000896)	147.75
Warren Co OH	Texas Eastern Transmission – Lebanon (1483060328)	147.70
Butler Co OH	Duke Energy Kentucky, Woodsdale Generating Station (1409120656)	129.05
Boone Co KY	East KY Power Coop - Bavarian LGTE	114.18
Hamilton Co OH	DTE St Bernard LLC (1431394148)	111.56

NH3		
Dearborn Co IN	Lawrenceberg Power LLC	57.79
Butler Co OH	The Shepherd Color Company (1409000411)	48.40
Butler Co OH	Duke Energy Indiana, Madison Generating Station (1409000896)	27.03
Butler Co OH	AdvancePierre Foods (1409000687)	21.72
Hamilton Co OH	Keebler Company (1431070662)	20.43
SO2		
Hamilton Co OH	Miami Fort Power Company LLC (1431350093)	16,958.69
Clermont Co OH	Zimmer Power Company LLC (1413090154)	6,285.67
Mason Co KY	East KY Power Coop – Spurlock Station	3,852.78
Boone Co KY	Duke Energy KY East Bend	1,822.88
Butler Co OH	Cleveland-Cliffs Steel Company (1409010006)	1,191.29
Butler Co OH	Middletown Coke Company (1409011031)	798.63
Pendleton Co KY	Carmeuse Lime Inc	634.22
Gallatin Co KY	Nucor Steel Gallatin LLC	384.46
Hamilton Co OH	Veolia North America Regeneration Services LLC (1431350817)	129.38
VOC		
Dearborn Co IN	MGPI of Indiana	3,170.64
Butler Co OH	Cleveland-Cliffs Steel Company (1409010006)	307.37
Clinton Co OH	Airborne Airpark	168.88
Boone Co KY	Cincinnati/Northern Ken	161.70
Dearborn Co IN	Matthews Aurora LLC	132.85
Boone Co KY	Safran Landing Systems Kentucky LLC	115.58
Gallatin Co KY	Nucor Steel Gallatin LLC	112.98

Source: 2022 EMP from https://www.epa.gov/air-emissions-modeling/2022v1-emissions- modeling-platform

Level of control of emission sources

In the Ohio portion of the Cincinnati-Wilmington-Maysville OH-KY-IN CSA, the emission reduction programs which have had or will have the greatest impact on $PM_{2.5}$ concentrations are:

- On-road and off-road diesel control programs in conjunction with ultra-low sulfur diesel fuel requirements
- NO_x trading program
- Various Cross-State Air Pollution Rules (CSAPR)
- Ohio Clean Diesel Initiatives
- Mercury and Air Toxics Standards (MATS)
- Good Neighbor Plan (stayed)
- NSPS for Oil and Gas Production

- Ohio Administrative Code 3745-112 “Consumer Products”
- Ohio Administrative Code 3745-113 “Architectural and Industrial Maintenance (AIM) Coatings”
- Ohio Administrative Code 3745-110 “Nitrogen Oxides – Reasonably Available Control Technology”
- Ohio Administrative Code 3745-21 “Carbon Monoxide, Photochemically Reactive Materials, Hydrocarbons, and Related Materials Standards”
- Ohio Administrative Code 3745-17 “Particulate Matter Standards”

The CSAPR, Good Neighbor Plan, and MATS regulate electric generating units (electric generating units (EGUs), or power plants). The CSAPR program replaced the Clean Air Interstate Rule (CAIR) but has the same objective of reducing power plant emissions that cross state lines to improve air quality. CSAPR was revised and updated in 2017 (replacing the original rule promulgated in 2015) to further reduce summertime NO_x emissions from power plants. The Good Neighbor Plan extends the regulations of CSAPR and CAIR to not only EGUs but also for non-EGU stationary sources beginning in 2026. However, this rule was stayed by the Supreme Court in July of 2024. CAIR and CSAPR have brought about the largest reductions in precursor or primary emissions of $PM_{2.5}$ and its species (sulfates, nitrates, organic carbon, elemental carbon and crustal) and will continue to bring additional reductions. Compliance with the MATS rule also leads to additional reductions in precursor species - in particular, sulfates.

The New Source Performance Standards (NSPS) for Oil and Gas production was promulgated March 8, 2024, by the U.S. EPA, and sets new requirements for crude oil and natural gas production sources to regarding greenhouse gas (specifically methane), VOC, and SO_2 emissions. All large oil and gas industrial source owners have to March 2029 to comply with new state requirements created under this ruling. Compliance with this rule will lead to reduction in methane, VOC, and SO_2 emissions.

Ohio Administrative Code (OAC) Chapter 3745-112[7] contain requirements for the content of VOCs in consumer products sold, supplied, offered for sale, or manufactured for use in the state of Ohio. These rules were initially promulgated in 2007 as part of Ohio’s strategy to attain the 1997 ozone standard by adopting the standards in the model rule developed by the Ozone Transport Commission (OTC). The OTC develops model rules for states to consider when adopting consumer products regulations. This rule was last reviewed and updated in 2022 to

[7] The current, effective copy of this rule can be found here: https://epa.ohio.gov/divisions-and-offices/air-pollution-control/regulations/effective-rules/dapc-effective-rules

strengthen the VOC content requirements consistent with more recent OTC model rules. This update was to assist with attaining and maintaining the 2015 ozone standard.

The rules in OAC Chapter 3745-113[8] contain requirements for the content of VOCs in AIM coatings. These rules were initially promulgated in 2007 as part of Ohio's strategy to attain the 1997 ozone standard by adopting the standards in the model rule developed by the OTC. This rule was last reviewed and updated in 2022 to strengthen the VOC content requirements consistent with more recent OTC model rules. This update was to assist with attaining and maintaining the 2015 ozone standard.

On March 30, 2022, Ohio submitted revisions to the previously submitted SIP for the 2015 ozone standard.[9] These revisions addressed Reasonably Available Control Technology (RACT) requirements for the 2015 ozone standard with respect to one nonattainment area that was bumped-up to moderate nonattainment: the Cleveland OH area (Cuyahoga, Geauga, Lake, Lorain, Medina, Portage and Summit Counties); one maintenance area: the Ohio portion of the Cincinnati OH-KY 2015 ozone area (Butler, Clermont, Hamilton and Warren Counties). For certain source categories, Ohio EPA submitted regulations that establish new or more stringent RACT controls in OAC Chapters 3745-21 (VOC) and 3745-110 (NO_X). The rules in OAC Chapter 3745-110[10] limit the emissions of NO_X from stationary industrial sources such as, but not limited to, boilers, combustion turbines and internal combustion engines. The rules in OAC Chapter 3745-21[11] establish requirements for the control of emissions of VOCs and carbon monoxide (CO) from stationary emission sources. Ohio submitted a request for redesignation of the Cincinnati OH-KY area which was approved by the U.S. EPA June 9, 2022 (87 FR 35104). Therefore, Ohio was not required to implement RACT measures for the Cincinnati area but still implemented the controls to help ensure that the Cincinnati area would maintain the 2015 ozone standard.

OAC Chapter 3745-17[12] regulates particulate matter and established RACT for stationary sources under the historical PM_{10} standard.

---

[8] The current, effective copy of this rule can be found here: https://epa.ohio.gov/divisions-and-offices/air-pollution-control/regulations/effective-rules/dapc-effective-rules

[9] This revision and all related documents to Ohio's 2015 8-hour ozone standard SIP can be found on Ohio EPA's website, https://epa.ohio.gov/divisions-and-offices/air-pollution-control/state-implementation-plans/division-of-air-pollution-control-sip-2015

[10] The current, effective copy of this rule can be found here: https://epa.ohio.gov/divisions-and-offices/air-pollution-control/regulations/effective-rules/dapc-effective-rules

[11] The current, effective copy of this rule can be found here: https://epa.ohio.gov/divisions-and-offices/air-pollution-control/regulations/effective-rules/dapc-effective-rules

[12] The current, effective copy of this rule can be found here: https://epa.ohio.gov/divisions-and-offices/air-pollution-control/regulations/effective-rules/dapc-effective-rules

With respect to the Ohio utilities, additional reductions have occurred since previous nonattainment designations and will be continuing into the future. Miami Fort Power Company LLC (facility ID 1431350093) is a power station located in Hamilton County. Miami Fort Power has two coal-fired boiler units each with a design capacity of 5,025 MMBtu/hr, both outfitted with NO_x and SO_2 control equipment. On July 9, 2021, Ohio EPA issued Director's Final Findings and Orders (DFFOs) requiring the permanent shutdown of all coal-fired burning activities at Miami Fort by January 1, 2028. This date falls well before the likely attainment date for the 2024 annual $PM_{2.5}$ standard. In addition, on November 13, 2023, Ohio EPA modified said DFFOs to include NO_x RACT requirements limiting NO_x emissions from the facility to 0.24 lb NO_x/MMBtu (30-day average) and 0.30 lb NO_x/MMBtu (annual limit). As can be seen from table 9 and table 10 above, the most significant NO_x and SO_2 emissions within the area are attributable to Miami Fort.

Zimmer Power Company LLC (facility ID 1413090154) is a power station located in Clermont County. Zimmer Power had two gas-fired boilers with design capacities of 635 MMBtu/hr and one coal-fired boiler (1,426 MW) that were all shutdown December 31, 2022. Zimmer Power also had three emergency diesel generators (4,801 horsepower) that shutdown December 31, 2023. As can be seen from table 9 and table 10 above, the second most significant NO_X and SO_2 emissions within the area are attributable to Zimmer Power.

Also, a larger point-source non-utility contributor, Cleveland-Cliffs Steel Company (facility ID 1409010006) is a steel plant located in Butler County. Cleveland-Cliffs Steel has four gas-fired boilers each with a design capacity of 211 MMBtu/hr, four slab furnaces (design capacity of 598 MMBtu/hr) with waste heat boilers (design capacity of 320 MMBtu/hr), and four combined, indirect gas-fired batch process furnaces (with design capacities of 63 MMBtu/hr, 34MMBtu/hr, 85 MMBtu/hr, and 136 MMBtu/hr). There is currently no significant control equipment implemented for these boiler and furnace units. Ohio EPA is currently working with this facility to review controls and determine if NO_X RACT requirements will be necessary.

Urbanization, population, and commuting trends

The following table 10 provides a summary of the 2022 population and VMT for each of the counties discussed in this section.

Table 10: Cincinnati-Wilmington-Maysville OH-KY-IN CSA County Level VMT, Population, Land Area, and Population Density

County	VMT	Population	Land Area (sq. miles)	Population Density (1,000 per sq. miles)
Hamilton OH	20,791,970	825,037	407	2.03
Butler OH	7,746,600	388,710	467	0.83
Warren OH	6,881,680	249,778	400	0.62
Clermont OH	4,538,620	210,805	452	0.47
Brown OH	1,131,770	43,680	492	0.09
Clinton OH	1,659,430	41,964	411	0.10
Kenton KY	397,500	170,313	164	1.04
Boone KY	441,300	139,093	257	0.54
Campbell KY	208,000	93,300	159	0.59
Grant KY	147,500	25,502	261	0.10
Mason KY	50,300	17,068	240	0.07
Pendleton KY	28,400	14,638	282	0.05
Bracken KY	24,700	8,420	209	0.04
Gallatin KY	78,500	8,720	105	0.08
Franklin IN	621,000	23,028	391	0.06
Dearborn IN	1,838,000	51,138	307	0.17
Ohio IN	109,000	5,974	88	0.07
Union IN	200,000	7,041	165	0.04
Total for All Counties	45,184,540	2,265,177	4,606	0.49

Source: Ohio Department of Transportation (Ohio 2022 VMT data only)
Ohio Department of Development, County Trends and Profiles for 2022 (Ohio populations only)
U.S. Department of Commerce Economics and Statistics Administrations, U.S. Census Bureau, 2022 American Community Survey 5-year Estimates (Kentucky and Indiana populations only)
Indiana Department of Transport, Historic VMT by County (1992-2022) (Indiana 2022 VMT data only)
Kentucky Transportation Cabinet, Division of Planning, Roadway Information and Data, Daily Vehicles Miles Traveled (DVMT) and Mileage Reports for 2022 (Kentucky VMT data only)
All other data: U.S. EPA Particle Pollution Designations Memo and Data, https://www.epa.gov/particle-pollution-designations/particle-pollution-designations-memorandum-and-data-2024-revised#A

Degrees of urbanization and population trends

As seen in table 10 above, the majority of the population resides in Hamilton County and then Kenton County (KY) followed by Butler County. Warren and Brown Counties also have higher population while the remaining counties have very low density. As seen in figure 5 below, the population in both Hamilton, Butler, and Warren Counties is expected to increase whereas the population of Brown County is expected to decrease.

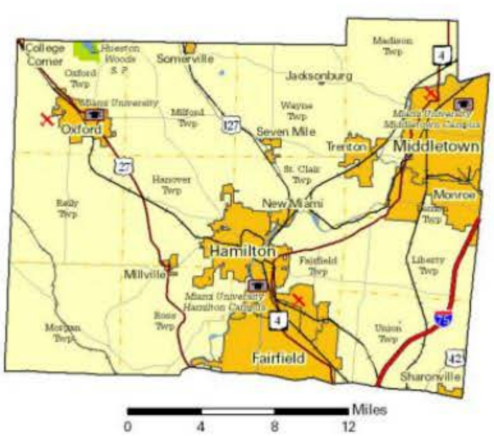
The most urbanized areas in Ohio are within Hamilton and Butler County. Their population and population densities are significantly higher than the surrounding Ohio counties, indicating that population-related emissions may be high in these areas. This is supported by table 8 above, which indicates these counties have the highest non-point and roadway emissions compared to others. Kenton County (KY) also has a high population and population density compared to the other counties but has low emissions compared to Hamilton and Butler Counties.

Brown and Clinton Counties have a low population and population density whereas Warren and Clermont Counties had mid-range populations and population densities. However, Clermont County has higher emissions than Warren, Brown, Butler, and Clinton Counties, but with the shutdown of Zimmer, that will significantly change.

Figure 5: Cincinnati-Wilmington-Maysville OH-KY-IN CSA Ohio County Profiles

Hamilton County

Hamilton County is 40% developed – low intensity, 30% forest, and 19% developed – high intensity. Cincinnati city is the largest major urban area, and where all the Hamilton County violating monitoring sites are located. The 2020 county population was 830,639 and decreased to 825,037 in 2022. The population is expected to increase to an estimated population of 835,109 by 2030.



Butler County

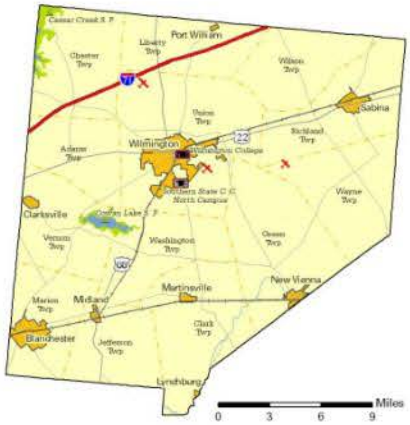
Butler County is 24% developed – low intensity, 23% pasture, and 21% cropland. Hamilton city is the largest major urban area. All of the Butler County violating monitoring sites are located in Middletown city. The 2020 county population was 390,357 and decreased to 388,420 in 2022. The population is expected to increase to an estimated population of 394,365 by 2030.

Clermont County

Clermont County is 46% forest, 16% developed – low intensity, and 16% cropland. Union township is the largest major urban area. The 2020 county population was 208,601 and increased to 210,805 in 2022. The population is expected to continually increase to an estimated population of 218,456 by 2030.

Warren County

Warren County is 28% forest, 24% cropland, and 20% developed – low intensity. Deerfield township is the largest major urban area. The 2020 county population was 242,337 and increased to 249,778 in 2022. The population is expected to continually increase to an estimated population of 262,869 by 2030.



Clinton County

Clinton County is 69% cropland, 14% forest, and 7% pasture. Wilmington city is the largest major urban area. The 2020 county population was 42,018 and decreased to 41,964 in 2022. The population is expected to continually decline to an estimated population of 40,595 by 2030.

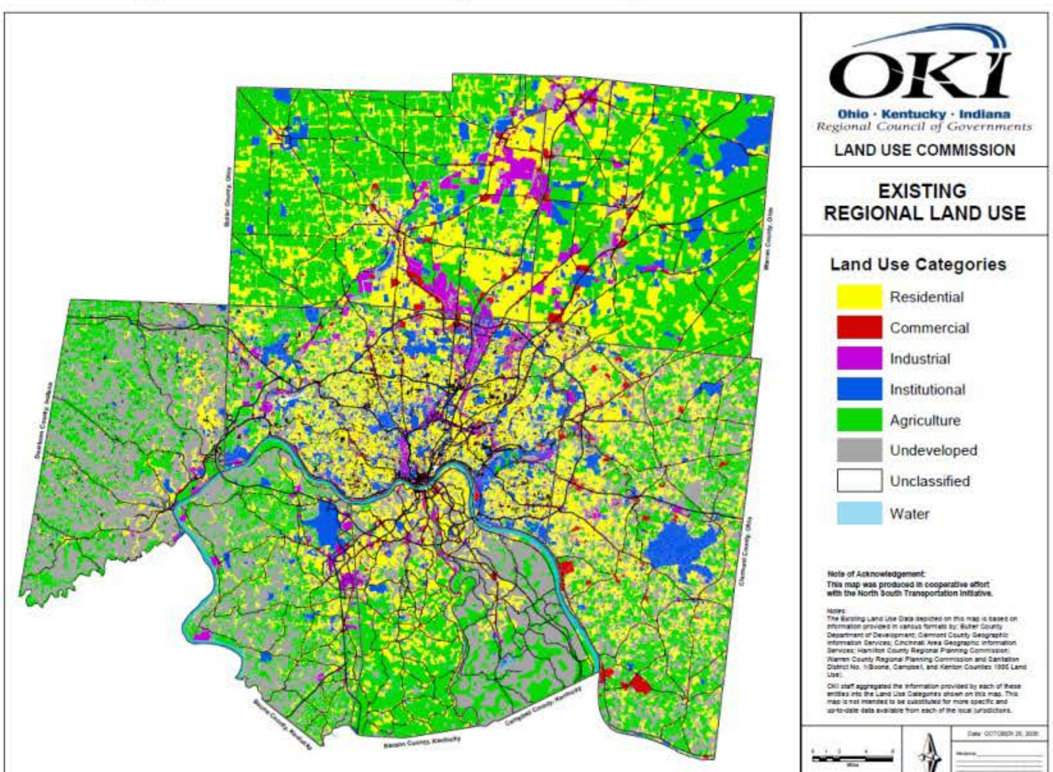
Brown County

Brown County is 35% cropland, 35% forest, and 20% pasture. Georgetown village is the largest major urban area. The 2020 county population was 43,676 and increased to 43,680 in 2022. The population is expected to decline to an estimated population of 42,278 by 2030.

Source: County profile information and maps found at Ohio Department of Development, Research, County Trends, https://development.ohio.gov/about-us/research/county/county-trends

As can be seen in figure 6 below, for the Indiana and Kentucky counties immediately surrounding the greater Cincinnati area, the majority of those areas are undeveloped or agriculture lands. However, there is a larger urban component concentrated near the Cincinnati area.

Figure 6: Cincinnati Analysis Area Regional Land Use



Source: http://www.oki.org/mapsdata/WebContent/LandUse/Existing%20Land%20Use%20(2000).pdf

Commuting trends

As can be seen in table 10, the majority of VMT occurs in Hamilton County, and to a lesser extent Butler, Kenton (KY), Warren, Clermont and Dearborn (IN) Counties. Table 11 below looks at commuter travel in and out of the two counties in this analysis area with violating monitoring sites, Hamilton and Butler. The majority of Hamilton County's workforce also lives in Hamilton County, with only 19% of county residents working in a different county and 37% of county workers living in a different county but commuting into Hamilton County. About 10% of Hamilton residents commute north to Butler, Warren, and Montgomery Counties for work, and 6% commute south to Kentucky counties (Boone, Kenton, Campbell) for work. Only 2% commute east to Clermont County for work. The majority 15% of those commuting to Hamilton County for work are coming from the north (Butler, Warren, Montgomery, Clinton, and Greene Counties) and only 8% commuting from the east (Clermont and Brown Counties).

More of Butler County's workforce live in a different county than Butler County residents working in a different county: 34% of Butler County workers live in a different county whereas 43% of county residents work in a different county. About 27% of residents commute to counties south (Hamilton, Boone (KY), and Clermont) of Butler for work. 10% commute east to Warren County and only about 4% commute north to Montgomery and Greene Counties for work. Again, the majority of Butler County's workforce (18%) commutes from the south (Hamilton, Clermont, and Kenton (KY) Counties) to work in Butler. 7% commutes from the east (Warren County) and 4% commutes from the north (Montgomery and Preble Counties) to work in Butler County.

Overall, the most significant commuter travel in and out of these counties occurs between Hamilton and Butler Counties, the two counties with the highest VMT. Kenton (KY), Warren, Clermont and Dearborn (IN) Counties, also with higher VMT, also contribute to the commuter travel but to a lesser extent. Brown and Clinton Counties, and other counties in Kentucky and Indiana that are part of this analysis, do not significantly contribute to commuter travel in and out of these nonattainment counties.

Table 11: Commuter Travel In and Out of Hamilton and Butler Counties

Hamilton	**% workers live in Hamilton work outside Hamilton Co**				19.3%
	% workers work in Hamilton live outside Hamilton Co				37.2%
# workers living in Hamilton		401,680	**# workers working in Hamilton**		515,783
Place of Work	**#**	**%**	**Place of Residence**	**#**	**%**
Butler County	23,293	5.8%	Butler County	46,299	9.0%
Warren County	13,769	3.4%	Clermont County	38,952	7.6%
Boone County (KY)	12,457	3.1%	Warren County	27,275	5.3%
Clermont County	8,461	2.1%	Brown County	3,444	0.7%
Kenton County (KY)	7,402	1.8%	Montgomery County	3,340	0.6%
Campbell County (KY)	4,052	1.0%	Clinton County	1,242	0.2%
Montgomery County	1,659	0.4%	Greene County	1,077	0.2%

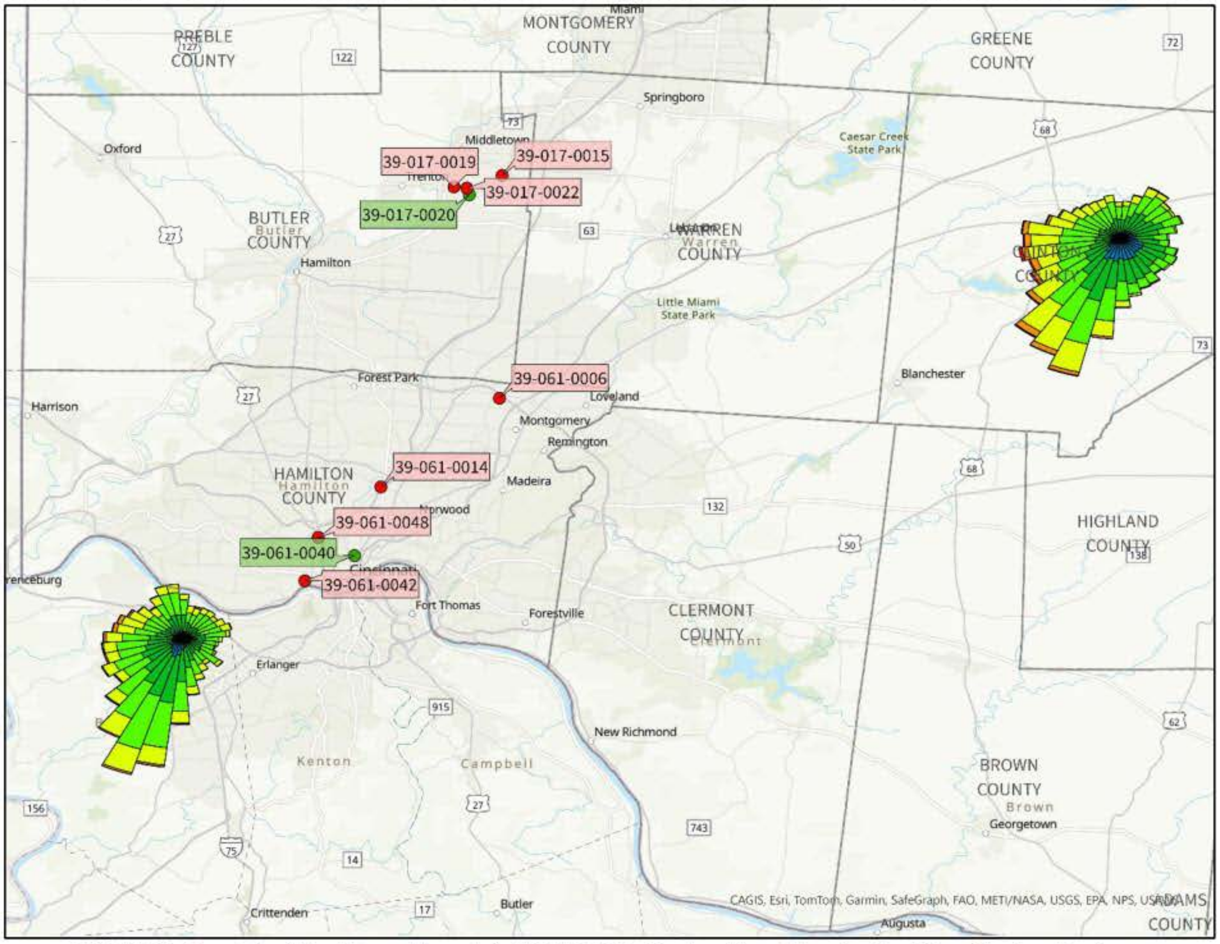
Butler	**% workers live in Butler work outside Butler Co**				42.6%
	% workers work in Butler live outside Butler Co				34.2%
# workers living in Butler		181,791	**# workers working in Butler**		158,441
Place of Work	**#**	**%**	**Place of Residence**	**#**	**%**
Hamilton County	46,299	25.5%	Hamilton County	23,293	14.7%
Warren County	17,701	9.7%	Warren County	11,344	7.2%
Montgomery County	5,631	3.1%	Montgomery County	4,616	2.9%
Clermont County	1,244	0.7%	Clermont County	4,302	2.7%
Boone County (KY)	1,035	0.6%	Preble County	2,213	1.4%
Greene County	1,029	0.6%	Kenton County (KY)	939	0.6%

Source: U.S. Department of Commerce Economics and Statistics Administrations, U.S. Census Bureau, Residence County to Workplace County Commuting Flows for the United States and Puerto Rico Sorted by Workplace Geography: 5-year ACS 2016-2020, Residence County to Workplace County Commuting Flows for the United States and Puerto Rico Sorted by Residence Geography: 5-Year ACS 2016-2020

METEOROLOGY

The following wind roses in figure 7 represent this area.

Figure 7: 2021-2023 Wind Roses for the Cincinnati-Wilmington-Maysville OH-KY-IN CSA



Source: AERMET Surface data (Wind Rose data only), U.S. EPA $PM_{2.5}$ Designations Mapping Tool (monitoring sites)

Winds from the south-southwest (the southwest quadrant) are prevalent near the Hamilton and Butler County violating monitoring sites. This indicates that sources of emissions from the southwest quadrant may be contributing to violations at these monitoring sites. However, in both counties, there are violating monitoring sites that are to the southwest of a non-violating monitoring site. This may indicate a component of the violation may be localized to the violating monitoring sites.

The HYSPLIT density maps for the Ohio violating monitoring sites in the Cincinnati-Wilmington-Maysville area (Appendix D pp.2-16) show that most of the air parcels that originate in this area do not tend to travel a large distance over 24 hours, and actually stay in the surrounding counties and area near the violating monitoring sites. This may indicate that any pollutants emitted in the air near or at the violating sites tend to stay in the area. This further supports that localized sources near the violating monitoring sites could be a component of the violations.

GEOGRAPHY/TOPOGRAPHICAL

This analysis area does not have any geographical or topographical barriers significantly affecting air pollution transport. Therefore, this factor does not play a role in the analysis of this area.

JURISDICITONAL BOUNDARIES

Butler, Warren, Clermont, Hamilton, Boone (KY), Kenton (KY), Campbell (KY), and partial Dearborn (IN) Counties were designated as nonattainment for the 1997 annual $PM_{2.5}$ standard as part of the Cincinnati-Hamilton OH-KY-IN nonattainment area. The same counties were designated as nonattainment under the 1997 ozone standard; however, under the 2008 ozone standard on partial areas of Boone (KY), Kenton (KY), Campbell (KY) Counties were designated nonattainment. Under the 2015 ozone standard, the same counties in Ohio and Kentucky (partial again) were designated as nonattainment; however, Dearborn (IN) County was excluded. This area has since been redesignated to attainment for all these standards. No other counties a part of this analysis have been designated nonattainment for $PM_{2.5}$ or other urban-scale pollutants.

The Cincinnati-Wilmington-Maysville OH-KY-IN CSA includes the following counties: Dearborn, Franklin, Ohio, and Union in Indiana; Boone, Bracken, Campbell, Gallatin, Grant, Kenton, Mason, and Pendleton in Kentucky; and Brown, Butler, Clermont, Hamilton, Clinton, and Warren in Ohio. The principal cities are Cincinnati and Middletown, Ohio.

COUNCLUSION

Butler, Warren, Clermont, and Hamilton Counties in Ohio have historically been a part of the nonattainment area. Based on 2022 projected emissions, Hamilton and Clermont Counties have higher emissions than Warren and Butler Counties. Overall, the most significant emissions in the analysis area emanate from Hamilton County, then Clermont County, Butler County, and Boone County (KY). Considering all the counties in the analysis area, these four counties account for 53% of $PM_{2.5}$, 62% of NO_X, 44% of NH_3, 83% of SO_2, and 38% of VOC emissions. The largest concentration of larger point sources resides in Hamilton, Clermont, Boone (KY), Dearborn (IN), and Butler Counties. Miami Fort Power in Hamilton County, Zimmer Power in Clermont County, and Cleveland-Cliffs Steel in Butler County have the highest SO_2, NO_X, and $PM_{2.5}$ emissions of the point sources in Ohio. Also, Duke Energy in Boone County, KY and East KY Power Coop – Spurlock Station in Mason County, KY both had high SO_2, NO_X, and $PM_{2.5}$ emissions. As noted above, the most significant source of emission in Clermont County was Zimmer Power, accounting for 19% of $PM_{2.5}$, 67% of NO_X, and 99% of SO_2 in Clermont County. With the full shutdown of Zimmer Power, after this emissions inventory was created, the most significant emissions from Clermont County are non-point for $PM_{2.5}$ and on-road for NO_x. While Clermont County does have a moderate population compared to the more rural counties in this analysis area and there is moderate commuting between Clermont County and the counties with violating monitoring sites, Ohio EPA does not believe those factors alone warrant including Clermont County in the nonattainment designations. With the full shutdown of Zimmer Power, Ohio EPA does not believe there is justification for inclusion of Clermont County in the nonattainment designations.

Warren County only accounts for 9% of $PM_{2.5}$, 6% of NO_X, 7% of NH_3, 0.2% of SO_2, and 8% of VOC emissions considering all counties in the analysis area. There is only one large point source of NO_X emissions (401 TPY) in Warren County, and it is east and northeast of any of the violating monitoring sites. Therefore, based upon meteorology, likely not a significant contributor. The majority of Warren County emissions are from non-point and on-road emissions. While Warren County does have a moderate population compared to the more rural counties in this analysis area and there is moderate commuting between Warren County and the counties with violating monitors, Ohio EPA does not believe those factors alone warrant including Warren County in the nonattainment designations.

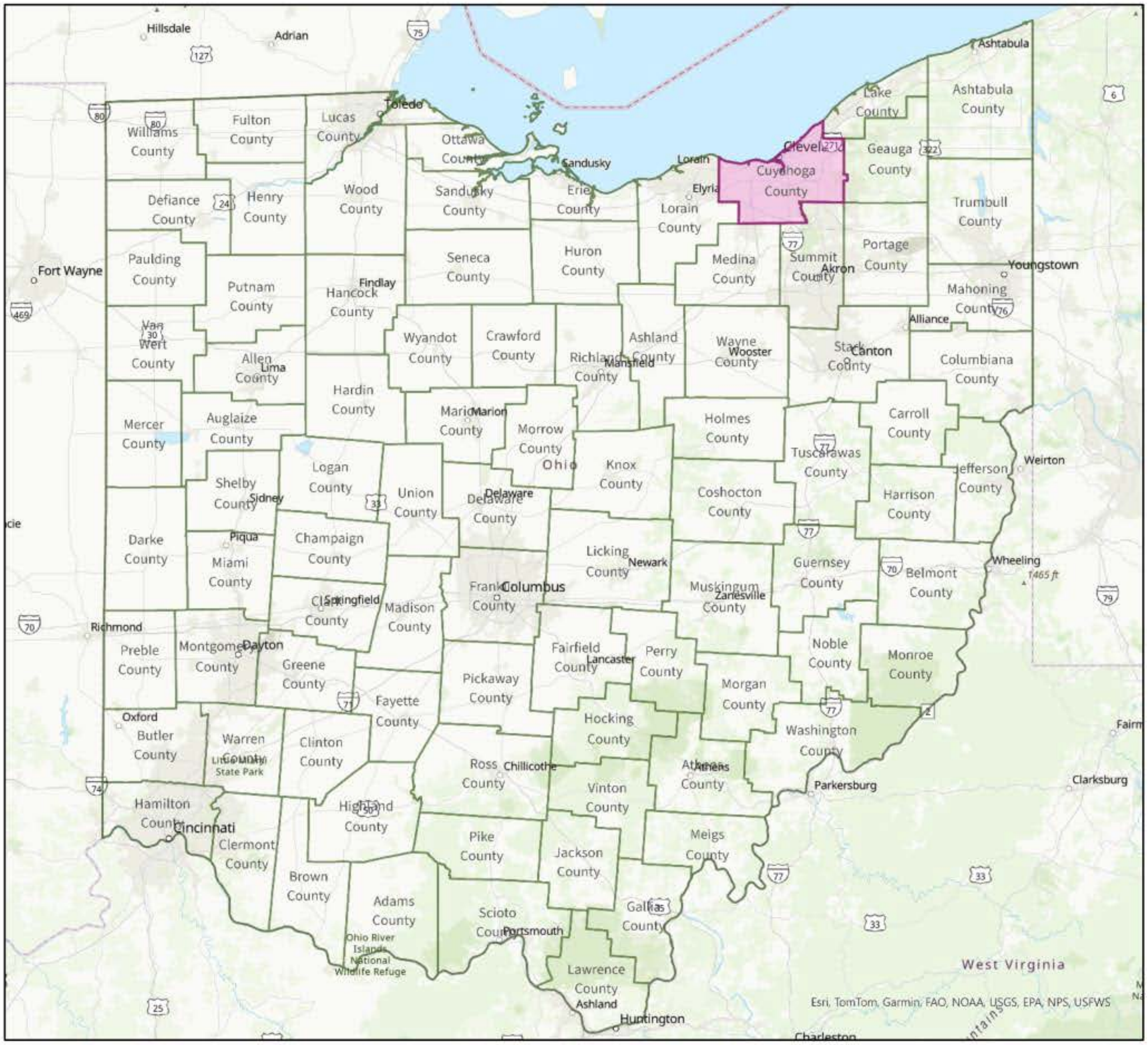
SO_2 and NO_X emissions dominate in the counties with violating monitoring sites and organic carbon dominates at the violating monitors. Accounting for the shutdown of Zimmer Power, Clermont and Warren Counties contribute very little to NO_X and SO_2 emissions in the area.

With respect to the remaining Ohio counties in this analysis area, none of the factors support including Clinton or Brown Counties. These counties have very low emissions, low populations, low population densities, low VMT and low commuting patterns with the counties with violating monitoring sites.

Ohio EPA recommends Hamilton and Butler Counties be designated nonattainment.

Cleveland-Akron-Canton OH CSA

Figure 8: Cleveland-Akron-Canton OH CSA Recommended Nonattainment Area

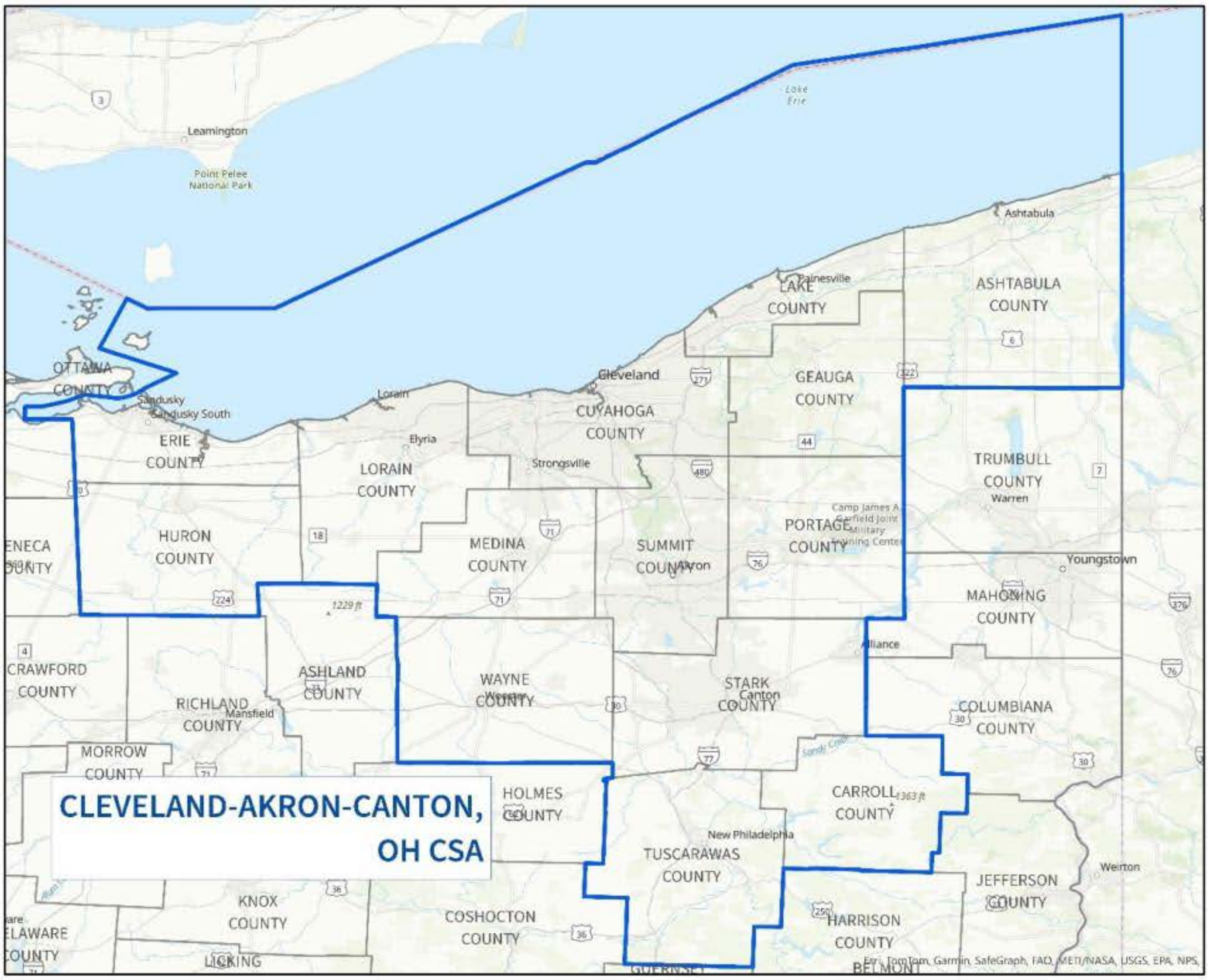


Source: U.S. EPA $PM_{2.5}$ Designations Mapping Tool

DISCUSSION

There are seven counties in this historic 1997 annual $PM_{2.5}$ standard nonattainment area: Ashtabula (partial), Cuyahoga, Lake, Lorain, Medina, Portage, and Summit Counties. These counties, excluding the partial area of Ashtabula County, were part of the 2006 24-hour $PM_{2.5}$ standard nonattainment area. Only Cuyahoga and Lorain Counties were part of the 2012 annual $PM_{2.5}$ standard nonattainment area. Ohio EPA recommends designating Cuyahoga County as nonattainment for the Cleveland-Akron-Canton OH CSA. After considering the five factors, Ohio EPA does not recommend including any other contributing counties in this area.

Figure 9: Cleveland-Akron-Canton OH CSA



Source: U.S. EPA $PM_{2.5}$ Designations Mapping Tool

For the 2021-2023 period, there are twelve monitoring sites in this area of which seven are in Cuyahoga County, two in Summit County, one in Lake County, one in Lorain County and one in Medina County (figure 11). Three of the Cuyahoga County monitoring sites (sites 39-035-0038, -

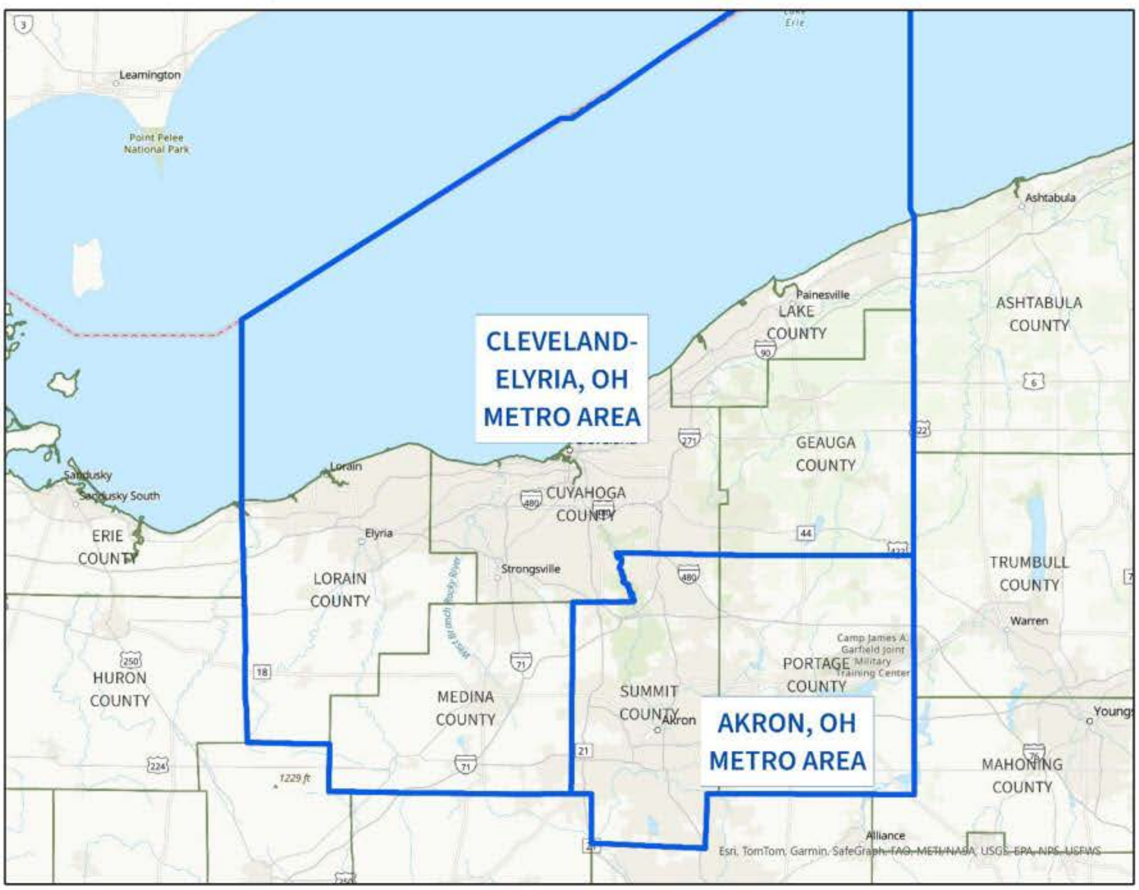
0060, -0065) are violating the revised annual standard. Cuyahoga County is part of the Cleveland-Akron-Canton CSA (figure 9) and Cleveland-Elyria MSA (figure 10) along with Medina, Lorain, Geauga, and Lake Counties. The CSA also includes Summit, Portage, Ashtabula, Stark, Caroll, Wayne, Huron, Erie and Tuscarawas Counties. Summit and Portage Counties are also a part of the Akron MSA (figure 10).

Stark County, along with Caroll, Wayne, and Tuscarawas Counties, have historically been evaluated for nonattainment as a separate area from Cleveland. Therefore, consistent with past practice, Ohio EPA, is analyzing these counties and the Canton-Massillon MSA separately in this document.

Ohio EPA will not be analyzing any additional counties adjacent to the CSA counties because historically those counties have been excluded from the nonattainment area.

Therefore, for the remainder of this analysis area, Ohio EPA will be referring to the Cleveland-Elyria-Akron area, comprised of the Cleveland-Elyria MSA and Akron MSA (figure 10).

Figure 10: Cleveland-Elyria-Akron Analysis Area

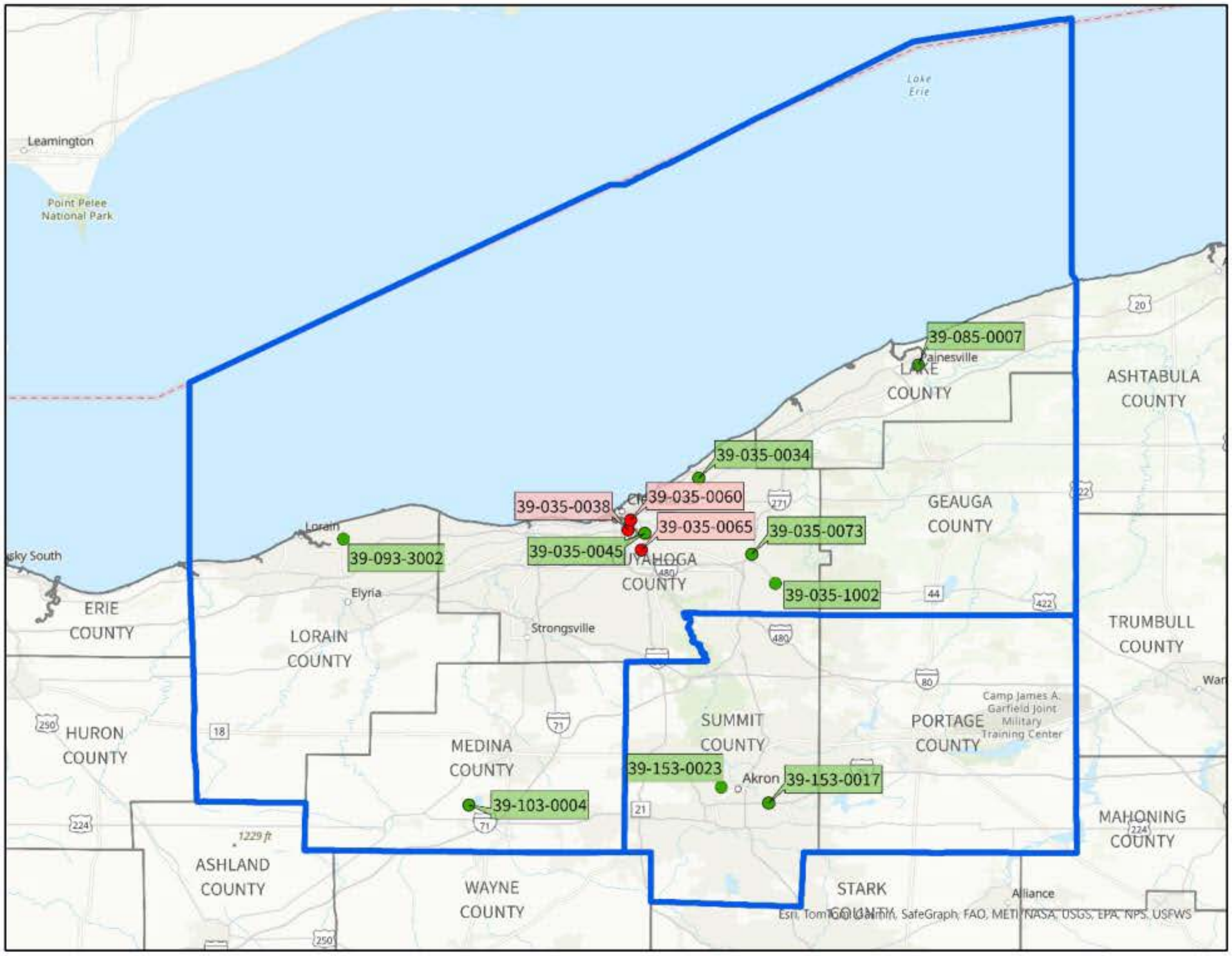


Source: U.S. EPA $PM_{2.5}$ Designations Mapping Tool

AIR QUALITY DATA

For the 2021-2023 period, there were twelve monitoring sites in the Cleveland-Elyria-Akron area.

Figure 11: Cleveland-Elyria-Akron Analysis Area Monitoring Sites



Source: U.S. EPA $PM_{2.5}$ Designations Mapping Tool

As can be seen in table 12, monitoring sites 39-035-0038, -035-0060, and -035-0065 are violating the standard based on 2021-2023 air quality data. The design value for this area is 12.2 µg/m^3.

Monitoring sites 39-035-0038, -0060, and -0065 are located in Cuyahoga County in the central Cleveland area, an industrialized area. As can be seen from tables 1 and 2, air quality trends have declined historically in this area with the exception of 2023 data influenced by wildfire events.

Table 12: Annual Average (µg/m³) for Analysis Area Monitoring Sites

		Annual Averages			3-year Annual Average
County	**Site**	**2021**	**2022**	**2023**	**2021 - 2023**
Cuyahoga	39-035-0034	7.5	6.7	8.4	7.5
	39-035-0038	9.8	8.9	11.2	***10.0***
	39-035-0045	9.9	8.2	8.9	9.0
	39-035-0060	9.7	8.8	11.9	***10.2***
	39-035-0065	12.7	11.0	12.8	***12.2***
	39-035-0073	8.8	7.6	9.1	8.5
	39-035-1002[13]	7.5	6.5		7.0
Lake	39-085-0007	6.9	6.2	8.5	7.2
Lorain	39-093-3002[14]	7.6			7.6
Medina	39-103-0004	6.9	6.3	9.1	7.4
Summit	39-153-0017	8.6	7.9	9.3	8.6
	39-153-0023	8.7	6.8	11.2	8.9

Source: U.S. EPA AQS

Insufficient data ***X.X*** Violating monitor

[13] Site discontinued December 31, 2022

[14] Site discontinued December 16, 2021

As can be seen in table 13, there are six speciation monitoring sites in the Cleveland-Elyria-Akron area being analyzed: four in Cuyahoga County, one in Lorain County, and one in Summit County. Three of the four Cuyahoga County are co-located with the violating monitoring sites.

Table 13: Cleveland-Elyria-Akron Area Speciation Monitors

Site ID	Annual Average	Speciation Monitor SANDWHICH Mass					Site Design Value
		Sulfates	Nitrates	Organic Carbon	Elemental Carbon	Crustal	
39-035-0038 Cuyahoga County	2020	0.88	1.11	1.53	0.56	0.89	8.8
	2021	1.29	1.62	2.05	0.70	1.45	9.8
	2022	1.07	1.27	1.78	0.71	1.53	8.9
	2020-2022 3-year annual average	1.08	1.33	1.79	0.66	1.29	9.2
39-035-0060 Cuyahoga County	2020	1.06	1.17	0.91	1.94	0.78	7.9
	2021	1.25	1.53	2.03	0.72	1.05	9.7
	2022	0.99	1.14	1.84	0.80	1.28	8.8
	2020-2022 3-year annual average	1.10	1.28	1.94	0.77	1.08	8.8
39-035-0065 Cuyahoga County	2020	0.87	1.08	2.69	1.39	0.93	10.4
	2021	1.29	1.55	2.13	0.82	3.67	12.7
	2022	1.06	1.20	1.96	0.68	2.41	11.0
	2020-2022 3-year annual average	1.07	1.28	2.92	1.83	0.81	11.4
39-035-0076[15] Cuyahoga County	2020	0.24	0.58	0.36	0.14	0.13	
	2021	0.83	0.68	0.39	0.16	0.47	
	2022	0.91	1.05	1.68	0.58	0.75	
	2020-2022 3-year annual average	0.66	0.77	0.45	0.81	0.29	
39-093-3002[16] Lorain County	2020	0.66	0.78	1.24	0.36	0.17	6.7
	2021	0.90	0.92	1.47	0.36	0.31	7.6
	2022						
	2020-2022 3-year annual average	0.52	0.57	0.90	0.24	0.16	7.2

Source: CSN speciation data (SANWICHED) from https://www.epa.gov/particle-pollution-designations/particle-pollution-designations-memorandum-and-data-2024-revised#A

Organic carbon tends to dominate at these monitoring sites. The violating monitoring sites in the Cleveland area have a higher fraction of organic carbon whereas the other Cuyahoga County speciation monitoring tends to dominate in elemental carbon and sulfates. Historically,

[15] $PM_{2.5}$ speciation only site

[16] Site discontinued December 16, 2021

sulfate[17] was more dominant than other species. This may be an indication of the significant shutdown of coal fired power plants in the area. Further, site 39-035-0076 has a very low concentrations compared to the other sites, especially the violating sites in Cuyahoga County in the industrialized area. This site is a newer speciation site that was installed south of the Cleveland are violating monitors specifically to act as a background site to the Cleveland industrialized area.

The 2021-2023 urban increments (UI) in table 14 have also been calculated for the three violating monitoring sites.

Table 14: Cleveland-Elyria-Akron Area Urban Increments

2021-2023 Averages		Organic Carbon UI	Elemental Carbon UI	Nitrates UI	Sulfates UI	Crustal UI
Cuyahoga 39-035-0038	Quarter 1	0.80	0.32	1.07	0.46	0.83
	Quarter 2	0.19	0.51	0.00	0.03	1.20
	Quarter 3	1.94	0.46	0.00	-0.11	0.77
	Quarter 4	1.44	0.39	0.53	0.44	1.22
	Annual	1.10	0.42	0.39	0.21	1.01
Cuyahoga 39-035-0060	Quarter 1	1.68	0.34	0.96	0.16	0.41
	Quarter 2	1.62	0.50	0.02	0.10	1.06
	Quarter 3	2.25	0.52	0.00	-0.13	0.87
	Quarter 4	2.15	0.44	0.52	0.30	0.83
	Annual	1.93	0.45	0.36	0.11	0.80
Cuyahoga 39-035-0065	Quarter 1	0.80	0.32	1.07	0.46	0.83
	Quarter 2	0.19	0.51	0.00	0.03	1.20
	Quarter 3	1.94	0.46	0.00	-0.11	0.77
	Quarter 4	1.44	0.39	0.53	0.44	1.22
	Annual	1.10	0.42	0.39	0.21	1.01

Source: https://www.epa.gov/particle-pollution-designations/particle-pollution-designations-memorandum-and-data-2024-revised

Organic carbon UI is higher in quarters 3 and 4 at all monitoring sites. This UI tends to dominate at monitoring site 39-035-0060, higher than the other $PM_{2.5}$ species for all quarters and the annual. There is a significantly higher nitrates UI at all monitoring sites during quarter 1. Quarter 2 tends to have a higher elemental carbon UI for monitoring sites 39-035-0038 and 39-035-0065, whereas quarter 3 has a higher elemental carbon UI for monitoring site 39-035-0060. Quarter 2 has a higher sulfates UI for monitoring sites 39-035-0038 and 39-035-005, whereas quarter 4 has a higher sulfates UI for monitoring site 39-065-0060. Crustal UI is higher in quarter

[17] https://dam.assets.ohio.gov/image/upload/epa.ohio.gov/Portals/27/sip/Designations_2012_PM2.5_standard_Final.pdf

3 at monitoring sites 39-035-0038 and 39-035-0060, and higher in quarter 2 at monitoring site 39-035-0060.

EMISSIONS AND EMISSIONS RELATED DATA

Emission trends

Table 15 presents emissions data for the Cleveland-Elyria-Akron analysis area. The most significant emissions in the analysis area emanates from Cuyahoga County. Cuyahoga County emissions accounts for 25% of the Cleveland-Elyria-Akron analysis area total emissions. Considering all counties in the Cleveland-Elyria-Akron area, Cuyahoga County accounts for 26% of $PM_{2.5}$, 33% of NO_x, 22% of NH_3, 28% of SO_2, and 22% of VOC emissions. The most significant emissions in the analysis area come from Cuyahoga, Summit, and Lorain Counties; although the vast majority of Summit County emissions is non-point emissions whereas Cuyahoga and Lorain Counties are predominantly point emissions. Not as significant are emissions from Lake, Medina, Portage, Geauga and Ashtabula Counties. Huron and Erie Counties do not have significant emissions compared to the above counties. Cuyahoga County has the highest $PM_{2.5}$, NO_x, SO_2, and VOC emissions in the area and is the only county with any violating monitors.

Even though Summit County has the second highest total emissions in the analysis area, both monitoring sites (39-153-0017 and 39-153-0020) are meeting the standard. Summit County is located south-southeast of Cuyahoga County. The non-violating Summit County monitoring sites are located in suburban, residential areas whereas the violating Cuyahoga County monitoring sites are located in urban, commercial/industrial areas.

In Cuyahoga County, the major non-point source sectors for VOC emissions are consumer solvents followed by biogenics. For the rest of the counties in the analysis area, the biogenics sector is the number one non-point source of VOC emissions, followed by the biogenics sector (except for Ashtabula County where the oil and gas production sector is second).

The number one non-point source sector for $PM_{2.5}$ emissions in Cuyahoga County is the commercial cooking sector, followed by the residential wood fuel sector. In Summit County, the residential wood fuel sector has the highest non-point $PM_{2.5}$ emissions, followed by paved road dust. Most of the non-point sources have residential fuel wood as one of the top two sectors for $PM_{2.5}$ emissions in the Cleveland-Elyria-Akron area.

Major on-road sources of NO_x emissions come from heavy duty diesel vehicles (except for Huron County, where it is non-diesel light duty vehicles) in the Cleveland-Elyria-Akron area.

As can be seen in figure 11, two of the violating Cuyahoga County monitors (39-035-0038 and -0060) are located right next to major highways and are also in the industrial area surrounded by the steel industry. The other violating monitor in Cuyahoga County (39-035-0065) is located in the same industrial area dominated by the steel industry. As can be seen in table 16, Cleveland Cliffs steel facility is the highest point source emitter and Charter Steel facility is the third highest emitter in Cuyahoga County. Together, these two point sources account for 56% of Cuyahoga County's total point source emissions (2,474 TPY out of 4,379 TPY). Lorain County emissions are also dominated by a point source, Avon Lake Power Plant. As will be discussed below, this facility has permanently shut down.

Table 15: Cleveland-Elyria-Akron Area Counties 2022 Emissions Data (TPY)

Cuyahoga	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	693.59	172.87	34.17	109.18	8.76	368.62	1,971.38	32.91	791.43	889.79
Nonpoint	3,329.23	1,204.42	106.69	42.85	6.79	1,968.48	4,230.05	498.24	63.42	17,174.11
Non-Road	253.68	107.99	57.89	4.74	1.11	81.84	2,122.40	6.82	2.91	2,880.63
On Road	203.35	53.90	73.90	7.66	0.34	67.54	5,233.61	587.23	25.79	2,635.17
Total	4,479.85	1,539.18	272.65	164.43	17.00	2,486.48	13,557.44	1,125.20	883.55	23,579.70
Lorain	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	318.69	41.83	13.58	40.59	1.88	220.81	1,273.51	2.01	1,582.75	337.54
Nonpoint	1,617.08	531.88	70.56	16.04	4.46	994.15	1,610.77	352.00	37.99	8,710.96
Non-Road	57.03	23.55	14.71	1.32	0.31	17.12	625.78	1.65	0.74	711.75
On Road	47.45	13.10	18.40	1.84	0.08	14.02	1,259.61	139.20	6.27	693.04
Total	2,040.24	610.36	117.25	59.79	6.73	1,246.10	4,769.66	494.84	1,627.74	10,453.30
Lake	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	70.08	9.90	5.56	11.90	0.48	42.24	584.05	1.41	92.59	303.77
Nonpoint	1,113.89	395.86	50.09	13.15	2.33	652.47	1,170.05	215.62	32.18	5,575.67
Non-Road	46.91	18.87	13.17	1.29	0.29	13.28	634.63	1.67	0.75	574.38
On Road	41.38	11.24	16.27	1.69	0.07	12.10	1,147.18	117.71	5.33	544.07
Total	1,272.27	435.87	85.09	28.03	3.17	720.09	3,535.91	336.41	130.85	6,997.90
Medina	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	59.43	23.02	1.97	0.99	0.09	33.37	105.94	0.49	147.09	142.93
Nonpoint	1,419.96	422.66	57.14	14.70	4.31	921.15	838.25	313.50	38.58	8,024.94
Non-Road	36.29	14.84	9.86	0.92	0.21	10.44	335.97	1.00	0.40	422.33
On Road	36.11	9.76	15.39	1.73	0.07	9.16	1,106.10	91.72	4.35	448.53
Total	1,551.80	470.28	84.36	18.34	4.68	974.12	2,386.26	406.71	190.42	9,038.72
Summit	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	39.14	10.34	1.94	2.62	0.35	23.89	171.47	1.63	4.82	379.65
Nonpoint	2,026.38	773.67	82.16	22.86	4.27	1,143.42	1,849.65	394.81	51.16	11,849.79
Non-Road	78.97	33.04	19.20	1.69	0.39	24.62	732.11	2.33	1.00	1,011.94
On Road	92.41	25.50	34.46	3.77	0.16	28.51	2,561.75	287.58	12.57	1,269.89
Total	2,236.90	842.55	137.76	30.94	5.17	1,220.44	5,314.98	686.35	69.55	14,511.26
Portage	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	168.54	24.81	2.10	9.19	1.02	131.42	117.01	6.78	24.71	407.97

Nonpoint	1,295.17	397.88	56.45	15.54	4.02	821.28	1,126.92	273.37	50.04	8,703.01
Non-Road	35.14	14.91	8.21	0.68	0.16	11.17	360.06	1.01	0.42	650.87
On Road	33.04	9.08	13.80	1.59	0.06	8.50	1,040.47	90.33	4.16	405.24
Total	1,531.90	446.68	80.56	27.00	5.26	972.37	2,644.46	371.50	79.34	10,167.08
Geauga	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	5.82	1.34	0.33	0.12	0.02	4.01	9.84	0.21	18.95	43.61
Nonpoint	1,123.17	330.68	46.19	11.97	3.09	731.25	423.72	282.35	31.14	5,810.90
Non-Road	37.42	16.09	8.30	0.64	0.16	12.22	288.04	0.89	0.37	516.43
On Road	16.29	4.54	6.57	0.60	0.03	4.55	415.25	42.35	1.97	233.66
Total	1,182.69	352.65	61.39	13.33	3.30	752.03	1,136.85	325.80	52.42	6,604.60
Ashtabula	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	77.22	15.82	2.48	5.38	0.86	52.68	294.91	4.91	21.33	2,330.62
Nonpoint	1,041.87	291.63	41.68	11.34	4.34	692.78	1,163.55	274.18	30.75	9,413.71
Non-Road	25.47	10.17	7.47	0.72	0.17	6.94	442.04	0.94	0.43	530.77
On Road	24.75	7.02	10.94	1.10	0.05	5.64	878.47	60.66	2.57	368.04
Total	1,169.32	324.64	62.57	18.54	5.42	758.04	2,778.97	340.68	55.08	12,643.15
Huron	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	24.40	4.37	1.81	1.24	0.16	16.82	211.26	2.59	0.79	1,088.64
Nonpoint	804.01	177.20	28.15	7.87	4.01	586.79	987.08	820.98	14.62	6,230.34
Non-Road	24.18	8.94	8.81	0.96	0.22	5.24	312.05	0.72	0.30	205.88
On Road	10.43	3.01	4.03	0.33	0.02	3.05	298.91	26.99	1.09	216.26
Total	863.02	193.52	42.80	10.40	4.41	611.90	1,809.30	851.28	16.80	7,741.13
Erie	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	71.03	19.58	7.05	4.07	0.45	39.88	414.22	0.61	59.32	349.20
Nonpoint	667.57	176.58	26.07	6.45	1.97	456.51	1,042.96	122.20	10.88	4,219.92
Non-Road	29.14	12.22	7.27	0.61	0.15	8.88	674.65	1.34	0.61	935.16
On Road	26.05	7.24	11.55	1.32	0.05	5.88	926.73	72.73	3.25	303.97
Total	793.79	215.62	51.94	12.45	2.62	511.15	3,058.56	196.87	74.06	5,808.24

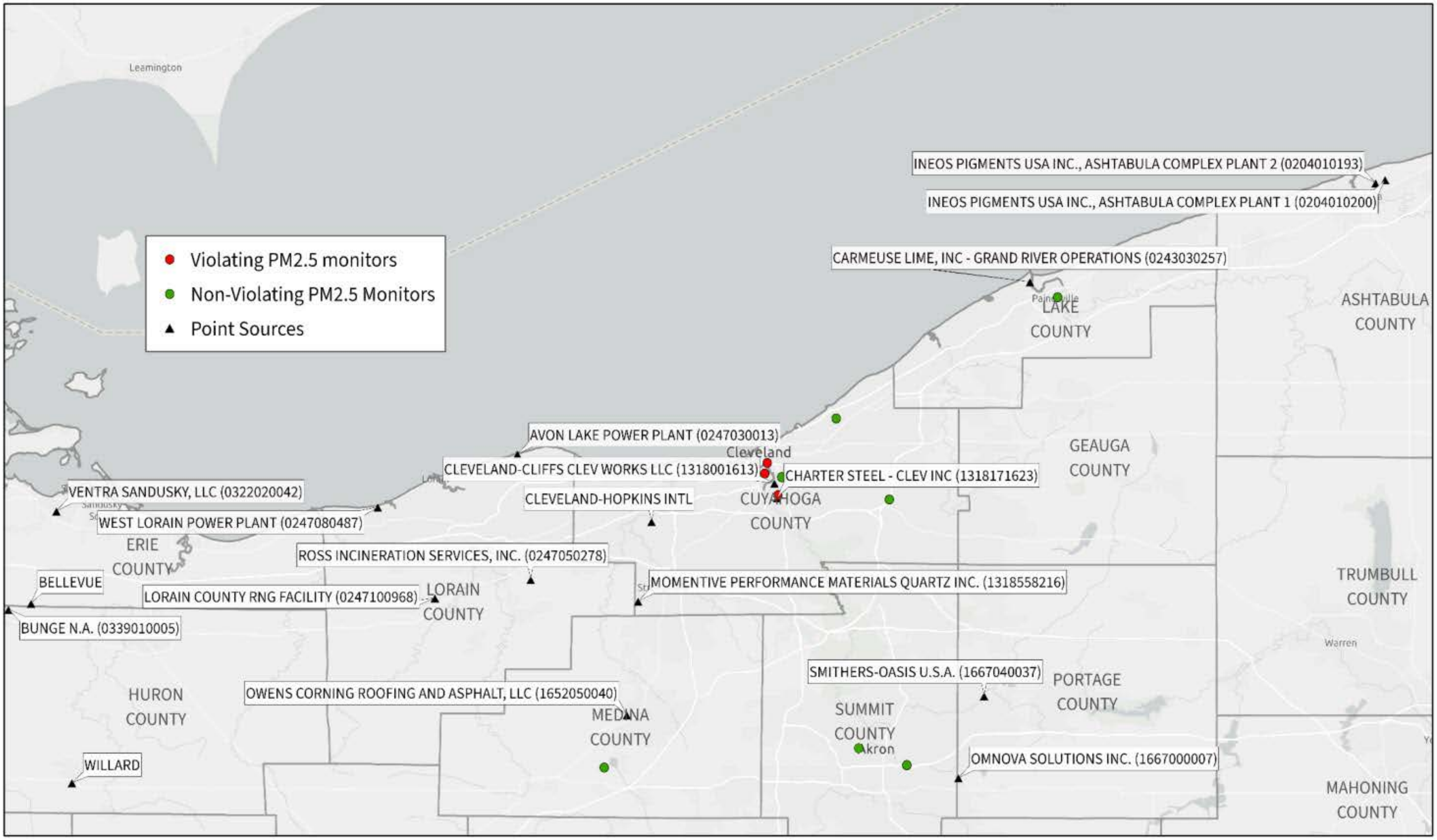
TOTALS	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Cuyahoga	4,479.85	1,539.18	272.65	164.43	17.00	2,486.48	13,557.44	1,125.20	883.55	23,579.70
Lorain	2,040.24	610.36	117.25	59.79	6.73	1,246.10	4,769.66	494.84	1,627.74	10,453.30

Lake	1,272.27	435.87	85.09	28.03	3.17	720.09	3,535.91	336.41	130.85	6,997.90
Medina	1,551.80	470.28	84.36	18.34	4.68	974.12	2,386.26	406.71	190.42	9,038.72
Summit	2,236.90	842.55	137.76	30.94	5.17	1,220.44	5,314.98	686.35	69.55	14,511.26
Portage	1,531.90	446.68	80.56	27.00	5.26	972.37	2,644.46	371.50	79.34	10,167.08
Geauga	1,182.69	352.65	61.39	13.33	3.30	752.03	1,136.85	325.80	52.42	6,604.60
Ashtabula	1,169.32	324.64	62.57	18.54	5.42	758.04	2,778.97	340.68	55.08	12,643.15
Huron	863.02	193.52	42.80	10.40	4.41	611.90	1,809.30	851.28	16.80	7,741.13
Erie	793.79	215.62	51.94	12.45	2.62	511.15	3,058.56	196.87	74.06	5,808.24

Source: 2022 EMP from https://www.epa.gov/air-emissions-modeling/2022v1-emissions-modeling-platform

The following figure 12 and table 16 show the higher emitting point sources in the area.

Figure 12: Location of Cleveland-Elyria-Akron Analysis Area Point Sources



Source: 2022 EMP from https://www.epa.gov/air-emissions-modeling/2022v1-emissions-modeling-platform

As can be seen in table 16 below, the point source with the most significant emissions of $PM_{2.5}$, NO_X, and NH_3 is Cleveland-Cliffs Cleveland Works located in Cuyahoga County. Avon Lake Power Company located in Lorain County has the highest emissions of SO_2 in the area, followed by Cleveland-Cliffs Cleveland Works. Cleveland-Cliffs is located between the three violating monitoring sites – south of two sites and north of the other site. Avon Lake Power is located to the west of the violating sites. INEOS Pigments Plant 2 in Ashtabula County has the highest VOC emissions in the analysis area and is located to the northwest of the violating sites. As can be seen in figure 12 above, most of the large point sources are concentrated in and around Cuyahoga County.

Table 16: Cleveland-Elyria-Akron Analysis Area Point Source Emissions for 2022 (TPY)

	PM2.5	
Cuyahoga County	Cleveland-Cliffs Cleveland Works LLC (1318001613)	439.27
Lorain County	Avon Lake Power Plant (0247030013)	181.02
Cuyahoga County	Momentive Performance Materials Quartz Inc (1318558216)	94.08
	NOx	
Cuyahoga County	Cleveland-Cliffs Cleveland Works LLC (1318001613)	1,032.22
Lorain County	Avon Lake Power Plant (0247030013)	672.00
Lake County	Carmeuse Lime Inc – Grand River Operations (0243030257)	420.12
Cuyahoga County	Cleveland Hopkins Intl	344.71
Erie County	BELLEVUE	298.04
Ashtabula County	INEOS Pigments USA Inc, Ashtabula Complex Plant 2 (0204010193)	215.06
Lorain County	Ross Incineration Services Inc (0247050278)	180.20
Lorain County	West Lorain Power Plant (0247080487)	135.97
Lorain County	Lorain County LFG Power Station (0247100968)	127.44
Huron County	WILLARD	120.29
Cuyahoga County	Charter Manufacturing Company Inc (1318171623)	108.95
	NH3	
Cuyahoga County	Cleveland-Cliffs Cleveland Works LLC (1318001613)	13.64
Cuyahoga County	Momentive Performance Materials Quartz Inc (1318558216)	8.07
Portage County	OMNOVA Solutions Inc. (1667000007)	3.22
	SO2	
Lorain County	Avon Lake Power Plant (0247030013)	1,550.41
Cuyahoga County	Cleveland-Cliffs Cleveland Works LLC (1318001613)	628.62
Medina County	Owens Corning Roofing and Asphalt LLC (16520550040)	141.79
Cuyahoga County	Charter Manufacturing Company, Inc. (131817623)	63.43
Lake County	Carmeuse Lime Inc – Grand River Operations (0243030257)	55.96
	VOC	
Ashtabula County	INEOS Pigments USA Inc, Ashtabula Complex Plant 2 (0204010193)	1,573.28
Huron County	Bunge N.A. (0339010005)	896.51
Ashtabula County	INEOS Pigments USA Inc, Ashtabula Complex Plant 1 (0204010200)	586.47
Portage County	Smithers-Oasis USA (1667040037)	164.86
Erie County	Ventra Sandusky, LLC (0322020042)	101.41

Cuyahoga County	Cleveland-Cliffs Cleveland Works LLC (1318001613)	92.95

Source: 2022 EMP from https://www.epa.gov/air-emissions-modeling/2022v1-emissions-modeling-platform

Level of control of emissions sources

In the Cleveland-Elyria-Akron area, the emission reduction programs which have had or will have the greatest impact on $PM_{2.5}$ concentrations are:

- On-road and off-road diesel control programs in conjunction with ultra-low sulfur diesel fuel requirements
- NO_x trading program
- Various Cross-State Air Pollution Rules (CSAPR)
- Ohio Clean Diesel Initiatives
- Mercury and Air Toxics Standards (MATS)
- Good Neighbor Plan (stayed)
- NSPS for Oil and Gas Production
- Ohio Administrative Code 3745-112 “Consumer Products”
- Ohio Administrative Code 3745-113 “Architectural and Industrial Maintenance (AIM) Coatings”
- Ohio Administrative Code 3745-110 “Nitrogen Oxides – Reasonably Available Control Technology”
- Ohio Administrative Code 3745-21 “Carbon Monoxide, Photochemically Reactive Materials, Hydrocarbons, and Related Materials Standards”
- Ohio Administrative Code 3745-17 “Particulate Matter Standards”

The CSAPR, Good Neighbor Plan, and MATS regulate EGUs, or power plants. The CSAPR program replaced CAIR but has the same objective of reducing power plant emissions that cross state lines to improve air quality. CSAPR was revised and updated in 2017 (replacing the original rule promulgated in 2015) to further reduce summertime NO_x emissions from power plants. The Good Neighbor Plan extends the regulations of CSAPR and CAIR to not only EGUs but also for non-EGU stationary sources beginning in 2026. However, this rule was stayed by the Supreme Court in July of 2024. CAIR and CSAPR have brought about the largest reductions in precursor or primary emissions of $PM_{2.5}$ and its species (sulfates, nitrates, organic carbon, elemental carbon and crustal) and will continue to bring additional reductions. Compliance with the MATS rule also leads to additional reductions in precursor species - in particular, sulfates.

The NSPS for Oil and Gas production was promulgated March 8, 2024, by U.S. EPA, and sets new requirements for crude oil and natural gas production sources to regarding greenhouse gas (specifically methane), VOC, and SO_2 emissions. All large oil and gas industrial source owners have to March 2029 to comply with new state requirements created under this ruling. Compliance with this rule will lead to reduction in methane, VOC, and SO_2 emissions.

OAC Chapter 3745-112[18] contain requirements for the content of VOCs in consumer products sold, supplied, offered for sale, or manufactured for use in the state of Ohio. These rules were initially promulgated in 2007 as part of Ohio's strategy to attain the 1997 ozone standard by adopting the standards in the model rule developed by the Ozone Transport Commission (OTC). The OTC develops model rules for states to consider when adopting consumer products regulations. This rule was last reviewed and updated in 2022 to strengthen the VOC content requirements consistent with more recent OTC model rules. This update was to assist with attaining and maintaining the 2015 ozone standard.

The rules in OAC Chapter 3745-113[19] contain requirements for the content of VOCs in AIM coatings. These rules were initially promulgated in 2007 as part of Ohio's strategy to attain the 1997 ozone standard by adopting the standards in the model rule developed by the OTC. This rule was last reviewed and updated in 2022 to strengthen the VOC content requirements consistent with more recent OTC model rules. This update was to assist with attaining and maintaining the 2015 ozone standard.

On March 30, 2022, Ohio submitted revisions to the previously submitted SIP for the 2015 ozone standard.[20] These revisions addressed Reasonably Available Control Technology (RACT) requirements for the 2015 ozone standard with respect to one nonattainment area that was bumped-up to moderate nonattainment: the Cleveland OH area (Cuyahoga, Geauga, Lake, Lorain, Medina, Portage and Summit Counties); and one maintenance area: the Ohio portion of the Cincinnati OH-KY area (Butler, Clermont, Hamilton and Warren Counties). For certain source categories, Ohio EPA submitted regulations that establish new or more stringent RACT controls in OAC Chapters 3745-21 (VOC) and 3745-110 (NO_X). The rules in OAC Chapter 3745-110[21] limit the emissions of NO_X from stationary industrial sources such as, but not limited to, boilers, combustion turbines and internal combustion engines. The rules in OAC Chapter 3745-21[22]

[18] The current, effective copy of this rule can be found here: https://epa.ohio.gov/divisions-and-offices/air-pollution-control/regulations/effective-rules/dapc-effective-rules

[19] The current, effective copy of this rule can be found here: https://epa.ohio.gov/divisions-and-offices/air-pollution-control/regulations/effective-rules/dapc-effective-rules

[20] This revision and all related documents to Ohio's 2015 8-hour ozone standard SIP can be found on Ohio EPA's website, https://epa.ohio.gov/divisions-and-offices/air-pollution-control/state-implementation-plans/division-of-air-pollution-control-sip-2015

[21] The current, effective copy of this rule can be found here: https://epa.ohio.gov/divisions-and-offices/air-pollution-control/regulations/effective-rules/dapc-effective-rules

[22] The current, effective copy of this rule can be found here: https://epa.ohio.gov/divisions-and-offices/air-pollution-control/regulations/effective-rules/dapc-effective-rules

establish requirements for the control of emissions of VOCs and carbon monoxide (CO) from stationary emission sources. NO_X and VOC emissions are both precursor pollutants that lead to the formation of ozone. Ohio EPA is currently in the process of further strengthening our RACT rules for the Cleveland area due to the impending bump-up to serious nonattainment.

OAC Chapter 3745-17[23] regulates particulate matter and established RACT for stationary sources under the historical PM_{10} standard. In Cuyahoga County, additional restrictions are in place requiring contingency plan requirements (OAC rule 3745-17-14) and more stringent requirements for select sources (OAC rule 3745-17-12).

With respect to the Ohio utilities, Avon Lake Power Plant (facility ID 0247030013) was an EGU facility located in Lorain County that was permanently shut down April 1, 2022. Prior to the facility's shutdown, it had one coal-fired boiler unit with a design capacity of 6,040 MMBtu/hr. As can be seen from table 15 and table 16 above, the most significant SO_2 emissions and second most significant NO_x and $PM_{2.5}$ emissions from point sources within the area were attributable to Avon Lake Power Plant.

Also, a larger point-source non-utility contributor, Cleveland-Cliffs Cleveland Works LLC (facility ID 1318001613) is an iron and steel mill located in Cuyahoga County. This mill has seven boiler units (three with 336 MMBtu/hr design capacities, one with 467 MMBtu/hr design capacity, one with 388 MMBtu/hr design capacity, and two with 237.5 MMBtu/hr design capacities) currently operating. The 467MMBtu/hr boiler and 388 MMBtu/hr boiler both have PM control equipment (installed 1974 and in 1976, respectively). The three 336 MMBtu boiler units and the 388 MMBtu/hr boiler unit have constant emissions monitoring (installed along with the units). This facility also has three reheat furnaces with no implemented controls; two blast furnaces both with VOC (installed 1943), PM (installed 1972), and CO (installed 1943) control equipment; and two basic oxygen furnaces (with two vessels per furnace) with PM control equipment (installed 1961). Ohio EPA is currently working with this facility to review controls and determine if NO_x RACT requirements will be necessary. As can be seen from table 15 and table 16 above, the most significant $PM_{2.5,}$ $NO_{x,}$ and NH_3 emissions and second most significant SO_2 emissions from point sources within the area are attributable to Cleveland-Cliffs Cleveland Works.

Urbanization, population, and commuting trends

The following table 17 provides a summary of the 2022 population and VMT for each of the counties discussed in this section.

[23] The current, effective copy of this rule can be found here: https://epa.ohio.gov/divisions-and-offices/air-pollution-control/regulations/effective-rules/dapc-effective-rules

Table 17: Cleveland-Elyria-Akron Area 2022 County Level VMT, Population, Land Area, and Population Density

County	VMT	Population	Land Area (sq. miles)	Population Density (1,000 per sq. miles)
Cuyahoga	27,022,350	1,263,667	459	2.75
Lorain	7,392,150	316,268	494	0.64
Lake	5,598,480	231,842	231	1.00
Medina	4,830,98	183,512	423	0.43
Geauga	2,394,490	95,469	408	0.23
Cleveland-Elyria MSA Total	42,407,470	2,090,758	2,015	1.04
Summit	14,431,060	535,882	420	1.28
Portage	4,599,260	161,745	504	0.32
Akron MSA Total	19,030,320	697,627	924	0.76
Ashtabula	2,717,630	97,014	709	0.14
Erie	3,504,490	74,501	255	0.29
Huron	1,215,220	58,218	496	0.12
Total for All Counties	68,875,130	3,018,118	4,399	0.69

Source: Ohio Department of Transportation (Ohio 2022 VMT data only)
Ohio Department of Development, County Trends and Profiles for 2022 (Ohio populations only)
All other data: U.S. EPA Particle Pollution Designations Memo and Data, https://www.epa.gov/particle-pollution-designations/particle-pollution-designations-memorandum-and-data-2024-revised#A

Degrees of urbanization and population trends

As seen in table 17 above, the majority of the population for this analysis area resides in Cuyahoga County and then next in Summit County. Other more populated counties include Lorain and Lake Counties. Cuyahoga County also has a very high population density; therefore, population related emissions are expected to be high. Summit and Lake Counties also have higher population densities than the other counties in the analysis area. As can be seen in figure 13, the majority of the counties in this area are expected to have declines in population, including Cuyahoga County.

The most urbanized areas are within Cuyahoga and Summit Counties. Their population and population densities are significantly higher than the other counties in the analysis area indicating that population-related emissions in these counties may be high. This is supported by table 15 above, which indicates that these two counties have the highest mobile and non-point emissions compared to the others. Lorain County mobile and non-point emissions are not as high.

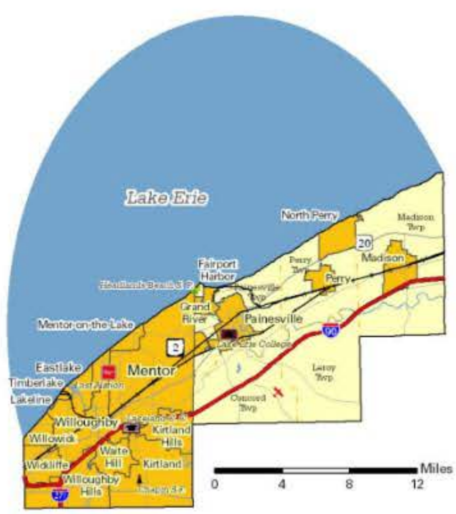
Figure 13: Cleveland-Elyria-Akron Analysis Area Ohio County Profiles

Cuyahoga County

Cuyahoga County is 31% developed - high intensity, 48% developed - low intensity, and 18% forest. Cleveland city is the largest major urban area, and where two of three the violating monitoring sites are located. The other violating monitoring site is located in Newburgh Heights, located 5 miles south of downtown Cleveland. The 2020 county population was 1,264,817 and declined to 1,236,041 in 2022. The population is expected to continually decline in the future to an estimated population of 1,210,921 by 2030.

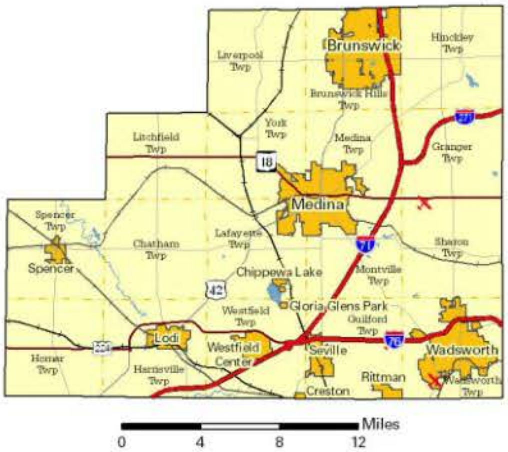
Lorain County

Lorain County is 30% cropland, 21% forest, and 20% developed - high intensity. Lorain city is the largest major urban area. The 2020 county population was 312,964 and increased to 316,268 in 2022. The population is expected to continually increase in the future to an estimated population of 316,704 by 2030.



Lake County

Lake County is 38% developed - low intensity, 33% forest, and 12% developed - high intensity. Mentor city is the largest major urban area. The 2020 county population was 232,603 and declined to 231,842 in 2022. The population is expected to continually decline in the future to an estimated population of 226,501 by 2030.



Medina County

Medina County is 30% forest, 23% shrub/grasslands, and 20% cropland. Brunswick city is the largest major urban area. The 2020 county population was 182,470 and increased to 183,512 in 2022. The population is expected to continually increase in the future to an estimated population of 186,744 by 2030.

Summit County

Summit County is 41% developed – low intensity, 28% forest, and 16% developed – high intensity. Akron city is the largest major urban area. The 2020 county population was 540,428 and declined to 535,882 in 2022. The population is expected to continually decline in the future to an estimated population of 519,874 by 2030.

Portage County

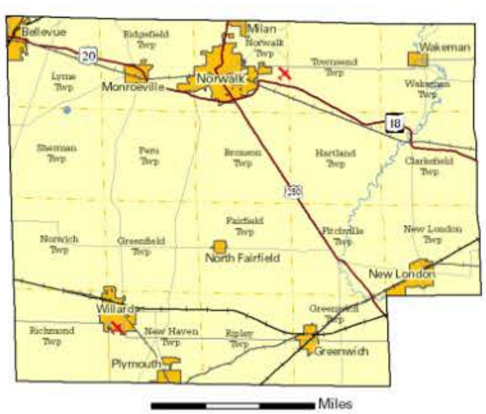
Portage County is 38% forest, 21% pasture, and 16% developed – low intensity. Kent city is the largest major urban area. The 2020 county population was 161,791 and decreased slightly to 161,745 in 2022. The population is expected to continually decline to an estimated population of 153,249 by 2030.

Geauga County

Geauga County is 49% forest, 20% pasture, and 17% developed – low intensity. Bainbridge township is the largest major urban area. The 2020 county population was 95,397 and increased slightly to 95,469 in 2022. The population is expected to continually increase to an estimated population of 96,327 by 2030.

Ashtabula County

Ashtabula County is 41% forest, 18% pasture, and 15% cropland. Ashtabula city is the largest major urban area. The 2020 county population was 97,574 and decreased to 97,014 in 2022. The population is expected to continually decline to an estimated population of 93,604 by 2030.



Huron County

Huron County is 66% cropland, 16% forest, and 7% developed – low intensity. Norwalk city is the largest major urban area. The 2020 county population was 58,565 and decreased slightly to 58,218 in 2022. The population is expected to continually decline to an estimated population of 56,144 by 2030.

Erie County

Erie County is 51% cropland, 18% forest, and 12% developed – low intensity. Sandusky city is the largest major urban area. The 2020 county population was 75,622 and decreased to 74,501 in 2022. The population is expected to continually decline to an estimated population of 70,426 by 2030.

Source: County profile information and maps found at Ohio Department of Development, Research, County Trends, https://development.ohio.gov/about-us/research/county/county-trends

Commuting trends

As seen can be seen in table 17, the majority of VMT occurs in Cuyahoga County and then Summit County, followed by Stark, Lake, and Lorain Counties. Table 18 below looks at commuter travel in and out of the Cuyahoga County, where the violating monitoring sites are located. Only 11% of workers who reside in Cuyahoga County commute to a different county for work. In turn, about 27% of workers who work in Cuyahoga County live in an outside county. Of the Cuyahoga County residents, the greatest percentage commutes south to Summit County (3.1%), northeast to Lake County (2.3%), and west to Lorain County (2%). Of the non-residents who commute into Cuyahoga County for work, the majority comes from Lorain County (6.2%), Summit County (4.9%) and Lake County (4.9%). Overall, the most significant commuter travel in and out of these counties occurs between Cuyahoga, Summit, Lorain, and Lake Counties.

Table 18: Commuter Travel In and Out of Cuyahoga County

Cuyahoga	**% workers live in Cuyahoga work outside Cuyahoga Co**				11.0%
	% workers work in Cuyahoga live outside Cuyahoga Co				26.8%
# workers living in Cuyahoga		582,120	**# workers working in Cuyahoga**		708,092
Place of Work	**#**	**%**	**Place of Residence**	**#**	**%**
Summit County	18,029	3.1%	Lorain County	44,058	6.2%
Lake County	13,326	2.3%	Summit County	35,608	4.9%
Lorain County	11,538	2.0%	Lake County	34,882	4.9%
Medina County	6,457	1.1%	Medina County	26,801	3.8%
Geauga County	3,597	0.6%	Geauga County	14,611	2.1%
Portage County	2,927	0.5%	Portage County	10,507	1.5%
Stark County	786	0.14%	Stark County	3,198	0.5%

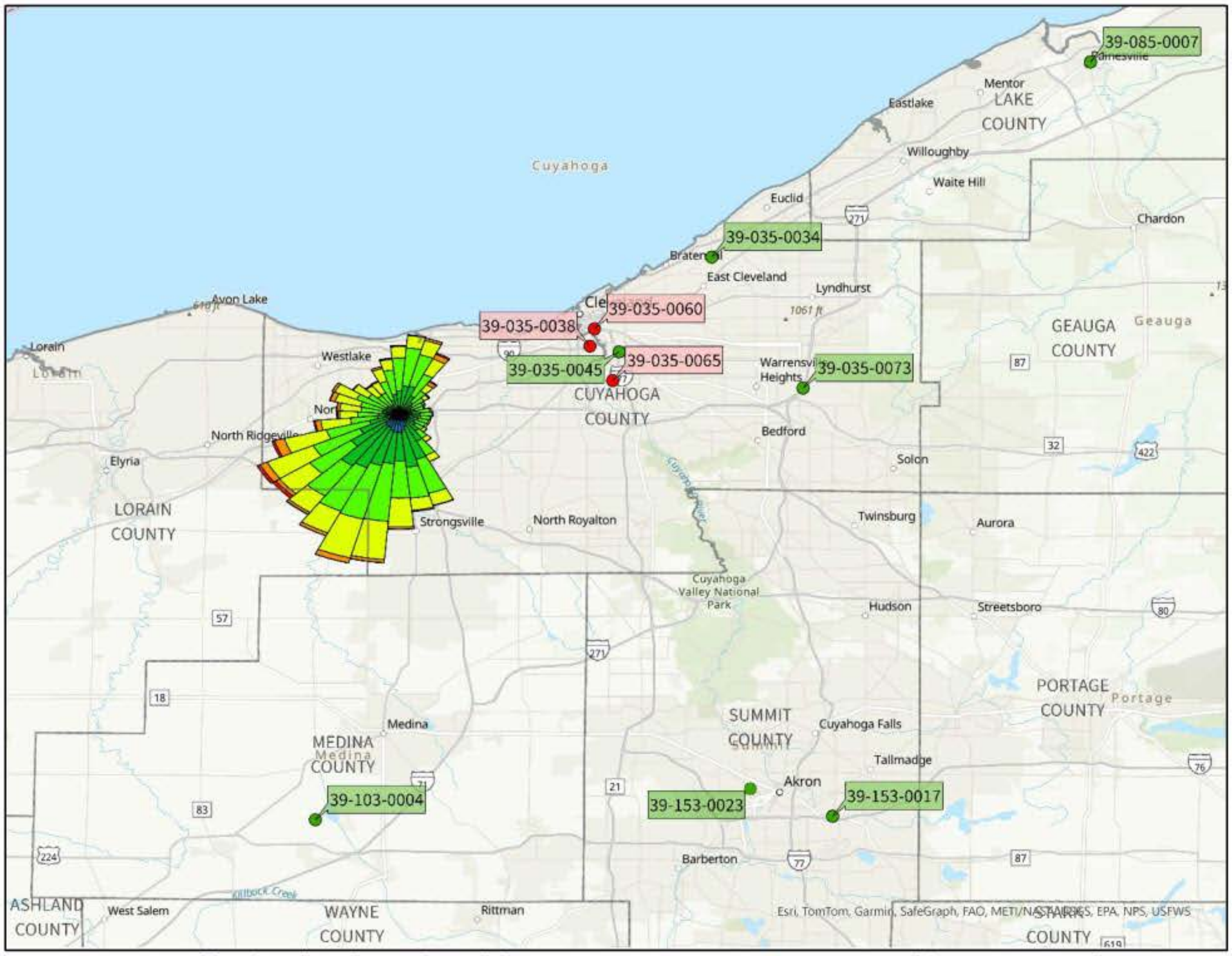
Source: U.S. Department of Commerce Economics and Statistics Administrations, U.S. Census Bureau, Residence County to Workplace County Commuting Flows for the United States and Puerto Rico Sorted by Workplace Geography: 5-year ACS 2016-

2020, Residence County to Workplace County Commuting Flows for the United States and Puerto Rico Sorted by Residence Geography: 5-Year ACS 2016-2020

METEOROLOGY

The following wind rose in figure 14 represents this area.

Figure 14: 2021-2023 Wind Roses for the Cleveland-Elyria-Akron Analysis Area



Source: AERMET Surface data (Wind Rose data only), U.S. EPA $PM_{2.5}$ Designations Mapping Tool (monitoring sites)

Winds from the southwest quadrant are prevalent near the Cleveland-Elyria-Akron area monitoring sites. However, given the nature of the location of the violating monitors in close proximity to the industrialized steel area in Cleveland, Ohio EPA anticipates very localized impacts.

The HSYPLIT density maps for the violating monitoring sites in the Cleveland-Elyria-Akron area (Appendix D pp.17-23) show that most of the air parcels that originate in this area do not tend to travel a large distance over 24 hours, and actually stay in the surrounding counties and area near the violating monitoring sites. This may indicate that any pollutants emitted in the air near or at the violating sites tend to stay in the area. This further supports that localized sources near the violating monitoring sites could be a component of the violations.

GEOGRAPHY/TOPOGRAPHICAL

This analysis area does not have any geographical or topographical barriers significantly affecting air pollution transport. Therefore, this factor does not play a role in the analysis of this area.

JURISDICTIONAL BOUNDARIES

Cuyahoga and Lorain Counties were designated as nonattainment for the 2012 annual $PM_{2.5}$ standard. Lake, Lorain, Cuyahoga, Medina, Summit, and Portage Counties were designated as nonattainment for the 2006 24-hour $PM_{2.5}$ standard. Lake, Lorain, Cuyahoga, Medina, Summit, and Portage Counties, and a partial area of Ashtabula County were designated as nonattainment under the 1997 annual $PM_{2.5}$ standard. With respect to the 1997 and 2008 ozone standards, Lake, Lorain, Cuyahoga, Medina, Summit, Portage, Ashtabula, and Geauga Counties were designated as nonattainment. These areas have been redesignated to attainment for the 1997 annual and 2006 24-hour $PM_{2.5}$ standards and 1997 ozone standards. For the most recent 2015 ozone standard, Lake, Lorain, Cuyahoga, Medina, Summit, Portage, and Geauga Counties were designated nonattainment as part of the Cleveland OH nonattainment area and have not yet been redesignated to attainment. No other counties a part of this analysis have been designated nonattainment for $PM_{2.5}$ or other urban-scale pollutants.

Cuyahoga County is part of the Cleveland-Akron-Canton CSA which is comprised of the Cleveland-Elyria MSA (Cuyahoga, Lake, Lorain, Medina, and Geauga Counties), the Akron MSA (Summit and Portage Counties), the Canton-Massillon MSA (Stark and Carroll Counties) and Ashtabula, Tuscarawas, Wayne, Erie, and Huron Counties.

CONCLUSION

Ashtabula (partial, only for the 1997 annual standard), Cuyahoga, Lake, Lorain, Medina, Portage, and Summit Counties have historically been a part of this nonattainment area for the 1997 annual and 2006 24-hour $PM_{2.5}$ standards. For the most recent 2012 annual $PM_{2.5}$ standard, only Cuyahoga and Lorain Counties were nonattainment.

Ashtabula County was a part of the designations of nonattainment under the 1997 annual $PM_{2.5}$ standard but not the 2006 24-hour or 2012 annual $PM_{2.5}$ standard. Under the 1997 annual $PM_{2.5}$

standard, a coal-fired power plant existed in Ashtabula County but since shutdown. Now, emissions in Ashtabula County are dominated by nonpoint emissions. It is unlikely these emissions have any impact on the violating monitoring in Cuyahoga County, given the significant distance and predominant wind pattern being in the opposite direction.

As was the case with the 1997 annual, 2006 24-hour, and 2012 annual $PM_{2.5}$ standards, Geauga County continues to have very low emissions and little to no population or commuter travel with Cuyahoga County. There are also no larger point sources in Geauga County. It is unlikely these emissions have any impact on the violating monitoring in Cuyahoga County, given the distance and predominant wind pattern being in the opposite direction.

Huron and Erie Counties have very low emissions and little to no commuter travel with Cuyahoga County.

The remaining counties include Cuyahoga (three violating monitoring sites in Cleveland), Lorain (non-violating monitoring site), Lake (non-violating monitoring site), Medina (non-violating monitoring site), Summit (two non-violating monitoring sites) and Portage (no monitoring sites) Counties. These counties were designated as nonattainment as part of the 2006 24-hour $PM_{2.5}$ standard but only Cuyahoga and Lorain Counties as a part of the 2012 annual $PM_{2.5}$ standard. Although emissions and commuter travel from Lake, Medina, Summit and Portage Counties is larger than those from Huron and Erie Counties, they are not significant enough to warrant inclusion in the nonattainment area, just as was the case under the 2012 annual $PM_{2.5}$ standard.

Just as under the 2012 annual $PM_{2.5}$ standard, only Cuyahoga County contains monitoring sites not attaining the revised annual standard. As identified in the Cleveland-Elyria-Akron's analysis above, these monitoring sites are all located geographically in the heart of the Cleveland metropolitan/industrial area. Figure 12 demonstrates the significant amount of point source emissions condensed nearby the violating monitoring sites. Cuyahoga County has by far the highest population in the area, although projected to steadily decline in the future, and the highest VMT.

It is Ohio's belief that violations at these monitoring sites can be attributed to local industrial sources and nearby on-road and off-road emissions. The monitoring sites are positioned in close proximity to one of the largest steel producing facilities in the country.

Cuyahoga County has the highest emissions in the analysis area compared to the other counties, followed by Lorain County. Most of Lorain County's emissions come from non-point sources and then to a lesser extent point sources.

For the 2012 annual $PM_{2.5}$ standard, U.S. EPA recommended Lorain County as part of the Cleveland nonattainment area due to Lorain County's high emissions. Avon Lake Power Plant, located in Lorain County, had the second largest point source emissions in the area and contributed significantly to Lorain County's emissions. It was also noted that since Lorain County was southwest of Cleveland, Lorain County was considered a "considerable contributor to the violating monitoring sites in Cleveland".[24] Lorain County emissions have decreased significantly (from 59,215 TPY in 2014 to 19,386 TPY in 2022), and Avon Lake Power Plant shut down April 1, 2022. Although emissions from Avon Lake are included in the emissions data presented in this document, Ohio EPA expects significant reductions in Lorain County point emissions due to the full shutdown. While Lorain County commuter travel into Cuyahoga is the highest at 6.2%, Ohio EPA does not believe the sole reason for inclusion of Lorain County should be based upon limited commuter travel.

As discussed above, the speciation data for the Cuyahoga County monitoring sites indicate a large organic carbon component, which tends to be from local sources. Historically sulfate was more dominant than other species. This may be an indication of the significant shutdown of coal fired power plants in the area. Further, site 39-035-0076 has a very low concentrations compared to the other sites, especially the violating sites in Cuyahoga County in the industrialized area. This site is a newer speciation site that was installed south of Cleveland specifically to act as a background site to the Cleveland industrialized area.

Ohio EPA continues to believe this revised annual $PM_{2.5}$ nonattainment area should be limited to Cuyahoga County.

[24] U.S. EPA's (120-day) response to Ohio's Recommended Nonattainment Area Designations for the 2012 PM2.5 Annual Standard, https://dam.assets.ohio.gov/image/upload/epa.ohio.gov/Portals/27/sip/05_OH_120resp_8-19-14.pdf

Canton-Massillon OH MSA

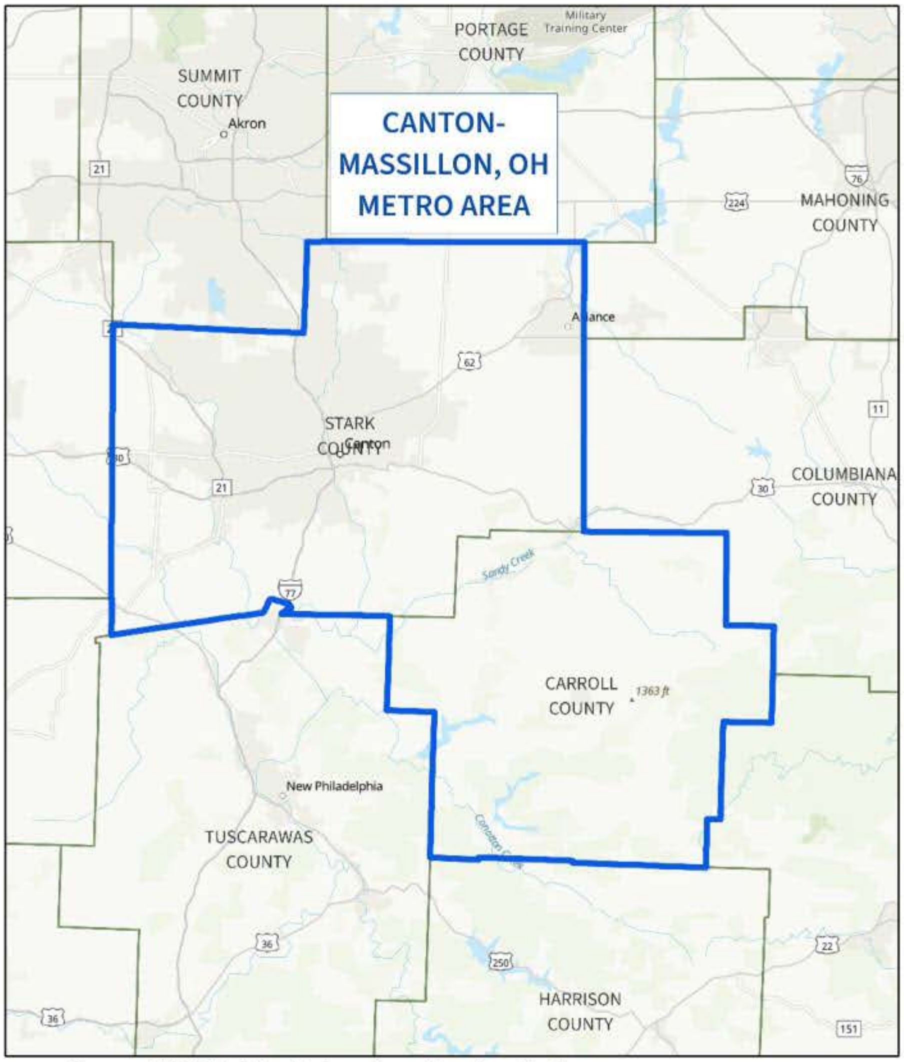
Figure 15: Canton-Massillon OH MSA Recommended Unclassifiable Area

Source: U.S. EPA $PM_{2.5}$ Designations Mapping Tool

DISCUSSION

There is one county in this historic 1997 annual and 2006 24-hour $PM_{2.5}$ nonattainment area: Stark County. Ohio EPA cannot make a recommendation regarding attainment or nonattainment for the Canton-Massillon area with the available 2021-2023 air quality data. Therefore, Ohio EPA is recommending Stark County as unclassifiable. After considering the five factors, Ohio EPA does not recommend adding any contributing counties to this area.

Figure 16 Canton-Massillon OH MSA



Source: U.S. EPA $PM_{2.5}$ Designations Mapping Tool

As seen in figure 17, Stark County contains two monitoring sites, both of which are violating the annual revised standard (site 39-151-0017 and 39-151-0020). Stark County is part of the Canton-Massillon, OH MSA along with Carroll County (figure 16).

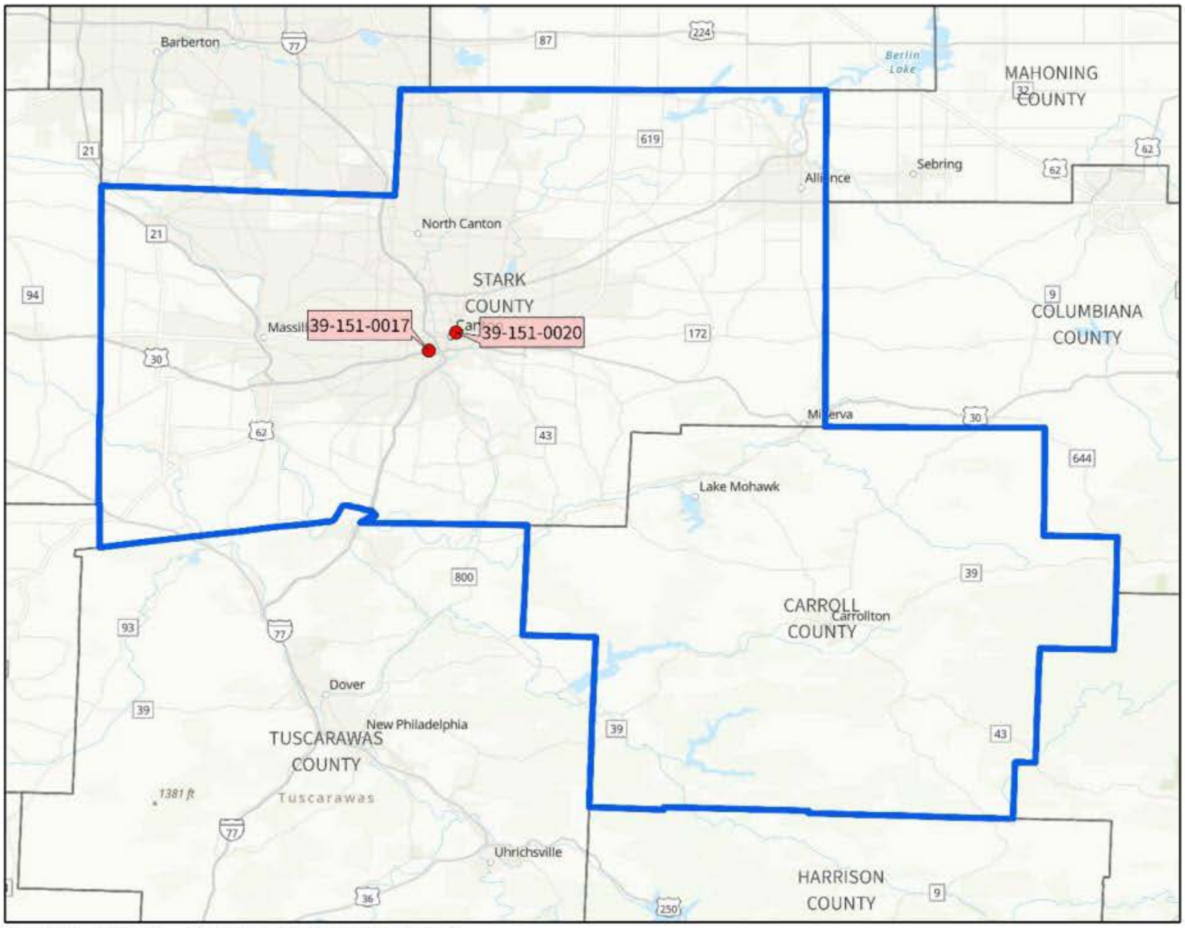
There are nine counties adjacent to the Canton-Massillon, OH MSA: Wayne, Holmes, Tuscarawas, Harrison, Jefferson, Columbiana, Mahoning, Portage, and Summit Counties.

Portage and Summit Counties are discussed in the Cleveland-Akron-Elyria area analysis while Jefferson and Harrison Counties are discussed in the Steubenville-Weirton area analysis.

AIR QUALITY DATA

For the 2021-2023 period, there are two Ohio monitoring sites in this area.

Figure 17: Canton-Massillon OH MSA Monitoring Sites



Source: U.S. EPA $PM_{2.5}$ Mapping Designations Tool

As can be seen in table 19, monitoring sites 39-151-0017 and 39-151-0020 in Stark County are both violating the standard based on 2021-2023 air quality data. The design value for the area is 9.5 µg/m³. As can be seen from tables 1 and 2, air quality trends have historically declined in this area with the exception of 2023 data influenced by wildfire events.

On January x, 2025, Ohio EPA submitted to U.S. EPA an exceptional events demonstration for both monitoring sites requesting the exclusion of certain daily $PM_{2.5}$ values affected by regulatorily significant summer 2023 Canadian wildfire smoke events discussed above. These sites experienced high daily $PM_{2.5}$ values during these events leading to higher design values and based on the discussion below, will have regulatory significance with respect to these recommended designations. As can be seen in table 19, approved requests for the exclusion of seven daily $PM_{2.5}$ values at site 39-151-0017 and ten daily $PM_{2.5}$ values at site 39-151-0020 due to impacts from regulatorily significant wildfire smoke-driven $PM_{2.5}$ episodes would result in site 39-151-0020 having a new 2021-2023 annual design value of 8.7 µg/m^3, indicating attainment, and site 39-151-0017 having a new 2021-2023 annual design value of 9.0 µg/m^3, although the design value would be invalid and therefore ineligible for comparison against the 2024 $PM_{2.5}$ annual NAAQS since it does not meet the data completeness criteria and cannot use the data substitution test per 40 CFR 50, Appendix N, Paragraph 4.1(c)(ii).

Table 19: Annual Average (µg/m^3) for Analysis Area Monitoring Sites

		Annual Averages			2021-2023 3-year Annual Average	
County	**Site ID**	**2021**	**2022**	**2023**	**Before EE**	**After EE**
Stark OH	39-151-0017	9.4	8.2	11.0	***9.5***	9.0
	39-151-0020	9.4	7.9	10.3	***9.2***	8.7

Source: U.S. EPA AQS

Insufficient data ***X.X*** Violating monitor

Site 39-151-0017 currently has a valid 2021-2023 $PM_{2.5}$ annual design value but does not meet the completeness criteria for the 2021 annual average, as the first quarter of data year 2021 had ten creditable samples, representing less than 50% data capture. When applying the data substitution test for the first quarter of data year 2021, per 40 CFR Part 50, Appendix N, Paragraph 4.1(c)(i), the test design value passes the data substitution test, so the valid design value of 9.5 µg/m^3 is maintained. Ohio EPA then recalculated the $PM_{2.5}$ annual design value for site 39-151-0017 without the seven $PM_{2.5}$ daily values affected by wildfire smoke events that will be requested for exclusion in an exceptional events demonstration, resulting in a new 2021-2023 $PM_{2.5}$ annual design value of 9.0 µg/m^3. However, per 40 CFR Part 50, Appendix N, Paragraph 4.1(c)(ii), the data substitution test can only be used to validate a calculated design value at or below the level of the standard if every quarter has at least 50% data capture, and the first quarter of data year 2021 does not meet this data completeness threshold. The new 2021-2023 $PM_{2.5}$ annual design value of 9.0 µg/m^3 for site 39-151-0017 is therefore deemed invalid to use for regulatory purposes. These details will be provided in Ohio's exceptional events demonstration, which is being worked on concurrently with this document.

It should be noted, when 2024 data is complete and a 2022-2024 annual design value is available for this site, it is expected that the design value will be valid with the removal of the incomplete 1st quarter 2021 data. Furthermore, based on 2022 data, 2023 data with Ohio's approved exceptional events demonstration, 2024 data collected to date, and considering historical data during non-wildfire event periods, Ohio EPA believes the 2022-2024 design value will meet the revised annual $PM_{2.5}$ standard.

As can be seen in table 20, there is one speciated $PM_{2.5}$ monitoring site in this area. It is co-located with the violating monitoring site 39-151-0017.

Table 20: Canton-Massillon Area Speciation Monitoring Sites

Site ID	Annual Averages	Speciation Monitor SANDWICH Mass					Site Design Value
		Sulfate	Nitrate	Organic Carbon	Elemental Carbon	Crustal	
39-151-0017 Stark County	2020	0.26	0.48	0.36	0.16	0.12	8.3
	2021	0.89	0.63	1.98	0.61	0.65	9.4
	2022	0.97	1.01	1.98	0.72	0.90	8.2
	2020-2022 3-year average	0.71	0.71	1.44	0.50	0.55	8.6

Source: CSN speciation data (SANDWICHED) from https://www.epa.gov/particle-pollution-designations/particle-pollution-designations-memorandum-and-data-2024-revised#A

Organic carbon dominates at this monitoring site. Sulfate and nitrate both also have a strong presence.

The 2021-2023 urban increments (UI) in table 21 have also been calculated for one of the violating monitoring sites.

Table 21: Canton-Massillon Area Urban Increments

2021-2023 Averages		Organic Carbon UI	Elemental Carbon UI	Nitrates UI	Sulfates UI	Crustal UI
Stark 39-151-0017	Quarter 1	2.69	0.37	0.81	0.08	0.55
	Quarter 2	4.14	0.71	0.00	0.09	0.39
	Quarter 3	3.22	0.59	0.00	-0.25	0.50
	Quarter 4	2.53	0.52	0.28	0.06	0.49
	Annual	3.18	0.56	0.23	-0.01	0.48
Stark 39-151-0020	Quarter 1	2.69	0.37	0.81	0.08	0.55
	Quarter 2	4.14	0.71	0.00	0.09	0.39
	Quarter 3	3.22	0.59	0.00	-0.25	0.50
	Quarter 4	2.53	0.52	0.28	0.06	0.49
	Annual	3.18	0.56	0.23	-0.01	0.48

Source: https://www.epa.gov/particle-pollution-designations/particle-pollution-designations-memorandum-and-data-2024-revised

Organic carbon UI tends to dominate throughout all quarters at both monitoring sites, peaking in quarter 2 along with the elemental carbon UI and sulfates UI. Nitrates UI and crustal UI are the highest in quarter 1 at both monitoring sites.

EMISSIONS AND EMISSIONS RELATED DATA

Emission trends

Table 22 presents emissions data for the Canton-Massillon MSA. Overall, the most significant emissions in the Canton-Massillon analysis area emanate from Stark County. Considering all the counties in the analysis area, Stark County accounts for 21% of the Canton-Massillon total area emissions: 27% of $PM_{2.5}$, 27% of NO_X, 10% of NH_3, 11% of SO_2, and 20% of VOC emissions. Stark County has the highest $PM_{2.5}$, NO_X, and VOC emissions in the area.

Tuscarawas County, located to the south of the violating monitoring sites, has the second highest emissions in the Canton-Massillon area, with the highest (51%) SO_2 emissions and second highest (16%) VOC emissions. Wayne County, located to the west of the violating monitoring sites, also has high emissions compared to the other counties in the area and has the highest (34%) NH_3 emissions. The majority of emissions in Wayne and Tuscarawas County come from point and nonpoint sources.

Mahoning County also has high emissions compared to the other counties but is located to the east of the violating monitoring sites. The one monitoring site located in Mahoning County is also meeting the standard.

In the Canton-Massillon analysis area, the biggest non-point sector for VOC emissions is biogenics followed by oil and gas production, except for Stark and Mahoning Counties where commercial solvents are second to biogenics. Most of the non-point sources has biogenics as one of the top two sectors for NO_X emissions in the Canton-Massillon analysis area (Mahoning County is the only outlier in this conclusion). The number one non-point source sector for $PM_{2.5}$ emissions in Stark County is the residential wood fuel sector, followed by paved road dust. In Carroll County, the crops and livestock dust have the highest non-point $PM_{2.5}$ emissions, followed by residential wood fuel. All of the non-point sources in the analysis area have residential fuel wood as one of the top two sectors for $PM_{2.5}$ emissions. The biggest non-point sector for NH_3 emissions is livestock waste for all analysis counties.

Table 22: Canton-Massillon MSA Counties 2022 Emissions Data (TPY)

Stark	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	385.65	49.27	14.39	48.48	2.75	270.76	971.98	24.09	536.92	607.53
Nonpoint	2,187.87	706.10	87.19	26.85	8.00	1,359.72	1,612.13	681.23	79.28	11,467.79
Non-Road	105.58	44.23	25.90	2.26	0.53	32.62	869.20	2.74	1.15	1,124.38
On Road	56.17	15.77	21.13	1.97	0.10	17.21	1,535.01	162.96	6.91	1,048.14
Total	2,735.28	815.37	148.61	79.56	11.38	1,680.31	4,988.32	871.02	624.25	14,247.84
Carroll	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	164.63	74.16	11.23	15.90	3.98	59.37	727.65	169.37	19.91	324.92
Nonpoint	463.20	117.18	15.24	6.18	3.84	320.77	476.77	209.27	646.21	7,559.81
Non-Road	8.35	3.35	2.44	0.23	0.06	2.27	106.03	0.23	0.09	136.29
On Road	5.36	1.52	2.36	0.20	0.01	1.26	164.72	11.84	0.51	100.26
Total	641.54	196.21	31.27	22.51	7.89	383.67	1,475.17	390.71	666.71	8,121.29
Wayne	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	203.91	20.24	4.70	45.94	1.20	131.84	416.02	13.40	924.88	317.76
Nonpoint	1,461.00	354.43	49.21	20.16	16.22	1,020.98	922.10	2,930.92	34.66	8,553.61
Non-Road	36.93	13.65	13.44	1.47	0.34	8.03	468.29	1.09	0.46	238.76
On Road	23.21	6.88	9.90	0.91	0.05	5.47	790.82	64.15	2.65	408.42
Total	1,725.05	395.20	77.25	68.48	17.81	1,166.32	2,597.24	3,009.56	962.66	9,518.56
Holmes	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	30.48	10.35	2.75	1.19	0.19	16.00	281.63	3.31	12.73	564.43
Nonpoint	754.08	195.12	27.59	11.97	10.04	509.36	451.10	1,907.36	22.71	8,061.57
Non-Road	17.49	6.39	6.59	0.72	0.17	3.61	230.84	0.47	0.20	123.67
On Road	7.67	2.19	3.26	0.26	0.02	1.94	235.11	17.34	0.73	116.02
Total	809.72	214.05	40.19	14.14	10.42	530.91	1,198.68	1,928.48	36.36	8,865.69
Tuscarawas	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	120.94	33.87	6.66	10.79	1.91	67.70	959.72	11.51	2,950.42	651.67
Nonpoint	951.77	273.94	34.52	12.47	7.38	623.48	659.22	951.00	23.76	10,338.68
Non-Road	16.43	6.41	5.09	0.52	0.12	4.30	207.87	0.49	0.22	180.98
On Road	22.41	6.49	9.75	0.98	0.05	5.15	791.29	58.08	2.45	370.14
Total	1,111.55	320.71	56.02	24.76	9.46	700.63	2,618.10	1,021.09	2,976.86	11,541.47
Columbiana	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	239.11	86.85	13.30	23.54	4.69	110.73	292.76	70.01	22.20	112.69

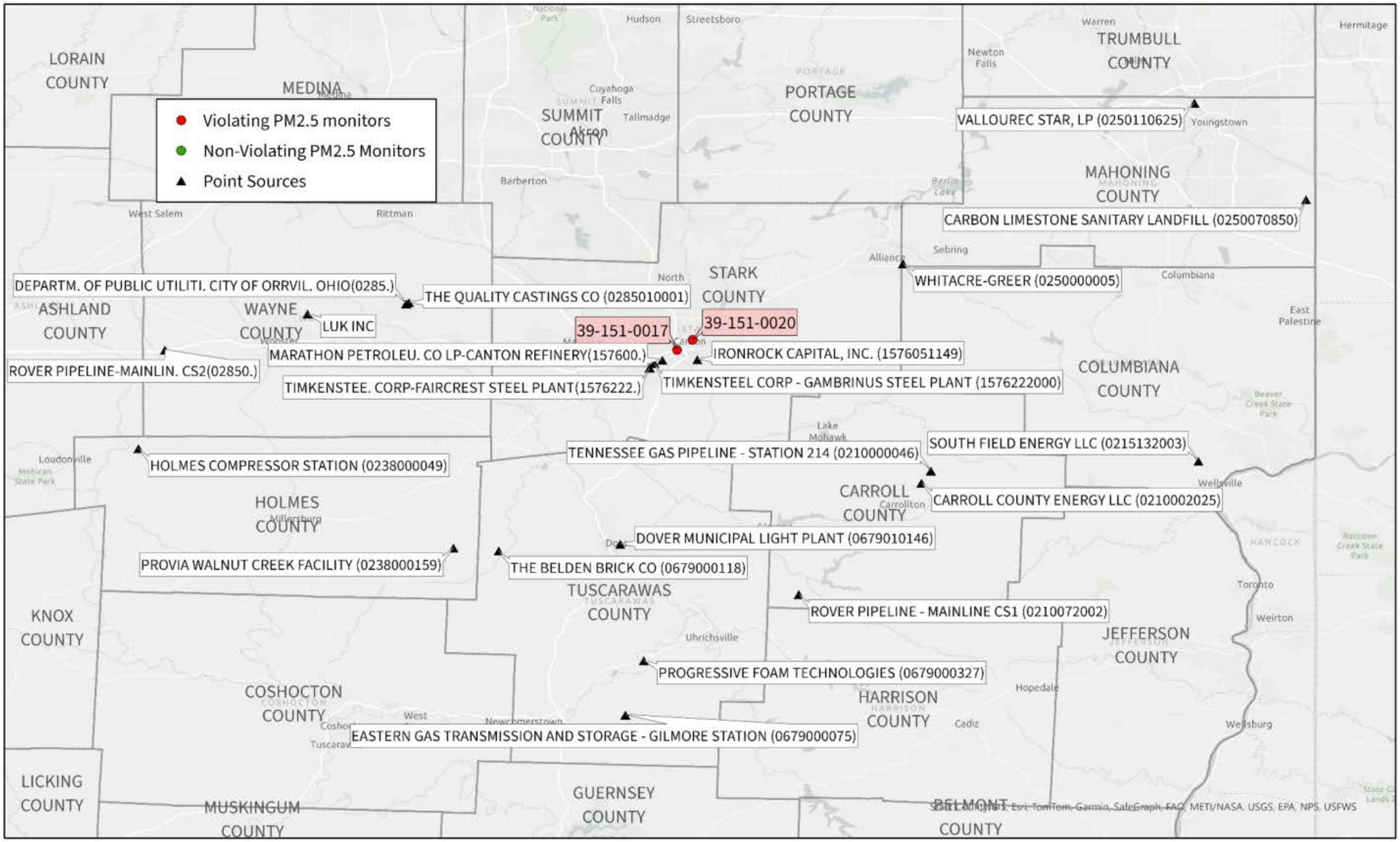
Nonpoint	1,005.47	308.19	43.20	11.68	6.48	635.92	1,026.57	937.07	159.82	8,217.13
Non-Road	20.77	8.11	6.52	0.66	0.15	5.31	241.33	0.62	0.26	264.83
On Road	16.55	4.86	6.40	0.52	0.03	4.74	479.99	45.10	1.81	355.11
Total	1,281.89	408.01	69.42	36.40	11.35	756.70	2,040.65	1,052.80	184.10	8,949.77
Mahoning	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Point	259.55	35.17	6.57	25.38	1.50	190.93	431.81	0.33	314.80	395.03
Nonpoint	1,415.76	479.75	56.40	14.73	4.91	859.97	1,133.35	577.53	38.34	8,489.69
Non-Road	32.90	13.49	8.80	0.81	0.19	9.59	357.44	1.01	0.42	451.94
On Road	43.51	12.00	16.59	1.84	0.08	13.01	1,324.71	125.39	5.36	684.65
Total	1,751.72	540.41	88.36	42.76	6.68	1,073.50	3,247.30	704.25	358.92	10,021.31

TOTALS	**PM2.5**	***OC***	***EC***	***Sulfate***	***Nitrate***	***Other***	**NOx**	**NH3**	**SO2**	**VOC**
Stark	2,735.28	815.37	148.61	79.56	11.38	1,680.31	4,988.32	871.02	624.25	14,247.84
Carroll	641.54	196.21	31.27	22.51	7.89	383.67	1,475.17	390.71	666.71	8,121.29
Wayne	1,725.05	395.20	77.25	68.48	17.81	1,166.32	2,597.24	3,009.56	962.66	9,518.56
Holmes	809.72	214.05	40.19	14.14	10.42	530.91	1,198.68	1,928.48	36.36	8,865.69
Tuscarawas	1,111.55	320.71	56.02	24.76	9.46	700.63	2,618.10	1,021.09	2,976.86	11,541.47
Columbiana	1,281.89	408.01	69.42	36.40	11.35	756.70	2,040.65	1,052.80	184.10	8,949.77
Mahoning	1,751.72	540.41	88.36	42.76	6.68	1,073.50	3,247.30	704.25	358.92	10,021.31

Source: 2022 EMP from https://www.epa.gov/air-emissions-modeling/2022v1-emissions-modeling-platform

The following figure 18 and table 23 show the higher emitting point sources in the area.

Figure 18: Location of Canton-Massillon Analysis Area Point Sources



Source: 2022 EMP from https://www.epa.gov/air-emissions-modeling/2022v1-emissions-modeling-platform

As shown in table 23 below, South Field Energy in Columbiana County and Carroll County Energy in Carroll County have the most significant $PM_{2.5}$ emissions in the analysis area. Both of these sources are located southeast of the violating sites. The Eastern Gas Gilmore Station in Tuscarawas County has the highest NO_X emissions in the area and is located south of the violating monitoring sites. Carroll County Energy also has the highest NH_3 emissions. Dover Municipal Light Plant in Tuscarawas County has the highest SO_2 emissions in the analysis area and is located south of the violating sites. ProVia Walnut Creek Facility in Holmes County has the highest VOC emissions and is located to the southwest of the violating sites. As can be seen in figure 13 above, most of the higher emitting point sources are located in Tuscarawas, Carroll, Stark, and Wayne Counties.

Table 23: Canton-Massillon Analysis Area Point Source Emissions for 2022 (TPY)

	PM2.5	
Columbiana County	South Field Energy LLC (0215132003)	189.01
Carroll County	Carroll County Energy LLC (0210002025)	136.40
Mahoning County	Vallourec Star, LP (0250110625)	122.47
Wayne County	The Quality Castings Company (0285010001)	121.51
	NOx	
Tuscarawas County	Eastern Gas Transmission and Storage - Gilmore Station (0679000075)	465.15
Carroll County	Tennessee Gas Pipeline - Station 214 (0210000046)	367.03
Tuscarawas County	Dover Municipal Light Plant (0679010146)	300.28
Stark County	Marathon Petroleum Company LP - Canton Refinery (1576002006)	299.72
Holmes County	Holmes Compressor Station (0238000049)	192.67
Columbiana County	South Field Energy LLC (0215132003)	174.14
Carroll County	Rover Pipeline - Mainline CS1 (0210072002)	156.56
Wayne County	Department of Public Utilities, City of Orrville, Ohio (0285010188)	154.28
Stark County	TimkenSteel Corporation - Faircrest Steel Plant (1576222001)	135.82
Mahoning County	Vallourec Star, LP (0250110625)	128.68
Wayne County	Rover Pipeline - Mainline CS2 (0285032017)	127.17
Mahoning County	Carbon Limestone LFG engine plant (0250050996)	124.06
Stark County	TimkenSteel Corporation - Gambrinus Steel Plant (1576222000)	121.43
Carroll County	Carroll County Energy LLC (0210002025)	113.55
	NH3	
Carroll County	Carroll County Energy LLC (0210002025)	169.37
Columbiana County	South Field Energy LLC (0215132003)	70.01
Wayne County	Luk Inc	10.81
	SO2	
Tuscarawas County	Dover Municipal Light Plant (0679010146)	2,092.02
Wayne County	Department of Public Utilities, City of Orrville, Ohio (0285010188)	920.78
Tuscarawas County	The Belden Brick Company (0679000118)	718.95
Mahoning County	Whitacre-Greer (0250000005)	219.80

Stark County	Ironrock Capital, Inc. (1576051149)	183.12
Stark County	TimkenSteel Corporation - Faircrest Steel Plant (1576222001)	132.70
Tuscarawas County	Belden Brick Plant 3 (0679005018)	119.00
Stark County	Marathon Petroleum Company LP - Canton Refinery (1576002006)	105.78
VOC		
Holmes County	ProVia Walnut Creek Facility (0238000159)	206.98
Mahoning County	DATCO Manufacturing LLC (0250110856)	146.57
Tuscarawas County	Progressive Foam Technologies (0679000327)	143.07
Stark County	Marathon Petroleum Company LP - Canton Refinery (1576002006)	98.89

Source: 2022 EMP from https://www.epa.gov/air-emissions-modeling/2022v1-emissions-modeling-platform

Level of control of emission sources

In the Canton-Massillon area, the emission reduction programs which have had or will have the greatest impact on $PM_{2.5}$ concentrations are:

- On-road and off-road diesel control programs in conjunction with ultra-low sulfur diesel fuel requirements
- NO_x trading program
- Various Cross-State Air Pollution Rules (CSAPR)
- Ohio Clean Diesel Initiatives
- Mercury and Air Toxics Standards (MATS)
- Good Neighbor Plan (stayed)
- NSPS for Oil and Gas Production
- Ohio Administrative Code 3745-112 “Consumer Products”
- Ohio Administrative Code 3745-113 “Architectural and Industrial Maintenance (AIM) Coatings”
- Ohio Administrative Code 3745-17 “Particulate Matter Standards”

The CSAPR, Good Neighbor Plan, and MATS regulate EGUs. The CSAPR program replaced CAIR but has the same objective of reducing power plant emissions that cross state lines to improve air quality. CSAPR was revised and updated in 2017 (replacing the original rule promulgated in 2015) to further reduce summertime NO_x emissions from power plants. The Good Neighbor Plan extends the regulations of CSAPR and CAIR to not only EGUs but also for non-EGU stationary sources beginning in 2026. However, this rule was stayed by the Supreme Court in July of 2024. CAIR and CSAPR have brought about the largest reductions in precursor or primary emissions of $PM_{2.5}$ and its species (sulfates, nitrates, organic carbon, elemental carbon and crustal) and will continue to bring additional reductions. Compliance with the MATS rule also leads to additional reductions in precursor species - in particular, sulfates.

The NSPS for Oil and Gas production was promulgated March 8, 2024, by U.S. EPA, and sets new requirements for crude oil and natural gas production sources to regarding greenhouse gas (specifically methane), VOC, and SO_2 emissions. All large oil and gas industrial source owners have to March 2029 to comply with new state requirements created under this ruling. Compliance with this rule will lead to reduction in methane, VOC, and SO_2 emissions.

OAC Chapter 3745-112[25] contain requirements for the content of VOCs in consumer products sold, supplied, offered for sale, or manufactured for use in the state of Ohio. These rules were initially promulgated in 2007 as part of Ohio's strategy to attain the 1997 ozone standard by adopting the standards in the model rule developed by the OTC. This rule was last reviewed and updated in 2022 to strengthen the VOC content requirements consistent with more recent OTC model rules. This update was to assist with attaining and maintaining the 2015 ozone standard.

The rules in OAC Chapter 3745-113[26] contains requirements for the content of VOCs in AIM coatings. These rules were initially promulgated in 2007 as part of Ohio's strategy to attain the 1997 ozone standard by adopting the standards in the model rule developed by the OTC. This rule was last reviewed and updated in 2022 to strengthen the VOC content requirements consistent with more recent OTC model rules. This update was to assist with attaining and maintaining the 2015 ozone standard.

OAC Chapter 3745-17[27] regulates particulate matter and established RACT for stationary sources under the historical PM_{10} standard.

With respect to the Ohio utilities, Dover Municipal Light (facility ID 0679010146) is the most notable significant point source and an EGU facility located in Tuscarawas County. Dover Municipal Light has one coal-fired boiler with a design capacity of 247 MMBtu/hr. This boiler has PM control equipment that has been operating since December 2007.

Urbanization, population, and commuting trends

The following table 24 provides a summary of the 2022 population and VMT for each of the counties discussed in this section.

[25] The current, effective copy of this rule can be found here: https://epa.ohio.gov/divisions-and-offices/air-pollution-control/regulations/effective-rules/dapc-effective-rules
[26] The current, effective copy of this rule can be found here: https://epa.ohio.gov/divisions-and-offices/air-pollution-control/regulations/effective-rules/dapc-effective-rules
[27] The current, effective copy of this rule can be found here: https://epa.ohio.gov/divisions-and-offices/air-pollution-control/regulations/effective-rules/dapc-effective-rules

Table 24: Canton-Massillon Analysis Area 2022 County Level VMT, Population, Land Area, and Population Density

County	VMT	Population	Land Area (sq. miles)	Population Density (1,000 per sq. miles)
Stark	778,601	372,657	576	0.57
Carroll	613,430	26,659	395	0.07
MSA Total	1,392,031	354,316	975	0.36
Wayne	299,928	116,559	555	0.21
Holmes	80,540	44,390	423	0.10
Tuscarawas	263,990	91,937	568	0.16
Columbiana	185,620	100,511	533	0.19
Mahoning	563,827	225,636	415	0.54
Total for All Counties	4,177,967	1,332,665	4,440	0.30

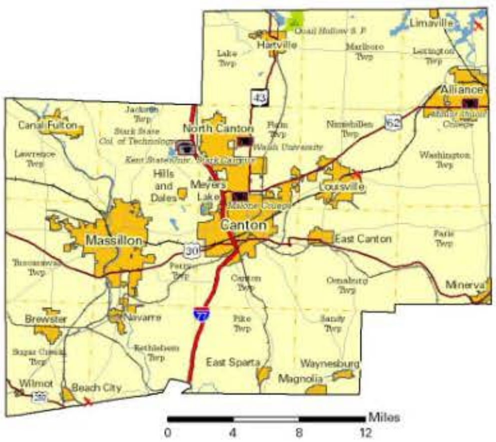
Source: Ohio Department of Transportation (Ohio 2022 VMT data only)
Ohio Department of Development, County Trends and Profiles for 2022 (Ohio populations only)
All other data: U.S. EPA Particle Pollution Designations Memo and Data, https://www.epa.gov/particle-pollution-designations/particle-pollution-designations-memorandum-and-data-2024-revised#A

Degree of urbanization and population trends

As seen in table 24 above, the majority of the population resides in the Canton-Massillon MSA and most notably Stark County, followed by Mahoning County. However, as can be seen in figure 19, the population of these counties have declined since 2020 and are expected to continually decline.

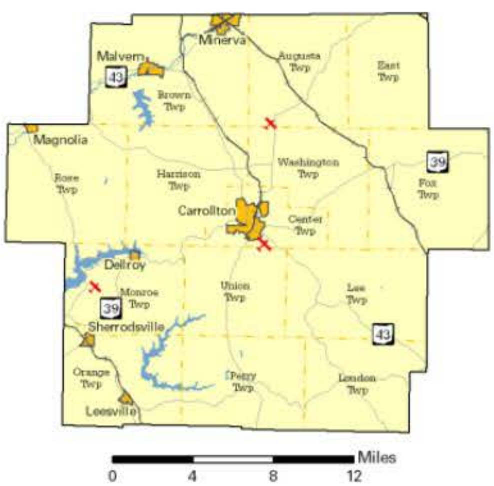
The most urbanized areas are within Stark and Mahoning Counties. Their population and population densities are significantly higher than the other counties in the area, indicating that population-related emissions may be high. Table 24 above supports this conclusion for Stark County, as it has the highest mobile and non-point source emissions out of the analysis area. However, Mahoning County is only the third highest in regard to mobile and non-point source emissions, being beat by Wayne County's mobile and non-point source emissions.

Figure 19: Canton-Massillon OH Analysis Area County Profiles



Stark County

Stark County is 24% developed – low intensity, 23% forest, and 22% forest. Canton city is the largest major urban area, and where both violating monitoring sites are located. The 2020 county population was 374,853 and decreased to 372,657 in 2022. The population is expected to continually decline to an estimated population of 358,580 by 2030.



Carroll County

Carroll County is 54% forest, 29% pasture, and 8% developed – low intensity. Brown Township is the largest major urban area. The 2020 county population was 26,721 and declined slightly to 26,659 in 2022. The population is expected to continually decline in the future to an estimated population of 25,297 by 2030.

Wayne County

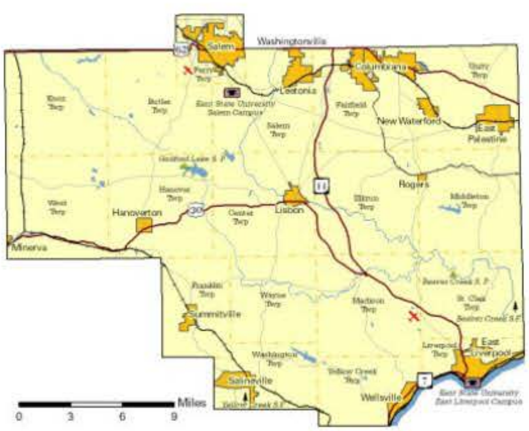
Wayne County is 39% cropland, 26% pasture, and 17% forest. Wooster city is the largest major urban area. The 2020 county population was 116,894 and decreased to 116,559 in 2022. The population is expected to continually decline to an estimated population of 114,490 by 2030.

Holmes County

Holmes County is 39% forest, 38% pasture, and 13% cropland. Salt Creek township is the largest major urban area. The 2020 county population was 44,223 and increased to 44,390 in 2022. The population is expected to continually increase to an estimated population of 44,888 by 2030.

Tuscarawas County

Tuscarawas County is 52% forest, 23% pasture, and 9% developed – low intensity. New Philadelphia city is the largest major urban area. The 2020 county population was 93,263 and decreased to 91,937 in 2022. The population is expected to continually decline to an estimated population of 90,206 by 2030.



Columbiana County

Columbiana County is 44% forest, 24% pasture, and 14% cropland. Salem city is the major urban area in the county. The 2020 county population was 101,788 and declined to 100,511 in 2022. The population is expected to continually decline in the future with an estimated population of 93,544 by 2030.

Mahoning County

Mahoning County is 31% forest, 23% developed – low intensity, and 18% pasture. Youngstown city (partial) is the largest major urban area. The 2020 county population was 228,614 and decreased to 225,636 in 2022. The population is expected to continually decline to an estimated population of 212,996 by 2030.

Source: County profile information and maps found at Ohio Department of Development, Research, County Trends, https://development.ohio.gov/about-us/research/county/county-trends

Commuting trends

As can be seen in table 24, the majority of VMT occurs in Stark, Carroll and Mahoning Counties. Table 25 below looks at commuter travel in and out of the analysis area counties and in and out of Stark County, the only county with violating monitoring sites. Only 24% of workers living in Stark County work in a different county, and only 20% of workers that work in Stark County live in a different county and commute into Stark County. Of the Stark County residents commuting to other counties for work, the greatest percentage (18%) commutes north to Summit, Cuyahoga, Mahoning, and Portage Counties. To a lesser extent, only 2% of Stark County residents commute south to Carroll and Tuscarawas Counties, and only 2% commute west to Wayne County. The greatest percentage (9%) of workers who commute to Stark County for work live in Summit and Portage Counties. Only 5% of Stark County workers commute from Tuscarawas and Carrol Counties, 3% commute from Columbiana and Mahoning Counties, and only 1% (less than 2,000 workers) commute from Wayne County. The majority of Stary County's workforce resides and works in Stark County.

Table 25: Commuter Travel In and Out of Stark and Carroll Counties

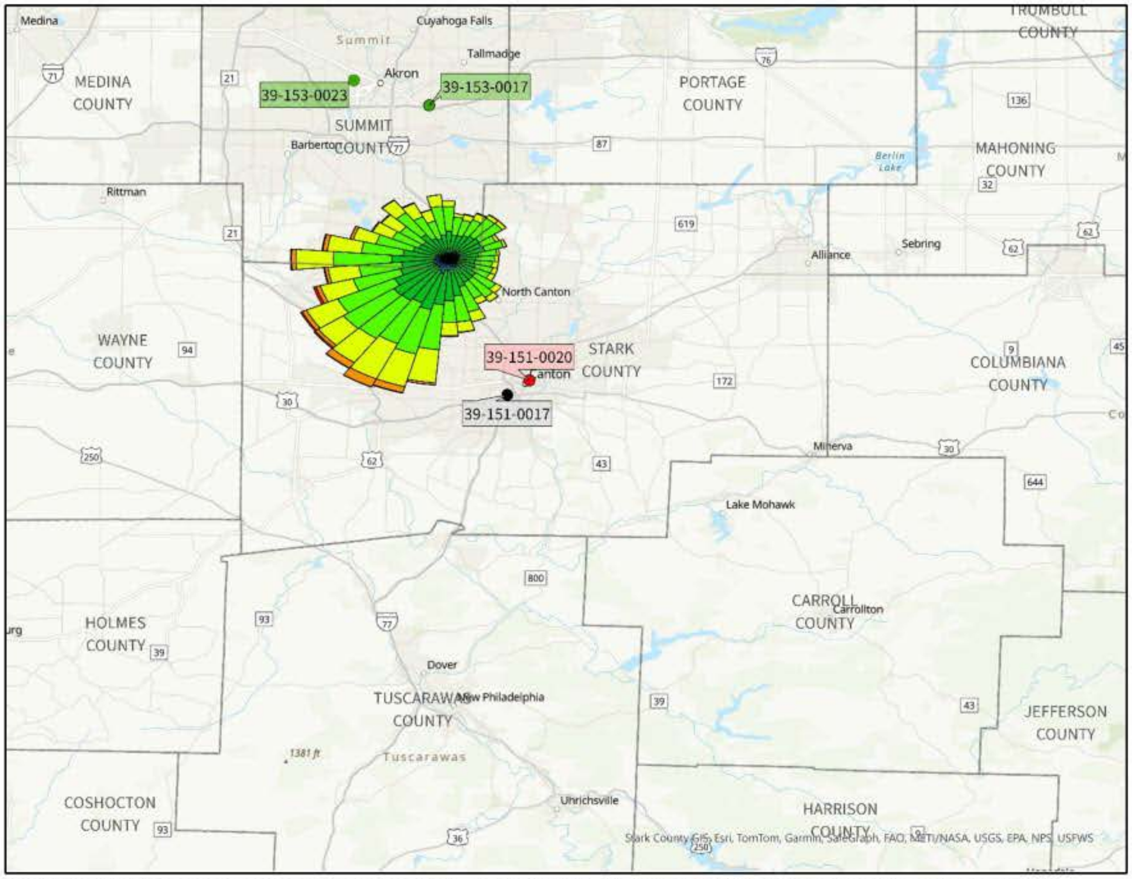
Stark	**% workers live in Stark work outside Stark Co**				24.4%
	% workers work in Stark live outside Stark Co				20.4%
# workers living in Stark Co		173,892	**# workers working in Stark Co**		165,144
Place of Work	**#**	**%**	**Place of Residence**	**#**	**%**
Summit County	23,861	14%	Summit County	10,822	6.6%
Wayne County	3,285	1.9%	Tuscarawas County	5,084	3.1%
Cuyahoga County	3,198	1.8%	Carroll County	3,419	2.1%
Tuscarawas County	2,994	1.7%	Columbiana County	3,039	1.8%
Portage County	2,562	1.5%	Portage County	2,848	1.7%
Carroll County	1,099	0.63%	Mahoning County	2,197	1.3%
Mahoning County	1,005	0.58%	Wayne County	1,936	1.2%

Source: U.S. Department of Commerce Economics and Statistics Administrations, U.S. Census Bureau, Residence County to Workplace County Commuting Flows for the United States and Puerto Rico Sorted by Workplace Geography: 5-year ACS 2016-2020, Residence County to Workplace County Commuting Flows for the United States and Puerto Rico Sorted by Residence Geography: 5-Year ACS 2016-2020

METEOROLOGY

The following wind rose in figure 20 represents this area.

Figure 20: 2021-2023 Wind Roses for the Canton-Massillon OH MSA



Source: AERMET Surface data (Wind Rose data only), U.S. EPA $PM_{2.5}$ Designations Mapping Tool (monitoring sites)

Winds from the southwest quadrant are prevalent in the Canton-Massillon area monitoring sites. This indicates that sources of emissions from the southwest may be contributing to violations at these monitoring sites.

The HYSPLIT density maps for the violating monitoring sites in Canton-Massillon area (Appendix D pp.24-28) show that most of the air parcels that originate in this area do not tend to travel a large distance over 24 hours, and actually stay in the surrounding counties and area near the violating monitoring sites. This may indicate that any pollutants emitted in the air near or at the violating sites tend to stay in the area. This further supports that localized sources near the violating monitoring sites could be a component of the violations

GEOGRAPHY/TOPOGRAPHICAL

This analysis area does not have any geographical or topographical barriers significantly affecting air pollution transport. Therefore, this factor does not play a role in the analysis of this area.

JURISDICTIONAL BOUNDARIES

Stark County was designated as a nonattainment county for 1997 annual and 2006 24-hour $PM_{2.5}$ standards as part of the Canton-Massillon nonattainment area. Mahoning and Columbiana Counties were designated as nonattainment under the 1997 ozone standard as part of the Youngstown-Warren-Sharon OH-PA nonattainment area. All of these areas have been redesignated to attainment. No other counties a part of this analysis area have been designated nonattainment for $PM_{2.5}$ or other urban-scale pollutants.

The Canton-Massillon MSA includes Stark and Carroll Counties and the principal cities of Canton and Massillon. The Canton-Massillon MSA is part of the larger Cleveland-Akron-Canton CSA.

CONCLUSION

The Canton-Massillon MSA includes Stark and Carroll Counties. There are nine counties that are adjacent to the Canton-Massillon MSA: Wayne, Holmes, Tuscarawas, Harrison, Jefferson, Columbiana, Mahoning, Portage and Summit Counties. Portage and Summit Counties are discussed in the Cleveland-Elyria-Akron area analysis. Jefferson and Harrison Counties are discussed in the Steubenville-Weirton area analysis. These are distinct, separate metropolitan areas that are treated separately.

Overall, Stark County's emissions, VMT, population and population density are the most significant of all counties in this analysis area. Organic carbon dominates at the violating monitoring sites, which may be an indication of local source contributions.

The most significant emissions of SO_2 are from Tuscarawas County, most likely a result of the Dover Municipal Light Plant located in that county. The facility is located almost directly south of the violating monitoring sites. However, sulfates do not dominate at the violating monitoring sites, and therefore, it is highly unlikely these emissions are impacting the violating monitoring sites. There is also little commuter travel between Stark and Tuscarawas Counties.

The most significant emissions of NH_3 are from Wayne County, but it is highly unlikely these are impacting the Stark County violating monitoring site. The higher emissions of NH_3 are likely due to the large percentage of cropland in Wayne County. There is also very little commuter travel between Stark and Wayne Counties.

Columbiana and Mahoning Counties also have high emissions compared to other counties in the analysis area but have historically been analyzed as part of the Youngstown-Warren OH-PA area. There is one monitoring site located in Mahoning County (see tables 1 and 2) and is indicating attainment of the standard. Both counties are located to the east of Stark County, and based on meteorology alone, it is unlikely emissions from Columbiana and Mahoning Counties are impacting the Stark County monitoring sites.

Holmes County has significantly lower emissions, VMT and commuter travel and is likely not a significant impact on the violating monitoring sites. Carroll County, located to the southeast of Stark County, is also a part of the Canton-Massillon MSA. However, emissions, VMT, and commuter travel from Carroll County are very low.

Ohio EPA recommends only Stark County be part of the designation area. No other factors warrant inclusion of any of the other counties included in the analysis of this area, except Stark County. However, since the exceptional events demonstration for site 39-151-0020 would result in attainment and for site 39-151-0017, an invalid 2021-2023 annual design value, Ohio EPA cannot make a recommendation for Stark County regarding attainment or nonattainment. Until more air quality data is available for a valid three-year annual design value (i.e. the 2022-2024 annual $PM_{2.5}$ design values), Ohio EPA's final classification for Stark County is recommended as unclassifiable. If the 2022-2024 annual design value is consistent with historical monitoring data, Ohio EPA projects that Stark County will be in attainment by the time of final recommendations.

Pittsburgh-New Castle-Weirton PA-OH-WV CSA

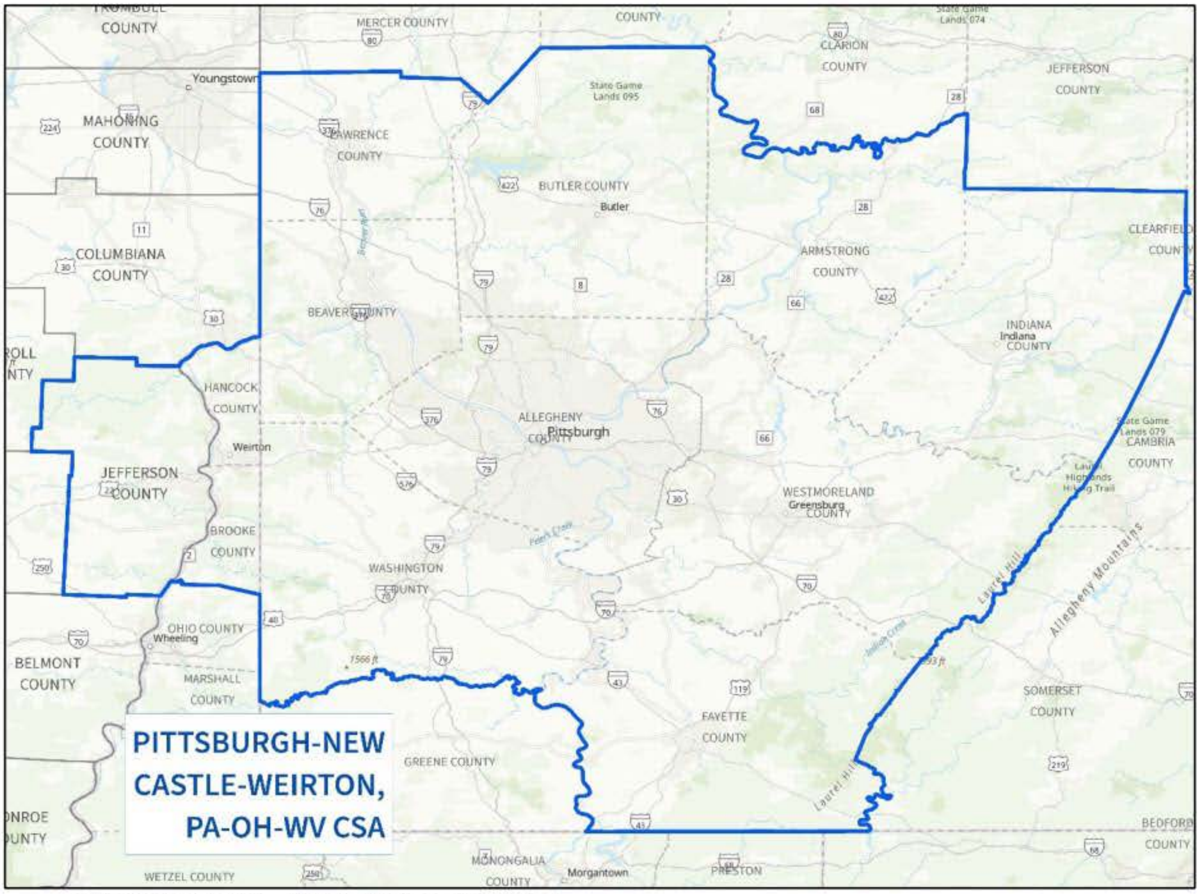
Figure 21: Pittsburgh-New Castle-Weirton PA-OH-WV CSA Recommended Nonattainment Area – Ohio Portion Only

Source: U.S. EPA $PM_{2.5}$ Designations Mapping Tool

DISCUSSION

For Pittsburgh-New Castle-Weirton PA-OH-WV CSA, there is one Ohio county in this historic 1997 annual and 2006 24-hour $PM_{2.5}$ nonattainment area: Jefferson County. In addition to Ohio counties, Hancock and Brooke Counties in West Virginia were a part of this 1997 annual $PM_{2.5}$ standard nonattainment area. Ohio EPA recommends designating Jefferson County as nonattainment for this area. After considering the five factors, Ohio EPA does not recommend adding any contributing counties to this area.

Figure 22: Pittsburgh-New Castle-Weirton PA-OH-WV CSA



Source: U.S EPA $PM_{2.5}$ Designations Mapping Tool

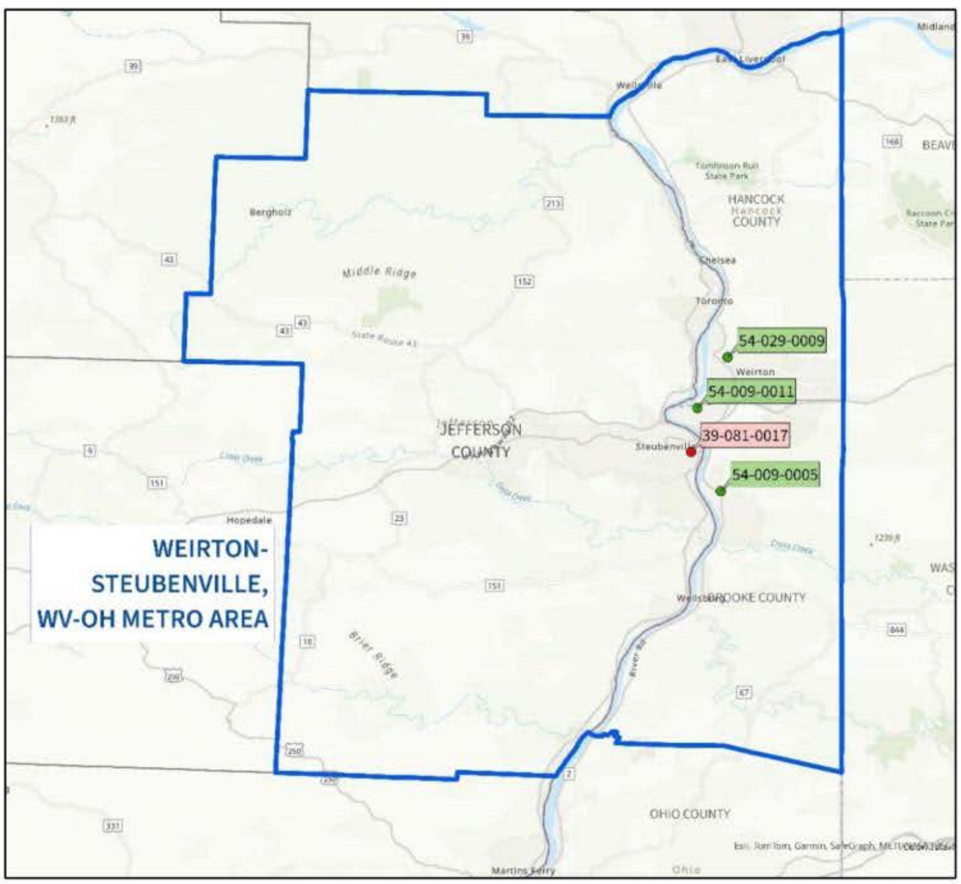
As can be seen in figure 22, the Pittsburgh-New Castle-Weirton PA-OH-WV CSA includes Jefferson, Hancock (WV), Brooke (WV), Washington (PA), Beaver (PA), Allegheny (PA), Lawrence (PA), Armstrong (PA), Indiana (PA), Westmoreland (PA), Fayette (PA), and Butler (PA) Counties. This CSA is comprised of the Weirton-Steubenville OH-WV MSA and the Pittsburgh PA MSA. The Pittsburgh PA MSA has historically been analyzed separately and Ohio will not consider data from Pennsylvania in this analysis. In addition to those two MSAs, the Wheeling WV-OH MSA is comprised of Belmont, Ohio (WV) and Marshall (WV) Counties and they have also been analyzed separately. These counties were designated as a nonattainment area for the 1997 annual $PM_{2.5}$ standard. However, as can be seen from table 1 and table 2, Belmont County is monitoring attainment. Ohio EPA will not be analyzing any additional counties adjacent to the CSA counties because historically those counties have been excluded from the nonattainment area. Therefore, for the remainder of this analysis area, Ohio EPA will be referring to the Weirton-Steubenville MSA.

As can be seen in figure 23, Jefferson County has one monitoring site, which is violating the annual revised standard (site 39-081-0017). Jefferson County is part of the Weirton-Steubenville MSA along with Hancock County (WV) and Brooke County (WV).

AIR QUALITY DATA

For the 2021-2023 period, there are four monitoring sites in this area, one of which is in Ohio and three in West Virginia.

Figure 23 Weirton-Steubenville OH-WV MSA Monitoring Sites



Source: U.S. EPA PM2.5 Designations Mapping Tool

As can be seen in table 26, the Jefferson County monitoring site 39-081-0017 is violating the standard based on 2021-2023 air quality data. The design value for this monitoring site is 10.0 μg/m³. As can be seen in tables 1 and 2, air quality trends have declined historically in this area with the exception of 2023 data influenced by wildfire events.

Table 26: Annual Average (μg/m³) for Analysis Area Monitoring Sites (WV and OH)

		Annual Averages			3-year Annual Average
County	**Site ID**	**2021**	**2022**	**2023**	**2021-2023**
Jefferson OH	39-081-0017	11.1	9.1	9.8	***10.0***
Brooke WV	54-009-0005	9.7	7.6	8.7	8.7
	54-009-0011	9.1	7.2	8.8	8.4
Hancock WV	54-029-0009	8.9	7.4	8.5	8.3

Source: U.S. EPA AQS

Insufficient data ***X.X*** Violating monitor

As can be seen in table 27, there is one speciation monitoring site in this area. It is co-located with the violating Ohio monitor.

Table 27: Weirton-Steubenville Area Speciation Monitoring Sites

Site ID	Annual Averages	Speciation Monitor SANDWICH Mass					Site Design Value
		Sulfate	Nitrate	Organic Carbon	Elemental Carbon	Crustal	
39-081-0017 Jefferson County	2020	0.75	0.41	1.13	0.43	0.25	8.9
	2021	1.55	1.17	2.31	0.82	0.67	11.1
	2022	0.67	0.19	1.08	0.36	0.44	9.1
	2020-2022 3-year average	0.99	0.59	1.51	0.54	0.45	9.7

Source: CSN speciation data (SANDWICHED) from https://www.epa.gov/particle-pollution-designations/particle-pollution-designations-memorandum-and-data-2024-revised#A

Organic carbon dominates at this monitoring site. Sulfate also has a strong presence.

The 2021-2023 urban increments (UI) in table 28 have also been calculated for the violating monitoring site.

Table 28: Weirton-Steubenville Area Urban Increments

2021-2023 Averages		Organic Carbon UI	Elemental Carbon UI	Nitrates UI	Sulfates UI	Crustal UI
Jefferson 39-081-0017	Quarter 1	1.28	0.45	0.87	0.73	0.44
	Quarter 2	4.24	0.66	0.00	0.37	0.32
	Quarter 3	2.43	0.39	0.00	0.02	0.30
	Quarter 4	2.12	0.53	0.10	0.57	0.51
	Annual	2.61	0.51	0.19	0.39	0.39

Source: https://www.epa.gov/particle-pollution-designations/particle-pollution-designations-memorandum-and-data-2024-revised

Organic carbon UI tends to dominate throughout the year at this monitoring site, peaking in quarter 2 along with the elemental carbon UI. Sulfates UI and nitrates UI are the highest in quarter 1, and crustal UI is the highest in quarter 2.

EMISSIONS AND EMISSIONS RELATED DATA

Emission trends

Table 29 presents emissions data for the Weirton-Steubenville analysis area. Overall, the most significant emissions in the Weirton-Steubenville analysis area emanates from Jefferson County. Considering all counties in the analysis area, Jefferson County accounts for 77% of total area emissions; 74% of $PM_{2.5}$, 87% of NO_x, 73% of NH_3, 99% of SO_2, and 50% of VOC emissions. Jefferson County has the highest $PM_{2.5}$, NO_X, and SO_2 emissions. Most of the emissions relate to point sources. However, there have been significant reductions in recent years from point source emissions in Jefferson County.

Comparatively, Brooke (WV) and Hancock (WV) Counties both have low emissions, accounting for the remaining 23% of the total area's emissions.

The biggest non-point sector for VOC emissions is biogenics followed by oil and gas production in all Ohio counties in the Weirton-Steubenville area. For $PM_{2.5}$ emissions, the top two non-point source sectors are residential wood fuel and crops and livestock dust.

Table 29: Weirton-Steubenville OH-WV MSA Counties 2022 Emissions Data (TPY)

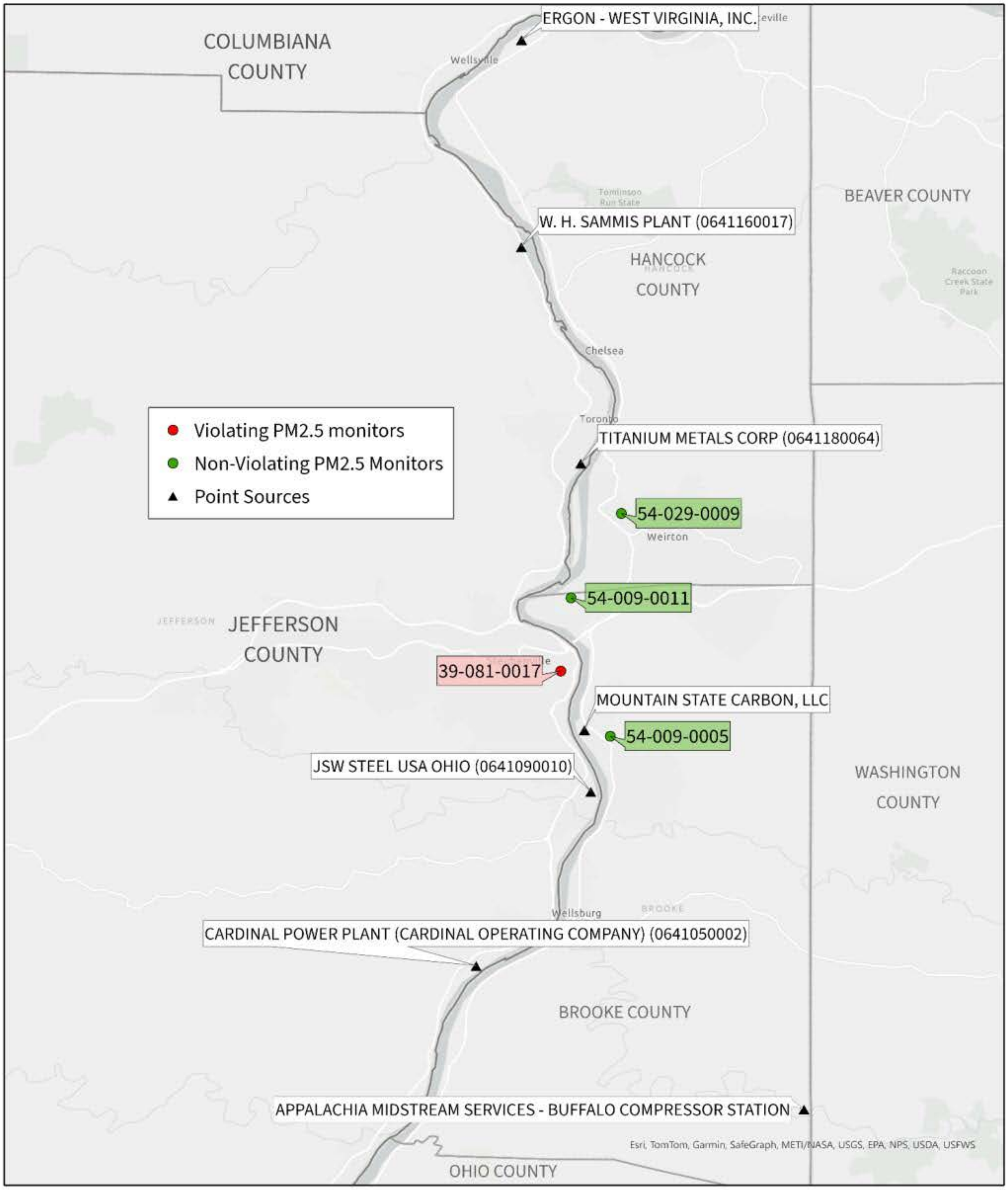
Jefferson OH	PM2.5	OC	EC	Sulfate	Nitrate	Other	NOx	NH3	SO2	VOC
Point	915.52	32.23	37.68	91.49	0.74	753.38	6,800.96	5.79	14,283.19	260.63
Nonpoint	620.35	208.40	28.91	7.16	3.12	372.76	585.97	195.94	185.61	6,629.50
Non-Road	10.27	4.12	2.96	0.29	0.07	2.84	108.93	0.32	0.13	130.12
On Road	9.81	2.98	3.78	0.30	0.02	2.73	298.83	30.71	1.20	221.11
Total	1,555.94	247.73	73.33	99.24	3.95	1,131.71	7,794.69	232.75	14,470.13	7,241.36
Brooke WV	**PM2.5**	**OC**	**EC**	**Sulfate**	**Nitrate**	**Other**	**NOx**	**NH3**	**SO2**	**VOC**
Point	42.16	6.05	1.28	3.49	0.33	9.52	293.53	1.26	78.45	259.19
Nonpoint	249.26	90.11	10.33	1.76	0.67	96.90	289.57	36.28	79.66	4,035.73
Non-Road	3.50	1.86	1.82	0.20	0.05	1.15	52.54	0.12	0.08	37.55
On Road	3.01	0.88	1.21	0.08	0.01	0.95	75.32	8.33	0.35	54.96
Total	297.93	98.90	14.64	5.53	1.06	108.52	710.97	45.99	158.54	4,387.43
Hancock WV	**PM2.5**	**OC**	**EC**	**Sulfate**	**Nitrate**	**Other**	**NOx**	**NH3**	**SO2**	**VOC**
Point	26.84	4.75	1.82	4.13	0.23	29.13	196.04	4.59	25.62	102.40
Nonpoint	206.36	77.46	9.65	1.63	0.95	99.52	196.81	27.39	5.48	2,605.76
Non-Road	2.09	2.13	2.10	0.23	0.05	1.36	35.95	0.08	0.05	44.97
On Road	3.13	0.86	1.12	0.09	0.01	0.93	72.42	6.92	0.31	70.81
Total	238.42	85.20	14.69	6.08	1.24	130.94	501.23	38.99	31.46	2,823.95

TOTALS	PM2.5	OC	EC	Sulfate	Nitrate	Other	NOx	NH3	SO2	VOC
Jefferson	1,555.94	247.73	73.33	99.24	3.95	1,131.71	7,794.69	232.75	14,470.13	7,241.36
Brooke WV	297.93	98.90	14.64	5.53	1.06	108.52	710.97	45.99	158.54	4,387.43
Hancock WV	238.42	85.20	14.69	6.08	1.24	130.94	501.23	38.99	31.46	2,823.95

Source: 2022 EMP from https://www.epa.gov/air-emissions-modeling/2022v1-emissions-modeling-platform

The following figure 24 and table 30 show the higher emitting point sources in the area.

Figure 24: Location of Weirton-Steubenville Analysis Area Point Sources



Source: 2022 EMP from https://www.epa.gov/air-emissions-modeling/2022v1-emissions-modeling-platform

As shown in table 30 below, the most significant point source emissions come from Cardinal Power Plant and W.H Sammis Plant both located in Jefferson County. These two facilities have the highest $PM_{2.5}$, NO_X, and SO_2 emissions in the analysis area. Cardinal Power has the highest VOC emissions, followed by Ergon in Hancock County (WV). Ergon also has the highest NH_3 emissions in the area, though NH_3 point source emissions for the area are overall miniscule. Cardinal Power is located to the south of the violating site and W.H. Sammis is located to the north. As can be seen in figure 24 above, most of these point sources are located on the Ohio-West Virginia border.

Table 30: Weirton-Steubenville Analysis Area Point Source Emissions for 2022 (TPY)

	PM2.5	
Jefferson Co OH	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	507.80
Jefferson Co OH	W. H. Sammis Plant (0641160017)	346.87
Brooke Co WV	Mountain State Carbon LLC	37.30
Jefferson Co OH	JSW Steel USA Ohio (0641090010)	33.83
	NOx	
Jefferson Co OH	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	3,767.50
Jefferson Co OH	W. H. Sammis Plant (0641160017)	2,678.72
Jefferson Co OH	Titanium Metals Corporation (0641180064)	248.25
Brooke Co WV	Mountain State Carbon LLC	147.97
Hancock Co WV	Ergon – West Virginia Inc	101.50
	NH3	
Hancock Co WV	Ergon – West Virginia Inc	4.59
Jefferson Co OH	W. H. Sammis Plant (0641160017)	2.87
Jefferson Co OH	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	2.11
Brooke Co WV	Mountain State Carbon LLC	1.09
	SO2	
Jefferson Co OH	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	11,069.18
Jefferson Co OH	W. H. Sammis Plant (0641160017)	3,136.30
Brooke Co WV	Mountain State Carbon LLC	77.43
Jefferson Co OH	JSW Steel USA Ohio (0641090010)	70.57
	VOC	
Jefferson Co OH	Cardinal Power Plant (Cardinal Operating Company) (0641050002)	127.16
Hancock Co WV	Ergon – West Virginia Inc	93.84
Brooke Co WV	Appalachian Midstream Services – Buffalo Compressor Station	85.94
Jefferson Co OH	W. H. Sammis Plant (0641160017)	69.85

Source: 2022 EMP from https://www.epa.gov/air-emissions-modeling/2022v1-emissions-modeling-platform

Level of control of emission sources

In the Weirton-Steubenville area, the emission reduction programs which have had or will have the greatest impact on $PM_{2.5}$ concentrations are:

- On-road and off-road diesel control programs in conjunction with ultra-low sulfur diesel fuel requirements
- NO_x trading program
- Various Cross-State Air Pollution Rules (CSAPR)
- Ohio Clean Diesel Initiatives
- Mercury and Air Toxics Standards (MATS)
- Good Neighbor Plan (stayed)
- NSPS for Oil and Gas Production
- Ohio Administrative Code 3745-112 “Consumer Products”
- Ohio Administrative Code 3745-113 “Architectural and Industrial Maintenance (AIM) Coatings”
- Ohio Administrative Code 3745-17 “Particulate Matter Standards”

The CSAPR, Good Neighbor Plan, and MATS regulate electric generating units EGUs. The CSAPR program replaced CAIR but has the same objective of reducing power plant emissions that cross state lines to improve air quality. CSAPR was revised and updated in 2017 (replacing the original rule promulgated in 2015) to further reduce summertime NO_x emissions from power plants. The Good Neighbor Plan extends the regulations of CSAPR and CAIR to not only EGUs but also for non-EGU stationary sources beginning in 2026. However, this rule was stayed by the Supreme Court in July of 2024. CAIR and CSAPR have brought about the largest reductions in precursor or primary emissions of $PM_{2.5}$ and its species (sulfates, nitrates, organic carbon, elemental carbon and crustal) and will continue to bring additional reductions. Compliance with the MATS rule also leads to additional reductions in precursor species - in particular, sulfates.

The NSPS for Oil and Gas production was promulgated March 8, 2024, by U.S. EPA, and sets new requirements for crude oil and natural gas production sources to regarding greenhouse gas (specifically methane), VOC, and SO_2 emissions. All large oil and gas industrial source owners have to March 2029 to comply with new state requirements created under this ruling. Compliance with this rule will lead to reduction in methane, VOC, and SO_2 emissions.

OAC Chapter 3745-112[28] contain requirements for the content of VOCs in consumer products sold, supplied, offered for sale, or manufactured for use in the state of Ohio. These rules were initially promulgated in 2007 as part of Ohio's strategy to attain the 1997 ozone standard by adopting the standards in the model rule developed by the OTC. The OTC develops model rules for states to consider when adopting consumer products regulations. This rule was last reviewed and updated in 2022 to strengthen the VOC content requirements consistent with more recent OTC model rules. This update was to assist with attaining and maintaining the 2015 ozone standard.

OAC Chapter 3745-113[29] contains requirements for the content of VOCs in AIM coatings. These rules were initially promulgated in 2007 as part of Ohio's strategy to attain the 1997 ozone standard by adopting the standards in the model rule developed by the OTC. This rule was last reviewed and updated in 2022 to strengthen the VOC content requirements consistent with more recent OTC model rules. This update was to assist with attaining and maintaining the 2015 ozone standard.

OAC Chapter 3745-17[30] regulates particulate matter and established RACT for stationary sources under the historical PM_{10} standard. In Jefferson County, additional restrictions are in place requiring contingency plan requirements (OAC rule 3745-17-14) and more stringent requirements for select sources (OAC rule 3745-17-13).

With respect to the Ohio utilities, Cardinal Power Plant (facility ID 0641050002) is an EGU facility located in Jefferson County. Cardinal Power has three coal-fired boilers all with a design capacity of 5,275 MMBtu/hr. All three boiler units have NO_x and SO_2 control equipment installed. The NO_x control equipment was installed in 2003. The SO_2 control equipment for two of the units were installed in late 2007/early 2008. The SO_2 control equipment was installed December 2011 for the other boiler unit. On June 25, 2019, Ohio submitted a supplement of the 2010 1-hour SO_2 standard attainment demonstration for the Steubenville OH-WV SO_2 nonattainment area. This supplement contained amended rules of OAC Chapter 3745-18, establishing a revised SO_2 emission limit for the coal-fired boilers at Cardinal Power to ensure the attainment and maintenance of the Steubenville nonattainment area with the 2010 1-hour SO_2 standard (84 FR 56385). Ohio requested this SO_2 emission limit be approved into the Regional Haze SIP for the

[28] The current, effective copy of this rule can be found here: https://epa.ohio.gov/divisions-and-offices/air-pollution-control/regulations/effective-rules/dapc-effective-rules

[29] The current, effective copy of this rule can be found here: https://epa.ohio.gov/divisions-and-offices/air-pollution-control/regulations/effective-rules/dapc-effective-rules

[30] The current, effective copy of this rule can be found here: https://epa.ohio.gov/divisions-and-offices/air-pollution-control/regulations/effective-rules/dapc-effective-rules

Second Implementation Period, to ensure maintenance and reasonable progress towards visibility goals, in a supplement submitted to U.S. EPA August 6, 2024. Cardinal Power Plant is the top point source emitter in Jefferson County and is located south of the violating monitoring site; however, it's worth noting that two non-violating monitors are between Cardinal Power Plan and the violating monitor.

The W.H. Sammis Plant (facility ID 0641160017) is another EGU facility located in Jefferson County. W.H. Sammis had three coal-fired boiler units: one with a design capacity of 3,000 MMBtu/hr and two with a design capacity of 6,066 MMBtu/hr. W.H. Sammis Plant was the second highest point source emitter in Jefferson County and is located north of the violating monitoring site. All of these boiler units were permanently shut down at the end of May 2023. This shut down will greatly reduce emissions in this county.

Also worth noting, Mountain State Carbon in West Virginia, located directly east of the violating monitor also permanently shut down all operation by March 31, 2022. Although not as a significant emitter, this source was much closer in proximity than either power plant to the violating monitoring site.

Urbanization, population, and commuting trends

The following table 31 provides a summary of the 2022 population and VMT for each of the counties discussed in this section.

Table 31: Weirton-Steubenville Analysis Area 2022 County Level VMT, Population, Land Area, and Population Density

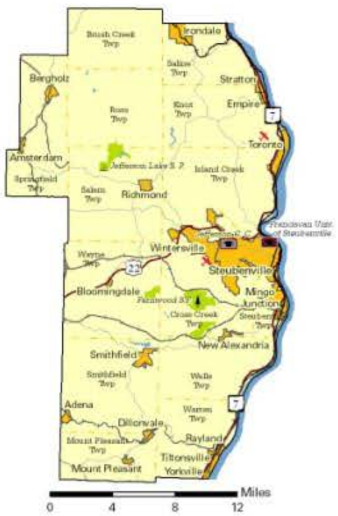
County	VMT	Population	Land Area (sq. miles)	Population Density (1,000 per sq. miles)
Jefferson OH	1,322,380	64,330	411	0.16
Brooke WV	499,234	22,349	93	0.24
Hancock WV	348,850	28,907	88	0.33
Total for All Counties	2,170,464	115,586	580	0.20

Source: Ohio Department of Transportation (Ohio 2022 VMT data only)
Ohio Department of Development, County Trends and Profiles for 2022 (Ohio populations only)
U.S. Department of Commerce Economics and Statistics Administrations, U.S. Census Bureau, 2022 American Community Survey 5-year Estimates (West Virginia populations only)
All other data: U.S. EPA Particle Pollution Designations Memo and Data, https://www.epa.gov/particle-pollution-designations/particle-pollution-designations-memorandum-and-data-2024-revised#A

Degrees of urbanization and population trends

As seen in table 31 above, the majority of the population resides in Jefferson County although the population densities are higher in Brooke (WV) and Hancock (WV) Counties. However, as can be seen in figure 25, the population of Jefferson County has declined since 2020 and are expected to continually decline.

Figure 25: Weirton-Steubenville Analysis Area Ohio County Profiles



Jefferson County

Jefferson County is 64% forest, 20% pasture, and 9% developed – low intensity. Steubenville city is the major urban area of the county, and where the violating monitoring site is located. The 2020 county population was 65,249 and declined to 64,330 in 2022. The population is expected to continually decline in the future with an estimated population of 59,792 by 2030.

Source: County profile information and maps found at Ohio Department of Development, Research, County Trends, https://development.ohio.gov/about-us/research/county/county-trends

Commuting trends

As can be seen in table 31, the majority of VMT occurs in Jefferson County, and to a lesser extent Brooke (WV) and Hancock (WV) Counties. Table 32 below looks at commuter travel in and out of the county in this analysis area with the violating monitoring site, Jefferson County. A significant amount of workers living in Jefferson County work in a different county (37%) whereas only 25% of those working in Jefferson County live in an outside county and commute into Jefferson County. Of the Jefferson County residents commuting to other counties, the greatest percentage commutes east to Allegheny (PA) (6.7%), Brooke (WV) (5.9%), and Belmont (5.6%) Counties. The greatest percentage of workers who commute to Jefferson County for work live in Columbiana (4.3%) County.

Table 32: Commuter Travel In and Out of Jefferson County

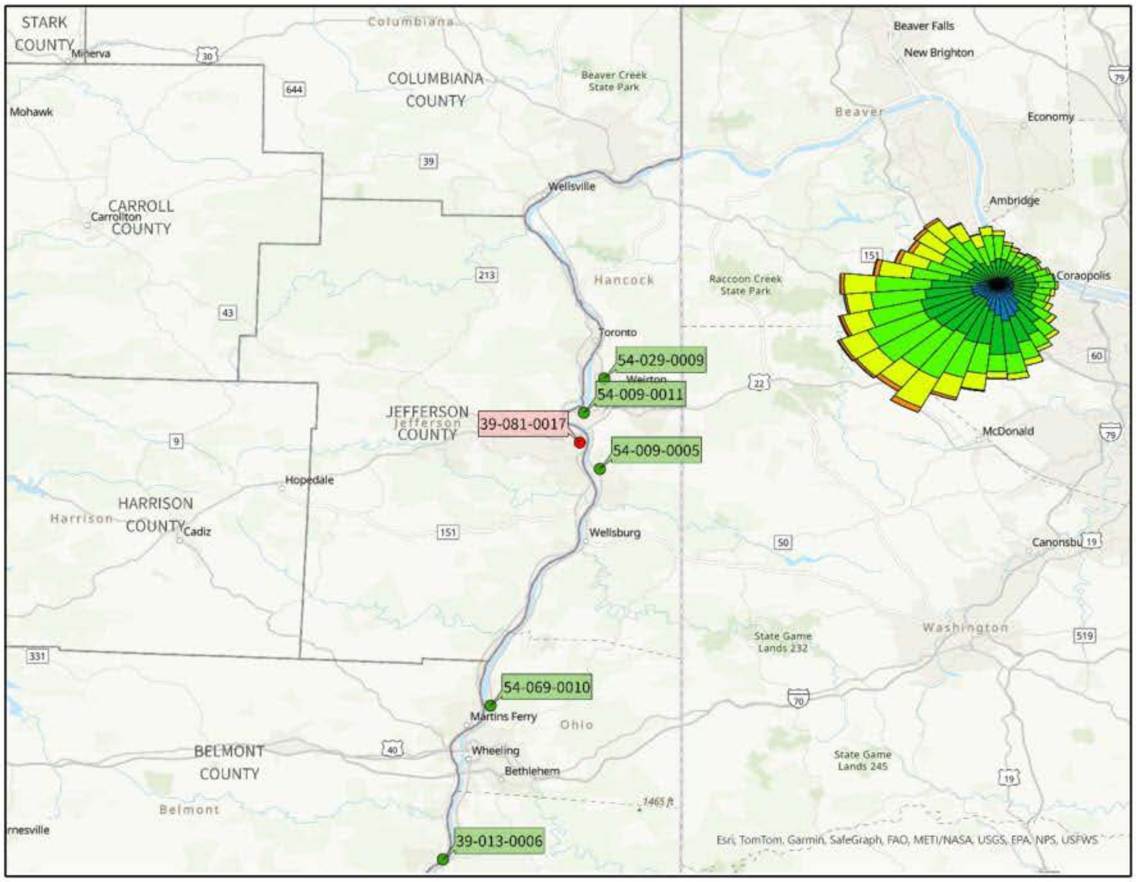
Jefferson	% of workers living in county work outside county					37.0%
	% of workers living outside of county work in county					25.1%
# workers living in Jefferson		27,652	**# workers working in Jefferson**			23,274
Place of Work	**#**	**%**	**Place of Residence**		**#**	**%**
Allegheny County (PA)	1,845	6.7%	Columbiana County		998	4.3%
Brooke County (WV)	1,626	5.9%	Brooke County (WV)		917	3.9%
Belmont County	1,543	5.6%	Hancock County (WV)		829	3.6%
Ohio County (WV)	1,361	4.9%	Harrison County		788	3.4%
Harrison County	559	2.0%	Belmont County		704	3.0%
Columbiana County	476	1.7%	Carroll County		305	1.3%

Source: U.S. Department of Commerce Economics and Statistics Administrations, U.S. Census Bureau, Residence County to Workplace County Commuting Flows for the United States and Puerto Rico Sorted by Workplace Geography: 5-year ACS 2016-2020, Residence County to Workplace County Commuting Flows for the United States and Puerto Rico Sorted by Residence Geography: 5-Year ACS 2016-2020

METEOROLOGY

The following wind rose in figure 26 represents this area.

Figure 26: 2021-2023 Wind Roses for the Weirton-Steubenville OH MSA



Source: AERMET Surface data (Wind Rose data only), U.S. EPA $PM_{2.5}$ Designations Mapping Tool (monitoring sites)

Winds from the southwest quadrant are prevalent near the Weirton-Steubenville area monitoring sites. This indicates that sources of emissions from the southwest may be contributing to violations at this monitoring site. It may be more likely that the source of these violations is local considering the two larger power plants are directly north and south of the violating monitor yet have non-violating monitors between them and the violating monitor.

The HYSPLIT density maps for the violating monitoring sites in the Weirton-Steubenville area (Appendix D pp.29-31) show that most of the air parcels that originate in this area do not tend to travel a large distance over 24 hours, and actually stay in the surrounding counties and area near the violating monitoring sites. This may indicate that any pollutants emitted in the air near or at the violating sites tend to stay in the area. This further supports that localized sources near the violating monitoring sites could be a component of the violations.

GEOGRAPHY/TOPOGRAPHICAL

This analysis area does not have any geographical or topographical barriers significantly affecting air pollution transport. Therefore, this factor does not play a role in the analysis of this area.

JURISDICTIONAL BOUNDARIES

Jefferson, Hancock (WV) and Brooke (WV) Counties was designated as a nonattainment for the 1997 annual $PM_{2.5}$ standard and while only Jefferson County was nonattainment for the 2006 24-hour $PM_{2.5}$ standard (both as part of the Steubenville- Weirton OH-WV nonattainment area). Jefferson, Brooke (WV) and Hancock (WV) Counties were designated as nonattainment under the 1997 ozone standard. These areas have been redesignated to attainment for all standards. No other counties a part of this analysis have been designated nonattainment for $PM_{2.5}$ or other urban-scale pollutants.

Jefferson County and the Weirton-Steubenville WV-OH MSA is part of the larger Pittsburgh-New Castle-Weirton PA-OH-WV CSA.

CONCLUSION

Jefferson, Brooke (WV) and Hancock (WV) Counties have historically been a part of this nonattainment area.

The most significant emissions of $PM_{2.5}$ and its precursors are from Jefferson County, predominantly from power plants to the north, W. H. Sammis Plant, and south, Cardinal Power Plant, of the violating monitoring site. The violating monitoring site shows a high presence of organic carbon and then, nitrates. As demonstrated above, significant reductions, including the permanent shut down of W. H. Sammis Plant in May 2023, have occurred during and after the time these inventories were created. As a result, we will continue to see a decline in power plant related emissions.

Also noted above, although not a significant emissions source for 2022 emissions but a source in close proximity to the violating monitoring site, Mountain State Carbon (WV) also shut down all operations by March 31, 2022. Under the 2010 1-hour SO_2 standard, Ohio submitted an attainment demonstration for the Steubenville OH-WV SO_2 nonattainment area (submitted to U.S. EPA June 25, 2019). The analysis showed Mountain State Carbon was a large contributor to SO_2 violations in the Steubenville OH-WV SO_2 nonattainment area. As can be seen from table 1, for the violating monitor, for the 3-year design value period of 2021-2023, 2021 had the most significant annual average of 11.1 $\mu g/m^3$– a period of time when Mountain State Carbon was still operating. 2022 and 2023 annual design values were 9.1 and 9.8 $\mu g/m^3$, respectively. Even with wildfire impacts, the 2023 design value was below the 2021 design value. Therefore, it's likely Mountain State Carbon was impacting the violating monitoring site.

Although W.H. Sammis is a much greater distance to the north, it is also likely that their 2023 shut down will lead to additional declining annual design values at the violating monitoring site. Although the fact that non-violating monitors exist between the violating monitor and W. H. Sammis lends to the question of how much local sources are leading to exceedances at the violating monitor. This is further corroborated by the fact that there also non-violating monitors between Cardinal Power Plant and the violating monitor.

The majority of the population and VMT for this analysis area are in Jefferson County. While populations are lower, the population densities of Brooke and Hancock Counties (WV) are significantly higher than Jefferson County.

There is some commuter travel between Jefferson County and the other counties in the analysis area. The majority of commuting occurs between Jefferson and Brooke (WV) Counties. Ohio EPA does not believe the sole reason for inclusion of any neighboring counties should be based upon limited commuter travel.

Ohio EPA is recommending only Jefferson County be designated nonattainment with respect to the Ohio portion of the Weirton-Steubenville OH-WV area.

Appendix A

AQS Data (2013 – 2023)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

User ID: ACBROWN

DESIGN VALUE REPORT

Report Request ID: 2216534 Report Code: AMP480 Aug. 19, 2024

GEOGRAPHIC SELECTIONS

Tribal Code	State	County	Site	Parameter	POC	City	AQCR	UAR	CBSA	CSA	EPA Region
	39										

PROTOCOL SELECTIONS

Parameter Classification	Parameter	Method	Duration
DESIGN VALUE	88101		

SELECTED OPTIONS

Option Type	Option Value
SINGLE EVENT PROCESSING	EXCLUDE REGIONALLY CONCURRED EVENTS
MERGE PDF FILES	YES
AGENCY ROLE	PQAO
USER SITE METADATA	STREET ADDRESS
QUARTERLY DATA IN WORKFILE	NO
WORKFILE DELIMITER	,
USE LINKED SITES	YES

DATE CRITERIA

Start Date	End Date
2013	2023

APPLICABLE STANDARDS

Standard Description
PM25 24-hour 2024
PM25 Annual 2024

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2013

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2013 Cred. Days	2013 Comp. Qrtrs	2013 98th Perctil	2013 Wtd. Mean	2013 Cert& Eval	2012 Cred. Days	2012 Comp. Qrtrs	2012 98th Perctil	2012 Wtd. Mean	2012 Cert& Eval	2011 Cred. Days	2011 Comp. Qrtrs	2011 98th Perctil	2011 Wtd. Mean	2011 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-003-0009 2650 BIBLE ROAD	46	3	19.0*	9.9*	U	60	4	20.7	10.0	Y	42	2	28.0*	10.8*	U	23	N	10.3	Y
39-009-0003 S.R. 377 GIFFORD STATE FOREST	57	4	15.6	8.1	U	55	4	15.6	8.7	Y	57	4	18.5	8.7	U	17	Y	8.5	Y
39-017-0003 BONITA & ST JOHN	120	4	25.8	11.1	U	120	4	20.2	11.2	Y	119	4	28.8	12.7	U	25	Y	11.7	Y
39-017-0016 400 NILLES RD.	118	4	23.3	10.7	U	118	4	23.2	10.8	Y	116	4	26.8	12.4	U	24	Y	11.3	Y
39-017-0019 1200 OXFORD STATE ROAD	121	4	25.5	11.0	U	119	4	22.8	11.4	Y	69	2	28.4*	12.7*	U	26	N	11.7	Y
39-017-0020 3350 YANKEE ROAD	119	4	26.4	13.3	X	118	4	27.5	13.9	Y	57	2	28.3*	13.6*	U	27	N	13.6	Y
39-023-0005 350 N. FOUNTAIN AVE.	112	4	24.4	10.1	U	120	4	22.3	10.4	Y	121	4	28.0	12.3	U	25	Y	10.9	Y
39-025-0022 2400 CLERMONT CENTER DR.		0		*			0		*		61	4	30.2	11.0	U	30	N	11.0	N
39-035-0034 881 E. 152nd ST.	112	4	23.7	9.5	U	117	4	19.5	9.3	Y	117	4	22.6	10.0	U	22	Y	9.6	Y
39-035-0038 2547 ST TIKHON	113	4	26.4*	12.2	U	362	4	28.8	12.3	Y	349	4	28.2	12.6	U	28	Y	12.4	Y
39-035-0045 4950 BROADWAY AVE.	112	4	23.7	11.2	U	115	4	24.5	11.4	Y	119	4	25.2	11.9	U	24	Y	11.5	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2013

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2013 Cred. Days	2013 Comp. Qrtrs	2013 98th Perctil	2013 Wtd. Mean	2013 Cert& Eval	2012 Cred. Days	2012 Comp. Qrtrs	2012 98th Perctil	2012 Wtd. Mean	2012 Cert& Eval	2011 Cred. Days	2011 Comp. Qrtrs	2011 98th Perctil	2011 Wtd. Mean	2011 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-035-0060 E. 14TH & ORANGE	364	4	25.6	12.1	U	301	4	31.4	13.2	Y	117	4	26.5	12.5	U	28	Y	12.6	Y
39-035-0065 4600 HARVARD AVE.	119	4	23.1	11.4	U	117	4	23.3	12.3	Y	115	4	27.0	12.6	U	24	Y	12.1	Y
39-035-1002 16900 HOLLAND RD.	115	4	22.5	9.2	U	113	4	19.9	9.7	Y	117	4	23.9	10.4	U	22	Y	9.7	Y
39-049-0024 STATE FAIRGROUNDS	115	4	23.8	10.1	U	111	4	22.0	10.7	Y	113	4	23.6	11.9	U	23	Y	10.9	Y
39-049-0025 1700 ANN ST.	121	4	24.3	10.2	U	119	4	22.0	10.7	Y	118	4	23.6	11.5	U	23	Y	10.8	Y
39-049-0029 7600 FODOR RD.	364	4	20.8	9.8	U	360	4	19.6	9.9	Y	359	4	26.6	11.9	U	22	Y	10.6	Y
39-049-0081 5750 MAPLE CANYON	121	4	23.6	9.8	U	118	4	20.7	10.1	Y	115	4	21.4	10.9	U	22	Y	10.3	Y
39-057-0005 100 DAYTON ST.	119	4	19.0	9.7	U	118	4	20.2	9.6	Y	117	4	26.4	11.3	U	22	Y	10.2	Y
39-061-0006 11590 GROOMS RD	119	4	23.2	10.1	U	116	4	21.7	10.3	Y	114	4	25.7	11.7	U	24	Y	10.7	Y
39-061-0010 6950 RIPPLE RD.	120	4	22.4	10.5	U	96	4	21.7*	10.6	Y	52	2	26.2*	11.8*	U	23	N	11.0	Y
39-061-0014 SEYMOUR & VINE ST.	119	4	24.1	11.6	U	119	4	25.2	12.1	Y	118	4	28.2	13.2	U	26	Y	12.3	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2013

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2013 Cred. Days	2013 Comp. Qrtrs	2013 98th Perctil	2013 Wtd. Mean	2013 Cert& Eval	2012 Cred. Days	2012 Comp. Qrtrs	2012 98th Perctil	2012 Wtd. Mean	2012 Cert& Eval	2011 Cred. Days	2011 Comp. Qrtrs	2011 98th Perctil	2011 Wtd. Mean	2011 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-061-0040	121	4	24.5	10.6	U	121	4	20.0	10.5	Y	117	4	29.7	12.1	U	25	Y	11.1	Y
250 WM. HOWARD TAFT																			
39-061-0042	115	4	26.4	11.5	U	121	4	23.3	11.7	Y	119	4	30.2	13.3	U	27	Y	12.2	Y
2101 W. 8TH ST.																			
39-081-0017	359	4	24.9	9.9	U	366	4	22.6	11.0	Y	306	4	29.9	12.7	U	26	Y	11.2	Y
618 LOGAN ST.																			
39-081-0021	5	0	12.2*	7.6*	U		0		*			0		*		12	N	7.6	N
110 STEUBEN ST.																			
39-081-1001	32	2	19.7*	11.0*	U	59	4	21.0	10.0	Y	59	4	24.9	11.3	U	22	N	10.8	N
501 COMMERICAL																			
39-085-0007	121	4	18.8	8.6	U	115	4	19.4	9.0	Y	119	4	23.3	9.4	U	21	Y	9.0	Y
177 MAIN STREET																			
39-087-0012	119	4	18.5	9.1	U	115	4	21.3	10.9	Y	111	4	22.9	10.8	U	21	Y	10.3	Y
450 Commerce Drive																			
39-093-3002	119	4	20.9	8.8	U	119	4	22.0	9.5	Y	118	4	23.1	9.4	U	22	Y	9.2	Y
2180 LAKE BREEZE																			
39-095-0024	120	4	21.3	9.6	U	117	4	21.3	10.0	Y	113	4	26.4	10.6	U	23	Y	10.1	Y
348 S. ERIE																			
39-095-0026	118	4	21.6	9.6	U	119	4	21.5	9.9	Y	113	4	23.5	10.7	U	22	Y	10.1	Y
4150 AIRPORT HIGHWAY																			
39-095-0028	121	4	20.1	9.5	U	115	4	24.7	10.0	Y	115	4	25.5	11.4	U	23	Y	10.3	Y
3040 YORK ST.																			

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2013

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2013 Cred. Days	2013 Comp. Qrtrs	2013 98th Perctil	2013 Wtd. Mean	2013 Cert& Eval	2012 Cred. Days	2012 Comp. Qrtrs	2012 98th Perctil	2012 Wtd. Mean	2012 Cert& Eval	2011 Cred. Days	2011 Comp. Qrtrs	2011 98th Perctil	2011 Wtd. Mean	2011 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-099-0005 145 MADISON AVE.	61	4	22.9	10.9	U	59	4	23.2	10.6	Y	61	4	25.0	10.6	U	24	Y	10.7	Y
39-099-0014 345 OAKHILL AVE.	109	4	21.9	9.7	U	115	4	20.7	10.1	Y	118	4	24.8	11.3	U	22	Y	10.4	Y
39-103-0004 BALLASH ROAD	103	4	22.5	9.1	U	145	4	19.1	9.3	Y	145	4	25.0	10.8	U	22	Y	9.7	Y
39-113-0032 215 EAST THIRD ST.	117	4	22.7	10.3	U	118	4	21.9	10.7	Y	119	4	28.5	12.1	U	24	Y	11.0	Y
39-133-0002 531 WASHINGTON	91	2	23.3	8.9*	U	120	4	18.2	9.3	Y	116	4	23.2	10.5	U	22	Y	9.5	Y
39-135-1001 6940 OXFORD GETTYSBURG RD.	119	4	21.0	9.7	U	115	4	19.5	9.3	Y	116	4	24.9	10.9	U	22	Y	10.0	Y
39-145-0013 4862 GALLIA	120	4	18.2	9.0	U	116	4	18.8	9.8	Y	121	4	21.2	10.1	U	19	Y	9.6	Y
39-151-0017 1330 DUEBER	179	4	27.8	11.6	U	350	4	25.4	11.9	Y	336	4	28.1	12.8	U	27	Y	12.1	Y
39-151-0020 420 MARKET	118	4	24.3	10.7	U	116	4	22.7	10.4	Y	114	4	23.1	11.3	U	23	Y	10.8	Y
39-153-0017 80 BRITTAIN	121	4	24.9	10.4	U	121	4	20.3	10.8	Y	193	4	26.4	11.8	U	24	Y	11.0	Y
39-153-0023 642 W. EXCHANGE ST.	119	4	24.0	9.9	U	118	4	19.8	10.0	Y	116	4	24.8	11.1	U	23	Y	10.4	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Report Date: Aug. 19, 2024

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2013

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2013 Cred. Days	2013 Comp. Qrtrs	2013 98th Perctil	2013 Wtd. Mean	2013 Cert& Eval	2012 Cred. Days	2012 Comp. Qrtrs	2012 98th Perctil	2012 Wtd. Mean	2012 Cert& Eval	2011 Cred. Days	2011 Comp. Qrtrs	2011 98th Perctil	2011 Wtd. Mean	2011 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-155-0005 540 LAIRD AVE.	115	4	24.5	9.8	U	114	4	19.3	9.3	Y	119	4	24.9	10.6	U	23	Y	9.9	Y
39-165-0007 430 S EAST ST.		0		*			0		*		59	4	28.4	11.0	U	28	N	11.0	N

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2014

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2014 Cred. Days	2014 Comp. Qrtrs	2014 98th Perctil	2014 Wtd. Mean	2014 Cert& Eval	2013 Cred. Days	2013 Comp. Qrtrs	2013 98th Perctil	2013 Wtd. Mean	2013 Cert& Eval	2012 Cred. Days	2012 Comp. Qrtrs	2012 98th Perctil	2012 Wtd. Mean	2012 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-003-0009 2650 BIBLE ROAD	59	4	27.7	9.5	S	46	3	19.0*	9.9 *	U	60	4	20.7	10.0	Y	22	N	9.8	Y
39-009-0003 S.R. 377 GIFFORD STATE FOREST	56	4	18.0	7.8	S	57	4	15.6	8.1	U	55	4	15.6	8.7	Y	16	Y	8.2	Y
39-017-0003 BONITA & ST JOHN	116	4	24.7	11.3	Y	120	4	25.8	11.1	U	120	4	20.2	11.2	Y	24	Y	11.2	Y
39-017-0016 400 NILLES RD.	120	4	23.6	10.7	Y	118	4	23.3	10.7	U	118	4	23.2	10.8	Y	23	Y	10.7	Y
39-017-0019 1200 OXFORD STATE ROAD	119	4	23.9	11.2	Y	121	4	25.5	11.0	U	119	4	22.8	11.4	Y	24	Y	11.2	Y
39-017-0020 3350 YANKEE ROAD	120	4	27.8	12.9	Y	119	4	26.4	13.3	X	118	4	27.5	13.9	Y	27	Y	13.4	Y
39-023-0005 350 N. FOUNTAIN AVE.	117	4	24.5	10.0	S	112	4	24.4	10.1	U	120	4	22.3	10.4	Y	24	Y	10.2	Y
39-035-0034 881 E. 152nd ST.	119	4	23.2	9.6	S	112	4	23.7	9.5	U	117	4	19.5	9.3	Y	22	Y	9.5	Y
39-035-0038 2547 ST TIKHON	112	4	26.5	12.3	S	113	4	26.4	12.2	U	362	4	28.8	12.3	Y	27	Y	12.3	Y
39-035-0045 4950 BROADWAY AVE.	115	4	25.7	11.4	S	112	4	23.7	11.2	U	115	4	24.5	11.4	Y	25	Y	11.3	Y
39-035-0060 E. 14TH & ORANGE	263	4	29.8*	11.9	S	364	4	25.6	12.1	U	301	4	31.4	13.2	Y	29	N	12.4	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Report Date: Aug. 19, 2024

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2014

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2014 Cred. Days	2014 Comp. Qrtrs	2014 98th Perctil	2014 Wtd. Mean	2014 Cert& Eval	2013 Cred. Days	2013 Comp. Qrtrs	2013 98th Perctil	2013 Wtd. Mean	2013 Cert& Eval	2012 Cred. Days	2012 Comp. Qrtrs	2012 98th Perctil	2012 Wtd. Mean	2012 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-035-0065 4600 HARVARD AVE.	115	4	26.2	12.5	S	119	4	23.1	11.4	U	117	4	23.3	12.3	Y	24	Y	12.0	Y
39-035-1002 16900 HOLLAND RD.	109	4	22.7	9.7	S	115	4	22.5	9.2	U	113	4	19.9	9.7	Y	22	Y	9.5	Y
39-049-0024 STATE FAIRGROUNDS	113	4	21.0	10.1	S	115	4	23.8	10.1	U	111	4	22.0	10.7	Y	22	Y	10.3	Y
39-049-0025 1700 ANN ST.	75	3	31.5*	11.5*	S	121	4	24.3	10.2	U	119	4	22.0	10.7	Y	26	N	10.8	Y
39-049-0029 7600 FODOR RD.	365	4	22.2	10.9	U	364	4	20.8	9.8	U	360	4	19.6	9.9	Y	21	Y	10.2	Y
39-049-0039 580 E. WOODROW AVE.	29	1	19.2*	9.0*	S		0		*			0		*		19	N	9.0	N
39-049-0081 5750 MAPLE CANYON	118	4	23.8	10.3	S	121	4	23.6	9.8	U	118	4	20.7	10.1	Y	23	Y	10.1	Y
39-057-0005 100 DAYTON ST.	91	4	31.2	9.8	S	119	4	19.0	9.7	U	118	4	20.2	9.6	Y	23	Y	9.7	Y
39-061-0006 11590 GROOMS RD	119	4	22.4	10.3	Y	119	4	23.2	10.1	U	116	4	21.7	10.3	Y	22	Y	10.2	Y
39-061-0010 6950 RIPPLE RD.	112	4	24.3	10.4	Y	120	4	22.4	10.5	U	96	4	21.7	10.6	Y	23	Y	10.5	Y
39-061-0014 SEYMOUR & VINE ST.	121	4	23.2	11.3	Y	119	4	24.1	11.6	U	119	4	25.2	12.1	Y	24	Y	11.7	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Report Date: Aug. 19, 2024

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2014

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2014 Cred. Days	2014 Comp. Qrtrs	2014 98th Perctil	2014 Wtd. Mean	2014 Cert& Eval	2013 Cred. Days	2013 Comp. Qrtrs	2013 98th Perctil	2013 Wtd. Mean	2013 Cert& Eval	2012 Cred. Days	2012 Comp. Qrtrs	2012 98th Perctil	2012 Wtd. Mean	2012 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-061-0040	120	4	23.6	10.4	Y	121	4	24.5	10.6	U	121	4	20.0	10.5	Y	23	Y	10.5	Y
250 WM. HOWARD TAFT																			
39-061-0042	109	4	24.8	11.2	Y	115	4	26.4	11.5	U	121	4	23.3	11.7	Y	25	Y	11.5	Y
2101 W. 8TH ST.																			
39-061-0048	119	4	27.8	12.9	U		0		*			0		*		28	N	12.9	N
3428 COLERAIN AVE.																			
39-081-0017	334	4	29.9	12.1	S	359	4	24.9	9.9	U	366	4	22.6	11.0	Y	26	Y	11.0	Y
618 LOGAN ST.																			
39-081-0021	58	4	22.7	10.6	S	5	0	12.2*	7.6 *	U		0		*		17	N	9.1	N
110 STEUBEN ST.																			
39-081-1001		0		*		32	2	19.7*	11.0*	U	59	4	21.0	10.0	Y	20	N	10.5	N
501 COMMERICAL																			
39-085-0007	120	4	18.1	8.7	S	121	4	18.8	8.6	U	115	4	19.4	9.0	Y	19	Y	8.7	Y
177 MAIN STREET																			
39-087-0012	118	4	15.3	7.5	S	119	4	18.5	9.1	U	115	4	21.3	10.9	Y	18	Y	9.2	Y
450 Commerce Drive																			
39-093-3002	119	4	22.9	9.1	S	119	4	20.9	8.8	U	119	4	22.0	9.5	Y	22	Y	9.1	Y
2180 LAKE BREEZE																			
39-095-0024	121	4	24.8	10.5	S	120	4	21.3	9.6	U	117	4	21.3	10.0	Y	22	Y	10.0	Y
348 S. ERIE																			
39-095-0026	119	4	28.6	10.3	S	118	4	21.6	9.6	U	119	4	21.5	9.9	Y	24	Y	10.0	Y
4150 AIRPORT HIGHWAY																			

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Report Date: Aug. 19, 2024

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2014

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

	2014					2013					2012					24-Hour		Annual	
Site_ID / STREET ADDRESS	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Design Value	Valid Ind.	Design Value	Valid Ind.
39-095-0028	108	4	24.4	10.6	S	121	4	20.1	9.5	U	115	4	24.7	10.0	Y	23	Y	10.1	Y
3040 YORK ST.																			
39-099-0005	61	4	22.1	9.9	S	61	4	22.9	10.9	U	59	4	23.2	10.6	Y	23	Y	10.5	Y
145 MADISON AVE.																			
39-099-0014	103	4	22.1	9.8	S	109	4	21.9	9.7	U	115	4	20.7	10.1	Y	22	Y	9.9	Y
345 OAKHILL AVE.																			
39-103-0004	111	4	19.8	8.6	S	103	4	22.5	9.1	U	145	4	19.1	9.3	Y	20	Y	9.0	Y
BALLASH ROAD																			
39-113-0032	86	3	30.8*	11.1*	S	117	4	22.7	10.3	U	118	4	21.9	10.7	Y	25	N	10.7	Y
215 EAST THIRD ST.																			
39-113-0038	31	1	18.7*	8.7*	S		0		*			0		*		19	N	8.7	N
113 Saint Mary Street																			
39-133-0002	95	3	19.3*	9.0*	S	91	2	23.3*	8.9 *	U	120	4	18.2	9.3	Y	20	N	9.1	N
531 WASHINGTON																			
39-135-1001	111	4	25.4	9.2	S	119	4	21.0	9.7	U	115	4	19.5	9.3	Y	22	Y	9.4	Y
6940 OXFORD GETTYSBURG RD.																			
39-145-0013	117	4	16.2	8.2	S	120	4	18.2	9.0	U	116	4	18.8	9.8	Y	18	Y	9.0	Y
4862 GALLIA																			
39-151-0017	121	4	25.0	11.7	Y	179	4	27.8	11.6	U	350	4	25.4	11.9	Y	26	Y	11.7	Y
1330 DUEBER																			
39-151-0020	118	4	23.5	10.6	Y	118	4	24.3	10.7	U	116	4	22.7	10.4	Y	24	Y	10.6	Y
420 MARKET																			

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2014

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2014 Cred. Days	2014 Comp. Qrtrs	2014 98th Perctil	2014 Wtd. Mean	2014 Cert& Eval	2013 Cred. Days	2013 Comp. Qrtrs	2013 98th Perctil	2013 Wtd. Mean	2013 Cert& Eval	2012 Cred. Days	2012 Comp. Qrtrs	2012 98th Perctil	2012 Wtd. Mean	2012 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-153-0017 80 BRITTAIN	120	4	22.9	10.8	Y	121	4	24.9	10.4	U	121	4	20.3	10.8	Y	23	Y	10.7	Y
39-153-0023 642 W. EXCHANGE ST.	118	4	21.8	10.0	Y	119	4	24.0	9.9	U	118	4	19.8	10.0	Y	22	Y	10.0	Y
39-155-0005 540 LAIRD AVE.	115	4	20.8	10.3	S	115	4	24.5	9.8	U	114	4	19.3	9.3	Y	22	Y	9.8	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2015

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2015 Cred. Days	2015 Comp. Qrtrs	2015 98th Perctil	2015 Wtd. Mean	2015 Cert& Eval	2014 Cred. Days	2014 Comp. Qrtrs	2014 98th Perctil	2014 Wtd. Mean	2014 Cert& Eval	2013 Cred. Days	2013 Comp. Qrtrs	2013 98th Perctil	2013 Wtd. Mean	2013 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-003-0009 2650 BIBLE ROAD	58	4	21.7	9.7	Y	59	4	27.7	9.5	S	46	3	19.0*	9.9*	U	23	N	9.7	Y
39-009-0003 S.R. 377 GIFFORD STATE FOREST	57	4	18.4	7.6	Y	56	4	18.0	7.8	S	57	4	15.6	8.1	U	17	Y	7.8	Y
39-013-0006 2 BALL PARK RD.	60	2	21.2*	8.7*	Y		0		*			0		*		21	N	8.7	N
39-017-0003 BONITA & ST JOHN	115	4	20.7	10.3	Y	116	4	24.7	11.3	Y	120	4	25.8	11.1	U	24	Y	10.9	Y
39-017-0016 400 NILLES RD.	118	4	22.6	9.5	Y	120	4	23.6	10.7	Y	118	4	23.3	10.7	U	23	Y	10.3	Y
39-017-0019 1200 OXFORD STATE ROAD	120	4	21.2	10.2	Y	119	4	23.9	11.2	Y	121	4	25.5	11.0	U	24	Y	10.8	Y
39-017-0020 3350 YANKEE ROAD	121	4	22.4	11.8	Y	120	4	27.8	12.9	Y	119	4	26.4	13.3	X	26	Y	12.7	Y
39-017-0022 3214 YANKEE RD.	53	3	20.9*	12.1*	Y		0		*			0		*		21	N	12.1	N
39-023-0005 350 N. FOUNTAIN AVE.	115	4	20.0	8.9	Y	117	4	24.5	10.0	S	112	4	24.4	10.1	U	23	Y	9.7	Y
39-035-0034 881 E. 152nd ST.	119	4	22.2	9.2	S	119	4	23.2	9.6	S	112	4	23.7	9.5	U	23	Y	9.4	Y
39-035-0038 2547 ST TIKHON	121	4	27.2	11.8	S	112	4	26.5	12.3	S	113	4	26.4	12.2	U	27	Y	12.1	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2015

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

	2015					2014					2013					24-Hour		Annual	
Site_ID / STREET ADDRESS	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Design Value	Valid Ind.	Design Value	Valid Ind.
39-035-0045 4950 BROADWAY AVE.	116	4	26.0	11.0	S	115	4	25.7	11.4	S	112	4	23.7	11.2	U	25	Y	11.2	Y
39-035-0060 E. 14TH & ORANGE	94	3	26.1*	12.3*	S	263	4	29.8*	11.9	S	364	4	25.6	12.1	U	27	N	12.1	Y
39-035-0065 4600 HARVARD AVE.	119	4	26.9	13.3	S	115	4	26.2	12.5	S	119	4	23.1	11.4	U	25	Y	12.4	Y
39-035-1002 16900 HOLLAND RD.	117	4	21.7	9.1	S	109	4	22.7	9.7	S	115	4	22.5	9.2	U	22	Y	9.3	Y
39-049-0024 STATE FAIRGROUNDS	106	4	21.1	10.0	Y	113	4	21.0	10.1	S	115	4	23.8	10.1	U	22	Y	10.1	Y
39-049-0025 1700 ANN ST.		0		*		75	3	31.5*	11.5*	S	121	4	24.3	10.2	U	28	N	10.9	N
39-049-0029 7600 FODOR RD.	364	4	19.5	9.5	U	365	4	22.2	10.9	U	364	4	20.8	9.8	U	21	Y	10.1	Y
39-049-0039 580 E. WOODROW AVE.	119	4	24.0	10.4	Y	29	1	19.2*	9.0 *	S		0		*		22	N	9.7	N
39-049-0081 5750 MAPLE CANYON	121	4	22.2	9.8	Y	118	4	23.8	10.3	S	121	4	23.6	9.8	U	23	Y	10.0	Y
39-057-0005 100 DAYTON ST.	118	4	17.7	8.3	Y	91	4	31.2	9.8	S	119	4	19.0	9.7	U	23	Y	9.3	Y
39-061-0006 11590 GROOMS RD	338	4	18.1	9.3	Y	119	4	22.4	10.3	Y	119	4	23.2	10.1	U	21	Y	9.9	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2015

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2015 Cred. Days	2015 Comp. Qrtrs	2015 98th Perctil	2015 Wtd. Mean	2015 Cert& Eval	2014 Cred. Days	2014 Comp. Qrtrs	2014 98th Perctil	2014 Wtd. Mean	2014 Cert& Eval	2013 Cred. Days	2013 Comp. Qrtrs	2013 98th Perctil	2013 Wtd. Mean	2013 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-061-0010 6950 RIPPLE RD.	119	4	20.5	9.2	Y	112	4	24.3	10.4	Y	120	4	22.4	10.5	U	22	Y	10.0	Y
39-061-0014 SEYMOUR & VINE ST.	118	4	23.0	10.7	Y	121	4	23.2	11.3	Y	119	4	24.1	11.6	U	23	Y	11.2	Y
39-061-0040 250 WM. HOWARD TAFT	299	4	19.3	9.2	Y	120	4	23.6	10.4	Y	121	4	24.5	10.6	U	22	Y	10.1	Y
39-061-0042 2101 W. 8TH ST.	115	4	22.8	10.1	Y	109	4	24.8	11.2	Y	115	4	26.4	11.5	U	25	Y	11.0	Y
39-061-0048 3428 COLERAIN AVE.		0		*		119	4	27.8	12.9	U		0		*		28	N	12.9	N
39-081-0017 618 LOGAN ST.	353	4	26.6	12.1	Y	334	4	29.9	12.1	S	359	4	24.9	9.9	U	27	Y	11.4	Y
39-081-0021 110 STEUBEN ST.	100	4	26.7*	9.6	Y	58	4	22.7	10.6	S	5	0	12.2*	7.6*	U	21	N	9.3	N
39-081-1001 501 COMMERICAL		0		*			0		*		32	2	19.7*	11.0*	U	20	N	11.0	N
39-085-0007 177 MAIN STREET	119	4	19.6	8.1	Y	120	4	18.1	8.7	S	121	4	18.8	8.6	U	19	Y	8.5	Y
39-087-0012 450 Commerce Drive	118	4	17.4	7.3	Y	118	4	15.3	7.5	S	119	4	18.5	9.1	U	17	Y	8.0	Y
39-093-3002 2180 LAKE BREEZE	120	4	22.6	8.2	Y	119	4	22.9	9.1	S	119	4	20.9	8.8	U	22	Y	8.7	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
PRELIMINARY DESIGN VALUE REPORT

Report Date: Aug. 19, 2024

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2015

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

	2015					2014					2013					24-Hour		Annual	
Site_ID / STREET ADDRESS	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Design Value	Valid Ind.	Design Value	Valid Ind.
39-095-0024 348 S. ERIE	120	4	23.6	10.1	Y	121	4	24.8	10.5	S	120	4	21.3	9.6	U	23	Y	10.1	Y
39-095-0026 4150 AIRPORT HIGHWAY	119	4	23.5	9.6	Y	119	4	28.6	10.3	S	118	4	21.6	9.6	U	25	Y	9.8	Y
39-095-0028 3040 YORK ST.	120	4	22.7	10.0	Y	108	4	24.4	10.6	S	121	4	20.1	9.5	U	22	Y	10.0	Y
39-099-0005 145 MADISON AVE.	60	4	26.2	11.0	Y	61	4	22.1	9.9	S	61	4	22.9	10.9	U	24	Y	10.6	Y
39-099-0014 345 OAKHILL AVE.	116	4	24.2	10.2	Y	103	4	22.1	9.8	S	109	4	21.9	9.7	U	23	Y	9.9	Y
39-103-0004 BALLASH ROAD	344	4	22.6	10.1	Y	111	4	19.8	8.6	S	103	4	22.5	9.1	U	22	Y	9.3	Y
39-113-0032 215 EAST THIRD ST.		0		*		86	3	30.8*	11.1*	S	117	4	22.7	10.3	U	27	N	10.7	N
39-113-0038 113 Saint Mary Street	120	4	20.4	9.6	Y	31	1	18.7*	8.7 *	S		0		*		20	N	9.1	N
39-133-0002 531 WASHINGTON	115	4	21.0	8.9	Y	95	3	19.3*	9.0 *	S	91	2	23.3*	8.9*	U	21	N	8.9	N
39-135-1001 6940 OXFORD GETTYSBURG RD.	113	4	18.3	8.4	Y	111	4	25.4	9.2	S	119	4	21.0	9.7	U	22	Y	9.1	Y
39-145-0013 4862 GALLIA	118	4	22.8	8.5	Y	117	4	16.2	8.2	S	120	4	18.2	9.0	U	19	Y	8.6	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
PRELIMINARY DESIGN VALUE REPORT

Report Date: Aug. 19, 2024

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2015

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

	2015					2014					2013					24-Hour		Annual	
Site_ID / STREET ADDRESS	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Design Value	Valid Ind.	Design Value	Valid Ind.
39-151-0017 1330 DUEBER	120	4	26.1	11.4	Y	121	4	25.0	11.7	Y	179	4	27.8	11.6	U	26	Y	11.6	Y
39-151-0020 420 MARKET	118	4	23.7	10.5	Y	118	4	23.5	10.6	Y	118	4	24.3	10.7	U	24	Y	10.6	Y
39-153-0017 80 BRITTAIN	357	4	26.6	12.5	Y	120	4	22.9	10.8	Y	121	4	24.9	10.4	U	25	Y	11.2	Y
39-153-0023 642 W. EXCHANGE ST.	102	4	22.8	9.7	Y	118	4	21.8	10.0	Y	119	4	24.0	9.9	U	23	Y	9.9	Y
39-155-0005 540 LAIRD AVE.	47	2	27.5*	10.5*	Y	115	4	20.8	10.3	S	115	4	24.5	9.8	U	24	N	10.2	N

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2016

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2016 Cred. Days	2016 Comp. Qrtrs	2016 98th Perctil	2016 Wtd. Mean	2016 Cert& Eval	2015 Cred. Days	2015 Comp. Qrtrs	2015 98th Perctil	2015 Wtd. Mean	2015 Cert& Eval	2014 Cred. Days	2014 Comp. Qrtrs	2014 98th Perctil	2014 Wtd. Mean	2014 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-003-0009	61	4	16.7	7.5	S	58	4	21.7	9.7	Y	59	4	27.7	9.5	S	22	Y	8.9	Y
2650 BIBLE ROAD																			
39-009-0003	60	4	11.4	6.2	S	57	4	18.4	7.6	Y	56	4	18.0	7.8	S	16	Y	7.2	Y
S.R. 377 GIFFORD STATE FOREST																			
39-013-0006	114	4	16.2	8.3	S	60	2	21.2*	8.7 *	Y		0		*		19	N	8.5	N
2 BALL PARK RD.																			
39-017-0003	28	1	16.2*	9.7*	S	115	4	20.7	10.3	Y	116	4	24.7	11.3	Y	21	N	10.4	N
BONITA & ST JOHN																			
39-017-0015	90	3	21.8*	9.8*	S		0		*			0		*		22	N	9.8	N
3901 LEFFERSON																			
39-017-0016	120	4	20.0	9.2	S	118	4	22.6	9.5	Y	120	4	23.6	10.7	Y	22	Y	9.8	Y
400 NILLES RD.																			
39-017-0019	120	4	21.0	9.3	S	120	4	21.2	10.2	Y	119	4	23.9	11.2	Y	22	Y	10.2	Y
1200 OXFORD STATE ROAD																			
39-017-0020	122	4	22.3	11.6	S	121	4	22.4	11.8	Y	120	4	27.8	12.9	Y	24	Y	12.1	Y
3350 YANKEE ROAD																			
39-017-0022	57	4	25.2	10.9	S	53	3	20.9*	12.1*	Y		0		*		23	N	11.5	N
3214 YANKEE RD.																			
39-023-0005	119	4	16.6	8.4	S	115	4	20.0	8.9	Y	117	4	24.5	10.0	S	20	Y	9.1	Y
350 N. FOUNTAIN AVE.																			
39-035-0034	120	4	15.7	7.8	S	119	4	22.2	9.2	S	119	4	23.2	9.6	S	20	Y	8.9	Y
881 E. 152nd ST.																			

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2016

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

	2016					2015					2014					24-Hour		Annual	
Site_ID / STREET ADDRESS	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Design Value	Valid Ind.	Design Value	Valid Ind.
39-035-0038 2547 ST TIKHON	121	4	21.3	10.0	S	121	4	27.2	11.8	S	112	4	26.5	12.3	S	25	Y	11.4	Y
39-035-0045 4950 BROADWAY AVE.	116	4	17.0	9.4	S	116	4	26.0	11.0	S	115	4	25.7	11.4	S	23	Y	10.6	Y
39-035-0060 E. 14TH & ORANGE	118	4	18.8	9.6	S	94	3	26.1*	12.3*	S	263	4	29.8*	11.9	S	25	N	11.2	Y
39-035-0065 4600 HARVARD AVE.	121	4	21.7	10.7	S	119	4	26.9	13.3	S	115	4	26.2	12.5	S	25	Y	12.2	Y
39-035-1002 16900 HOLLAND RD.	120	4	14.3	7.8	S	117	4	21.7	9.1	S	109	4	22.7	9.7	S	20	Y	8.9	Y
39-049-0024 STATE FAIRGROUNDS	114	4	17.2	8.7	S	106	4	21.1	10.0	Y	113	4	21.0	10.1	S	20	Y	9.6	Y
39-049-0025 1700 ANN ST.		0		*			0		*		75	3	31.5*	11.5*	S	32	N	11.5	N
39-049-0029 7600 FODOR RD.	366	4	13.0	7.0	U	364	4	19.5	9.5	U	365	4	22.2	10.9	U	18	Y	9.2	Y
39-049-0039 580 E. WOODROW AVE.	122	4	17.7	8.4	S	119	4	24.0	10.4	Y	29	1	19.2*	9.0*	S	20	N	9.3	N
39-049-0081 5750 MAPLE CANYON	122	4	17.3	8.0	S	121	4	22.2	9.8	Y	118	4	23.8	10.3	S	21	Y	9.4	Y
39-057-0005 100 DAYTON ST.	122	4	15.2	7.8	S	118	4	17.7	8.3	Y	91	4	31.2	9.8	S	21	Y	8.6	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Report Date: Aug. 19, 2024

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2016

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2016 Cred. Days	2016 Comp. Qrtrs	2016 98th Perctil	2016 Wtd. Mean	2016 Cert& Eval	2015 Cred. Days	2015 Comp. Qrtrs	2015 98th Perctil	2015 Wtd. Mean	2015 Cert& Eval	2014 Cred. Days	2014 Comp. Qrtrs	2014 98th Perctil	2014 Wtd. Mean	2014 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-061-0006 11590 GROOMS RD	353	4	15.5	8.8	S	338	4	18.1	9.3	Y	119	4	22.4	10.3	Y	19	Y	9.5	Y
39-061-0010 6950 RIPPLE RD.	121	4	19.1	8.8	S	119	4	20.5	9.2	Y	112	4	24.3	10.4	Y	21	Y	9.4	Y
39-061-0014 SEYMOUR & VINE ST.	120	4	22.5	10.1	S	118	4	23.0	10.7	Y	121	4	23.2	11.3	Y	23	Y	10.7	Y
39-061-0040 250 WM. HOWARD TAFT	360	4	15.4	8.8	S	299	4	19.3	9.2	Y	120	4	23.6	10.4	Y	19	Y	9.4	Y
39-061-0042 2101 W. 8TH ST.	120	4	20.1	9.5	S	115	4	22.8	10.1	Y	109	4	24.8	11.2	Y	23	Y	10.3	Y
39-061-0048 3428 COLERAIN AVE.		0		*			0		*		119	4	27.8	12.9	U	28	N	12.9	N
39-081-0017 618 LOGAN ST.	356	4	25.1	11.0	S	353	4	26.6	12.1	Y	334	4	29.9	12.1	S	27	Y	11.8	Y
39-081-0021 110 STEUBEN ST.	105	3	17.2	7.6*	S	100	4	26.7*	9.6	Y	58	4	22.7	10.6	S	22	Y	9.3	Y
39-085-0007 177 MAIN STREET	120	4	14.6	6.8	S	119	4	19.6	8.1	Y	120	4	18.1	8.7	S	17	Y	7.9	Y
39-087-0012 450 Commerce Drive	120	4	14.0	6.7	S	118	4	17.4	7.3	Y	118	4	15.3	7.5	S	16	Y	7.1	Y
39-093-3002 2180 LAKE BREEZE	119	4	15.1	7.0	S	120	4	22.6	8.2	Y	119	4	22.9	9.1	S	20	Y	8.1	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2016

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2016 Cred. Days	2016 Comp. Qrtrs	2016 98th Perctil	2016 Wtd. Mean	2016 Cert& Eval	2015 Cred. Days	2015 Comp. Qrtrs	2015 98th Perctil	2015 Wtd. Mean	2015 Cert& Eval	2014 Cred. Days	2014 Comp. Qrtrs	2014 98th Perctil	2014 Wtd. Mean	2014 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-095-0024 348 S. ERIE	121	4	19.7	8.6	S	120	4	23.6	10.1	Y	121	4	24.8	10.5	S	23	Y	9.8	Y
39-095-0026 4150 AIRPORT HIGHWAY	121	4	16.9	8.2	S	119	4	23.5	9.6	Y	119	4	28.6	10.3	S	23	Y	9.4	Y
39-095-0028 3040 YORK ST.	115	4	16.6	8.2	S	120	4	22.7	10.0	Y	108	4	24.4	10.6	S	21	Y	9.6	Y
39-099-0005 145 MADISON AVE.	57	4	16.8	7.9	S	60	4	26.2	11.0	Y	61	4	22.1	9.9	S	22	Y	9.6	Y
39-099-0014 345 OAKHILL AVE.	116	4	17.4	8.0	S	116	4	24.2	10.2	Y	103	4	22.1	9.8	S	21	Y	9.3	Y
39-103-0004 BALLASH ROAD	211	4	18.5	7.6	S	344	4	22.6	10.1	Y	111	4	19.8	8.6	S	20	Y	8.8	Y
39-113-0032 215 EAST THIRD ST.		0		*			0		*		86	3	30.8*	11.1*	S	31	N	11.1	N
39-113-0038 113 Saint Mary Street	121	4	21.2	8.9	S	120	4	20.4	9.6	Y	31	1	18.7*	8.7*	S	20	N	9.1	N
39-133-0002 531 WASHINGTON	103	3	14.4*	7.1*	S	115	4	21.0	8.9	Y	95	3	19.3*	9.0*	S	18	N	8.3	N
39-135-1001 6940 OXFORD GETTYSBURG RD.	119	4	15.9	7.5	S	113	4	18.3	8.4	Y	111	4	25.4	9.2	S	20	Y	8.4	Y
39-145-0013 4862 GALLIA	123	4	16.5	8.3	S	118	4	22.8	8.5	Y	117	4	16.2	8.2	S	19	Y	8.3	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2016

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2016 Cred. Days	2016 Comp. Qrtrs	2016 98th Perctil	2016 Wtd. Mean	2016 Cert& Eval	2015 Cred. Days	2015 Comp. Qrtrs	2015 98th Perctil	2015 Wtd. Mean	2015 Cert& Eval	2014 Cred. Days	2014 Comp. Qrtrs	2014 98th Perctil	2014 Wtd. Mean	2014 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-151-0017 1330 DUEBER	121	4	19.9	9.3	S	120	4	26.1	11.4	Y	121	4	25.0	11.7	Y	24	Y	10.8	Y
39-151-0020 420 MARKET	122	4	19.0	8.2	S	118	4	23.7	10.5	Y	118	4	23.5	10.6	Y	22	Y	9.7	Y
39-153-0017 80 BRITTAIN	365	4	21.6	9.7	S	357	4	26.6	12.5	Y	120	4	22.9	10.8	Y	24	Y	11.0	Y
39-153-0023 642 W. EXCHANGE ST.	114	4	15.9	7.8	S	102	4	22.8	9.7	Y	118	4	21.8	10.0	Y	20	Y	9.2	Y
39-155-0005 540 LAIRD AVE.		0		*		47	2	27.5*	10.5*	Y	115	4	20.8	10.3	S	24	N	10.4	N
39-155-0014 540 LAIRD AVE. S.E.	114	4	14.4	7.5	S		0		*			0		*		14	N	7.5	N

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2017

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2017 Cred. Days	2017 Comp. Qrtrs	2017 98th Perctil	2017 Wtd. Mean	2017 Cert& Eval	2016 Cred. Days	2016 Comp. Qrtrs	2016 98th Perctil	2016 Wtd. Mean	2016 Cert& Eval	2015 Cred. Days	2015 Comp. Qrtrs	2015 98th Perctil	2015 Wtd. Mean	2015 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-003-0009 2650 BIBLE ROAD	61	4	16.4	7.6	S	61	4	16.7	7.5	S	58	4	21.7	9.7	Y	18	Y	8.3	Y
39-009-0003 S.R. 377 GIFFORD STATE FOREST	59	4	12.2	6.3	S	60	4	11.4	6.2	S	57	4	18.4	7.6	Y	14	Y	6.7	Y
39-013-0006 2 BALL PARK RD.	111	4	15.1	7.7	S	114	4	16.2	8.3	S	60	2	21.2*	8.7*	Y	18	N	8.2	N
39-017-0003 BONITA & ST JOHN		0		*		28	1	16.2*	9.7 *	S	115	4	20.7	10.3	Y	18	N	10.0	N
39-017-0015 3901 LEFFERSON	116	4	18.3	9.3	S	90	3	21.8*	9.8 *	S		0		*		20	N	9.6	N
39-017-0016 400 NILLES RD.	119	4	17.7	8.5	S	120	4	20.0	9.2	S	118	4	22.6	9.5	Y	20	Y	9.1	Y
39-017-0019 1200 OXFORD STATE ROAD	122	4	17.9	8.7	S	120	4	21.0	9.3	S	120	4	21.2	10.2	Y	20	Y	9.4	Y
39-017-0020 3350 YANKEE ROAD	122	4	19.9	10.3	S	122	4	22.3	11.6	S	121	4	22.4	11.8	Y	22	Y	11.2	Y
39-017-0022 3214 YANKEE RD.	103	4	21.8	10.3	S	57	4	25.2	10.9	S	53	3	20.9	12.1*	Y	23	Y	11.1	Y
39-023-0005 350 N. FOUNTAIN AVE.	120	4	19.7	8.1	S	119	4	16.6	8.4	S	115	4	20.0	8.9	Y	19	Y	8.5	Y
39-035-0034 881 E. 152nd ST.	120	4	18.2	7.8	S	120	4	15.7	7.8	S	119	4	22.2	9.2	S	19	Y	8.2	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2017

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

	2017					2016					2015					24-Hour		Annual	
Site_ID / STREET ADDRESS	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Design Value	Valid Ind.	Design Value	Valid Ind.
39-035-0038 2547 ST TIKHON	122	4	22.6	9.9	S	121	4	21.3	10.0	S	121	4	27.2	11.8	S	24	Y	10.6	Y
39-035-0045 4950 BROADWAY AVE.	117	4	20.7	9.8	S	116	4	17.0	9.4	S	116	4	26.0	11.0	S	21	Y	10.1	Y
39-035-0060 E. 14TH & ORANGE	119	4	20.6	9.7	S	118	4	18.8	9.6	S	94	3	26.1*	12.3*	S	22	N	10.5	Y
39-035-0065 4600 HARVARD AVE.	120	4	26.5	11.2	S	121	4	21.7	10.7	S	119	4	26.9	13.3	S	25	Y	11.7	Y
39-035-0073 25609 EMERY ROAD	91	3	14.2*	7.3*	S		0		*			0		*		14	N	7.3	N
39-035-1002 16900 HOLLAND RD.	118	4	19.9	8.1	S	120	4	14.3	7.8	S	117	4	21.7	9.1	S	19	Y	8.3	Y
39-049-0024 STATE FAIRGROUNDS	119	4	16.5	8.3	S	114	4	17.2	8.7	S	106	4	21.1	10.0	Y	18	Y	9.0	Y
39-049-0029 7600 FODOR RD.		0		*		366	4	13.0	7.0	U	364	4	19.5	9.5	U	16	N	8.3	N
39-049-0038 7560 SMOKY ROW RD.	117	4	21.5	8.8	S		0		*			0		*		22	N	8.8	N
39-049-0039 580 E. WOODROW AVE.	119	4	15.9	8.2	S	122	4	17.7	8.4	S	119	4	24.0	10.4	Y	19	Y	9.0	Y
39-049-0081 5750 MAPLE CANYON	120	4	19.3	8.2	S	122	4	17.3	8.0	S	121	4	22.2	9.8	Y	20	Y	8.7	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Report Date: Aug. 19, 2024

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2017

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2017 Cred. Days	2017 Comp. Qrtrs	2017 98th Perctil	2017 Wtd. Mean	2017 Cert& Eval	2016 Cred. Days	2016 Comp. Qrtrs	2016 98th Perctil	2016 Wtd. Mean	2016 Cert& Eval	2015 Cred. Days	2015 Comp. Qrtrs	2015 98th Perctil	2015 Wtd. Mean	2015 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-057-0005	121	4	15.7	7.4	S	122	4	15.2	7.8	S	118	4	17.7	8.3	Y	16	Y	7.8	Y
100 DAYTON ST.																			
39-061-0006	361	4	18.6	8.8	S	353	4	15.5	8.8	S	338	4	18.1	9.3	Y	17	Y	9.0	Y
11590 GROOMS RD																			
39-061-0010	121	4	18.6	8.2	S	121	4	19.1	8.8	S	119	4	20.5	9.2	Y	19	Y	8.7	Y
6950 RIPPLE RD.																			
39-061-0014	115	4	21.5	9.5	S	120	4	22.5	10.1	S	118	4	23.0	10.7	Y	22	Y	10.1	Y
SEYMOUR & VINE ST.																			
39-061-0040	317	4	19.2	8.8	S	360	4	15.4	8.8	S	299	4	19.3	9.2	Y	18	Y	8.9	Y
250 WM. HOWARD TAFT																			
39-061-0042	120	4	18.5	8.8	S	120	4	20.1	9.5	S	115	4	22.8	10.1	Y	20	Y	9.5	Y
2101 W. 8TH ST.																			
39-061-0048	361	4	21.7	10.9	S		0		*			0		*		22	N	10.9	N
3428 COLERAIN AVE.																			
39-081-0017	119	4	21.9	8.9	S	356	4	25.1	11.0	S	353	4	26.6	12.1	Y	25	Y	10.7	Y
618 LOGAN ST.																			
39-081-0021	112	4	16.5	8.2	S	105	3	17.2	7.6 *	S	100	4	26.7*	9.6	Y	20	Y	8.5	N
110 STEUBEN ST.																			
39-085-0007	118	4	15.6	7.2	S	120	4	14.6	6.8	S	119	4	19.6	8.1	Y	17	Y	7.4	Y
177 MAIN STREET																			
39-087-0012	113	4	17.4	6.6	S	120	4	14.0	6.7	S	118	4	17.4	7.3	Y	16	Y	6.8	Y
450 Commerce Drive																			

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Report Date: Aug. 19, 2024

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2017

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2017 Cred. Days	2017 Comp. Qrtrs	2017 98th Perctil	2017 Wtd. Mean	2017 Cert& Eval	2016 Cred. Days	2016 Comp. Qrtrs	2016 98th Perctil	2016 Wtd. Mean	2016 Cert& Eval	2015 Cred. Days	2015 Comp. Qrtrs	2015 98th Perctil	2015 Wtd. Mean	2015 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-093-3002 2180 LAKE BREEZE	117	4	17.2	7.6	S	119	4	15.1	7.0	S	120	4	22.6	8.2	Y	18	Y	7.6	Y
39-095-0024 348 S. ERIE	122	4	19.9	8.3	S	121	4	19.7	8.6	S	120	4	23.6	10.1	Y	21	Y	9.0	Y
39-095-0026 4150 AIRPORT HIGHWAY	116	4	18.5	8.1	S	121	4	16.9	8.2	S	119	4	23.5	9.6	Y	20	Y	8.6	Y
39-095-0028 3040 YORK ST.	28	1	33.8*	10.2*	S	115	4	16.6	8.2	S	120	4	22.7	10.0	Y	24	N	9.4	N
39-095-1003 163 LEE ST.	89	3	19.4*	8.5*	S		0		*			0		*		19	N	8.5	N
39-099-0005 145 MADISON AVE.	61	4	17.3	8.0	S	57	4	16.8	7.9	S	60	4	26.2	11.0	Y	20	Y	9.0	Y
39-099-0014 345 OAKHILL AVE.	116	4	17.8	7.9	S	116	4	17.4	8.0	S	116	4	24.2	10.2	Y	20	Y	8.7	Y
39-103-0004 BALLASH ROAD	111	4	18.9	7.8	S	211	4	18.5	7.6	S	344	4	22.6	10.1	Y	20	Y	8.5	Y
39-113-0038 113 Saint Mary Street	121	4	18.0	8.3	S	121	4	21.2	8.9	S	120	4	20.4	9.6	Y	20	Y	8.9	Y
39-133-0002 531 WASHINGTON	113	4	17.9	7.4	S	103	3	14.4	7.1 *	S	115	4	21.0	8.9	Y	18	Y	7.8	Y
39-135-1001 6940 OXFORD GETTYSBURG RD.	114	4	16.0	7.3	S	119	4	15.9	7.5	S	113	4	18.3	8.4	Y	17	Y	7.7	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Report Date: Aug. 19, 2024

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2017

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

	2017					2016					2015					24-Hour		Annual	
Site_ID / STREET ADDRESS	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Design Value	Valid Ind.	Design Value	Valid Ind.
39-145-0013 4862 GALLIA	96	3	16.8*	6.9*	S	123	4	16.5	8.3	S	118	4	22.8	8.5	Y	19	N	7.9	N
39-151-0017 1330 DUEBER	122	4	20.3	9.4	S	121	4	19.9	9.3	S	120	4	26.1	11.4	Y	22	Y	10.1	Y
39-151-0020 420 MARKET	117	4	17.1	8.3	S	122	4	19.0	8.2	S	118	4	23.7	10.5	Y	20	Y	9.0	Y
39-153-0017 80 BRITTAIN	362	4	18.2	8.4	S	365	4	21.6	9.7	S	357	4	26.6	12.5	Y	22	Y	10.2	Y
39-153-0023 642 W. EXCHANGE ST.	115	4	18.7	8.0	S	114	4	15.9	7.8	S	102	4	22.8	9.7	Y	19	Y	8.5	Y
39-155-0005 540 LAIRD AVE.		0		*			0		*		47	2	27.5*	10.5*	Y	28	N	10.5	N
39-155-0014 540 LAIRD AVE. S.E.	112	4	20.9	8.2	S	114	4	14.4	7.5	S		0		*		18	N	7.9	N

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2018

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2018 Cred. Days	2018 Comp. Qrtrs	2018 98th Perctil	2018 Wtd. Mean	2018 Cert& Eval	2017 Cred. Days	2017 Comp. Qrtrs	2017 98th Perctil	2017 Wtd. Mean	2017 Cert& Eval	2016 Cred. Days	2016 Comp. Qrtrs	2016 98th Perctil	2016 Wtd. Mean	2016 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-003-0009 2650 BIBLE ROAD	130	4	17.7	8.3	S	61	4	16.4	7.6	S	61	4	16.7	7.5	S	17	Y	7.8	Y
39-009-0003 S.R. 377 GIFFORD STATE FOREST	61	4	13.7	6.7	S	59	4	12.2	6.3	S	60	4	11.4	6.2	S	12	Y	6.4	Y
39-013-0006 2 BALL PARK RD.	116	4	17.2	7.7	S	111	4	15.1	7.7	S	114	4	16.2	8.3	S	16	Y	7.9	Y
39-017-0003 BONITA & ST JOHN		0		*			0		*		28	1	16.2*	9.7*	S	16	N	9.7	N
39-017-0015 3901 LEFFERSON	121	4	19.6	9.4	S	116	4	18.3	9.3	S	90	3	21.8*	9.8*	S	20	N	9.5	N
39-017-0016 400 NILLES RD.	122	4	18.7	8.7	S	119	4	17.7	8.5	S	120	4	20.0	9.2	S	19	Y	8.8	Y
39-017-0019 1200 OXFORD STATE ROAD	122	4	18.7	8.8	S	122	4	17.9	8.7	S	120	4	21.0	9.3	S	19	Y	8.9	Y
39-017-0020 3350 YANKEE ROAD	122	4	20.5	10.9	S	122	4	19.9	10.3	S	122	4	22.3	11.6	S	21	Y	10.9	Y
39-017-0022 3214 YANKEE RD.	117	4	20.9	10.2	S	103	4	21.8	10.3	S	57	4	25.2	10.9	S	23	Y	10.5	Y
39-023-0005 350 N. FOUNTAIN AVE.	327	4	24.3	9.6	S	120	4	19.7	8.1	S	119	4	16.6	8.4	S	20	Y	8.7	Y
39-035-0034 881 E. 152nd ST.	119	4	20.2	7.9	S	120	4	18.2	7.8	S	120	4	15.7	7.8	S	18	Y	7.8	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2018

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2018 Cred. Days	2018 Comp. Qrtrs	2018 98th Perctil	2018 Wtd. Mean	2018 Cert& Eval	2017 Cred. Days	2017 Comp. Qrtrs	2017 98th Perctil	2017 Wtd. Mean	2017 Cert& Eval	2016 Cred. Days	2016 Comp. Qrtrs	2016 98th Perctil	2016 Wtd. Mean	2016 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-035-0038 2547 ST TIKHON	123	4	22.3	9.5	S	122	4	22.6	9.9	S	121	4	21.3	10.0	S	22	Y	9.8	Y
39-035-0045 4950 BROADWAY AVE.	121	4	23.5	9.5	S	117	4	20.7	9.8	S	116	4	17.0	9.4	S	20	Y	9.6	Y
39-035-0060 E. 14TH & ORANGE	230	4	27.0	9.9	S	119	4	20.6	9.7	S	118	4	18.8	9.6	S	22	Y	9.7	Y
39-035-0065 4600 HARVARD AVE.	120	4	22.1	11.1	S	120	4	26.5	11.2	S	121	4	21.7	10.7	S	23	Y	11.0	Y
39-035-0073 25609 EMERY ROAD	128	4	20.0	7.9	S	91	3	14.2*	7.3 *	S		0		*		17	N	7.6	N
39-035-1002 16900 HOLLAND RD.	122	4	19.6	7.8	S	118	4	19.9	8.1	S	120	4	14.3	7.8	S	18	Y	7.9	Y
39-049-0024 STATE FAIRGROUNDS	99	3	18.2*	8.1*	S	119	4	16.5	8.3	S	114	4	17.2	8.7	S	17	N	8.4	N
39-049-0029 7600 FODOR RD.		0		*			0		*		366	4	13.0	7.0	U	13	N	7.0	N
39-049-0034 KORBEL AVE.	21	1	24.7*	9.9*	S		0		*			0		*		25	N	9.9	N
39-049-0038 7560 SMOKY ROW RD.	185	4	24.9	9.1	S	117	4	21.5	8.8	S		0		*		23	N	8.9	N
39-049-0039 580 E. WOODROW AVE.	121	4	19.3	8.6	S	119	4	15.9	8.2	S	122	4	17.7	8.4	S	18	Y	8.4	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2018

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2018 Cred. Days	2018 Comp. Qrtrs	2018 98th Perctil	2018 Wtd. Mean	2018 Cert& Eval	2017 Cred. Days	2017 Comp. Qrtrs	2017 98th Perctil	2017 Wtd. Mean	2017 Cert& Eval	2016 Cred. Days	2016 Comp. Qrtrs	2016 98th Perctil	2016 Wtd. Mean	2016 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-049-0081 5750 MAPLE CANYON	121	4	20.0	8.5	S	120	4	19.3	8.2	S	122	4	17.3	8.0	S	19	Y	8.2	Y
39-057-0005 100 DAYTON ST.	338	4	20.0	8.1	S	121	4	15.7	7.4	S	122	4	15.2	7.8	S	17	Y	7.8	Y
39-061-0006 11590 GROOMS RD	363	4	19.6	9.3	S	361	4	18.6	8.8	S	353	4	15.5	8.8	S	18	Y	9.0	Y
39-061-0010 6950 RIPPLE RD.		0		*		121	4	18.6	8.2	S	121	4	19.1	8.8	S	19	N	8.5	N
39-061-0014 SEYMOUR & VINE ST.	117	4	18.8	9.4	S	115	4	21.5	9.5	S	120	4	22.5	10.1	S	21	Y	9.7	Y
39-061-0040 250 WM. HOWARD TAFT	359	4	21.8	9.8	S	317	4	19.2	8.8	S	360	4	15.4	8.8	S	19	Y	9.1	Y
39-061-0042 2101 W. 8TH ST.	120	4	22.4	9.2	S	120	4	18.5	8.8	S	120	4	20.1	9.5	S	20	Y	9.2	Y
39-061-0048 3428 COLERAIN AVE.	317	4	24.4*	12.4	S	361	4	21.7	10.9	S		0		*		23	N	11.7	N
39-067-0004 45600 JEWETT HOPEDALE RD.	20	1	13.2*	7.3*	S		0		*			0		*		13	N	7.3	N
39-067-0005 46700 JEWETT HOPEDALE RD.	20	1	16.4*	6.5*	S		0		*			0		*		16	N	6.5	N
39-081-0017 618 LOGAN ST.	116	4	19.3	8.7	S	119	4	21.9	8.9	S	356	4	25.1	11.0	S	22	Y	9.5	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Report Date: Aug. 19, 2024

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2018

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2018 Cred. Days	2018 Comp. Qrtrs	2018 98th Perctil	2018 Wtd. Mean	2018 Cert& Eval	2017 Cred. Days	2017 Comp. Qrtrs	2017 98th Perctil	2017 Wtd. Mean	2017 Cert& Eval	2016 Cred. Days	2016 Comp. Qrtrs	2016 98th Perctil	2016 Wtd. Mean	2016 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-081-0021 110 STEUBEN ST.	86	3	19.7*	8.8*	S	112	4	16.5	8.2	S	105	3	17.2*	7.6*	S	18	N	8.2	N
39-085-0007 177 MAIN STREET	118	4	18.5	7.0	S	118	4	15.6	7.2	S	120	4	14.6	6.8	S	16	Y	7.0	Y
39-087-0012 450 Commerce Drive	113	4	14.0	6.4	S	113	4	17.4	6.6	S	120	4	14.0	6.7	S	15	Y	6.6	Y
39-093-3002 2180 LAKE BREEZE	184	4	19.6	7.8	S	117	4	17.2	7.6	S	119	4	15.1	7.0	S	17	Y	7.5	Y
39-095-0024 348 S. ERIE	119	4	21.0	8.6	S	122	4	19.9	8.3	S	121	4	19.7	8.6	S	20	Y	8.5	Y
39-095-0026 4150 AIRPORT HIGHWAY	114	4	18.9	8.0	S	116	4	18.5	8.1	S	121	4	16.9	8.2	S	18	Y	8.1	Y
39-095-0028 3040 YORK ST.		0		*		28	1	33.8*	10.2*	S	115	4	16.6	8.2	S	25	N	9.2	N
39-095-1003 163 LEE ST.	117	4	21.5	8.9	S	89	3	19.4*	8.5 *	S		0		*		20	N	8.7	N
39-099-0005 145 MADISON AVE.	46	3	19.8*	8.5*	S	61	4	17.3	8.0	S	57	4	16.8	7.9	S	18	N	8.2	N
39-099-0014 345 OAKHILL AVE.	109	4	16.8	7.8	S	116	4	17.8	7.9	S	116	4	17.4	8.0	S	17	Y	7.9	Y
39-103-0004 BALLASH ROAD	248	4	17.0	7.5	S	111	4	18.9	7.8	S	211	4	18.5	7.6	S	18	Y	7.6	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2018

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2018					2017					2016					24-Hour		Annual	
	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Design Value	Valid Ind.	Design Value	Valid Ind.
39-113-0038 113 Saint Mary Street	348	4	20.6	8.2	S	121	4	18.0	8.3	S	121	4	21.2	8.9	S	20	Y	8.5	Y
39-133-0002 531 WASHINGTON	116	4	16.5	7.3	S	113	4	17.9	7.4	S	103	3	14.4	7.1*	S	16	Y	7.3	Y
39-135-1001 6940 OXFORD GETTYSBURG RD.	346	4	19.8	8.7	S	114	4	16.0	7.3	S	119	4	15.9	7.5	S	17	Y	7.8	Y
39-145-0013 4862 GALLIA	115	4	15.9	7.1	S	96	3	16.8*	6.9 *	S	123	4	16.5	8.3	S	16	N	7.4	N
39-151-0017 1330 DUEBER	119	4	21.8	9.1	S	122	4	20.3	9.4	S	121	4	19.9	9.3	S	21	Y	9.3	Y
39-151-0020 420 MARKET	225	4	23.5	8.8	S	117	4	17.1	8.3	S	122	4	19.0	8.2	S	20	Y	8.4	Y
39-153-0017 80 BRITTAIN	360	4	20.0	8.8	S	362	4	18.2	8.4	S	365	4	21.6	9.7	S	20	Y	9.0	Y
39-153-0023 642 W. EXCHANGE ST.	118	4	18.4	7.7	S	115	4	18.7	8.0	S	114	4	15.9	7.8	S	18	Y	7.8	Y
39-155-0014 540 LAIRD AVE. S.E.	175	4	19.0	7.8	S	112	4	20.9	8.2	S	114	4	14.4	7.5	S	18	Y	7.8	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2019

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2019 Cred. Days	2019 Comp. Qrtrs	2019 98th Perctil	2019 Wtd. Mean	2019 Cert& Eval	2018 Cred. Days	2018 Comp. Qrtrs	2018 98th Perctil	2018 Wtd. Mean	2018 Cert& Eval	2017 Cred. Days	2017 Comp. Qrtrs	2017 98th Perctil	2017 Wtd. Mean	2017 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-003-0009 2650 BIBLE ROAD	328	4	17.0	7.4	Y	130	4	17.7	8.3	S	61	4	16.4	7.6	S	17	Y	7.8	Y
39-009-0003 S.R. 377 GIFFORD STATE FOREST	61	4	13.3	6.4	Y	61	4	13.7	6.7	S	59	4	12.2	6.3	S	13	Y	6.5	Y
39-013-0006 2 BALL PARK RD.	93	2	18.4	8.7*	Y	116	4	17.2	7.7	S	111	4	15.1	7.7	S	17	Y	8.0	Y
39-017-0015 3901 LEFFERSON	120	4	19.5	9.3	Y	121	4	19.6	9.4	S	116	4	18.3	9.3	S	19	Y	9.3	Y
39-017-0016 400 NILLES RD.	120	4	23.8	8.7	Y	122	4	18.7	8.7	S	119	4	17.7	8.5	S	20	Y	8.6	Y
39-017-0019 1200 OXFORD STATE ROAD	119	4	21.5	9.2	Y	122	4	18.7	8.8	S	122	4	17.9	8.7	S	19	Y	8.9	Y
39-017-0020 3350 YANKEE ROAD	120	4	23.9	11.9	Y	122	4	20.5	10.9	S	122	4	19.9	10.3	S	21	Y	11.0	Y
39-017-0022 3214 YANKEE RD.	120	4	25.6	10.8	Y	117	4	20.9	10.2	S	103	4	21.8	10.3	S	23	Y	10.4	Y
39-023-0005 350 N. FOUNTAIN AVE.	360	4	22.3	9.8	Y	327	4	24.3	9.6	S	120	4	19.7	8.1	S	22	Y	9.2	Y
39-035-0034 881 E. 152nd ST.	120	4	17.7	7.2	Y	119	4	20.2	7.9	S	120	4	18.2	7.8	S	19	Y	7.6	Y
39-035-0038 2547 ST TIKHON	123	4	20.6	9.1	Y	123	4	22.3	9.5	S	122	4	22.6	9.9	S	22	Y	9.5	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
PRELIMINARY DESIGN VALUE REPORT

Report Date: Aug. 19, 2024

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2019

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2019 Cred. Days	2019 Comp. Qrtrs	2019 98th Perctil	2019 Wtd. Mean	2019 Cert& Eval	2018 Cred. Days	2018 Comp. Qrtrs	2018 98th Perctil	2018 Wtd. Mean	2018 Cert& Eval	2017 Cred. Days	2017 Comp. Qrtrs	2017 98th Perctil	2017 Wtd. Mean	2017 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-035-0045 4950 BROADWAY AVE.	121	4	21.0	9.2	Y	121	4	23.5	9.5	S	117	4	20.7	9.8	S	22	Y	9.5	Y
39-035-0060 E. 14TH & ORANGE	351	4	24.4	10.2	Y	230	4	27.0	9.9	S	119	4	20.6	9.7	S	24	Y	9.9	Y
39-035-0065 4600 HARVARD AVE.	119	4	23.8	10.8	Y	120	4	22.1	11.1	S	120	4	26.5	11.2	S	24	Y	11.0	Y
39-035-0073 25609 EMERY ROAD	359	4	20.7	8.2	Y	128	4	20.0	7.9	S	91	3	14.2*	7.3*	S	18	N	7.8	N
39-035-1002 16900 HOLLAND RD.	120	4	19.2	7.4	Y	122	4	19.6	7.8	S	118	4	19.9	8.1	S	20	Y	7.8	Y
39-049-0024 STATE FAIRGROUNDS		0		*		99	3	18.2*	8.1 *	S	119	4	16.5	8.3	S	17	N	8.2	N
39-049-0034 KORBEL AVE.	113	4	20.4	8.8	Y	21	1	24.7*	9.9 *	S		0		*		23	N	9.3	N
39-049-0038 7560 SMOKY ROW RD.	360	4	21.0	9.7	Y	185	4	24.9	9.1	S	117	4	21.5	8.8	S	22	Y	9.2	Y
39-049-0039 580 E. WOODROW AVE.	64	2	22.3*	8.2*	S	121	4	19.3	8.6	S	119	4	15.9	8.2	S	19	N	8.3	N
39-049-0081 5750 MAPLE CANYON	118	4	22.1	8.7	Y	121	4	20.0	8.5	S	120	4	19.3	8.2	S	20	Y	8.5	Y
39-057-0005 100 DAYTON ST.		0		*		338	4	20.0	8.1	S	121	4	15.7	7.4	S	18	N	7.7	N

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2019

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

	2019					2018					2017					24-Hour		Annual	
Site_ID / STREET ADDRESS	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Design Value	Valid Ind.	Design Value	Valid Ind.
39-061-0006 11590 GROOMS RD	365	4	17.4	9.0	Y	363	4	19.6	9.3	S	361	4	18.6	8.8	S	19	Y	9.0	Y
39-061-0010 6950 RIPPLE RD.		0		*			0		*		121	4	18.6	8.2	S	19	N	8.2	N
39-061-0014 SEYMOUR & VINE ST.	299	4	23.6	9.2	Y	117	4	18.8	9.4	S	115	4	21.5	9.5	S	21	Y	9.4	Y
39-061-0040 250 WM. HOWARD TAFT	364	4	19.4	9.5	Y	359	4	21.8	9.8	S	317	4	19.2	8.8	S	20	Y	9.4	Y
39-061-0042 2101 W. 8TH ST.	118	4	18.6	8.7	Y	120	4	22.4	9.2	S	120	4	18.5	8.8	S	20	Y	8.9	Y
39-061-0048 3428 COLERAIN AVE.	350	4	24.8	11.9	Y	317	4	24.4	12.4	S	361	4	21.7	10.9	S	24	Y	11.8	Y
39-067-0004 45600 JEWETT HOPEDALE RD.		0		*		20	1	13.2*	7.3 *	S		0		*		13	N	7.3	N
39-067-0005 46700 JEWETT HOPEDALE RD.	57	4	13.9	7.6	Y	20	1	16.4*	6.5 *	S		0		*		15	N	7.1	N
39-081-0017 618 LOGAN ST.	114	4	21.1	9.0	Y	116	4	19.3	8.7	S	119	4	21.9	8.9	S	21	Y	8.8	Y
39-081-0021 110 STEUBEN ST.		0		*		86	3	19.7*	8.8 *	S	112	4	16.5	8.2	S	18	N	8.5	N
39-085-0007 177 MAIN STREET	120	4	14.5	6.5	Y	118	4	18.5	7.0	S	118	4	15.6	7.2	S	16	Y	6.9	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Report Date: Aug. 19, 2024

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2019

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

	2019					2018					2017					24-Hour		Annual	
Site_ID / STREET ADDRESS	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Design Value	Valid Ind.	Design Value	Valid Ind.
39-087-0012 450 Commerce Drive	115	4	12.8	6.7	Y	113	4	14.0	6.4	S	113	4	17.4	6.6	S	15	Y	6.6	Y
39-093-3002 2180 LAKE BREEZE	359	4	19.6	7.2	Y	184	4	19.6	7.8	S	117	4	17.2	7.6	S	19	Y	7.5	Y
39-095-0024 348 S. ERIE	120	4	20.7	8.1	Y	119	4	21.0	8.6	S	122	4	19.9	8.3	S	21	Y	8.3	Y
39-095-0026 4150 AIRPORT HIGHWAY	111	4	20.1	7.7	Y	114	4	18.9	8.0	S	116	4	18.5	8.1	S	19	Y	7.9	Y
39-095-0028 3040 YORK ST.		0		*			0		*		28	1	33.8*	10.2*	S	34	N	10.2	N
39-095-1003 163 LEE ST.	116	4	25.3	8.8	Y	117	4	21.5	8.9	S	89	3	19.4*	8.5*	S	22	N	8.7	N
39-099-0005 145 MADISON AVE.	54	4	18.5	7.4	Y	46	3	19.8*	8.5 *	S	61	4	17.3	8.0	S	19	N	8.0	N
39-099-0014 345 OAKHILL AVE.	110	4	18.4	8.3	Y	109	4	16.8	7.8	S	116	4	17.8	7.9	S	18	Y	8.0	Y
39-103-0004 BALLASH ROAD	350	4	20.2	8.1	Y	248	4	17.0	7.5	S	111	4	18.9	7.8	S	19	Y	7.8	Y
39-113-0038 113 Saint Mary Street	365	4	20.7	9.0	Y	348	4	20.6	8.2	S	121	4	18.0	8.3	S	20	Y	8.5	Y
39-133-0002 531 WASHINGTON	105	3	18.4	7.6*	Y	116	4	16.5	7.3	S	113	4	17.9	7.4	S	18	Y	7.4	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2019

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2019 Cred. Days	2019 Comp. Qrtrs	2019 98th Perctil	2019 Wtd. Mean	2019 Cert& Eval	2018 Cred. Days	2018 Comp. Qrtrs	2018 98th Perctil	2018 Wtd. Mean	2018 Cert& Eval	2017 Cred. Days	2017 Comp. Qrtrs	2017 98th Perctil	2017 Wtd. Mean	2017 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-135-1001 6940 OXFORD GETTYSBURG RD.	351	4	16.7	8.3	Y	346	4	19.8	8.7	S	114	4	16.0	7.3	S	18	Y	8.1	Y
39-145-0013 4862 GALLIA	112	4	13.3	6.7	Y	115	4	15.9	7.1	S	96	3	16.8*	6.9*	S	15	N	6.9	N
39-151-0017 1330 DUEBER	121	4	19.4	9.3	Y	119	4	21.8	9.1	S	122	4	20.3	9.4	S	21	Y	9.3	Y
39-151-0020 420 MARKET	346	4	22.4	9.6	Y	225	4	23.5	8.8	S	117	4	17.1	8.3	S	21	Y	8.9	Y
39-153-0017 80 BRITTAIN	360	4	21.3	8.7	Y	360	4	20.0	8.8	S	362	4	18.2	8.4	S	20	Y	8.6	Y
39-153-0023 642 W. EXCHANGE ST.	120	4	22.3	8.1	Y	118	4	18.4	7.7	S	115	4	18.7	8.0	S	20	Y	7.9	Y
39-155-0014 540 LAIRD AVE. S.E.	362	4	17.6	7.2	Y	175	4	19.0	7.8	S	112	4	20.9	8.2	S	19	Y	7.7	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2020

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2020 Cred. Days	2020 Comp. Qrtrs	2020 98th Perctil	2020 Wtd. Mean	2020 Cert& Eval	2019 Cred. Days	2019 Comp. Qrtrs	2019 98th Perctil	2019 Wtd. Mean	2019 Cert& Eval	2018 Cred. Days	2018 Comp. Qrtrs	2018 98th Perctil	2018 Wtd. Mean	2018 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-003-0009 2650 BIBLE ROAD	356	4	13.1	5.4	Y	328	4	17.0	7.4	Y	130	4	17.7	8.3	S	16	Y	7.0	Y
39-009-0003 S.R. 377 GIFFORD STATE FOREST	58	2	14.1	6.1*	N	61	4	13.3	6.4	Y	61	4	13.7	6.7	S	14	Y	6.4	Y
39-013-0006 2 BALL PARK RD.	92	3	16.9*	7.1*	Y	93	2	18.4*	8.7 *	Y	116	4	17.2	7.7	S	18	N	7.8	N
39-017-0015 3901 LEFFERSON	102	3	18.6*	8.9*	N	120	4	19.5	9.3	Y	121	4	19.6	9.4	S	19	N	9.2	Y
39-017-0016 400 NILLES RD.	103	3	17.4*	8.1*	N	120	4	23.8	8.7	Y	122	4	18.7	8.7	S	20	N	8.5	N
39-017-0019 1200 OXFORD STATE ROAD	103	3	20.7*	8.4*	N	119	4	21.5	9.2	Y	122	4	18.7	8.8	S	20	N	8.8	N
39-017-0020 3350 YANKEE ROAD	102	4	22.2*	10.4	N	120	4	23.9	11.9	Y	122	4	20.5	10.9	S	22	N	11.1	Y
39-017-0022 3214 YANKEE RD.	98	4	26.2*	9.8	N	120	4	25.6	10.8	Y	117	4	20.9	10.2	S	24	N	10.2	Y
39-023-0005 350 N. FOUNTAIN AVE.	341	4	16.5	7.4	N	360	4	22.3	9.8	Y	327	4	24.3	9.6	S	21	Y	8.9	Y
39-035-0034 881 E. 152nd ST.	109	3	15.1	6.8*	N	120	4	17.7	7.2	Y	119	4	20.2	7.9	S	18	Y	7.3	Y
39-035-0038 2547 ST TIKHON	102	3	25.1*	8.8*	Y	123	4	20.6	9.1	Y	123	4	22.3	9.5	S	23	N	9.1	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2020

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2020 Cred. Days	2020 Comp. Qrtrs	2020 98th Perctil	2020 Wtd. Mean	2020 Cert& Eval	2019 Cred. Days	2019 Comp. Qrtrs	2019 98th Perctil	2019 Wtd. Mean	2019 Cert& Eval	2018 Cred. Days	2018 Comp. Qrtrs	2018 98th Perctil	2018 Wtd. Mean	2018 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-035-0045 4950 BROADWAY AVE.	102	3	16.7*	8.8*	N	121	4	21.0	9.2	Y	121	4	23.5	9.5	S	20	N	9.2	Y
39-035-0060 E. 14TH & ORANGE	347	4	22.2	7.9	N	351	4	24.4	10.2	Y	230	4	27.0	9.9	S	25	Y	9.3	Y
39-035-0065 4600 HARVARD AVE.	102	4	26.9*	10.4	N	119	4	23.8	10.8	Y	120	4	22.1	11.1	S	24	N	10.8	Y
39-035-0073 25609 EMERY ROAD	352	4	18.3	8.4	N	359	4	20.7	8.2	Y	128	4	20.0	7.9	S	20	Y	8.2	Y
39-035-1002 16900 HOLLAND RD.	44	1	17.8*	5.9*	N	120	4	19.2	7.4	Y	122	4	19.6	7.8	S	19	N	7.0	N
39-049-0024 STATE FAIRGROUNDS		0		*			0		*		99	3	18.2*	8.1*	S	18	N	8.1	N
39-049-0034 KORBEL AVE.	95	3	19.7*	7.7*	N	113	4	20.4	8.8	Y	21	1	24.7*	9.9*	S	22	N	8.8	N
39-049-0038 7560 SMOKY ROW RD.	357	4	17.7	7.8	Y	360	4	21.0	9.7	Y	185	4	24.9	9.1	S	21	Y	8.8	Y
39-049-0039 580 E. WOODROW AVE.		0		*		64	2	22.3*	8.2 *	S	121	4	19.3	8.6	S	21	N	8.4	N
39-049-0081 5750 MAPLE CANYON	90	3	20.2*	8.2*	N	118	4	22.1	8.7	Y	121	4	20.0	8.5	S	21	N	8.5	N
39-057-0005 100 DAYTON ST.		0		*			0		*		338	4	20.0	8.1	S	20	N	8.1	N

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2020

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2020 Cred. Days	2020 Comp. Qrtrs	2020 98th Perctil	2020 Wtd. Mean	2020 Cert& Eval	2019 Cred. Days	2019 Comp. Qrtrs	2019 98th Perctil	2019 Wtd. Mean	2019 Cert& Eval	2018 Cred. Days	2018 Comp. Qrtrs	2018 98th Perctil	2018 Wtd. Mean	2018 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-061-0006 11590 GROOMS RD	360	4	18.3	8.7	N	365	4	17.4	9.0	Y	363	4	19.6	9.3	S	18	Y	9.0	Y
39-061-0014 SEYMOUR & VINE ST.	366	4	23.7	9.9	N	299	4	23.6	9.2	Y	117	4	18.8	9.4	S	22	Y	9.5	Y
39-061-0040 250 WM. HOWARD TAFT	356	4	18.5	8.6	N	364	4	19.4	9.5	Y	359	4	21.8	9.8	S	20	Y	9.3	Y
39-061-0042 2101 W. 8TH ST.	366	4	20.0	8.7	N	118	4	18.6	8.7	Y	120	4	22.4	9.2	S	20	Y	8.9	Y
39-061-0048 3428 COLERAIN AVE.	365	4	21.3	10.3	N	350	4	24.8	11.9	Y	317	4	24.4	12.4	S	24	Y	11.6	Y
39-067-0004 45600 JEWETT HOPEDALE RD.		0		*			0		*		20	1	13.2*	7.3*	S	13	N	7.3	N
39-067-0005 46700 JEWETT HOPEDALE RD.	43	2	11.8*	6.5*	N	57	4	13.9	7.6	Y	20	1	16.4*	6.5*	S	14	N	6.9	N
39-081-0017 618 LOGAN ST.	96	3	23.3*	8.9*	N	114	4	21.1	9.0	Y	116	4	19.3	8.7	S	21	N	8.8	N
39-081-0021 110 STEUBEN ST.		0		*			0		*		86	3	19.7*	8.8*	S	20	N	8.8	N
39-085-0007 177 MAIN STREET	109	4	15.7	6.2	N	120	4	14.5	6.5	Y	118	4	18.5	7.0	S	16	Y	6.6	Y
39-087-0012 450 Commerce Drive	210	2	17.6	7.3*	N	115	4	12.8	6.7	Y	113	4	14.0	6.4	S	15	Y	6.8	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2020

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2020 Cred. Days	2020 Comp. Qrtrs	2020 98th Perctil	2020 Wtd. Mean	2020 Cert& Eval	2019 Cred. Days	2019 Comp. Qrtrs	2019 98th Perctil	2019 Wtd. Mean	2019 Cert& Eval	2018 Cred. Days	2018 Comp. Qrtrs	2018 98th Perctil	2018 Wtd. Mean	2018 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-093-3002 2180 LAKE BREEZE	358	4	15.3	6.7	Y	359	4	19.6	7.2	Y	184	4	19.6	7.8	S	18	Y	7.2	Y
39-095-0024 348 S. ERIE	98	3	21.4*	7.9*	N	120	4	20.7	8.1	Y	119	4	21.0	8.6	S	21	N	8.2	N
39-095-0026 4150 AIRPORT HIGHWAY	98	3	20.3*	7.3*	Y	111	4	20.1	7.7	Y	114	4	18.9	8.0	S	20	N	7.7	N
39-095-1003 163 LEE ST.	87	4	22.2*	9.5	N	116	4	25.3	8.8	Y	117	4	21.5	8.9	S	23	N	9.1	Y
39-099-0005 145 MADISON AVE.		0		*		54	4	18.5	7.4	Y	46	3	19.8*	8.5*	S	19	N	8.0	N
39-099-0014 345 OAKHILL AVE.	97	3	23.8*	7.9*	Y	110	4	18.4	8.3	Y	109	4	16.8	7.8	S	20	N	8.0	N
39-103-0004 BALLASH ROAD	357	4	15.6	6.5	Y	350	4	20.2	8.1	Y	248	4	17.0	7.5	S	18	Y	7.3	Y
39-113-0038 113 Saint Mary Street	327	4	20.4	9.0	N	365	4	20.7	9.0	Y	348	4	20.6	8.2	S	21	Y	8.8	Y
39-133-0002 531 WASHINGTON	44	1	15.7*	6.9*	N	105	3	18.4*	7.6 *	Y	116	4	16.5	7.3	S	17	N	7.3	N
39-135-1001 6940 OXFORD GETTYSBURG RD.	327	4	15.4	7.4	N	351	4	16.7	8.3	Y	346	4	19.8	8.7	S	17	Y	8.1	Y
39-145-0013 4862 GALLIA	97	2	14.3*	6.6*	N	112	4	13.3	6.7	Y	115	4	15.9	7.1	S	15	N	6.8	N

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2020

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

	2020					2019					2018					24-Hour		Annual	
Site_ID / STREET ADDRESS	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Design Value	Valid Ind.	Design Value	Valid Ind.
39-145-0015 1526 Haverhill-Ohio Furnace Rd.	19	1	15.3*	6.8*	Y		0		*			0		*		15	N	6.8	N
39-151-0017 1330 DUEBER	52	1	17.0*	8.3*	N	121	4	19.4	9.3	Y	119	4	21.8	9.1	S	19	N	8.9	N
39-151-0020 420 MARKET	358	4	19.7	8.7	Y	346	4	22.4	9.6	Y	225	4	23.5	8.8	S	22	Y	9.0	Y
39-153-0017 80 BRITTAIN	355	4	19.2	8.8	Y	360	4	21.3	8.7	Y	360	4	20.0	8.8	S	20	Y	8.8	Y
39-153-0023 642 W. EXCHANGE ST.	95	3	25.1*	7.5*	Y	120	4	22.3	8.1	Y	118	4	18.4	7.7	S	22	N	7.8	N
39-155-0014 540 LAIRD AVE. S.E.	347	4	18.4	6.2	N	362	4	17.6	7.2	Y	175	4	19.0	7.8	S	18	Y	7.1	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2021

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2021 Cred. Days	2021 Comp. Qrtrs	2021 98th Perctil	2021 Wtd. Mean	2021 Cert& Eval	2020 Cred. Days	2020 Comp. Qrtrs	2020 98th Perctil	2020 Wtd. Mean	2020 Cert& Eval	2019 Cred. Days	2019 Comp. Qrtrs	2019 98th Perctil	2019 Wtd. Mean	2019 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-003-0009 2650 BIBLE ROAD	358	4	16.8	6.9	Y	356	4	13.1	5.4	Y	328	4	17.0	7.4	Y	16	Y	6.6	Y
39-009-0003 S.R. 377 GIFFORD STATE FOREST	110	4	17.3	6.2	Y	58	2	14.1	6.1 *	N	61	4	13.3	6.4	Y	15	Y	6.2	Y
39-013-0006 2 BALL PARK RD.	119	4	21.1	8.1	Y	92	3	16.9*	7.1 *	Y	93	2	18.4*	8.7*	Y	19	N	8.0	N
39-017-0015 3901 LEFFERSON	122	4	22.7	9.8	Y	102	3	18.6*	8.9 *	N	120	4	19.5	9.3	Y	20	N	9.3	Y
39-017-0016 400 NILLES RD.	122	4	20.9	8.8	Y	103	3	17.4*	8.1 *	N	120	4	23.8	8.7	Y	21	N	8.5	N
39-017-0019 1200 OXFORD STATE ROAD	121	4	20.8	9.4	Y	103	3	20.7*	8.4 *	N	119	4	21.5	9.2	Y	21	N	9.0	N
39-017-0020 3350 YANKEE ROAD	348	4	26.0	11.6	Y	102	4	22.2*	10.4	N	120	4	23.9	11.9	Y	24	N	11.3	Y
39-017-0022 3214 YANKEE RD.	118	4	23.1	11.0	Y	98	4	26.2*	9.8	N	120	4	25.6	10.8	Y	25	N	10.5	Y
39-023-0005 350 N. FOUNTAIN AVE.	362	4	21.7	9.1	Y	341	4	16.5	7.4	N	360	4	22.3	9.8	Y	20	Y	8.8	Y
39-035-0034 881 E. 152nd ST.	119	4	19.7	7.5	Y	109	3	15.1	6.8 *	N	120	4	17.7	7.2	Y	18	Y	7.1	Y
39-035-0038 2547 ST TIKHON	308	4	22.3	9.8	Y	102	3	25.1*	8.8 *	Y	123	4	20.6	9.1	Y	23	N	9.2	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
PRELIMINARY DESIGN VALUE REPORT

Report Date: Aug. 19, 2024

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2021

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2021 Cred. Days	2021 Comp. Qrtrs	2021 98th Perctil	2021 Wtd. Mean	2021 Cert& Eval	2020 Cred. Days	2020 Comp. Qrtrs	2020 98th Perctil	2020 Wtd. Mean	2020 Cert& Eval	2019 Cred. Days	2019 Comp. Qrtrs	2019 98th Perctil	2019 Wtd. Mean	2019 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-035-0045 4950 BROADWAY AVE.	120	4	20.9	9.9	Y	102	3	16.7*	8.8 *	N	121	4	21.0	9.2	Y	20	N	9.3	Y
39-035-0060 E. 14TH & ORANGE	357	4	23.4	9.7	Y	347	4	22.2	7.9	N	351	4	24.4	10.2	Y	23	Y	9.3	Y
39-035-0065 4600 HARVARD AVE.	121	4	28.7	12.7	Y	102	4	26.9*	10.4	N	119	4	23.8	10.8	Y	26	N	11.3	Y
39-035-0073 25609 EMERY ROAD	355	4	20.9	8.8	Y	352	4	18.3	8.4	N	359	4	20.7	8.2	Y	20	Y	8.5	Y
39-035-1002 16900 HOLLAND RD.	93	3	15.1*	7.5*	Y	44	1	17.8*	5.9 *	N	120	4	19.2	7.4	Y	17	N	6.9	N
39-049-0034 KORBEL AVE.	121	4	19.4	9.1	Y	95	3	19.7*	7.7 *	N	113	4	20.4	8.8	Y	20	N	8.5	N
39-049-0038 7560 SMOKY ROW RD.	365	4	23.8	9.3	Y	357	4	17.7	7.8	Y	360	4	21.0	9.7	Y	21	Y	8.9	Y
39-049-0039 580 E. WOODROW AVE.		0		*			0		*		64	2	22.3*	8.2*	S	22	N	8.2	N
39-049-0081 5750 MAPLE CANYON	122	4	20.1	9.0	Y	90	3	20.2*	8.2 *	N	118	4	22.1	8.7	Y	21	N	8.7	N
39-061-0006 11590 GROOMS RD	348	4	22.7	10.2	Y	360	4	18.3	8.7	N	365	4	17.4	9.0	Y	19	Y	9.3	Y
39-061-0014 SEYMOUR & VINE ST.	362	4	23.2	10.0	Y	366	4	23.7	9.9	N	299	4	23.6	9.2	Y	24	Y	9.7	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2021

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2021 Cred. Days	2021 Comp. Qrtrs	2021 98th Perctil	2021 Wtd. Mean	2021 Cert& Eval	2020 Cred. Days	2020 Comp. Qrtrs	2020 98th Perctil	2020 Wtd. Mean	2020 Cert& Eval	2019 Cred. Days	2019 Comp. Qrtrs	2019 98th Perctil	2019 Wtd. Mean	2019 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-061-0040 250 WM. HOWARD TAFT	352	4	23.3	9.1	Y	356	4	18.5	8.6	N	364	4	19.4	9.5	Y	20	Y	9.1	Y
39-061-0042 2101 W. 8TH ST.	365	4	22.4	9.8	Y	366	4	20.0	8.7	N	118	4	18.6	8.7	Y	20	Y	9.1	Y
39-061-0048 3428 COLERAIN AVE.	350	4	25.1	10.8	Y	365	4	21.3	10.3	N	350	4	24.8	11.9	Y	24	Y	11.0	Y
39-067-0005 46700 JEWETT HOPEDALE RD.	54	4	17.4	7.9	Y	43	2	11.8*	6.5 *	N	57	4	13.9	7.6	Y	14	N	7.3	N
39-081-0017 618 LOGAN ST.	339	4	29.7	11.1	Y	96	3	23.3*	8.9 *	N	114	4	21.1	9.0	Y	25	N	9.7	Y
39-085-0007 177 MAIN STREET	120	4	15.7	6.9	Y	109	4	15.7	6.2	N	120	4	14.5	6.5	Y	15	Y	6.5	Y
39-087-0012 450 Commerce Drive	360	4	21.4	8.2	Y	210	2	17.6	7.3 *	N	115	4	12.8	6.7	Y	17	Y	7.4	Y
39-093-3002 2180 LAKE BREEZE	263	3	17.2*	7.6*	Y	358	4	15.3	6.7	Y	359	4	19.6	7.2	Y	17	N	7.2	N
39-095-0024 348 S. ERIE	115	4	20.8	8.6	Y	98	3	21.4*	7.9 *	N	120	4	20.7	8.1	Y	21	N	8.2	N
39-095-0026 4150 AIRPORT HIGHWAY	117	4	19.9	8.4	Y	98	3	20.3*	7.3 *	Y	111	4	20.1	7.7	Y	20	N	7.8	N
39-095-1003 163 LEE ST.	114	4	21.5	8.9	Y	87	4	22.2*	9.5	N	116	4	25.3	8.8	Y	23	N	9.1	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2021

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2021 Cred. Days	2021 Comp. Qrtrs	2021 98th Perctil	2021 Wtd. Mean	2021 Cert& Eval	2020 Cred. Days	2020 Comp. Qrtrs	2020 98th Perctil	2020 Wtd. Mean	2020 Cert& Eval	2019 Cred. Days	2019 Comp. Qrtrs	2019 98th Perctil	2019 Wtd. Mean	2019 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-099-0005 145 MADISON AVE.		0		*			0		*		54	4	18.5	7.4	Y	19	N	7.4	N
39-099-0014 345 OAKHILL AVE.	94	3	22.5*	8.8*	Y	97	3	23.8*	7.9 *	Y	110	4	18.4	8.3	Y	22	N	8.3	N
39-099-0015 91 Wick Oval Street	79	1	17.7*	7.7*	Y		0		*			0		*		18	N	7.7	N
39-103-0004 BALLASH ROAD	361	4	16.9	6.9	Y	357	4	15.6	6.5	Y	350	4	20.2	8.1	Y	18	Y	7.2	Y
39-113-0038 113 Saint Mary Street	356	4	22.0	9.3	Y	327	4	20.4	9.0	N	365	4	20.7	9.0	Y	21	Y	9.1	Y
39-133-0002 531 WASHINGTON	70	2	13.9*	7.3*	N	44	1	15.7*	6.9 *	N	105	3	18.4*	7.6*	Y	16	N	7.3	N
39-135-1001 6940 OXFORD GETTYSBURG RD.	365	4	20.2	7.9	Y	327	4	15.4	7.4	N	351	4	16.7	8.3	Y	17	Y	7.9	Y
39-145-0013 4862 GALLIA	121	4	15.0	7.1	Y	97	2	14.3*	6.6 *	N	112	4	13.3	6.7	Y	14	N	6.8	N
39-145-0015 1526 Haverhill-Ohio Furnace Rd.	56	4	16.3	7.1	Y	19	1	15.3*	6.8 *	Y		0		*		16	N	6.9	N
39-151-0017 1330 DUEBER	101	3	20.9*	9.4*	Y	52	1	17.0*	8.3 *	N	121	4	19.4	9.3	Y	19	N	9.0	N
39-151-0020 420 MARKET	365	4	23.5	9.4	Y	358	4	19.7	8.7	Y	346	4	22.4	9.6	Y	22	Y	9.2	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2021

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2021 Cred. Days	2021 Comp. Qrtrs	2021 98th Perctil	2021 Wtd. Mean	2021 Cert& Eval	2020 Cred. Days	2020 Comp. Qrtrs	2020 98th Perctil	2020 Wtd. Mean	2020 Cert& Eval	2019 Cred. Days	2019 Comp. Qrtrs	2019 98th Perctil	2019 Wtd. Mean	2019 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-153-0017 80 BRITTAIN	346	4	22.8	8.6	Y	355	4	19.2	8.8	Y	360	4	21.3	8.7	Y	21	Y	8.7	Y
39-153-0023 642 W. EXCHANGE ST.	111	4	20.2	8.7	Y	95	3	25.1*	7.5 *	Y	120	4	22.3	8.1	Y	23	N	8.1	N
39-155-0014 540 LAIRD AVE. S.E.	359	4	22.5	8.7	Y	347	4	18.4	6.2	N	362	4	17.6	7.2	Y	20	Y	7.4	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2022

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2022 Cred. Days	2022 Comp. Qrtrs	2022 98th Perctil	2022 Wtd. Mean	2022 Cert& Eval	2021 Cred. Days	2021 Comp. Qrtrs	2021 98th Perctil	2021 Wtd. Mean	2021 Cert& Eval	2020 Cred. Days	2020 Comp. Qrtrs	2020 98th Perctil	2020 Wtd. Mean	2020 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-003-0009 2650 BIBLE ROAD	358	4	16.5	7.1	Y	358	4	16.8	6.9	Y	356	4	13.1	5.4	Y	15	Y	6.4	Y
39-009-0003 S.R. 377 GIFFORD STATE FOREST	119	4	12.5	5.5	Y	110	4	17.3	6.2	Y	58	2	14.1	6.1*	N	15	Y	5.9	Y
39-013-0006 2 BALL PARK RD.	111	4	14.6	6.7	Y	119	4	21.1	8.1	Y	92	3	16.9*	7.1*	Y	18	N	7.3	N
39-017-0015 3901 LEFFERSON	120	4	19.0	8.4	Y	122	4	22.7	9.8	Y	102	3	18.6*	8.9*	N	20	N	9.0	N
39-017-0016 400 NILLES RD.	119	4	19.9	7.8	Y	122	4	20.9	8.8	Y	103	3	17.4*	8.1*	N	19	N	8.2	N
39-017-0019 1200 OXFORD STATE ROAD	285	4	19.1	8.0	Y	121	4	20.8	9.4	Y	103	3	20.7*	8.4*	N	20	N	8.6	N
39-017-0020 3350 YANKEE ROAD	362	4	21.3	9.9	Y	348	4	26.0	11.6	Y	102	4	22.2*	10.4	N	23	N	10.7	Y
39-017-0022 3214 YANKEE RD.	121	4	20.5	9.5	Y	118	4	23.1	11.0	Y	98	4	26.2*	9.8	N	23	N	10.1	Y
39-023-0005 350 N. FOUNTAIN AVE.	338	4	16.2	7.5	Y	362	4	21.7	9.1	Y	341	4	16.5	7.4	N	18	Y	8.0	Y
39-035-0034 881 E. 152nd ST.	118	4	15.2	6.7	Y	119	4	19.7	7.5	Y	109	3	15.1	6.8*	N	17	Y	7.0	Y
39-035-0038 2547 ST TIKHON	361	4	23.1	8.9	Y	308	4	22.3	9.8	Y	102	3	25.1*	8.8*	Y	24	N	9.2	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2022

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2022 Cred. Days	2022 Comp. Qrtrs	2022 98th Perctil	2022 Wtd. Mean	2022 Cert& Eval	2021 Cred. Days	2021 Comp. Qrtrs	2021 98th Perctil	2021 Wtd. Mean	2021 Cert& Eval	2020 Cred. Days	2020 Comp. Qrtrs	2020 98th Perctil	2020 Wtd. Mean	2020 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-035-0045 4950 BROADWAY AVE.	122	4	17.6	8.2	Y	120	4	20.9	9.9	Y	102	3	16.7*	8.8*	N	18	N	9.0	N
39-035-0060 E. 14TH & ORANGE	360	4	23.4	8.8	Y	357	4	23.4	9.7	Y	347	4	22.2	7.9	N	23	Y	8.8	Y
39-035-0065 4600 HARVARD AVE.	122	4	27.4	11.0	Y	121	4	28.7	12.7	Y	102	4	26.9*	10.4	N	28	N	11.4	Y
39-035-0073 25609 EMERY ROAD	361	4	19.2	7.6	Y	355	4	20.9	8.8	Y	352	4	18.3	8.4	N	19	Y	8.2	Y
39-035-1002 16900 HOLLAND RD.	119	4	15.5	6.5	Y	93	3	15.1*	7.5 *	Y	44	1	17.8*	5.9*	N	16	N	6.6	N
39-049-0034 KORBEL AVE.	122	4	17.3	7.7	Y	121	4	19.4	9.1	Y	95	3	19.7*	7.7*	N	19	N	8.2	N
39-049-0038 7560 SMOKY ROW RD.	364	4	19.9	7.9	Y	365	4	23.8	9.3	Y	357	4	17.7	7.8	Y	20	Y	8.3	Y
39-049-0040 2104 Jackson Pike	72	2	18.6*	8.7*	Y		0		*			0		*		19	N	8.7	N
39-049-0081 5750 MAPLE CANYON	122	4	17.4	7.3	Y	122	4	20.1	9.0	Y	90	3	20.2*	8.2*	N	19	N	8.2	N
39-061-0006 11590 GROOMS RD	340	4	18.2	8.6	Y	348	4	22.7	10.2	Y	360	4	18.3	8.7	N	20	Y	9.2	Y
39-061-0014 SEYMOUR & VINE ST.	363	4	18.8	8.7	Y	362	4	23.2	10.0	Y	366	4	23.7	9.9	N	22	Y	9.5	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2022

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2022					2021					2020					24-Hour		Annual	
	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Design Value	Valid Ind.	Design Value	Valid Ind.
39-061-0040 250 WM. HOWARD TAFT	364	4	17.4	7.6	Y	352	4	23.3	9.1	Y	356	4	18.5	8.6	N	20	Y	8.5	Y
39-061-0042 2101 W. 8TH ST.	365	4	18.5	8.1	Y	365	4	22.4	9.8	Y	366	4	20.0	8.7	N	20	Y	8.9	Y
39-061-0048 3428 COLERAIN AVE.	353	4	19.8	9.7	Y	350	4	25.1	10.8	Y	365	4	21.3	10.3	N	22	Y	10.3	Y
39-067-0005 46700 JEWETT HOPEDALE RD.	40	3	19.9*	7.0*	N	54	4	17.4	7.9	Y	43	2	11.8*	6.5*	N	16	N	7.1	N
39-081-0017 618 LOGAN ST.	361	4	20.7	9.1	Y	339	4	29.7	11.1	Y	96	3	23.3*	8.9*	N	25	N	9.7	Y
39-085-0007 177 MAIN STREET	119	4	15.1	6.2	Y	120	4	15.7	6.9	Y	109	4	15.7	6.2	N	16	Y	6.4	Y
39-087-0012 450 Commerce Drive	361	4	14.8	7.1	Y	360	4	21.4	8.2	Y	210	2	17.6	7.3*	N	18	Y	7.5	Y
39-093-3002 2180 LAKE BREEZE		0		*		263	3	17.2*	7.6 *	Y	358	4	15.3	6.7	Y	16	N	7.2	N
39-095-0024 348 S. ERIE	90	2	16.5*	6.6*	Y	115	4	20.8	8.6	Y	98	3	21.4*	7.9*	N	20	N	7.7	N
39-095-0026 4150 AIRPORT HIGHWAY	117	4	18.3	6.9	Y	117	4	19.9	8.4	Y	98	3	20.3*	7.3*	Y	20	N	7.5	N
39-095-1003 163 LEE ST.	113	4	23.5	8.7	Y	114	4	21.5	8.9	Y	87	4	22.2*	9.5	N	22	N	9.1	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2022

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2022 Cred. Days	2022 Comp. Qrtrs	2022 98th Perctil	2022 Wtd. Mean	2022 Cert& Eval	2021 Cred. Days	2021 Comp. Qrtrs	2021 98th Perctil	2021 Wtd. Mean	2021 Cert& Eval	2020 Cred. Days	2020 Comp. Qrtrs	2020 98th Perctil	2020 Wtd. Mean	2020 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-099-0014 345 OAKHILL AVE.		0		*		94	3	22.5*	8.8 *	Y	97	3	23.8*	7.9*	Y	23	N	8.3	N
39-099-0015 91 Wick Oval Street	348	4	17.1	7.8	Y	79	1	17.7*	7.7 *	Y		0		*		17	N	7.8	N
39-103-0004 BALLASH ROAD	350	4	17.7	6.3	Y	361	4	16.9	6.9	Y	357	4	15.6	6.5	Y	17	Y	6.6	Y
39-113-0038 113 Saint Mary Street	365	4	18.1	7.9	Y	356	4	22.0	9.3	Y	327	4	20.4	9.0	N	20	Y	8.8	Y
39-133-0002 531 WASHINGTON	120	4	16.6	6.4	Y	70	2	13.9*	7.3 *	N	44	1	15.7*	6.9*	N	15	N	6.9	N
39-135-1001 6940 OXFORD GETTYSBURG RD.	353	4	15.8	7.1	Y	365	4	20.2	7.9	Y	327	4	15.4	7.4	N	17	Y	7.5	Y
39-145-0013 4862 GALLIA	117	4	16.7	6.8	Y	121	4	15.0	7.1	Y	97	2	14.3*	6.6*	N	15	N	6.8	N
39-145-0015 1526 Haverhill-Ohio Furnace Rd.	57	4	15.3	7.1	Y	56	4	16.3	7.1	Y	19	1	15.3*	6.8*	Y	16	N	7.0	N
39-151-0017 1330 DUEBER	121	4	19.5	8.2	Y	101	3	20.9*	9.4 *	Y	52	1	17.0*	8.3*	N	19	N	8.6	N
39-151-0020 420 MARKET	365	4	21.1	7.9	Y	365	4	23.5	9.4	Y	358	4	19.7	8.7	Y	21	Y	8.6	Y
39-153-0017 80 BRITTAIN	359	4	18.8	7.9	Y	346	4	22.8	8.6	Y	355	4	19.2	8.8	Y	20	Y	8.4	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Report Date: Aug. 19, 2024

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2022

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2022 Cred. Days	2022 Comp. Qrtrs	2022 98th Perctil	2022 Wtd. Mean	2022 Cert& Eval	2021 Cred. Days	2021 Comp. Qrtrs	2021 98th Perctil	2021 Wtd. Mean	2021 Cert& Eval	2020 Cred. Days	2020 Comp. Qrtrs	2020 98th Perctil	2020 Wtd. Mean	2020 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-153-0023 642 W. EXCHANGE ST.	116	4	15.5	6.8	Y	111	4	20.2	8.7	Y	95	3	25.1*	7.5*	Y	20	N	7.7	N
39-155-0014 540 LAIRD AVE. S.E.	354	4	16.6	7.3	Y	359	4	22.5	8.7	Y	347	4	18.4	6.2	N	19	Y	7.4	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2023

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2023 Cred. Days	2023 Comp. Qrtrs	2023 98th Perctil	2023 Wtd. Mean	2023 Cert& Eval	2022 Cred. Days	2022 Comp. Qrtrs	2022 98th Perctil	2022 Wtd. Mean	2022 Cert& Eval	2021 Cred. Days	2021 Comp. Qrtrs	2021 98th Perctil	2021 Wtd. Mean	2021 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-003-0009	358	4	35.0	8.5	S	358	4	16.5	7.1	Y	358	4	16.8	6.9	Y	23	Y	7.5	Y
2650 BIBLE ROAD																			
39-009-0003	244	4	18.8	6.8	S	119	4	12.5	5.5	Y	110	4	17.3	6.2	Y	16	Y	6.1	Y
S.R. 377 GIFFORD STATE FOREST																			
39-013-0006	244	4	19.5	8.5	S	111	4	14.6	6.7	Y	119	4	21.1	8.1	Y	18	Y	7.8	Y
2 BALL PARK RD.																			
39-017-0015	294	4	38.6	10.5	S	120	4	19.0	8.4	Y	122	4	22.7	9.8	Y	27	Y	9.6	Y
3901 LEFFERSON																			
39-017-0016		0		*		119	4	19.9	7.8	Y	122	4	20.9	8.8	Y	20	N	8.3	N
400 NILLES RD.																			
39-017-0019	360	4	30.5	10.1	S	285	4	19.1	8.0	Y	121	4	20.8	9.4	Y	23	Y	9.1	Y
1200 OXFORD STATE ROAD																			
39-017-0020	358	4	34.4	12.0	S	362	4	21.3	9.9	Y	348	4	26.0	11.6	Y	27	Y	11.2	Y
3350 YANKEE ROAD																			
39-017-0022	300	4	43.7	12.1	S	121	4	20.5	9.5	Y	118	4	23.1	11.0	Y	29	Y	10.9	Y
3214 YANKEE RD.																			
39-023-0005	363	4	32.6	9.8	S	338	4	16.2	7.5	Y	362	4	21.7	9.1	Y	24	Y	8.8	Y
350 N. FOUNTAIN AVE.																			
39-035-0034	183	4	19.9	8.4	S	118	4	15.2	6.7	Y	119	4	19.7	7.5	Y	18	Y	7.5	Y
881 E. 152nd ST.																			
39-035-0038	362	4	34.0	11.2	S	361	4	23.1	8.9	Y	308	4	22.3	9.8	Y	26	Y	10.0	Y
2547 ST TIKHON																			

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2023

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2023 Cred. Days	2023 Comp. Qrtrs	2023 98th Perctil	2023 Wtd. Mean	2023 Cert& Eval	2022 Cred. Days	2022 Comp. Qrtrs	2022 98th Perctil	2022 Wtd. Mean	2022 Cert& Eval	2021 Cred. Days	2021 Comp. Qrtrs	2021 98th Perctil	2021 Wtd. Mean	2021 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-035-0045 4950 BROADWAY AVE.	183	3	17.7*	8.9*	S	122	4	17.6	8.2	Y	120	4	20.9	9.9	Y	19	N	9.0	N
39-035-0060 E. 14TH & ORANGE	358	4	35.0	11.9	S	360	4	23.4	8.8	Y	357	4	23.4	9.7	Y	27	Y	10.2	Y
39-035-0065 4600 HARVARD AVE.	239	4	35.0	12.8	S	122	4	27.4	11.0	Y	121	4	28.7	12.7	Y	30	Y	12.2	Y
39-035-0073 25609 EMERY ROAD	365	4	35.8	9.1	S	361	4	19.2	7.6	Y	355	4	20.9	8.8	Y	25	Y	8.5	Y
39-035-1002 16900 HOLLAND RD.		0		*		119	4	15.5	6.5	Y	93	3	15.1*	7.5*	Y	15	N	7.0	N
39-049-0034 KORBEL AVE.	162	4	29.1	10.3	S	122	4	17.3	7.7	Y	121	4	19.4	9.1	Y	22	Y	9.0	Y
39-049-0038 7560 SMOKY ROW RD.	323	4	35.0	10.7	S	364	4	19.9	7.9	Y	365	4	23.8	9.3	Y	26	Y	9.3	Y
39-049-0040 2104 Jackson Pike	202	4	24.6	10.2	S	72	2	18.6*	8.7 *	Y		0		*		22	N	9.4	N
39-049-0081 5750 MAPLE CANYON	238	4	29.1	9.9	S	122	4	17.4	7.3	Y	122	4	20.1	9.0	Y	22	Y	8.7	Y
39-061-0006 11590 GROOMS RD	345	4	28.6	8.9	S	340	4	18.2	8.6	Y	348	4	22.7	10.2	Y	23	Y	9.2	Y
39-061-0014 SEYMOUR & VINE ST.	364	4	30.8	10.9	S	363	4	18.8	8.7	Y	362	4	23.2	10.0	Y	24	Y	9.9	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Report Date: Aug. 19, 2024

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2023

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2023					2022					2021					24-Hour		Annual	
	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Cred. Days	Comp. Qrtrs	98th Perctil	Wtd. Mean	Cert& Eval	Design Value	Valid Ind.	Design Value	Valid Ind.
39-061-0040 250 WM. HOWARD TAFT	357	4	27.3	10.0	S	364	4	17.4	7.6	Y	352	4	23.3	9.1	Y	23	Y	8.9	Y
39-061-0042 2101 W. 8TH ST.	359	4	30.4	10.1	S	365	4	18.5	8.1	Y	365	4	22.4	9.8	Y	24	Y	9.3	Y
39-061-0048 3428 COLERAIN AVE.	356	4	30.6	9.8	S	353	4	19.8	9.7	Y	350	4	25.1	10.8	Y	25	Y	10.1	Y
39-067-0005 46700 JEWETT HOPEDALE RD.		0		*		40	3	19.9*	7.0 *	N	54	4	17.4	7.9	Y	19	N	7.4	N
39-081-0017 618 LOGAN ST.	361	4	25.3	9.8	S	361	4	20.7	9.1	Y	339	4	29.7	11.1	Y	25	Y	10.0	Y
39-085-0007 177 MAIN STREET	115	4	36.1	8.5	S	119	4	15.1	6.2	Y	120	4	15.7	6.9	Y	22	Y	7.2	Y
39-087-0012 450 Commerce Drive	365	4	27.9	8.5	S	361	4	14.8	7.1	Y	360	4	21.4	8.2	Y	21	Y	7.9	Y
39-093-3002 2180 LAKE BREEZE		0		*			0		*		263	3	17.2*	7.6*	Y	17	N	7.6	N
39-095-0024 348 S. ERIE	148	4	31.6	9.8	S	90	2	16.5*	6.6 *	Y	115	4	20.8	8.6	Y	23	N	8.3	N
39-095-0026 4150 AIRPORT HIGHWAY	120	4	31.0	9.1	S	117	4	18.3	6.9	Y	117	4	19.9	8.4	Y	23	Y	8.1	Y
39-095-1003 163 LEE ST.	118	4	32.9	10.5	S	113	4	23.5	8.7	Y	114	4	21.5	8.9	Y	26	Y	9.4	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2023

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2023 Cred. Days	2023 Comp. Qrtrs	2023 98th Perctil	2023 Wtd. Mean	2023 Cert& Eval	2022 Cred. Days	2022 Comp. Qrtrs	2022 98th Perctil	2022 Wtd. Mean	2022 Cert& Eval	2021 Cred. Days	2021 Comp. Qrtrs	2021 98th Perctil	2021 Wtd. Mean	2021 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-099-0014 / 345 OAKHILL AVE.		0		*			0		*		94	3	22.5*	8.8*	Y	23	N	8.8	N
39-099-0015 / 91 Wick Oval Street	361	4	30.2	9.9	S	348	4	17.1	7.8	Y	79	1	17.7*	7.7*	Y	22	N	8.5	N
39-103-0004 / BALLASH ROAD	363	4	29.6	9.1	S	350	4	17.7	6.3	Y	361	4	16.9	6.9	Y	21	Y	7.4	Y
39-113-0038 / 113 Saint Mary Street	360	4	33.4	9.8	S	365	4	18.1	7.9	Y	356	4	22.0	9.3	Y	25	Y	9.0	Y
39-133-0002 / 531 WASHINGTON		0		*		120	4	16.6	6.4	Y	70	2	13.9*	7.3*	N	15	N	6.9	N
39-135-1001 / 6940 OXFORD GETTYSBURG RD.	351	4	31.5	9.0	S	353	4	15.8	7.1	Y	365	4	20.2	7.9	Y	23	Y	8.0	Y
39-145-0013 / 4862 GALLIA	321	4	31.7	8.7	S	117	4	16.7	6.8	Y	121	4	15.0	7.1	Y	21	Y	7.6	Y
39-145-0015 / 1526 Haverhill-Ohio Furnace Rd.	290	4	33.2	8.8	S	57	4	15.3	7.1	Y	56	4	16.3	7.1	Y	22	Y	7.7	Y
39-151-0017 / 1330 DUEBER	257	4	28.6	10.6	S	121	4	19.5	8.2	Y	101	3	20.9*	9.4*	Y	23	N	9.4	Y
39-151-0020 / 420 MARKET	357	4	31.1	10.3	S	365	4	21.1	7.9	Y	365	4	23.5	9.4	Y	25	Y	9.2	Y
39-153-0017 / 80 BRITTAIN	330	4	27.4	9.3	S	359	4	18.8	7.9	Y	346	4	22.8	8.6	Y	23	Y	8.6	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Report Date: Aug. 19, 2024

Pollutant: Site-LevelPM2.5 - Local Conditions(88101)
Standard Units: Micrograms/cubic meter (LC)(105)
NAAQS Standard: PM25 24-hour 2024 / PM25 Annual 2024
Statistic: Annual Weighted Mean **Level:** 9
Statistic: Annual 98th Percentile **Level:** 35

Design Value Year: 2023

REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.

State Name: Ohio

Site_ID / STREET ADDRESS	2023 Cred. Days	2023 Comp. Qrtrs	2023 98th Perctil	2023 Wtd. Mean	2023 Cert& Eval	2022 Cred. Days	2022 Comp. Qrtrs	2022 98th Perctil	2022 Wtd. Mean	2022 Cert& Eval	2021 Cred. Days	2021 Comp. Qrtrs	2021 98th Perctil	2021 Wtd. Mean	2021 Cert& Eval	24-Hour Design Value	24-Hour Valid Ind.	Annual Design Value	Annual Valid Ind.
39-153-0023 642 W. EXCHANGE ST.	81	3	49.4	11.2*	S	116	4	15.5	6.8	Y	111	4	20.2	8.7	Y	28	Y	8.9	N
39-155-0014 540 LAIRD AVE. S.E.	364	4	30.4	10.1	S	354	4	16.6	7.3	Y	359	4	22.5	8.7	Y	23	Y	8.7	Y

Notes: 1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

CERTIFICATION EVALUATION AND CONCURRENCE FLAG MEANINGS

FLAG	MEANING
M	The monitoring organization has revised data from this monitor since the most recent certification letter received from the state.
N	The certifying agency has submitted the certification letter and required summary reports, but the certifying agency and/or EPA has determined that issues regarding the quality of the ambient concentration data cannot be resolved due to data completeness, the lack of performed quality assurance checks or the results of uncertainty statistics shown in the AMP255 report or the certification and quality assurance report.
S	The certifying agency has submitted the certification letter and required summary reports. A value of "S" conveys no Regional assessment regarding data quality per se. This flag will remain until the Region provides an "N" or "Y" concurrence flag.
U	Uncertified. The certifying agency did not submit a required certification letter and summary reports for this monitor even though the due date has passed, or the state's certification letter specifically did not apply the certification to this monitor.
X	Certification is not required by 40 CFR 58.15 and no conditions apply to be the basis for assigning another flag value
Y	The certifying agency has submitted a certification letter, and EPA has no unresolved reservations about data quality (after reviewing the letter, the attached summary reports, the amount of quality assurance data submitted to AQS, the quality statistics, and the highest reported concentrations).

Appendix B

SLAMS Data Certification (2021 – 2023)

Ohio Environmental Protection Agency

Mike DeWine, Governor
Jon Husted, Lt. Governor
Laurie A. Stevenson, Director

April 25, 2022

John Mooney
Director, Air and Radiation Division
U.S. EPA, Region V
Mail Code: A-18J
77 West Jackson Boulevard
Chicago, Illinois 60604

Re: Ohio SLAMS Ambient Air Monitoring Data Certification for 2021 Data

Dear Mr. Mooney,

At this time, we are certifying Ohio's ambient monitoring data. Please find enclosed our State and Local Air Monitoring Stations (SLAMS) Report (AMP600) for calendar year 2021 as required in 40 CFR 58, Section 58.15. The ambient concentration and the quality assurance data for these sites have been completely submitted to the AQS database. Ohio's comments have been made in this report for any occurrence where the requested flag differs from the AQS recommended flag. In all cases, we are certifying data. Ohio wants to point out, specifically, the comments on PM2.5 monitors at site 39-099-0015. This is a new site that began operating in October of 2021. An enclosed AMP430 Completeness Report shows the PM2.5 POC 1, 3, and 4 monitors at this site with 100%, 99%, and 100% respectively. All three of those monitors were given an "N" AQS recommended flag because of 62% completeness on the AMP600 report. Ohio EPA has reached out to U.S. EPA Region 5 and we believe the AMP600 to be in error in that case. Note Ohio has already certified Ozone data in the Cincinnati, OH-KY Nonattainment Area.

Additionally, we are re-certifying select data from calendar year 2020. We are not certain of the reason, but the 2020 Agency and Concurrence flags for Site 39-003-0009, Parameter 88101, POCs 1 and 2 have reverted to "M". For Site 39-115-0004, Parameter 42401, Ohio EPA identified in December of 2021 a period of a few hours from 2020 that should have been invalidated but were not. Ohio EPA has since invalidated those hours and saved documentation for the change. As such, that 2020 flag has also reverted to "M". In all cases, the AQS recommended flag remains "Y" for these site/parameters. Ohio EPA is recertifying this data and has enclosed a signed State and Local Air Monitoring Stations (SLAMS) Report (AMP600) for calendar year 2020 for just these sites.

Also enclosed is an AQS Quick Look Report (AMP-450NC) for calendar year 2021 as required in 40 CFR 58, Section 58.15. This report shows the raw data for the SO2 hourly 5-minute maximum averages for Ohio sites and the PM-Coarse data from Ohio's NCore sites.

I certify that the data in the report are accurate to the best of our knowledge taking into consideration the quality assurance findings and only to the extent of the activities performed by Ohio EPA. There were no incidents of air pollution that reached or exceeded levels as specified by Section 51.151 which could cause significant harm to the health of persons.

Sincerely,

Robert Hodanbosi

Robert Hodanbosi
Chief, Division of Air Pollution Control

Enclosure

cc:
Jennifer Van Vlerah, Assistant Chief, Ohio EPA DAPC
Jessica Kuenzli, Manager, Ohio EPA DAPC
William Kenny, Supervisor, Ohio EPA DAPC
Jacqueline Nwia, U.S. EPA Region 5
Michael Compher, U.S. EPA Region 5

Ohio Environmental Protection Agency

Mike DeWine, Governor
Jon Husted, Lt. Governor
Anne M. Vogel, Director

April 19, 2023

John Mooney
Director, Air and Radiation Division
U.S. EPA, Region V
Mail Code: A-18J
77 West Jackson Boulevard
Chicago, Illinois 60604

Re: Ohio SLAMS Ambient Air Monitoring Data Certification for 2022 Data

Dear Mr. Mooney,

At this time, we are certifying Ohio's ambient monitoring data. Please find enclosed our State and Local Air Monitoring Stations (SLAMS) Report (AMP600) for calendar year 2022 as required in 40 CFR 58, Section 58.15. The ambient concentration and the quality assurance data for these sites have been completely submitted to the AQS database. Ohio's comments have been made in this report for any occurrence where the requested flag differs from the AQS recommended flag. In all cases, we are certifying data.

Additionally, we are re-certifying select data from calendar year 2019 and 2021. We are not certain of the reason, but the 2019 Agency and Concurrence flags for Site 39-001-0001, Parameter 42401, POC 1 have reverted to "M". For Site 39-155-0006, Parameter 81102, POC 1, in September 2022 Ohio EPA identified four missing samples from December of 2021 Ohio EPA have since uploaded the missing data and saved documentation for the change. As such, that 2021 flag has also reverted to "M". In all cases, the AQS recommended flag remains "Y" for these site/parameters. Ohio EPA is recertifying this data and has enclosed a signed State and Local Air Monitoring Stations (SLAMS) Report (AMP600) for calendar year 2019 and 2021 for just these sites.

Also enclosed is an AQS Quick Look Report (AMP-450NC) for calendar year 2022 as required in 40 CFR 58, Section 58.15. This report shows the raw data for the SO2 hourly 5-minute maximum averages for Ohio sites and the PM-Coarse data from Ohio's NCore sites.

I certify that the data in the report are accurate to the best of our knowledge taking into consideration the quality assurance findings and only to the extent of the activities performed by Ohio EPA. There were no incidents of air pollution that reached or exceeded levels as specified by Section 51.151 which could cause significant harm to the health of persons.

Sincerely,

Robert Hodanbosi

Robert Hodanbosi
Chief, Division of Air Pollution Control

Enclosure

cc:
Jennifer Van Vlerah, Assistant Chief, Ohio EPA DAPC
William Kenny, Manager, Ohio EPA DAPC
Brooke White, Supervisor, Ohio EPA DAPC
Chad McEvoy, U.S. EPA Region 5
Michael Compher, U.S. EPA Region 5

Environmental Protection Agency

EPA.Ohio.gov

Mike DeWine, *Governor* Jon Husted, *Lt. Governor* Anne M. Vogel, *Director*

April 29, 2024

John Mooney
Director, Air and Radiation Division
U.S. EPA, Region V
Mail Code: A-18J
77 West Jackson Boulevard
Chicago, Illinois 60604

Re: Ohio SLAMS Ambient Air Monitoring Data Certification for 2023 Data, select 2022 and 2020 Data.

Dear Mr. Mooney,

At this time, we are certifying Ohio's ambient monitoring data, except for $PM_{2.5}$. Please find enclosed our State and Local Air Monitoring Stations (SLAMS) Report (AMP600) for all other criteria pollutants for calendar year 2023 as required in 40 CFR 58, Section 58.15. The ambient concentration and the quality assurance data for these sites have been completely submitted to the Air Quality System (AQS) database. Ohio's comments have been made in this report for any occurrence where the requested flag differs from the AQS recommended flag. Note, Ohio was informed on April 25, 2023 in an email from Michael Compher that U.S. EPA is offering flexibility in the annual data certification deadline for $PM_{2.5}$ due to issues and changes within AQS. As such, we are not certifying Ohio's $PM_{2.5}$ data in this submittal but will thoroughly investigate and certify $PM_{2.5}$ data at a later date. In all other cases, we are certifying data.

Additionally, we are re-certifying select data from calendar year 2020 and 2022. As a result of a TSA data point life cycle, Ohio EPA had to correct some data from 2020 at site 39-109-0005, parameter 44201, POC 1, which had hours that should have been invalidated and were not correctly invalidated originally. This correction has resulted in the 2020 certification flag reverting to "M" and the need to recertify this monitor's data from 2020. For site 39-145-0013, parameter 88101, POC 1, Ohio EPA erroneously submitted August 2023 data with 2022 dates. This error was rectified with the accidental data removed and correct 2023 data added. However, this results in the flag for this monitor also reverting to "M" and the need to recertify 2022 data for this monitor. In all cases, the AQS recommended flag remains "Y" for these site/parameters. Ohio EPA is recertifying this data and has enclosed a signed SLAMS Report (AMP600) for calendar year 2020 and 2022 for recertification of just these monitors.

Also enclosed is an AQS Quick Look Report (AMP-450NC) for calendar year 2023 as required in 40 CFR 58, Section 58.15. This report shows the raw data for the SO2 hourly 5-minute maximum averages for Ohio sites and the PM-Coarse data from Ohio's NCore sites.

50 W. Town Street
Suite 700
Columbus, Ohio 43215 U.S.A.

614 | 644 3020
epa.ohio.gov

I certify that the data in the report are accurate to the best of our knowledge taking into consideration the quality assurance findings and only to the extent of the activities performed by Ohio EPA. There were no incidents of air pollution that reached or exceeded levels as specified by Section 51.151 which could cause significant harm to the health of persons.

Sincerely,

Robert Hodanbosi

Robert Hodanbosi
Chief, Division of Air Pollution Control

Enclosure

cc:
Jennifer Van Vlerah, Assistant Chief, Ohio EPA DAPC
William Kenny, Manager, Ohio EPA DAPC
Brooke White, Supervisor, Ohio EPA DAPC
Chad McEvoy, U.S. EPA Region 5
Michael Compher, U.S. EPA Region 5

Appendix C

West Virginia VMT by County and Functional System

County	F_System	Rural or Urban	Miles	Daily VMT	Annual VMT
Barbour	1 - Interstate	Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	4.43	36,188.00	13,208,620.00
		Urban	-	-	-
	4 - Minor Arterial	Rural	39.96	145,033.80	52,937,337.00
		Urban	-	-	-
	5 - Major Collector	Rural	101.58	120,894.75	44,126,583.75
		Urban	-	-	-
	6 - Minor Collector	Rural	18.42	5,115.00	1,866,975.00
		Urban	-	-	-
	7 - Local	Rural	465.55	37,219.00	13,584,935.00
Berkeley	1 - Interstate	Urban	26.00	1,174,609.00	428,732,285.00
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	6.38	68,294.00	24,927,310.00
		Urban	14.08	308,291.40	112,526,361.00
	4 - Minor Arterial	Rural	8.42	50,903.80	18,579,887.00
		Urban	40.14	406,085.20	148,221,098.00
	5 - Major Collector	Rural	32.79	76,855.30	28,052,184.50
		Urban	57.06	265,909.80	97,057,077.00
	6 - Minor Collector	Rural	8.29	5,971.00	2,179,415.00
		Urban	6.57	28,404.70	10,367,715.50
	7 - Local	Rural	272.18	92,294.00	33,687,310.00
		Urban	174.24	172,426.00	62,935,490.00
Boone	1 - Interstate	Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	22.88	258,538.00	94,366,370.00
		Urban	-	-	-
	4 - Minor Arterial	Rural	38.27	88,060.00	32,141,900.00
		Urban	-	-	-
	5 - Major Collector	Rural	95.38	189,637.00	69,217,505.00
		Urban	-	-	-
	6 - Minor Collector	Rural	29.37	10,083.00	3,680,295.00
		Urban	-	-	-
	7 - Local	Rural	224.26	46,062.00	16,812,630.00

Braxton	**1 - Interstate**	**Rural**	38.55	431,812.00	157,611,380.00
		Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	**Urban**	-	-	-
	3 - Principal Arterial - Other	**Rural**	7.18	74,050.00	27,028,250.00
		Urban	-	-	-
	4 - Minor Arterial	**Urban**	-	-	-
	5 - Major Collector	**Rural**	143.77	146,881.55	53,611,765.75
		Urban	-	-	-
	6 - Minor Collector	**Rural**	67.43	17,082.00	6,234,930.00
		Urban	-	-	-
	7 - Local	**Rural**	522.56	21,660.00	7,905,900.00
Brooke	**1 - Interstate**	**Urban**	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	**Urban**	5.50	152,902.00	55,809,230.00
	3 - Principal Arterial - Other	**Rural**	2.19	10,512.00	3,836,880.00
		Urban	16.05	162,997.00	59,493,905.00
	4 - Minor Arterial	**Rural**	4.43	19,569.50	7,142,867.50
		Urban	10.46	30,693.90	11,203,273.50
	5 - Major Collector	**Rural**	33.54	22,747.45	8,302,819.25
		Urban	28.26	59,938.75	21,877,643.75
	6 - Minor Collector	**Rural**	16.33	4,533.00	1,654,545.00
		Urban	-	-	-
	7 - Local	**Rural**	64.90	8,718.00	3,182,070.00
		Urban	50.27	26,622.00	9,717,030.00
Cabell	**1 - Interstate**	**Urban**	25.90	721,146.00	263,218,290.00
	2 - Principal Arterial - Other Freeways and Expressways	**Urban**	1.76	22,474.00	8,203,010.00
	3 - Principal Arterial - Other	**Rural**	8.65	41,825.80	15,266,417.00
		Urban	36.94	417,950.10	152,551,786.50
	4 - Minor Arterial	**Rural**	11.13	50,590.20	18,465,423.00
		Urban	48.70	420,733.60	153,567,764.00
	5 - Major Collector	**Rural**	82.06	73,994.90	27,008,138.50
		Urban	41.60	93,463.15	34,114,049.75
	6 - Minor Collector	**Rural**	25.96	13,259.00	4,839,535.00
		Urban	3.74	3,052.80	1,114,272.00
	7 - Local	**Rural**	270.78	36,975.00	13,495,875.00
		Urban	150.93	224,438.00	81,919,870.00

Calhoun	1 - Interstate	Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Urban	-	-	-
	4 - Minor Arterial	Rural	14.86	18,194.50	6,640,992.50
		Urban	-	-	-
	5 - Major Collector	Rural	86.96	76,186.50	27,808,072.50
		Urban	-	-	-
	6 - Minor Collector	Rural	45.17	6,812.00	2,486,380.00
		Urban	-	-	-
	7 - Local	Rural	319.05	22,728.00	8,295,720.00
Clay	1 - Interstate	Rural	8.60	74,618.00	27,235,570.00
		Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Urban	-	-	-
	4 - Minor Arterial	Urban	-	-	-
	5 - Major Collector	Rural	129.37	98,993.70	36,132,700.50
		Urban	-	-	-
	6 - Minor Collector	Rural	27.47	4,659.00	1,700,535.00
		Urban	-	-	-
	7 - Local	Rural	356.65	26,612.00	9,713,380.00
Doddridge	1 - Interstate	Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	18.87	177,293.00	64,711,945.00
		Urban	-	-	-
	4 - Minor Arterial	Urban	-	-	-
	5 - Major Collector	Rural	130.87	74,488.20	27,188,193.00
		Urban	-	-	-
	6 - Minor Collector	Rural	40.10	11,918.00	4,350,070.00
		Urban	-	-	-
	7 - Local	Rural	339.39	20,175.00	7,363,875.00
Fayette	1 - Interstate	Rural	14.63	288,685.00	105,370,025.00
		Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	10.66	124,640.00	45,493,600.00
		Urban	15.63	315,936.40	115,316,786.00

	4 - Minor Arterial	Rural	63.56	155,562.00	56,780,130.00
		Urban	25.80	89,993.10	32,847,481.50
	5 - Major Collector	Rural	195.64	155,597.35	56,793,032.75
		Urban	33.97	40,511.55	14,786,715.75
	6 - Minor Collector	Rural	30.10	9,335.00	3,407,275.00
		Urban	5.18	2,889.20	1,054,558.00
	7 - Local	Rural	427.63	35,904.00	13,104,960.00
		Urban	81.32	20,138.00	7,350,370.00
Gilmer	1 - Interstate	Rural	0.40	5,240.00	1,912,600.00
		Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Urban	-	-	-
	4 - Minor Arterial	Rural	26.98	34,701.00	12,665,865.00
		Urban	-	-	-
	5 - Major Collector	Rural	102.19	76,670.90	27,984,878.50
		Urban	-	-	-
	6 - Minor Collector	Rural	41.28	4,295.00	1,567,675.00
		Urban	-	-	-
	7 - Local	Rural	305.29	16,656.00	6,079,440.00
Grant	1 - Interstate	Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	33.67	74,278.00	27,111,470.00
		Urban	-	-	-
	4 - Minor Arterial	Rural	53.29	128,641.50	46,954,147.50
		Urban	-	-	-
	5 - Major Collector	Rural	85.33	71,916.20	26,249,413.00
		Urban	-	-	-
	6 - Minor Collector	Rural	29.62	10,909.00	3,981,785.00
		Urban	-	-	-
	7 - Local	Rural	190.49	30,882.00	11,271,930.00
Greenbrier	1 - Interstate	Rural	35.15	283,155.00	103,351,575.00
		Urban	1.27	13,041.00	4,759,965.00
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	25.13	74,157.60	27,067,524.00
		Urban	10.73	116,460.60	42,508,119.00

	4 - Minor Arterial	Rural	87.09	219,956.60	80,284,159.00
		Urban	4.73	16,085.80	5,871,317.00
	5 - Major Collector	Rural	134.71	90,518.80	33,039,362.00
		Urban	8.49	9,079.00	3,313,835.00
	6 - Minor Collector	Rural	79.97	29,528.00	10,777,720.00
		Urban	-	-	-
	7 - Local	Rural	587.70	66,703.00	24,346,595.00
		Urban	22.88	24,287.00	8,864,755.00
Hampshire	1 - Interstate	Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Urban	-	-	-
	4 - Minor Arterial	Rural	45.23	244,401.00	89,206,365.00
		Urban	-	-	-
	5 - Major Collector	Rural	149.79	215,749.05	78,748,403.25
		Urban	-	-	-
	6 - Minor Collector	Rural	36.35	13,792.00	5,034,080.00
		Urban	-	-	-
	7 - Local	Rural	451.25	55,864.00	20,390,360.00
Hancock	1 - Interstate	Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	0.39	11,193.00	4,085,445.00
	3 - Principal Arterial - Other	Rural	11.73	41,576.40	15,175,386.00
		Urban	10.25	69,989.60	25,546,204.00
	4 - Minor Arterial	Rural	1.95	17,349.50	6,332,567.50
		Urban	16.41	79,370.50	28,970,232.50
	5 - Major Collector	Rural	35.48	39,933.00	14,575,545.00
		Urban	16.86	38,138.30	13,920,479.50
	6 - Minor Collector	Rural	12.95	10,398.00	3,795,270.00
		Urban	3.22	1,075.90	392,703.50
	7 - Local	Rural	94.04	12,914.00	4,713,610.00
		Urban	27.60	26,912.00	9,822,880.00
Hardy	1 - Interstate	Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	39.52	156,709.50	57,198,967.50
		Urban	-	-	-
	4 - Minor Arterial	Rural	10.00	55,023.00	20,083,395.00

		Urban	-	-	-
	5 - Major Collector	Rural	134.41	168,895.00	61,646,675.00
		Urban	-	-	-
	6 - Minor Collector	Rural	34.44	11,867.00	4,331,455.00
		Urban	-	-	-
	7 - Local	Rural	296.87	72,833.00	26,584,045.00
Harrison	1 - Interstate	Rural	12.94	347,288.00	126,760,120.00
		Urban	9.86	328,655.10	119,959,111.50
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	6.10	75,471.70	27,547,170.50
		Urban	12.22	257,984.30	94,164,269.50
	4 - Minor Arterial	Rural	35.55	124,059.00	45,281,535.00
		Urban	68.10	434,425.60	158,565,344.00
	5 - Major Collector	Rural	104.16	132,553.35	48,381,972.75
		Urban	40.19	72,610.40	26,502,796.00
	6 - Minor Collector	Rural	54.59	30,704.00	11,206,960.00
		Urban	4.14	3,711.20	1,354,588.00
	7 - Local	Rural	426.53	49,906.00	18,215,690.00
		Urban	94.52	209,509.00	76,470,785.00
Jackson	1 - Interstate	Rural	39.49	489,090.00	178,517,850.00
		Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	14.95	74,365.50	27,143,407.50
		Urban	-	-	-
	4 - Minor Arterial	Rural	22.54	103,317.00	37,710,705.00
		Urban	-	-	-
	5 - Major Collector	Rural	108.15	168,569.30	61,527,794.50
		Urban	-	-	-
	6 - Minor Collector	Rural	59.38	28,000.00	10,220,000.00
		Urban	-	-	-
	7 - Local	Rural	642.81	78,775.00	28,752,875.00
Jefferson	1 - Interstate	Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	19.53	297,242.90	108,493,658.50
		Urban	17.46	333,533.10	121,739,581.50

	4 - Minor Arterial	Rural	8.22	49,865.80	18,201,017.00
		Urban	8.99	56,038.30	20,453,979.50
	5 - Major Collector	Rural	66.88	154,528.75	56,402,993.75
		Urban	19.72	70,200.99	25,623,361.35
	6 - Minor Collector	Rural	23.23	36,982.00	13,498,430.00
		Urban	3.59	2,683.75	979,568.75
	7 - Local	Rural	240.09	90,933.00	33,190,545.00
		Urban	46.97	96,523.00	35,230,895.00
Kanawha	1 - Interstate	Rural	37.08	557,989.20	203,666,058.00
		Urban	49.87	1,809,938.60	660,627,589.00
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	9.25	73,081.30	26,674,674.50
		Urban	67.55	959,370.10	350,170,086.50
	4 - Minor Arterial	Rural	45.02	120,005.10	43,801,861.50
		Urban	122.04	654,994.80	239,073,102.00
	5 - Major Collector	Rural	109.11	110,562.85	40,355,440.25
		Urban	116.50	265,123.45	96,770,059.25
	6 - Minor Collector	Rural	53.99	26,551.00	9,691,115.00
		Urban	4.34	2,657.35	969,932.75
	7 - Local	Rural	520.32	84,252.00	30,751,980.00
		Urban	293.73	341,304.00	124,575,960.00
Lewis	1 - Interstate	Rural	22.23	349,714.70	127,645,865.50
		Urban	0.64	11,824.80	4,316,052.00
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	4.11	55,132.00	20,123,180.00
		Urban	3.09	48,501.00	17,702,865.00
	4 - Minor Arterial	Rural	13.79	21,913.70	7,998,500.50
		Urban	11.48	63,282.20	23,098,003.00
	5 - Major Collector	Rural	84.78	97,834.90	35,709,738.50
		Urban	4.06	6,667.25	2,433,546.25
	6 - Minor Collector	Rural	44.21	11,433.00	4,173,045.00
		Urban	-	-	-
	7 - Local	Rural	438.37	41,515.00	15,152,975.00
		Urban	16.66	5,670.00	2,069,550.00
Lincoln	1 - Interstate	Urban	-	-	-

	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	4.74	55,184.00	20,142,160.00
		Urban	-	-	-
	4 - Minor Arterial	Rural	38.44	88,813.75	32,417,018.75
		Urban	-	-	-
	5 - Major Collector	Rural	110.00	129,582.80	47,297,722.00
		Urban	-	-	-
	6 - Minor Collector	Rural	44.87	14,042.00	5,125,330.00
		Urban	-	-	-
	7 - Local	Rural	457.59	45,012.00	16,429,380.00
Logan	1 - Interstate	Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	30.24	178,085.20	65,001,098.00
		Urban	18.08	137,155.15	50,061,629.75
	4 - Minor Arterial	Rural	12.23	48,412.00	17,670,380.00
		Urban	19.19	91,078.50	33,243,652.50
	5 - Major Collector	Rural	97.79	105,372.25	38,460,871.25
		Urban	28.47	66,793.00	24,379,445.00
	6 - Minor Collector	Rural	18.08	11,343.00	4,140,195.00
		Urban	0.01	10.50	3,832.50
	7 - Local	Rural	232.83	36,811.00	13,436,015.00
		Urban	63.86	8,852.00	3,230,980.00
Marion	1 - Interstate	Rural	2.02	63,163.40	23,054,641.00
		Urban	11.13	383,631.20	140,025,388.00
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Urban	-	-	-
	4 - Minor Arterial	Rural	31.96	95,233.70	34,760,300.50
		Urban	36.87	269,528.80	98,378,012.00
	5 - Major Collector	Rural	74.74	110,483.30	40,326,404.50
		Urban	53.00	108,536.20	39,615,713.00
	6 - Minor Collector	Rural	51.46	23,995.00	8,758,175.00
		Urban	0.00	6.80	2,482.00
	7 - Local	Rural	394.89	51,030.00	18,625,950.00
		Urban	84.41	55,944.00	20,419,560.00
Marshall	1 - Interstate	Urban	-	-	-

	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	46.38	159,148.50	58,089,202.50
		Urban	13.41	186,445.00	68,052,425.00
	4 - Minor Arterial	Rural	2.52	4,401.60	1,606,584.00
		Urban	4.54	16,308.40	5,952,566.00
	5 - Major Collector	Rural	120.51	96,649.05	35,276,903.25
		Urban	14.04	19,743.45	7,206,359.25
	6 - Minor Collector	Rural	43.34	25,359.00	9,256,035.00
		Urban	1.47	1,795.30	655,284.50
	7 - Local	Rural	302.12	45,493.00	16,604,945.00
		Urban	14.85	16,531.00	6,033,815.00
Mason	1 - Interstate	Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	61.49	236,694.75	86,393,583.75
		Urban	3.44	32,075.50	11,707,557.50
	4 - Minor Arterial	Rural	5.52	27,117.00	9,897,705.00
		Urban	13.75	94,290.00	34,415,850.00
	5 - Major Collector	Rural	123.18	92,864.20	33,895,433.00
		Urban	9.95	14,097.20	5,145,478.00
	6 - Minor Collector	Rural	70.34	60,272.00	21,999,280.00
		Urban	0.00	0.45	164.25
	7 - Local	Rural	473.34	38,515.00	14,057,975.00
		Urban	13.93	11,691.00	4,267,215.00
McDowell	1 - Interstate	Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	79.00	203,034.80	74,107,702.00
		Urban	-	-	-
	4 - Minor Arterial	Rural	17.17	20,861.40	7,614,411.00
		Urban	-	-	-
	5 - Major Collector	Rural	149.80	100,620.40	36,726,446.00
		Urban	-	-	-
	6 - Minor Collector	Rural	25.00	7,944.00	2,899,560.00
		Urban	-	-	-
	7 - Local	Rural	388.12	37,730.00	13,771,450.00
Mercer	1 - Interstate	Rural	21.44	494,783.90	180,596,123.50

		Urban	5.82	129,342.40	47,209,976.00
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	18.39	141,840.20	51,771,673.00
		Urban	29.07	335,243.90	122,364,023.50
	4 - Minor Arterial	Rural	11.56	46,849.60	17,100,104.00
		Urban	41.02	276,628.20	100,969,293.00
	5 - Major Collector	Rural	106.24	103,924.90	37,932,588.50
		Urban	49.62	121,477.74	44,339,375.10
	6 - Minor Collector	Rural	53.67	14,217.00	5,189,205.00
		Urban	4.82	3,790.55	1,383,550.75
	7 - Local	Rural	539.18	60,201.00	21,973,365.00
		Urban	111.96	59,944.00	21,879,560.00
Mineral	1 - Interstate	Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	8.65	26,137.40	9,540,151.00
		Urban	4.01	45,228.60	16,508,439.00
	4 - Minor Arterial	Rural	31.74	127,280.15	46,457,254.75
		Urban	10.53	40,681.35	14,848,692.75
	5 - Major Collector	Rural	91.14	114,394.10	41,753,846.50
		Urban	10.94	10,942.10	3,993,866.50
	6 - Minor Collector	Rural	25.83	13,556.00	4,947,940.00
		Urban	2.32	2,785.50	1,016,707.50
	7 - Local	Rural	211.82	40,362.00	14,732,130.00
		Urban	11.04	33,883.00	12,367,295.00
Mingo	1 - Interstate	Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	78.91	313,771.10	114,526,451.50
		Urban	-	-	-
	4 - Minor Arterial	Urban	-	-	-
	5 - Major Collector	Rural	130.49	144,241.05	52,647,983.25
		Urban	-	-	-
	6 - Minor Collector	Rural	18.33	8,630.00	3,149,950.00
		Urban	-	-	-
	7 - Local	Rural	238.84	44,224.00	16,141,760.00
Monongalia	1 - Interstate	Rural	10.70	288,577.00	105,330,605.00

		Urban	24.98	628,307.70	229,332,310.50
	2 - Principal Arterial - Other Freeways and Expressways	Rural	0.45	716.80	261,632.00
		Urban	3.58	4,656.60	1,699,659.00
	3 - Principal Arterial - Other	Rural	29.43	80,495.30	29,380,784.50
		Urban	22.43	387,971.20	141,609,488.00
	4 - Minor Arterial	Rural	13.37	84,922.20	30,996,603.00
		Urban	33.63	262,648.50	95,866,702.50
	5 - Major Collector	Rural	90.40	119,501.80	43,618,157.00
		Urban	61.29	165,346.40	60,351,436.00
	6 - Minor Collector	Rural	39.05	22,051.00	8,048,615.00
		Urban	2.32	1,012.40	369,526.00
	7 - Local	Rural	413.34	58,403.00	21,317,095.00
		Urban	109.54	109,471.00	39,956,915.00
Monroe	1 - Interstate	Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	33.34	86,948.00	31,736,020.00
		Urban	-	-	-
	4 - Minor Arterial	Rural	11.31	24,245.50	8,849,607.50
		Urban	-	-	-
	5 - Major Collector	Rural	80.86	45,251.35	16,516,742.75
		Urban	-	-	-
	6 - Minor Collector	Rural	72.77	18,711.00	6,829,515.00
		Urban	-	-	-
	7 - Local	Rural	402.66	45,312.00	16,538,880.00
Morgan	1 - Interstate	Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	30.34	208,050.00	75,938,250.00
		Urban	-	-	-
	4 - Minor Arterial	Urban	-	-	-
	5 - Major Collector	Rural	57.07	72,014.70	26,285,365.50
		Urban	-	-	-
	6 - Minor Collector	Rural	31.27	8,339.00	3,043,735.00
		Urban	-	-	-
	7 - Local	Rural	271.10	47,075.00	17,182,375.00
Nicholas	1 - Interstate	Urban	-	-	-

	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	31.85	345,876.20	126,244,813.00
		Urban	-	-	-
	4 - Minor Arterial	Rural	41.22	109,392.00	39,928,080.00
		Urban	-	-	-
	5 - Major Collector	Rural	136.68	258,357.10	94,300,341.50
		Urban	-	-	-
	6 - Minor Collector	Rural	47.02	19,742.00	7,205,830.00
		Urban	-	-	-
	7 - Local	Rural	414.37	54,616.00	19,934,840.00
Ohio	1 - Interstate	Rural	2.69	59,964.70	21,887,115.50
		Urban	15.70	438,992.50	160,232,262.50
	2 - Principal Arterial - Other Freeways and Expressways	Urban	3.04	26,521.00	9,680,165.00
	3 - Principal Arterial - Other	Rural	2.63	11,919.60	4,350,654.00
		Urban	15.38	115,709.40	42,233,931.00
	4 - Minor Arterial	Urban	19.86	130,881.60	47,771,784.00
	5 - Major Collector	Rural	47.40	64,336.15	23,482,694.75
		Urban	45.83	116,215.85	42,418,785.25
	6 - Minor Collector	Rural	10.04	3,844.00	1,403,060.00
		Urban	1.47	44.10	16,096.50
	7 - Local	Rural	78.64	18,850.00	6,880,250.00
		Urban	33.57	95,893.00	35,000,945.00
Pendleton	1 - Interstate	Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Urban	-	-	-
	4 - Minor Arterial	Rural	75.59	104,777.50	38,243,787.50
		Urban	-	-	-
	5 - Major Collector	Rural	86.85	49,664.70	18,127,615.50
		Urban	-	-	-
	6 - Minor Collector	Rural	51.74	11,557.00	4,218,305.00
		Urban	-	-	-
	7 - Local	Rural	335.96	25,039.00	9,139,235.00
Pleasants	1 - Interstate	Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	17.49	121,216.00	44,243,840.00

		Urban	-	-	-
	4 - Minor Arterial	Urban	-	-	-
	5 - Major Collector	Rural	38.72	38,472.00	14,042,280.00
		Urban	-	-	-
	6 - Minor Collector	Rural	22.27	5,560.00	2,029,400.00
		Urban	-	-	-
	7 - Local	Rural	164.23	15,992.00	5,837,080.00
		Urban	-	-	-
Pocahontas	1 - Interstate	Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	42.28	63,163.00	23,054,495.00
		Urban	-	-	-
	4 - Minor Arterial	Rural	49.87	47,727.80	17,420,647.00
		Urban	-	-	-
	5 - Major Collector	Rural	150.57	72,926.24	26,618,077.60
		Urban	-	-	-
	6 - Minor Collector	Rural	28.17	6,135.00	2,239,275.00
		Urban	-	-	-
	7 - Local	Rural	385.52	38,442.00	14,031,330.00
Preston	1 - Interstate	Rural	18.08	188,259.60	68,714,754.00
		Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	4.76	6,995.00	2,553,175.00
		Urban	-	-	-
	4 - Minor Arterial	Rural	101.39	244,519.90	89,249,763.50
		Urban	-	-	-
	5 - Major Collector	Rural	126.77	121,646.70	44,401,045.50
		Urban	-	-	-
	6 - Minor Collector	Rural	74.71	40,826.00	14,901,490.00
		Urban	-	-	-
	7 - Local	Rural	815.33	75,793.00	27,664,445.00
		Urban	0.45	36.00	13,140.00
Putnam	1 - Interstate	Rural	1.24	56,778.30	20,724,079.50
		Urban	12.38	403,971.60	147,449,634.00
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-

	3 - Principal Arterial - Other	Rural	20.29	239,831.80	87,538,607.00
		Urban	4.15	68,157.20	24,877,378.00
	4 - Minor Arterial	Rural	1.33	5,717.10	2,086,741.50
		Urban	34.82	272,961.40	99,630,911.00
	5 - Major Collector	Rural	84.48	171,922.90	62,751,858.50
		Urban	35.51	164,716.80	60,121,632.00
	6 - Minor Collector	Rural	34.60	7,634.00	2,786,410.00
		Urban	-	-	-
	7 - Local	Rural	368.98	52,250.00	19,071,250.00
		Urban	64.72	69,411.00	25,335,015.00
Raleigh	1 - Interstate	Rural	15.52	223,659.30	81,635,644.50
		Urban	31.58	632,604.60	230,900,679.00
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	10.13	27,494.60	10,035,529.00
		Urban	13.37	206,701.70	75,446,120.50
	4 - Minor Arterial	Rural	23.28	89,798.45	32,776,434.25
		Urban	43.72	435,673.25	159,020,736.25
	5 - Major Collector	Rural	128.47	181,021.20	66,072,738.00
		Urban	118.74	217,227.90	79,288,183.50
	6 - Minor Collector	Rural	20.87	9,188.00	3,353,620.00
		Urban	2.01	3,031.40	1,106,461.00
	7 - Local	Rural	415.50	48,186.00	17,587,890.00
		Urban	213.19	51,665.00	18,857,725.00
Randolph	1 - Interstate	Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	49.55	183,198.70	66,867,525.50
		Urban	13.43	150,920.20	55,085,873.00
	4 - Minor Arterial	Rural	44.85	89,150.90	32,540,078.50
		Urban	5.47	29,892.30	10,910,689.50
	5 - Major Collector	Rural	110.86	64,253.20	23,452,418.00
		Urban	9.43	15,271.10	5,573,951.50
	6 - Minor Collector	Rural	64.48	20,702.00	7,556,230.00
		Urban	1.88	1,587.10	579,291.50
	7 - Local	Rural	544.27	106,423.00	38,844,395.00
		Urban	25.49	114,430.00	41,766,950.00

Ritchie	**1 - Interstate**	**Urban**	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	**Urban**	-	-	-
	3 - Principal Arterial - Other	**Rural**	20.95	162,625.00	59,358,125.00
		Urban	-	-	-
	4 - Minor Arterial	**Urban**	-	-	-
	5 - Major Collector	**Rural**	191.79	126,119.95	46,033,781.75
		Urban	-	-	-
	6 - Minor Collector	**Rural**	34.92	4,806.00	1,754,190.00
		Urban	-	-	-
	7 - Local	**Rural**	528.18	20,325.00	7,418,625.00
Roane	**1 - Interstate**	**Rural**	14.72	105,959.00	38,675,035.00
		Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	**Urban**	-	-	-
	3 - Principal Arterial - Other	**Urban**	-	-	-
	4 - Minor Arterial	**Rural**	20.44	54,086.00	19,741,390.00
		Urban	-	-	-
	5 - Major Collector	**Rural**	135.01	109,361.20	39,916,838.00
		Urban	-	-	-
	6 - Minor Collector	**Rural**	63.54	14,145.00	5,162,925.00
		Urban	-	-	-
	7 - Local	**Rural**	556.06	34,772.00	12,691,780.00
Summers	**1 - Interstate**	**Rural**	9.59	68,838.00	25,125,870.00
		Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	**Urban**	-	-	-
	3 - Principal Arterial - Other	**Urban**	-	-	-
	4 - Minor Arterial	**Rural**	77.16	153,485.30	56,022,134.50
		Urban	-	-	-
	5 - Major Collector	**Rural**	32.72	10,085.70	3,681,280.50
		Urban	-	-	-
	6 - Minor Collector	**Rural**	51.88	8,840.00	3,226,600.00
		Urban	-	-	-
	7 - Local	**Rural**	422.02	38,207.00	13,945,555.00
Taylor	**1 - Interstate**	**Urban**	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	**Urban**	-	-	-
	3 - Principal Arterial - Other	**Urban**	-	-	-

	4 - Minor Arterial	Rural	34.79	141,690.50	51,717,032.50
		Urban	19.64	87,196.20	31,826,613.00
	5 - Major Collector	Rural	31.16	26,743.50	9,761,377.50
		Urban	7.07	6,948.60	2,536,239.00
	6 - Minor Collector	Rural	20.37	10,474.00	3,823,010.00
		Urban	0.14	63.80	23,287.00
	7 - Local	Rural	252.68	26,137.00	9,540,005.00
		Urban	25.61	6,926.00	2,527,990.00
Tucker	**1 - Interstate**	**Urban**	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	**Urban**	-	-	-
	3 - Principal Arterial - Other	**Rural**	46.33	118,860.40	43,384,046.00
		Urban	-	-	-
	4 - Minor Arterial	**Rural**	10.37	19,537.60	7,131,224.00
		Urban	-	-	-
	5 - Major Collector	**Rural**	63.80	35,499.00	12,957,135.00
		Urban	-	-	-
	6 - Minor Collector	**Rural**	33.11	3,750.00	1,368,750.00
		Urban	-	-	-
	7 - Local	**Rural**	274.72	21,508.00	7,850,420.00
Tyler	**1 - Interstate**	**Urban**	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	**Urban**	-	-	-
	3 - Principal Arterial - Other	**Rural**	13.93	63,594.00	23,211,810.00
		Urban	-	-	-
	4 - Minor Arterial	**Urban**	-	-	-
	5 - Major Collector	**Rural**	84.08	112,207.40	40,955,701.00
		Urban	-	-	-
	6 - Minor Collector	**Rural**	39.08	8,354.00	3,049,210.00
		Urban	-	-	-
	7 - Local	**Rural**	267.63	19,653.00	7,173,345.00
Upshur	**1 - Interstate**	**Urban**	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	**Urban**	-	-	-
	3 - Principal Arterial - Other	**Rural**	8.85	80,586.20	29,413,963.00
		Urban	6.55	76,864.80	28,055,652.00
	4 - Minor Arterial	**Rural**	9.86	28,685.50	10,470,207.50
		Urban	12.25	61,899.50	22,593,317.50

	5 - Major Collector	Rural	73.35	92,576.10	33,790,276.50
		Urban	10.08	15,389.55	5,617,185.75
	6 - Minor Collector	Rural	53.08	24,856.00	9,072,440.00
		Urban	1.99	2,020.40	737,446.00
	7 - Local	Rural	515.70	37,161.00	13,563,765.00
		Urban	18.74	17,423.00	6,359,395.00
Wayne	1 - Interstate	Urban	5.87	111,111.00	40,555,515.00
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	43.30	144,814.40	52,857,256.00
		Urban	14.05	75,503.20	27,558,668.00
	4 - Minor Arterial	Urban	11.70	40,583.00	14,812,795.00
	5 - Major Collector	Rural	133.09	195,637.00	71,407,505.00
		Urban	27.27	102,444.25	37,392,151.25
	6 - Minor Collector	Rural	55.04	21,168.00	7,726,320.00
		Urban	6.48	3,336.50	1,217,822.50
	7 - Local	Rural	494.42	50,014.00	18,255,110.00
		Urban	72.44	19,390.00	7,077,350.00
Webster	1 - Interstate	Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Urban	-	-	-
	4 - Minor Arterial	Urban	-	-	-
	5 - Major Collector	Rural	118.49	107,551.00	39,256,115.00
		Urban	-	-	-
	6 - Minor Collector	Rural	38.12	14,009.00	5,113,285.00
		Urban	-	-	-
	7 - Local	Rural	320.25	19,487.00	7,112,755.00
Wetzel	1 - Interstate	Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	16.38	45,379.50	16,563,517.50
		Urban	7.81	81,237.80	29,651,797.00
	4 - Minor Arterial	Rural	64.99	93,985.60	34,304,744.00
		Urban	5.93	20,489.40	7,478,631.00
	5 - Major Collector	Rural	80.22	48,799.90	17,811,963.50
		Urban	8.20	5,679.40	2,072,981.00
	6 - Minor Collector	Rural	37.39	7,216.00	2,633,840.00

		Urban	0.01	1.35	492.75
	7 - Local	Rural	333.18	13,762.00	5,023,130.00
		Urban	6.36	2,141.00	781,465.00
Wirt	1 - Interstate	Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Urban	-	-	-
	4 - Minor Arterial	Urban	-	-	-
	5 - Major Collector	Rural	101.68	84,609.90	30,882,613.50
		Urban	-	-	-
	6 - Minor Collector	Rural	23.77	2,441.00	890,965.00
		Urban	-	-	-
	7 - Local	Rural	273.46	11,057.00	4,035,805.00
Wood	1 - Interstate	Rural	14.96	181,312.50	66,179,062.50
		Urban	15.26	260,447.00	95,063,155.00
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	17.78	156,050.30	56,958,359.50
		Urban	31.68	404,872.20	147,778,353.00
	4 - Minor Arterial	Rural	0.97	7,476.50	2,728,922.50
		Urban	52.74	360,469.70	131,571,440.50
	5 - Major Collector	Rural	113.61	117,549.60	42,905,604.00
		Urban	43.09	109,298.10	39,893,806.50
	6 - Minor Collector	Rural	44.34	7,831.00	2,858,315.00
		Urban	5.61	1,943.75	709,468.75
	7 - Local	Rural	391.47	34,333.00	12,531,545.00
		Urban	142.47	100,513.00	36,687,245.00
Wyoming	1 - Interstate	Urban	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	Urban	-	-	-
	3 - Principal Arterial - Other	Rural	36.80	98,216.00	35,848,840.00
		Urban	-	-	-
	4 - Minor Arterial	Rural	81.00	199,036.00	72,648,140.00
		Urban	-	-	-
	5 - Major Collector	Rural	85.98	99,351.44	36,263,275.60
		Urban	-	-	-
	6 - Minor Collector	Rural	34.49	17,993.00	6,567,445.00
		Urban	-	-	-

	7 - Local	**Rural**	294.02	28,054.00	10,239,710.00

		Miles		Daily VMT		Annual VMT	
	Rural or Urban	Rural	Urban	Rural	Urban	Rural	Urban
County	F_System						
Barbour	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	4.43	-	36,188.00	-	13,208,620.00	-
	4 - Minor Arterial	39.96	-	145,033.80	-	52,937,337.00	-
	5 - Major Collector	101.58	-	120,894.75	-	44,126,583.75	-
	6 - Minor Collector	18.42	-	5,115.00	-	1,866,975.00	-
	7 - Local	465.55	-	37,219.00	-	13,584,935.00	-
Berkeley	1 - Interstate	-	26.00	-	1,174,609.00	-	428,732,285.00
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	6.38	14.08	68,294.00	308,291.40	24,927,310.00	112,526,361.00
	4 - Minor Arterial	8.42	40.14	50,903.80	406,085.20	18,579,887.00	148,221,098.00
	5 - Major Collector	32.79	57.06	76,855.30	265,909.80	28,052,184.50	97,057,077.00
	6 - Minor Collector	8.29	6.57	5,971.00	28,404.70	2,179,415.00	10,367,715.50
	7 - Local	272.18	174.24	92,294.00	172,426.00	33,687,310.00	62,935,490.00
Boone	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	22.88	-	258,538.00	-	94,366,370.00	-
	4 - Minor Arterial	38.27	-	88,060.00	-	32,141,900.00	-
	5 - Major Collector	95.38	-	189,637.00	-	69,217,505.00	-
	6 - Minor Collector	29.37	-	10,083.00	-	3,680,295.00	-
	7 - Local	224.26	-	46,062.00	-	16,812,630.00	-
Braxton	1 - Interstate	38.55	-	431,812.00	-	157,611,380.00	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	7.18	-	74,050.00	-	27,028,250.00	-
	4 - Minor Arterial	-	-	-	-	-	-
	5 - Major Collector	143.77	-	146,881.55	-	53,611,765.75	-
	6 - Minor Collector	67.43	-	17,082.00	-	6,234,930.00	-
	7 - Local	522.56	-	21,660.00	-	7,905,900.00	-
Brooke	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	5.50	-	152,902.00	-	55,809,230.00
	3 - Principal Arterial - Other	2.19	16.05	10,512.00	162,997.00	3,836,880.00	59,493,905.00
	4 - Minor Arterial	4.43	10.46	19,569.50	30,693.90	7,142,867.50	11,203,273.50
	5 - Major Collector	33.54	28.26	22,747.45	59,938.75	8,302,819.25	21,877,643.75

	6 - Minor Collector	16.33	-	4,533.00	-	1,654,545.00	-
	7 - Local	64.90	50.27	8,718.00	26,622.00	3,182,070.00	9,717,030.00
Cabell	1 - Interstate	-	25.90	-	721,146.00	-	263,218,290.00
	2 - Principal Arterial - Other Freeways and Expressways	-	1.76	-	22,474.00	-	8,203,010.00
	3 - Principal Arterial - Other	8.65	36.94	41,825.80	417,950.10	15,266,417.00	152,551,786.50
	4 - Minor Arterial	11.13	48.70	50,590.20	420,733.60	18,465,423.00	153,567,764.00
	5 - Major Collector	82.06	41.60	73,994.90	93,463.15	27,008,138.50	34,114,049.75
	6 - Minor Collector	25.96	3.74	13,259.00	3,052.80	4,839,535.00	1,114,272.00
	7 - Local	270.78	150.93	36,975.00	224,438.00	13,495,875.00	81,919,870.00
Calhoun	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	-	-	-	-	-	-
	4 - Minor Arterial	14.86	-	18,194.50	-	6,640,992.50	-
	5 - Major Collector	86.96	-	76,186.50	-	27,808,072.50	-
	6 - Minor Collector	45.17	-	6,812.00	-	2,486,380.00	-
	7 - Local	319.05	-	22,728.00	-	8,295,720.00	-
Clay	1 - Interstate	8.60	-	74,618.00	-	27,235,570.00	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	-	-	-	-	-	-
	4 - Minor Arterial	-	-	-	-	-	-
	5 - Major Collector	129.37	-	98,993.70	-	36,132,700.50	-
	6 - Minor Collector	27.47	-	4,659.00	-	1,700,535.00	-
	7 - Local	356.65	-	26,612.00	-	9,713,380.00	-
Doddridge	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	18.87	-	177,293.00	-	64,711,945.00	-
	4 - Minor Arterial	-	-	-	-	-	-
	5 - Major Collector	130.87	-	74,488.20	-	27,188,193.00	-
	6 - Minor Collector	40.10	-	11,918.00	-	4,350,070.00	-
	7 - Local	339.39	-	20,175.00	-	7,363,875.00	-
Fayette	1 - Interstate	14.63	-	288,685.00	-	105,370,025.00	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	10.66	15.63	124,640.00	315,936.40	45,493,600.00	115,316,786.00
	4 - Minor Arterial	63.56	25.80	155,562.00	89,993.10	56,780,130.00	32,847,481.50
	5 - Major Collector	195.64	33.97	155,597.35	40,511.55	56,793,032.75	14,786,715.75
	6 - Minor Collector	30.10	5.18	9,335.00	2,889.20	3,407,275.00	1,054,558.00

	7 - Local	427.63	81.32	35,904.00	20,138.00	13,104,960.00	7,350,370.00
Gilmer	1 - Interstate	0.40	-	5,240.00	-	1,912,600.00	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	-	-	-	-	-	-
	4 - Minor Arterial	26.98	-	34,701.00	-	12,665,865.00	-
	5 - Major Collector	102.19	-	76,670.90	-	27,984,878.50	-
	6 - Minor Collector	41.28	-	4,295.00	-	1,567,675.00	-
	7 - Local	305.29	-	16,656.00	-	6,079,440.00	-
Grant	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	33.67	-	74,278.00	-	27,111,470.00	-
	4 - Minor Arterial	53.29	-	128,641.50	-	46,954,147.50	-
	5 - Major Collector	85.33	-	71,916.20	-	26,249,413.00	-
	6 - Minor Collector	29.62	-	10,909.00	-	3,981,785.00	-
	7 - Local	190.49	-	30,882.00	-	11,271,930.00	-
Greenbrier	1 - Interstate	35.15	1.27	283,155.00	13,041.00	103,351,575.00	4,759,965.00
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	25.13	10.73	74,157.60	116,460.60	27,067,524.00	42,508,119.00
	4 - Minor Arterial	87.09	4.73	219,956.60	16,085.80	80,284,159.00	5,871,317.00
	5 - Major Collector	134.71	8.49	90,518.80	9,079.00	33,039,362.00	3,313,835.00
	6 - Minor Collector	79.97	-	29,528.00	-	10,777,720.00	-
	7 - Local	587.70	22.88	66,703.00	24,287.00	24,346,595.00	8,864,755.00
Hampshire	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	-	-	-	-	-	-
	4 - Minor Arterial	45.23	-	244,401.00	-	89,206,365.00	-
	5 - Major Collector	149.79	-	215,749.05	-	78,748,403.25	-
	6 - Minor Collector	36.35	-	13,792.00	-	5,034,080.00	-
	7 - Local	451.25	-	55,864.00	-	20,390,360.00	-
Hancock	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	0.39	-	11,193.00	-	4,085,445.00
	3 - Principal Arterial - Other	11.73	10.25	41,576.40	69,989.60	15,175,386.00	25,546,204.00
	4 - Minor Arterial	1.95	16.41	17,349.50	79,370.50	6,332,567.50	28,970,232.50
	5 - Major Collector	35.48	16.86	39,933.00	38,138.30	14,575,545.00	13,920,479.50
	6 - Minor Collector	12.95	3.22	10,398.00	1,075.90	3,795,270.00	392,703.50
	7 - Local	94.04	27.60	12,914.00	26,912.00	4,713,610.00	9,822,880.00

Hardy	**1 - Interstate**	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	39.52	-	156,709.50	-	57,198,967.50	-
	4 - Minor Arterial	10.00	-	55,023.00	-	20,083,395.00	-
	5 - Major Collector	134.41	-	168,895.00	-	61,646,675.00	-
	6 - Minor Collector	34.44	-	11,867.00	-	4,331,455.00	-
	7 - Local	296.87	-	72,833.00	-	26,584,045.00	-
Harrison	**1 - Interstate**	12.94	9.86	347,288.00	328,655.10	126,760,120.00	119,959,111.50
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	6.10	12.22	75,471.70	257,984.30	27,547,170.50	94,164,269.50
	4 - Minor Arterial	35.55	68.10	124,059.00	434,425.60	45,281,535.00	158,565,344.00
	5 - Major Collector	104.16	40.19	132,553.35	72,610.40	48,381,972.75	26,502,796.00
	6 - Minor Collector	54.59	4.14	30,704.00	3,711.20	11,206,960.00	1,354,588.00
	7 - Local	426.53	94.52	49,906.00	209,509.00	18,215,690.00	76,470,785.00
Jackson	**1 - Interstate**	39.49	-	489,090.00	-	178,517,850.00	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	14.95	-	74,365.50	-	27,143,407.50	-
	4 - Minor Arterial	22.54	-	103,317.00	-	37,710,705.00	-
	5 - Major Collector	108.15	-	168,569.30	-	61,527,794.50	-
	6 - Minor Collector	59.38	-	28,000.00	-	10,220,000.00	-
	7 - Local	642.81	-	78,775.00	-	28,752,875.00	-
Jefferson	**1 - Interstate**	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	19.53	17.46	297,242.90	333,533.10	108,493,658.50	121,739,581.50
	4 - Minor Arterial	8.22	8.99	49,865.80	56,038.30	18,201,017.00	20,453,979.50
	5 - Major Collector	66.88	19.72	154,528.75	70,200.99	56,402,993.75	25,623,361.35
	6 - Minor Collector	23.23	3.59	36,982.00	2,683.75	13,498,430.00	979,568.75
	7 - Local	240.09	46.97	90,933.00	96,523.00	33,190,545.00	35,230,895.00
Kanawha	**1 - Interstate**	37.08	49.87	557,989.20	1,809,938.60	203,666,058.00	660,627,589.00
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	9.25	67.55	73,081.30	959,370.10	26,674,674.50	350,170,086.50
	4 - Minor Arterial	45.02	122.04	120,005.10	654,994.80	43,801,861.50	239,073,102.00
	5 - Major Collector	109.11	116.50	110,562.85	265,123.45	40,355,440.25	96,770,059.25
	6 - Minor Collector	53.99	4.34	26,551.00	2,657.35	9,691,115.00	969,932.75
	7 - Local	520.32	293.73	84,252.00	341,304.00	30,751,980.00	124,575,960.00
Lewis	**1 - Interstate**	22.23	0.64	349,714.70	11,824.80	127,645,865.50	4,316,052.00

	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	4.11	3.09	55,132.00	48,501.00	20,123,180.00	17,702,865.00
	4 - Minor Arterial	13.79	11.48	21,913.70	63,282.20	7,998,500.50	23,098,003.00
	5 - Major Collector	84.78	4.06	97,834.90	6,667.25	35,709,738.50	2,433,546.25
	6 - Minor Collector	44.21	-	11,433.00	-	4,173,045.00	-
	7 - Local	438.37	16.66	41,515.00	5,670.00	15,152,975.00	2,069,550.00
Lincoln	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	4.74	-	55,184.00	-	20,142,160.00	-
	4 - Minor Arterial	38.44	-	88,813.75	-	32,417,018.75	-
	5 - Major Collector	110.00	-	129,582.80	-	47,297,722.00	-
	6 - Minor Collector	44.87	-	14,042.00	-	5,125,330.00	-
	7 - Local	457.59	-	45,012.00	-	16,429,380.00	-
Logan	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	30.24	18.08	178,085.20	137,155.15	65,001,098.00	50,061,629.75
	4 - Minor Arterial	12.23	19.19	48,412.00	91,078.50	17,670,380.00	33,243,652.50
	5 - Major Collector	97.79	28.47	105,372.25	66,793.00	38,460,871.25	24,379,445.00
	6 - Minor Collector	18.08	0.01	11,343.00	10.50	4,140,195.00	3,832.50
	7 - Local	232.83	63.86	36,811.00	8,852.00	13,436,015.00	3,230,980.00
Marion	1 - Interstate	2.02	11.13	63,163.40	383,631.20	23,054,641.00	140,025,388.00
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	-	-	-	-	-	-
	4 - Minor Arterial	31.96	36.87	95,233.70	269,528.80	34,760,300.50	98,378,012.00
	5 - Major Collector	74.74	53.00	110,483.30	108,536.20	40,326,404.50	39,615,713.00
	6 - Minor Collector	51.46	0.00	23,995.00	6.80	8,758,175.00	2,482.00
	7 - Local	394.89	84.41	51,030.00	55,944.00	18,625,950.00	20,419,560.00
Marshall	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	46.38	13.41	159,148.50	186,445.00	58,089,202.50	68,052,425.00
	4 - Minor Arterial	2.52	4.54	4,401.60	16,308.40	1,606,584.00	5,952,566.00
	5 - Major Collector	120.51	14.04	96,649.05	19,743.45	35,276,903.25	7,206,359.25
	6 - Minor Collector	43.34	1.47	25,359.00	1,795.30	9,256,035.00	655,284.50
	7 - Local	302.12	14.85	45,493.00	16,531.00	16,604,945.00	6,033,815.00
Mason	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-

	3 - Principal Arterial - Other	61.49	3.44	236,694.75	32,075.50	86,393,583.75	11,707,557.50
	4 - Minor Arterial	5.52	13.75	27,117.00	94,290.00	9,897,705.00	34,415,850.00
	5 - Major Collector	123.18	9.95	92,864.20	14,097.20	33,895,433.00	5,145,478.00
	6 - Minor Collector	70.34	0.00	60,272.00	0.45	21,999,280.00	164.25
	7 - Local	473.34	13.93	38,515.00	11,691.00	14,057,975.00	4,267,215.00
McDowell	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	79.00	-	203,034.80	-	74,107,702.00	-
	4 - Minor Arterial	17.17	-	20,861.40	-	7,614,411.00	-
	5 - Major Collector	149.80	-	100,620.40	-	36,726,446.00	-
	6 - Minor Collector	25.00	-	7,944.00	-	2,899,560.00	-
	7 - Local	388.12	-	37,730.00	-	13,771,450.00	-
Mercer	1 - Interstate	21.44	5.82	494,783.90	129,342.40	180,596,123.50	47,209,976.00
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	18.39	29.07	141,840.20	335,243.90	51,771,673.00	122,364,023.50
	4 - Minor Arterial	11.56	41.02	46,849.60	276,628.20	17,100,104.00	100,969,293.00
	5 - Major Collector	106.24	49.62	103,924.90	121,477.74	37,932,588.50	44,339,375.10
	6 - Minor Collector	53.67	4.82	14,217.00	3,790.55	5,189,205.00	1,383,550.75
	7 - Local	539.18	111.96	60,201.00	59,944.00	21,973,365.00	21,879,560.00
Mineral	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	8.65	4.01	26,137.40	45,228.60	9,540,151.00	16,508,439.00
	4 - Minor Arterial	31.74	10.53	127,280.15	40,681.35	46,457,254.75	14,848,692.75
	5 - Major Collector	91.14	10.94	114,394.10	10,942.10	41,753,846.50	3,993,866.50
	6 - Minor Collector	25.83	2.32	13,556.00	2,785.50	4,947,940.00	1,016,707.50
	7 - Local	211.82	11.04	40,362.00	33,883.00	14,732,130.00	12,367,295.00
Mingo	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	78.91	-	313,771.10	-	114,526,451.50	-
	4 - Minor Arterial	-	-	-	-	-	-
	5 - Major Collector	130.49	-	144,241.05	-	52,647,983.25	-
	6 - Minor Collector	18.33	-	8,630.00	-	3,149,950.00	-
	7 - Local	238.84	-	44,224.00	-	16,141,760.00	-
Monongalia	1 - Interstate	10.70	24.98	288,577.00	628,307.70	105,330,605.00	229,332,310.50
	2 - Principal Arterial - Other Freeways and Expressways	0.45	3.58	716.80	4,656.60	261,632.00	1,699,659.00
	3 - Principal Arterial - Other	29.43	22.43	80,495.30	387,971.20	29,380,784.50	141,609,488.00

	4 - Minor Arterial	13.37	33.63	84,922.20	262,648.50	30,996,603.00	95,866,702.50
	5 - Major Collector	90.40	61.29	119,501.80	165,346.40	43,618,157.00	60,351,436.00
	6 - Minor Collector	39.05	2.32	22,051.00	1,012.40	8,048,615.00	369,526.00
	7 - Local	413.34	109.54	58,403.00	109,471.00	21,317,095.00	39,956,915.00
Monroe	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	33.34	-	86,948.00	-	31,736,020.00	-
	4 - Minor Arterial	11.31	-	24,245.50	-	8,849,607.50	-
	5 - Major Collector	80.86	-	45,251.35	-	16,516,742.75	-
	6 - Minor Collector	72.77	-	18,711.00	-	6,829,515.00	-
	7 - Local	402.66	-	45,312.00	-	16,538,880.00	-
Morgan	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	30.34	-	208,050.00	-	75,938,250.00	-
	4 - Minor Arterial	-	-	-	-	-	-
	5 - Major Collector	57.07	-	72,014.70	-	26,285,365.50	-
	6 - Minor Collector	31.27	-	8,339.00	-	3,043,735.00	-
	7 - Local	271.10	-	47,075.00	-	17,182,375.00	-
Nicholas	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	31.85	-	345,876.20	-	126,244,813.00	-
	4 - Minor Arterial	41.22	-	109,392.00	-	39,928,080.00	-
	5 - Major Collector	136.68	-	258,357.10	-	94,300,341.50	-
	6 - Minor Collector	47.02	-	19,742.00	-	7,205,830.00	-
	7 - Local	414.37	-	54,616.00	-	19,934,840.00	-
Ohio	1 - Interstate	2.69	15.70	59,964.70	438,992.50	21,887,115.50	160,232,262.50
	2 - Principal Arterial - Other Freeways and Expressways	-	3.04	-	26,521.00	-	9,680,165.00
	3 - Principal Arterial - Other	2.63	15.38	11,919.60	115,709.40	4,350,654.00	42,233,931.00
	4 - Minor Arterial	-	19.86	-	130,881.60	-	47,771,784.00
	5 - Major Collector	47.40	45.83	64,336.15	116,215.85	23,482,694.75	42,418,785.25
	6 - Minor Collector	10.04	1.47	3,844.00	44.10	1,403,060.00	16,096.50
	7 - Local	78.64	33.57	18,850.00	95,893.00	6,880,250.00	35,000,945.00
Pendleton	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	-	-	-	-	-	-
	4 - Minor Arterial	75.59	-	104,777.50	-	38,243,787.50	-

	5 - Major Collector	86.85	-	49,664.70	-	18,127,615.50	-
	6 - Minor Collector	51.74	-	11,557.00	-	4,218,305.00	-
	7 - Local	335.96	-	25,039.00	-	9,139,235.00	-
Pleasants	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	17.49	-	121,216.00	-	44,243,840.00	-
	4 - Minor Arterial	-	-	-	-	-	-
	5 - Major Collector	38.72	-	38,472.00	-	14,042,280.00	-
	6 - Minor Collector	22.27	-	5,560.00	-	2,029,400.00	-
	7 - Local	164.23	-	15,992.00	-	5,837,080.00	-
Pocahontas	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	42.28	-	63,163.00	-	23,054,495.00	-
	4 - Minor Arterial	49.87	-	47,727.80	-	17,420,647.00	-
	5 - Major Collector	150.57	-	72,926.24	-	26,618,077.60	-
	6 - Minor Collector	28.17	-	6,135.00	-	2,239,275.00	-
	7 - Local	385.52	-	38,442.00	-	14,031,330.00	-
Preston	1 - Interstate	18.08	-	188,259.60	-	68,714,754.00	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	4.76	-	6,995.00	-	2,553,175.00	-
	4 - Minor Arterial	101.39	-	244,519.90	-	89,249,763.50	-
	5 - Major Collector	126.77	-	121,646.70	-	44,401,045.50	-
	6 - Minor Collector	74.71	-	40,826.00	-	14,901,490.00	-
	7 - Local	815.33	0.45	75,793.00	36.00	27,664,445.00	13,140.00
Putnam	1 - Interstate	1.24	12.38	56,778.30	403,971.60	20,724,079.50	147,449,634.00
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	20.29	4.15	239,831.80	68,157.20	87,538,607.00	24,877,378.00
	4 - Minor Arterial	1.33	34.82	5,717.10	272,961.40	2,086,741.50	99,630,911.00
	5 - Major Collector	84.48	35.51	171,922.90	164,716.80	62,751,858.50	60,121,632.00
	6 - Minor Collector	34.60	-	7,634.00	-	2,786,410.00	-
	7 - Local	368.98	64.72	52,250.00	69,411.00	19,071,250.00	25,335,015.00
Raleigh	1 - Interstate	15.52	31.58	223,659.30	632,604.60	81,635,644.50	230,900,679.00
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	10.13	13.37	27,494.60	206,701.70	10,035,529.00	75,446,120.50
	4 - Minor Arterial	23.28	43.72	89,798.45	435,673.25	32,776,434.25	159,020,736.25
	5 - Major Collector	128.47	118.74	181,021.20	217,227.90	66,072,738.00	79,288,183.50

	6 - Minor Collector	20.87	2.01	9,188.00	3,031.40	3,353,620.00	1,106,461.00
	7 - Local	415.50	213.19	48,186.00	51,665.00	17,587,890.00	18,857,725.00
Randolph	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	49.55	13.43	183,198.70	150,920.20	66,867,525.50	55,085,873.00
	4 - Minor Arterial	44.85	5.47	89,150.90	29,892.30	32,540,078.50	10,910,689.50
	5 - Major Collector	110.86	9.43	64,253.20	15,271.10	23,452,418.00	5,573,951.50
	6 - Minor Collector	64.48	1.88	20,702.00	1,587.10	7,556,230.00	579,291.50
	7 - Local	544.27	25.49	106,423.00	114,430.00	38,844,395.00	41,766,950.00
Ritchie	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	20.95	-	162,625.00	-	59,358,125.00	-
	4 - Minor Arterial	-	-	-	-	-	-
	5 - Major Collector	191.79	-	126,119.95	-	46,033,781.75	-
	6 - Minor Collector	34.92	-	4,806.00	-	1,754,190.00	-
	7 - Local	528.18	-	20,325.00	-	7,418,625.00	-
Roane	1 - Interstate	14.72	-	105,959.00	-	38,675,035.00	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	-	-	-	-	-	-
	4 - Minor Arterial	20.44	-	54,086.00	-	19,741,390.00	-
	5 - Major Collector	135.01	-	109,361.20	-	39,916,838.00	-
	6 - Minor Collector	63.54	-	14,145.00	-	5,162,925.00	-
	7 - Local	556.06	-	34,772.00	-	12,691,780.00	-
Summers	1 - Interstate	9.59	-	68,838.00	-	25,125,870.00	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	-	-	-	-	-	-
	4 - Minor Arterial	77.16	-	153,485.30	-	56,022,134.50	-
	5 - Major Collector	32.72	-	10,085.70	-	3,681,280.50	-
	6 - Minor Collector	51.88	-	8,840.00	-	3,226,600.00	-
	7 - Local	422.02	-	38,207.00	-	13,945,555.00	-
Taylor	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	-	-	-	-	-	-
	4 - Minor Arterial	34.79	19.64	141,690.50	87,196.20	51,717,032.50	31,826,613.00
	5 - Major Collector	31.16	7.07	26,743.50	6,948.60	9,761,377.50	2,536,239.00
	6 - Minor Collector	20.37	0.14	10,474.00	63.80	3,823,010.00	23,287.00

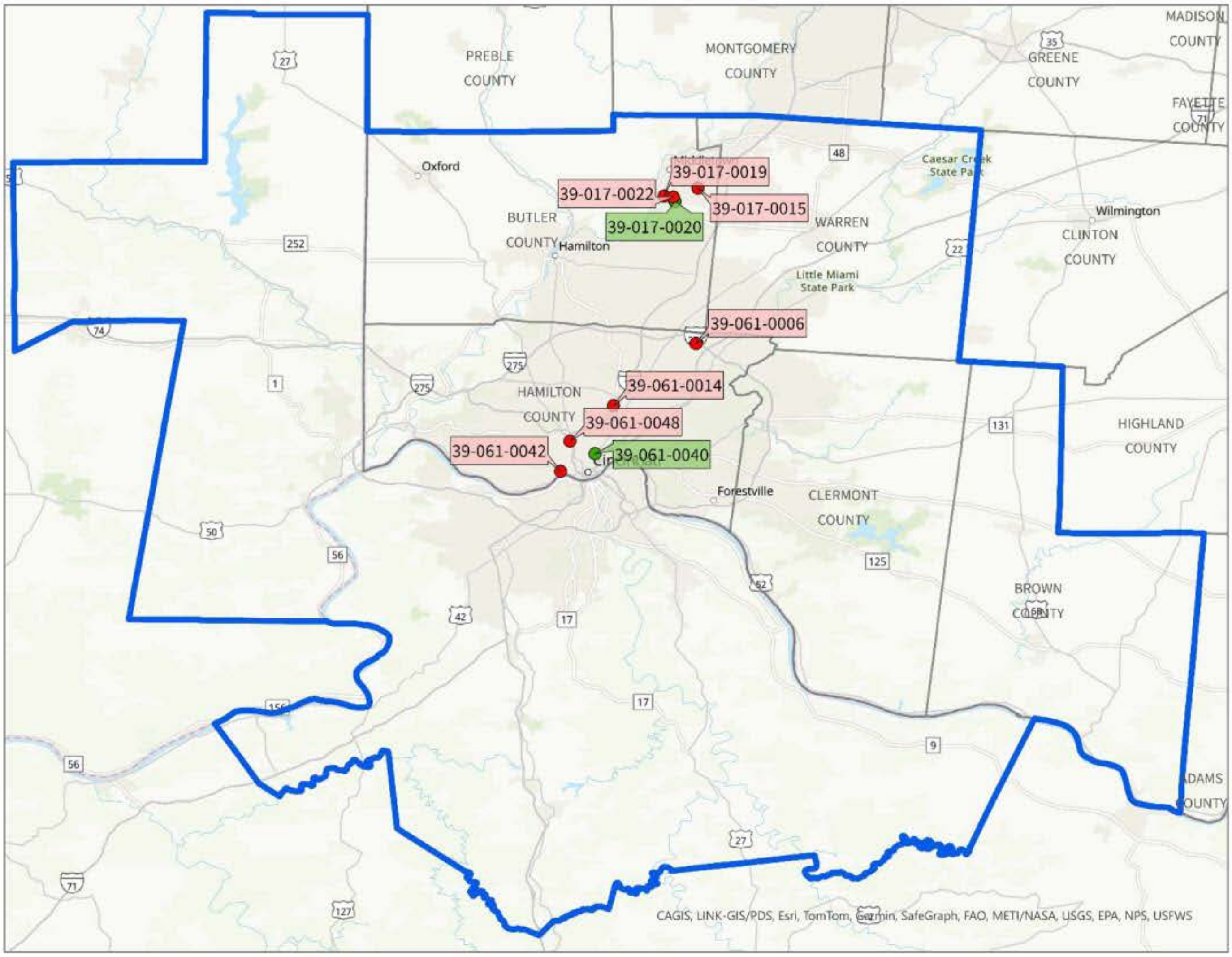
	7 - Local	252.68	25.61	26,137.00	6,926.00	9,540,005.00	2,527,990.00
Tucker	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	46.33	-	118,860.40	-	43,384,046.00	-
	4 - Minor Arterial	10.37	-	19,537.60	-	7,131,224.00	-
	5 - Major Collector	63.80	-	35,499.00	-	12,957,135.00	-
	6 - Minor Collector	33.11	-	3,750.00	-	1,368,750.00	-
	7 - Local	274.72	-	21,508.00	-	7,850,420.00	-
Tyler	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	13.93	-	63,594.00	-	23,211,810.00	-
	4 - Minor Arterial	-	-	-	-	-	-
	5 - Major Collector	84.08	-	112,207.40	-	40,955,701.00	-
	6 - Minor Collector	39.08	-	8,354.00	-	3,049,210.00	-
	7 - Local	267.63	-	19,653.00	-	7,173,345.00	-
Upshur	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	8.85	6.55	80,586.20	76,864.80	29,413,963.00	28,055,652.00
	4 - Minor Arterial	9.86	12.25	28,685.50	61,899.50	10,470,207.50	22,593,317.50
	5 - Major Collector	73.35	10.08	92,576.10	15,389.55	33,790,276.50	5,617,185.75
	6 - Minor Collector	53.08	1.99	24,856.00	2,020.40	9,072,440.00	737,446.00
	7 - Local	515.70	18.74	37,161.00	17,423.00	13,563,765.00	6,359,395.00
Wayne	1 - Interstate	-	5.87	-	111,111.00	-	40,555,515.00
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	43.30	14.05	144,814.40	75,503.20	52,857,256.00	27,558,668.00
	4 - Minor Arterial	-	11.70	-	40,583.00	-	14,812,795.00
	5 - Major Collector	133.09	27.27	195,637.00	102,444.25	71,407,505.00	37,392,151.25
	6 - Minor Collector	55.04	6.48	21,168.00	3,336.50	7,726,320.00	1,217,822.50
	7 - Local	494.42	72.44	50,014.00	19,390.00	18,255,110.00	7,077,350.00
Webster	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	-	-	-	-	-	-
	4 - Minor Arterial	-	-	-	-	-	-
	5 - Major Collector	118.49	-	107,551.00	-	39,256,115.00	-
	6 - Minor Collector	38.12	-	14,009.00	-	5,113,285.00	-
	7 - Local	320.25	-	19,487.00	-	7,112,755.00	-

Wetzel	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	16.38	7.81	45,379.50	81,237.80	16,563,517.50	29,651,797.00
	4 - Minor Arterial	64.99	5.93	93,985.60	20,489.40	34,304,744.00	7,478,631.00
	5 - Major Collector	80.22	8.20	48,799.90	5,679.40	17,811,963.50	2,072,981.00
	6 - Minor Collector	37.39	0.01	7,216.00	1.35	2,633,840.00	492.75
	7 - Local	333.18	6.36	13,762.00	2,141.00	5,023,130.00	781,465.00
Wirt	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	-	-	-	-	-	-
	4 - Minor Arterial	-	-	-	-	-	-
	5 - Major Collector	101.68	-	84,609.90	-	30,882,613.50	-
	6 - Minor Collector	23.77	-	2,441.00	-	890,965.00	-
	7 - Local	273.46	-	11,057.00	-	4,035,805.00	-
Wood	1 - Interstate	14.96	15.26	181,312.50	260,447.00	66,179,062.50	95,063,155.00
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	17.78	31.68	156,050.30	404,872.20	56,958,359.50	147,778,353.00
	4 - Minor Arterial	0.97	52.74	7,476.50	360,469.70	2,728,922.50	131,571,440.50
	5 - Major Collector	113.61	43.09	117,549.60	109,298.10	42,905,604.00	39,893,806.50
	6 - Minor Collector	44.34	5.61	7,831.00	1,943.75	2,858,315.00	709,468.75
	7 - Local	391.47	142.47	34,333.00	100,513.00	12,531,545.00	36,687,245.00
Wyoming	1 - Interstate	-	-	-	-	-	-
	2 - Principal Arterial - Other Freeways and Expressways	-	-	-	-	-	-
	3 - Principal Arterial - Other	36.80	-	98,216.00	-	35,848,840.00	-
	4 - Minor Arterial	81.00	-	199,036.00	-	72,648,140.00	-
	5 - Major Collector	85.98	-	99,351.44	-	36,263,275.60	-
	6 - Minor Collector	34.49	-	17,993.00	-	6,567,445.00	-
	7 - Local	294.02	-	28,054.00	-	10,239,710.00	-

Appendix D

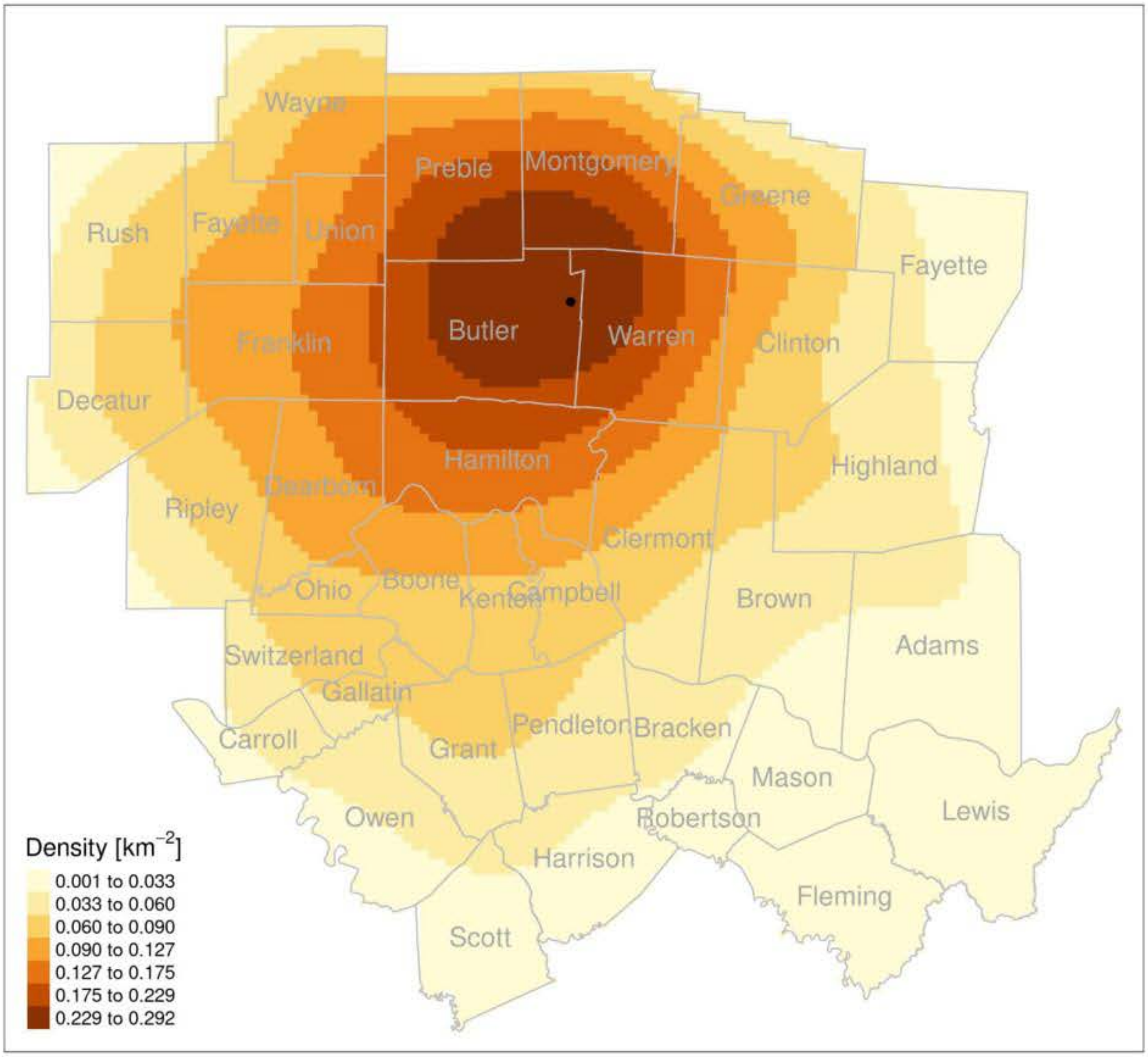
Ohio's HYSPLIT Density Maps

Cincinnati-Wilmington-Maysville OH-KY-IN CSA, Ohio Portion



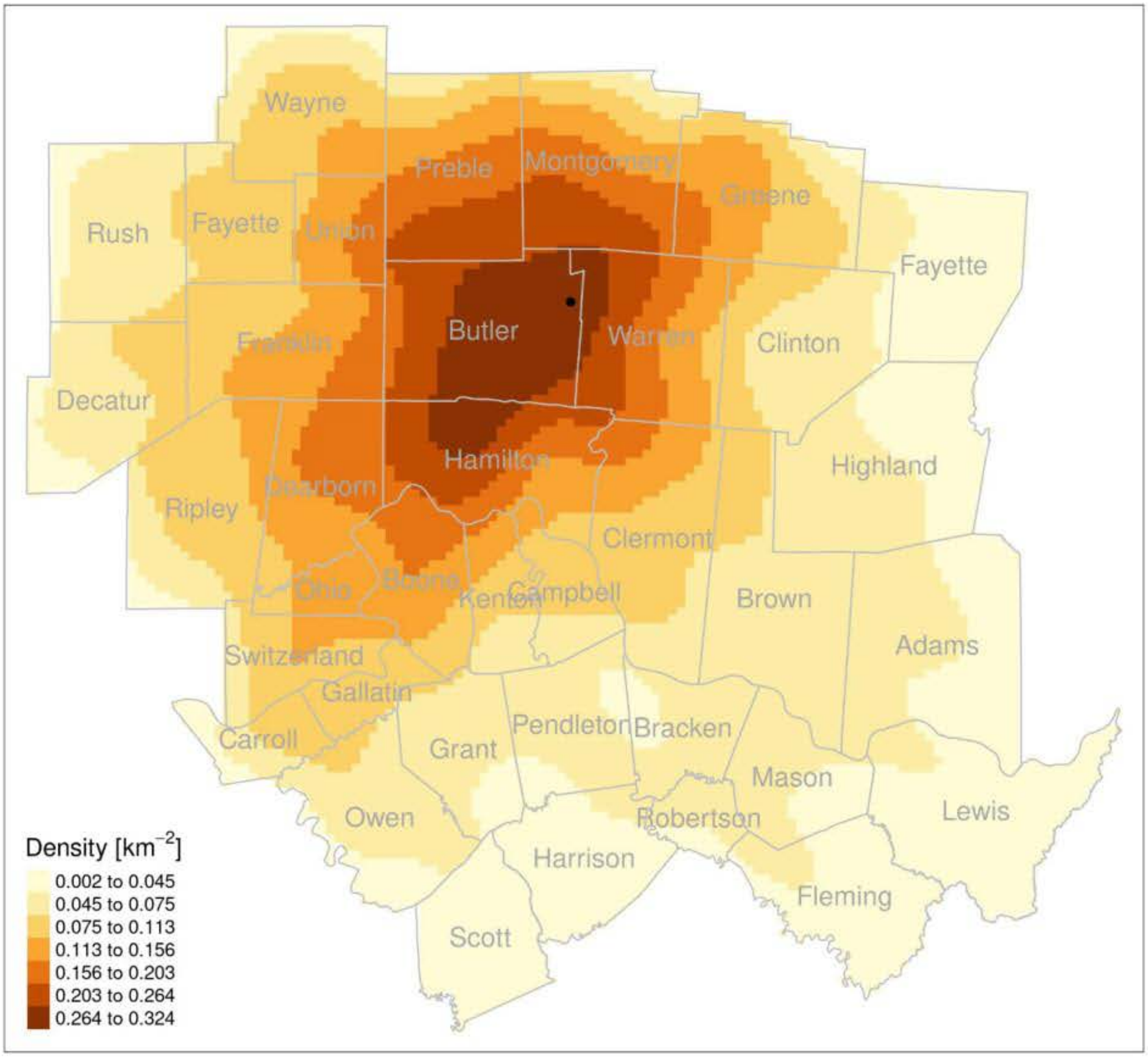
Ohio Bell (39-017-0015)
Butler County

Morning (0800) HYSPLIT



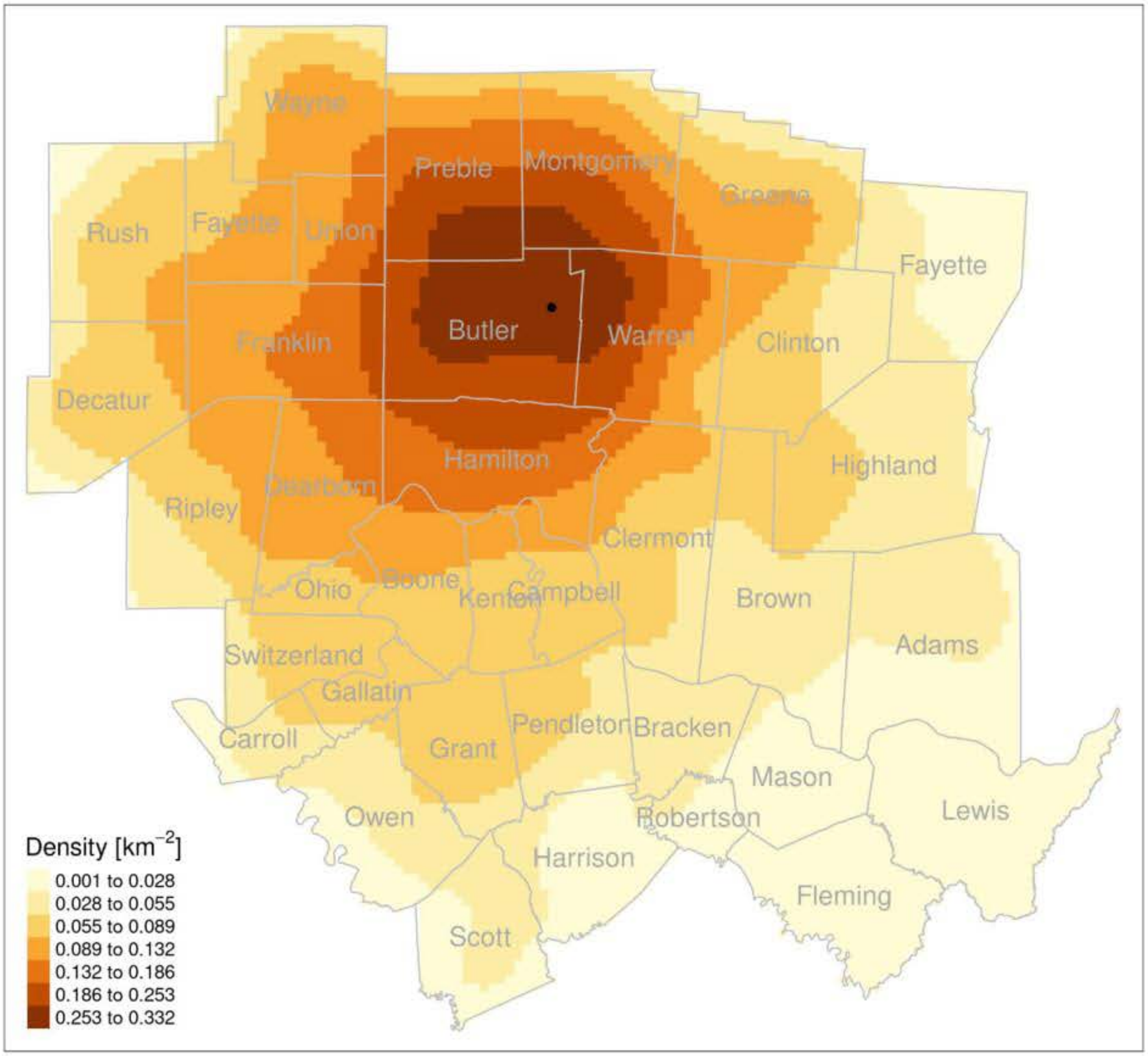
Ohio Bell (39-017-0015)

Night (2200) HYSPLIT



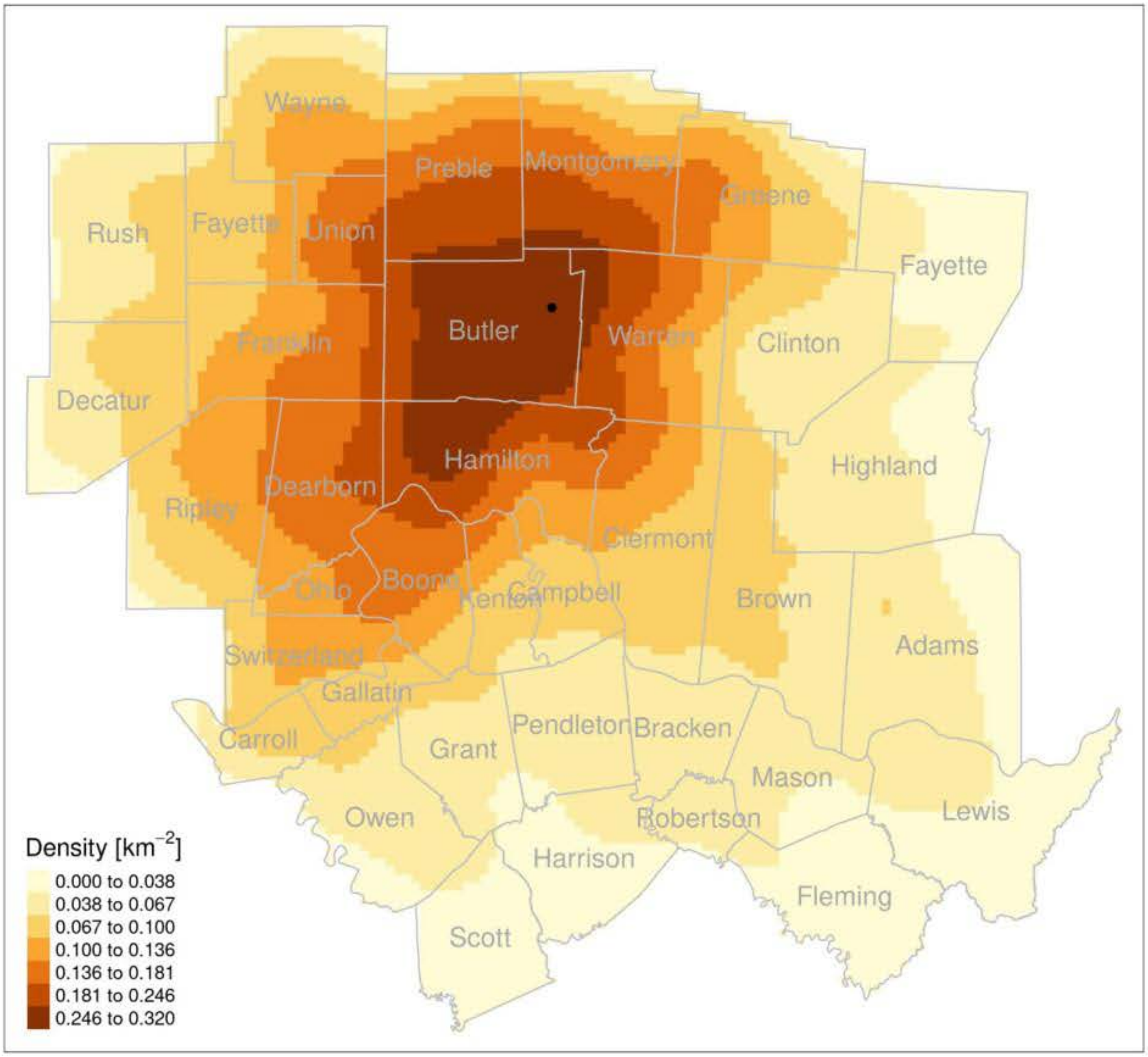
Amanda Elementary (39-017-0019)
Butler County

Morning (0800) HYSPLIT



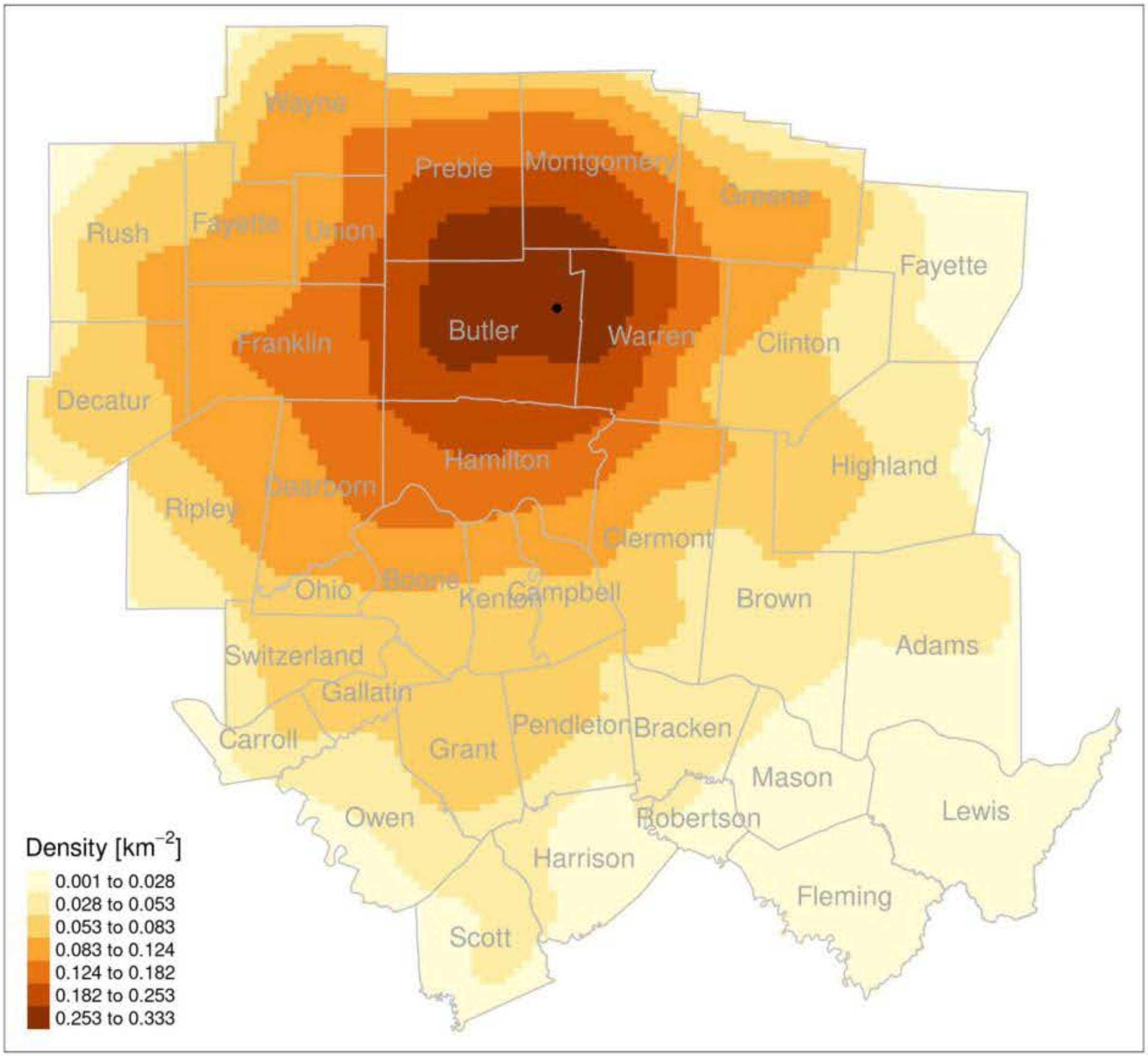
Amanda Elementary (39-017-0019)

Night (2200) HYSPLIT



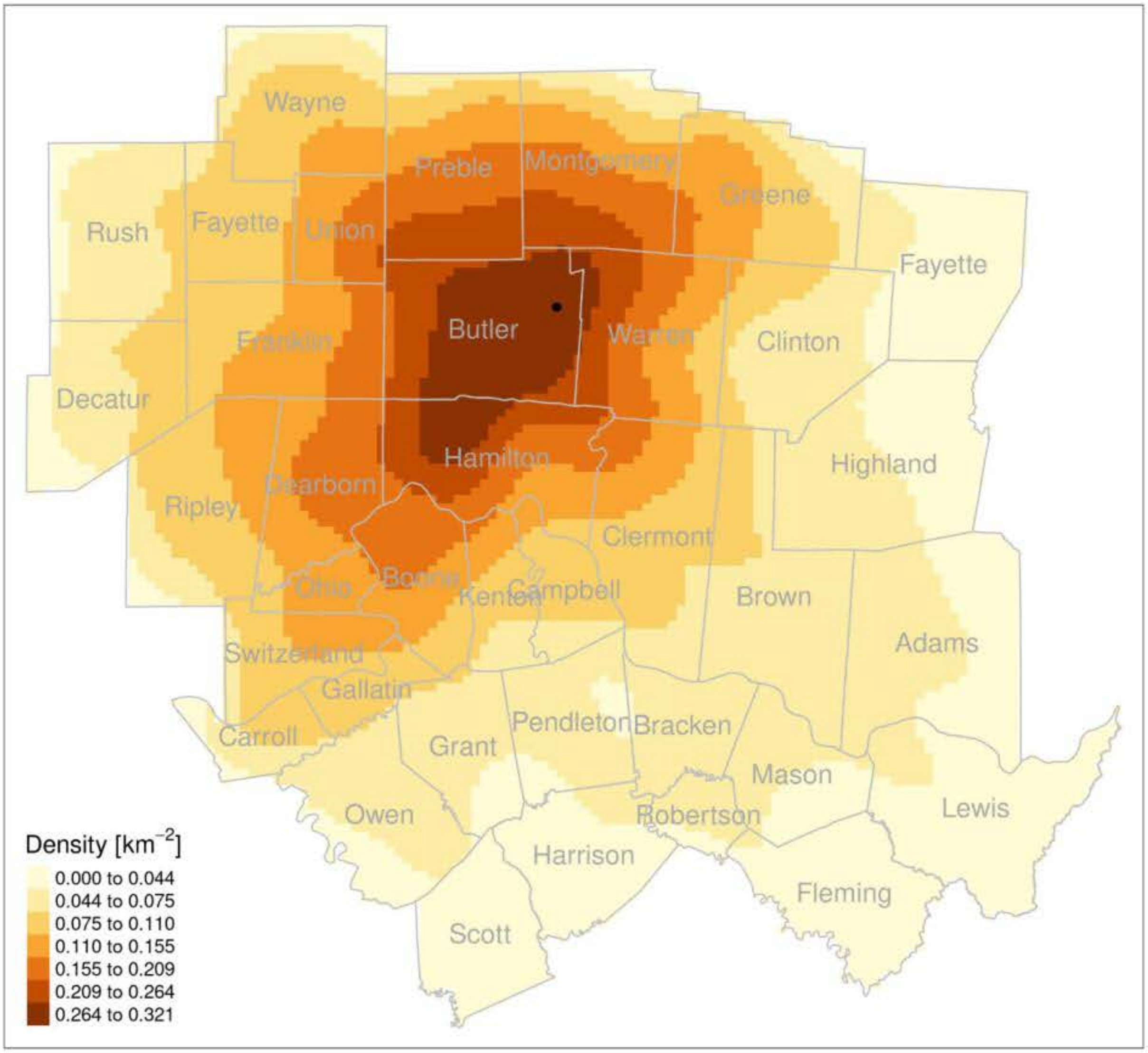
BPG (39-017-0022)
Butler County

Morning (0800) HYSPLIT



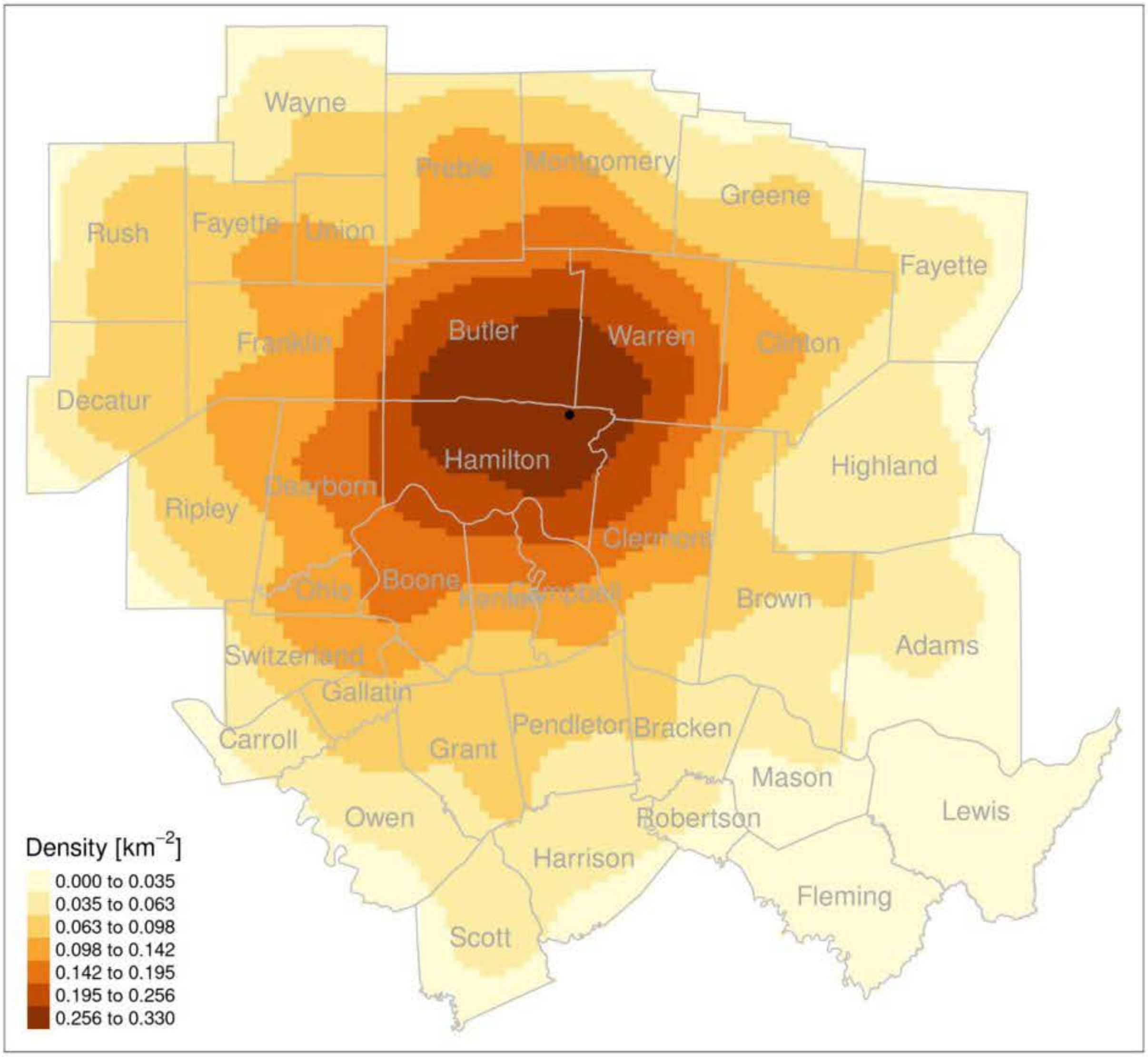
BPG (39-017-0022)

Night (2200) HYSPLIT



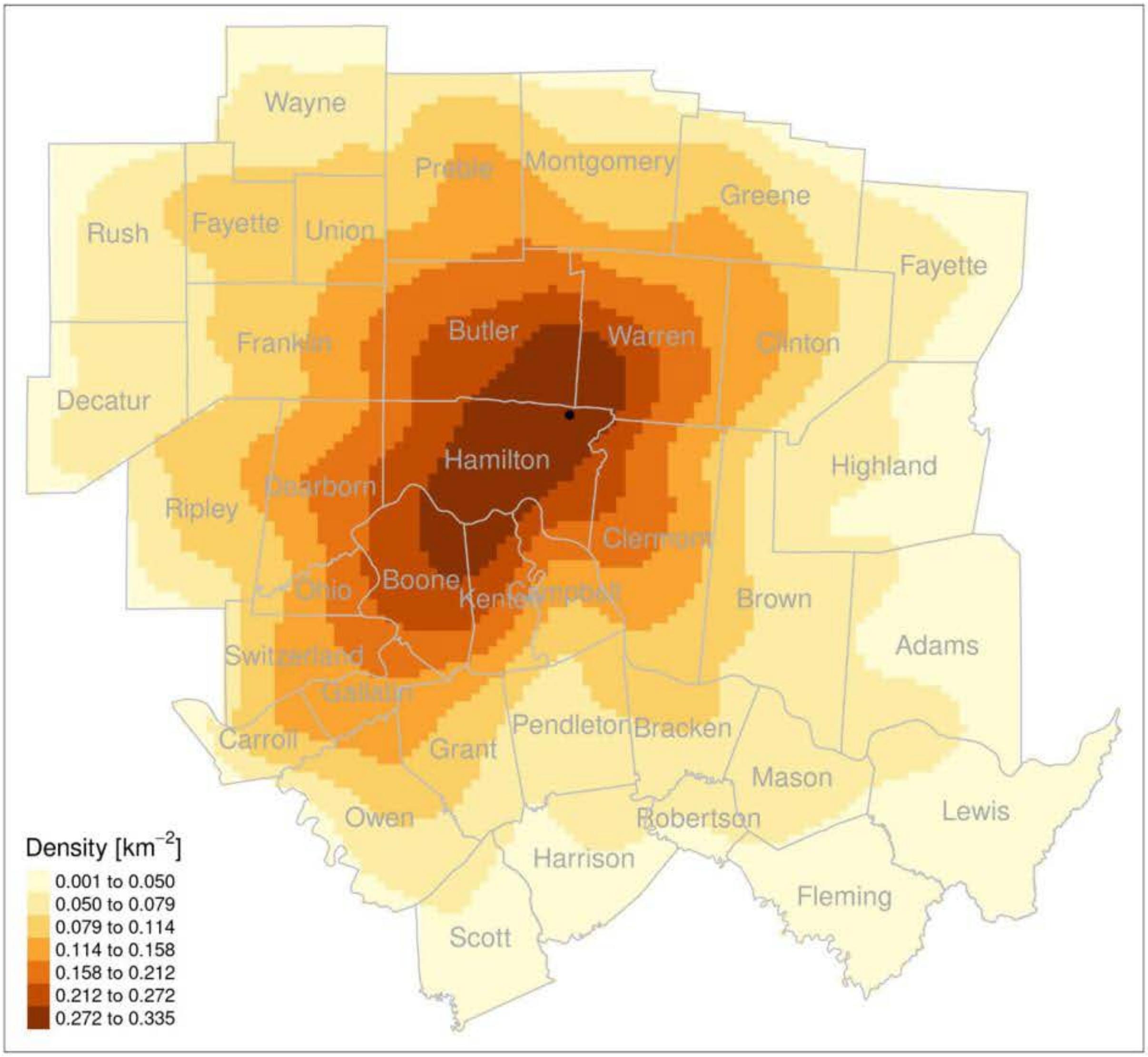
Sycamore (39-061-0006)
Hamilton County

Morning (0800) HYSPLIT



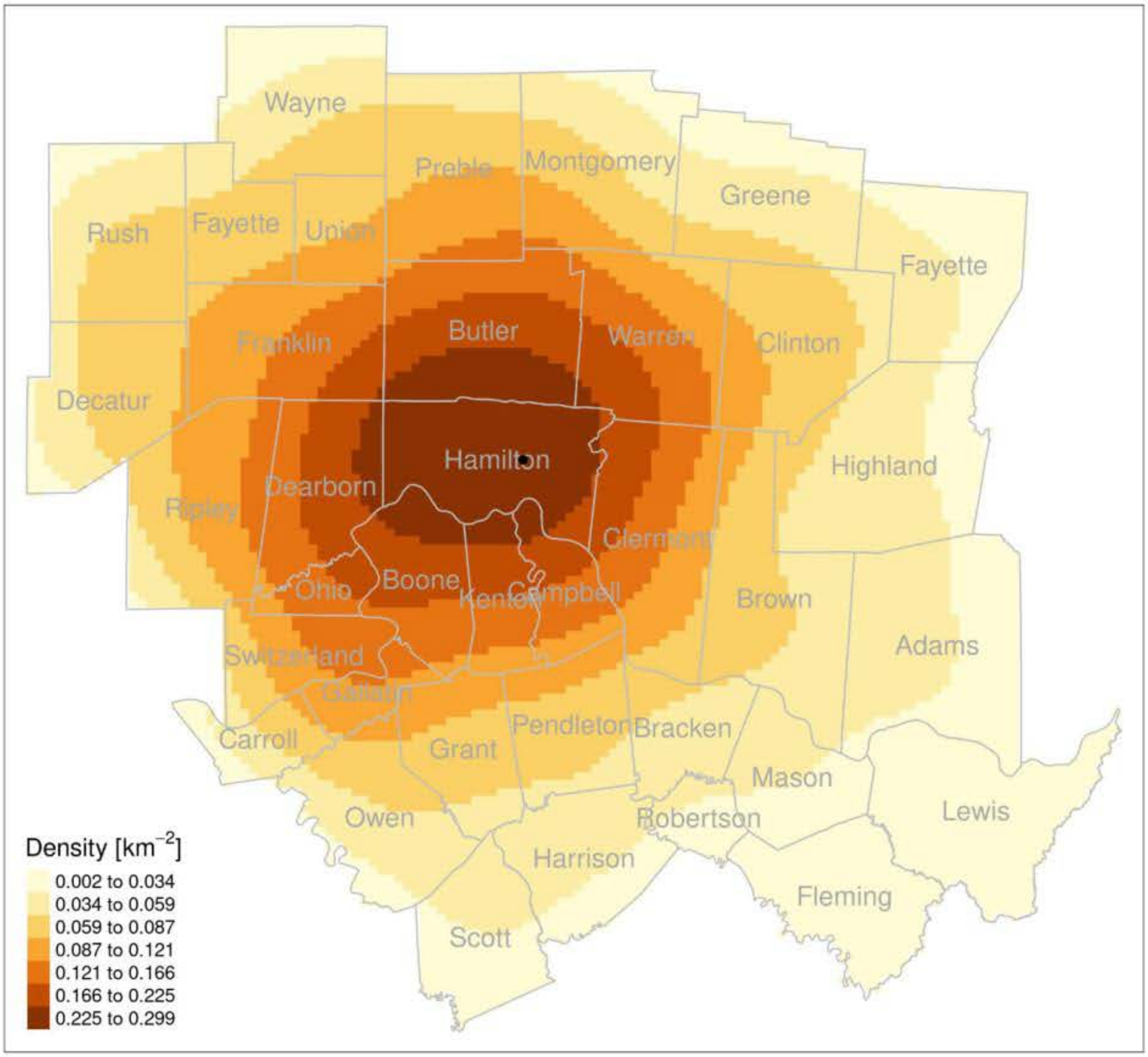
Sycamore (39-061-0006)

Night (2200) HYSPLIT



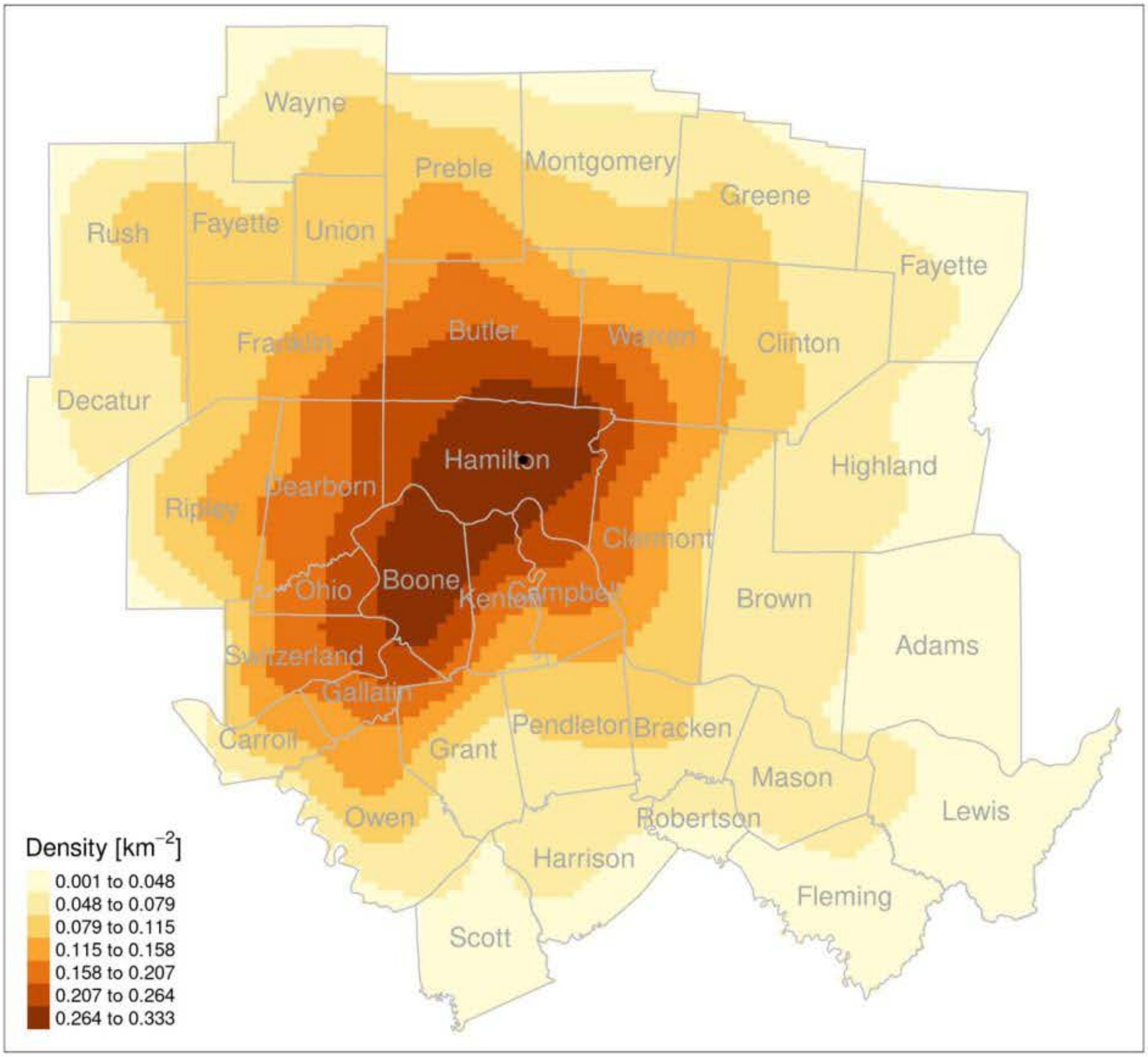
Carthage (39-061-0014)
Hamilton County

Morning (0800) HYSPLIT



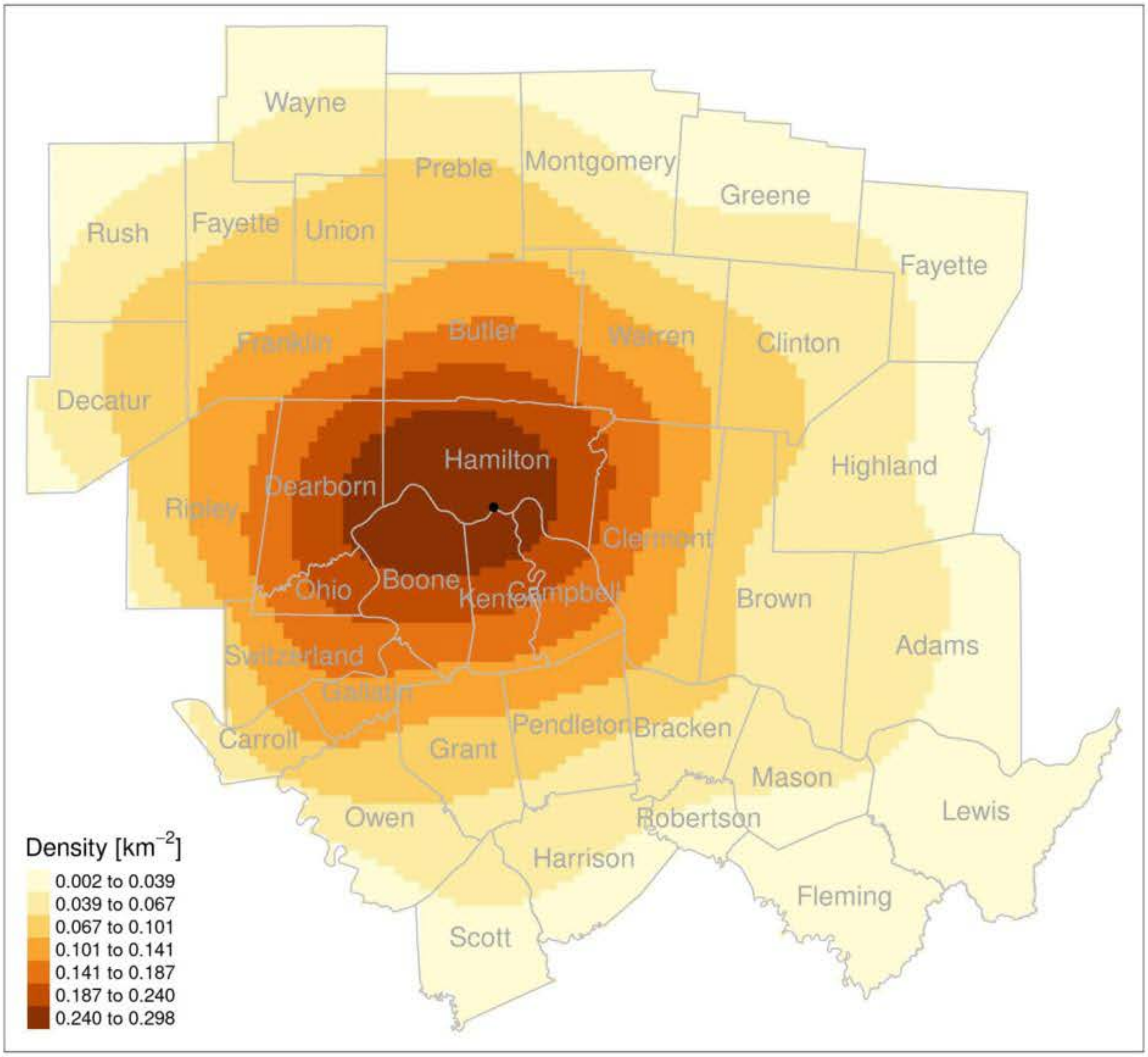
Carthage (39-061-0014)

Night (2200) HYSPLIT



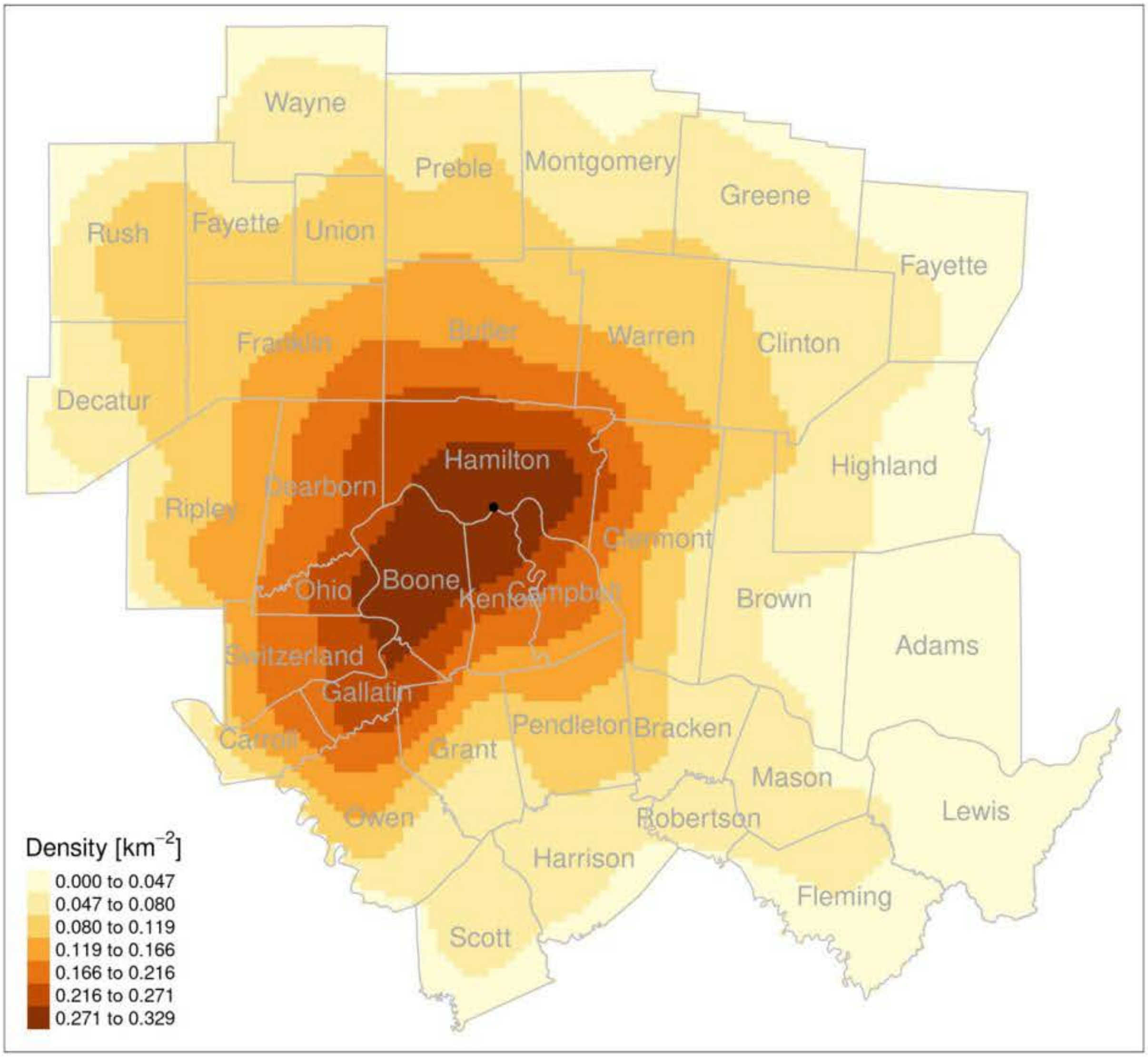
Lower Price Hill (39-061-0042)
Hamilton County

Morning (0800) HYSPLIT



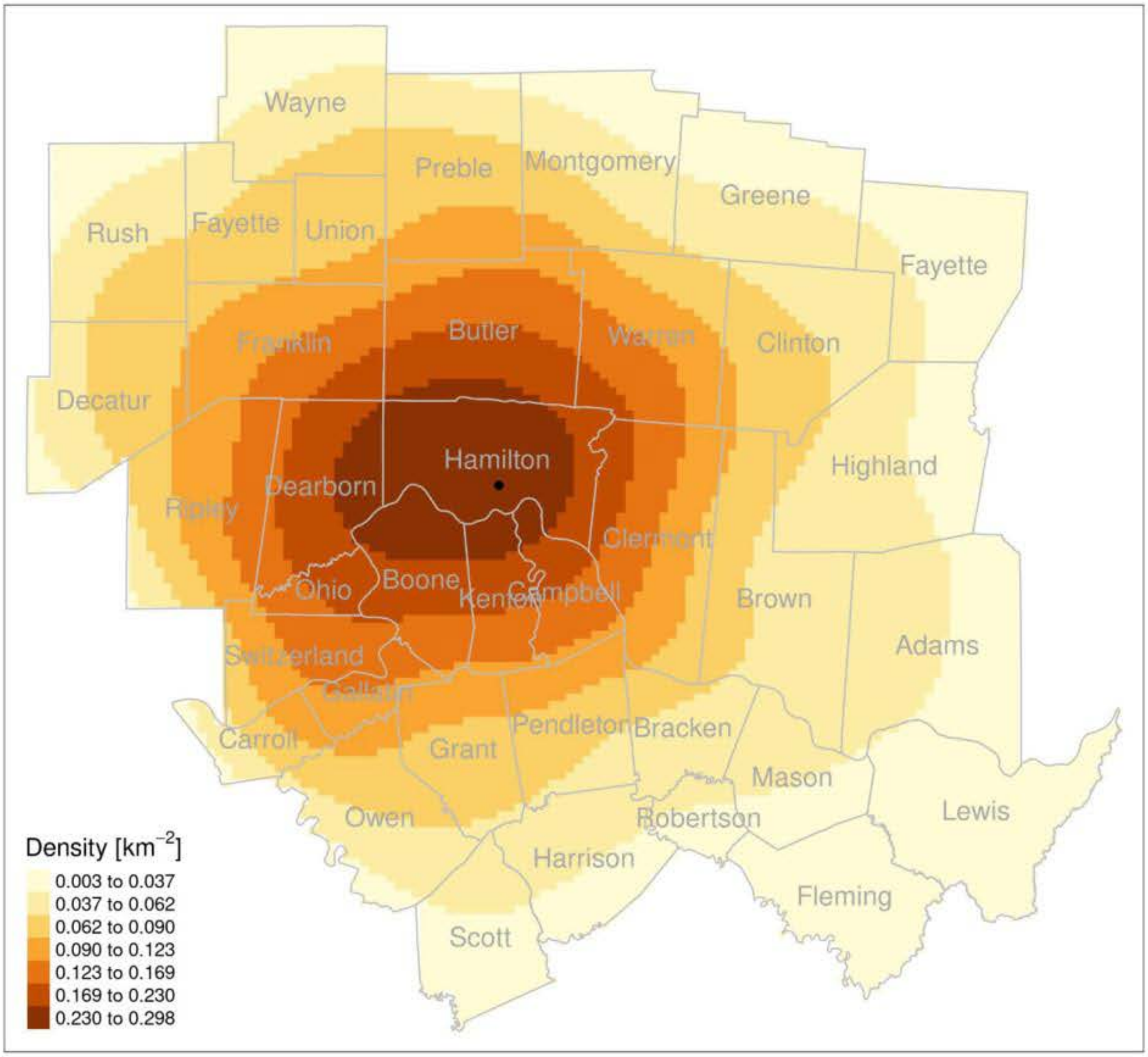
Lower Price Hill (39-061-0042)

Night (2200) HYSPLIT



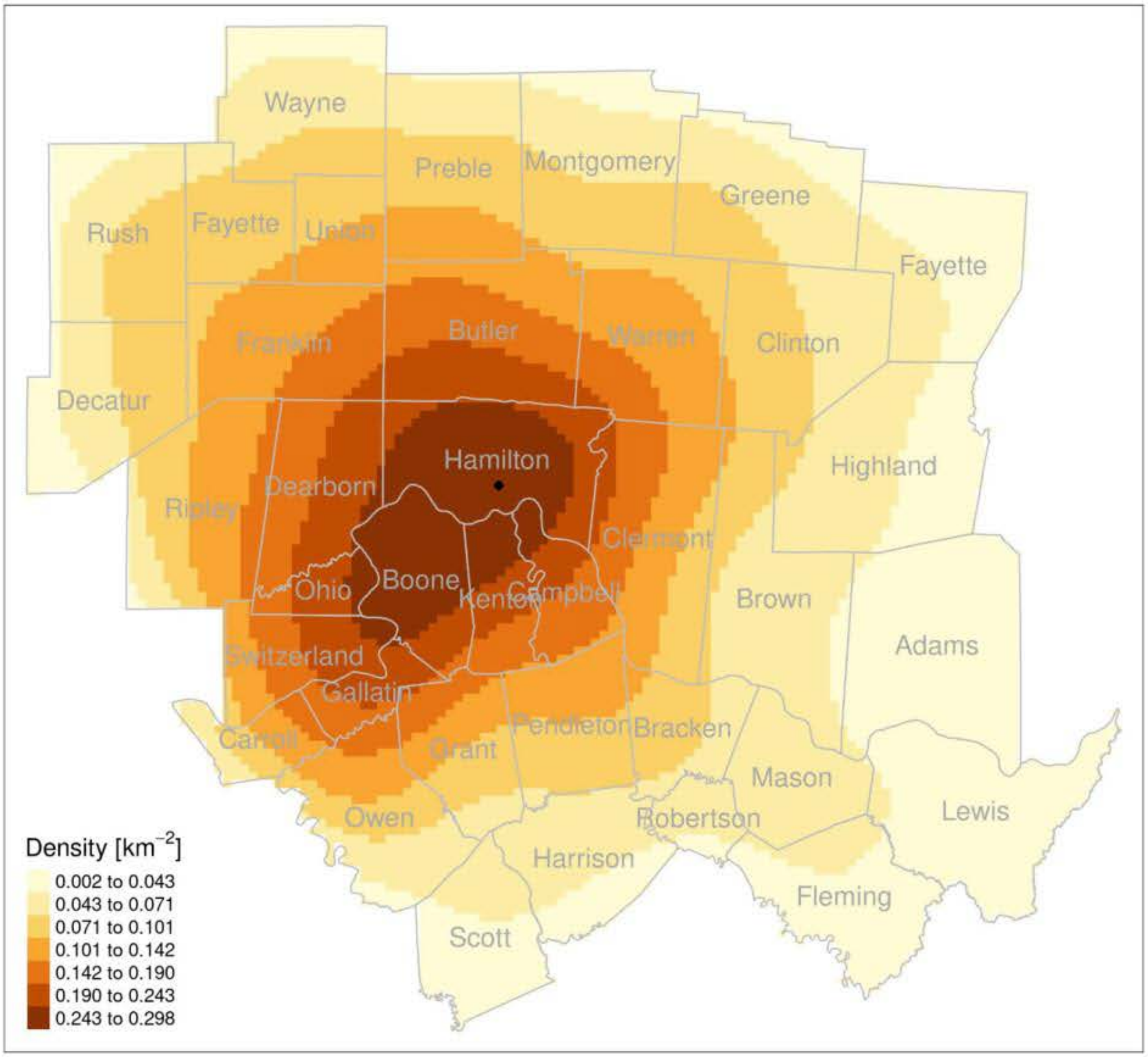
Cincinnati Near Road (39-061-0048)
Hamilton County

Morning (0800) HYSPLIT

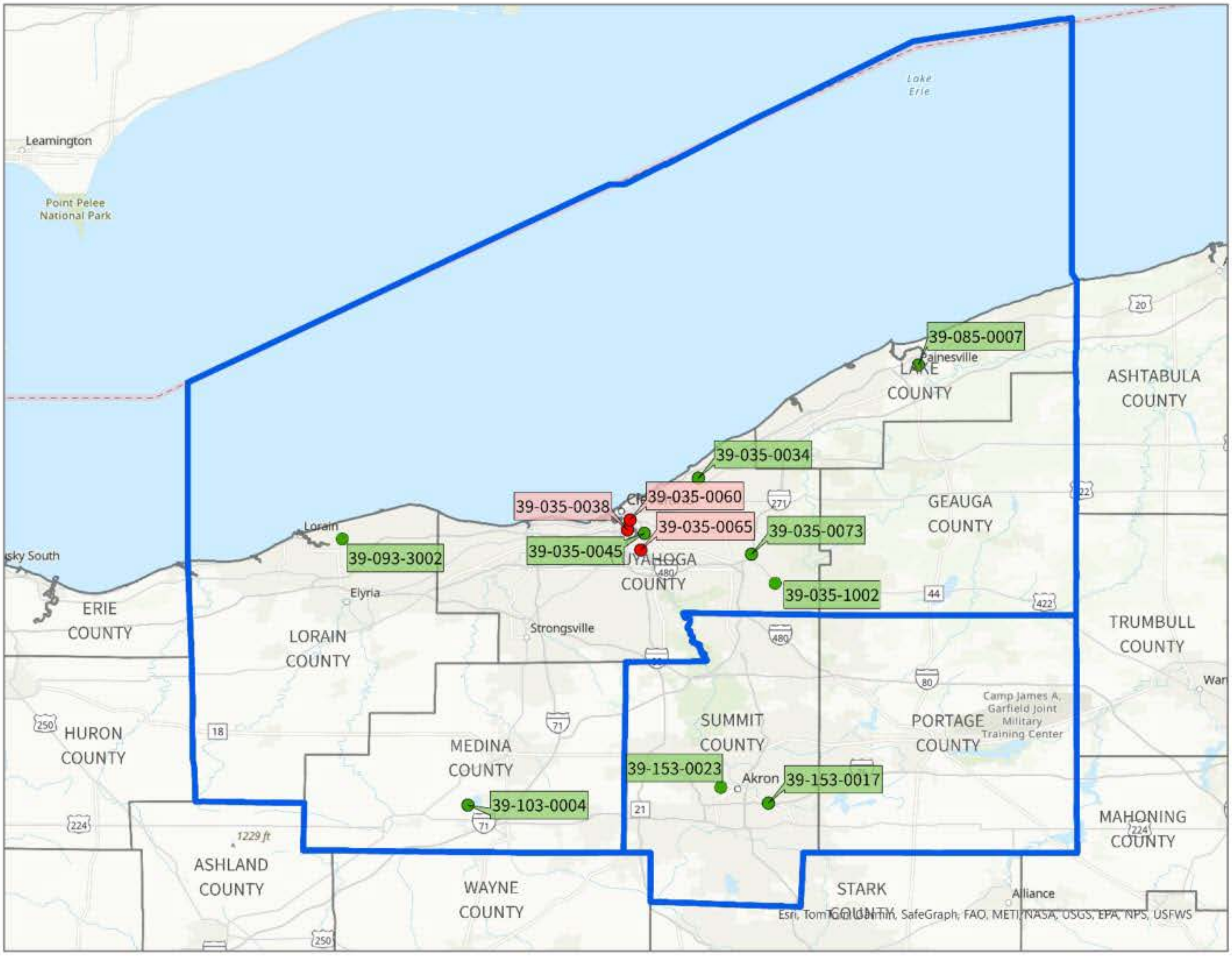


Cincinnati Near Road (39-061-0048)

Night (2200) HYSPLIT

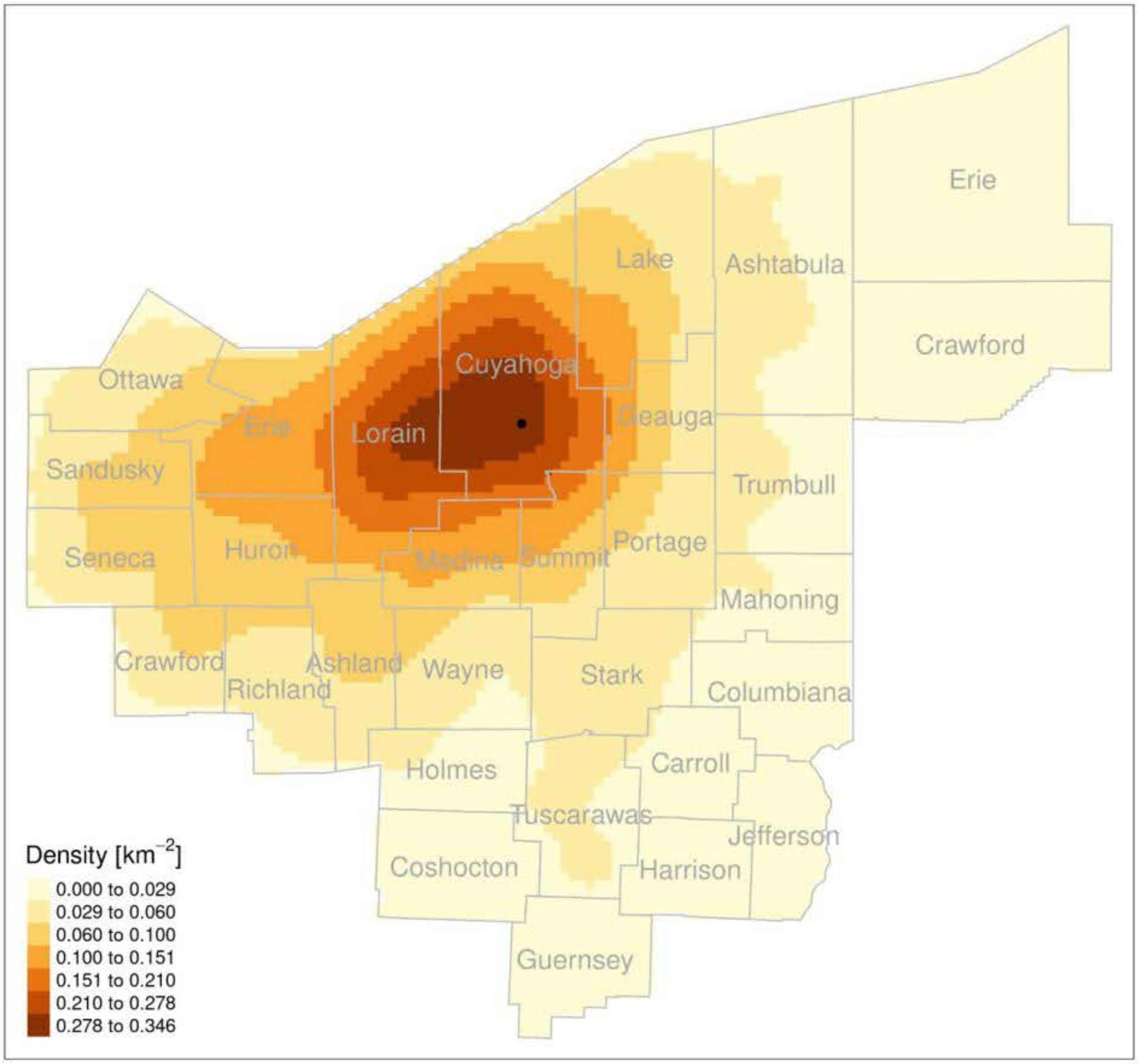


Cleveland-Elyria-Akron OH Analysis Area



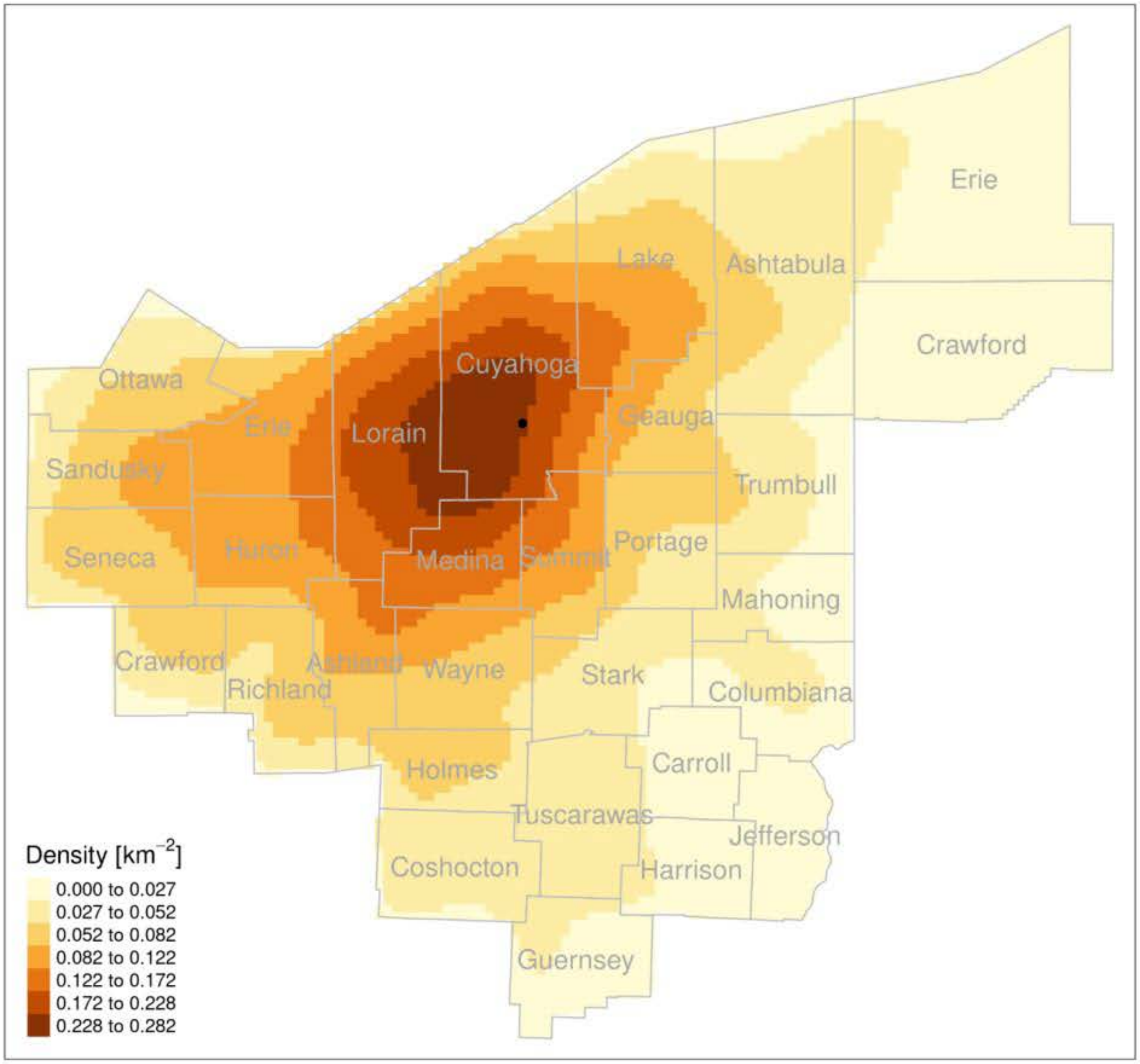
St. Theodosius (39-035-0038)
Cuyahoga County

Morning (0800) HYSPLIT



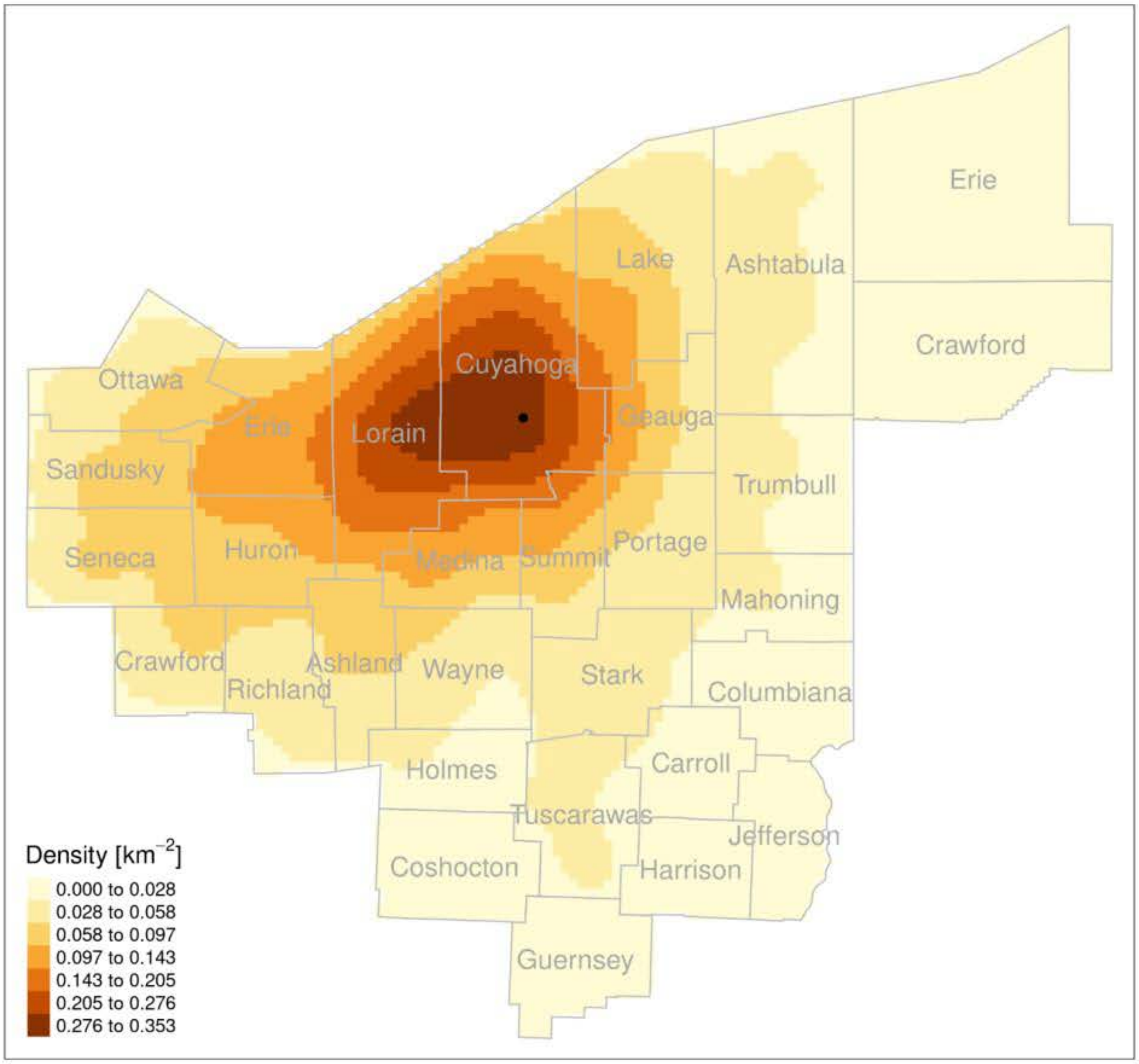
St. Theodosius (39-035-0038)

Night (2200) HYSPLIT



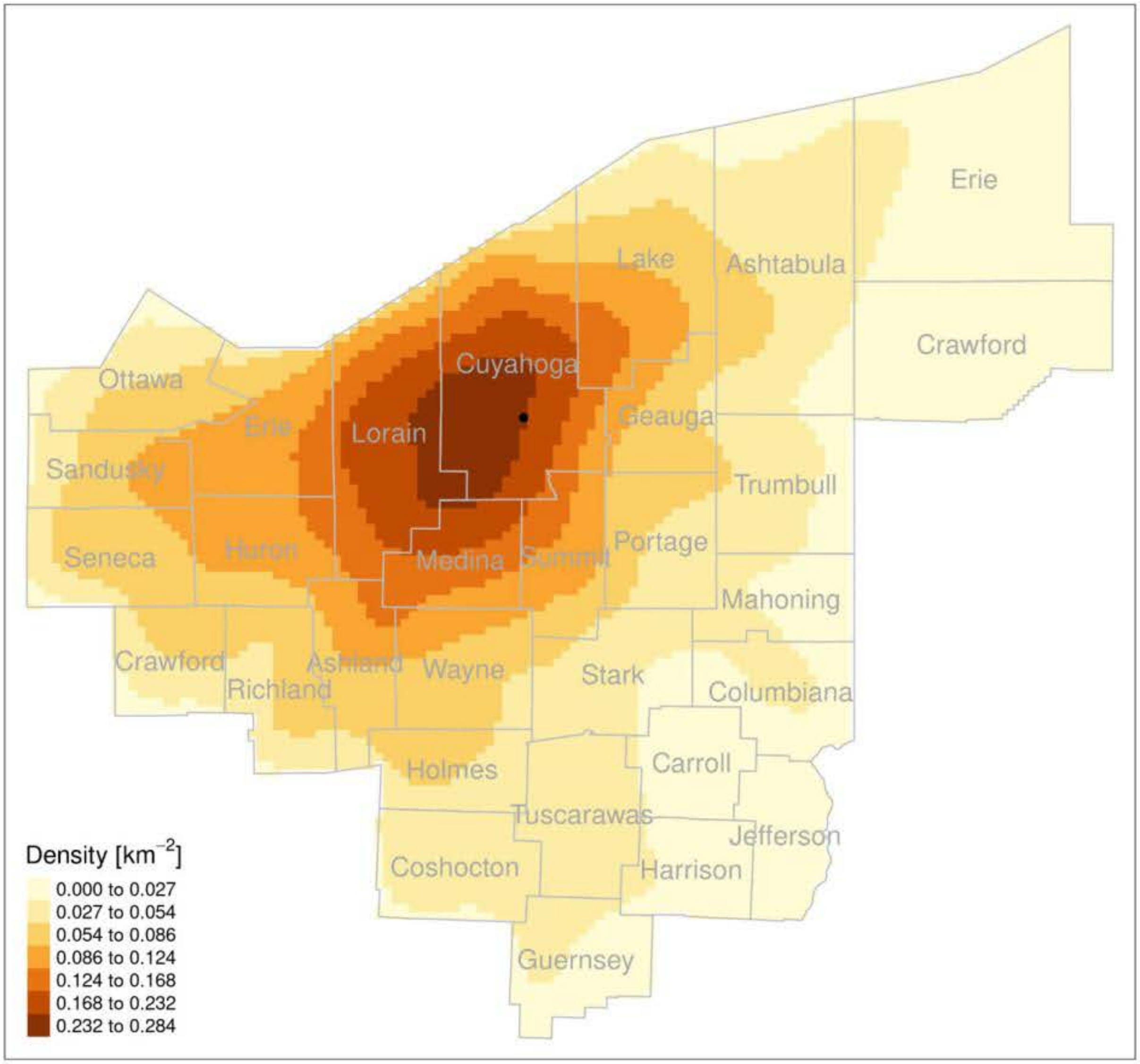
GT Craig NCore PAMS (39-035-0060)
Cuyahoga County

Morning (0800) HYSPLIT



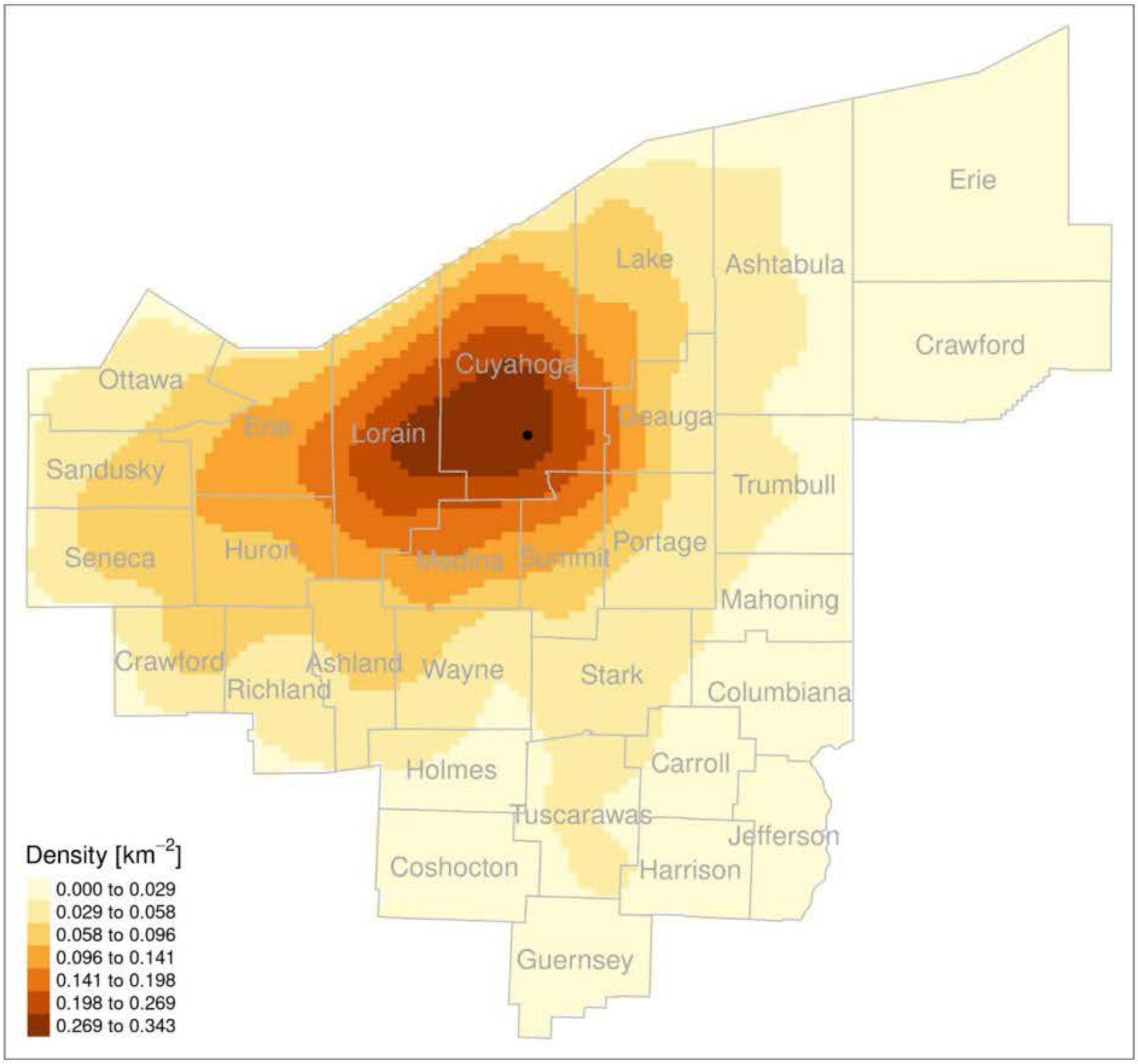
GT Craig NCore PAMS (39-035-0060)

Night (2200) HYSPLIT



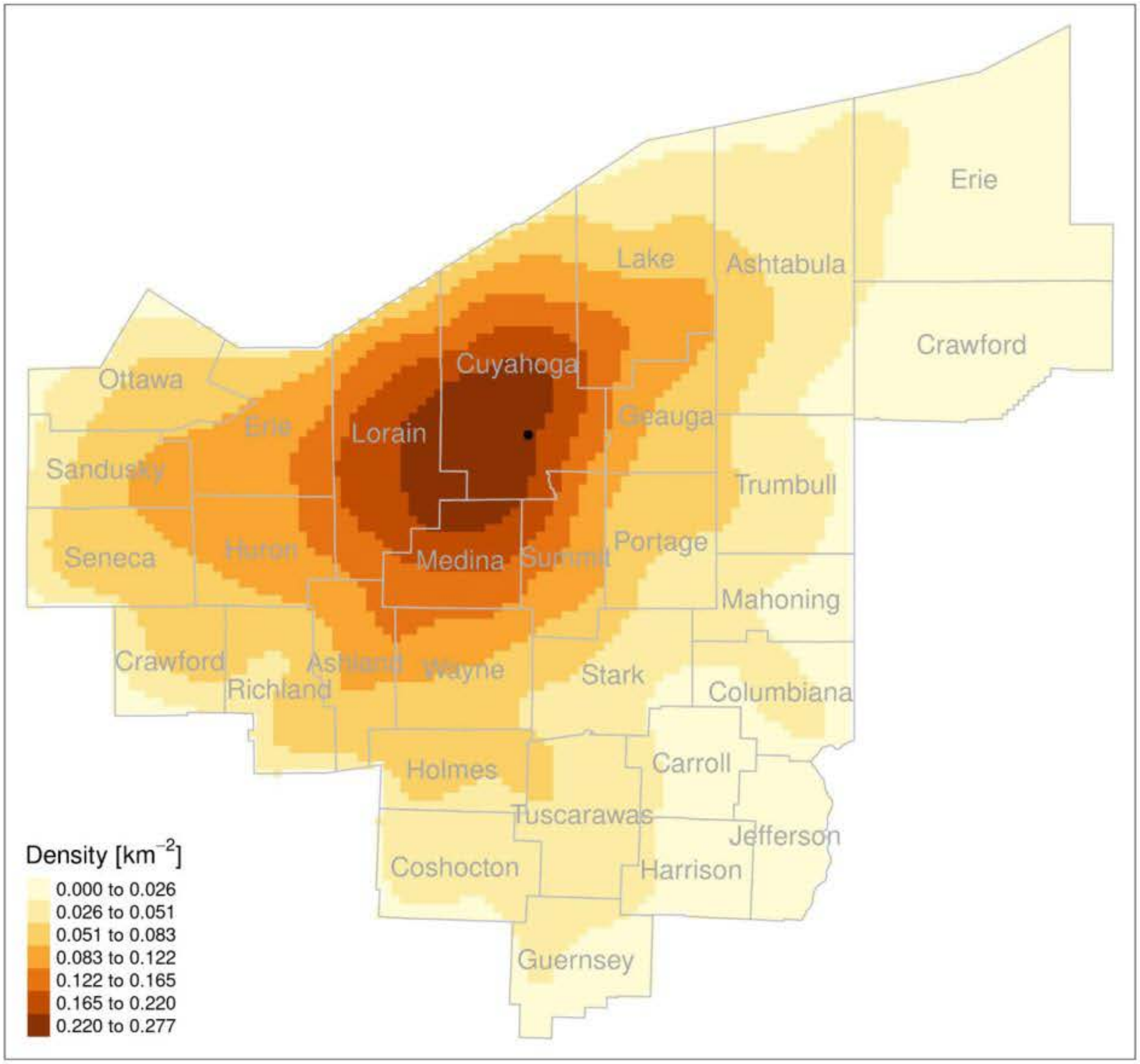
Harvard Yards (39-035-0065)
Cuyahoga County

Morning (0800) HYSPLIT



Harvard Yards (39-035-0065)

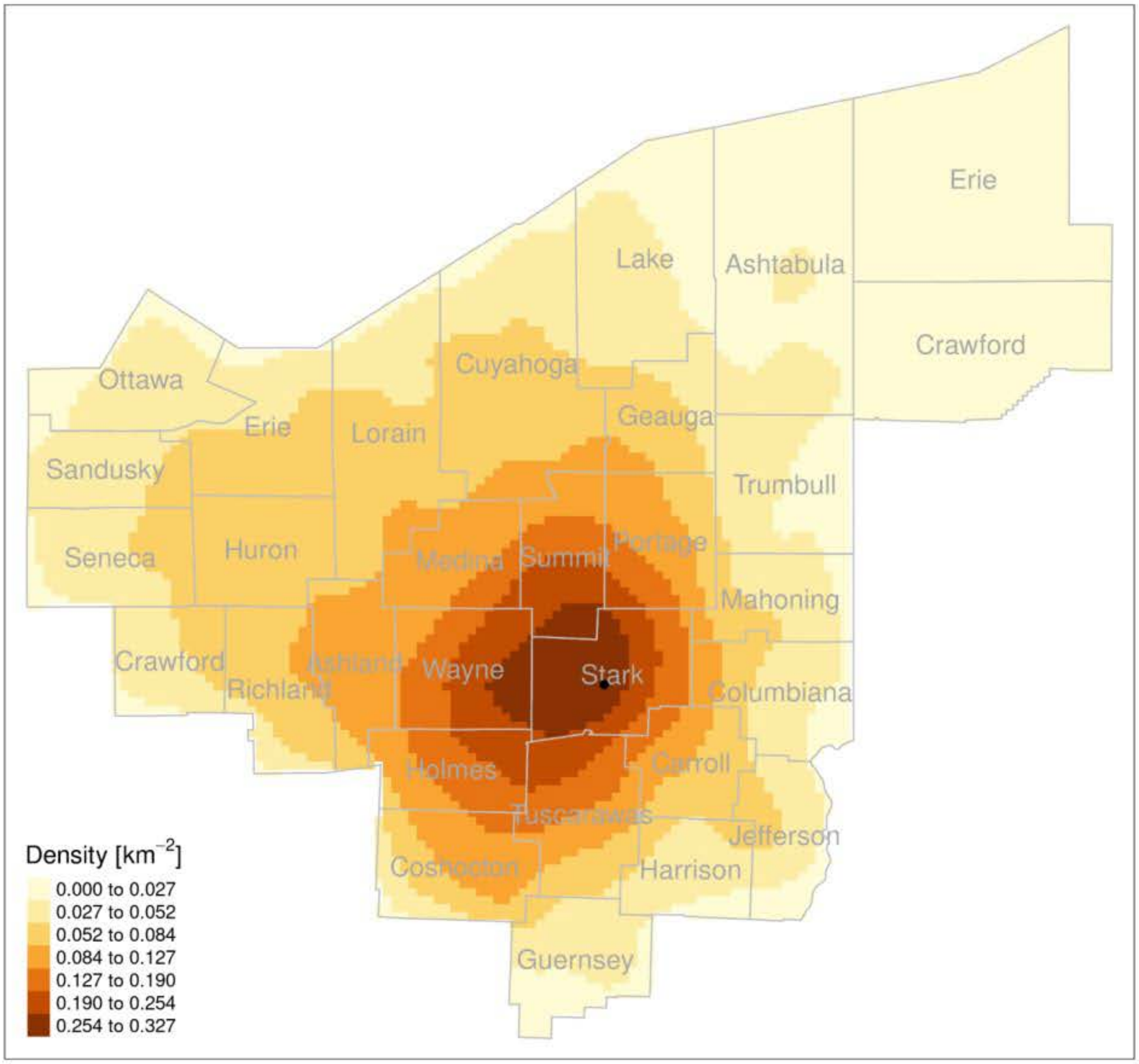
Night (2200) HYSPLIT



Canton-Massillon OH MSA

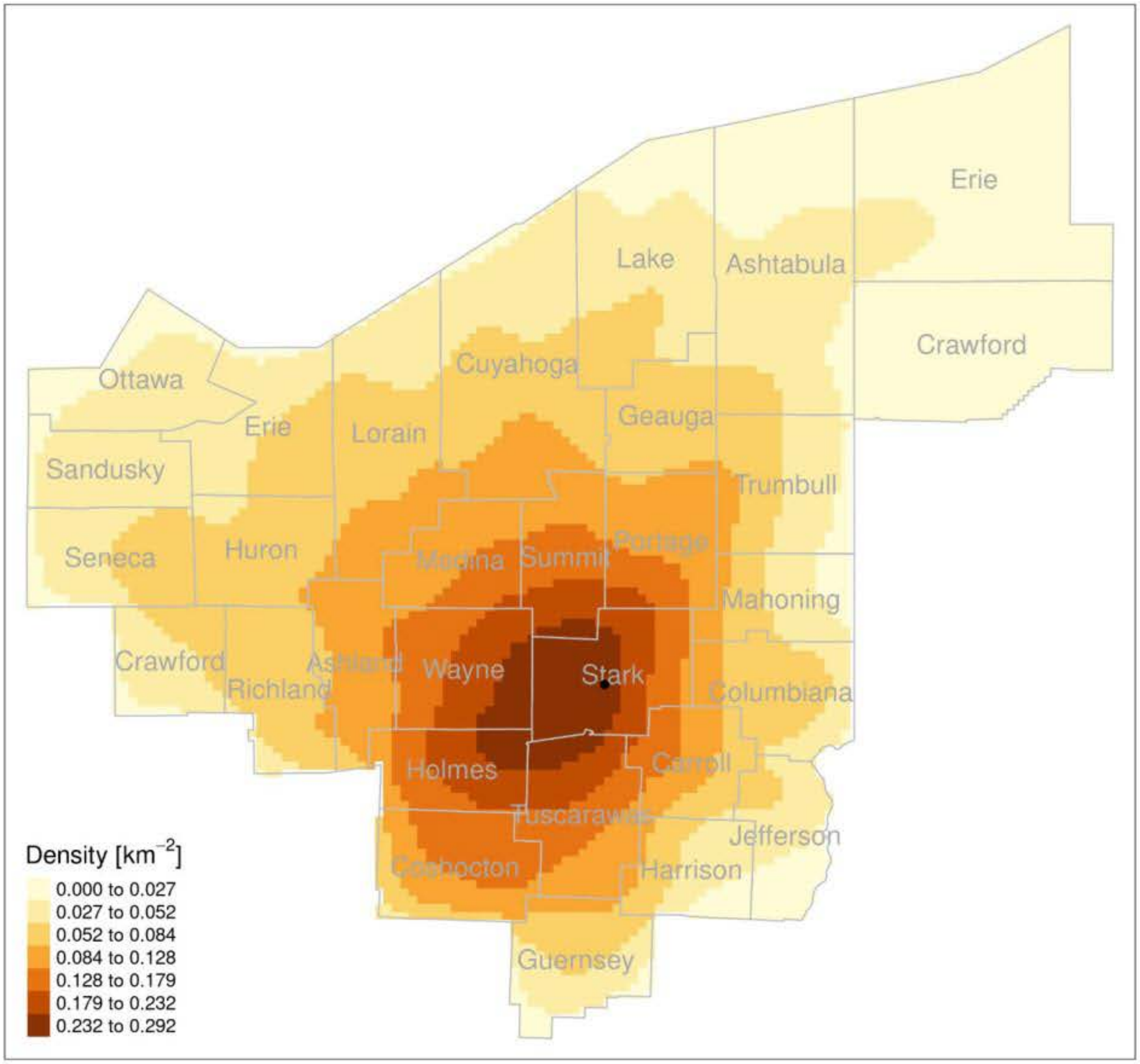
Canton Fire Station 8 (39-151-0017)
Stark County

Morning (0800) HYSPLIT



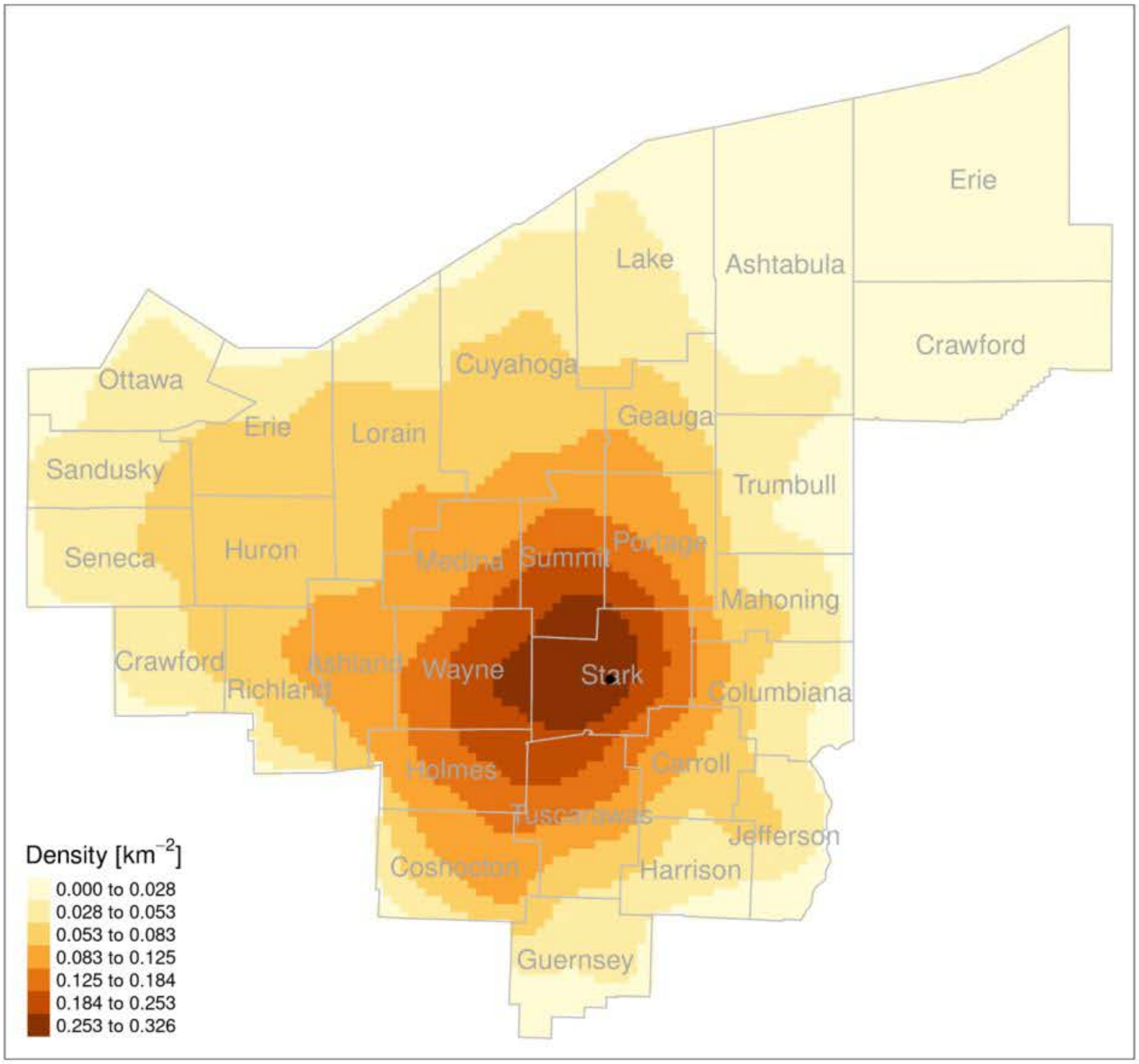
Canton Fire Station 8 (39-151-0017)

Night (2200) HYSPLIT



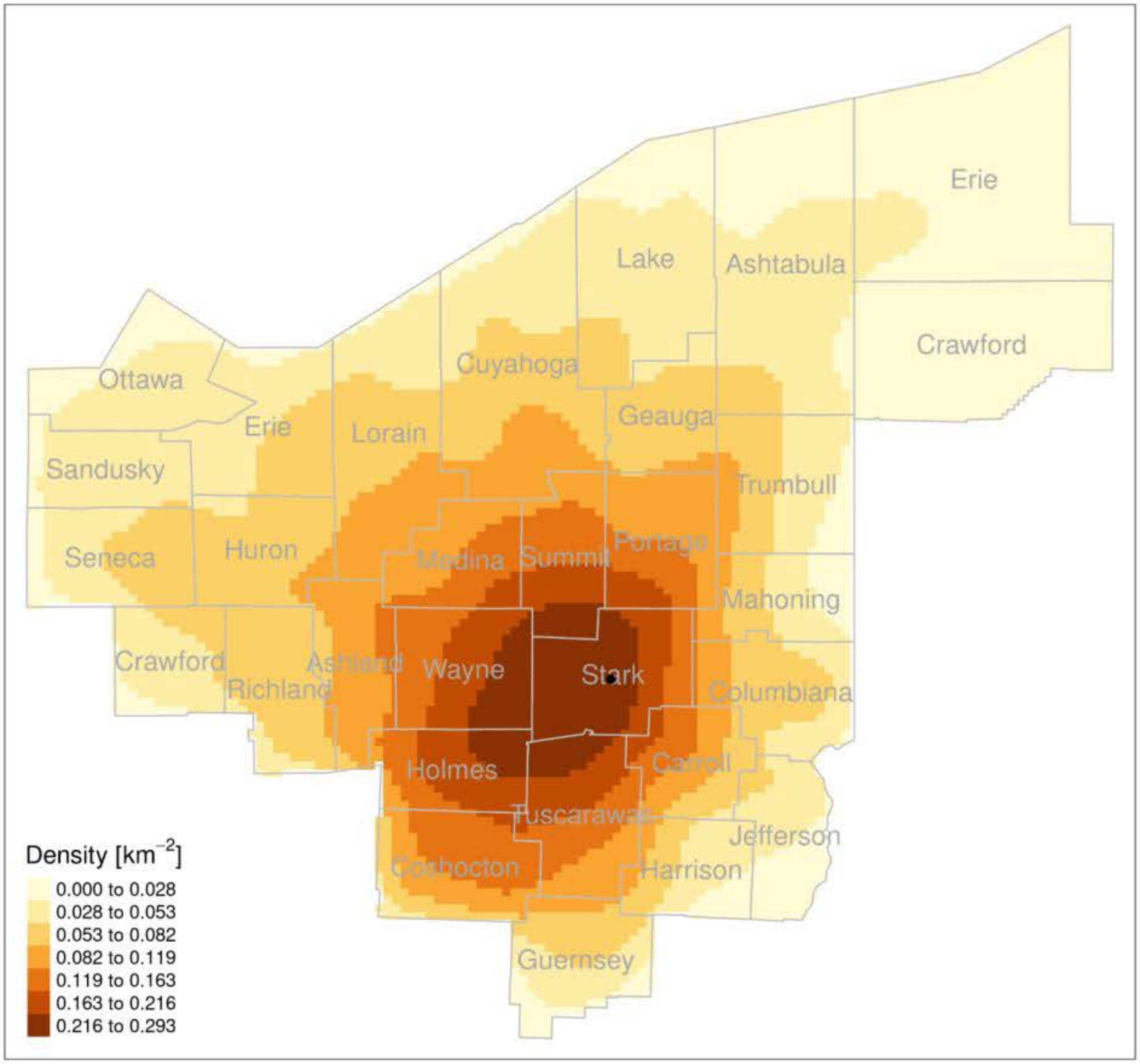
Canton (39-151-0020)
Stark County

Morning (0800) HYSPLIT



Canton (39-151-0020)

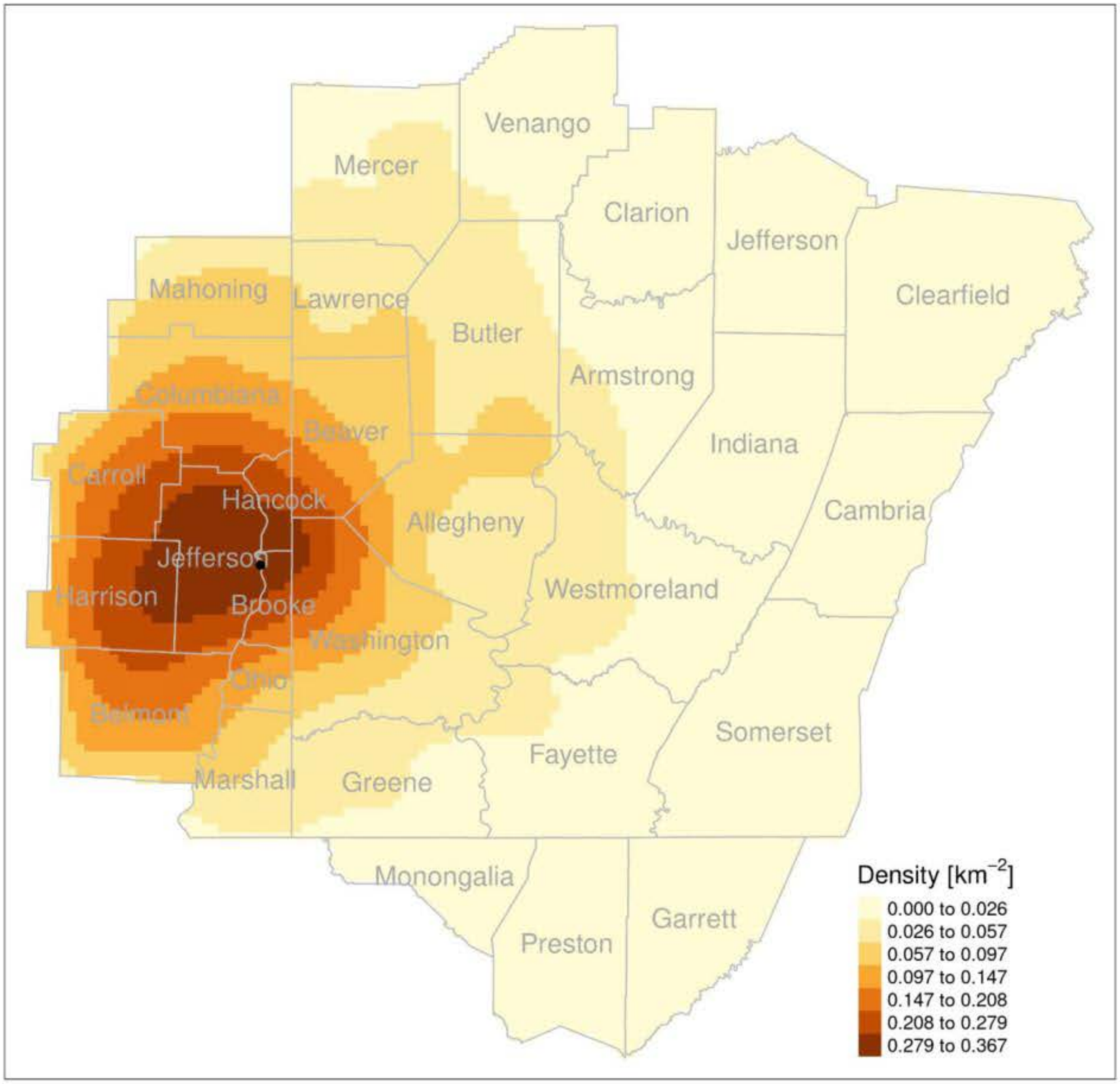
Night (2200) HYSPLIT



Weirton-Steubenville WV-OH Analysis Area, Ohio Portion

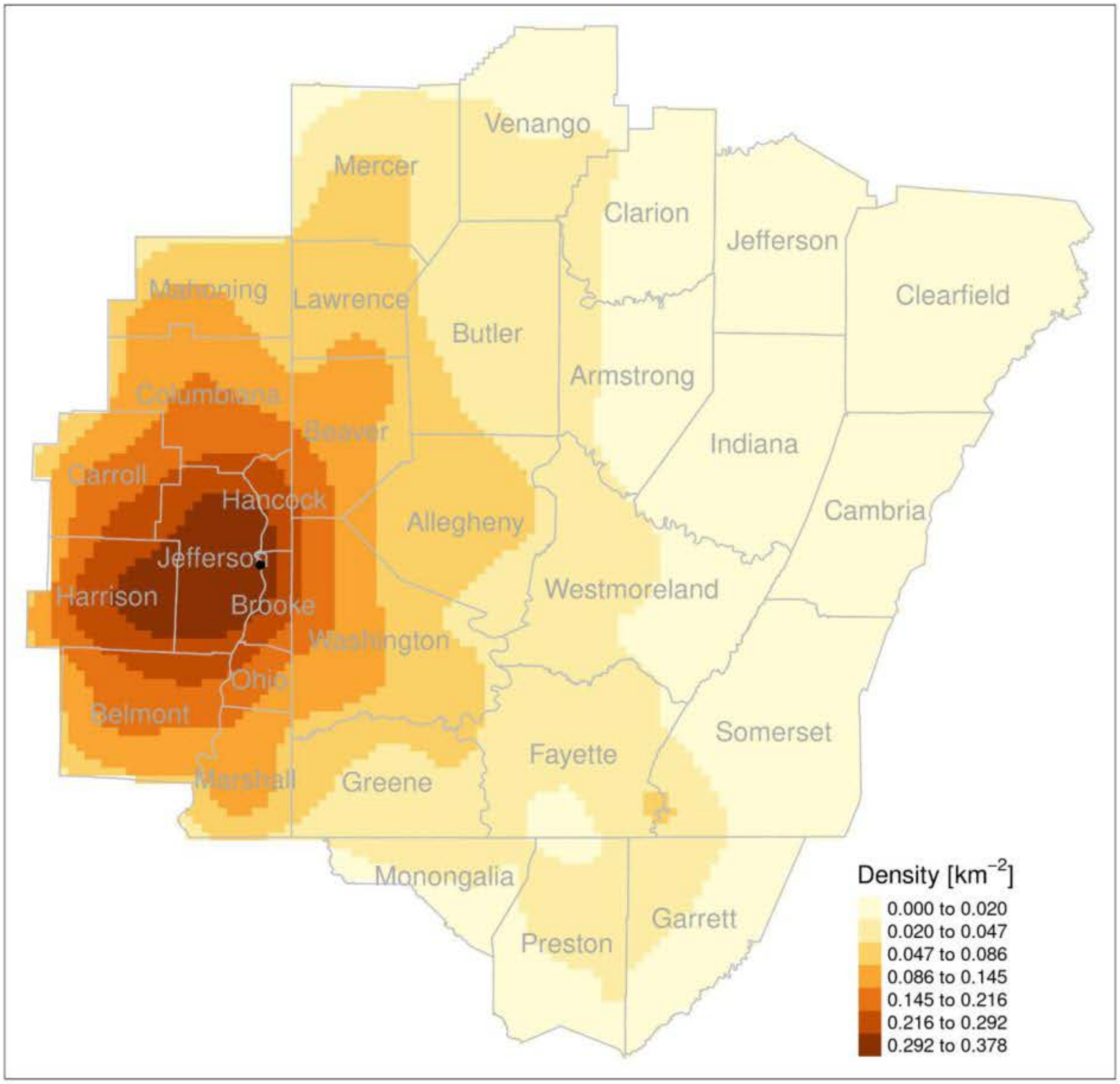
Steubenville (39-081-0017)
Jefferson County

Morning (0800) HYSPLIT



Steubenville (39-081-0017)

Night (2200) HYSPLIT



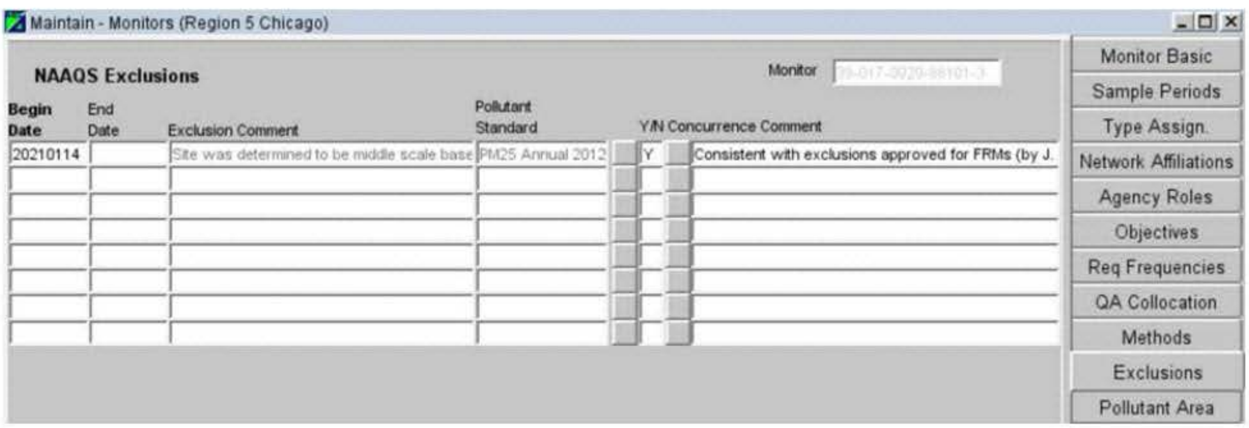
Appendix E

Ohio's Exemption Request for Yankee (39-017-0020)

Subject	**RE: Exemption Request for Yankee (39-017-0020) from comparison to the 2012 PM2.5 annual NAAQS**
From	Nwia, Jacqueline
To	Van Vlerah, Jennifer
Cc	Fetty Davis, Erica; Kenny, William; Compher, Michael
Sent	Monday, August 9, 2021 1:02 PM

Jennifer,

I have concurred with your request to exclude the newly installed T640x continuous monitor at site 39-017-0020, POC 3, from the annual PM2.5 NAAQS. This approval is consistent with the exclusions approved for the 2 FRMs operated at the site (POC 1 and POC 4) due to unique local influences and documented in 80 FR 18537.



Please let me know if you have any questions/concerns.

Thank you.

Jackie

Jacqueline Nwia
Environmental Scientist
Air Monitoring and Analysis Section
Air Toxics and Assessment Branch
Air and Radiation Division
U.S. Environmental Protection Agency, Region 5
77 West Jackson Blvd. (AR-18)
Chicago, IL 60604
ph. (312) 886-6081
nwia.jacqueline@epa.gov

From: Jennifer.VanVlerah@epa.ohio.gov <Jennifer.VanVlerah@epa.ohio.gov>
Sent: Friday, August 6, 2021 1:36 PM
To: Nwia, Jacqueline <nwia.jacqueline@epa.gov>
Cc: Fetty Davis, Erica <erica.fettydavis@epa.ohio.gov>; Kenny, William <William.Kenny@epa.ohio.gov>
Subject: Exemption Request for Yankee (39-017-0020) from comparison to the 2012 PM2.5 annual NAAQS

Ohio EPA is requesting to exempt the PM2.5 continuous monitor located at Yankee (39-017-0020) from comparison to the 2012 PM2.5 annual NAAQS. This site was operating a non-FEM continuous instrument under 88501 POC 3 until early 2021. At that time, Ohio EPA began operating a new FEM instrument (Teledyne API T640x) necessitating a parameter code change to 88101 POC 3.

Yankee is an industrial site located in Butler County, Ohio. Previously, Ohio EPA requested to exclude the two FRM monitors located at the site and the exclusion was granted and documented in 80 FR 18537. We are requesting the exclusion be extended to the PM2.5 continuous monitor for site consistency.

Thank you, Jennifer

Jennifer Van Vlerah
Assistant Chief
Ohio EPA Division of Air Pollution Control
614-644-3696

Appendix F

Public Notice

Note: Ohio EPA received no comments on the Recommended Nonattainment Area Designations for the 2024 Revised Primary Annual $PM_{2.5}$ NAAQS during the public comment period. Subsequently, Ohio RPA did not prepare a response to comments document.

Public Notice

Ohio Environmental Protection Agency

Recommended Designations of Nonattainment Area Boundaries for the 2024 Revised Annual $PM_{2.5}$ Standard

The Ohio Environmental Protection Agency (Ohio EPA) is soliciting comments regarding the extent of Ohio's nonattainment areas for the revised annual $PM_{2.5}$ National Ambient Air Quality Standard (NAAQS) which lowered the 2012 annual standard from 12.0 micrograms per cubic meter ($\mu g/m^3$) to 9.0 $\mu g/m^3$. The United States Environmental Protection Agency (U.S. EPA) adopted this revised annual $PM_{2.5}$ standard effective on February 7, 2024. The comments received will be used to formulate the State's formal recommendation proposal to U.S. EPA. Ohio EPA's preliminary recommendations are for the following counties to be designated nonattainment for the 2024 revised annual $PM_{2.5}$ standard: Cuyahoga, Jefferson, Butler, and Hamilton. In addition, Ohio EPA is preliminarily recommending Stark County be designated as unclassifiable. The remainder of the State is recommended as unclassifiable/attainment.

Ohio EPA is seeking public comment to satisfy U.S. EPA requirements for public involvement in state implementation plan (SIP) related activities in accordance with 40 CFR 51.102. Written comments should be submitted on or before **Friday, December 20, 2024** at the following address:

E-mail:	DAPC-Comments@epa.ohio.gov
Mailing address:	Amelia Brown Ohio Environmental Protection Agency, DAPC Lazarus Government Center P.O. Box 1049 Columbus, Ohio 43216-1049
Phone:	(614) 644-3622

A public hearing may be requested by contacting or DAPC-Comments@epa.ohio.gov no later than **Friday, December 20, 2024**. If a public hearing is requested, a new notification will be published to identify the time and location of the public hearing. The public hearing will be held at least 30 days after the date of the new notification.

All interested persons are entitled to attend or be represented at any hearing and give written or oral comments on these changes. All oral comments presented at any hearing, and all written statements submitted at any hearing or to the above address by the close of business on **Friday, December 20, 2024** will be considered by Ohio EPA prior to final action on this action. Written statements submitted after **Friday, December 20, 2024** may be considered as time and circumstances permit but will not be part of the official record.

The $PM_{2.5}$ designation recommendation documentation is available on Ohio EPA DAPC's Web page for electronic downloading at: https://epa.ohio.gov/divisions-and-offices/air-pollution-control/state-implementation-plans/state-implementation-plan-sip-2024-pm-25-annual-standard.

Questions regarding accessing the web site should be directed to William Kenny at william.kenny@epa.ohio.gov; other questions or comments about this document should be directed to Amelia Brown at (614) 644-3622 or DAPC-Comments@epa.ohio.gov or mailed to Amelia Brown at the above address.

J. Kevin Stitt
Office of the Governor
State of Oklahoma

January 27, 2025

Mr. Scott Mason, Regional Administrator
U.S. Environmental Protection Agency, Region 6
1201 Elm St., Suite 500
Dallas, TX 75270

Subject: Designation Recommendation for 2024 Fine Particulate Matter NAAQS

Dear Administrator ~~Nance~~:

On February 7, 2024, the U.S. Environmental Protection Agency (EPA) revised the primary annual fine particulate matter ($PM_{2.5}$) national ambient air quality standard (NAAQS) (89 FR 16202, March 6, 2024). In that action, EPA strengthened the primary annual $PM_{2.5}$ standard from 12.0 micrograms per cubic meter ($\mu g/m^3$) to 9.0 $\mu g/m^3$; retained the existing 24-hour $PM_{2.5}$ standard at 35 $\mu g/m^3$; retained the existing 24-hour PM_{10} (coarse particle) standard at 150 $\mu g/m^3$; and did not change the current suite of secondary PM standards. As required by section 107(d)(a)(A) of the federal Clean Air Act (42 USC § 7407) and on behalf of the State of Oklahoma, I recommend that each of the 77 counties in Oklahoma be designated as attainment/unclassifiable for the revised primary annual $PM_{2.5}$ standard.

This recommendation is based on an evaluation performed by the Department of Environmental Quality (DEQ) of certified $PM_{2.5}$ monitoring data from 2021 through 2023, as specified in EPA guidance. DEQ has also considered preliminary 2024 data because EPA expects to make final designation decisions based on the 2022-2024 monitor data. This recommendation takes into account the exceptional event demonstrations being submitted to EPA Region 6 by February 7, 2025, for events taking place in calendar years 2022 and 2023. With this data removed from consideration during the designation process, all $PM_{2.5}$ regulatory monitors in the State of Oklahoma would be monitoring attainment for the 2024 $PM_{2.5}$ standard. Attached is a table showing design values for DEQ's $PM_{2.5}$ monitoring network to support this conclusion.

An additional note of consideration in this process is the fact that Oklahoma has largely used a monitoring device approved by EPA for use as a method for NAAQS-comparable $PM_{2.5}$ data collection, but now known by EPA to have produced highly biased data. An attempt was made by the device manufacturer, and approved by EPA, to retroactively apply a correction to address this issue. Oklahoma, as well as other states operating this device, are now finding that the approved correction did not fully address the bias. Oklahoma believes that the remaining known bias in this dataset alone is enough to inaccurately skew the values above the regulatory standard, and with the still present high bias removed, all $PM_{2.5}$ regulatory monitors in the State of Oklahoma would

STATE CAPITOL BUILDING • 2300 N. LINCOLN BOULEVARD, SUITE 212 • OKLAHOMA CITY, OKLAHOMA 73105 • (405) 521-2342

be monitoring attainment for the 2024 $PM_{2.5}$ standard. For this additional reason, I am recommending that EPA designate all 77 of Oklahoma's counties as attainment/unclassifiable.

If you desire additional information, or you have any questions concerning this matter, please contact Kendal Stegmann at 405-702-4100.

Sincerely,

J. Kevin Stitt
Governor

ec: Jeff Starling, Secretary of Energy and Environment
Robert Singletary, Executive Director, DEQ
Kendal Stegmann, Division Director, Air Quality Division, DEQ

Site Name	Site Number	County	2021 Mean (μg/m³)	2022 Mean (μg/m³)	2023 Mean (μg/m³)	2024 Mean* (μg/m³)	2021-2023 Design Value (μg/m³)	2022-2024* Design Value (μg/m³)
Healdton	40-019-0297	Carter	7.9	6.7	7.5	9.0	7.4	7.7
Moore	40-027-0049	Cleveland	9.9	8.7	9.2	9.5	9.3	9.2
Lawton	40-031-0651	Comanche	7.5	7.0	6.9	6.8	7.1	6.9
Seiling	40-043-0860	Dewey	6.9	6.8	7.1	7.6	6.9	7.2
Ponca City	40-071-0604	Kay	10.5	7.5	9.2	9.9	9.0	8.9
Oklahoma City Downtown	40-109-0035	Oklahoma	8.4	7.4	9.5	8.0	8.4	8.3
Oklahoma City Near Road	40-109-0097	Oklahoma	10.0	8.3	8.9	9.3	9.1	8.8
North Oklahoma City	40-109-1037	Oklahoma	9.5	8.3	8.1	8.7	8.6	8.4
McAlester	40-121-0415	Pittsburg	8.7	7.9	8.0	8.7	8.2	8.2
Glenpool	40-143-0174	Tulsa	8.9	7.4	8.1	8.7	8.2	8.1
Tulsa	40-143-1127	Tulsa	9.1	8.2	9.1	8.6	8.8	8.7

*Based on uncertified data.

PECHANGA BAND OF INDIANS
Pechanga Indian Reservation

Post Office Box 1477 • Temecula, CA 92593
Telephone (951) 770-6000 Fax (951) 695-1778

January 31, 2025

Cheree Peterson
USEPA Region 9 Acting Regional Administrator
U.S. Environmental Protection Agency
75 Hawthorne Street #11
San Francisco, CA 94105

RE: *Recommendation for Designation of Attainment for the Revised National Ambient Air Quality Standards (NAAQS) 2024 Primary (Health-based) Annual Standard for Particulate Matter smaller than 2.5 microns ($PM_{2.5}$) in the Pechanga Air Quality Planning Area.*

Dear Acting Regional Administrator Peterson,

On behalf of the Pechanga Band of Indians ("the Band"), I am writing in response to the particle pollution designations for the 2024 revised annual PM NAAQS process. We respectfully request the designation of the Pechanga Planning Area and lands held in trust by the Band, including the Meadowbrook parcel, as *attainment* for the revised annual $PM_{2.5}$ standard. This letter outlines the basis for our request and highlights discrepancies in planning area definitions that we seek to clarify.

$PM_{2.5}$ Design Values for the Pechanga Planning Area

The Pechanga Planning Area's air monitoring network, which is located on the Pechanga Reservation at the Government Center, has consistently demonstrated compliance with the annual $PM_{2.5}$ NAAQS. Our design values over the past three years are as follows:

- **2021:** 5.9 µg/m³
- **2022:** 6.2 µg/m³
- **2023:** 6.1 µg/m³

These values reflect air quality well within the attainment threshold of new 9 µg/m³ annual standard.

Summary of Five-Factor Analysis

Factor 1: Air Quality Data

The Band has been operating its air monitoring station since 2008. The site is located on the Pechanga Indian Reservation (Reservation) on the southeastern boundary of the city of Temecula. The single air monitoring site collects data for multiple pollutants. Table 1 provides a list of monitoring locations, the United States Environmental Protection Agency (USEPA) Air Quality System (AQS) site code, and the pollutants monitored.

On April 3, 2015, the USEPA took a final action to revise the boundaries of the Southern California air quality planning areas to designate the reservation of the Pechanga Band of Indians of the Pechanga Reservation, California as a separate air quality planning area for the 2008 ozone standard and the 2012 annual $PM_{2.5}$ standard.

Table 1- Pechanga Air Station Pollutants Monitored

Site Name	AQS Code	Pollutants Monitored
Pechanga Air Station	TT-586-0009	O_3 $PM_{2.5}$

PM 2.5

Fine particulate matter with a diameter of 2.5 microns or less is created primarily from industrial processes and fuel combustion. These particles are breathed deeply into the lungs. Exposure to particle pollution is linked to a variety of significant health problems ranging from aggravated asthma to premature death in people with heart and lung disease.

Table 2- Monitoring for $PM_{2.5}$

Tribal Land	County	County Population in July 1, 2023 (US Census Bureau)[1]	Annual Design Value 2021-2023 (ppm)	24-Hr Design Value µg/m^3	Monitors Required	Active Monitors	Monitors Needed
Pechanga Indian Reservation	Riverside Metro Area/San Diego-Chula Vista-Carlsbad, Metro Area	2,492,442 / 3,269,973	6.1	13	1	2	2

The Pechanga air station is collecting $PM_{2.5}$ data, measured in micrograms per cubic meter ($\mu g/m^3$), to be used by the Band to make regulatory decisions in support of Tribal sovereignty. The data are also collected for use by the community and for the Band to monitor NAAQS compliance. The data are submitted to AQS to demonstrate compliance with NAAQS and to support research by the community and regulatory agencies. All sites are suitable for comparison against the annual $PM_{2.5}$ NAAQS.

The method used for the Beta Attenuation Monitor (BAM) Model 1020 configured for $PM_{2.5}$ federal equivalent (FEM) monitoring includes sampling of ambient air through a standard USEPA PM_{10} inlet head and a Very Sharp Cut Cyclone (VSCC) at a volumetric flow rate of 16.7 liters per minute. A Smart Heater attached to the inlet system, and controlled by relative humidity (RH) measured at the filter tape, minimizes positive artifact from water sorption in humid environments. Particles in the air stream are collected and measured on quartz fiber filter tape. $PM_{2.5}$ concentrations and sampling attribute data are reported hourly for a 24-hour period, from midnight to midnight. The equipment is listed in the USEPA list of designated reference and equivalent methods as: EQPM-0798-122.

A collocated $PM_{2.5}$ sampler at the air station is a Thermo Scientific Partisol Model 2000i. The Partisol 2000i Air Sampler was designed to conform to the USEPA federal reference method (FRM) for fine particulate sampling. The hardware was designed to meet or exceed the requirements of CFR 40 Part 50. It is located 2.34 meters from the primary sampler, at a right angle to the prevailing southwest wind direction. Its sample inlet is nine meters above the ground, at the same height as the primary sampler. The Partisol 2000i sampler operates by splitting a PM_{10} sample stream into its $PM_{2.5}$ and coarse fractions (particles between 2.5 and 10 microns in size) using an USEPA designed virtual impactor for the 2.5 micron cutpoint. The system collects particulate matter on two 47 mm diameter filters simultaneously. The sampler is operated for a 24-hour period, from midnight to midnight, once every 6 days, according to the national schedule. The equipment is listed in the USEPA list of designated reference and equivalent methods as: RFPS-1298-126.

Factor 2: Emissions

The Pechanga Environmental Department created an Emissions Inventory in 2021. The report was conducted using the most current information and data available during the timeframe. The report was very thorough and examines the emissions sources on the reservation.

Area Sources

A total of six (6) area sources were identified on the Pechanga Reservation. Typically, area sources are inventoried collectively due to number of sources or geographical separation. Area sources include:

- Pechanga Resort & Casino (PRC);

- Tribal Government Building;
- Recreation Center;
- Gas Station;
- Residences; and
- Natural.

Area sources encompass more widespread sources that may be abundant, but individually, they release small amounts of a given pollutant. These emission sources are estimated as a group rather than individually. Area sources within the Reservation have been identified and inventoried individually in order to establish baseline emissions data that can be used to calculate trends from each individual source.

Table 3 - Area Source Emissions (tons/year)

Source	CO	NO_x	SO_2	PM_{10}	VOC
Pechanga Resort & Casino	8.73	6.27	.15	12.17	.86
Government Bldg	0.3	0.25	0.01	0.01	0.04
Recreation Center	2.324	1.606	0.017	0.210	0.152
Residences	7.440	0.717	0.024	1.158	1.138
Emergency Generators	.18	1.54	.04	.07	0.09
Total (tons/yr)	18.974	10.383	0.241	13.618	2.28

Mobile Sources

Mobile sources include emissions from on-road and off-road vehicles and equipment that directly impact the Reservation. On-road sources include passenger cars, trucks, buses and motorcycles. Off-road vehicles include construction and farm equipment. Other off-road vehicles, such as aircraft, trains and boats, are not operated within the boundaries of the Reservation and are not included in this emissions inventory.

Table 4 - On-Road Mobile Emissions (tons/year)

Source	CO	NO_x	SO_2	PM_{10}	VOC
On-road	45.108	7.269	0.161	0.234	4.834
Off-road	0.212	1.173	0.033	0.007	0.014
Total (tons/yr)	45.320	8.442	0.194	0.241	4.848

Natural Sources

Emissions from natural sources on the Reservation include wildfires, vegetation, and dust from undisturbed surfaces.

Table 5 - Natural Source Emissions (tons/year)

Source	CO	NO_x	SO_2	PM_{10}	VOC
Wildfires	712.51	20.39	-	86.35	122.1
Dust from undisturbed lands	-	-	-	0.036	-
Riparian Woodland	-	-	-	-	1.55
Southern Oak Woodland	-	-	-	-	1.54
Chamisal Chaparral	-	-	-	-	6.70
Transitional Chaparral	-	-	-	-	0.857
Totals (tons/yr)	712.51	20.39	-	86.386	132.747

Factor 3: Meteorology
Ambient air quality is determined primarily by the type and amount of contaminants emitted into the atmosphere, the size and topography of the local air shed, and the pollutant-dispersion properties of local weather patterns. When airborne pollutants are not dispersed by local meteorological conditions, air quality problems will result.

Review of meteorological data collected at the Reservation indicate a predominant wind direction from the southwest. This is a strong sea breeze that originates near Oceanside and passes through a relatively unpopulated area in San Diego County before it reaches the Reservation.

Factor 4: Geography/Topography
The Pechanga Reservation ranges from 1,100 feet to 2,600 feet in elevation. The Reservation is settled amidst mountain ranges, with Wild Horse Peak and Agua Tibia Mountain to the east/southeast, Pala Mountain to the South, and Mount Olympus and Gavilan Mountain to West/Southwest, respectively. The Santa Rosa mountain ranges, running north and south, and Camp Pendleton close in the Reservation to the west. Interstate 15, a major transportation route for the inland counties, is located approximately 0.2 miles west of the reservation; the City of Temecula is located approximately four miles to the northwest; with SR 79 as the main transportation corridor providing access to the Reservation. The outlying areas to the north and northeast from the Reservation include Temecula residential and business areas.

Factor 5: Jurisdictional Boundaries
The Pechanga Band of Indians exerts jurisdiction over all lands within the Reservation as well as lands held in trust for its benefit by the United States.

Clarification of Planning Area Boundaries

The California Air Resources Board (CARB) has included the Pechanga Reservation within their nonattainment planning area. However, this inclusion is inconsistent with the USEPA’s 2015 determination, which recognized the Pechanga Planning Area as a distinct entity.

The Reservation has many new additional parcels now held in trust but not contiguous to the Reservation. We will be working with the USEPA Air Division staff to update the Pechanga planning area. USEPA mapping tools do not include all the trust properties of Pechanga.

Meadowbrook is included in the mapping toolkit available online through the USEPA website. Meadowbrook is shown to be in attainment for the 2012 PM2.5 NAAQS. We would ask the additional parcels be included in the attainment status in the future.

Request for Designation

The Band respectfully requests:

1. **Attainment Designation for the Pechanga Planning Area:** The data from our monitoring network clearly supports this designation; and

2. **Attainment Designation for the Pechanga Trust land noncontiguous to the Reservation:** Meadowbrook is included in the mapping toolkit available online through the USEPA website. Meadowbrook is shown to be in attainment for the 2012 PM2.5 NAAQS.

Conclusion

The Pechanga Band of Indians appreciates the opportunity to provide input on this critical matter. We urge the USEPA to acknowledge the unique circumstances of our planning area, the robust monitoring data demonstrating attainment, and the need to ensure accurate representation of Tribal sovereignty in air quality planning.

We look forward to continuing our collaboration with the USEPA and other stakeholders to protect air quality and public health. Should you require additional information or clarification, please do not hesitate to contact Helen Rain Waquiu, Director of Environmental at hwaquiu@pechanga-nsn.gov or 951-770-6153.

Thank you for your attention to this matter.

Sincerely,

Mark Macarro
Tribal Chairman

GOVERNMENT OF PUERTO RICO
DEPARTMENT OF NATURAL AND ENVIRONMENTAL RESOURCES

FEB 1 9 2025

MR. MICHAEL MARTUCCI
REGIONAL ADMINISTRATOR
USEPA-REGION II
290 BROADWAY 25th FLOOR
NEW YORK NY, 10007-1866

Dear Mr. Martucci:

RE: Puerto Rico Designation Recommendation for the 2024 Revised Primary Annual Fine Particulate ($PM_{2.5}$) National Ambient Air Quality Standard

The Puerto Rico Department of Natural and Environment Resources (PRDNER) as representative of the Government of Puerto Rico is submitting the initial recommendations of Puerto Rico as attainment for San Juan and Ponce MAs and attainment-unclassifiable for Mayaguez and Guayama MAs. The designation recommendation is submitted according to Section 107 (d) (1) (A) of the Clean Air Act.

On February 7, 2024, the Environmental Protection Agency (EPA) promulgated a revised National Ambient Air Quality Standard for the primary annual fine particle ($PM_{2.5}$). The $PM_{2.5}$ annual primary standard was revised from 12 $\mu g/m^3$ to 9 $\mu g/m^3$. The annual secondary standard of 15 $\mu g/m^3$ and the 24-hour $PM_{2.5}$ standard of 35 $\mu g/m^3$ were retained.

PRDNER classified the San Juan and Ponce MAs as attainment with the revised $PM_{2.5}$ Primary Annual Standard. Although $PM_{2.5}$ network is designed and meets the criteria of location by area, PRDNER is classifying the Mayaguez and Guayama MAs as attainment-unclassifiable because the available data shows compliance with the new standard but is not from 2022-2024.

The latest $PM_{2.5}$ air quality monitoring data for Guayama MA is from 2015-2017 and for Mayaguez MA is from 2011-2013. PRDNER is working with the air monitoring network to restore the $PM_{2.5}$ air quality monitors in Mayaguez and Guayama by the end of 2025 and have a complete set of data by the end of 2028.

Please feel free to contact me, at (787)999-2200 if you have any questions regarding these recommendations, or you can reach our staff contact César O. Rodríguez at (787)999-2200, ext. 5810.

Cordially,

Waldemar Quiles Pérez
Secretary
Department of Natural and Environmental Resources

GOVERNMENT OF PUERTO RICO
DEPARTMENT OF NATURAL AND ENVIRONMENTAL RESOURCES

Puerto Rico Area Designation Recommendation for the Revised Primary $PM_{2.5}$ Annual National Ambient Air Quality Standard

Government of Puerto Rico
Department of Natural and Environmental Resources

February 2025

San José Industrial Park, 1375 Ave Ponce de León, San Juan, PR 00926

787.999.2303 www.drna.pr.gov 787.999.2200

Area Designation Recommendation for the Revised $PM_{2.5}$ Primary Annual National Ambient Air Quality Standard

On February 7, 2024[1], the Environmental Protection Agency (EPA) promulgated a revised National Ambient Air Quality Standard for the primary annual fine particle ($PM_{2.5}$). The $PM_{2.5}$ annual primary standard was revised from 12 $\mu g/m^3$ to 9 $\mu g/m^3$. The annual secondary standard of 15 $\mu g/m^3$ and the 24-hour $PM_{2.5}$ standard of 35 $\mu g/m^3$ were retained. The annual primary standard was revised based on the available health effects and evidence that supports causal relationship between long and short-term exposures and mortality and cardiovascular effects, and the evidence supports a likely to be a causal relationship between long-term exposures and respiratory effects, nervous system effects, and cancer.

Section 107(d) of the Clean Air Act (CAA) governs the process for area designations following the establishment of a new revised NAAQS. Under this section, States are required to submit recommendations to EPA not later than one year after promulgation of a new or revised standard. The recommendations must be submitted to EPA by February 7, 2025.

As required by section 107(d) the Government of Puerto Rico (GOVPR) is submitting the designations and recommendations for the revised $PM_{2.5}$ annual primary standard. The Department of Natural and Environmental Resources (DNER) is responsible for developing and implementing emission control programs for attaining and maintaining the standard.

As a result of this change DNER includes the designation and recommendations for the newly revised Annual Primary PM2.5 National Ambient Air Quality Standard. The resulting average or design values are compared to the standard. The DNER evaluated the most recent and complete three years of monitoring data for each metropolitan area and determined that none of the monitors exceed the $PM_{2.5}$ standard. The most recent and complete three-year period of monitoring data for San Juan and Ponce metropolitan areas was 2022-2024. For Mayaguez metropolitan area, the most recent and complete three-years of monitoring data was from 2011-2013 and for Guayama was 2015-2017.

DNER used the statistical definition for Metropolitan Area provided by the Office of Management and Budget and the Census Bureau to design the GOVPR Monitoring Network. The GOVPR has six Metropolitan Areas, which are: San Juan-Bayamon-Caguas, Humacao, Ponce, Mayaguez, Guayama and Fajardo.

The GOVPR Network includes ten (10) monitors for $PM_{2.5}$ which are located as follow: San Juan: 3 monitors; Caguas: 1 monitor; Adjuntas: 1 monitor; Guayama: 1 monitor; Salinas: 1 monitor (new), Mayaguez: 1 monitor; Ponce: 1 monitor; Fajardo: 1 monitor (background).

[1] 89 Federal Register 16202

Puerto Rico Air Monitoring Network Plan 2023

Air Monitoring, Validation, Data Management, Air Dispersion Model Division
Air Quality Area

MSA Arecibo

EQB Id.	County	AQS	Pollutant
74	Arecibo	72-013-0001	Pb
75	Arecibo	72-013-0002	Pb

MSA Guayama- Salinas

EQB Id.	County	AQS	Pollutants
15	Guayama	72-057-0012	$PM_{2.5}$, PM_{10}
18	Salinas	72-123-0002	SO_2
69	Guayama	72-057-0011	SO_2

MSA Ponce

EQB Id.	County	AQS	Pollutants
13	Adjuntas	72-001-0002	$PM_{2.5}$
56	Ponce	72-113-0004	PM_{10}, $PM_{2.5}$, CO

MSA Mayagüez

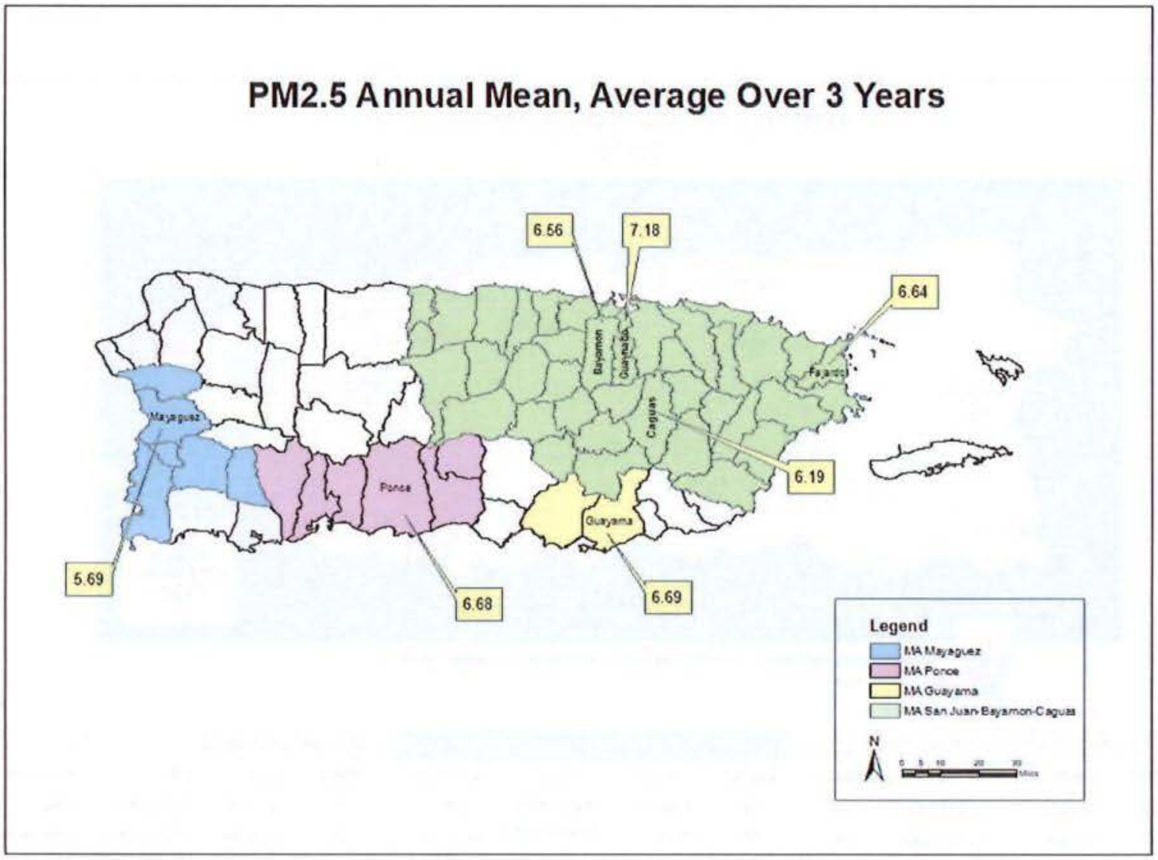
EQB Id.	County	AQS	Pollutants
59	Mayagüez	072-97-0007	O_3, $PM_{2.5}$

MSA- San Juan - Caguas

EQB Id.	County	AQS	Pollutants
7	Guaynabo	72-061-0001	PM_{10}
20	Guaynabo	72-061-0006	Near Roads
21	Caguas	72-025-0007	Near Roads
22	Fajardo	72-053-0003	PM_{10}, $PM_{2.5}$
24	Guaynabo	72-061-0005	PM_{10}, $PM_{2.5}$
30	San Juan	72-127-0003	CO
37	Bayamón	72-021-0010	NCore
40	Cataño	72-33-0004	PM_{10}, $PM_{2.5}$, SO_2

[1]Map from Puerto Rico Air Monitoring Network Plan-2024.

Metropolitan Area	Population
San Juan	1,967,627
Mayaguez	253,347
Ponce	361,094
Caguas	308,365
Arecibo	174,300
Aguadilla	146,424



Procedure to determine Attainment

The procedure for $PM_{2.5}$ attainment designations is based on the primary standards. The first step in the designation process is to determine attainment with the 24- hour primary standard. The approach is based on the average for each area. The second step was to determine attainment with the annual primary standard. The designation is determined by calculating the primary $PM_{2.5}$ annual mean, average over three years.

The air quality data was used from the EPA Air Quality System to calculate $PM_{2.5}$ design values. The design values shown are calculated in accordance with 40CFR Part 50 Appendix N. The 3- year average mean concentration for the annual $PM_{2.5}$ is computed at each monitor by averaging the daily Federal Reference Method (FRM) samples taken each quarter, averaging these quarterly averages to obtain an annual average, and then averaging the three annual averages. Quarters with data capture less than 75 percent were replaced with maximum data values for the same quarter according to the Guideline on Data Handling Conventions for the PM NAAQS.

The data was flagged for natural and exceptional events were excluded from the design value calculations.

Calculation of the 3-Years Average 98th Percentile for $PM_{2.5}$ (24-Hours Primary Standard)

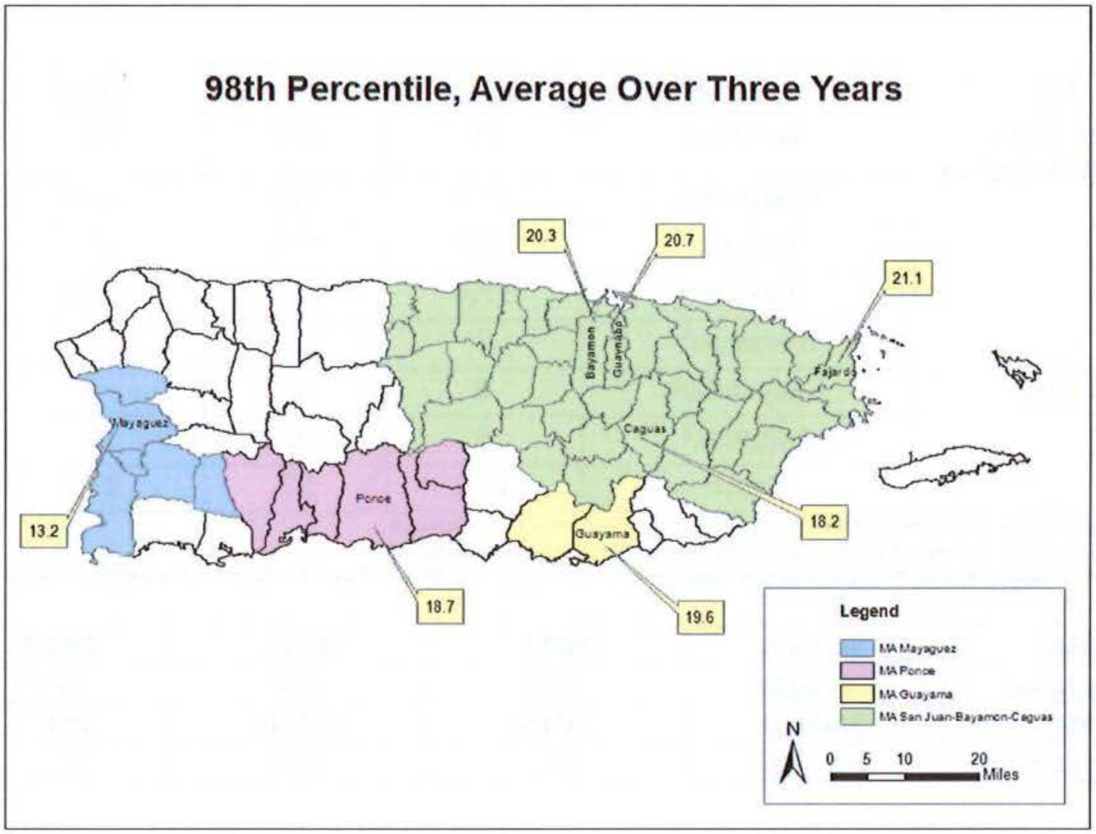
MA	Station	2022	2023	2024
San Juan-Bayamon-Caguas	Bayamon	20	17.8	23.3
	Guaynabo	18.9	18.8	24.5
	Fajardo	18.5	19.6	25.4
	Caguas	17.4	15.1	22.2
	Humacao[1]	0	0	0
Ponce	Guayanilla[2]	0	0	0
	Adjuntas[3]	0	0	0
	Ponce	17.5	17	21.6

[1]Inactive since 2014, not considered for the 3 Years Average 98th Percentile calculation.
[2]Inactive since 2017, not considered for the 3 Years Average 98th Percentile calculation.
[3]Last monitoring data is from 2021 and only one month of data. Not considered for the 3 Years Average 98th Percentile calculation

MA	Station	2011	2012	2013
Mayaguez	Mayaguez	12.5	15.8	11.4
MA	**Station**	**2015**	**2016**	**2017**
Guayama	Guayama	15.3	16.5	27.2

To find the 3-years average of the 98th percentile to each site is as follows:

Metropolitan Areas	Station	3-Year 98th Percentile
San Juan-Bayamon-Caguas	**2022-2024**	
	Bayamon	20.3
	Guaynabo	20.7
	Caguas	18.2
	Fajardo	21.1
Ponce	Guayanilla	0
	Ponce	18.7
Mayaguez	**2011-2013**	
	Mayaguez	13.2
Guayama	**2015-2017**	
	Guayama	19.6



Calculation of the 3 -Years Average of Spatially Averaged Annual Mean

San Juan-Bayamon-Caguas MA

Year	Bayamon	Guaynabo	Fajardo	Caguas	Humacao[1]	Annual Spatial
2022	6.44	6.96	6.16	5.97	0	6.38
2023	6.51	7.14	6.84	5.49	0	6.49
2024	6.74	7.44	6.94	7.12	0	7.06

[1]Inactive since 2014, not considered for annual spatial calculation.

The three years average spatial mean:

$$(6.38 + 6.49 + 7.06) / 3 = 6.64\ \mu g/m^3$$

Ponce MA

Year	Ponce	Guayanilla[1]	Adjuntas[2]	Annual Spatial
2022	6.66	0	0	6.66
2023	6.36	0	0	6.36
2024	7.03	0	0	7.03

[1]Inactive since 2017, not considered for annual spatial calculation.
[2]Last monitoring data is from 2021 and only one month, not considered for annual spatial calculation.

The three-year average spatial mean:

$$\mathbf{(6.66 + 6.36 + 7.03) / 3 = 6.68\ \mu g/m^3}$$

Mayaguez MA

Year	Mayaguez
2011	5.49
2012	6.22
2013	5.38

The three-year average spatial mean:

$$\mathbf{(5.49 + 6.22 + 5.38) / 3 = 5.69\ \mu g/m^3}$$

Guayama MA

Year	Guayama
2015	6.07
2016	6.37
2017	7.64

The three-year average spatial mean:

$$\mathbf{(6.07 + 6.37 + 7.64) / 3 = 6.69\ \mu g/m^3}$$

Conclusion

Based on the technical documentation and the most recent and complete data presented above, all the design values are below the PM2.5 standard. The DNER compare the 3 – Year $PM_{2.5}$ Annual Average data with the new revised primary standard and all monitors are in conformity with the $PM_{2.5}$ primary annual standard of 9 $\mu g/m^3$, and with the retain secondary standard of 15 $\mu g/m^3$.

The 24 hours 3- Years 98th Percentile was also revised, and the data is in conformity with the retained standard of 35 $\mu g/m^3$. EPA expects that making final designations recommendations will rely on air quality data from 2022-2024. Therefore, the DNER recommendation is that Puerto Rico is in attainment with the revised $PM_{2.5}$ Primary Annual Standard for the San Juan and Ponce MA and is in attainment/unclassifiable for Mayaguez and Guayama MA.

STATE OF RHODE ISLAND

OFFICE OF GOVERNOR DANIEL J. MCKEE

February 14, 2025

Karen McGuire, Acting Regional Administrator
US Environmental Protection Agency Region I
5 Post Office Square, Suite 100
Boston, MA 02109-3912

Re: Rhode Island's Recommendations for Air Quality Designations for the 2024 Revised Primary Annual Fine Particle Standard

Dear Acting Regional Administrator McGuire:

On February 7, 2024, the United States Environmental Protection Agency (EPA) promulgated a revised primary annual $PM_{2.5}$ National Ambient Air Quality Standard (NAAQS) (89 FR 16202). The EPA strengthened the primary annual PM_{25} standard from 12.0 micrograms per cubic meter (μg/m3) to 9.0 μg/m3. Clean Air Act Section 107(d)(l)(A) requires states to submit area designation recommendations to EPA after the promulgation of a new or revised NAAQS.

Pursuant to the requirements of Section 107(d)(1)(A) of the Clean Air Act Amendments of 1990, Rhode Island is hereby submitting its recommendation for the State's attainment status designation for the 2024 revised NAAQS for $PM_{2.5}$. An area is designated as nonattainment if one or more regulatory ambient $PM_{2.5}$ air quality monitors have a design value greater than the annual standard of 9.0 μg/m3.

The annual $PM_{2.5}$ design values, based on certified ambient air quality data from the most recent three calendar year period (2021-2023), from all regulatory monitors that are sited and operated in accordance with 40 CFR part 58 in Rhode Island are as follows:

Site	County	$PM_{2.5}$ Design Value (2021-2023) μg/m3
Alton Jones, West Greenwich (44-003-0002)	Kent	4.9
CCRI, Providence (44-007-0022)	Providence	6.3
Francis School, East Providence (44-007-1010)	Providence	6.6

Site	County	$PM_{2.5}$ Design Value (2021-2023) µg/m3
Near Road (44-007-0030)	Providence	8.2[1]
Vernon Street, Pawtucket (44-007-0026)	Providence	7.7
US EPA Lab, Narragansett (44-009-0007)	Washington	5.1

The design values calculated for Rhode Island show all sites in Rhode Island are in attainment of the revised primary annual $PM_{2.5}$ NAAQS. Rhode Island is therefore recommending that all counties in Rhode Island be designated as attainment for the revised primary annual PM_{25} standard.

If you have any questions about this issue, I encourage you to contact Karen Slattery, Deputy Administrator, at the Rhode Island Department of Environmental Management's Office of Air Resources at (401) 537-4396 or karen.slattery@dem.ri.gov.

Sincerely,

Daniel J. McKee
Governor

[1] Note this design value is for 2019—2021 as the Near Rd. site did not have complete data for 2021-2023 due to the site moving to a new location in 2022.

SC DEPARTMENT of ENVIRONMENTAL SERVICES

Office of the Director
2600 Bull St.
Columbia, SC, 29201

January 21, 2025

Jeaneanne M. Gettle
Acting Regional Administrator
US EPA Region 4
Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303-8909

Re: South Carolina Recommendation for 2024 Fine Particulate Matter NAAQS Designation

Dear Ms. Gettle:

On February 7, 2024, the United States Environmental Protection Agency (EPA) promulgated a revised National Ambient Air Quality Standard (NAAQS) for fine particulate matter ($PM_{2.5}$). The Clean Air Act Section 107(d)(l) requires the governor of each state, no later than one year following promulgation of a new or revised NAAQS, to submit to the Administrator a list of all areas (or portions thereof) in the state that should be designated as nonattainment, attainment, or unclassifiable for the new NAAQS. Accordingly, governors must submit their initial PM designation recommendations to the EPA no later than February 7, 2025, (89 *Federal Register* 16202, published March 6, 2024).

I am writing this letter in response to the EPA's request to submit area recommendations for the revised $PM_{2.5}$ NAAQS established by the EPA via 89 FR 16202. The attached table (Attachment 1) provides the recommendations from the South Carolina Department of Environmental Services (Department) for the designation status of each county in South Carolina. The Department's recommendations are based on 2021 – 2023 design values calculated using certified monitoring data (Attachment 2).

Based on the attached ambient air monitoring data, I am pleased to report that South Carolina fully complies with the revised fine particulate matter standard. On behalf of Governor Henry McMaster, I am recommending that each county in the State of South Carolina be separately designated as "attainment" for the revised primary $PM_{2.5}$ NAAQS.

Should you have any questions regarding our recommendation, please contact Rhonda B. Thompson, PE, Chief, Bureau of Air Quality, at (803) 898-4391 or by email at Rhonda.Thompson@des.sc.gov.

Sincerely,

Myra C. Reece

Myra C. Reece, Interim Director
S.C. Department of Environmental Services

cc: Denisse Diaz, Director, Air and Radiation Division, EPA Region 4
Rhonda B. Thompson, PE, Chief, Bureau of Air Quality
R. Keith Frost, Assistant Chief, BAQ
Heinz Kaiser, Director, Division of Emissions Evaluation & Support, BAQ
Mary Peyton D. Wall, Air Regulation and Data Analysis Section, BAQ

Attachments: SC Designation Recommendations by County
South Carolina Annual $PM_{2.5}$ Design Values – 2023
EPA Map Projecting Counties Meeting Standard

Attachment 1

Designation Recommendations for South Carolina by County

	County	Recommended Designation		County	Recommended Designation
1.	Abbeville	Attainment	24.	Greenwood	Attainment
2.	Aiken	Attainment	25.	Hampton	Attainment
3.	Allendale	Attainment	26.	Horry	Attainment
4.	Anderson	Attainment	27.	Jasper	Attainment
5.	Bamberg	Attainment	28.	Kershaw	Attainment
6.	Barnwell	Attainment	29.	Lancaster	Attainment
7.	Beaufort	Attainment	30.	Laurens	Attainment
8.	Berkeley	Attainment	31.	Lee	Attainment
9.	Calhoun	Attainment	32.	Lexington	Attainment
10.	Charleston	Attainment	33.	Marion	Attainment
11.	Cherokee	Attainment	34.	Marlboro	Attainment
12.	Chester	Attainment	35.	McCormick	Attainment
13.	Chesterfield	Attainment	36.	Newberry	Attainment
14.	Clarendon	Attainment	37.	Oconee	Attainment
15.	Colleton	Attainment	38.	Orangeburg	Attainment
16.	Darlington	Attainment	39.	Pickens	Attainment
17.	Dillon	Attainment	40.	Richland	Attainment
18.	Dorchester	Attainment	41.	Saluda	Attainment
19.	Edgefield	Attainment	42.	Spartanburg	Attainment
20.	Fairfield	Attainment	43.	Sumter	Attainment
21.	Florence	Attainment	44.	Union	Attainment
22.	Georgetown	Attainment	45.	Williamsburg	Attainment
23.	Greenville	Attainment	46.	York	Attainment

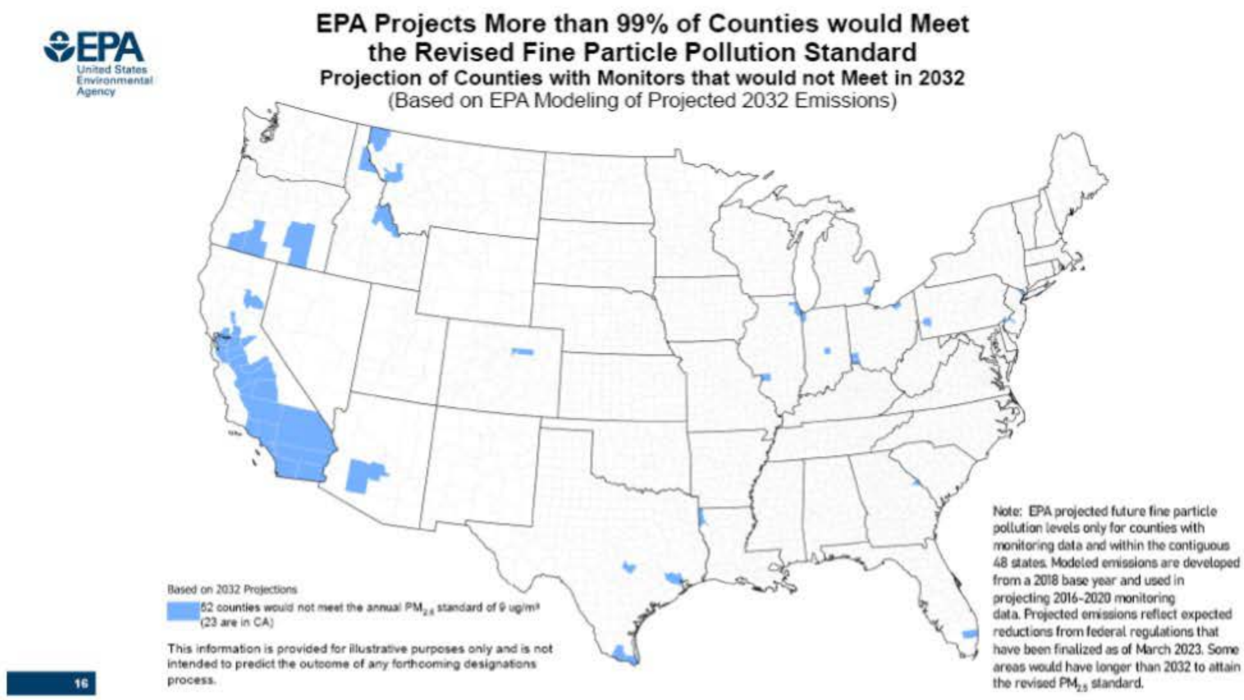
Attachment 2

South Carolina Annual $PM_{2.5}$ NAAQS Design Values - 2023

Site ID	Site Name	2021 Weighted Arithmetic Average ($\mu g/m^3$)	2022 Weighted Arithmetic Average ($\mu g/m^3$)	2023 Weighted Arithmetic Average ($\mu g/m^3$)	2021-2023 Design Value ($\mu g/m^3$)	Design Value Valid?
025-0001	Chesterfield	7.0	5.9	8.0	7.0	Yes
037-0001	Trenton	8.1*	7.5*	8.7	8.1	Yes
041-0003	Williams Middle School	7.4	8.0	9.1	8.2	Yes
045-0015	Greenville ESC	8.5	7.9	8.9	8.4	Yes
045-0016	Hillcrest Middle School	7.8	7.3*	8.6	7.9	Yes
079-0007	Parklane	7.3	6.7	8.3	7.4	Yes
083-0011	T.K. Gregg	8.6	7.6*	8.9	8.4	Yes
*The EPA Air Quality System (AQS) database reported incomplete data; however, the design value is considered valid.						

Attachment 3

EPA Map Projecting Counties Meeting Standard



DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES
JOE FOSS BUILDING
523 E CAPITOL AVE
PIERRE SD 57501-3182
danr.sd.gov

December 13, 2024

KC Becker
Regional Administrator
U.S. Environmental Protection Agency, Region 8
1595 Wynkoop Street
Denver, CO 80202-1129

Dear Administrator Becker:

On February 7, 2024, EPA promulgated a revised primary annual National Ambient Air Quality Standard for particulate matter 2.5 microns in diameter or less ($PM_{2.5}$) by reducing the annual average concentration level to 9 micrograms per cubic meter. Initial recommendations for area designations are due to EPA by February 7, 2025.

On December 22, 2021, Governor Noem submitted a letter to EPA Region 8 designating the Secretary of the Department of Agriculture and Natural Resources as her designee for submitting designations and other matters that involve South Dakota's Air Quality Program. In that capacity, I recommend EPA designate all counties in South Dakota as attaining the primary annual $PM_{2.5}$ standard (see Attachment A). Attachment B provides the technical analysis for designating all of South Dakota's counties as attaining the 2024 annual average standard for $PM_{2.5}$.

Thank you for the opportunity to propose designations for the revised primary annual $PM_{2.5}$ standard. I look forward to your concurrence. If you have questions, please contact Kyrik Rombough of my staff at 605.773.3151.

Sincerely,

Hunter Roberts
Secretary

Attachments

ec: Adrienne Sandoval, EPA Region 8 w/attachments

Attachment A
South Dakota Area Designations
Revised 2024 Annual Average $PM_{2.5}$ Standard

Designated Area	Designation Type
Aurora County	Attainment
Beadle County	Attainment
Bennett County	Attainment
Bon Homme County	Attainment
Brookings County	Attainment
Brown County	Attainment
Brule County	Attainment
Buffalo County	Attainment
Butte County	Attainment
Campbell County	Attainment
Charles County	Attainment
Clark County	Attainment
Clay County	Attainment
Codington County	Attainment
Corson County	Attainment
Custer County	Attainment
Davison County	Attainment
Day County	Attainment
Deuel County	Attainment
Dewey County	Attainment
Douglas County	Attainment
Edmunds County	Attainment
Fall River County	Attainment
Faulk County	Attainment
Grant County	Attainment
Gregory County	Attainment
Haakon County	Attainment
Hamlin County	Attainment
Hand County	Attainment
Hanson County	Attainment
Harding County	Attainment
Hughes County	Attainment
Hutchinson County	Attainment
Hyde County	Attainment
Jackson County	Attainment
Jerauld County	Attainment
Jones County	Attainment
Kingsbury County	Attainment
Lake County	Attainment
Lawrence County	Attainment

Designated Area	Designation Type
Lincoln County	Attainment
Lyman County	Attainment
Marshall County	Attainment
McCook County	Attainment
McPherson County	Attainment
Meade County	Attainment
Mellette County	Attainment
Miner County	Attainment
Minnehaha County	Attainment
Moody County	Attainment
Oglala Lakota County	Attainment
Pennington County	Attainment
Perkins County	Attainment
Potter County	Attainment
Roberts County	Attainment
Sanborn County	Attainment
Spink County	Attainment
Stanley County	Attainment
Sully County	Attainment
Todd County	Attainment
Tripp County	Attainment
Turner County	Attainment
Union County	Attainment
Walworth County	Attainment
Yankton County	Attainment
Ziebach County	Attainment

Attachment B
Determining Area Designations

On February 7, 2024, EPA promulgated a revised primary annual National Ambient Air Quality Standard for particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$). In accordance with Section 107(d)(1)(A) of the Clean Air Act, initial recommendations for area designations are due to EPA by February 7, 2025. EPA revised the primary $PM_{2.5}$ annual standard by reducing the three-year annual average concentration level to 9 micrograms per cubic meter.

The recorded three-year average $PM_{2.5}$ design value concentrations throughout South Dakota have not exceeded the revised annual standard from 2015 through 2023. Currently, the monitoring site with the highest annual average design value for $PM_{2.5}$ was recorded at the Watertown Site at 94% of the revised annual standard using data collected from 2021 to 2023. The Pierre Airport Site has the lowest design value concentration at 40% of the revised standard.

1. Air Monitoring Data

DANR believes South Dakota's ambient air monitoring network is representative of the highest $PM_{2.5}$ concentration areas in the state. Table B-1 displays the three-year calculated design value concentration for each site using data from 2021 to 2023.

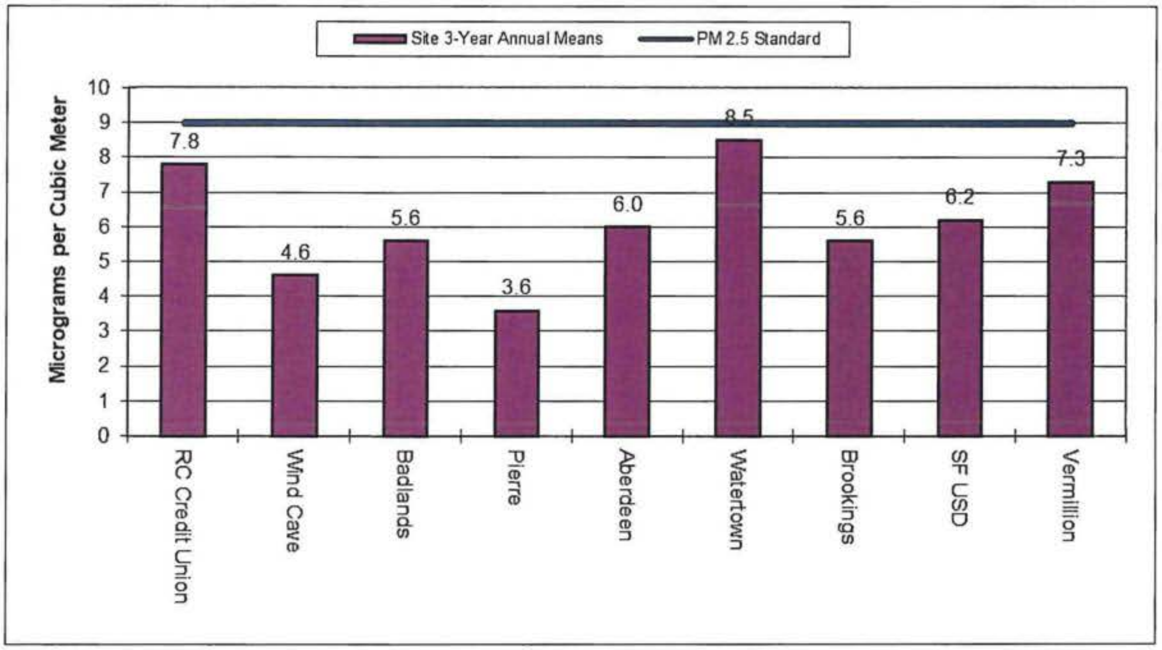
Table B-1 – 2023 Site Design Values Concentrations in South Dakota

Site	Annual Averages	2023 Annual Design Values	Attainment Status
Watertown	2021 – 9.2 ug/m³ 2022 – 6.9 ug/m³ 2023 – 9.5 ug/m³	8.5 ug/m³	Yes
Brookings Research Farm	2021 – 6.7 ug/m³ 2022 – 3.7 ug/m³ 2023 – 6.4 ug/m³	5.6 ug/m³	Yes
SF USD	2021 – 7.2 ug/m³ 2022 – 4.7 ug/m³ 2023 – 6.9 ug/m³	6.2 ug/m³	Yes*
Vermillion	2021 – 2022 – 6.0 ug/m³ 2023 – 8.7ug/m³	7.3 ug/m³	Yes*
Aberdeen Bus Stop	2021 – 6.7 ug/m³ 2022 – 4.2 ug/m³ 2023 – 7.0 ug/m³	6.0 ug/m³	Yes
Pierre Airport	2021 – 3.9 ug/m³ 2022 – 1.9 ug/m³ 2023 – 5.2 ug/m³	3.6 ug/m³	Yes
Badlands	2021 – 5.9 ug/m³ 2022 – 3.3 ug/m³ 2023 – 7.5 ug/m³	5.6 ug/m³	Yes
Wind Cave	2021 – 4.8 ug/m³ 2022 – 4.4 ug/m³ 2023 – 4.8 ug/m³	4.6 ug/m³	Yes
Rapid City Credit Union	2021 – 8.1 ug/m³ 2022 – 7.0 ug/m³ 2023 – 8.4 ug/m³	7.8 ug/m³	Yes

*Less than three complete years at SF USD and Vermillion sites.

Figure B-1 provides a graph comparison of the annual design values for each site using the 2021 to 2023 data compared to the 2024 revised annual $PM_{2.5}$ standard. As is demonstrated in the graph, all sites are attaining the revised annual $PM_{2.5}$ standard of 9 ug/m^3.

Figure B-1 – 2023 Design Values Compared to the Revised Annual $PM_{2.5}$ Standard



*Less than three complete years at SF USD and Vermillion

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243-0435

DAVID W. SALYERS, P.E.
COMMISSIONER

BILL LEE
GOVERNOR

January 21, 2025

Denisse Diaz, Director
Air and Radiation Division
U.S. EPA, Region 4 Office
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303

Re: State Recommendations for Area Designations for 2024 $PM_{2.5}$ NAAQS

Dear. Ms. Diaz:

On February 7, 2024, the EPA strengthened the primary annual $PM_{2.5}$ National Ambient Air Quality Standard (NAAQS) to 9.0 micrograms per cubic meter (µg/m^3). Section 107(d)(1)(A) of the Clean Air Act requires each state to submit to EPA the recommended designation of each area of the state as nonattainment, attainment, or unclassifiable for the revised NAAQS no later than one year after NAAQS promulgation. In this letter, the Tennessee Department of Environment and Conservation (TDEC) presents preliminary recommended designations in accordance with EPA's memorandum dated February 7, 2024, "Initial Area Designations for the 2024 Revised Primary Annual Fine Particle National Ambient Air Quality Standard".

Table 1 includes initial area designations for each county in Tennessee. To support these recommendations, Table 2 displays $PM_{2.5}$ design values from the most recent three-year period of certified data (2021-2023) from monitors within Tennessee and neighboring states with Combined Statistical Areas (CSAs) or Core Based Statistical Areas (CBSAs) with Tennessee counties. Based on this data, TDEC recommends "attainment/unclassifiable[1]" for all counties in Tennessee with attaining 3- year design values, below the revised NAAQS of 9.0 µg/m^3.

Additionally, TDEC initially recommends attainment for counties with 3-year design values above the revised NAAQS of 9.0 micrograms per cubic meter assuming EPA will approve the Exceptional Event Demonstrations submitted by the Nashville/Davidson Metro Public Health Department, Knox County Health Department, the Shelby County Health Department, and the Georgia Environmental Protection Division.[2] These recommendations may be revised based on EPA's action on these exceptional event demonstrations.

---

[1] EPA's February 7, 2024, guidance memorandum indicates the EPA expects to use "unclassifiable/attainment" for areas that are not violating the NAAQS and are not contributing to a nearby violation of the NAAQS. The Tennessee Division of Air Pollution Control will, therefore, use "attainment/unclassifiable" for its recommendations for these categories of areas.

[2] Exceptional Event Demonstrations were submitted by each program considering the regulatory significance of the 2021-2023 and/or 2022-2024 monitored $PM_{2.5}$ design values.

TDEC may also revise these recommendations based on 2022-2024 design values following certification of 2024 $PM_{2.5}$ monitoring data.

We appreciate the EPA's thoughtful consideration of our initial area recommendations. If you have any questions or need additional information on these recommendations, please contact Michelle Owenby, Director of the Division of Air Pollution Control at michelle.b.walker@tn.gov or 615-426-9250.

Sincerely,

David W. Salyers, P.E.
Commissioner

Table 1: Initial Area Designation Recommendations for each Tennessee county based on the 2021-2023 $PM_{2.5}$ data.

CSA	County	Designation Recommendation
Chattanooga-Cleveland-Dalton, TN-GA-AL[3]	Bradley	Attainment/Unclassifiable
Chattanooga-Cleveland-Dalton, TN-GA-AL[3]	Hamilton	Attainment/Unclassifiable
Chattanooga-Cleveland-Dalton, TN-GA-AL[3]	Marion	Attainment/Unclassifiable
Chattanooga-Cleveland-Dalton, TN-GA-AL[3]	McMinn	Attainment/Unclassifiable
Chattanooga-Cleveland-Dalton, TN-GA-AL[3]	Meigs	Attainment/Unclassifiable
Chattanooga-Cleveland-Dalton, TN-GA-AL[3]	Polk	Attainment/Unclassifiable
Chattanooga-Cleveland-Dalton, TN-GA-AL[3]	Sequatchie	Attainment/Unclassifiable
Huntsville-Decatur-Albertville, AL-TN	Lincoln	Attainment/Unclassifiable
Johnson City-Kingsport-Bristol, TN-VA	Carter	Attainment/Unclassifiable
Johnson City-Kingsport-Bristol, TN-VA	Greene	Attainment/Unclassifiable
Johnson City-Kingsport-Bristol, TN-VA	Hawkins	Attainment/Unclassifiable
Johnson City-Kingsport-Bristol, TN-VA	Sullivan	Attainment/Unclassifiable
Johnson City-Kingsport-Bristol, TN-VA	Unicoi	Attainment/Unclassifiable
Johnson City-Kingsport-Bristol, TN-VA	Washington	Attainment/Unclassifiable
Knoxville-Morristown-Sevierville, TN[3]	Anderson	Attainment/Unclassifiable
Knoxville-Morristown-Sevierville, TN[3]	Blount	Attainment/Unclassifiable
Knoxville-Morristown-Sevierville, TN[3]	Campbell	Attainment/Unclassifiable
Knoxville-Morristown-Sevierville, TN[3]	Cocke	Attainment/Unclassifiable
Knoxville-Morristown-Sevierville, TN[3]	Grainger	Attainment/Unclassifiable
Knoxville-Morristown-Sevierville, TN[3]	Hamblen	Attainment/Unclassifiable
Knoxville-Morristown-Sevierville, TN[3]	Jefferson	Attainment/Unclassifiable
Knoxville-Morristown-Sevierville, TN[3]	Knox	Attainment/Unclassifiable
Knoxville-Morristown-Sevierville, TN[3]	Loudon	Attainment/Unclassifiable
Knoxville-Morristown-Sevierville, TN[3]	Morgan	Attainment/Unclassifiable
Knoxville-Morristown-Sevierville, TN[3]	Roane	Attainment/Unclassifiable
Knoxville-Morristown-Sevierville, TN[3]	Sevier	Attainment/Unclassifiable
Knoxville-Morristown-Sevierville, TN[3]	Union	Attainment/Unclassifiable
Memphis-Clarksdale-Forrest City, TN-MS-AR	Fayette	Attainment/Unclassifiable
Memphis-Clarksdale-Forrest City, TN-MS-AR	Shelby	Attainment/Unclassifiable
Memphis-Clarksdale-Forrest City, TN-MS-AR	Tipton	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Bedford	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Cannon	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Cheatham	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Coffee	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Davidson	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Dickson	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Franklin	Attainment/Unclassifiable

[3] CSA with at least one violating monitor above the 2024 Annual $PM_{2.5}$ NAAQS based on 2021-2023 data.

CSA	County	Designation Recommendation
Nashville-Davidson--Murfreesboro, TN[3]	Hickman	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Lawrence	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Macon	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Marshall	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Maury	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Moore	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Robertson	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Rutherford	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Smith	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Sumner	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Trousdale	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Williamson	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Wilson	Attainment/Unclassifiable
Union City-Martin, TN	Obion	Attainment/Unclassifiable
Union City-Martin, TN	Weakley	Attainment/Unclassifiable
	Benton	Attainment/Unclassifiable
	Bledsoe	Attainment/Unclassifiable
	Carroll	Attainment/Unclassifiable
	Chester	Attainment/Unclassifiable
	Claiborne	Attainment/Unclassifiable
	Clay	Attainment/Unclassifiable
	Crockett	Attainment/Unclassifiable
	Cumberland	Attainment/Unclassifiable
	Decatur	Attainment/Unclassifiable
	Dekalb	Attainment/Unclassifiable
	Dyer	Attainment/Unclassifiable
	Fentress	Attainment/Unclassifiable
	Gibson	Attainment/Unclassifiable
	Giles	Attainment/Unclassifiable
	Grundy	Attainment/Unclassifiable
	Hancock	Attainment/Unclassifiable
	Hardeman	Attainment/Unclassifiable
	Hardin	Attainment/Unclassifiable
	Haywood	Attainment/Unclassifiable
	Henderson	Attainment/Unclassifiable
	Henry	Attainment/Unclassifiable
	Houston	Attainment/Unclassifiable
	Humphreys	Attainment/Unclassifiable
	Jackson	Attainment/Unclassifiable
	Johnson	Attainment/Unclassifiable
	Lake	Attainment/Unclassifiable
	Lauderdale	Attainment/Unclassifiable

CSA	County	Designation Recommendation
	Lewis	Attainment/Unclassifiable
	Madison	Attainment/Unclassifiable
	McNairy	Attainment/Unclassifiable
	Monroe	Attainment/Unclassifiable
	Montgomery	Attainment/Unclassifiable
	Overton	Attainment/Unclassifiable
	Perry	Attainment/Unclassifiable
	Pickett	Attainment/Unclassifiable
	Putnam	Attainment/Unclassifiable
	Rhea	Attainment/Unclassifiable
	Scott	Attainment/Unclassifiable
	Stewart	Attainment/Unclassifiable
	Van Buren	Attainment/Unclassifiable
	Warren	Attainment/Unclassifiable
	Wayne	Attainment/Unclassifiable
	White	Attainment/Unclassifiable

Table 2. 2021-2023 Design Values for $PM_{2.5}$ monitors in Tennessee counties or adjacent states with CSAs or CBSAs with Tennessee Counties before adjusting for Exceptional Event Demonstrations.

Area	Area Type	State-County	Site ID	2021-2023 Annual DV
Memphis-Clarksdale-Forrest City, TN-MS-AR	CSA	TN-Shelby	47-157-0075	8.3
		TN-Shelby	47-157-0024	8.9
		MS-DeSoto	28-033-0002	8.7
		TN-Shelby	47-157-0100	8.4
		AR-Crittenden	05-035-0005	8.2
Chattanooga-Cleveland-Dalton, TN-GA-AL	CSA	GA-Walker	13-295-0004	9.4[4]
		TN-Hamilton	47-065-4002	8.4
		TN-McMinn	47-107-1002	7.8
Knoxville-Morristown-Sevierville, TN	CSA	TN-Knox	47-093-1020	8.8
		TN-Knox	47-093-1017	9.1
		TN-Knox	47-093-1013	8.5
		TN-Blount	47-009-0011	7.4
		TN-Roane	47-145-0004	7.3
		TN-Loudon	47-105-0109	6.9
Nashville-Davidson-Murfreesboro, TN	CSA	TN-Davidson	47-037-0040	9.6
		TN-Sumner	47-165-0007	7.6
		TN-Lawrence	47-099-0003	6.8
		TN-Maury	47-119-2007	7.3
Clarksville, TN-KY	CBSA	KY-Christian	21-047-0006	8.6

[4] On December 20, 2024, EPA approved a NAAQS exclusion for the $PM_{2.5}$ monitor a Rossville-Williams Street. Therefore, the design value for GA-Walker county shown in Table 2 is a 2-year design value (2022-2023) based on FRM, filter-based data. FRM data from 2021 was not included since the FRM monitor did not start collecting data until May, 2021 and thus did not meet EPA's completeness criteria for that year.

Area	Area Type	State-County	Site ID	2021-2023 Annual DV
		TN-Montgomery	47-125-2001	7.2
Johnson City-Kingsport-Bristol, TN-VA	CSA	TN-Sullivan	47-163-1007	6.7
		VA-Bristol City	51-520-0006	7.3
Jackson	CBSA	TN-Madison	47-113-0010	8.1

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243-0435

DAVID W. SALYERS, P.E.
COMMISSIONER

BILL LEE
GOVERNOR

January 21, 2025

Denisse Diaz, Director
Air and Radiation Division
U.S. EPA, Region 4 Office
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303

Re: State Recommendations for Area Designations for 2024 PM2.5 NAAQS

Dear. Ms. Diaz:

On February 7, 2024, the EPA strengthened the primary annual PM2.5 National Ambient Air Quality Standard (NAAQS) to 9.0 micrograms per cubic meter (ug/m3). Section 107(d)(1)(A) of the Clean Air Act requires each state to submit to EPA the recommended designation of each area of the state as nonattainment, attainment, or unclassifiable for the revised NAAQS no later than one year after NAAQS promulgation. In this letter, the Tennessee Department of Environment and Conservation (TDEC) presents preliminary recommended designations in accordance with EPA's memorandum dated February 7, 2024, "Initial Area Designations for the 2024 Revised Primary Annual Fine Particle National Ambient Air Quality Standard".

Table 1 includes initial area designations for each county in Tennessee. To support these recommendations, Table 2 displays PM2.5 design values from the most recent three-year period of certified data (2021-2023) from monitors within Tennessee and neighboring states with Core Statistical Areas (CSAs) or Core Based Statistical Areas (CBSAs) with Tennessee counties. Based on this data, TDEC recommends "attainment/unclassifiable[1]" for all counties in Tennessee with attaining 3-year design values, below the revised NAAQS of 9.0 ug/m3.

Additionally, TDEC initially recommends attainment for counties with 3-year design values above the revised NAAQS of 9.0 micrograms per cubic meter assuming EPA will approve the Exceptional Event Demonstrations submitted by the Nashville/Davidson Metro Public Health Department, Knox County Health Department, the Shelby County Health Department, and the Georgia Environmental Protection Division.[2] These recommendations may be revised based on EPA's action on these exceptional event demonstrations.

---

[1] EPA's February 7, 2024, guidance memorandum indicates the EPA expects to use "unclassifiable/attainment" for areas that are not violating the NAAQS and are not contributing to a nearby violation of the NAAQS. The Tennessee Division of Air Pollution Control will, therefore, use "attainment/unclassifiable" for its recommendations for these categories of areas.

[2] Exceptional Event Demonstrations were submitted by each program considering the regulatory significance of the 2021-2023 and/or 2022-2024 monitored $PM_{2.5}$ design values.

TDEC may also revise these recommendations based on 2022-2024 design values following certification of 2024 PM2.5 monitoring data.

We appreciate the EPA's thoughtful consideration of our initial area recommendations. If you have any questions or need additional information on these recommendations, please contact Michelle Owenby, Director of the Division of Air Pollution Control at michelle.b.walker@tn.gov or 615-426-9250.

Sincerely,

David W. Salyers, P.E.
Commissioner

Table 1: Initial Area Designation Recommendations for each Tennessee county based on the 2021-2023 $PM_{2.5}$ data.

CSA	County	Designation Recommendation
Chattanooga-Cleveland-Dalton, TN-GA-AL[3]	Bradley	Attainment/Unclassifiable
Chattanooga-Cleveland-Dalton, TN-GA-AL[3]	Hamilton	Attainment/Unclassifiable
Chattanooga-Cleveland-Dalton, TN-GA-AL[3]	Marion	Attainment/Unclassifiable
Chattanooga-Cleveland-Dalton, TN-GA-AL[3]	McMinn	Attainment/Unclassifiable
Chattanooga-Cleveland-Dalton, TN-GA-AL[3]	Meigs	Attainment/Unclassifiable
Chattanooga-Cleveland-Dalton, TN-GA-AL[3]	Polk	Attainment/Unclassifiable
Chattanooga-Cleveland-Dalton, TN-GA-AL[3]	Sequatchie	Attainment/Unclassifiable
Huntsville-Decatur-Albertville, AL-TN	Lincoln	Attainment/Unclassifiable
Johnson City-Kingsport-Bristol, TN-VA	Carter	Attainment/Unclassifiable
Johnson City-Kingsport-Bristol, TN-VA	Greene	Attainment/Unclassifiable
Johnson City-Kingsport-Bristol, TN-VA	Hawkins	Attainment/Unclassifiable
Johnson City-Kingsport-Bristol, TN-VA	Sullivan	Attainment/Unclassifiable
Johnson City-Kingsport-Bristol, TN-VA	Unicoi	Attainment/Unclassifiable
Johnson City-Kingsport-Bristol, TN-VA	Washington	Attainment/Unclassifiable
Knoxville-Morristown-Sevierville, TN[3]	Anderson	Attainment/Unclassifiable
Knoxville-Morristown-Sevierville, TN[3]	Blount	Attainment/Unclassifiable
Knoxville-Morristown-Sevierville, TN[3]	Campbell	Attainment/Unclassifiable
Knoxville-Morristown-Sevierville, TN[3]	Cocke	Attainment/Unclassifiable
Knoxville-Morristown-Sevierville, TN[3]	Grainger	Attainment/Unclassifiable
Knoxville-Morristown-Sevierville, TN[3]	Hamblen	Attainment/Unclassifiable
Knoxville-Morristown-Sevierville, TN[3]	Jefferson	Attainment/Unclassifiable
Knoxville-Morristown-Sevierville, TN[3]	Knox	Attainment/Unclassifiable
Knoxville-Morristown-Sevierville, TN[3]	Loudon	Attainment/Unclassifiable
Knoxville-Morristown-Sevierville, TN[3]	Morgan	Attainment/Unclassifiable
Knoxville-Morristown-Sevierville, TN[3]	Roane	Attainment/Unclassifiable
Knoxville-Morristown-Sevierville, TN[3]	Sevier	Attainment/Unclassifiable
Knoxville-Morristown-Sevierville, TN[3]	Union	Attainment/Unclassifiable
Memphis-Clarksdale-Forrest City, TN-MS-AR	Fayette	Attainment/Unclassifiable
Memphis-Clarksdale-Forrest City, TN-MS-AR	Shelby	Attainment/Unclassifiable
Memphis-Clarksdale-Forrest City, TN-MS-AR	Tipton	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Bedford	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Cannon	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Cheatham	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Coffee	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Davidson	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Dickson	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Franklin	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Hickman	Attainment/Unclassifiable

[3] CSA with at least one violating monitor above the 2024 Annual $PM_{2.5}$ NAAQS based on 2021-2023 data.

CSA	County	Designation Recommendation
Nashville-Davidson--Murfreesboro, TN[3]	Lawrence	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Macon	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Marshall	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Maury	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Moore	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Robertson	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Rutherford	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Smith	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Sumner	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Trousdale	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Williamson	Attainment/Unclassifiable
Nashville-Davidson--Murfreesboro, TN[3]	Wilson	Attainment/Unclassifiable
Union City-Martin, TN	Obion	Attainment/Unclassifiable
Union City-Martin, TN	Weakley	Attainment/Unclassifiable
	Benton	Attainment/Unclassifiable
	Bledsoe	Attainment/Unclassifiable
	Carroll	Attainment/Unclassifiable
	Chester	Attainment/Unclassifiable
	Claiborne	Attainment/Unclassifiable
	Clay	Attainment/Unclassifiable
	Crockett	Attainment/Unclassifiable
	Cumberland	Attainment/Unclassifiable
	Decatur	Attainment/Unclassifiable
	Dekalb	Attainment/Unclassifiable
	Dyer	Attainment/Unclassifiable
	Fentress	Attainment/Unclassifiable
	Gibson	Attainment/Unclassifiable
	Giles	Attainment/Unclassifiable
	Grundy	Attainment/Unclassifiable
	Hancock	Attainment/Unclassifiable
	Hardeman	Attainment/Unclassifiable
	Hardin	Attainment/Unclassifiable
	Haywood	Attainment/Unclassifiable
	Henderson	Attainment/Unclassifiable
	Henry	Attainment/Unclassifiable
	Houston	Attainment/Unclassifiable
	Humphreys	Attainment/Unclassifiable
	Jackson	Attainment/Unclassifiable
	Johnson	Attainment/Unclassifiable
	Lake	Attainment/Unclassifiable
	Lauderdale	Attainment/Unclassifiable
	Lewis	Attainment/Unclassifiable

CSA	County	Designation Recommendation
	Madison	Attainment/Unclassifiable
	McNairy	Attainment/Unclassifiable
	Monroe	Attainment/Unclassifiable
	Montgomery	Attainment/Unclassifiable
	Overton	Attainment/Unclassifiable
	Perry	Attainment/Unclassifiable
	Pickett	Attainment/Unclassifiable
	Putnam	Attainment/Unclassifiable
	Rhea	Attainment/Unclassifiable
	Scott	Attainment/Unclassifiable
	Stewart	Attainment/Unclassifiable
	Van Buren	Attainment/Unclassifiable
	Warren	Attainment/Unclassifiable
	Wayne	Attainment/Unclassifiable
	White	Attainment/Unclassifiable

Table 2. 2021-2023 Design Values for PM2.5 monitors in Tennessee counties or adjacent states with CSAs of CBSAs with Tennessee Counties

Area	Area Type	State-County	Site ID	2021-2023 Annual DV
Memphis-Clarksdale-Forrest City, TN-MS-AR	CSA	TN-Shelby	47-157-0075	8.3
		TN-Shelby	47-157-0024	8.9
		MS-DeSoto	28-033-0002	8.7
		TN-Shelby	47-157-0100	8.4
		AR-Crittenden	05-035-0005	8.2
Chattanooga-Cleveland-Dalton, TN-GA-AL	CSA	GA-Walker	13-295-0004	9.4[4]
		TN-Hamilton	47-065-4002	8.4
		TN-McMinn	47-107-1002	7.8
Knoxville-Morristown-Sevierville, TN	CSA	TN-Knox	47-093-1020	8.8
		TN-Knox	47-093-1017	9.1
		TN-Knox	47-093-1013	8.5
		TN-Blount	47-009-0011	7.4
		TN-Roane	47-145-0004	7.3
		TN-Loudon	47-105-0109	6.9
Clarksville, TN-KY	CBSA	KY-Christian	21-047-0006	8.6
		TN-Montgomery	47-125-2001	7.2
Johnson City-Kingsport-Bristol, TN-VA	CSA	TN-Sullivan	47-163-1007	6.7
		VA-Bristol City	51-520-0006	7.3
Jackson	CBSA	TN-Madison	47-113-0010	8.1

[4] On December 20, 2024, EPA approved a NAAQS exclusion for the $PM_{2.5}$ monitor a Rossville-Williams Street. Therefore, the design value for GA-Walker county shown in Table 2 is a 2-year design value (2022-2023) based on FRM, filter-based data. FRM data from 2021 was not included since the FRM monitor did not start collecting data until May, 2021 and thus did not meet EPA's completeness criteria for that year.

GOVERNOR GREG ABBOTT

February 6, 2025

The Honorable Lee Zeldin
Administrator
U.S. Environmental Protection Agency
William Jefferson Clinton Building
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20760

Re: State Designations for the 2024 Revised Primary Annual Fine Particulate Matter National Ambient Air Quality Standard (NAAQS or Standard)

Dear Administrator Zeldin:

On February 7, 2024, the Biden–Harris Administration's U.S. Environmental Protection Agency (EPA) authorized a substantial lowering of the primary annual fine particulate matter ($PM_{2.5}$) NAAQS by pointing to alleged public health benefits. Ironically, the legally required scientific evidence used to support the revision was nearly identical to the evidence the Trump Administration used in 2020 to conclude that the 2020 $PM_{2.5}$ NAAQS was protective of public health.

The State of Texas, along with numerous other states, private entities, and interest groups filed suit challenging the revised $PM_{2.5}$ Standard. The petitioners correctly state that the revised $PM_{2.5}$ NAAQS is unlawful, violates the federal Clean Air Act (FCAA), and should be vacated. S*ee Commonwealth of Kentucky and State of West Virginia, et al. v. EPA*, D.C. Cir. Dkt. No. 24-1050 (consolidated with 24-1051, 24-1052, 24-1073, and 24-1091). Rather than revising the $PM_{2.5}$ NAAQS pursuant to the FCAA's explicit authorization—to focus on "public health"—the previous EPA seems to have heavily relied on President Biden's policies of advancing environmental justice. This is supported by the fact that this is the first time in history EPA has ever voluntarily initiated and effectuated a reconsideration of a NAAQS outside the normal statutory review period. Even though the case remains pending, I reiterate Texas' view that the previous Trump Administration's 2020 decision should be reinstated. I additionally urge EPA to reconsider the 2024 $PM_{2.5}$ NAAQS.

The consequences of arbitrarily revising the $PM_{2.5}$ Standard are significant and far reaching. Designating areas as "nonattainment" results in staggering economic costs and complex permitting requirements. One study estimated the costs to implement the 2015 eight-hour ozone NAAQS to be between \$3.2 and \$36.2 billion dollars for one nonattainment county.[1] These costs include increased expenses for pre-construction permitting (new source review), general and transportation conformity, and other regulatory hurdles for air quality planning. Additionally, there are potential national

[1] Nivin, Steven R. Ph.D., LLC for Alamo Area Council of Governments, Potential Cost of Nonattainment in the San Antonio Metropolitan Area, February 21, 2017, https://aacog.gov/sites/default/files/2022-07/Potential%20Cost%20of%20Nonattainment%20in%20the%20San%20Antonio%20Metropolitan%20Area%20%28Report%29.pdf

POST OFFICE BOX 12428 AUSTIN, TEXAS 78711 512-463-2000 (VOICE) DIAL 7-1-1 FOR RELAY SERVICES

security implications for areas with military and Department of Defense operations due to delays in, or the constricting of, critical military defense operations.

Section 107(d) of the FCAA requires the governor of each state to submit to EPA a list of all areas with a designation of attainment, nonattainment, or unclassifiable, within one year of the promulgation of a new or revised NAAQS. Because of the Biden–Harris Administration's arbitrary and unlawful adoption of the revised $PM_{2.5}$ NAAQS, I urge EPA to defer all designations. Alternatively, because the FCAA requires that governors submit designations to EPA, I am designating all counties within the State of Texas with regulatory monitors and complete data meeting the 2024 $PM_{2.5}$ NAAQS as attainment, and all remaining counties will continue to be designated as "attainment/unclassifiable."

Sincerely,

Greg Abbott
Governor

GA:bhd

cc: The Honorable John Cornyn, United States Senator
The Honorable Ted Cruz, United States Senator

W. Scott Mason IV, EPA Administrator for Region 6
Brooke Paup, Chairwoman, Texas Commission on Environmental Quality
Kelly Keel, Executive Director, Texas Commission on Environmental Quality

State of Utah

SPENCER J. COX
Governor

DEIDRE M. HENDERSON
Lieutenant Governor

Office of the Governor

January 17, 2025

Acting Regional Administrator
US EPA REGION 8
1595 WYNKOOP STREET
DENVER, COLORADO 80202-1129

Dear Acting Administrator,

The purpose of this letter is to recommend appropriate Particulate Matter ($PM_{2.5}$) area designations for all areas in the state of Utah. These recommendations are made in response to the Environmental Protection Agency's (EPA) February 7, 2024, revision to the National Ambient Air Quality Standard (NAAQS) for annual $PM_{2.5}$.[1] Section 107(d) of the Clean Air Act directs states to provide their recommendations to EPA following promulgation of new or revised NAAQS.[2] EPA revised the 2024 NAAQS lowering the annual $PM_{2.5}$ standard from 12.0 $\mu g/m^3$ to 9.0 $\mu g/m^3$, and retained the 24-hour standard at 35 $\mu g/m^3$. States' recommendations are due to EPA by February 7, 2025.

Pending final certification of the 2024 data, collected at the $PM_{2.5}$ monitoring stations by the Utah Division of Air Quality, all areas within the state comply with the new standard for the designation years of 2022-2024 that EPA has indicated will be used for the final designations.[3] Therefore, I am not recommending any new areas within the state be designated as "Nonattainment" for $PM_{2.5}$ at this time.

All areas of the state should be designated as, "Attainment/Unclassifiable" since the 2022-2024 design values are below 9.0 $\mu g/m^3$. The exception to this recommendation concerns all Tribal Lands, over which the Utah Division of Air Quality has no jurisdiction.

---

[1] Reconsideration of the National Ambient Air Quality Standards for Particulate Matter, 89 Fed. Reg. 20274 (2024).

[2] Clean Air Act, 42 U.S.C. § 7407(d) (2020).

[3] Initial Area Designations for the 2024 Revised Primary Annual Fine Particle National Ambient Air Quality Standard, U.S. EPA, Memorandum (2024).

2022 - 2024 Annual $PM_{2.5}$ Design Values at Utah Regulatory Monitors				
County	**Attainment**	**Unclassifiable**	**Monitor**	**Design Value (µg/m^3) (3-year average of the annual average concentration of $PM_{2.5}$)**
Beaver	x	x	NA	NA
Box Elder	x	x	NA	NA
Cache	x		Smithfield - SM	7.3
Carbon	x	x	NA	NA
Daggett	x	x	NA	NA
Davis	x		Bountiful - BV	6.9
Duchesne	x		Roosevelt - RS	6.6
Emery	x	x	NA	NA
Garfield	x	x	NA	NA
Grand	x	x	NA	NA
Iron	x		Enoch - EN	5.1
Juab	x	x	NA	NA
Kane	x	x	NA	NA
Millard	x	x	NA	NA
Morgan	x	x	NA	NA
Piute	x	x	NA	NA
Rich	x	x	NA	NA
Salt Lake	x		Copper View - CV	7.2
			Hawthorne - HW	6.7
			Rose Park - RP	7.6
			Herriman - H3	6.1
			Lake Park - LP	7.4
			Tech Center - EQ	7.9
			Prison - ZZ	7.1
			Near Road - NR	8.6

2022 - 2024 Annual $PM_{2.5}$ Design Values at Utah Regulatory Monitors Continued				
County	**Attainment**	**Unclassifiable**	**Monitor**	**Design Value (µg/m3)**
San Juan	x	x	NA	NA
Sanpete	x	x	NA	NA
Sevier	x	x	NA	NA
Summit	x	x	NA	NA
Tooele	x		Erda - ED	5.9
Uintah	x		Vernal - V4	5.5
Utah	x		Lindon - LN	6.3
			Spanish Fork - SF	6.4
Wasatch	x	x	NA	NA
Washington	x		Hurricane - HC	4.4
Weber	x		Harrisville - HV	6.1
Wayne	x	x	NA	NA

Annual $PM_{2.5}$ design values listed in the above table are subject to change pending final certification of 2024 data. Exceedance of the new standard of 9.0 $\mu g/m^3$ is not expected from the final certified design values. The submission of any further documentation, which EPA determines is necessary to verify or otherwise meet the requirements of Section 107 (d) of the Clean Air Act, will be submitted by Bryce C. Bird, director of the Division of Air Quality, and any questions your agency may have concerning this submittal should be addressed to Bryce Bird at (801) 536-4064.

Sincerely,

Spencer J. Cox
Governor

Enclosures

Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

www.deq.virginia.gov

Stefanie K. Taillon
Acting Secretary of Natural and Historic Resources

Michael S. Rolband, PE, PWD, PWS Emeritus
Director

February 5, 2025

VIA ELECTRONIC MAIL

Ms. Catherine Libertz
Acting Regional Administrator
U.S. EPA Region III
Four Penn Center
1600 JFK Boulevard
Philadelphia, PA 19103-2029
Libertz.Catherine@epa.gov

Dear Ms. Libertz,

Pursuant to Section 107(d)(1)(A) of the Clean Air Act and on behalf of the Governor of the Commonwealth of Virginia, I hereby submit the initial recommendations and comments on the designation of areas in Virginia under the 2024 Primary Annual National Ambient Air Quality Standard (NAAQS) for Fine Particulate Matter ($PM_{2.5}$). This letter is in direct response to the guidance provided in the February 7, 2024, EPA memorandum that outlines the data and analyses to be considered in making these area designation recommendations.

The Department of Environmental Quality (DEQ) operates an ambient $PM_{2.5}$ monitoring network in Virginia. The latest ambient concentrations observed by this monitoring network are well below the level of the new standard (see enclosure) and have significantly decreased since 2002. At the same time, emissions of $PM_{2.5}$ and related precursor pollutants have also decreased due to the implementation of both state and federal programs. We believe that these observed levels and trends are generally representative of the Commonwealth regarding the pollution exposure and air quality improvements experienced by the general public. Therefore, I respectfully request that all of Virginia be designated attainment for the 2024 annual $PM_{2.5}$ standard based on the official 2023 design values for all monitors in Virginia.

Thank you again for this opportunity to provide input on this important issue for Virginia. Please contact me if you have any questions.

Sincerely,

Michael Rolband
Virginia Department of Environmental Quality
(804) 698-4020
Michael.Rolband@deq.virginia.gov

Enclosures

cc: Cristina Fernandez, EPA RIII Air and Radiation Division Director
(Fernandez.Cristina@epa.gov)
Michael Dowd, DEQ Air & Renewable Energy Division Director
(Michael.Dowd@deq.virginia.gov)
Thomas Ballou, DEQ Office of Air Data Analysis Manager
(Thomas.Ballou@deq.virginia.gov)
Ava Lovain, Greenhouse Gas Inventory Specialist, DEQ Office of Air Data Analysis
(Anna.Lovain@deq.virginia.gov)
Allyson Frantz, Air Quality Planner, DEQ Office of Air Data Analysis
(Allyson.B.Frantz@deq.virginia.gov)

Enclosure I

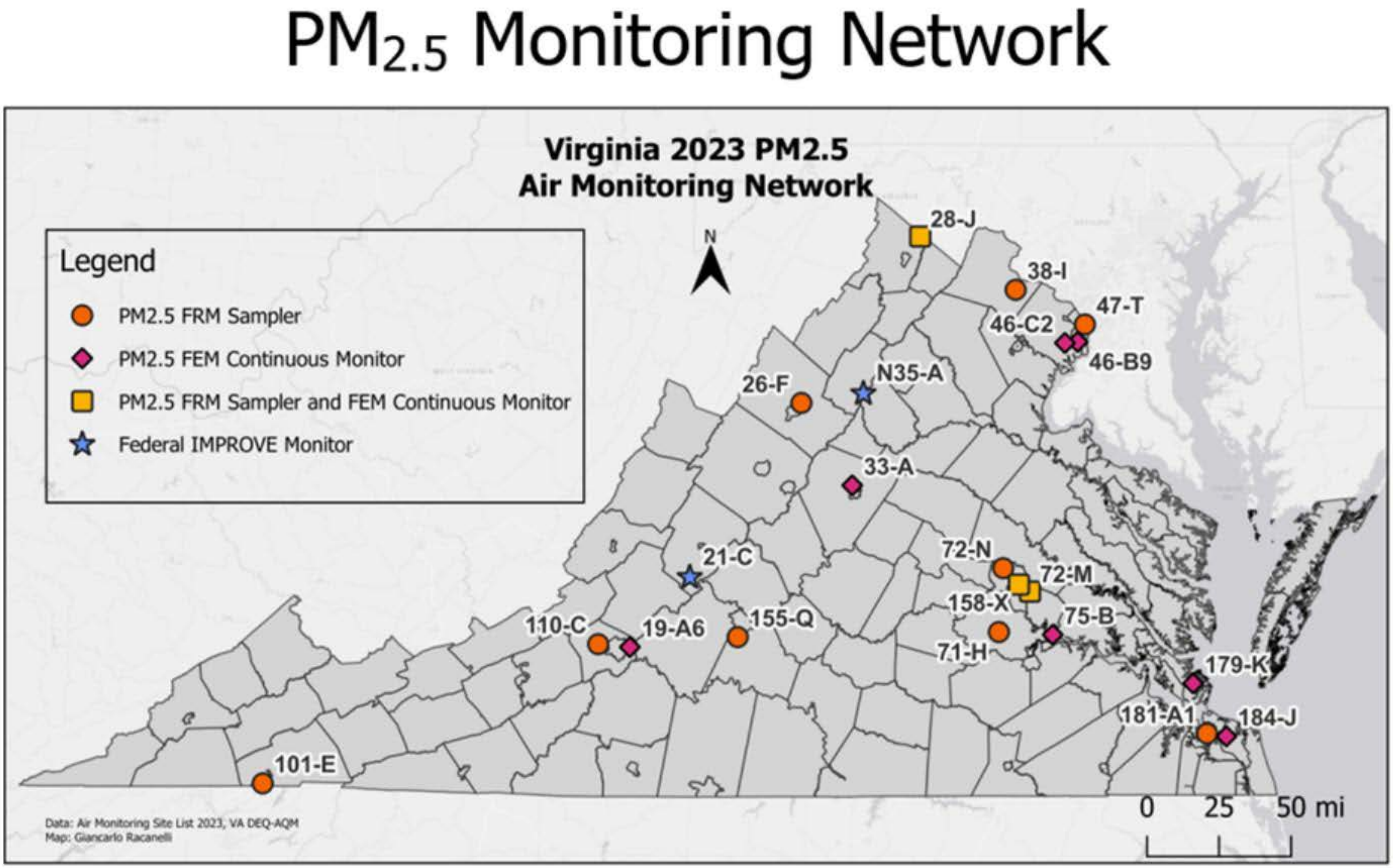
Virginia $PM_{2.5}$ Air Quality and Emissions Data

I. $PM_{2.5}$ Monitoring Network Map
II. $PM_{2.5}$ Monitor Data Design Values (2021-2023)
III. $PM_{2.5}$ Monitor Data Annual Design Value Trends (2002-2024)
    a. Graph
    b. Table
IV. $PM_{2.5}$ Monitor Data Daily Design Value Trends (2002-2024)
    a. Graph
    b. Table
V. Virginia 2022 Statewide Anthropogenic Emissions (NH_3, NOx, $PM_{2.5}$, SO_2, VOC)
VI. Virginia 2022 Statewide Anthropogenic Emissions, VOC
VII. Virginia 2022 Statewide Anthropogenic Emissions, NH_3
VIII. Virginia 2022 Statewide Anthropogenic Emissions, NOx
IX. Virginia 2022 Statewide Anthropogenic Emissions, $PM_{2.5}$
X. Virginia 2022 Statewide Anthropogenic Emissions, SO_2
XI. Virginia PM2.5 Direct and Indirect Pollutant Contributor Emissions Trends (2002-2022)

Notes:

1. All DEQ ambient air quality monitors and historical monitoring data is maintained and updated by the Office of Air Quality Monitoring (I to IV).
2. Graph II shows the official certified annual PM2.5 design values for 2021-2023 for all Virginia monitors which serves as the basis for the area designation recommendations.
3. Graphs and tables III and IV show the annual and 24-hour 2.5 design value trends from 2002 to 2024. Please note that the 2024 data is preliminary and unofficial. Also note that the EPA chose not change the 24-hour standard in 2024, the 2012 standard of 35 micron per cubic meter is still in effect.
4. The Virginia 2022 anthropogenic emissions data of NH_3, NOx, $PM_{2.5}$, SO_2, VOC was obtained from the U.S. Environmental Protection Agency 2022 Air Emissions Modeling Emissions Inventory. This is the latest year available for a comprehensive emissions inventory of all source sectors (V to X).
5. The Virginia direct and indirect pollutant contributor emissions trends were obtained from the US EPA's Air Pollutant Emissions Trends webpage (XI).

I. $PM_{2.5}$ Monitoring Network Map[1]

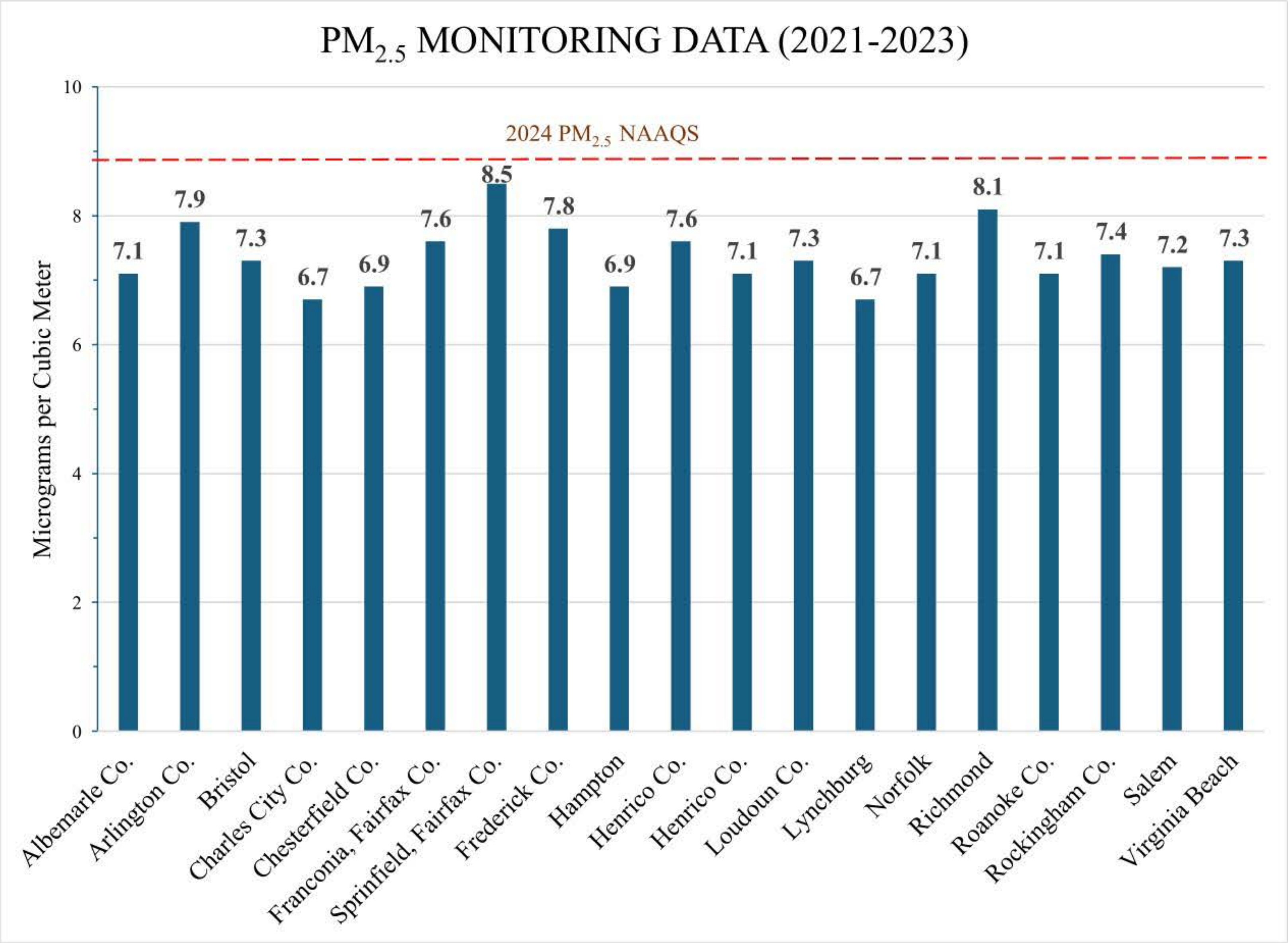


[1] Virginia Department of Environmental Quality. *Virginia Ambient Air Monitoring 2023 Annual Report,* 2023. Retrieved January 27, 2025 from https://www.deq.virginia.gov/our-programs/air/reports.

$PM_{2.5}$ Virginia Monitoring Stations and Site IDs

Site ID	AQS ID	County/City	Station Location
19-A6	51-161-1004	Roanoke Co.	Herman L. Horn Elementary School, Ruddell Rd.
21-C	51-163-0003	Rockbridge	USDA Forest Service, Natural Bridge Station
26-F	51-165-0003	Rockingham	Rockingham VDOT
28-J	51-069-0010	Frederick	Woodbine Road, Lester Building Systems
33-A	51-003-0001	Albemarle	Albemarle High School
38-I	51-107-1005	Loudoun	Broad Run High School, Ashburn
46-B9	51-059-0030	Fairfax	Franconia Park, Telegraph Rd.
46-C2	51-059-0031	Fairfax	Park and Ride, 6831 Backlick Rd.
47-T	51-013-0020	Arlington	Aurora Hills Visitors Center. 18th and Hayes St.
71-H	51-041-0004	Chesterfield	Beach Road VDOT
72-M	51-087-0014	Henrico	Henrico Police Athletic League, 2401 Hartman St.
72-N	51-087-0015	Henrico	DEQ Piedmont Office, Glen Allen
75-B	51-036-0002	Charles City Co.	Rt. 608, Shirley Plantation
101-E	51-520-0006	Bristol	Highland View Elementary School
110-C	51-775-0011	Salem	Salem High School
155-Q	51-680-0015	Lynchburg	Leesville Hwy. & Greystone Dr., City Water Tower
158-X	51-760-0025	Richmond City	Joseph Bryan Park
179-K	51-650-0008	Hampton	NASA Langley Research Center
181-A1	51-710-0024	Norfolk	2nd St. and Woodis Ave.
184-J	51-810-0008	Virginia Beach City	DEQ Tidewater Regional Office
N35-A	51-113-0003	Madison	Big Meadows, Shenandoah National Park

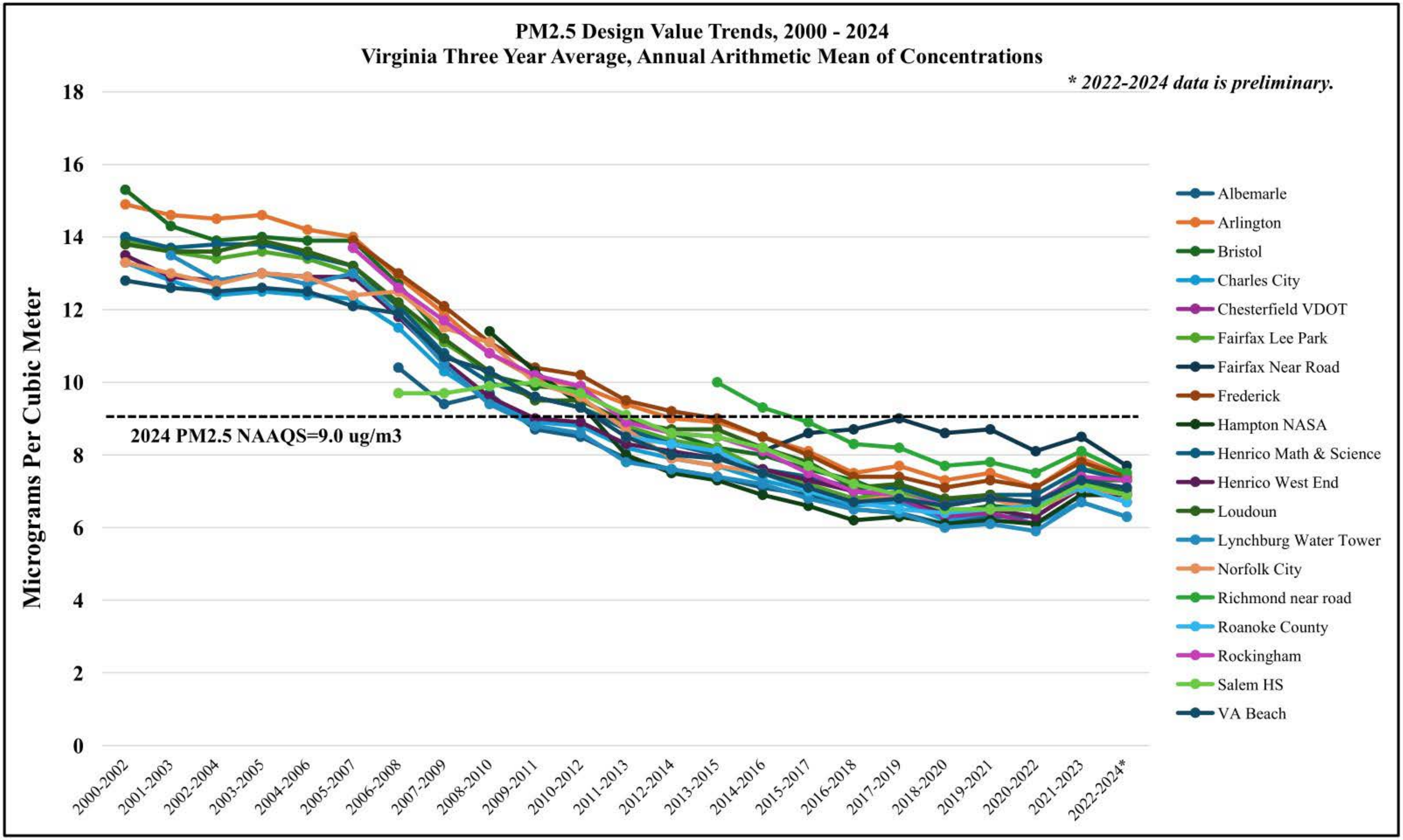
II. $PM_{2.5}$ Monitor Data Design Values (2021 – 2023)[2]



[2] U.S. Environmental Protection Agency. Emissions Modeling AQS AMP480 Report. Accessed January 21, 2025.

III. PM2.5 Monitor Data Annual Design Value Trends, (2002-2024)[3]

a. Graph



[3] U.S. Environmental Protection Agency. Emissions Modeling AQS AMP480 Report. Accessed January 21, 2025.

PM2.5 Monitor Data Annual Design Value Trends, (2002-2024)[4]

b. Table

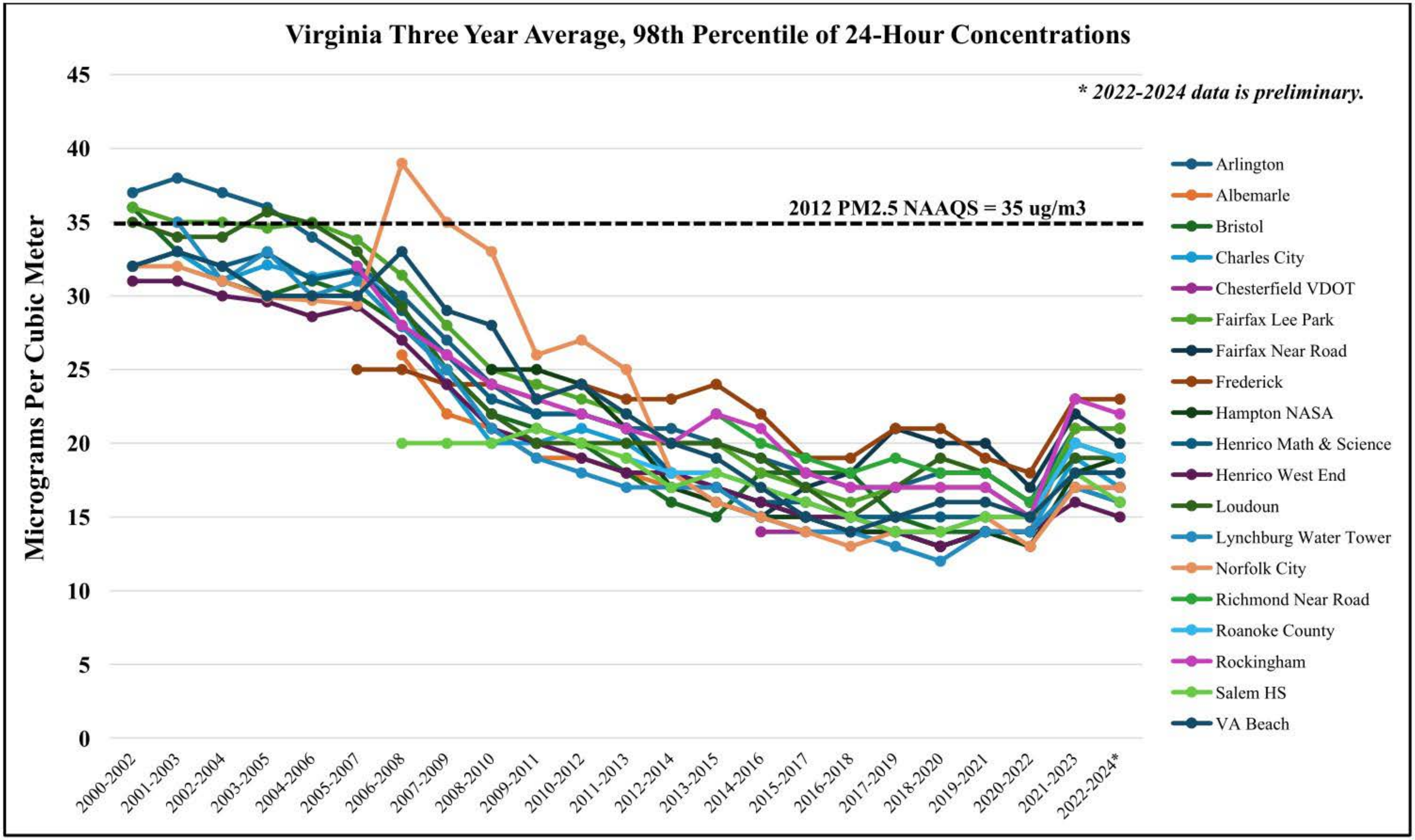
	2000-2002	2001-2003	2002-2004	2003-2005	2004-2006	2005-2007	2006-2008	2007-2009	2008-2010	2009-2011	2010-2012	2011-2013	2012-2014	2013-2015	2014-2016	2015-2017	2016-2018	2017-2019	2018-2020	2019-2021	2020-2022	2021-2023	2022-2024*
Albemarle							10.4	9.4	9.7	8.7	8.5	7.9	7.6	7.4	7.1	6.9	6.5	6.4	6.1	6.3	6.3	7.1	7.1
Arlington	14.9	14.6	14.5	14.6	14.2	14.0	12.9	11.9	10.8	10.1	9.9	9.4	9.0	8.9	8.5	8.1	7.5	7.7	7.3	7.5	7.1	7.9	7.4
Bristol	15.3	14.3	13.9	14.0	13.9	13.9	12.7	11.2	10.2	9.9	9.8	9.0	8.6	8.2	8.0	7.6	7.3	6.8	6.4	6.6	6.5	7.3	7.0
Charles City	13.3	12.8	12.4	12.5	12.4	12.3	11.5	10.3	9.5	8.9	8.8	8.2	7.9	7.7	7.3	7.0	6.6	6.7	6.2	6.4	6.1	6.7	6.3
Chesterfield VDOT															7.5	7.3	7.0	6.8	6.3	6.4	6.1	6.9	6.9
Fairfax Lee Park	13.9	13.6	13.4	13.6	13.4	13.0	12.1	11.1	10.3	9.6	9.3	8.8	8.4	8.2	7.6	7.2	6.8	7.0	6.7	6.8	6.5	7.6	7.5
Fairfax Near Road															8.1	8.6	8.7	9.0	8.6	8.7	8.1	8.5	7.7
Frederick						13.9	13.0	12.1	11.1	10.4	10.2	9.5	9.2	9.0	8.5	8.0	7.4	7.4	7.1	7.3	7.1	7.8	7.4
Hampton NASA									11.4	10.3	9.4	8.0	7.5	7.3	6.9	6.6	6.2	6.3	6.1	6.2	6.1	6.9	6.9
Henrico Math & Science	14.0	13.7	13.8	13.8	13.5	13.2	12.1	10.8	10.0	9.6	9.3	8.7	8.3	8.0	7.6	7.4	7.1	7.1	6.7	6.9	6.9	7.6	7.3
Henrico West End	13.5	12.9	12.8	13.0	12.9	12.9	11.8	10.6	9.6	9.0	8.9	8.3	8.1	7.9	7.6	7.3	7.0	6.9	6.4	6.5	6.3	7.1	6.7
Loudoun	13.8	13.6	13.6	13.9	13.6	13.2	12.2	11.2	10.3	9.5	9.5	8.9	8.7	8.7	8.2	7.8	7.1	7.2	6.8	6.9	6.6	7.3	7.3
Lynchburg Water Tower		13.5	12.8	13.0	12.7	13.0	11.9	10.5	9.4	8.8	8.6	7.8	7.6	7.4	7.2	6.8	6.5	6.4	6.0	6.1	5.9	6.7	6.3
Norfolk City	13.3	13.0	12.7	13.0	12.9	12.4	12.5	11.5	11.1	10.0	9.6	8.7	7.9	7.7	7.5	7.1	6.7	6.9	6.6	6.8	6.5	7.1	6.9
Richmond near road														10.0	9.3	8.9	8.3	8.2	7.7	7.8	7.5	8.1	7.5
Roanoke County												8.5	8.3	8.1	7.5	7.0	6.7	6.5	6.4	6.5	6.6	7.1	6.7
Rockingham						13.7	12.6	11.7	10.8	10.2	9.9	8.9	8.6	8.5	8.1	7.5	7.0	6.9	6.6	6.8	6.7	7.4	7.3
Salem HS							9.7	9.7	9.9	10.0	9.7	9.1	8.6	8.5	8.2	7.7	7.2	6.9	6.5	6.5	6.5	7.2	6.9
VA Beach	12.8	12.6	12.5	12.6	12.5	12.1	11.9	10.7	10.3	9.6	9.3	8.5	8.0	7.9	7.5	7.1	6.7	6.8	6.6	6.8	6.7	7.3	7.1

***2022-2024 data is preliminary.**

[4] U.S. Environmental Protection Agency. Emissions Modeling AQS AMP480 Report. Accessed January 21, 2025.

IV. $PM_{2.5}$ Monitor Data Daily Design Value Trends, (2002-2024)[5]

a. Graph



Note: US EPA chose not to change the daily PM2.5 standard in 2024 and therefore the 2012 daily standard of 35 micrograms per cubic meter is still in effect.

[5] U.S. Environmental Protection Agency. Emissions Modeling AQS AMP480 Report. Accessed January 21, 2025.

$PM_{2.5}$ Monitor Data Daily Design Value Trends, (2002-2024)[6]

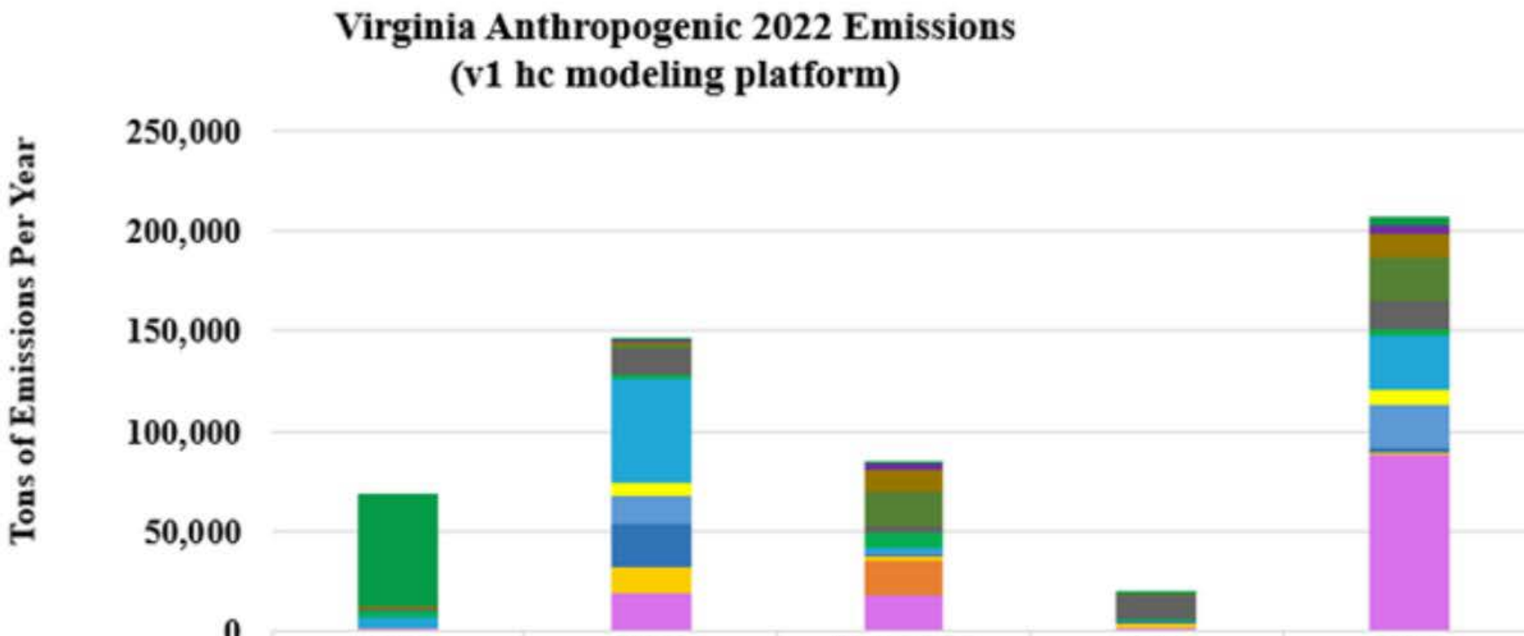
b. Table

	2000-2002	2001-2003	2002-2004	2003-2005	2004-2006	2005-2007	2006-2008	2007-2009	2008-2010	2009-2011	2010-2012	2011-2013	2012-2014	2013-2015	2014-2016	2015-2017	2016-2018	2017-2019	2018-2020	2019-2021	2020-2022	2021-2023	2022-2024*
Arlington	37	38	37	36	34	32	30	27	24	22	22	21	21	20	19	18	17	17	18	18	16	21	21
Albemarle							26	22	21	19	19	18	17	17	16	15	14	14	13	14	14	21	21
Bristol	36	33	31	30	31	30	28	25	22	21	20	18	16	15	18	18	18	15	14	14	14	17	16
Charles City	32	33	31	32	31	32	29	24	20	20	21	20	18	17	16	15	14	14	13	14	14	19	17
Chesterfield VDOT															14	14	14	14	13	14	14	17	17
Fairfax Lee Park	36	35	35	35	35	34	31	28	25	24	23	22	20	20	18	17	16	17	17	17	15	21	21
Fairfax Near Road															15	17	18	21	20	20	17	22	20
Frederick						25	25	24	24	23	24	23	23	24	22	19	19	21	21	19	18	23	23
Hampton NASA									25	25	24	21	17	16	15	15	14	14	13	14	13	18	19
Henrico Math & Science	32	33	32	33	31	32	29	26	23	22	22	21	18	17	16	16	15	15	15	15	15	20	19
Henrico West End	31	31	30	30	29	29	27	24	21	20	19	18	18	17	16	15	15	14	13	14	14	16	15
Loudoun	35	34	34	36	35	33	29	25	22	20	20	20	20	20	19	17	15	17	19	18	16	19	19
Lynchburg Water Tower		35	31	33	30	31	28	25	21	19	18	17	17	17	15	14	14	13	12	14	14	17	16
Norfolk City	32	32	31	30	30	29	39	35	33	26	27	25	18	16	15	14	13	14	14	15	13	17	17
Richmond Near Road														22	20	19	18	19	18	18	16	20	19
Roanoke County												19	18	18	17	16	15	14	14	15	15	20	19
Rockingham						32	28	26	24	23	22	21	20	22	21	18	17	17	17	17	15	23	22
Salem HS							20	20	20	21	20	19	17	18	17	16	15	14	14	15	15	18	16
VA Beach	32	33	32	30	30	30	33	29	28	23	24	22	20	19	17	15	14	15	16	16	15	18	18

***2022 – 2024 data is preliminary.**

[6] U.S. Environmental Protection Agency. Emissions Modeling AQS AMP480 Report. Accessed January 21, 2025.

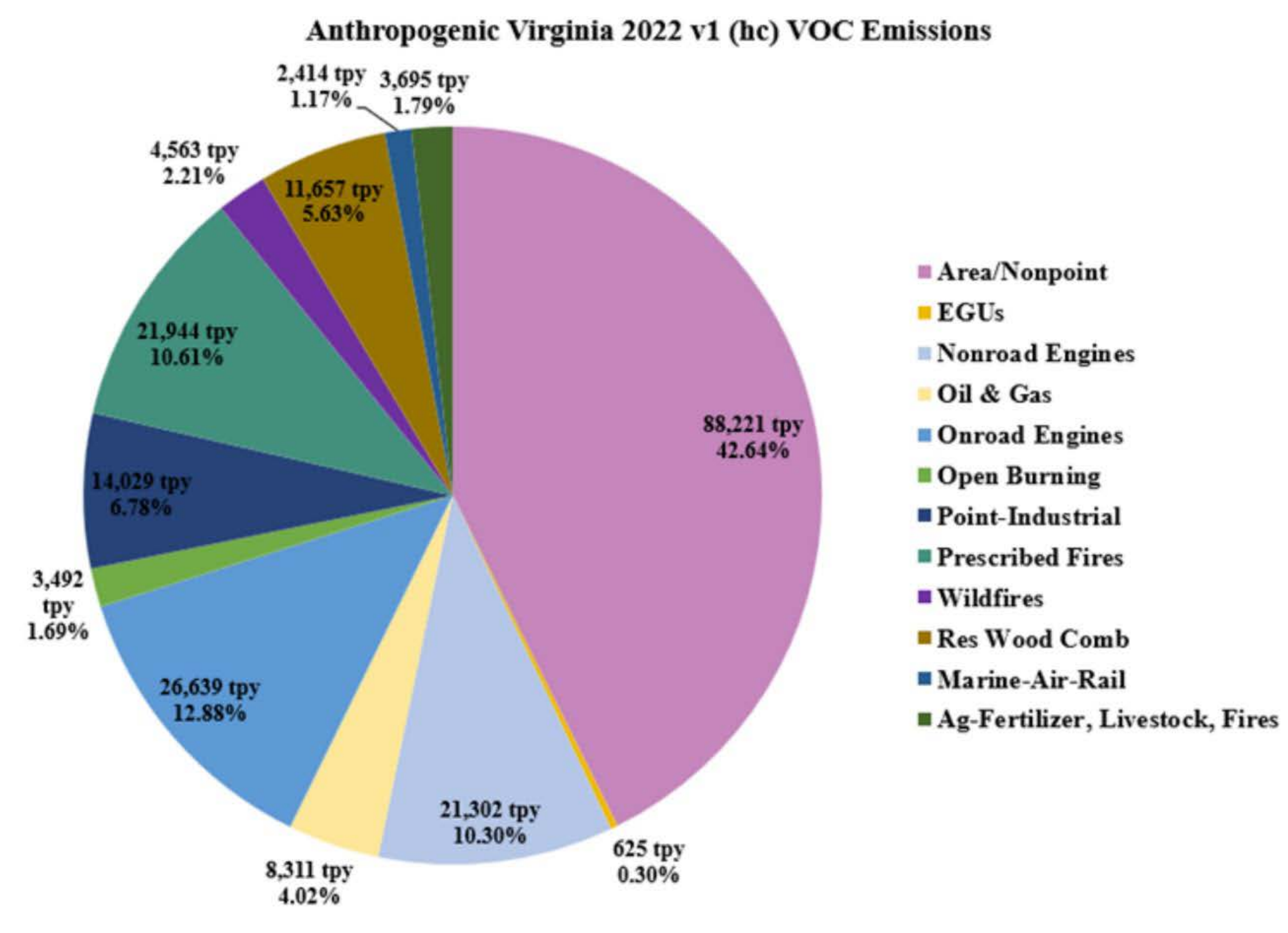
V. Virginia 2022 Statewide Anthropogenic Emissions (NH_3, NOx, $PM_{2.5}$, SO_2, VOC)[7]



	NH3	NOX	PM25-PRI	SO2	VOC
Ag-Fertilizer, Livestock, Fires	56,771	298	522	91	3,695
Wildfires	144	493	3,907	242	4,563
Res Wood Comb	561	1,105	10,787	264	11,657
Prescribed Fires	817	1,968	17,262	1,067	21,944
Point-Industrial	1,005	13,496	2,938	11,960	14,029
Open Burning	2,905	1,586	7,486	505	3,492
Onroad Engines	4,941	51,943	1,671	216	26,639
Oil & Gas	12	6,551	188	170	8,311
Nonroad Engines	42	14,979	1,704	18	21,302
Marine-Air-Rail	9	21,450	635	662	2,414
EGUs	617	12,598	1,859	2,663	625
Dust			17,757		
Area/Nonpoint	1,364	19,014	17,794	1,491	88,221

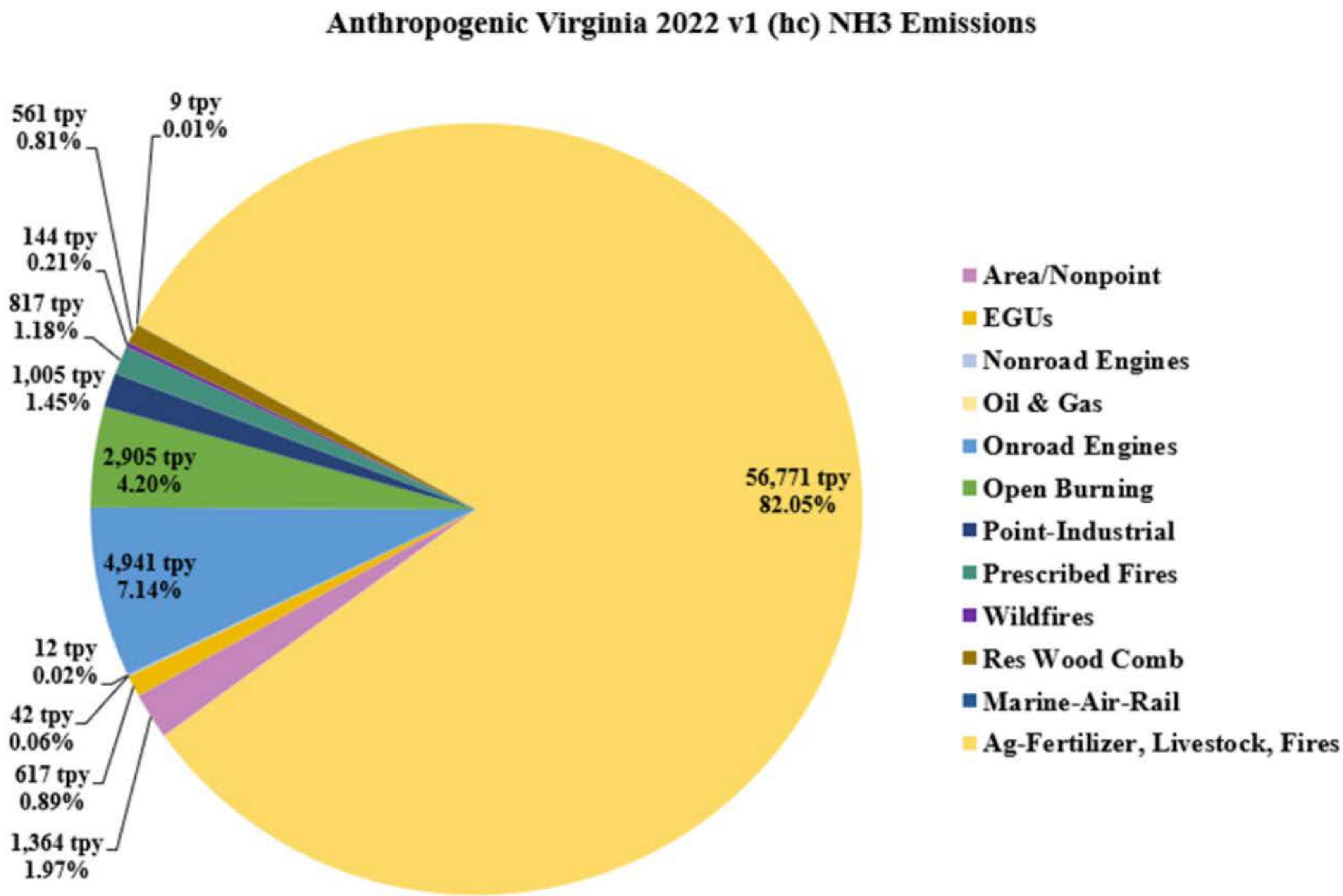
[7] U.S.Environmental Protection Agency. 2022 Air Emissions Modeling State Sector Report (v1), Updated January 17, 2025. Retrieved January 21, 2025 from https://gaftp.epa.gov/Air/emismod/2022/v1/reports/.

VI. Virginia 2022 Statewide Anthropogenic Emissions (VOC)[8]



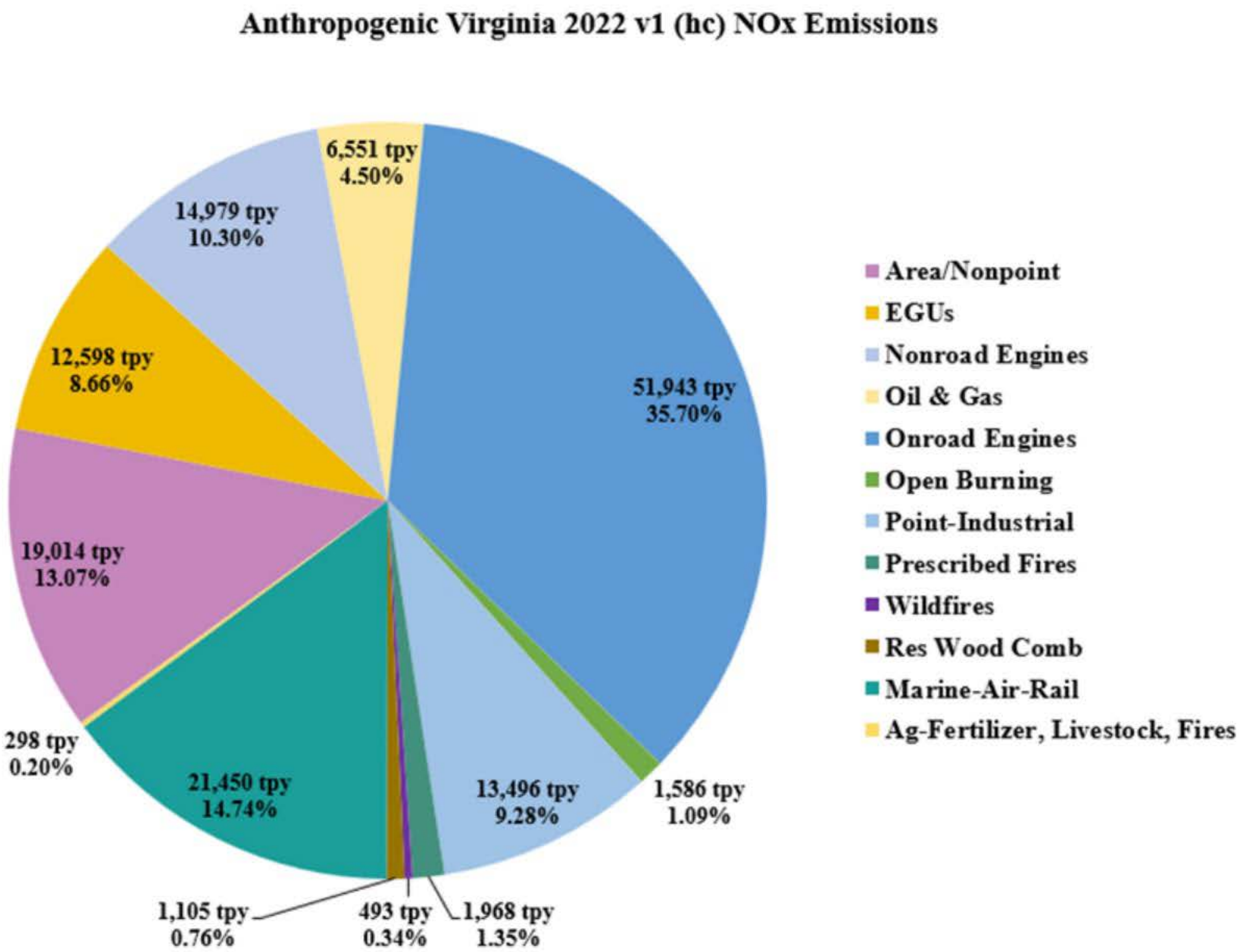
[8] Environmental Protection Agency. 2022 Air Emissions Modeling State Sector Report (v1), Updated January 17, 2025. Retrieved January 21, 2025 from https://gaftp.epa.gov/Air/emismod/2022/v1/reports/.

VII. Virginia 2022 Statewide Anthropogenic Emissions (NH_3)[9]



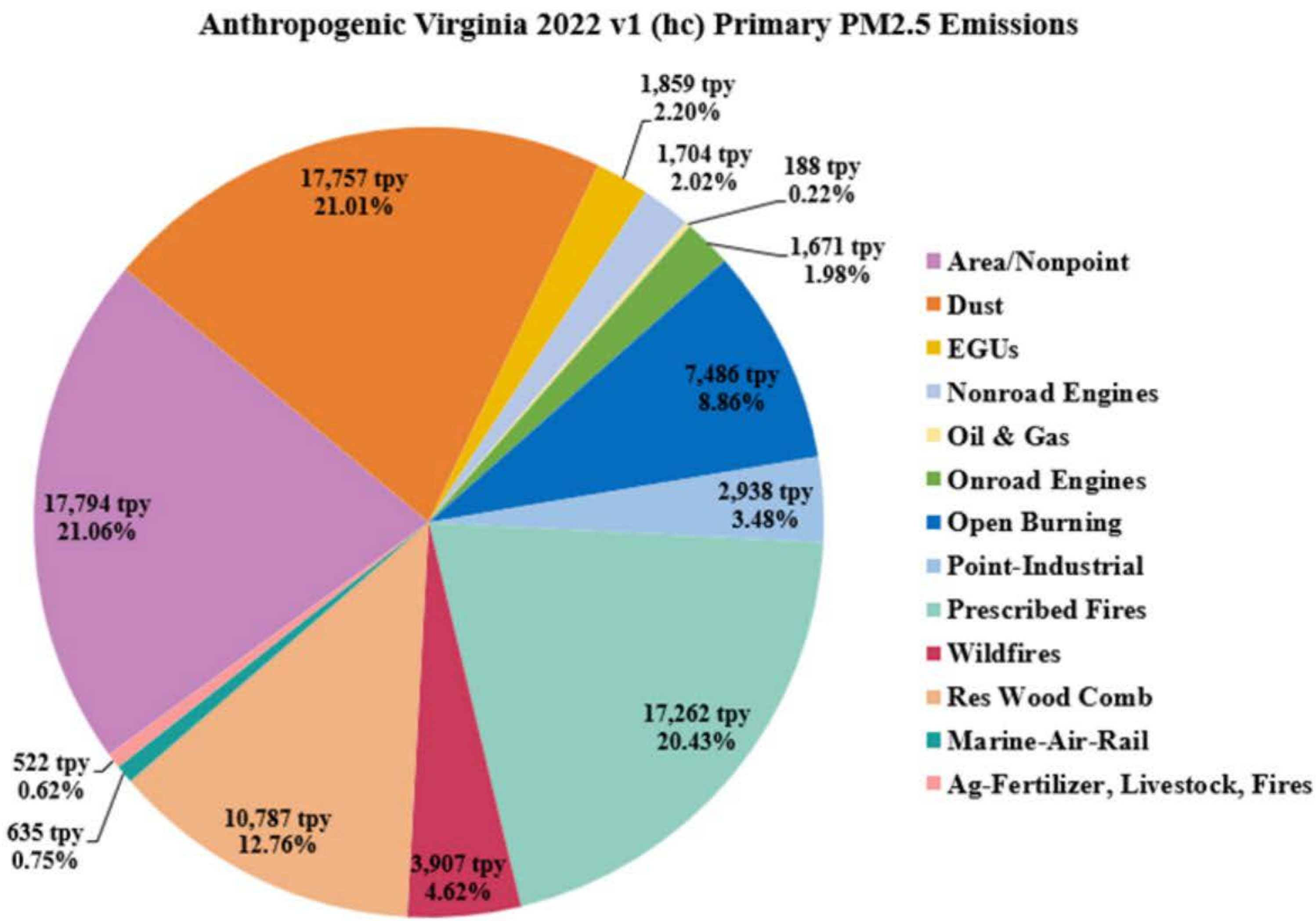
[9] U.S. Environmental Protection Agency. 2022 Air Emissions Modeling State Sector Report (v1), Updated January 17, 2025. Retrieved January 21, 2025 from https://gaftp.epa.gov/Air/emismod/2022/v1/reports/.

VIII. Virginia 2022 Statewide Anthropogenic Emissions (NOx)[10]



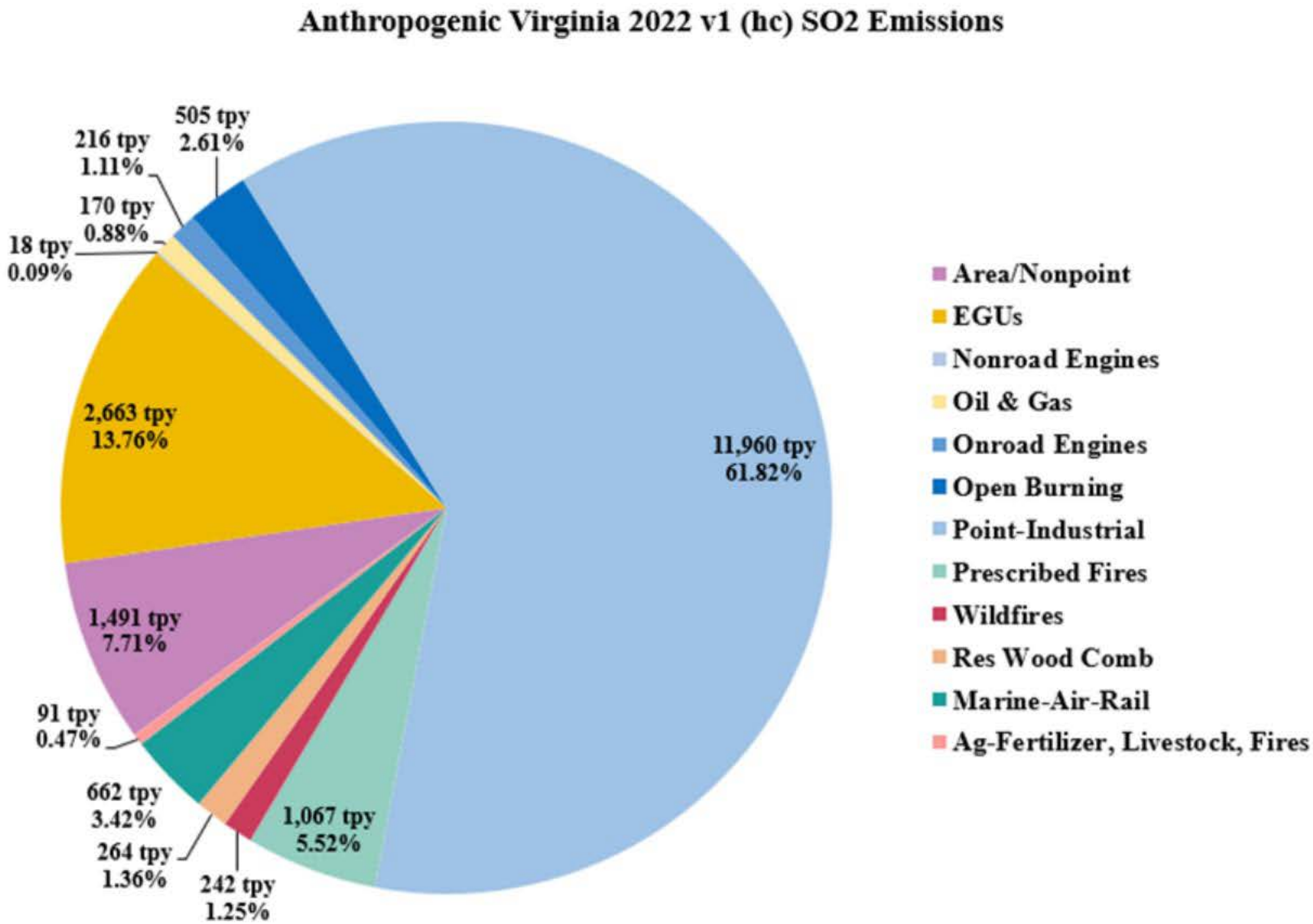
[10] U.S. Environmental Protection Agency. 2022 Air Emissions Modeling State Sector Report (v1), Updated January 17, 2025. Retrieved January 21, 2025 from https://gaftp.epa.gov/Air/emismod/2022/v1/reports/.

IX. Virginia 2022 Statewide Anthropogenic Emissions ($PM_{2.5}$)[11]



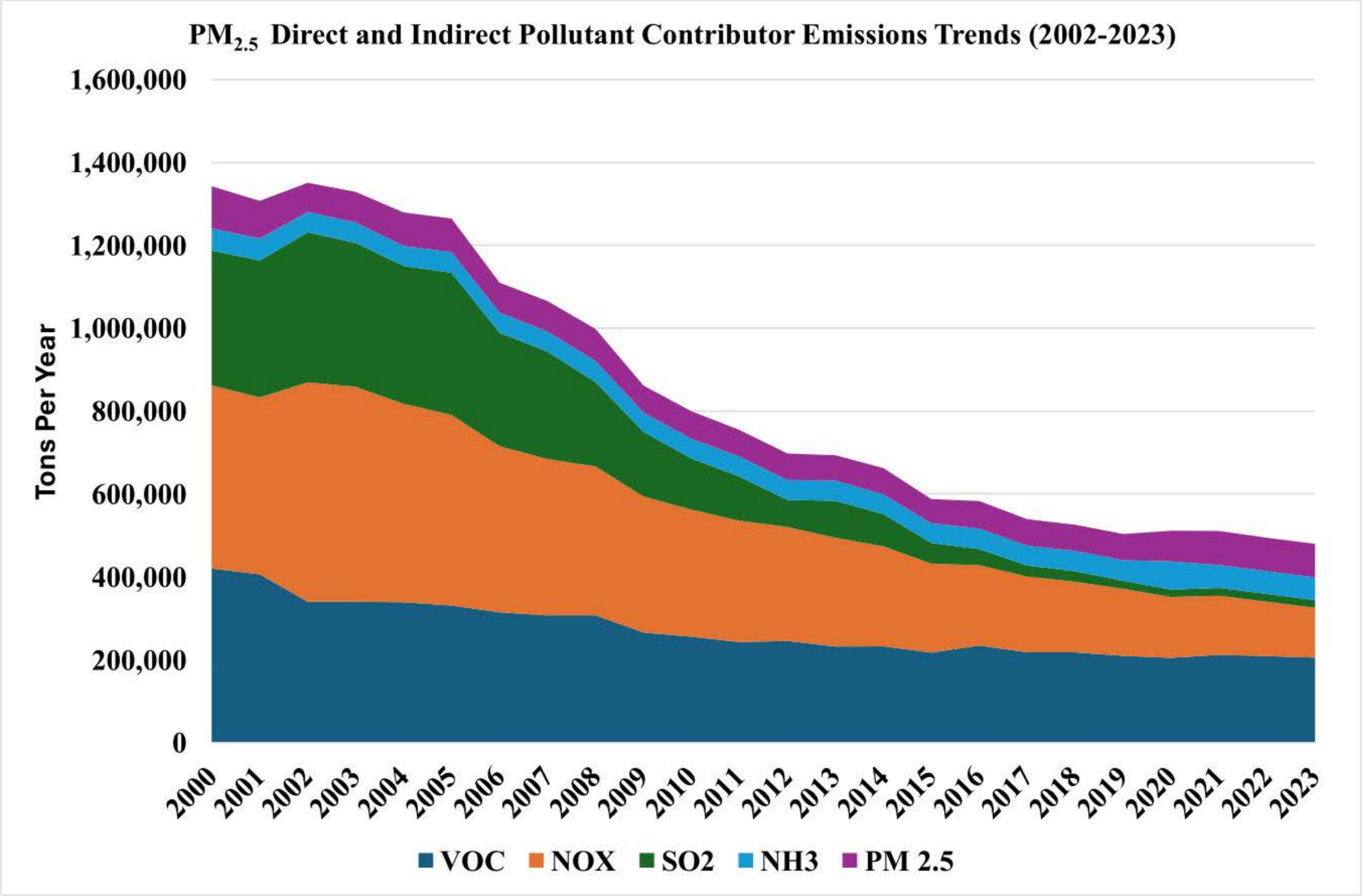
[11] U.S. Environmental Protection Agency. 2022 Air Emissions Modeling State Sector Report (v1), Updated January 17, 2025. Retrieved January 21, 2025 from https://gaftp.epa.gov/Air/emismod/2022/v1/reports/.

X. Virginia 2022 Statewide Anthropogenic Emissions (Sulfur Dioxide)[12]



[12] U.S. Environmental Protection Agency. 2022 Air Emissions Modeling State Sector Report (v1), Updated January 17, 2025. Retrieved January 21, 2025 from https://gaftp.epa.gov/Air/emismod/2022/v1/reports/.

XI. Virginia $PM_{2.5}$ Direct and Indirect Pollutant Contributor Emissions Trends (2002-2023)[13]



[13] U.S. Environmental Protection Agency. 2023 Air Pollutant Emissions Trends Data. Updated January 17, 2025. Retrieved January 21, 2025 from https://www.epa.gov/air-emissions-inventories/air-pollutant-emissions-trends-data.

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES
--------0--------
DEPARTMENT OF PLANNING AND NATURAL RESOURCES

4611 Tutu Park Mall
Suite 300, 2nd Floor
St. Thomas, VI 00802
(340) 774-3320

45 Mars Hill, Frederiksted
St. Croix, VI 00840
(340) 773-1082
dpnr.vi.gov

Office of the Commissioner

January 24, 2025

Mike Martucci
Regional Administrator
United States Environmental Protection Agency
Region II
290 Broadway
New York, New York 10007-1866

RE: Designations under the new PM2.5 National Ambient Air Quality Standards

Dear Regional Administrator Martucci:

The Virgin Islands Department of Planning and Natural Resources (VIDPNR) hereby acknowledges receipt of your January 10, 2025, letter. This correspondence was concerning a designation recommendation from the US Virgin Islands for the 2024 revised primary annual Particulate Matter- two and a half micron or less (PM2.5) National Ambient Air Quality Standard (NAAQS).

The Department has proposed that the entire Territory should be designated as an unclassifiable area based on insufficient monitoring data from the Virgin Islands PM2.5 monitoring network during the period considered for designation. The Department anticipates working with the US Environmental Protection Agency as it pertains to the PM2.5 designation process.

Should you have any questions, concerns, or require additional information, please contact George Patrick, Acting Director of the Division of Environmental Protection at (340) 773-1082 or george.patrick@dpnr.vi.gov.

Sincerely,

Jean-Pierre L. Oriol
Commissioner

Area Designation Recommendation, Exceptional Events Demonstrations, and Response to Comments

For the 2024 Primary Annual $PM_{2.5}$ National Ambient Air Quality Standard

Air Quality Program

Washington State Department of Ecology
Olympia, Washington

February 2025, Publication 25-02-002

Publication Information

This document is available on the Department of Ecology's website at:
https://apps.ecology.wa.gov/publications/summarypages/2502002.html

Related Information

- Ecology Air Quality Targets Website,[1]
- EPA Exceptional Events Website,[2]
- Washington Smoke Blog[3]

Contact Information

Air Quality Program

P.O. Box 47600
Olympia, WA 98504-7600
Phone: 360-407-6800

Website[4]: Washington State Department of Ecology

ADA Accessibility

The Department of Ecology is committed to providing people with disabilities access to information and services by meeting or exceeding the requirements of the Americans with Disabilities Act (ADA), Section 504 and 508 of the Rehabilitation Act, and Washington State Policy #188.

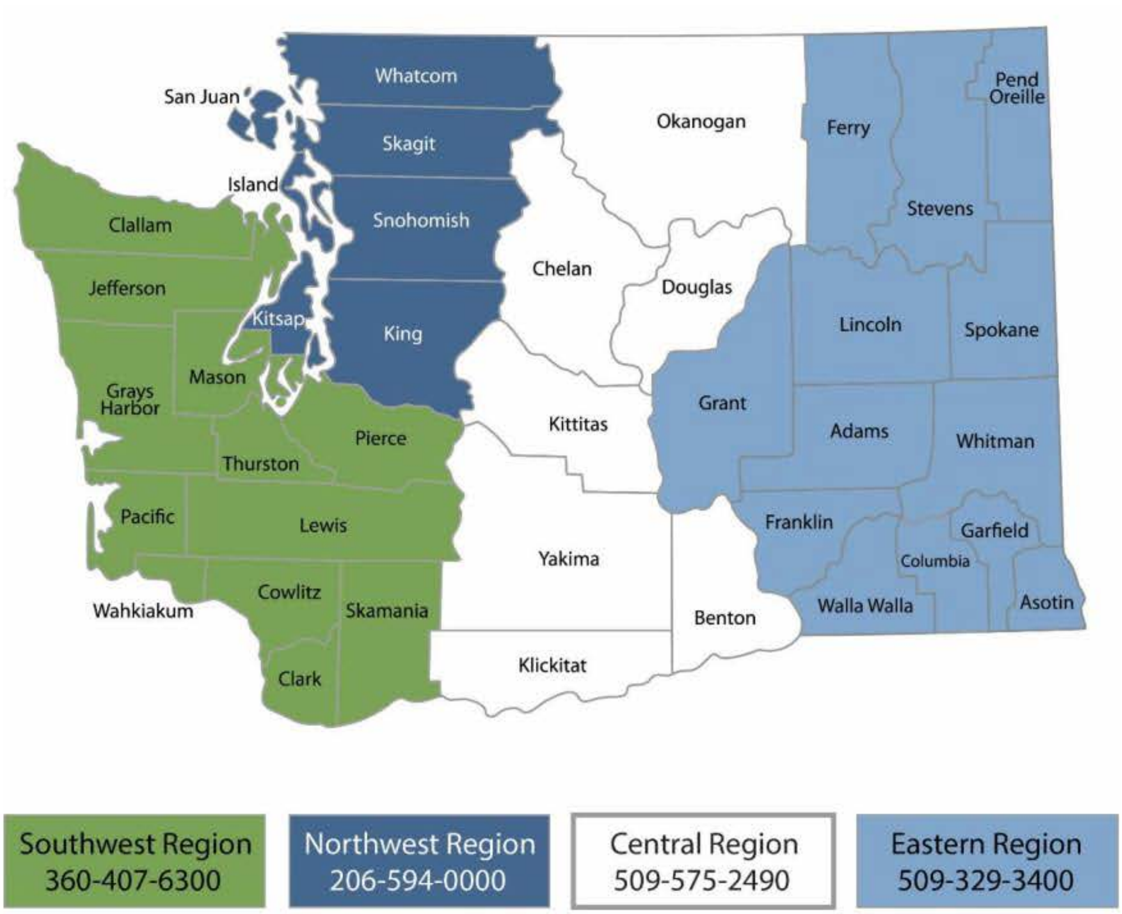
To request an ADA accommodation, contact Ecology by phone at 360-407-6800 or email at melanie.forster@ecy.wa.gov. For Washington Relay Service or TTY call 711 or 877-833-6341. Visit Ecology's website for more information.

---

[1] www.ecology.wa.gov/Air-Climate/Air-quality/Air-quality-targets
[2] www.epa.gov/air-quality-analysis/treatment-air-quality-monitoring-data-influenced-exceptional-events
[3] www.wasmoke.blogspot.com/
[4] www.ecology.wa.gov/contact

Department of Ecology's Regional Offices

Map of Counties Served



Region	Counties served	Mailing Address	Phone
Southwest	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, Wahkiakum	P.O. Box 47775 Olympia, WA 98504	360-407-6300
Northwest	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom	P.O. Box 330316 Shoreline, WA 98133	206-594-0000
Central	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima	1250 West Alder Street Union Gap, WA 98903	509-575-2490
Eastern	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman	4601 North Monroe Spokane, WA 99205	509-329-3400
Headquarters	Statewide	P.O. Box 46700 Olympia, WA 98504	360-407-6000

Area Designation Recommendation, Exceptional Events Demonstration, and Response to Comments

For the 2024 Primary Annual $PM_{2.5}$ National Ambient Air Quality Standard

Air Quality Program
Washington State Department of Ecology

Olympia, WA

February 2025 | Publication 25-02-002

DEPARTMENT OF
ECOLOGY
State of Washington

Table of Contents

List of Figures and Tables

Figures

Tables

Acknowledgements

The authors of this report thank the following people for their contribution to this study:

- Caitlin Cannon
- Whitney Oswald
- Jack Millard
- Shevonda Joyner
- Farren Thorpe
- Sam Fox
- Jill Schulte
- Sean Hopkins
- Beth Friedman
- Chris Atherly

Designation Recommendation to EPA

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600, Olympia, WA 98504-7600 • 360-407-6000

February 7, 2025

Dan Opalski, Acting Regional Administrator
U.S. Environmental Protection Agency, Region 10
1200 Sixth Ave, Suite 155
Seattle, WA 98101

RE: Area designations for the 2024 $PM_{2.5}$ National Ambient Air Quality Standard

Dear Acting Regional Administrator Opalski:

On behalf of the Governor, I am submitting the State of Washington's recommendations for air quality area designations for the revised fine particulate matter ($PM_{2.5}$) national ambient air quality standard. The U.S. Environmental Protection Agency (EPA) strengthened the primary annual $PM_{2.5}$ standard to protect public health on February 7, 2024. The revision of the standard from 12 $\mu g/m^3$ to 9 $\mu g/m^3$ triggered a designation process outlined in EPA's *Initial Area Designations for the 2024 Revised Primary Annual Fine Particle National Ambient Air Quality Standard*[5] memorandum. The designation process laid out in section 107(d) of the Clean Air Act[6] provides states with the opportunity to make recommendations to EPA on designations within one year after the revision of the standard.

The Washington State Department of Ecology (Ecology) developed these recommendations from the most recent certified air quality monitoring data (2021-2023) available from $PM_{2.5}$ Federal Reference Method (FRM) and Federal Equivalent Method (FEM) monitors. Ecology also considered preliminary 2024 data because EPA expects to make final designation decisions based on the 2022-2024 monitor data. A summary "Recommended Designations for the annual $PM_{2.5}$ Standard" is enclosed.

Ecology recommends all counties in the State of Washington be designated as attainment/unclassifiable for the $PM_{2.5}$ standard with the exception of Omak, Washington,

---

[5] https://www.epa.gov/system/files/documents/2024-02/pm-naaqs-designations-memo_2.7.2024-_-jg-signed.pdf
[6] https://www.govinfo.gov/content/pkg/USCODE-2013-title42/html/USCODE-2013-title42-chap85-subchapI-partA-sec7407.htm

which we tentatively recommend be designated as attainment based on preliminary analysis of 2024 monitor data. Ecology recommendations do not apply to tribal lands, which follow a separate designation process with EPA. Several monitors located on tribal lands are close enough to non-tribal lands that we have included recommendations for these tribal land adjacent areas. In the case of Omak, Washington, a tribal monitor is representing both tribal and non-tribal lands in the same city. Further information on Omak is included below.

RECOMMENDED DESIGNATIONS

Attainment

Monitors in Clark, King, Kitsap, Kittitas, Pierce, Skagit, Snohomish, Spokane, Stevens, Whatcom, and Yakima counties meet the $PM_{2.5}$ standard. We are recommending these areas be designated attainment.

Ecology's recommendation of attainment for Stevens and Yakima counties is based on our assessment of exceptional events for 2021 and 2023. Ecology submitted initial notification to EPA for 2023 exceptional events days on July 30, 2024, for the wildfire influenced days from August 17 – 21 of 2023 at the Colville-E 1st St monitor. Ecology believes that the 2021 exceedance days in August and September at the Yakima 4th Ave and the Toppenish Ward Rd monitors[7] and in July, August, and September at the Colville E 1st St monitor were likely influenced by wildfire smoke to a degree that might otherwise trigger regulatory significance. However, Ecology has not submitted formal exceptional events demonstrations for such events because Ecology does not anticipate that events in 2021 will have regulatory significance as indicated in the EPA's memorandum, *Initial Area Designations for the 2024 Revised Primary Annual Fine Particle National Ambient Air Quality Standard*[8], issued on February 7, 2024. In the unlikely circumstance that events in 2021 are determined to have regulatory significance for final designations decisions for the 2024 revised primary annual $PM_{2.5}$ NAAQS, Ecology will work with EPA to provide additional information consistent with the requirements of the *EPA's Exceptional Events Rule*[9].

Further information on 2021 events can be found in the attached document "2021 Days Flagged for Wildfire Smoke Impacts."

The other counties in Washington State (Asotin, Benton, Chelan, Clallam, Columbia, Cowlitz, Douglas, Ferry, Franklin, Garfield, Grant, Grays Harbor, Island, Jefferson, Klickitat, Lewis, Lincoln, Mason, Pacific, Pend Oreille, San Juan, Skamania, Stevens, Thurston, Wahkiakum, Walla Walla, and Whitman) do not have regulatory $PM_{2.5}$ monitors. $PM_{2.5}$ is monitored in these areas by non-regulatory monitors due to consistently low values. Ecology recommends a designation of attainment/unclassifiable for these areas.

---

[7] The Toppenish Ward Rd monitor is operated by the Yakama Nation, Ecology includes this information because it is representative of nearby non-tribal areas.

[8] https://www.epa.gov/system/files/documents/2024-02/pm-naaqs-designations-memo_2.7.2024-_-jg-signed.pdf

[9] https://www.epa.gov/air-quality-analysis/federal-register-notice-final-revisions-exceptional-events-rule

Tentative Attainment

The Omak monitor, located in Okanogan County and operated by the Confederated Tribes of the Colville Reservation Office of Environmental Trust with support from EPA and Ecology, represents a community spanning tribal and non-tribal lands. Because this monitor is a tribal monitor, EPA Region 10 is preparing Exceptional Events Demonstrations to exclude wildfire-impacted data for this monitor from the designation decision.

Ecology recognizes that if EPA were to exclude wildfire-influenced data from the 2021-2023 data set the Design Value for this monitor will still be very slightly above the new $PM_{2.5}$ standard. However, preliminary data analysis indicates that this monitor is likely to be in attainment of the new standard for the 2022-2024 data set that EPA intends to use for the final regulatory decision, in accordance with EPA's initial area designations memo listed above.

There are no major permitted sources of $PM_{2.5}$ in the Omak area. Significant non-regulatory work has been done in the region by the Okanogan River Airshed Partnership and others to reduce $PM_{2.5}$ emissions. This work has included woodstove changeout programs, green waste collection, and wood chipping. These programs address the most significant human-caused sources of $PM_{2.5}$ emissions in the county per the 2020 Emissions inventory[10] for Okanogan County.

Due to the low preliminary monitor values available for 2024, as well as the strong history of non-regulatory work addressing local $PM_{2.5}$ sources, Ecology believes this area is likely to meet the new $PM_{2.5}$ standard when EPA considers the 2022-2024 data set for its final designation decision. Ecology encourages EPA to make its final decision based on the most recent monitor data.

If the Omak monitor does not meet the new standard once all 2024 data is available in early 2025 Ecology intends to submit a boundary designation recommendation.

Thank you for your consideration of our recommendations. Please contact Kathy Taylor or her staff at (360) 584-5104 or Kathy.Taylor@ecy.wa.gov if you have questions.

Sincerely,

Casey D. Sixkiller
Director

Enclosure

cc: Kathy Taylor, Ecology

[10] https://www.epa.gov/air-emissions-inventories/2020-national-emissions-inventory-nei-data

Recommended Designations for the 2024 annual $PM_{2.5}$ Standard

The United States Environmental Protection Agency (EPA) revised the annual federal health-based standard for fine particulate matter ($PM_{2.5}$) in the ambient air to 9 micrograms per cubic meter ($\mu g/m^3$) in February 2024 to improve protection of public health. $PM_{2.5}$ refers to particulates with an aerometric diameter of 2.5 microns or less. Compliance with the $PM_{2.5}$ standard is evaluated over a three-year period by taking the mean or average of each year's mean monitored values. A design value of 9.05 $\mu g/m^3$ or higher is a violation of the annual $PM_{2.5}$ standard.

Site Site Number	County	2021 Mean ($\mu g/m^3$)	2022 Mean ($\mu g/m^3$)	2023 Mean ($\mu g/m^3$)	2021-2023 Design Value ($\mu g/m^3$)	Designation Recommendation
Vancouver – NE 84th Ave	Clark	5.65	7.70	6.39	6.6	Attainment
Seattle- 10th & Weller	King	6.53	10.53	7.85	8.3	Attainment
Seattle – Duwamish	King	6.64	8.78	7.74	7.7	Attainment
Seattle – Beacon Hill	King	4.35	7.01	6.02	5.8	Attainment
Bremerton – Spruce Ave	Kitsap	5.20	6.36	4.90	5.5	Attainment
Ellensburg – Ruby St	Kittitas	6.27	7.06	6.48	6.6	Attainment
Omak – 8th Ave (Confederated Tribes of the Colville Nation)	Okanogan	14.88	10.28	11.79	12.3	*** See narrative below
Tacoma – S 36th St	Pierce	6.64	8.34	6.43	7.1	Attainment
Tacoma – L St	Pierce	6.10	8.70	7.17	7.3	Attainment
Anacortes – 202 O Ave	Skagit	4.77*	5.63	5.27	5.2*	Attainment
Darrington – Fir St	Snohomish	5.56	12.16	4.22	7.3	Attainment
Marysville – 7th Ave	Snohomish	7.01	9.11	8.45	8.2	Attainment
Spokane Valley – E Broadway Ave	Spokane	8.99	7.73	7.71	8.1	Attainment
Colville – E 1st St	Stevens	8.99**	8.92	9.03**	9.0**	Attainment
Bellingham – Pacific St	Whatcom	4.02	6.09*	4.96	5.0*	Attainment
Yakima – 4th Ave	Yakima	8.96**	9.13	8.79	9.0**	Attainment
Toppenish – Ward Rd (Yakama Nation)	Yakima	9.02**	9.37**	8.51**	9.0**	Attainment

* Sites with one asterisk do not meet the minimum data completeness requirement of 50 percent data capture per calendar quarter for determination of a valid design value with the substitution tests described in 40 C.F.R. Part 50 Appendix N 4.1 (c).

**Exceptional events due to wildfires were excluded from calculations. In 2021, days flagged in AQS with wildfire-related informational flags ("IT" or "IF") were excluded in descending order until the resulting 2021 annual mean was below 9.05 ug/m3, as shown on each site's corresponding table. In 2022 and 2023, days for which Ecology or EPA Region 10 submitted exceptional events demonstrations were excluded from calculations.

***Exceptional events due to wildfires can only be excluded from design value calculations when they have regulatory significance or impact a regulatory decision. Because the 2023 design value for the Omak monitor would still be very slightly above the 2024 $PM_{2.5}$ standard even with exceptional events excluded, these events can't be excluded from the 2023 design value. Ecology anticipates that these events will have regulatory significance for the 2024 design value EPA will use to make its final designation decision.

The following monitors are excluded from this list because they were either established or discontinued during the 2021-2023 period and therefore have no creditable samples in at least one calendar quarter from 2021-2023. All sites listed below are located in counties where at least one other monitor recorded a valid 2021-2023 design value that Ecology used to determine the designation recommendation for that county. All network modifications listed below were made with approval of the EPA Regional Administrator following the requirements described in 40 C.F.R. Part 58.14, "System modification."

Site **Site Number**	**County**	**Monitor History**
Tukwila Allentown 530330069	King	Site established in April 2021.
Kent-James & Central 530332004	King	Site discontinued in June 2023.
Tacoma-Alexander Ave 530530031	Pierce	Site established in January 2022.
Spokane-Augusta Ave 530630021	Spokane	Site discontinued in March 2021.
Sunnyside-S 16th St 530770005	Yakima	Site established in April 2023.

Response to Comments

Ecology held a public comment period on the proposed area designation recommendation and exceptional events demonstrations from November 8, 2024, through December 13, 2024. During this 36-day public comment period, the public had an opportunity to review and comment on the draft designation recommendation letter, exceptional events demonstration for 2023 $PM_{2.5}$ exceedances due to wildfires at the Colville E 1st St monitor, and report of 2021 days flagged for wildfire smoke impacts. Ecology held a virtual public hearing on these documents on December 10, 2024.

Ecology notified the public about the comment period and hearing in the following ways:

- Web Site – Ecology posted notice to the Ecology webpage and Ecology's Public Involvement Calendar.
- Email Distribution List – Ecology sent out notice via the Air Quality Rules and SIP updates listserv.

Ecology provided the following ways for the public to submit comments on the proposal:

- Online through the Ecology website
- At the virtual public hearing on December 10, 2024
- Postal Mail: Caitlin Cannon, Air Quality Program, Washington State Department of Ecology, P.O. Box 47600, Olympia, WA 98504-7600

Ecology received 4 comments. Our response is below. The transcription of verbal testimony recorded at the public hearing has been edited to remove filler words such as "um" for ease of reading. The original transcription can be obtained through public records request.

Comment 1

Eli Loftis with the Okanogan Conservation District submitted the following comment:

Yes, thank you, my name is Eli Loftis, E-L-I L-O-F-T-I-S. I am the wildfire and community resiliency lead planner for the Okanogan Conservation District leading and managing the conservation district wildfire, forestry, and air quality programs. I am here to speak to express the Conservation District's support for the recommendation that Ecology is providing to the EPA. Air quality is a significant issue for Okanogan County. We are the largest county in the state with one of the least densely populated with only about 8 people per square mile. We struggle with air quality severely due to multiple point sources of $PM_{2.5}$ and PM_{10} but also due to significant wildfire events. We agree with Ecology that the 2024 data will most likely show that we are hopefully within attainment of these new federal standards. We have been a major part of the air quality and fire resiliency efforts here in our community for many years, leading community chipping events in collaboration with our other Okanogan River Airshed Partnership members which includes the Confederated Tribes of the Colville Reservation, Okanogan County Solid Waste and many others including Clean Air Methow which is a part of the Methow Valley Citizens Council. As stated, we fully support these recommendations and strongly hope that

EPA accepts them as a nonattainment declaration will have a disproportionate negative impact on some of our most vulnerable citizens and other members of our community and cause a significant regulatory burden which is unnecessary for a community of this size and area. Thank you.

Ecology's Response: Thank you for your support of our draft recommendation. Ecology recognizes the dedicated work of many organizations in Okanogan County through the Okanogan River Airshed Partnership to reduce $PM_{2.5}$ exposure and protect public health.

Comment 2

Isabelle Spohn submitted the following comment:

Thank you, Isabelle I-S-A-B-E-L-L-E Spohn S-P-O-H-N. I live in the Methow Valley and have a great interest in air quality. I fully support making a more stringent standard. We need to protect our health. Regarding the recommendation I will submit further testimony after I have seen the documents that you presented but at this point I would like to advocate for deciding after the data is in exactly whether or not we are in compliance. Thank you.

Ecology's Response: Thank you for your comment. Ecology's recommendation is based on certified air quality data from 2021-2023, along with a preliminary analysis of 2024 data. The 2024 data will be complete and certified by the time EPA announces their designation decision scheduled for early 2026. EPA expects to make their final decision based on three years of certified air quality data from 2022-2024.

Comment 3

Anna Jones with the Methow Valley Citizens Council submitted the following comment:

To Whom This May Concern at the EPA,

I am writing as the Program Manager for Clean Air Methow regarding the EPA's potential designation of Omak, WA, as a nonattainment area under the revised PM2.5 National Ambient Air Quality Standards (NAAQS). This designation carries significant implications for public health, economic development, and environmental management across the region.

While the Omak monitor provides valuable data, it is essential to consider the broader context of air quality across geographic boundaries. The Methow Valley's air quality is shaped by distinct factors, including seasonal wildfire smoke and weather patterns that differ significantly from those in Omak. Misrepresenting these conditions could result in unnecessary regulatory burdens on communities already actively working to improve air quality.

I urge the County Commissioners to advocate for the EPA to rely on the most recent, high-quality data and to consider localized conditions and exceptional events, such as wildfire impacts, in its decision-making process. As noted in Ecology's draft recommendations, exceptional events have been flagged in the region, and their exclusion is vital to ensuring a fair assessment of air quality data.

Clean Air Methow remains committed to proactive measures that protect air quality, and we encourage the EPA to focus regulatory efforts on areas with the most acute challenges. Ensuring accurate, science-based designations will not only protect public health but also maintain community trust and foster collaborative air quality solutions.

I welcome the opportunity to discuss this issue further or provide additional context if needed. Please feel free to contact me at 509-997-0888x6 or annam@mvcitizens.org.

Sincerely,

Anna Jones
PO Box 774
Program Manager, Clean Air Methow
Twisp, WA 98856
www.mvcitizens.org
509 997-0888

Ecology's Response: Thank you for your comment. Ecology recognizes that Okanogan County is very large and has diverse terrain that creates multiple airsheds. Ecology supports a network of multiple $PM_{2.5}$ monitoring sites in Okanogan County in order to accurately characterize air quality in these distinct airsheds. At this time we are recommending attainment for all of Washington, but if EPA were to disagree we would recommend a boundary smaller than the county. In the past the EPA has agreed with Washington State recommendations for nonattainment area boundaries smaller than a county.

Comment 4

Isabelle Spohn submitted the following comment:

Thank you for your work on behalf of the public.

First, I am in total agreement with the EPA's strengthening of the primary annual PM 2.5 standard from 12 µg/m3 to 9 µg/m3. Doing what we can to protect the health of not only humans, but also wildlife, in these challenging times of changing climate is of great importance.

I'm a full-time resident and registered voter in Okanogan County, having lived here since 1978. Although I'm concerned with Air Quality in the entire county, my primary concern is for the Methow Valley because I live here. My concern also stems from our very sensitive air shed, which is subject to the frequent inversions typical of a high mountain valley, particularly during the winter. And in the upper Methow, these inversions can be as low as the roof of a home, with woodsmoke smoke sometimes entering homes in the neighborhood through closed windows. Although PM2.5 from wildfire is largely not controllable by humans, we can control to some degree the human impacts during other times of the year that contribute to the annual average.

I do agree with noting and considering exceptional events such as wildfires in your calculations regarding attainment/nonattainment issues.

The Omak Monitor: Boundaries of Attainment areas

I have read in the enclosed documents that "Consideration of geography or topography can provide additional information relevant to defining non attainment area boundaries. The EPA recommends that analyses examine the physical features of the land that might define the air shed and, therefore, affect the formation and distribution of PM2.5 concentrations over an area. Mountains or other physical features may influence the fate and transport of emissions and PM2.5 concentrations. Additional analyses may consider topographical features that cause local stagnation episodes via inversions."

However, I have also read that "The EPA recommends that the boundaries of attainment/unclassifiable areas generally not be smaller than a county."

First, we need to consider that Okanogan County is larger than 3 of the smallest states in the USA. This fact alone should indicate that special consideration of the boundaries of attainment areas in this county is appropriate. In addition, our county includes numerous air sheds, water sheds, and various ecosystems from shrub-steppe to high mountains and valleys - all of which create various and differing impacts upon meteorology and air quality.

In the case of the Omak monitor and any questions arising from its data, I contend that the Methow Valley and the Okanogan Valley are two discreet, adjacent air sheds and water sheds with very different topography and populations. They are separated by the Okanogan Range. The Methow has high mountains and is narrow and winding, creating a challenging situation for modeling and collection of data especially during winter when inversions are more severe and wood stoves are in use. Omak and the Okanogan Valley, on the other hand, is more subject to the impacts of a larger human environment. Both, of course, are affected unpredictably and often separately by PM 2.5 from wildfire.

In deciding issues of attainment/non-attainment, these two valleys should be considered separately for the above reasons.

In respect to any necessary use of baseline data, I suggest that WDOE/EPA review the air quality studies (including monitoring and computer modeling) conducted by the EPA in order to comply with Regional Forester Jeff Sirmon's 7/05/84 Record of Decision addressing the Early

Winters Winter Sports Study in regards to air quality (focusing especially upon woodstove and fireplace usage at the proposed resort.) Accurate baselines are especially important due to the potential impacts upon the adjacent Pasayten and Sawtooth Wilderness areas (Class 1air) - particularly if PSD increments are an issue in future applications.

Public Input and Advertisement of Opportunities to Comment

Thank you especially for the very useful documents that were provided for this comment period. However, should WDOE/EPA desire any substantial amount of public input from the Omak or Okanogan County areas, I would suggest advertising hearings in a manner that would encourage this input. The general populace is not accustomed to regularly viewing the website of WDOE in case there are statewide issues to which they would want to respond. A good practice would be to advertise such a hearing in the county's newspaper of record (Currently the Omak Chronicle, sometimes the Methow Valley News - on a year-to-year basis) so that the general populace would be aware. It could include reference to the WDOE website for details. I only became aware of this opportunity to comment because I listened in (over Zoom) to a recent Okanogan County Commissioners' meeting.

Thanks once again for your attention to public health and the environment in Washington State.

Sincerely yours,

Isabelle Spohn

509-997-4425

Ecology's response: Thank you for your comment. Ecology agrees that the Methow and Okanogan River Valleys represent different airsheds. Ecology supports a network of multiple $PM_{2.5}$ monitoring sites in Okanogan County in order to accurately characterize air quality in these distinct airsheds. At this time we are recommending attainment for all of Washington, but if EPA were to disagree we would recommend a boundary smaller than the county. In the past the EPA has agreed with Washington State recommendations for nonattainment area boundaries smaller than a county.

Ecology was not able to access the referenced studies in the time available, however the Washington State Air Quality Monitoring Network aligns with EPA's guidelines for $PM_{2.5}$ monitoring found in 40 C.F.R. parts 50, 53, and 58[11]. Available monitoring technology has evolved significantly since the referenced Record of Decision. EPA maintains a complete data record of $PM_{2.5}$ monitoring data submitted by Ecology since $PM_{2.5}$ monitoring began in the late 1990s, which can provide any necessary baseline data for analysis of $PM_{2.5}$ trends.

Thank you for your feedback on our public notice process. We appreciate the suggestion and will take this into consideration for future public notices.

[11] https://www.ecfr.gov/current/title-40/chapter-I

Appendix A. Exceptional Event Demonstration for 2023 $PM_{2.5}$ Exceedances Due to Wildfires at Colville E. 1st St. (AQS ID: 530650005)

Acronyms and Abbreviations

AQA – Air Quality Alert

AQI – Air Quality Index

AQS – Air Quality System

CAA – Clean Air Agency

DNR – Department of Natural Resources

DOH – Department of Health

Ecology – Department of Ecology

EER – Exceptional Events Rule

HMS – Hazard Mapping System (from NOAA)

HYSPLIT - HYbrid Single-Particle Lagrangian Integrated Trajectory

L&I – Department of Labor & Industries

MODIS - Moderate Resolution Imaging Spectroradiometer

NAAQS – National Ambient Air Quality Standards

NOAA – National Oceanic and Atmospheric Administration

Executive Summary

Washington State Department of Ecology (Ecology) found that an air quality monitoring site located in Colville, Washington was impacted by smoke from wildfires. It caused brief exceedances of the 2024 annual national ambient air quality standard for fine particles ($PM_{2.5}$ NAAQS). Colville is located in central Stevens County. Local sources of $PM_{2.5}$ pollution include residential woodburning, agricultural and transportation activities – all of them are well controlled.

The Environmental Protection Agency (EPA) wrote the Exceptional Events Rule (EER)[12] to allow states to flag air quality data as exceptional and request EPA to exclude those data from influencing decisions to control industrial or other controllable human-caused sources of pollution. An exceptional event (EE) is a natural or unusual event that can overwhelm existing pollution control strategies. Examples of exceptional events include, but are not limited to, smoke from wildland fires, dust from high winds, volcanic activities, stratospheric ozone intrusions, and pollution from traditional national, ethnic, or other cultural events (e.g., fireworks). Data that is excluded by an exceptional event demonstration remains in both the state and federal databases and is used for health-based notifications and exposure evaluations.

Ecology flagged values at the Colville (E. 1st St.) monitoring site and requests EPA concurrence that certain flagged values are exceptional events. The $PM_{2.5}$ flagged values are over 9 micrograms per cubic meter ($\mu g/m^3$) and affect Washington's attainment of the 2024 annual $PM_{2.5}$ NAAQS. Ecology demonstrates that these exceptional concentration values:

- occurred as a result of wildfire smoke
- were not reasonably controllable or preventable by the State of Washington
- are not likely to reoccur and fully meet the EER criteria for excluding monitor values from the data used to determine attainment of the NAAQS

Ecology is only requesting concurrence for days that are of regulatory significance, but is also providing information for days that may become regulatorily significant in the future.

Required elements of the Exceptional Events Rule

The EER requires that demonstrations justifying data exclusion for exceptional events must include the following:

a) A narrative conceptual model that describes the event(s) causing the exceedance or violation and a discussion of how emissions from the event(s) led to the exceedance or violation at the affected monitor(s);

[12] https://www.epa.gov/air-quality-analysis/federal-register-notice-final-revisions-exceptional-events-rule

b) A demonstration that the event affected air quality in such a way that there exists a clear causal relationship between the specific event and the monitored exceedance or violation;

c) Analyses comparing the claimed event-influenced concentration(s) to concentrations at the same monitoring site at other times to support the clear causal relationship requirement;

d) A demonstration that the event was both not reasonably controllable and not reasonably preventable;

e) A demonstration that the event was a human activity that is unlikely to recur at a particular location or was a natural event; and

f) Documentation that the State followed the public comment process and conducted at least a 30-day comment period.

In addition, a state must submit the public comments with the demonstration and address in the demonstration those comments disputing or contradicting factual evidence provided in the demonstration (40 CFR 50.14 (c)(3)(v)).

Introduction

Ecology requests an exclusion of the wildfire measured exceedances of the 2024 annual $PM_{2.5}$ (fine particulate matter) National Ambient Air Quality Standards (NAAQS) at Colville, Washington for 4 days, 8/17/2023, 8/19/2023, 8/20/2023, and 8/21/2023. Information has also been included for 8/18/2023 in case this day becomes regulatorily significant in the future. This demonstration provides evidence and narrative satisfying all the requirements set forth in the Exceptional Events Rule. The exceedances were the direct result of wildfire events that affected air quality at the Colville monitor (AQS Site ID 530650005, Parameter Code 88101, Parameter Occurrence Code 5).

The regulatory significance of the requested exceptional event days was evaluated using the 2022-2023 mean $PM_{2.5}$ at the Colville monitor, calculated following the procedures described in Appendix N to 40 C.F.R. Part 50, compared to the annual $PM_{2.5}$ NAAQS of 9.0 µg/m^3. The 2022-2023 mean $PM_{2.5}$ was considered the best available surrogate for the 2024 annual design value based on currently available data, following guidance from EPA Region 10. Ecology recognizes that the 2024 annual design value will ultimately determine the regulatory significance of the requested exceptional event exclusions. Table A-1**Error! Reference source not found.** shows the 2022-2023 mean $PM_{2.5}$ calculated after excluding each of the four requested exceptional event days in descending order of daily mean $PM_{2.5}$. Exclusion of all four exceptional event days is necessary in order for the 2022-2023 mean $PM_{2.5}$ to reach at or below 9.04 µg/m^3, which is the highest mean expected to attain the 2024 annual $PM_{2.5}$ NAAQS.

Table A-1 Regulatory Significance of Requested Exceptional Events Days

Date	**Daily $PM_{2.5}$ (µg/m^3)**	**Qualifier Flags**	**Request Exclusion from the regulatory decision?**	**2022-2023 Mean after Exclusion (µg/m^3)**
8/20/2023	154.2	IF, IT	Yes	9.325
8/19/2023	140.9	IF, IT	Yes	9.143
8/21/2023	70.5	IF, IT	Yes	9.057
8/17/2023	61.6	IF	Yes	8.981

The conceptual model describes the events and how the emissions from the events led to the exceedances on the monitor each day. It demonstrates that a clear causal relationship exists between the wildfire smoke events and the monitored exceedances. Ecology compared the historical concentrations at the Colville monitor to the exceedance concentrations to support the clear causal relationship requirement. The wildfire events were both not reasonably controllable, not reasonably preventable, and were natural events. Ecology worked with its partners to promptly notify the public of the event and provided public education so individuals could reduce their exposure to wildfire smoke.

Conceptual Model

In August 2023, smoke from regional wildfires was transported to the Colville monitor. The Colville monitor recorded several daily exceedances of the annual $PM_{2.5}$ NAAQS from 8/6/2023 to 8/29/2023 as a result of wildfire smoke. The conceptual model describes the source of the fine particulate matter that impacted the monitor, the transport weather conditions that brought aerosols to the monitor, and the timing and magnitude of the events' impacts on the monitor.

Overview

Wildfires occur every year in the Pacific Northwest during summer and fall. The 2023 wildfire smoke season started early, due to a heat wave in May that affected the Pacific Northwest. Large multi-day wildfires didn't occur in Washington until July, but Canada had many large fires that started in the Spring and burned for several months. Additional fire starts due to lightning occurred throughout the summer across the region. The 2023 wildfire season had the most area burned in Canada's recorded history with more than 45 million acres burned, sending smoke to many parts of the USA. Significant Canadian smoke influenced Washington State from August 15 to August 22, which coincided with significant smoke impacts from Washington wildfires in the Cascades. Moderate smoke persisted for several more days until a frontal system in late August produced rain and cooler weather, which mostly put an end to the wildfire season. Washington saw over 151,000 acres burn in wildfires in 2023.[13] There were also 202,000 acres burned in Oregon, 87,000 acres burned in Idaho, and 7,017,000 acres burned in British Columbia.[14]

Several fires in Washington, Idaho, and British Columbia impacted the Colville monitor during the mid-August 2023 event. Colville was directly impacted by the Crater Creek fire in BC, just north of the USA/Canada border, for several days. However, many more fires influenced the area, especially from August 19 to August 22 when a low-pressure weather system (remnants of Hurricane Hilary) allowed wide-spread smoke to persist across the region. Additional fires of influence included the Ross Moore Lake fire in BC, the Lower East Adams Lake fire in BC, the Bush Creek East fire in BC, the Sourdough fire in Washington, the Airplane Lake fire in Washington, and other regional fires.

[13] https://www.nifc.gov/fire-information/statistics

[14] https://www2.gov.bc.ca/gov/content/safety/wildfire-status/about-bcws/wildfire-history/wildfire-season-summary

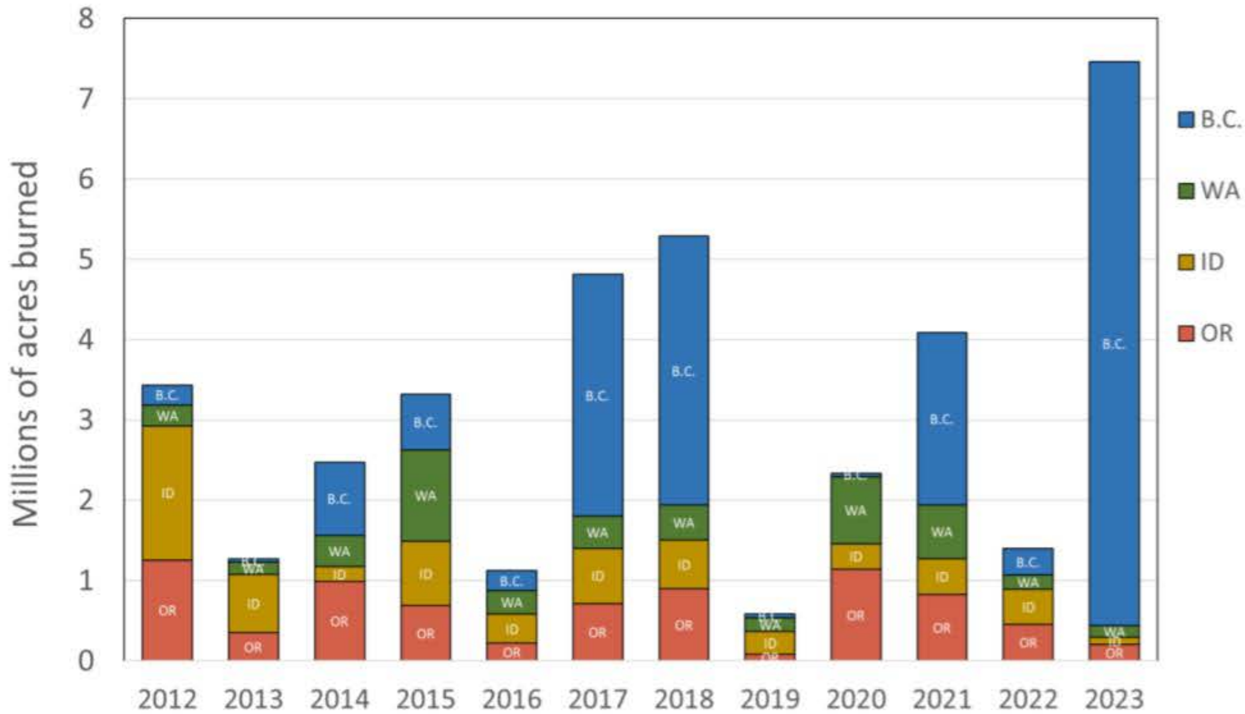


Figure A-1. Total area burned for wildfires in Oregon, Idaho, Washington, and British Columbia from 2012 to 2023 from NIFC[15] and the Government of British Columbia.[16]

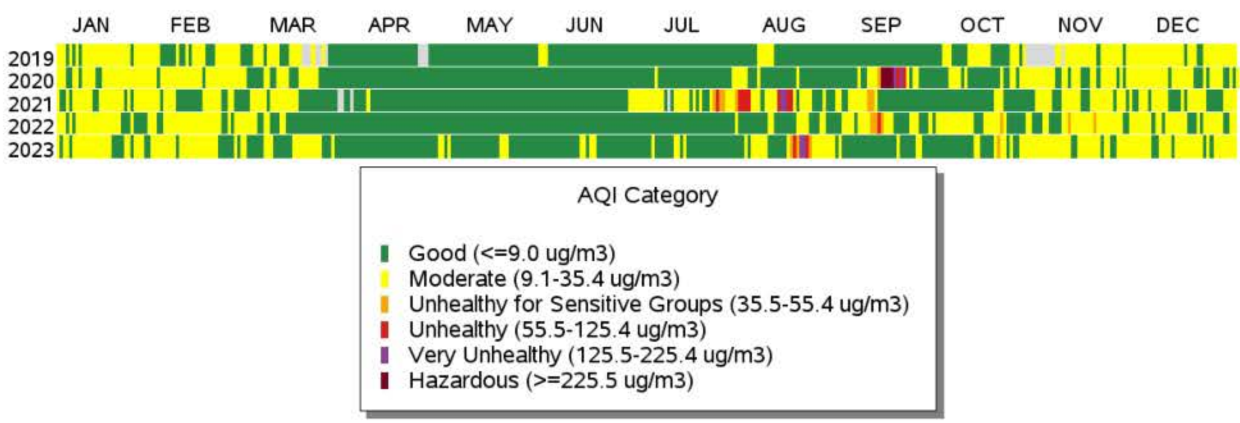


Figure A-2 $PM_{2.5}$ Daily AQI Values 2019-2023 Colville E 1st St monitor, AQS Site ID 53-065-0005[17]

General weather conditions

The first week of August 2023 included an overcast weather event that allowed haze and smoke from regional fires to persist on August 5th and 6th. Over the next week, after the residual

[15] www.nifc.gov/fire-information/statistics

[16] https://www2.gov.bc.ca/gov/content/safety/wildfire-status/about-bcws/wildfire-statistics/wildfire-averages

[17] Created with EPA's Multi-Year Tile Plot tool for Exceptional Event Analysis. https://www.epa.gov/air-quality-analysis/multiyear-tile-plot-exceptional-events-analysis

smoke cleared, temperatures increased and conditions became extremely hot and dry across the West. Strong westerly winds on August 15 allowed fires to grow quickly, increasing smoke production across the region. Significant smoke production occurred across the region for the next few days, as extreme temperature and strong winds continued. A low-pressure weather system traveled past the state on August 17, which cleared some residual smoke out, but the hot and windy conditions exacerbated fires. A large residual smoke layer was evident across most of Washington on August 19, as winds shifted and allowed smoke to pool in the Columbia Basin and persist in mountain valleys. The National Weather Service (NWS) Area Forecast Discussion (AFD) on August 20 noted remnants of Hurricane Hilary affecting the region, as shown in the Figure below. The NWS AFD went on to say "A slight cloud shield is brushing our southeast WA corner and the southern Idaho Panhandle but is thinning out. The local and regional fires can still be seen on satellite as hot spots and coincident our air quality is some of the worst in the country and near the top of the worst in the world. Not something we want to be winning at, but here we are. Northerly winds down the Okanogan Valley will begin to relax through the day today (Sunday) while the northeast wind from the Purcell Trench in northern Idaho through the West Plains and Palouse will relax and weaken by early this afternoon. However, the smoke filtering into the Inland Northwest from Canadian wildfires and local wildfires will stick around through at least mid-day Monday, per the latest HRRR smoke model."[18]

[18] https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=AFDOTX&e=202308201026

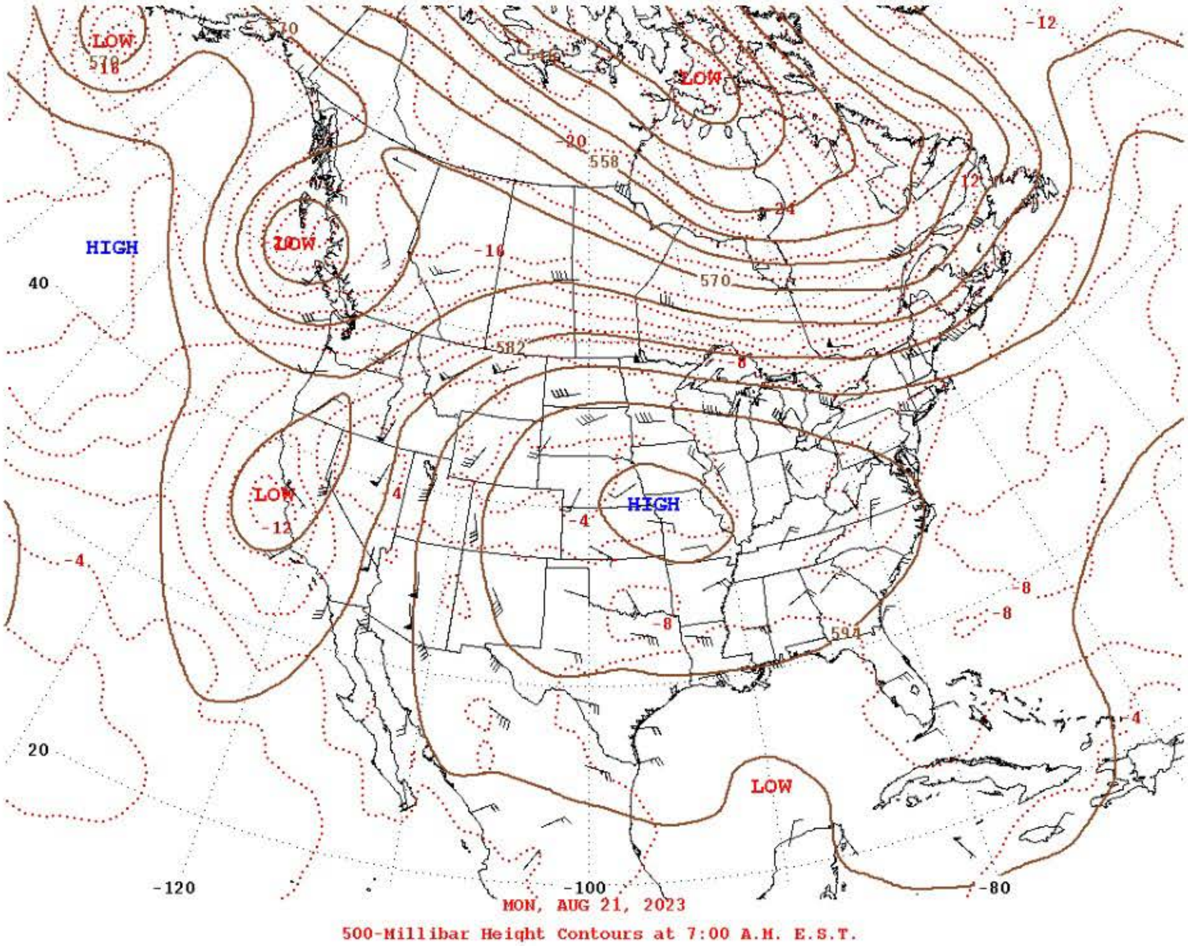


Figure A-3. 500 mb height contours on August 21, 2023 (4 a.m. PST) acquired from the NOAA Weather Prediction Center Product Archive.[19]

Source area and affected region

The Colville community in Stevens County, Washington, is a forest-oriented community (population 4,917) in a valley of the Colville River situated in the east Okanogan Highlands. Colville is the largest city in Stevens County and is about 65 miles north of Spokane. Many of the homes are heated by wood. As a result, the major contributor to the historical particulate air pollution has been residential wood combustion for home heating, especially on stagnant winter days when temperature inversions form over the small valley. In contrast, wildfire season is often at its peak in late summer in the Pacific Northwest, which can cause serious smoke impacts.

[19] https://www.wpc.ncep.noaa.gov/archives/web_pages/wpc_arch/get_wpc_archives.php

Fires

In 2023, wildfire smoke events in Washington became significant in the last week of July. Considerable fire activity in Washington and the nearby region increased in mid-August, with wildfire smoke impacting many parts of the state from August 15 to August 22, followed by moderate smoke for several more days. A frontal system in late August produced rain and cooler weather, which mostly put an end to the wildfire season.

On August 15, fires in the Cascades increased smoke production as strong westerly winds were evident across the region. On August 16, north-westerly winds transported smoke from BC fires to northeast Washington. On August 18, smoke production from BC fires was extreme and greatly influenced northeast Washington. By the morning of August 19, smoke had filled the Columbia Basin and most of the state was covered in smoke. Smoke production continued for the next few days as wide-spread smoke persisted across the region. MODIS imagery from Worldview[20] clearly shows the buildup of smoke over several days.

The Crater Creek fire was the most impactful to the Colville site during the August 2023 multi-day smoke event, but several other fires influenced the region and contributed to residual smoke. See Figure A-4 for a map of wildfires in the region; see Table A-2 for details about the most significant wildfires that impacted Colville.

[20] https://worldview.earthdata.nasa.gov/?v=-128.35916752308734,42.337961387770605,-110.62305263927004,51.196781269843925&l=Reference_Labels_15m,Reference_Features_15m,Coastlines_15m,MODIS_Combined_Thermal_Anomalies_All,MODIS_Aqua_CorrectedReflectance_TrueColor&lg=false&t=2023-08-18-T00%3A00%3A00Z

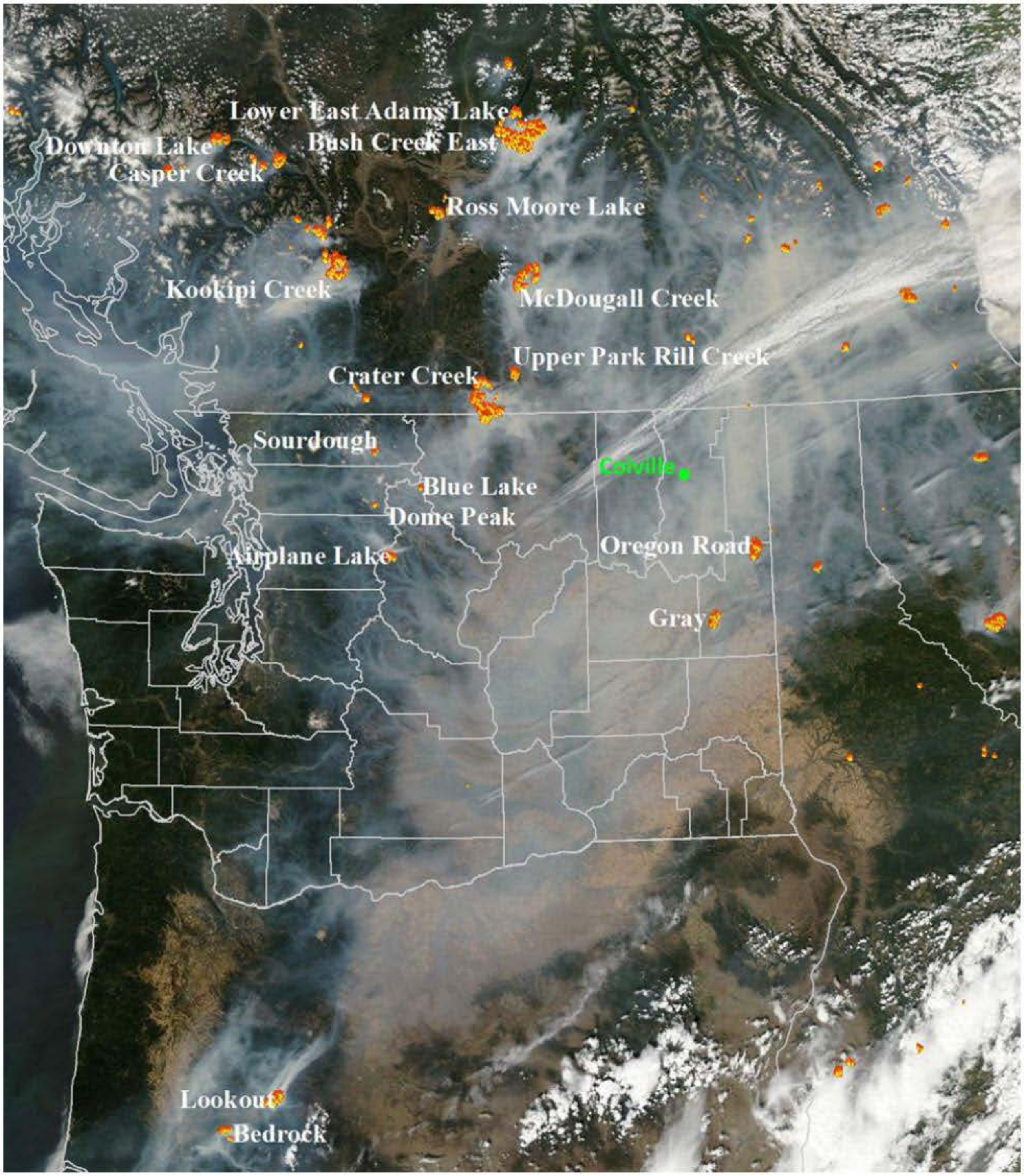


Figure A-4. Map of regional wildfires on August 19, 2023 that contributed to smoke events. The background layer is Aqua/MODIS imagery (~2 pm LT). HMS hot-spot locations are shown as red/orange fire symbols.

Table A-2. Wildfires that contributed to exceedances at Colville in 2023

Wildfire Name	Location	Discovery Date	Acres Burned
Kookipi Creek	Lytton, BC	July 8	44,590
Casper Creek	Anderson Lake, BC	July 11	27,180
Adams Lake Complex	Adams Lake, BC	July 12	64,225
Downton Lake	Mt. Penrose, BC	July 13	20,880
Ross Moore Lake	Ross Moore Lake, BC	July 21	23,304
Crater Creek	Cathedral Provincial Park, BC	July 23	100,000+
Eagle Bluff	Oroville, WA / Osoyoos, BC	July 29	16,428
McDougall Creek	Kelowna, BC	August 15	33,883
Upper Park Rill Creek	NE of Keremeos, BC	August 18	5,048
Bedrock	Lane County, OR	July 22	31,590
Lookout	Lane County, OR	August 8	25,754
Airplane Lake	Chelan County, WA	July 26	6,956
Sourdough	Whatcom County, WA	August 1	7,377
Dome Peak	Snohomish County, WA	August 9	1,477
Blue Lake	Chelan County, WA	August 14	1,074
Gray	Spokane County, WA	August 18	10,085
Oregon Road	Spokane County, WA	August 18	10,817

Clear Casual Relationship

The EER requires that a clear causal relationship exists between the event that affected air quality and the monitored exceedance. In 2024, EPA released the "$PM_{2.5}$ Wildland Fire Exceptional Events Tiering Document"[21] that provides three tiers of analyses that apply to the "clear causal relationship" criterion included in an exceptional event demonstration. The tiered approach recognizes that some wildfire events are easily recognizable, so fewer pieces of evidence are needed to show a clear causal relationship. The tiering threshold is based on the most recent 5-year period of monitoring data (2019-2023), as the lesser value of either (a) the month-specific 98th percentile for 24-hour $PM_{2.5}$data or (b) the minimum annual 98th percentile for 24-hour $PM_{2.5}$data with Informational (I) qualifiers on the monitoring data excluded.

- Tier 1: intended for wildfire events that cause unambiguous $PM_{2.5}$impacts well above historical 24-hour concentrations, thus requiring fewer pieces of evidence to establish a clear causal relationship. Tier 1 demonstrations are appropriate for 24-hour $PM_{2.5}$ greater than or equal to 1.5 times the threshold determined.
- Tier 2: should be used for events when $PM_{2.5}$ concentrations are less distinguishable from historical concentrations, and thus require more pieces of evidence than a Tier 1 analysis. Tier 2 demonstrations are appropriate for 24-hour $PM_{2.5}$ greater than or equal to the threshold but less than 1.5 times the threshold.
- Tier 3: should be used for events when $PM_{2.5}$ concentrations are near or within the range of historical concentrations, and thus require more pieces of evidence to establish the clear causal relationship than Tier 2 or Tier 1. Tier 3 demonstrations are appropriate for 24-hour $PM_{2.5}$ less than the threshold.

The "EPA $PM_{2.5}$ Tiering Tool for Exceptional Events Analysis"[22] was used to determine the thresholds at Colville for August 2023. For the month of August, the 5-year month-specific 98th percentile (13.9 ug/m^3) from 2019 to 2023 was less than the annual 5-year 98th percentile (18.0 ug/m^3). Therefore the value of 13.9 ug/m^3 (the month-specific 98th percentile) was used as the tiering threshold for August 2023. Thus, Tier 1 demonstrations are appropriate for concentrations of 20.85 µg/m^3 or greater, while Tier 2 demonstrations are appropriate for concentrations greater than or equal to 13.9 µg/m^3 but less than 20.85 µg/m^3. A total of 7 Tier-1 exceedances and 5 Tier-2 exceedances occurred in August 2023 due to wildfire smoke.

[21] www.epa.gov/system/files/documents/2024-04/final-pm-fire-tiering-4-30-24.pdf

[22] www.epa.gov/air-quality-analysis/pm25-tiering-tool-exceptional-events-analysis

Table A-3. $PM_{2.5}$ daily average concentrations and Tiers for August 2023 at Colville

Date	Daily mean concentration (ug/m^3)	Tier	Request for exclusion from regulatory decision
8/6/2023	19.2	Tier 2	False
8/16/2023	31.4	Tier 1	False
8/17/2023	61.6	Tier 1	True (RF flag)
8/18/2023	50.9	Tier 1	False
8/19/2023	140.9	Tier 1	True (RF, RT flags)
8/20/2023	154.2	Tier 1	True (RF, RT flags)
8/21/2023	70.5	Tier 1	True (RF, RT flags)
8/22/2023	34.4	Tier 1	False
8/23/2023	16.1	Tier 2	False
8/27/2023	15.2	Tier 2	False
8/28/2023	21	Tier 2	False
8/29/2023	19.3	Tier 2	False

$PM_{2.5}$ and wind data time series

The three-tiered time series graph below shows hourly wind speed and wind direction as well as hourly $PM_{2.5}$ at the Colville monitor during the wildfire smoke event. Meteorological data were collected on site at Colville-E 1st St and submitted to EPA's AQS database. On August 16, northwesterly winds carried smoke into the Colville valley, causing hourly $PM_{2.5}$ concentrations to grow to 50 µg/m^3. Winds died down and hourly $PM_{2.5}$ exceeded 100 µg/m^3 for several hours on August 17. On the afternoon of August 17, wind speeds increased again, clearing most of the smoke from the Colville valley. On August 18, wind speeds were very strong and wildfires generated extreme smoke plumes which dispersed smoke across the region. Hourly $PM_{2.5}$ at Colville exceeded 150 µg/m^3 on the evening of August 18 but dropped down to 60 µg/m^3 in the early morning hours of August 19 as winds shifted direction and died down. Strong northwesterly winds returned on August 19, and more smoke traveled into the area, adding to the residual that was still there from the day before. Hourly $PM_{2.5}$ concentrations reached 250 µg/m^3 midday on August 19, leveling out at 200 µg/m^3 as winds died down in the evening. Hourly concentrations stayed above 100 µg/m^3 on August 20 and the morning of August 21, but a weather system decreased smoke production across the region and brought southeasterly winds. Fire activity slowed down on August 22 with cooler temperatures and moisture in the region, which allowed smoke to slowly clear out. However, hourly concentrations remained above 25 µg/m^3 on August 22 as wind speeds were relatively low.

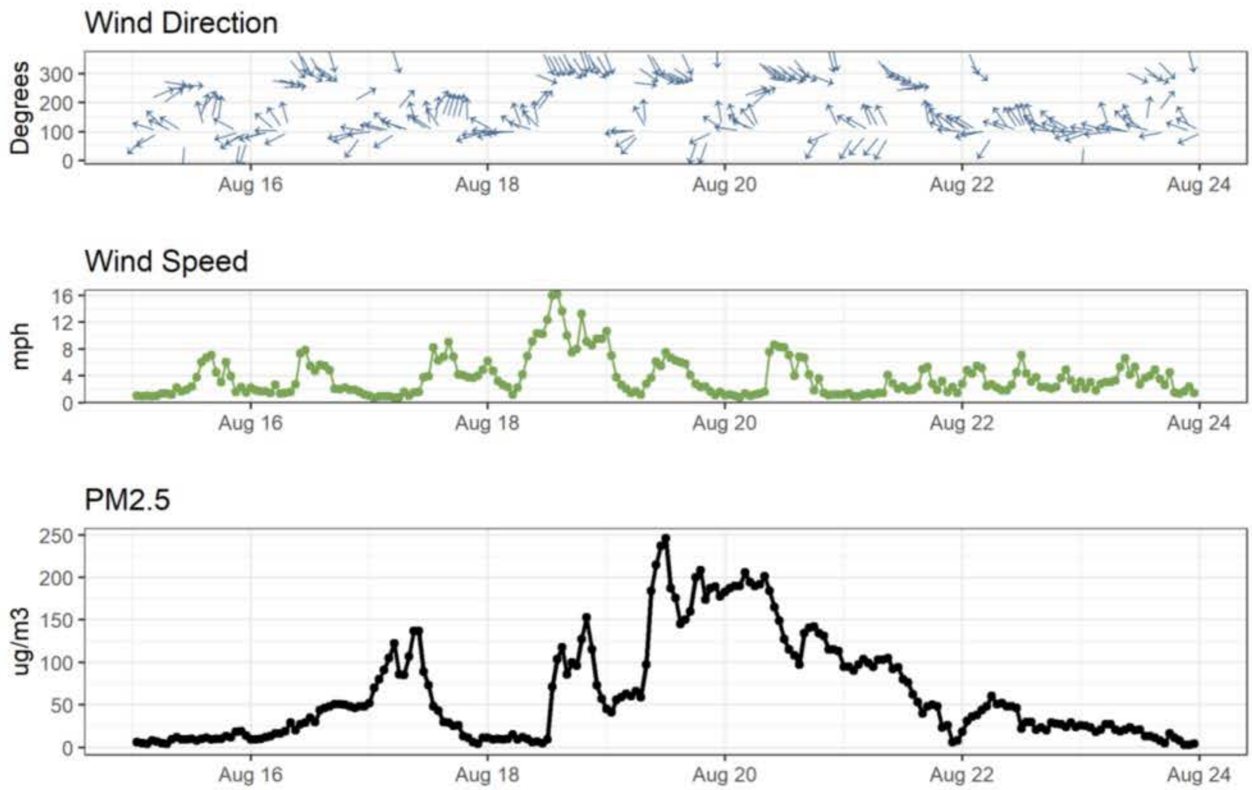


Figure A-5. Hourly $PM_{2.5}$, wind speed, and wind direction at Colville from August 15 through August 24, 2023.

Satellite data and back trajectories

Satellite imagery provides visual evidence of the size and direction of the smoke plumes that affected Colville. Both MODIS[23] and GOES[24] satellite imagery were analyzed for the wildfire season. HYSPLIT back trajectory modeling was conducted through EPA's AirNowTech website. The HYSPLIT model shows the back trajectory from the monitor to show that smoke traveled from the direction of the wildfires relative to the monitor. The HYSPLIT model also shows the trajectory of smoke at varying heights. The figures below show satellite imagery and HYSPLIT back trajectories for Colville on August 17, 18, 19, 20, and 21.

[23] worldview.earthdata.nasa.gov

[24] www.star.nesdis.noaa.gov/smcd/spb/aq/AerosolWatch/

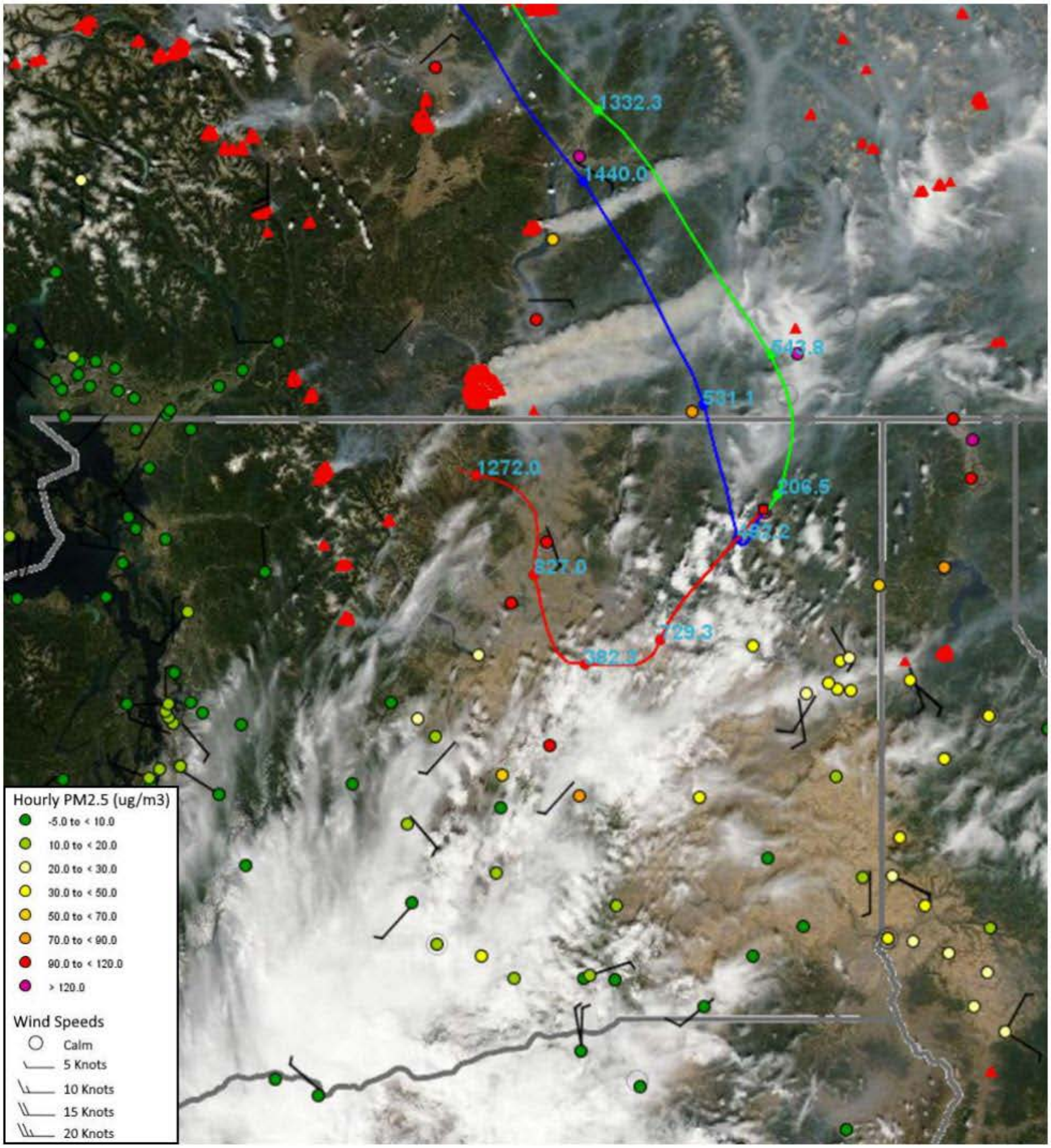


Figure A-6. HYSPLIT back-trajectories on August 17, 2023 for Colville.

24-hour back-trajectories were initiated at 200 (green), 500 (blue), and 1000 (red) meter starting heights. The trajectories, wind barbs, and $PM_{2.5}$ monitors shown are for 9 am PST, when concentrations were highest that day. Blue labels along trajectories are heights above ground level in meters. The background layer is Aqua/MODIS imagery (~2 pm LT). HMS-detected hot-spots are shown as red triangles.