# 2023

# ANNUAL NETWORK REVIEW


## Prepared By :

Chattanooga Hamilton - County Air Pollution Control Bureau

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## Presented To :

TDEC/ EPA Region 4


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# 2. ACRONYMS

| | |
|---|---|
| Appendix D | Volume 40, Code of Federal Regulations, part 58, Appendix D |
| AQS | Air Quality System |
| CBSA | Core Base Statistical Area |
| CFR | Code of Federal Regulation |
| CSA | Combine Statistical Area |
| CHCAPCB | Chattanooga Hamilton County Air Pollution Control Bureau |
| DOT | Department of Transportation |
| EJ | Environmental Justice |
| FEM | Federal Equivalent Method |
| FRM | Federal Reference Method |
| HMPS | Hazard Mitigation Plans |
| Lat | Latitude |
| Long | Longitude |
| MSA | Metropolitan Statistical Area |
| Ncore | National Core Multipollutant Monitoring Station |
| NAAQS | National Ambient Air Quality Standard |
| O3 | Ozone |
| $PM_{2.5}$ | Particular Matter ≤2.5 micrometers diameter |
| PAMS | Photochemical Assessment Monitoring Station |
| QAAP | Quality Assurance Project Plan |
| QMP | Quality Management Plan |
| TDEC | Tennessee, Department of Environment and Conservation |
| SAIPE | Small Area Income and Poverty Estimates |
| SLAMS | State or Local Air Monitoring Station |
| SPOT | Statewide Project Overview Tracker |
| SPM | Special Purpose Monitor |
| USEPA | United States Environmental Protection Agency |
| UV | Ultra Violet |
| VMT | Vehicle Miles Travelled |
| ≥ | greater than or equal to |
| > | greater than |
| ≤ | less than or equal to |
| < | less than |

# 3. INTRODUCTION

In 2007, the U.S Environmental Protection Agency (EPA) finalized amendments to the ambient air monitoring regulations. These amendments revised the technical requirements for certain types of monitoring site, programs and analyzers. Monitoring agencies are required to submit annual monitoring network plans.

The Chattanooga – Hamilton County Air Pollution Control Bureau is a local monitoring agency operating under a certificate of exemption from the State of Tennessee. The regulations from title 40, part 58, Section 10(1) of the Code of Federal Regulations state that:

> *(40 CFR 58.10 (a)(1)) July 1, 2007, the state, or where applicable local, agency shall submit to the Regional Administrator an annual monitoring network plan which shall provide for the documentation of the establishment and maintenance of an air quality surveillance system that consists of a network of SLAMS monitoring stations that can include FRM, FEM, and ARM monitors that are part of SLAMS, NCore, CSN, PAMS, and SPM stations. The plan shall include a statement of whether the operation of each monitor meets the requirements of appendices A, C, D, and E of this part, where applicable. The Regional Administrator may require additional information in support of this statement. The annual monitoring network plan must be made available for public inspection and comment for at least 30 days prior to submission to the EPA and the submitted plan shall include and address, as appropriate, any received comments.*

This document has been created and submitted to fulfill the requirements of the annual monitoring plan (AMP). It also provides an opportunity for Chattanooga - Hamilton County to receive comments and input from the State of Tennessee Department of Environment and Conservation Division of Air Pollution Control (TDEC-APC) and the public regarding the network.

The purpose of this comprehensive review is to evaluate if the current monitoring strategies meet the needs of the City of Chattanooga, Hamilton County, and its municipalities. It also aims to ensure compliance with all current Federal, State, and Local regulations and help in the development of future strategies and decisions. Moreover, it serves to identify and report the needs for changes within the network and request approval for those changes from the US EPA Regional Office.

## Organization and scope of work

The Chattanooga-Hamilton County Air Pollution Control Bureau (CHCAPCB) runs three air monitoring stations in Chattanooga-Hamilton County. The data acquired provides valuable air quality information that can be access on EPA Air Data Website. Data available includes historical records, daily air quality values, trend visualizations of pollutants, and downloadable data with summarized statistics for criteria pollutants by monitors. The availability of this data helps in the efforts of public health and maintenance and creation of environmental policies.

## Monitoring Activities

The Chattanooga, TN-GA metropolitan statistical area, as defined by the United States Office of Management and Budget (OMB), consists of six counties—three in southeast Tennessee (Hamilton, Marion, and Sequatchie) and three in northwest Georgia (Catoosa, Dade, and Walker), anchored by the city of Chattanooga. The bureau oversees air quality for the municipalities of Soddy Daisy, Signal Mountain, Red Bank, East Ridge, Collegedale, Ridgeside, Walden, Lakesite, and Lookout Mountain

The criteria for pollutants measured by the Bureau includes Particulate Matter ($PM_{2.5}$) and Ozone ($O^3$), we operate two Ozone sites and one particular matter site.

The Chattanooga – Hamilton County air monitoring network has been designed to comply with the national ambient air quality standards (NAAQS), logistics and EPA guidelines are followed for siting requirements any time a new site needs to be established or relocated.

The Monitoring Network review that is specified in 40 CFR 58.10 contains the following elements that apply to each monitoring site:

- The USEPA Air Quality System (AQS) site identification number.
- The location, including street address and geographical coordinates.
- The sampling and analysis method(s) for each measured parameter.
- The operating schedules for each monitor.
- Any proposals to remove or move a monitoring station within a period of 18 months following plan submittal.
- The monitoring objective and spatial scale of representativeness for each monitor as defined in Appendix D of Part 58.
- The identification of any sites that are suitable and sites that are not suitable for comparison against the annual PM2.5 and Ozone National Ambient Air Quality Standards (NAAQS) as described in part 58.30.
- The MSA, CBSA, CSA or other areas represented by the monitor.
- The annual monitoring network plans and or periodic network assessments are subject to Regional approval according to part 58.14.

## Chattanooga – Hamilton County Topography and Climate

Hamilton County is located near the border of Tennessee, Georgia, and Alabama. It possesses a diverse climate due to its surrounding mountains, ridges, and valleys, giving it the well know title as the "Scenic City", situated in a unique location, at the meeting point of the ridge-and-valley Appalachians and the Cumberland Plateau, which are both part of the Appalachian Mountains. The town is located on both banks of the Tennessee River, with Moccasin Bend at its center with an elevation is approximately 676 feet (206 meters), which is one of the lowest elevations in East Tennessee.

The National Center for Environmental Information (NCEI) calculates the climate Normal, a thirty-year normal is calculated every 10 years. Climate Normals as seen in Table 1, are a data product that helps us understand typical climate conditions for locations across the United States. Chattanooga's Climate Normals and records began in 1879.

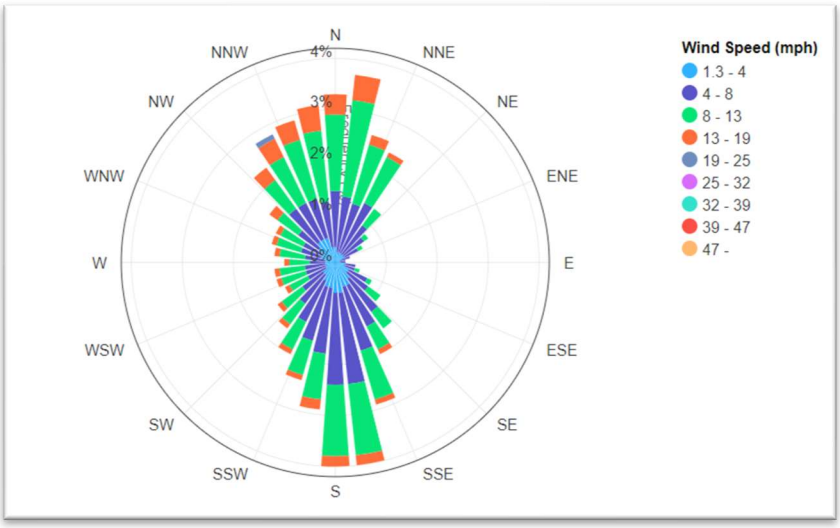
Table 1 - 30-year Climate Normals (1991-2020)

| Chattanooga Climatological Normals | |
|---|---|
| Average Rainfall - 55.00" | The Average number of days max >= 90 F° (POR) - 46 days. |
| Average Snowfall - 3.6" | The average number of days min <= 32 F° (POR) - 59 days |
| Median first frost - October 31st | Median last frost - April 4th |
| Median first freeze - November 9th | Median last freeze - March 24th |
| Thanksgiving average temp (POR) - 47.1 °F | Thanksgiving avg rainfall (POR) - 0.09" |
| Easter averages temp (POR) - 58.1 °F | Easter averages rainfall (POR) - 0.14" |

POR: Period of record

When assessing pollution, emissions, and transport, wind speed and direction must be considered. To help us with this evaluation, we use a graphic tool called Wind Roses as seen in Figure 1. These are generated from data collected at the Chattanooga Metropolitan Airport at Lovell Field (station 13882) using the Application Tool Environment by the Midwestern Regional Climate Center.

*Figure 1 - Chattanooga Ten Year Wind Rose (March 11, 2014, to March 11, 2024/Sub-Interval: Jan 1-Dec 31)*



Chattanooga's annual average wind speed during 2023 was 4.8 miles per hour while the highest average wind speed was 9.0 miles per hour.

Because of temperature inversion, topography, and wind speeds, smoke easily gets trapped in the valley, which plays a significant role in air quality. Pollutants become trapped near the ground during these inversions. The Tennessee River Gorge provides perfect conditions for the inversions from Spring to Fall and the formations of cloud inversion, as seen in Figure 2.

Figure 2 - Cloud Inversion photo taken at Snooper's Rock/ Photo by kcsmolak

## Traffic Patterns

In 1988, Hamilton Place, the largest mall in Tennessee at the time, was constructed in the city of East Brainerd and could be reached via I-75. This event triggered a surge in commercial and residential development near the mall. Within a year, the number of vehicle miles traveled (VMT) per year increased from approximately 6 million VMT to over 10 million VMT.

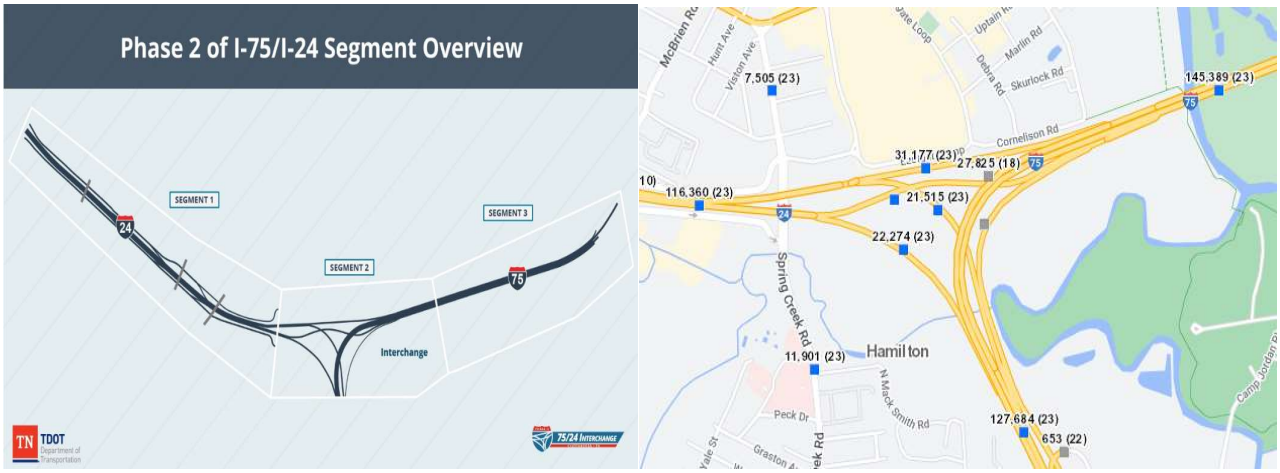
The I-75 and I-24 interchange is a vital transportation route connecting Tennessee and Georgia. Due to increased traffic volumes, safety concerns arose, and operational deficiencies such as poor ramp geometry and insufficient merging distances were identified. To address these issues, interchange modifications were deemed necessary to be completed in two phases. Phase II of the project began in November 2023 and includes road improvements such as expanding the stretch of I-24, reconfiguring entrance, and exit ramps and widening I-75 to five lanes. The project is expected to be completed in 2025.

The project's traffic impacts have resulted in the highest traffic counts in Hamilton County, as seen in Table 2 and Figure 3.

Table 2- TN DOT Traffic Count Data Base System SPOT Traffic comparison

| Location ID | Located on | 2020 AADT Count | 2023 AADT Count |
|---|---|---|---|
| 33000163 | I0075 East of I-24 JCT | 117,649 | 145,389 |
| 33000160 | I0075 South of I-75 & I-24 JCT | 93,493 | 127,684 |
| 33000212 | I0024 East Ridge | 102,680 | 116,360 |

Figure 3 – Map of highest traffic area during Phase II I-75/I-24 Project, Hamilton County, Tennessee.

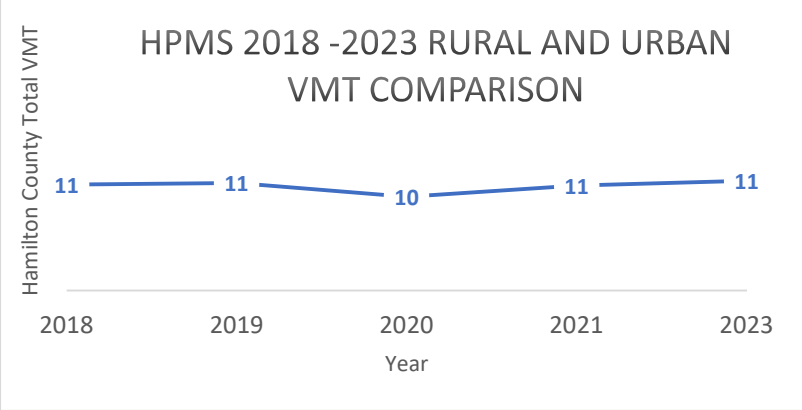


## Vehicle Miles Traveled

The data on the Tennessee Department of Transportation's website indicates that Hamilton County's Annual Vehicle Miles Travelled (VMT) in 2022 is 83,220 miles, representing a slight increase of 627 miles from the previous year, 2021.

The COVID-19 pandemic impacted many aspects of life, including remote work for employees and widespread school closures throughout 2020 and 2021. One of the noticeable effects of this shift was a significant decrease in Vehicle Miles Traveled (VMT) from 2019 to 2020. Before the pandemic, VMT had been steadily increasing since 2013. Figure 4 illustrates both the decrease and the overall steady increase in VMT.

Figure 4 - Hamilton County VMT comparison from 2018 to 2023



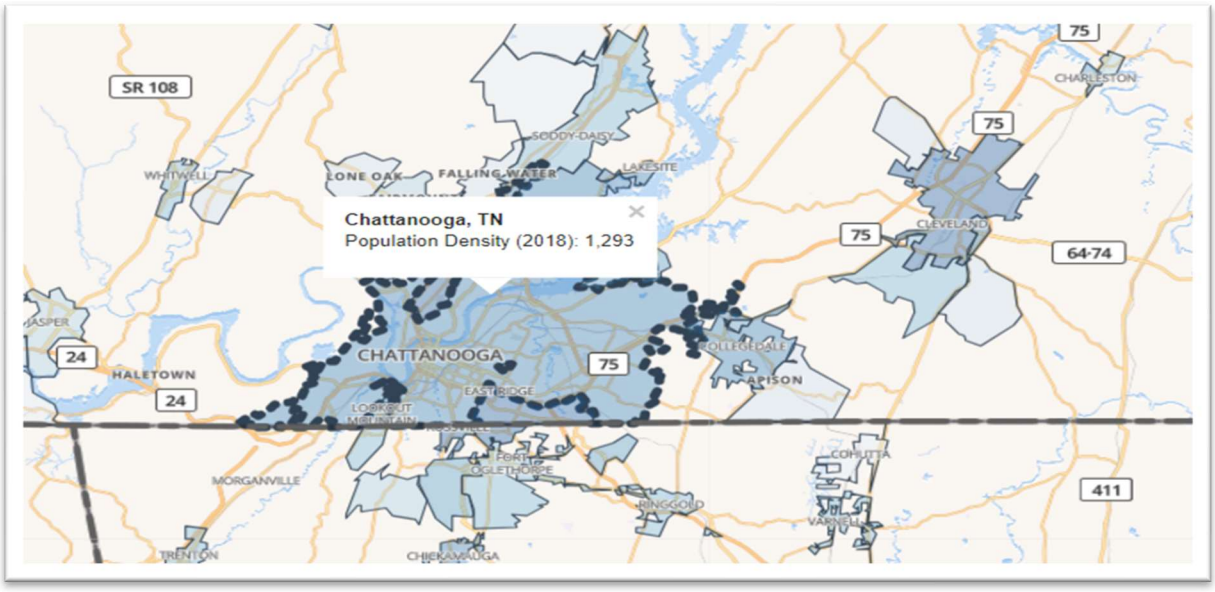

## Population

According to the U.S. Census Bureau website, the estimated population of Hamilton County as of July 1, 2022, was 374,682. However, the latest official census conducted in 2020 reported the population of Hamilton County to be 366,207 per Figure 6.

According to the World Population Review website, Hamilton County's estimated population is expected to reach 385,992, with a growth rate of 1.49% by 2024.

Chattanooga, Tennessee's last measured population density was 1,293 in 2018 as shown in Figure 5. Since the first statistic recorded in 2009, Chattanooga has experienced an average growth rate of 0.53. The forecast population density estimated by 2023 was 1,326 people per square mile.

Figure 5 - Population Density Map by Open Data Network (Tyler Technology)




Chattanooga, Tennessee's last measured population count, was 177,365 in 2018. Since the first statistic was recorded in 2009, it has experienced an average growth rate of 0.53%. The population forecast for the city was 181,877 by 2023. The graph in Figure 7 includes this forecast.

Figure 6 - Chattanooga Population Density Map

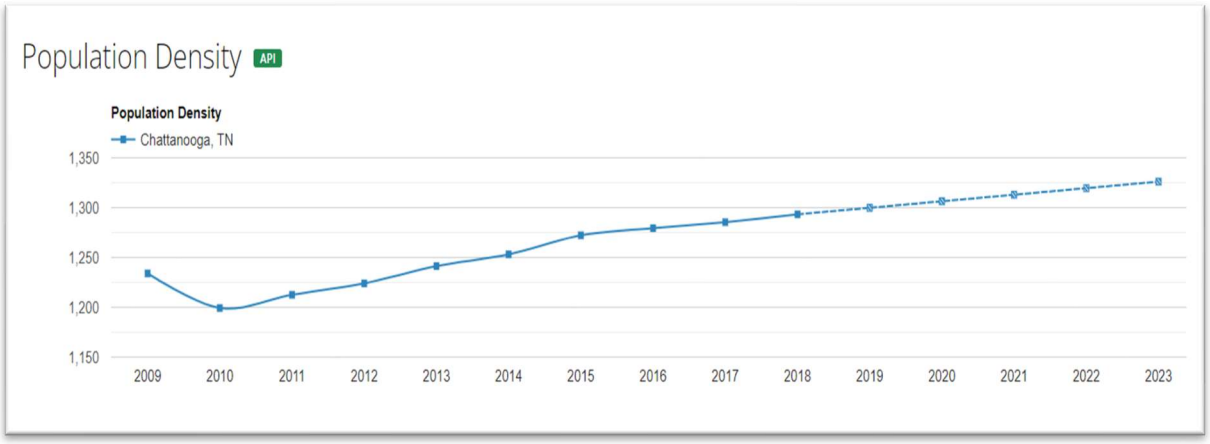
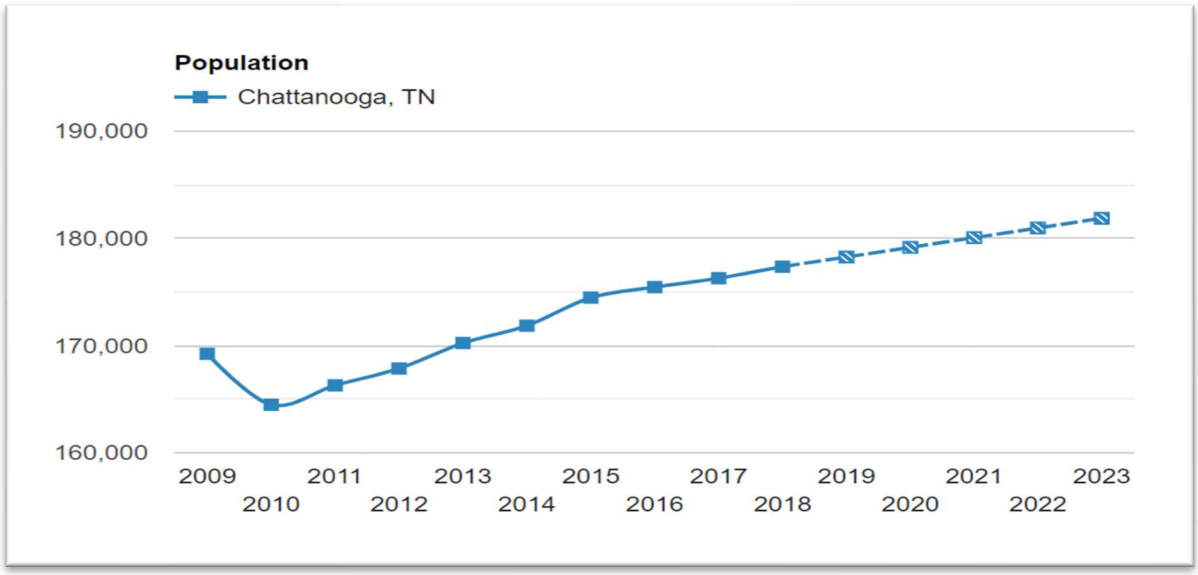


Figure 7 - Chattanooga's population 2023 forecast based on 2018 Census.




The above graphs are based on data from the U.S. Census American Community

The last available Hamilton County demographics are from 2022. The U.S. Census Bureau estimated that 70.7% of the population were White only, 18.4% Black or African American, 0.6% American Indian and Alaskan Native, 2.3% Asian alone, 0.2% Native Hawaiian and other Pacific Islander, 6.8% Hispanic or Latino.

The 2022 Small Area Income and Poverty Estimates (SAIPE) estimate that poverty in Hamilton County was 11.8%. The poverty estimate for Chattanooga is at 16.7% for residents with income below the poverty level and 7.3% for residents with income below 50% of the poverty level.

## Environmental Justice

The United States EPA defines environmental justices as:

> *"The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies." Achievement of the environmental justice goal is reached when everyone enjoys the same degree of protection from environmental and health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn, and work.*

Hamilton County may utilize a variety of indicators which may include demographics (race, income level, age, etc.), environmental (PM2.5, Traffic Proximity, etc.), and health outcomes (Asthma, Hearth Disease, etc.), to make an assessment and identify the areas of Environmental Justice at City - County level.

The EPA Environmental Justice Strategy EJ2020 Action Agenda lists Air Quality as an area of concern. The agenda's goal was to achieve air quality that meets the PM2.5 NAAQS standards in all areas of the country. Chattanooga - Hamilton County is in attainment for the PM2.5 NAAQS and is committed to be pro-active in the protection of public health and the environment.

Therefore, The Bureau, The City of Chattanooga, and The Hamilton County Health Department have begun discussions to determine needs and establish combined goals, considering the newest demographic information from the 2020 census and the new EJ Screen: Environmental Justice Screening and Mapping Tool | US EPA.

The first initiatives the Bureau has established during 2023 are:

- The purchase of two AI particle sensors with the capability to identify PM2.5 levels as well as to identify and count continuously pollen concentrations, allowing to forecast the daily levels. The forecast is available to the public through the app Pollen Wise available in the Apple App store or GooglePlay store. Pollen Wise Provides up-to-date pollen counts to help users mitigate allergens and avoid seasonal allergy symptoms. The pollen sensors are located in Soddy Daisy & Downtown Chattanooga.

- The purchase of low-cost sensors to be added to the already established network led by The Enterprise Center, a non-profit organization that provides data through the City of Chattanooga's ChattaData open portal. The new sensors will be located near the roads most congested around the already identified EJ communities. The low-cost sensors have the capability to measure Nitrogen Dioxide (NO2) and Volatile Organic Compounds (VOCs), widening the scope of monitoring around the metropolitan area.

# 4. HAMILTON COUNTY NETWORK REVIEW 2024

## Site Information

The Chattanooga Hamilton County Air Pollution Control Bureau currently operates three existing SLAMS (State and Local Air Monitoring Stations) that belong to our monitoring network, as identified in Figure 8; current site evaluations are described in Tables 4 through 6. Two measure Ozone concentrations, and the third measure Particulate Matter ($PM_{2.5}$). We collect daily pollutant concentration data, document parameters as requested per 40CFR standards, and report ambient air monitoring data to the EPA.

Table 3 – 2024 Active Chattanooga Hamilton County Air Monitoring Sites.

| Site Name | Geo Location | Site ID AQS | Pollutant |
|---|---|---|---|
| 1A-Ozone | 35.1027729 lat / -85.1623991long | 470654003 | Ozone |
| 2A-Ozone | 35.2336549 lat/ -85.1818643 long | 470651011 | Ozone |
| 3A-$PM_{2.5}$ | 35.0510059 lat/ -85.2928675 long | 470654002 | $PM_{2.5}$ |

The Bureau prepared an addendum to the 2022 Network Review, part of the 2022 State of Tennessee Air Monitoring Plan, to request discontinuation of the East Ridge $PM_{2.5}$ site at 1517 Tombras Avenue behind East Ridge City Hall (AQS 470650031).

Name designations were modified during 2023 for consolidation purposes as the sites had been relocated multiple times and had carried over name descriptions that were inaccurate. The new name convention was based on the pollutant measured at each site, Site names were updated to AQS and the geographical coordinates were adjusted for accuracy.

Since December 1, 2023, the Bureau has changed locations after request from the Hamilton County to terminate the lease to give priority to the Hamilton County Sheriff's Department to use the building as their headquarters.

The new address is:

Chattanooga – Hamilton County Air Pollution Control Bureau

CBL Center II
2034 Hamilton Place Blvd., Suite 300
Chattanooga, TN 37421

## Site Discussion

The CHCAPCB ambient air monitoring network has undergone a comprehensive review based on historical monitoring data, air quality monitoring regulations, data representation based on spatial considerations, special data requirements, and regulatory changes. The evaluation was based on several factors, including the AQS database, the documents for parts 53 and 58 under 40 CFR, and the census data and maps. The CHCAPCB monitors are categorized as SLAMS (State or Local Air Monitoring Station).The following sections describe the purposes and any changes related to each in the ambient air monitoring network in Hamilton County

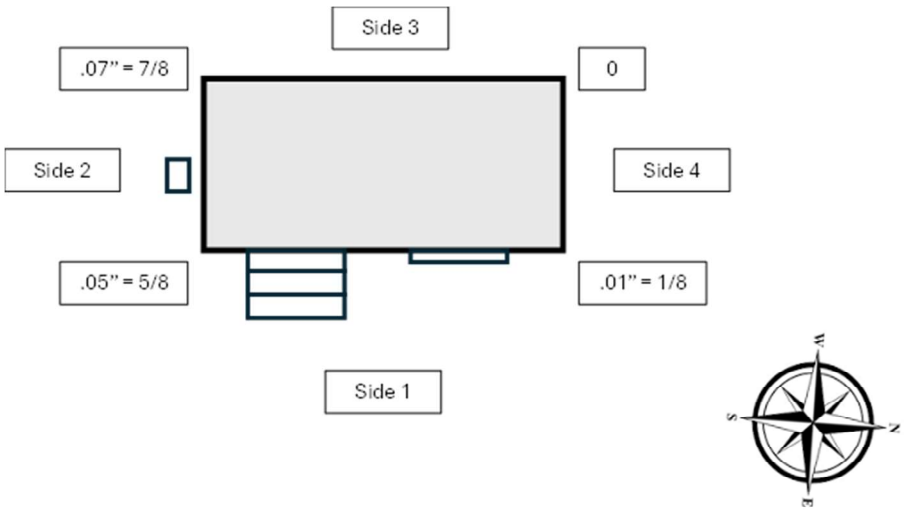
### Site 1A - Ozone

- No changes are proposed currently for this site.
- The site and monitors meet all design criteria for the monitoring network.
- HVAC maintenance was performed for the shelter unit 03/2024.
- Settling evaluation determined anchors need to be re-positioning only.

### Site 2A – Ozone

- Changes are currently proposed for this site.
- Settling evaluation determined anchors re-positioning and appropriate anchoring system evaluation by a licensed engineer.
  Signs of structural movement were detected after windstorms in 2023. Figure 8 shows the degree to which the shelter has slanted. Arrangements were made to resolve this issue within 2024-2025.
- The site and monitors meet all design criteria for the monitoring network.
- HVAC maintenance was performed for the shelter unit 03/2024. AI pollen monitor was installed on the shelter's roof railing on 02/2023.

Figure 8 - Site Shelter Re-Leveling Schematic




## Site 3A – $PM_{2.5}$

- No changes are proposed currently for this site.
- The site and monitors meet all design criteria for the monitoring network.
- A new network cable was installed on the sides of the platform to feed the ethernet connection to the new AI pollen/Particle sensor. The Pollen sensor was attached to the electrical box outside the platform.
- Heater unit installed in the T640 shelter 10/31/2023 to keep shelter temperatures from dropping < 0 °C during winter season.

## Recent Changes

A few changes were made at the Air Monitoring Department in 2023, in lieu of the availability of Grants provided by EPA and based on the needs assessment by the new Air Monitoring Manager.

Some of the recent changes include.

- Establishing quarterly QC/QA revisions through a third-party Quality Assurance Consultant for all data and field operations and data certifications.
- The purchase of two new Ozone monitors to replace our aging equipment at both our Ozone sites and tandem replacement of calibrators following the installation of analyzers during the 2025 Ozone season.
- Implementing a digital logbook system to standardize the use of protected field forms, accurate automated calculations, and the establishment of a tier-level quality control system.

- The Purchase of field tablets for the technicians to access the new logbooks.
- The projected hiring of a new technician (5-year grant-based contract) to help with the low-cost sensor activities and prepare for the retirement of current technicians.
- The establishment of new procedures for data and backup storage maintenance.
- T-640 bias algorithm update completed September 29, 2023. T640 equipment (active and spare) has been updated to report under Method Code 636.
- T-640 monitor at site 3A-PM2.5 is reporting under code 636 since October 1st, 2023. Data loss of approximately 3 hours due to change of code. Because the change was completed during the middle of the day on September 29th, 2023, AQS won't allow the data to be uploaded under two different codes on the same day. The data has been stored but not reported to AQS until Monday, October 1st, under the new method. The EPA regional office has been notified of the change.
- We have purchased a new refrigerator and NIST data temperature loggers. We are following EPA guidelines for maintaining PM2.5 filters.
- We purchased the Asset tracker system module to be added to AirVision by Agilare.

Thanks to the needs assessment Grant allocation, newer equipment will be purchased. The table below is the current equipment active at the bureau. Because of the recent office move, any equipment from prior network reports not on the list below have been surpluses or disposed of during November 2023.

## Table 4 - 1A Ozone 2024 Site Evaluation

**1A - Ozone**


| | |
|---|---|
| Agency | Chattanooga Hamilton Air Pollution Control Bureau |
| PQAO | 0170 |
| Address | Reservoir Rd (Private Road) – 8301 Hickory Valley Rd |
| AQS ID | 470654003 formerly 0028 |
| County | Hamilton County |
| CBSA | Chattanooga/North Georgia |
| Latitude | 35.1027729 |
| Longitude | -85.1623991 |
| Parameter Code | 44201 |
| Parameter | Ozone |
| Monitor Type | SLAMS |
| POC | 1 |

This Ozone site was established on June 13, 1979, on the volunteer Army Ammunition Plant (VAAP) as AQS site 470650028. According to notes in AQS, the Ozone monitor was moved to the laboratory building on Patrol Rd 100-200 ft away sometime in 1979. The Ozone monitor was moved in 1982 to a trailer across the street and NW of the lab.

In February 2004, it was moved to eastside Water Utility plant territory; because the monitoring site was moved more than 2 miles, the AQS identifier changed to 470654003.

The site is inside a private property with a secured area that requires authorized access. On 1/25/2021, TA installed a new 8x14 shelter on the original old shelter foundation.

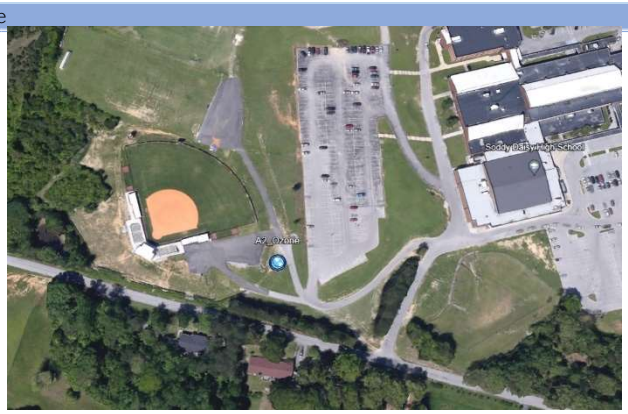
| | |
|---|---|
| Shelter Year Installation | 2021 |
| Collection Frequency | Hourly |
| Method | 047 |
| FRM/FEM | Thermo Environmental 49I |
| Analysis | UV Photometric |
| Reference Method ID | EQOA-0880-047 |
| Objective | Typical Concentrations |
| Dom. Source | Area |
| Scale | Urban |
| Land Use | Industrial |
| Location | Urban and Center City |
| Elevation | 283.25 MASL |
| Meteorology Center Near | Chattanooga Metropolitan Airport |
| Intake Height | 4.2 m |
| Date Established | 6/13/1979 moved from 0028 in 02/2004 for the 031/01/2004 Ozone season start date. |

| Direction | Predominant land use |
|---|---|
| North | Commercial – along US-58, residential beyond Highway 58 |
| South | Undeveloped forest and commercial Industrial Area |
| East | Forestal Area |
| West | Forest to Highway 58, commercial on Highway 58 then residential beyond |

| Direction Obstacles | Trees/Buildings | Height (m) | Distance (m) |
|---|---|---|---|
| North | None | n/a | n/a |
| South | One Story Building | 3.7 m | 12.6 m |
| East | None | n/a | n/a |
| West | SW- Building<br>Tree behind the building | 1 ½ Story: top of roof 5m<br>14.4 m | 20.7 m<br>27.0 m |

| Directions | Topographic Features (hill, valleys, rivers) | General terrain (flat, rolling rough) |
|---|---|---|
| North | The site sits on top of a hill about 4.2 meters above sea level. It is a secured wilderness area, The site is on the north edge of the hill – almost hanging over highway 58. To the north, it is looking down the mountain. | About 1,000 acres are developed to the southeast of this monitoring site as commercial/industrial, including the Volkswagen plant.<br>The Highway 58 area at the bottom of the hill to the Nort is commercial. Highway 58 is a major highway running east/west. |
| South | One-story building - Commercial | Flat on top of the hill. |
| East | Looking downhill. | |
| West | Looking downhill. | |

*Table 5 - 2A Ozone 2024 Site Evaluation*

| 2A – Ozone | | | |
|---|---|---|---|
|  | |  | |
| Agency | Chattanooga Hamilton Air Pollution Control Bureau | This Ozone site was established on August 1, 1978, at 9527 West Ridge Trl rd, behind the Head Start Building. The original method at this site was chemiluminescence, which was changed to UV on June 1, 1979. The Ozone site was moved on February 1, 2002, within a one-mile radius to a new shelter on a hill behind Soddy Daisy High School.<br><br>On May 20, 2009, the shelter and monitors were moved approximately 100 feet east of the property to accommodate a girls' softball field.<br><br>This Ozone site also housed the special purpose PM2.5 monitor (initially established 1999) that was originally located at the Sherif's annex roof at 6233 Dayton Blvd (AQS 470650032)from January 2002 until June 2008 when the monitor was changed from a WINS impactor to a VSCC model (FRM).<br><br>In 02/2024, an Al Pollen/particle sensor was installed using the existing power outlet on the N side of the roof and connected to the existing network access. | |
| PQAO | 0170 | | |
| Address | Soddy Daisy HS – 618 Sequoyah Access Rd | | |
| AQS ID | 470651011 | | |
| County | Hamilton County | | |
| CBSA | Chattanooga/North Georgia | | |
| Latitude | 35.2336549 | | |
| Longitude | -85.1818643 | | |
| Parameter Code | 44201 | | |
| Parameter | Ozone | | |
| Monitor Type | SLAMS | | |
| POC | 1 | | |
| Shelter Year Installation | 2021 | | |
| Collection Frequency | Hourly | | |
| Method | 047 | | |
| FRM/FEM | Thermo Environmental 49I | | |
| Analysis | UV Photometric | | |
| Reference Method ID | EQOA-0880-047 | | |
| Objective | Background | | |
| Dom. Source | Area | | |
| Scale | Neighborhood | | |
| Land Use | Commercial | | |
| Location | Rural | | |
| Elevation | 287.42 MASL | | |
| Meteorology Center Near | Chattanooga Metropolitan Airport | | |
| Intake Height | 5.2 m | | |
| Date site established | 08/01/1978 moved to SDHS 02/01/2002. PM 2.5 decommissioned 12/31/2015. | | |
| Direction | Predominant land use | | |
| North | School Property, boy's ball fields | | |
| South | Beyond Hyatte Rd are residential, rural, and agricultural | | |
| East | Soddy Daisy HS and Daisy Elementary | | |
| West | Girl's softball field: beyond the field is Hyatte Rd; beyond Hyatte is residential, rural, and agricultural. | | |
| Direction Obstacles | Trees/Buildings | Height (m) | Distance (m) |
| North | Two trees | 5.6 m and 10.6 m | 26.0m, 44.3 m |
| South | Tree row | 12.6 m | 30.0 m |
| East | Tree row | 12.6 m | 71.6 m |
| West | Field House | 2 Story | 7.4 m |
| Directions | Topographic Features (hill, valleys, rivers) | General terrain (flat, rolling rough) | |
| North | The site is on a hill | Hill | |
| South | Residential, farms. | | |
| East | The student parking lot below the site | | |
| West | Two-story field house/ concession stands, parking lot, and girl's ball fields on the hill above the site. | The site is between an upper parking lot and a lower parking lot. | |

## Table 6 - 3A PM2.5 2024 Site Evaluation

**3A - PM 2.5**

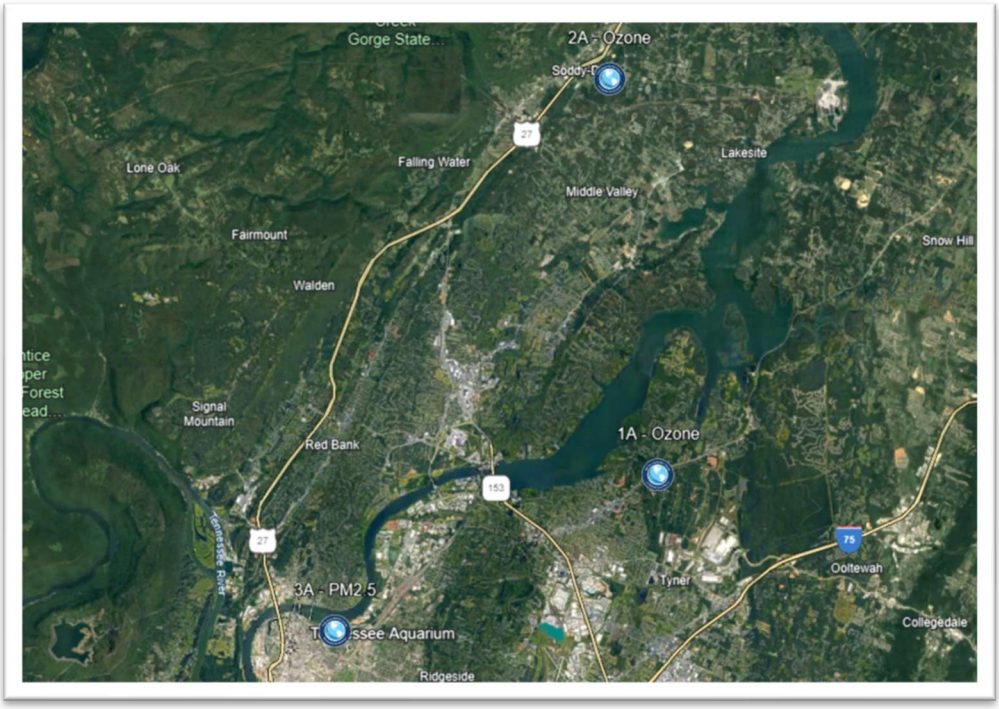

| | | | |
|---|---|---|---|
| Agency | Chattanooga Hamilton Air Pollution Control Bureau | | |
| PQAO | 0170 | | |
| Address | 911 Siskin Drive Chattanooga TN | | |
| AQS ID | 470654002 | | |
| County | Hamilton | | |
| CBSA | Chattanooga/North Georgia | | |
| Latitude | 35.00510059 | | |
| Longitude | -85.2928675 | | |
| Parameter | 88101 | 88101 | 88502 |
| Monitor | SLAMS | SLAMS | SLAMS |
| POC | 1 | 2 | 3 |
| Interval | 7 | 7 | 1 |
| Collection Frequency | 3-day | 6-days (June-2022) | Minute/Hourly |
| Method | 145 VSCC | 145 VSCC | 236 |
| FRM/FEM | FRM - 2025i Sequential | FRM - 2025i Sequential | FEM T-640 Light Scattering |
| Analysis | Gravimetric Lab | Gravimetric Lab | Light Scattering |
| Reference Method ID | RFPs-0202-145 | RFPS-0202-145 | EQPM-0516-238 for pm2.5 only |
| Objective | Population | | |
| Dom. Source | Area | | |
| Scale | Urban | | |
| Land Use | Commercial | | |
| Location | Urban/City Center | | |
| Elevation | 215 AMSL | | |
| Meteorology Center Near | Chattanooga Metropolitan Airport | | |
| Date Established | 01/01/1999 | 01/01/1999 | 02/15/2017 |

3A site was established on Jan 1, 1999, at the UTC campus with collocated FRM monitors on Davenport Building's roof. Monitors moved to the Student Center roof in 2000, then to a temporary site behind the Administration Building in 2003 with TEOM installation. The monitors were finally moved to a new shelter at the current site on March 15, 2004, at 911 Siskin Drive. Various air quality monitors were installed in the past two decades, including Speciation, continuous PM2.5, and plate number 1 monitors. The TEOM continuous PM2.5 monitor had to be replaced after a predryer failure in 2013 In 2015, speciation monitoring stopped. In 2017, FRMs were converted to VSCC models, and a continuous SPM was added, reporting PM2.5 to AQS in February. The shelter was replaced with a deck in June 2018, and the SPM now reports to AirNow. New VSCC models were installed on the deck, and SPM data was combined with FRM POCs 1 and 2 to compare against the standard. The data from POC 1 and the T640 are averaged for each day the FRM runs. POC 2 data can substitute for missing POC 1. The T640 retains POC 3. The POC 2 FRM changed from 3-day to 12-day monitoring on 5/9/19. Siskin Rehabilitation Hospital has been using the property on which the deck sits as an employee parking lot. Siskin built a parking garage, so the site is no longer used for parking as of April 2020.

| Direction | Predominant land use |
|---|---|
| North | Commercial – Power Utility Fenced station grounds & Riverside Dr (US-58 business) |
| South | School Baseball Field – Erlanger Hospital and Health Department |
| East | Siskin Rehabilitation Center – Epilepsy Foundation of South Tennessee |
| West | Commercial – Power Utility Fenced station /SW -Chattanooga |

| Instrument | Intake Heights |
|---|---|
| FRM-2025i | 2.6 m |
| FRM-2025i | 2.6 m |
| FEM-T640 | 2.8 m |

Figure 9 - Chattanooga Air Monitoring Site




The EPA, through the Office of Air Quality Planning and Standards, published a memorandum on January 25, 2024, that elaborates on the recommendations to implement an Asset management framework as part of a modernization plan.

Annual SLT air monitoring asset reports should be submitted to the EPA concurrently with the submission of an air agency's Annual Monitoring Network Plan (AMNP), which is due on July 1 of each year (see 40 CFR part 58.10). The EPA has developed a spreadsheet template consistent with the fields in Attachment 1 for SLTs to populate and submit as their annual asset management report.

As part of the compliance process and the recent Bureau move, many of the old equipment was surplus or passed-on to other agencies. Table 7 has our most current list of operational equipment.

Table 7 – Sites Equipment

| Site | Manufacturer | Model | Condition | Display Text |
|---|---|---|---|---|
| 0A_AM Shop | Alicat | FP-25 | New | Particulate audit device Grant# 02D39522 |
| 0A_AM Shop | BGI Incorporated | DeltaCal | Good | Air Flow Calibrator Particulate audit device |
| 0A_AM Shop | BGI Incorporated | DeltaCal | Good | Air Flow Calibrator Particulate audit device |
| 0A_AM Shop | Chinook Engineering | Chinook Streamline FTS | Good | Audit/Calibration device for 2025 spare |
| 0A_AM Shop | Dwyer | Manometer series 475 | Good | Manometer used for auditing and calibrating 2025 in conjunction with Chinook orifice. |
| 0A_AM Shop | Met One Instruments | Swift 25.0 | New | Ancillary Equipment - Multi site |
| 1A_Ozone | ESC | 8816 | Average | Secondary data recorder. |
| 1A_Ozone | Agilaire Corp | 8872 | Average | Primary data recorder. |
| 1A_Ozone | Comtrol Devicemaster | RTS-4 Port | Good | RS-232 Serial to IP port interface |
| 1A_Ozone | Gigabit Inc | GS108 | Good | Network Switch |
| 1A_Ozone | American Power Conversion Inc. | SMT750-RM2UC | Poor | UPS for primary data recorder. Needs replacement |
| 1A_Ozone | Shelter 1 | LS814 | Good | Monitoring site equipment shelter. |
| 1A_Ozone | Thermo Scientific | TEI-49i-A1NAA | Average | Ozone analyzer. |
| 1A_Ozone | Thermo Scientific | TEI-49iPS | Average | Level-2 Calibration Standard |
| 1A_Ozone | Desktop Computer | Optiplex 7040 | Average | Desktop Computer |
| 1A_Ozone | Dell | Unknown | Average | Dell Computer (Monitor only) |
| 1A_Ozone | Startech | Cabshelf 116V | Good | 1 U Vented Cantilever Shelf 16"/1RU Rack Shelf |
| 2A_Ozone | ESC | 8816 | Good | Site secondary data recorder |
| 2A_Ozone | Agilaire Corp | 8872 | Good | Site primary data recorder. |
| 2A_Ozone | Comtrol Devicemaster | RTS-4 Port | Good | RS-232 Serial to IP port interface. |
| 2A_Ozone | Gigabit Inc | GS108 | Good | Network switch. |
| 2A_Ozone | American Power Conversion Inc. | SMT750-RM2UC | Good | UPS for primary data recorder |
| 2A_Ozone | Shelter 1 | LS814 | Good | Monitoring site equipment shelter. |
| 2A_Ozone | Thermo Scientific | TEI-49iPS | Good | Site Level-2 Calibration Standard. |
| 2A_Ozone | Thermo Scientific | TEI-49i-A1NAA | Good | Site ozone analyzer. |
| 2A_Ozone | IA Particle Sensor | APS-400 | New | Pollen Sense, automated particulate and pollen sensor |
| 3A-PM2.5 | Thermo Fisher | 2025 | Average | Spare 2.5 FRM for 3A |
| 3A-PM2.5 | Thermo Fisher | 2025i | Good | 21084 - Sequential PM2.5 FRM 2.5 Poc 1- Sampling 1 every 3 days |
| 3A-PM2.5 | Thermo Fisher | 2025i | Good | 21131 - Sequential PM2.5 FRM 2.5 Poc 2 - sample 1 every 6 days |
| 3A_PM2.5 | Teledyne API | T640 | Good | T-640 FEM PM2.5 Continuous particulate instrument. |

| Site | Manufacturer | Model | Condition | Display Text |
|---|---|---|---|---|
| 3A_PM2.5 | Teledyne API | T640 | Good | T-640 FEM PM2.5 Continuous particulate instrument. |
| 3A_PM2.5 | Netgear ProSafe | GS108v4 | Good | Network switch. |
| 3A_PM2.5 | Agilaire Corp | 8832 | Good | Site data logger for T640. |
| 3A_PM2.5 | Shelter 1 | | Average | Equipment shelter for housing T640 continuous particulate monitor. |
| 3A_PM2.5 | Data Communication Shelter | Unknown | Average | Shelter housing Datalogger and network communications equipment for T640. |
| 3A_PM2.5 | Hampshire Controls Corp | 140-100HV | Good | Monitoring shelter internal temperature. One of two |
| 3A_PM2.5 | Hampshire Controls Corp | 140-100HV | New | Monitoring shelter internal temperature. Two of two |
| 3A_PM2.5 | Hammond | FLHTF800A115 | New | 800 watt 120V electrical heater |
| 3A_PM2.5 | IA Particle Sensor | APS-400 | New | Pollen Sense, automated particulate and pollen sensor |