

State of South Carolina

Annual Ambient Air Monitoring Network Plan

July 1, 2025 – December 31, 2026



**SC DEPARTMENT *of*
ENVIRONMENTAL
SERVICES**

Bureau of Air Quality

2600 Bull Street • South Carolina 29201 • Phone: (803) 898-4123 • Website: www.des.sc.gov

Certification

This document contains the planned changes and final description of the sites, monitors, and samplers of the South Carolina Ambient Air Monitoring Network (Monitoring Network) for criteria pollutants and related parameters for the eighteen-month period of July 1, 2025, through December 31, 2026. The South Carolina Department of Environmental Services (Department) certifies that the network described herein meets or exceeds the minimum requirements needed to support the State Implementation Plan, national air quality assessments, and policy decisions as required in 40 Code of Federal Regulations (CFR) Part 58, Ambient Air Quality Surveillance, at the time of submittal to the U.S. Environmental Protection Agency (EPA), Region 4. Due to circumstances that may arise during the implementation of the Network Plan from July 1, 2025 through December 31, 2026, some elements of the network may require modification. A notification of modifications will be posted on the Department website and provided to the EPA Region 4 office. Where necessary, a request for approval of deviations from this Network Plan and supporting documentation will be submitted to the EPA Region 4 office.

Connie Turner Signature: Connie Turner Date: 6/20/2025
Director, Division of Air Quality Analysis, Bureau of Regional and Laboratory Services
South Carolina Department of Environmental Services

Micheal Mattocks Signature: Micheal Mattocks Date: 6/20/25
Assistant Bureau Chief, Bureau of Regional and Laboratory Services
South Carolina Department of Environmental Services

Travis Fuss Signature: Travis Fuss Date: 6/11/25
Bureau Chief, Bureau of Regional and Laboratory Services
South Carolina Department of Environmental Services

Heinz Kaiser Signature: Heinz Kaiser Date: June 10, 2025
Director, Division of Emissions Evaluation and Support
South Carolina Department of Environmental Services

Rhonda B. Thompson Signature: Rhonda B. Thompson Date: 06/19/2025
Bureau Chief, Bureau of Air Quality
South Carolina Department of Environmental Services

Acronyms

AADT – Annual Average Daily Traffic
AQI – Air Quality Index
AQS – Air Quality System
CBSA – Core-Based Statistical Area
CFR – Code of Federal Regulation
CO – Carbon Monoxide
CPW – Charleston Public Works
CSA – Combined Statistical Area
CSN – Chemical Speciation Network
DAQA – Department of Air Quality Analysis
DJJ – Department of Juvenile Justice
DNPH – Analysis method using 2,4-dinitrophenylhydrazine
EPA – Environmental Protection Agency
ESC – Employment Security Commission
EtO – Ethylene Oxide
FDMS – Filter Dynamics Measurement System
FEM – Federal Equivalent Method
FRM – Federal Reference Method
GC/MS – Gas Chromatography / Mass Spectroscopy
HPLC – High Performance Liquid Chromatography
IC – Ion Chromatography
IMPROVE – Interagency Monitoring of Protected Visual Environments
ICP/MS – Inductively Coupled Plasma Mass Spectroscopy
ID – Site Identification
JCI – Johnson Controls Incorporated
MET – Meteorology
MOA – Memorandum of Agreement
Monitoring Network – South Carolina Ambient Air Monitoring Network
MSA – Metropolitan Statistical Area
mSA – Micropolitan Statistical Area
 $\mu\text{g}/\text{m}^3$ – Micrograms per cubic meter

NAAQS – National Ambient Air Quality Standards
NATTS – National Air Toxics Trends Site
NCFS – North Charleston Fire Station
NCore – National Core Monitoring Network
Network Plan – South Carolina Annual Ambient Air Monitoring Network Plan
NO – Nitric Oxide
NO₂ – Nitrogen Dioxide
NO_x – Nitrogen Oxides
NO_y – NO_x and other oxidized species
NPAP – National Performance Audit Program
NWR – National Wildlife Refuge
OMB – Office of Management and Budget
PAH – Polycyclic Aromatic Hydrocarbons
PAMS – Photochemical Assessment Monitoring Stations
PEP – Performance Evaluation Program
PM_{2.5} – Particulate Matter ≤ 2.5 microns
PM₁₀ – Particulate Matter ≤ 10 microns
PPB – Parts Per Billion
PPM – Parts Per Million
PTFE – Polytetrafluoroethylene
PUF – Polyurethane Foam
PWEI – Population Weighted Emissions Index
QA – Quality Assurance
QAPP – Quality Assurance Project Plan
QC – Quality Control
SCC – Sharp Cut Cyclone
SCDES – South Carolina Department of Environmental Services
SLAMS – State and Local Air Monitoring Station
SO₂ – Sulfur Dioxide
SPM – Special Purpose Monitor
STN – Speciation Trends Network
TAD – Technical Assistance Document
TEOM – Tapered Element Oscillating Microbalance

TPY – Tons Per Year

TSP – Total Suspended Particulate

UV – Ultraviolet

VOC – Volatile Organic Compound

VSCC – Very Sharp Cut Cyclone

Table of Contents

Certification	2	Jenkins Ave. Fire Station	56
Acronyms	3	North Charleston Fire Station (NCFS)	
Summary of Changes for July 1, 2025			57
through December 31, 2026	7	Cape Romain	59
Introduction	8	Charlotte-Concord-Gastonia, NC-SC	
The Annual Ambient Air Monitoring		MSA.....	61
Network Plan	9	York Landfill.....	62
Public Participation Opportunities	10	Columbia MSA	63
South Carolina Ambient Air Monitoring		Parklane (NCore).....	64
.....	10	Congaree Bluff	67
Population, MSAs, and Design Values		Irmo DJJ	68
.....	10	Sandhill Experimental Station	69
Network Operation and Summary	13	Florence MSA.....	70
The NAAQS and Design Values.....	14	Pee Dee Experimental Station.....	71
2023 Criteria Pollutant Design Values		Williams Middle School	72
.....	16	Greenville-Anderson-Greer MSA ...	73
Monitoring Network Descriptions.	22	Garrison Arena.....	74
Carbon Monoxide (CO) Network....	22	Greenville Employment Security	
Lead Network.....	24	Commission (ESC)	75
Nitrogen Dioxide Network.....	25	Hillcrest Middle School.....	77
Sulfur Dioxide Network.....	27	Myrtle Beach-Conway-North Myrtle	
Ozone Network.....	31	Beach MSA	78
PM _{2.5} Network	34	Coastal Carolina	79
PM ₁₀ Network.....	39	Spartanburg MSA	80
Photochemical Assessment		North Spartanburg Fire Station #2	81
Monitoring Station (PAMS) Network		T.K. Gregg Recreation Center	82
.....	42	Remainder of State	83
Air Toxics Network.....	42	Chesterfield (NATTS).....	84
Meteorology and Precipitation		Appendix A: Summary of Public	
Network	43	Comments.....	86
Site Descriptions	44	Appendix B: Site Evaluations Summary for	
Augusta-Richmond County, GA-SC MSA		CFR 40 Part 58, Appendix E Table	87
.....	50	Appendix C: Alphabetical Order of	
Jackson Middle School	51	Monitoring Sites	95
Trenton	52	Appendix D: Summary of Changes for July	
Charleston-North Charleston MSA	54	1, 2023 through December 31, 2024.....	96
Moncks Corner National Guard	55	Appendix E: EPA Correspondence.....	98
		Appendix F: Memorandum of Agreements	
			99

Appendix G: Waivers.....	100	Rule for 2010 1-hour SO ₂ NAAQS
Appendix H: Ongoing Data Requirements		Verification Calendar Year 2023112

Summary of Changes for July 1, 2025 through December 31, 2026

Augusta-Richmond County, GA-SC MSA

Trenton Monitoring Site – The Trenton Monitoring Site will begin operating a SPM rotating SO₂ monitor on January 1, 2026.

Charleston-North Charleston MSA

No changes planned.

Charlotte-Concord-Gastonia, NC-SC MSA

York Landfill Monitoring Site – The SPM rotating SO₂ monitor will be moved to the Trenton Monitoring Site on December 31, 2025.

Columbia MSA

The waiver renewal request for the Congaree Bluff Monitoring Site is in Appendix G.

Florence MSA

Lead monitoring has been discontinued at the Clarios Woods Monitoring Site. The last day of sampling was March 26, 2025.

Greenville-Anderson-Greer MSA

The waiver renewal request for the Greenville ESC Monitoring Site is in Appendix G.

Hilton Head Island-Bluffton-Port Royal MSA

No changes planned.

Myrtle Beach-Conway-North Myrtle Beach SC MSA

The Department has started the process of finding an appropriate Site for a second ozone monitor in the MSA.

Spartanburg MSA

The Department has started the process of finding an appropriate Site for a second ozone monitor in the MSA.

Sumter MSA

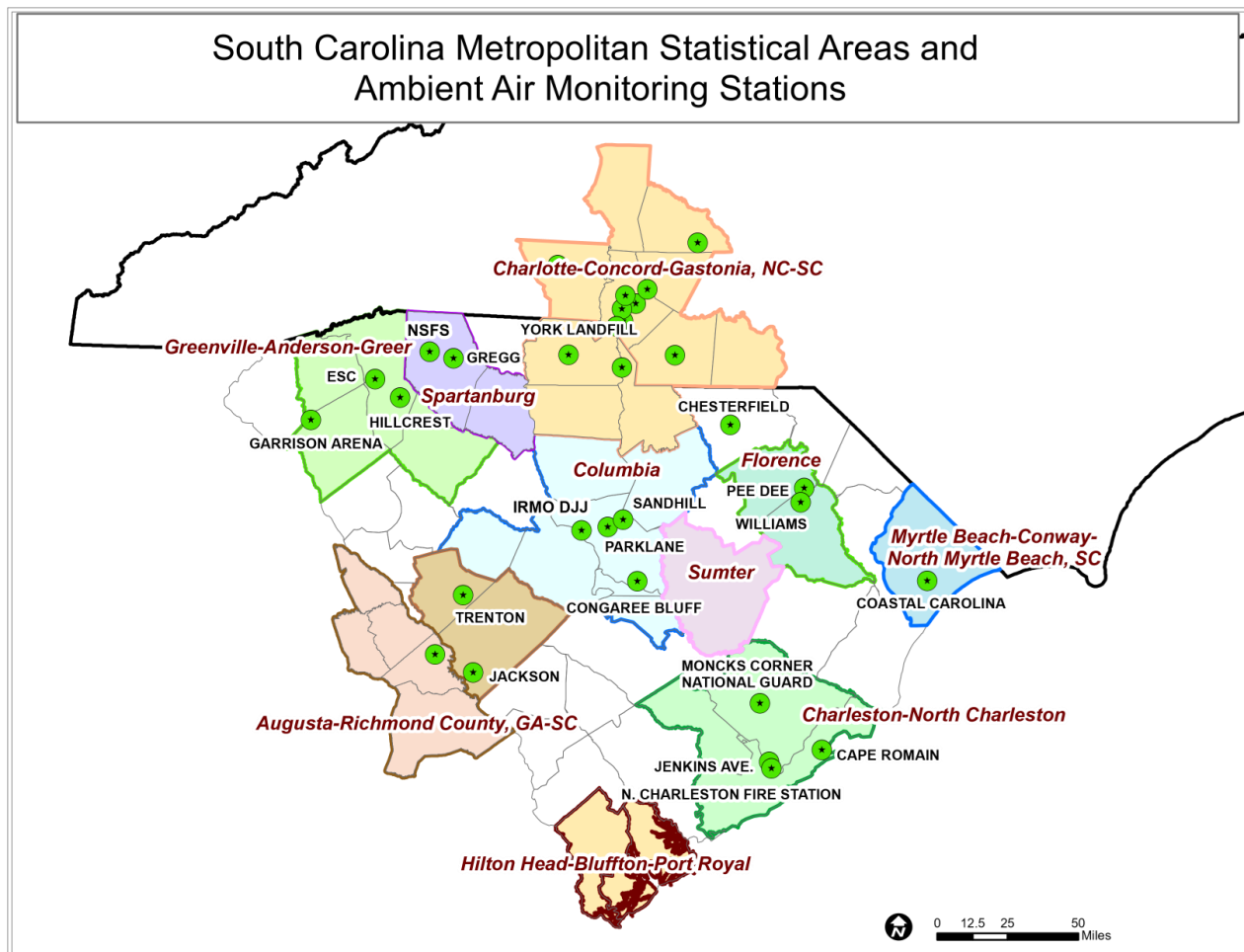
No changes planned.

Remainder of State

No changes planned.

Introduction

The Department or its predecessors have operated an air quality monitoring network in South Carolina since 1959. During that time, the network has continually evolved to meet the requirements and needs of the Department's Air Program and to comply with federal requirements. In 2025-2026, the network within South Carolina will be comprised of 59 monitors and samplers at 20 sites. The South Carolina Monitoring Sites can be seen in the map below.



The Annual Ambient Air Monitoring Network Plan

On October 17, 2006, the EPA published revisions to the ambient monitoring regulations (71 FR 61298) requiring quality assurance (QA), monitor designations, minimum requirements for both number and distribution of monitors among metropolitan statistical areas (MSAs), and probe siting changes. The regulations also included the requirement for the submission of an annual monitoring network plan and 5-year periodic network assessments.

This document constitutes the 2025-2026 South Carolina Annual Ambient Air Monitoring Network Plan (2025 Network Plan) and covers the eighteen-month period from July 1, 2025, through December 31, 2026. This 2025 Network Plan, as required and described in 40 CFR 58.10, and Periodic Network Assessment, must contain the following information for each monitoring station in the network:

- The Air Quality System (AQS) site identification number (ID) for existing stations,
- Location of each monitoring station, including street address and geographical coordinates,
- The sampling and analysis method used for each measured parameter,
- The operating schedule for each monitor,
- Any proposal to remove or relocate a monitoring station within a period of eighteen months following the network plan submittal,
- The monitoring objective and spatial scale of representativeness for each monitor,
- The identification of any sites that are suitable for comparison against the Particulate Matter < 2.5 microns (PM_{2.5}) National Ambient Air Quality Standard (NAAQS), and
- The MSA, Core-Based Statistical Area (CBSA), Combined Statistical Area (CSA), or other area represented by the monitor.

Each MSA and their monitoring sites are listed in the Site Description section. They are organized into two main parts:

- Network Summaries: A table which presents the total number of sites and monitors for the State and a list of all proposed changes to the current network, as well as descriptions of the monitoring network for each pollutant, and
- Air Monitoring Station Descriptions: An outline of the designations, parameters, monitoring methods, and the purpose for each monitor at the site.

The Monitoring Network is reviewed annually, and any planned changes are described in the annual Network Plan. Network Plans go through a 30-day public

review and comment period prior to submission to the EPA Region 4 Administrator.

Public Participation Opportunities

In response to public interest, prior to publication of documents, the Department solicits involvement from both internal (the Department) and external workgroups about the potential impact of the monitoring changes. Opportunities for public involvement include:

A webpage maintained for public review of draft publications, and access to current monitoring plan, reference documents, and announcements.¹

The proposed 2025 Network Plan was available for public review and comment from April 25, 2025, through May 27, 2025. All public comments received are summarized and addressed in Appendix B of the final 2025 Network Plan submitted to the EPA.

The Department is committed to the continuation of opportunities for input and participation in the development of the annual revisions of the Network Plan and the periodic assessments of the air quality surveillance system.

South Carolina Ambient Air Monitoring

South Carolina monitors for criteria pollutants, air toxics, meteorology, and precipitation. The following sections explain the role that the CBSA and MSA population and design values have in ambient air monitoring.

Population, MSAs, and Design Values

The EPA regulation 40 CFR Part 58 requires each state to maintain a minimum number of ambient air monitors to properly characterize air quality and to meet any required objectives of the air monitoring network.² In general, ambient air monitoring requirements are based on the Metropolitan Statistical Area (MSA) population, emissions, and current ambient air monitoring design values.

The current South Carolina MSA names, associated counties, and populations are listed below. An MSA's total population is derived by adding the separate populations of all the counties.

¹<https://gis.dhec.sc.gov/monitors/>

² 40 CFR 58.11 paragraph (a)(3)(c) and Appendix D to 40 CFR Part 58.

2024 South Carolina MSAs and Shared MSAs with Counties and 2023 Populations	
MSA Name and Counties Included in MSA	Population
Augusta-Richmond County, GA-SC MSA Burke County, GA Columbia County, GA Lincoln County, GA McDuffie County, GA Richmond County, GA Aiken County, SC Edgefield County, SC	629,429
Charleston-North Charleston, SC MSA Berkeley County, SC Charleston County, SC Dorchester County, SC	849,417
Charlotte-Concord-Gastonia, NC-SC MSA Anson County, NC Cabarrus County, NC Gaston County, NC Iredell County, NC Lincoln County, NC Mecklenburg County, NC Rowan County, NC Union County, NC Chester County, SC Lancaster County, SC York County, SC	2,805,115
Columbia, SC MSA Calhoun County, SC Fairfield County, SC Kershaw County, SC Lexington County, SC Richland County, SC Saluda County, SC	858,302
Florence, SC MSA Darlington County Florence County	199,630
Greenville-Anderson-Greer, SC MSA Anderson County, SC	975,480

2024 South Carolina MSAs and Shared MSAs with Counties and 2023 Populations	
MSA Name and Counties Included in MSA	Population
Greenville County, SC Laurens County, SC Pickens County, SC	
Hilton Head Island-Bluffton-Port Royal, SC MSA Beaufort County, SC Jasper County, SC	232,523
Myrtle Beach-Conway-North Myrtle Beach, SC MSA Horry County, SC	397,478
Spartanburg, SC MSA Spartanburg County, SC Union County, SC	383,327
Sumter, SC MSA Sumter County, SC	104,165

South Carolina has one MSA (Augusta-Richmond County, GA-SC) shared with Georgia and one MSA (Charlotte-Concord-Gastonia, NC-SC MSA) shared with North Carolina. In cooperation with the State of South Carolina, each of the two states have signed Memorandum of Agreements (MOA), which specifies the responsibilities of each party to develop a monitoring network that meets the appropriate monitoring objectives for the shared MSAs. The MOAs (located in Appendix F) are with the Georgia Department of Natural Resources Environmental Protection Division,³ the North Carolina Department of Environmental Quality Division of Air Quality, and Mecklenburg County, North Carolina Land Use and Environmental Services Agency⁴.

Once the MSA boundaries are determined by OMB and their populations are calculated, the ambient air monitors are established at ambient air monitoring sites within the MSAs as determined by federal regulations and EPA guidance for each

³ The Memorandum of Agreement on Air Quality Monitoring for Criteria Pollutants for the Augusta-Richmond County Metropolitan Statistical Area (MSA) was signed on March 6, 2017, by the South Carolina Bureau of Air Quality and the Georgia Environmental Protection Division-Air Protection Branch.

⁴ The Memorandum of Agreement on Air Quality Monitoring for Criteria Pollutants for the Charlotte-Gastonia-Concord Metropolitan Statistical Area (MSA) was signed on July 1, 2016, by the South Carolina Bureau of Air Quality, the North Carolina Department of Environmental and Natural Resources-Division of Air Quality and the Mecklenburg County, North Carolina Land Use and Environmental Service Agency-Air Quality.

pollutant.

Network Operation and Summary

The Division of Air Quality Analysis (DAQA) along with regional staff in the Bureau of Regional and Laboratory Services has the primary responsibility for the establishment, maintenance, and operation of the monitoring network using EPA designated Federal Reference Methods (FRM) or Federal Equivalent Methods (FEM). Samples collected as a part of routine monitoring or special projects are analyzed in the DAQA laboratory. Following the validation process, data is reported to the EPA's Air Quality System (AQS) database which is available for public access.

It is the Department's intent that all criteria pollutant monitors and samplers used for compliance monitoring be sited and operated in accordance with all requirements of 40 CFR Part 58, Appendix A, C, D, and E. Appendix G is also discussed below.

Appendix A: As specified in Appendix A, regular calibrations, flow verifications, and Quality Control (QC) checks of the measurement systems are performed to verify that the instruments are operating correctly, and data being collected is accurate. All monitors and samplers are calibrated at least once per year. Calibration is also performed whenever the monitor/sampler fails a routine Quality Control (QC)/precision check or a multi-point check, when maintenance is performed that may affect the monitor response, or if the monitor is located away from the building in which it was calibrated. Where possible, a QC/precision check or flow check precedes any maintenance that is expected to affect monitor response.

The QA activities supporting the Monitoring Network meet or exceed the QA requirements defined in 40 CFR Part 58, Appendix A. Raw data is collected hourly from sites across the state and provided to internal data users (forecasters and data analysts) and to the AIRNow database which is available to the public. Ozone monitors provide hourly data to AIRNow during Ozone Season (March 1-October 31).

Before the data is submitted to AQS, it is verified to meet quality QA/QC requirements through review of the instrument performance documentation. Instrument QA/QC alone is not sufficient to assure monitoring data quality. In addition to periodic site assessments, the Department conducts additional visits to monitoring sites to document comparisons with applicable siting criteria.

Appendix C: All criteria pollutant monitoring in the monitoring networks for comparison to the NAAQS is performed using the EPA designated FRM or FEM.

Appendix D: All criteria pollutant monitoring in the monitoring networks meets the monitoring objectives, spatial scales, and design criteria of this Appendix.

Appendix E: Each site description page in this document contains a statement addressing compliance to 40 CFR Part 58, Appendix E for State and Local Air Monitoring Station (SLAMS) monitors. If the site is not in compliance, a plan is presented to address the deficiency. For special purpose monitor (SPM) monitors, 40 CFR 58.20 states that compliance is optional, but monitoring organizations are encouraged to meet as many of the Appendix E requirements as possible.

Appendix G: The Air Quality Index (AQI) reporting is required if an MSA has a population over 350,000 people. Although not required, the Florence MSA also reports AQI values. The following MSAs report AQI values:

- Charlotte-Concord-Gastonia, NC-SC MSA
- Greenville-Anderson-Greer MSA
- Columbia MSA
- Charleston-North Charleston MSA
- Augusta-Richmond County, GA-SC MSA
- Myrtle Beach-Conway-North Myrtle Beach MSA
- Spartanburg MSA
- Florence MSA

The Mecklenburg County Air Quality reports AQI values for the Charlotte-Concord-Gastonia, NC-SC MSA. Both the Georgia Environmental Protection Division (GA EPD) and the Department report AQI values for the Augusta-Richmond County GA-SC MSA.

Finally, DAQA operates under the approved SCDES Quality Assurance Management Plan (QMP), the Ambient Air Quality Monitoring Quality Assurance Project Plan (QAPP), Particulate Matter (PM_{2.5}) QAPP, and approved plans for specific projects. The EPA Region 4 office may conduct audits of any component of the operation of the network or quality management system. DAQA also participates in the National Performance Audit Program (NPAP) and the Performance Evaluation Program (PEP) administered by the EPA to provide independent audits.

The NAAQS and Design Values

Although all monitoring measurement equipment may be referred to as monitors, there are actually two types of monitoring equipment. A “monitor” samples for data continuously, while a “sampler” monitors intermittently (e.g. once daily (1:1), once every 3 days (1:3), or once every 6 days (1:6)).

Once the monitors collect enough data (1 or 3 years, depending on criteria pollutant), a design value can be calculated and compared to the EPA established NAAQS, which are shown in the table below. The “Primary/Secondary” column in the table refers to the type of standard. A criteria pollutant may have more than one type of standard. The primary standards are for protection of the public’s health, while the secondary standards are for the protection of animals, crops, vegetation, and buildings. The “Averaging Time” is how the data is combined and calculated. The “Level” is the NAAQS standard. The “Form” are additional requirements to calculate the standard.

Pollutant	Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)	Primary	8 hours	9 ppm	Not to be exceeded more than once per year
		1 hour	35 ppm	
Lead (Pb)	Primary and Secondary	Rolling 3-month average	0.15 µg/m ³	Not to be exceeded
Nitrogen Dioxide (NO ₂)	Primary	1 hour	100 ppb	98 th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Primary and Secondary	1 year	53 ppb	Annual mean
Ozone (O ₃)	Primary and Secondary	8 hours	0.070 ppm	Annual fourth-highest daily maximum 8-hour concentration averaged over 3 years
PM _{2.5}	Primary	1 year	9.0 µg/m ³	Annual mean, averaged over 3 years
	Secondary	1 year	15.0 µg/m ³	Annual mean, averaged over 3 years
	Primary and Secondary	24 hours	35 µg/m ³	98 th percentile averaged over 3 years
PM ₁₀	Primary and Secondary	24 hours	150 µg/m ³	Not to be exceeded more than once per year
Sulfur Dioxide (SO ₂)	Primary	1 hour	75 ppb	99 th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Secondary	3 hours	10 ppb	Annual mean, averaged over 3 years ¹

¹The EPA promulgated the revised secondary SO₂ limit on December 11, 2024.

The criteria pollutant design values are calculated each year and compared to the standards to determine whether the MSA is in attainment for that criteria pollutant. The two tables presented below indicate the 2023 and 2024 certified design values for the South Carolina criteria pollutant monitoring network.

2023 Criteria Pollutant Design Values

Site ID	County	Site Name	Ozone (ppm)	PM _{2.5} Annual (µg/m ³)	PM _{2.5} 24-hour (µg/m ³)	PM ₁₀ (# Expected Exceedances)	SO ₂ 1-hour (ppb)	NO ₂ 1-hour (ppb)	NO ₂ Annual (ppb)	CO 8-hour (ppm)	CO 1-hour (ppm)	Lead (µg/m ³)
003-0003	Aiken	Jackson Middle School	.062									
007-0006	Anderson	Garrison Arena	.062									
015-1002	Berkeley	Moncks Corner	.060									
019-0003	Charleston	Jenkins Avenue					10	32*	6.58			
019-0046	Charleston	Cape Romain	.058					11*	1.23			
025-0001	Chesterfield	Chesterfield	.060	6.8	18							
031-0003	Darlington	Pee Dee	.062									
037-0001	Edgefield	Trenton	.059	8.1	18							
041-0003	Florence	Williams Middle		7.7	19							

Site ID	County	Site Name	Ozone (ppm)	PM _{2.5} Annual (µg/m ³)	PM _{2.5} 24-hour (µg/m ³)	PM ₁₀ (# Expected Exceedances)	SO ₂ 1-hour (ppb)	NO ₂ 1-hour (ppb)	NO ₂ Annual (ppb)	CO 8-hour (ppm)	CO 1-hour (ppm)	Lead (µg/m ³)
		School										
041-8003	Florence	Clarios Woods										.04*
045-0015	Greenville	Greenville ESC		8.4	19	0	2	39*	6.76			
045-0016	Greenville	Hillcrest Middle School	.066	7.9	19							
051-0008	Horry	Coastal Carolina	.063									
079-0007	Richland	Parklane	.062	7.4	17		2			1	1	
079-0021	Richland	Congaree Bluff	.057									
079-1001	Richland	Sandhill	.065					29*	3.24			
083-0009	Spartanburg	North Spartanburg Fire Station	.065									
083-0011	Spartanburg	T.K. Gregg		8.4	20							
091-0008	York	York County Landfill	.064									
* denotes design values that did not meet data completeness requirements												

2024 Criteria Pollutant Design Values

Site ID	County	Site Name	Ozone (ppm)	PM _{2.5} Annual (µg/m ³)	PM _{2.5} 24-hour (µg/m ³)	PM ₁₀ (# Expected Exceedances)	SO ₂ 1-hour (ppb)	NO ₂ 1-hour (ppb)	NO ₂ Annual (ppb)	CO 8-hour (ppm)	CO 1-hour (ppm)	Lead (µg/m ³)
003-0003	Aiken	Jackson Middle School	.061									
007-0006	Anderson	Garrison Arena	.063									
015-1002	Berkeley	Moncks Corner	.061									
019-0003	Charleston	Jenkins Avenue					9	33	6.02			
019-0046	Charleston	Cape Romain	.058									
025-0001	Chesterfield	Chesterfield	.061	7.3	18							
031-0003	Darlington	Pee Dee	.063									
037-0001	Edgefield	Trenton	.059	8.0	14							
041-0003	Florence	Williams Middle School		7.8	13							
041-8003	Florence	Clarios Woods										0.0*
045-	Greenville	Greenville		8.4	18	0	2	39	6.84			

Site ID	County	Site Name	Ozone (ppm)	PM _{2.5} Annual (µg/m ³)	PM _{2.5} 24-hour (µg/m ³)	PM ₁₀ (# Expected Exceedances)	SO ₂ 1-hour (ppb)	NO ₂ 1-hour (ppb)	NO ₂ Annual (ppb)	CO 8-hour (ppm)	CO 1-hour (ppm)	Lead (µg/m ³)
0015		ESC										
045-0016	Greenville	Hillcrest Middle School	.065	7.8	18							
051-0008	Horry	Coastal Carolina	.062									
079-0007	Richland	Parklane	.061	7.4	13		2			0.60	0.95	
079-0021	Richland	Congaree Bluff	.057									
079-1001	Richland	Sandhill	.064					29	3.44			
083-0009	Spartanburg	North Spartanburg Fire Station	.068									
083-0011	Spartanburg	T.K. Gregg		8.3	19							
091-0008	York	York County Landfill	.065									
* denotes design values that did not meet data completeness requirements												

Required Minimum Monitoring Summary

Based on the latest MSA population data and design values information, the minimum monitoring requirements for each MSA are:

MSA	Ozone	PM_{2.5}	PM_{2.5} Cont.	PM₁₀	Lead	SO₂	NO/NO_y/ NO₂	CO
**Augusta-Richmond County, GA-SC MSA	2	2	1	1-2	0	0	0	0
Charleston-North Charleston MSA	2	1	1	1-2	0	1	0	0
Charlotte-Concord-Gastonia, NC-SC MSA	2	3	2	2-4	0	1	4*	2
Columbia MSA (NCore)	2	1	1	1-2	0	0	1	1
Florence MSA	1	1	1	0	0	0	0	0
Greenville-Anderson-Greer MSA	2	2	1	1-2	0	0	1	0
Hilton Head Island-Bluffton-Port Royal MSA	0	0	0	0	0	0	0	0
Myrtle Beach-Conway-North Myrtle Beach, SC MSA	2	0	0	0-1	0	0	0	0
Spartanburg MSA	2	1	1	0-1	0	0	0	0
Sumter MSA	0	0	0	0	0	0	0	0
*United States Census Bureau population estimates and 40 CFR Part 58, Appendix D. **Minimum ambient air monitoring requirements are met cooperatively with the States of Georgia and North Carolina. ***The Charlotte-Concord-Gastonia MSA is required to have two near-road monitors, one area-wide monitor, and a NO_y at the NCore site.								

South Carolina also measures air toxics and meteorology. The table below summarizes the 2025-2026 Ambient Air Monitoring Network.

Network Summary: Calendar Year July 1, 2025, through December 31, 2026, Air Monitoring Stations and Monitors																		
Region	Sites	PM _{2.5} Intermittent	PM _{2.5} Continuous	PM _{2.5} Speciation	PM ₁₀	Lead	Ozone	SO ₂	NO ₂ /NO/NO _x	CO	Metals	Carbonyls	SVOC	VOC	EtO	Precipitation Chem.	Precipitation	Meteorology
*Augusta-Richmond County, GA-SC MSA	2	1	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
Charleston-North Charleston MSA	4	2	2	0	1	0	2	1	1	0	0	0	0	0	0	0	0	1
*Charlotte-Concord-Gastonia, NC-SC MSA	1	0	0	0	0	0	1	1**	0	0	0	0	0	0	0	0	0	0
Columbia MSA	4	3	2	1	2	0	3	1	2	1	0	0	0	0	0	1	1	1
Florence MSA	2	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Greenville-Anderson-Greer MSA	3	3	1	0	1	0	2	1	1	0	0	0	0	0	0	0	0	0
Myrtle Beach-Conway-North Myrtle Beach, SC MSA	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Spartanburg MSA	2	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Remainder of State	1	1	1	0	0	0	1	0	0	0	2	2	2	2	1	0	0	0
Totals	20	12	10	1	4	0	14	4*	4	1	2	2	2	2	1	1	1	2
*Minimum ambient air monitoring requirements are met cooperatively with the States of Georgia and North Carolina.																		
**These monitors have been selected to run on a rotational schedule in order to best utilize resources. The monitor will be moved from York Landfill Monitoring Site to Trenton Monitoring Site as of January 1, 2026.																		

Monitoring Network Descriptions

The following sections describe each South Carolina Monitoring Network, including the location of each monitor, how the network meets the required objectives, and how the pollutant is measured.

Carbon Monoxide (CO) Network

CO is a colorless, odorless gas that can be harmful when inhaled in large amounts. CO is released when something is burned.

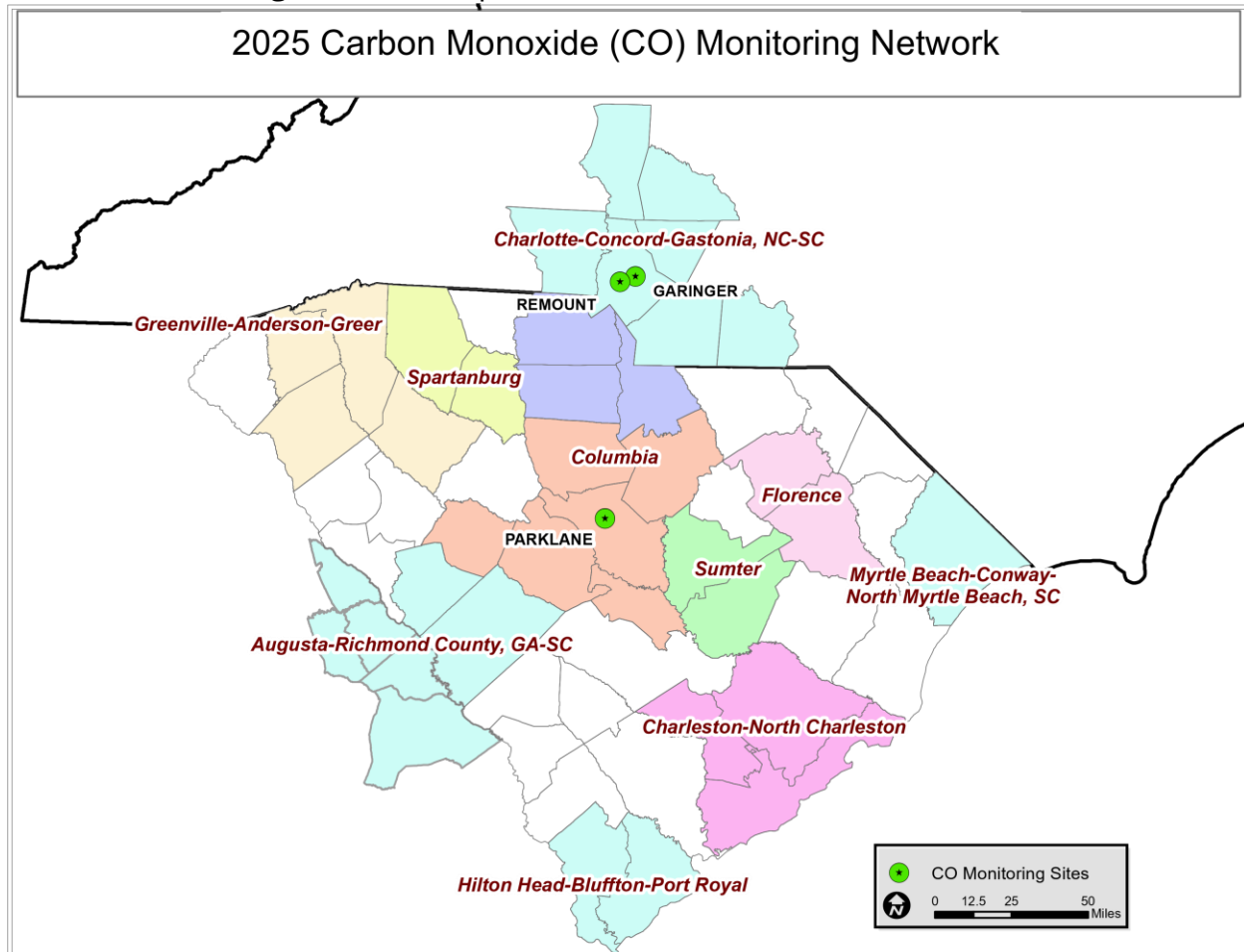
CO has a one-hour NAAQS of 35 ppm and an eight-hour NAAQS of 9 ppm.

Minimum Requirements –

The CO minimum monitoring criteria has two requirements:

- 1) Near-road CO Monitors – Each state with CBSAs having a population of 1,000,000 or more people must have one CO monitor collocated with one required near-road NO₂ monitor to be operational by January 1, 2017. The Charlotte-Concord-Gastonia, NC-SC MSA is the only CBSA in South Carolina that meets the population requirement for a collocated CO monitor. The Mecklenburg County Air Quality office operates a CO monitor at the Remount Road Monitoring Site in Charlotte, North Carolina that became operational on January 1, 2017.
- 2) NCore Requirement – Each NCore site in a CBSA with a population of 500,000 or more must include a CO monitor. The Parklane Monitoring Site in the Columbia, SC MSA is the NCore site for South Carolina and supports one CO monitor. The Garinger Monitoring Site in Mecklenburg County is also an NCore site for the Charlotte-Concord-Gastonia, NC-SC MSA and supports a CO monitor.

The CO Monitoring Network Map below indicates the location of the monitors.



Analytical Methods –

FRM non-dispersive infrared correlation monitors are used for continuous monitoring of CO concentrations in ambient air. CO monitors are operated in accordance with SCDES's Quality Assurance Project Plan for Ambient Air Quality Monitoring. Data is stored locally on redundant data acquisition systems and recovered hourly by the DAQA central office computer system (AirVision).

Lead Network

Lead may be found in small quantities naturally in the environment or produced in man-made products like gasoline or paint. Exposure to lead can cause neurological damage.

There are three requirements for the minimum monitoring criteria. They are as follows:

1. Non-airport lead source – The minimum monitoring criteria found in 40 CFR Part 58, Appendix D, Section 4.5 requires that there must be one source-oriented monitor located to measure the maximum lead concentration at each non-airport lead source which emits 0.050 or more tons per year. South Carolina does not have any sources that exceed these thresholds.
2. Airport lead source – There must be one source-oriented monitor located to measure the maximum lead concentration from each airport which emits 1.0 or more tons per year. South Carolina does not have any sources that exceed these thresholds.
3. Collocation requirement – The lead collocation requirement found in 40 CFR Part 58, Appendix A, Section 3.4.4. requires 15 percent of the primary monitoring (not counting non-source oriented NCore sites in the primary quality assurance organization (PQAO)) to be collocated and have at least one collocated monitor, if the total number of monitors is less than three. South Carolina has no lead monitors, and thus no lead collocation requirements.

Court Ordered Monitoring –

On May 7, 2010, the Department issued an air synthetic minor construction permit to Johnson Controls Battery Group for the Florence Recycling Center (Permit No. 1040-0129-CA). The company has since been purchased by Clarios, LLC. Originally, under a settlement agreement⁵ with several petitioners, the Florence Recycling Center had to support source-oriented ambient lead monitoring conducted by the Department at three sites around the facility. The Monitoring Sites were originally called JCI-Entrance, JCI-Railroad, and JCI-Woods. Later renamed Clarios-Woods.

⁵https://scdhec.gov/sites/default/files/docs/HomeAndEnvironment/Docs/JCI/JCI-Settlement%20Agreement_07142010.pdf

Clarios ceased production at the Florence Recycling Center as of March 22, 2021. The Department discontinued monitoring at the JCI Railroad and JCI Entrance Monitoring Sites on November 8, 2021. The Department discontinued monitoring at the Clarios-Woods Monitoring Site on March 26, 2025.

Analytical Methods –

Lead samples were collected using high volume total suspended particulate (TSP) samplers. Lead samplers were operated in accordance with the Department's Quality Assurance Project Plan for Johnson Controls Recycling Center (Clarios) Lead Monitoring Project. Lead filter samples were sent to an EPA contract laboratory for extraction and analysis of concentrations. Particulate samples were extracted using hot block acid digestion and analyzed by Inductively Coupled Plasma Mass Spectroscopy (ICP/MS).

Nitrogen Dioxide Network

Nitrogen Dioxide (NO₂) is a highly reactive gas that is used as an indicator for the larger group of nitrogen oxides. NO₂ in the air primarily comes from burning fossil fuels. Breathing air with a high concentration of NO₂ can cause respiratory issues.

Nitrogen Dioxide has a one-hour NAAQS of 100 ppb and an annual mean NAAQS of 53 ppb.

Minimum Requirements –

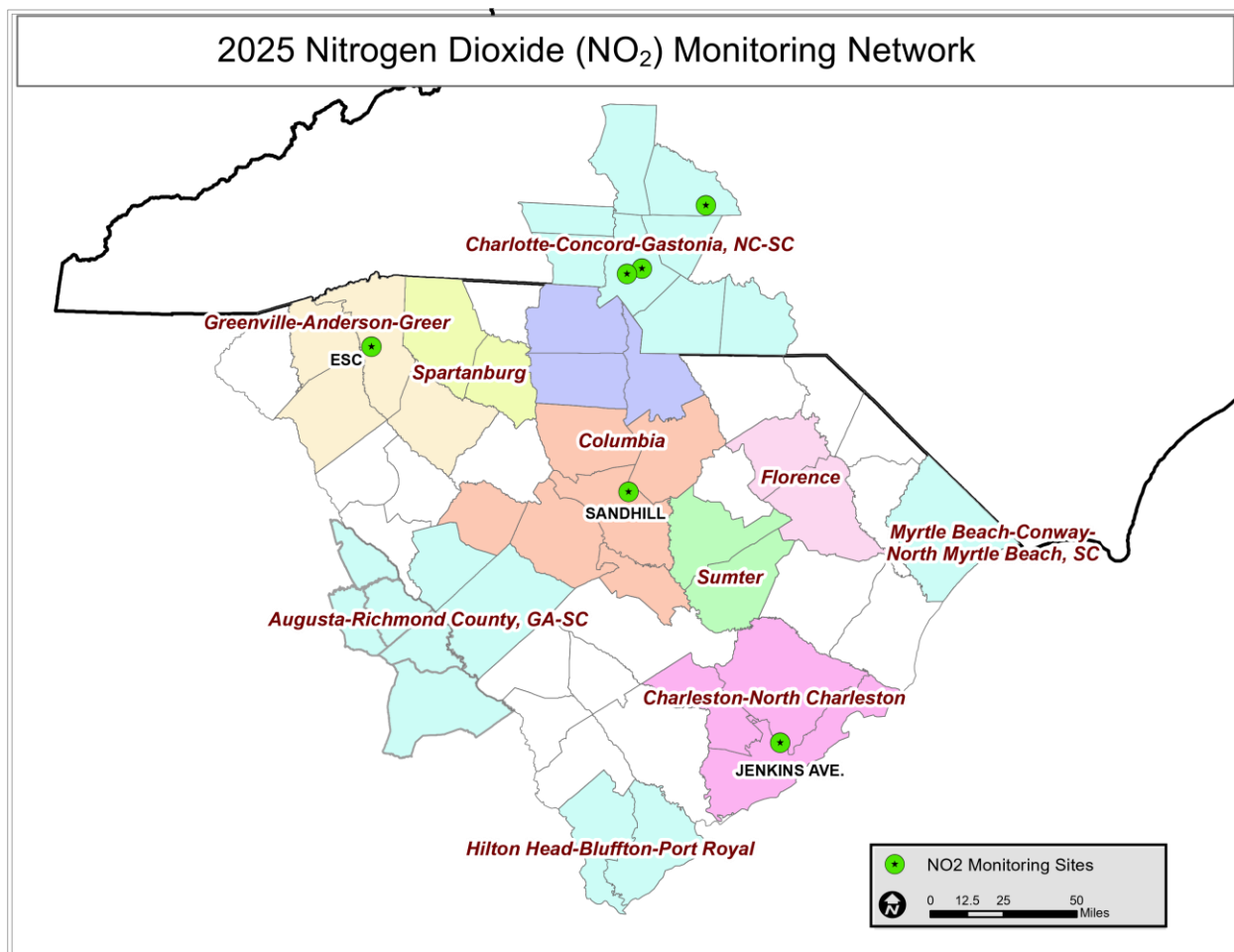
The NO₂ minimum monitoring criteria has four requirements:

- 1) Near-road NO₂ Monitors – Each state must have one microscale near-road NO₂ monitoring site in each CBSA with a population of at least 1,000,000 or more persons. An additional near-road NO₂ monitoring site is required for any CBSA with a population of 2,500,000 or more, or in any CBSA with a population of 1,000,000 or more that has one or more roadway segments with 250,000 or greater Annual Average Daily Traffic (AADT) counts. The Charlotte-Gastonia-Concord NC-SC MSA meets the population requirement of at least 2,500,000 or more persons. The first near-road site is the Remount Road Monitoring Site located in Charlotte, North Carolina. The second near-road monitoring site is the Equipment Drive Monitoring Site, which is also located in Charlotte, North Carolina, and began operation on January 22, 2024.
- 2) Area-Wide NO₂ Monitoring – Each state must have one monitoring site in each CBSA with a population of 1,000,000 or more persons which will monitor a location of expected highest NO₂ concentrations representing the

neighborhood or larger spatial scales. The Garinger High School Monitoring Site in the Charlotte-Gastonia-Concord, NC-SC MSA operates an area wide NO₂ monitor. The Rockwell (37-159-0021) Site in North Carolina also operates an SPM NO₂ monitor at the urban scale for the purpose of AQI reporting.

- 3) Regional Administrator Required Monitoring – The Regional Administrators, in collaboration with states, require a minimum of forty additional NO₂ monitoring sites above the minimum monitoring requirements (nationwide) in any area, with a primary focus on siting these monitors in locations to protect susceptible and vulnerable populations. The Greenville ESC Monitoring Site is a Regional Administrator Required Monitoring site.
- 4) NCore Requirement (NO/NO_y Monitoring) – Each NCore site must include a NO/NO_y monitor that will collect data to be used to produce conservative estimates for NO₂ and further ozone research. The Parklane Monitoring Site in Columbia, South Carolina is the NCore site for South Carolina. The Garinger High School Monitoring Site in Mecklenburg County is also an NCore site for the Charlotte-Concord-Gastonia, NC-SC MSA and supports a NO/NO_y monitor.

The NO₂ Monitoring Network Map below indicates the location of the monitors.



Analytical Methods –

Nitrogen Dioxide (NO₂) – The FRM gas-phase chemiluminescence monitors are used for continuous monitoring of NO₂ concentrations in ambient air. The FRM gas-phase chemiluminescence NO₂ monitors directly measure NO and indirectly measure both NO₂ and NO_x. The NO₂ monitors are operated in accordance with the Department's Quality Assurance Project Plan for Ambient Air Quality Monitoring. The continuous data output from the instrument is stored locally on redundant data acquisition systems and recovered hourly by a central office computer system (AirVision).

Sulfur Dioxide Network

SO₂ is a gas and is used as an indicator for the larger group of sulfur oxides. The largest source of SO₂ in the atmosphere is the burning of fossil fuels by power plants and other industrial facilities. Short-term exposures to SO₂ can harm the respiratory system and make breathing difficult.

Sulfur dioxide has two NAAQS standards. The primary standard is the 99th percentile of 1-hour daily maximum concentrations at a level of 75 ppb. The secondary standard is a 3-hour average at a level of 10 ppb.

Minimum Requirements –

The SO₂ minimum monitoring criteria has three requirements:

1) Monitoring by the Population Weighted Emissions Index – The population weighted emissions index (PWEI) is determined using the most current population of each CBSA and the most recent level of SO₂ emissions for each county within the CBSA. The emissions data is available from the National Emissions Inventory. For any CBSA with a calculated PWEI value equal to or greater than 1,000,000, a minimum of three SO₂ monitors are required. For any CBSA with a calculated PWEI value equal to or greater than 100,000, but less than 1,000,000, a minimum of two SO₂ monitors are required. For any CBSA with a calculated PWEI value equal to or greater than 5,000, but less than 100,000, a minimum of one SO₂ monitor is required.

The following table presents each CBSA's 2024 population, 2017 SO₂ emissions, calculated index, and minimum monitoring requirements. The process for calculating the index can be found at the bottom of the table.

CBSA	2023 CBSA Population	2020 CBSA SO₂ Emissions (Tons)	PWEI	SO₂ Minimum Monitors Required
*Charlotte-Concord-Gastonia, NC-SC	2,805,115	6,244.53	17,517	1
Greenville-Anderson-Greer, SC	975,480	603.99	589	0
Columbia, SC	858,302	2490.33	2,137	0
Charleston-North Charleston, SC	849,417	7502.77	6,373	1
*Augusta-Richmond County, GA-SC	629,429	3698.37	2,328	0

CBSA	2023 CBSA Population	2020 CBSA SO₂ Emissions (Tons)	PWEI	SO₂ Minimum Monitors Required
Myrtle Beach-Conway-North Myrtle Beach, SC	397,478	167.20	66	0
Spartanburg, SC	383,327	275.77	106	0
Hilton Head Island-Bluffton-Port Royal, SC	232,523	323.65	75	0
Florence, SC	199,630	776.35	155	0
Sumter, SC	104,165	246.51	26	0
The PWEI is calculated using the latest US Census population data and the latest NEI county level data. The population for each CBSA is multiplied by the CBSA total SO₂ emissions (reported in tons using the latest National Emissions Inventory data). This product is divided by 1,000,000 to derive the index. A CBSA with index greater than 1,000,000 will require three monitors. CBSA with index less than 1,000,000 but greater than 100,000 will require two monitors. CBSA with index less than 100,000 but greater than 5,000 will require one monitor. CBSA with index less than 5,000 will require no monitors. *Monitors may be operated in the non-South Carolina portion of the CBSA.				

In the Charleston-North Charleston MSA, the Jenkins Ave. Fire Station Monitoring Site hosts the required SO₂ monitor. The Department also operates an additional SLAMS monitor in the Greenville ESC Monitoring Site located in the Greenville-Anderson-Greer MSA. The Garinger High School Monitoring Site in North Carolina fulfills the minimum monitoring requirements for the Charlotte-Concord-Gastonia, NC-SC MSA.

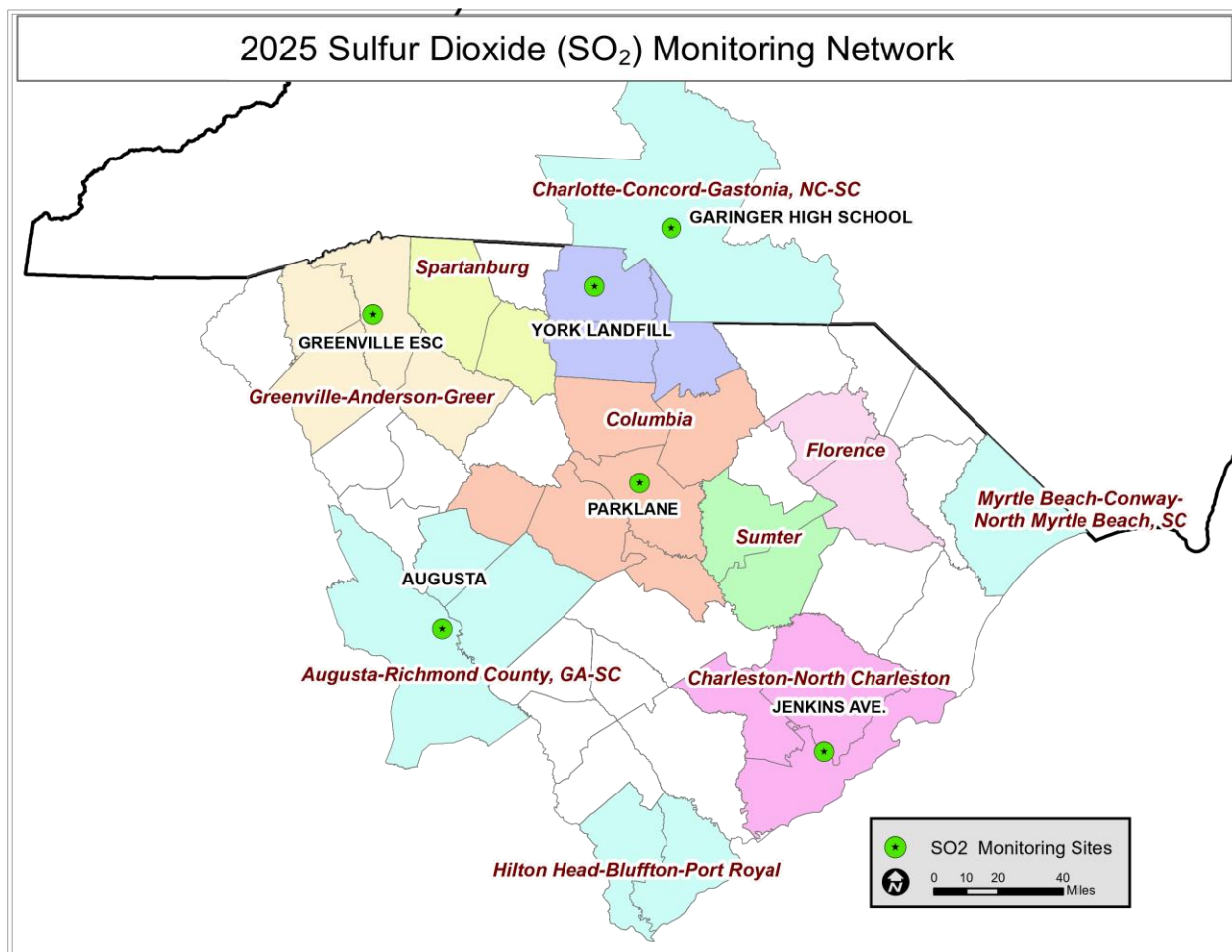
2) Regional Administrator Required Monitoring – The Regional Administrator may require additional SO₂ monitoring sites above the minimum number of monitors required by the PWEI in areas that have the potential to have high SO₂ concentrations, in areas impacted by sources which are not conducive to modeling, or in locations with susceptible and vulnerable populations that are not otherwise being monitored. South Carolina does not have any SO₂ Regional Administrator Required Monitoring.

3) NCore Requirement – Each NCore site must include an SO₂ monitor. The Parklane Monitoring Site in Columbia, South Carolina is the NCore site for South Carolina. The Garinger High School Monitoring Site in Mecklenburg County is also an NCore site for the Charlotte-Concord-Gastonia, NC-SC MSA and supports a SO₂ monitor.

The Department also operates one additional rotating SPM SO₂ monitor at the York

Landfill Monitoring Site. Rotational monitors operate for approximately two consecutive years in one location and then are moved to a new site. The York Monitoring Site is scheduled to operate an SO₂ monitor in 2024 and 2025. The Trenton (45-037-0001) monitoring site in the Augusta-North Augusta, GA-SC MSA will host the rotational SO₂ monitor in 2026 and 2027.

The SO₂ Monitoring Network Map below indicates the location of each SO₂ monitor.



Analytical Methods –

The FEM ultraviolet (UV) fluorescence monitors are used for continuous monitoring of SO₂ concentrations in ambient air. SO₂ monitors are operated in accordance with the Department's Quality Assurance Project Plan for Ambient Air Quality Monitoring. The continuous data output from the instrument is stored locally on redundant data acquisition systems and recovered hourly by central office computer system (AirVision).

Ozone Network

Ground level ozone is created by chemical reactions between nitrogen oxides (NO_x) and volatile organic compounds (VOC) in the presence of sunlight. Breathing in high levels of ozone can cause respiratory issues, especially in vulnerable populations, the elderly, and children.

Ozone has one eight-hour three-year design value NAAQS level that is 0.070 ppm.

Minimum Requirements –

The ozone minimum monitoring criteria has two requirements:

- 1) Required Ozone SLAMS Sites – A minimum number of required ozone SLAMS sites for each CBSA that is determined by CBSA population and the peak ozone concentrations.
- 2) NCore Requirement – Each NCore site must include an ozone monitor. The Parklane Monitoring Site in Columbia, South Carolina is the NCore site for South Carolina. The Garinger High School Monitoring Site in Mecklenburg County is also an NCore site for the Charlotte-Concord-Gastonia, NC-SC MSA and supports an ozone monitor.

The number of required ozone SLAMS sites for each CBSA and the site where each monitor is located is summarized below.

Augusta-Richmond County GA-SC – Two required monitors

Two SLAMS monitors are located at the Jackson Middle School and Trenton Sites. Two additional SLAMS sites are operated in Georgia by the Georgia Environmental Protection Division: Augusta Monitoring Site and Evans Monitoring Site.

Charleston-North Charleston, SC – Two required monitors

The two required SLAMS monitors are located at the Moncks Corner National Guard and Cape Romain Monitoring Sites.

Charlotte-Concord-Gastonia, NC-SC – Two required monitors

South Carolina operates one of the required monitors at the York Landfill Monitoring Site. Five additional SLAMS monitors for the CBSA are located in the Charlotte Metro area and are operated by the North Carolina Department of Air Quality and Mecklenburg County Air Quality. These Sites include ozone monitors at the Crouse, Garinger, University Meadows, Rockwell, and Monroe Monitoring Sites.

Columbia, SC MSA – Two required monitors

The two required SLAMS monitors are located at the Parklane and Sandhill Monitoring Sites. There is an additional ozone SPM at the Congaree Bluff Monitoring Site.

Florence, SC MSA – One required monitor

The required SLAMS monitor is located at the Pee Dee Experimental Station Monitoring Site.

Greenville-Anderson-Greer, SC MSA – Two required monitors

The two required SLAMS monitors are located at the Garrison Arena and Hillcrest Monitoring Sites.

Hilton Head Island-Bluffton-Port Royal, SC MSA – No required monitors

Myrtle Beach-North Myrtle Beach-Conway, SC MSA – Two required monitors

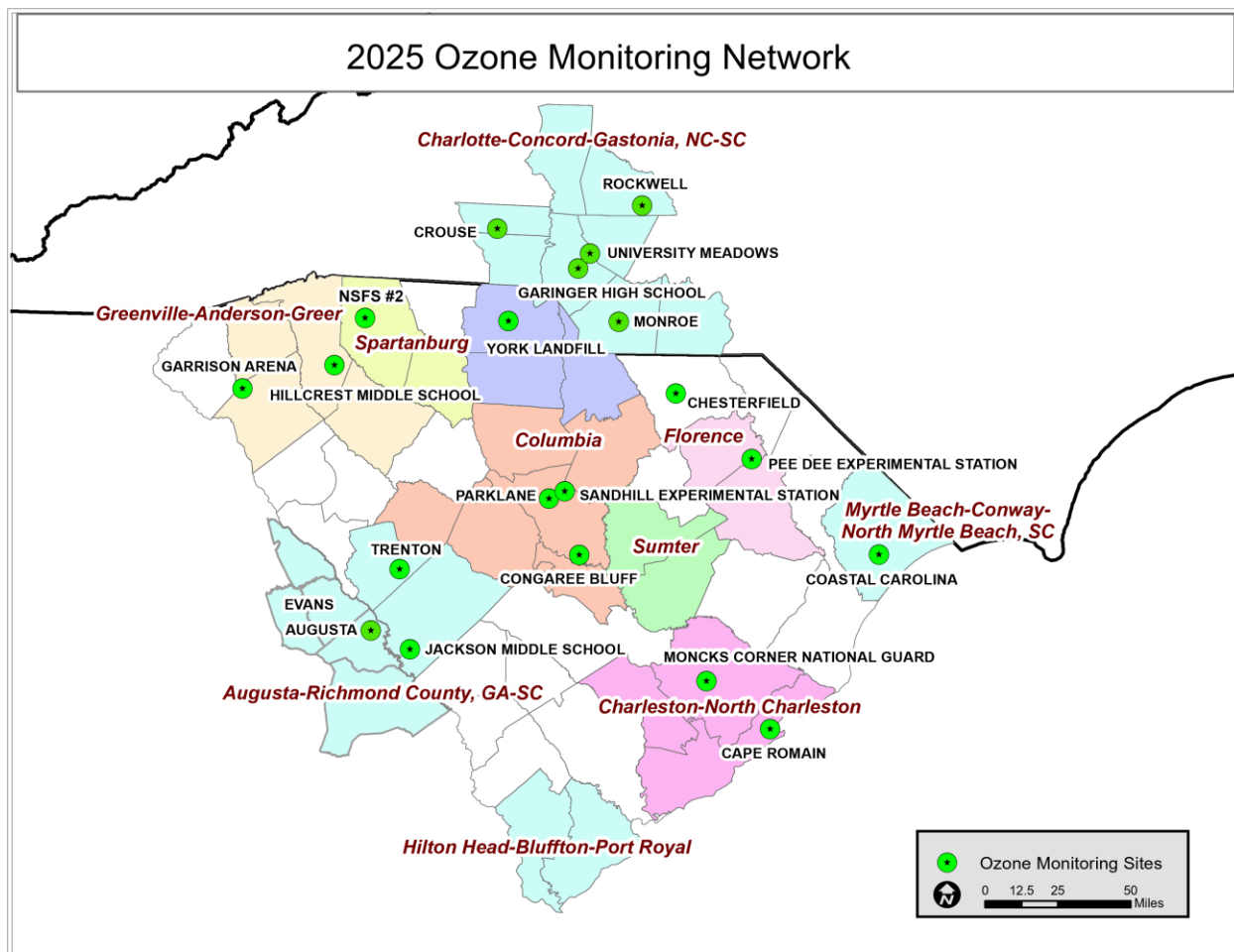
One required SLAMS monitor is located at the Coastal Carolina Monitoring Site. The Department has started the process of finding an appropriate site for a second ozone monitor in the MSA.

Spartanburg, SC MSA – Two required monitors

One required monitor is located at the North Spartanburg Fire Station Monitoring Site. The Department is currently in the process of finding an appropriate location for the second ozone monitoring site.

Sumter, SC MSA – No required monitors

The Ozone Monitoring Network map below indicates the location of the monitors.



Analytical Methods –

The FEM UV photometry monitors are used for continuous monitoring of ozone concentrations in the ambient air. Ozone monitors are operated in accordance with the Department's Ambient Air Quality Monitoring QAPP. The continuous data output from the instrument is stored locally on redundant data acquisition systems and recovered hourly by the central office computer system (AirVision). Effective October 12, 2023 (88 FR 70598), the absorption cross-section value used for ozone measurement via UV photometry was updated to 304.39 atm⁻¹ cm⁻¹ (CCQM.O3.2019). All monitors in the SCDES ozone network were made traceable to CCQM.O3.2019 prior to the start of the 2025 ozone season.

PM_{2.5} Network

Particulate matter (PM) is not a single pollutant, but a complex mixture of many liquid and solid chemicals in the air. For regulatory and scientific use, air particles are defined by their size. Fine particulate matter (PM_{2.5}) is defined as particles that are 2.5 microns or less in diameter. Some of the sources of PM_{2.5} are chemical reactions of gases, smoke from fires, industrial processes, vehicle emissions and dust. PM_{2.5} can cause respiratory and heart issues.

The Department began operating Teledyne T640 (method code 236) and T640X (method code 238) FEM monitors in 2020 to collect continuous PM_{2.5} data at multiple sites throughout the state. It became apparent that these monitors showed a significantly higher bias when compared to FRM samplers. On June 13, 2023, Teledyne released a data alignment firmware update that was meant to correct this bias and make the data collected by the T640 and T640X more comparable to the FRM samplers. On September 6, 2023, the Department applied this firmware update to all T640 and T640X monitors, which changed their method codes to 636 and 638, respectively. All data collected by the T640 and T640X monitors before the firmware update (method codes 236 and 238) have had a NAAQS Exclusion applied by EPA, and bias corrected data for this period has been uploaded to AQS by EPA under method codes 736 and 738. All data aligned T640 and T640X monitors (method codes 636 and 638), excluding those located at the Cape Romain, Coastal Carolina, and Chesterfield Monitoring Sites, will also have a NAAQS Exclusion applied for up to 23 months after the firmware update to evaluate the comparability of the new method code to the FRM samplers. Data quality will be addressed at the end of the NAAQS Exclusion time period.

In 2023, the 2012 PM_{2.5} annual mean NAAQS was 12.0 µg/m³ with a 24-hour NAAQS of 35 µg/m³. As of February 07, 2024, the EPA lowered the PM_{2.5} annual mean NAAQS to 9.0 µg/m³ and the 24-hour NAAQS of 35 µg/m³ was retained.

The PM_{2.5} minimum monitoring criteria has seven requirements:

- 1) Required PM_{2.5} SLAMS sites – A minimum number of required PM_{2.5} SLAMS sites for each CBSA.
- 2) Collocated Requirement – Collocated monitors are two PM_{2.5} monitors that are located at the same monitoring site and compared to ensure that high quality data is being collected. The Department is required to collocate at least 15 percent of the monitors of a method code for each distinct primary monitor method code

it operates. Method codes are a way to categorize the different methods that the monitors use to collect data. The Department operates one primary FEM monitor with method code 636 and one primary FRM sampler with method code 145. Based on the number of monitors operated by the Department, each primary method code requires one collocated monitor. The collocation requirement is met for method code 145 at the Hillcrest, Parklane, and North Charleston Fire Station Monitoring Sites. The collocation requirement is met for the method code 636 at the Chesterfield Monitoring Site.

In addition, primary FRM samplers designated for collocation must be collocated with another FRM, and for primary FEM monitors designated for collocation, 50 percent must be collocated with an FRM and 50 percent must be collocated with an FEM of the same method code. At each of the sites mentioned, the QA collocated monitor is an FRM. Since there is only one required collocated monitor for each method code, this meets the required ratio between FRM and FEM collocated monitors. The details of each monitor, their method codes, and the primary monitor and collocation status of site can be seen in more detail in the Site Description section of this 2025 Network Plan.

- 3) Continuous Monitoring – A continuous PM_{2.5} monitoring requirement which is equal to at least one-half (round up) the minimum required sites listed in Table D-5 to 40 CFR Part 53, Appendix D. At least one required continuous analyzer in each MSA must be collocated with one of the required FRM/FEM monitors, unless at least one of the required FRM/FEM monitors is itself a continuous FEM monitor in which case no collocation requirement applies.
- 4) Regional Background and Transport – At least one PM_{2.5} site must be established in each state to monitor for regional background and at least one PM_{2.5} site to monitor regional transport. The Cape Romain Monitoring Site in Charleston County is the regional background site, and the Chesterfield Monitoring Site in Chesterfield County is the regional transport site.
- 5) NCore Requirement – Each state is required to operate at least one NCore site which measures PM_{2.5} using both continuous and integrated/filter-based samplers. The Parklane Monitoring Site in Columbia, South Carolina is the NCore site for South Carolina. The Garinger High School Monitoring Site in Mecklenburg County is also an NCore site for the Charlotte-Concord-Gastonia, NC-SC MSA and supports the required PM_{2.5} monitors.

- 6) Near-road PM_{2.5} Monitoring – The EPA required the collocation of one PM_{2.5} monitor with a near-road NO₂ monitor in urban areas having populations of 1,000,000 or more by January 1, 2017. The Charlotte-Concord-Gastonia, NC-SC MSA is the only MSA in South Carolina that met the population requirement for a collocated PM_{2.5} monitor. The near-road monitoring requirement for the Charlotte-Concord-Gastonia, NC-SC MSA is being fulfilled at the Remount Road Monitoring Site by the Mecklenburg County Air Quality Commission.

The required number of PM_{2.5} SLAMS monitors and continuous monitors for each CBSA and the site where each monitor is located is summarized below.

Augusta-Richmond County, GA-SC MSA – Required: two SLAMS monitors, one continuous monitor

One required SLAMS site is the Trenton Monitoring Site, which has one FRM sampler as the required SLAMS monitor and one continuous monitor. The additional required SLAMS monitor is located at the Augusta Monitoring Site in Georgia, operated by the Georgia Environmental Protection Division.

Charleston-North Charleston, SC MSA – Required: one SLAMS monitor, one continuous monitor

There are two SLAMS monitors located in this CBSA. The North Charleston Fire Station Monitoring Site operates two SLAMS FRM samplers and one continuous SPM monitor. The Cape Romain Monitoring Site is the PM_{2.5} background site for the state and operates one continuous SLAMS monitor.

Charlotte-Concord-Gastonia, NC-SC MSA – Required: two SLAMS monitors, one continuous monitor

All required monitors for this CBSA are operated in North Carolina. The Monitoring Sites in North Carolina are the Garinger High School, Remount Road, Friendship Park, and Rockwell Monitoring Sites. Each of these Sites operates a continuous monitor.

Columbia, SC MSA – Required: one SLAMS monitor, one continuous monitor

There are four SLAMS monitors located in this CBSA. At the Parklane Monitoring Site, there are two SLAMS FRM samplers and one continuous SLAMS monitor. The Irmo DJJ Monitoring Site operates one SLAMS FRM and one continuous SPM monitor.

Florence, SC MSA – Required: one SLAMS monitor, one continuous monitor

There is one SLAMS FRM and one continuous SPM monitor located at the Williams Monitoring Site.

Greenville-Anderson-Greer, SC MSA – Required: two SLAMS monitors, one continuous monitor

There are three SLAMS monitors and one SPM in this CBSA. Two SLAMS FRM samplers are located at the Hillcrest Monitoring site. One SLAMS FRM and one SPM continuous monitor is located at the Greenville ESC Monitoring Site.

Hilton Head Island-Bluffton-Port Royal, SC MSA – No required monitors

Myrtle Beach-North Myrtle Beach-Conway, SC MSA – No required monitors

The Coastal Carolina Monitoring Site has one SPM continuous monitor.

Spartanburg, SC MSA – Required: one SLAMS monitor, one continuous monitor

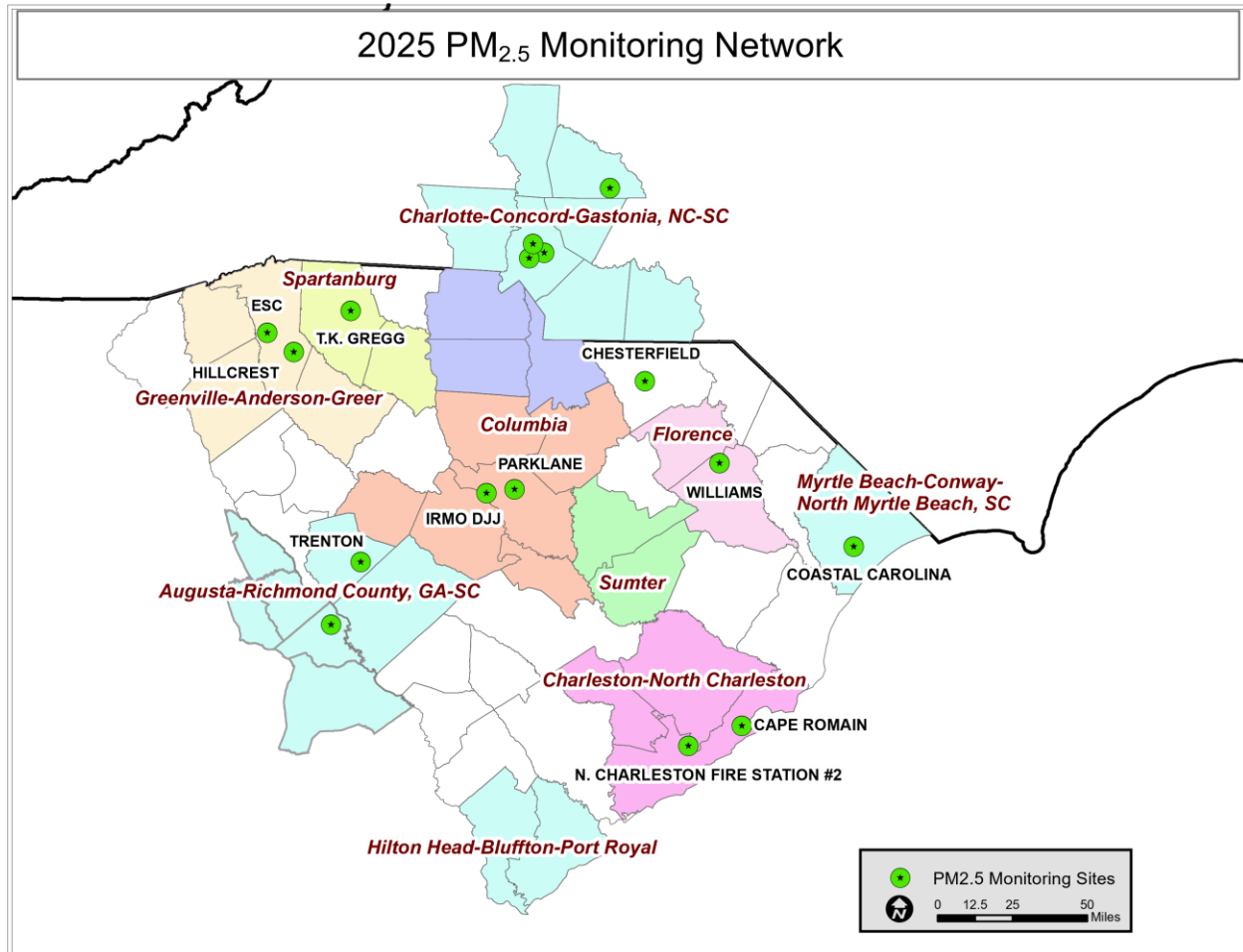
The T.K. Gregg Monitoring Site has one SLAMS FRM and one continuous SPM monitor.

Sumter, SC MSA – No required monitors

Chesterfield County (not in an MSA) – Required: one required monitor

The Chesterfield Monitoring Site is the PM_{2.5} regional transport site for the state and operates one FRM and one continuous monitor.

The PM_{2.5} Monitoring Network map below indicates the location of each PM_{2.5} monitor.



Analytical Methods – The network consists of both PM_{2.5} monitors and PM_{2.5} samplers. The analytical method for each one is described below.

- a) All PM_{2.5} samplers operated by the Department for comparison to the NAAQS are designated FRM samplers. The PM_{2.5} sampler operation, sample collection, and sample analysis are done in accordance with the Department's Quality Assurance Project Plan for the PM_{2.5} Ambient Air Monitoring Program.
- b) Continuous PM_{2.5} monitors, unless designated a FEM, do not provide concentration data suitable for comparison to the NAAQS. Non-FEM continuous monitors that provide reasonably comparable measurements may be used to provide data for calculation of an area AQI. Continuous PM_{2.5} monitors provide continuous concentration measurements every day. All PM_{2.5} monitors operated by the Department for comparison to the NAAQS are

designated FEM monitors using the broadband spectroscopy method. The continuous PM_{2.5} monitors are operated in accordance with the Department's Quality Assurance Project Plan for the PM_{2.5} Ambient Air Monitoring Program. Concentration measurements are averaged over 1-minute, 1-hour and 24-hour periods. Data is stored locally on redundant data acquisition systems and recovered hourly by a central office computer system (AirVision). The 24-hour daily averages from FEM monitors are used for comparison to the ambient standards.

- 7) PM_{2.5} Speciation Monitoring – Chemical speciation is the testing of the PM_{2.5} sample to examine what air pollutants are in the sample. Chemical speciation monitoring is required at all NCore sites and is conducted at the Parklane Monitoring Site. It is funded as part of the PM_{2.5} STN. There is also PM_{2.5} speciation monitoring at the Garinger Monitoring Site in Mecklenburg County for the Charlotte-Concord-Gastonia, NC-SC MSA.

Analytical Methods – The Department operates a PM_{2.5} Speciation sampler to collect samples for analysis to determine the chemical makeup of the particulate. The PM_{2.5} speciation samplers are operated according to the Department's Quality Assurance Project Plan for PM_{2.5} Chemical Speciation Sampling at Trends, NCore, Supplemental, and Tribal Sites. The samples are collected on a set of two cartridges on the Met-One SuperSASS sampler for nitrates, sulfates, and metals and on a single cartridge in the URG 3000N sampler for carbon containing material. The samples are collected over a 24-hour sampling period. The individual cartridges contain denuders and filters designed to efficiently capture the major components of PM_{2.5}.

After collection, the samples are shipped to an EPA contract laboratory for analysis. At the laboratory, the samples are analyzed using thermal optical analysis (for carbon), ion chromatography (IC) for nitrates and sulfates, and x-ray fluorescence for metals to determine the presence and concentration of specific compounds. Sample results are available on the EPA website.

PM₁₀ Network

PM₁₀ particles range from 2.5 to 10 micrometers in size. These particles usually come from roadways, construction sites, windblown dust and industrial sources. High PM₁₀ levels can cause issues with a person's throat and lungs.

PM₁₀ has a 24-hour NAAQS of 150 µg/m³ that cannot be exceeded more than once

per year on average over three years.

The PM₁₀ minimum monitoring criteria has one requirement that is based on the CBSA population, the number of exceedances of the NAAQS, and the percentage of PM₁₀ concentrations over or under the NAAQS. Unlike other criteria pollutants, the minimum monitoring requirement for PM₁₀ is given as a range of required monitoring sites for a CBSA, depending on the level of PM₁₀ pollution.

Minimum Requirements –

The required number of SLAMS monitors in each CBSA are summarized below.

Augusta-Richmond County, GA-SC MSA – 1-2 required monitors

One SLAMS monitor is located at the Augusta Monitoring Site in Georgia, operated by the GA EPD.

Charleston-North Charleston, SC MSA – 1-2 required monitors

One SLAMS monitor is located at the North Charleston Fire Station.

Charlotte-Concord-Gastonia, NC-SC MSA – 2-4 required monitors

Two SLAMS monitors are operated by the MCAQ in North Carolina at the Garinger and Ramblewood Park Monitoring Sites.

Columbia, SC MSA – 1-2 required monitors

One SLAMS monitor and one SPM monitor are located at the Parklane Monitoring Site.

Florence, SC MSA – No required monitors

Greenville-Anderson-Greer, SC MSA – 1-2 required monitors

One SLAMS monitor is located at the Greenville ESC Monitoring Site.

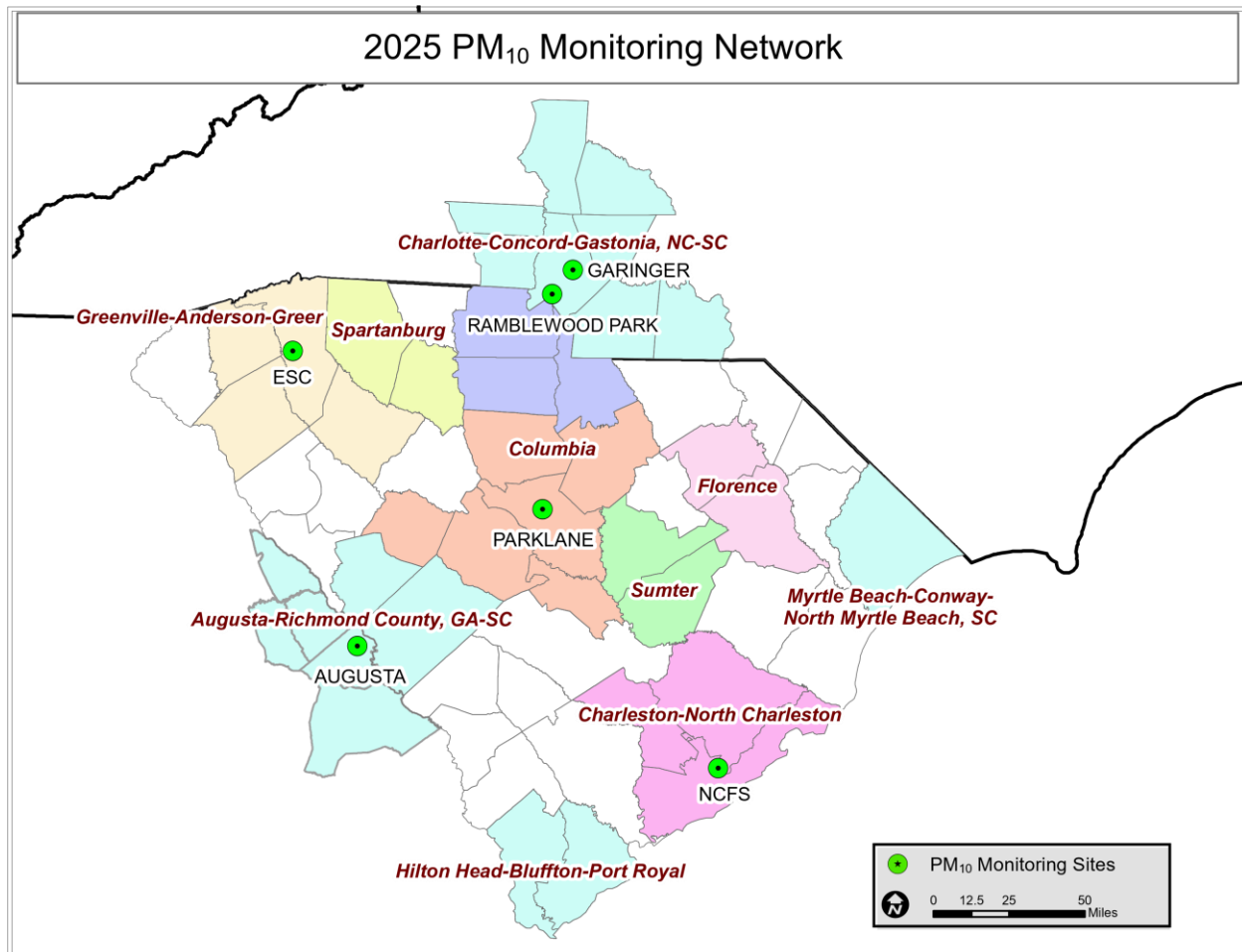
Hilton Head Island-Bluffton-Port Royal, SC MSA – No required monitors

Myrtle Beach-Conway-North Myrtle Beach, SC MSA – 0-1 required monitors

Spartanburg, SC MSA – 0-1 required monitors

Sumter, SC MSA – No required monitors

The PM₁₀ Monitoring Network map below indicates the locations of the monitors.



Analytical Methods –

The network consists of both PM₁₀ monitors and PM₁₀ samplers. The analysis for each one is described below.

- PM₁₀ samplers operated by the Department are designated as either FRM or FEM and are operated consistent with the requirements in 40 CFR Part 50, Appendix J and 40 CFR Part 58. The PM₁₀ samplers located at the Chesterfield Monitoring Site are used for the National Air Toxics Trends Station (NATTS) metals. Filters collected from these samplers are analyzed as described in subsection "d" of the Air Toxics Network Analytical Methods.
- Continuous PM₁₀ monitors provide continuous concentration measurements every day. All PM₁₀ monitors operated by the Department for comparison to the NAAQS are designated FEM monitors using the broadband spectroscopy

method. The continuous PM₁₀ monitors are operated in accordance with the Department's Quality Assurance Project Plan for Ambient Air Quality Monitoring. The concentration measurements are averaged over 1-minute, 1-hour, and 24-hour periods. Data is stored locally on redundant data acquisition systems and recovered hourly by a central office computer system (AirVision). Only 24-hour daily averages from FEM monitors are used for comparison to the ambient standards.

Photochemical Assessment Monitoring Station (PAMS) Network

South Carolina is not subject to the PAMS requirement.

Air Toxics Network

South Carolina monitors for air toxics in the ambient air. Volatile organic compounds (VOCs), Polycyclic Aromatic Hydrocarbons (PAHs), carbonyls, and metals are sampled at the Chesterfield Monitoring Site.

Analytical Methods –

- a) Volatile Organic Compounds – Volatile organic compounds (VOCs) are collected into passivated or silica lined stainless steel canisters. The canisters are cleaned, tested, and evacuated at the laboratory prior to installation at the sampling site. At the sampling location, the canisters are filled and pressurized with ambient air throughout the sampling period (typically 24 hours). Measured portions of the captured air are concentrated at low temperature and analyzed using gas chromatography with a mass spectrometer detector (GC/MS) to identify and quantitate target compounds. The VOC samplers are operated in accordance with the Department's Quality Assurance Project Plan for the Chesterfield, South Carolina National Air Toxics Trends Station. The collection and analysis method are based on the EPA Method TO-15A and the NATTS Technical Assistance Document (TAD). The EtO canisters are sent to a contract laboratory for analysis.
- b) Polycyclic Aromatic Hydrocarbons – PAHs are collected using polyurethane foam (PUF) and a solid adsorbent to trap the compounds from air pulled through the material by a high-volume sampler. High-volume PUF samplers are operated in accordance with the Department's Quality Assurance Project Plan for the Chesterfield, South Carolina National Air Toxics Trends Station. The PAHs are extracted from the collection cartridge using a solvent, and the rinses are concentrated for analysis. Measured portions of the extract are analyzed using GC/MS to identify and quantitate the collected compounds.

The collection and analysis method are based on the EPA Method TO-13A and the NATTS TAD.

- c) **Carbonyls** – Carbonyls (including aldehydes and ketones) are extracted from ambient air by reaction with a compound that stabilizes them enough to capture and hold. The reaction of the target compounds with Dinitrophenylhydrazine (DNPH) removes them from the sampled air and concentrates them in the sample cartridge. The carbonyl samplers are operated in accordance with the Department's Quality Assurance Project Plan for the Chesterfield, South Carolina National Air Toxics Trends Station. The carbonyls are extracted from the collection cartridge using solvent. Measured portions of the extract are analyzed using HPLC to identify and quantitate the collected compounds. The collection and analysis method are based on the EPA Method TO-11A and the NATTS TAD.
- d) **NATTS Metals** – NATTS metals in particulate are collected on filters using the PM₁₀ High Volume samplers. PM₁₀ High Volume samplers are operated in accordance with the Department's Quality Assurance Project Plan for the Chesterfield, South Carolina National Air Toxics Trends Station. Metals are extracted from a portion of the filter using hot block digestion in an acid solution. Detection, identification, and quantitation of the target metals inductively coupled plasma with a mass spectrometer. The collection and analysis method are based on the EPA Method IO-3.1, IO-3.5, and the NATTS TAD.

Meteorology and Precipitation Network

Meteorological parameters are monitored at the Cape Romain and Parklane Monitoring Sites. Precipitation monitoring, including precipitation chemistry, is conducted at the Parklane Monitoring Site.

Analytical Methods –

Meteorology consists of wind direction, wind speed, temperature, and pressure. Collection and/or analysis methods are discussed below.

- a. **Wind Direction and Speed** – Wind data is collected using systems that incorporate high precision 'Air Quality' systems. The systems use separate or combined wind vanes and anemometers mounted 10 meters above ground. The systems provide supporting information about the local meteorology.

- b. Ambient Temperature and Pressure – Ambient temperature is available from sensors that are part of the sampling systems for the FRM PM_{2.5} samplers and FEM PM_{2.5} continuous monitors. Ambient temperature measurement is necessary for the systems to maintain the required flow rate used to reproducibly separate the desired particulate size fractions as conditions change. Although the primary use of the measurement is for sampler flow control, the sensors are accurate and regularly audited. Temperature and pressure sensors are compared to reference systems at least once per month. In addition to the PM_{2.5} sampler, the Parklane Monitoring Site also has a Met-One Model 597 Ambient Temperature, Pressure, and Relative Humidity probe. The readings are stored on the data logger in both 1-minute and 1-hour averages.

Precipitation – Precipitation is measured by tipping bucket gauges that provide a signal indicating the occurrence, rate, and amount of precipitation. The gauges are not heated, so they may not accurately provide the time and rate for frozen precipitation events. The monitors are checked periodically for operation and accuracy using a known volume of water and compared with actual volumes of collected precipitation where there are collocated samplers.

Precipitation Chemistry – A portion of the precipitation sample collected each week is analyzed for pH and conductivity. To determine concentrations of dissolved material that contributes to acid rain, the collected material is analyzed for cations and anions using ion chromatography.

Site Descriptions

Specific siting information for each site and monitor or sampler is stored in the EPA's AQS, the national ambient air database. The AQS Site Description includes the exact location of the site, local and regional population, and description of the site location, monitor types, and monitoring objectives. This site and monitor/sampler information are routinely updated whenever there is a change in site characteristics or pollutants monitored. Pictures for each monitoring site can be viewed at: <https://gis.dhec.sc.gov/monitors/>.

The AQS is used as the primary repository for all South Carolina ambient air monitoring information, including site descriptions. All ambient air monitoring data is stored in AQS, including criteria pollutants, non-NAAQS parameters, ambient air

toxics at the NATTS location, and supporting QA data.

Each network station description contained in this document includes a Site Description and Monitor Details. An explanation of the information in each station description is presented below.

Site Description – The site description includes specific information about each ambient air monitoring site. The site description header includes the following:

- 1) Site Name – The name that is given to the site.
- 2) CSA/MSA – The area where the site is located as defined by the United States Census.⁶
- 3) AQS Site ID – The unique site ID used in AQS is in the form of 45-ccc-ssss where:
 - a. 45 is the federal identification code for South Carolina,
 - b. ccc is the county identification code, and
 - c. ssss is the site identification code within the county.
- 4) Location – Typically the street address of the site, where available.
- 5) County – County in which the site is located.
- 6) Coordinates – Latitude (N), then Longitude (W) listed in decimal degrees.
- 7) Date Established – The date when each existing monitoring station was established is shown in the description. Individual monitors at a site may have differing start and stop dates.
- 8) Site Evaluation (most recent date visited) – Each monitoring station in the network is visited annually to determine whether all required probe exposure criteria for monitors are met. If necessary, corrective action is scheduled to address deficiencies. If a new monitoring site has not yet been evaluated, it will be denoted with the word “PENDING”.

Monitor Details – Each station description has a table that lists the parameter(s) and the descriptive information associated with that particular parameter. An explanation of the information in the tables is presented below.

- 1) Parameter – The chemicals that are being measured. These may be criteria pollutants (compounds for which a NAAQS has been established), non-criteria pollutants, and/or supporting information (primarily meteorological

⁶ The US Census Bureau periodically adjusts CSA and MSA names and boundaries. This plan uses the latest available revision (July 21, 2023).

measurements) measured at the site.

- 2) Scale – Each monitor or sampler in the monitoring network is described in terms of the approximate physical dimensions of the air parcel nearest the monitoring station throughout which pollutant concentrations are expected to be reasonably similar. This is most often referred to as the “Scale” of the monitor. Different pollutants monitored at the same location may represent different scales depending on the characteristics of the pollutant. Area dimensions or scales of representativeness used in the network description are:
- a. Microscale – Air volumes associated with area dimensions ranging from several meters up to about 100 meters.
 - b. Middle scale – Areas up to several city blocks in size with dimensions ranging from approximately 100 meters to 0.5 kilometers.
 - c. Neighborhood scale – Extended areas of a city that have relatively uniform land use with dimensions ranging from 0.5 to 4.0 kilometers.
 - d. Urban scale – Citywide or equivalent rural areas with dimensions ranging from 4 to 50 kilometers.
 - e. Regional scale – Areas ranging from 50 to hundreds of kilometers in diameter.

The true representative area may best be described by an irregular shape of the approximate dimensions indicated above to account for local sources, topography, and differing land use. The representative scale of a monitor is closely associated with the monitoring objective.

- 3) Objective – The ambient air monitoring network is designed to meet three primary objectives:
- a. Provide air pollution data to the public in a timely manner. Near real-time data is made available on the internet through AIRNow and Air Quality Index (AQI) reporting and forecasting in the major metropolitan areas.
 - b. Support compliance with ambient air quality standards and emissions strategy development. Monitors are operated to measure concentrations for comparison to NAAQS and to provide information to aid in the development of strategies to improve air quality.
 - c. Support air pollution research studies. Data from the monitoring network support greater understanding of the impacts and effects of ambient air pollution.

Individual monitors within a monitoring network that support these basic objectives generally serve one or more of the following purposes:

- i. Determine highest concentrations of pollutants,
- ii. Determine representative concentrations in areas of high population density,
- iii. Determine impact on air quality of significant sources or source categories,
- iv. Determine general background concentrations,
- v. Determine extent of regional pollutant transport, and
- vi. Determine welfare-related impacts in more rural and remote areas (ex. visibility impairment and impacts to vegetation).

The design intent in siting monitors is to correctly match the area represented by the sample of monitored air with the scale most appropriate to meet the monitoring objective of the monitor. The relationship of appropriate scale to the six basic purposes is as follows:

Monitoring Purpose	Siting Scale
Highest concentration	Micro, Middle, Neighborhood
Population exposure	Neighborhood, Urban
Source impact	Micro, Middle, Neighborhood
General/background	Neighborhood, Urban, Regional
Regional transport	Urban, Regional
Welfare-related impacts	Urban, Regional

Monitor and sampler data is regularly reviewed to assure the assigned scale is correct and appropriate for the intended objective.

- 4) Designation – Monitor designations that may be found in the tables include the SLAMS, SPM, and Other monitoring. Definitions of these designations are:
 - a. SLAMS – Monitors that are required by 40 CFR Part 58, Appendix D, and are needed for the monitoring objectives of Appendix D, including NAAQS comparisons, but may serve other data purposes. These stations must meet regulatory requirements that relate to four major areas: QA/QC, monitoring methodology, sampling interval, and siting of instruments and instrument probes.
 - b. SPM – Monitors which support investigations addressing complaints,

areas and pollutants of concern, network refinement, modeling verification, and compliance. These monitors are committed to investigation and projects as described in the associated Quality Assurance Project Plan (QAPP). They may be located as separate monitoring stations or be included at existing monitoring locations. The SPM may also monitor for particulate, criteria pollutants, precipitation, and meteorology. Supplemental speciation is a type of SPM monitor that operates according to Chemical Speciation Network (CSN) protocols but is not contained in the Speciation Trends Network (STN) Network. This monitoring data is reported to AQS by the University of California – Davis. Although siting and probe exposure will conform to all requirements for SLAMS monitors whenever possible, 40 CFR 58.20 states that compliance for SPM monitors is optional.

- c. Other Monitor/Sampler – A monitor or sampler that measures data on a pollutant that will not be used for regulatory purposes, such as the NATTS samplers.
- d. Collocated QA/QC Sampler – A particulate matter sampler that is paired with, but operated independent of, a similar sampler. It is used to indicate measurement precision.

The SLAMS and SPM data may be used in the reporting of an area's AQI. The AQI is a method of reporting that converts concentration levels of pollution to a simple number scale of 0-500. Index reporting is required for all urban areas with a population exceeding 350,000. Intervals on the AQI scale are related to potential health effects of the daily measured concentration of the measured pollutants. All stations in a metropolitan area provide data for daily index reporting. Data from continuous ozone and PM_{2.5} monitors is collected hourly and reported as AQI maps on the EPA's AIRNow website. A daily AQI is provided for the areas in and around Aiken, Charleston, Columbia, Florence/Darlington, Greenville-Spartanburg, Myrtle Beach, and York/Chester/Lancaster.

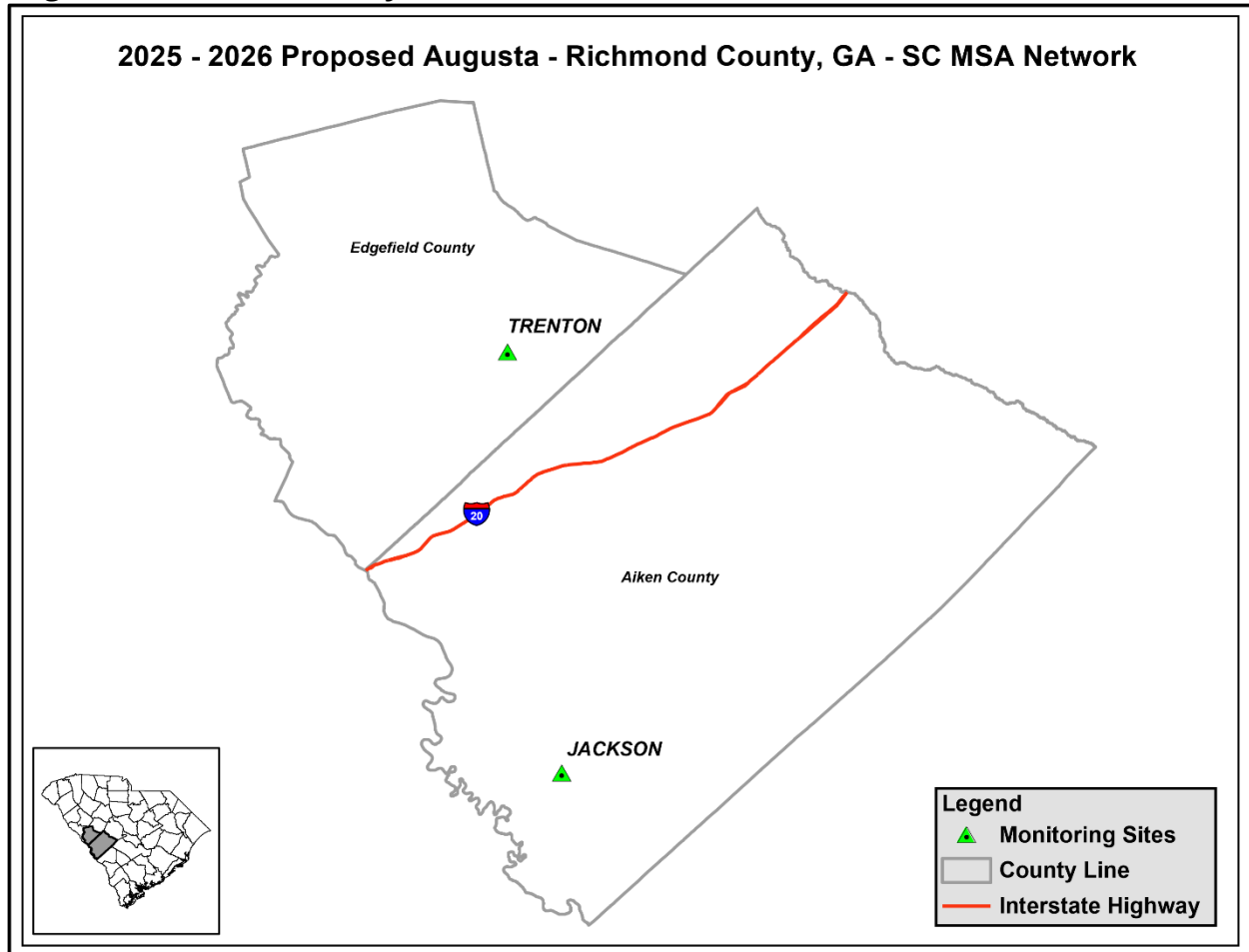
- 5) Probe Height – The monitor or sampler probe is the point where ambient air enters the analytical or sample collection system. Ideally, air would be sampled approximately at nose height, but due to operational, exposure, and security considerations, air may be sampled further from ground level. Proper probe height is specified in the monitoring regulations (typically between two and fifteen meters) and is checked as part of the periodic site evaluations.

- 6) Sampling and Analysis Methods – All sampling and analytical procedures used to determine ambient concentrations of criteria pollutants for comparison to the NAAQS will use either FRM or FEM. For the reactive gases, borosilicate glass or FEP Teflon are used in the sampling train.

Where appropriate for specific monitoring objectives, well characterized, non-equivalent methods may be used. The analysis method for the parameters most commonly measured and listed in the station descriptions are described in the corresponding pollutant's Network Descriptions section.

The following sections describe each of the South Carolina monitoring sites organized by MSA.

Augusta-Richmond County, GA-SC MSA



Classification of Monitoring Type by Sites:

Site ID	Site Name	PM _{2.5}	PM _{2.5} Cont.	PM ₁₀	Lead	Ozone	SO ₂	NO ₂	CO
45-003-0003	Jackson Middle School					●			
45-037-0001	Trenton	●	○			●	*		
Total		1	1	0	0	2	0	0	0
○ SPM / Other ● SLAMS Duplicate / QA Monitors ○○/●● *Please refer to the site description page for details on this monitor's operational schedule.									

Jackson Middle School**CSA/MSA:** none/Augusta-Richmond County MSA**AQS Site ID:** 45-003-0003**Location:** 8217 Atomic Road, Jackson**County:** Aiken**Coordinates:** +33.342226, -81.788731**Date Established:** October 24, 1985**Site Evaluation:** April 22, 2025

The Jackson Middle School Monitoring Site is located in southwestern Aiken County, within the town limits of Jackson at Jackson Middle School. This Site is located in a suburban setting. The Site supports an ozone monitor that measures ozone concentrations upwind of the Augusta urbanized area. The sample inlet is 128 meters from the nearest road.

This site meets all 40 CFR Part 58 Appendix E siting criteria.

Changes for 2025-2026

There are no changes planned for 2025-2026.

Monitors:

Parameter	Scale	Objective	Designation	Probe Height (m)	Analysis & (Method Code)	Sampling Frequency
Ozone 44201-2	Urban	Upwind Background	SLAMS	3.38	Ultraviolet Absorption (087)	Continuous

Trenton

CSA/MSA: none/Augusta-Richmond County MSA

AQS Site ID: 45-037-0001

Location: 660 Woodyard Road (Hwy 121), Trenton

County: Edgefield

Coordinates: +33.739963, -81.853635

Date Established: March 28, 1980

Site Evaluation: April 22, 2025

The Trenton Monitoring Site is located in southeastern Edgefield County. This Site was originally established to monitor ozone crossing into South Carolina from Georgia. The Trenton Monitoring Site supports an ozone monitor and the required FRM PM_{2.5} sampler and a continuous FEM PM_{2.5} monitor that fulfills 40 CFR Part 58, Appendix D, Section 4.7 requirements. This Site also has been designated as a rotational site for SO₂. The SO₂ monitoring will run from 2026 through 2027. The sample inlets are 30.3 meters from the nearest road.

This Site meets all 40 CFR Part 58, Appendix E siting criteria.

Changes for 2025-2026:

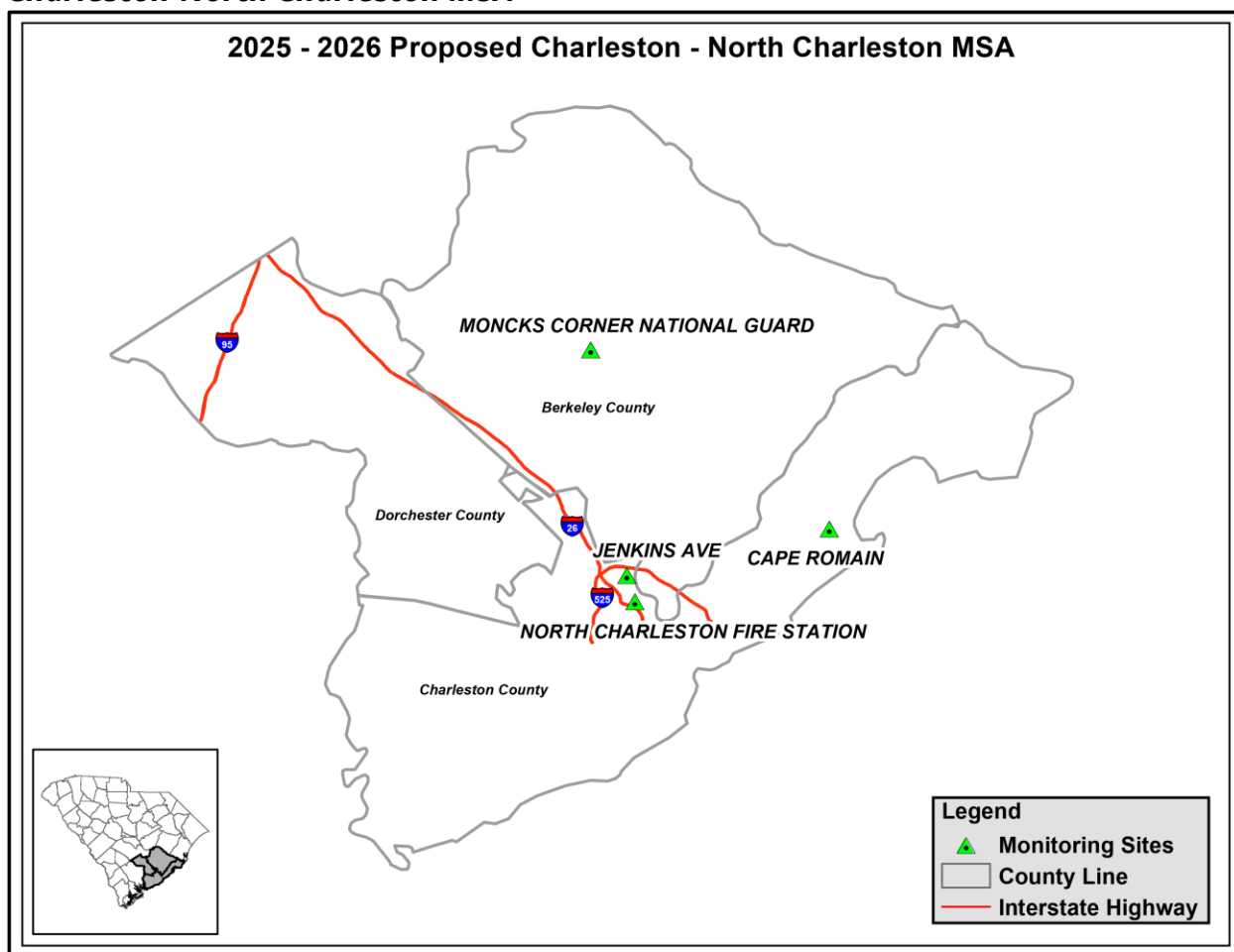
Data collected by the FEM T640 monitor at this site will be labeled with a NAAQS Exclusion for up to 23 months after the data alignment firmware update on September 6, 2023, to assess the comparability of the data to the FRM sampler. Data quality will be addressed at the end of the NAAQS Exclusion time period. The SO₂ monitoring will begin in January 2026. There are no other changes planned for 2025-2026.

Monitors:

Parameter	Scale	Objective	Designation	Probe Height (m)	Analysis & (Method Code)	Sampling Frequency
Ozone 44201-1	Urban	Maximum Ozone Concentration/ Extreme Downwind	SLAMS	4.29	Ultraviolet Absorption (087)	Continuous
PM _{2.5} 88101-1	Urban	Extreme Downwind	SLAMS	4.66	FRM Gravimetric w/ VSCC	1:3

Parameter	Scale	Objective	Designation	Probe Height (m)	Analysis & (Method Code)	Sampling Frequency
					(145)	
PM _{2.5} 88101-3	Urban	Extreme Downwind	SPM	4.35	FEM Broadband Spectroscopy (636)	Continuous

Charleston-North Charleston MSA



Classification of Monitoring Type by Site:

Site ID	Site Name	PM _{2.5}	PM _{2.5} Cont.	PM ₁₀	Ozone	SO ₂	NO ₂	Meteorology
45-015-1002	Moncks Corner National Guard				●			
45-019-0003	Jenkins Ave. Fire Station					●	○	
45-019-0020	North Charleston Fire Station (NCFS)	●●	○	●				
45-019-0046	Cape Romain		●		●			●
Total		2	2	1	2	1	1	1
○ SPM / Other ● SLAMS Duplicate / QA Monitors ○○/●●								

Moncks Corner National Guard**CSA/MSA:** none/Charleston-North Charleston MSA**AQS Site ID:** 45-015-1002**Location:** 320 Airport Road, Moncks Corner**County:** Berkeley**Coordinates:** +33.183016, -80.030712**Date Established:** February 28, 2020**Site Evaluation:** March 28, 2025

The Moncks Corner National Guard Monitoring Site is located in Moncks Corner, downwind from the Charleston urban area. The Site operates a required ozone monitor that fulfills the 40 CFR Part 58, Appendix D, Section 4.1 minimum monitoring requirements for this MSA and measures maximum ozone concentrations. The sample inlet is 177 meters from the nearest road.

This site meets all 40 CFR Part 58, Appendix E siting requirements.

Changes for 2025-2026:

There are no changes planned for 2025-2026.

Monitors:

Parameter	Scale	Objective	Designation	Probe Height (m)	Analysis & (Method Code)	Sampling Frequency
Ozone 44201-1	Urban	Max Ozone Concentration	SLAMS	4.41	FEM Ultraviolet Absorption (087)	Continuous

Jenkins Ave. Fire Station

CSA/MSA: none/Charleston-North Charleston MSA

AQS Site ID: 45-019-0003

Location: 4830 Jenkins Avenue, North Charleston

County: Charleston

Coordinates: +32.882289, -79.977538

Date Established: February 14, 1969

Site Evaluation: March 28, 2025

The Jenkins Ave. Fire Station Monitoring Site is located in the city of North Charleston behind a fire station in an urban and central city setting. This Site supports a required SO₂ monitor that fulfills the 40 CFR Part 58, Appendix D, Section 4.4 minimum monitoring requirements (PWEI) for the MSA and a NO₂ monitor. The sample inlets are 33.5 meters from the nearest road.

This Site meets all 40 CFR Part 58, Appendix E siting requirements.

Changes for 2025-2026:

There are no changes planned for 2025-2026.

Monitors:

Parameter	Scale	Objective	Designation	Probe Height (m)	Analysis & (Method Code)	Sampling Frequency
Sulfur Dioxide 42401-1	Neighbor-hood	Population Exposure	SLAMS	4.69	Pulsed Fluorescent (560)	Continuous
Nitrogen Dioxide 42602-2	Neighbor-hood	Highest Concentration /Source Oriented	SPM	4.69	Chemiluminescence (599)	Continuous

North Charleston Fire Station (NCFS)

CSA/MSA: none/Charleston-North Charleston MSA

AQS Site ID: 45-019-0020

Location: 2800 Carner Avenue, North Charleston

County: Charleston

Coordinates: +32.84755, -79.96517

Date Established: November 8, 2021

Site Evaluation: June 4, 2025

The North Charleston Fire Station (NCFS) Monitoring Site is located in the central portion of the Charleston peninsula on the grounds of the North Charleston Fire Station #3. This Site was selected for its heavy exposure to population and industry. This Site supports a continuous PM₁₀ monitor that fulfills the 40 CFR Part 58, Appendix D, Section 4.6 requirements.

Also, this Site operates collocated PM_{2.5} intermittent samplers that fulfill the 40 CFR Part 58, Appendix A, Section 3.2 collocation requirements and a continuous PM_{2.5} monitor that fulfills the 40 CFR Part 58, Appendix D, Section 4.7.2 requirements. The sample inlets are 24.6 meters from the nearest road.

This Site meets all 40 CFR Part 58, Appendix E siting requirements.

Changes for 2025-2026:

Data collected by the FEM T640X monitor at this site will be labeled with a NAAQS Exclusion for up to 23 months after the data alignment firmware update on September 6, 2023, to assess the comparability of the data to the FRM sampler. Data quality will be addressed at the end of the NAAQS Exclusion time period.

There are no other changes planned for 2025-2026.

Monitors:

Parameter	Scale	Objective	Designation	Probe Height (m)	Analysis & (Method Code)	Sampling Frequency
PM ₁₀ 81102-1	Neighbor- hood	Highest Concentra- tion/ Population Exposure	SLAMS	2.91	FEM Broadband Spectroscopy (639)	Continuous
PM _{2.5} 88101-1	Neighbor- hood	Highest Concentra- tion/ Population Exposure	SLAMS	2.31	FRM Gravimetric w/ VSCC (145)*	1:1
PM _{2.5} 88101-2	Neighbor- hood	Highest Concentra- tion/ Population Exposure	QA Collocated SLAMS	2.31	FRM Gravimetric w/ VSCC (145)	1:3
PM _{2.5} 88101-3	Neighbor- hood	Highest Concentra- tion/ Population Exposure	SPM	2.91	FEM Broadband Spectroscopy (638)	Continuous

*Indicates the Primary Monitoring Method for PM_{2.5}

Cape Romain

CSA/MSA: none/Charleston-North Charleston MSA

AQS Site ID: 45-019-0046

Location: 390 Bulls Island Road, Awendaw

County: Charleston

Coordinates: +32.941023, -79.657187

Date Established: July 11, 1983

Site Evaluation: June 4, 2025

The Cape Romain Monitoring Site is located in Charleston County at the Cape Romain National Wildlife Refuge (NWR) near Moore's Landing. The Cape Romain NWR is a Class I area about 20 miles northeast of Charleston. The majority of the Refuge area is offshore, extending from Bull Island 20 miles northeast to Cape Romain. The Refuge is bordered on the west by the Intracoastal Waterway. Inland are large tracts of forests with scattered residences. Several miles inland, a primary coastal route, US Highway (Hwy) 17, parallels the coast, with some development along the section of highway that is closest to the Refuge.

The Cape Romain Monitoring Site has a required ozone monitor that fulfills the 40 CFR Part 58, Appendix D, Section 4.1 requirement, and a required continuous FEM PM_{2.5} monitor that fulfills the 40 CFR Part 58, Appendix D, Section 4.7.3 monitoring requirement for regional background of PM_{2.5}. Also, meteorological parameters are being measured. The sample inlets are 86 meters from the nearest road. The monitoring shelter was replaced in June 2024.

This Site meets all 40 CFR Part 58, Appendix E siting requirements.

Changes for 2025-2026:

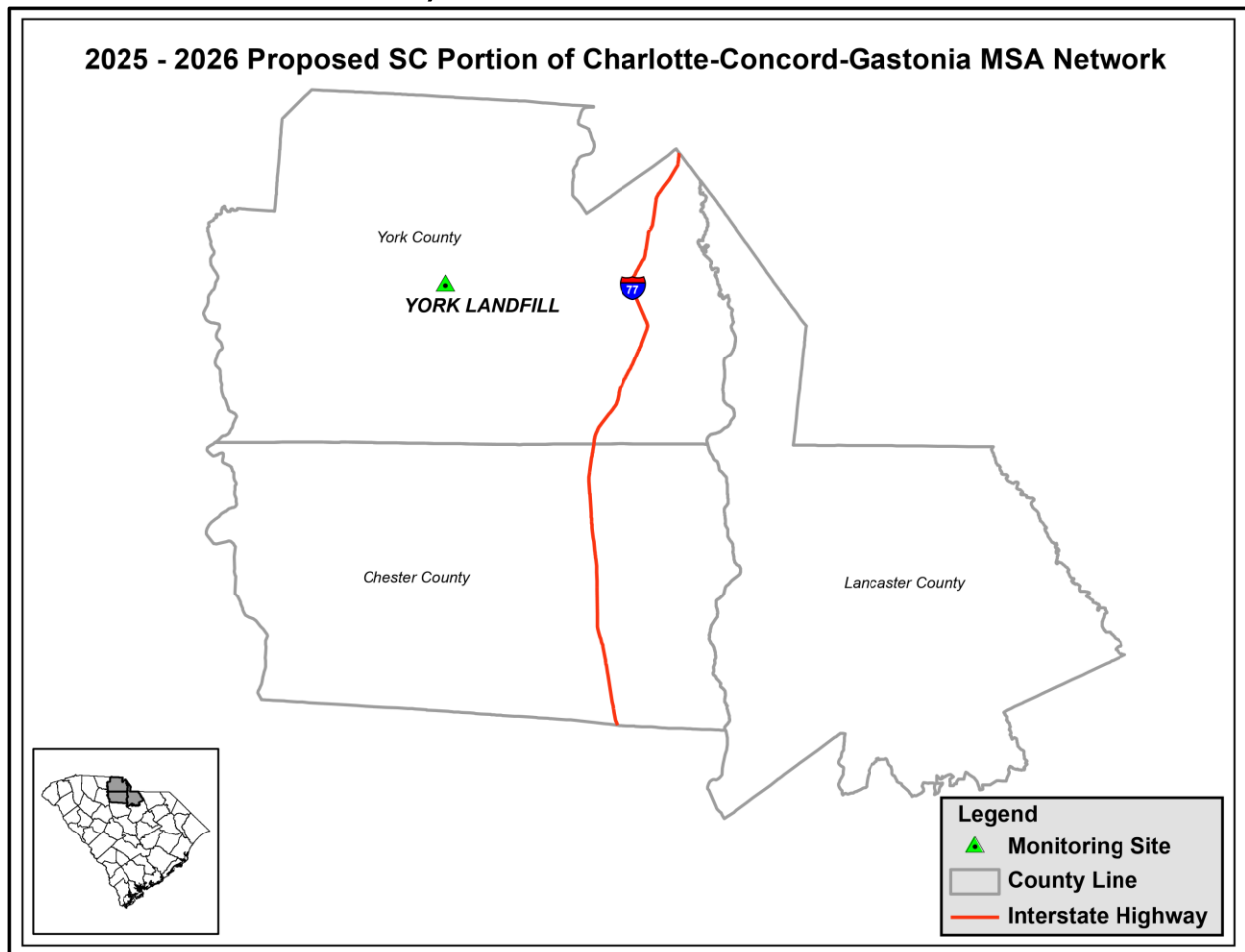
There are no changes planned for 2025-2026.

Monitors:

Parameter	Scale	Objective	Designation	Probe Height (m)	Analysis & (Method Code)	Sampling Frequency
Ozone 44201-1	Regional	General/ Background	SLAMS	4.15	Ultraviolet Absorption (087)	Continuous

Parameter	Scale	Objective	Designation	Probe Height (m)	Analysis & (Method Code)	Sampling Frequency
PM _{2.5} 88101-3	Regional	General/ Background	SLAMS	5.02	FEM Broadband Spectroscopy (636)	Continuous
Wind Speed and Wind Direction	Neighborhood	Local Conditions	SLAMS	N/A	Instruments for wind speed and direction (020)	Continuous

Charlotte-Concord-Gastonia, NC-SC MSA



Classification of Monitoring Type by Site:

Site ID	Site Name	PM _{2.5}	PM _{2.5} Cont.	PM ₁₀	Lead	Ozone	SO ₂	NO ₂	CO
45-091-0008	York Landfill					●	○		
Total		0	0	0	0	1	1	0	0
○ SPM / Other ● SLAMS ○○/●● Duplicate / QA Monitors									

York Landfill

CSA/MSA: Charlotte-Concord CSA / Charlotte-Concord-Gastonia, NC-SC MSA

AQS Site ID: 45-091-0008

Location: 310 Langrum Branch Road, York

County: York

Coordinates: +34.977000, -81.207000

Date Established: February 27, 2017

Site Evaluation: April 29, 2025

The York Landfill Monitoring Site is located in south central York County in a rural setting. This Site currently operates an ozone monitor and represents ozone background levels near the Charlotte urban area. Also, this Site has been designated as a rotational site for SO₂ and will operate from December 15, 2023 through December 2025. The sample inlets are 34.8 meters from the nearest road.

This Site meets all 40 CFR Part 58, Appendix E siting requirements.

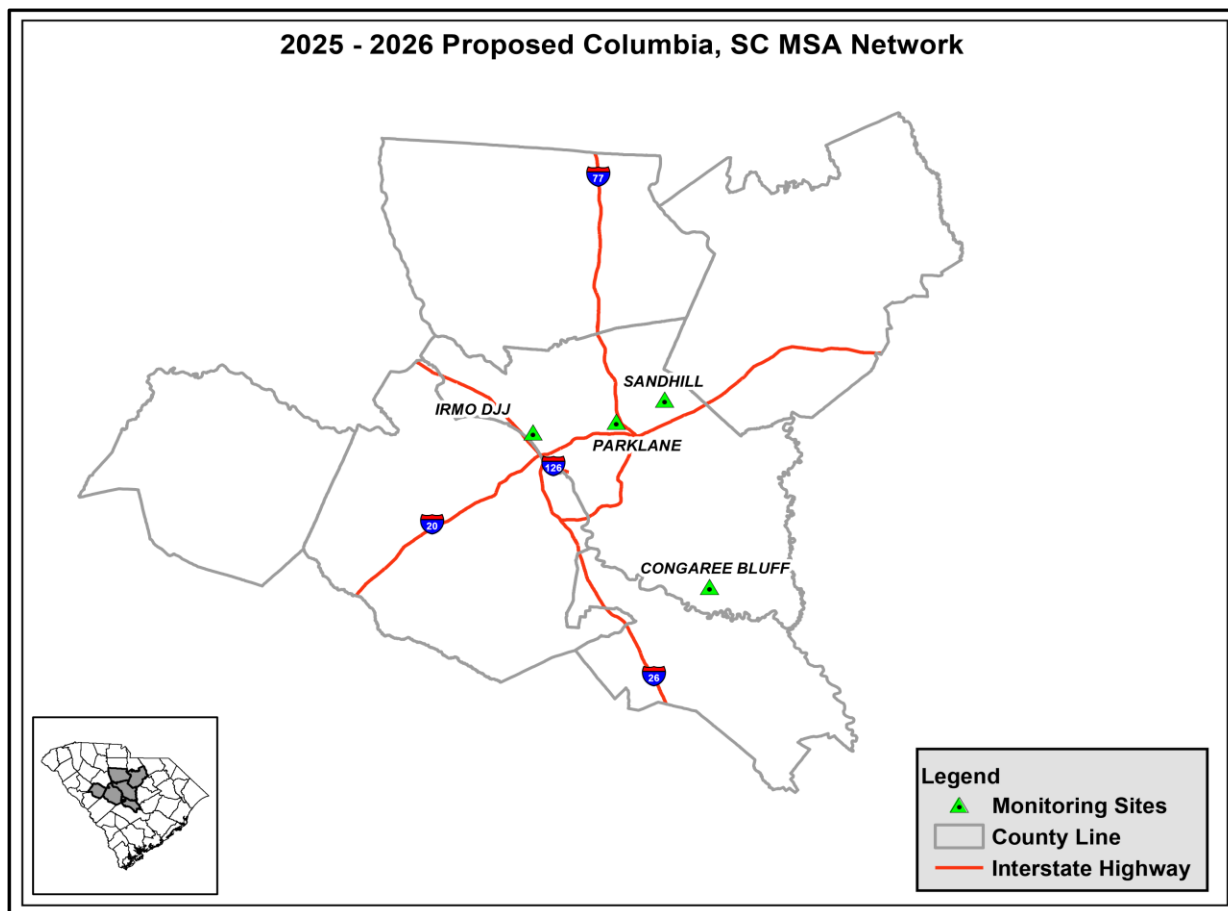
Changes for 2025-2026:

The SO₂ rotational monitor will operate through December 2025. There are no other changes planned for 2025-2026.

Monitors:

Parameter	Scale	Objective	Designation	Probe Height (m)	Analysis & (Method Code)	Sampling Frequency
Ozone 44201-1	Urban	Upwind Background	SLAMS	4.51	Ultraviolet Absorption (087)	Continuous
Sulfur Dioxide 42401-1	Urban	Upwind Background	SPM	4.51	Pulsed Florescent (560)	Continuous

Columbia MSA



Classification of Monitoring Type by Site:

Site ID	Site Name	PM _{2.5}	PM _{2.5} Cont.	PM _{2.5} Speciation	PM ₁₀	PM _{10-2.5}	Ozone	SO ₂	NO ₂ /NO/NO _y	CO	Precipitation Chem.	Precipitation	Meteorology
45-079-0007	Parklane (NCore)	●●	○	●	●○	●	●	●	●	●	○	○	●
45-079-0021	Congaree Bluff						○						
45-079-0022	Irmo DJJ	●	○										
45-079-1001	Sandhill						●		○				
Total		3	2	1	2	1	3	1	2	1	1	1	1
○ SPM / Other ● SLAMS ○○/●● Duplicate / QA Monitors													

Parklane (NCore)**CSA/MSA:** Columbia-Orangeburg-Newberry CSA / Columbia MSA**AQS Site ID:** 45-079-0007**Location:** 8311 Parklane Road, Columbia**County:** Richland**Coordinates:** +34.093959, -80.962304**Date Established:** April 3, 1980**Site Evaluation:** March 18, 2025

The Parklane Monitoring Site is in north central Richland County within the city limits of Columbia. This Site was originally established to provide downwind population exposure measurements at the edge of the Columbia urban area population. The Parklane Monitoring Site is the required national core (NCore) multi-pollutant monitoring site as designated in 40 CFR Part 58, Appendix D, Section 3. It supports the required continuous monitors that sample for PM_{2.5}, speciated PM_{2.5}, PM_{10-2.5}, ozone, SO₂, CO, and NO/NO_y. Also, an intermittent sampler for PM_{2.5}, and instruments for wind speed, wind direction, relative humidity, and ambient temperature are operated here. Besides the NCore requirement, the ozone monitor also fulfills the 40 CFR Part 58, Appendix D, Section 4.1 requirement. The Site also operates a pair of collocated FRM PM_{2.5} samplers to fulfill the required 40 CFR Part 58, Appendix A, Section 3.2 requirement, a low volume PM₁₀, precipitation chemistry and precipitation samplers. The site supports the required PM₁₀ monitor that fulfills the 40 CFR Part 58, Appendix D, Section 4.6 requirement. The sample inlets are 41.6 meters from the nearest road.

This Site meets all 40 CFR Part 58, Appendix E requirements except for Appendix E Section 2.3- Spacing from Obstructions. The distance from one tree to the probe is not at least twice the height that the obstacle protrudes above the probe, however the probe still meets 270 degrees of continuous airflow as required by Section 2.3(b). The NO/NO_y will be left at 8.6 meters as recommended by the EPA in 2018.

Changes for 2025-2026:

The continuous PM_{2.5} data collected by the FEM T640X monitor at this site will be labeled with a NAAQS Exclusion for up to 23 months after the data alignment firmware update on September 6, 2023, to assess the comparability of the data to the FRM sampler. Data quality will be addressed at the end of the NAAQS Exclusion time period.

There are no other changes planned for 2025-2026

Monitors:

***Bolded** parameters are an NCore requirement.

Parameter *Required	Scale	Objective	Designa- tion	Probe Height (m)	Analysis & (Method Code)	Sampling Frequency
Carbon Monoxide 42101-1	Neighbor- hood	NCore Population Exposure	SLAMS	4.33	Gas filter Correlation (593)	Continuous
Sulfur Dioxide 42401-1	Neighbor- hood	NCore Population Exposure/ Other	SLAMS	4.33	Pulsed Fluorescent (560)	Continuous
Nitric Oxide /NO_y 42600-2 42601-2	Neighbor- hood	NCore Population Exposure	SLAMS	8.6	Chemilumi- nesence (674)	Continuous
Ozone 44201-1	Urban	NCore Max Ozone Concentration	SLAMS	4.33	Ultraviolet Absorption (087)	Continuous
PM ₁₀ 81102-3	Neighbor- hood	Population Exposure	SLAMS	4.79	FEM Broadband Spectroscopy (639)	Continuous
PM_{2.5} 88101-1	Neighbor- hood	NCore Population Exposure	SLAMS	4.75	FRM Gravimetric w/ VSCC (145)*	1:3
PM _{2.5} 88101-2	Neighbor- hood	Population Exposure	Collocated SLAMS	4.74	FRM Gravimetric w/ VSCC (145)	1:3
PM_{2.5} 88101-3	Neighbor- hood	NCore Population Exposure	SPM	4.79	FEM Broadband Spectroscopy (638)	Continuous
Speciated PM_{2.5}	Neighbor- hood	NCore Population	SLAMS	2.46	CSN Protocol	1:3

Parameter *Required	Scale	Objective	Designa- tion	Probe Height (m)	Analysis & (Method Code)	Sampling Frequency
		Exposure			(811,812,826,838,839,841, 842)	
Low Volume PM ₁₀ 85101-1	Urban	Population Exposure	SPM	4.73	Gravimetric (127)	1:3
PM_{10-2.5} 86101-1	Neighbor- hood	NCore Population Exposure	SLAMS	4.73	Gravimetric (176)	1:3
Precipitation Chemistry	Neighbor- hood	Regional Transport	Other	N/A	Not applicable	Weekly- Tues-Tues
Precipitation	Neighbor- hood	General / Background	SPM	N/A	Tipping bucket (011)	Continuous and Sample
Wind Speed / Direction	Neighbor- hood	NCore Local Conditions	SLAMS	N/A	Instruments for wind speed/wind direction (020)	Continuous

*Indicates the Primary Monitoring Method for PM_{2.5}.

Congaree Bluff

CSA/MSA: Columbia-Orangeburg-Newberry CSA / Columbia MSA

AQS Site ID: 45-079-0021

Location: 1850 South Cedar Creek Road, Gadsden

County: Richland

Coordinates: +33.814680, -80.781135

Date Established: December 27, 1999

Site Evaluation: March 04, 2025

The Congaree Bluff Monitoring Site is located in southern Richland County which is in a rural setting within the boundaries of the Congaree National Park. Monitoring within the Congaree Bluff area began in 1981 with the establishment of the Congaree Swamp Monitoring Site. The original Site was established in cooperation with the Department of the Interior, with the support of the General Assembly, to provide long term monitoring in this unique area, but, because of flooding issues, had to be relocated to the current Congaree Bluff Monitoring Site in 2001. Ozone monitoring at this Site only represents conditions found in the National Park. The sample inlet is 187.5 meters from the nearest road.

This Site meets all 40 CFR Part 58 Appendix E requirements except for the tree obstructions. This Site does not have at least 270 degrees of open airflow around the probe. The Site has a waiver (March 24, 2021) for the tree obstructions. The renewal request for the waiver is included in Appendix G.

Changes for 2024-2025:

There are no changes planned for 2025-2026.

Monitors:

Parameter	Scale	Objective	Designation	Probe Height (m)	Analysis & (Method Code)	Sampling Frequency
Ozone 44201-1	Neighborhood	General / Background	SPM	4.5	Ultraviolet (087)	Continuous

Irmo DJJ

CSA/MSA: Columbia-Orangeburg-Newberry CSA / Columbia MSA

AQS Site ID: 45-079-0022

Location: 4900 Broad River Road, Columbia

County: Richland

Coordinates: +34.0757, -81.1248

Date Established: January 20, 2023

Site Evaluation: March 18, 2025

The Irmo DJJ Monitoring Site was established on January 20, 2023 to serve as the replacement for the Irmo Monitoring Site. It operates a PM_{2.5} sampler and a PM_{2.5} continuous monitor that fulfills 40 CFR Part 58, Appendix D, Section 4.7.2. The sample inlets are 33.0 meters from the nearest road.

This Site meets all the 40 CFR Part 58, Appendix E siting requirements.

Changes for 2025-2026:

Data collected by the FEM T640 monitor at this site will be labeled with a NAAQS Exclusion for up to 23 months after the data alignment firmware update on September 6, 2023, to assess the comparability of the data to the FRM sampler. Data quality will be addressed at the end of the NAAQS Exclusion time period. No further changes are planned for 2025-2026.

Monitors: * Indicates the Primary Monitoring Method for PM_{2.5}

Parameter	Scale	Objective	Designation	Probe Height (m)	Analysis & (Method Code)	Sampling Frequency
PM _{2.5} 88101-1	Neighborhood	Population Exposure	SLAMS	2.05	FRM Gravimetric w/ VSCC (145)*	1:1
PM _{2.5} 88101-3	Neighborhood	Population Exposure	SPM	2.25	FEM Broadband Spectroscopy (636)	Continuous

* Indicates the Primary Monitoring Method for PM_{2.5}

Sandhill Experimental Station**CSA/MSA:** Columbia-Orangeburg-Newberry CSA / Columbia MSA**AQS Site ID:** 45-079-1001**Location:** 900 Clemson Road, Columbia**County:** Richland**Coordinates:** +34.131262, -80.868318**Date Established:** January 1, 1959**Site Evaluation:** March 04, 2025

The Sandhill Experimental Station Monitoring Site is located in northeastern Richland County, downwind from the Columbia metropolitan area. This Site is located in a rapidly urbanizing portion of the City of Columbia. This Site operates a NO₂ monitor and a required ozone monitor that fulfills 40 CFR Part 58, Appendix D, Section 4.1 for this MSA. The sample inlets are 31.1 meters from the nearest road.

This Site meets all 40 CFR Part 58, Appendix E siting criteria.

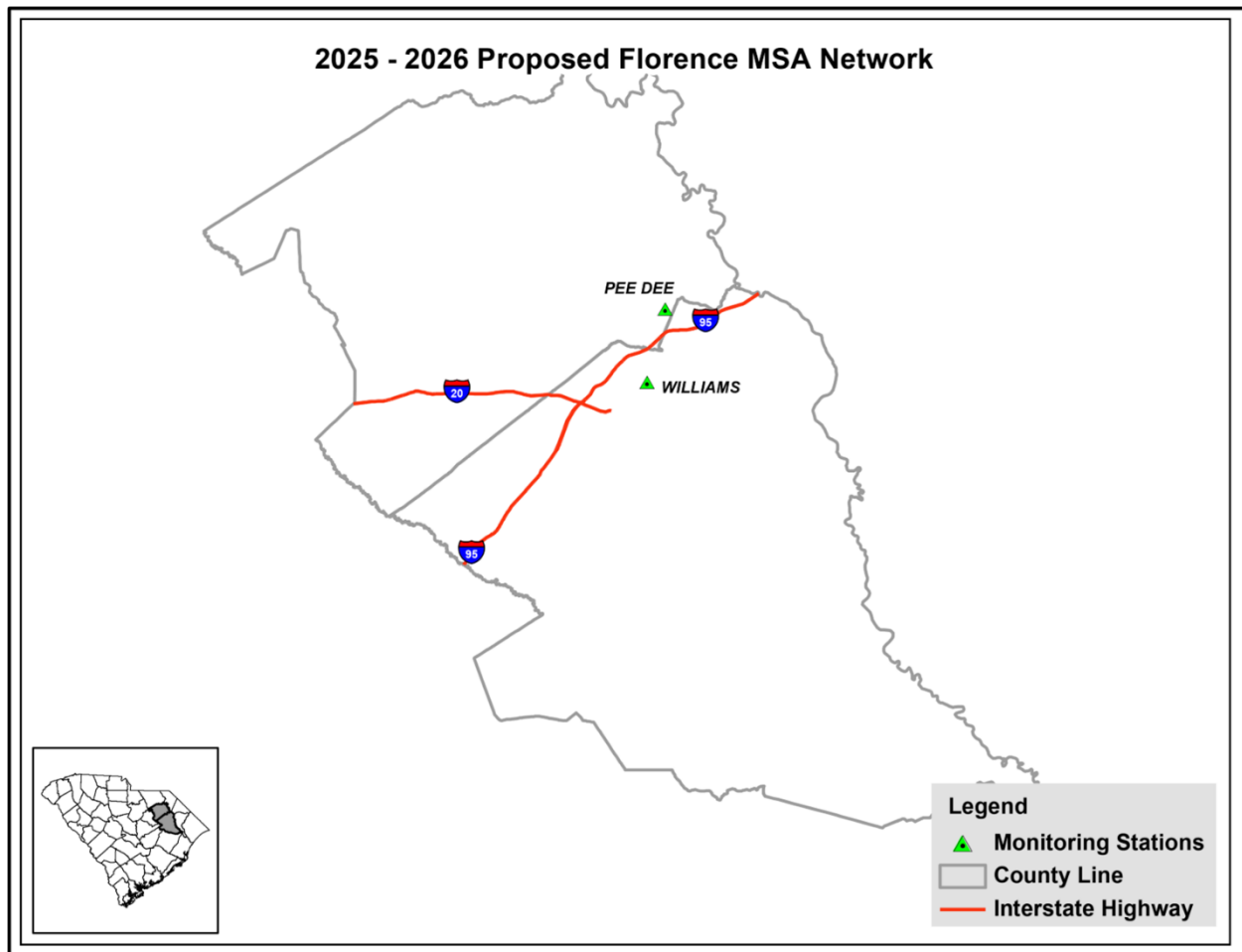
Changes for 2025-2026:

There are no changes planned for 2025-2026.

Monitors:

Parameter	Scale	Objective	Designation	Probe Height (m)	Analysis & (Method Code)	Sampling Frequency
Nitrogen Dioxide 42602-1	Urban	General / Background Max Precursor Emissions Impact	SPM	4.02	Chemiluminescence (599)	Continuous
Ozone 44201-1	Urban	Max Ozone Concentration	SLAMS	4.02	Ultraviolet Absorption (087)	Continuous

Florence MSA



Classification of Monitoring Type by Site:

Site ID	Site Name	PM _{2.5}	PM _{2.5} Cont.	PM ₁₀	Lead	Ozone	SO ₂	NO ₂	CO
45-031-0003	Pee Dee Experimental Station					●			
45-041-0003	Williams Middle School	●	○						
Total		1	1	0	0	1	0	0	0
○ SPM / Other ● SLAMS ○○/●● Duplicate / QA Monitors									

Pee Dee Experimental Station

CSA/MSA: none/Florence MSA

AQS Site ID: 45-031-0003

Location: 2200 Pocket Road, Darlington

County: Darlington

Coordinates: +34.285696, -79.744859

Date Established: February 25, 1993

Site Evaluation: March 13, 2025

The Pee Dee Experimental Station Monitoring Site is located in northeastern Darlington County. This Site has an ozone monitor. The sample inlets are 193.3 meters from the nearest road.

This Site meets all 40 CFR Part 58 Appendix E siting criteria.

Changes for 2025-2026:

There are no changes planned for 2025-2026.

Monitors:

Parameter	Scale	Objective	Designation	Probe Height (m)	Analysis & (Method Code)	Sampling Frequency
Ozone 44201-1	Urban	Max Ozone Concentration/ General / Background	SLAMS	4.10	Ultraviolet Absorption (087)	Continuous

Williams Middle School

CSA/MSA: none/Florence MSA

AQS Site ID: 45-041-0003

Location: 1119 N. Irby Street, Florence

County: Florence

Coordinates: +34.214263, -79.767347

Date Established: August 4, 2008

Site Evaluation: March 13, 2025

The Williams Middle School Monitoring Site is located in Florence County and operates one PM_{2.5} FRM sampler and one PM_{2.5} FEM continuous monitor. Sample inlets are 110 meters from the nearest road.

This Site meets all 40 CFR Part 58, Appendix E requirements.

Changes for 2025-2026:

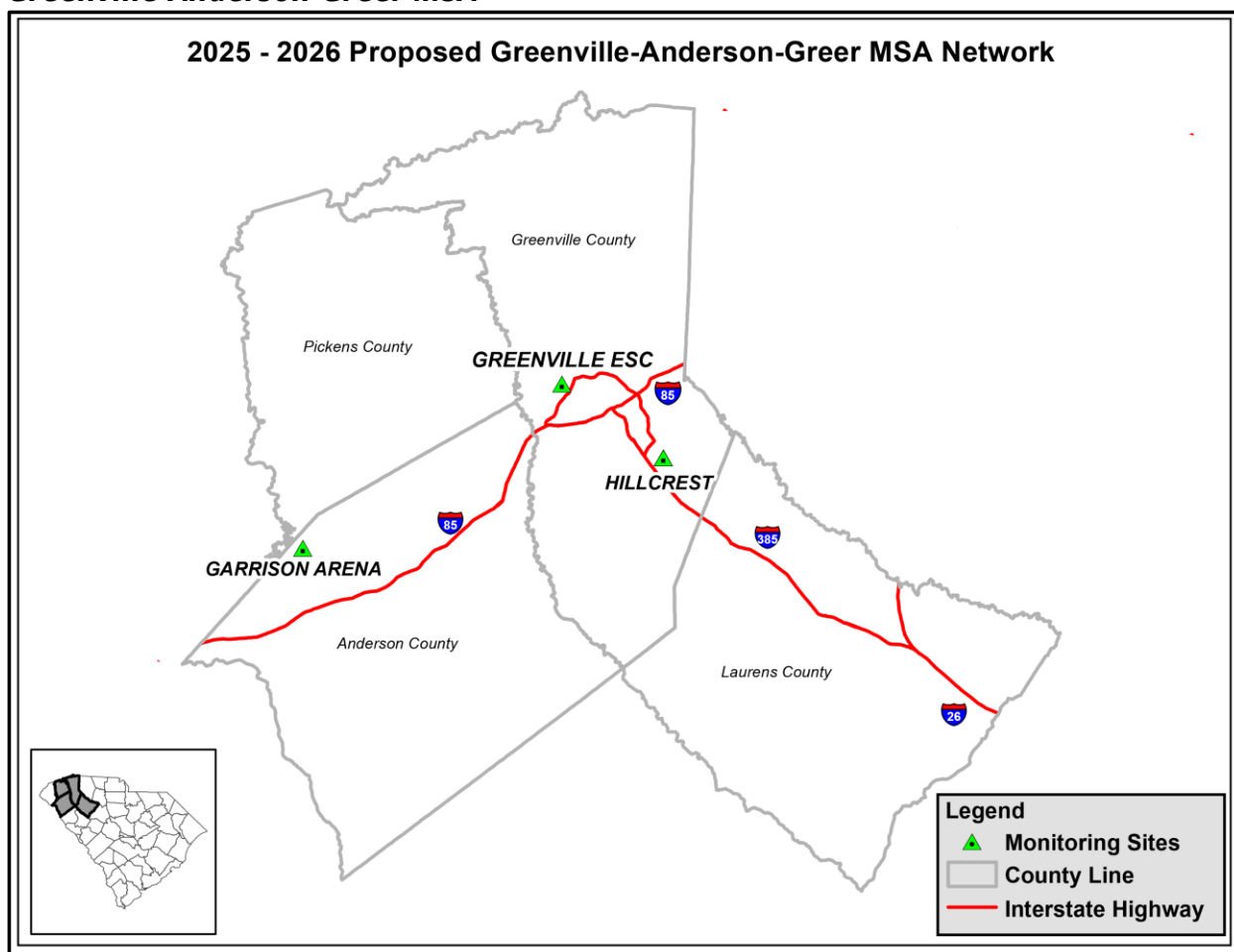
Data collected by the FEM T640 monitor at this site will be labeled with a NAAQS Exclusion for up to 23 months after the data alignment firmware update on September 6, 2023, to assess the comparability of the data to the FRM sampler. There are no changes planned for 2025-2026.

Monitors:

Parameter	Scale	Objective	Designation	Probe Height (m)	Analysis & (Method Code)	Sampling Frequency
PM _{2.5} 88101-1	Neighborhood	Population Exposure/ Highest Concentration	SLAMS	2.76	FRM Gravimetric w/ VSCC (145)*	1:3
PM _{2.5} 88101-3	Neighborhood	Population Exposure/ Highest Concentration	SPM	2.91	FEM Broadband Spectroscopy (636)	Continuous

*Indicates the Primary Monitoring Method for PM_{2.5}

Greenville-Anderson-Greer MSA



Classification of Monitoring Type by Site:

Site ID	Site Name	PM _{2.5}	PM _{2.5} Cont.	PM ₁₀	Lead	Ozone	SO ₂	NO ₂	CO
45-007-0006	Garrison Arena					●			
45-045-0015	Greenville ESC	●	○	●			●	●	
45-045-0016	Hillcrest	●●				●			
Total		3	1	1	0	2	1	1	0
○ SPM / Other ● SLAMS ○○/●● Duplicate / QA Monitors									

Garrison Arena

CSA/MSA: Greenville-Spartanburg-Anderson CSA / Greenville-Anderson-Greer MSA

AQS Site ID: 45-007-0006

Location: 1101 W. Queen Street, Pendleton

County: Anderson

Coordinates: +34.635958, -82.810667

Date Established: February 28, 2020

Site Evaluation: May 21, 2025

The Garrison Arena Monitoring Site is located on the grounds of Clemson University at the T. Ed Garrison Arena near the northern border of Anderson County. This Site supports a required ozone monitor that fulfills the 40 CFR Part 58, Appendix D, Section 4.1 minimum monitoring requirements. The monitor measures ozone concentrations upwind of the Greenville-Spartanburg urbanized area. This Site is 14.25 meters from the nearest road.

This Site meets all 40 CFR Part 58, Appendix E siting criteria.

Changes for 2025-2026

There are no changes planned for 2025-2026.

Monitors:

Parameter	Scale	Objective	Designation	Probe Height (m)	Analysis & (Method Code)	Sampling Frequency
Ozone 44201-1	Urban	Max Ozone Concentration	SLAMS	4.55	Ultraviolet Absorption (087)	Continuous

Greenville Employment Security Commission (ESC)

CSA/MSA: Greenville-Spartanburg-Anderson CSA / Greenville-Anderson-Greer MSA

AQS Site ID: 45-045-0015

Location: 133 Perry Avenue, Greenville

County: Greenville

Coordinates: +34.843895, -82.414585

Date Established: April 11, 2008

Site Evaluation: April 01, 2025

The Greenville ESC Monitoring Site was established on April 11, 2008, in the City of Greenville. This Site supports a PM_{2.5} FRM sampler and a T640X monitor, which measures both continuous PM_{2.5} and PM₁₀. The continuous PM_{2.5} monitor fulfills the 40 CFR Part 58, Appendix A Section 3.2 and the 40 CFR Part 58, Appendix D, Section 4.7 minimum monitoring requirements. The continuous PM₁₀ monitor fulfills the 40 CFR Part 58, Appendix D, Section 4.6 requirements.

In addition, this Site monitors for SO₂ and NO₂. The EPA Region 4 selected this Site as one of the locations for a Regional Administrator required NO₂ monitor to help protect susceptible and vulnerable populations, as required by 40 CFR Part 58, Appendix D, Section 4.3.4.

The sample inlets are 12.1 meters from the nearest road.

This Site meets all 40 CFR Part 58 Appendix E siting criteria except for Appendix E, Section 2.3 - Spacing from Obstructions. This site does not have at least 270 degrees of continuous airflow due tree obstructions, but does have at least 270 degrees of total airflow. The Department has reviewed the existing waiver for this site and is requesting an updated waiver from EPA for Appendix E, Section 2.3 for the Greenville ESC Monitoring Site since the probe cannot be reasonably relocated.

Changes for 2025-2026:

Data collected by the FEM T640X monitor at this site will be labeled with a NAAQS Exclusion for up to 23 months after the data alignment firmware update on September 6, 2023, to assess the comparability of the data to the FRM sampler. Data quality will be addressed at the end of the NAAQS Exclusion time period. There are no other changes planned for 2025-2026.

Monitors:

Parameter	Scale	Objective	Designation	Probe Height (m)	Analysis & (Method Code)	Sampling Frequency
Sulfur Dioxide 42401-1	Neighborhood	Population Exposure	SLAMS	4.32	Pulsed fluorescent (560)	Continuous
Nitrogen Dioxide 42602-1	Neighborhood	Population Exposure	SLAMS	4.32	Chemiluminescence (599)	Continuous
PM ₁₀ 81102-1	Neighborhood	Population Exposure	SLAMS	5.08	FEM Broadband Spectroscopy (639)	Continuous
PM _{2.5} 88101-1	Neighborhood	Population Exposure / Welfare Related Impacts	SLAMS	4.76	FRM Gravimetric w/ VSCC (145) *	1:1
PM _{2.5} 88101-3	Neighborhood	Population Exposure/ Welfare Related Impacts	SPM	5.08	FEM Broadband Spectroscopy (638)	Continuous

*Indicates the Primary Monitoring Method for PM_{2.5}

Hillcrest Middle School

CSA/MSA: Greenville-Spartanburg-Anderson CSA / Greenville-Anderson-Greer MSA

AQS Site ID: 45-045-0016

Location: 510 Garrison Road, Simpsonville

County: Greenville

Coordinates: +34.751848, -82.256701

Date Established: February 17, 2009

Site Evaluation: April 1, 2025

The Hillcrest Middle School Monitoring Site is located in Simpsonville and represents suburban areas near the interstate corridors in the Greenville MSA. Initiated in 2008, this Site was selected as a monitoring location based on results of the Greenville MSA Ozone Study. This Site supports an ozone monitor that fulfills the 40 CFR Part 58, Appendix D, Section 4.1 requirement and a required collocated PM_{2.5} FRM sampler pair that fulfills 40 CFR Part 58, Appendix A, Section 3.2. The sample inlets are 259 meters from the nearest road.

This Site meets all 40 CFR Part 58, Appendix E requirements.

Changes for 2025-2026

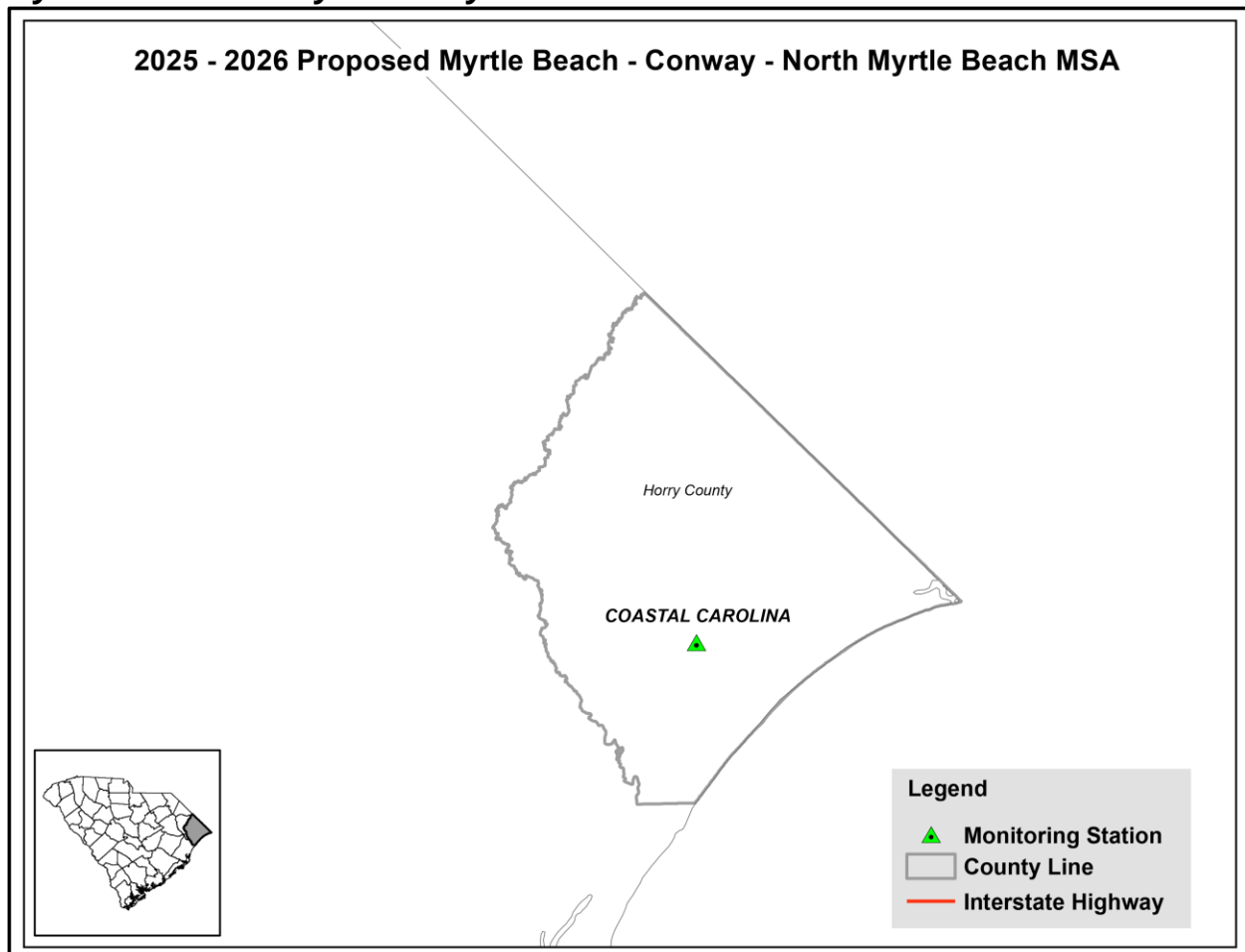
There are no changes planned for 2025-2026.

Monitors:

Parameter	Scale	Objective	Designation	Probe Height (m)	Analysis & (Method Code)	Sampling Frequency
Ozone 44201-1	Urban	Population Exposure	SLAMS	3.92	Ultraviolet Adsorption (087)	Continuous
PM _{2.5} 88101-1	Urban	Population Exposure	SLAMS	3.46	FRM Gravimetric w/ VSCC (145)*	1:3
PM _{2.5} 88101-2	Urban	Population Exposure	QA Collocated SLAMS	3.46	FRM Gravimetric w/ VSCC (145)	1:3

*Indicates the Primary Monitoring Method for PM_{2.5}

Myrtle Beach-Conway-North Myrtle Beach MSA



Classification of Monitoring Type by Site:

Site ID	Site Name	PM _{2.5}	PM _{2.5} Cont.	PM ₁₀	Lead	Ozone	SO ₂	NO ₂	CO
45-051-0008	Coastal Carolina		○			●			
Total		0	1	0	0	1	0	0	0
○ SPM / Other ● SLAMS ○○/●● Duplicate / QA Monitors									

Coastal Carolina

CSA/MSA: Myrtle Beach-Conway-North Myrtle Beach MSA

AQS Site ID: 45-051-0008

Location: 485 Century Circle, Conway

County: Horry

Coordinates: +33.800500, -78.994100

Date Established: June 27, 2016

Site Evaluation: May 6, 2025

In 2016, the Department established the Coastal Carolina Monitoring Site on the grounds of the Coastal Carolina University in Conway. This Site supports a PM_{2.5} monitor and a required ozone monitor that fulfills 40 CFR Part 58, Appendix D, Section 4.1 for the MSA and measures maximum ozone concentrations.

40 CFR Part 58, Appendix D, Section 4.1 states that if the most recent 3-year ozone design value exceeds 85 percent of the ozone NAAQS (which is 0.070 ppm), then another ozone monitor must be added in the MSA. The EPA invalidated portions of the 2018 and 2019 ozone data sets. In 2023, the 3-year ozone design value exceeded 85 percent of the ozone NAAQS. Therefore, the Department has started the process of finding an appropriate Site for a second ozone monitor in the MSA. Monitoring for PM_{2.5} began February 23, 2023; however, the CBSA was updated in July 2023 and the PM_{2.5} monitor is no longer required. The PM_{2.5} monitor will remain at the Site as an SPM monitor. The sample inlet is 18.3 meters from the nearest road. This Site meets all 40 CFR Part 58, Appendix E requirements.

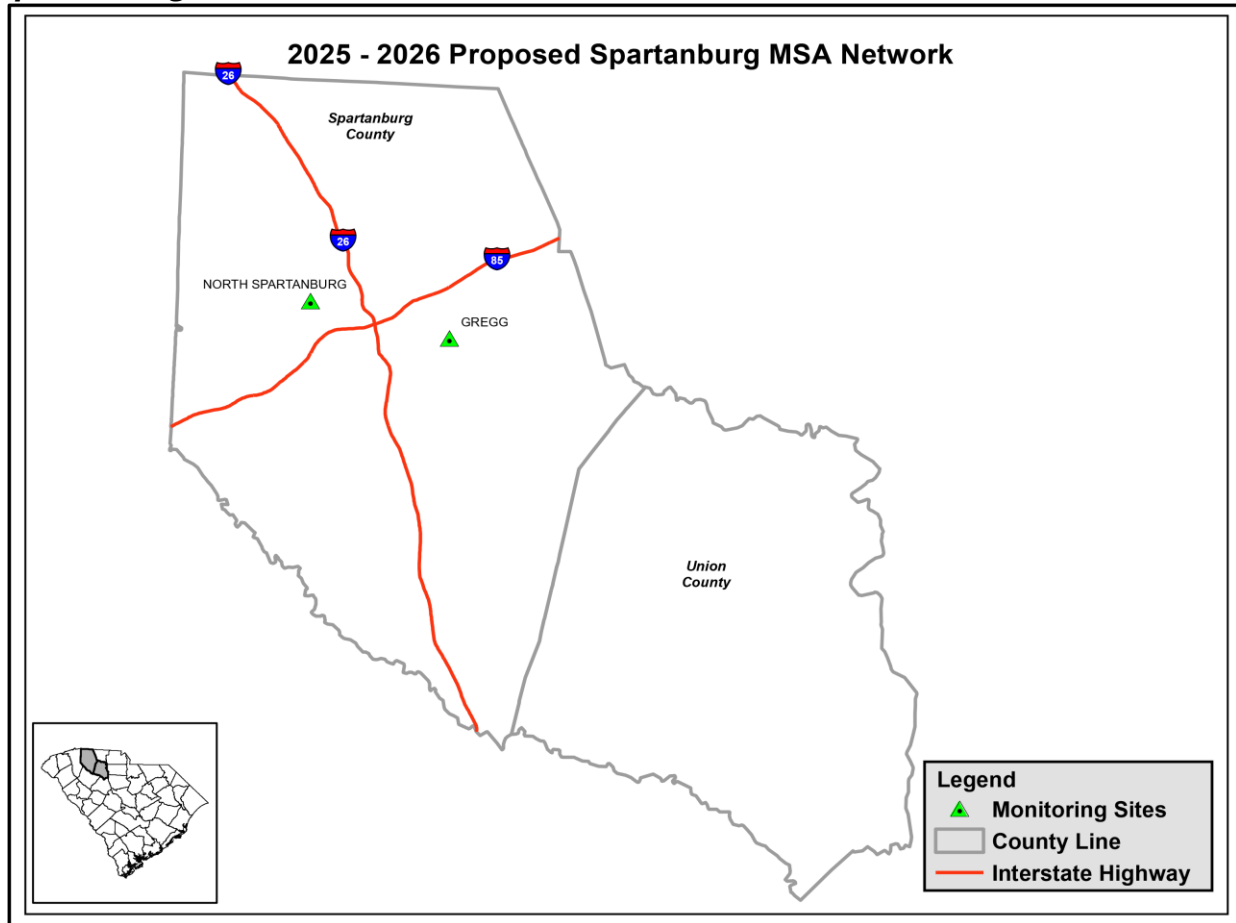
Changes for 2025-2026:

There are no changes planned for 2025-2026.

Monitors:

Parameter	Scale	Objective	Designation	Probe Height (m)	Analysis & (Method Code)	Sampling Frequency
Ozone 44201-1	Urban	Population Exposure	SLAMS	4.10	Ultraviolet (087)	Continuous
PM _{2.5} 88101-3	Urban	Population Exposure	SPM	4.53	Broadband Spectroscopy (636)	Continuous

Spartanburg MSA



Classification of Monitoring Type by Site:

Site ID	Site Name	PM _{2.5}	PM _{2.5} Cont.	PM ₁₀	Lead	Ozone	SO ₂	NO ₂	CO
45-083-0009	North Spartanburg Fire Station #2					●			
45-083-0011	T.K. Gregg	●	○						
Total		1	1	0	0	1	0	0	0
○ SPM / Other ● SLAMS ○○/●● Duplicate / QA Monitors									

North Spartanburg Fire Station #2

CSA/MSA: Greenville-Spartanburg-Anderson CSA / Spartanburg MSA

AQS Site ID: 45-083-0009

Location: 1556 John Dodd Road, Inman

County: Spartanburg

Coordinates: +34.988706, -82.075802

Date Established: April 4, 1990

Site Evaluation: April 17, 2025

The North Spartanburg Fire Station #2 Monitoring Site was established on April 4, 1990, in rural Spartanburg County, northwest of the City of Spartanburg. This Site supports a required ozone monitor to fulfill the 40 CFR Part 58, Appendix D, Section 4.1 requirements. The objective is to measure maximum ozone concentration. The sample inlet is 92.5 meters from the nearest road.

This site meets all the 40 CFR Part 58 Appendix E siting criteria.

Changes for 2025-2026:

There are no changes planned for 2025-2026.

Monitors:

Parameter	Scale	Objective	Designation	Probe Height (m)	Analysis & (Method Code)	Sampling Frequency
Ozone 44201-1	Urban	Max Ozone Concentration	SLAMS	3.82	Ultraviolet Absorption (087)	Continuous

T.K. Gregg Recreation Center

CSA/MSA: Greenville-Spartanburg-Anderson CSA / Spartanburg MSA

AQS Site ID: 45-083-0011

Location: 267 Northview Street, Spartanburg

County: Spartanburg

Coordinates: +34.955566, -81.924797

Date Established: December 29, 2008

Site Evaluation: April 17, 2025

The T.K. Gregg Recreation Center Monitoring Site is located in downtown Spartanburg in Spartanburg County. This Site has a PM_{2.5} FRM sampler and a continuous PM_{2.5} monitor. The sample inlets are 48.2 meters from the nearest road.

This Site meets all 40 CFR Part 58, Appendix E requirements.

Changes for 2025-2026:

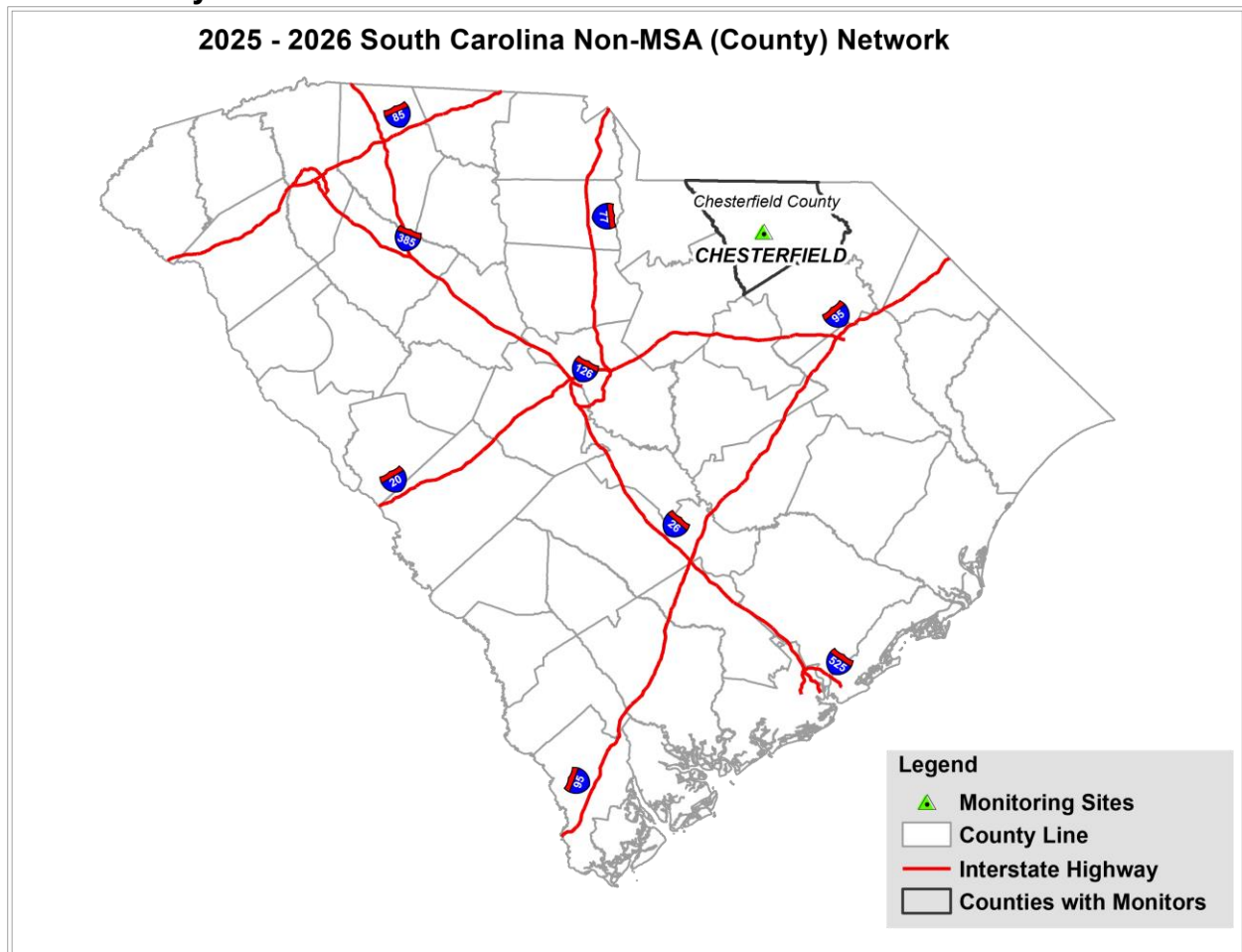
Data collected by the FEM T640 monitor at this site will be labeled with a NAAQS Exclusion for up to 23 months after the data alignment firmware update on September 6, 2023, to assess the comparability of the data to the FRM sampler. Data quality will be addressed at the end of the NAAQS Exclusion time period. There are no changes planned for 2025-2026.

Monitors:

Parameter	Scale	Objective	Designation	Probe Height (m)	Analysis & (Method Code)	Sampling Frequency
PM _{2.5} 88101-1	Neighborhood	Highest Concentration	SLAMS	2.44	FRM Gravimetric w/VSCC (145)*	1:1
PM _{2.5} 88101-3	Neighborhood	Highest Concentration	SPM	2.80	Broadband Spectroscopy (636)	Continuous

*Indicates the Primary Monitoring Method for PM_{2.5}

Remainder of State



Classification of Monitoring Type by Site:

Site ID	Site Name	PM _{2.5}	PM _{2.5} Cont.	Ozone	Metals	Carbonyls	SVOCs	VOCs	EtO
45-025-0001	Chesterfield	●	●	○	○○	○○	○○	○○	○
Total		1	1	1	2	2	2	2	1
○ SPM / Other ● SLAMS ○○/●● Duplicate / QA Monitors									

Chesterfield (NATTS)

CSA/MSA: none/none

AQS Site ID: 45-025-0001

Location: SC Hwy 145, McBee (Route 2 Box 100)

County: Chesterfield

Coordinates: +34.615367, -80.198787

Date Established: January 6, 2000

Site Evaluation: April 10, 2025

The Chesterfield Monitoring Site is located in central Chesterfield County. This Site has an ozone monitor and a required continuous FEM PM_{2.5} monitor that is collocated with a FRM PM_{2.5} sampler, which fulfills the 40 CFR Part 58, Appendix A, Section 3.2 collocation requirement. The FRM PM_{2.5} sampler also fulfills the Appendix D, Section 4.7.3 requirement for regional transport concentrations.

The Chesterfield Monitoring Site is a rural NATTS Site which includes carbonyls, total VOCs, EtO, PAHs, and metals sampling. The sample inlets are 34 meters from the nearest road.

The criteria pollutants meet all 40 CFR Part 58, Appendix E requirements. The duplicate metals have a tree that is an obstruction, but there is still 356° of air flow around those monitors.

Changes for 2025-2026:

There are no changes planned for 2025-2026.

Monitors:

Parameter	Scale	Objective	Designation	Probe Height (m)	Analysis & (Method Code)	Sampling Frequency
Ozone 44201-1	Regional	General / Background	SPM	4.43	Ultraviolet Absorption (087)	Continuous
PM _{2.5} 88101-1	Regional	Regional Transport	QA Collocated SLAMS	3.01	FRM Gravimetric w/ VSCC (145)	1:3
PM _{2.5}	Regional	Regional	SLAMS	2.85	FEM	Continuous

Parameter	Scale	Objective	Designation	Probe Height (m)	Analysis & (Method Code)	Sampling Frequency
88101-3		Transport			Broadband Spectroscopy (636)*	
Carbonyls	Urban	NATTS	Other	4.24	DNPH/HPLC	1:6
Collocated Carbonyls	Urban	NATTS	Other	4.24	DNPH/HPLC	1:6
PAHs	Urban	NATTS	Other	1.13	PUF/GCMS	1:6
Collocated PAHs	Urban	NATTS	Other	1.12	PUF/GCMS	1:6
VOC	Urban	NATTS	Other	4.35	Canister/ GCMS	1:6
Collocated VOC	Urban	NATTS	Other	1.94	Canister/ GCMS	1:6
Ethylene Oxide	Urban	NATTS	Other	4.35	Canister/ GCMS	1:6
Metals	Urban	NATTS	Other	2.36	PM ₁₀ / ICP/MS	1:6
Collocated Metals	Urban	NATTS	Other	2.34	PM ₁₀ / ICP/MS	1:6

*Indicates the Primary Monitoring Method for PM_{2.5}

Appendix A: Summary of Public Comments

There were no public comments received.

Appendix B: Site Evaluations Summary for CFR 40 Part 58, Appendix E Table

Site Evaluations are conducted yearly on each monitoring site to ensure compliance to requirements found in 40 CFR Part 58, Appendix E. After appropriate administrative review, the Site Evaluations are sent to the EPA Region 4. The following tables summarize the information about the latest Site Evaluation for each of the monitoring sites.

The first table gives the column number and the shortened Column Name listed in the columns of the second table. It also gives the Section number and the regulatory requirement it represents from 40 CFR, Part 58, Appendix E. The second table lists each monitoring site, their individual criteria pollutant monitors, and the fulfillment and/or measurements of the 40 CFR Part 58, Appendix E requirements. For brevity, the column titles in the second table have been shortened as follows:

Column	Column Name	40 CFR Part 58, Appendix E Requirements
Column 1:	Site ID, Site Name and Date Visited	Site Identification information and date the Site Evaluation was conducted.
Column 2:	Parameter	Criteria Pollutant.
Column 3:	Sampling Train	Section 2.6. For reactive gases, is sampling train made of borosilicate glass, FEP Teflon or their equivalent?
Column 4:	Sampling Time	Section 2.6. For reactive gases, is sampling time <20 seconds?
Column 5:	Probe Height	Section 2.1. Horizontal and Vertical Placement: Height from ground to probe must be 2-15 meters.
Column 6:	Support Structure	Section 2.1. Horizontal and Vertical Placement: Is Horizontal and vertical distance from supporting structure >1 meter.
Column 7:	Collocation Placement	Section 11. Horizontal and Vertical Placement: Collocated monitors must be within 4 meters of each other.
Column 8:	Flow Rates	Section 11. Horizontal and Vertical Placement: For PM collocation, flow rates greater than 200 liters/min must be at least 2 meters apart or at least 1-meter flow rates for less than 200 liters/min.
Column 9:	Minor Sources	Section 2.2. Spacing from Minor Sources: Probe should be away from minor sources.
Column 10:	Obstructions	Section 2.3. Spacing from Obstructions: Distance from probe to obstacle must be at least twice the height the obstacle protrudes above the probe.
Column 11:	Airflow	Section 2.3. Spacing from Obstructions: Must have continuous unrestricted airflow 270 degrees around probe. (Yes means the probe has at least 270 degrees around the probe).
Column 12:	Dripline	Section 2.4. Spacing from Trees: Distance from dripline of trees to probe must be <10 meters.
Column 13:	Roadway	Section 2.5. Spacing from Roadways: Does it meet distance from roadway to probe?

Site ID; Site Name; Date Visited	Parameter	Sam- pling Train	Sam- pling Time	Probe Height (m)	Vertical Distance from Support (m)	Collocation Placement (m)	Flow Rate	Minor Sources	Obstructions	Airflow	Drip- line (m)	Roadway (m)
Augusta-Richmond County, GA-SC MSA												
45-003-0003; Jackson; April 22, 2025	Ozone	Yes	Yes	3.33	0.75	N/A	N/A	Yes	Yes	Yes	14.0	128
45-037-0001; Trenton; April 22, 2025	Ozone	Yes	Yes	4.29	1.65	N/A	N/A	Yes	Yes	Yes	31.6	30.3
45-037-0001; Trenton; April 22, 2025	PM _{2.5} Cont.	N/A	N/A	4.35	1.71	N/A	Yes	Yes	Yes	Yes	31.6	30.3
45-037-0001; Trenton; April 22, 2025	PM _{2.5} Int.	N/A	N/A	4.66	2.08	N/A	Yes	Yes	Yes	Yes	31.6	30.3
Charleston-North Charleston MSA												
45-015-1002; Moncks Corner; March 28, 2025	Ozone	Yes	Yes	4.41	1.91	N/A	N/A	Yes	Yes	Yes	15.8	177
45-019-0003; Jenkins Ave; March 25, 2025	NO ₂	Yes	Yes	4.69	1.97	N/A	N/A	Yes	Yes	Yes	24.8	33.5
45-019-0003; Jenkins Ave; March 25, 2025	SO ₂	Yes	Yes	4.69	1.97	N/A	N/A	Yes	Yes	Yes	24.8	33.5

45-019-0020 N. Charleston F.S. June 6, 2025	PM _{2.5} Int.	N/A	N/A	2.31	2.04	2.07	Yes	Yes	Yes	Yes	21.0	24.6
45-019-0020 N. Charleston F.S. June 6, 2025	PM _{2.5} Int.	N/A	N/A	2.31	2.04	2.07	Yes	Yes	Yes	Yes	21.0	24.6
45-019-0020 N. Charleston F.S. June 6, 2025	PM _{2.5} Cont.	N/A	N/A	2.91	2.64	N/A	Yes	Yes	Yes	Yes	21.0	24.6
45-019-0020 N. Charleston F.S. June 6, 2025	PM ₁₀ Cont.	N/A	N/A	2.91	2.64	N/A	Yes	Yes	Yes	Yes	21.0	24.6
45-019-0046; Cape Romain; June 4, 2025	Ozone	Yes	Yes	4.15	1.43	N/A	N/A	Yes	Yes	Yes	11	86
45-019-0046; Cape Romain; June 4, 2025	NO ₂	Yes	Yes	4.15	1.4	N/A	N/A	Yes	Yes	Yes	12.9	86
45-019-0046; Cape Romain; June 4, 2025	PM _{2.5} Cont.	N/A	N/A	5.02	2.3	N/A	Yes	Yes	Yes	Yes	11	86
Charlotte-Concord-Gastonia MSA												
45-091-0008; York Landfill; April 29, 2025	Ozone	Yes	Yes	4.51	1.94	N/A	N/A	Yes	Yes	Yes	25.0	34.8
45-091-0008; York Landfill; April 29, 2025	SO ₂	Yes	Yes	4.51	1.94	N/A	N/A	Yes	Yes	Yes	25.0	34.8
Columbia MSA												

45-079-0022; Irmo DJJ; March 18, 2025	PM _{2.5} Int.	N/A	N/A	2.05	1.73	2.15	Yes	Yes	Yes	Yes	19.4	33.0
45-079-0022; Irmo DJJ; March 18, 2025	PM _{2.5} Cont.	N/A	N/A	2.25	1.93	2.15	Yes	Yes	Yes	Yes	19.4	33.0
45-079-0007; Parklane; March 18, 2025	PM _{2.5} Int.	N/A	N/A	4.75	2.06	2.35	Yes	Yes	No	Yes	15.0	41.6
45-079-0007; Parklane; March 18, 2025	PM _{2.5} Int.	N/A	N/A	4.75	2.05	2.35	Yes	Yes	No	Yes	15.0	41.6
45-079-0007; Parklane; March 18, 2025	PM _{2.5} Cont.	N/A	N/A	4.79	2.15	N/A	Yes	Yes	No	Yes	15.0	41.6
45-079-0007; Parklane; March 18, 2025	Speciated PM _{2.5}	N/A	N/A	2.46	2.06	N/A	Yes	Yes	Yes	Yes	20.4	41.6
45-079-0007; Parklane; March 18, 2025	PM ₁₀	N/A	N/A	4.73	2.04	N/A	Yes	Yes	No	Yes	15.0	41.6
45-079-0007; Parklane; March 18, 2025	PM ₁₀ Cont.	N/A	N/A	4.79	2.15	N/A	Yes	Yes	No	Yes	15.0	41.6
45-079-0007; Parklane; March 18, 2025	Ozone	Yes	Yes	4.33	1.69	N/A	N/A	Yes	Yes	Yes	15.0	41.6
45-079-0007; Parklane; March 18, 2025	SO ₂	Yes	Yes	4.33	1.69	N/A	N/A	Yes	Yes	Yes	15.0	41.6

45-079-0007; Parklane; March 18, 2025	CO	Yes	Yes	4.33	1.69	N/A	N/A	Yes	Yes	Yes	15.0	41.6
45-079-0007; Parklane; March 18, 2025	NO/NO _y	Yes	Yes	8.6	N/A	N/A	N/A	Yes	Yes	Yes	15.0	41.6
45-079-0021; Congaree Bluff; March 4, 2025	Ozone	Yes	Yes	4.5	1.8	N/A	N/A	Yes	No	No	14.4	187.5
45-079-1001; Sandhill; March 04, 2025	Ozone	Yes	Yes	4.05	1.45	N/A	N/A	Yes	Yes	Yes	15.8	31.1
45-079-1001; Sandhill; March 04, 2025	NO ₂	Yes	Yes	4.05	1.45	N/A	N/A	Yes	Yes	Yes	15.8	31.1
Florence MSA												
45-031-0003; Pee Dee; March 13, 2025	Ozone	Yes	Yes	4.03	1.35	N/A	N/A	Yes	Yes	Yes	No Trees	193.3
45-041-0003; Williams Middle School; March 13, 2025	PM _{2.5} Cont.	N/A	N/A	2.76	2.20	N/A	Yes	Yes	Yes	Yes	18.8	110
45-041-0003; Williams Middle School; March 13, 2025	PM _{2.5} Int.	N/A	N/A	2.91	2.35	N/A	Yes	Yes	Yes	Yes	18.8	110
Greenville-Anderson-Greer MSA												
45-007-0006; Garrison Arena; May 21, 2025	Ozone	Yes	Yes	4.54	1.9	N/A	N/A	Yes	Yes	Yes	43.8	14.25

45-045-0015; Greenville ESC; April 1, 2025	SO ₂	Yes	Yes	4.32	1.40	N/A	N/A	Yes	No	Yes	12.2	12.1
45-045-0015; Greenville ESC; April 1, 2025	NO ₂	Yes	Yes	4.32	1.40	N/A	N/A	Yes	No	Yes	12.2	12.1
45-045-0015; Greenville ESC; April 1, 2025	PM _{2.5} Cont.	N/A	N/A	5.08	2.16	N/A	Yes	Yes	No	Yes	12.2	12.1
45-045-0015; Greenville ESC; April 1, 2025	PM ₁₀ Cont.	N/A	N/A	5.08	2.16	N/A	Yes	Yes	No	Yes	12.2	12.1
45-045-0015; Greenville ESC; April 1, 2025	PM _{2.5} Int.	N/A	N/A	4.76	2.06	N/A	Yes	Yes	No	No	12.2	12.1
45-045-0016; Hillcrest; April 1, 2025	Ozone	Yes	Yes	3.92	1.22	N/A	N/A	Yes	Yes	Yes	No Trees	259
45-045-0016; Hillcrest; April 1, 2025	PM _{2.5} Int.	N/A	N/A	3.46	2.06	1.7	Yes	Yes	Yes	Yes	No Trees	259
45-045-0016; Hillcrest; April 1, 2025	PM _{2.5} Int.	N/A	N/A	3.46	2.06	1.7	Yes	Yes	Yes	Yes	No Trees	259
Myrtle Beach-Conway-North Myrtle Beach MSA												
45-051-0008; Coastal Carolina; May 06, 2025	Ozone	Yes	Yes	4.10	1.55	N/A	N/A	Yes	Yes	Yes	28.0	18.3

45-051-0008; Coastal Carolina; May 06, 2025	PM _{2.5} Cont.	N/A	N/A	4.53	1.98	N/A	Yes	Yes	Yes	Yes	28.4	18.3
Spartanburg MSA												
45-083-0009; N. Spartanburg #2; April 17, 2025	Ozone	Yes	Yes	3.82	1.05	N/A	N/A	Yes	Yes	Yes	20.8	92.5
45-083-0011; T.K. Gregg; April 17, 2025	PM _{2.5} Int.	N/A	N/A	2.80	2.41	3.72	Yes	Yes	Yes	Yes	34.0	48.2
45-083-0011; T.K. Gregg; April 17, 2025	PM _{2.5} Cont.	N/A	N/A	2.44	2.05	3.72	Yes	Yes	Yes	Yes	34.0	48.2
Remainder of State												
45-025-0001; Chesterfield; April 10, 2025	PM _{2.5} Cont.	N/A	N/A	2.85	2.04	N/A	Yes	Yes	Yes	Yes	14.8	34
45-025-0001; Chesterfield; April 10, 2025	Ozone	Yes	Yes	4.43	1.61	N/A	N/A	Yes	Yes	Yes	12.6	34
45-025-0001; Chesterfield; April 10, 2025	PM _{2.5} Int.	N/A	N/A	3.01	2.2	N/A	Yes	Yes	Yes	Yes	>14.8	34

Appendix C: Alphabetical Order of Monitoring Sites

Monitoring Site Name	MSA/County	Page
Cape Romain	Charleston-North Charleston MSA	59
Chesterfield	Chesterfield County	84
Coastal Carolina	Myrtle Beach-Conway-North Myrtle Beach MSA	79
Congaree Bluff	Columbia MSA	67
Garrison Arena	Greenville-Anderson-Greer MSA	79
Greenville Employment Security Commission (ESC)	Greenville-Anderson-Greer MSA	75
Hillcrest Middle School	Greenville-Anderson-Greer	77
Irmo DJJ	Columbia MSA	68
Jackson Middle School	Augusta-Richmond County, GA-SC MSA	51
Jenkins Ave. Fire Station	Charleston-North Charleston MSA	56
Moncks Corner National Guard	Charleston-North Charleston MSA	55
North Charleston Fire Station	Charleston-North Charleston MSA	57
North Spartanburg Fire Station #2	Spartanburg MSA	81
Parklane (NCore)	Columbia MSA	64
Pee Dee Experimental Station	Florence MSA	71
Sandhill Experimental Station	Columbia MSA	69
T.K. Gregg Recreational Center	Spartanburg MSA	82
Trenton	Augusta-Richmond County, GA-SC MSA	52
Williams Middle School	Florence MSA	72
York Landfill	Charlotte-Concord-Gastonia, SC-NC MSA	62

Appendix D: Summary of Changes for July 1, 2023 through December 31, 2024

Augusta-Richmond County, GA-SC MSA

No changes planned.

Charleston-North Charleston MSA

FAA Beacon Monitoring Site – The North Charleston Fire Station Monitoring Site was established on November 08, 2021. The FAA Beacon Monitoring Site operated for one year concurrently with the North Charleston Fire Station Monitoring Site. On January 5, 2023, PM_{2.5} monitoring was discontinued.

Jenkins Ave. Fire Station Monitoring Site – The SLAMS PM₁₀ monitoring was discontinued on February 2, 2023, and relocated to the North Charleston Fire Station Monitoring Site.

North Charleston Fire Station Monitoring Site – On February 2, 2023, the PM₁₀ monitoring was relocated from the Jenkins Ave. Fire Station Monitoring Site to the North Charleston Fire Station Monitoring Site. On June 13, 2023, Teledyne released a T640 and T640X data alignment firmware update which is meant to better align data collected on these monitors to FRM samplers. In order to evaluate the comparability of the data to the FRM samplers in the network, the PM_{2.5} T640X monitor at this site will be designated SPM.

Charlotte-Concord-Gastonia, NC-SC MSA

York Landfill Monitoring Site – The York Landfill Monitoring Site was scheduled to operate a special purpose rotating SO₂ monitor 2020-2022. SO₂ monitoring was discontinued on January 13, 2023.

Columbia MSA

Cayce City Hall Monitoring Site – Approval for the discontinuation and relocation of PM₁₀ monitoring from the Cayce City Hall Monitoring Site to the Parklane Monitoring site was approved by EPA on February 22, 2023. PM₁₀ monitoring was discontinued on May 30, 2023.

Parklane Monitoring Site – Approval for the discontinuation and relocation of PM₁₀ monitoring from the Cayce City Hall Monitoring Site to the Parklane Monitoring site was approved by EPA on February 22, 2023. PM₁₀ monitoring began on May 30, 2023. SVOC monitoring was discontinued on January 30, 2023. On June 13, 2023, Teledyne released a T640 and T640X data alignment firmware update which is meant to better align data collected on these monitors to FRM samplers. In order to evaluate the comparability of the data to the FRM samplers in the network, an additional PM_{2.5} T640X monitor at this site will be used for testing and designated SPM with a NAAQS exclusion.

Irmo Monitoring Site – The Irmo DJJ Monitoring Site was established and began continuous monitoring of PM_{2.5} on January 20, 2023, to replace the Irmo Monitoring Site after the landowner requested site relocation. The replacement site was approved by EPA on October 26, 2021. Continuous PM_{2.5} monitoring was discontinued at Irmo Monitoring Site in conjunction with the start-up of Irmo DJJ on January 20, 2023. The Irmo Monitoring Site and its remaining PM_{2.5} FRM sampler were discontinued on June 2, 2023.

Irmo DJJ Monitoring Site – The Irmo DJJ Monitoring Site was established on January 20, 2023, as a replacement for the Irmo Monitoring site. The replacement site was approved by EPA on October 26, 2021. PM_{2.5} monitoring began on January 20, 2023. On June 13, 2023, Teledyne released a T640 and T640X data alignment firmware update which is meant to better align data collected on these monitors to FRM samplers. In order to evaluate the comparability of the data to the FRM samplers in the network, an additional PM_{2.5} T640X monitor at this site will be used for testing and designated SPM with a NAAQS exclusion.

Florence MSA

On June 13, 2023, Teledyne released a T640 and T640X data alignment firmware update which is meant to better align data collected on these monitors to FRM samplers. In order to evaluate the comparability of the data to the FRM samplers in the network, the T640 monitor at this site will be designated SPM.

Greenville-Anderson MSA

No changes planned.

Hilton Head Island-Bluffton MSA

No changes planned.

Myrtle Beach-Conway-North Myrtle Beach SC MSA

Coastal Carolina Monitoring Site –The Coastal Carolina Monitoring Site was approved by EPA on December 20, 2022, as a location for monitoring expected maximum concentration for PM_{2.5} and PM₁₀ in the MSA. One Teledyne T640 monitor began monitoring for continuous PM_{2.5} at the Coastal Carolina Monitoring Site on February 23, 2023.

Spartanburg MSA

No changes planned.

Sumter MSA

No changes planned.

Remainder of State

Chesterfield Monitoring Site – Collocated Ethylene Oxide monitoring at the Chesterfield Monitoring Site was discontinued on December 19, 2022.

Appendix E: EPA Correspondence



REGION 4

ATLANTA, GA 30303

November 6, 2024

Rhonda B. Thompson, PE
Chief, Bureau of Air Quality Control
South Carolina Department
of Health and Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

Dear Ms. Thompson:

Thank you for submitting the 2024 Annual Ambient Air Monitoring Network Plan (Network Plan) dated July 7, 2024, for the South Carolina Department of Environmental Services (SC DES). The Network Plan is required by 40 Code of Federal Regulations (CFR) §58.10. The U.S. Environmental Protection Agency Region 4 understands that the SC DES provided the public with a 30-day review period for the draft Network Plan and that no comments were received other than comments from the EPA on the draft Network Plan. The EPA approves the proposed monitoring network changes and all components of South Carolina's Network Plan.

On July 21, 2023, the Office of Management and Budget (OMB) updated the core based statistical areas for the nation. Due to these updates, the increase in population in the Spartanburg metropolitan statistical area (MSA) and the Myrtle Beach-Conway-North Myrtle Beach MSA have triggered the requirement to add a second ozone monitor. The SC DES has begun the process of finding second ozone monitor locations in both MSAs.

The SC DES has requested a waiver of a specific siting requirement of 270 degrees continuous unobstructed air flow for the Greenville ESC site (AQS ID: 45-045-0015) in Appendix G of the Network Plan. This site met siting requirements under the previous rules, which required 270 degrees of unobstructed airflow, but does not meet the updated requirements of having at least 270 continuous degrees of unobstructed air flow. Appendix G references "Tree D" as the obstruction causing the lack of continuous airflow. The EPA has determined that this request meets waiver provisions in 40 CFR 58 Appendix E Section 4 and approves the requested waiver of the word "continuous" in the 40 CFR 58 Appendix E Section 2.3 (b) requirement.

The EPA recommends SC DES continue to seek permission to remove "Tree D". If the tree cannot be removed, SC DEC should reassess and again request this waiver in the 2025 Network Plan along with the next 5-year network assessment. All other siting criteria must continue to be met at the Greenville ESC site.

Thank you for working with the EPA to monitor air pollution and safeguard the air quality in South Carolina. If you have any questions or concerns, please contact Darren Palmer at (404) 562-9052 or Katherine Beck at (404) 562-8166.

Sincerely,

**DENISSE
DIAZ**

Digitally signed by
DENISSE DIAZ
Date: 2024.11.06
13:59:31 -05'00'

Denisse D. Diaz
Director
Air and Radiation Division

Enclosure

cc: Micheal Mattocks, Assistant Bureau Chief, BEHS
Connie Turner, Director, Division of Air Quality Analysis, BEHS
Heinz Kaiser, Director, Division of Air Emissions Evaluation and Support BAQ
Mary Peyton Wall, Air Regulation and Data Support Section BAQ
Joel Hodges, Air Regulation and Data Support Section, BAQ
Keith Harris, Region 4 LSASD

2024 State of South Carolina Ambient Air Monitoring Network Plan

U.S. EPA Region 4 Comments and Recommendations

This document contains the U.S. Environmental Protection Agency's comments and recommendations on the state of South Carolina's 2024 Ambient Air Monitoring Network Plan (Network Plan). Ambient air monitoring rules, which include regulatory requirements that address network plans, data certification, and minimum monitoring requirements, among other requirements, are found in 40 CFR Part 58. Minimum monitoring requirements for criteria pollutants are listed in 40 CFR Part 58, Appendix D. Minimum monitoring requirements are listed for ozone (O₃), particulate matter less than 2.5 microns (PM_{2.5}), particulate matter less than 10 microns (PM₁₀), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), carbon monoxide (CO), and lead (Pb).

The minimum monitoring requirements are based on core based statistical area (CBSA) boundaries as defined by the U.S. Office of Management and Budget (OMB), July 1, 2023, population estimates from the U.S. Census Bureau, and historical ambient air monitoring data. Minimum monitoring requirements for O₃, PM_{2.5}, and PM₁₀ only apply to metropolitan statistical areas (MSAs), which are a subset of CBSAs. OMB currently defines 10 MSAs in the state of South Carolina. The July 1, 2023, population estimates from the U.S. Census Bureau for each MSA in South Carolina and the total population estimates of MSAs shared with North Carolina and Georgia are shown in Table 1.

Table 1: Metropolitan Statistical Areas and July 1, 2023, Population Estimates

MSA Name	Population
Charlotte-Concord-Gastonia, NC-SC	2,805,115
Greenville-Anderson-Greer, SC	975,480
Columbia, SC	858,302
Charleston-North Charleston, SC	849,417
Augusta-Richmond County, GA-SC	629,429
Myrtle Beach-Conway-North Myrtle Beach, SC	397,478
Spartanburg, SC	383,327
Hilton Head Island-Bluffton-Port Royal, SC	232,523
Florence, SC	199,630
Sumter, SC	104,165

The estimated 2022 census numbers indicated that the population of the Myrtle Beach-Conway-North Myrtle Beach, SC-NC MSA was over 500,000 people, however with the redefined MSA boundary the 2023 estimated population is now less than 500,000 and will not trigger the anticipated additional PM₁₀ monitoring requirements.

Proposed Monitoring Network Changes

The EPA has approval authority for changes to regulatorily required state or local air monitoring stations (SLAMS). SLAMS include the ambient air quality monitoring sites and monitors required by 40 CFR Part 58, Appendix D and are needed to meet the monitoring objectives of Appendix D, including national ambient air quality standards (NAAQS) comparisons, and may also serve other data purposes. The EPA is not required to approve changes made to special purpose monitors (SPMs). SPMs are

monitors designated by the monitoring agency as special purpose and do not count towards minimum monitoring requirements of 40 CFR Part 58. SPMs are required to be identified in the Network Plan for public and the EPA review.

The South Carolina Department of Environmental Services (SC DES) proposed changes to its monitoring network for 2024 through 2025 Table 2 summarizes the requested monitor discontinuations and relocations. Information related to each proposed change as well as the EPA's decision and rationale for approval/disapproval of each proposed change are contained in the following pollutant sections.

Table 2: Proposed Monitoring Changes

AQS ID	CBSA	Site Name	Pollutant	Type	Comments
45-019-0048	Charleston-North Charleston, SC MSA	Cape Romain Monitoring Site	NO ₂	SPM	On January 3, 2024, the SPM NO ₂ monitor was discontinued. Acknowledged.
45-091-0008	Charlotte-Concord-Gastonia, NC-SC MSA	York Landfill	SO ₂	SPM	On January 2, 2024, the York Landfill monitoring site began operating a rotating SPM SO ₂ monitor. Acknowledged.
45-037-0001	August-Richmond County, GA-SC MSA	Trenton	SO ₂	SPM	On January 3, 2024, the rotational SPM SO ₂ monitor was discontinued. Acknowledged.
45-045-0015	Greenville-Anderson-Greer, SC MSA	Greenville ESC	PM _{2.5} , PM ₁₀ , SO ₂ , NO ₂	SLAMS	The EPA approves the waiver request submitted with the 2024 Network Plan. More information is found in the "Waivers of Requirements" section.

Network Plan Public Comments

40 CFR § 58.10(a)(1)

The requirement for a public comment period and response from the agency in the final Network Plan is found in 40 CFR 58.10(a)(1):

"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 also include and address, as appropriate, any received comments."

The proposed 2024 Network Plan was available for public review and comment from April 26, 2024, through May 28, 2024. The Network Plan meets the public comment requirements of 40 CFR 58.10.

Among other things, Executive Order 14096: *Revitalizing Our Nation's Commitment to Environmental Justice for All*¹ directs federal agencies to seek out and encourage the involvement of persons and communities potentially affected by providing timely opportunities for members of the public to share information or concerns and participate in decision-making processes, ensuring that agencies offer or provide information in a manner that provides meaningful access to individuals with limited English

¹ <https://www.whitehouse.gov/briefing-room/presidential-actions/2023/04/21/executive-order-on-revitalizing-our-nations-commitment-to-environmental-justice-for-all/>

proficiency, individuals with disabilities, and communities or groups of people who are potentially affected and who are not regular participants in Federal decision-making. While the EO does not impose new requirements on states, the EPA encourages states to adopt public comment and engagement practices that are sufficiently inclusive to inform all potentially impacted communities.

Operating Schedules

40 CFR § 58.12

The operating schedules proposed by the SC DES in its Network Plan meet the requirements for continuous analyzers and all manual Pb, PM₁₀, PM_{2.5}, and PM_{2.5} Speciation Trends Network (STN) monitors.

Air Quality Index (AQI) Reporting

40 CFR § 58.50

AQI reporting is required in MSAs with populations over 350,000. Six MSAs in the state of South Carolina have populations over 350,000 (see Table 3). The SC DES reports AQI values for these MSAs and one additional MSA. The Mecklenburg County Air Quality reports AQI values for the Charlotte-Concord-Gastonia, NC-SC MSA. Both the Georgia Environmental Protection Division (GA EPD) and the SC DES report AQI values for the Augusta-Richmond County GA-SC MSA.

Table 3: AQI Reporting

MSAs Reporting
Greenville-Anderson-Greer, SC
Columbia, SC
Charleston-North Charleston, SC
Augusta-Richmond County, GA-SC
Myrtle Beach-Conway-North Myrtle Beach, SC
Florence, SC
Charlotte-Concord-Gastonia, NC-SC

The South Carolina monitoring network satisfies the minimum AQI reporting requirements in 40 CFR Part 58.

National Core (NCore) Monitoring Network

40 CFR Part 58, Appendix D, Section 3.0

A requirement that each state operate at least one NCore site is found in 40 CFR Part 58, Appendix D, Section 3. The NCore site must measure, at a minimum, PM_{2.5} particulate mass using continuous and integrated/filter-based samplers, speciated PM_{2.5}, PM_{10-2.5} particle mass, O₃, SO₂, CO, NO/NO_y, wind speed, wind direction, relative humidity, and ambient temperature. This section requires each state to operate at least one NCore site. The SC DES meets the NCore requirement by operating the Parklane site in Columbia.

Table 4: NCore Monitoring Sites

AQS ID	Site Name	CBSA	Requirement Met (Y/N)
45-079-0007	Parklane	Columbia, SC	Y

The NCore monitoring network described in the Network Plan and listed in Table 4 meets all design criteria of 40 CFR Part 58.

O₃ Monitoring Requirements

40 CFR Part 58, Appendix D, Section 4.1 and Table D-2

Ambient air monitoring network design criteria for O₃ are found in 40 CFR Part 58, Appendix D, Section 4.1. This section requires state agencies to operate O₃ sites for various locations depending upon area size and typical peak concentrations.

Table 5: Ozone Design Criteria – Minimum Required SLAMS Monitors

CBSA	Minimum Required SLAMS	Number of SLAMS	Number of SPMs or Other Regulatory Monitors	Site Names (AQS IDs) of SLAMS	Requirement Met (Y/N)
Augusta-Richmond County, GA-SC	2	4	0	Jackson Middle School (AQS ID: 45-003-0003) Trenton (AQS ID: 45-037-0001) Evans (AQS ID 13-073-0001) ¹ Augusta (AQS ID 13-245-0091) ¹	Y
Charleston-North Charleston, SC	2	2	0	Moncks Corner National Guard (AQS ID: 45-015-1002) Cape Romain (AQS ID: 45-019-0046)	Y
Charlotte-Concord-Gastonia, NC-SC	2	4	3	York Landfill (AQS ID: 45-091-0008) Crouse (AQS ID: 37-109-0004) ² Garinger (AQS ID: 37-119-0041) ³ University Meadows (AQS ID: 37-119-0046) ³ Rockwell (AQS ID: 37-159-0021) ¹	Y
Columbia, SC	2	2	1	Parklane (AQS ID: 45-079-0007) Sandhill (AQS ID: 45-079-1001)	Y
Florence, SC	1	1	0	Pee Dee Exp. Station (AQS ID: 45-031-0003)	Y
Greenville-Anderson-Greer, SC	2	2	0	Garrison Arena (AQS ID: 45-007-0006) Hillcrest (AQS ID: 45-045-0016)	Y
Myrtle Beach-Conway-North Myrtle Beach, SC	2	1	0	Coastal Carolina (AQS ID: 45-051-0008)	N
Spartanburg, SC	2	1	0	North Spartanburg Fire Station #2 (AQS ID: 45-083-0009)	N

¹Evans and Augusta sites are operated by the Georgia Environmental Protection Division

²Crouse and Rockwell sites are operated by the North Carolina Department of Air Quality

³Garinger and University Meadows sites are operated by Mecklenburg County Air Quality

The Coastal Carolina site (AQS ID 45-051-0008) is operated by the SC DES. 40 CFR Part 58, Appendix D, Section 4.1 states that if the most recent 3-year ozone design value exceeds 85 percent of the ozone NAAQS (which is 0.070 ppm), then another ozone monitor must be added in the MSA. In 2023, the 3-year ozone design value exceeded 85 percent of the ozone NAAQS. The EPA supports SC DES searching for a new site and will be happy to collaborate with SC DES. The EPA requests that the location of the new ozone site be included in the Network Plan due July 1, 2025, with a proposed startup date of March 1, 2026.

When OMB added Union County to the Spartanburg MSA, it triggered a second ozone monitor requirement due to the increase in population. The Department is investigating possible locations for the new site. The EPA supports SC DES searching for a new site and will be happy to collaborate with SCDES. The EPA requests that the location of the new ozone site be included in the Network Plan due July 1, 2025, with a proposed start-up date of March 1, 2026.

More information about O₃ site selection can be found in the EPA's Guideline on Ozone Monitoring Site Selection, which can be found at: <https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockkey=2000D45M.TXT>.

Except for the two MSAs where there are new requirements, the O₃ monitoring network outlined in the Network Plan and Table 5 meets the minimum monitoring requirements found in 40 CFR Part 58, Appendix D, Table D-2 for all MSAs in South Carolina.

CO Monitoring Requirements

40 CFR Part 58, Appendix D, Section 4.2

Ambient air monitoring network design criteria for CO are found in 40 CFR Part 58, Appendix D, Section 4.2. CBSAs with populations over one million are required to operate one CO monitor collocated with a near-road NO₂ site. There is one CBSA in South Carolina with a population over 1,000,000, the Charlotte-Concord-Gastonia, NC-SC CBSA. The CO requirement for this area is met by the Mecklenburg County Air Quality (MCAQ) operating a CO monitor at its Remount near-road site.

Table 6: CO Design Criteria – Minimum Required SLAMS Near-road Monitors

CBSA	Minimum Required Near-road CO Monitors	Number of Near-road CO Monitors	Site Names (AQS IDs) of Existing Near-road CO Monitors	Requirement Met (Y/N)
Charlotte-Concord-Gastonia, NC-SC	1	1	Remount (37-119-0045) ¹	Y

¹Remount site is operated by the MCAQ.

The Regional Administrator monitoring requirements for CO are found in 40 CFR Part 58, Appendix D 4.2.2. The section states, "The Regional Administrators, in collaboration with states, may require additional CO monitors above the minimum number of monitors required in 4.2.1." The Regional Administrator is not requiring the SC DES to operate an additional CO monitor at this time.

Table 7: CO Design Criteria – Minimum Required SLAMS RA-Required Monitors

CBSA	Minimum RA-required CO Monitors	Number of RA-required CO Monitors	Site Names (AQS IDs) of Existing RA-required CO Monitors	Requirement Met (Y/N)
None	0	0	None	Y

The CO monitoring network described in the Network Plan meets the design criteria of 40 CFR Part 58 for both near-road and RA-required monitors as identified in Tables 6 and 7 above.

NO₂ Monitoring Requirements

40 CFR Part 58, Appendix D, Section 4.3

Ambient air monitoring network design criteria for NO₂ are found in 40 CFR Part 58, Appendix D, Section 4.3. Three types of NO₂ monitoring are required: near-road, area-wide, and Regional Administrator. These types of NO₂ monitoring are described in Sections 4.3.2, 4.3.3, and 4.3.4, respectively.

Ambient air monitoring design criteria for near-road NO₂ monitoring sites are found in 40 CFR Part 58, Appendix D, Section 4.3.2.

In the Charlotte-Gastonia-Concord, NC-SC CBSA, the MCAQ operates one near-road monitoring site at the Remount site (AQS ID: 37-119-0045). When the initial near-road monitoring network was funded by the EPA and established, the Charlotte area was below the 2.5 million population threshold for a second near-road NO₂ monitoring site. However, the recent census population estimate for the Charlotte-Concord-Gastonia, NC-SC CBSA is over 2.5 million people. The MCAQ has identified a suitable location for the additional near-road NO₂ monitoring site and was preparing to install and operate the new near-road site in 2023. However, due to delays outside the control of the MCAQ, the site began operation in early 2024.

Table 8: NO₂ Design Criteria – Minimum Required SLAMS Near-road Monitors

CBSA	Minimum Required Near-road NO ₂	Number of Near-road NO ₂	Site Names (AQS IDs) of Existing NO ₂ Near-Road	Requirement Met (Y/N)
Charlotte-Concord-Gastonia, NC-SC	2	2	Remount (AQS ID: 37-119-0045) ¹ Equipment Drive (AQS ID 37-119-0050) ¹	Y

¹The Remount and Equipment Drive sites are operated by the MCAQ.

Ambient air monitoring network design criteria for area wide NO₂ sites are found in Section 4.3.3 of Appendix D to 40 CFR Part 58. The MCAQ operates a NO₂ monitor at its Garinger site to meet the minimum requirement for the Charlotte-Gastonia-Concord, NC-SC CBSA.

Table 9: NO₂ Design Criteria – Minimum Required SLAMS Area-Wide Monitors

CBSA	Minimum Required Area-Wide NO ₂	Number of Area-Wide NO ₂	Site Names (AQS IDs) of Existing NO ₂ Area-Wide Sites	Requirement Met (Y/N)
Charlotte-Gastonia-Concord, NC-SC	1	1	Garinger (AQS ID: 37-119-0041) ¹	Y

¹The Garinger site is operated by the MCAQ.

Ambient air monitoring network design criteria for Regional Administrator-required NO₂ monitoring, often referred to as RA-40 monitoring, are found in 40 CFR Part 58, Appendix D, Section 4.3.4. Under these provisions, Regional Administrators must require a minimum of 40 additional NO₂ monitoring stations nationwide, with a primary focus on siting these monitors in locations to protect susceptible and vulnerable populations. The full list of NO₂ monitors identified by the EPA's Regional Administrators can be found on the EPA's website at <https://www.epa.gov/amtic/no2-monitoring-susceptible-and-vulnerable-populations>. The SC DES operates one RA-40 monitor at its Greenville ESC site in the Greenville-Anderson-Greer, SC CBSA.

Table 10: NO₂ Design Criteria – Minimum Required SLAMS RA-40 Monitors

CBSA	Minimum Required RA-40 Monitors	Number of RA-40 Monitors	Site Names (AQS IDs) of Existing RA-40 Sites	Requirement Met (Y/N)
Greenville-Anderson-Greer, SC	1	1	Greenville ESC (AQS ID: 45-045-0015)	Y

The NO₂ monitoring network described by the Network Plan meets all design criteria of 40 CFR Part 58.

SO₂ Monitoring Requirements

40 CFR Part 58, Appendix D, Section 4.4

Ambient air monitoring network design criteria for SO₂ are found in 40 CFR Part 58, Appendix D, Section 4.4. This section requires that the population weighted emissions index (PWEI) be calculated by states for each CBSA. As a result, the SO₂ monitoring site(s) required in each CBSA will satisfy minimum monitoring requirements if the monitor(s) is sited within the boundaries of the parent CBSA and is one of the following site types: population exposure, maximum concentration, source-oriented, general background, or regional transport. A SO₂ monitor at an NCore station may satisfy minimum monitoring requirements if that monitor is located within a CBSA with minimally required monitors consistent with Appendix D, Section 4.4

Based upon PWEIs calculated using 2023 population estimates and 2020 emission inventory data, the minimum numbers of monitors required for the CBSAs in South Carolina are summarized in Table 11.

Table 11: SO₂ Design Criteria – Minimum Required SLAMS PWEI Monitors

CBSA	2023 Population Estimate	2020 NEI Emissions (Tons per year)	PWEI	Number of Minimum Required PWEI SO ₂ Monitors	Number of SO ₂ SLAMS	Site Names (AQIS IDs) of Existing SO ₂ monitors	Requirement Met (Y/N)
Charlotte-Concord-Gastonia, NC-SC	2,805,115	3527	9894	1	1	Garinger (AQIS ID:37-119-0041) ¹	Y
Columbia, SC	858,302	2292	1967	0	1	Parklane (AQIS ID: 45-079-0007)	Y
Charleston-North Charleston, SC	849,417	6914	5873	1	1	Jenkins Ave. (AQIS ID: 45-019-003)	Y
Greenville-Anderson-Greer, SC	975,480	169	165	0	0	Greenville ESC (AQIS ID: 45-045-0015)	Y

¹The Garinger site is operated by Mecklenburg County Air Quality.

The SO₂ monitoring network outlined in the Network Plan meets the SO₂ PWEI requirements specified in 40 CFR Part 58, Appendix D, Section 4.4.

The EPA finalized the SO₂ Data Requirements Rule (DRR) on August 10, 2015 (40 CFR Part 51, Subpart BB). This rule requires air quality near sources with SO₂ emissions of 2,000 tons per year (tpy) or greater be characterized using ambient air monitoring or modeling. On January 15, 2016, the SC DES submitted to the EPA a list of eight sources in the state around which SO₂ air quality must be characterized. These eight sources were characterized using modeling and/or took federally enforceable emissions limits. The SC DES does not operate any SO₂ monitoring sites to meet the DRR requirements.

Table 12: SO₂ Design Criteria – Data Requirement Rule Monitors

CBSA	Minimum Required DRR Monitors	Number of DRR Monitors	Site Names (AQIS IDs) of Existing DRR Sites	Requirement Met (Y/N)
None	0	0	None	Y

The DRR also requires annual emissions reporting for sources that used modeling to show attainment with the standard under the rule. Forty (40) CFR § 51.1205 (b) requires that:

“For any area where modeling of actual SO₂ emissions serve as the basis for designating such area as attainment for the 2010 SO₂ NAAQS, the air agency shall submit an annual report to the EPA Regional Administrator by July 1 of each year, either as a stand-alone document made available for public inspection, or as an appendix to its Annual Monitoring Network Plan (also due on July 1 each year under 40 CFR §58.10), that documents the annual SO₂ emissions of each applicable source in each such area and provides an assessment of the cause of any emissions increase from the previous year.”

The SC DES submitted its 2023 annual emission report with its 2024 Network Plan to meet this requirement. The report applies to areas designated attainment/unclassifiable based on modeling of

actual SO₂ emissions for Santee Cooper Cross Generating Station, New-Indy Catawba (formerly Resolute Industries), Sylvamo Eastover Mill (formerly International Paper – Eastover), and Dominion Wateree Station (formerly SCE&G Wateree Station).

For the DRR portion found in Appendix I of the Network Plan. The EPA will respond in a separate correspondence. The next annual SO₂ emissions report for these facilities is due July 1, 2025.

The Regional Administrator may require additional SO₂ monitoring stations above the minimum number of monitors required in 40 CFR Part 58, Appendix D, Section 4.4.2, where the minimum monitoring requirements are not sufficient to meet monitoring objectives. The SC DES is not required by the Regional Administrator to operate an SO₂ monitor at this time.

Table 13: SO₂ Design Criteria – Minimum Required SLAMS RA Monitors

CBSA	Minimum Required RA-40 Monitors	Number of RA-40 Monitors	Site Names (AQ5 IDs) of Existing RA-40 Sites	Requirement Met (Y/N)
None	0	0	None	Y

The SC DES operates an additional SO₂ monitoring network to provide background concentration data. Two years of data are collected every four years at two monitoring sites. These are SPMs and do not require approval from the EPA for startup or shutdown. For the data to be useable to support the SC DES's prevention of significant deterioration (PSD) modeling and permitting activities, the rotating SO₂ monitoring network must meet the requirements in Appendix B to 40 CFR Part 58. Section 8.3 of Appendix W to 40 CFR Part 51 discusses using air monitoring data for background concentrations and Appendix B to 40 CFR Part 58 discusses quality assurance requirements for PSD air monitoring procedures that must be followed for the data to be useable for PSD and permitting purposes.

Table 14 lists the two monitors that the SC DES includes in its SO₂ rotating background network and that are currently operating. The SC DES has updated the monitoring objective for the Trenton SO₂ site from source oriented to upwind background. The EPA believes this better represents the monitoring objectives of the site.

Table 14: SO₂ Rotating Background Monitoring

CBSA	Site Name (AQ5 ID)	Frequency of Operation	Next Expected Years of Operation	Monitoring Objective in Network Plan
Charlotte-Concord CSA	York Landfill (45-091-0008)	Every other 2 years	2024-2025	Upwind Background
August-Richmond County, GA-SC	Trenton (AQ5 ID: 45-037-0001)	Every other 2 years	2026-2027	Upwind Background

The South Carolina SO₂ monitoring network meets the monitoring requirements in 40 CFR Part 58.

Pb Monitoring Requirements

40 CFR Part 58, Appendix D, Section 4.5

The monitoring requirements for Pb found at 40 CFR Part 58, Appendix D, Section 4.5 require that, at a minimum, there must be one source-oriented SLAMS site located to measure the maximum Pb concentration in ambient air resulting from each non-airport Pb source which emits 0.5 or more tons per year and from each airport which emits 1.0 or more tons per year.

Although South Carolina has no sources that exceed the emissions thresholds for Pb monitoring, the SC DES and Clarios, LLC (formerly Johnson Controls Battery Group) conducted source oriented ambient Pb monitoring at three sites around the Florence Recycling Center in Florence, South Carolina. The resulting air monitoring data are comparable to the 2008 lead NAAQS. The company and the SC DES conducted this monitoring under terms of a settlement agreement reached with several petitioners who commented on the construction permit for the facility. The locations of the monitoring sites were selected based upon an agreement between the company and stakeholders. As of March 22, 2021, Clarios ceased production at the recycling center. The SC DES discontinued two of three sites as of November 6, 2021, near the Clarios facility – JCI Entrance site (AQS ID: 45-041-8002) and JCI Railroad site (AQS ID: 45-041-8001).

The EPA requested that the SC DES continue to monitor for Pb near the Clarios facility at one site – the JCI Woods site (AQS ID: 45-041-8003). Pb monitoring should continue if there is a possibility of Pb emissions or re-entrainment of Pb dust. Pb monitoring should continue until meets the requirements for discontinuation under 40 CFR 58.14(c)(1) and the following occurs:

- The permit is revoked, so that operations cannot restart, and
- A cleanup plan that addresses dust suppression and/or monitoring of potentially Pb-containing dust should be put in place.

The EPA recommends that the SC DES provide documentation of the permit being revoked and of a cleanup plan that addresses minimizing the re-entrainment of Pb containing dust.

Table 15: Pb Design Criteria – Minimum Required Source-Oriented Monitors

Source	CBSA	Minimum Required Source-Oriented Pb Sites	Number of Source-Oriented Pb Sites	Site Names (AQS IDs) of Existing Source-Oriented Sites	Requirement Met (Y/N)
Clarios ¹	Florence, SC	0	1	JCI Woods (AQS ID: 45-041-8003)	Y

¹This monitoring is not required by the EPA rules but is part of a settlement agreement between the SC DES, the facility, and community groups. The SC DES operates this sampler as a SPM to evaluate Pb NAAQS compliance.

The Pb monitoring collocation requirements are found in 40 CFR Part 58, Appendix A, 3.4.4. These requirements include that: 15 percent of the primary monitors are collocated and have at least one collocated quality control monitor (if the total number of monitors is less than three). These collocation requirements are assessed at the PQAQ level. The SC DES is required to operate one collocated Pb monitor, and it operates it at the JCI Woods site (AQS ID: 45-041-8003) (see Table 16).

Table 16: Pb Design Criteria – Minimum Required Collocated Monitors

PQAO	Minimum Required Collocated Monitors	Number of Collocated Monitors	Site Names (AQS IDs) of Existing Collocated Sites	Requirement Met (Y/N)
SC DES	1	1	JCI Woods (AQS ID: 45-041-8003)	Y

The Pb monitoring network described in the Network Plan meets all design criteria of 40 CFR Part 58.

PM₁₀ Monitoring Requirements

40 CFR Part 58, Appendix A, Section 3.3

40 CFR Part 58, Appendix D, Section 4.6 and Table D-4

Ambient air monitoring network design criteria for PM₁₀ are found in 40 CFR Part 58, Appendix D, Section 4.6. Table D-4, in this section, indicates the approximate number of PM₁₀ stations required in MSAs with populations exceeding 100,000 to characterize national and regional PM₁₀ air quality trends and geographical patterns. The SC DES, the GA EPD and the MCAQ are required to operate six PM₁₀ monitors at five sites in CBSAs in or abutting the state (see Table 18).

Table 17: PM₁₀ Design Criteria – Minimum Required SLAMS Monitors

CBSA	Minimum Required SLAMS	Number of SLAMS	Number of SPMs or Other Regulatory Monitors	Site Names (AQS IDs) of SLAMS	Requirement Met (Y/N)
Augusta-Richmond County, GA-SC	1	1	0	Augusta (AQS ID: 13-245-0091) ¹	Y
Charleston-North Charleston, SC	1	1	0	Jenkins Ave. Fire Station (AQS ID: 45-019-0003)	Y
Charlotte-Concord-Gastonia, NC-SC	2	2	0	Garinger (AQS ID: 37-119-0041) ² Ramblewood Park (AQS ID: 37-119-0047) ²	Y
Columbia, SC	1	1	1	Cayce City Hall (AQS ID: 45-063-0010)	Y
Greenville-Anderson-Greer, SC	1	1	0	Greenville ESC (AQS ID: 45-045-0015)	Y

¹The Augusta site is operated by the GA EPD.

²The Garinger and Ramblewood Park sites are operated by the MCAQ.

The PM₁₀ collocation requirements for manual methods are found in 40 CFR Part 58, Appendix A, 3.3.4. Those requirements include that: 15 percent of each network of manual PM₁₀ methods (at least one site) must be collocated and the sites with collocated monitors should be among those measuring annual mean concentrations in the highest 25 percent of the network. These collocation requirements are assessed at the PQAO level. The SC DES is not required to operate any PM₁₀ collocated monitors.

Table 18: PM₁₀ Design Criteria – Minimum Required Collocated Monitors

PQAO	Sites with Manual PM ₁₀ Method	Minimum Required Collocated Monitors	Number of Collocated PM ₁₀ Monitors	Site Names (AQS IDs) of Collocated Sites	Requirement Met (Y/N)
SC DES	0	0	0	None	Y

The proposed PM₁₀ monitoring network described in the Network Plan meets all design criteria of 40 CFR Part 58.

PM_{2.5} Monitoring Requirements

40 CFR Part 58, Appendix A, Section 3.2

40 CFR Part 58, Appendix D, Section 4.7 and Table D-5

Ambient air monitoring network design criteria for PM_{2.5} are found in 40 CFR Part 58, Appendix D, Section 4.7. This section requires that state and, where applicable, local agencies operate the minimum number of required PM_{2.5} SLAMS sites listed in Appendix D, Table D-5. The SC DES, GA EPD and MCAQ operate PM_{2.5} SLAMS monitors at 15 sites in CBSAs in or abutting the state (see Table 19).

Table 19: PM_{2.5} Design Criteria – Minimum Required SLAMS Monitors

CBSA	Minimum Required SLAMS	Number of SLAMS Sites	Number of SPMs or Other Regulatory Monitoring Sites	Site Names (AQS IDs) of SLAMS	Requirement Met (Y/N)
Augusta-Richmond County, GA-SC	2	2	0	Augusta (AQS ID: 13-245-0091) ¹ Trenton (AQS ID 45-037-0001)	Y
Charleston-North Charleston, SC	1	2	1	NCFS (AQS ID: 45-019-0020) Cape Romain (AQS ID: 45-019-0046)	Y
Charlotte-Concord-Gastonia, NC-SC	2	3	2	Garinger (AQS ID: 37-119-0041) ² Remount (AQS ID: 37-119-0045) ² Friendship Park (AQS ID: 37-119-0048) ²	Y
Columbia, SC	1	2	0	Irmo DJJ (AQS ID: 45-079-0022) Parklane (AQS ID: 45-079-0007)	Y
Greenville-Anderson-Greer, SC	2	2	0	Greenville ESC (AQS ID: 45-045-0015) Hillcrest (AQS ID: 45-045-0016)	Y
Florence, SC	1	1	0	Williams Middle School (AQS ID: 45-041-0003)	Y
Spartanburg, SC	1	1	0	T.K. Gregg (AQS ID: 45-083-0011)	Y
Myrtle Beach-Conway-North Myrtle Beach SC	1	1	0	Coastal Carolina (AQS ID 45-051-0008) ³	Y
None	0	1	1	Chesterfield (AQS ID: 45-025-0001)	Y

¹The Augusta site is operated by the GA EPD.

²The Garinger, Remount, and Friendship Park sites are operated by the MCAQ.

³PM_{2.5} monitoring at the Coastal Carolina Site began in 2023.

PM_{2.5} Collocation Requirements

40 CFR Part 58, Appendix A, Section 3.2

Forty (40) CFR Part 58, Appendix A, Section 3.2.3 states that 15 percent of each network of manual PM_{2.5} methods (at least one site) must be collocated. Section 3.2.3.1 states that for each distinct monitoring method designation (FRM or FEM) a PQAO is using for a primary monitor, the PQAO must have 15 percent of the primary monitors of each method designation collocated and have at least one collocated quality control monitor. The first collocated monitor must be a designated a FRM monitor.

Section 3.2.3.2 states that for each primary monitor designated as an FEM used by the PQAO, 50 percent of the monitors designated for collocation (or the first if only one collocation is necessary) shall be collocated with a FRM quality control monitor and 50 percent of the monitors shall be collocated with a monitor having the same method designation as the FEM primary monitor.

The SC DES is transitioning its PM_{2.5} network to include more continuous FEM equipment and reduce the number of filter based FRM equipment. Specifically, the SC DES will operate more Teledyne T640 and T640x monitors (AQS method codes 636 and 638 respectively). The EPA staff recently had a discussion with SC DES staff on plans to continue to meet regulatory collocation requirements in 2024. The EPA believes that the SC DES has a good plan for maintaining compliance with PM_{2.5} collocation requirements.

Table 20: PM_{2.5} Design Criteria – Minimum Required Collocated Monitors

PQAO	Method	AQS Method Code	Number of Primary Monitors	Minimum Required Collocated Monitors	Number of Collocated Monitors	Site Names (AQS IDs) of Collocated Sites	Requirements Met (Y/N)
SC DES	FRM Gravimetric w/ VSCC	145	8	1	3	Hillcrest (AQS ID: 45-045-0016) Parklane (AQS ID: 45-079-0007) NCFS (AQS ID 45-019-0020)	Y
SC DES	Teledyne T640X at 16.67 LPM	638	0	0	0	Greenville ESC (AQS ID: 45-045-0015)	Y
SC DES	Teledyne T640 at 5.0 LPM	636	3	1	1	Chesterfield (AQS ID: 45-025-0001)	Y

The PM_{2.5} monitoring network meets all design criteria of 40 CFR Part 58.

PM_{2.5} Near-Road Monitoring Requirements

40 CFR Part 58, Appendix D, Section 4.7.1(b)(2)

Regulatory requirements in 40 CFR Part 58, Appendix D, Section 4.1.1(b)(2) require that “CBSAs with a population of 1,000,000 or more persons, at least one PM_{2.5} monitor is to be collocated at a near-road NO₂ station.” One CBSA with a population of 1,000,000 or more persons is partially in the State of

South Carolina, the Charlotte-Gastonia-Concord, NC-SC CBSA, and the MCAQ operates the required PM_{2.5} near-road monitor at the Remount site.

Table 21: PM_{2.5} Design Criteria – Minimum Required SLAMS Near-Road Monitors

CBSA	Minimum Required Near-road PM _{2.5}	Number of Near-road PM _{2.5}	Site Names (AQS IDs) of Existing PM _{2.5} Near-Road	Requirement Met (Y/N)
Charlotte-Concord-Gastonia, NC-SC	1	1	Remount (AQS ID: 37-119-0045) ¹	Y

¹The Remount site is operated by the MCAQ.

The near-road PM_{2.5} monitoring network described in the Network Plan meets the design criteria of 40 CFR Part 58.

PM_{2.5} Continuous Monitoring Requirements 40 CFR Part 58, Appendix D, Section 4.7.2

Regulatory requirements for continuous PM_{2.5} monitoring require that “...State, or where appropriate, local agencies must operate continuous PM_{2.5} analyzers equal to at least one-half (round up) the minimum required sites listed in Table D-5 of this appendix.

At least one required continuous analyzer in each MSA must be collocated with one of the required FRM/FEM/ARM (federal reference method/federal equivalent method/approved regional method) monitors, unless at least one of the required FRM/FEM/ARM monitors is itself a continuous FEM or ARM monitor in which case no collocation requirement applies.”

Six MSAs listed in Table 23, below, are required to have continuous monitors. Eight MSAs in or partially in South Carolina have continuous PM_{2.5} monitors as does one site not in an MSA. The requirements are met in all areas in the state.

Table 22: PM_{2.5} Design Criteria – Continuous Monitors

MSA	Minimum Required Continuous PM _{2.5}	Number of Continuous PM _{2.5} Monitors	Site Names (AQS IDs) of Existing PM _{2.5} Monitors	Requirement Met (Y/N)
Augusta-Richmond County, GA-SC	1	1	Trenton (AQS ID: 45-037-0001)	Y
Charleston-North Charleston, SC	1	2	Cape Romain (AQS ID: 45-019-0046) NCFS (AQS ID: 45-019-0020)	Y
Charlotte-Concord-Gastonia, NC-SC	1	5	Garinger (AQS ID: 37-119-0041) ¹ Friendship Park (AQS ID: 37-119-0048) ¹ Remount (AQS ID: 37-119-0045) ¹ Rockwell (AQS ID: 37-159-0021) ² Catawba Longhouse (AQS ID: 45-091-8801) ³	Y
Columbia, SC	1	2	Irmo DJJ (AQS ID: 45-079-0022) Parklane (AQS ID: 45-079-0007)	Y
Florence, SC	0	1	Williams Middle School (AQS ID: 45-041-0003)	Y

Greenville-Anderson-Greer, SC	1	1	Greenville ESC (AQS ID: 45-045-0015)	Y
Myrtle Beach-Conway-North Myrtle Beach SC-NC	1	1	Coastal Carolina (AQS ID 45-051-0008) ⁴	
Spartanburg, SC	0	1	T.K. Gregg (AQS ID: 45-083-0011)	Y
Remainder of State	0	1	Chesterfield (AQS ID: 45-025-0001)	Y

¹The Garinger, Friendship Park, and Remount sites are operated by the MCAQ.

²The Rockwell site is operated by the North Carolina Department of Air Quality.

³The Catawba Longhouse site is operated by the Catawba Nation (CN).

PM_{2.5} Continuous Federal Equivalent Methods

40 CFR § 58.11(e)

The EPA regulations contain provisions for handling data collected using continuous PM_{2.5} FEMs. These procedures are found at 40 CFR §58.11(e). If an agency can demonstrate that the FEM data are not of sufficient comparability to a colocated FRM, then the monitoring agency may request that the FEM data not be used in comparison to the NAAQS.

As long as there is a colocated FRM at a site meeting sample frequency requirements, a NAAQS exclusion may be applied to the PM_{2.5} data from a T640/x for up to two years via the SPM provision in §58.20. In the Network Plan to be submitted in 2025, agencies operating either the T640 or the T640x FEMs must include information on when the firmware upgrade occurred, and when the data alignment function was enabled for each monitor. Also, each agency must include whether the evaluation period caused the FEM to no longer be the primary monitor at the site. If any monitors are proposed to change from a SLAMS to an SPM, then this change must be submitted in an addendum to the Network Plan for the EPA approval.

The SC DES has requested NAAQS exclusion under 40 CFR §58.11(e) for 7 PM_{2.5} continuous FEMs in the Network Plan. Table 23 lists the PM_{2.5} FEM monitors that have been requested by the SC DES to be approved as not comparable to the NAAQS.

Table 23: Continuous PM_{2.5} Monitors Collecting Data Not Comparable to the NAAQS

CBSA	Site Name (AQS ID)	FEM Method Description	FEM Method Code	Comments
Charleston-North Charleston, SC	North Charleston Fire Station(AQS ID: 45-019-0020)	FEM Broadband Spectroscopy	638	NAAQS exclusion for 07/25/22 - 09/05/23 while the monitor did NOT have the data alignment enabled; NAAQS exclusion starting 09/06/23 because this is the first day with the data alignment enabled, resulting in a new method code.
Augusta-Richmond County, GA-SC	Trenton (AQS ID: 45-037-0001)	FEM Broadband Spectroscopy	636	NAAQS exclusion for 06/07/22 - 09/05/23 while the monitor did NOT have the data

				alignment enabled; NAAQS exclusion starting 09/06/23 because this is the first day with the data alignment enabled, resulting in a new method code.
Florence, SC	Williams (AQS ID: 45-041-0003)	FEM Broadband Spectroscopy	636	NAAQS exclusion for 05/11/22 - 09/05/23 while the monitor did NOT have the data alignment enabled; NAAQS exclusion starting 09/06/23 because this is the first day with the data alignment enabled, resulting in a new method code.
Greeville-Anderson-Greer, SC	Greenville ESC (AQS ID: 45-045-0015)	FEM Broadband Spectroscopy	638	NAAQS exclusion starting 09/06/23 because this is the first day with the data alignment enabled, resulting in a new method code.
Columbia, SC	Parklane (AQS ID: 45-079-0007)	FEM Broadband Spectroscopy	638	NAAQS exclusion for 03/18/22 - 09/05/23 while the monitor did NOT have the data alignment enabled; NAAQS exclusion starting 09/06/23 because this is the first day with the data alignment enabled, resulting in a new method code.
Columbia, SC	Irmo DJJ (AQS ID: 45-079-0022)	FEM Broadband Spectroscopy	636	NAAQS exclusion for 01/20/23 - 09/05/23 while the monitor did NOT have the data alignment enabled; NAAQS exclusion starting 09/06/23 because this is the first day with the data alignment enabled, resulting in a new method code.
Spartanburg, SC	TK Gregg (AQS ID: 45-083-0011)	FEM Broadband Spectroscopy	636	NAAQS exclusion for 05/11/22 - 09/05/23 while the monitor did NOT have the data alignment enabled; NAAQS exclusion starting 09/06/23 because this is the first day with the data alignment enabled, resulting in a new method code.

The (Agency) has applied the updated data alignment for all T640s across the South Carolina network and enabled it on September 6, 2023. The EPA appreciates SC DES's cooperation in updating the firmware and enabling it so quickly. The state may evaluate the methods at each site for up to two years with a regionally concurred NAAQS exclusion. Once the evaluation period is over, the state must provide a PM_{2.5} Comparability Assessment for each site to assess the performance and bias statistics to

ensure the data are suitable for comparison to the PM_{2.5} NAAQSs. These assessments can be generated here: <https://www.epa.gov/outdoor-air-quality-data/pm25-continuous-monitor-comparability-assessments>.

PM_{2.5} Background and Transport Sites **40 CFR Part 58, Appendix D, Section 4.7.3**

Monitoring requirements in 40 CFR Part 58, Appendix D, Section 4.7.3 require that each state install and operate at least one PM_{2.5} site to monitor for regional background concentrations and at least one PM_{2.5} site to monitor for regional transport.

Table 24: PM_{2.5} Regional Background and Transport Monitors

Requirement	Minimum Required	Number of Monitors	Site Names (AQS IDs) of SLAMS	Requirement Met (Y/N)
Background	1	1	Cape Romain (AQS ID: 45-019-0046)	Y
Transport	1	1	Chesterfield (AQS ID: 45-025-0001)	Y

On April 10, 2020, the SC DES temporarily replaced the Chesterfield site (AQS ID: 45-025-0001) continuous PM_{2.5} TEOM sampler with a T640 and redesignated the monitor as an SPM in AQS. Use of the TEOM sampler resumed on April 23, 2021, but the monitor was not returned to a SLAMS designation. The EPA requests that the SC DES update the monitor's designation in AQS to reflect what is represented in the Network Plan.

As identified in Table 24, the SC DES meets the requirements of 40 CFR Part 58 by operating one background site and one transport site.

PM_{2.5} Chemical Speciation Network (CSN) **40 CFR Part 58, Appendix D, Section 4.7.4**

Monitoring rules in 40 CFR Part 58, Appendix D, Section 4.7.4 require that each state conduct chemical speciation monitoring and analyses at sites designated to be part of the PM_{2.5} Speciation Trends Network (STN). The selection and modification of these STN sites must be approved by the Administrator. The PM_{2.5} CSN includes STN stations and supplemental speciation stations that provide chemical species data of fine particulate. The EPA funds one STN monitor in South Carolina at the Parklane site (see Table 25).

Table 25: PM_{2.5} Chemical Speciation Network – Non-SLAMS Monitors

CBSA	Site Name (AQS ID) of CSN Monitor
Columbia, SC	Parklane (AQS ID: 45-079-0007)

Photochemical Assessment Monitoring Stations (PAMS) **40 CFR Part 58, Appendix D, Section 5.0**

With the promulgation of a new O₃ NAAQS on October 1, 2015, the EPA finalized changes to the PAMS requirements. On December 20, 2019, the EPA revised the start date for the updated stations. The

revision was published in the *Federal Register* on January 8, 2020, and extends the date by which the stations were to begin operating from June 1, 2019, to June 1, 2021. Since the state does not have a CBSA with a population of one million or more, it is not required to meet the PAMS requirement.

Air Toxics Monitoring Network

As part of the National Air Toxics Trends Station (NATTS) network, the SC DES samples for metals, semi-volatile organic compounds, carbonyls, and volatile organic compounds (SVOCS) at the Chesterfield monitoring site (AQS ID: 45-025-0001). The SC DES added ethylene oxide (EtO) sampling as part of the Tier 1 target analytes at Chesterfield in November 2020 and contracted with Eastern Research Group (ERG) to analyze EtO samples. All other NATTS analytes are analyzed by the SC DES. The collection and analysis of NATTS samples at the Chesterfield site is conducted in accordance with an EPA-approved quality assurance project plan (QAPP).

The SC DES was awarded a community-scale Air Toxics Monitoring Grant to collect air samples for a one-year period at three locations in several North Charleston area environmental justice communities and at one high traffic location. The sampling started on May 11, 2022, and the samples will be analyzed for EtO. The sites are Irving site (AQS ID: 45-019-0021), Rosemont site (AQS ID: 45-019-0009), and Gethsemane site (AQS ID: 45-019-0022), and FAA site (45-019-0048) (high traffic site). The results will be uploaded to AQS. The EPA appreciates the SC DES's efforts on this study and for the operation of the NATTS program.

The SC DES also collects samples for SVOCs in the Columbia, SC MSA at the Parklane site (AQS ID: 45-079-0020) site. Air toxics sampling at Parklane is conducted at the SC DES's discretion, and according to SC DES, it is not collected using the EPA or state-match funds. The EPA recommends that the SC DES develop and approve a QAPP for air toxics sampling to ensure that the data is of sufficient quality for SC DES's intended use, such as a risk screening analysis and/or sharing with the public.

Non-SLAMS Monitoring

The Network Plan also includes the following non-SLAMS monitors summarized in Table 26. These monitors include criteria pollutant monitoring comparable to the NAAQS, continuous PM_{2.5} monitoring used for the AQI, air toxics monitoring, and/or tribal air monitoring.

Table 26: Non-SLAMS Monitors

CBSA	Pollutant(s)	Site Name (AQS ID) of Non-SLAMS Monitor	Monitor Type	NAAQS Comparable
Augusta-Richmond County, GA-SC	SO ₂	Trenton (AQS ID: 45-037-0001)	SPM – 2yr rotating	Y - but only operating for 2 years
Charleston-North Charleston, SC	NO ₂	Jenkins Ave. Fire Station (AQS ID: 45-019-0003)	SPM	Y
Charleston-North Charleston, SC	NO ₂	Cape Romain (AQS ID: 45-019-0046)	SPM	Y
Charleston-North Charleston, SC	PM _{2.5} Cont.	NCFS (AQS ID: 45-019-0020)	SPM	Y

Charleston-North Charleston, SC	SO ₂	York Landfill (AQS ID: 45-091-0008)	SPM – 2yr rotating	Y - but only operating for 2 years
Charlotte-Concord- Gastonia, NC-SC	PM _{2.5} Cont., O ₃	Catawba Longhouse (AQS ID: 45-091-8801) ¹	Tribal	Y
Columbia, SC	PM _{2.5} Cont.	DJJ (AQS ID: 45-079-0022)	SPM	Y
Columbia, SC	SVOC, Precipitation, PM ₁₀ , Chemicals	Parklane (AQS ID: 45-079-0007)	SPM	Y – only for PM ₁₀
Columbia, SC	O ₃	Congaree Bluff (AQS ID: 45-079-0021)	SPM	Y for Congaree National Park Only
Columbia, SC	NO ₂	Sandhill Experimental Station (AQS ID: 45-079-1001)	SPM	Y
Florence, SC	Pb	JCI Entrance (AQS ID: 45-041-8002) JCI Woods (AQS ID: 45-041-8003)	SPM	Y
Greenville-Anderson, SC	PM _{2.5} Cont.	Greenville ESC (AQS ID: 45-045-0015)	SPM	Y
Spartanburg, SC	PM _{2.5} Cont.	T.K. Gregg (AQS ID: 45-083-0011)	SPM	Y
Not in an MSA	O ₃ , Metals, Carbonyls, SVOCs, VOCs, Precipitation	Chesterfield (AQS ID: 45-025-0001)	SPM	Y for O ₃ , N/A for all else

¹The Catawba Longhouse site is operated by the CN

Memoranda of Agreement (MOA) with Neighboring State and Local Air Monitoring Agencies 40 CFR Part 58, Appendix D, 2(e)

Section 2(e) of Appendix D to 40 CFR Part 58 states:

“The EPA recognizes that State or local agencies must consider MSA/CSA boundaries and their own political boundaries and geographical characteristics in designing their air monitoring networks. The EPA recognizes that there may be situations where the EPA Regional Administrator and the affected State or local agencies may need to augment or to divide the overall MSA/CSA monitoring responsibilities and requirements among these various agencies to achieve an effective network design. Full monitoring requirements apply separately to each affected State or local agency in the absence of an agreement between the affected agencies and the EPA Regional Administrator.”

The SC DES maintains MOAs to address minimum monitoring requirements with the GA EPD, the NC DAQ, and the MCAQ. These MOAs are summarized in Table 27.

Table 27: MOAs to Meet Monitoring Requirements for CBSAs Crossing Jurisdictional Boundaries

CBSA	Agencies on the MOA	Pollutants	Date of Agreement	Expiration
Augusta-Richmond County, GA-SC	SC DES, GA EPD	PM ₁₀ , PM _{2.5} , O ₃ , and other criteria pollutants as necessary	January 2017	Every 10 years
Charlotte-Concord-Gastonia, NC-SC	SC DES, NC DAQ, MCAQ	Criteria pollutant monitoring required by 40 CFR 58, Appendix D	July 1, 2016	Every 10 years
Myrtle Beach-Conway-North Myrtle Beach, SC MSA	SC DES, NC DAQ	O ₃ and other criteria pollutants as necessary	July 1, 2015	Every 10 years

The EPA approves of the SC DES agreements to share regulatory monitoring requirements for the Charlotte, Myrtle Beach, and Augusta areas.

Monitoring Siting Criteria and Site Assessments **40 CFR Part 58, Appendix E**

In reference to the Network Plan, 40 CFR § 58.10(a)(1) states:

“The plan shall include a statement of whether the operation of each monitor meets the requirements of appendices A, B, C, D, and E of this part, where applicable. The Regional Administrator may require additional information in support of this statement.”

The Network Plan includes assessment information for all monitoring sites. The EPA appreciates the inclusion of this information and the work that the SC DES has done to evaluate siting criteria at all its monitoring sites. The EPA understands that the SC DES is still working to resolve siting criteria issues identified by its own assessments and in recent EPA audits and appreciates the SC DES’s continued progress in resolving these issues.

Areas with Environmental Justice Concerns

The EPA recognizes that the Network Plan submitted in 2024 meets the federal regulatory requirements outlined at 40 CFR § 58.10 and Appendices A through E, including consideration of areas with susceptible and vulnerable populations. Executive Order 14096: Revitalizing Our Nation’s Commitment to Environmental Justice for All defines environmental justice as:

“The just treatment and meaningful involvement of all people, regardless of income, race, color, national origin, Tribal affiliation, or disability, in agency decision-making and other Federal activities that affect human health and the environment so that people:

(i) are fully protected from disproportionate and adverse human health and environmental effects (including risks) and hazards, including those related to climate change, the cumulative impacts of environmental and other burdens, and the legacy of racism or other structural or systemic barriers; and

(ii) have equitable access to a healthy, sustainable, and resilient environment in which to live, play, work, learn, grow, worship, and engage in cultural and subsistence practices.”

For future plans, including next year’s plan, we encourage the SC DES to continue to evaluate areas with environmental justice concerns related to ambient air monitoring. When proposing future changes to the air monitoring network (such as relocating existing air monitoring sites or proposing new sites) and in the upcoming five-year Network Assessment due in 2025 as required by 40 CFR § 58.10(d), the EPA recommends that SC DES describe which factors it relied on in its air monitoring network design decisions and how weight was apportioned to each. Where possible, SC DES should include additional detail about the environmental justice considerations taken into account related to the ambient air quality network. This would support transparency in the decision-making process and provide the impacted communities and their representatives with the information needed to meaningfully participate.

American Rescue Plan

The SC DES and the CN received funding in 2022 under the American Rescue Plan (ARP) to upgrade the existing ambient air monitoring network. As a recipient of this ARP direct award grants, the SC DES and the CN initiated procurement requests for equipment purchases and began installation of equipment once received. The remaining equipment will be purchased before the end of the grant period unless an extension is received. The Table 28 below indicates for the SC DES the receipt and installation status of equipment funded under the ARP and Table 29 below indicates the planned equipment upgrades for the CN. Quarterly reports must be submitted as well as a final progress report that is due within 120 days of the project end date. Prior to collecting environmental information, the SCDES and the CN must submit to the EPA a QAPP for all new pollutants to be monitored and methods to be used for approval 180 days prior to collection of environmental data.

Table 28. SC DES ARP Monitoring Equipment Upgrades

AQS Site ID (Location)	Equipment Description	Date Received
45-037-0001	T640 Monitor	5/2023
45-037-0001	2025i Sampler	4/2024
45-041-0003	T640 and Enclosure	5/2023
45-045-0016	T640 and Enclosure	5/2023
45-079-0007	T640X	5/2023
45-063-0010	T640X Enclosure	5/2023
45-083-0011	T640 and Enclosure	5/2023
45-051-0008	T640 and Enclosure	5/2023
45-025-0001	T640 and Enclosure	5/2023

45-045-0015	T640X	5/2023
45-063-0010	T640 and Enclosure	5/2023
45-019-0046	T640	5/2023
Multiple	4 x Agilaire 8864	5/2023
Multiple	2 x Teledyne T703U	12/2023

Table 29: Catawba Nation ARP Equipment Upgrades

PQAO	Equipment Description
Catawba Nation (CN)	Ozone Analyzer – 1 Wind Speed and Direction Sensor – 1 FEM PM _{2.5} monitor – 1 Flow calibrator - 1 Flow meter – 1 Zero Air Generator - 1

Inflation Reduction Act – Clean Air Act (CAA) Section 103 Direct Award

The SCDES will receive funding in 2023 under Section 60105(f) of the Inflation Reduction Act, which provides for “grants and other activities authorized under subsections (a) through (c) of section 103 and section 105 of the Clean Air Act.” The CAA Section 103 statutory authority for this action specifically authorizes “the coordination and acceleration of, research, investigations, experiments, demonstrations, surveys, and studies relating to the causes, effects (including health and welfare effects), extent, prevention, and control of air pollution.” As recipients of IRA CAA grants, these agencies will prepare and initiate procurement requests for equipment purchases and/or contract support service, and plan for timely set-up and installation of equipment. Remaining equipment will be purchased before the end of the grant period unless an extension is approved. The table below indicates the air monitoring equipment funded under these IRA CAA grants. Since some agencies are using these funds for activities other than air monitoring, not all agencies receiving grants are listed below. Quarterly reports will be submitted as well as a final progress report within 120 days of the applicable project end date. Prior to the collection of environmental information, including air monitoring data, agencies must have a QAPP in place that has been approved by the EPA. The QAPP, which should cover all pollutants and monitoring methods not already covered in an approved QAPP, to be submitted to the EPA for approval 180 days prior to the planned collection of environmental information.

Table 30. IRA CAA Monitoring Equipment Upgrades

Location	Equipment Description
TBD between Chesterfield and Parklane	Large shelter Upgrade
TBD between Chesterfield and Parklane	Small Shelter Upgrade
NA	Laptop with Docking Shelter and Bag
NA	Laptop with Docking Shelter and Bag with Air Modeling Enhancement
NA	EtO NATTS Sampling Analysis (65 per year x 3 years)

Waivers of Requirements

The EPA's air monitoring regulations allow for the waiver of requirements in specific instances. The EPA requires ongoing waivers to be renewed every five years as part of the network assessment.

SC DES requests in the Network Plan a waiver of a specific 40 CFR Part 58, Appendix E siting requirement at the Greenville ESC site (AQS ID: 45-045-0015). Specifically, a waiver of the word "continuous" in the requirement for at least 270 degrees of continuous unobstructed airflow in 40 CFR Part 58 Appendix E, Section 2.3 (b).

Forty CFR Part 58, Appendix E Section 2.3 "Spacing From Obstructions" subpart (b) states that

A probe inlet located near or along a vertical wall is undesirable because air moving along the wall may be subject to removal mechanisms. A probe inlet must have unrestricted airflow with no obstructions (as defined in paragraph (a) of this section – see [https://www.ecfr.gov/current/title-40/appendix-Appendix%20E%20to%20Part%2058#p-Appendix-E-to-Part-58\(a\)](https://www.ecfr.gov/current/title-40/appendix-Appendix%20E%20to%20Part%2058#p-Appendix-E-to-Part-58(a))) in a continuous arc of at least 270 degrees. An unobstructed continuous arc of 180 degrees is allowable when the applicable network design criteria specified in appendix D of this part (see <https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-58/appendix-Appendix%20D%20to%20Part%2058>) require monitoring in street canyons and the probe is located on the side of a building. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, there must be a minimum of 2.0 meters of horizontal separation from walls, parapets, and structures for rooftop site placement.

In 40 CFR Part 58, Appendix E Section 4 "Waiver Provisions", section 4.2 states that "For an existing site, a waiver may be granted if either the criterion in section 4.1.1 or the criterion in 4.1.2 of this appendix is met.":

4.1.1 The site can be demonstrated to be as representative of the monitoring area as it would be if the siting criteria were being met.

4.1.2 The monitor or probe cannot reasonably be located so as to meet the siting criteria because of physical constraints (e.g., inability to locate the required type of site the necessary distance from roadways or obstructions).

The Greenville ESC site (AQS ID: 45-045-0015) has two obstructions: Tree C and Tree D, as referenced in Appendix G of the Network Plan, that prevent at least 270 degrees of continuous unobstructed air flow. This site met previous siting requirements for at least 270 degrees of non-continuous unobstructed airflow until requirements were updated with the 2024 PM_{2.5} NAAQS update. The EPA recognizes that due to underground utilities SC DES is unable to remove either tree to meet the new siting requirements. After reviewing the waiver request, the EPA believes that the airflow arc being noncontinuous at this site will not impact the representativeness of the measurements as if siting criteria were being met.

The EPA approves the waiver of the word “continuous” in the 40 CFR 58 Appendix E Section 2.3 (b) requirement that “...a probe inlet must have unrestricted airflow with no obstructions (as defined in paragraph (a) of this section) in a continuous arc of at least 270 degrees”. This waiver does not waive any other siting requirements for the Greenville Site, including the requirement for at least 270 degrees of total unobstructed airflow.

All other siting criteria must continue to be met at this site. The EPA recommends SC DES continue to seek permission to remove “Tree D” as referenced in Appendix G to the Network Plan. If the tree cannot be removed, SC DES should reassess and re-request this this waiver in the 2025 Network Plan along with the next Network Assessment.

Table 31: Summary of EPA Approved Waivers of Requirements

CBSA	Monitoring Site(s) Affected	Pollutant(s)	CFR Requirement Waived	EPA Waiver Authority/Rationale	Year Waiver First Granted	Waiver Expiration Date	Comments
Columbia, SC	Congaree Bluff (AQS ID: 45-079-0021)	O ₃ , SO ₂	40 CFR Part 58, Appendix E, Section 2.3(b) & 2.4(a) ¹	40 CFR Part 58, Appendix E, Section 4.1.2 ²	2016	2025	Approval of spacing from trees requirements
Florence, SC	JCI Woods (AQS ID: 45-041-8003)	Pb	40 CFR Part 58, Appendix E, Section 2.3(b) ¹	40 CFR Part 58, Appendix E, Section 4.1.1 ³	2020	2025	Approval of spacing from obstructions
Greenville-Anderson-Greer, SC	Greenville ESC (45-045-0015)	SO ₂ , NO ₂ , PM _{2.5} , PM ₁₀	“continuous” aspect of 40 CFR Part 58 Appendix E Section 2.3(b)	40 CFR Part 58, Appendix E, Section 4.1.1	2024	2025	Approval of Non-continuous 270 degree unrestricted airflow arc

¹These waivers were granted prior to the rule update. These are the citations to the current requirements.

² This waiver was requested under the previous rule and the waiver provision was located under 40 CFR Part 58 Appendix E, Section 10.1.2

³ This waiver was requested under the previous rule and the waiver provision was located under 40 CFR Part 58 Appendix E, Section 10.1.1



REGION 4

ATLANTA, GA 30303

October 30, 2023

Rhonda B. Thompson, PE
Chief, Bureau of Air Quality Control
South Carolina Department
of Health and Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

Dear Ms. Thompson:

Thank you for submitting the state of South Carolina's 2023 Annual Ambient Air Monitoring Network Plan (Network Plan) dated July 7, 2023. The Network Plan is required by 40 Code of Federal Regulations (CFR) §58.10. The U.S. Environmental Protection Agency (EPA) Region 4 understands that the South Carolina Department of Health and Environmental Control (SC DHEC) provided the public with a 30-day review period for the draft Network Plan and that no comments were received other than comments from the EPA on the draft Network Plan.

The SC DHEC is in the process of increasing the number of continuous Federal Equivalent Method (FEM) monitors, specifically Teledyne T640 and T640x monitors, in its fine particulate matter (PM_{2.5}) network and reducing the number of filter-based, Federal Reference Method (FRM) monitors. The EPA supports this effort, and this transition will save resources as well as provide higher time resolution PM_{2.5} measurements in more areas of the state. The EPA staff recently discussed with SC DHEC staff the state's plans to continue to meet regulatory PM_{2.5} collocation requirements in 2023 during this transition. Based on this discussion, the EPA believes that the SC DHEC has a good plan for maintaining compliance with PM_{2.5} collocation requirements.

Please note that on July 21, 2023, the Office of Management and Budget released revised delineations of core based statistical areas and guidance on uses of the delineations of these areas (<https://www.whitehouse.gov/wp-content/uploads/2023/07/OMB-Bulletin-23-01.pdf>). We encourage all agencies to review and consider these delineations in preparation for developing the Network Plan due by July 1, 2024, including any proposed changes that may need to be implemented in calendar year 2025.

The EPA approves the proposed monitoring network changes and all components of South Carolina's Network Plan. Thank you for working with the EPA to monitor air pollution and safeguard the air quality in South Carolina. If you have any questions or concerns, please contact Katy Lusky at (404) 562-9130 or Katherine Beck at (404) 562-8061.

Sincerely,

**ANTHONY
TONEY**

Digitally signed by
ANTHONY TONEY
Date: 2023.10.30
12:30:36 -04'00'

Anthony G. Toney
Acting Director

Enclosure

cc: Micheal Mattocks, Assistant Bureau Chief, BEHS
Connie Turner, Director, Division of Air Quality Analysis, BEHS
Heinz Kaiser, Director, Division of Air Emissions Evaluation and Support BAQ
Mary Peyton Wall, Air Regulation and Data Support Section BAQ
Joel Hodges, Air Regulation and Data Support Section, BAQ
Keith Harris, Region 4 LSASD

2023 State of South Carolina Ambient Air Monitoring Network Plan

U.S. EPA Region 4 Comments and Recommendations

This document contains the U.S. Environmental Protection Agency's comments and recommendations on the state of South Carolina's 2023 Ambient Air Monitoring Network Plan (Network Plan). Ambient air monitoring rules, which include regulatory requirements that address network plans, data certification, and minimum monitoring requirements, among other requirements, are found in 40 CFR Part 58. Minimum monitoring requirements for criteria pollutants are listed in 40 CFR Part 58, Appendix D. Minimum monitoring requirements are listed for ozone (O₃), particulate matter less than 2.5 microns (PM_{2.5}), particulate matter less than 10 microns (PM₁₀), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), carbon monoxide (CO), and lead (Pb).

The minimum monitoring requirements are based on core based statistical area (CBSA) boundaries as defined by the U.S. Office of Management and Budget (OMB), July 6, 2021, population estimates from the U.S. Census Bureau, and historical ambient air monitoring data. Minimum monitoring requirements for O₃, PM_{2.5}, and PM₁₀ only apply to metropolitan statistical areas (MSAs), which are a subset of CBSAs. OMB currently defines 10 MSAs in the state of South Carolina. The July 1, 2022, population estimates from the U.S. Census Bureau for each MSA in South Carolina and the total population estimates of MSAs shared with North Carolina and Georgia are shown in Table 1.

Table 1: Metropolitan Statistical Areas and July 1, 2022, Population Estimates

MSA Name	Population
Charlotte-Gastonia-Concord NC-SC	2,756,069
Greenville-Anderson, SC	958,958
Columbia, SC	847,686
Charleston-North Charleston-Summerville, SC	830,529
Augusta-Richmond County, GA-SC	624,083
Myrtle Beach-Conway-North Myrtle Beach, SC-NC	536,165
Spartanburg, SC	345,831
Hilton Head Island-Bluffton, SC	228,410
Florence, SC	199,119
Sumter, SC	134,925

The estimated 2022 census numbers indicate that the population of the Myrtle Beach-Conway-North Myrtle Beach, SC-NC MSA is now over 500,000 people. The Myrtle Beach area is now subject to additional minimum monitoring requirements that are discussed in the pollutant sections below.

Proposed Monitoring Network Changes

The EPA has approval authority for changes to regulatorily required state or local air monitoring stations (SLAMS). SLAMS include the ambient air quality monitoring sites and monitors required by 40 CFR Part 58, Appendix D and are needed to meet the monitoring objectives of Appendix D, including national ambient air quality standards (NAAQS) comparisons, and may also serve other data purposes. The EPA is not required to approve changes made to special purpose monitors (SPMs). SPMs are monitors designated by the monitoring agency as special purpose and do not count towards minimum

monitoring requirements of 40 CFR Part 58. SPMs are required to be identified in the Network Plan for public and the EPA review.

The South Carolina Department of Health and Environmental Control (SC DHEC) proposed changes to its monitoring network for 2023 through 2024. Table 2 summarizes the requested monitor discontinuations and relocations. Information related to each proposed change as well as the EPA's decision and rationale for approval/disapproval of each proposed change are contained in the following pollutant sections.

Table 2: Monitors Proposed for Relocation or Discontinuation

AQS ID	CBSA	Site Name	Pollutant	Type	Comments
45-019-0048	Charleston-North Charleston, SC	FAA Beacon Irving Street	PM _{2.5}	SPM	On January 5, 2023, the PM _{2.5} monitor was shut down.
45-019-0003	Charleston-North Charleston, SC	Jenkins Ave	PM ₁₀	SLAMS	The SLAMS PM ₁₀ monitor at the Jenkins Ave. site was shut down on February 2, 2023, and relocated to the North Charleston Fire Station monitoring site.
45-019-0020	Charleston-North Charleston, SC	North Charleston Fire Station	PM ₁₀	SLAMS	On February 2, 2023, the PM ₁₀ monitor was relocated from the Jenkins Ave. Fire Station monitoring site to the North Charleston Fire Station site.
45-091-0008	Charlotte-Concord-Gastonia, NC-SC	York Landfill	SO ₂	SPM	A special purpose rotating SO ₂ monitor was operated at the York Landfill site from 2020 to 2022. The SO ₂ monitor was then shut down on January 13, 2023, and will resume operation in 2024.
45-079-0021	Columbia, SC	Cayce City Hall	PM ₁₀	SPM	Approval to relocate the PM ₁₀ monitor at the Cayce City Hall site to the Parklane site was granted by EPA on February 22, 2023. The Cayce City Hall site was shut down on May 30, 2023.
45-079-0007	Columbia, SC	Parklane	SVOC	SPM	SVOC monitoring was discontinued on January 30, 2023. Acknowledged.
45-063-0008	Columbia, SC	Irmo	PM _{2.5} cont.	SPM?	The Irmo DJJ site began continuous monitoring of PM _{2.5} on January 20, 2023. It replaced the Irmo site after the landowner requested the site relocation. The replacement site was approved by the EPA on October 26, 2021. The continuous PM _{2.5} monitor at Irmo site was discontinued on January 20, 2023. The Irmo site and its remaining PM _{2.5} FRM sampler were shut down on June 2, 2023.
45-079-0022	Columbia, SC	Irmo DJJ	PM _{2.5}	SPM	The Irmo DJJ site was established on January 20, 2023, as a replacement for the Irmo monitoring site. The replacement site was approved by EPA on October 26, 2021. The state began operating the PM _{2.5} monitor on January 20, 2023.

45-041-0003	Florence, SC	Williams Middle School	PM _{2.5}	SPM	On June 13th, 2023, Teledyne released a T640 and T640X data alignment firmware update which is meant to better align data collected on these monitors to FRM samplers. To evaluate the comparability of the data to the FRM samplers in the network, the T640 monitor at this site will be designated a SPM.
45-051-0008	Myrtle Beach, SC	Coastal Carolina	PM _{2.5}	SPM	According to the U.S. Census 2022 data, the population in the MSA is above the minimum threshold for PM ₁₀ and PM _{2.5} , requiring one PM ₁₀ monitor and one PM _{2.5} monitor. The Coastal Carolina site was approved by the EPA on December 20, 2022, as a location for monitoring the expected maximum concentrations for PM _{2.5} and PM ₁₀ in the MSA. One Teledyne T640 monitor began monitoring for continuous PM _{2.5} at the Coastal Carolina monitoring site on February 23, 2023.
45-019-0046, (45-025-0001)	multiple	Chesterfield	NATTS	Other	Collocated ethylene oxide sampling at the Chesterfield site was discontinued on December 19, 2022. Acknowledged.

Table 3 summarizes requested monitor startups, as well as the EPA's decision and rationale for approval/disapproval/acknowledgement of each proposed startup.

Table 3: Proposed Changes in Monitoring

AQS ID	CBSA	Site Name	Pollutant	Type	Comments
45-019-0020	Charleston-North Charleston, SC	NCFS	PM _{2.5}	SLAMS	February 2, 2023, the continuous PM _{2.5} monitor was replaced with a Teledyne T640X, which also monitors PM ₁₀ .
45-037-0001	Augusta-Richmond County, GA-SC	Trenton	PM _{2.5}	SLAMS	Approved. SPM was converted to SLAMS to meet the new minimum monitor requirement for the Augusta area.
45-051-0008	Myrtle Beach-Conway-North Myrtle Beach, SC-NC	Coastal Carolina	PM ₁₀ , PM _{2.5}	SLAMS	Approved. Start-up of a Federal Equivalent Method (FEM) monitor that measures both PM _{2.5} and PM ₁₀ (Teledyne T640x) and a PM _{2.5} Federal Reference Method (FRM) sampler to meet new minimum monitoring requirements triggered by population increase in Myrtle Beach. Expected operation in 2023.

Network Plan Public Comments

40 CFR § 58.10(a)(1)

The requirement for a public comment period and response from the agency in the final Network Plan is found in 40 CFR 58.10(a)(1):

“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 also include and address, as appropriate, any received comments.”

The proposed 2023 Network Plan was available for public review and comment from April 28, 2023, through May 30, 2023. The Network Plan meets the public comment requirements of 40 CFR 58.10.

Operating Schedules

40 CFR § 58.12

The operating schedules proposed by the SC DHEC in its Network Plan meet the requirements for continuous analyzers and all manual Pb, PM₁₀, PM_{2.5}, and PM_{2.5} Speciation Trends Network (STN) monitors.

Air Quality Index (AQI) Reporting

40 CFR § 58.50

AQI reporting is required in MSAs with populations over 350,000. Six MSAs in the state of South Carolina have populations over 350,000 (see Table 4). The SC DHEC reports AQI values for these MSAs and one additional MSA. The Mecklenburg County Air Quality reports AQI values for the Charlotte-Concord-Gastonia, NC-SC MSA. Both the Georgia Environmental Protection Division (GA EPD) and the SC DHEC report AQI values for the Augusta-Richmond County GA-SC MSA.

Table 4: AQI Reporting

MSAs Reporting
Greenville-Anderson, SC
Columbia, SC
Charleston-North Charleston, SC
Augusta-Richmond County, GA-SC
Myrtle Beach-Conway-North Myrtle Beach, SC-NC
Florence, SC
Charlotte-Concord-Gastonia, NC-SC

The South Carolina monitoring network satisfies the minimum AQI reporting requirements in 40 CFR Part 58.

National Core (NCore) Monitoring Network
40 CFR Part 58, Appendix D, Section 3.0

A requirement that each state operate at least one NCore site is found in 40 CFR Part 58, Appendix D, Section 3. The NCore site must measure, at a minimum, PM_{2.5} particulate mass using continuous and integrated/filter-based samplers, speciated PM_{2.5}, PM_{10-2.5} particle mass, O₃, SO₂, CO, NO/NO_y, wind speed, wind direction, relative humidity, and ambient temperature. This section requires each state to operate at least one NCore site. The SC DHEC meets the NCore requirement by operating the Parklane site in Columbia.

Table 5: NCore Monitoring Sites

AQS ID	Site Name	CBSA	Requirement Met (Y/N)
45-079-0007	Parklane	Columbia, SC	Y

The NCore monitoring network described in the Network Plan and listed in Table 5 meets all design criteria of 40 CFR Part 58.

O₃ Monitoring Requirements
40 CFR Part 58, Appendix D, Section 4.1 and Table D-2

Ambient air monitoring network design criteria for O₃ are found in 40 CFR Part 58, Appendix D, Section 4.1. This section requires state agencies to operate O₃ sites for various locations depending upon area size and typical peak concentrations.

Table 6: Ozone Design Criteria – Minimum Required SLAMS Monitors

CBSA	Minimum Required SLAMS	Number of SLAMS	Number of SPMs or Other Regulatory Monitors	Site Names (AQS IDs) of SLAMS	Requirement Met (Y/N)
Augusta-Richmond County, GA-SC	2	4	0	Jackson Middle School (AQS ID: 45-003-0003) Trenton (AQS ID: 45-037-0001) Evans (AQS ID 13-073-0001) ¹ Augusta (AQS ID 13-245-0091) ¹	Y
Charleston-North Charleston, SC	2	2	0	Moncks Corner National Guard (AQS ID: 45-015-1002) Cape Romain (AQS ID: 45-019-0046)	Y
Charlotte-Concord-Gastonia, NC-SC	2	4	3	York Landfill (AQS ID: 45-091-0008) Crouse (AQS ID: 37-109-0004) ² Garinger (AQS ID: 37-119-0041) ³ University Meadows (AQS ID: 37-119-0046) ³ Rockwell (AQS ID: 37-159-0021) ¹	Y
Columbia, SC(NCore)	2	2	1	Parklane (AQS ID: 45-079-0007) Sandhill (AQS ID: 45-079-1001)	Y
Florence, SC	0	1	0	Pee Dee Exp. Station (AQS ID: 45-031-0003)	Y

Greenville-Anderson, SC	2	2	0	Garrison Arena (AQS ID: 45-007-0006) Hillcrest (AQS ID: 45-045-0016)	Y
Myrtle Beach-Conway-North Myrtle Beach, SC-NC	1	1	0	Coastal Carolina (AQS ID: 45-051-0008)	Y
Spartanburg, SC	1	1	0	North Spartanburg Fire Station #2 (AQS ID: 45-083-0009)	Y

¹Evans and Augusta sites are operated by the Georgia Environmental Protection Division

²Crouse and Rockwell sites are operated by the North Carolina Department of Air Quality

³Garinger and University Meadows sites are operated by Mecklenburg County Air Quality

The Coastal Carolina site (AQS ID 45-051-0008) is operated by the SC DHEC. The 2020-2022 O₃ design value (DV) for that site was 0.058 parts per million, which is less than 85.0% of the NAAQS. According to Table D-2 of Appendix D to 40 CFR Part 58, the Myrtle Beach-Conway-North Myrtle Beach SC-NC MSA, with a population over 350,000 and a DV less than 85% of the NAAQS, is not required to have a second O₃ monitor. However, if the 2021-2023 DV is valid and above 85% of the NAAQS, the EPA requests that the SC DHEC and the NC DAQ collaborate to characterize the area of highest O₃ concentration in the MSA, and to present the results of this investigation in their respective Network Plans due July 1, 2025. The results of this investigation could indicate that the expected maximum concentration is in an area other than the area near the Coastal Carolina site. The EPA is willing to also participate in the discussions and help with this analysis. The characterization of O₃ concentrations in the MSA would be used to propose a new O₃ monitoring site in the MSA.

O₃ monitors located 5-10 miles downwind from concentrated NO_x emission sources are often representative of expected O₃ maximum concentrations in the Southeast. The characterization of the Myrtle Beach area could consider current population trends, traffic, and frequent afternoon wind directions during O₃ season. More information about O₃ site selection can be found in the EPA's Guideline on Ozone Monitoring Site Selection, which can be found at:
<https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockkey=2000D45M.TXT>.

The O₃ monitoring network outlined in the Network Plan and Table 6 meets the minimum monitoring requirements found in 40 CFR Part 58, Appendix D, Table D-2 for all MSAs in South Carolina.

CO Monitoring Requirements

40 CFR Part 58, Appendix D, Section 4.2

Ambient air monitoring network design criteria for CO are found in 40 CFR Part 58, Appendix D, Section 4.2. CBSAs with populations over one million are required to operate one CO monitor collocated with a near-road NO₂ site. There is one CBSA in South Carolina with a population over 1,000,000, the Charlotte-Concord-Gastonia, NC-SC CBSA. The CO requirement for this area is met by the Mecklenburg County Air Quality (MCAQ) operating a CO monitor at its Remount near-road site.

Table 7: CO Design Criteria – Minimum Required SLAMS Near-road Monitors

CBSA	Minimum Required Near-road CO Monitors	Number of Near-road CO Monitors	Site Names (AQ5 IDs) of Existing Near-road CO Monitors	Requirement Met (Y/N)
Charlotte-Concord-Gastonia, NC-SC	1	1	Remount (37-119-0045) ¹	Y

¹Remount site is operated by the MCAQ.

The Regional Administrator monitoring requirements for CO are found in 40 CFR Part 58, Appendix D 4.2.2. The section states, “The Regional Administrators, in collaboration with states, may require additional CO monitors above the minimum number of monitors required in 4.2.1.” The Regional Administrator is not requiring the SC DHEC to operate an additional CO monitor at this time.

Table 8: CO Design Criteria – Minimum Required SLAMS RA-Required Monitors

CBSA	Minimum RA-required CO Monitors	Number of RA-required CO Monitors	Site Names (AQ5 IDs) of Existing RA-required CO Monitors	Requirement Met (Y/N)
None	0	0	None	Y

The CO monitoring network described in the Network Plan meets the design criteria of 40 CFR Part 58 for both near-road and RA-required monitors as identified in Tables 7 and 8 above.

NO₂ Monitoring Requirements

40 CFR Part 58, Appendix D, Section 4.3

Ambient air monitoring network design criteria for NO₂ are found in 40 CFR Part 58, Appendix D, Section 4.3. Three types of NO₂ monitoring are required: near-road, area-wide, and Regional Administrator. These types of NO₂ monitoring are described in Sections 4.3.2, 4.3.3, and 4.3.4, respectively.

Ambient air monitoring design criteria for near-road NO₂ monitoring sites are found in 40 CFR Part 58, Appendix D, Section 4.3.2.

In the Charlotte-Gastonia-Concord, NC-SC CBSA, the MCAQ operates one near-road monitoring site at the Remount site (AQ5 ID: 37-119-0045). When the initial near-road monitoring network was funded by EPA and established, the Charlotte area was below the 2.5 million population threshold for a second near-road NO₂ monitoring site. However, the recent census population estimate for the Charlotte-Concord-Gastonia, NC-SC CBSA is over 2.5 million people. The MCAQ has identified a suitable location for the additional near-road NO₂ monitoring site and was preparing to install and operate the new near-road site in 2023. However, due to delays outside the control of the MCAQ, the site is not expected to begin operation until early 2024.

Table 9: NO₂ Design Criteria – Minimum Required SLAMS Near-road Monitors

CBSA	Minimum Required Near-road NO₂	Number of Near-road NO₂	Site Names (AQS IDs) of Existing NO₂ Near-Road	Requirement Met (Y/N)
Charlotte-Gastonia-Concord, NC-SC	2	2	Remount (AQS ID: 37-119-0045) ¹ Equipment Drive (AQS ID 37-119-0050) ¹	Y

¹The Remount and Equipment Drive sites are operated by the MCAQ.

Ambient air monitoring network design criteria for area wide NO₂ sites are found in Section 4.3.3 of Appendix D to 40 CFR Part 58. The MCAQ operates a NO₂ monitor at its Garinger site to meet the minimum requirement for the Charlotte-Gastonia-Concord, NC-SC CBSA.

Table 10: NO₂ Design Criteria – Minimum Required SLAMS Area-Wide Monitors

CBSA	Minimum Required Area-Wide NO₂	Number of Area-Wide NO₂	Site Names (AQS IDs) of Existing NO₂ Area-Wide Sites	Requirement Met (Y/N)
Charlotte-Gastonia-Concord, NC-SC	1	1	Garinger (AQS ID: 37-119-0041) ¹	Y

¹The Garinger site is operated by the MCAQ.

Ambient air monitoring network design criteria for Regional Administrator-required NO₂ monitoring, often referred to as RA-40 monitoring, are found in 40 CFR Part 58, Appendix D, Section 4.3.4. Under these provisions, Regional Administrators must require a minimum of 40 additional NO₂ monitoring stations nationwide, with a primary focus on siting these monitors in locations to protect susceptible and vulnerable populations. The full list of NO₂ monitors identified by the EPA's Regional Administrators can be found on EPA's website at <http://www.epa.gov/ttnamti1/svpop.html>. The SC DHEC operates one RA-40 monitor at its Greenville ESC site in the Greenville-Anderson, SC CBSA.

Table 11: NO₂ Design Criteria – Minimum Required SLAMS RA-40 Monitors

CBSA	Minimum Required RA-40 Monitors	Number of RA-40 Monitors	Site Names (AQS IDs) of Existing RA-40 Sites	Requirement Met (Y/N)
Greenville-Anderson, SC	1	1	Greenville ESC (AQS ID: 45-045-0015)	Y

The NO₂ monitoring network described by the Network Plan meets all design criteria of 40 CFR Part 58.

SO₂ Monitoring Requirements

40 CFR Part 58, Appendix D, Section 4.4

Ambient air monitoring network design criteria for SO₂ are found in 40 CFR Part 58, Appendix D, Section 4.4. This section requires that the population weighted emissions index (PWEI) be calculated by states for each CBSA. As a result, the SO₂ monitoring site(s) required in each CBSA will satisfy minimum monitoring requirements if the monitor(s) is sited within the boundaries of the parent CBSA and is one of the following site types: population exposure, maximum concentration, source-oriented, general background, or regional transport. A SO₂ monitor at an NCore station may satisfy minimum monitoring requirements if that monitor is located within a CBSA with minimally required monitors consistent with Appendix D, Section 4.4

Based upon PWEIs calculated using 2022 population estimates and 2017 emission inventory data, the minimum numbers of monitors required for the CBSAs in South Carolina are summarized in Table 12.

Table 12: SO₂ Design Criteria – Minimum Required SLAMS PWEI Monitors

CBSA	2022 Population Estimate	2017 NEI Emissions (Tons per year)	PWEI	Number of Minimum Required PWEI SO ₂ Monitors	Number of SO ₂ SLAMS	Site Names (AQS IDs) of Existing SO ₂ monitors	Requirement Met (Y/N)
Charlotte-Concord-Gastonia, NC-SC	2,756,069	5,648	8,801	1	1	Garinger (AQS ID:37-119-0041) ¹	Y
Columbia, SC	847,686	3,709	2,111	0	1	Parklane (AQS ID: 45-079-0007)	Y
Charleston-North Charleston, SC	830,529	8,173	6,231	1	1	Jenkins Ave. (AQS ID: 45-019-003)	Y
Greenville, SC	958,958	728	579	0	1	Greenville ESC (AQS ID: 45-045-0015)	Y

¹The Garinger site is operated by Mecklenburg County Air Quality.

The SO₂ monitoring network outlined in the Network Plan meets the SO₂ PWEI requirements specified in 40 CFR Part 58, Appendix D, Section 4.4.

The EPA finalized the SO₂ Data Requirements Rule (DRR) on August 10, 2015 (40 CFR Part 51, Subpart BB). This rule requires air quality near sources with SO₂ emissions of 2,000 tons per year (tpy) or greater be characterized using ambient air monitoring or modeling. On January 15, 2016, the SC DHEC submitted to the EPA a list of eight sources in the state around which SO₂ air quality must be characterized. These eight sources were characterized using modeling and/or took federally enforceable emissions limits. The SC DHEC does not operate any SO₂ monitoring sites to meet the DRR requirements.

Table 13: SO₂ Design Criteria – Data Requirement Rule Monitors

CBSA	Minimum Required DRR Monitors	Number of DRR Monitors	Site Names (AQS IDs) of Existing DRR Sites	Requirement Met (Y/N)
None	0	0	None	Y

The DRR also requires annual emissions reporting for sources that used modeling to show attainment with the standard under the rule. Forty (40) CFR § 51.1205 (b) requires that:

“For any area where modeling of actual SO₂ emissions serve as the basis for designating such area as attainment for the 2010 SO₂ NAAQS, the air agency shall submit an annual report to the EPA Regional Administrator by July 1 of each year, either as a stand-alone document made available for public inspection, or as an appendix to its Annual Monitoring Network Plan (also due on July 1 each year under 40 CFR §58.10), that documents the annual SO₂ emissions of each applicable source in each such area and provides an assessment of the cause of any emissions increase from the previous year.”

The SC DHEC submitted its 2022 annual emission report with its 2023 Network Plan to meet this requirement. The report applies to areas designated attainment/unclassifiable based on modeling of actual SO₂ emissions for Santee Cooper Cross Generating Station, New-Indy Catawba (formerly Resolute Industries), Sylvamo Eastover Mill (formerly International Paper – Eastover), and Dominion Wateree Station (formerly SCE&G Wateree Station).

For the DRR portion found in Appendix I of the Network Plan, the EPA responded in a separate correspondence dated September 20, 2023. The next annual SO₂ emissions report for these facilities is due July 1, 2024.

The Regional Administrator may require additional SO₂ monitoring stations above the minimum number of monitors required in 40 CFR Part 58, Appendix D, Section 4.4.2, where the minimum monitoring requirements are not sufficient to meet monitoring objectives. The SC DHEC is not required by the Regional Administrator to operate an SO₂ monitor at this time.

Table 14: SO₂ Design Criteria – Minimum Required SLAMS RA Monitors

CBSA	Minimum Required RA-40 Monitors	Number of RA-40 Monitors	Site Names (AQS IDs) of Existing RA-40 Sites	Requirement Met (Y/N)
None	0	0	None	Y

The SC DHEC operates an additional SO₂ monitoring network to provide background concentration data. Two years of data are collected every four years at two monitoring sites. These are SPMs and do not require approval from the EPA for startup or shutdown. For the data to be useable to support the SC DHEC's prevention of significant deterioration (PSD) modeling and permitting activities, the rotating SO₂ monitoring network must meet the requirements in Appendix B to 40 CFR Part 58. Section 8.3 of Appendix W to 40 CFR Part 51 discusses using air monitoring data for background concentrations and Appendix B to 40 CFR Part 58 discusses quality assurance requirements for PSD air monitoring procedures that must be followed for the data to be useable for PSD and permitting purposes.

Table 15 lists the two monitors that the SC DHEC includes in its SO₂ rotating background network and that are currently operating. The SC DHEC has updated the monitoring objective for the Trenton SO₂ site from source oriented to upwind background. The EPA believes this better represents the monitoring objectives of the site.

Table 15: SO₂ Rotating Background Monitoring

CBSA	Site Name (AQS ID)	Frequency of Operation	Next Expected Years of Operation	Monitoring Objective in Network Plan
Columbia, SC	Congaree Bluff (AQS ID: 45-079-0021)	Every other 2 years	2022-2023	General Background
August-Richmond County, GA-SC	Trenton (AQS ID: 45-037-0001)	Every other 2 years	2022-2023	Upwind Background

The South Carolina SO₂ monitoring network meets the monitoring requirements in 40 CFR Part 58.

Pb Monitoring Requirements

40 CFR Part 58, Appendix D, Section 4.5

The monitoring requirements for Pb found at 40 CFR Part 58, Appendix D, Section 4.5 require that, at a minimum, there must be one source-oriented SLAMS site located to measure the maximum Pb concentration in ambient air resulting from each non-airport Pb source which emits 0.5 or more tons per year and from each airport which emits 1.0 or more tons per year.

Although South Carolina has no sources that exceed the emissions thresholds for Pb monitoring, the SC DHEC and Clarios, LLC (formerly Johnson Controls Battery Group) conduct source-oriented ambient Pb monitoring at three sites around the Florence Recycling Center in Florence, South Carolina. The resulting air monitoring data are comparable to the NAAQS. The company and the SC DHEC conduct this monitoring under terms of a settlement agreement reached with several petitioners who commented on the construction permit for the facility. The locations of the monitoring sites were selected based upon an agreement between the company and stakeholders. As of March 22, 2021, Clarios ceased production at the recycling center. The SC DHEC discontinued two of three sites near the Clarios facility – JCI Entrance (AQS ID: 45-041-8002) and JCI Railroad (AQS ID: 45-041-8001).

The EPA requested that the SC DHEC continue to monitor for Pb near the Clarios facility at one site – the JCI Woods site (AQS ID: 45-041-8001). Pb monitoring should continue if there is a possibility of Pb emissions or re-entrainment of Pb dust. Pb monitoring should continue until the following occurs:

- The permit should be revoked, so that operations cannot restart, and
- A cleanup plan that addresses suppression and/or monitoring of potentially Pb-containing dust should be put in place.

The EPA requires that the SC DHEC provide documentation of the permit being revoked and of a cleanup plan that addresses minimizing the re-entrainment of Pb containing dust. The EPA will consider the monitor shutdown request once the SC DHEC provides sufficient information to support a conclusion that ambient Pb concentrations are not expected to exceed the NAAQS given the current and future disposition of the site.

Table 16: Pb Design Criteria – Minimum Required Source-Oriented Monitors

Source	CBSA	Minimum Required Source-Oriented Pb Sites	Number of Source-Oriented Pb Sites	Site Names (AQS IDs) of Existing Source-Oriented Sites	Requirement Met (Y/N)
Clarios ¹	Florence, SC	0	1	JCI Woods (AQS ID: 45-041-8003)	Y

¹This monitoring is not required by EPA rules but is part of a settlement agreement between the SC DHEC, the facility, and community groups. The SC DHEC operates this sampler as a SPM to evaluate Pb NAAQS compliance.

The Pb monitoring collocation requirements are found in 40 CFR Part 58, Appendix A, 3.4.4. These requirements include that: 15 percent of the primary monitors are collocated and have at least one collocated quality control monitor (if the total number of monitors is less than three). These collocation requirements are assessed at the PQAO level. The SC DHEC is required to operate one collocated Pb monitor, and it operates it at the JCI Woods site (AQS ID: 45-041-8003) (see Table 17).

Table 17: Pb Design Criteria – Minimum Required Collocated Monitors

PQAO	Minimum Required Collocated Monitors	Number of Collocated Monitors	Site Names (AQS IDs) of Existing Collocated Sites	Requirement Met (Y/N)
SC DHEC	1	1	JCI Woods (AQS ID: 45-041-8003)	Y

The Pb monitoring network described in the Network Plan meets all design criteria of 40 CFR Part 58.

PM₁₀ Monitoring Requirements

40 CFR Part 58, Appendix A, Section 3.3

40 CFR Part 58, Appendix D, Section 4.6 and Table D-4

Ambient air monitoring network design criteria for PM₁₀ are found in 40 CFR Part 58, Appendix D, Section 4.6. Table D-4, in this section, indicates the approximate number of PM₁₀ stations required in MSAs with populations exceeding 100,000 to characterize national and regional PM₁₀ air quality trends and geographical patterns. The SC DHEC, the GA EPD and the MCAQ are required to operate six PM₁₀ monitors at five sites in CBSAs in or abutting the state (see Table 18).

Table 18: PM₁₀ Design Criteria – Minimum Required SLAMS Monitors

CBSA	Minimum Required SLAMS	Number of SLAMS	Number of SPMs or Other Regulatory Monitors	Site Names (AQS IDs) of SLAMS	Requirement Met (Y/N)
Augusta-Richmond County, GA-SC	1	1	0	Augusta (AQS ID: 13-245-0091) ¹	Y
Charleston-North Charleston, SC	1	1	0	Jenkins Ave. Fire Station (AQS ID: 45-019-0003)	Y
Charlotte-Concord-Gastonia, NC-SC	2	2	0	Garinger (AQS ID: 37-119-0041) ² Ramblewood Park (AQS ID: 37-119-0047) ²	Y
Columbia, SC (NCore)	1	1	1	Cayce City Hall (AQS ID: 45-063-0010)	Y
Greenville-Anderson, SC	1	1	0	Greenville ESC (AQS ID: 45-045-0015)	Y
Myrtle Beach-Conway-North Myrtle Beach SC-NC	1	1	0	Coastal Carolina (AQS ID 45-051-0008) ³	Y

¹The Augusta site is operated by the GA EPD

²The Garinger and Ramblewood Park sites are operated by the MCAQ

³The Coastal Carolina PM₁₀ monitoring is expected to start by the end of 2023

The estimated 2022 census numbers indicate that the population of the Myrtle Beach-Conway-North Myrtle Beach, SC-NC MSA is now over 500,000 people. As a result, the Myrtle Beach area is now required to operate one PM₁₀ monitor, per 40 CFR Part 58, Appendix D, Table D-4.

The Network Plan Addendum, received on October 26, 2022, proposed to meet this requirement by operating a T640x monitor, which measures both PM₁₀ and PM_{2.5}, at the existing Coastal Carolina site (AQS ID 45-051-0008). The EPA's evaluation of this startup was based primarily on analysis of PM_{2.5} in the Myrtle Beach area. This evaluation is discussed in the PM_{2.5} section and supports the conclusion that the PM₁₀ and PM_{2.5} monitoring requirements are being met by this site. The PM₁₀ levels are typically not near the NAAQS and having one site to measure both PM₁₀ and PM_{2.5} will save the SC DHEC resources. Thus, the EPA approves the startup of PM₁₀ monitoring at the Coastal Carolina site to meet the new PM₁₀ minimum requirement.

The PM₁₀ collocation requirements for manual methods are found in 40 CFR Part 58, Appendix A, 3.3.4. Those requirements include that: 15 percent of each network of manual PM₁₀ methods (at least one site) must be collocated and the sites with collocated monitors should be among those measuring annual mean concentrations in the highest 25 percent of the network. These collocation requirements are assessed at the PQAO level. The SC DHEC is not required to operate any PM₁₀ collocated monitors.

Table 19: PM₁₀ Design Criteria – Minimum Required Collocated Monitors

PQAO	Sites with Manual PM₁₀ Method	Minimum Required Collocated Monitors	Number of Collocated PM₁₀ Monitors	Site Names (AQS IDs) of Collocated Sites	Requirement Met (Y/N)
SC DHEC	0	0	0	None	Y

The proposed PM₁₀ monitoring network described in the Network Plan meets all design criteria of 40 CFR Part 58.

PM_{2.5} Monitoring Requirements

40 CFR Part 58, Appendix A, Section 3.2

40 CFR Part 58, Appendix D, Section 4.7 and Table D-5

Ambient air monitoring network design criteria for PM_{2.5} are found in 40 CFR Part 58, Appendix D, Section 4.7. This section requires that state and, where applicable, local agencies operate the minimum number of required PM_{2.5} SLAMS sites listed in Appendix D, Table D-5. The SC DHEC, GA EPD and MCAQ operate PM_{2.5} SLAMS monitors at 15 sites in CBSAs in or abutting the state (see Table 20).

Table 20: PM_{2.5} Design Criteria – Minimum Required SLAMS Monitors

CBSA	Minimum Required SLAMS	Number of SLAMS Sites	Number of SPMs or Other Regulatory Monitoring Sites	Site Names (AQS IDs) of SLAMS	Requirement Met (Y/N)
Augusta-Richmond County, GA-SC	2	2	0	Augusta (AQS ID: 13-245-0091) ¹ Trenton (AQS ID 45-037-0001)	Y
Charleston-North Charleston, SC	1	2	1	NCFS (AQS ID: 45-019-0020) Cape Romain (AQS ID: 45-019-0046)	Y
Charlotte-Concord-Gastonia, NC-SC	2	3	2	Garinger (AQS ID: 37-119-0041) ² Remount (AQS ID: 37-119-0045) ² Friendship Park (AQS ID: 37-119-0048) ²	Y
Columbia, SC(NCore)	1	2	0	Irmo (AQS ID: 45-063-0008) ³ Irmo DJJ (AQS ID: 45-079-0022) ³ Parklane (AQS ID: 45-079-0007)	Y
Greenville-Anderson, SC	1	2	0	Greenville ESC (AQS ID: 45-045-0015) Hillcrest (AQS ID: 45-045-0016)	Y
Florence, SC	0	1	0	Williams Middle School (AQS ID: 45-041-0003)	Y
Spartanburg, SC	0	1	0	T.K. Gregg (AQS ID: 45-083-0011)	Y
Myrtle Beach-Conway-North Myrtle Beach SC-NC	1	1	0	Coastal Carolina (AQS ID 45-051-0008) ⁴	Y
None	0	1	1	Chesterfield (AQS ID: 45-025-0001)	Y

¹The Augusta site is operated by the GA EPD

²The Garinger, Remount, and Friendship Park sites are operated by the MCAQ

³The SC DHEC will relocate the Irmo Site monitors to the Irmo DJJ Site due to access issues.

⁴PM_{2.5} monitoring at the Coastal Carolina Site is expected to start in 2023

The SC DHEC previously proposed relocating the Irmo site (AQS ID: 45-063-0008) to the Irmo Department of Juvenile Justice (DJJ) site (AQS ID: 45-079-0022). In 2019, the owners of the property where the Irmo site is located requested the monitoring site be removed from their property. After working with EPA, the SC DHEC was able locate a suitable site 2.4 miles northeast from the Irmo site. The demographics and location of the Irmo DJJ site are similar to the original Irmo site, and meet the requirements of 40 CFR Part 58, Appendix E. As such, the EPA previously approved relocating the Irmo monitors to the Irmo DJJ PM_{2.5} site. The monitors were installed and operating by January 20, 2023.

The estimated 2022 census numbers indicate that the population of the Myrtle Beach-Conway-North Myrtle Beach, SC-NC MSA is now over 500,000 people. The Myrtle Beach area is now required to install one PM_{2.5} monitor to meet the minimum monitoring requirements of 40 CFR Part 58, Appendix D, Table D-5. In February 2023, the SC DHEC installed and began operating a T640 at the Coastal Carolina site to measure PM_{2.5} and is planning to install a T640x to monitor PM₁₀ by the end of the year. The EPA approves the SC DHEC's plans for the PM_{2.5} monitoring at the Coastal Carolina site, as well as the PM₁₀ monitoring required to begin by December 31, 2023.

The level of the PM_{2.5} annual NAAQS is 12.0 micrograms per cubic meter (µg/m³) and the DV is calculated by taking the annual arithmetic mean, averaged over 3 years. The 2020 DV at the Augusta site is 10.3 µg/m³, which is greater than 85% of the NAAQS. According to 40 CFR Part 58, Appendix D, Table D-5, two PM_{2.5} monitors are required in the Augusta-Richmond County MSA, based on the 2020 DV and the MSA's estimated 2019 population of 608,980. The SC DHEC operates one required SLAMS (FRM) monitor, as well as and one continuous FEM monitor, at the Trenton monitoring site. The second required SLAMS monitor is located at the Augusta monitoring site in Georgia, operated by the Georgia Environmental Protection Division.

PM_{2.5} Collocation Requirements

40 CFR Part 58, Appendix A, Section 3.2

Forty (40) CFR Part 58, Appendix A, Section 3.2.3 states that 15 percent of each network of manual PM_{2.5} methods (at least one site) must be collocated. Section 3.2.3.1 states that for each distinct monitoring method designation (FRM or FEM) a PQAQ is using for a primary monitor, the PQAQ must have 15 percent of the primary monitors of each method designation collocated and have at least one collocated quality control monitor. The first collocated monitor must be a designated a FRM monitor.

Section 3.2.3.2 states that for each primary monitor designated as an FEM used by the PQAQ, 50 percent of the monitors designated for collocation (or the first if only one collocation is necessary) shall be collocated with a FRM quality control monitor and 50 percent of the monitors shall be collocated with a monitor having the same method designation as the FEM primary monitor.

The SC DHEC is transitioning its PM_{2.5} network to include more continuous FEM equipment and reduce the number of filter-based, FRM equipment. Specifically, the SC DHEC will operate more Teledyne T640 and T640x monitors (AQ5 method codes 636 and 638 respectively). The EPA staff recently had a discussion with SC DHEC staff on plans to continue to meet regulatory collocation requirements in 2023 as FEM methods are started up and fewer FRM samplers are operated. The EPA believes that the SC DHEC has a good plan for maintaining compliance with PM_{2.5} collocation requirement.

Table 21: PM_{2.5} Design Criteria – Minimum Required Collocated Monitors

PQAQ	Method	AQS Method Code	Number of Primary Monitors	Minimum Required Collocated Monitors	Number of Collocated Monitors	Site Names (AQ5 IDs) of Collocated Sites	Requirements Met (Y/N)
SC DHEC	FRM Gravimetric w/ VSCC	145	8	1	3	Hillcrest (AQ5 ID: 45-045-0016) Parklane (AQ5 ID: 45-079-0007) NCFS (AQ5 ID 45-019-0020)	Y
SC DHEC	Teledyne T640X at 16.67 LPM	638	0	0	0	Greenville ESC (AQ5 ID: 45-045-0015)	Y
SC DHEC	Teledyne T640 at 5.0 LPM	636	3	1	1	Chesterfield (AQ5 ID: 45-025-0001)	Y

¹The EPA has approved relocating the Irmo site to the Irmo DJJ site due to site access issues.

The PM_{2.5} monitoring network meets all design criteria of 40 CFR Part 58.

PM_{2.5} Near-Road Monitoring Requirements **40 CFR Part 58, Appendix D, Section 4.7.1(b)(2)**

Regulatory requirements in 40 CFR Part 58, Appendix D, Section 4.1.1(b)(2) require that “CBSAs with a population of 1,000,000 or more persons, at least one PM_{2.5} monitor is to be collocated at a near-road NO₂ station.” One CBSA with a population of 1,000,000 or more persons is partially in the State of South Carolina, the Charlotte-Gastonia-Concord, NC-SC CBSA, and the MCAQ operates the required PM_{2.5} near-road monitor at the Remount site.

Table 22: PM_{2.5} Design Criteria – Minimum Required SLAMS Near-Road Monitors

CBSA	Minimum Required Near-road PM_{2.5}	Number of Near-road PM_{2.5}	Site Names (AQS IDs) of Existing PM_{2.5} Near-Road	Requirement Met (Y/N)
Charlotte-Gastonia-Concord, NC-SC	1	1	Remount (37-119-0045) ¹	Y

¹The Remount site is operated by the MCAQ

The near-road PM_{2.5} monitoring network described in the Network Plan meets the design criteria of 40 CFR Part 58.

PM_{2.5} Continuous Monitoring Requirements **40 CFR Part 58, Appendix D, Section 4.7.2**

Regulatory requirements for continuous PM_{2.5} monitoring require that “...State, or where appropriate, local agencies must operate continuous PM_{2.5} analyzers equal to at least one-half (round up) the minimum required sites listed in Table D-5 of this appendix.

At least one required continuous analyzer in each MSA must be collocated with one of the required FRM/FEM/ARM (federal reference method/federal equivalent method/approved regional method) monitors, unless at least one of the required FRM/FEM/ARM monitors is itself a continuous FEM or ARM monitor in which case no collocation requirement applies.”

The Teledyne API T640 is an approved FEM for PM_{2.5}, and the T640x is an approved FEM for PM_{2.5}, PM₁₀, and PM_{10-2.5}. These methods were first approved in 2016 and have grown in use around the country. They have become popular due to multiple valued attributes to the method (i.e., one monitor for multiple PM metrics and less maintenance and consumables); however, data assessments have indicated both methods have a positive bias of ~20% relative to state, local, and tribal (SLT) operated PM_{2.5} FRMs. During the most recent PM NAAQS review, the desire for improved FEM/FRM comparability was a key recommendation of the Clean Air Scientific Advisory Committee (CASAC) to the EPA in its review of the PM policy assessment.

Teledyne API worked with the EPA's Office of Research and Development (ORD) on modifications to these methods to address the bias. The EPA ORD's Reference and Equivalency Program accepts and evaluates applications for new and modified methods and approves new designations and updates if

they meet performance criteria and related requirements defined in 40 CFR Part 53. The EPA recently approved a modification to the firmware of the Teledyne T640 and T640x PM FEMs that includes a “network data alignment” feature to better align data from these methods with STL FRMs. Teledyne API customers can begin applying the upgrades through firmware available from Teledyne. The EPA anticipates this upgrade will lead to greater confidence in the comparability of Teledyne FEMs to collocated FRMs. The Reference and Equivalency Program maintains and publishes a list of all designated and modified FRMs and FEMs that are currently in effect. This list can be found on the web at: <https://www.epa.gov/amtic/air-monitoring-methods-criteria-pollutants>.

For agencies which have previously received NAAQS exclusions for the Teledyne T640/x monitors for PM_{2.5} due to an evaluation period showing unfavorable comparability and performance statistics, we recommend that they apply this upgrade as soon as possible and go back through the evaluation process. As long as there is a collocated FRM at a site meeting sample frequency requirements, a NAAQS exclusion may be applied to the PM_{2.5} data from a T640/x for up to two years via the SPM provision in §58.20. In the Network Plan to be submitted in 2024, agencies operating either the T640 or the T640x FEMs must include information on when the firmware upgrade occurred, and when the data alignment function was enabled for each monitor. Also, each agency must include whether the evaluation period caused the FEM to no longer be the primary monitor at the site. If any monitors are proposed to change from a SLAMS to an SPM, then this change must be submitted in an addendum to the Network Plan for EPA approval.

Six MSAs listed in Table 23, below, are required to have continuous monitors. Eight MSAs in or partially in South Carolina have continuous PM_{2.5} monitors as does one site not in an MSA. The requirements are met in all areas in the state.

Table 23: PM_{2.5} Design Criteria – Continuous Monitors

MSA	Minimum Required Continuous PM_{2.5}	Number of Continuous PM_{2.5} Monitors	Site Names (AQ5 IDs) of Existing PM_{2.5} Monitors	Requirement Met (Y/N)
Augusta-Richmond County, GA-SC	1	1	Trenton (AQ5 ID: 45-037-0001)	Y
Charleston-North Charleston, SC	1	2	Cape Romain (AQ5 ID: 45-019-0046) NCFS (AQ5 ID: 45-019-0020)	Y
Charlotte-Concord-Gastonia, NC-SC	1	5	Garinger (AQ5 ID: 37-119-0041) ¹ Friendship Park (AQ5 ID: 37-119-0048) ¹ Remount (AQ5 ID: 37-119-0045) ¹ Rockwell (AQ5 ID: 37-159-0021) ² Catawba Longhouse (AQ5 ID: 45-091-8801) ³	Y
Columbia, SC (NCore)	1	2	Irmo (AQ5 ID: 45-063-0008) ⁴ Irmo DJJ ⁴ (AQ5 ID: 45-079-0022) Parklane (AQ5 ID: 45-079-0007)	Y
Florence, SC	0	1	Williams Middle School (AQ5 ID: 45-041-0003)	Y
Greenville-Anderson, SC	1	1	Greenville ESC (AQ5 ID: 45-045-0015)	Y
Myrtle Beach-Conway-North Myrtle Beach SC-NC	1	1	Coastal Carolina (AQ5 ID 45-051-0008) ⁵	

Spartanburg, SC	0	1	T.K. Gregg (AQS ID: 45-083-0011)	Y
Remainder of State	0	1	Chesterfield (AQS ID: 45-025-0001)	Y

¹The Garinger, Friendship Park, and Remount sites are operated by the MCAQ

²The Rockwell site is operated by the North Carolina Department of Air Quality

³The Catawba Longhouse site is operated by the Catawba Indian Nation (CIN)

⁴SC DHEC will relocate the Irmo continuous monitor to the Irmo DJJ site.

⁵The Coastal Carolina PM_{2.5} monitoring is expected to start in 2023

PM_{2.5} Background and Transport Sites

40 CFR Part 58, Appendix D, Section 4.7.3

Monitoring requirements in 40 CFR Part 58, Appendix D, Section 4.7.3 require that each state install and operate at least one PM_{2.5} site to monitor for regional background concentrations and at least one PM_{2.5} site to monitor for regional transport.

Table 24: PM_{2.5} Regional Background and Transport Monitors

Requirement	Minimum Required	Number of Monitors	Site Names (AQS IDs) of SLAMS	Requirement Met (Y/N)
Background	1	1	Cape Romain (AQS ID: 45-019-0046)	Y
Transport	1	1	Chesterfield (AQS ID: 45-025-0001)	Y

On April 10, 2020, the SC DHEC temporarily replaced the Chesterfield (AQS ID: 45-025-0001) continuous PM_{2.5} TEOM sampler with a T640 and redesignated the monitor as an SPM in AQS. Use of the TEOM sampler resumed on April 23, 2021, but the monitor was not returned to a SLAMS designation. The EPA requests that the SC DHEC update the monitor's designation in AQS to reflect what is represented in the Network Plan.

As identified in Table 24, the SC DHEC meets the requirements of 40 CFR Part 58 by operating one background site and one transport site.

PM_{2.5} Chemical Speciation Network (CSN)

40 CFR Part 58, Appendix D, Section 4.7.4

Monitoring rules in 40 CFR Part 58, Appendix D, Section 4.7.4 require that each state conduct chemical speciation monitoring and analyses at sites designated to be part of the PM_{2.5} Speciation Trends Network (STN). The selection and modification of these STN sites must be approved by the Administrator. The PM_{2.5} CSN includes STN stations and supplemental speciation stations that provide chemical species data of fine particulate. The EPA funds one STN monitor in South Carolina at the Parklane site (see Table 25).

Table 25: PM_{2.5} Chemical Speciation Network – Non-SLAMS Monitors

CBSA	Site Name (AQS ID) of CSN Monitor
Columbia, SC	Parklane (AQS ID: 45-079-0007)

Photochemical Assessment Monitoring Stations (PAMS)

40 CFR Part 58, Appendix D, Section 5.0

With the promulgation of a new O₃ NAAQS on October 1, 2015, the EPA finalized changes to the PAMS requirements. On December 20, 2019, the EPA revised the start date for the updated stations. The revision was published in the *Federal Register* on January 8, 2020, and extends the date by which the stations were to begin operating from June 1, 2019, to June 1, 2021. Since the state does not have a CBSA with a population of one million or more, it is not required to meet the PAMS requirement.

Air Toxics Monitoring Network

As part of the National Air Toxics Trends Station (NATTS) network, the SC DHEC samples for metals, semi-volatile organic compounds, carbonyls, and volatile organic compounds (SVOCs) at the Chesterfield monitoring site (AQS ID: 45-025-0001). The SC DHEC added ethylene oxide (EtO) sampling as part of the Tier 1 target analytes at Chesterfield in November 2020 and contracted with Eastern Research Group (ERG) to analyze EtO samples. All other NATTS analytes are analyzed by the SC DHEC. The collection and analysis of NATTS samples at the Chesterfield site is conducted in accordance with an EPA-approved quality assurance project plan (QAPP).

The SC DHEC was awarded a community-scale Air Toxics Monitoring Grant to collect air samples for a one-year period at three locations in several North Charleston area environmental justice communities and at one high traffic location. The sampling started on May 11, 2022, and the samples will be analyzed for EtO. The sites are Irving (45-019-0021), Rosemont (45-019-0009), and Gethsemane (45-019-0022), and FAA (45-019-0048) (high traffic site). The results will be uploaded to AQS. The EPA appreciates the SC DHEC's efforts on this study and for the operation of the NATTS program.

The SC DHEC also collects samples for SVOCs in the Columbia, SC MSA at the Parklane (AQS ID: 45-079-0020) site. Air toxics sampling at Parklane is conducted at the SC DHEC's discretion and according to SC DHEC, it is not collected using the EPA or state-match funds. The EPA recommends that the SC DHEC develop and approve a QAPP for air toxics sampling to ensure that the data is of sufficient quality for SC DHEC's intended use, such as a risk screening analysis and/or sharing with the public.

Non-SLAMS Monitoring

The Network Plan also includes the following non-SLAMS monitors summarized in Table 26. These monitors include criteria pollutant monitoring comparable to the NAAQS, continuous PM_{2.5} monitoring used for the AQI, air toxics monitoring, and/or tribal air monitoring.

Table 26: Non-SLAMS Monitors

CBSA	Pollutant(s)	Site Name (AQ5 ID) of Non-SLAMS Monitor	Monitor Type	NAAQS Comparable
Augusta-Richmond County, GA-SC	SO ₂	Trenton (AQ5 ID: 45-037-0001)	SPM – 2yr rotating	Y - but only operating for 2 years
Charleston-North Charleston, SC	NO ₂	Jenkins Ave. Fire Station (AQ5 ID: 45-019-0003)	SPM	Y
Charleston-North Charleston, SC	NO ₂	Cape Romain (AQ5 ID: 45-019-0046)	SPM	Y
Charleston-North Charleston, SC	PM _{2.5} Cont.	NCFS (AQ5 ID: 45-019-0020)	SPM	Y
Charleston-North Charleston, SC	SO ₂	York Landfill (45-091-0008)	SPM – 2yr rotating	Y - but only operated for 2 years
Charlotte-Concord-Gastonia, NC-SC	PM _{2.5} Cont., O ₃	Catawba Longhouse (AQ5 ID: 45-091-8801) ¹	Tribal	Y
Columbia, SC	PM _{2.5} Cont.	DJJ (AQ5 ID: 45-079-0022)	SPM	Y
Columbia, SC	SVOC, Precipitation, PM ₁₀ , Chemicals	Parklane (AQ5 ID: 45-079-0007)	SPM	Y – only for PM ₁₀
Columbia, SC	O ₃	Congaree Bluff (AQ5 ID: 45-079-0021)	SPM	Y for Congaree National Park Only
Columbia, SC	NO ₂	Sandhill Experimental Station (AQ5 ID: 45-079-1001)	SPM	Y
Florence, SC	Pb	JCI Entrance (AQ5 ID: 45-041-8002) JCI Woods (AQ5 ID: 45-041-8003)	SPM	Y
Greenville-Anderson, SC	PM _{2.5} Cont.	Greenville ESC (AQ5 ID: 45-045-0015)	SPM	Y
Spartanburg, SC	PM _{2.5} Cont.	T.K. Gregg (AQ5 ID: 45-083-0011)	SPM	Y
Not in an MSA	O ₃ , Metals, Carbonyls, SVOCs, VOCs, Precipitation	Chesterfield (AQ5 ID: 45-025-0001)	SPM	Y for O ₃ , N/A for all else

¹The Catawba Longhouse site is operated by the CIN

Memoranda of Agreement (MOA) with Neighboring State and Local Air Monitoring Agencies

40 CFR Part 58, Appendix D, 2(e)

Section 2(e) of Appendix D to 40 CFR Part 58 states:

“The EPA recognizes that State or local agencies must consider MSA/CSA boundaries and their own political boundaries and geographical characteristics in designing their air monitoring networks. The EPA recognizes that there may be situations where the EPA Regional Administrator and the affected State or local agencies may need to augment or to divide the overall MSA/CSA monitoring responsibilities and requirements among these various agencies to achieve an effective network design. Full monitoring requirements apply separately to each affected State or local agency in the absence of an agreement between the affected agencies and the EPA Regional Administrator.”

The SC DHEC maintains MOAs to address minimum monitoring requirements with the GA EPD, the NC DAQ, and the MCAQ. These MOAs are summarized in Table 27.

Table 27: MOAs to Meet Monitoring Requirements for CBSAs Crossing Jurisdictional Boundaries

CBSA	Agencies on the MOA	Pollutants	Date of Agreement	Expiration
Augusta-Richmond County, GA-SC	SC DHEC, GA EPD	PM ₁₀ , PM _{2.5} , O ₃ , and other criteria pollutants as necessary	January 2017	Every 10 years
Charlotte-Concord-Gastonia, NC-SC	SC DHEC, NC DAQ, MCAQ	Criteria pollutant monitoring required by 40 CFR 58, Appendix D	July 1, 2016	Every 10 years
Myrtle Beach-Conway-North Myrtle Beach, SC MSA	SC DHEC, NC DAQ	O ₃ and other criteria pollutants as necessary	July 1, 2015	Every 10 years

The EPA approves of the SC DHEC agreements to share regulatory monitoring requirements for the Charlotte, Myrtle Beach, and Augusta areas.

Monitoring Siting Criteria and Site Assessments

40 CFR Part 58, Appendix E

In reference to the Network Plan, 40 CFR § 58.10(a)(1) states:

“The plan shall include a statement of whether the operation of each monitor meets the requirements of appendices A, B, C, D, and E of this part, where applicable. The Regional Administrator may require additional information in support of this statement.”

The Network Plan includes assessment information for all monitoring sites. The EPA appreciates the inclusion of this information and the work that the SC DHEC has done to evaluate siting criteria at all its monitoring sites. The EPA understands that the SC DHEC is still working to resolve siting criteria issues identified by its own assessments and in recent EPA audits and appreciates the SC DHEC’s continued progress in resolving these issues.

Areas with Environmental Justice Concerns

The EPA recognizes that the Network Plan submitted in 2023 meets the federal regulatory requirements outlined at 40 CFR §58.10 and Appendices A through E (with the exceptions noted in above sections), including consideration of areas with susceptible and vulnerable populations. For future plans, including next year’s plan, we encourage the SC DHEC to continue to evaluate areas with environmental justice concerns¹ related to ambient air monitoring. Where possible, please add detail to the discussion of environmental justice considerations taken into account and related to the ambient air quality network.

¹ Executive Order 14008, January 27, 2021. Federal Register / vol. 86, No. 19, February 1, 2021, p. 7619. Securing Environmental Justice and Spurring Economic Opportunity. Section 219. Policy.

American Rescue Plan

The SC DHEC and the CIN received funding in 2022 under the American Rescue Plan (ARP) to upgrade the existing ambient air monitoring network. As a recipient of this ARP direct award grants, the SC DHEC and the CIN initiated procurement requests for equipment purchases and began installation of equipment once received. The remaining equipment will be purchased before the end of the grant period unless an extension is received. The Table 28 below indicates for the SC DHEC the receipt and installation status of equipment funded under the ARP and Table 29 below indicates the planned equipment upgrades for the CIN. Quarterly reports must be submitted as well as a final progress report that is due within 120 days of the project end date. Prior to collecting environmental information, the SCDHEC and the CIN must submit to the EPA a QAPP for all new pollutants to be monitored and methods to be used for approval 180 days prior to collection of environmental data.

Table 28. SC DHEC ARP Monitoring Equipment Upgrades

AQS Site ID (Location)	Equipment Description	Date Received
45-037-0001	T640 Monitor	5/2023
45-037-0001	2025i Sampler	Not received
45-041-0003	T640* and Enclosure	5/2023
45-045-0016	T640* and Enclosure	5/2023
45-079-0007	T640X	5/2023
45-063-0010	T640X* Enclosure	5/2023
45-083-0011	T640 and Enclosure	5/2023
45-051-0008	T640 and Enclosure	5/2023
45-025-0001	T640 and Enclosure	5/2023
45-045-0015	T640X	5/2023
45-063-0010	T640* and Enclosure	5/2023
45-019-0046	T640	5/2023
Multiple	4 x Agilaire 8864*	5/2023
Multiple	3 x Teledyne T703U	Not received

Table 29: CIN ARP Equipment Upgrades

PQAO	Equipment Description
Catawba Indian Nation (CIN)	Ozone Analyzer – 1 Wind Speed and Direction Sensor – 1 FEM PM _{2.5} monitor – 1 Flow calibrator - 1 Flow meter – 1

	Zero Air Generator - 1
--	------------------------

Inflation Reduction Act – Clean Air Act (CAA) Section 103 Direct Award

The SCDHEC will receive funding in 2023 under Section 60105(f) of the Inflation Reduction Act, which provides for “grants and other activities authorized under subsections (a) through (c) of section 103 and section 105 of the Clean Air Act.” The CAA Section 103 statutory authority for this action specifically authorizes “the coordination and acceleration of, research, investigations, experiments, demonstrations, surveys, and studies relating to the causes, effects (including health and welfare effects), extent, prevention, and control of air pollution.” As recipients of these IRA CAA grants, agencies will prepare and initiate procurement requests for equipment purchases and/or contract support services, and plan for timely set-up and installation of equipment. The table below indicates the equipment funded under these IRA CAA grants. Quarterly reports must be submitted as well as a final progress report that is due within 120 days of the applicable project end date. Prior to the collection of environmental information, including air monitoring data, agencies must have an EPA-approved QAPP. The QAPP, which should cover all pollutants and monitoring methods not already covered in an approved QAPP, needs to be submitted to the EPA for approval 180 days prior to the planned collection of environmental information.

Table 30. IRA CAA Monitoring Equipment Upgrades

Location	Equipment Description
TBD between Chesterfield and Parklane	Large shelter Upgrade
TBD between Chesterfield and Parklane	Small Shelter Upgrade
NA	Laptop with Docking Shelter and Bag
NA	Laptop with Docking Shelter and Bag with Air Modeling Enhancement
NA	EtO NATTS Sampling Analysis (65 per year x 3 years)

Waivers of Requirements

The EPA’s air monitoring regulations allow for the waiver of requirements in specific instances. The EPA requires ongoing waivers to be renewed every five years as part of the network assessment. EPA granted a renewal of the waiver for the tree obstruction requirement at the Congaree Bluff site in an addendum to the 2020 Network Plan.

Table 31: Summary of EPA Approved Waivers of Requirements

CBSA	Monitoring Site(s) Affected	Pollutant(s)	CFR Requirement Waived	EPA Waiver Authority/Rationale	Year Waiver First Granted	Waiver Expiration Date	Comments
Columbia, SC	Congaree Bluff (AQS ID: 45-079-0021)	O ₃ , SO ₂	40 CFR Part 58, Appendix E, Section 4 & 11	40 CFR Part 58, Appendix E, Section 10.1.2	2016	2025	Approval of spacing from trees requirements
Florence, SC	JCI Woods (AQS ID: 45-041-8003)	Pb	40 CFR Part 58, Appendix E, Section 4	40 CFR Part 58, Appendix E, Section 10.1.1	2020	2025	Approval of spacing from obstacles

Appendix F: Memorandum of Agreements

MEMORANDUM OF AGREEMENT
ON AIR QUALITY MONITORING FOR CRITERIA POLLUTANTS FOR
THE CHARLOTTE-CONCORD-GASTONIA
METROPOLITAN STATISTICAL AREA (MSA)

July 1, 2016

Participating Agencies:

North Carolina
Department of Environmental Quality (NCDEQ)
Division of Air Quality (NCDAQ)

South Carolina
Department of Health and Environmental Control (SCDHEC)
Bureau of Air Quality

Mecklenburg County, North Carolina
Land Use and Environmental Services Agency
Air Quality (MCAQ)

RECEIVED
JUL 01 2016
BUREAU OF AIR QUALITY

I. PURPOSE/OBJECTIVES/GOALS

The purpose of this Memorandum of Agreement (MOA) is to establish the Charlotte-Concord-Gastonia Metropolitan Statistical Area (MSA) Criteria Pollutant Air Quality Monitoring Agreement among NCDAQ, SCDHEC, and the MCAQ (collectively referred to as the "affected agencies") to collectively meet United States Environmental Protection Agency (EPA) minimum monitoring requirements for criteria pollutants deemed necessary to meet the needs of the MSA as determined reasonable by all parties. This MOA will renew the terms and conditions of this collective agreement to provide adequate criteria pollutant monitoring for the Charlotte-Concord-Gastonia MSA as required by 40 CFR 58 Appendix D, Section 2(e).

II. BACKGROUND

The Charlotte-Concord-Gastonia MSA consists of

Cabarrus County, NC
Gaston County, NC
Iredell County, NC
Lincoln County, NC
Mecklenburg County, NC
Rowan County, NC
Union County, NC
Chester County, SC
Lancaster County, SC

York County, SC

NCDAQ has jurisdiction over Cabarrus, Gaston, Iredell, Lincoln, Rowan, and Union Counties; SCDHEC has jurisdiction over Chester, Lancaster, and York Counties; MCAQ has jurisdiction over Mecklenburg County.

The NCDAQ, SCDHEC, and MCAQ are required by the Clean Air Act to measure for certain criteria pollutants in the ambient air in the Charlotte-Concord-Gastonia MSA. The EPA has established minimum monitoring requirements based on the size of the MSA and the quality of the air in the MSA.

40 CFR 58 Appendix D, Section 2 (e) states (in part):

“... The EPA recognizes that State or local agencies must consider MSA/CSA boundaries and their own political boundaries and geographical characteristics in designing their air monitoring networks. The EPA recognizes that there may be situations where the EPA Regional Administrator and the affected State or local agencies may need to augment or to divide the overall MSA/CSA monitoring responsibilities and requirements among these various agencies to achieve an effective network design. Full monitoring requirements apply separately to each affected State or local agency in the absence of an agreement between the affected agencies and the EPA Regional Administrator.”

Currently each air pollution control agency (affected agency) conducts monitoring in its respective jurisdiction and coordinates monitoring with the other air pollution control agencies within the MSA.

III. ROLES AND RESPONSIBILITIES

The parties agree to the following terms and conditions:

- NCDAQ, SCDHEC, and MCAQ (the “affected agencies”) commit to conducting appropriate monitoring in their respective jurisdictions of the MSA; as needed, to collectively meet EPA minimum monitoring requirements for the entire MSA for criteria air pollutant monitoring deemed necessary to meet the needs of the MSA as determined reasonable by all affected agencies. The minimum air quality monitoring requirements for the MSA shall apply to the MSA in its entirety and shall not apply to any sole affected agency within the MSA unless agreed upon by all affected agencies.
- The affected agencies commit to coordinating monitoring responsibilities and requirements to achieve an effective network design regarding criteria air pollutant monitoring conducted in the MSA and commit to communicate unexpected or unplanned changes in monitoring activities within their jurisdictions to the other affected agencies. As conditions warrant, the affected agencies may conduct telephone conference calls, meetings, or other communications to discuss monitoring activities for the MSA. Each affected party shall inform the others via telephone or e-mail of any monitoring changes occurring in its jurisdiction of the MSA at its earliest convenience after learning of the need for the change or making the changes. Such unforeseen changes may include evictions from monitoring sites, destruction of monitoring sites due to

natural disaster, or similar occurrences that result in extended change (greater than one quarter) or permanent change in the monitoring network. At least once a year in the second quarter or before June 15th, each agency shall make available to the other agency a copy of its proposed monitoring plan for its jurisdiction with the MSA for the next year.

- Each party reserves the right to revoke or terminate this MOA at any time for any reason by giving thirty (30) days written notice prior to the date of termination.

IV. LIMITATIONS

A. All commitments made in this MOA are subject to the availability of funds and each party's budget priorities. Nothing in this MOA, in and of itself, obligates NCDAQ, SCDHEC, or MCAQ to expend funds or to enter into any contract, assistance agreement, interagency agreement, or other financial obligation.

B. This MOA is neither a fiscal nor a funds obligation document. Any endeavor involving reimbursement or contribution of funds between parties to this MOA will be handled in accordance with applicable laws, regulations, and procedures, and will be subject to separate subsidiary agreements what will be effected in writing by representatives of the parties.

C. Except as provided in Section III, this MOA does not create any right or benefit, substantive or procedural, enforceable by law or equity against NCDAQ, SCDHEC, or MCAQ, their officers or employees, or any other person. This MOA does not direct or apply to any person outside NCDAQ, SCDHEC, or MCAQ.

V. PROPRIETARY INFORMATION AND INTELLECTUAL PROPERTY

No proprietary information or intellectual property is anticipated to arise out of this MOA.

VI. POINTS OF CONTACT

The following individuals are designated points of contact for the MOA:

NCDEQ DAQ: Joette Steger
NC DENR Division of Air Quality
1641 Mail Service Center
Raleigh, NC 27699-1641

joette.steger@ncdenr.gov
Voice/fax: 919-707-8449

SCDHEC: Scott Reynolds
SCDHEC Bureau of Environmental Health Services
2600 Bull Street
Columbia, SC 29201

reynolds@dhec.sc.gov

Voice: 803-896-0902

MCAQ: Jeff Francis
Mecklenburg County Land Use and Environmental Services Agency –
Air Quality
2145 Suttle Avenue
Charlotte, NC 28208-5237

Jeff.Francis@mecklenburgcountync.gov

Phone 704-336-5430

Fax 704-336-4391

In the event that a point of contact needs to be changed, notification may be made via email to the other parties.

VII. MODIFICATION/DURATION/TERMINATION

This MOA will be effective when signed by all parties. This MOA may be amended at any time by the mutual written consent of all parties. The parties will review this MOA at least once every 10 years to determine whether it should be revised, renewed, or cancelled. This MOA may be revoked or terminated by an affected party at any time and for any reason by giving thirty (30) days written notice prior to the date of termination.

VIII. REFERENCE

United States Environmental Protection Agency, Title 40 Code of Federal Regulations, Part 58, Appendix D, "Network Design Criteria for Ambient Air Quality Monitoring", Section 2 (e), "General Monitoring Requirements"

IX. APPROVALS

North Carolina Department of Environmental Quality
Division of Air Quality (NCDAQ)

BY: Shirley C. Holman

TITLE: Director, Division of Air Quality

DATE: 6/27/2016

South Carolina Department of Health and Environmental Control (SCDHEC)
Bureau of Air Quality

BY: Keith B. Dyer

TITLE: Chief, Bureau of Air Quality

DATE: 07/05/2016

Mecklenburg County Land Use and Environmental Services Agency – Air Quality (MCAQ)
Mecklenburg County Air Quality

BY: Kevin H. Pham

TITLE: Director, Air Quality

DATE: 6/29/2014



Catherine E. Heigel, Director

Promoting and protecting the health of the public and the environment

MEMORANDUM

July 5, 2016

Subject: Change of Point of Contact for South Carolina

Memorandum of Agreement on Air Quality Monitoring for Criteria Pollutants for the Charlotte-Concord-Gastonia Metropolitan Statistical Area (MSA)

From: Rhonda B. Thompson, SC DHEC
Chief, Bureau of Air Quality

As of July 5, 2016, the Point of Contact for South Carolina will be Micheal Mattocks, instead of Scott Reynolds.

Micheal's contact information is below:

Micheal Mattocks
SC DHEC – Bureau of Environmental Health Services
2600 Bull Street
Columbia, SC 29201
(803)896-0856
mattock@dhec.sc.gov



DHEC MOA#: 2017-429

MEMORANDUM OF AGREEMENT

**ON AIR QUALITY MONITORING FOR CRITERIA POLLUTANTS FOR
THE AUGUSTA - RICHMOND COUNTY
METROPOLITAN STATISTICAL AREA (MSA)**

January 2017

Participating Agencies:

Georgia
Georgia Department of Natural Resources
Environmental Protection Division
Air Protection Branch (GA EPD)

South Carolina
Department of Health and Environmental Control (SCDHEC)
Bureau of Air Quality

I. PURPOSE/OBJECTIVES/GOALS

The purpose of this Memorandum of Agreement (MOA) is to renew the Augusta - Richmond County Metropolitan Statistical Area (MSA) Criteria Pollutant Air Quality Monitoring Agreement between SCDHEC and GA EPD (collectively referred to as the "affected agencies") to collectively meet United States Environmental Protection Agency (EPA) minimum monitoring requirements for particles of an aerodynamic diameter of 10 micrometers and less (PM10), particles of an aerodynamic diameter of 2.5 micrometers and less (PM2.5), and ozone; as well as any other criteria pollutant air quality monitoring deemed necessary to meet the needs of the MSA as determined reasonable by all parties. This MOA will establish the terms and conditions of this collective agreement to provide adequate criteria pollutant monitoring for the Augusta - Richmond County MSA as required by 40 CFR 58 Appendix D, Section 2(e).

II. BACKGROUND

The Augusta - Richmond County MSA consists of the following counties: Burke, Columbia, McDuffie, Lincoln, Richmond, Aiken and Edgefield. GA EPD has jurisdiction over Burke, Columbia, McDuffie, Lincoln, and Richmond Counties in Georgia and SCDHEC has jurisdiction over Aiken and Edgefield Counties, South Carolina. The SCDHEC and GA EPD are required by the Clean Air Act to measure for certain criteria pollutants in the ambient air in the Augusta - Richmond County Metropolitan Statistical Area (MSA). The EPA has established minimum monitoring requirements based on the size of the MSA and the quality of the air in the MSA for PM10, PM2.5, and ozone.

40 CFR 58 Appendix D, Section 2(e) states (in part):

“...The EPA recognizes that there may be situations where the EPA Regional Administrator and the affected State or local agencies may need to augment or to divide the overall MSA/CSA monitoring responsibilities and requirements among these various agencies to achieve an effective network design. Full monitoring requirements apply separately to each affected State or local agency in the absence of an agreement between the affected agencies and the EPA Regional Administrator.”

Currently each air pollution control agency (affected agency) conducts monitoring in its respective jurisdiction and coordinates its monitoring with the other air pollution control agency within the MSA.

III. ROLES AND RESPONSIBILITIES

The parties agree to the following terms and conditions:

- SCDHEC, and GA EPD (the “affected agencies”) commit to conducting appropriate monitoring in their respective jurisdictions of the MSA; as needed, to collectively meet EPA minimum monitoring requirements for the entire MSA for PM10, PM2.5, and ozone, as well as any other criteria air pollutant monitoring deemed necessary to meet the needs of the MSA as determined reasonable by all affected agencies. The minimum air quality monitoring requirements (for PM10, PM2.5, and ozone described in 40 CFR 58) for the MSA shall apply to the MSA in its entirety and shall not apply to any sole affected agency within the MSA unless agreed upon by all affected agencies.
- The affected agencies commit to coordinating monitoring “responsibilities and requirements...to achieve an effective network design” regarding criteria air pollutant monitoring conducted in the MSA and commit to communicate unexpected or unplanned changes in monitoring activities within their jurisdictions to the other affected agency. As conditions warrant, the affected agencies may conduct telephone conference calls, meetings, or other

communications to discuss monitoring activities for the MSA. Each affected agency shall inform the other affected agency via telephone or e-mail of any monitoring changes occurring in its jurisdiction of the MSA at its earliest convenience after learning of the need for the change or making the changes. Such unforeseen changes may include evictions from monitoring sites, destruction of monitoring sites due to natural disasters, or similar occurrences that result in an extended (greater than 1 quarter) or permanent change in the monitoring network. At least once a year in the second quarter of the year or before June 15th, each affected agency shall make available to the other affected agency, a copy of its proposed monitoring plan for its jurisdiction within the MSA for the next year.

- Each party reserves the right to revoke or terminate this MOA at any time and for any reason by giving thirty (30) days written notice prior to the date of termination.

IV. LIMITATIONS

A. All commitments made in this MOA are subject to the availability of appropriated funds and each party's budget priorities. Nothing in this MOA, in and of itself, obligates SCDHEC or GA EPD to expend appropriations or to enter into any contract, assistance agreement, interagency agreement or other financial obligation.

B. This MOA is neither a fiscal nor a funds obligation document. Any endeavor involving reimbursement or contribution of funds between parties to this MOA will be handled in accordance with applicable laws, regulations, and procedures, and will be subject to separate subsidiary agreements that will be effected in writing by representatives of the parties.

C. Except as provided in Section III, this MOA does not create any right or benefit, substantive or procedural, enforceable by law or equity against SCDHEC or GA EPD, their officers or employees, or any other person. This MOA does not direct or apply to any person outside SCDHEC or GA EPD.

V. PROPRIETARY INFORMATION AND INTELLECTUAL PROPERTY

No proprietary information or intellectual property is anticipated to arise out of this MOA.

VI. POINTS OF CONTACT

The following individuals are designated points of contact for the MOA:

GA EPD: DeAnna Oser
GA EPD Ambient Monitoring Program
4244 International Parkway, Suite 120
Atlanta, GA 30354

DeAnna.Oser@dnr.ga.gov
Voice: (404) 363-7004
FAX: (404) 363-7100

SCDHEC: Micheal Mattocks
SCDHEC Bureau of Environmental Services
8231 Parklane Road
Columbia, SC 29223

mattocm@dhec.sc.gov
Voice: (803) 896-0902
FAX: (803) 896-0980

In the event that a point of contact needs to be changed, notification may be made via email to the other parties.

VII. MODIFICATION/DURATION/TERMINATION

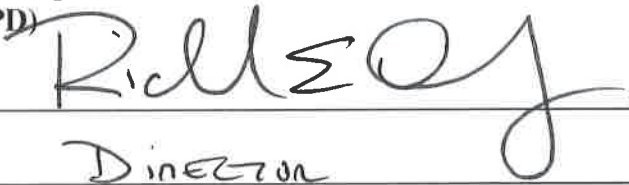
This MOA will be effective when signed by all parties. This MOA may be amended at any time by the mutual written consent of the parties. The parties will review this MOA at least once every 10 years to determine whether it should be revised, renewed, or cancelled. This MOA may be revoked or terminated by an affected agency at any time and for any reason by giving thirty (30) days written notice prior to the date of termination.

VIII. REFERENCE

United States Environmental Protection Agency, Title 40 Code of Federal Regulations, Part 58, Appendix D, "Network Design Criteria for Ambient Air Quality Monitoring", Section 2 (e), "General Monitoring Requirements."

IX. APPROVALS

**Georgia Department of Natural Resources, Environmental Protection Division
(GA EPD)**

BY: 
TITLE: Director
DATE: 2/21/17

**South Carolina Department of Health and Environmental Control (SCDHEC)
Bureau of Air Quality**

BY: 
TITLE: Bureau Chief
DATE: 03/01/17

THIS AGREEMENT IS NOT OFFICIAL AND BINDING UNTIL SIGNED BY THE
DHEC CONTRACTS MANAGER.


Francine Miller
DHEC Contracts Manager
DATE: 3-6-17

Appendix G: Waivers

Site Waiver for Greenville ESC (45-045-0015) Monitoring Site

Restricted Airflow Due to Obstructions

The S.C. Department of Environmental Services (Department) previously requested approval from EPA for a waiver to be granted for the probe siting criteria for restricted airflow due to obstructions as specified in 40 CFR Part 58 Appendix E Section 2.3 – Spacing from Obstructions for the criteria pollutant monitoring being conducted at the Greenville ESC (45-079-0021) Monitoring Site in Greenville County. Approval to waive the word “continuous” in the 40 CFR Appendix E Section 2.3(b) requirement was granted in EPA’s 2024 Annual Ambient Air Monitoring Network Plan Response Letter dated November 6, 2024.

EPA asked that the Department re-evaluate the need for this waiver in the 2025 Ambient Air Monitoring Network Plan and 2025 5-Year Network Assessment, and again, request the waiver if needed. After additional site evaluations, the conditions requiring a waiver still exist, and additional tree growth has prompted a need for expanded waiver provisions. Basic information on the Site is listed in the Table below. The site record indicates that both requirements in 40 CFR Part 58 Appendix E Section 4.1 for consideration of a waiver have been met.

General Information for the Greenville ESC Monitoring Site	
Item	Description
AQS ID	45-045-0015
Street Address	133 Perry Avenue, Greenville, SC
Geographic Coordinates	+34.84389, -82.41458
MSA Represented	Greenville-Spartanburg-Anderson CSA / Greenville-Anderson-Greer MSA
<i>Sulfur Dioxide</i>	
Designation	SLAMS
Analysis Method	Pulsated Fluorescent
Sampling Frequency	Continuous
Monitoring Objective	Population Exposure
Monitoring Scale	Neighborhood
<i>Nitrogen Dioxide</i>	
Designation	SLAMS
Analysis Method	Chemiluminescence
Sampling Frequency	Continuous
Monitoring Objective	Population Exposure
Monitoring Scale	Neighborhood
<i>PM_{2.5} Intermittent</i>	
Designation	SLAMS

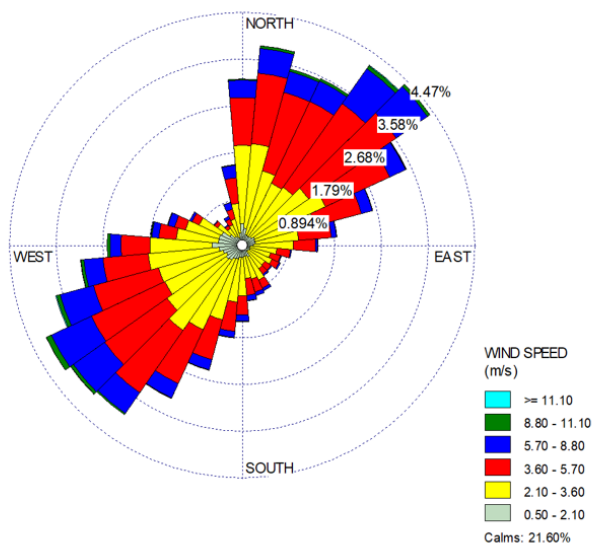
General Information for the Greenville ESC Monitoring Site	
Item	Description
Analysis Method	FRM Gravimetric w/ VSCC
Sampling Frequency	1:1
Monitoring Objective	Population Exposure / Welfare Related Impacts
Monitoring Scale	Neighborhood
PM_{2.5} Continuous	
Designation	SPM
Analysis Method	FEM Broadband Spectroscopy
Sampling Frequency	Continuous
Monitoring Objective	Population Exposure / Welfare Related Impacts
Monitoring Scale	Neighborhood
PM₁₀ Continuous	
Designation	SLAMS
Analysis Method	FEM Broadband Spectroscopy
Sampling Frequency	Continuous
Monitoring Objective	Population Exposure
Monitoring Scale	Neighborhood

Predominant and Secondary Wind Patterns

The wind data from the Greenville-Downtown Airport (GMU) is representative of the wind pattern for the Greenville ESC Site. Using 2017-2021 data, the wind rose in Figure 1 was created. It indicates that the predominant wind directions for this Site are from the southwest and the northeast. Also, secondary dominant winds come from the north-northeast.

Figure 1. Wind Rose for the Greenville ESC Site

Greenville – Downtown Airport (GMU) – WBAN ID: 723119.
2017-2021 Annual Data.



Justification for Request

The Greenville ESC Monitoring Site opened on April 11, 2008. Located in a heavily industrialized area, this monitoring site provides important information on population exposure to SO₂, NO₂, PM_{2.5}, and PM₁₀. In the 2010 NO₂ NAAQS (75 FR 6474), the EPA required the Regional Administrators to identify additional monitors where NO₂ concentrations had the potential to exceed the NAAQS. The NO₂ monitor at the Greenville ESC Monitoring Site was identified as a Regional Administrator required monitor. With 17 years of uninterrupted PM_{2.5} data collection, it has the longest PM_{2.5} data record of any air monitoring site in the upstate region.

The Greenville ESC Monitoring Site has a few tree obstructions to airflow that do not block wind from the prominent wind direction (NE). The Site was granted a waiver for these obstructions when the site was originally established in 2009 and again in 2016. Under advice from EPA, the Department did not renew the waiver when it was due for renewal in 2018 since there was a total of at least 270 degrees of airflow. The *Reconsideration of the National Ambient Air Quality Standards for Particulate Matter*, promulgated on February 6, 2024, updated 40 CFR Part 58 Appendix E to require that the 270 degrees of necessary airflow be in a continuous arc rather than a total of 270 degrees open airflow from the possible 360 degrees arc.

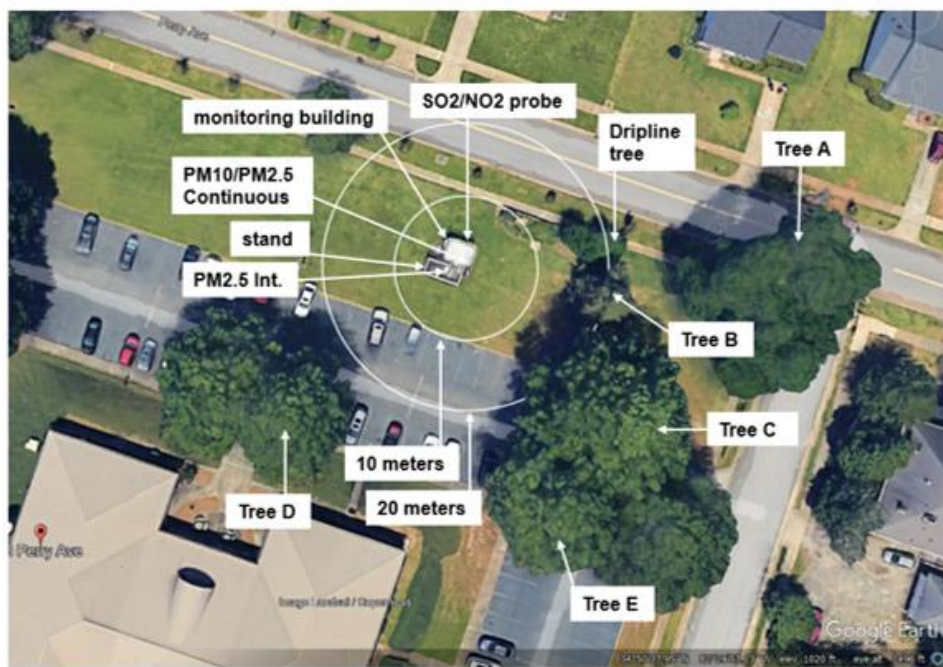
On March 12, 2024, a site evaluation was conducted which found that there were obstructions to the PM_{2.5} Intermittent probe that reduced the continuous airflow to below 270 degrees. At this time, the Department drafted and submitted the initial waiver request along with the 2024 Annual Ambient Air Monitoring Network Plan. After this evaluation and waiver submittal, the wooden stand at the site was reconstructed to address stability issues (Figure 3). A re-evaluation of the site was conducted on October 17, 2024, to incorporate any changes in probe height or location due to the stand reconstruction. This evaluation revealed that despite the height of the stand raising slightly, new tree growth caused obstructions that reduced airflow at all probes at the site to less than 270 continuous degrees. Approval to waive the word “continuous” in the 40 CFR Appendix E Section 2.3(b) requirement was granted in the EPA’s 2024 Annual Ambient Air Monitoring Network Plan Response Letter dated November 6, 2024.

The most recent site evaluation on April 1, 2025, showed that each probe at the site had less than 270 degrees of both continuous airflow and total airflow. The site now has 200 degrees of continuous airflow, and 257 degrees of total airflow. An aerial picture of the Greenville ESC Monitoring Site and the obstructions, and a view of the Site with the old and new reconstructed stand are shown below (Figures 2 and 3). Four mature trees (trees A, C, D, and E in Figure 3, 4, and 5) have been identified as protruding above all or most probe inlets more than half the distance to the probe, preventing 270 continuous or total degrees of airflow at each probe.

Figure 2. Greenville ESC Site Stand Reconstruction



Figure 3. Aerial View of the Greenville ESC Monitoring Site



Tree: **A**-Large tree behind fir tree near road. **B**-Fir Tree east of Site. **C**-Tree at edge of parking lot near dumpster. **D**-Tree in front of Employment Security Building entrance. **E**-Tree south of Tree C.

Figure 4. Panorama Photos of the Greenville ESC Monitoring Site (April 1, 2025)

Panorama Facing Continuous Open Airflow (SW to ENE)



Panorama Facing Tree Obstructions (E to SW)

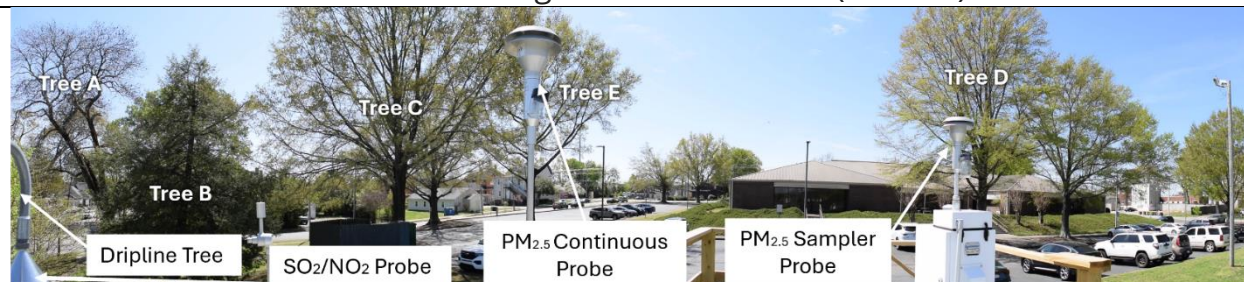
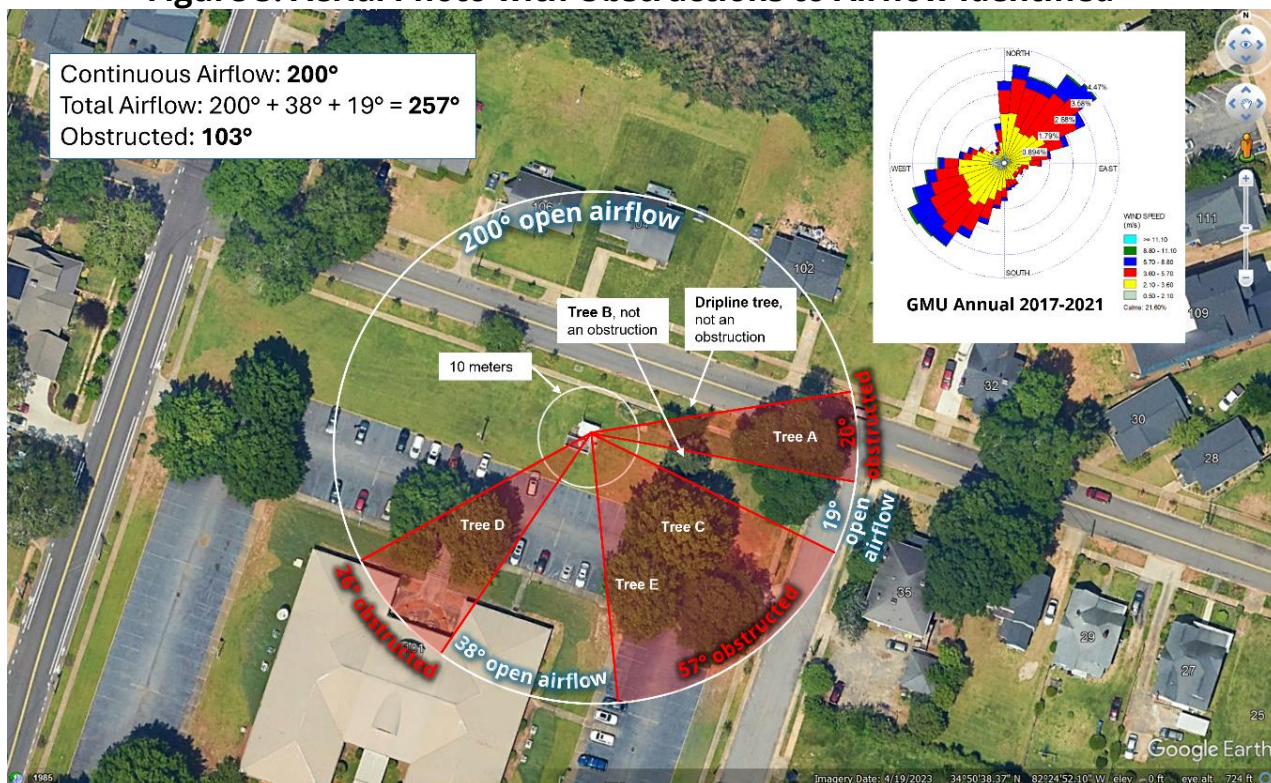


Figure 5. Aerial Photo with Obstructions to Airflow Identified



The Greenville ESC Site is constrained by the presence of underground utilities that limits possible placement of the building and the stand. When established, the Site was placed approximately equidistant from the most significant trees. Since then, the trees have grown taller, and the 270 degrees continuous monitoring requirement is no longer met at any probe at the site. Additionally, the most recent site evaluation showed that there is less than 270 degrees of total airflow at the site, which no longer satisfies the waiver terms approved by EPA on November 6, 2024. The site now has 200 degrees of continuous airflow, and 257 degrees of total airflow. Relocation of the sampler on the stand to maximize distance from trees was done in support of previous waiver submissions, but the minor relocations did not have any detectable impact on measured concentration or representativeness of the monitoring for the criteria pollutants. Site topography, land use, and vegetation density is typical of the area being represented. All other Appendix E probe siting criteria are being met at this site. This Site has a long history of SO₂, NO₂, and PM_{2.5} monitoring for population exposure and has been important for determining design values for PM_{2.5} in the quickly growing Greenville-Anderson-Greer MSA.

The Department requests that EPA waive the 40 CFR 58 Appendix E Section 2.3 (b) 270-degree airflow requirement for the Greenville ESC Monitoring Site.

Site Waiver Request for Congaree Bluff (45-079-0021) Monitoring Site

Introduction

The Department of Environmental Services (Department) requests approval for renewal of a waiver to be granted for the probe siting criteria for restricted airflow due to obstructions as specified in 40 CFR Part 58 Appendix E Section 2.3 – Spacing from Obstructions for the ozone monitoring being conducted at the Congaree Bluff (45-079-0021) Monitoring Site in Richland County. The Department originally received approval for this waiver in the letter which reviewed the Network Plan Addendum to South Carolina's 2015 Annual Ambient Air Monitoring Network Plan (May 26, 2016) and received approval for a renewal of this waiver in the letter which reviewed South Carolina's 2020 Annual Ambient Air Monitoring Network Plan (Addendum) (March 24, 2021).

General Site Information

The Congaree Bluff (45-079-0021) Monitoring Site is located within the boundary of the Congaree National Park (Park), which was established by Congress in 1976. The Site represents general / background concentrations at a neighborhood scale within the Congaree National Park. Most of the Park is designated as Wilderness and also has a Class II Floor Area designation⁷. The National Park Service (NPS) has a Resource Management Plan, which includes an agreement with the Department to operate an air monitoring station within the Park Boundaries⁸. The original Site (Congaree Swamp (45-079-1006)) was located in the flood plain and had to be relocated in 2001 because of operation viability and long-term viability of the monitoring activity within a designated wilderness area⁹. As a result of the Wilderness designation, modifications or improvements are highly restrictive and, in some cases, prohibited. Basic information on the Site is listed in Table 1 below.

⁷ Southeast Support Office. Natural Resources Management. *Relocation of the Ambient Air Quality Monitoring Station at Congaree Swamp National Monument*, by Bobby C. Carson, (Columbia, South Carolina, August 1998).

⁸ National Park Service. U.S. Department of the Interior Natural Resource Stewardship and Science. *Natural Resource Condition Assessment-Congaree National Park Natural Resource Report*. NPS/ECN/NRR-20181665.

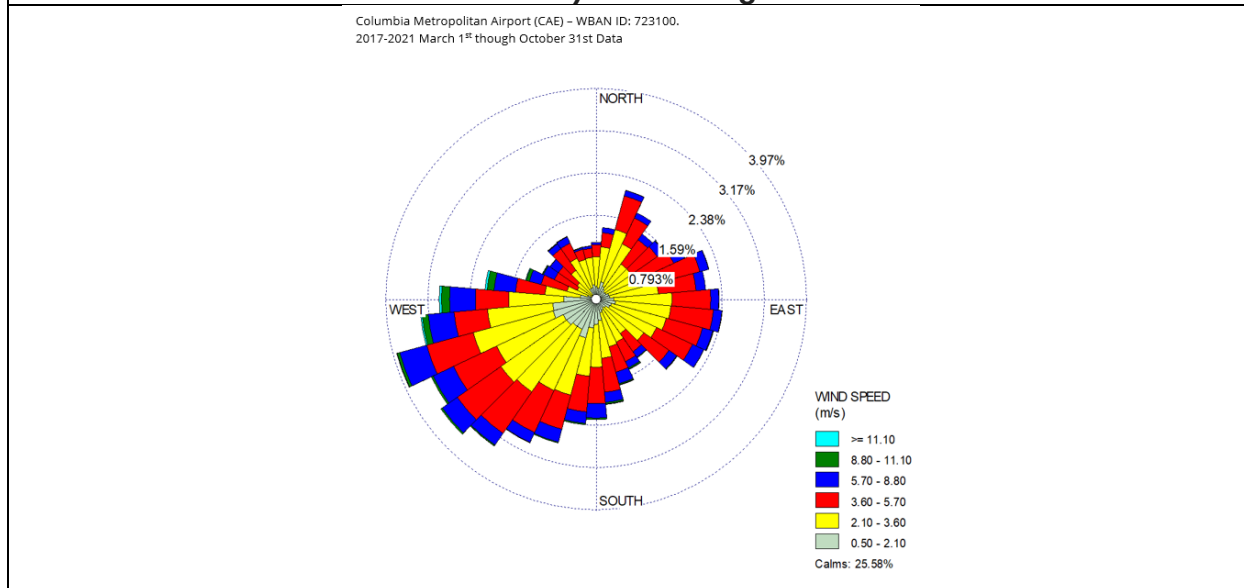
⁹ South Carolina Department of Health and Environmental Control. *General Management Plan/Wilderness Suitability Study and Environmental Assessment Letter*, by Otto Pearson, (Columbia, South Carolina, December 17, 1987).

Table 1: General Information for the Congaree Bluff (45-079-0021) Monitoring Site	
ITEM	DESCRIPTION
AQS ID	45-079-0021
Street Address	1850 South Cedar Creek Road Gadsden, SC 29052
Geographic Coordinates	+33.81467, -80.78113
OZONE	
Designation	SPM
Analysis Method	Ultraviolet (047)
Sampling Frequency	Continuous
Monitoring Objective	General / Background
Monitoring Scale	Neighborhood

Predominant and Secondary Wind Patterns

The wind data from the Columbia Metropolitan Airport is representative of the wind pattern for the Congaree Bluff (45-079-0021) Monitoring Site. Using 2017-2021 ozone season data, the wind rose in Figure 1 was created. It indicates that the predominant wind direction for this Site is from the west-southwest. Secondary dominate winds come from the southwest and west.

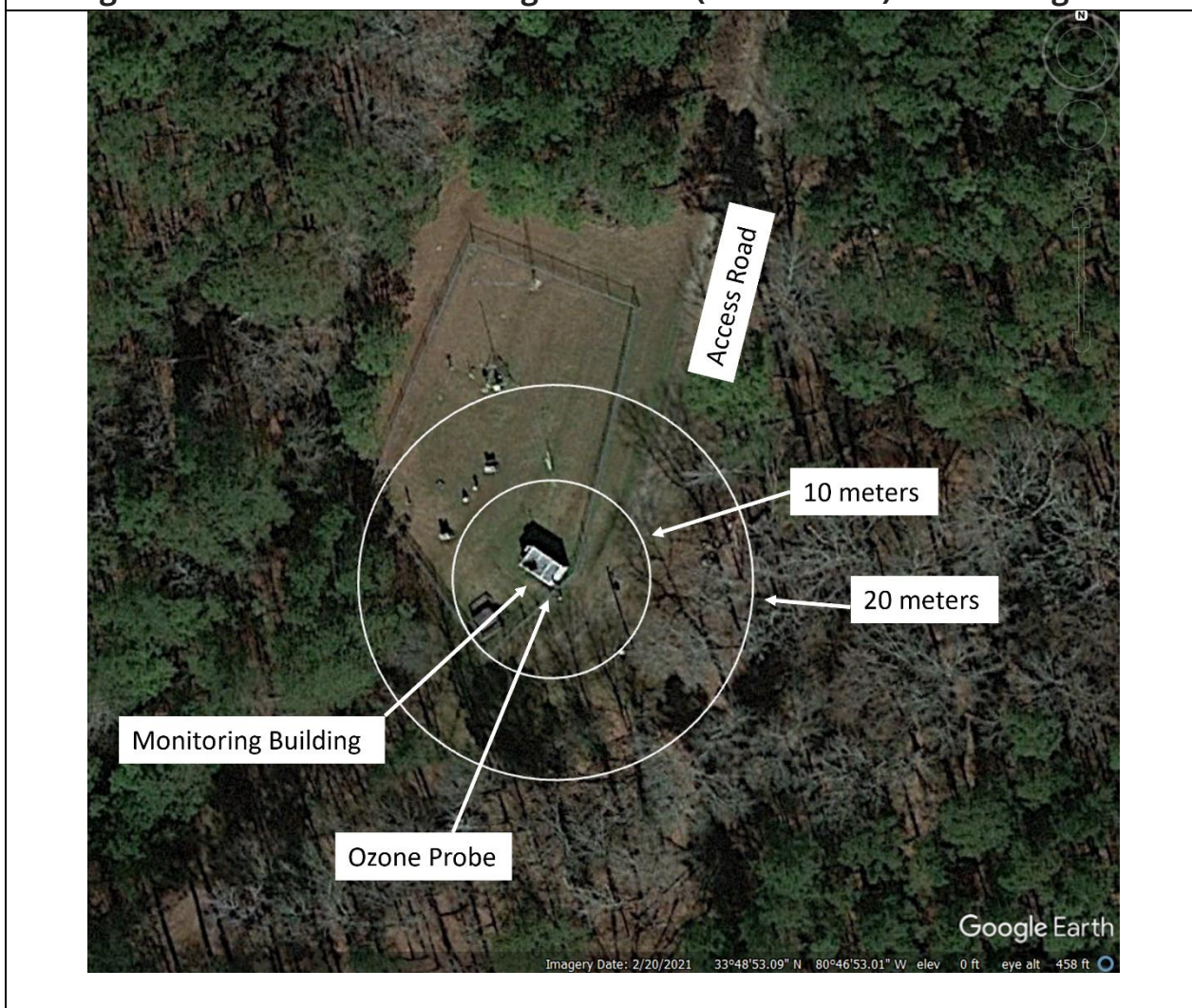
Figure 1: 2017-2021 Wind Rose for Ozone Season for the Congaree Bluff (45-079-0021) Monitoring Site



Justification for Request

The Congaree Bluff (45-079-0021) Monitoring Site is an essential part of the agreement with the NPS to operate air monitoring within the bounds of the Congaree Swamp National Park. The probes at the Congaree Bluff (45-079-0021) Monitoring Site cannot be reasonably located so as to meet the siting criteria because of physical constraints, nor is there a suitable site to which the station could be moved to, as there are firm restrictions on changes made to the Site. The current location of the Site, shown in Figure 3, is in a clearing within the bounds of the Congaree National Park. The Park is unwilling to allow the removal of the trees violating Section 2.3 of Appendix E as these trees are vital to the delicate ecosystem of the Park and the

Figure 3: Aerial Picture of Congaree Bluff (45-079-0021) Monitoring Site



reestablishment of habitat for the endangered Red-Cockaded Woodpecker. Although compliance with Appendix E siting criteria is not required for SPM monitors, it is the Department's intent that all the samplers meet as many siting and

operational requirements as possible. Currently, the Site does not meet the following siting criteria for tree obstructions: Section 2.3 of Appendix E, which requires that the distance from the obstacle (such as a tree) to the probe must be at least twice the height that obstacle protrudes above the probe and requires that the probe must have at least 270 degrees of continuous unrestricted airflow. Numerous trees, located to the northeast, east, and southeast, were identified as obstructions. This row of trees blocks airflow so that the Site has only 112 degrees of continuous unrestricted airflow. Figure 4, Figure 5, Figure 6, and Figure 7 provide a comprehensive view of the trees.

Figure 4: Congaree Bluff Monitoring Site Facing North



Figure 5: Congaree Bluff Monitoring Site Facing East



Figure 6: Congaree Bluff Monitoring Site Facing South



Figure 7: Congaree Bluff Monitoring Site Facing West



After conferring with EPA-Region 4 and the National Forest Service, a waiver for the tree obstructions was originally applied for on March 16, 2016, and approved by EPA on May 26, 2016. As part of the agreement with EPA-Region 4, the Department changed the purpose of this Site to characterize air quality within the Congaree National Park and changed the scale of the monitor from “Urban” to “Neighborhood” in the 2017 Monitoring Plan. This Plan was submitted to EPA on July 1, 2017, and approved on October 25, 2017. A renewal for this waiver was applied for on February 4th, 2021 and approved March 24, 2021. As a part of South Carolina’s 2025 Annual Network Plan and 2025 Network Assessment, the Department requests renewal for the site waiver of 40 CFR Part 58 appendix E Section 2.3 Siting Criteria for the Congaree Bluff (45-079-0021) Monitoring Site.

Appendix H: Ongoing Data Requirements Rule for 2010 1-hour SO₂ NAAQS Verification Calendar Year 2023

On June 2, 2010, the U.S. EPA revised the primary NAAQS for sulfur dioxide (SO₂) by establishing a 1-hour standard at a level of 75 parts per billion. In 2017, the Department of Health and Environmental Control, now the SC Department of Environmental Services, (Department) submitted SO₂ designation modeling for certain facilities in Berkeley, Richland, and York counties to demonstrate these counties should be designated as attainment. These facilities included Santee Cooper Cross Generating Station, New-Indy Catawba (formerly Resolute Industries), Sylvamo Eastover Mill (formerly International Paper – Eastover), and Dominion Wateree Station (formerly SCE&G Wateree Station). On March 22, 2024, the Department proposed termination of the annual reporting requirement for Santee Cooper Cross Generating Station.

In January 2018, EPA designated each county in South Carolina as attainment/unclassifiable for the 2010 SO₂ standard. Under 40 CFR 51.1205(b), for areas designated as attaining the standard based on modeling of actual emissions, the Department is required to submit an annual report that documents the annual SO₂ emissions of these sources, an assessment of any emissions increase from the prior year, and a recommendation whether further modeling is warranted.

Attached is the Department's annual report satisfying the ongoing data requirements for the affected area's designations. The annual report was provided for a 30-day public comment period, which began on April 25, 2025, and ended May 27, 2025. Sylvamo Eastover Mill (Sylvamo) and Wateree Station (Wateree), Richland County Sylvamo and Wateree were modeled in the same modeling domain for the 1-hr SO₂ attainment modeling. Wateree has taken permit limits matching its modeled rates, and this revised permit was provided to the EPA by letter on May 11, 2017. Sylvamo modeled several units below the permitted emission rates. As shown in Tables 1-5 below, actual SO₂ emissions for all these sources are significantly less than the modeled rates and no further modeling is warranted.

Table 1

Sylvamo No. 1 Power Boiler and No. 1 Recovery Furnace (Combined Stack)			
2023 SO ₂ Emissions	2024 SO ₂ Emissions	Modeled Emissions	Status
157.1 lbs/hr	169.3 lbs/hr	606.9 lbs/hr	No further action needed

Table 2

Sylvamo Recovery Furnace No. 2 and No. 2 NCG Incinerator (Combined Stack)			
2023 SO ₂ Emissions	2024 SO ₂ Emissions	Modeled Emissions	Status
191.0 lbs/hr	204.8 lbs/hr	420.8 lbs/hr	No further action needed

Table 3

Sylvamo No. 2 Power Boiler			
2023 SO ₂ Emissions	2024 SO ₂ Emissions	Modeled Emissions	Status
44.0 lbs/hr	62.3 lbs/hr	971.0 lbs/hr	No further action needed

For Sylvamo, the source of sulfur dioxide (SO₂) pound per hour (lb/hr) emissions rates is actual total emissions per source per year over time period (year). An example calculation is shown below for the combined stack of No. 1 Recovery Furnace (381A) and No. 1 Power Boiler (501A):

$$\begin{aligned}
 & \text{Emission Rate } \left(\frac{\text{lb}}{\text{hr}} \right) \\
 &= \frac{\text{Total SO}_2 \text{ tons emitted from 381A \& 501A}}{\text{Total time in Calendar Year, days}} \times \frac{2000 \text{ lb}}{\text{ton}} \times \frac{\text{day}}{24 \text{ hours}}
 \end{aligned}$$

Table 4

Wateree No. 1		
2024 SO ₂ Emissions	Modeled Emissions	Status
41.2 lbs/hr	2687.3 lbs/hr 11770.3 TPY, combined stack	No further action needed

Table 5

Wateree No. 2		
2024 SO ₂ Emissions	Modeled Emissions	Status
42.3 lbs/hr	2687.3 lbs/hr 11770.34 TPY, combined stack	No further action needed

The data for Wateree is based on actual emissions per actual hours of operation. Since each unit's emissions are measured on one combined stack, the emissions are

apportioned by heat rate. The final result is actual pounds/hour.

WAT1SO2:

$$\frac{223.9 \text{ tons}}{6744.6 \text{ hrs}} \times \frac{14348953 \text{ mmBtu}}{14348953 \text{ mmBtu} + 8753064 \text{ mmBtu}} \times 2000 \text{ lbs} = 41.2 \text{ lbs/hr}$$

WAT2SO2:

$$\frac{223.9 \text{ tons}}{4010 \text{ hrs}} \times \frac{8753064 \text{ mmBtu}}{14348953 \text{ mmBtu} + 8753064 \text{ mmBtu}} \times 2000 \text{ lbs} = 42.3 \text{ lbs/hr}$$

The Actual SO₂ emissions in tons per year:

Unit	2023	2024
WAT Unit 1	266.5	223.9
WAT Unit 2	266.5	223.9

New-Indy Catawba (New-Indy), formerly Resolute, York County

The New-Indy 1-hr SO₂ DRR modeling was based on permit allowable SO₂ emissions with the exception that No. 6 fuel oil combustion emissions were based on actual No. 6 fuel oil use at maximum permitted sulfur content. The information used in the assessment (shown in Table 6) for this facility shows that no further modeling is warranted.

Table 6

New-Indy (Resolute) Facility No. 6 Fuel Oil Use			
2023 fuel oil used	2024 fuel oil used	Modeled usage:	Status
3,827,633 gallons	2,383,827 gallons	4,041,888 gallons	No further action needed

The primary sources of SO₂ at New-Indy Catawba LLC (Catawba Mill) are No. 6 fuel oil combustion for process steam generation and incineration of pulp mill non-condensable gases (NCG's) in the combination boilers. The SO₂ DRR modeling for the Catawba Mill was performed using the actual hourly No. 6 fuel oil usage during calendar years 2012 - 2014 year assuming the maximum fuel oil sulfur content (2.1%) as a conservative assumption. The combustion of pulp mill NCG's was modeled at the pulp mill design capacity and the permitted SO₂ emission rate of 10.1 pounds SO₂ per air dried ton pulp (lb SO₂/ ADTP). Other minor sources of SO₂ at the Catawba Mill (biomass and natural gas combustion, etc.) were modeled at the maximum short-term permitted emission rates.

The 2023 and 2024 actual SO₂ emissions are compared to the modeled SO₂

emissions in Tables 7 and 8 and are less than the modeled emissions rates in 2012, 2013, and 2014. As shown in Table 7, the annual SO₂ emissions from No. 6 fuel oil are based on the total fuel oil usage and the average fuel oil sulfur content. The annual SO₂ emissions from pulp mill NCG combustion are based on the total pulp production and the actual NCG emissions factor per ton of production.

The highest actual hourly emissions rate is compared to the highest modeled hourly emissions rate in Table 8. The highest actual hourly emissions in 2024 from burning No. 6 fuel oil combined with the highest hourly emissions from pulp mill NCG combustion are less than the highest hourly emissions modeled during the 2012-2014 period. These two functions are related but not solely dependent upon each other. This means that the highest hourly emissions from burning No. 6 fuel oil and the highest hourly emission from pulp mill NCG combustion did not occur at the same time (e.g., during the same hour of the year). When the 2024 actual emissions are paired in time, the highest hourly emissions are 1,128 pounds per hour. The 2024 actual SO₂ emissions are less than the SO₂ emissions modeled in 2014. As shown in both Tables 7 and 8 the actual emissions during 2023 – 2024 are well below the maximum modeled SO₂ 1-hour emissions rates.

Table 7 – Comparison of Annual SO₂ Emissions

Year	No. 6 Fuel Oil			Pulp Mill NCG Combustion			Sum
	Gallons	% S	tons SO ₂	ADTP	lb SO ₂ /ADTP	tons SO ₂	tons SO ₂
2012 Model	1,566,028	2.1	258	666,125	10.1	3,364	3,622
2013 Model	1,230,464	2.1	203	666,125	10.1	3,364	3,567
2014 Model	4,041,888	2.1	666	666,125	10.1	3,364	4,030
2023 Actual	3,827,633	1.87	562	472,079	3.88	916	1,478
2024 Actual	2,383,827	1.64	307	474,027	3.88	920	1,226

Table 8 – Comparison of Maximum Hourly SO₂ Emissions

Year	No. 6 Fuel Oil			Pulp Mill NCG Combustion			Sum
	max gallons/hr	% S	lbs SO ₂ /hr	max ADTP/hr	lb SO ₂ /ADTP	lbs SO ₂ /hr	lbs SO ₂ /hr
2012 Model	6,696	2.1	2,208	76.0	10.1	768	2,976
2013 Model	3,746	2.1	1,235	76.0	10.1	768	2,003
2014 Model	6,086	2.1	2,007	76.0	10.1	768	2,775
2023 Actual	6,835	1.87	2,007	85.3	3.99	333	2,340
2024 Actual	3,311	1.75	910	77.3	3.99	309	1,218