Upstate Air Quality Advisory Committee Meeting

March 6, 2024



AGENDA

Welcome and Introductions	Dean Hybl Executive Director Ten at the Top
EPA Update	Mia South Co-lead CPRG, Training and Technical Assistance Forums Program Manager, Advance Program Office of Air Quality Planning and Standards Air Quality Policy Division State and Local Programs Group
State of Our Air Quality Update	Renee Madden Air Monitoring Data Analyst South Carolina Department of Health and Environmental Control
Palmetto Air Quality Coalition	Alex Butler Resilience Planning Director South Carolina Office of Resilience
Closing	Dean Hybl

Clean Air Act

- Since the Clean Air Act was enacted in 1970, EPA estimates that national emissions from the six primary pollutants has reduced more than 70%
- EPA estimates that
 - More than 200,000 early deaths have been annually prevented in the U.S.
 - The number of asthmatic episodes—cases of acute bronchitis and hospitalization due to breathing problems—have been significantly reduced
- Clean Air Act calls for standards to be regularly monitored and reviewed every five years

Continued Public Health Concerns

- A 2018 study conducted by researchers from the Washington University School of Medicine in St. Louis estimated that air pollutants play a role in more than 3.2 million new cases of diabetes annually (150,000 in the United States).
- World Health Organization estimates there are 4.2 million deaths annually due to outdoor air pollution & 3.8 million from household exposure to smoke from dirty cookstoves & fuels
- There are over 24,000 cases of Pediatric Asthma and 90,000 cases of Adult Asthma in the Upstate (more than 7.5% of our population)

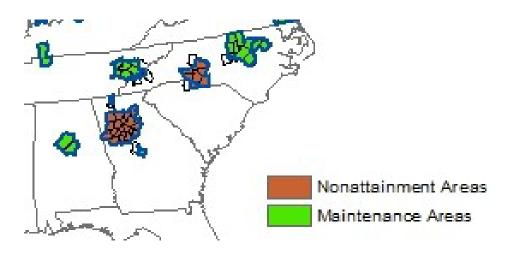
An Economic Development Issue

- The Birmingham, AL, case
 - Lost over \$5 billion of economic development and thousands of jobs after being designated as a nonattainment area
 - It took them 30 years and millions of dollars before they finally reached attainment levels in 2012



History of Air Quality in the Upstate

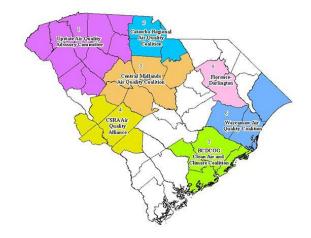
- Early Action Compact (early 2000s) Greenville, Anderson & Spartanburg
- PM 2.5 Monitor Led by Greenville County and Greenville Chamber of Commerce (designated as attainment area in 2018)





Upstate Air Quality Advisory Committee

- Originally led by Greenville County Planning Department
- TATT became convening organization in 2012
- Comprised of local governments, businesses and non-profits
- Liaison with SC DHEC Bureau of Air Quality
- One of 7 designated Regional Advisory Committees in SC





Clean Air Upstate

- Campaign started in 2012
- Focus primarily on mobile sources for future emission reduction impacts
- Two areas of focus: education/outreach and creating strategies for reducing emissions from onroad sources
- Programs were in active status from 2012-2016
- Since 2016 primarily in maintenance mode with Upstate Air Quality Advisory Committee meetings and staying engaged with DHEC
- In 2018 hosted "A Cleaner Future" Workshop on Air Quality and Sustainability
- Currently in "maintenance mode" as region remains within attainment



Clean Air Upstate

- Focus on voluntary actions & education
- Schools Breathe Better No-Idling Program
- No-Idling Signage
- Clean Air Tips through Social Media, WSPA-TV & Web Site
- J. Dan Powell Electric Charging Station Program
- Truck Stop Electrification











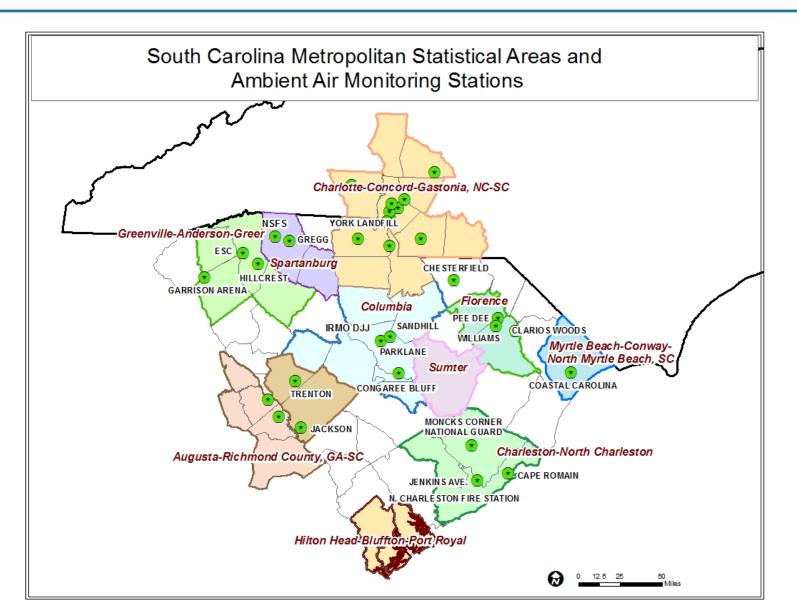
Air Quality in SC

Ten at the Top Air Quality Meeting

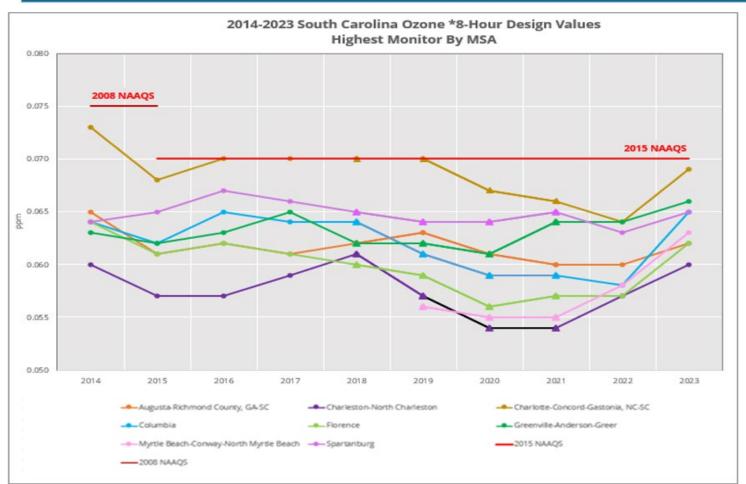
Renee Madden
Air Monitor Data Analyst
Air Regulation, Data Analysis, &SIP Management
SC DHEC/Bureau of Air Quality

Amy Curran
Outreach Coordinator
SC DHEC/Bureau of Air Quality









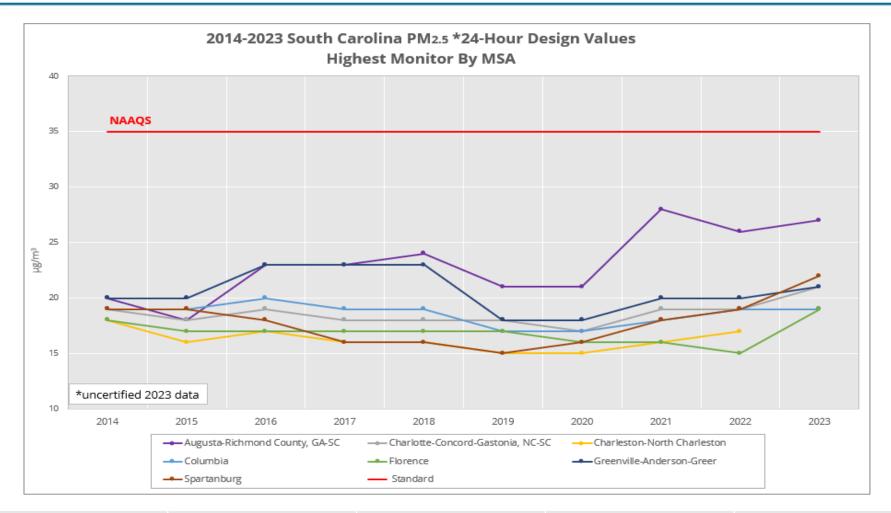
Notes: *The 2023 data is uncertified.

All ozone data collected from South Carolina ozone monitoring sites between 07/11/2018 and 07/28/2019 was invalidated **EPA** because of a failed ozone standard test. Therefore, the South Carolina ozone monitors have no valid design values for the years 2018 through 2021.

Triangles on the graph represent incomplete design values.

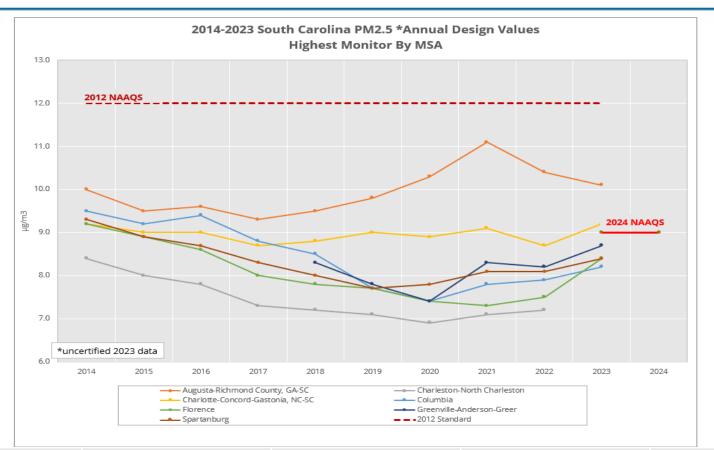
Pollutant	Primary/Secondary	Averaging Time	Level	Form
Ozone	primary and secondary	8 hours	0.070 ppm	Annual fourth-highest daily maximum 8-hour concentration averaged over 3 years





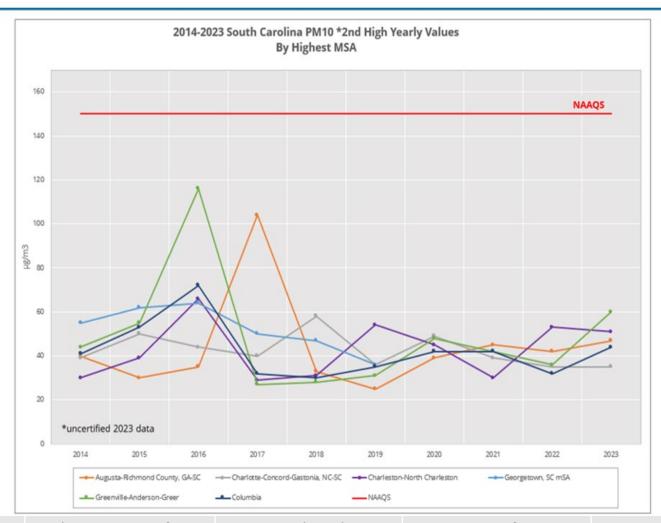
Pollutant	Primary/Secondary	Averaging Time	Level	Form
PM _{2.5}	primary and secondary	24 hours	35 μg/m ³	98th percentile, averaged over 3 years





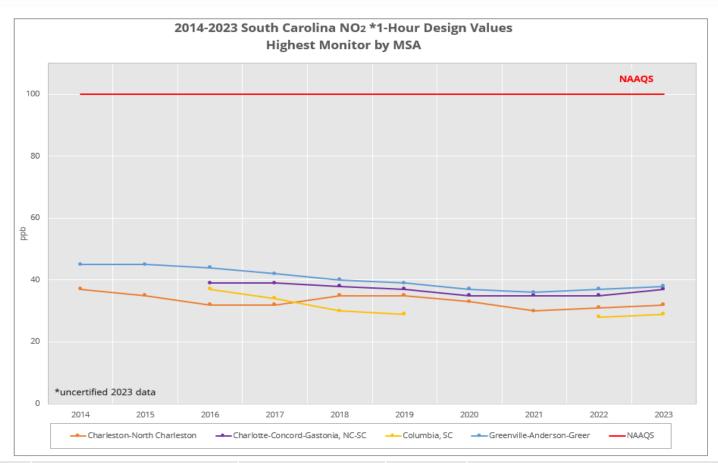
Pollutant	Primary/Secondary	Averaging Time	Level	Form
PM _{2.5}	primary	1 year	9.0 μg/m ³	annual mean, averaged over 3 years
PM _{2.5}	secondary	1 year	15.0 μg/m ³	annual mean, averaged over 3 years





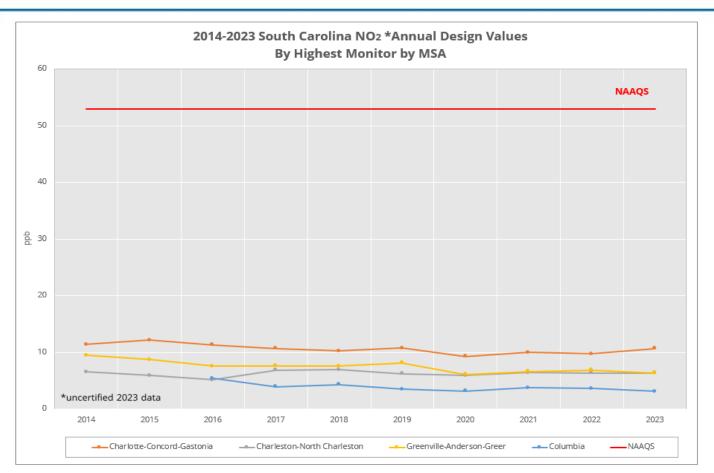
Pollutant	Primary/Secondary	Averaging Time	Level	Form
PM ₁₀	primary and secondary	24 hours	150 μg/m³	Not to be exceeded more than once per year on average over 3





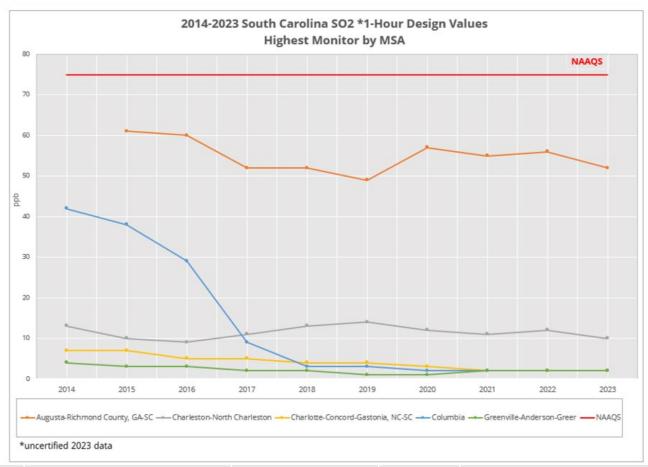
Pollutant	Primary/Secondary	Averaging Time	Level	Form
Nitrogen Dioxide (NO ₂)	primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
(1402)	primary and secondary	1 year	53 ppb ⁽²⁾	Annual Mean





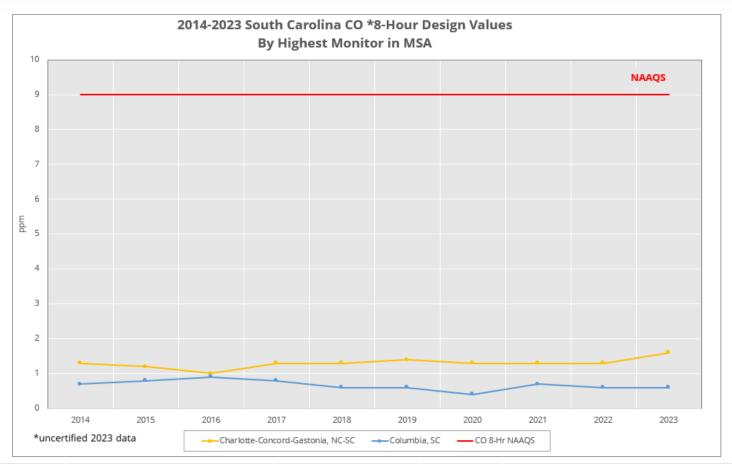
Pollutant	Primary/Secondary	Averaging Time	Level	Form
Nitrogen Dioxide (NO ₂)	primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	primary and secondary	1 year	53 ppb ⁽²⁾	Annual Mean





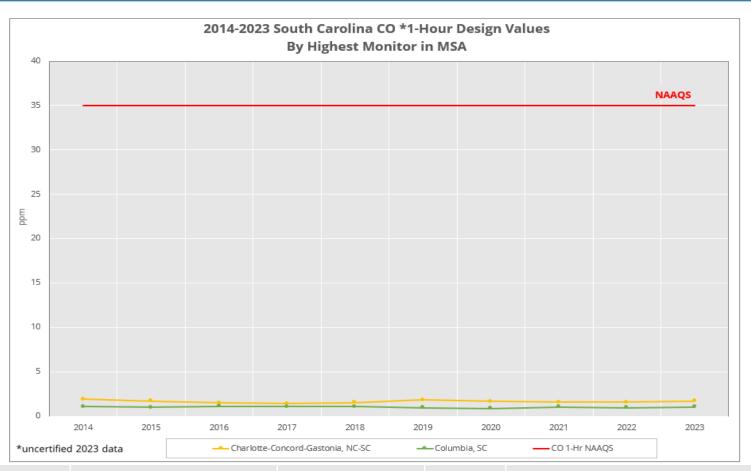
Pollutant	Primary/Secondary	Averaging Time	Level	Form
Sulfur Dioxide (SO ₂)	primary	1 hour	75 ppb ⁽⁴⁾	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year





Pollutant	Primary/Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)	primary	8 hours	9 ppm	Not to be exceeded more than once per
	primary	1 hour	35 ppm	year





Pollutant	Primary/Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)	primary	8 hours	9 ppm	Not to be exceeded more than once per
	primary	1 hour	35 ppm	year



Bureau of Air Quality Grant Funding & Outreach











Diesel Emissions Reduction Act (DERA) Grant Program



Breathe Better (B2) Program

- Idling vehicles waste fuel and produce air pollutants harmful to human health.
- Anti-idling campaign focused on protecting public health on school campuses and at local businesses.
- Get access to helpful resources to encourage idle reduction at your business and in your community!



Be a Breathe Better (B²) Business!

Does your business have:

- A high volume of daily visitors?
- A visible parking area for anti-idling signs?
- Frequent deliveries by trucks?

Your business can be a community leader and encourage behavioral change to reduce air pollution.



Sign up today...it's EASY!

- Fill out the Enrollment. You will receive "Turn Off Your Engine" signs to post on your business campus.
- You will also receive desk top flag posters to display the corresponding air quality forecast color.













www.scdhec.gov/b2











Breathe Better for Businesses



Diesel Emissions Reduction Act (DERA) Grant Program

- State DERA Yearly allocation from EPA.
- National DERA Competitive grant for up to \$2 million.
 - SC received in 2012, 2016, and 2019
- School Bus Rebate Program
- DERA Tribal Grants

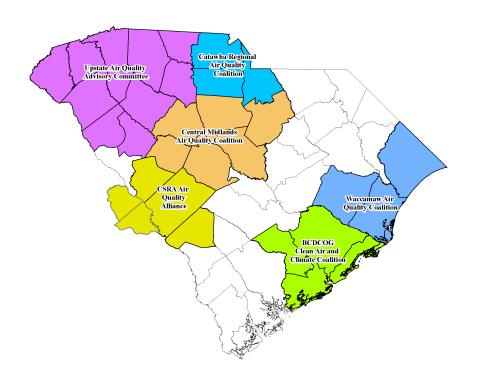




www.scdhec.gov/dera



Air Quality Coalitions and EPA ADVANCE



AQ Coalitions – Network of 6 regional coalitions focused on maintaining good air quality in SC.

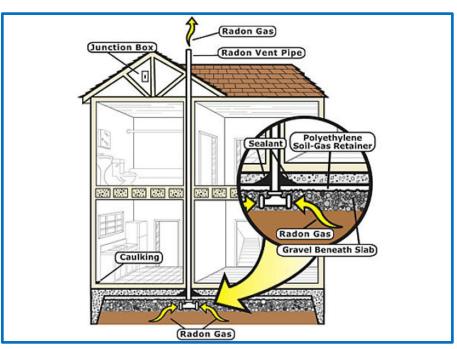
Advance – EPA program which encourages proactive, community-based steps to remain in attainment.

www.scdhec.gov/advance



South Carolina Radon Program





www.scdhec.gov/radon



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Air Quality Update and the Advance Program



Mia South

Office of Air Quality Planning and Standards, US EPA



Overview

- Air Quality update for Ozone and PM
- What is the Advance program?
 - What are the goals of the program?
 - Who is participating?
 - How might you benefit from participating in PM Advance?
 - What are the requirements
- Why is PM a concern?
 - Why should attainment areas care about reducing PM?
 - Will we avoid a future nonattainment designation if we sign up for PM Advance?
 - How would the timing of PM Advance relate to the timing of designations for any revised PM2.5 NAAQS?
 - Where can I get more information?



Air Quality Update for PM

Particulate Matter Final Rule

- On February 7, 2024, the U.S. Environmental Protection Agency (EPA) announced a final rule to strengthen the nation's National Ambient Air Quality Standards (NAAQS) for fine particle pollution, also known as fine particulate matter (PM2.5) or soot.
- EPA is revising the level of the primary (health-based) annual PM2.5 standard from 12.0 micrograms per cubic meter (µg/m3) to 9.0 µg/m3, based on scientific evidence that shows the current standard does not protect public health with an adequate margin of safety, as required by the Clean Air Act (CAA).
- EPA is retaining the primary 24-hour PM2.5 standard at the level of 35 μg/m3. The EPA Administrator concluded that the revised annual standard together with the current 24-hour standard will protect public health with an adequate margin of safety.
- EPA is retaining the primary (health-based) 24-hour PM10 standard, which provides public health protection against exposures to coarse particles. The EPA Administrator concluded that the current evidence does not call into question the adequacy of that standard.
- EPA is not changing the current secondary (welfare-based) standards for both PM2.5 and PM10 at this time. The EPA
 Administrator concluded that the available scientific evidence and information do not call into question the adequacy of
 protection provided by the current secondary PM standards for non-ecological effects (i.e., visibility, climate, and material
 effects) at this time. EPA is reviewing the ecological effects of PM in a separate action.
- The final rule published today 3/6/2024.
- For more information, see the **EPA website**.

3/6/2024

Review of the Ozone NAAQS

- This spring, the EPA will hold a virtual public science and policy workshop to gather input from the scientific community and the public and will summarize that information over the summer regarding how the information can be used to inform the review.
- EPA anticipates releasing Volumes 1 and 2 of Integrated Review Plan (IRP), which lays out the agency's plan for the review, in Fall 2024 for public comment and CASAC consultation
- There are 3 volumes of the IRP: the first is a background document, the second details the plan for the Integrated Science Assessment, the third details the plans for any quantitative risk assessments to inform the review and is usually released after the first draft of the Integrated Science Assessment.
- For more information, see EPA's <u>website</u>.

3/6/2024

What is the Advance Program

The Advance Program is a voluntary, collaborative initiative between EPA, state and local governments, and tribes established in 2012

Areas designated as <u>attainment</u> for the Ozone and/or PM2.5 NAAQS develop plans and take actions in their communities to proactively reduce emissions, improve air quality, and remain in attainment

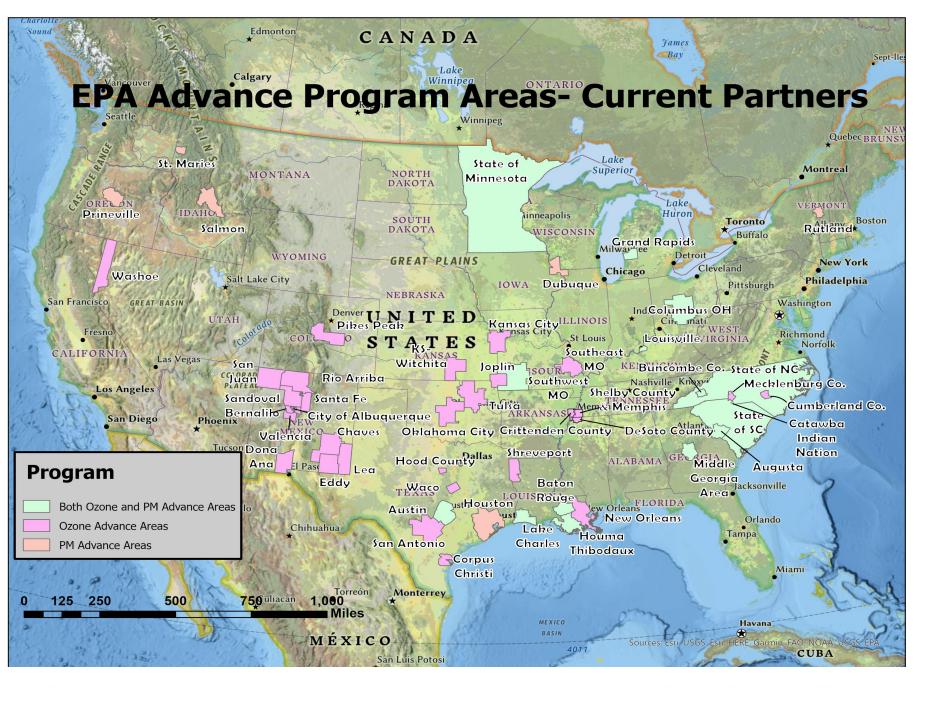
Program promotes opportunities for addressing climate, toxics, and environmental justice concerns and leverages resources from the Climate Pollution Reduction Grants Program.

GOALS

- Meet the objectives of air quality, sustainability, climate change, environmental justice in concert with economic development
- Maintain and improve air quality and public health
- Prevent Ozone and PM nonattainment areas
 - Efficiently direct available resources toward actions to address air quality problems quickly
- Integrate work on Advance with other priorities
 - Climate and sustainability
 - Environmental justice
 - Multipollutant risk areas



3/6/2024



- 50 Areas
 - 29 Ozone
 - 6 PM2.5
 - 15 Both
- Greater than 52 million population

Mobile Source Programs

Energy Efficiency; Renewable Energy

Green Infrastructure; Heat Island Programs

Wood Smoke Reduction

Education and Increased Awareness

Stationary Source Programs

All plans submitted to EPA on SharePoint













Programs and initiatives Advance plans

8

Why Areas Join the Advance Program

Cost of remaining in attainment is less than cost of meeting nonattainment/maintenance area requirements

Reduce emissions, improve air quality, improve public health, achieve climate co-benefits

Multi- pollutant emphasis

Provides forum for community and stakeholder collaboration on clean air and related issues

Participation with EPA provides credibility and demonstrates the area's clean air commitment

Access to EPA expertise and technical assistance opportunities

Advance areas have flexibility to include broad array of programs and initiatives in their plans

 Air quality, sustainable economic development, energy efficiency and climate, air toxics/environmental justice, cleaner transportation, etc. Learn best practices from other Advance areas through collaboration, and with EPA index of programs and initiatives in previously submitted plans.

Educates public and community about air quality and health

Promotes positive actions by industry, government, public stakeholders

Commitment to update Advance annual plan serves as a driver for action and stakeholder input

Streamlined reporting process

Advance Program Tool that shows emissions, design values and air quality changes

Recent Improvements

Advance Database that details programs and projects, metrics, EJ considerations, Climate consideration and pollutant reductions

Monthly webinars and collaboration with other Advance areas

Expanded community and stakeholder collaboration on clean air and related issues

Website Redesign

3/6/2024

Program Requirements

1

Identify your lead governmental organization(s).

2

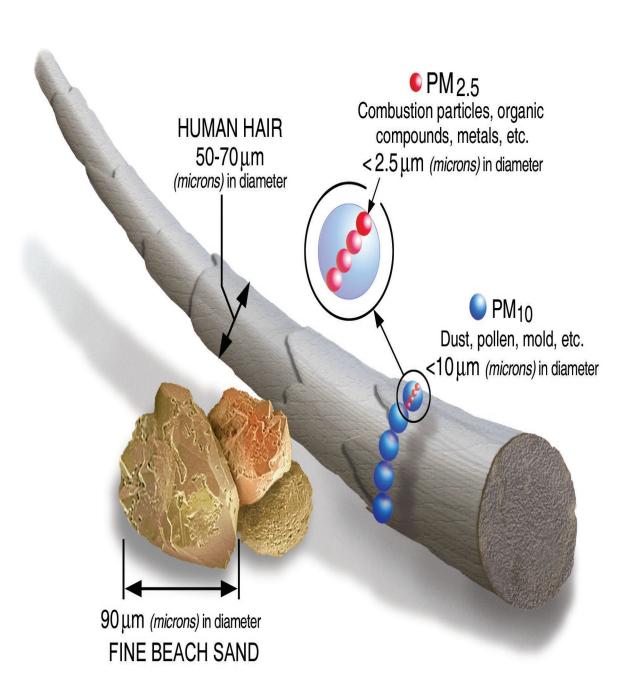
Conduct stakeholder meetings and identify priority emission reductions. 3

Within one year, submit the initial "Path Forward" plan for the area, in consultation with EPA.

4

Provide an annual Advance plan revision by March 1st.

3/6/2024



- Very significant health effects caused by or likely caused by exposure to PM2.5, esp. compared to O3
- Disproportionate exposure by race/ethnicity and socioeconomic status

Will PM Advance Protect Me From a Nonattainment Designation?

- Signing up for PM Advance will NOT guarantee that your area will avoid future designations.
- Taking robust, expeditious actions could help some areas clean up their air quality enough to affect designations.
- Areas that are eventually designated can also benefit from early actions taken to reduce PM.

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Questions to consider about evaluating PM for your area

- What can monitoring and modeling tell us about PM 2.5 in my area?
- How is PM affecting vulnerable communities in your area?
- What can your community do to better control the sources of PM?
- What actions can you take now to avoid a PM nonattainment designation?

	2023 AQI fo	r Fine Particle Pollu	tion				
(Breakpoints are in micrograms per cubic meter)							
AQI Category and Index Value	Previous AQI Category Breakpoints	Updated AQI Category Breakpoints	What changed?				
Good (0 – 50)	0.0 to 12.0	0.0 to 9.0	EPA updated the breakpoint between Good and Moderate to				
Moderate (51 – 100)	12.1 to 35.4	9.1 to 35.4	reflect the updated annual standard of 9 micrograms per cubic meter				
Unhealthy for Sensitive Groups (101 – 150)	35.5 to 55.4	35.5 to 55.4	No change, because EPA retained the 24-hour fine PM standard of 35 micrograms per cubic meter.				
Unhealthy (151 – 200)	55.5 to 150.4	55.5 to 125.4	EPA updated the breakpoints at the upper end of the unhealthy, very unhealthy, and hazardous categories based on scientific evidence about particle pollution and health. The Agency also collapsed two sets of breakpoints for the Hazardous category into one.				
Very Unhealthy (201 – 300)	150.5 to 250.4	125.5 to 225.4					
Hazardous (301+)	250.5 to 350.4 and 350.5 to 500	225.5+					

^{*}Final Updates to the Air Quality Index (AQI) for Particulate Matter



Questions?
Mia South

south.mia@epa.gov

919-541-5550

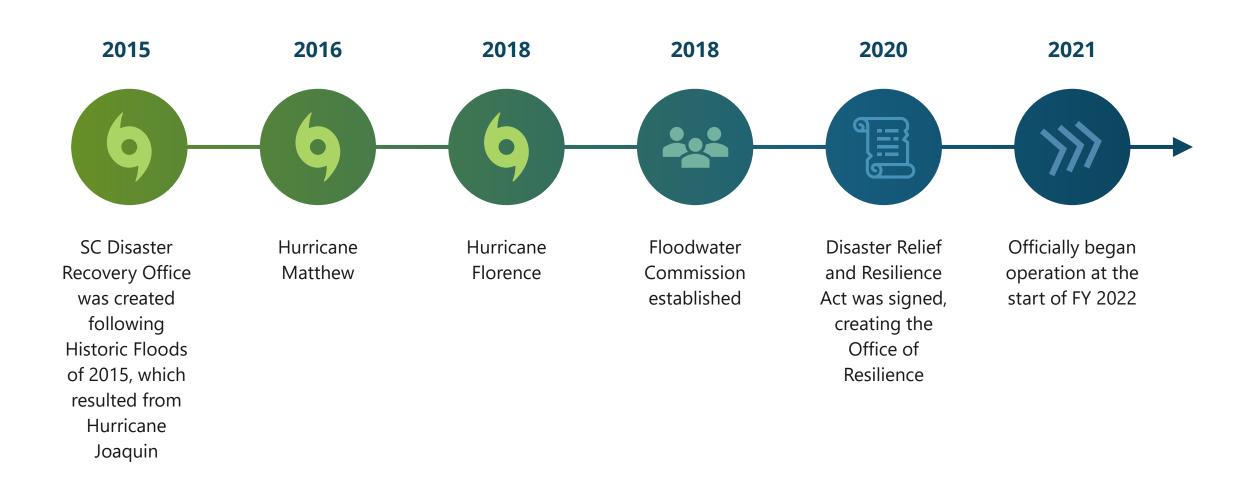
www.epa.gov/advance

South Carolina Office of RESILIENCE

Lessening the impact of disasters on the communities and citizens of South Carolina by planning and coordinating statewide resilience, long term recovery, and hazard mitigation.



History



What We Do

Resilience

- Develop and manage the Strategic Statewide Resilience & Risk Reduction Plan
- Manage the Disaster Relief and Resilience Reserve Fund and the SC Resilience Revolving Fund

Mitigation

- **Buyouts**: Voluntary acquisitions of repetitively flooded land and property in order to return it to green space
- Infrastructure: Traditional "Gray" and Nature-based "Green" Infrastructure for flood reduction
- Plans & Studies: Funding for local governments and state agencies to develop and/or update hazard mitigation plans, stormwater plans, and more
- **Matching Grants**: Provide the local cost share for other federal flood mitigation programs

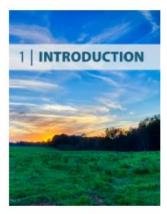
Disaster Recovery

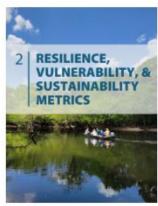
 Rebuild and replace homes damaged by hurricanes and flooding in FEMA-declared counties; funded by US Department of Housing & Urban Development



Resilience Planning

The South Carolina Office of Resilience recently released the **Strategic Statewide Resilience and Risk Reduction Plan** (Resilience Plan). The Plan identifies major flood risks around the state and potential losses that could occur as a result of extreme weather events. The Plan provides strategies for local governments to implement resilience into their communities in order to mitigate potential flood risks.



















Recommendation Themes

Improve Data Collection and Coordination

Increase Education, Outreach, and Disclosure

Coordinate Watershed-Based Resilience Planning and Projects

Incorporate Resilience into Planning, Land Use and Other Regulatory Processes

Maintain and Strengthen Building Codes

Incorporate Resilience into Infrastructure Design

Maintain Natural Flood Protection Through Conservation

Incorporate Resilience into Housing Recovery

Establish a Voluntary Pre-Disaster Buyout Program

Identify and Maximize All Available Funding Sources For Resilience Activities



Palmetto Air Quality Collaborative (PAQC)





Climate Pollution Reduction Grant (CPRG)



- Established by the Inflation Reduction Act on August 16, 2022
- Administered by the U.S. Environmental Protection Agency (EPA)
- Focuses on developing state, tribal, and metropolitan climate plans that include GHG reduction measures

Phase I: Planning Grants (2023-2027)

- \$3 million for the statewide effort
 - Co-leads: SC DHEC and SC Office of Resilience
 - Sub-awardee: SC Ports Authority
- \$1 million for the Charlotte, Columbia, and Greenville-Anderson metropolitan areas
- Priority Climate Action Plan (PCAP) due March 1, 2024

Phase II: Implementation Grants (2024-2029)

- Competitive; \$4.3 billion available; Due: April 1, 2024
- 30 to 115 expected awards, ranging from \$2 million to \$500 million

The Palmetto Air Quality Collaborative (PAQC)



- Innovation
 - Innovate strategies to reduce greenhouse gases and other air pollutants in South Carolina



- Multiple Benefits
 - Engage communities, capitalize on workforce and economic development opportunities, and advance resilience initiatives



- Coordination and Collaboration
 - Develop actionable pollution reduction measures through interagency and intergovernmental collaboration, public and stakeholder engagement, and action team input

Benefits of Reducing Emissions

Provide Benefits:

- Cleaner air
- Improved public health
- Economic growth and development
- Enhanced resilience

Reduce Harm:

- Lessening of impacts from extreme weather events and natural hazards
- Deceleration of sea level rise and coastal erosion











The PAQC Process

Coordination

Interagency & Intergovernmental Coordination

State and local government agencies

Councils of Governments (COGs)

Public & Stakeholder Engagement

SCOR, DHEC, Energy Office

Sector-specific teams of experts and engaged stakeholders to help identify and evaluate quantifiable GHG reductions measures

Action Teams

Transportation and Mobile Sources

Agriculture / Natural and Working Lands

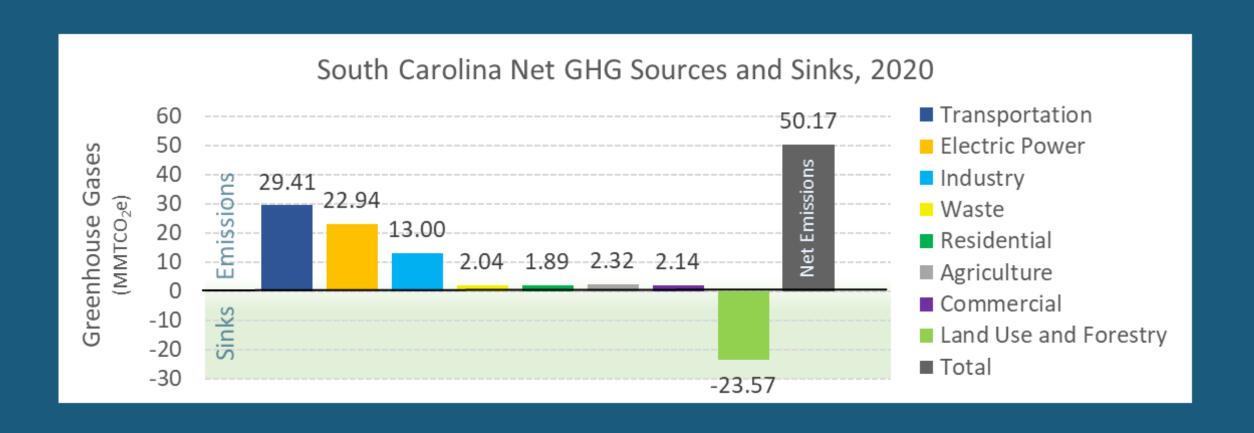
Waste and Materials Management

Residential and Commercial Buildings

Industry

GHG Inventory

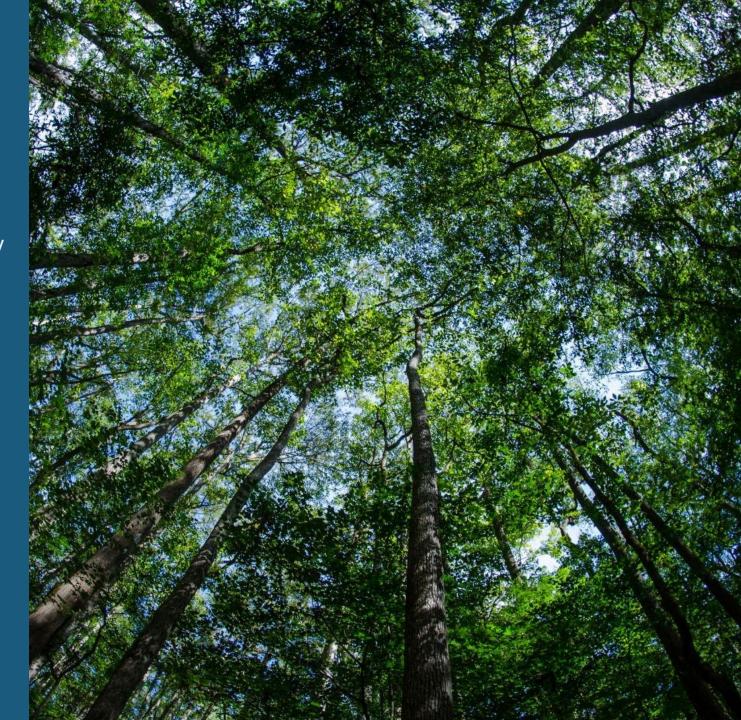
South Carolina Total Net Emissions



Sector	Reduction Measures
Transportation	 Public Transit (Regional: charging infrastructure, zero-emission vehicle fleets/buses; Intercity Travel: rapid transit/trains) EVs/Alternative Fuels: including passenger, commercial, industrial, and government vehicles/ fleets; EV infrastructure at Resilience Hubs, multi-family housing, heavily-trafficked roads; responsible end-of-life management and recycling of Li-ion batteries. Ports and Rail: electrify port equipment/transportation of goods; alternative fuel pilots (such as hydrogen fuel cell), rebate programs for diesel transition Alternative Transit: biking/walking paths; greenspace development Air: renewable energy at SC airports, including solar (i.e., installation of solar canopies over terminal parking), energy efficiency within terminal
Industry	 Energy Efficiency: new technologies, processes, equipment; energy efficiency measures for non-process uses; logistics Electrification: renewable energy, battery storage, microgrids, new technologies; energy reduction processes Industrial Recycling: statewide recycling program for industrial materials Material Efficiency: low-carbon materials (including recycled materials, carbon-storing materials, new technologies); circular economy Measuring and Monitoring: support small businesses to develop GHG emissions and align with sustainability standards and reporting metrics
Commercial & Residential Buildings	 Energy Efficiency: energy audits, energy efficiency upgrades, public education and outreach Electrification: solar, battery storage, new technologies, microgrids; carbon-storing or carbon-neutral materials; solar canopies over commercial buildings and government parking lots/garages Community Resilience Hubs: build hubs in communities around the state that include EV charging, solar panels, microgrid and battery storage Residential Building Practices: incentivize builders meet criteria for energy efficiency standards such as Energy Star and HERS; incentivize use of carbon-storing building materials Electrification: deploy solar, battery storage, microgrids in residential and multifamily housing; coordinate with utilities to deploy demand-side management technologies and customer education; coordinate with Solar for All funding (if awarded) for community solar development; educate the public about the benefits and safety of solar technology
Agriculture	 Climate Smart Expansion: Expand existing programs at Clemson University (Agriculture, Grasslands) Product Research and Development: incentivize product development that optimizes carbon storage to support market for those products Electrification: alternative fuel farming equipment; biomass/biofuel energy production; rideshare transportation of goods
Waste	 <u>Develop Recycling Programs</u>: multifamily home recycling; business/private sector recycling; government/state agency recycling <u>Materials Management</u>: incentivize use of products made from recycled materials; circular economy <u>Landfill Gas to Energy:</u> expand existing facilities to capture landfill methane emissions and produce energy by coordinating with state utilities
GHG Monitoring	Clemson University builds and installs GHG and air pollutant sensors to create a statewide network of monitoring sites

Priority Measures

- 1. Land conservation and restoration
- 2. Climate-smart forestry and agriculture
- 3. Residential weatherization and energy efficiency
- 4. Organics recovery and food waste
- 5. State agency recycling
- 6. Transportation
 - a. Vehicle fleet transition
 - b. Alternative and multi-modal transportation
- 7. Industry: Sustainable Supply Chain
 - a. Energy use and efficiency
 - b. Transportation and logistics



Resources and Next Steps

- Priority Climate Action Plan
 - March 1, 2024
 - Will be posted on the PAQC website

- Implementation Grant applications
 - April 1, 2024
 - Based on "priority measures"
 - Statewide programs
 - Multi-state coalition centered on land conservation

Grant awarded Program planning begins	Priority Climate Action Plan (PCAP)	Phase II Implementation Grant Applications	Comprehensive Climate Action Plan (CCAP)	Final Status Report Phase I award and program ends
JULY 2023	MARCH 1, 2024	APRIL 1, 2024	JUNE 2025	JUNE 2027
PCAP Development		CCAP Development		Ongoing Activities



Contact Information

Website https://scor.sc.gov/paqc

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