Palmetto Air Quality Collaborative (PAQC)

Open House Webinar

January 30, 2024, 7:00 to 8:30 pm
January 31, 2024, 12:00 to 1:30 pm

SOUTH CAROLINA
OFFICE OF
RESILIENCE

Introductions

Please enter in chat (optional): Name, organization or community, specific interests

Agenda

- Overviews
  - SCOR, CPRG, PAQC

- Draft Priority Climate Action Plan
  - Greenhouse Gas (GHG) Inventory
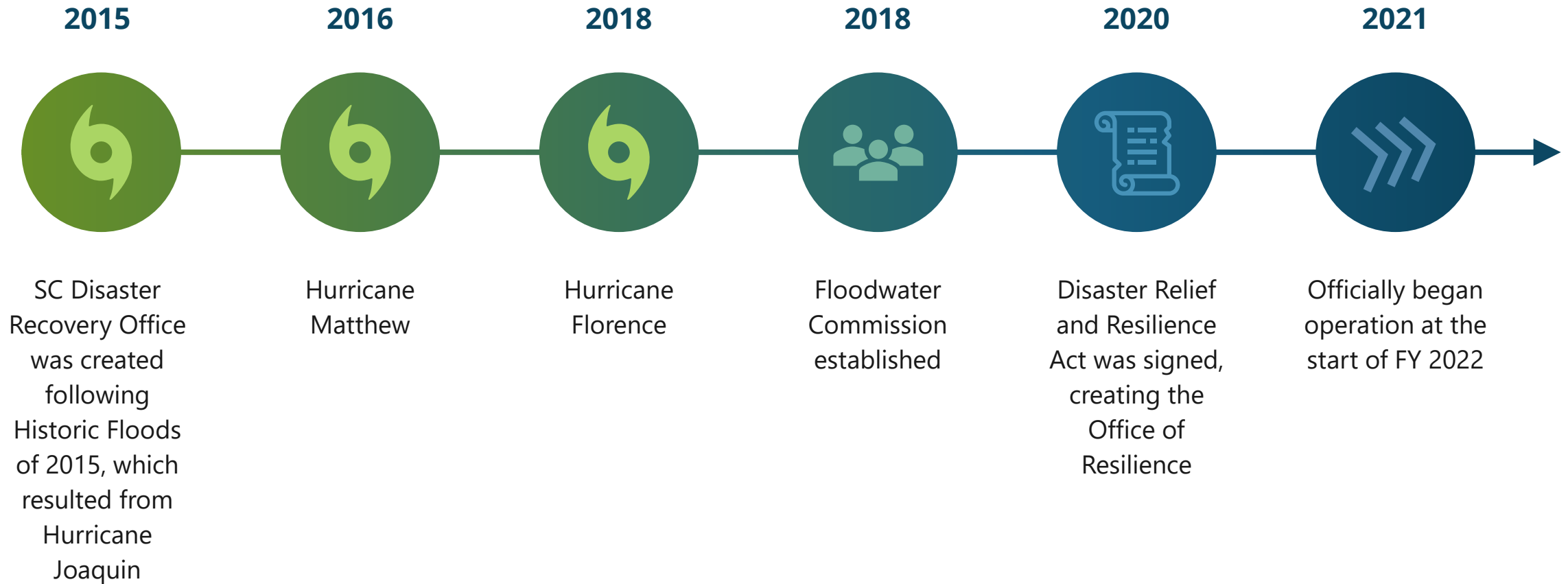 - GHG Reduction Measures

- Next Steps

- Questions

Overviews

SCOR's Mission

SCOR lessens 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

2015	2016	2018	2018	2020	2021

SC Disaster Recovery Office was created following Historic Floods of 2015, which resulted from Hurricane Joaquin

Hurricane Matthew

Hurricane Florence

Floodwater Commission established

Disaster Relief and Resilience Act was signed, creating the Office of Resilience

Officially began operation at the start of FY 2022

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
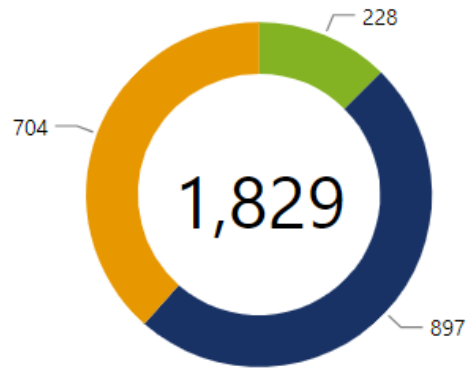
Disaster Recovery

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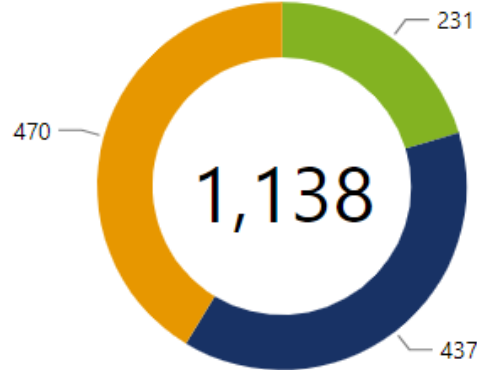

DISASTER CYCLE

PREPAREDNESS — RESPONSE — RECOVERY — MITIGATION
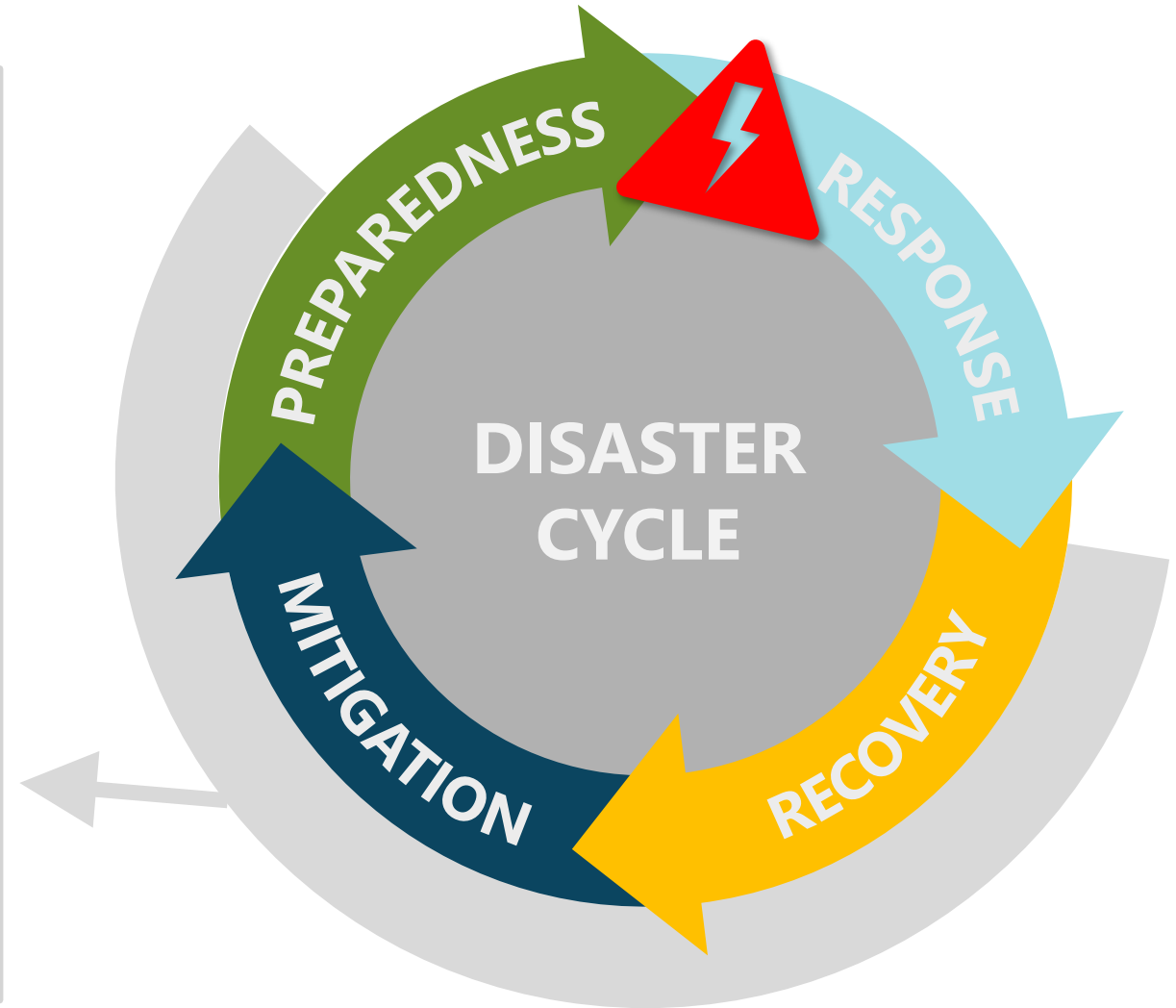
CDBG-Disaster Recovery Programs

2015 Flood: $126M

228
704
1,829
897

● Reconstruction ● Rehabilitation ● Replacement

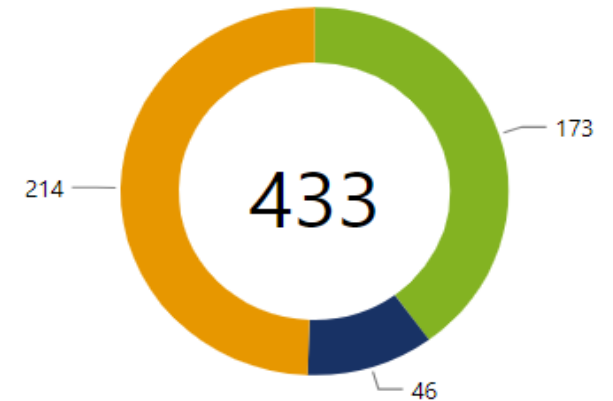Started 01/04/2017 – Completed 9/24/2021

2016 Hurricane Matthew: $95M

231
470
1,138
437

● Reconstruction ● Rehabilitation ● Replacement

Started 10/3/2017 – Completed 12/9/2022

2018 Hurricane Florence: $72M

173
214
433
46

● Reconstruction ● Rehabilitation ● Replacement

Started 4/21/2021 – Not yet completed (88%)

SCOR has concluded two out of three disaster projects with the successful ***reconstruction, replacement, or repair*** of a total of **3,400** homes, providing essential relief to individuals whose residences were adversely affected by the 2015 Flood, Hurricane Matthew in 2016, or Hurricane Florence in 2018. Construction in the Hurricane Florence program is expected to be complete this year.

CDBG-Mitigation Programs

Infrastructure: $100.3M Allocated / $62M Awarded

(20) statewide public infrastructure projects in effect, encompassing a variety of initiatives such as storm water drainage, upgrades, and retention ponds. Notably, the ***Erhardt Drainage project***, a collaboration with the City of Charleston, holds a significant importance with an estimated funding approaching $10 million.

Housing Buyouts: $42.3M Allocated / $34M Awarded

(6) Projects in effect. The objective is to acquire properties in flood-prone areas with a history of repetitive flooding. This program aims to relocate citizens away from potential harm, simultaneously restoring the land to green space to reestablish the natural function of the floodplain.

Plans and Studies: $9.1M Allocated / $6.5M Awarded

(20) Projects in effect. Conducting studies to help communities identify the causes of flooding in their areas and offering support or completing diverse plans related to flood mitigation are key services. These plans and studies are designed to generate shovel-ready projects that can be submitted for funding through SCOR's infrastructure program.
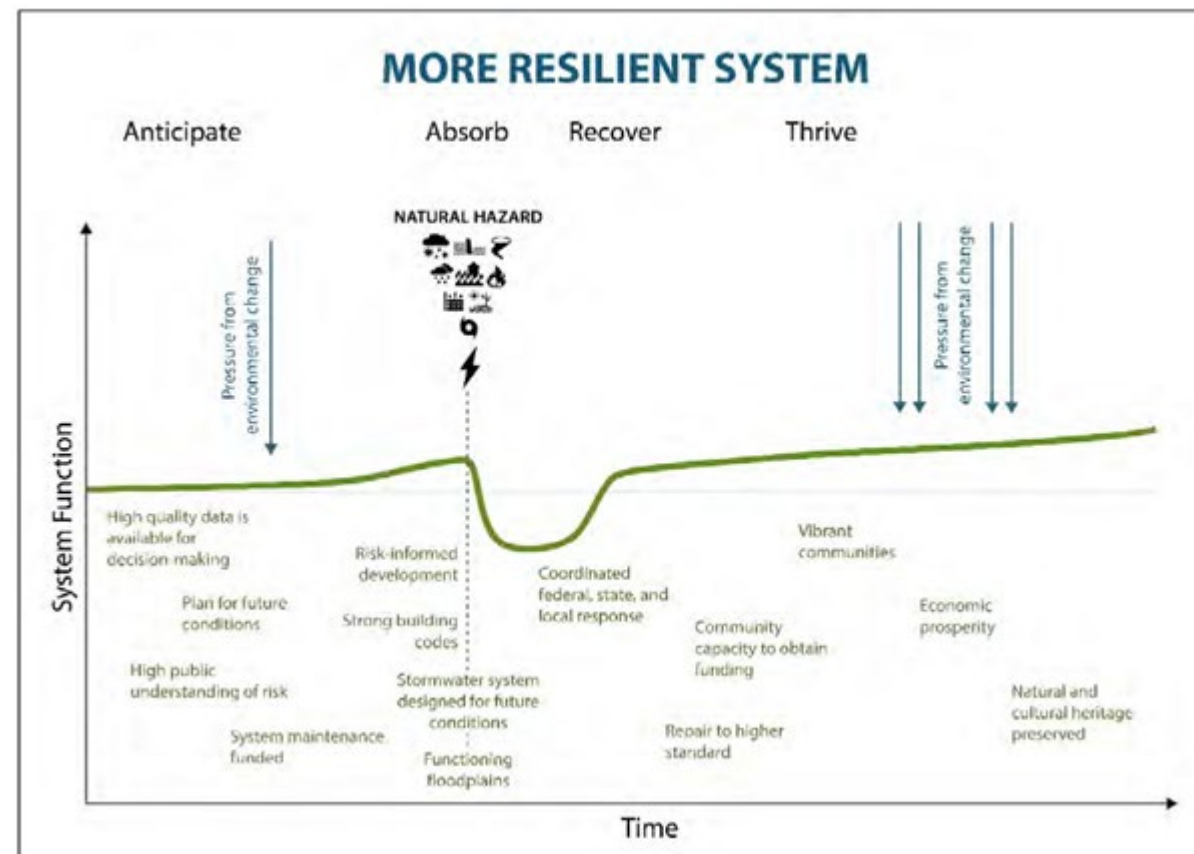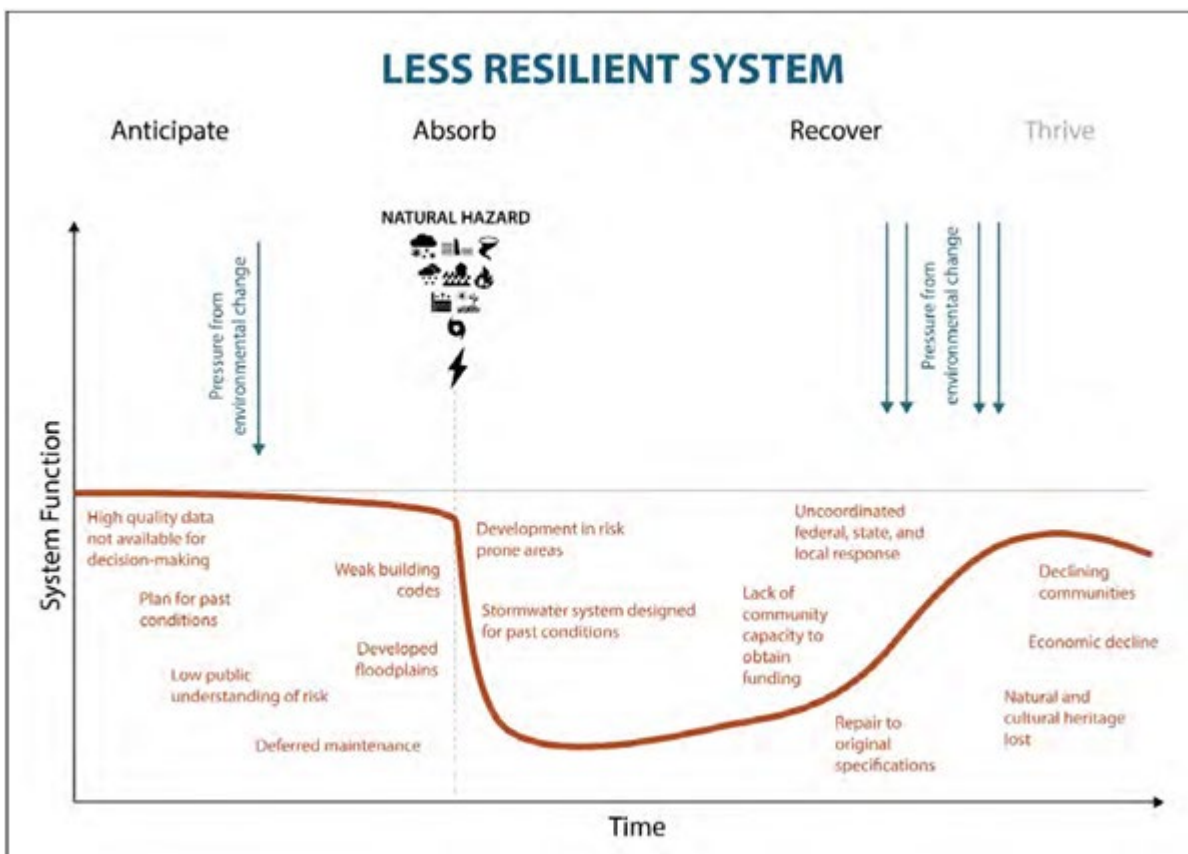
Matching Grants: $2.2M Allocated / $2.1M Awarded

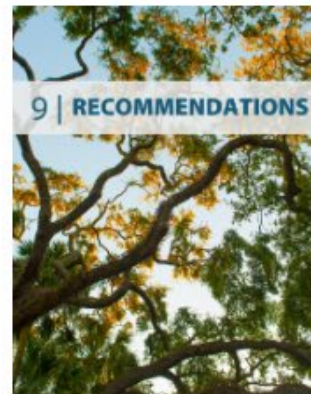(8) Projects in effect. Provides the local cost-share portion for various federal flood mitigation grants.

Resilience Definition

The ability of communities, economies, and ecosystems within South Carolina to anticipate, absorb, recover, and thrive when presented with environmental change and natural hazards.

Resilience Planning

The South Carolina Office of Resilience is responsible for developing and implementing a **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 to mitigate potential flood risks.

1 | INTRODUCTION

2 | RESILIENCE, VULNERABILITY, & SUSTAINABILITY METRICS

3 | PLANNING CONDITIONS

4 | CLIMATE TRENDS

5 | FLOOD RISK AND VULNERABILITY ASSESSMENT

6 | OTHER HAZARDS

7 | CURRENT PROCESSES

8 | FUNDING

9 | RECOMMENDATIONS

https://scor.sc.gov/resilience

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

Climate Pollution Reduction Grant (CPRG)

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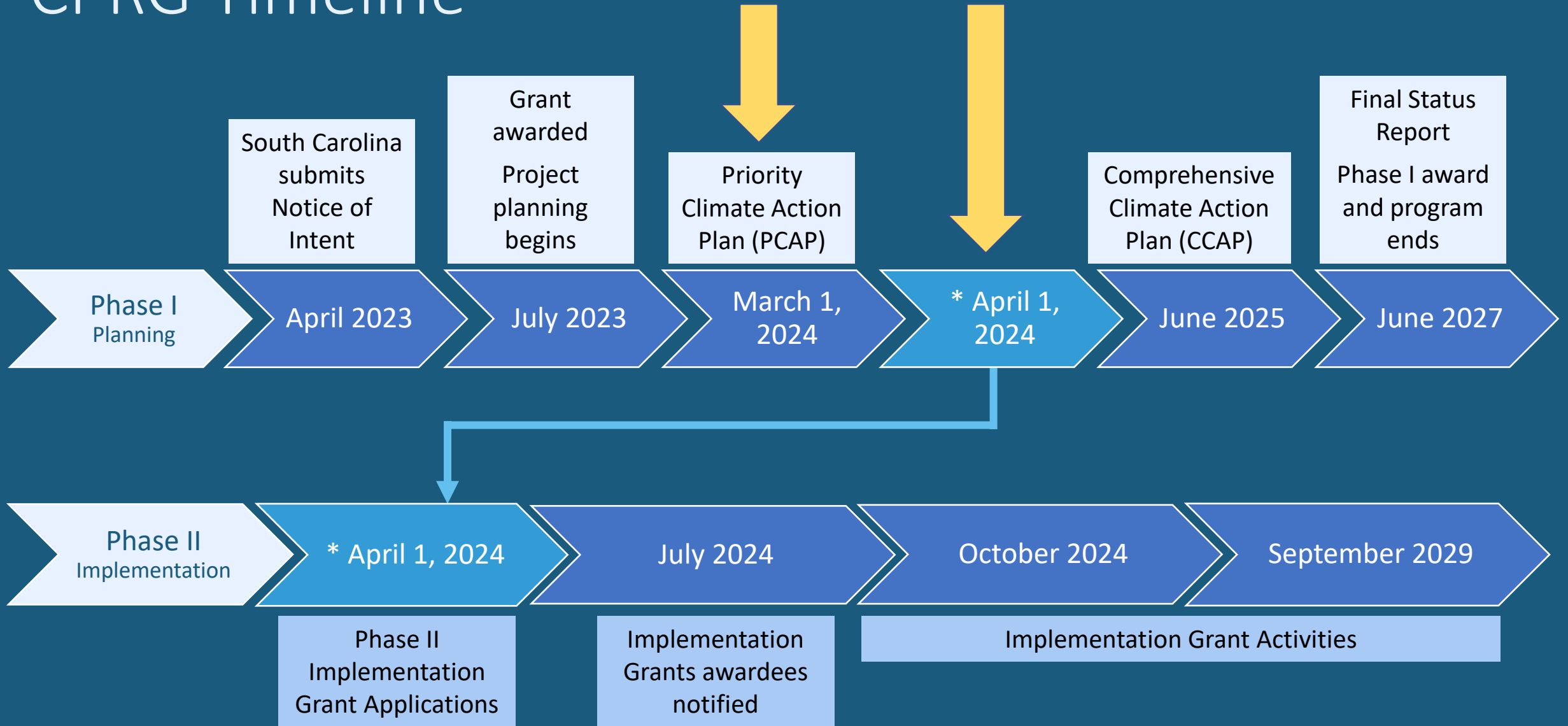- Focuses on developing state, tribal, and metropolitan climate plans that include GHG reduction measures

Phase I: Planning Grants

- $3 million for the statewide effort
    - Led by SC Office of Resilience (SCOR)
    - 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

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

CPRG Timeline

Phase I — Planning

April 2023	July 2023	March 1, 2024	* April 1, 2024	June 2025	June 2027

- **April 2023** — South Carolina submits Notice of Intent
- **July 2023** — Grant awarded; Project planning begins
- **March 1, 2024** — Priority Climate Action Plan (PCAP)
- **June 2025** — Comprehensive Climate Action Plan (CCAP)
- **June 2027** — Final Status Report; Phase I award and program ends

Phase II — Implementation

* April 1, 2024	July 2024	October 2024	September 2029

- **April 1, 2024** — Phase II Implementation Grant Applications
- **July 2024** — Implementation Grants awardees notified
- Implementation Grant Activities

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

The PAQC Process

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

Coordination Teams

Interagency & Intergovernmental Coordination

State and local government agencies

Councils of Governments (COGs)

Public & Stakeholder Engagement

SCOR, Energy Office

Action Teams

Transportation and Mobile Sources

Agriculture / Natural and Working Lands

Waste and Materials Management

Residential and Commercial Buildings

Industry

GHG Inventory

South Carolina
Priority Climate Action Plan (PCAP)

Counties covered by CPRG Awards granted to MSAs

Draft Priority Climate Action Plan (PCAP)

https://scor.sc.gov/paqc
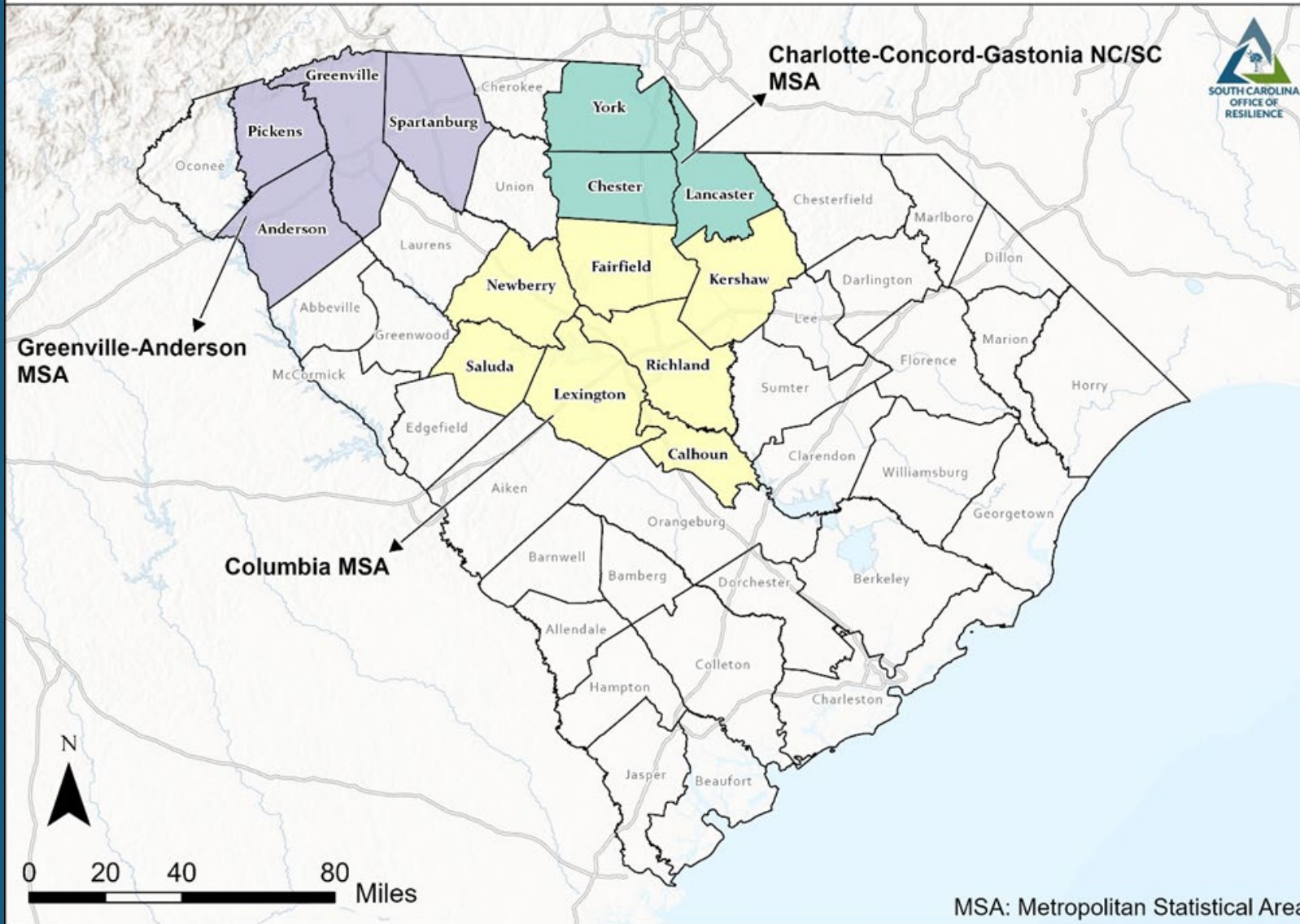
What is the Palmetto Air Quality Collaborative?

The Palmetto Air Quality Collaborative (PAQC) is a 4-year planning initiative to develop innovative strategies to reduce greenhouse gases (GHG) and air pollution in South Carolina. This initiative intends to lay the groundwork for lowering air emissions, engaging communities, and supporting workforce and economic development opportunities. The PAQC is co-led by the SC Office of Resilience (SCOR) and SC Department of Health and Environmental Control (DHEC) and is funded through the U.S. Environmental Protection Agency (EPA) Climate Pollution Reduction Grant (CPRG) program.

∧ DRAFT South Carolina Priority Climate Action Plan

Draft Priority Climate Action Plan (PCAP) (PDF)

All comments and feedback for the draft must be returned to the PAQC no later than February 14th, 2024, to be considered for revisions.

Please email draft PCAP comments and feedback to: PAQC.Comments@scor.sc.gov

Prompts for comments and feedback:

- Reduction measures: suggested improvements or edits to text, suggestions for quantifying greenhouse gas emissions, additional measures to include.
- Overall feedback on the report: content that needs clarification, missing information, contradictions, or redundancies.

You may include as many comments as you would like in your submission. Please include your name, organization, and contact information so we may reach out to you if we have questions about your comments. Due to the limited time remaining to complete the PCAP, we request that comments be tailored in the following formats:

Comments about reduction measure ideas:

Reduction Measure:

Section and page number:

Comment:

Comments for report as a whole:

Section and page number:

Comment:

EPA Requirements

- GHG Inventory
- Priority Measures
  1. Impact on GHG reductions
  2. Implementation readiness
  3. Benefits
- Review of Authority
- Community benefits analysis

PAQC Goal: *Establish a framework and process for the next 3 ½ years of the CPRG / PAQC planning grant.*

Draft South Carolina PCAP

DRAFT South Carolina Priority Climate Action Plan (PCAP) v 1.0

January 2024

Contents

https://scor.sc.gov/sites/scor/files/Documents/SC_PCAP_Draft_Version_1.0_ForWeb.pdf

Greenhouse Effect

- <u>Solar Radiation:</u> energy (heat) emitted by the sun mostly in the form of visible light, also called sunlight

- <u>Infrared Radiation:</u> weaker energy emitted by the Earth in the form of thermal heat, also called terrestrial radiation

- <u>Greenhouse Gases (GHGs):</u> Gases in the atmosphere that **trap heat** in Earth's system

  - Without GHGs, Earth would be uninhabitable (about 60°F cooler)

- **More GHGs in the atmosphere: less heat escapes to space and Earth gets warmer**

The Greenhouse Effect

Some solar radiation is reflected by the Earth and the atmosphere.

Some of the infrared radiation passes through the atmosphere. Some is absorbed and re-emitted in all directions by greenhouse gas molecules. The effect of this is to warm the Earth's surface and the lower atmosphere.

Most radiation is absorbed by the Earth's surface and warms it.

Atmosphere

Earth's surface

Infrared radiation is emitted by the Earth's surface.

Image Credit: U.S. Environmental Protection Agency

Greenhouse Gases

Common Name	Chemical Formula	Common Sources and Uses
Carbon Dioxide	CO_2	Combustion (burning fossil fuels) Land cover change
Methane	CH_4	Combustion Agriculture (livestock, rice) Waste and Landfill Decomposition
Nitrous Oxide	N_2O	Combustion (burning fossil fuels)
Sulphur Hexafluoride	SF_6	Electrical Insulator (gas used to fill spaces to insulate)
Hydrofluorocarbons	HFCs	Refrigerants (coolant)
Perfluorocarbons	PFCs	Aluminum production Industrial processes

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
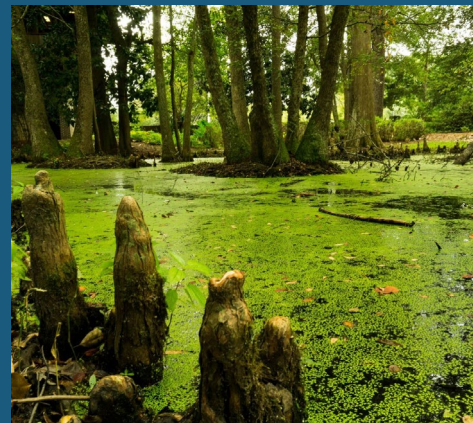
Greenhouse gas inventory

Energy Resources for State and Local Governments

- Energy Resources for State, Local, and Tribal Governments (Home)
- State Topics
- Local Topics
- Tribal Topics
- Resources

Download the State Inventory and Projection Tool

Welcome to the download page for EPA's State Greenhouse Gas Inventory and Projection Tools. The page includes zip files containing the tools and corresponding guidance documents. Note that the user's guides are companion documents to the tools, and EPA encourages users to consult them. This version of the State Inventory Tool (updated June 2023) has data updated through 2020. Please use the latest version of each State Inventory Tool module with the latest version of the Projection Tool so data can be imported correctly.

📄 Download All State Inventory Tool Modules (zip)

- 📄 Ag Module (xlsm)
- 📄 CO2FFC Module (xlsm)
- 📄 Coal Module (xlsm)
- 📄 Electricity Consumption Module (xlsm)
- 📄 IP Module (xlsm)
- 📄 Land Use, Land-Use Change, and Forestry Module (xlsm)
- 📄 Mobile Combustion Module (xlsm)
- 📄 Natural Gas and Oil Module (xlsm)
- 📄 Solid Waste Module (xlsm)
- 📄 Stationary Combustion Module (xlsm)
- 📄 Synthesis Tool (xlsm)
- 📄 Wastewater Module (xlsm)

📄 Projection Tool (zip)

https://www.epa.gov/statelocalenergy/state-inventory-and-projection-tool
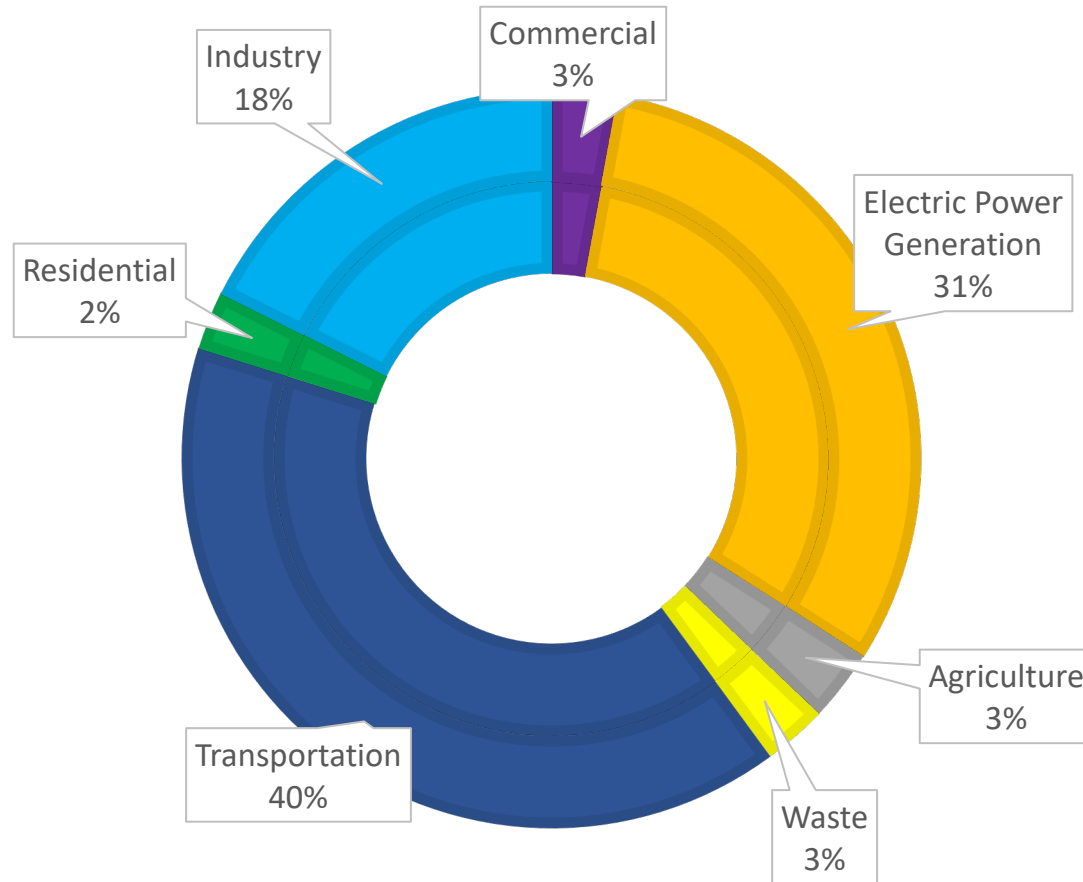
South Carolina Total Gross Emissions

SC GHG EMISSIONS BY SOURCE AND PERCENTAGE, 2020

Source	Amount (MMTCO$_2$e)	Percentage
Transportation	29.406	39.89%
Electric Power Generation	22.935	31.11%
Industry	13.002	17.63%
Agriculture	2.318	3.14%
Commercial	2.139	2.90%
Waste	2.039	2.77%
Residential	1.888	2.56%
Total	**73.727**	

Emission units are in Million Metric Tons of Carbon Dioxide Equivalent (MMTCO$_2$e)

South Carolina Total Net Emissions

South Carolina Net GHG Sources and Sinks, 2020
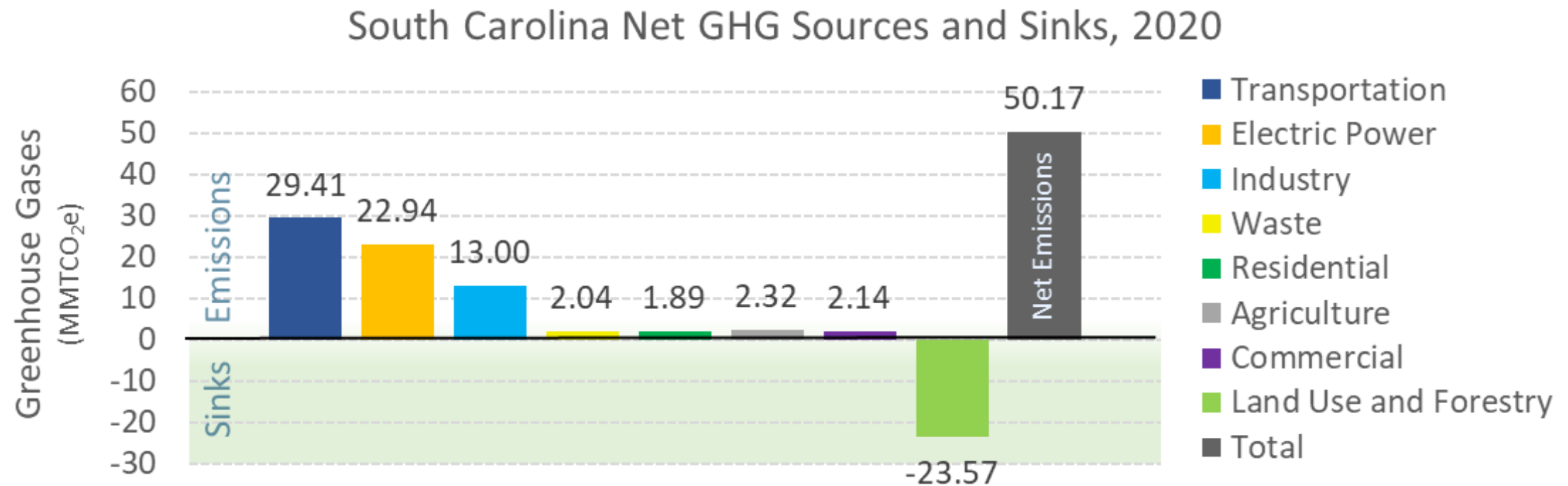
South Carolina GHG Emissions, 1990 to 2020

SC Total Emissions by Source, 1990 - 2020
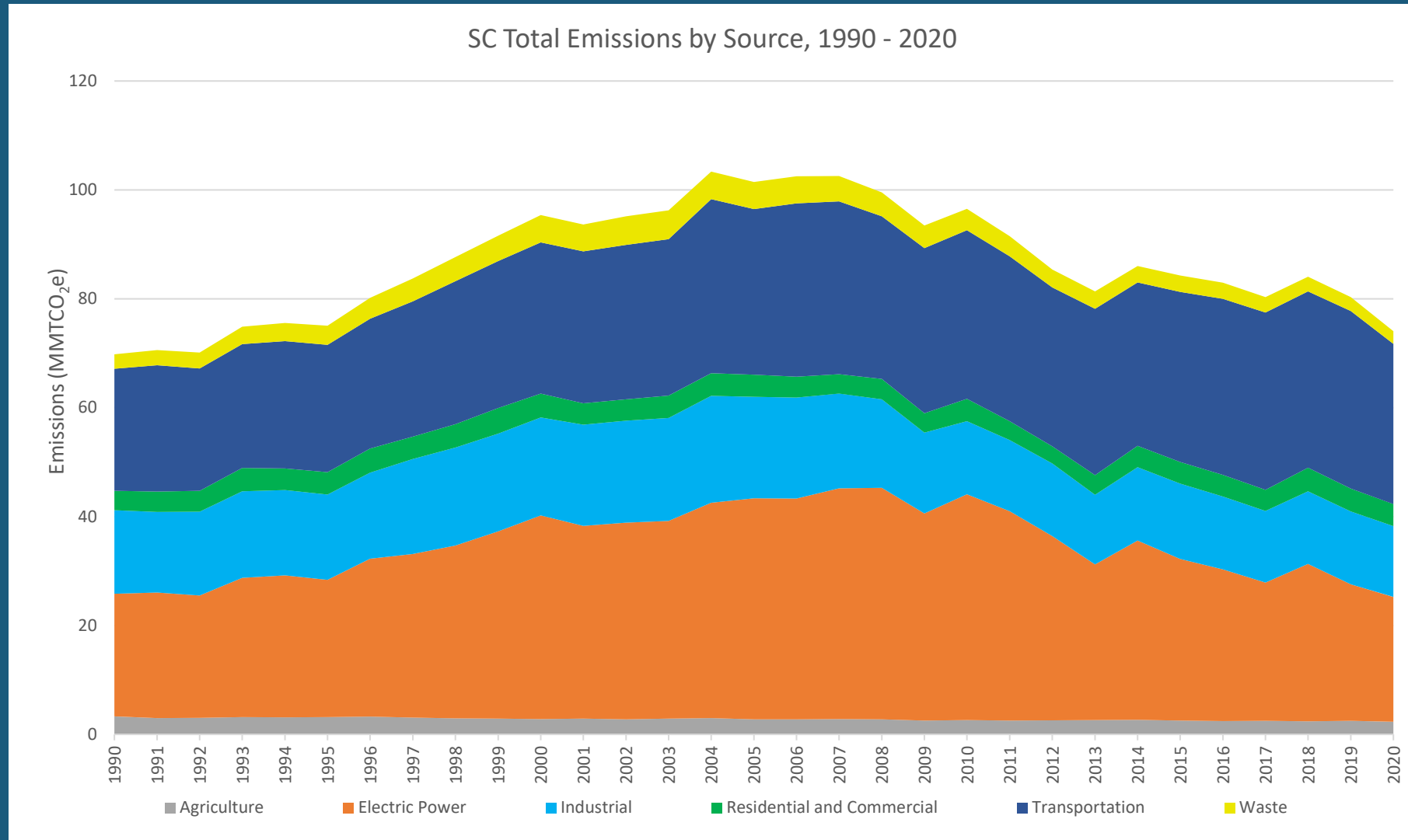
GHG Reduction Measures

Transportation

Industry

Greenhouse Gas Inventory

Residential & Commercial Buildings

Agriculture / Natural & Working Lands

Waste and Materials Management

Sector	Recommended Reduction Measures
Transportation	• <u>Public Transit (Regional)</u>: charging infrastructure, zero-emission vehicle fleets/buses; <u>Intercity Travel</u>: rapid transit/trains) • <u>EVs/Alternative Fuels</u>: 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. • <u>Ports and Rail</u>: electrify port equipment/transportation of goods; alternative fuel pilots (such as hydrogen fuel cell), rebate programs for diesel transition • <u>Alternative Transit</u>: biking/walking paths; greenspace development • <u>Air</u>: renewable energy at SC airports, including solar (i.e., installation of solar canopies over terminal parking), energy efficiency within terminal
Industry	• <u>Energy Efficiency</u>: new technologies, processes, equipment; energy efficiency measures for non-process uses; logistics • <u>Energy Use</u>: renewable energy, battery storage, microgrids, new technologies; energy reduction processes • <u>Industrial Recycling</u>: statewide recycling program for industrial materials • <u>Material Efficiency</u>: low-carbon materials (including recycled materials, carbon-storing materials, new technologies); circular economy • <u>Measuring and Monitoring</u>: support small businesses to develop GHG emissions and align with sustainability standards and reporting metrics

Sector	Recommended Reduction Measures
Residential & Commercial Buildings	• <u>Energy Efficiency & Weatherization</u>: energy audits, energy efficiency upgrades, public education and outreach • <u>Community Resilience Hubs</u>: build hubs in communities around the state that include EV charging, solar panels, microgrid and battery storage • <u>Residential Building Practices</u>: incentivize builders meet criteria for energy efficiency standards such as Energy Star and HERS; incentivize use of carbon-storing building materials • <u>Energy</u>: 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	• <u>Climate Smart Expansion</u>: Expand existing programs at Clemson University (Agriculture, Grasslands) • <u>Product Research and Development</u>: incentivize product development that optimizes carbon storage to support market for those products • <u>Energy Use</u>: alternative fuel farming equipment; biomass/biofuel energy production; rideshare transportation of goods
Waste	• <u>Expand 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

Priority Greenhouse Gas Reduction Measures

1. Impact on GHG Reductions (quantified):
    - What can be achieved over different time frames?
    - Within 5 years, 10 years, and 25 years?

2. Implementation Readiness:
    - Who has "authority to implement"?
    - What are the various opportunities and constraints?

3. Benefits (quantitative and/or qualitative assessment):
    - Pollution reduction, air quality improvement
    - Community resilience
    - Economics (cost savings, increased efficiency, economic growth, workforce)
    - Ecosystem/habitat restoration or conservation

| Sector	Priority Reduction Measures (in the DRAFT PCAP)
Residential Weatherization and Energy Efficiency	• Expand and coordinate weatherization and energy efficiency programs for residential buildings • Provides a one-stop shop for applicants to receive guidance on available services, including pre-weatherization • Follows recommendations from the South Carolina Energy Efficiency Roadmap • Builds on and augments existing programs and funding (utilities, federal and state agencies, non-profits, foundations)
Climate Smart Forestry	• Expand the Clemson Climate Smart Forestry program and accelerate the rate of carbon storage through Climate Smart Forestry practices • Includes Incentives for landowners and new marketing opportunities for wood products • Benefits for landowners, rural areas and rapidly developing counties; water quality and quantity, flood mitigation, wildlife habitat, recreation

Sector	Priority Reduction Measures (in the DRAFT PCAP)
Land Conservation and Restoration	• Improve South Carolina's ability to store carbon and reduce net GHG emissions through coordinated land conservation, preservation, and restoration efforts • Take advantage of the ability of managed forests, natural ecosystems, and other lands to store carbon • Benefits: ecosystem services, economic and recreation opportunities, protection of culturally significant places, flood mitigation
Organics Recovery and Food Waste	• Reduce food waste and enhance organic recovery systems, infrastructure, and programs • Addresses a large source of methane in our landfills • Benefits: business opportunities, cost savings, reduced need for new landfills, coordination with food banks
Alternative and Multi-Modal Transportation	• Reduce vehicle miles traveled; expand and enhance opportunities for biking, walking, transit • Augment existing programs, fill gaps to complete projects and create shovel-ready projects • Coordinate with housing and commercial development planning, greenspace and trails initiatives

How to Get Involved

- Draft PCAP: Provide comments
  - Due February 14

- Survey: Provide information about community interests and priorities

- Listserv: Monthly newsletters

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

- Reminder: This is 4-year grant. More opportunities will be forthcoming.

Next Steps
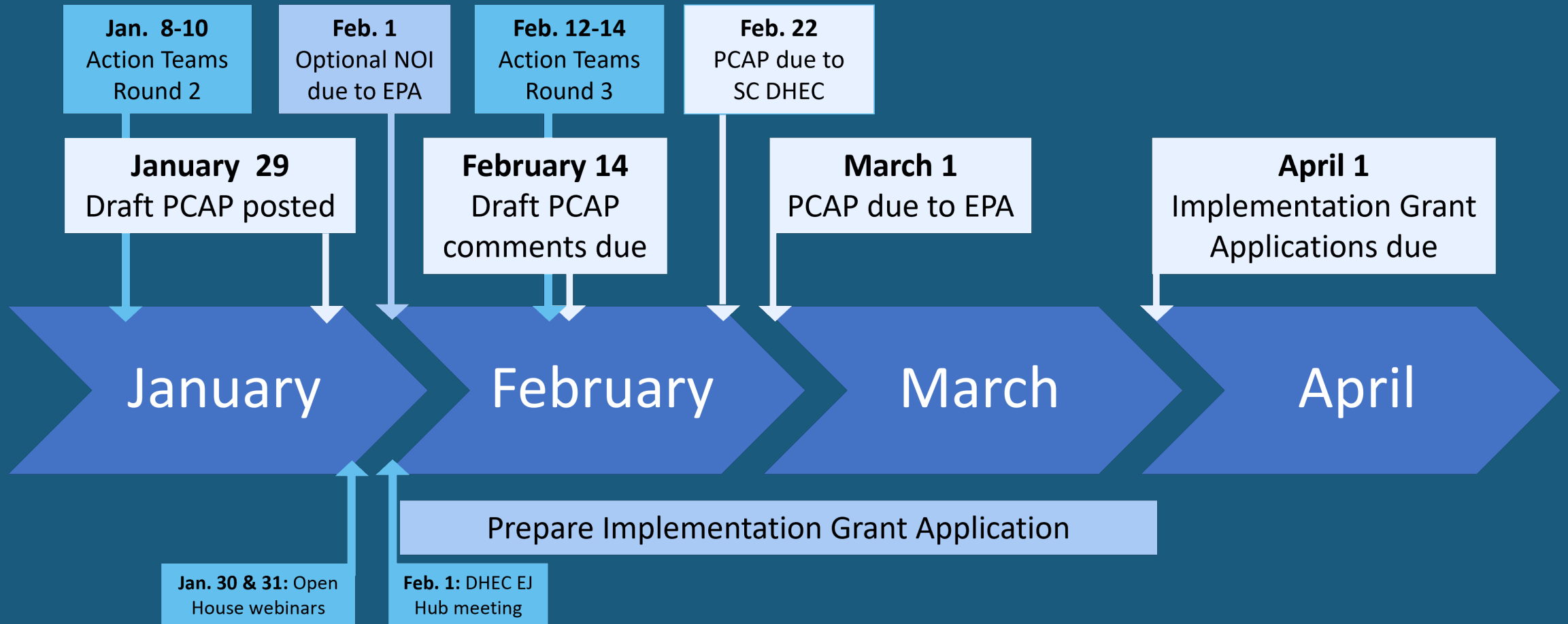
Implementation Grants

Applications due April 1, 2024

- Measures MUST be included in a PCAP

- Eligible applicants: state and local government agencies, regional Councils of Government, federally recognized tribes

- Coalitions, sub-awardees, and sub-contracts allowed

EPA Priorities

- Actionable, quantifiable emissions reduction measures

- Community benefits

- Complement other funding sources
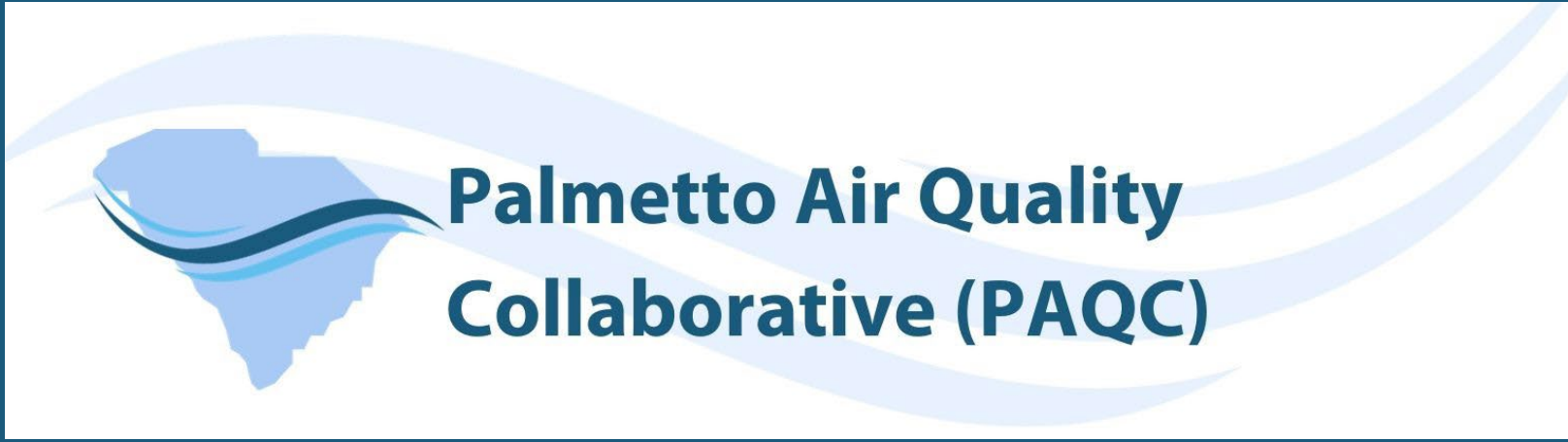
Thank you for your interest in the PAQC!

Questions? Contact us at PAQC@scor.sc.gov

Kirsten.Lackstrom@scor.sc.gov
Amanda.Rahimian@scor.sc.gov