Palmetto Air Quality Collaborative (PAQC)

Action Team
Round 2 Meetings

SOUTH CAROLINA OFFICE OF RESILIENCE

January 8 - 10, 2024

Welcome!

Please enter in chat: name, organization, specific interests

Today's Agenda

1. Action Team Overview
2. Stakeholder Survey
3. GHG Inventory
4. GHG Reduction Measures: Themes and Ideas
5. Discussion
6. Final Thoughts and Next Steps

Action Team Roles and Responsibilities

Objectives

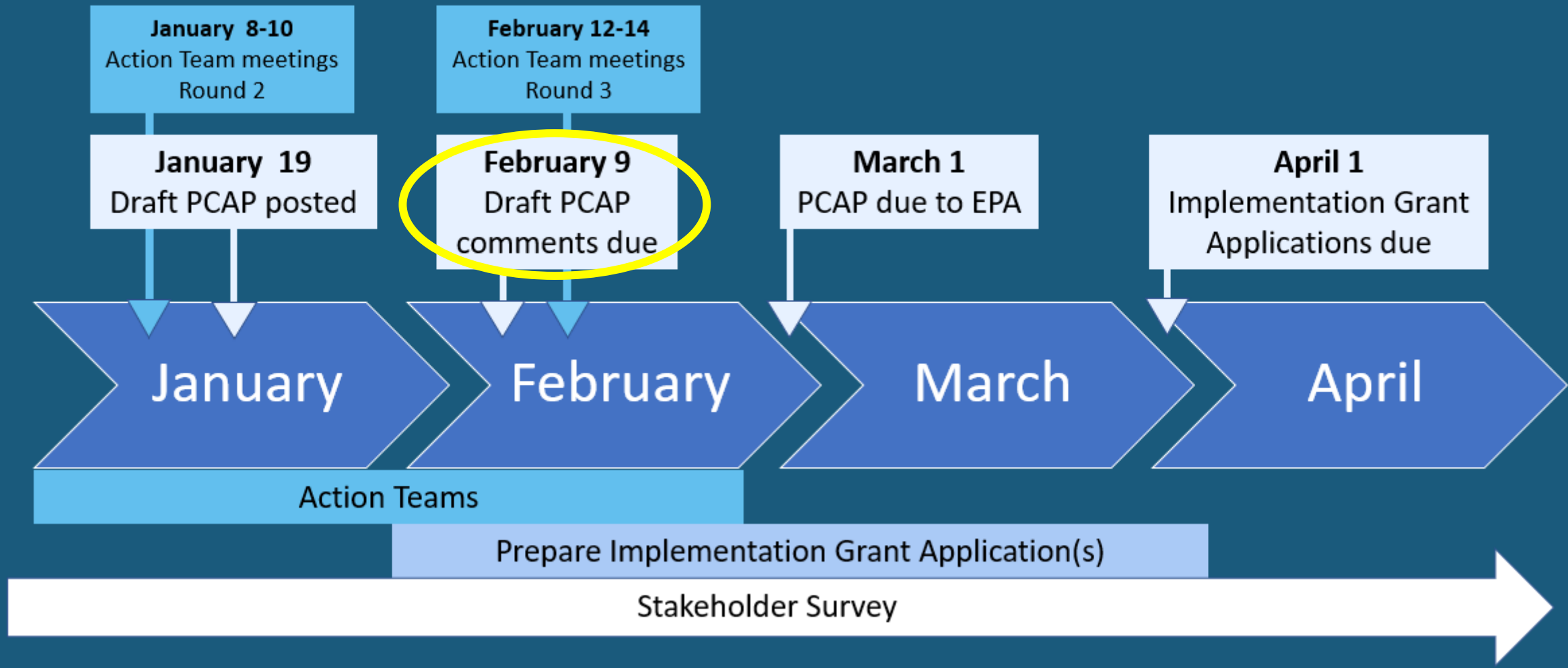
- Provide subject-matter expertise and insight of member's organization/community priorities.
- Assist SCOR in identifying, developing, and prioritizing quantifiable, implementable GHG reduction measures for inclusion in the PCAP.
- Provide input on the draft PCAP to create a robust and strong plan that is inclusive of all communities in South Carolina.
- Promote participation in a statewide Implementation Grant application.

Expectations and Responsibilities

- Respectfully promote interests and concerns of your organization/community as it relates to GHG and co-pollutant reduction measures and climate planning.
- Attend PAQC Action Team meetings as scheduled, or send a representative if unavailable.
- Provide information about efforts your organization/community is working on or developing.
- Review GHG inventories and related information developed by SCOR.
- Provide recommendations for specific measures to include in the PCAP.
- Share engagement opportunities, such as surveys or public meetings, to broaden PAQC's reach.
- Supply additional information or data as available.

Respond to specific action items, such as reviewing materials and providing timely feedback to PAQC.

Review of Dates and Deadlines



Action Team Members

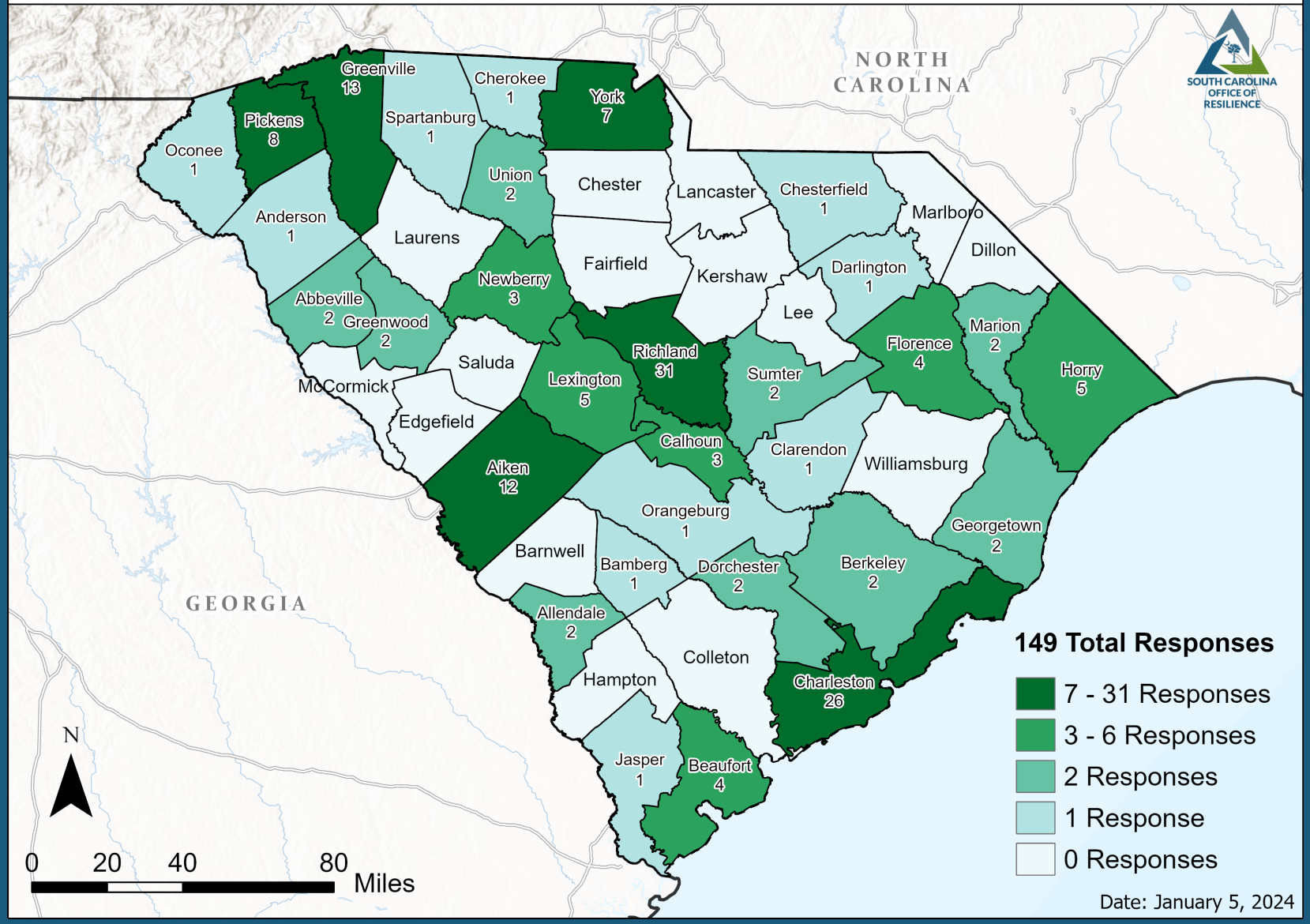
*SCOR intends to list participating organizations in the PCAP. Please contact us at PAQC@scor.sc.gov if you have questions or concerns.

First Name:	Last Name:	Agency:

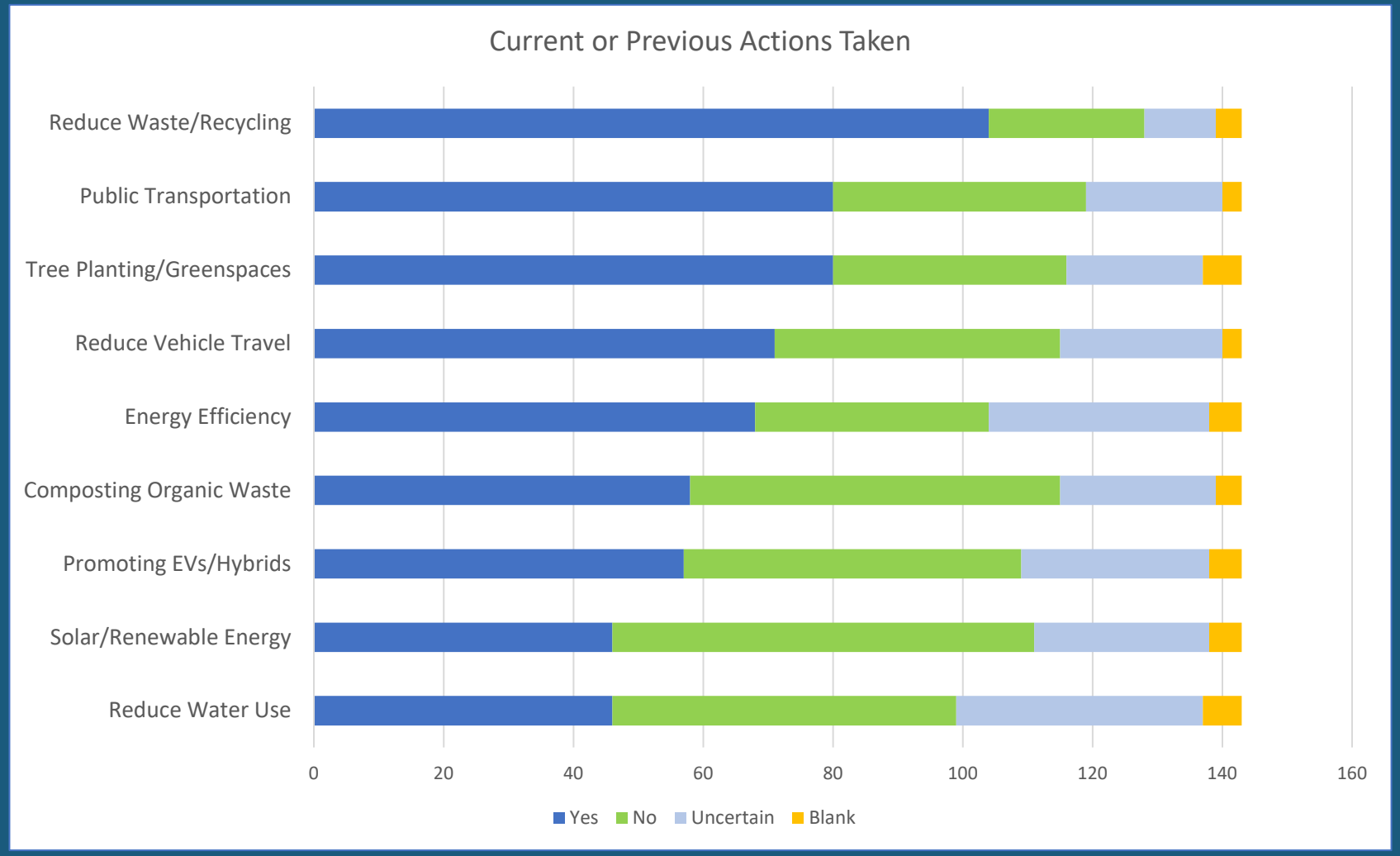
Stakeholder Survey

- Opened November 27
  - Encouraged submissions by Dec 22
- As of December 28, 145 responses
  - Organization Responses:
    - 56 Local government
    - 35 Non-Profits
    - 16 Private Citizens
    - 9 COGs
    - 8 Business/Private Sector
    - 8 Community-Based
    - 8 Academia
    - 5 State government
  - 31 Counties

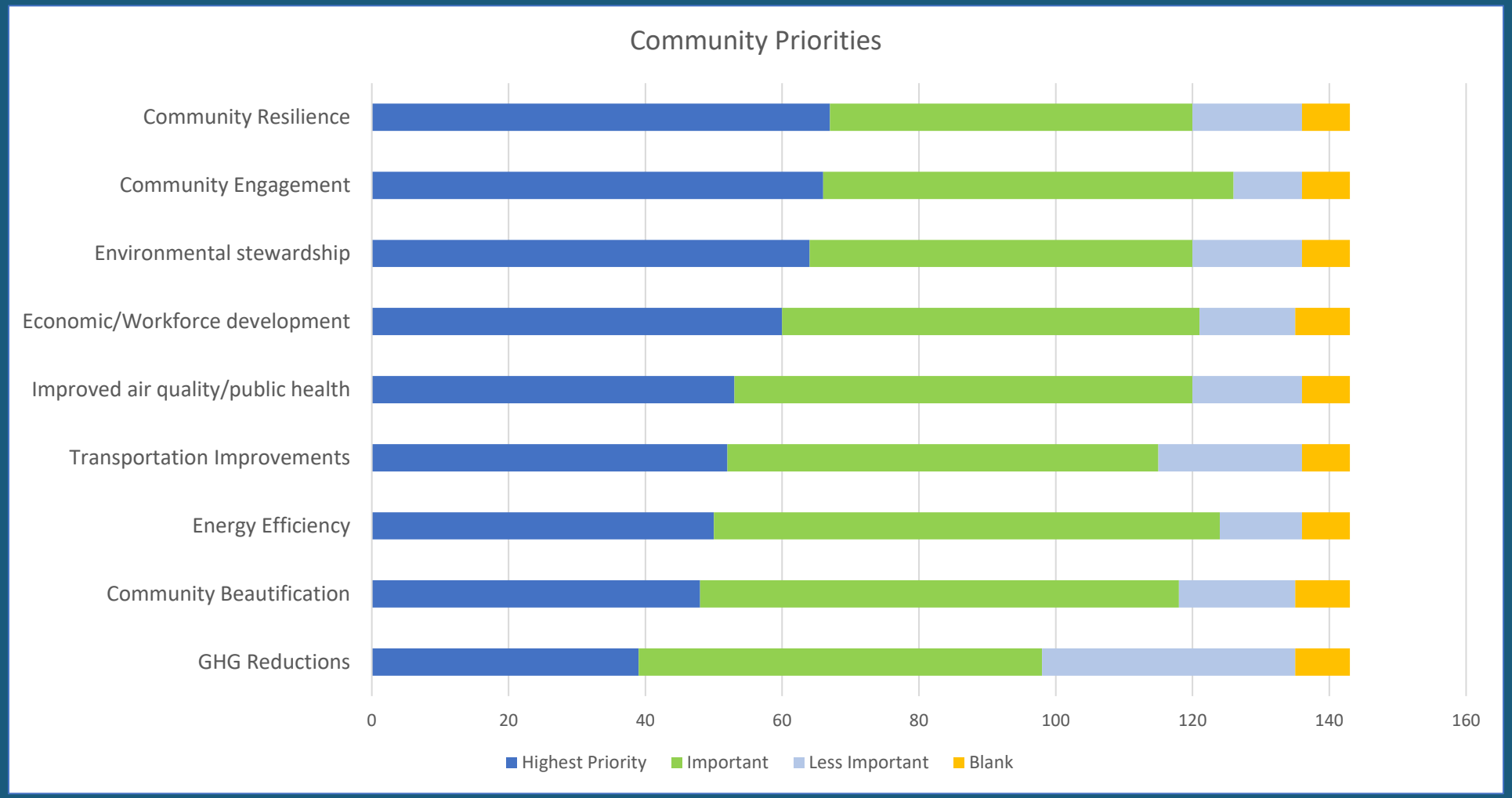
Palmetto Air Quality Collaborative (PAQC)
Survey Responses by County



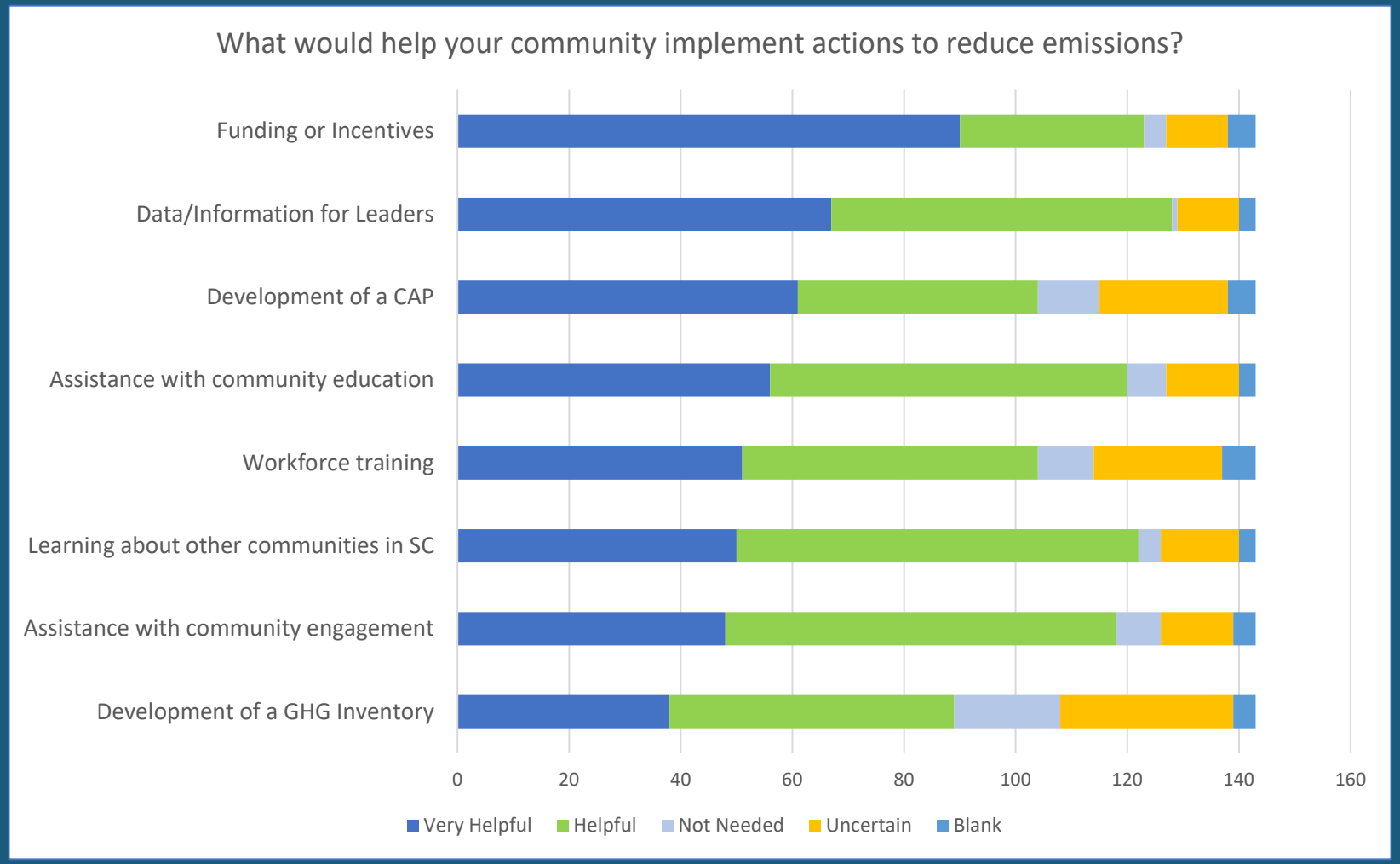
Please indicate if your community or organization has taken or is taking any of these actions, many of which may help reduce greenhouse gas emissions.



How does your community or organization prioritize the following economic, health, and environmental benefits?



What would help your community or organization plan and implement actions and strategies to reduce greenhouse gas emissions?

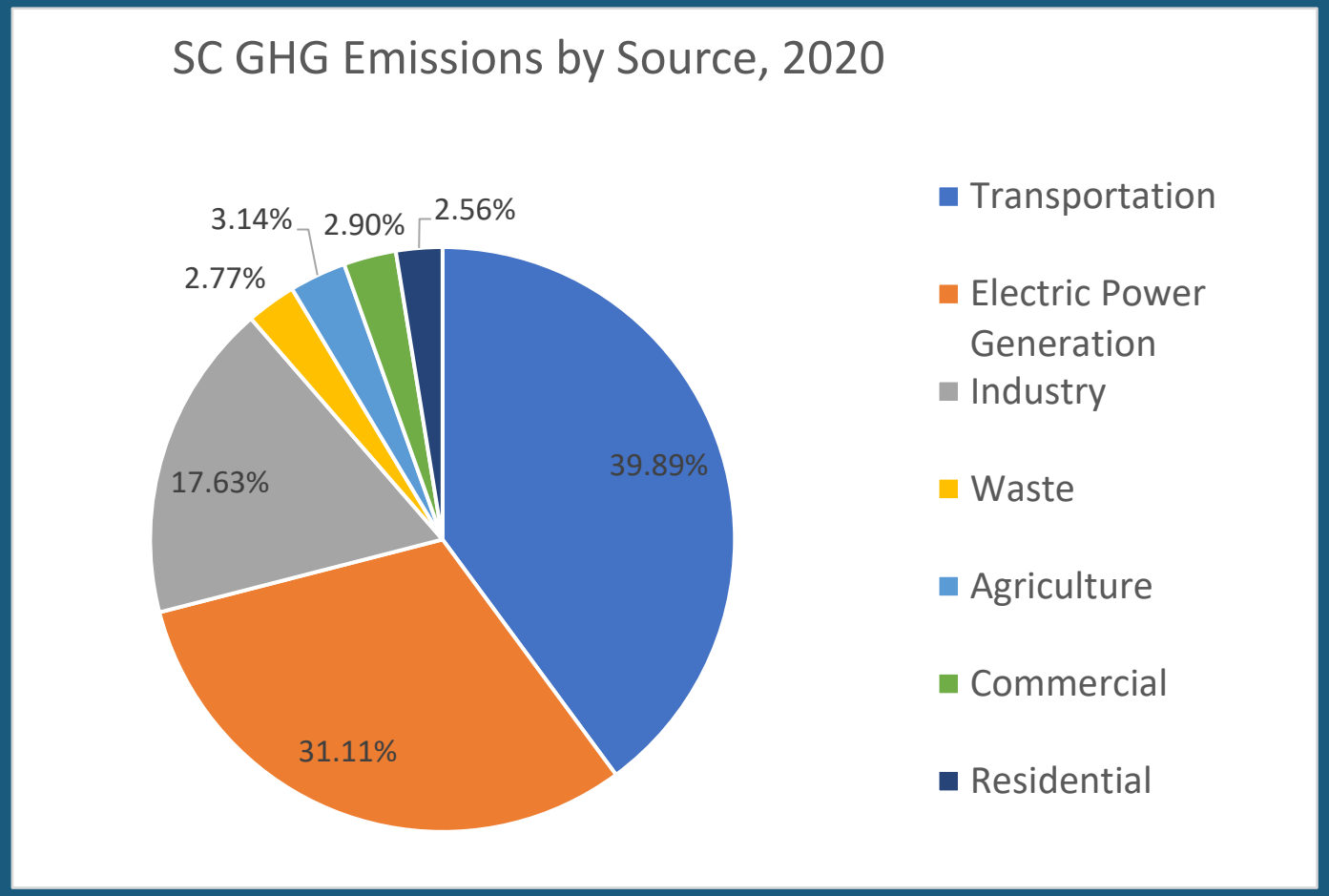


Review of PCAP Requirements

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

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

SC GHG Inventory – 2020 Summary



Total SC Emissions ($MMTCO_2e$) by Source, 2020		
Sector	**Amount**	**Percentage**
Transportation	29.406	39.89%
Electric Power Generation	22.935	31.11%
Industry	13.002	17.63%
Waste	2.039	2.77%
Agriculture	2.318	3.14%
Commercial	2.139	2.90%
Residential	1.888	2.56%
Total:	**73.727**	

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SC GHG Inventory – Summary by Source and GHG

All units are measured in million metric tons CO_2 equivalent ($MMTCO_2e$)

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Source	GHG	1990	2005	2019	2020	Module (Relevant Worksheet)
Transportation						
Highway and Non-Highway	CO_2	21.649	29.753	32.288	29.144	CO_2 Fossil Fuel Combustion
Highway and Non-Highway	CH_4, N_2O	0.752	0.663	0.302	0.262	Mobile Combustion
Transportation Total		**22.400**	**30.416**	**32.590**	**29.406**	
Electric Power Generation						
Coal	CO_2	21.976	37.511	14.960	12.812	CO_2 Fossil Fuel Combustion (CO_2FFC)
Petroleum	CO_2	0.054	0.436	0.061	0.055	
Natural Gas	CO_2	0.379	2.470	9.931	9.976	
Additional Emissions from Fuel Combustion	CH_4, N_2O	0.099	0.182	0.103	0.092	Stationary Combustion (Stationary)
Electric Power Generation Total		**22.508**	**40.600**	**25.056**	**22.935**	
Industry						
Fossil Fuel Combustion	CO_2	12.911	13.158	7.230	6.827	CO_2 Fossil Fuel Combustion (CO_2FFC)
Additional Emissions from Fuel Combustion	CH_4, N_2O	0.170	0.165	0.169	0.160	Stationary Combustion (Stationary)
Industrial Wastewater	CH_4, N_2O	0.006	0.008	0.005	0.006	Wastewater (Wastewater)
Cement manufacture Lime manufacture Limestone and dolomite use Soda ash Aluminum production Iron and steel production Urea consumption	CO_2	1.433	2.950	2.508	2.409	Industrial Processes (IP)
Ozone depleting substances (ODS) substitutes Semi conductor manufacturing Electric power transmission and distribution systems Aluminum production	HFC, PFC, NF_3, SF_6	0.853	2.372	3.495	3.599	Industrial Processes (IP)
Industry Total		**15.373**	**18.654**	**13.407**	**13.002**	
Waste						
Landfill Emissions	CH_4	1.830	3.603	1.559	1.402	Waste
Waste Combustion	CO_2	0.058	0.150	0.129	0.129	
Municipal Wastewater	CH_4	0.247	0.301	0.364	0.368	Wastewater
Municipal Wastewater	N_2O	0.091	0.116	0.138	0.140	
Waste Total		**2.225**	**4.170**	**2.190**	**2.039**	

SC GHG Inventory – Summary by Source and GHG

All units are measured in million metric tons CO_2 equivalent ($MMTCO_2e$)

Source	GHG	1990	2005	2019	2020	Module (Relevant Worksheet)
Agriculture						
Liming, urea fertilization	CO_2	0.004	0.006	0.015	0.017	Agriculture
Enteric fermentation, manure management, agricultural residue burning	CH_4	1.400	1.287	1.002	0.976	
Manure management, agricultural soils	N_2O	1.892	1.460	1.479	1.325	
Agriculture Total		**3.296**	**2.754**	**2.497**	**2.318**	
Residential						
Fossil Fuel Combustion	CO_2	2.071	2.275	1.935	1.888	CO_2 Fossil Fuel Combustion
Additional Emissions from Fuel Combustion	CH_4, N_2O	0.063	0.044	0.022	0.019	Stationary Combustion
Residential Total		**2.071**	**2.275**	**1.935**	**1.888**	
Commercial						
Fossil Fuel Combustion	CO_2	1.428	1.721	2.237	2.128	CO_2 Fossil Fuel Combustion
Additional Emissions from Fuel Combustion	CH_4, N_2O	0.012	0.012	0.012	0.011	Stationary Combustion
Commercial Total		**1.440**	**1.733**	**2.249**	**2.139**	
SUBTOTAL		**69.314**	**100.602**	**79.924**	**73.727**	
Source or Sink						
Natural Working Lands and Forestry						
Net Forest Carbon Flux						Land Use-Land Use Change-Forestry (LULUCF) Note: Forest Fire data provided by SC Forestry Commission; data available beginning in 2006.
Forest Land Remaining Forest		(20.865)	(21.637)	(22.277)	(21.687)	
Land Converted to Forest Land		(2.320)	(2.300)	(2.280)	(2.280)	
Forest Land Converted to Land		2.210	2.620	3.060	3.060	
Urban Trees		(1.647)	(2.467)	(3.306)	(3.366)	
Landfilled Yard Trimmings, Food Scraps		(0.264)	(0.074)	(0.107)	(0.109)	
Forest Fires (CH_4, N_2O)				0.028	0.056	
N_2O from Settlement Soils		0.030	0.025	0.025	0.025	
Agricultural Soil Carbon Flux		1.108	0.998	0.832	0.734	
Natural Working Lands and Forestry Total		**(21.748)**	**(22.835)**	**(24.026)**	**(23.567)**	
TOTAL NET EMISSIONS		**47.566**	**77.767**	**55.899**	**50.160**	

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SC GHG Inventory – Electric Power Generation

All units are measured in million metric tons CO_2 equivalent ($MMTCO_2e$)

GHG Emissions by Sources and Gases (Electric Power Generation)						
		Amounts of MMTCO2E				
Source	**GHG**	**1990**	**2005**	**2019**	**2020**	**Module/Worksheet**
CO2		**22.409**	**40.418**	**24.953**	**22.843**	Fossil Fuel Combustion CO2
Coal	CO2	21.976	37.511	14.960	12.812	(CO2FFC)
Petroleum	CO2	0.054	0.436	0.061	0.055	
Natural Gas	CO2	0.379	2.470	9.931	9.976	
Other	CO2	0.000	0.000	0.000	0.000	
CH4		**0.007**	**0.018**	**0.021**	**0.020**	Stationary Combustion
Coal	CH4	0.006	0.011	0.004	0.004	
Petroleum	CH4	0.000	0.000	0.000	0.000	
Natural Gas	CH4	0.000	0.001	0.005	0.005	
Wood	CH4	0.000	0.005	0.012	0.011	
Other	CH4	0.000	0.000	0.000	0.000	
N2O		**0.092**	**0.164**	**0.082**	**0.072**	
Coal	N2O	0.092	0.156	0.062	0.053	Stationary Combustion
Petroleum	N2O	0.000	0.001	0.000	0.000	
Natural Gas	N2O	0.000	0.001	0.004	0.004	
Wood	N2O	0.000	0.006	0.015	0.014	
Other	N2O	0.000	0.000	0.000	0.000	
TOTAL		**45.016**	**81.199**	**50.113**	**45.871**	

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SC GHG Inventory – Transportation (Fuel Type)

All units are measured in million metric tons CO_2 equivalent ($MMTCO_2e$)

GHG Emissions by Fuel Type (Transportation)						
		Amounts of MMTCO2E				
Source	**GHG**	**1990**	**2005**	**2019**	**2020**	**Module (Worksheet)**
Transportation		**21.649**	**29.753**	**32.288**	**29.144**	CO2 Fossil Fuel Combustion (CO2FFC)
Coal	CO2	-	-	-	-	
Petroleum	CO2	21.493	29.619	32.162	29.035	
Natural Gas	CO2	0.156	0.134	0.126	0.109	
Other	CO2	-	-	-	-	
Highway and Alternative Fuel Vehicles		**19.121**	**24.268**	**27.013**	**23.250**	Mobile Consumption, CO2
Gasoline	CO2	14.861	18.928	19.733	16.282	
Distillate Fuel Oil	CO2	4.255	5.326	7.257	6.947	
CNG	CO2	0.000	0.010	0.022	0.020	
LNG	CO2	0.000	0.000	0.000	0.000	
LPG	CO2	0.005	0.004	0.001	0.001	
Off-road by Fuel Type		**5.309**	**4.893**	**4.849**	**4.471**	
Jet Fuel, Kerosene	CO2	0.397	0.659	1.492	1.135	
Jet Fuel, Naphtha	CO2	0.757	0.000	0.000	0.000	
Aviation Gasoline	CO2	0.035	0.034	0.023	0.020	
Gasoline	CO2	1.899	1.304	1.621	1.747	
Diesel	CO2	1.983	2.158	1.650	1.554	
Residual Fuel Oil	CO2	0.237	0.738	0.063	0.015	

SC GHG Inventory – Transportation (Vehicle Type)

All units are measured in million metric tons CO_2 equivalent ($MMTCO_2e$)

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Summary (Mobile Consumption Module)

Vehicle Type	GHG	Amounts of $MMTCO_2e$ 1990	2005	2019	2020
Gasoline Highway	CO_2	14.86	18.93	19.73	16.28
Diesel Highway	CO_2	4.41	5.49	7.70	7.29
Non-Highway	CO_2	5.31	4.89	4.85	4.47
Alternative Fuel Vehicles	CO_2	0.01	0.01	0.02	0.02
Gasoline Highway	CH_4	0.094	0.041	0.016	0.012
Diesel Highway	CH_4	0.000	0.000	0.002	0.002
Non-Highway	CH_4	0.022	0.024	0.027	0.028
Alternative Fuel Vehicles	CH_4	0.000	0.000	0.001	0.001
Gasoline Highway	N_2O	0.530	0.495	0.125	0.094
Diesel Highway	N_2O	0.003	0.005	0.052	0.050
Non-Highway	N_2O	0.102	0.097	0.080	0.074
Alternative Fuel Vehicles	N_2O	0.000	0.000	0.000	0.000

	Amounts of $MMTCO_2e$			
GHG	1990	2005	2019	2020
CO_2	24.58	29.33	32.31	28.07
CH_4	0.117	0.066	0.046	0.043
N_2O	0.635	0.597	0.256	0.219

SC GHG Inventory – Industry

All units are measured in million metric tons CO_2 equivalent ($MMTCO_2e$)

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GHG Emissions by Sources and Gases (Industry Summary)						
Source	**GHG**	**1990**	**2005**	**2019**	**2020**	**Module (Relevant Worksheet)**
Fossil Fuel Combustion – Total	**CO_2**	**12.911**	**13.158**	**7.230**	**6.827**	CO_2 Fossil Fuel Combustion (CO_2FFC)
Coal		5.367	3.442	0.357	0.295	
Petroleum		3.151	5.892	1.984	1.762	
Natural Gas		4.393	3.824	4.889	4.769	
Other		0.000	0.000	0.000	0.000	
Additional Emissions from Fuel Combustion – Total		**0.170**	**0.165**	**0.169**	**0.160**	Stationary Combustion (Stationary)
Industrial –Stationary	N_2O	0.097	0.095	0.095	0.090	
Industrial –Stationary	CH_4	0.073	0.070	0.074	0.070	
Industrial Wastewater – Total	**CH_4**	**0.006**	**0.008**	**0.005**	**0.006**	Wastewater (Wastewater)
Industrial Production – Total	**CO_2**	**1.433**	**2.950**	**2.508**	**2.409**	Industrial Processes (IP)
Cement Manufacture		1.106	1.627	1.475	1.388	
Lime Manufacture		-	-	-	-	
Limestone and Dolomite Use		-	0.009	0.034	0.033	
Soda Ash		0.038	0.037	0.031	0.029	
Aluminum Production (CO_2)		0.288	0.242	0.150	0.138	
Iron & Steel Production		-	1.034	0.817	0.817	
Ammonia Production		-	-	-	-	
Urea Consumption		0.001	0.001	0.002	0.003	
Industrial Production – Total	**HFC, PFC, NF_3, SF_6**	**0.853**	**2.372**	**3.495**	**3.599**	Industrial Processes (IP)
ODS Substitutes		0.003	1.884	3.069	3.185	
Semiconductor Manufacturing		0.082	0.059	-	-	
Magnesium Production		-	-	-	-	
Electric Power Transmission and Distribution Systems		0.490	0.191	0.092	0.081	
HCFC-22 Production		-	-	-	-	
Aluminum Production (PFCs)		0.279	0.238	0.334	0.334	
TOTAL		**15.373**	**18.654**	**13.407**	**13.002**	

SC GHG Inventory – Industry Energy Consumption by Use Type

All units are measured in million metric tons CO_2 equivalent ($MMTCO_2e$)

Energy Consumption by Use Types (Industry Summary)						
Energy Use		**1990**	**2005**	**2019**	**2020**	**Module/Relevant Worksheet**
Industry (TOTAL)		**10.704**	**13.902**	**6.917**	**6.172**	IndirectCO2
Indirect Uses-Boiler Fuel	**Totals**	**0.052**	**0.413**	**0.096**	**0.086**	
	Conventional Boiler Use	0.036	0.408	0.096	0.086	
	CHP and/or Cogeneration Process	0.016	0.005	0.000	0.000	
Direct Uses-Process	**Totals**	**8.590**	**11.151**	**5.739**	**5.121**	
	Process Heating	1.234	1.418	0.626	0.559	
	Process Cooling and Refrigeration	0.770	0.947	0.558	0.498	
	Machine Drive	5.503	7.206	3.682	3.285	
	Electro-Chemical Processes	1.048	1.440	0.748	0.668	
	Other Process Use	0.034	0.140	0.124	0.111	
Direct Uses-Nonprocess	**Totals**	**1.750**	**2.125**	**1.009**	**0.900**	
	Facility HVAC	0.946	1.094	0.522	0.465	
	Facility Lighting	0.630	0.742	0.324	0.289	
	Other Facility Support	0.149	0.231	0.118	0.105	
	Onsite Transportation	0.014	0.029	0.026	0.023	
	Other Nonprocess Use	0.010	0.029	0.019	0.017	
Other		**0.312**	**0.212**	**0.073**	**0.065**	

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SC GHG Inventory – Residential & Commercial

All units are measured in million metric tons CO_2 equivalent ($MMTCO_2e$)

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GHG Emissions by Fuel Type (Resid. & Comm. Summary)					
		Amounts of MMTCO2E			
Source	**GHG**	**1990**	**2005**	**2019**	**2020**
Residential -Totals		**2.134**	**2.319**	**1.957**	**1.907**
Coal	CO2	0.003	-	-	-
Natural Gas		1.003	1.570	1.648	1.588
Other		-	-	-	-
Petroleum		1.066	0.705	0.287	0.299
Coal	CH4	0.000	-	-	-
Natural Gas		0.003	0.004	0.004	0.004
Other		-	-	-	-
Petroleum		0.004	0.003	0.001	0.001
Wood		0.047	0.031	0.013	0.011
Coal	N2O	0.000	-	-	-
Natural Gas		0.000	0.001	0.001	0.001
Other		-	-	-	-
Petroleum		0.002	0.002	0.001	0.001
Wood		0.006	0.004	0.002	0.001
Commercial - Totals		**1.440**	**1.733**	**2.249**	**2.139**
Coal	CO2	0.012	-	-	-
Natural Gas		0.839	1.213	1.397	1.303
Other		-	-	-	-
Petroleum		0.577	0.508	0.840	0.825
Coal	CH4	0.000	-	-	-
Natural Gas		0.002	0.003	0.004	0.003
Other		-	-	-	-
Petroleum		0.002	0.002	0.003	0.003
Wood		0.005	0.005	0.002	0.002
Coal	N2O	0.000	-	-	-
Natural Gas		0.000	0.001	0.001	0.001
Other		-	-	-	-
Petroleum		0.001	0.001	0.002	0.002
Wood		0.001	0.001	0.000	0.000

SC GHG Inventory – Residential & Commercial (Energy Consumption by Use Type)

All units are measured in million metric tons CO_2 equivalent ($MMTCO_2e$)

GHG Emissions by Energy Use Type (Residential and Commercial Summary)					
		Amounts of MMTCO2E			
Source	**GHG**	**1990**	**2005**	**2019**	**2020**
Residential - Totals		**7.912**	**12.426**	**8.019**	**7.588**
Space Heating	CO2	0.857	0.921	1.274	1.205
Air Conditioning		1.771	3.398	1.820	1.722
Water Heating		0.857	1.433	1.235	1.168
Refrigeration		0.971	1.187	0.442	0.418
Other Appliances and Lighting		3.456	5.486	3.249	3.074
Commercial - Totals		**5.500**	**8.883**	**5.705**	**5.128**
Space Heating	CO2	0.183	0.259	0.086	0.077
Coooling		1.071	1.747	1.160	1.043
Ventilation		0.633	1.077	0.817	0.734
Water Heating		0.170	0.225	0.032	0.029
Lighting		1.935	2.754	0.935	0.840
Cooking		0.049	0.102	0.118	0.106
Refrigeration		0.596	1.054	0.881	0.792
Office Equipment		0.073	0.170	0.226	0.203
Computers		0.207	0.427	0.483	0.435
Other		0.584	1.068	0.967	0.869
TOTAL		**13.412**	**21.309**	**13.724**	**12.716**

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SC GHG Inventory – Waste and Wastewater Sources

All units are measured in million metric tons CO_2 equivalent ($MMTCO_2e$)

	1990	2005	2019	2020	Module
CH_4	1.830	3.604	1.559	1.402	
CO_2	0.056	0.147	0.127	0.127	
N_2O	0.002	0.003	0.002	0.002	Solid Waste
Total	**1.887**	**3.753**	**1.689**	**1.531**	

CH_4 Emissions from Landfills (MMTCO2E)					
	1990	**2005**	**2019**	**2020**	**Module**
Potential CH_4	2.033	4.975	4.533	4.507	
MSW Generation	1.900	4.650	4.237	4.212	
Industrial Generation	0.133	0.325	0.297	0.295	
CH_4 Avoided	-	(0.972)	(2.801)	(2.949)	
Flare	-	(0.478)	(0.920)	(1.068)	Solid Waste
Landfill Gas-to-Energy	-	(0.493)	(1.880)	(1.880)	
Oxidation at MSW Landfills	0.190	0.368	0.144	0.126	
Oxidation at Industrial Landfills	0.013	0.033	0.030	0.029	
Total CH_4 Emissions	**1.830**	**3.603**	**1.559**	**1.402**	

CO_2, N_2O, and CH_4 Emissions from Waste Combustion (MMTCO2E)					
Gas/Waste Product	**1990**	**2005**	**2019**	**2020**	**Module**
CO_2	0.056	0.147	0.127	0.127	
Plastics	0.038	0.102	0.083	0.083	
Synthetic Rubber in MSW	0.008	0.015	0.013	0.013	
Synthetic Fibers	0.010	0.030	0.031	0.031	Solid Waste
N_2O	0.002	0.003	0.002	0.002	
CH_4	0.000	0.000	0.000	0.000	
Total CO_2, N2O, CH_4 Emissions	**0.058**	**0.150**	**0.129**	**0.129**	

Source	**GHG**	**1990**	**2005**	**2019**	**2020**	**Module**
Municipal	CH_4	0.247	0.301	0.364	0.368	Wastewater
Municipal	N_2O	0.091	0.116	0.138	0.140	
Industrial						
Fruits & Vegetables	CH_4	n/a	n/a	n/a	n/a	n/a=default data not available
Red Meat	CH_4	0.006	0.008	0.005	0.006	
Poultry	CH_4	n/a	n/a	n/a	n/a	n/a=default data not available
Pulp & Paper	CH_4	n/a	n/a	n/a	n/a	n/a=default data not available
Total		**0.344**	**0.425**	**0.507**	**0.514**	

Under review. Please do not cite or distribute.

SC GHG Inventory – Agriculture

All units are measured in million metric tons CO_2 equivalent ($MMTCO_2e$)

GHG Emissions by Sources and Gases (Agriculture Summary)						
		Amounts of $MMTCO_2e$				
Source	**GHG**	**1990**	**2005**	**2019**	**2020**	**Module/Worksheet** Agriculture
CO_2		**0.004**	**0.006**	**0.015**	**0.017**	
Liming	CO_2	-	-	-	-	
Urea Fertilization	CO_2	0.004	0.006	0.015	0.017	
CH_4		**1.400**	**1.287**	**1.002**	**0.976**	
Enteric Fermentation	CH_4	1.029	0.867	0.664	0.653	
Manure Management	CH_4	0.369	0.420	0.338	0.323	
Rice Cultivation	CH_4	-	-	-	-	
Agricultural Residue Burning	CH_4	0.002	0.001	0.000	0.001	
N_2O		**1.892**	**1.460**	**1.479**	**1.325**	
Manure Management	N_2O	0.104	0.152	0.177	0.169	
Ag Soils	N_2O	1.787	1.308	1.303	1.156	
Agricultural Residue Burning	N_2O	0.000	0.000	0.000	0.000	
TOTAL		**3.296**	**2.754**	**2.497**	**2.318**	

SC GHG Inventory – Land Use, Land-Use Change (LULUCF)

All units are measured in million metric tons CO_2 equivalent ($MMTCO_2e$)

Under review. Please do not cite or distribute.

South Carolina Land Use, Land-Use Change, and Forestry (LULUCF) Emissions and Sequestration (Summary, Selected Years)				
Emissions* (MMTCO2E) * Note that parentheses indicate net sequestration.				
	1990	**2005**	**2019**	**2020**
Total	**(21.75)**	**(22.84)**	**(24.03)**	**(23.57)**
Net Forest Carbon Flux	**(20.98)**	**(21.32)**	**(21.50)**	**(20.91)**
Forest Land Remaining Forest Land	**(20.87)**	**(21.64)**	**(22.28)**	**(21.69)**
Aboveground Biomass	(9.64)	(9.46)	(9.59)	(9.14)
Belowground Biomass	(2.08)	(1.98)	(1.94)	(1.84)
Deadwood	(0.76)	(0.94)	(1.26)	(1.25)
Litter	0.31	0.09	(0.04)	(0.02)
Soil (Mineral)	(0.05)	(0.29)	(0.40)	(0.39)
Soil (Organic)	-	-	0.01	0.01
Drained Organic Soil	-	-	-	-
Total wood products and landfills	(8.65)	(9.06)	(9.06)	(9.06)
Land Converted to Forest Land	**(2.32)**	**(2.30)**	**(2.28)**	**(2.28)**
Aboveground Biomass	(1.43)	(1.42)	(1.41)	(1.41)
Belowground Biomass	(0.28)	(0.28)	(0.28)	(0.28)
Deadwood	(0.19)	(0.18)	(0.18)	(0.18)
Litter	(0.40)	(0.40)	(0.40)	(0.40)
Soil (Mineral)	(0.02)	(0.02)	(0.01)	(0.01)
Forest Land Converted to Land	**2.21**	**2.62**	**3.06**	**3.06**
Aboveground Biomass	1.54	1.81	2.12	2.12
Belowground Biomass	0.30	0.36	0.42	0.42
Deadwood	0.10	0.12	0.14	0.14
Litter	0.24	0.28	0.33	0.33
Soil (Mineral)	0.03	0.05	0.05	0.05
Urban Trees	**(1.65)**	**(2.47)**	**(3.31)**	**(3.37)**
Landfilled Yard Trimmings and Food Scraps	**(0.26)**	**(0.07)**	**(0.11)**	**(0.11)**
Grass	(0.03)	(0.01)	(0.01)	(0.01)
Leaves	(0.07)	0.03	0.02	0.02
Branches	(0.14)	(0.04)	(0.05)	(0.05)
Landfilled Food Scraps	(0.03)	(0.05)	(0.06)	(0.06)
Forest Fires	**-**	**-**	**0.03**	**0.06**
CH4	-	-	0.02	0.05
N2O	-	-	0.00	0.01
N2O from Settlement Soils	**0.03**	**0.03**	**0.03**	**0.03**
Agricultural Soil Carbon Flux	**1.11**	**1.00**	**0.83**	**0.73**

Questions and Discussion about GHG Inventory

Considerations and Questions for the GHG Inventory Team

1. Data gaps and limitations

- When looking at the GHG Inventory, can you identify any gaps that may be significantly impacting the measurement and monitoring of emissions?
- What would you suggest for addressing these gaps? (e.g., tools, resources, methods, data availability)

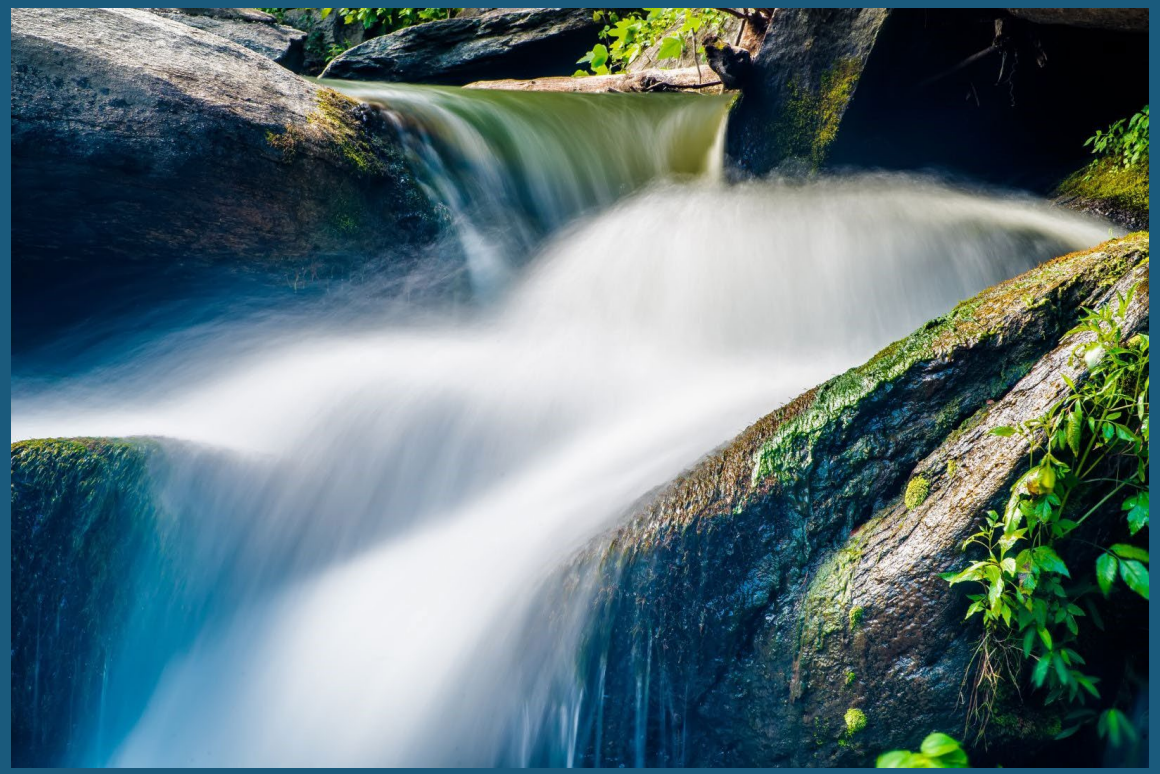
2. Assistance with quantifying reduction measures

- How can we quantify the measures being listed in our PCAP?
- Which measures will have the greatest reductions in emissions?

3. Opportunities for future inventories

- How do we increase accuracy while still tracking emissions correctly over time?
- What other entities in the state are tracking GHG emissions? How can we coordinate efforts?

Reviewing and Assessing Reduction Measures



1. Impact on GHG Reductions:
   - What can be achieved over different time frames?
   - Within 5 years, 10 years, and 25 years?
2. Implementation Readiness:
   - Who has “authority to implement”?
   - Opportunities and constraints?
3. Benefits:
   - For low-income and disproportionately burdened communities?
   - Other community and state priorities?

Criteria to Review & Assess Measures

Impact on GHG Emissions	
What is the potential impact on reducing GHG emissions?	• High potential reduction amount • Medium potential reduction amount • Low potential reduction amount
What are the estimated, quantified GHG reduction amounts?	• Estimated amount(s) • Method(s) or tool(s) used to estimate
Is this measure implementation-ready (within 5 years)?	• Yes, related activities and/or plans currently in place • Possible, in development or in a planning process • No
How quickly could GHG emissions reductions be realized?	• Within 5 years (2025-2030) • Within 10 years (2025-2035) • Within 25 years (2025-2050)

Criteria to Review & Assess Measures

Implementation Readiness	
Who has the authority and ability to implement?	• State, regional (COGs), and/or local government • Private sector • Other (for example: non-profits, professional associations, academia, community-based organizations)
Who are the potential partners?	• State, regional (COGs), and/or local government • Private sector • Other (for example: non-profits, professional associations, academia, community-based organizations)
What is the estimated cost of implementing this measure?	• Dollar amount
What are the potential opportunities and constraints?	• Cost effectiveness, commercial viability • Funding (including other investments or grant opportunities) • Policy • Public support • Technology • Workforce/staff capacity • Other

Criteria to Review & Assess Measures

Benefits	
How will the measure benefit low income and disproportionately burdened communities?	• EPA requires use of the Climate and Economic Justice Screening Tool to identify communities
What are the co-benefits?	• Co-pollutant reductions, air quality improvements • Community resilience • Cost savings, increased efficiency • Economic growth and diversity • Ecosystem and habitat restoration and/or conservation • Historic or cultural preservation • Public and community engagement • Other community priorities

Benefits Analysis

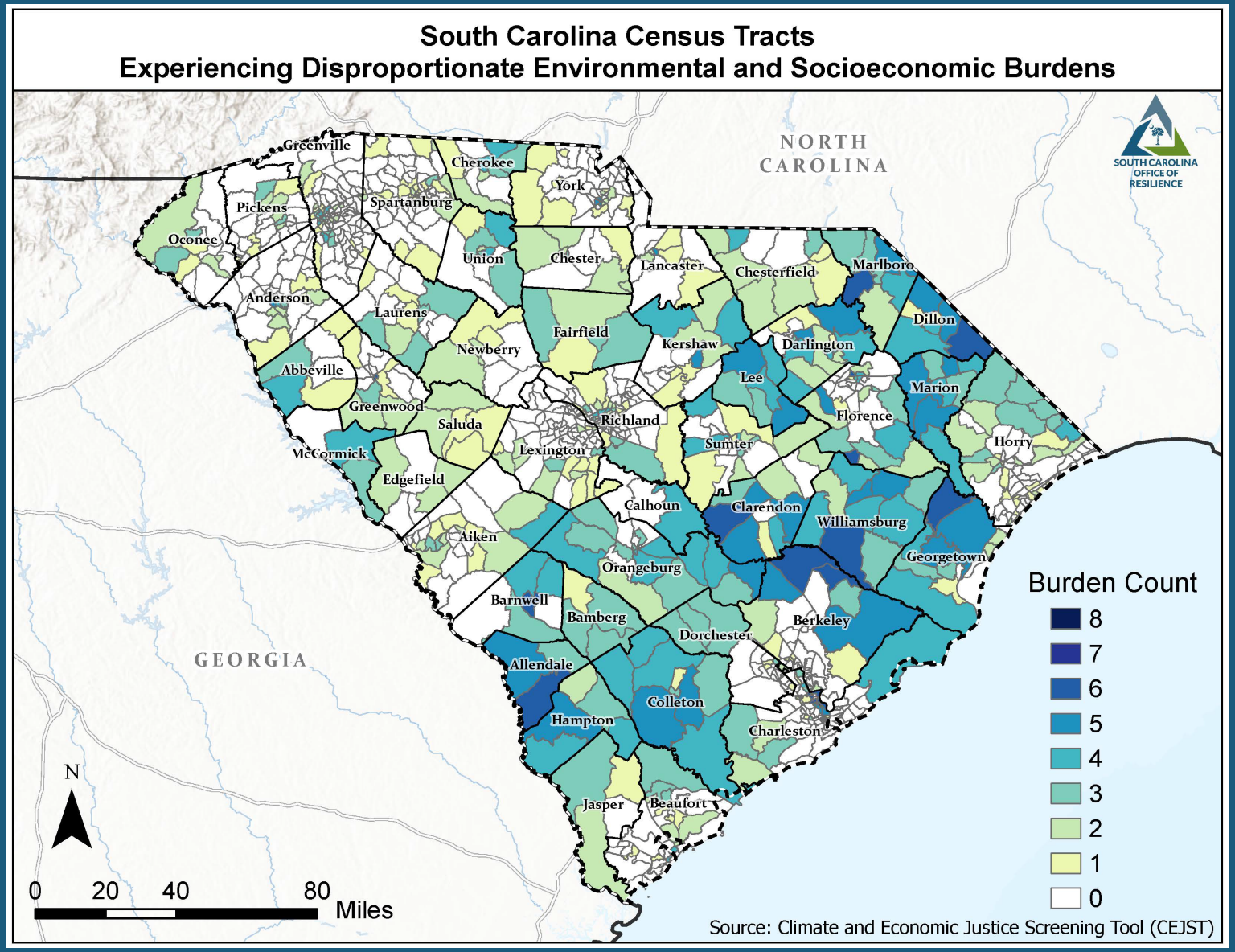
CEJST environmental and socioeconomic burden categories

<u>Indicators include:</u>

Low income (% of census tract's population where household income is ≤ 200% of the Federal poverty level)

<u>AND</u>

1. Climate change
2. Energy
3. Health
4. Housing
5. Pollution
6. Transportation
7. Water and wastewater
8. Workforce development



https://screeningtool.geoplatform.gov/en/

GHG Reduction Measures

1. Transportation

- Public transit (regional public transportation; rapid transit/trains for intercity travel)
- Alternative transportation (expand biking and walking opportunities)
- Vehicle electrification / alternate fuels (includes supporting charging infrastructure)
- Ports, freight transport, logistics

2. Industry

- Energy efficiency (for process and non-process uses of energy)
- Electrification: strategies to reduce use of fossil-fuel based energy sources (to include renewables, storage systems, new technologies)
- Material efficiency (use of low-carbon materials; circular economy)
- Procurement (purchasing policies to support sustainable goods and services)

GHG Reduction Measures

3. Waste
   - Landfill gas to energy / biomass
   - Reduce food waste; support regional composting facilities and programs
   - Waste reduction and recycling
   - Materials (incentivize use of sustainable and carbon-storing products; support new markets)

4. Agriculture and Natural & Working Lands

- Climate-Smart Agriculture and Forestry (practices and products to optimize carbon storage)
- Blue carbon (carbon sequestration in coastal ecosystems)
- Green infrastructure (such as urban forest, greenspace, ecosystem connectivity)

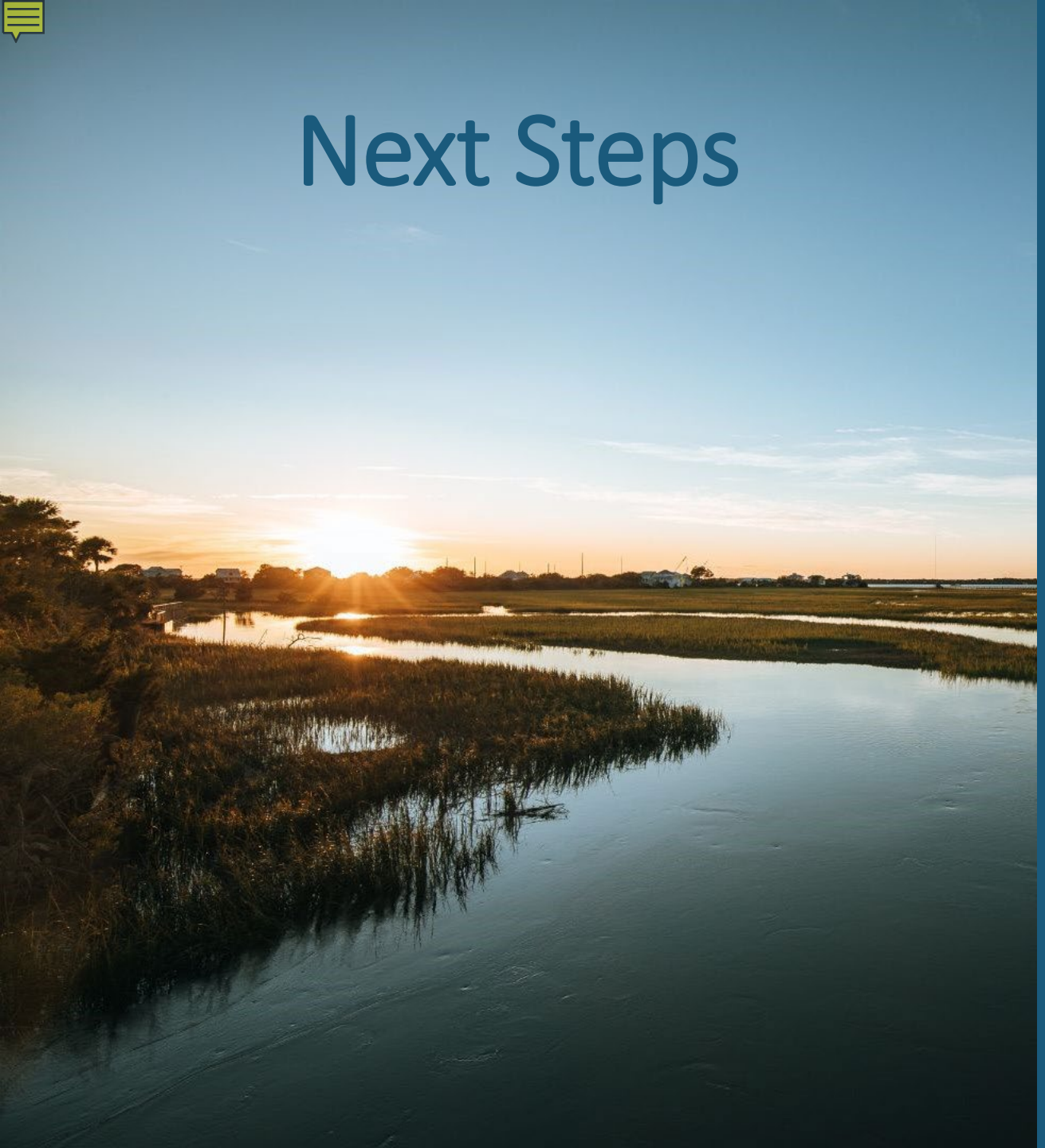
GHG Reduction Measures

5. Residential and Commercial Buildings

- Energy efficiency in residential buildings (energy audits; critical home repairs; weatherization; appliance upgrades; program coordination; encourage energy efficiency standards and/or certifications)
- Energy efficiency in commercial and public buildings (energy audits; energy efficiency upgrades)
- Deployment of renewables, storage systems, and other new technologies in multi-family housing, commercial and public buildings
- Community resilience hubs
- Use of carbon-neutral or carbon-storing materials in new construction
- Demand-side technologies; customer education

Discussion

Measures
GHG Inventory



Next Steps

- Submit comments, ideas, or suggestions by COB Friday, January 12
- Whiteboard notes will be sent out to all Action Team members
- Draft PCAP posted to PAQC website on January 19
  - Please share with your networks
  - Comments due by February 9
- Feb 12-14: Round 3 Action Team webinars
- Implementation Grants
  - January 22 week: SCOR reviews specific project ideas for a statewide application
  - Optional NOIs due February 1 to EPA

Thank you for assisting the PAQC!

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