Appendix C: GHG Emission Reductions

The State of Louisiana determined GHG emission reductions that comprised the twenty-eight strategies and eighty-four actions as set forth in the PCAP on novel and viable pathways to reduce net greenhouse gas emissions over the coming decades to reach statewide carbon neutrality by 2050.

Table 1. GHG Emission Reduction Summary 2025-3030[1]

CARE Initiative		GHG Reduction	PCAP
GHG Reduction Measure	**Work Plan Task**	**2025-30 MMT CO2e**	**Page**
1. Hydrogen Development	Task 1.0 Launch Regional Clean Hydrogen and Fuels Network	19.25	p. 14
	Task 1.1 Hydrogen Upstream Production	0.3	
	Task 1.2 Hydrogen Downstream use	0.0039	p. 21
2. Industrial Decarbonization	Task 2.1 Industrial Decarbonization	0.525	p. 14
	Task 2.2 Industrial CCS	0.472	p. 14
3. N2O Abatement	Task 3.1 N2O Abatement	5.09	p. 14
4. Resilient Clean Ports	Task 4.1 Port Shore Power	1.38	p. 26
	Task 4.2 Port Community Resilience Hubs	0.0011	p. 7
5. Ports Buffer Zone Program	Task 5.1 Ports Buffer Zone Program	0.0535	p. 38
6. Sustainable Agriculture	Task 6.1 Sustainable Agriculture Innovation Program	7.238	p.36
7. Clean Energy Acceleration	Task 7.1 Clean Energy Acceleration	0	p. 6
8. Nature-Based Solutions	Task 8.1 Blue Carbon Research and Accreditation	1.007	p. 85
	Task 8.2 Community Forestry and Greening	.00144	p. 78

MEASURE 1. CLEAN HYDROGEN ECONOMY

Approach: The State will launch its portion of a new national hydrogen-centric coalition under development to spur a globally competitive U.S. hydrogen economy market. Louisiana in collaboration with the private sector will deploy a suite of innovative hydrogen projects to accelerate low- and no-carbon hydrogen upstream production and downstream end-use to significantly reduce GHG emissions. The Clean Hydrogen Economy will launch innovative demonstration projects for clean hydrogen to eliminate 90% to 100% of GHG emissions at industrial sites, ports, and corridors that have high concentrations of GHG emissions impacting the quality of life and health of LIDAC populations.

Measure Implementation Assumptions and CPRG Implementation Plan Outputs:

- Switch 25% of all hydrogen to clean hydrogen used in ammonia and refining production.
- Transition 5 MTPA of steam methane reformers to low- or no-carbon hydrogen.
- Support electrification and fuel-switching (e.g.) hydrogen and low-carbon or zero-carbon biofuels) if 119,250 (5%) medium and heavy-duty vehicles in the state.

Task 1.0 Launch Regional Clean Hydrogen and Fuels Network

Louisiana will perform $16 million of prudent and necessary pre-construction activities to enable the rapid adoption of clean hydrogen project development by 2030, focusing on the following hydrogen GHG reduction measures aligned with the interests of investor, industry, and community stakeholders:

[1] PCAP Appendix A: Priority Climate Action Plan: Quantitative Assessments.

- Switch 25% of all hydrogen to clean hydrogen used in ammonia and refining production.
- Transition 5 MTPA of steam methane reformers to low- or no-carbon hydrogen.
    - GHG Reduction Outcome 2025-2030: 15.5 MMTCO2e (PCAP Appendix A Page 14)
    - GHG Reduction Outcome: 2025-2050 77.5 MMTCO2e
- Support electrification and fuel-switching (e.g.) hydrogen and low-carbon or zero-carbon biofuels) if 119,250 (5%) medium and heavy-duty vehicles in the state by 2030.
    - GHG Reduction Outcome: 2025-2030 3.75 MMTCO2e (PCAP Appendix A Page 21)
    - GHG Reduction Outcome: 2025-2050 18.75 MMTCO2e

Task 1.1 Deploy Hydrogen Upstream Production Projects

The State will award $64 million in grants with private sector match to install four multi-faceted hydrogen production projects with carbon-free hydrogen boilers and electrolyzer units with on-site clean power generation to eliminate 90% - 100% of GHG emissions at natural gas processing plants, industrial facilities, or ports.

- GHG Reduction Outcome for all four projects:
    - 60,000 MT CO2e annually
    - 300,000 MT CO2e 2025-2030
    - 1,500,000 MT CO2e 2025-2050

Task 1.2 Deploy Hydrogen Downstream Use Pilots

Louisiana will award $20 million in grants to deploy sixteen Zero-Emission Medium and Heavy-Duty Vehicle fueling pilots at major freight corridors to spur the zero-emissions freight (ZEF) network with private sector match.

- According to NREL, the average hydrogen fueling station cost is $2.2 million.
- A use case for one recently install hydrogen fueling station displaced nearly 11,000 gallons of gasoline equivalent during its first six months in operation which on an annual basis is equivalent to 196 MT CO2e per the EPA Greenhouse Gas Equivalencies Calculator.
- GHG Reduction Outcome for all sixteen clean hydrogen fueling stations:
    - 784 MT CO2e annually
    - 3,920 MT CO2e 2025-2030
    - 19,600 MT CO2e 2025-2050

GHG Reduction Estimate Method, Models/Tools Used, Assumptions, and Reference Case: The State treated the outputs of shifting hydrogen usage to clean hydrogen and generating more clean hydrogen as a single output dealing with both the supply and demand side (with the emphasis on modeling the demand side). This output was evaluated using the EPS tool that was used in the PCAP. No single policy in the EPS tool perfectly corresponded to the output. The State opted to treat the output's emissions reduction as equivalent to the emissions reduction of shifting 25% of the fuel demand for the state's ammonia and refining sectors to hydrogen when all hydrogen being produced in the state was clean. To isolate this value, the State used a combination of the EPS tool's hydrogen production pathway being set to 100% electrolysis and the hydrogen fuel switching policy for (low, medium, and high heat) to be set to 25% for the chemical and petroleum refining and coke sectors. The annual emissions reduction was modeled as the overall reduction in annual emissions compared to the BAU case in the year of analysis (2030). For the specific clean hydrogen production projects and clean hydrogen fueling station pilots,

the sources were NREL Hydrogen & Fuel Cells[2], Commission Energy Linde Report[3], EPA Greenhouse Gas Equivalencies Calculator[4], and DOE Clean Hydrogen Funding Awards[5].

Measure-Specific Activity Data: Immediate measure-specific activity includes:

- Perform four data-driven studies across the clean economy value chain to inform the capital investment decisions and prioritization of sits and regions for the grant awards to fill the market gaps on the U.S. Department of Energy awarded hydrogen hubs and projects.
- Prioritize technologies, sites, and locations for the portfolio of clean hydrogen production projects and clean hydrogen downstream-use pilots.
- Solidify the cost share requirement levels to maximize the grant awards towards the four multi-faceted hydrogen production project sixteen Zero-Emission Medium and Heavy-Duty Vehicle fueling pilots at major freight corridors.

GHG Emissions Reduced by CPRG Funded Projects:

GHG Reduction Outcome	Annual	2025-2030	2025-2050
Clean Hydrogen Production Projects	60,000	300,000	1,500,000
Clean Hydrogen Downsteam Pilots	784	3,920	19,600
Total GHG Reductions	**60,784**	**303,920**	**1,519,600**

GHG Emission Reductions by Regional Clean Hydrogen Economic Strategy:

GHG Reduction Outcome	2025-2030	2025-2050
Switch 25% of all hydrogen to clean hydrogen used in ammonia and refining Transition 5 MTPA of steam methane reformers to low- or no-carbon hydrogen	15.5	77.5
Support electrification and fuel-switching (e.g.) hydrogen and low-carbon or	3.75	18.75
Total GHG Reductions	**19.25**	**96.25**

Co-Pollutant Reduction Estimate Method: The EPS tool also provided co-pollutant reductions for select co-pollutants (NOx and VOCs).

MEASURE 2. INDUSTRIAL DECARBONIZATION

Approach: The State will launch a suite of industrial decarbonization innovative projects in coordination with federal and state incentives, through a new program to accelerate energy efficiency and innovative industrial decarbonization technologies in the hard-to-abate industrial sector.

Measure Implementation Assumptions and CPRG Implementation Plan Outputs:

- Enhance energy efficiency in chemical and refining facilities by an average of 10% by 2030.
- Electrify 15% of all low- and medium-heat processes, with a goal of 100% of all new and replacement boilers and process heaters being electric by 2040.

[2] https://www.nrel.gov/hydrogen/assets/images/cdp-infr-41.jpg
[3] https://www.energy.ca.gov/sites/default/files/2022-01/CEC-600-2022-004.pdf
[4] https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator
[5] https://www.energy.gov/eere/fuelcells/bipartisan-infrastructure-law-clean-hydrogen-electrolysis-manufacturing

- Apply carbon capture, utilization, and storage at as close as possible to 90% capture rate at a majority of natural gas processing facilities, petroleum refineries, and ammonia and chemical manufacturing plants by 2030.

Task 2.1 Industrial Decarbonization

Louisiana will award $21 million in grants to towards the deployment of seven industrial decarbonization projects that install energy efficiency measures, hydrogen boilers, electrical boilers, or steam heat pumps in chemical, refining, and other industrial facilities with cost share match.

- The estimated all-in cost of a steam heat pump is nearly $40 million that could displace 100% of total facility GHG emissions of 15,000 MT CO2e annually.
- Each industrial decarbonization project is aimed to produce a GHG reduction of:
  - 15,000 MT CO2e annually
  - 75,000 MT CO2e 2025-2030
  - 375,000 MT CO2e 2025-2050
- GHG Reduction Outcome for all seven industrial decarbonization projects:
  - 105,000 MT CO2e annually
  - 525,000 MT CO2e 2025-2030
  - 2,625,000 MT CO2e 2025-2050

Task 2.2 Industrial CCS

Louisiana will award $26.25 million in grants to deploy seven carbon capture and storage (CCS) as close as possible to 90% capture rate or higher at natural gas facilities, petroleum refineries, chemical plants, and other industrial sites with cost share match from the private sector.

- The estimated all-in cost of CCS system at a natural gas facility is nearly $22 million that could displace nearly 90% of total facility GHG emissions of 15,000 MT CO2e annually.
- Each industrial decarbonization project is aimed to produce a GHG reduction of:
  - 13,500 MT CO2e annually
  - 67,500 MT CO2e 2025-2030
  - 337,500 MT CO2e 2025-2050
- GHG Reduction Outcome for all seven industrial decarbonization projects:
  - 94,500 MT CO2e annually
  - 472,500 MT CO2e 2025-2030
  - 2,362,500 MT CO2e 2025-2050

GHG Reduction Estimate Method, Models/Tools Used, Assumptions, and Reference Case: The Industrial Decarbonization output was modeled using data taken from a report on industrial electrification potential in Louisiana created by Carbon Solutions, LLC (Rodriguez et al., 2023). The report includes data on the overall emissions from industrial processes that could be electrified, as well as the amount of emissions reductions that were possible using a clean electrical grid or a partially clean grid based on the assumption that Louisiana's current non-clean grid produces 365 g of CO2e per kWh (with a 50% clean grid having 50% of the emissions per kWh). The original report breaks emissions down into several categories of equipment, and the State's analysis drew on the numbers for process heaters and boilers specifically. Because some of these process heaters and boilers are being used in industrial sectors that tend to rely on higher heat processes (refining of chemicals and metals), the Institute conducted an additional analysis with the process heaters and boilers from these industrial sectors removed. The 2030 values reported for the output were 15% of the total emissions reduction possible (for both a 50% and 100% clean grid) in accordance with the output targeting only 15% of the boilers and process heaters.

The Industrial CCS output was evaluated using the EPS tool that was used in the LCAP. The output was modeled by setting the process emissions CCS policy to rise to a value of 72% (80% of 90%) by 2030 for the petroleum refining and coke, chemicals, and energy and gas processing industrial sectors. The annual emissions reduction was modeled as the overall reduction in annual emissions compared to the BAU case in the year of analysis (2030). The EPS tool also provided co-pollutant reductions for select co-pollutants (NOx and VOC).

Measure-Specific Activity Data: Immediate measure-specific activity includes:

- Prioritize technologies, sites, and locations for the portfolio of industrial decarbonization projects and industrial CCS projects to generate the most cost effective GHG reductions at 90% to 100% targeted reductions per project.
- Solidify the cost share requirement levels to maximize the grant awards towards the seven industrial decarbonization projects and seven industrial CCS projects.

Co-Pollutant Reduction Estimate Method: The Industrial Decarbization and Industrial CCS analysis relied on the 2020 NEI data (U.S. Environmental Protection Agency, 2020) on co-pollutants emissions from industrial boilers' fuel combustion. This data was used to set the baseline of industrial boilers' co-pollutant emissions. To reflect the output, a 15% reduction in all baseline CAP and HAP pollutions was calculated. The EPS tool also provided co-pollutant reductions for select co-pollutants (NOx and VOC). Values were taken directly from the estimate provided by the tool.

MEASURE 3. N2O ABATEMENT

Measure 3. N2O Abatement						
Year	**1**	**2**	**3**	**4**	**5**	**Total**
MMTCO2e		.56	1.13	1.7	1.7	5.09

Approach: The State will launch first-of-a-kind N_2O abatement pilots and market mechanisms.

Task 3.1 N2O Abatement Technologies

Measure Implementation Assumptions and CPRG Implementation Plan Outputs:

- Reduce ~6,000 tons of N2O emissions annually from fertilizer production facilities through N2O abatement strategies.

GHG Reduction Estimate Method, Models/Tools Used, Assumptions, and Reference Case: This output was modeled using the EPA's CO2e calculator (U.S. Environmental Protection Agency, 2015). The annual N2O emissions avoided were plugged into the calculator to generate an equivalent number of tons of CO2e.

Measure-Specific Activity Data:

- The tonnage emissions of N2O for this measure were based on the average annual output of typical fertilizer production facilities.
- This analysis assumes that one-third of projects are deployed by the start of year 2, with full deployment of projects by the start of year 4.

GHG Emissions Reduced:

- Emissions reduction from the EPA's CO2e calculator was 1.7 MMT CO2e annually.
- 5.09 MMT CO2e 2025-2030

- 39.09 MMT CO2e 2025-2050

MEASURE 4. RESILIENT CLEAN PORTS

Measure 4. Resilient Clean Ports						
Year	**1**	**2**	**3**	**4**	**5**	**Total**
MMTCO2e			0.39	0.39	0.60	1.3811

Approach: The State will launch a resilient, clean, ports initiative for a holistic and integrated regional plan across the network of thirty-two ports to accelerate cleaner, abundant energy and community resilience to mitigate climate risks and significantly reduce GHG emissions for the Gulf Coast State.

Task 4.1 Port Shore Power Program

The State will coordinate with the 32 ports on a novel and viable port shore power program.

Measure Implementation Assumptions and CPRG Implementation Plan Outputs:

- Convert 100 berths at Louisiana ports to shore power by 2030

GHG Reduction Estimate Method, Models/Tools Used, Assumptions, and Reference Case: The State relied on information on marine diesel emissions sourced from the EIA (U.S. Energy Information Administration, 2023), information on ship auxiliary power consumption from EPA's shore power calculator (U.S. Environmental Protection Agency, 2022b), and information from Carbon Solutions, LLC's report on industrial electrification on the emissions from the Louisiana power grid and information sourced from Port Fourchon on the number of gallons of fuel burned in by ships in berth (Correspondence with Port Fourchon Officials, personal communication, 2023). This last value, 800,000 gallons of marine diesel per berth per year, corresponds to emissions of approximately 8,000 MT CO2e each year (using the EIA's estimate of 22.44 pounds of carbon per gallon of marine diesel burned), and the entire 100 berths targeted would account for approximately 0.81 MMT CO2e. To determine emissions under shore power, the State created a scaling factor by comparing the emissions per kWh of a ship's engine in auxiliary mode with the emissions per kWh of the Louisiana electrical grid under current conditions. These values were estimated as 705 grams of CO2e per kWh and 365 grams of CO2e per kWh from EPA's shore power calculator and Carbon, LLC's industrial electrification report, respectively. Because the emissions reduction is grid dependent, the State provides estimates for a grid a under current conditions as well as for a 50% and 100% clean grid.

Measure-Specific Activity Data: This analysis projects that shore power installations can be done by the start of year 3, with a scale in emissions based on a transition to a 50% clean grid by 2030.

GHG Emissions Reduced: The estimated emissions reductions under the current Louisiana power grid are 0.39 MMT CO2e annually. The estimated reductions for a 50% clean grid are 0.6 MMT CO2e annually, and the estimated emissions reduction for a 100% clean grid are 0.81 MMT CO2e annually.

- 1.38 MMT CO2e 2025-2030
- 13.38 MMT CO2e 2025-2050

Co-Pollutant Reduction Estimate Method: The analysis relied on emissions factor tables from the Port Emissions Inventory Guidance (U.S. Environmental Protection Agency, 2022a) to calculate possible emissions from the 800,000 gallons of marine diesel per berth per year reflecting the ship auxiliary

power consumption of 11,548,222.13 kWh derived from the calculations for the GHG emissions reduction of shore power. The analysis used the emissions factor for engine category 3 in auxiliary mode, with fuel type as marine gas oil (MGO)/marine diesel oil (MDO), across all engine types and keel-laid years.

Task 4.2 Port Community Resilience Hubs

Measure Implementation Assumptions and CPRG Implementation Plan Outputs:

- Deploy 32 carbon-free microgrids serving ports as critical facilities

GHG Reduction Estimate Method, Models/Tools Used, Assumptions, and Reference Case: The quantification for this output relied on the EPA AVERT tool (U.S. Environmental Protection Agency, 2023a). The State modeled the output as 40 MW hours of distributed photovoltaic solar, with the geography set to the state of Louisiana.

Measure-Specific Activity Data: This analysis projects that 32 carbon-free microgrids will be deployed by the start of year 4, staggered in development.

GHG Emissions Reduced:

- .00045 MMT CO2e annually by 2030
- .001125 MMT CO2e 2025-2030
- .010 MMT CO2e 2025-2050

Co-Pollutant Reduction Estimate Method:
The EPA AVERT tool also reports on several specific co-pollutants (SO2, NOx, VOCs, and NH3).

MEASURE 5. PORTS BUFFER ZONE PROGRAM

Approach: The State will create a new port buffer zone program to preserve, restore, and maintain natural habitats as flood risk mitigation measures that also enhance biodiversity and increase access to green spaces.

Task 5.1 Port Buffer Zone Program

Measure Implementation Assumptions and CPRG Implementation Plan Outputs:

- Deploy buffer zones at each of state's 32 ports.

GHG Reduction Estimate Method, Models/Tools Used, Assumptions, and Reference Case: To calculate the sequestration value for acres of fresh forested wetlands, a literature review was conducted for various associated habitat types (forest wetlands, bottomland hardwood, etc.) and aboveground net primary productivity (ANPP) for each type was converted to the same unit and averaged across the literature review sources. This resulted in an ANPP figure for fresh forested wetlands at 16.06 MT of CO2e per hectare per year. This was applied to the acreage listed in the output after converting that figure to hectares. This sequestration figure does not include carbon stored in soils in these habitats.

Measure-Specific Activity Data: Immediate measure-specific activity includes:

- Determine FEMA designated flood zones established in the State of Louisiana unplanned and undeveloped acreage as potential land to contribute to the Ports Buffer Zone Program.
- Solidify the acreage and maps with LIDAC communities for each thirty-two ports for a holistic and integrated Ports Buffer Zone Program with port specific .

GHG Emissions Reduced:
For every one hectare of land dedicated to the Ports Buffer Zone Program, GHG reductions are estimated at 16.06 MT CO2e annually. The Louisiana thirty-two ports will dedicate 645 hectares to the Louisiana Buffer Zone Program resulting in:

- 10,707 MT CO2e annually
- 53,535 MT CO2e 2025-2030
- 267,675 MT CO2e 2025-2050

Co-Pollutant Reduction Estimate Method:
Co-pollutant reductions for the shore power were derived from the EPA's Port Emissions Inventory Guidance, based on the assumptions of 800,000 gallons of marine diesel per berth per year.

MEASURE 6. SUSTAINABLE AGRICULTURE PROGRAM

Measure 6. Sustainable Agriculture Program						
Year	**1**	**2**	**3**	**4**	**5**	**Total**
MMTCO2e		0.658	1.316	1.974	3.29	7.238

Approach: The State will stand up a new framework to implement sustainable agriculture practices and support farmers in the transition to reduce crop burns, enhance soil carbon management, and integrate natural biological cycles.

Task 6.1 Sustainable Agriculture Innovation Program
The State will launch a new innovative sustainable agriculture program to significantly reduce prescribed acreage burning and promote sustainable agriculture practices in the Louisiana farming industry.

Measure Implementation Assumptions and CPRG Implementation Plan Outputs:
- Reduce the need for prescribed burning on 66% of sugarcane acreage in Louisiana by 2030.

GHG Reduction Estimate Method, Models/Tools Used, Assumptions, and Reference Case: To quantify the emissions from burning of sugarcane, first the percentage of bagasse (sugarcane waste) was estimated per yield. This yield was applied to the US Department of Agriculture (USDA)-reported production tonnage of sugarcane from Louisiana in 2022. Finally, using an EPA report on bagasse combustion in sugar mills, the percentage of carbon composition of bagasse was estimated. This resulting tonnage was converted into metric tons using the EPA equivalencies calculator.

- USDA statistics from 2022 show that Louisiana harvested 497,800 acres of sugarcane. The average yield is estimated at 33.4 net tons per acre, and the production total was 16.6 million net tons. These numbers are used to estimate a 66% reduction in acreage burning.
- A recent study (White Jr. et al., 2023) suggests that bagasse is 31% of cane delivered to mills.
    - The analysis assumes that bagasse is 31% of the production acreage of sugarcane and would be burned.
- An EPA report on combustion of bagasse in sugarcane mills (Hamlin, 1993) finds that the composition of bagasse is 19.2% carbon, 2.6% hydrogen, 0.15% nitrogen, and less than 0.1% sulfur, with a heating value of 7,620 kJ/kg.

Measure-Specific Activity Data:

- It is estimated that 154,318 acres of sugar cane are burned each year (31% of 497,800 acres)
- A reduction of 66% in acres of sugar cane burned would be 101,850 acres/yr.
- The State projects a ramp-up of activity to reach the output, with full output by start of year 5.

GHG Emissions Reduced:

- 3.29 MMT CO2e annually by 2030
- 7.238 MMT CO2e cumulative reductions 2025-2030
- 76.328 MMT CO2e cumulative reductions 2025-2050

MEASURE 7. CLEAN ENERGY ACCELERATION

Approach: The State will launch a new strategy to enable the deployment of offshore wind and large scale solar as a responsible shift from fossil-based power generation to carbon-free power generation.

Measure Implementation Assumptions and CPRG Implementation Plan Outputs:

- Support 5 GW of offshore wind by 2035.
- Support development of 500 MW of community solar statewide by 2030.

Task 7.1 Clean Energy Acceleration

Louisiana will perform $5 million of prudent and necessary pre-construction activities to enable the rapid adoption of clean energy power generation development by 2030, focusing on the following clean energy GHG reduction measures aligned with the interests of investor, industry, and community stakeholders:

- Support 5 GW of offshore wind in the Gulf Coast region and 500 MW of large-scale solar power.
- GHG Reduction Outcome: 0.885 MMTCO2e (PCAP Appendix A Page 6)
- GHG Reduction Outcome: 0.056 MMTCO2e (PCAP Appendix A Page 4)

GHG Reduction Estimate Method, Models/Tools Used, Assumptions, and Reference Case:

Measure-Specific Activity Data: Immediate measure-specific activity includes:

- Firm up the offshore wind and large-scale solar capacity, project developers and stakeholders, to jointly remove market barriers to enable 5GW and 500 MW of power generation.
- Solidify strategy to address power generation project development back log.
- Enable 30% of additional transmission capacity for new and existing power infrastructure.

Co-Pollutant Reduction Estimate Method:

The quantification for this output used the EPA AVERT tool and represents the amount of emissions reduction in the year 2030. Although the tool does not offer explicit modeling of offshore wind, it does offer modeling for onshore wind programs. The EPA AVERT tool also reports on several specific co-pollutants (SO2, NOx, VOCs, and NH3). While the overall co-pollutant reduction was quantified in the tool, it is not possible to estimate the effects of those reductions without further information on where the emissions would be avoided.

MEASURE 8. NATURE-BASED SOLUTIONS

Approach: The State will launch a new program to utilize innovative, nature-based solutions to sequester carbon, engage industry partners, and support climate-vulnerable LIDAC populations.

Measure Implementation Assumptions and CPRG Implementation Plan Outputs:

- Protect 30,000 acres of Louisiana wetlands as essential natural carbon sequestration assets.

Task 8.1 Blue Carbon Research and Accreditation

The State of Louisiana will seek accreditation of Louisiana-based public and private wetlands restoration projects in reputable and widely utilized carbon markets.

GHG Reduction Estimate Method, Models/Tools Used, Assumptions, and Reference Case:

To calculate the sequestration value for acres of fresh forested wetlands, a literature review was conducted for various associated habitat types (forest wetlands, bottomland hardwood, etc.) and aboveground net primary productivity (ANPP) for each type was converted to the same unit and averaged across the literature review sources. This resulted in an ANPP figure for fresh forested wetlands at 16.06 MT of CO2e per hectare per year. This was applied to the acreage listed in the output after converting that figure to hectares. This sequestration figure does not include carbon stored in soils in these habitats.

Measure-Specific Activity Data: Immediate measure-specific activity includes:

- Deploy a strategy for carbon sequestration asset investment to protect Louisiana's coastal wetlands as essential nature-based solutions to mitigate climate risks.

GHG Emissions Reduced:

- 201,524 MT CO2e annually by 2030
- 1,007,620 MT CO2e 2025-2030
- 5,038,100 MT CO2e 2025-2050

Task 8.2 Community Forestry and Greening

Measure Implementation Assumptions and CPRG Implementation Plan Outputs:

- 24,000 urban trees planted in LIDAC communities by 2030

GHG Reduction Estimate Method, Models/Tools Used, Assumptions, and Reference Case:

This calculation relies on summary research underpinning EPA's CO2e calculator (U.S. Environmental Protection Agency, 2015). This tool references a conversion amount for urban trees planted, with many caveats, including that the trees would be grown in a nursery for one year until they become 1 inch in diameter at 4.5 feet above the ground, and that they are not densely planted. This figure also includes some assumptions about tree survival and growth rate. Finally, their figure incorporates the carbon sequestration amount for a period of ten years, so this is not an annual figure. The figure used by EPA is 0.060 MT CO2 per urban tree planted.

Measure-Specific Activity Data:

- This analysis assumes an even ramp of deployment of 6,000 trees/yr, starting in year 2.

GHG Emissions Reduced:

- .00144 MMT CO2e, for subsequent ten years, annually by 2030
- .00144 MMT CO2e 2025-2030
- .00432 MMT CO2e 2025-2050