CLEAN AIR COALITION
Sarasota–Manatee Region

# SARASOTA-MANATEE CLEAN AIR COALITION
A VISION FOR 2050

October 2025

The U.S. Environmental Protection Agency (EPA) Climate Pollution Reduction Grant (CPRG) offered the Sarasota-Manatee region[1] an opportunity to work closely with local governments and partners to reduce greenhouse gas (GHG) emissions in the region. The Comprehensive Climate Action Plan (CCAP) identifies regional GHG reduction measures that will improve air quality, and it provides a blueprint for implementation through 2050.

[1] The Sarasota-Manatee region includes the North Port-Sarasota-Bradenton (NPSB) Metropolitan Statistical Area (MSA) as defined by the U.S. Census Bureau.
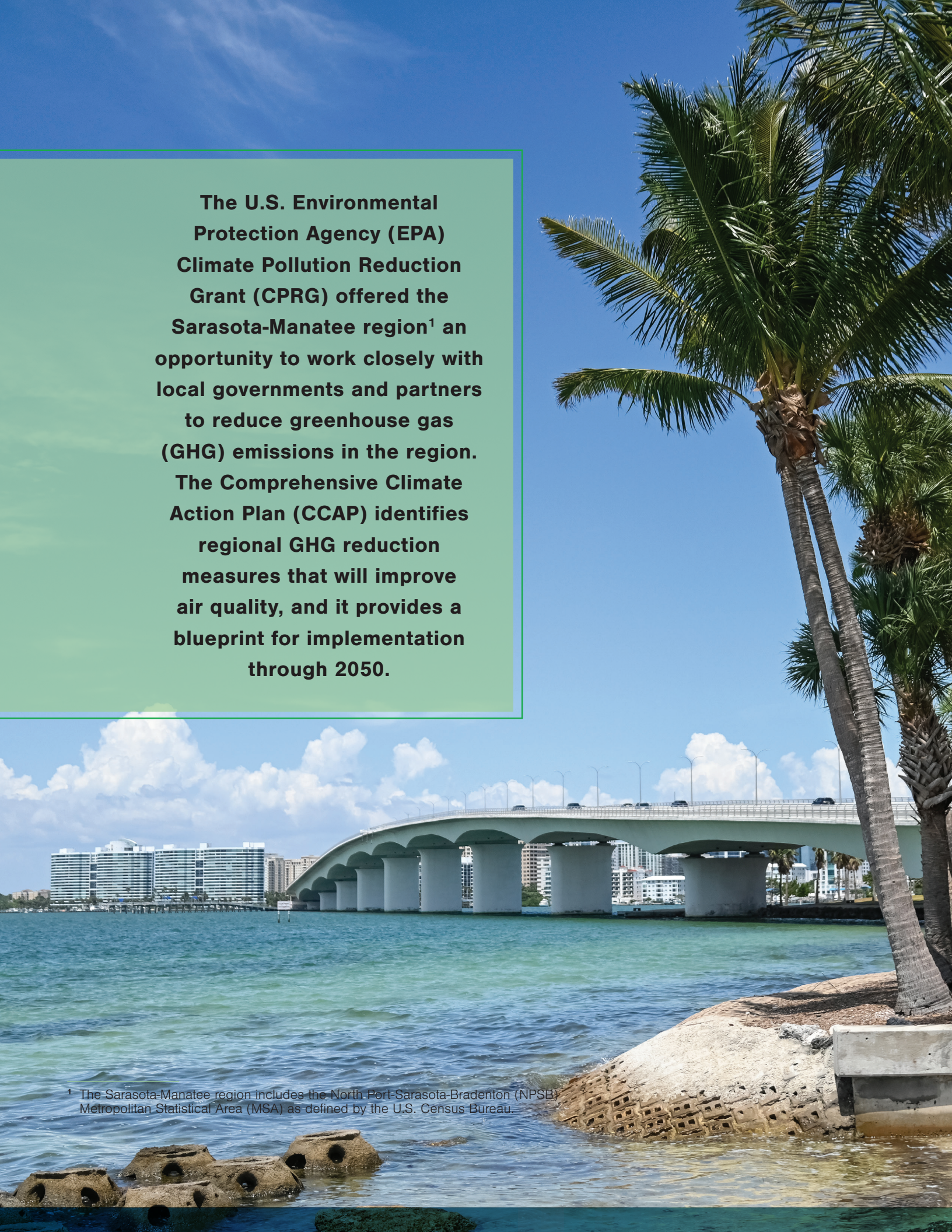
INTRODUCTION

Sarasota County, on behalf of the North Port-Sarasota-Bradenton Metropolitan Statistical Area (MSA) region, received a $1 million grant from the EPA CPRG program to develop a Priority Climate Action Plan (PCAP) and a Comprehensive Climate Action Plan (CCAP). Sarasota County is administering the grant, which covers Sarasota and Manatee Counties and the cities within the region.

In March 2024, as part of the CPRG process, the Clean Air Coalition for the Sarasota-Manatee region developed and published its PCAP (available at: scmc-pollutionreduction.com). The PCAP identified priority, short-implementation GHG reduction measures that would yield benefits to communities in the region. The CCAP takes this process to the next step and builds on the significant research and consultation that occurred during the development of the region's PCAP. It encompasses a holistic review of existing sustainability plans, implementation programs, and regional priorities, and incorporates community priorities that were identified through a robust public engagement process.

The CCAP provides a vetted set of measures and strategies to guide regional air pollution reduction efforts through 2050.

The seeds for this CCAP were planted well before receiving the CPRG grant, and the Sarasota-Manatee region has long recognized the importance of improving air quality. In 2002, Sarasota County established its Sustainability Office—one of the first county sustainability offices in the country. This region was an early adopter of climate studies and GHG reduction goals with Sarasota County's 2006 Roadmap to Sustainability, green building standards, and a commitment to achieve carbon neutrality among new county buildings by 2030. The region has been honored for its achievements in sustainability; in 2017 Manatee County was the first county to achieve Platinum Status by the Florida Green Building Coalition. In 2023, Sarasota County achieved the Leadership in Energy and Environmental Design (LEED) for Cities and Communities "Gold" certification and national accreditation.

During the development of both the PCAP and the CCAP, the planning team engaged stakeholders from across the region to understand their priorities around climate issues and to chart a path for participation in the larger state-wide and nation-wide efforts to reduce air pollution.

DEFINING AIR POLLUTION

Air pollution is the presence of one or more contaminants in the atmosphere, in quantities and durations sufficient to cause adverse effects on human health, ecosystems, property, or climate. These contaminants, also called pollutants, may be in the form of gases, liquids (droplets), or particulate matter, originating from natural sources or anthropogenic (human-made) activities. Common air pollutants include sulfur dioxide, nitrogen oxides, carbon monoxide, volatile organic compounds, particulate matter, ozone, and heavy metals.

Air pollutants categorized as GHG emissions are carbon dioxide, methane, nitrous oxide, and fluorinated gases. The CCAP focuses on GHG emissions from anthropogenic activities – processes and actions caused by humans that release pollutants into the atmosphere, contributing to air pollution. The primary sources of GHG emissions are:

↗ Combustion of fossil fuels to generate electricity and fuel for transportation.

↗ Industrial processes like manufacturing facilities.

↗ Waste disposal, like landfills and sewage treatment plants.

↗ Agricultural activities like livestock farming and the use of pesticides and fertilizers.

All the GHGs are reported in metric tons of carbon dioxide equivalent ($MTCO_2e$).

Clean Air Matters!

Reducing air pollution matters. Particulate matter and GHG emissions originating from transportation, power plants, and industrial activities affect human health and contribute to serious health concerns in the form of strokes, heart disease, lung cancer, neurological disorders, and acute and chronic respiratory diseases.

Every citizen matters. Air pollution directly and indirectly affect vulnerable populations, including children, the elderly, and those with pre-existing conditions, posing significant health risks.

Preserving the environment for future generations matters. GHG emissions, particularly carbon dioxide and methane, are the primary drivers of climate change and have a direct link to sea level rise. The combination of ice melt and thermal expansion, both fueled by increased GHG emissions, is causing sea levels to rise at an accelerating pace, threatening coastal ecosystems, infrastructure, and communities around the world.

Maintaining a healthy and robust economic and social environment matters. Tourism and agriculture are vulnerable to climate disruptions stemming from GHG emissions.

Reducing GHG emissions helps mitigate climate change and yields immediate health and benefits by lowering levels of harmful air pollutants. Sarasota and Manatee Counties understand that as entities with regional influence and decision-making authority, they can champion changes and policy to reduce GHG emissions and other harmful air pollutants.

The CCAP provides a regional framework with actionable steps and tools for implementation. It is intended to serve as a blueprint for the -Sarasota-Manatee region in the larger effort to reduce GHG emissions, leveraging the strengths and spheres of influence in which the counties can affect change. Importantly, the CCAP is a model that other counties or regions can follow to develop and implement collaborative strategies that reduce air pollution in the context of larger statewide or nationwide efforts.

JOURNEY TO THE COMPREHENSIVE CLIMATE ACTION PLAN

The road to developing the measures and strategies proposed in the CCAP required the synthesis of significant amounts of data from different sources. The process followed by the Sarasota-Manatee region's planning team involved the following steps:

Understanding community priorities.

Determining regional baseline emissions.

Forecasting future regional emissions.

**Setting short- and long-term regional reduction targets.**

Developing actionable GHG reduction measures and carbon capture opportunities to meet the targets.
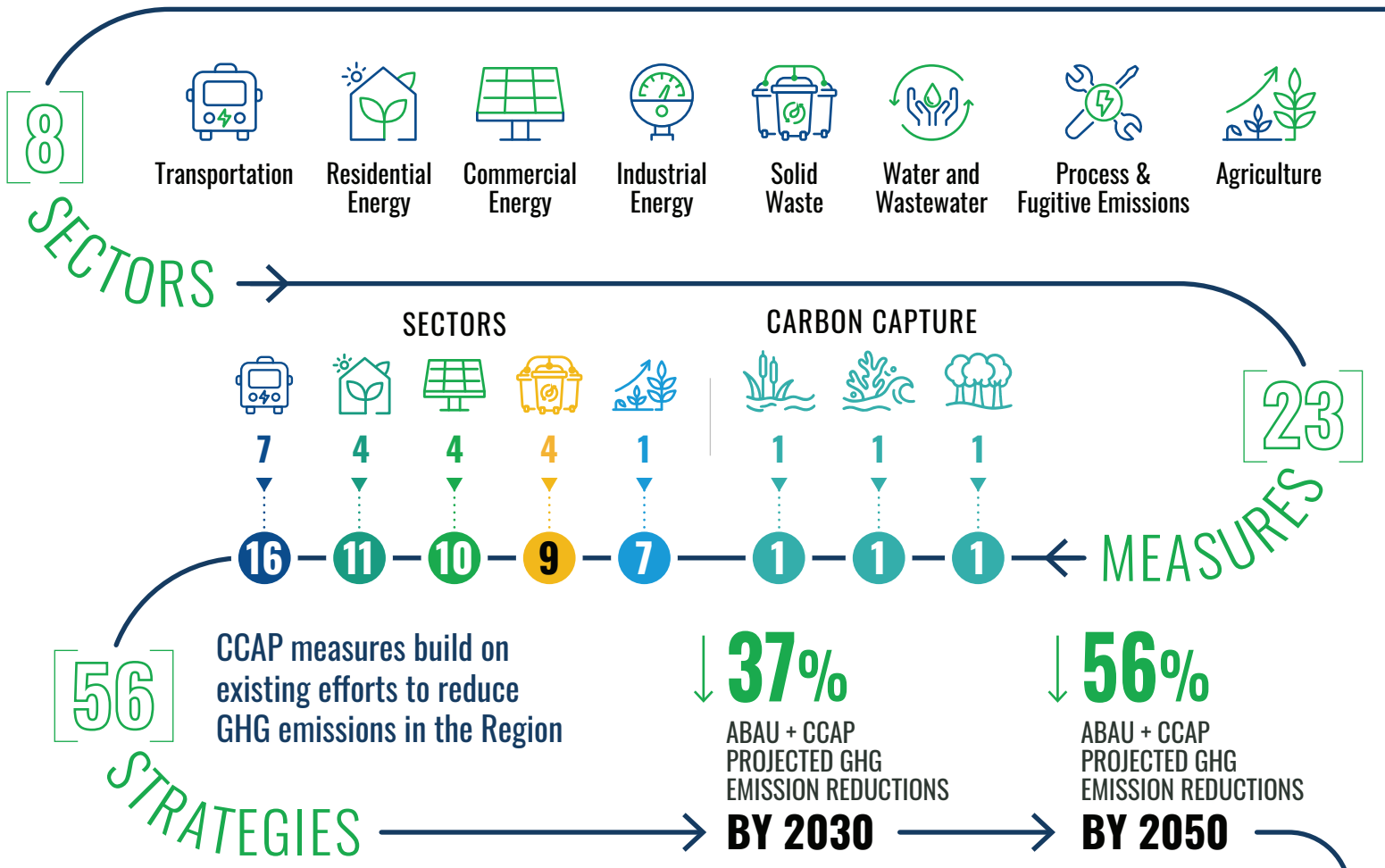
The CCAP offers concrete GHG emission reductions addressing topics in areas important to residents of the Region where local and regional agencies CAN AFFECT CHANGE.

Sarasota-Manatee GHG emissions totaled 7,903,007 MT CO$_2$e in 2019 according to the baseline inventory.

2019
BASE YEAR
EMISSIONS
7,903,009
(MT CO$_2$e)
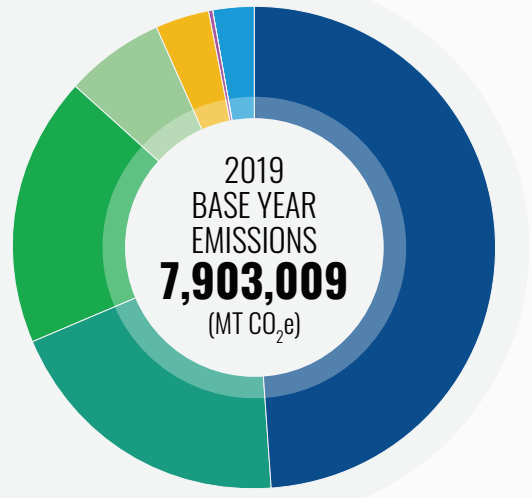
49% ●	TRANSPORTATION	3,877,115
20% ●	RESIDENTIAL ENERGY	1,564,309
18% ●	COMMERCIAL ENERGY	1,428,859
6% ●	INDUSTRIAL ENERGY	509,402
4% ●	SOLID WASTE	291,653
3% ●	AGRICULTURE	203,482
<1% ●	WATER AND WASTEWATER	15,906
<1% ●	PROCESS AND FUGITIVE	12,281

JOURNEY TO CCAP

8 SECTORS

Transportation | Residential Energy | Commercial Energy | Industrial Energy | Solid Waste | Water and Wastewater | Process & Fugitive Emissions | Agriculture

23 MEASURES

SECTORS | CARBON CAPTURE

| 7 | 4 | 4 | 4 | 1 | 1 | 1 | 1 |

16 – 11 – 10 – 9 – 7 – 1 – 1 – 1

56 STRATEGIES

CCAP measures build on existing efforts to reduce GHG emissions in the Region

↓ **37%**
ABAU + CCAP PROJECTED GHG EMISSION REDUCTIONS
BY 2030

↓ **56%**
ABAU + CCAP PROJECTED GHG EMISSION REDUCTIONS
BY 2050

3

Measures and Strategies

TRANSPORTATION AND MOBILE SOURCES

MEASURE	STRATEGY
Improve transit options	↗ Improve the efficiency and effectiveness of existing public transit services
	↗ Implement bus rapid transit and priority signaling
	↗ Develop high-capacity, high-frequency transit services such as light rail or express bus services
	↗ Encourage development around transit stations and multimodal hubs
	↗ Encourage multimodal hubs
Provide options for active transportation	↗ Promote walking and cycling by developing supportive infrastructure
	↗ Promote the use of shared vehicles
	↗ Integrate various forms of transportation services into a single accessible on-demand service
Transition to electric lawn equipment	↗ Replace city, county, and community gasoline lawn equipment with electric
Encourage public transition to zero-emission/renewable vehicles	↗ Increase the availability of public EV charging stations to encourage the adoption of EVs
Reduce congestion	↗ Implement smart traffic signal systems
	↗ Develop lanes that are dynamically managed to optimize traffic flow
Transition agency fleet to zero-emission/renewable vehicles	↗ Ensure vehicles are well-maintained; set fuel efficiency targets; and provide driver training on efficient driving
	↗ Create a comprehensive plan to transition to a zero-emissions fleet
	↗ Transition light-duty, medium-duty, and heavy-duty non-emergency vehicles to electric, compressed natural gas or hybrid options
Encourage use of low-carbon materials in transportation infrastructure	↗ Update traditional procurement policy, design, and construction manuals to encourage using low-carbon construction materials

RESIDENTIAL ENERGY

MEASURE
Provide incentives for building enclosure upgrades
Provide incentives for energy efficiency improvements
Install photovoltaic roof systems
Conduct residential energy audits and upgrade building codes

STRATEGY

- ↗ Improve the envelope efficiency by creating an airtight envelope for improved energy conservation
- ↗ Replace windows, doors, and skylights to improve energy performance

- ↗ Replace old HVAC technology with a heat pump or high-efficiency HVAC coupled with the commissioning of the equipment
- ↗ Install LEDs
- ↗ Install Energy Star or equivalent appliances
- ↗ Install an energy-efficient heat pump for domestic hot water or a solar hot water heater
- ↗ Install stormwater storage tanks to capture and reuse rainwater for irrigation and other non-potable uses
- ↗ Install low-flow faucets, showerheads, and toilets

- ↗ Install PV panels on roofs and update codes when wind-rated to allow using building-integrated photovoltaics in building materials

- ↗ Update energy efficiency requirements to include higher insulation standards, stricter sealing requirements, and more efficient doors and windows
- ↗ Conduct assessments of residential buildings to determine cold and thermal bridges and identify opportunities for energy efficiency improvements

COMMERCIAL ENERGY

MEASURE	STRATEGY
Conduct energy audits and upgrade building codes for agency-owned assets	↗ Develop an inventory of all existing agency-owned and operated buildings and facilities. Conduct portfolio energy analysis including operational GHG and energy benchmarking. Perform energy audits for buildings with the highest Energy Use Intensity. ↗ Adopt and design new facilities to meet LEED, Envision, or other sustainability rating requirements ↗ Update traditional procurement policy, design, and construction manuals to encourage using low-carbon construction materials
Conduct enclosure and efficiency improvements in agency-owned assets	↗ Improve the envelope efficiency ↗ Replace old HVAC technology with a heat pump or high-efficiency HVAC coupled with the commissioning of the equipment ↗ Install more energy-efficient LEDs
Continue conversion to efficient streetlights	↗ Develop an inventory of all streetlights and illuminated street signs. Determine which lights have not yet been converted to LED and implement a replacement schedule ↗ Implement adaptive street and signal lighting by deploying a central control system
Investigate renewable energy options for agency-owned assets	↗ Generate electricity from onsite solar PV panels for commercial and agency-owned (rooftop, covered parking, sidewalks, floating) with potential battery backup installation ↗ Build microgrids

SOLID WASTE

MEASURE	STRATEGY
Improve diversion of organic materials	↗ Enhance existing food recovery networks for edible foods within both counties
	↗ Foster and support food waste to animal feed conversion.
	↗ Enhance existing backyard/community small-scale composting and vermicomposting systems
	↗ Develop a compost facility at either the county or regional level.
Improve recycling capture rates	↗ Optimize household recycling education programming.
	↗ Mandate and/or enhance commercial recycling to improve commercial capture rates.
	↗ Develop a recyclables processing facility at either the county or regional level.
Improve diversion of construction and demolition materials	↗ Develop and expand infrastructure necessary to improve C&D material diversion to include the fostering of regional end markets to ensure a stable recovery program
Construct a landfill gas to energy facility (Lena Road)	↗ Construct a landfill gas to energy facility for the Lena Road Landfill in Manatee County.

AGRICULTURE

MEASURE	S
	↗
	↗
Engage in and support agricultural practices that reduce GHG emissions	↗
	↗
	↗
	↗
	↗

CARBON CAPTURE

Transition marginal production land into habitat or ecosystem restoration; connectivity to carbon removal-projects.

Manage soil/water testing, precision fertilization, use of biostimulants; dynamic fertilization scheduling to avoid high-heat, high-precipitation periods; adopt long-lived perennials (for turfgrass)

Adopt low-till/no-till/conservation tillage; easements for marginal acreages

Establish silvopasture to improve forage quality and create favorable microclimates for livestock and soil microbiota

Encourage sustainable intensification, diversification of forage crops to increase biomass productivity and reducing grazing periods(-methane reduction)

Consider agrivoltaics or on-site solar for on-farm energy needs

Reduce GHG emissions via uptake of robotics, remote sensing, and precision fertilization/precision spray solutions
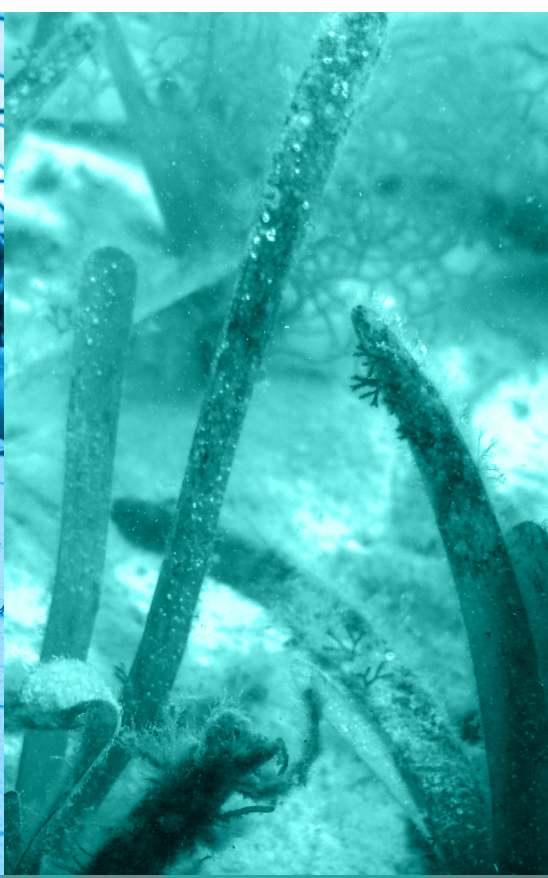
MEASURES/STRATEGIES

↗ Conserve and restore coastal wetlands and mangrove forests

↗ Restore seagrass meadows

↗ Reforest green spaces

Understanding Community Priorities

Understanding community needs, priorities, and challenges was a critical initial step in developing the CCAP. The initial input gathered during the community outreach efforts during the PCAP was instrumental in informing the CCAP measures.

For the CCAP, the planning team met with community-based leaders to solicit their input on the most important issues and those with the biggest impacts related to air pollution on low-income populations and others who are adversely affected by air pollution.

Four pop-up community engagement events engaged a variety of stakeholders in informal settings. With a concerted focus on engaging stakeholders from low-income communities, the CCAP planning team used participation in and input from these activities to gauge priorities for GHG reduction measures. The events also served as a prelude to a regional community meeting held in March 2025. This community meeting introduced the CCAP and was used as a forum to further refine measures for GHG reduction.

Participants in the development of the CCAP included agency leaders, community group leaders, survey respondents, and members of the public. Interactive sector-specific breakout groups focused on feasibility and practicality of proposed GHG reduction measures.

**Respondents to the survey indicated that the communities' top priorities to increase clean air are:**

#1 Invest in the environment.

#2 Invest in all the sectors: transportation, energy, waste, and the environment.

They also agreed that the best ways to implement clear air strategies in the Sarasota-Manatee region are to:

#1 Make policy changes to make mandatory changes when there are no costs to end-users; and

#2 Provide incentives to the end users to make different choices, like rebates for energy efficient appliances.

According to agency and community group leaders, the top challenges within the low-income communities related to air quality and GHG emissions are:

#1 High energy costs.

#2 Exposure to extreme heat.

#3 Lack of access to reliable, convenient, safe, and affordable public transportation or mobility options.
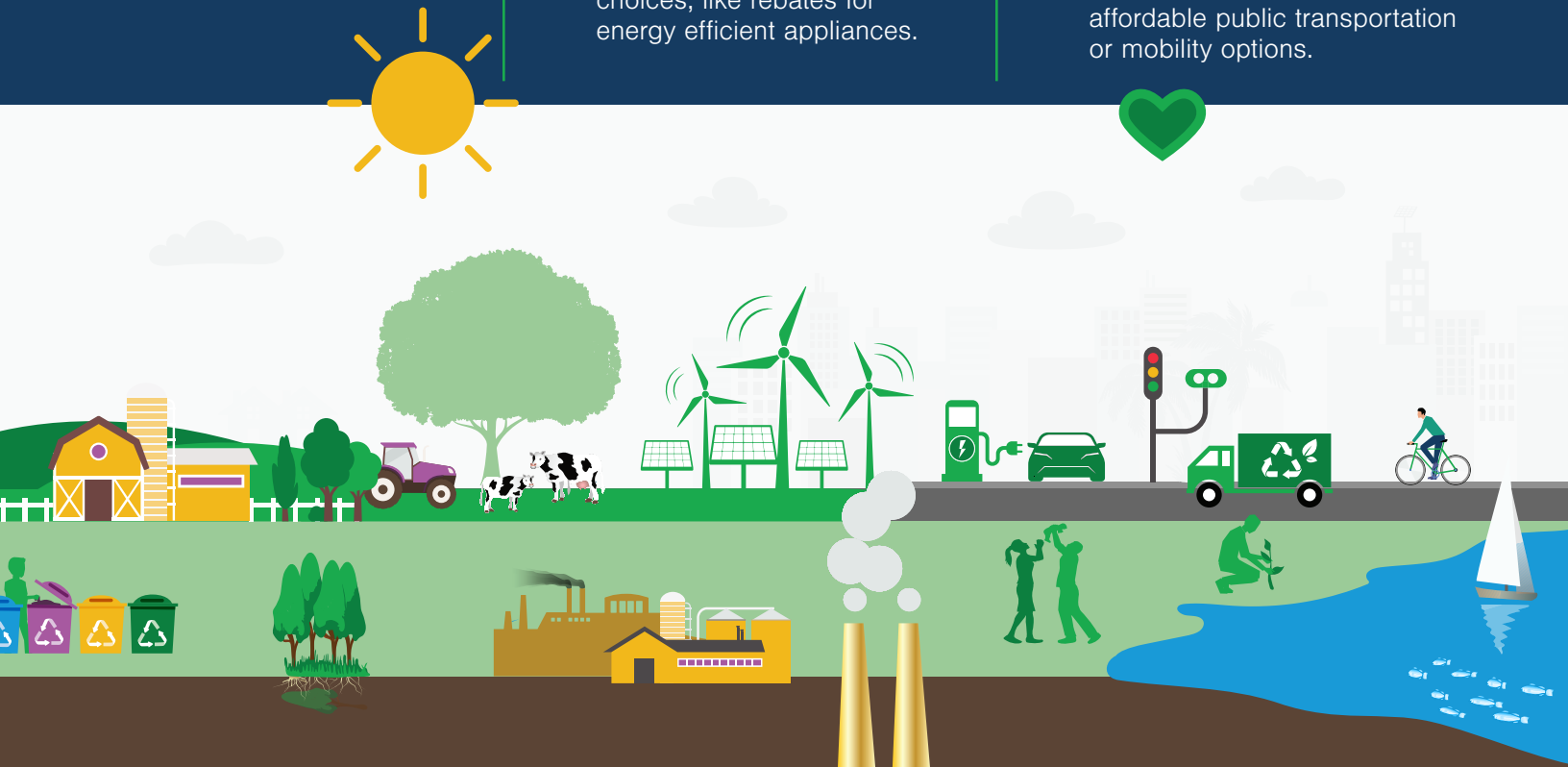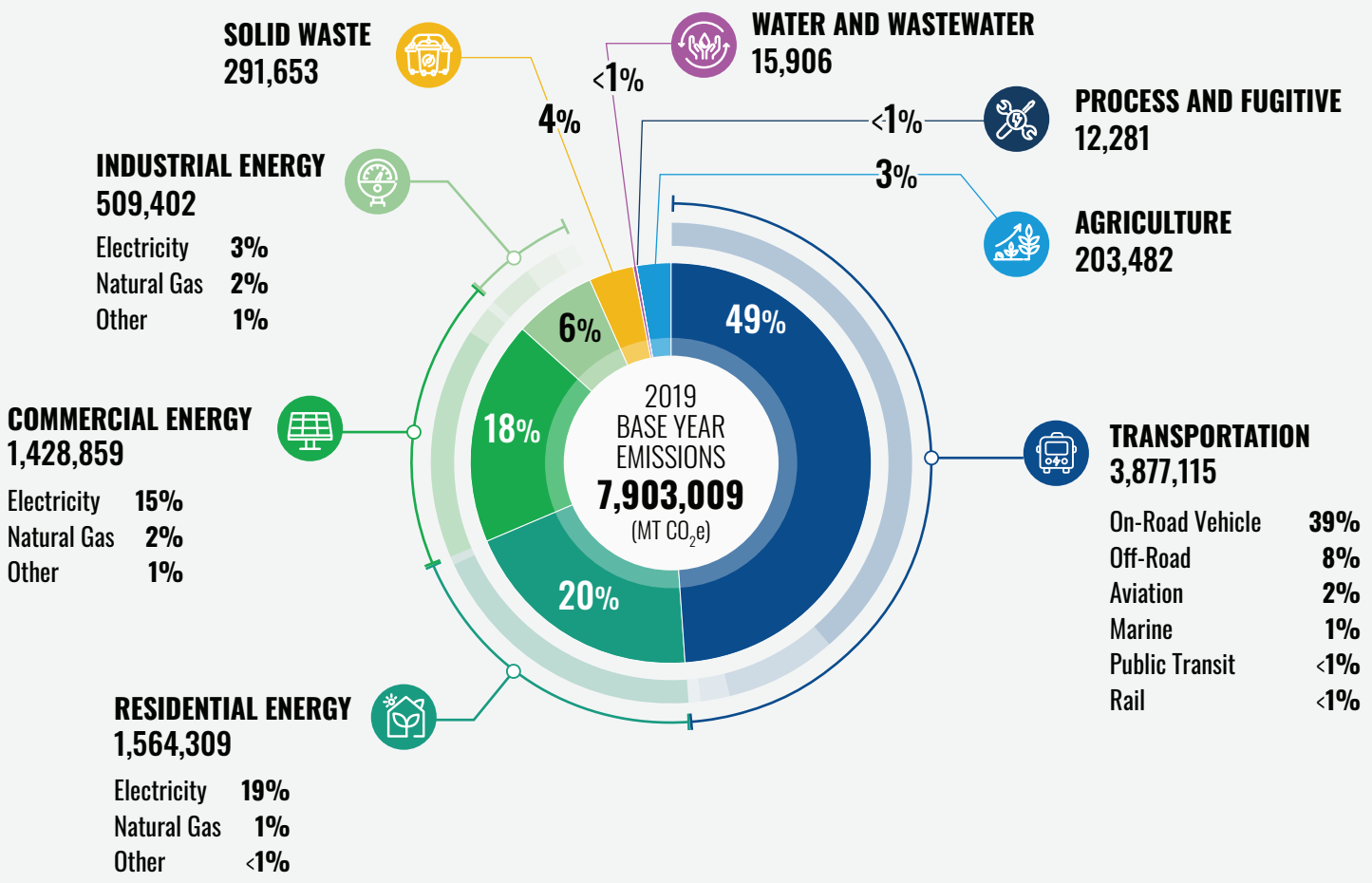
Determining Regional Baseline Emissions

Understanding the baseline is an important step in setting GHG emission reduction targets. The planning team chose 2019 as the baseline because it was the most recent year that was representative of typical activity, prior to the COVID-19 pandemic and associated short-term changes in activity rates for major sources such as transportation.

The region's total emissions for the sectors considered totaled approximately 7,903,007 MT CO_2e in 2019. Baseline emissions were categorized by sector. The transportation sector was the largest contributor of

GHG emissions with approximately 49 percent of the total GHG emissions. Residential and commercial energy use were the second and third largest contributors of GHG emissions with 20 percent and 18 percent of total emissions, respectively. Emissions from industrial energy sources represent 6 percent of the inventory, while approximately 4 percent of the emissions were from solid waste management, and approximately 3 percent were from agricultural sources. The remaining emissions were from wastewater treatment and fugitive emissions from natural gas distribution, representing less than 1 percent of the emissions inventoried.

SOLID WASTE
291,653

WATER AND WASTEWATER
15,906

<1%

4%

<1%

PROCESS AND FUGITIVE
12,281

INDUSTRIAL ENERGY
509,402

Electricity	3%
Natural Gas	2%
Other	1%

3%

AGRICULTURE
203,482

49%

COMMERCIAL ENERGY
1,428,859

Electricity	15%
Natural Gas	2%
Other	1%

6%

18%

2019
BASE YEAR
EMISSIONS
7,903,009
(MT CO_2e)

TRANSPORTATION
3,877,115

On-Road Vehicle	39%
Off-Road	8%
Aviation	2%
Marine	1%
Public Transit	<1%
Rail	<1%

20%

RESIDENTIAL ENERGY
1,564,309

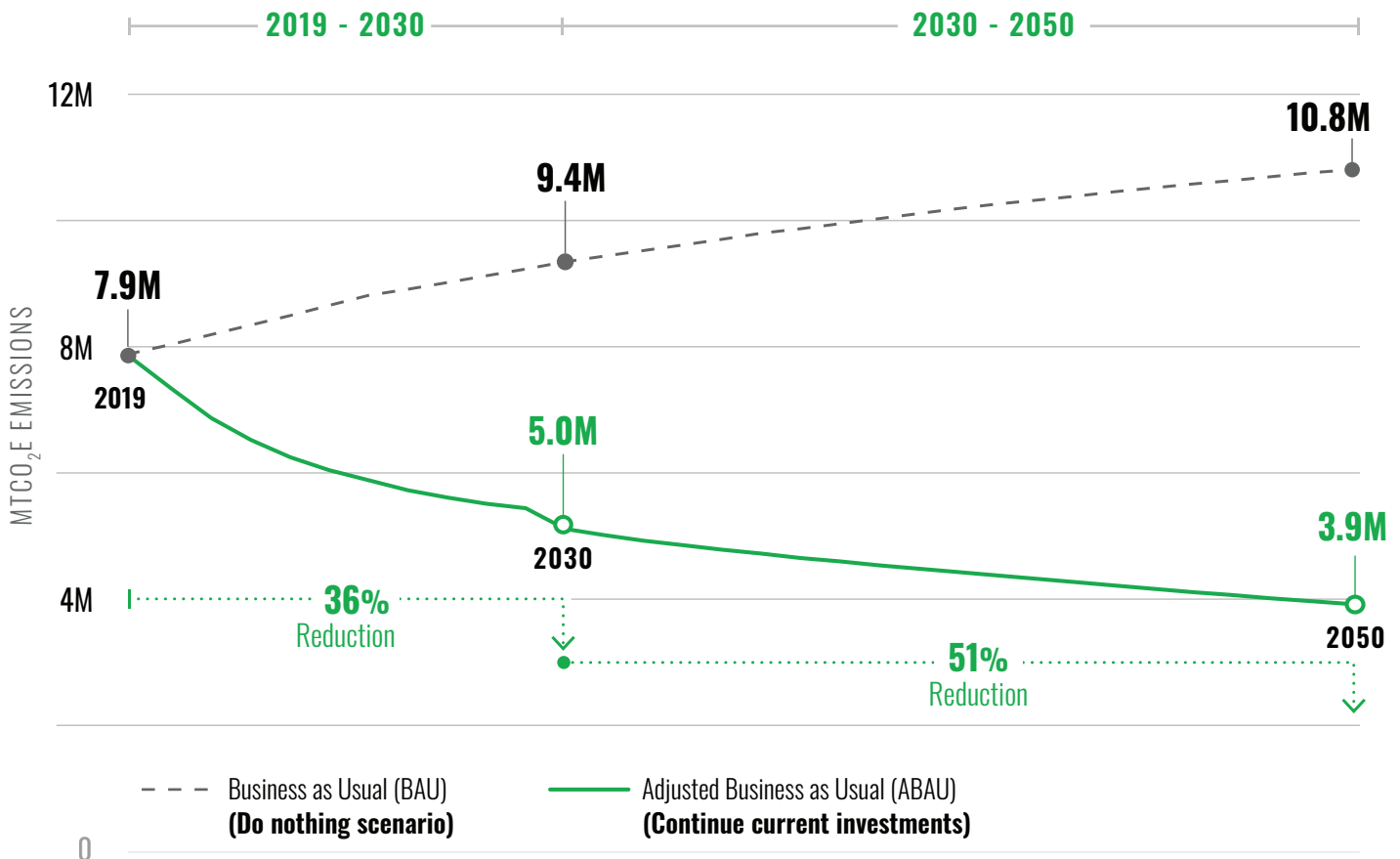| Electricity | 19% |
| Natural Gas | 1% |
| Other | <1% |

Forecasting Future Regional Emissions

Once the baseline was established, the next step was the development of a forecast to summarize GHG emission trends based on anticipated demographic and economic changes. Two forecasts were prepared.

↗ The **Business As Usual (BAU)** forecast incorporates projected population growth and presumes current emissions rates and activities are constant. This scenario captures a "do nothing" approach.

↗ A second scenario, identified as the **Adjusted Business as Usual (ABAU)**, reduces emissions from the baseline scenario due to anticipated impacts from existing policies and plans that will occur regardless of the implementation measures outlined in this CCAP. The ABAU forecast also captures emission reductions

attributed to Florida Power and Light's (FPL) (and its parent company, NextEra Energy) *Real Zero*. This scenario reflects a continuation of investments and strategies that are already in process.

Under the BAU, emissions for the Sarasota-Manatee region are projected to increase by 18 percent above 2019 levels (to 9,362,229 MT CO_2e) by 2030 and by 37 percent above 2019 levels (to 10,849,057 MT CO_2e) by 2050. Because the ABAU scenario includes fuel economy standards, EV transition, and implementation of the Carbon Zero Plan, it shows a reduction in the overall GHG emissions of around 36 percent (to 5,089,327 MT CO_2e) below 2019 levels in 2030, and about 51 percent (to 3,886,251 MT CO_2e) below 2019 levels in 2050.

2019 - 2030   **2030 - 2050**

12M

10.8M

9.4M

7.9M

MTCO$_2$E EMISSIONS

8M

2019

5.0M

2030

4M   **36%**
Reduction

51%
Reduction

3.9M

2050

− − − Business as Usual (BAU)
(Do nothing scenario)

Adjusted Business as Usual (ABAU)
(Continue current investments)

0

Setting Short- and Long-Term Regional Reduction Targets

With a clear quantification of baseline emissions, the Sarasota-Manatee region established short and long-term *targets for reduction.*

The 2030 short-term reduction target is expected to be achievable by implementing projects and activities already or in the process of being programmed, along with providing additional incentives, particularly for low-income communities. The 2050 long-term reduction target relies on continuing the actions that support the 2030 reductions, implementing the GHG reduction measures identified in this CCAP, and an optimistic expectation of improved technology solutions and changing legislative requirements.

> **Sarasota-Manatee region set a short-term emission reduction goal of 35 percent by 2030 and 75 percent by 2050 from the 2019 baseline.**

Developing Actionable GHG Reduction Measures and Carbon Capture Opportunities to Meet the Targets

The CCAP provides a framework for the region to assess and organize plans around reducing GHG emissions, with particular attention to the effects of climate change on low-income communities. Foundational to the CCAP is the understanding that reducing GHG emissions relies on both the coordinated and independent actions of multiple participants—local governments, regional agencies, and the private sector.

To understand the complexities involved with sector-specific GHG reduction measures, county and municipal agency staff engaged in two sets of consultant-led regional workshops to share lessons-learned from other communities; discuss challenges encountered and opportunities available in future technology and funding; and set future policies and targets for the region.

The first discussions occurred during the preparation of the PCAP. During the preparation of the CCAP, two sets of meetings were held with representatives from the counties, cities, metropolitan planning organizations, and transit authorities in the region. Sector-specific workshops addressed the following: (1) transportation; (2) energy - commercial (agency-owned) and residential; (3) environment, agriculture, and working lands; and (4) solid waste (waste management).

Engagement with the counties and cities that will lead implementation of the measures was a critical activity in the development of the CCAP. The measures included in this CCAP were vetted with the agencies to ensure that they have the authority to implement them. Measures that require a policy or local ordinance change, or those that are recommendations for voluntary adoption, are noted as such.

As a result, the choice of measures and the proposed progress to achieve the reductions associated with each measure are grounded in achievable actions expected to produce the greatest return.

In total, the CCAP offers 23 measures, comprising 56 strategies intended to reduce air pollution in the region. Of these 56 strategies, 37 address the 3 major sources of emissions (Transportation, Residential Energy, and Commercial Energy), while 16 are intended to address emissions related to Solid Waste and Agriculture.

The remaining 3 strategies are related to carbon capture opportunities. The benefits of carbon capture through ecosystem restoration have substantial climate mitigation effects—a modest-scale wetland restoration project has the capability to reduce one thousand-metric tons of carbon dioxide per year. Carbon capture and sequestration through ecosystem

restoration also offer meaningful climate change mitigation potential as well as co-benefits such as storm buffering, biodiversity habitat provision, and water quality support.[2]

Each measure is supported by specific strategies and information about the cost of implementation, information about the agency with the authority to implement the measure/strategy, an implementation schedule, the potential reduction in GHG emissions, metrics to track progress, potential funding sources, and the benefits these measures are expected to have on the region.

A word about funding: Before the benefits of these measures can be fully realized, the region will need access to existing, expanded, and new sources of funding to meet its CCAP goals. To support the implementation of these GHG emission reduction measures, the CCAP provides an analysis of sector-specific funding and financing opportunities

for maximizing available capital support. These opportunities include programs readily available to communities in the Sarasota-Manatee region as well as replicable tools and financing models employed by other communities. Some examples include grants and tax credits (funding) as well as green bonds, carbon markets, and commercial or not-for-profit lenders (financing). Recognizing the rapidly evolving availability of federal grants, diversifying and/or combining funding and financing sources (known as blended financing) is highly emphasized to support the implementation and sustainability of these projects.

The CCAP is designed to be flexible and iterative; adjustments can be made to the implementation timeframes and mechanisms in response to market and regulation changes, technology advancements, and progress updates tracked by the counties.
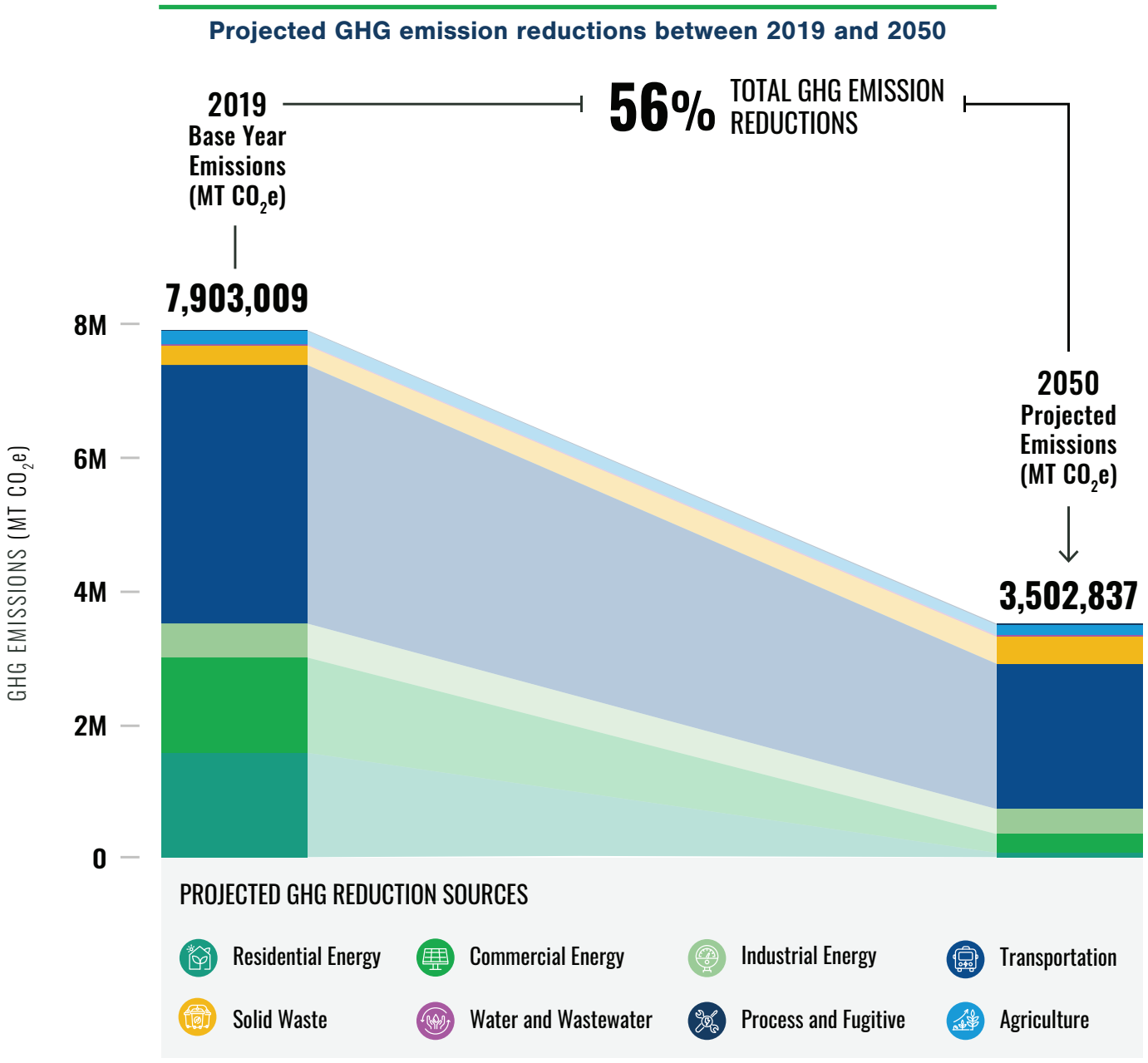

[2] Perfect, I., J. Vandermeer, and A. Wright. Nature's Matrix. Linking Agriculture, Conservation and Food Sovereignty. (Routledge, 2019).

Expected GHG Emission Reductions

The measures contained in this CCAP, together with actions that other entities are expected to take (e.g., decarbonization efforts by Florida Power and Light [FPL] and its parent company NextEra Energy), are projected to decrease GHG emissions by 56 percent over 2019 levels by 2050 and achieve positive environmental and economic outcomes for the Sarasota-Manatee region, from lower energy cost burdens to improving air quality.

Projected GHG emission reductions between 2019 and 2050

2019 Base Year Emissions (MT CO_2e)

56% TOTAL GHG EMISSION REDUCTIONS

7,903,009

2050 Projected Emissions (MT CO_2e)

3,502,837

GHG EMISSIONS (MT CO_2e)

8M
6M
4M
2M
0

PROJECTED GHG REDUCTION SOURCES

- Residential Energy
- Commercial Energy
- Industrial Energy
- Transportation
- Solid Waste
- Water and Wastewater
- Process and Fugitive
- Agriculture

While this reduction is short of the target goal of 75 percent, it represents a significant improvement from 2019 levels and relies on reductions in sectors where the Sarasota-Manatee region can affect change. However, it is likely that advances in technology, market and regulatory changes, future commitments from regional entities, and the reduction in costs of existing technology will provide additional opportunities for the region to further reduce carbon emissions.

Call to Action: We ALL Have a Part to Play!

Achieving GHG emission reductions does not rest with one agency or one industry—rather it relies on multiple actors contributing their efforts. The CCAP is intended as a blueprint for the agencies, municipalities, and counties in the Sarasota-Manatee region to do their part in this endeavor.

The Sarasota-Manatee communities, its residents and visitors, as well as the private businesses must participate in reducing GHG emissions. Adopting changes in everyday choices, like changes toward transitioning to renewable transportation fuels, energy efficiency, and changed behavior with waste management, will each contribute to the larger goal.

Additionally, the entire region benefits if the emission reduction goals set in the CCAP are met. Reducing GHG emissions has positive effects on public health, tourism, the workforce, and the costs associated with maintaining public infrastructure, among others.

PRESERVE OUR NATURAL RESOURCES

REDUCE MONTHLY ENERGY CONSUMPTION

IMPROVE RESILIENCE TO EXTREME WEATHER

SUPPORTS WORKFORCE TRANSITION TO A FUTURE CLEAN ENERGY ECONOMY

IMPROVE HEALTH BENEFITS FROM BETTER AIR AND NOISE QUALITY

REDUCE LIFE-CYCLE COST OF INFRASTRUCTURE INVESTMENT

BEYOND THE CCAP

The GHG reduction measures described in the CCAP are the result of many conversations and numerous rounds of analysis that yielded steps that the region has vetted and agreed to pursue. These measures are intended to provide the roadmap from the 2025 lens of technologies, legislative opportunities, and available funding. The journey is not expected to be linear—rather it will be iterative, with updates as new information becomes available.