

GREENHOUSE GAS INVENTORY

*CORAL GABLES SUSTAINABILITY
MANAGEMENT PLAN*

RS&H



GREENHOUSE GAS INVENTORY

CORAL GABLES SUSTAINABILITY MANAGEMENT PLAN

RS&H No.:
111-0096-000

Prepared by RS&H, Inc. at the
direction of the City of Coral Gables

RS&H

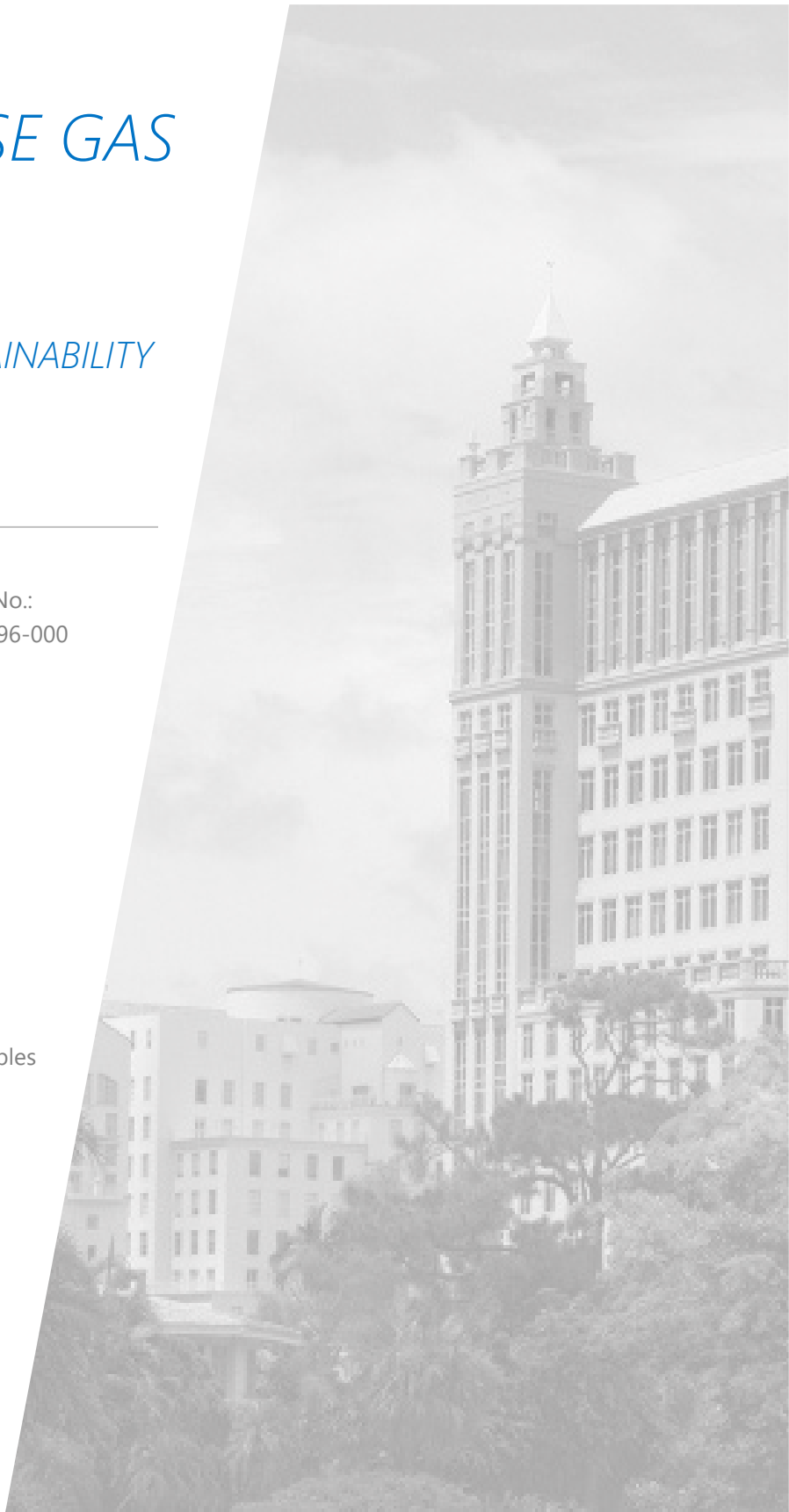


TABLE OF CONTENTS

1. Executive Summary	1
2. Introduction.....	2
3. Community	3
3.1 2013 Community Inventory Overview.....	3
3.3 2017 Community Inventory Overview.....	5
3.4 Community Inventory Data Sources and Methods.....	7
4. Local Government Operations.....	9
4.1 2013 LGO Inventory Overview.....	9
4.3 2017 LGO Inventory Overview.....	11
4.4 LGO Inventory Data Sources and Methods.....	12
5. GHG Emissions Forecast.....	14
5.1 Forecast Methodology	14
5.2 Community Inventory Forecast Results	14
5.3 LGO Inventory Forecast Results	15
6. Emissions Reduction Targets.....	16
6.1 Community GHG Emissions Reduction Targets	16
6.2 LGO GHG Emissions Reduction Targets	16

LIST OF TABLES

Table 1: 2013 Community Inventory Sectors, Activities, and Emissions.....	3
Table 2: 2017 Community Inventory Sectors, Activities, and Emissions.....	5
Table 3: 2013 LGO Inventory Sectors, Activities, and Emissions.....	9
Table 4: 2017 LGO Inventory Sectors, Activities, and Emissions.....	11

LIST OF FIGURES

Figure 2: 2013 Community-wide Emissions.....	4
Figure 2: 2017 Community-wide Emissions.....	6
Figure 3: 2013 LGO Emissions	10
Figure 4: 2017 LGO Emissions	12
Figure 4: Coral Gables Community Emissions Forecast, 2013 – 2030	15
Figure 5: Coral Gables LGO Emissions Forecast, 2013 - 2030.....	15
Figure 6: Community BAU Forecast and Emissions Reduction Targets.....	16
Figure 7: LGO BAU Forecast and Emissions Reduction Targets.....	17

1. EXECUTIVE SUMMARY

In 2014, the City of Coral Gables began a Sustainability Master Plan (SMP) and implementation process. As part of this process, RS&H prepared the first Greenhouse Gas (GHG) emissions inventory and forecast for the city's Local Government Operations (LGO) as well as for the community as a whole (Community). This inventory establishes 2013 as the baseline for its GHG emissions. As the SMP planning concluded, the inventory was updated to measure the City's progress. The inventory update covers the year 2017. Between 2013 and 2017, the City reduced LGO emissions by 6% and Community emissions by 8%. This indicates that it is on track to meet its goal of reducing LGO emissions by 20% below 2013 levels by 2025.

This report details results of the LGO and Community GHG emissions inventories. It provides an emissions baseline and update to evaluate the city's progress towards its GHG emissions reduction goals. Coral Gables' city limits serve as the physical boundaries for the inventory accounting effort.

The report also includes a business-as-usual (BAU) forecast of the city's emissions from the present until 2030. This forecast was developed using the results of the 2013 inventory as the starting point.

Together, the inventories and forecast allow the local government to understand present and future emissions trends. The inventory and forecast also provides the information needed to evaluate emissions reduction targets, informing staff and policy-makers as they design and implement strategic measures to reduce and mitigate greenhouse gas emissions.

This inventory and forecast use 2013 as the base year of assessment. In 2013, the community's total estimated emissions were 762,179 metric tons of carbon dioxide equivalents (mtCO_{2e})¹, with the Commercial sector contributing the largest single source (40%). The Transportation and Residential sectors also contributed significantly at 30% and 28%, respectively.

Within this community-wide total, local government operations (i.e. facilities, vehicles, and infrastructure directly owned and/or controlled by the city) were responsible for emitting 13,762 mtCO_{2e}, with city-owned buildings and facilities contributing 50%. The city's vehicle fleet operation and city streetlights also contributed significantly to the total LGO emissions, at 23% and 13%, respectively.

In 2017, the community's total estimated emissions were 694,217 mtCO_{2e}, 9% less than 2013. The Commercial sector remains the largest contributor, with 36% of emissions. The Transportation and Residential sectors were also significant (32% and 28%).

Government operations contributed 12,927 mtCO_{2e} to this total. Government emissions decreased 6% from 2013 levels. Buildings and facilities remain the largest contributor, but its share dropped to 41%, while the vehicle fleet's contribution increased to 30%.

¹ CO_{2e} refers to carbon dioxide equivalent (CO_{2e}), a measure that describes how much warming a given type and amount of a greenhouse gas may cause, using the functionally equivalent amount of carbon dioxide (CO₂) as the reference.

2. INTRODUCTION

Coral Gables is a leader in promoting public awareness about the causes and impacts of climate change. These inventories support the city's long-term efforts to reduce emissions and is critical to clearly understanding the city's contribution to and path toward addressing the problem caused by climate change.

This report presents estimates of GHG emissions in Coral Gables for the calendar year 2013 and 2017 for each emissions-producing activity that takes place within the city limits. It establishes a GHG emissions baseline (2013) that will allow Coral Gables to evaluate future GHG emissions levels and includes an update (2017) that demonstrates progress towards achieving emissions reductions goals. Coral Gables has set a goal to reduce government operations emissions by 20% below 2013 levels by 2025. Methodology

The first step toward achieving tangible greenhouse gas emission reductions requires identifying baseline levels and sources of emissions in the community. The next step is to monitor emissions over time. A standardized approach is necessary to quantify GHG emissions in a way that is useful to local governments and their communities.

The Community portion of the inventory was completed under ICLEI's U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions, Version 1.1, published July 2013. The LGO portion of this inventory was completed under ICLEI's Local Government Operations Protocol, Version 1.1, published May 2010. The 2013 inventory was entered into ICLEI's ClearPath GHG emissions reporting platform to facilitate future updates, reporting, and integration with the software's planning, monitoring, and forecasting tools. At the City's direction, the 2017 inventory was not entered into ClearPath.

GHG emissions were quantified using calculations to determine emissions based on activity data and emission factors. The basic equation used is: *Activity Data X Emission Factor = Emissions*. Activity data collected and provided by the City measure the energy use, fuel consumption or other indicators of emissions generating processes. Emission factors corresponding to emissions per unit of activity data (e.g. metric tons CO₂/kWh of electricity) were used to convert activity data into associated emissions quantities.

It is useful to think of emissions estimates as indicators of reality, rather than exact values. Since GHG emissions are not typically measured at the source, they must be estimated from data on emissions-generating activities, such as fuel consumption. Emissions estimates include numerous assumptions and are limited by the quality and availability of related data.

Emissions results in this inventory are presented in mtCO₂e, or metric tons of carbon dioxide equivalent units. Because various greenhouse gases have differing global warming potentials, they are commonly converted to equivalent units of CO₂ to allow comparison of their global warming effects.

3. COMMUNITY

The community-scale inventory represents the total amount of greenhouse gas (GHG) emissions associated with the community within its jurisdictional boundary. This total includes emissions from municipal government operations and activities. As result the LGO inventory may be considered a subset of the community inventory.

3.1 2013 Community Inventory Overview

In 2013, community-wide emissions from Coral Gables totaled **762,179** metric tons CO₂e. Table 1 shows community sectors, activities, and estimated emissions included in this total. Figure 1 shows the percentage of the total contributed by each sector.

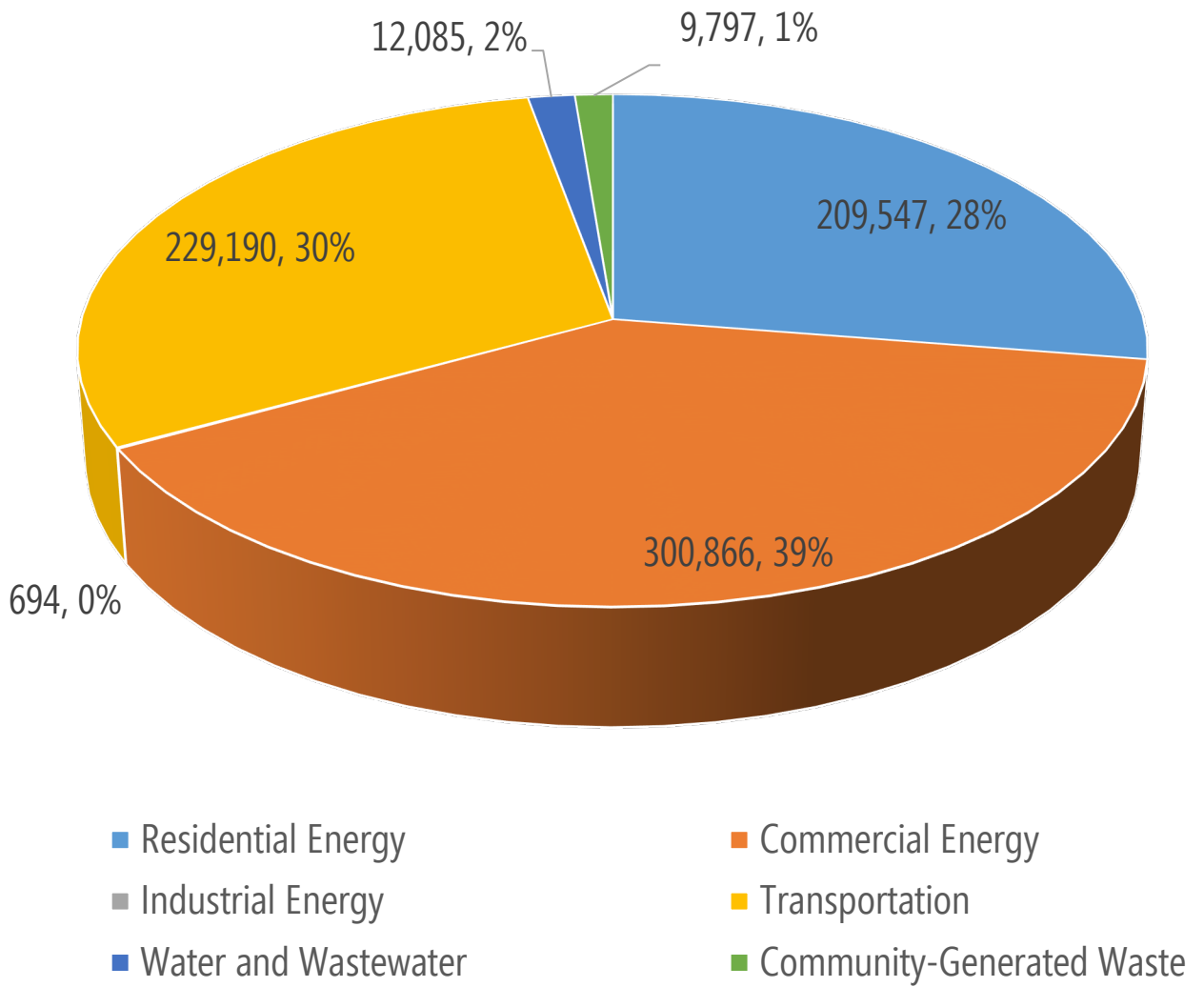
TABLE 1: 2013 COMMUNITY INVENTORY SECTORS, ACTIVITIES, AND EMISSIONS

Sector	Activities	Emissions (CO ₂ e)
Residential	Electricity consumption	
	Natural gas consumption	209,547
	Propane consumption	
Commercial	Electricity consumption	300,866
	Natural gas consumption	
Industrial	Electricity consumption	694
Transportation	Gasoline vehicles VMT	229,190
	Diesel vehicles VMT	
Water and Wastewater	Potable water supply	
	Wastewater collection and treatment	12,085
	Septic system fugitive emissions	
	WWTP process emissions (CH ₄)	
Agriculture	<i>Not occurring in the community</i>	NO*
Community-generated Waste	Solid waste generation	9,797
	Solid waste transportation	
Process and Fugitive Emissions	<i>Not estimated – no data available</i>	NE**
Upstream Impacts of Activities	<i>Not estimated – no data available</i>	NE**
Consumption-Based Emissions	<i>Not estimated – no data available</i>	NE**
Total		762,179

*NO = Not Occurring. The source or activity does not occur or exist within the community.

**NE = Not Estimated. Emissions occur but have not been estimated or reported (e.g., data unavailable, effort required not justifiable).

FIGURE 1: 2013 COMMUNITY-WIDE EMISSIONS



3.3 2017 Community Inventory Overview

In 2017, community-wide emissions from Coral Gables totaled **694,217** metric tons CO₂e, a 9% reduction from 2013. Table 2 shows community sectors, activities, and estimated emissions included in this total. Figure 2 shows the percentage of the total contributed by each sector.

Emissions decreased in the Transportation, Commercial and Residential sectors, which contribute 96% of emissions. Emissions increased in the Industrial, Water / Wastewater and Community-generated Waste sectors.

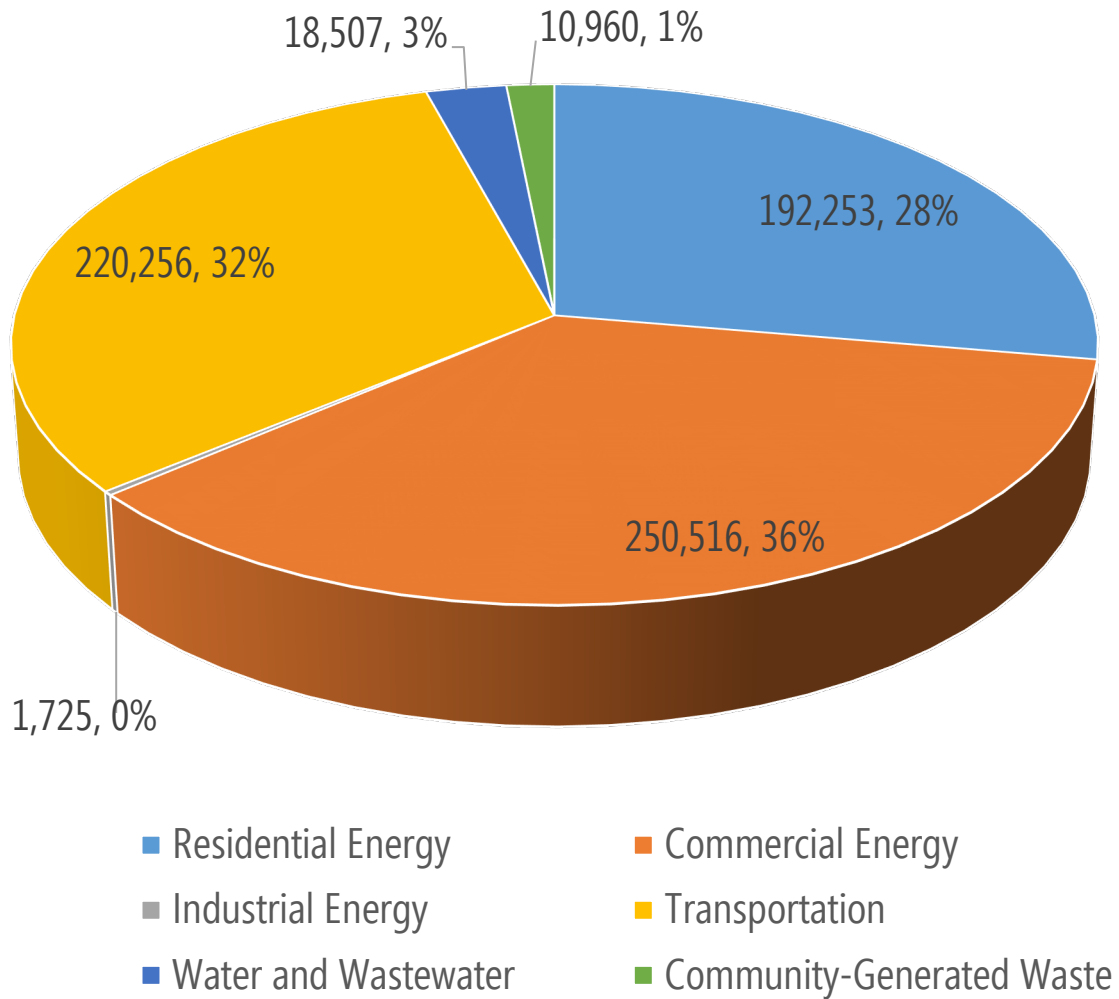
TABLE 2: 2017 COMMUNITY INVENTORY SECTORS, ACTIVITIES, AND EMISSIONS

Sector	Activities	Emissions (CO ₂ e)
Residential	Electricity consumption	
	Natural gas consumption	192,253
	Propane consumption	
Commercial	Electricity consumption	250,516
	Natural gas consumption	
Industrial	Electricity consumption	1,725
Transportation	Gasoline vehicles VMT	
	Diesel vehicles VMT	220,256
Water and Wastewater	Potable water supply	
	Wastewater collection and treatment	
	Septic system fugitive emissions	18,507
	WWTP process emissions (CH ₄)	
Agriculture	<i>Not occurring in the community</i>	NO*
Community-generated Waste	Solid waste generation	10,960
	Solid waste transportation	
Process and Fugitive Emissions	<i>Not estimated – no data available</i>	NE**
Upstream Impacts of Activities	<i>Not estimated – no data available</i>	NE**
Consumption-Based Emissions	<i>Not estimated – no data available</i>	NE**
Total		694,217

*NO = Not Occurring. The source or activity does not occur or exist within the community.

**NE = Not Estimated. Emissions occur but have not been estimated or reported (e.g., data unavailable, effort required not justifiable).

FIGURE 2: 2017 COMMUNITY-WIDE EMISSIONS



3.5 Community Inventory Data Sources and Methods

This section details data sources and methods used to complete the emissions estimates for each sector. Unless otherwise noted, data was collected and provided by Coral Gables.

Purchased Electricity

Emissions in the Residential, Commercial and Industrial sectors are related to purchased electricity (Scope 2 emissions) and the combustion of fuels for heating or industrial processes. Data to calculate electricity and natural gas emissions was provided by Florida Power and Light (FPL) and Florida City Gas. In 2017, Florida City Gas provided usage data for the Commercial sector only. Propane emissions were estimated using ICLEI method BE1.2 based on data from the Energy Information Agency (EIA) and the American Community Survey (ACS).

Transportation

Transportation emissions estimates were developed using vehicle miles travelled (VMT) data within the city limits interpolated from the Southeast Florida Regional Planning Model (SERPM) Version 7.

Water / Wastewater

Water and wastewater related emissions were calculated using data from the city's Public Works department and Miami-Dade Water and Sewer Department (WASD). WASD provided emissions totals for the water and wastewater plants serving the city and the city's contribution to these totals was estimated using a ratio approach. Since most city residents use septic systems, emissions from these sources were estimated using a population-based approach. Population-based calculations were used to estimate wastewater treatment emissions. In 2013, Coral Gables contribution to WWTP emissions were calculated based on ratio of City's wastewater sent to WWTP to total WWTP influent volume. Central District WWTP GHG emissions totals were supplied by Miami-Dade County WASD. Population-based calculations were used to estimate wastewater treatment emissions for Coral Gables in 2017. Population estimates were obtained from the US Census Bureau website. In 2013 and 2017, ICLEI Equation WW.6 - Alternate Methane Emissions from lagoons was used to estimate CH₄ emissions, and ICLEI Equation WW.7 - N₂O Process Emission from WWTP was used to estimate NO₂ emissions.

Agriculture

Since there is little to no agriculture occurring in Coral Gables, this category was omitted from the inventory.

Solid Waste

Solid Waste related emissions were estimated based on data from the city's public works, Miami-Dade County, and Waste Management of Dade County (WMDC). Coral Gables' solid waste management system is complex and has changed from 2013 to 2017

2013

Single-family waste (i.e. "garbage") is picked up by the city's Public Works Department and transferred to the North Dade landfill (7.1%), South Dade Landfill (18.9%) or the Resource Recovery Facility (72.9%)². The Resources Recovery Facility (RRF) is a waste-to-energy facility processing about 1.3 million tons of waste

² Percentages reported by Miami-Dade for 2013

annually. About 18.5% of the waste it receives is processed into biomass fuel exported outside Miami-Dade County. Recyclable materials are removed from the waste, which is then incinerated and used to produce electricity. Since recycled proportion of Coral Gables' waste at RRF is unknown, calculations assume 100% contributes to the facility's emissions. All three facilities are located outside of Coral Gables. A ratio approach was used to calculate the city's contribution to emissions from these facilities using EPA Mandatory Reporting Rule (MRR) data on reported GHG emissions totals. ICLEI method SW.1 was used to estimate emissions at N. Dade and S. Dade landfills, and method SW.7 was used for the RRF. WMDC picks up waste from multi-family residences and commercial buildings within the city. For the purposes of this analysis, it was assumed that WMDC disposes of waste in a landfill with landfill gas collection in place.

2017

Garbage was transferred to the County's West Transfer Station (72.5%) and the Resource Recovery Facility (27.5%). Trash (yard and bulk waste) was sent to 4 facilities: West Transfer (12%, 3,534 tons); Resource Recovery (0.01%, 2.32 tons); South Dade (0.11%, 31.39 tons); and Waste Management's landfill (88%, 25,742 tons). It is assumed that material sent to West Transfer, South Dade, and WM ends up in a landfill with landfill gas collection in place. ICLEI Community Protocol Appendix E: Solid Waste Emission Activities and Sources equations SW.7.1 and SW.7.2 were used to estimate Coral Gables' portion of the RRF's emissions. Note that this is an approximate approach because solid waste generation data are from 2017 and the most recent EGrid data available is from 2014. Eq. SW 6 was used to estimate Transportation emissions from the centroid of Coral Gables to each disposal facility.

Process and Fugitive Emissions, Upstream Impacts of Activities and Consumption-Based Emissions

Due to a lack of available information, the categories Process and Fugitive Emissions, Upstream Impacts of Activities, and Consumption-Based Emissions have been excluded from the 2013 and 2017 inventories. Although emissions related to these activities occur, they are not estimated at this time.

Urban Forestry

Coral Gables maintains a web-based inventory of its tree canopy. The inventory reflects 38,713 total trees as of 2018. The inventory software (TreeKeeper) estimates 1510 metric tons of CO₂ were sequestered via the canopy. Trees sequester CO₂ via photosynthesis, removing the gas from the atmosphere to build their physical structure. The estimated amount of CO₂ sequestered by the canopy is equivalent to about 0.17% of total community emissions.

Current community and local government protocols for developing greenhouse gas inventories do not include the impact of urban forestry on emissions. This is because emissions reductions from biological sequestration are uncertain, change over time and difficult to account. For these reasons, emissions sequestered by the tree canopy have not been directly included in the emissions inventory in 2013 or 2017.

Coral Gables' tree canopy is among its distinguishing features. It contributes greatly to the economic, social and environmental health of the community. While urban forestry's impact on the Community's emissions is uncertain and complex, it is an issue worthy of further study as the City continues to inventory its emissions.

4. LOCAL GOVERNMENT OPERATIONS

The local government operations inventory allows city operations to understand its own impact on the community's emissions and to effectively plan to reduce those emissions over which it has significant influence or direct control. It represents the total amount of greenhouse gas (GHG) emissions associated with local government operations for calendar year 2013, which is the base year and 2017.

4.1 2013 LGO Inventory Overview

In 2013, LGO emissions from Coral Gables totaled 13,762 metric tons CO₂e. Table 3 shows local government sectors, activities, and estimated emissions included in this total. Figure 3 shows the percentage of the total contributed by each sector.

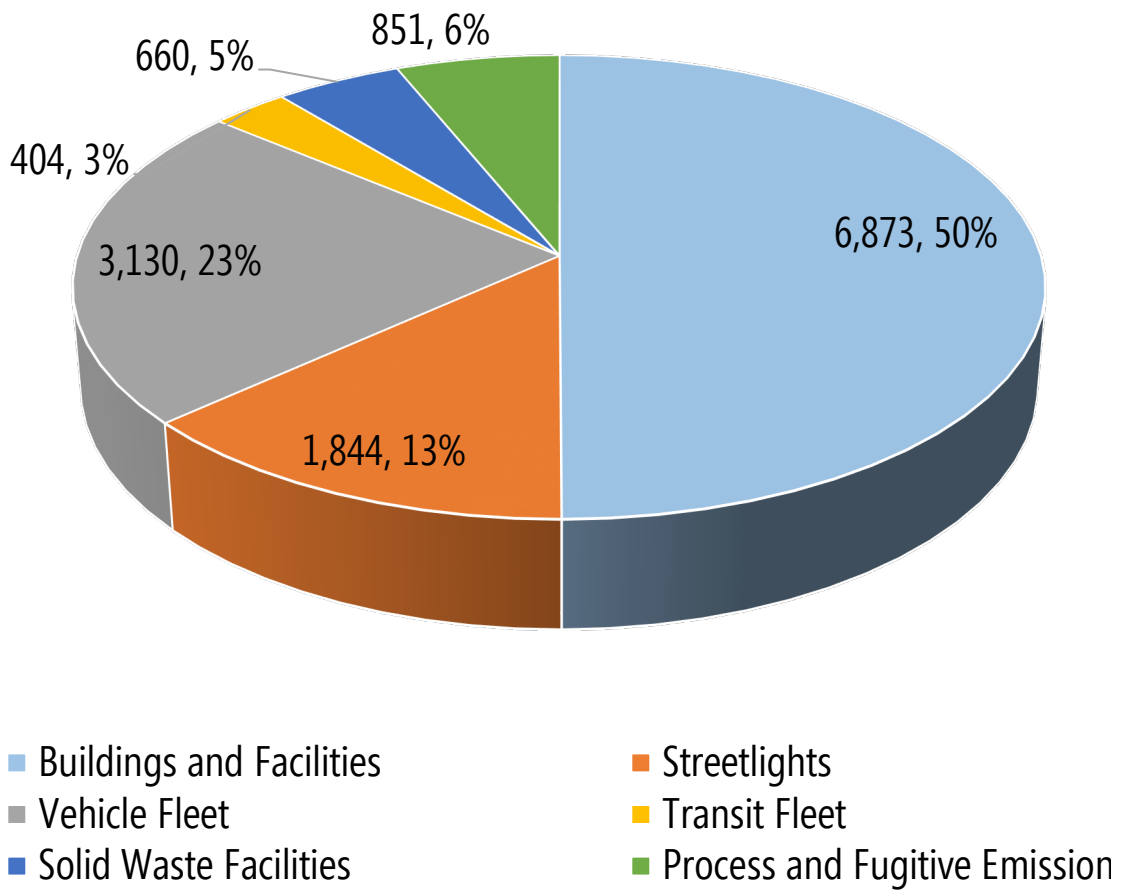
TABLE 3: 2013 LGO INVENTORY SECTORS, ACTIVITIES, AND EMISSIONS

Sector	Activities	Emissions (CO ₂ e)
Buildings / Facilities	Electricity consumption	6,873
	Electric Power T&D losses	
	Stationary fuel combustion	
	<i>Not estimated, no information available.</i>	
Streetlights	Electricity consumption (Streetlights)	1,844
Port / Airport Facilities	<i>Not occurring – there are no city-owned Port/Airport facilities</i>	NO
Vehicle Fleet	Fleet vehicle emissions	3,130
	Off-highway vehicle emissions	
Transit Fleet	Transit Fleet vehicle emissions (Trolley)	404
Employee Commute	<i>Not estimated, no information available</i>	NE
Solid Waste Facilities	Waste generation at city facilities	660
Water and Wastewater Treatment Facilities	<i>Not occurring – there are no city-owned Water/Wastewater Treatment facilities</i>	NO
Power Generation	<i>Not estimated – there are no city-owned power generation facilities other than generators. No generator information was available.</i>	NO
Fugitive Emissions	Fugitive emissions related to HVAC systems	851
<i>Total</i>		<i>13,762</i>

*NO = Not Occurring. The source or activity does not occur or exist within the community.

**NE = Not Estimated. Emissions occur but have not been estimated or reported (e.g., data unavailable, effort required not justifiable).

FIGURE 3: 2013 LGO EMISSIONS



4.3 2017 LGO Inventory Overview

In 2017, LGO emissions from Coral Gables totaled 12,927 metric tons CO₂e. Table 4 shows local government sectors, activities, and estimated emissions included in this total. Figure 4 shows the percentage of the total contributed by each sector.

Emissions decreased in the Buildings and Facilities, Streetlights and Solid Waste sectors, which contribute 53% of emissions. Emissions increased in the Vehicle Fleet, Transit Fleet and Fugitive Emissions sectors. Increases in the vehicle fleet sector, which is the second largest, may be due to Hurricane Irma. Following the hurricane, large amounts of fuel were used to process and transport debris. Transit fleet increases are due to service extensions, which have the potential to reduce community transportation emissions. Fugitive emissions increases are due to changes in accounting of heated / cooled square footage operated by the City.

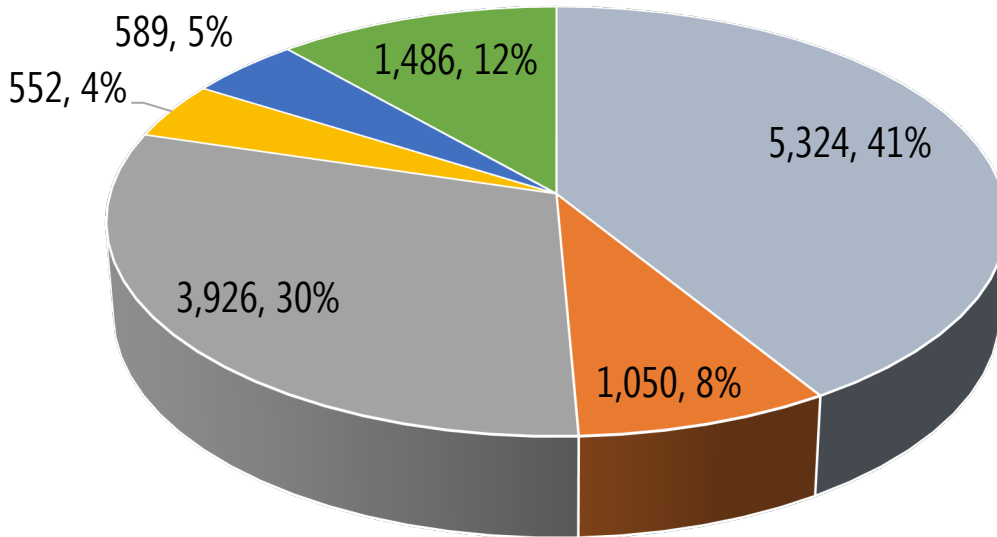
TABLE 4: 2017 LGO INVENTORY SECTORS, ACTIVITIES, AND EMISSIONS

Sector	Activities	Emissions (CO ₂ e)
Buildings / Facilities	Electricity consumption	5,324
	Electric Power T&D losses	
	Stationary fuel combustion	
	<i>Not estimated, no information available.</i>	
Streetlights	Electricity consumption (Streetlights)	1,050
Port / Airport Facilities	<i>Not occurring – there are no city-owned Port/Airport facilities</i>	NO
Vehicle Fleet	Fleet vehicle emissions	3,926
	Off-highway vehicle emissions	
Transit Fleet	Transit Fleet vehicle emissions (Trolley)	552
Employee Commute	<i>Not estimated, no information available</i>	NE
Solid Waste Facilities	Waste generation at city facilities	589
Water and Wastewater Treatment Facilities	<i>Not occurring – there are no city-owned Water/Wastewater Treatment facilities</i>	NO
Power Generation	<i>Not estimated – there are no city-owned power generation facilities other than generators. No generator information was available.</i>	NO
Fugitive Emissions	Fugitive emissions related to HVAC systems	1,486
Total		12,927

*NO = Not Occurring. The source or activity does not occur or exist within the community.

**NE = Not Estimated. Emissions occur but have not been estimated or reported (e.g., data unavailable, effort required not justifiable).

FIGURE 4: 2017 LGO EMISSIONS



- Buildings and Facilities
- Vehicle Fleet
- Solid Waste Facilities
- Streetlights
- Transit Fleet
- Process and Fugitive Emissions

4.4 LGO Inventory Data Sources and Methods

This section details data sources, methods and sources used to complete the emissions estimates for each sector.

Building and Facilities

Buildings and Facilities emissions estimates were calculated based on the city’s utility records. This category also includes infrastructure such as pump and lift stations.

Streetlights

Streetlight emissions were calculated based on the city’s utility billing data. In 2013, streetlight records were entered into ClearPath individually by FPL account number to facilitate tracking the performance of each group. Clearpath was not used in 2017.

Port and Airport Facilities

Port and Airport Facilities were omitted from the inventory, since none are owned or operated by the city, or located within its jurisdiction.

Vehicle Fleet and Transit Fleet

Vehicle Fleet and Transit Fleet (i.e. the city's Trolley service) emissions were calculated based on fuel purchase records supplied by the city's Public Works Department.

Employee Commute

Employee Commute related emissions were omitted from the inventory since the city did not have sufficient information on this activity to support an emissions estimate. Since inclusion of this activity is required by the LGO Protocol, it is recommended that the city complete an employee commuting survey or utilize GIS analysis to estimate emissions in this category.

Solid Waste Facilities

The Solid Waste Facilities emissions estimate was based on waste generation data for city facilities. To calculate waste tonnages, a conversion factor of 150 pounds of waste per cubic yard of dumpster space was applied following EPA guidance (the middle of the accepted range)³. The city supplied service-level data to support this estimate; in future tracking the exact volumes or tonnages disposed would allow a more accurate emissions calculation and support waste minimization efforts.

Water and Wastewater Treatment Facilities

Water and Wastewater Treatment Facilities were omitted from the inventory, since none are owned or operated by the city, or located within its jurisdiction.

Utility-scale Power Generation

The city does not own or operate utility-scale power plants or any other significant power generation sources. The city was unable to provide information on fuel use by stationary generators. While this information would help refine the inventory, generators are typically used only when tested and in emergencies or power outages. As a result, generator emissions are likely *de minimus* compared to the inventory total (i.e., less than 2%).

Fugitive Emissions

Fugitive emissions were estimated using the World Resource Institute screening method. No direct data on HVAC system capacity, leakage or recharge was available. The City supplied lists of facilities and square footages that were used to develop the estimate. Differences in the City's accounting of facilities and their floor area account for the differences in 2013 and 2017 emissions estimates.

³ US-EPA "Standard Volume-to-weight Conversion factors", accessed 3/9/15 at http://www.epa.gov/osw/conservation/tools/recmeas/docs/guide_b.pdf

5. GHG EMISSIONS FORECAST

5.1 Forecast Methodology

While establishing an emissions baseline lays the groundwork for measuring and reporting emissions, it is also useful to forecast emissions over time to see how projected rates of population growth and energy consumption would affect emissions under a business-as-usual (BAU) scenario.

RS&H prepared BAU forecasts for both the LGO and Community scale over a 15-year time horizon. The forecast end date of 2030 corresponds to the first key planning horizon highlighted in the Southeast Florida Regional Climate Action Plan (2012).

A review of GHG emissions forecasts performed by ICLEI members revealed a wide range of methods and growth rate indicators. In the interest of simplicity and reproducibility, two growth rate indicators were used to develop the city's BAU forecast. Population growth projections for Miami-Dade County, prepared by the Florida Office of Economic and Demographic Research, were used for the majority of emissions-generating activities.⁴ For categories related to energy use (e.g. transportation and facilities energy consumption) the U.S. Energy Information Agency (EIA) Annual Energy Outlook 2014 total energy projection for the southeast region was used.⁵ In both cases, projections were used as a basis for calculating compound annual growth rates for the 5-year date ranges in ClearPath.

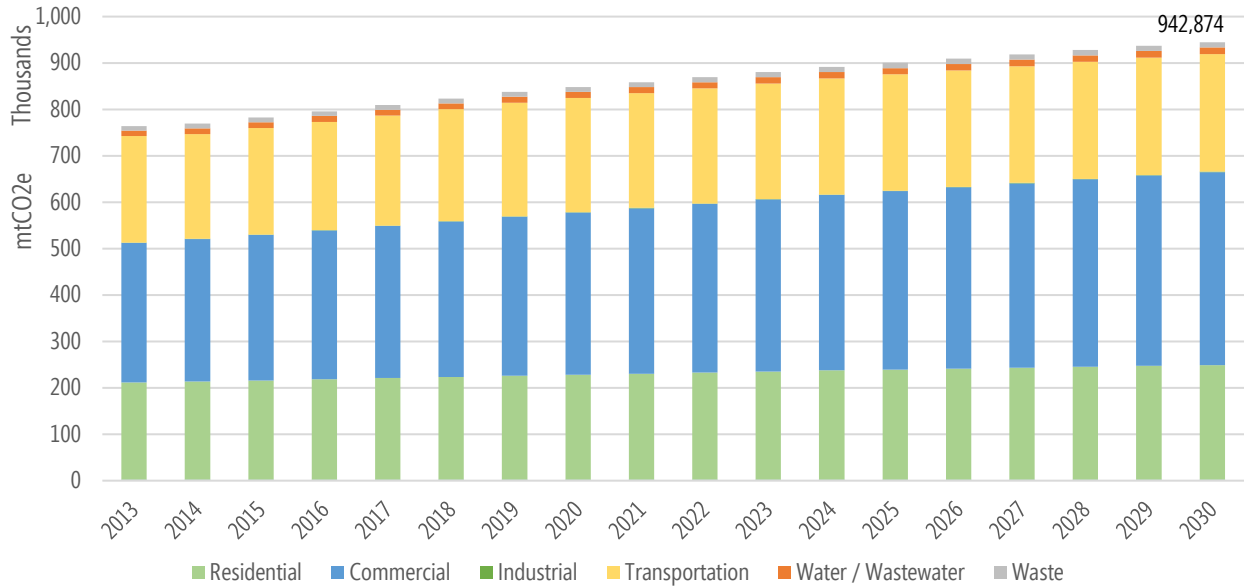
5.2 Community Inventory Forecast Results

The Community GHG Emissions forecast indicates growth in the commercial energy, residential energy and transportation sectors, will result in GHG emissions gradually increasing to 942,874 mtCO₂e by 2030 under a BAU scenario. Increases in Water/wastewater treatment and solid waste related emissions are less significant since they make up a small proportion of the inventory total.

⁴ "Medium Projections of Florida Population by County, 2015-2040", accessed February 19, 2015 at http://edr.state.fl.us/Content/population-demographics/data/Medium_Projections.pdf

⁵ "Energy Consumption by Sector and Source, South Atlantic, Reference case- 2014 update", accessed February 19, 2015 at http://www.eia.gov/forecasts/aeo/supplement/suptab_5.xlsx

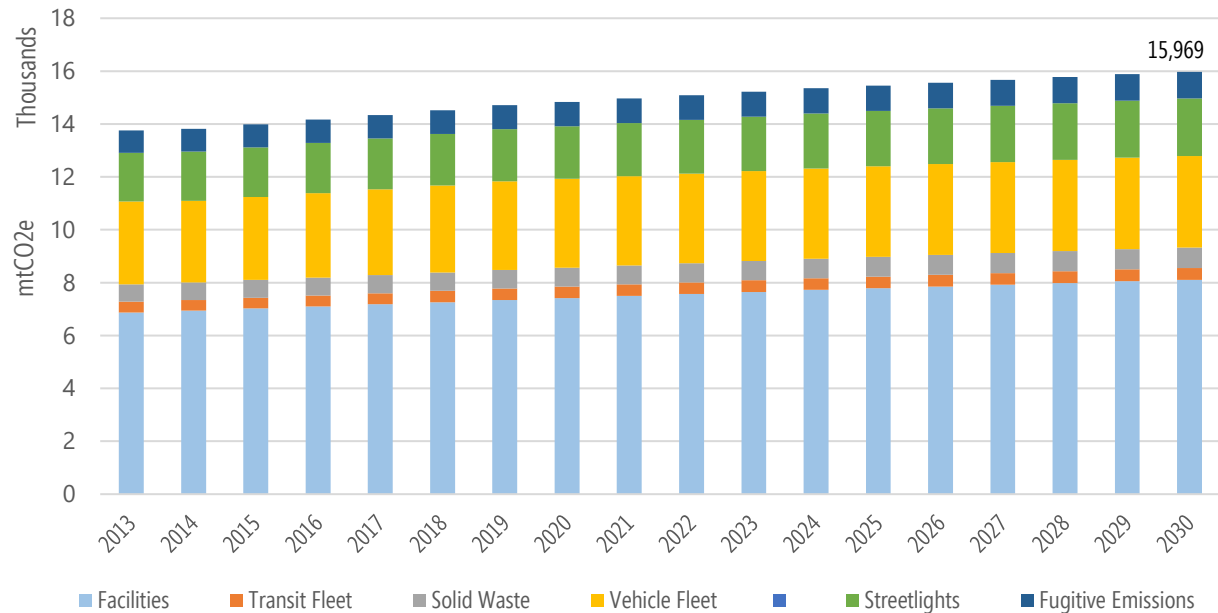
FIGURE 5: CORAL GABLES COMMUNITY EMISSIONS FORECAST. 2013 – 2030



5.3 LGO Inventory Forecast Results

The LGO GHG Emissions forecast assumes that city facilities will need to be expanded to provide services as the city’s population continues to grow. Since facility energy consumption is the largest single emissions source for Government operations, this source represents most emissions increases to 2030. Under a BAU scenario, LGO emissions would total approximately 15,969 mtCO2e by 2030.

FIGURE 6: CORAL GABLES LGO EMISSIONS FORECAST, 2013 - 2030



6. EMISSIONS REDUCTION TARGETS

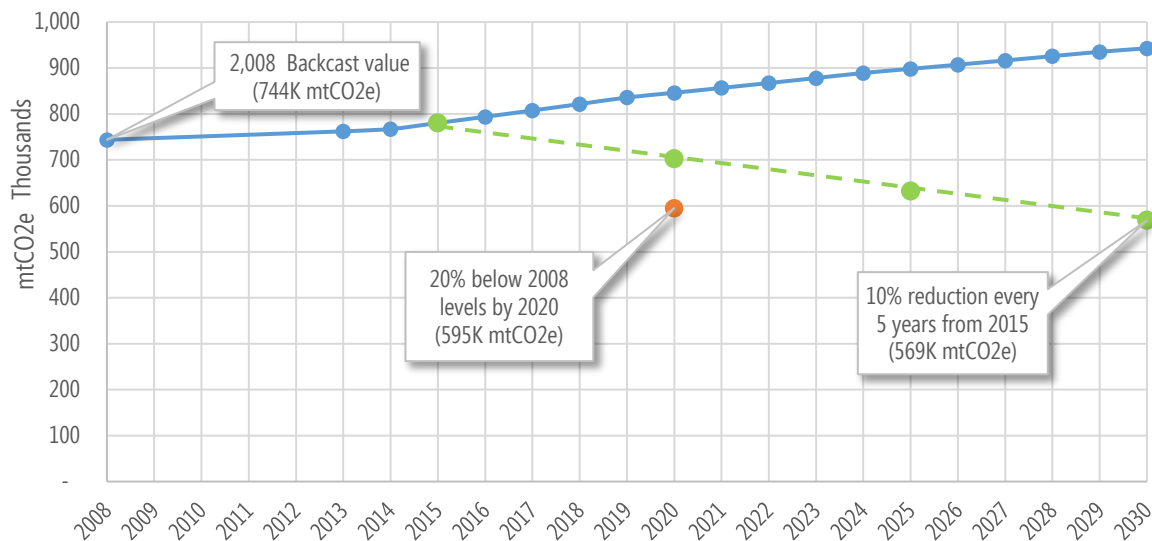
6.1 Community GHG Emissions Reduction Targets

Miami-Dade and other SE FL Climate Compact counties follow the GHG emissions reduction goals set by the U.S. Cool Counties Climate Stabilization Declaration in 2008. These targets include an 80 percent emissions reduction by 2050 from 2008 levels. To achieve this goal, Miami-Dade County set interim targets of 20% emissions reduction from 2008 levels by 2020 and a 10% reduction over every 5-year period through 2050.

Coral Gables is aligning its emissions reduction goals as much as possible with those set by other local governments in the south Florida region. To facilitate comparison with regional goals, a backcasting approach was used to estimate 2008 emissions totals. This 2008 estimate is 743,755 mtCO₂e for the Coral Gables community.

Meeting the regional goal of 20% below 2008 levels by 2020 would require the city to reduce community emissions by 24% from 2015 to 2020, to approximately 595,000 mtCO₂e. Through 2017 it has reduced emission by 8%. While this progress is admirable, meeting this goal would require an ambitious effort to reduce emissions at a rapid pace throughout the community. Another option would be to target 10% emissions reductions every 5 years until 2030. This would result in community-wide emissions of about 569,000 mtCO₂e in 2030. The community is currently on pace to meet this target.

FIGURE 7: COMMUNITY BAU FORECAST AND EMISSIONS REDUCTION TARGETS



6.2 LGO GHG Emissions Reduction Targets

Estimated 2008 GHG emissions for Coral Gables government operations are 13,368 mtCO₂e. The City's Sustainability Action Plan set a formal goal of reducing emissions 20% below 2013 levels by 2025. It is on track to meet this goal.

Achieving the regional goal of 20% below 2008 levels by 2020 would require the city to reduce operational emissions by 25% from 2015 to 2020. Measures identified in the Solutions Memorandum have the potential to achieve sufficient emissions reductions to meet this goal if implemented beginning in 2015. While achievable, this target would likely require substantial planning and investment, and may not be practical within the 5-year time frame. Another option would be to target 10% emissions reductions every 5 years until 2030. The latter option would result in LGO emissions of about 10,200 MT CO₂e in 2030. The City is on track to meet this later goal.

FIGURE 8: LGO BAU FORECAST AND EMISSIONS REDUCTION TARGETS

