GREENHOUSE GAS EMISSIONS INVENTORY

Charleston County, 2018 & 2020

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CHARLESTON COUNTY
SOUTH CAROLINA
Resilience and Sustainability

Table of Contents

Acknowledgements

Thank you to all the departments and organizations inside and outside the County that provided data:

- **Energy:** Dominion Energy, Berkeley Electric Cooperative, and Santee Cooper (a special thanks to all the municipalities in Charleston County for requesting energy data on behalf of the County)
- **Waste:** Charleston County Environmental Management
- **Carbon Sequestration:** Charleston County Greenbelt Program
- **Fleet:** Charleston County Fleet Operations
- **Employee Commute:** Charleston County employees who completed the internal survey and all departments who provided employee air travel data

Introduction

Overview

Following the City of Charleston's lead in publishing the Lowcountry's first Greenhouse Gas Inventories, Charleston County is now publishing its first Greenhouse Gas Inventory which encompasses the entire County and includes separate data about municipalities within the County.

This inventory will establish baseline greenhouse gas emissions levels for the County and be used as a starting point for planning and implementing actions to reduce these emissions. This report includes data for calendar year 2018 and 2020 in order to compare emissions from one business-as-usual year and one year impacted by the COVID-19 pandemic.

Three inventories were conducted to evaluate greenhouse gas emissions:

1. **Countywide Inventory:** This inventory represents all emissions in the Charleston County geographic limits.

2. **Municipality Inventories:** Charleston County government only has jurisdiction over unincorporated areas so these inventories represent emissions from all sixteen municipalities contained geographically within Charleston County and unincorporated Charleston County.

3. **Government Inventory:** This inventory includes only operations within Charleston County Government like fleet, buildings, and the landfill.

County Indicators

Table 1 displays County indicators from 2014 to 2020. This data is provided to show that increased cooling days[1] correlate to increased climate change over time. According to the Dutch Dialogues Charleston Report, tidal flooding has also increased with 89 events in 2019 and 69 in 2020 compared to the 1990s that saw an average of 25 per year.

Table 1: County Indicators

Indicator	2014	2016	2018	2020	Change since 2014
Population	365,674	380,673	394,708	407,543	+11%
Gross Domestic Product (Bureau of Economic Analysis)	$25.4 M	$29.0 M	$31.3 M	$32.8 M	+29%
Cooling Degree Days (NOAA NCEI)	2,153	2,777	2,755	2,665	+24%
Heating Degree Days (NOAA NCEI)	1,823	1,490	1,668	1,170	-36%

How do Greenhouse Gases Affect the Climate?

Naturally occurring gases dispersed in the atmosphere determine the Earth's climate by trapping solar radiation. This phenomenon is known as the greenhouse effect.

Overwhelming evidence shows that human activities are increasing the concentration of greenhouse gases and changing the global climate. Collectively, these gases intensify the natural greenhouse effect, causing global average surface and lower atmospheric temperatures to rise.

Global climate change influences seasonal patterns and intensifies weather events, threatening the safety, quality of life, and economic prosperity of communities everywhere[2].

[1] To calculate the cooling and heating degree days, the average daily temperature is compared to 65 degrees Fahrenheit. If the average daily temperature is above 65 degrees Fahrenheit, the day is categorized as a cooling degree day and if the average daily temperature is below 65 degrees Fahrenheit, the day is categorized as a heating degree day. The difference between each daily temperature and 65 degrees combines to calculate the annual figure.

[2] Fifth Assessment Report of the Intergovernmental Panel on Climate Change

Key Findings

Overall Emissions

What is a carbon dioxide equivalent (CO_2e)?[3]

A measurement used to compare the emissions from various greenhouse gases on the basis of their global-warming potential (GWP), by converting amounts of other gases to the equivalent amount of carbon dioxide with the same global warming potential.

For example, methane's effect on the climate is 28 times more severe than CO_2, but it does not stay in the atmosphere as long.

Carbon Dioxide (CO_2)
GWP = 1

Methane (CH_4)
GWP = 28

Nitrous Oxide (N_2O)
GWP = 265

Figure 1: Countywide vs. Government Annual GHG Emissions

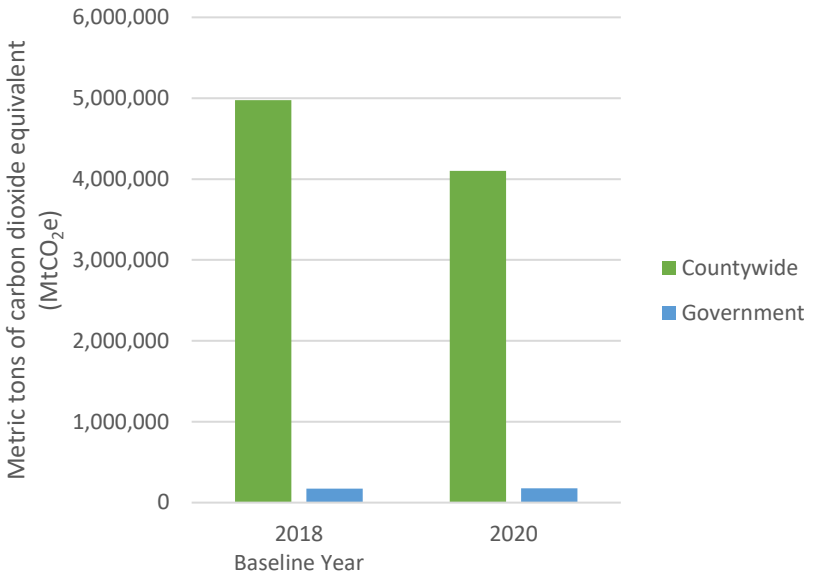
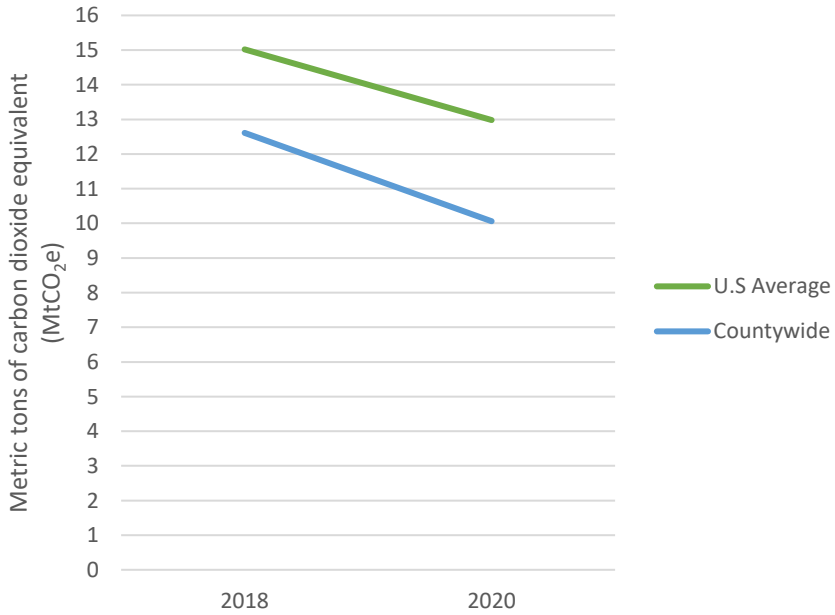


Figure 2: Countywide Annual GHG Emissions Per Capita



Since 2018, the baseline year, greenhouse gas emissions in Charleston County have decreased approximately 18% to 4.1 million metric tons of carbon dioxide equivalent ($MtCO_2e$) due to a decrease in emissions from buildings and transportation.

Government emissions account for 3% of countywide emissions and have increased about 3% to 176,129 $MtCO_2e$ from 2018 to 2020 due to an increase in fleet and landfill emissions.

Per capita emissions for the average Charleston County resident decreased 20% from 2018 to 2020 to 10.1 $MtCO_2e$. Emissions decreased at a faster rate than population growth in this time period.

This per capita was below the average U.S. resident in 2018 and 2020 and decreased at a faster rate than the US average. Due to the COVID-19 pandemic, during some or most of 2020, many Charleston County and U.S. residents worked from home, decreasing the need to commute to and from work. The US per capita data comes from the International Energy Agency (IEA).

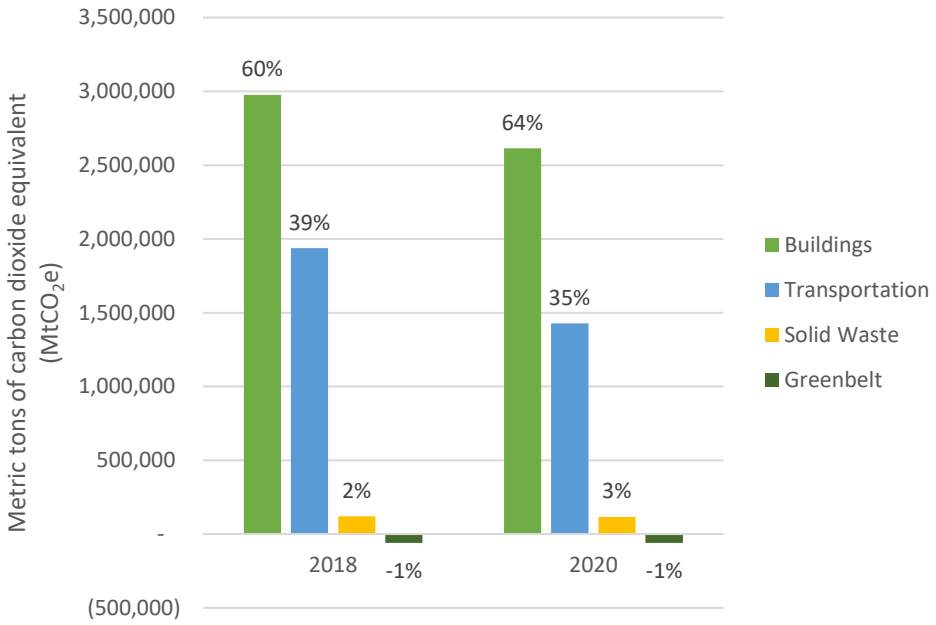
[3]Fifth Assessment Report of the Intergovernmental Panel on Climate Change

Countywide Inventory

Countywide Emissions are tracked within four distinct sectors:

1. **Buildings** includes energy use in residential, commercial, and industrial buildings.
2. **Transportation** includes emissions from vehicles and CARTA fixed route and paratransit buses.
3. **Waste** includes landfill, yard waste, and food waste from residential and commercial properties.
4. **Carbon Sequestration** includes carbon captured from the Greenbelt Program properties.

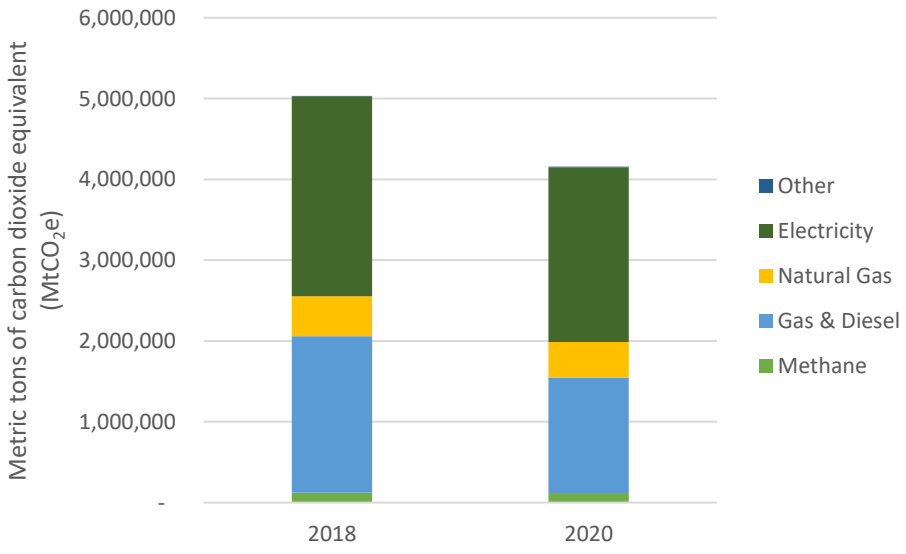
Figure 3: Countywide GHG Emissions by Sector



In 2018, the total emissions countywide were 4,975,717 $MtCO_2e$ and in 2020 total emissions countywide were 4,100,307 $MtCO_2e$. Figure 3 shows a breakdown by year and sector of GHG emissions. Buildings remained the largest polluter countywide in both years with transportation the second largest polluter.

Figure 4 shows a breakdown by year and source. In 2020, all sources decreased with the exception of the Other category. Other includes Distillate Fuel Oil No. 2. These are industrial energy emissions that are reported to the Environmental Protection Agency (EPA) above a certain threshold. The methane source is from the solid waste emissions. This graph only includes emissions and not carbon sequestration from forested Greenbelt properties.

Figure 4: Countywide GHG Emissions by Source

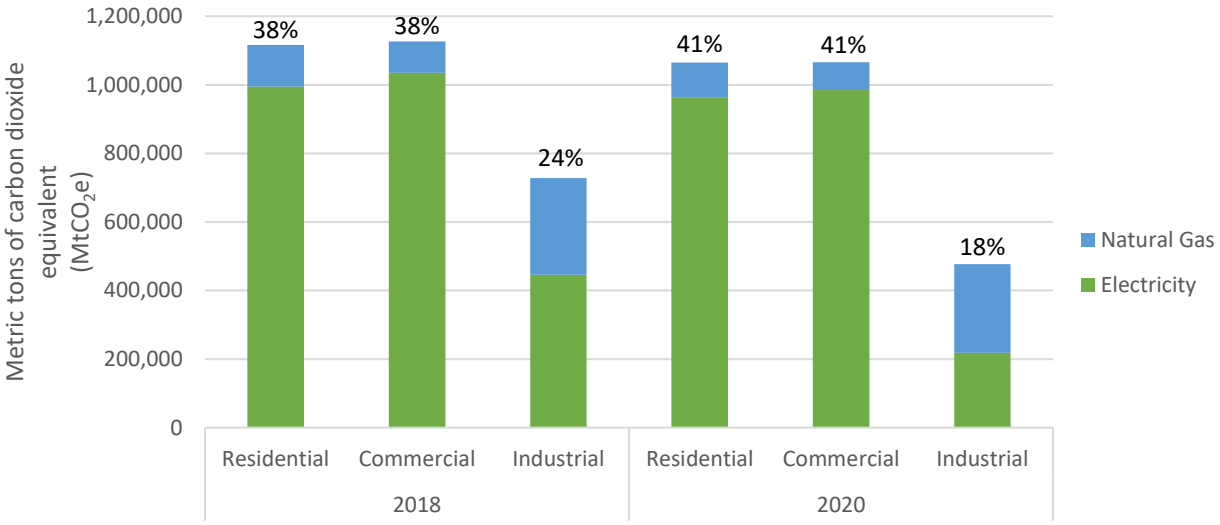


Buildings

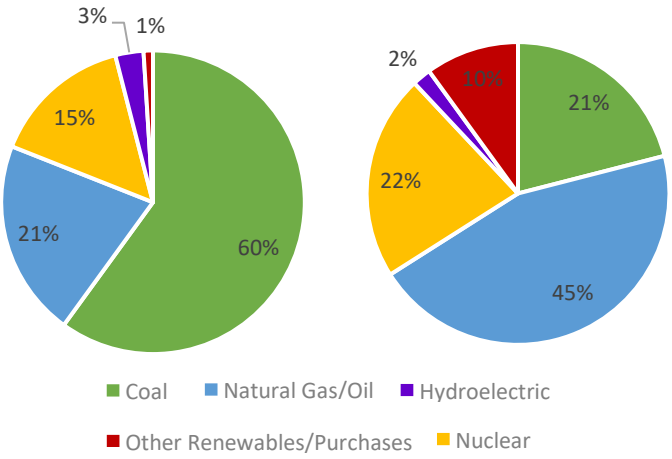
In 2018, 60% of emissions countywide were from buildings. In 2020, this figure increased to 64%. It is important to note that total building emissions between 2018 and 2020 actually decreased by 12%. Building emissions make up a larger percentage of total emissions because transportation decreased at a higher rate than building emissions. In 2018 and 2020, the residential and commercial sectors had equal emissions, at 38% (2018) and 41% (2020). For both 2018 and 2020, 83% of the energy used in buildings came from electricity, while 17% were powered by natural gas.

Dominion Energy furnished residential, commercial, and industrial energy data for buildings countywide. Berkeley Electric Cooperative provided data for residential and commercial (which includes schools) usage - they do not have industrial accounts. Santee Cooper provided data for commercial and industrial accounts in the City of North Charleston.

Figure 5: Countywide GHG Emissions from Buildings



Figures 6 & 7: 2013 vs. 2020 Charleston County Energy Supply Mix by Source



Between 2013 and 2020[4], the energy mix decreased in coal supply by 39% and increased in natural gas/oil and nuclear by 23% and 7% respectively. This change in the energy mix is likely a significant reason for the greenhouse gas emission decrease in the buildings category. Natural gas emits 50 to 60% less carbon dioxide when combusted in a natural gas power plant than emissions from a typical coal plant.[5]

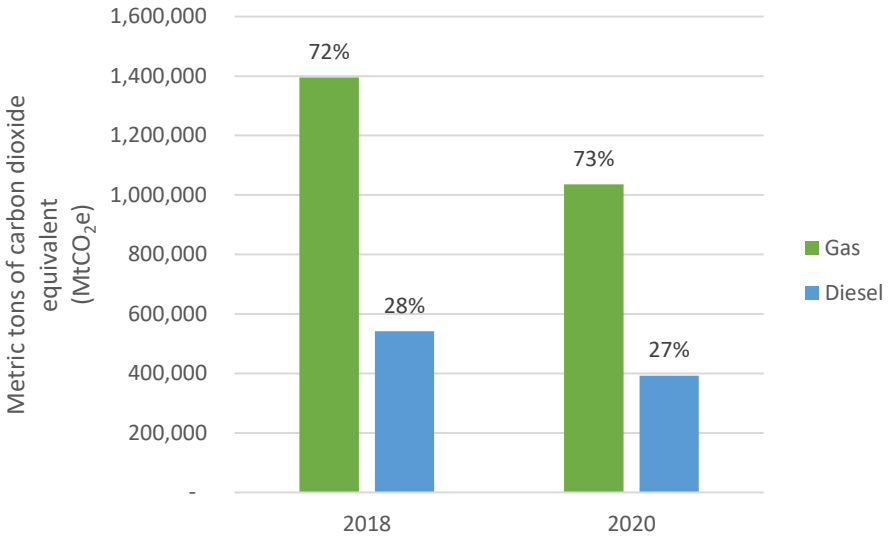
[4]The energy mixes for Dominion and Berkeley Electric Cooperative were weighted at 90% and 10% respectively to estimate the mix for the entire County; Santee Cooper also provides electricity but less than 1% and was not included in the weighted energy mix.

[5] National Energy Technology Laboratory (NETL). 2010. Cost and performance baseline for fossil energy plants, Volume 1: Bituminous coal and natural gas to electricity. Revision 2. November. DOE/NETL-2010/1397. United States Department of Energy.

Transportation

The transportation category accounts for the second largest emissions, at 38% in 2018 and 34% in 2020 of countywide emissions. Transportation activities released 1.9 million and 1.4 million $MtCO_2e$ respectively, a decrease of 26% between 2018 and 2020. The decrease in transportation emissions could be a result of more efficient vehicles on the road and the increase in staying at home during the COVID-19 pandemic. This data was provided by Google Environmental Insights Explorer (EIE). Air travel emissions from flights within the County were not included due to lack of data and the small amount of emissions.

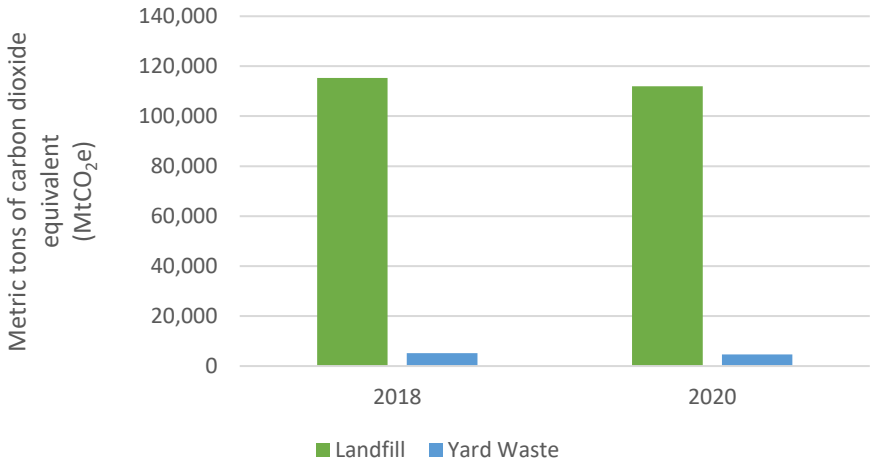
Figure 8: Countywide GHG Emissions from Transportation



Waste

Waste accounted for 2% in 2018 and 3% in 2020 of all countywide emissions for a total of 120,561 and 116,716 $MtCO_2e$ respectively. Unlike the other emission sectors[6], the waste emissions are from Methane (CH_4). Emissions from transporting waste are not included in this calculation but are included in the Transportation sector. Yard waste and food waste are composted at the County's Bees Ferry facility. Emissions from composting food waste are negligible[7]. This data was provided by Charleston County. Environmental Management

Figure 9: Countywide GHG Emissions from Waste



[6] Methane and Nitrous Oxide comprise a small percentage of total $MtCO_2e$ emissions.
[7] For 2018, food waste emissions were 105 $MtCO_2e$ and in 2020, emissions were 70 $MtCO_2e$

Carbon Sequestration

Charleston County has 160,000 acres of protected land thanks to the Greenbelt Program. Some of this land is forested which captures carbon. An estimated 59,034 $MtCO_2e$ has been sequestered through this program. Unlike the other sectors, protecting forested land gives the County an opportunity to lower greenhouse gases. Modeling does not allow for differences in estimation between 2018 and 2020 so the same number was used for both inventory years.

Countywide Tables

Tracking emissions and activity use is equally important. Table 2 shows emissions by sector and Table 3 shows activity use by sector. It is important to note that activity use may have been affected by the COVID-19 pandemic and it will be important to see if the decrease in activity use by sector holds in future years.

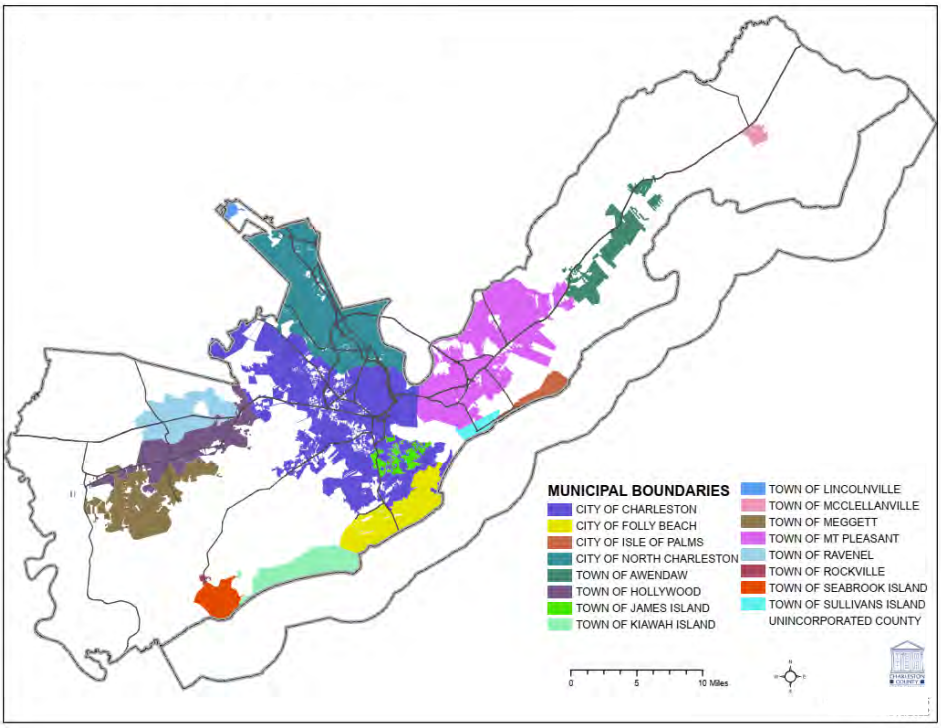
Table 2: Countywide GHG Emissions by Sector ($MtCO_2e$)			
Sector	**2018**	**2020**	**% Change**
Residential - Electricity	994,904	962,278	-3%
Residential -Natural Gas	121,358	102,551	-15%
Residential - Other	6,930	7,623	+10%
Commercial -Electricity	1,034,615	984,898	-5%
Commercial - Natural Gas	91,811	80,607	-12%
Industrial - Electricity	445,962	218,198	-51%
Industrial - Natural Gas	281,650	258,289	-8%
Industrial - Other	3	0	-100%
Transportation - Gasoline	1,395,065	1,035,731	-26%
Transportation -Diesel	542,163	392,450	-28%
Solid Waste	120,561	116,717	-3%

Table 3: Countywide Activity Use by Sector			
Sector	**2018**	**2020**	**% Change**
Residential - Electricity (kWh)	2,546,751,299	2,486,711,664	-2%
Residential - Natural Gas (therms)	22,817,447	19,281,319	-15%
Residential - Other (MMBtu)	106,344	116,790	+10%
Commercial - Electricity (kWh)	2,609,971,300	2,501,242,392	-4%
Commercial - Natural Gas (therms)	17,262,035	15,155,616	-12%
Industrial - Electricity (kWh)	1,107,632,643	537,675,390	-51%
Industrial - Natural Gas (therms)	53,066,892	48,665,397	-8%
Industrial - Other (Gallons)	243,730	452	-100%
Transportation - Gasoline (VMT)	3,376,687,247	2,510,862,958	-26%
Transportation - Diesel (VMT)	358,944,843	266,640,314	-26%
Solid Waste (tons)	176,560	171,406	-3%

Municipalities' Inventories

Charleston County includes sixteen distinct cities and towns within its borders. The County only has jurisdiction over unincorporated areas (shown in white on the map). For this inventory is it important to include greenhouse gas emissions data for each municipality so each city and town has a baseline to begin emissions reduction work.

Figure 10: Map of Charleston County Municipalities



Municipality Emissions are tracked within three distinct sectors:

1. **Buildings** includes energy use in residential, commercial, government, and industrial buildings.

Per the local municipalities' approval, Dominion Energy furnished residential, commercial, and industrial energy data for buildings within in each municipality. Berkeley Electric Cooperative provided data for residential and commercial (which includes schools) usage- they do not have industrial accounts. Santee Cooper provided data for commercial and industrial accounts in the City of North Charleston.

2. **Transportation** includes emissions from vehicles.

Google EIE data was only available for those municipalities with populations over 25,000, i.e., the City of Charleston, North Charleston, and the Town of Mount Pleasant. All other transportation data was calculated by weighting the County transportation data by a municipality's population.

3. **Waste** includes landfill residential, commercial, and government waste.

Landfill data was only available at the County level so this data was calculated by weighting the County landfill data by a municipality's population.

Every municipality saw a decrease in greenhouse gases from 2018 to 2020. This is likely due to the significant shift from coal to natural gas from the major utility providers in the County as discussed earlier and the decrease in driving due to the COVID-19 pandemic in 2020. The end of this report contains individual factsheets for each municipality.

Table 4: Total Greenhouse Gas Emissions			
Municipality	**Per Capita Greenhouse Gas Emissions, 2018 (CO_2e)**	**Per Capita Greenhouse Gas Emissions, 2020 (CO_2e)**	**% Change**
City of Charleston[8]	9.0	N/A	N/A
City of Folly Beach	13.2	11.1	-16%
City of North Charleston	14.6	12.3	-16%
City of Isle of Palms	15.3	12.9	-16%
Town of Awendaw	9.2	6.4	-30%
Town of Hollywood	9.7	7.9	-19%
Town of James Island	9.8	8.0	-18%
Town of Kiawah Island	30.8	23.3	-24%
Town of Lincolnville	9.2	6.0	-35%
Town of McClellanville	12.0	9.4	-22%
Town of Meggett	11.4	10.3	-10%
Town of Mount Pleasant	10.2	8.4	-18%
Town of Ravenel	8.5	7.0	-17%
Town of Rockville	9.6	7.7	-21%
Town of Seabrook Island	14.0	10.9	-22%
Town of Sullivan's Island	11.8	9.8	-17%
Unincorporated Charleston County	12.2	10.7	-12%

Figure 11: 2018 GHG Emissions Percentage by Municipality

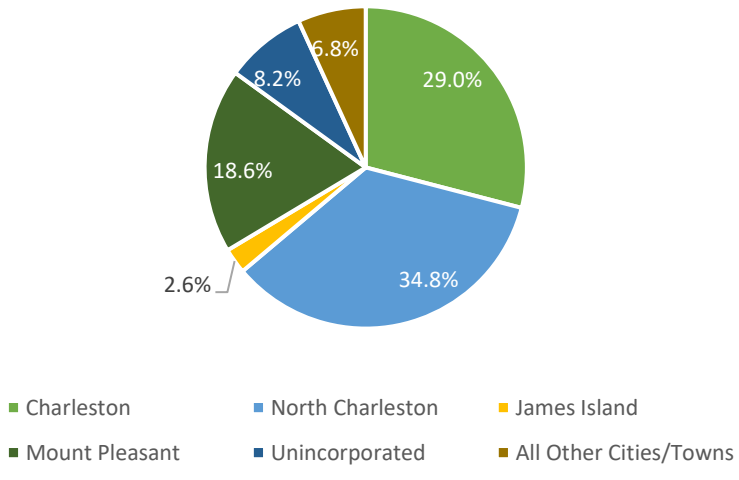


Figure 11 highlights the cities and towns within Charleston County that have the largest emissions. The five largest individual emitters also have the largest populations with the City of Charleston, the City of North Charleston, and the Town of Mount Pleasant all having industrial energy usage. All of the municipalities represented in the "All Other Cities/Towns" category all individually account for less than 2% emissions for the city or town. The emissions breakdown showed no significant shifts between 2018 and 2020.

[8] Refer to the City of Charleston's 2018 Greenhouse Gas Inventory for their most recent emissions data

Government Wide Inventory

Government emissions are tracked in four distinct sectors:

1. **County buildings** include all County offices and facilities plus their associated lighting.
2. **Fleet** includes all the vehicles in the County fleets such as cars, trucks, and major construction equipment. This figure also includes police, fire public safety vehicles, and helicopters for mosquito control.
3. **Employee commute** includes employee transportation to and from work and air travel for work.
4. **Solid waste facilities** includes all emissions from the County's landfill and composting facility.

Buildings

In 2018 and 2020, buildings accounted for 8% and 7% of total emissions, respectively. Between 2018 and 2020 building emissions decreased by 9% despite an increase in overall building footprint. This data was gathered from Dominion Energy and Berkeley Electric Cooperative.

Fleet

The County's fleet accounted for 7% and 8% of overall government emissions in 2018 and 2020, respectively. Fleet emissions increased by 18% with a large increase in the number of gallons used in vehicles that require diesel fuel.

Employee Commute

Employee commute is the smallest driver of emissions, making up only 3% and 2% of emissions in 2018 and 2020, respectively. Commuting emissions decreased by 45% due to more remote work during the COVID-19 pandemic and all air travel being cancelled after March 2020.

Solid Waste Facilities

Solid waste is by far the largest sector of emissions making up 82% and 83% in 2018 and 2020, respectively. The Bees Ferry Landfill is owned by the County and therefore counts toward government emissions despite many municipalities sending waste to this facility. Emissions increased by 4% between 2018 and 2020 due to the growing population in Charleston County.

Street Lights

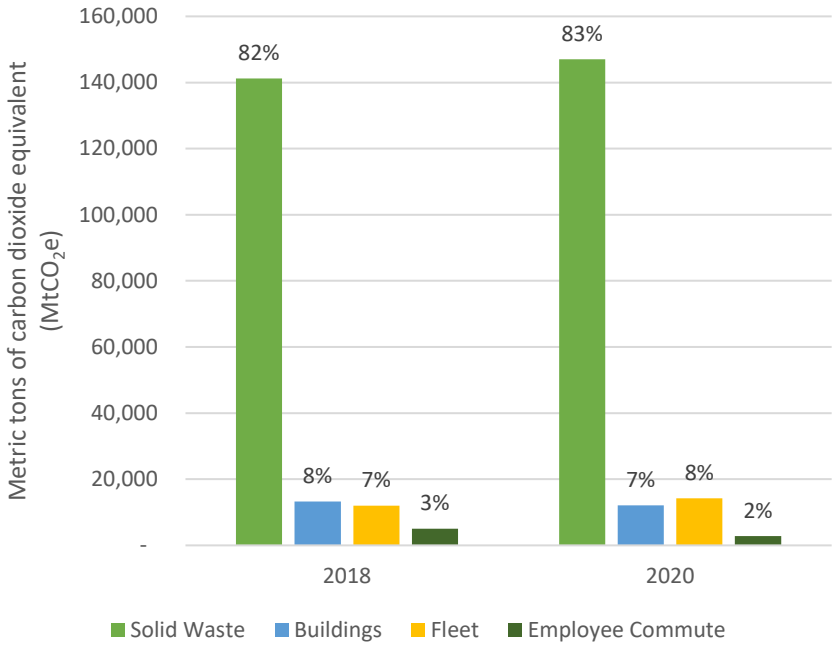
The County does not own any street lights.

Water and Sewage

Charleston Water System and other smaller water system[10] within the County are private entities and the County does not have jurisdiction over them. Their energy use is included in the countywide inventory. In addition, these water utilities do not operate incinerators or digesters.

[9] Most municipalities within Charleston County are connected to Charleston Water System. Other utilities include the Isle of Palms Water and Sewer Commission, Awendaw Water Department, SouthWest Water Company, Mount Pleasant Waterworks, Seabrook Island Utility Commission. Residents not connected to one of these utilities use well water.

Figure 12: Government Wide GHG Emissions by



In 2018, government emissions were 171,547 $MtCO_2e$ and in 2020 emissions were 176,129 $MtCO_2e$. Unlike countywide emissions, government emissions have increased by 3% within this two-year period.

Government Wide Tables

Table 5: Government Wide GHG Emissions by Sector ($MtCO_2e$)			
Sector	**2018**	**2020**	**% Change**
Buildings- Electricity	12,520	11,336	-9%
Buildings -Natural Gas	709	729	+3%
Vehicle Fleet	12,013	14,231	+18%
Employee Commute + Air Travel	5,071	2,789	-45%
Solid Waste	141,234	147,044	+4%

Table 6: Government Wide Activity Use by Sector			
Sector	**2018**	**2020**	**% Change**
Buildings - Electricity (kWh)	36,922,616	36,798,875	-0.3%
Buildings - Natural Gas (therms)	133,377	137,089	+3%
Vehicle Fleet - Gasoline (gallons)	567,533	631,618	+11%
Vehicle Fleet - Diesel (gallons)	725,440	843,508	+16%
Vehicle Fleet - Jet Fuel (gallons)	7,624	4,389	
Employee Commute - Gasoline (VMT)	11,910,687	6,442,605	-46%
Employee Commute - Diesel (VMT)	0	11,500	N/A
Employee Commute – Air Travel (Passenger Miles)	546,262	69,514	-87%
Solid Waste (metric tons)	4,931	5,150	+4%

Next Steps

While emissions are decreasing countywide, it is important to plan emissions-reductions activities as a critical next step. In order to take further action, the County will begin working on a Climate Action Plan. On March 10, 2021, Charleston County Council adopted a resolution that encourages the development and implementation of an equity-centered, community-based, integrated climate action plan. The resolution also states the importance of working with municipal governments within Charleston County on their plans to address climate mitigation.

The Climate Action Plan will build off the existing Climate Action Plan published by the City of Charleston in May 2021. This inventory will establish a baseline for the County's emissions and the Climate Action Plan will discuss a targeted reduction goal and the activities to reach the goal.

As part of the planning process, all stakeholder input is crucial including but not limited to residents, business owners, non-profits, special interest groups, faith-based groups, and elected officials. Charleston County will create volunteer groups that will brainstorm specific action items and an overarching committee that will make recommendations to the County Council.

If you are interested in being part of the Climate Action planning process, contact Arielle Gerstein at agerstein@charlestoncounty.org.

Appendix

Factor Sets

Grid Electricity	Dominion[11]	Santee Cooper[12]	SRVC 2018[13]	SRVC 2020
CO_2 lbs/mWh	881	1257	743	623
CH_4 lbs/GWh	50	163	67	50
N_2O lbs/GWh	7	24	9	7

Transportation	2018 US National Defaults	2020 US National Defaults
Gas Passenger Vehicle Fuel Economy (MPG)	24.37713	24.37713
Gas Passenger Vehicle g CH4/mi	0.0186	0.0180
Gas Passenger Vehicle g N2O/mi	0.0093	0.0074
Gas Light Truck Fuel Economy (MPG)	17.86788	17.86788
Gas Light Truck g CH4/mi	0.0201	0.0187
Gas Light Truck g N2O/mi	0.0167	0.0132
Gas Heavy Truck Fuel Economy (MPG)	5.365653	5.377347
Gas Heavy Truck g CH4/mi	0.086	0.0719
Gas Heavy Truck g N2O/mi	0.0664	0.0611
Gas Motorcycle Fuel Economy (MPG)	24.37713	24.37713
Gas Motorcycle g CH4/mi	0.0186	0.0180
Gas Motorcycle g N2O/mi	0.0093	0.0074
Diesel Passenger Vehicle Fuel Economy (MPG)	24.37713	24.37713
Diesel Passenger Vehicle g CH4/mi	0.0005	0.0005
Diesel Passenger Vehicle g N2O/mi	0.001	0.001
Diesel Light Truck Fuel Economy (MPG)	17.86788	17.86788
Diesel Light Truck g CH4/mi	0.001	0.001
Diesel Light Truck g N2O/mi	0.0015	0.0015
Diesel Heavy Truck Fuel Economy (MPG)	6.307708	6.307708
Diesel Heavy Truck g CH4/mi	0.0051	0.0051
Diesel Heavy Truck g N2O/mi	0.0048	0.0048
Diesel Motorcycle Fuel Economy (MPG)	24.37713	24.37713
Diesel Motorcycle g CH4/mi	0.0005	0.0005
Diesel Motorcycle g N2O/mi	0.001	0.001

Waste	2018 & 2020 Waste Characterization
Percentage Mixed MSW	100

What are factor sets?

Factor sets are emissions factors that provide the basis for the carbon footprint calculation. As discussed in the Community Wide Inventory, as fuel mixes move away from coal plants and toward natural gas and renewable energy production, these emissions factors will decrease.

Methodology

The 2018 and 2020 countywide inventories were completed using the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC). Whereas, emissions in the 2018 and 2020 government inventories were calculated and reported per the Local Government Operations Protocol (LGOP). The inventories were performed using ICLEI's Clearpath tool.

[10] Dominion only provided a value for CO_2 lbs/mWh; the values for CH_4 lbs/GWh and N_2O lbs/GWh are from the EPA egrid 2020 table specific to the Virginia/Carolina subregion; this factor set was used for 2018 and 2020

[11] Santee Cooper only provided one factor set so these values were used for 2018 and 2020

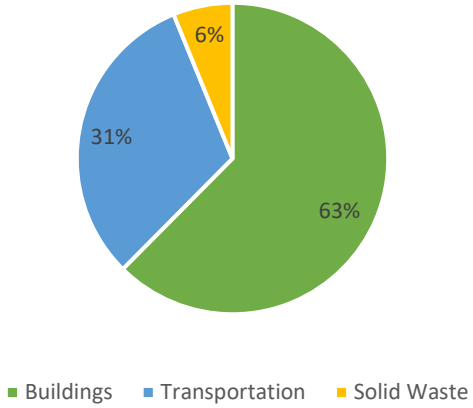
[12] Berkeley Electric Cooperative did not provide a factor set so the EPA egrid 2018 and 2020 table values specific to the Virginia/Carolina subregion were used

GHG Profiles for Municipalities and Unincorporated Charleston County

The following pages contain data for each municipality with Charleston County geographic borders and unincorporated Charleston County. To view data for the City of Charleston, refer to the 2018 Greenhouse Gas Inventory for their most recent emissions data.

City of Folly Beach
2018/2020 Community Greenhouse Gas (GHG) Emissions Inventory

2020 GHG Emissions by Sector



Total GHG Emissions:

2018: 35,002 $MtCO_2e$
2020: 29,621 $MtCO_2e$

Per Capita GHG Emissions:

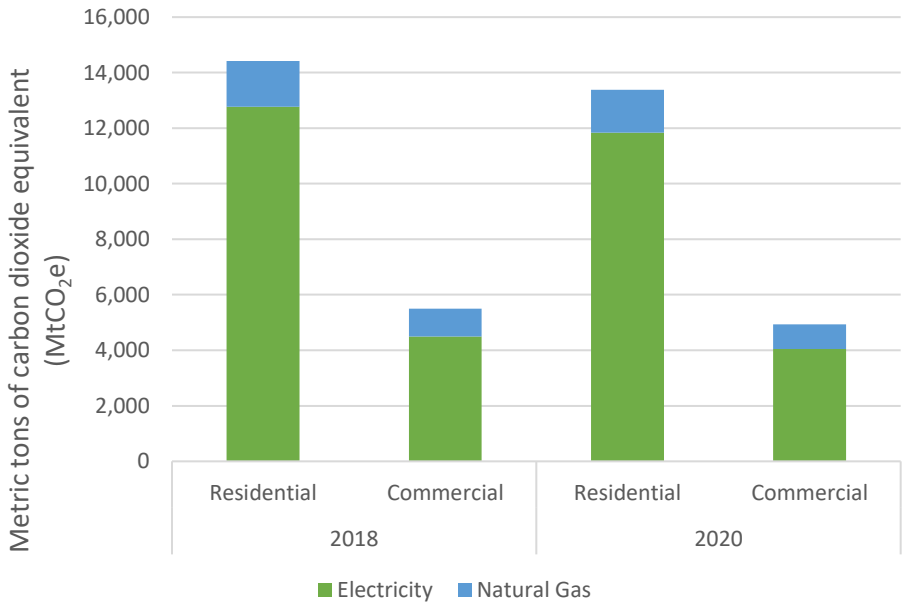
2018: 13.2 $MtCO_2e$
2020: 11.1 $MtCO_2e$

Percent Decrease in Total GHG Emissions from 2018 to 2020: 15%

GHG Emissions by Sector ($MtCO_2e$)		
Sector	**2018**	**2020**
Buildings	19,984	18,494
Transportation	13,085	9,299
Solid Waste	1,933	1,828

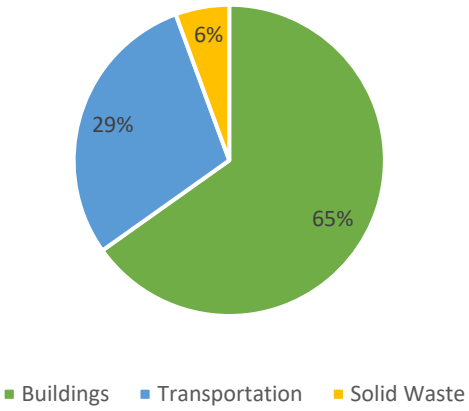
Activity Use by Sector		
Sector	**2018**	**2020**
Buildings – Electricity (kWh)	43,051,342	39,579,370
Buildings – Natural Gas (therms)	497,974	459,694
Transportation (VMT)	25,051,983	18,156,221
Solid Waste (tons)	1,184	1,120

GHG Emissions for Buildings



City of North Charleston
2018/2020 Community Greenhouse Gas (GHG) Emissions Inventory

2020 GHG Emissions by Sector



Total GHG Emissions:

2018: 1,602,898 $MtCO_2e$
2020: 1,397,655 $MtCO_2e$

Per Capita GHG Emissions:

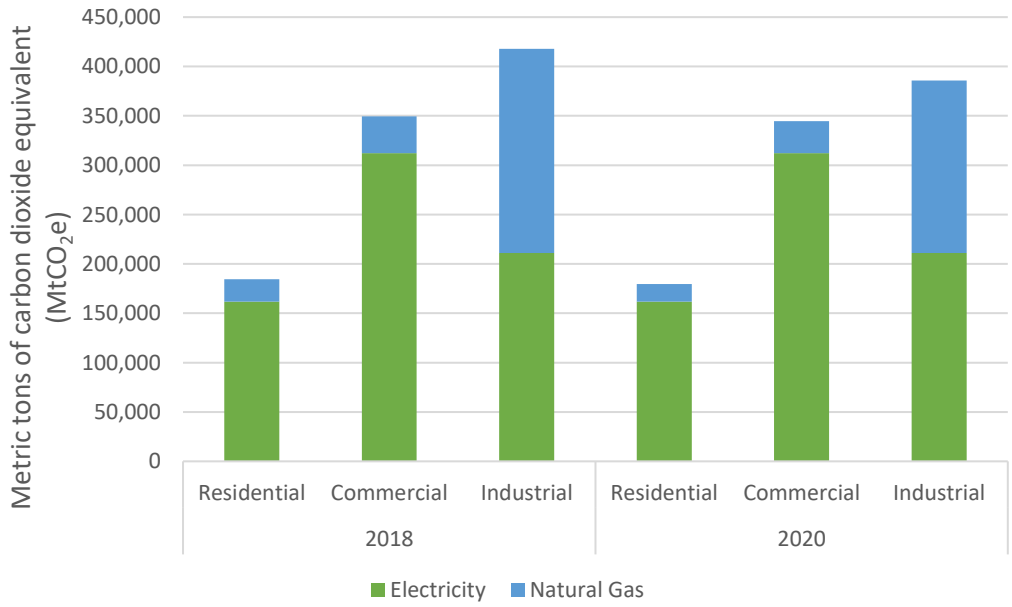
2018: 14.6 $MtCO_2e$
2020: 12.3 $MtCO_2e$

Percent Decrease in Total GHG Emissions from 2018 to 2020: 13%

GHG Emissions ($MtCO_2e$) by Sector		
Sector	**2018**	**2020**
Buildings	952,474	910,844
Transportation	570,158	408,599
Waste	80,266	78,212

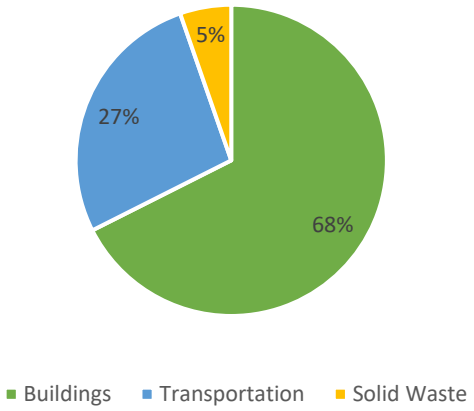
Activity Use by Sector		
Sector	**2018**	**2020**
Buildings – Electricity (kWh)	2,306,437,066	1,679,389,955
Buildings – Natural Gas (therms)	50,249,727	42,448,844
Transportation (VMT)	1,091,558,135	797,798,355
Solid Waste (tons)	49,154	47,896

GHG Emissions for Buildings



City of Isle of Palms
2018/2020 Community Greenhouse Gas (GHG) Emissions Inventory

2020 GHG Emissions by Sector



Total GHG Emissions:

2018: 66,263 $MtCO_2e$
2020: 56,281 $MtCO_2e$

Per Capita GHG Emissions:

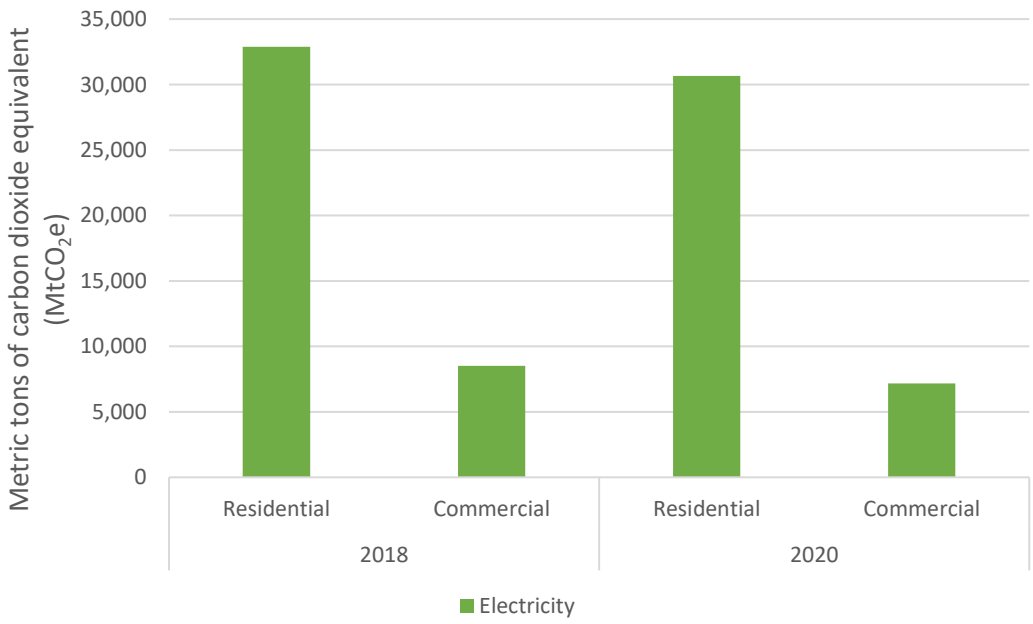
2018: 15.3 $MtCO_2e$
2020: 12.9 $MtCO_2e$

Percent Decrease in Total GHG Emissions from 2018 to 2020: 15%

GHG Emissions ($MtCO_2e$) by Sector		
Sector	**2018**	**2020**
Buildings	41,611	38,031
Transportation	21,479	15,249
Waste	3,173	3,001

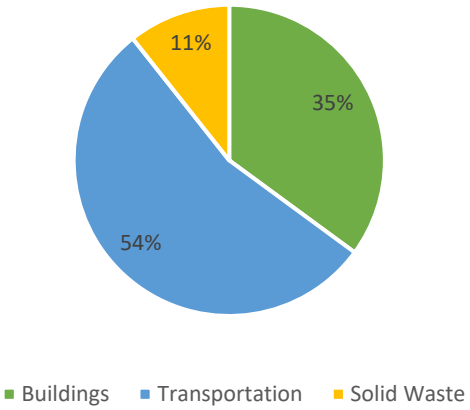
Activity Use by Sector		
Sector	**2018**	**2020**
Buildings – Electricity (kWh)	103,208,796	94,297,188
Transportation (VMT)	41,122,352	29,767,869
Solid Waste (tons)	1,944	1,838

GHG Emissions for Buildings



Town of Awendaw
2018/2020 Community Greenhouse Gas (GHG) Emissions Inventory

2020 GHG Emissions by Sector



Total GHG Emissions:

2018: 12,017 $MtCO_2e$
2020: 11,218 $MtCO_2e$

Per Capita GHG Emissions:

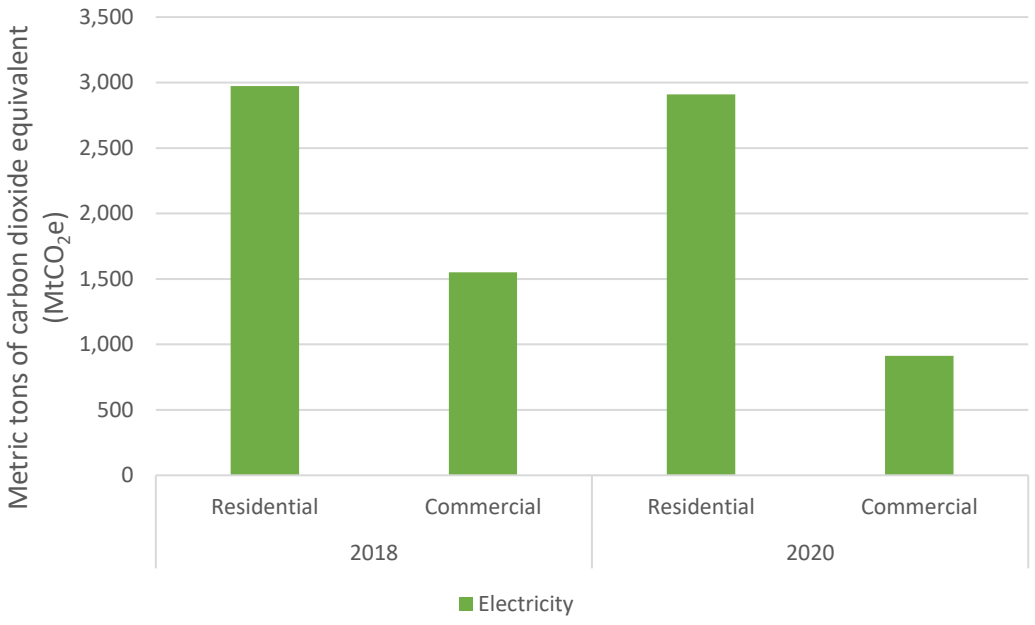
2018: 15.3 $MtCO_2e$
2020: 12.9 $MtCO_2e$

Percent Decrease in Total GHG Emissions from 2018 to 2020: 7%

GHG Emissions ($MtCO_2e$) by Sector		
Sector	**2018**	**2020**
Buildings	4,596	3,935
Transportation	6,466	6,087
Waste	955	1,196

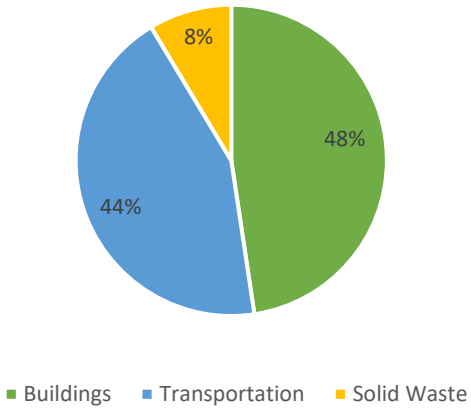
Activity Use by Sector		
Sector	**2018**	**2020**
Buildings – Electricity (kWh)	13,179,451	12,157,818
Transportation (VMT)	41,122,352	29,767,869
Solid Waste (tons)	1,944	1,838

GHG Emissions for Buildings



Town of Hollywood
2018/2020 Community Greenhouse Gas (GHG) Emissions Inventory

2020 GHG Emissions by Sector



Total GHG Emissions:

2018: 49,711 $MtCO_2e$
2020: 42,053 $MtCO_2e$

Per Capita GHG Emissions:

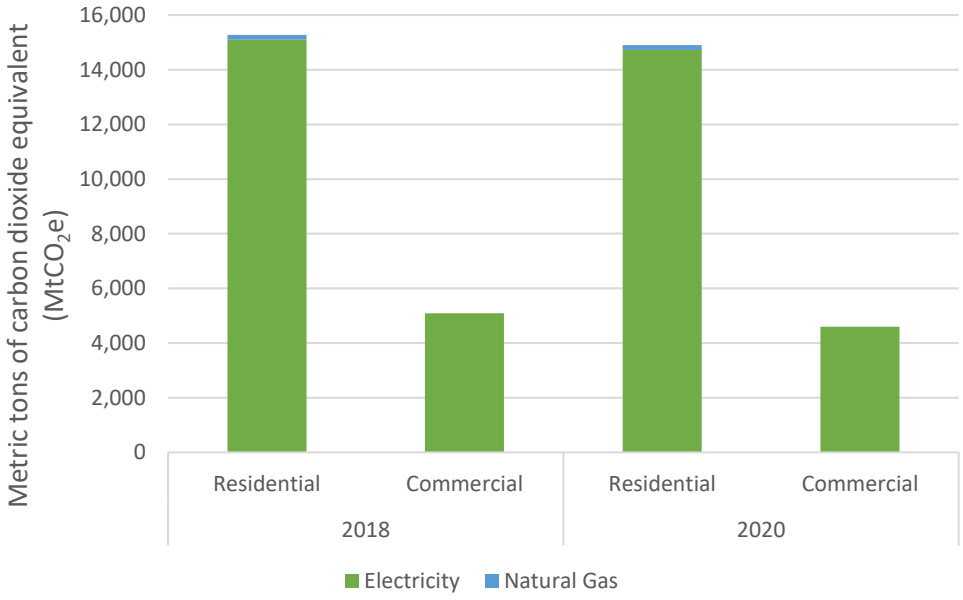
2018: 9.7 $MtCO_2e$
2020: 7.9 $MtCO_2e$

Percent Decrease in Total GHG Emissions from 2018 to 2020: 15%

GHG Emissions ($MtCO_2e$) by Sector		
Sector	**2018**	**2020**
Buildings	20,667	20,027
Transportation	25,305	18,405
Waste	3,739	3,621

Activity Use by Sector		
Sector	**2018**	**2020**
Buildings – Electricity (kWh)	50,528,224	48,434,612
Buildings – Natural Gas (therms)	32,491	33,909
Transportation (VMT)	48,447,715	35,936,760
Solid Waste (tons)	2,290	2,218

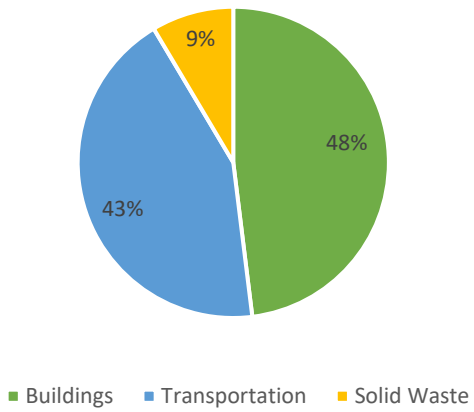
GHG Emissions for Buildings



Note: The Town of Hollywood does have a small number of industrial emissions from electricity (8 $MtCO_2e$ for 2018 and 8 $MtCO_2e$ from 2020) use but not large enough to display on the graph.

Town of James Island
2018/2020 Community Greenhouse Gas (GHG) Emissions Inventory

2020 GHG Emissions by Sector



Total GHG Emissions:

2018: 117,485 $MtCO_2e$
2020: 97,741 $MtCO_2e$

Per Capita GHG Emissions:

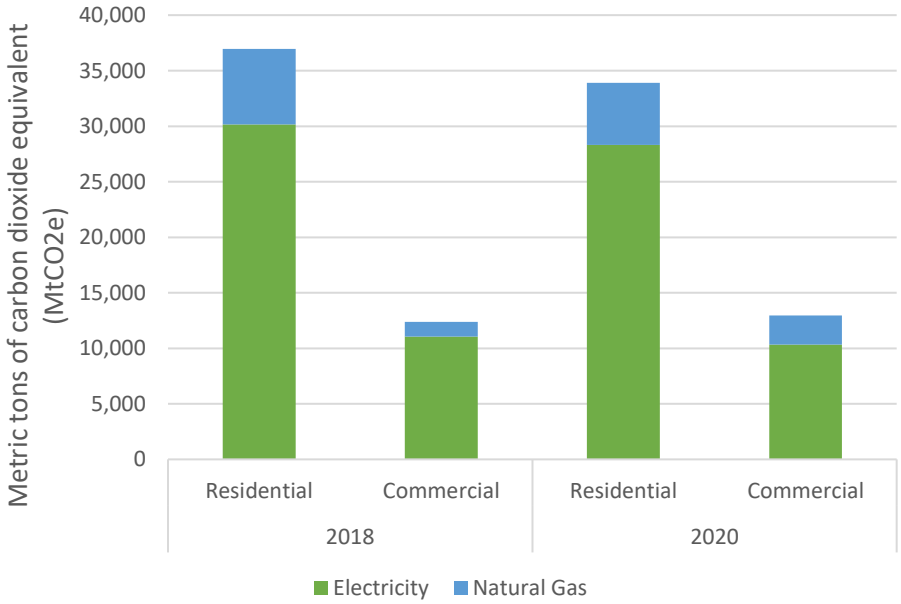
2018: 9.8 $MtCO_2e$
2020: 8.0 $MtCO_2e$

Percent Decrease in Total GHG Emissions from 2018 to 2020: 17%

GHG Emissions ($MtCO_2e$) by Sector		
Sector	**2018**	**2020**
Buildings	49,342	46,959
Transportation	59,371	42,433
Waste	8,772	8,349

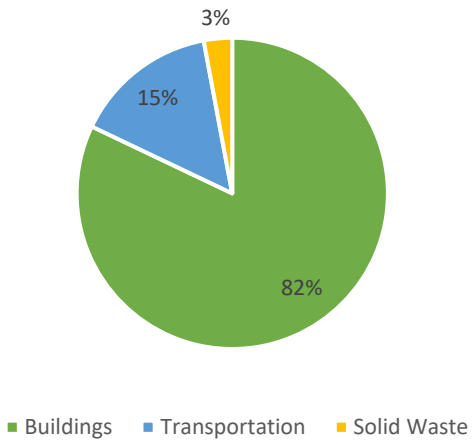
Activity Use by Sector		
Sector	**2018**	**2020**
Buildings – Electricity (kWh)	102,787,117	96,397,107
Buildings – Natural Gas (therms)	1,520,417	1,545,458
Transportation (VMT)	113,666,157	82,852,869
Solid Waste (tons)	5,372	5,113

GHG Emissions for Buildings



Town of Kiawah Island
2018/2020 Community Greenhouse Gas (GHG) Emissions Inventory

2020 GHG Emissions by Sector



Total GHG Emissions:

2018: 47,000 $MtCO_2e$
2020: 41,278 $MtCO_2e$

Per Capita GHG Emissions:

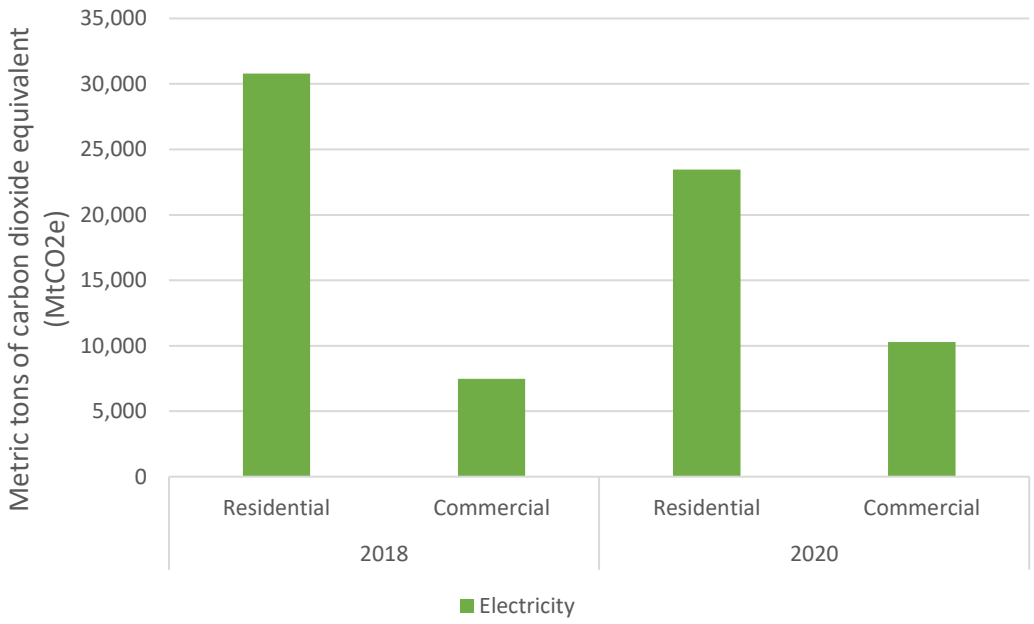
2018: 30.8$MtCO_2e$
2020: 23.3 $MtCO_2e$

Percent Decrease in Total GHG Emissions from 2018 to 2020: 24%

GHG Emissions ($MtCO_2e$) by Sector		
Sector	**2018**	**2020**
Buildings	33,348	33,877
Transportation	7,538	6,185
Waste	1,114	1,216

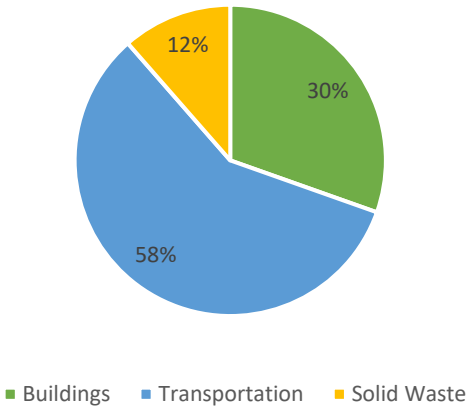
Activity Use by Sector		
Sector	**2018**	**2020**
Buildings – Electricity (kWh)	112,807,108	109,536,942
Transportation (VMT)	14,431,661	12,077,368
Solid Waste (tons)	682	745

GHG Emissions for Buildings



Town of Lincolnville
2018/2020 Community Greenhouse Gas (GHG) Emissions Inventory

2020 GHG Emissions by Sector



Total GHG Emissions:

2018: 11,765 $MtCO_2e$
2020: 14,584 $MtCO_2e$

Per Capita GHG Emissions:

2018: 9.2 $MtCO_2e$
2020: 6.0 $MtCO_2e$

Percent Increase in Total GHG Emissions from 2018 to 2020: 24%

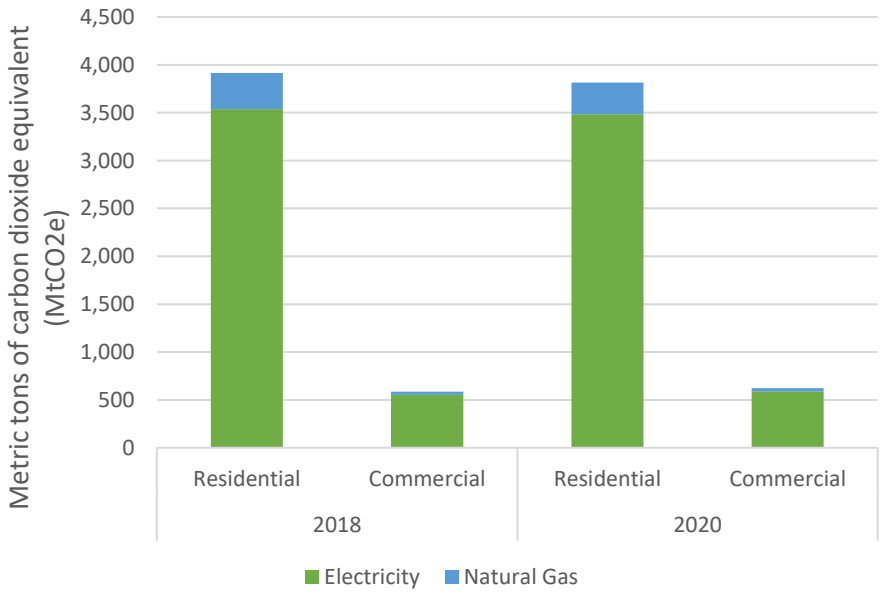
QUICK FACT

Between 2018 and 2020, the Town of Lincolnville increased in population by 90%. Although total emissions increased, per capita emissions decreased by 35% due to population growth.

GHG Emissions ($MtCO_2e$) by Sector		
Sector	**2018**	**2020**
Buildings	33,348	33,877
Transportation	17,380	12,858
Waste	2,568	2,529

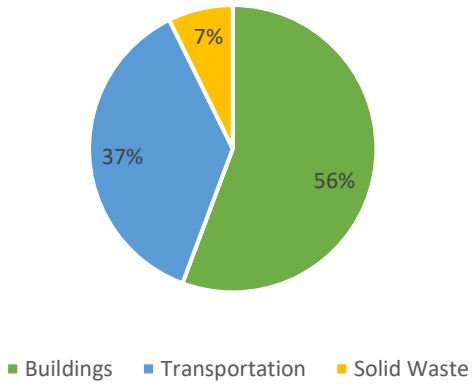
Activity Use by Sector		
Sector	**2018**	**2020**
Buildings – Electricity (kWh)	10,204,510	10,153,231
Buildings – Natural Gas (therms)	77,303	68,414
Transportation (VMT)	12,114,296	16,554,218
Solid Waste (tons)	573	1,022

GHG Emissions for Buildings



Town of McClellanville
2018/2020 Community Greenhouse Gas (GHG) Emissions Inventory

2020 GHG Emissions by Sector



Total GHG Emissions:

2018: 6,575 $MtCO_2e$
2020: 5,777 $MtCO_2e$

Per Capita GHG Emissions:

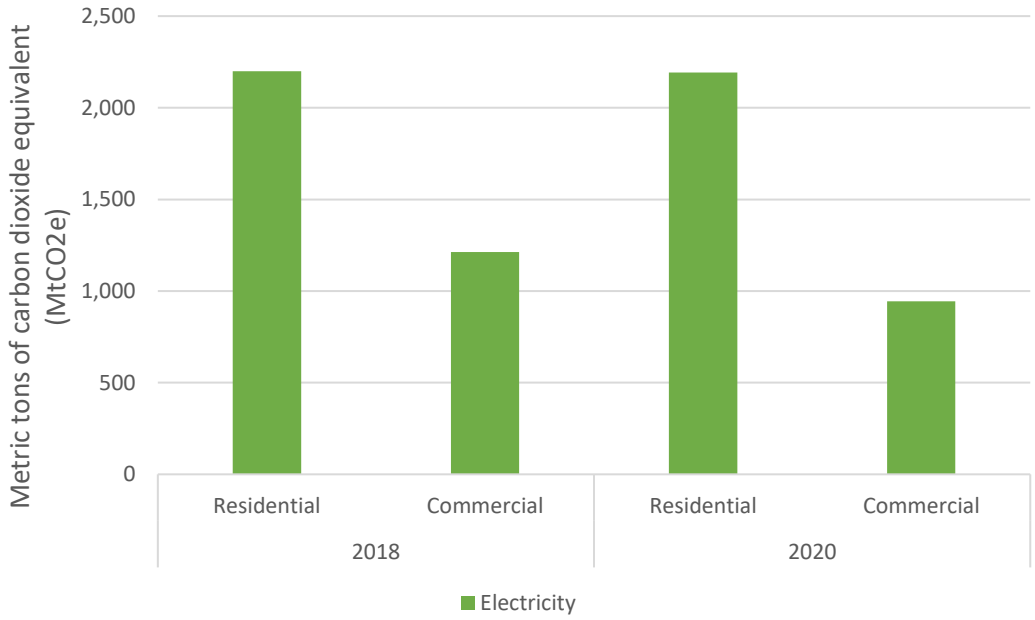
2018: 12.0 $MtCO_2e$
2020: 9.4 $MtCO_2e$

Percent Decrease in Total GHG Emissions from 2018 to 2020: 12%

GHG Emissions ($MtCO_2e$) by Sector		
Sector	**2018**	**2020**
Buildings	3,483	3,217
Transportation	2,694	2,139
Waste	398	421

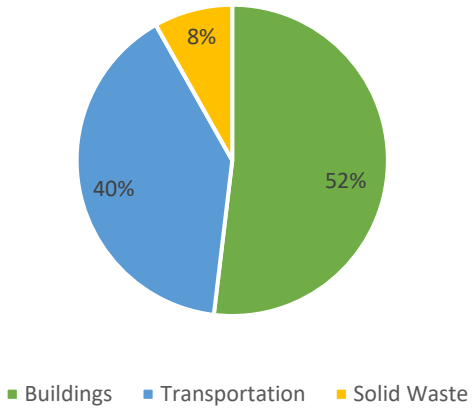
Activity Use by Sector		
Sector	**2018**	**2020**
Buildings – Electricity (kWh)	8,724,421	8,017,815
Transportation (VMT)	5,158,039	4,177,742
Solid Waste (tons)	244	258

GHG Emissions for Buildings



Town of Mount Pleasant
2018/2020 Community Greenhouse Gas (GHG) Emissions Inventory

2020 GHG Emissions by Sector



Total GHG Emissions:

2018: 855,539 $MtCO_2e$
2020: 750,620 $MtCO_2e$

Per Capita GHG Emissions:

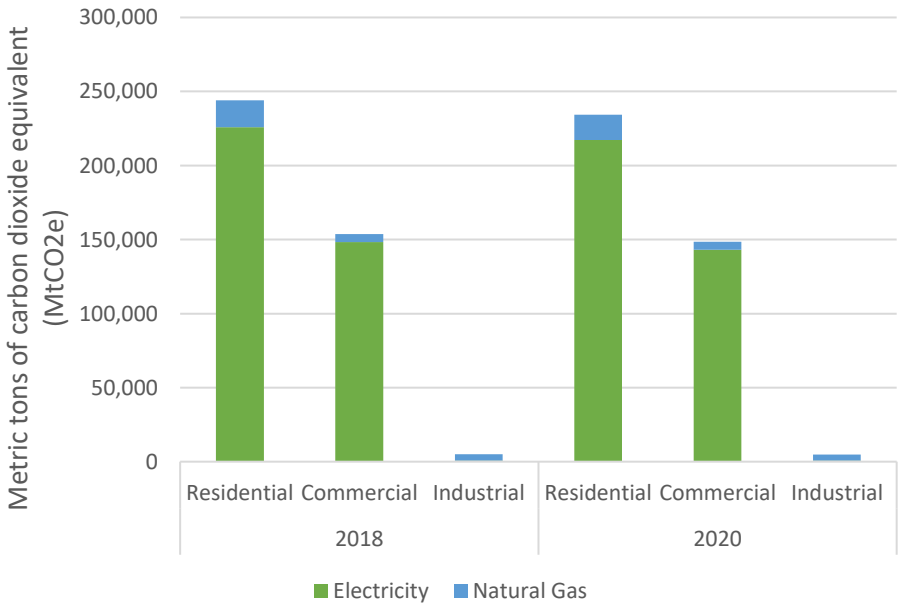
2018: 10.2 $MtCO_2e$
2020: 8.4 $MtCO_2e$

Percent Decrease in Total GHG Emissions from 2018 to 2020: 12%

GHG Emissions ($MtCO_2e$) by Sector		
Sector	**2018**	**2020**
Buildings	404,245	389,522
Transportation	390,156	299,693
Waste	61,138	61,405

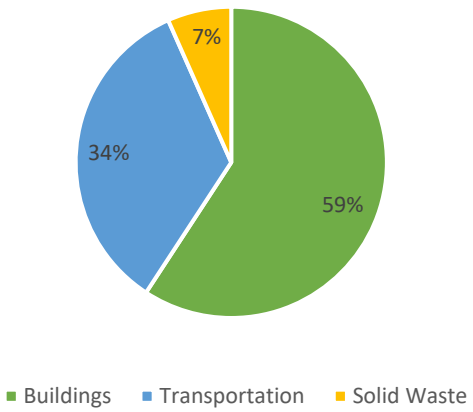
Activity Use by Sector		
Sector	**2018**	**2020**
Buildings – Electricity (kWh)	944,487,234	916,352,480
Buildings – Natural Gas (therms)	5,209,699	5,052,553
Transportation (VMT)	746,947,751	585,158,451
Solid Waste (tons)	37,441	37,604

GHG Emissions for Buildings



Town of Meggett
2018/2020 Community Greenhouse Gas (GHG) Emissions Inventory

2020 GHG Emissions by Sector



Total GHG Emissions:

2018: 13,361 $MtCO_2e$
2020: 11,574 $MtCO_2e$

Per Capita GHG Emissions:

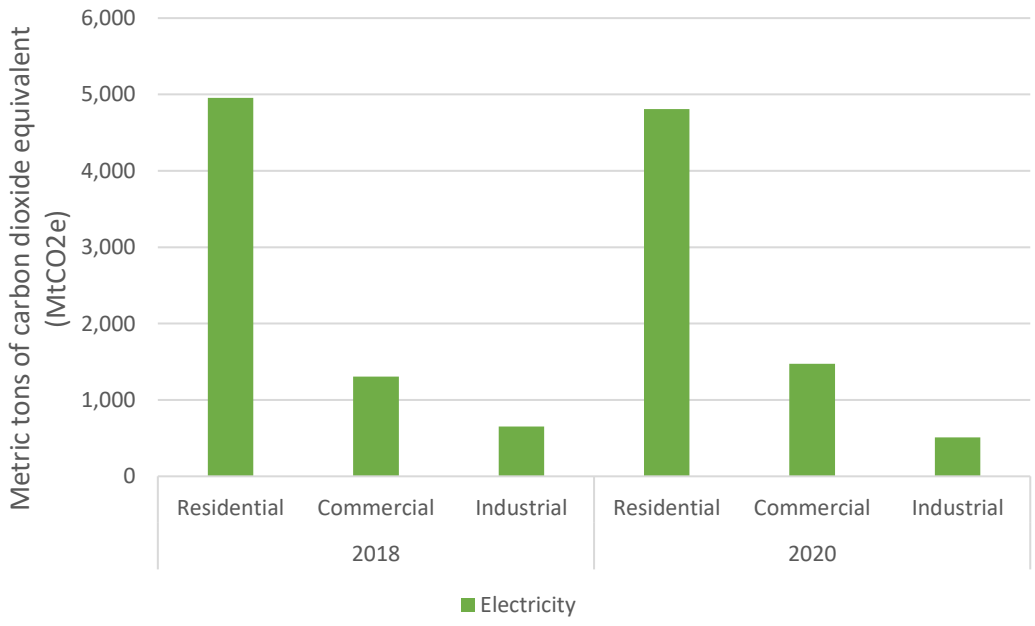
2018: 11.4 $MtCO_2e$
2020: 10.3 $MtCO_2e$

Percent Decrease in Total GHG Emissions from 2018 to 2020: 16%

GHG Emissions ($MtCO_2e$) by Sector		
Sector	**2018**	**2020**
Buildings	6,991	6,879
Transportation	5,986	3,923
Waste	884	772

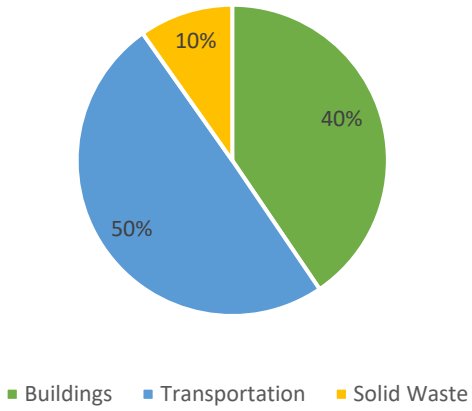
Activity Use by Sector		
Sector	**2018**	**2020**
Buildings – Electricity (kWh)	17,235,180	16,935,459
Transportation (VMT)	11,461,258	7,660,331
Solid Waste (tons)	542	473

GHG Emissions for Buildings



Town of Ravenel
2018/2020 Community Greenhouse Gas (GHG) Emissions Inventory

2020 GHG Emissions by Sector



Total GHG Emissions:

2018: 22,488 $MtCO_2e$
2020: 18,607 $MtCO_2e$

Per Capita GHG Emissions:

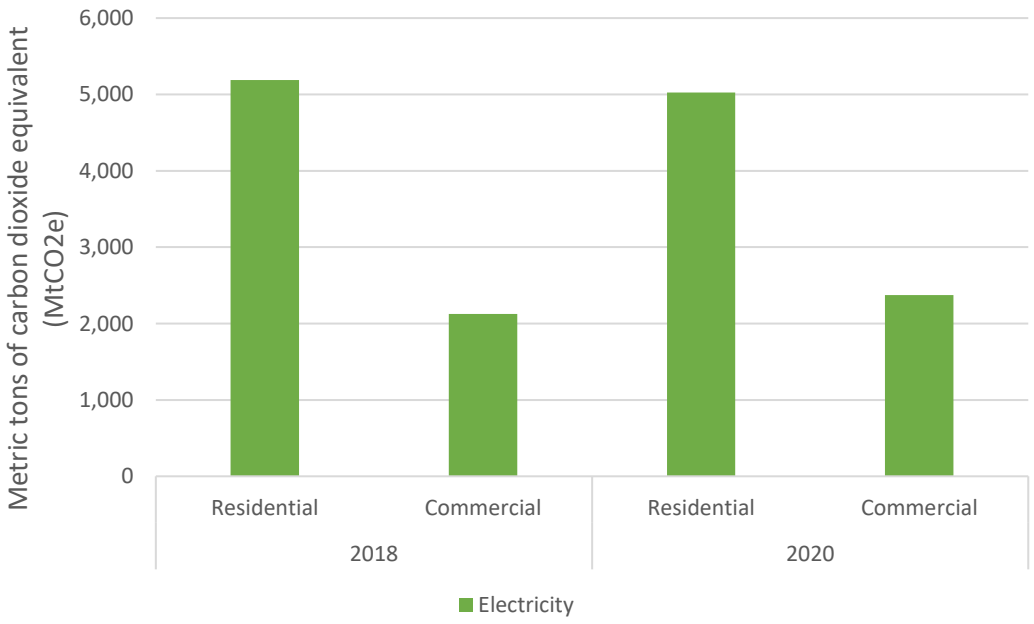
2018: 8.5 $MtCO_2e$
2020: 7.0 $MtCO_2e$

Percent Decrease in Total GHG Emissions from 2018 to 2020: 17%

GHG Emissions ($MtCO_2e$) by Sector		
Sector	**2018**	**2020**
Buildings	7,424	7,538
Transportation	12,125	9,249
Waste	1,939	1,820

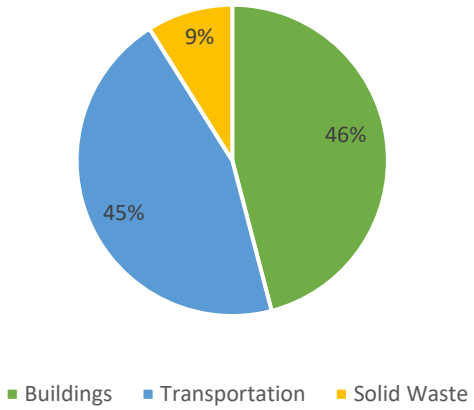
Activity Use by Sector		
Sector	**2018**	**2020**
Buildings – Electricity (kWh)	20,313,477	21,912,781
Transportation (VMT)	25,127,697	18,060,385
Solid Waste (tons)	1,188	1,115

GHG Emissions for Buildings



Town of Rockville
2018/2020 Community Greenhouse Gas (GHG) Emissions Inventory

2020 GHG Emissions by Sector



Total GHG Emissions:

2018: 1,171 $MtCO_2e$
2020: 1,019 $MtCO_2e$

Per Capita GHG Emissions:

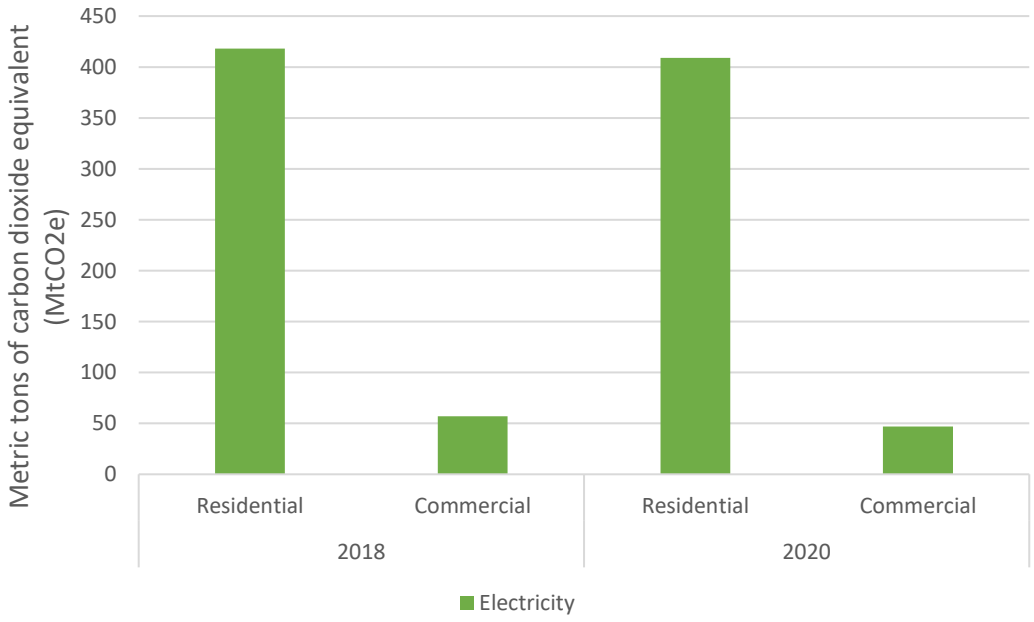
2018: 9.8 $MtCO_2e$
2020: 7.7 $MtCO_2e$

Percent Decrease in Total GHG Emissions from 2018 to 2020: 13%

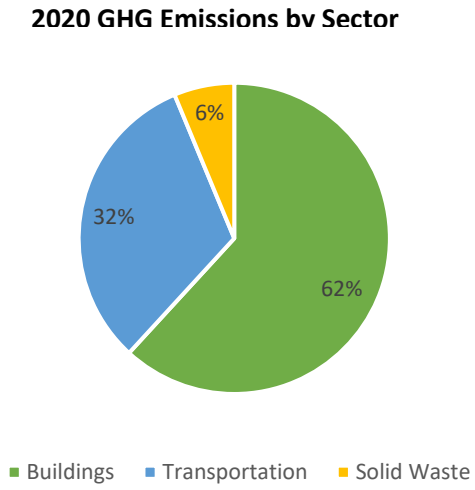
GHG Emissions ($MtCO_2e$) by Sector		
Sector	**2018**	**2020**
Buildings	491	468
Transportation	593	460
Waste	87	91

Activity Use by Sector		
Sector	**2018**	**2020**
Buildings – Electricity (kWh)	1,402,664	1,480,963
Transportation (VMT)	1,135,715	899,611
Solid Waste (tons)	54	56

GHG Emissions for Buildings



Town of Seabrook Island
2018/2020 Community Greenhouse Gas (GHG) Emissions Inventory



Total GHG Emissions:

2018: 23,819 $MtCO_2e$
2020: 19,800 $MtCO_2e$

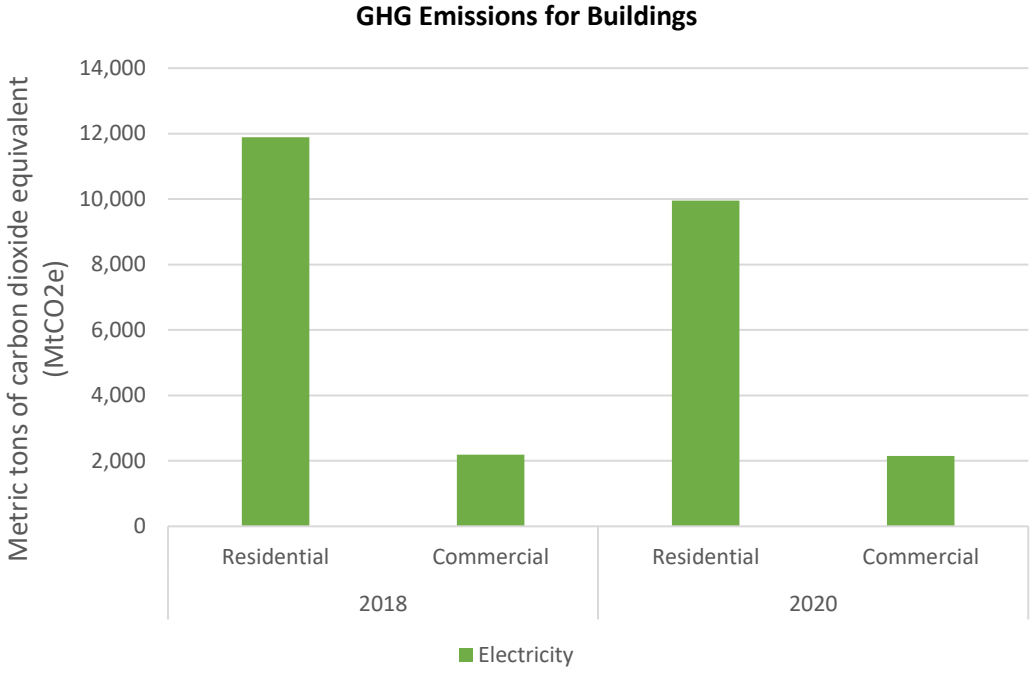
Per Capita GHG Emissions:

2018: 14.0 $MtCO_2e$
2020: 10.9 $MtCO_2e$

Percent Decrease in Total GHG Emissions from 2018 to 2020: 17%

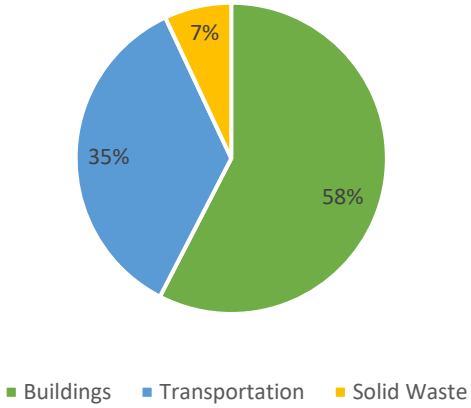
GHG Emissions ($MtCO_2e$) by Source		
Source	**2018**	**2020**
Buildings	14,208	12,241
Transportation	8,374	6,317
Waste	1,237	1,242

Activity Use by Sector		
Sector	**2018**	**2020**
Buildings – Electricity (kWh)	41,520,470	39,272,652
Transportation (VMT)	16,032,512	12,335,585
Solid Waste (tons)	758	761



Town of Sullivan's Island
2018/2020 Community Greenhouse Gas (GHG) Emissions Inventory

2020 GHG Emissions by Sector



Total GHG Emissions:

2018: 25,409 $MtCO_2e$
2020: 21,437 $MtCO_2e$

Per Capita GHG Emissions:

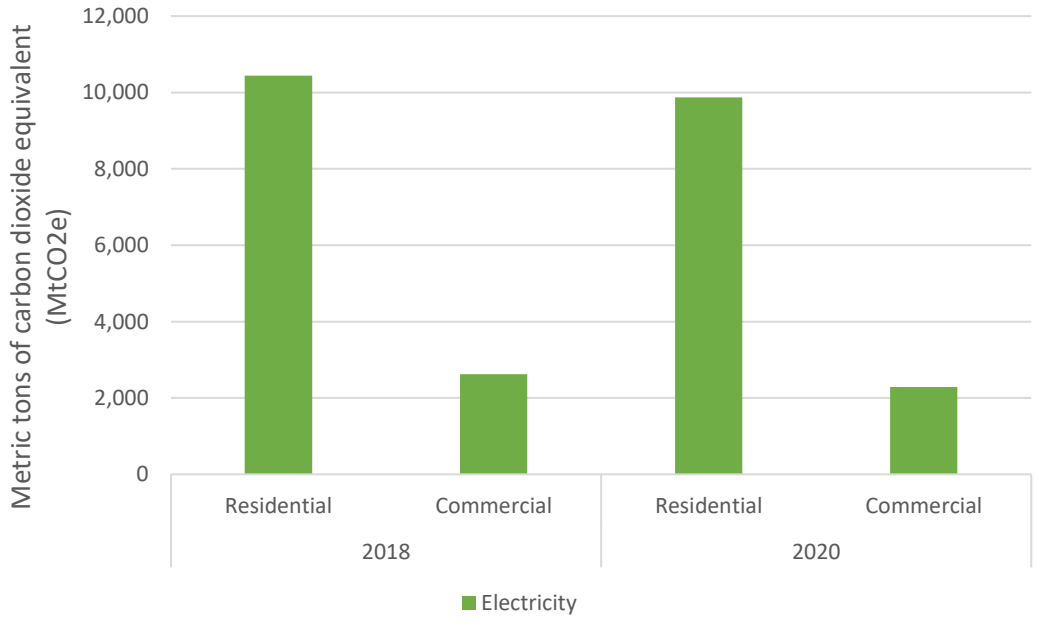
2018: 11.8 $MtCO_2e$
2020: 9.8 $MtCO_2e$

Percent Decrease in Total GHG Emissions from 2018 to 2020: 16%

GHG Emissions ($MtCO_2e$) by Source		
Source	**2018**	**2020**
Buildings	13,223	12,344
Transportation	10,618	7,598
Waste	1,568	1,495

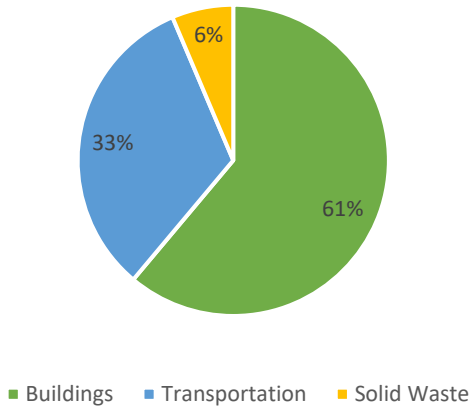
Activity Use by Sector		
Sector	**2018**	**2020**
Buildings – Electricity (kWh)	32,558,905	30,298,923
Transportation (VMT)	20,329,301	14,836,778
Solid Waste (tons)	961	916

GHG Emissions for Buildings



Unincorporated Charleston County
2018/2020 Community Greenhouse Gas (GHG) Emissions Inventory

2020 GHG Emissions by Sector



Total GHG Emissions:

2018: 376,120 $MtCO_2e$
2020: 303,918 $MtCO_2e$

Per Capita GHG Emissions:

2018: 12.2 $MtCO_2e$
2020: 10.7 $MtCO_2e$

Percent Decrease in Total GHG Emissions from 2018 to 2020: 12%

GHG Emissions ($MtCO_2e$) by Source		
	GHG Emissions (MtCO2e)	
Source	2018	2020
Buildings	201,629	185,719
Transportation	152,028	98,766
Waste	22,463	19,433

Activity Use by Sector		
Sector	2018	2020
Buildings – Electricity (kWh)	485,068,054	477,744,181
Buildings – Natural Gas (therms)	3,195,425	2,628,619
Transportation (VMT)	291,027,458	192,844,025
Solid Waste (tons)	13,756	11,901

Emissions from Buildings