

City of Wilmington

Greenhouse Gas Emissions Update

BACKGROUND

Wilmington has been a longtime leader in addressing the challenge of climate change. In 2006, Wilmington passed a resolution endorsing the US Conference of Mayors Climate Protection Agreement. In 2009, Wilmington performed its first Greenhouse Gas (GHG) emission inventory which established a GHG emission baseline. The inventory was followed by City Council passing a resolution in October 2009 setting ambitious GHG emissions reduction goals for municipal operations.

Wilmington has maintained the commitment to curbing climate change through resolutions supporting GHG emission reductions, including:

- 2017 - Resolution re-affirming Wilmington's commitment to address climate change through its policies, programs and practices.
- 2020 – Resolution establishing the Ad Hoc Clean Energy Policy Task Force
- 2021 – Resolution adopting 2035 and 2050 Clean Energy Goals
- 2021 – Resolution supporting the Mayors for 100% Clean Renewable Energy Pledge
- 2021 – Resolution establishing the Clean Energy Advisory Committee

What is the Goal?



Reduce **municipal operations** GHG emissions by **58% by 2050** from a 2007 baseline of 9,704 metric ton of CO₂e.

What are Greenhouse Gas emission?

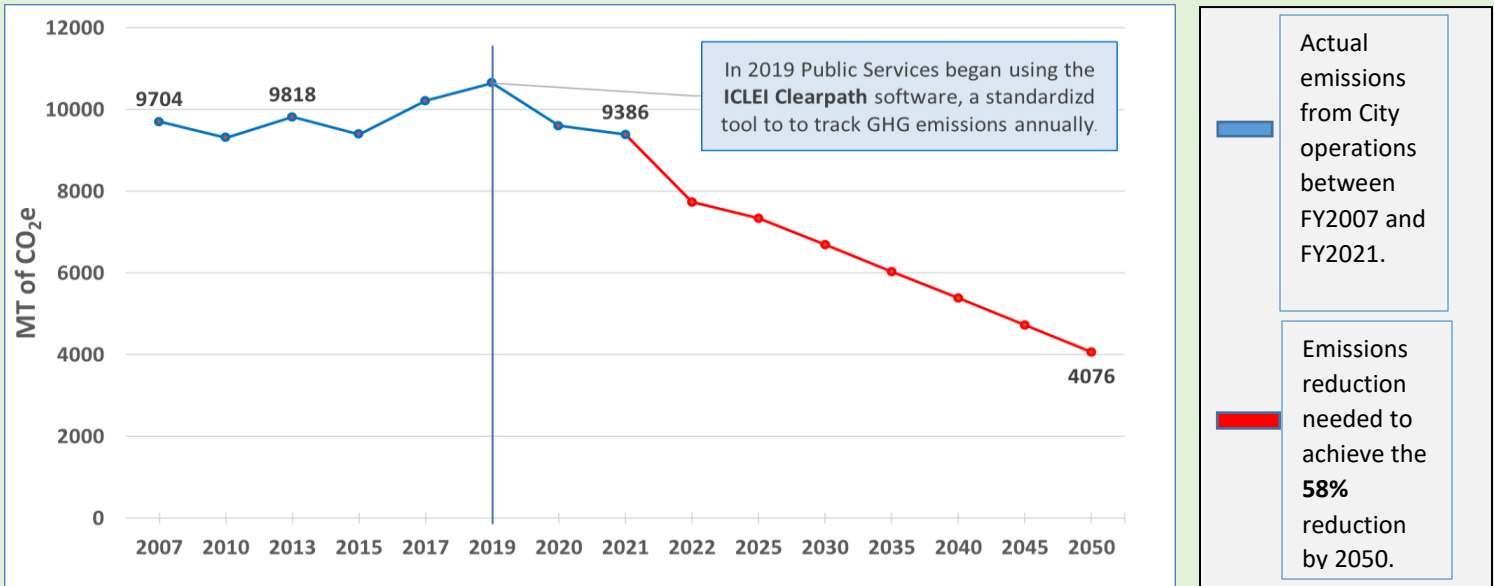
GHG's such as carbon dioxide and methane trap heat in the atmosphere, warming the planet and causing cascading impacts on environmental systems. The largest source of GHG emissions from human activity in the US is from burning fossil fuels for electricity, heat, and transportation.

CO₂e, or “carbon dioxide equivalent,” is the standard unit for measuring GHG emissions.

Greenhouse Gas Emissions Update

GHG emissions from the City of Wilmington include emissions from City buildings, fleet, equipment, streetlights, and traffic signals.

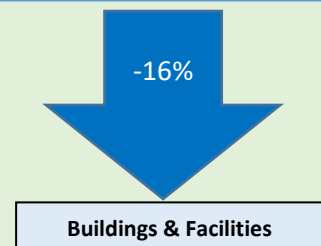
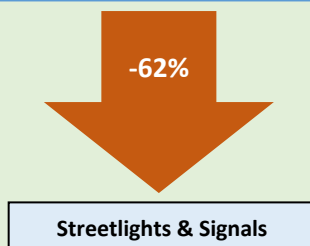
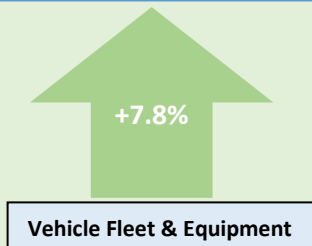
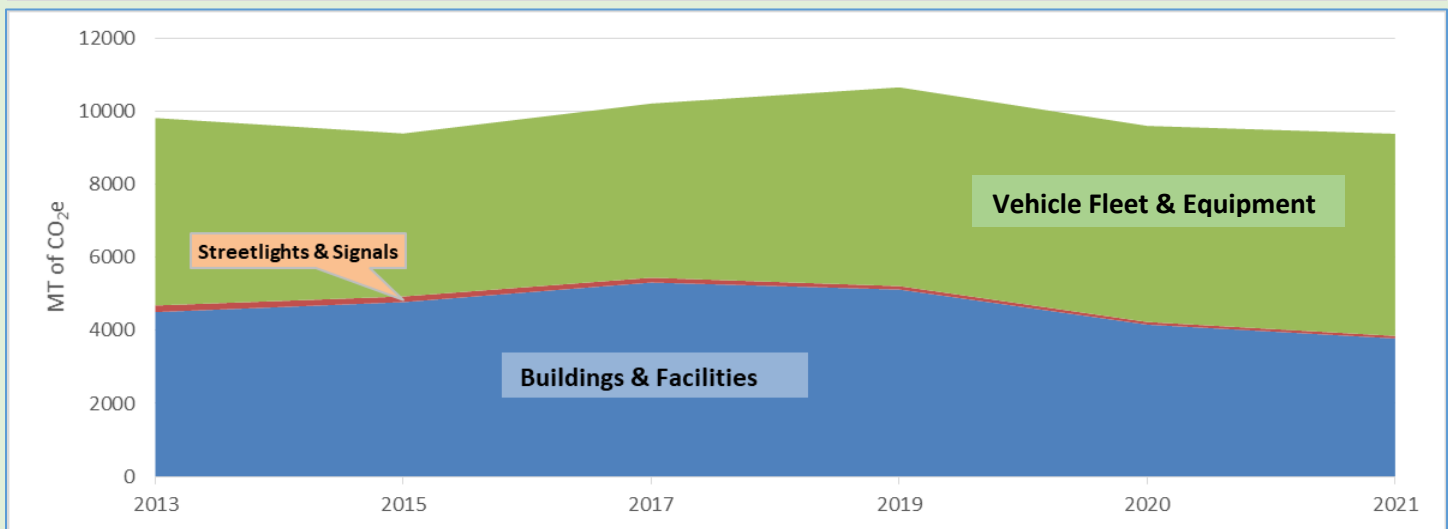
Total GHG Emissions from Municipal Operations



As of 2021, total GHG emissions from City Operations have **decreased 3.3%** since 2007.

To meet the 2050 goal, total GHG emissions will need to decrease by an average of **131 metric tons of CO₂e per year**, or about **1.3%** per year.

Total GHG Emissions by Source


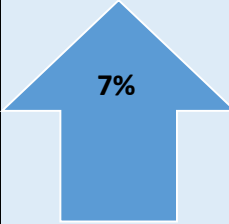

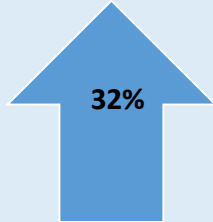

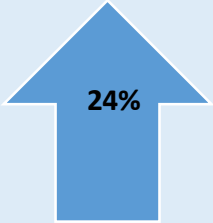


Greenhouse Gas Emissions Update

The **GHG emission reductions** shown in the previous graphs are the result of a variety of actions:

- **Energy efficiency projects in City facilities to reduce energy usage**
 - Examples: LED lighting retrofits in Police HQ, Fire HQ, and MLK Rec Center
- **Conversion of streetlights and traffic signals to energy efficient LED**
 - Over 8,000 streetlight & area lighting converted to 80% more efficient LED!
- **Fleet procurement of newer and more fuel-efficient vehicles**
 - In FY21, the vehicle fleet contained fifteen (15) hybrid vehicles
 - New Police Dodge Chargers (13 mpg) replacing old Crown Victoria's (8 mpg)
- **Design and construction of new City facilities with energy efficiency and sustainability in mind**
 - Examples: Haynes-Lacewell Police & Fire Training Facility, Cinema Drive Fire Station (LEED Silver)
- **The transition of the electricity grid toward less carbon intensive mix by Duke Energy**
 - eGrid 2012 CO₂ emission rate = **932.9 lb/MWh**
 - eGrid 2018 CO₂ emission rate = **743.3 lb MWh**

Factors Impacting GHG emissions

	Past Years	2021	% Change
 <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 5px auto;">Number of Fleet Vehicles</div>	619 <small>(2017)</small>	661	 7%
 <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 5px auto;">Buildings & Facility Square Footage</div>	533,180 <small>(2007)</small>	703,114	 32%
 <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 5px auto;">Population</div>	99,477 <small>(2007)</small>	123,728	 24%

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What Can Wilmington Do Next?

Policy & Legislation

- Support the newly formed Clean Energy Advisory Committee and implement the recommendations from the Ad Hoc Clean Energy Policy Task Force report
- Support clean energy policy at the state & federal level
- Support Duke Energy's and other utility providers development of green power sources throughout NC

Buildings & Facilities-Prioritize Sustainable Design, Energy Reduction, and Energy Efficiency

- Establish a Sustainable Building Policy for all new construction
- Prioritize energy efficiency projects of existing buildings & facilities
- Replace energy-inefficient lighting for efficient LEDs.
- Purchase energy efficient computers, laptops, and appliances rated by ENERGY STAR and/or EPEAT
- Increase electricity generated from renewable energy sources

Fleet & Equipment

- Phase in the replacement of ICE vehicles with ZEV or hybrid
- Replace gas mowers, landscaping equipment, and golf carts with electric models
- Utilize federal / state funding and grants to increase EV charging infrastructure
- Conduct a fleet audit / study to guide fleet transformation
- Support use of alternative transportation whenever possible