

1/6/2026

# GREENHOUSE GAS INVENTORY AND CLIMATE ACTION STRATEGIES

Town Council Meeting



TOWN OF CARRBORO • NC

# Greenhouse Gas Inventory Agenda

1. Background
2. Most recent Inventory
3. Year-to-Year comparison
4. Target Areas
5. In-Progress Reductions



# Introduction

## What is a greenhouse gas inventory?

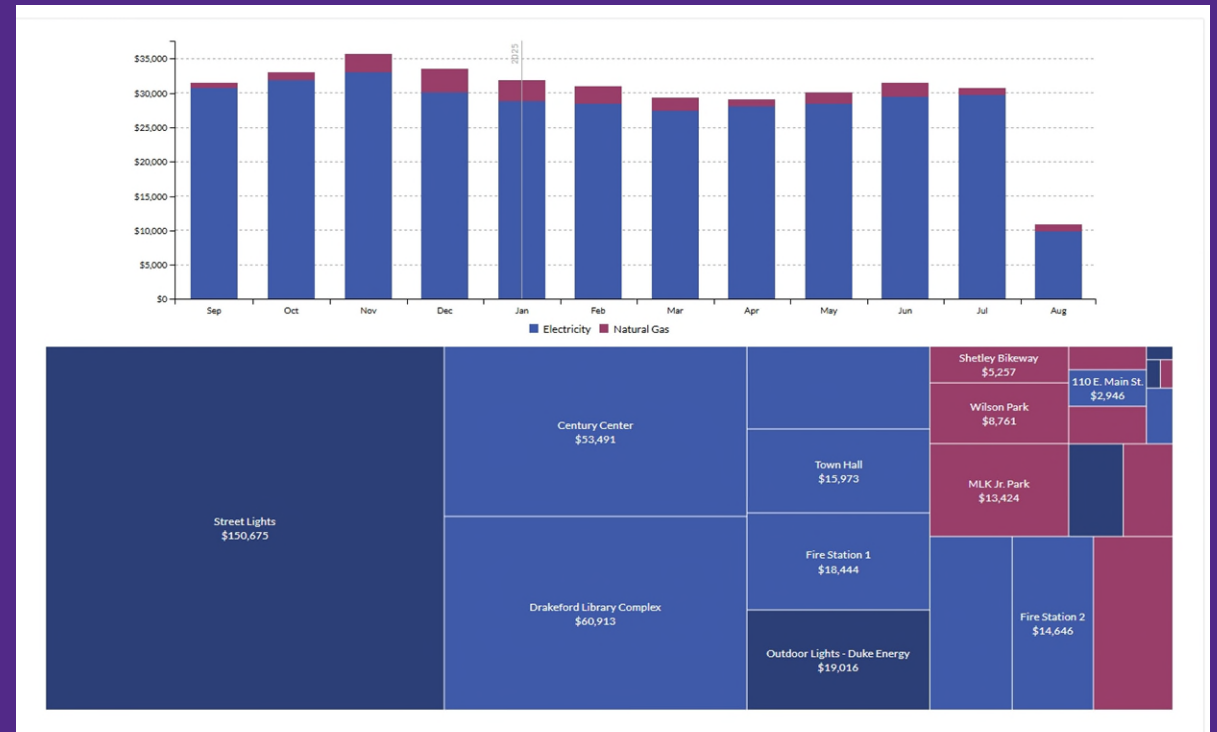
- A greenhouse gas (GHG) inventory estimates the total amount of emissions created by an organization
- The emissions are broken down by **source** and by **scope**
- The purpose of a GHG inventory is to better guide policy and investments.



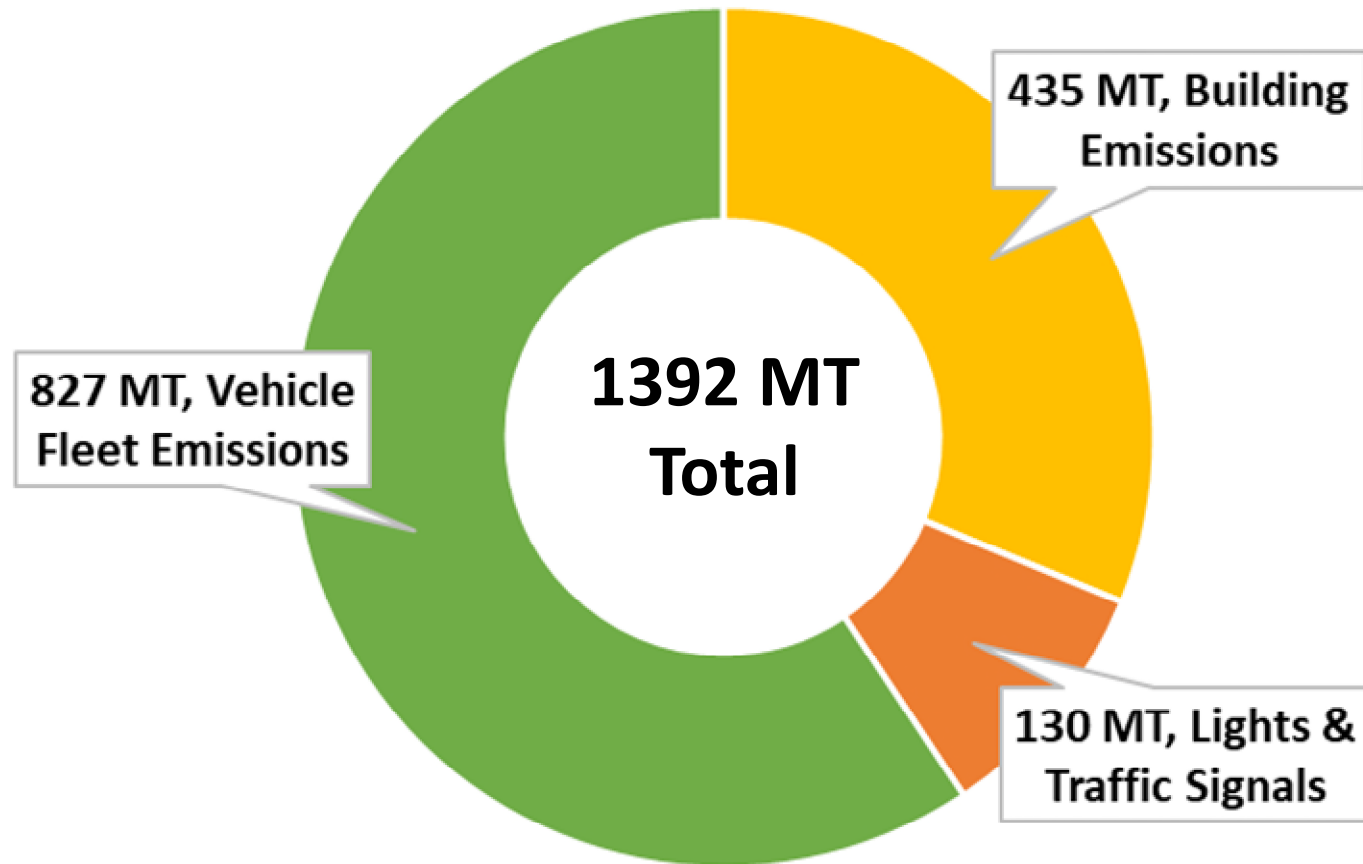
# Introduction (cont.)

## What is counted in a GHG inventory?

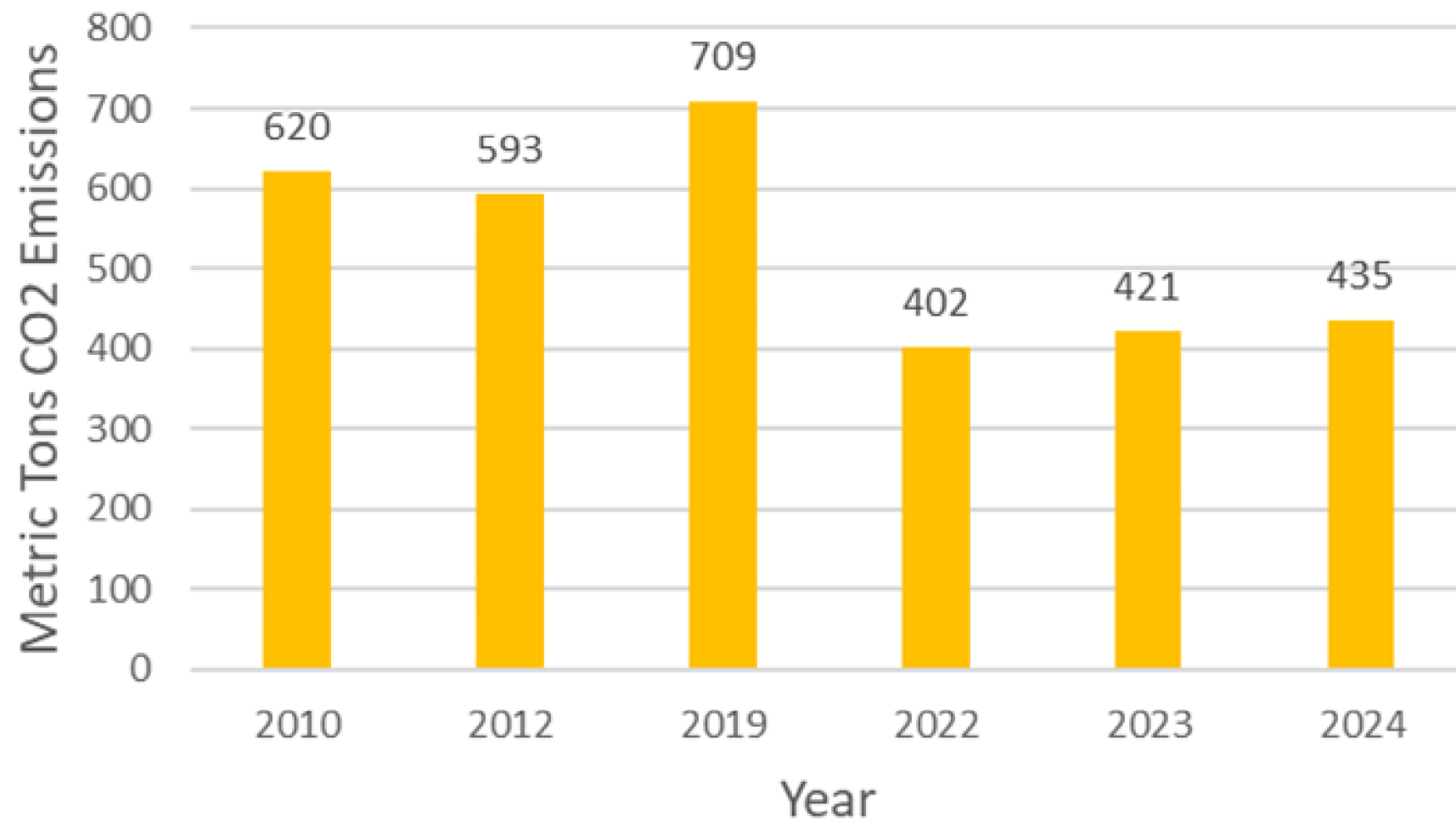
- The Town of Carrboro's emission sources are:
  - Electricity
    - Buildings
    - Signals / Street Lights
  - Natural Gas
    - Buildings
    - Generators
  - The Town Vehicle Fleet
    - Gasoline
    - Diesel



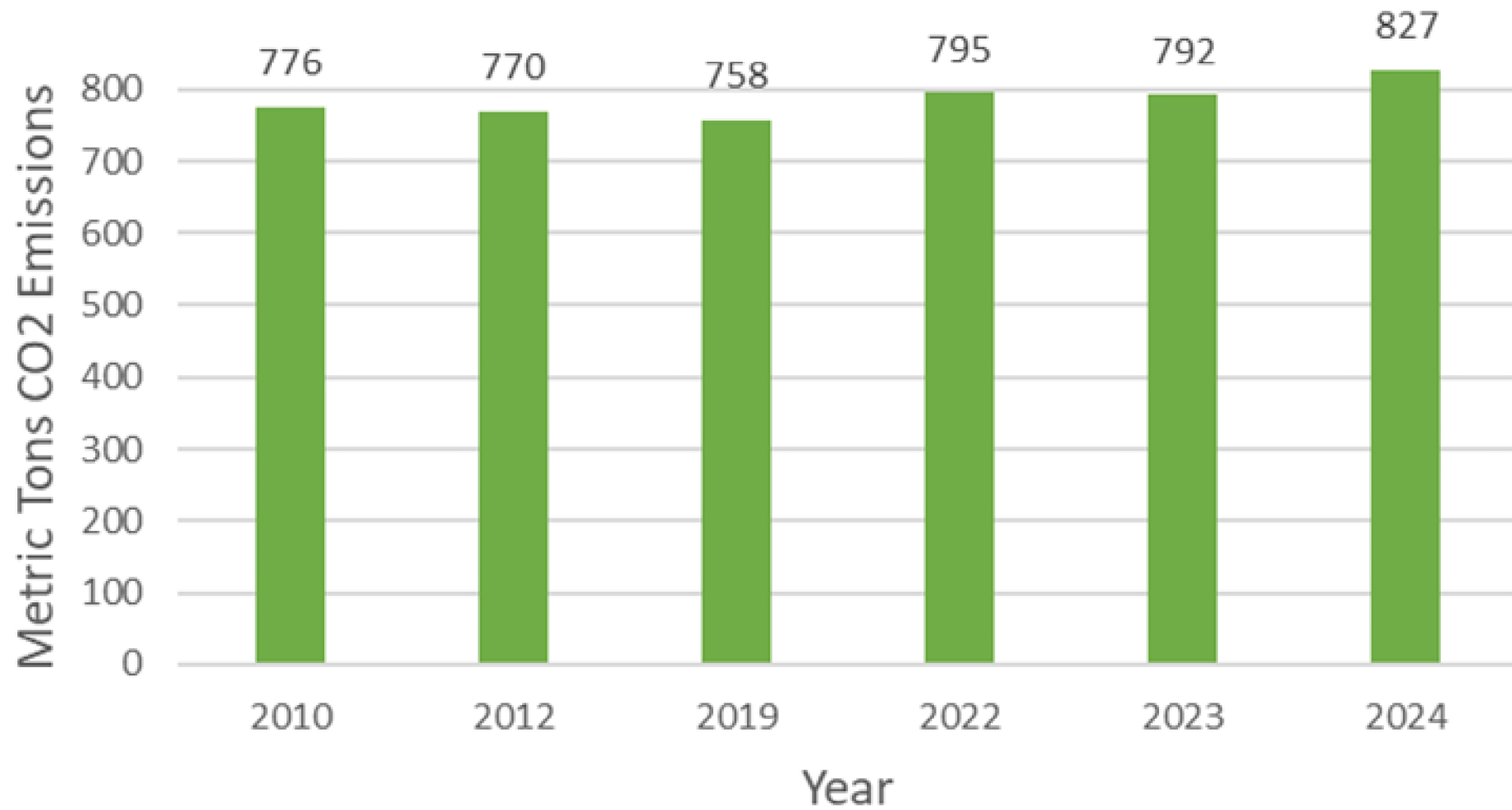
# 2024 GHG Inventory



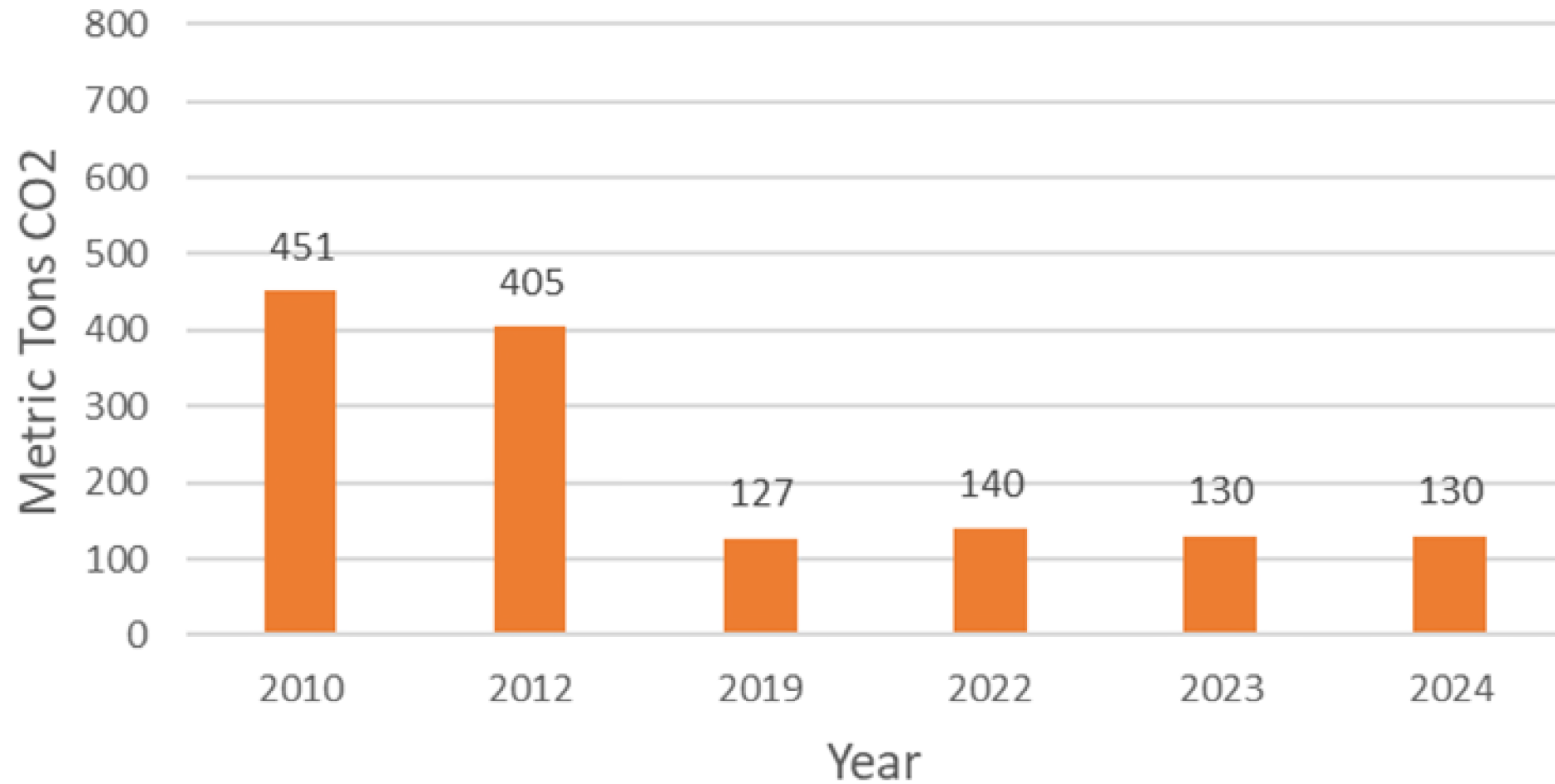
## Building Emissions



## Vehicle Fleet Emissions

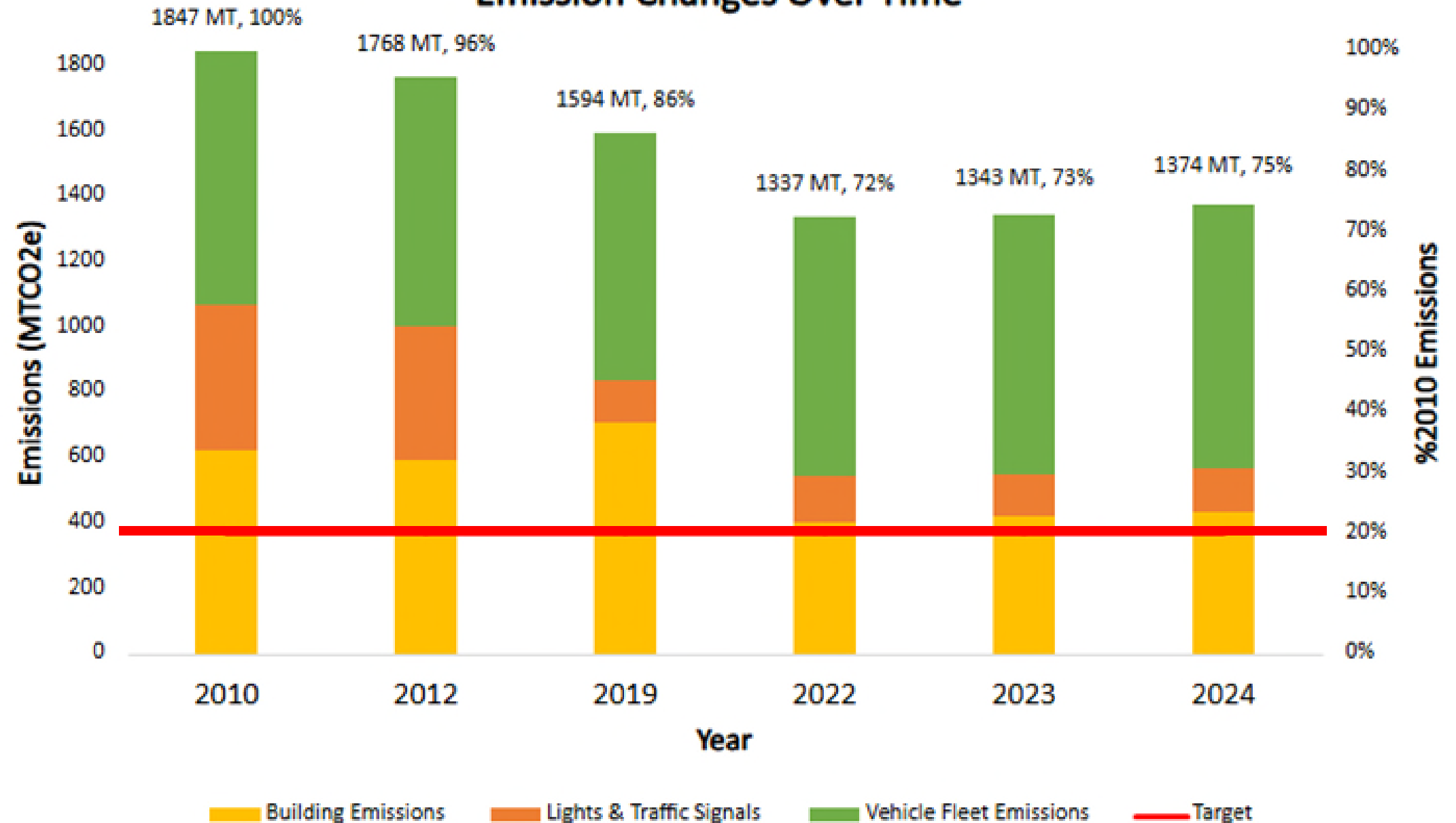


## Lights & Traffic Signals





## Emission Changes Over Time



# Where can we reduce emissions?



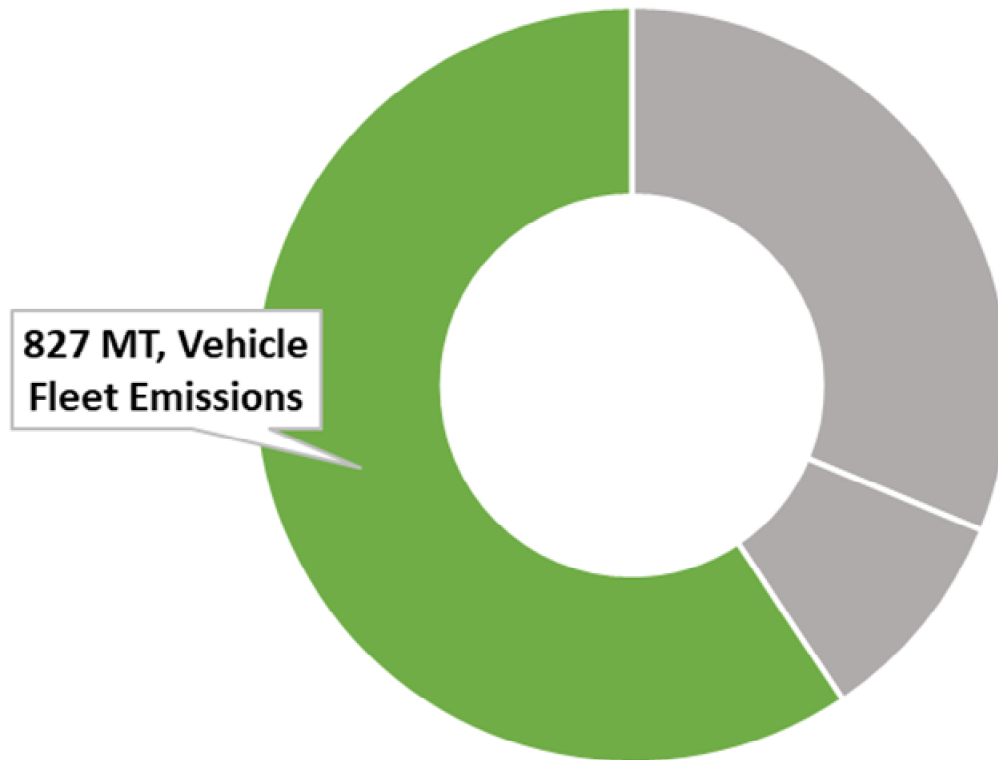
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# Vehicles



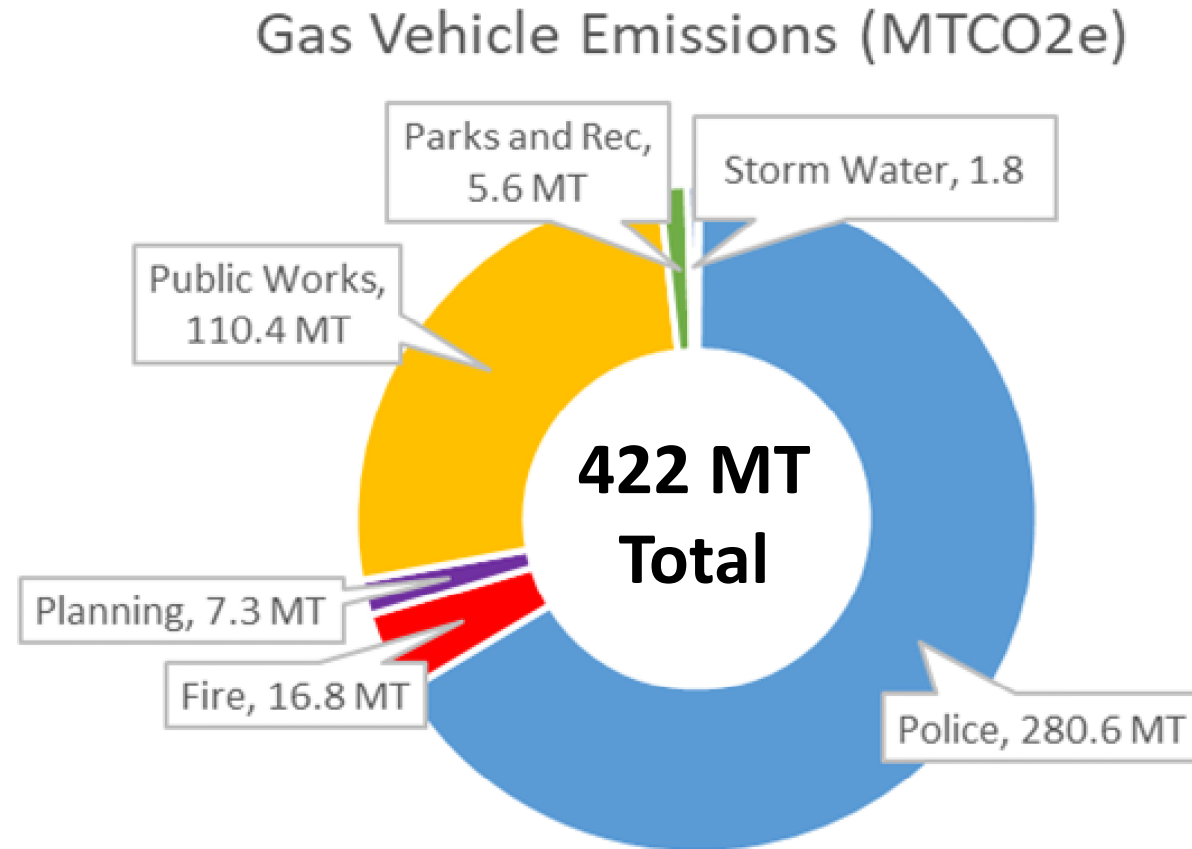
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# 2024 GHG Inventory



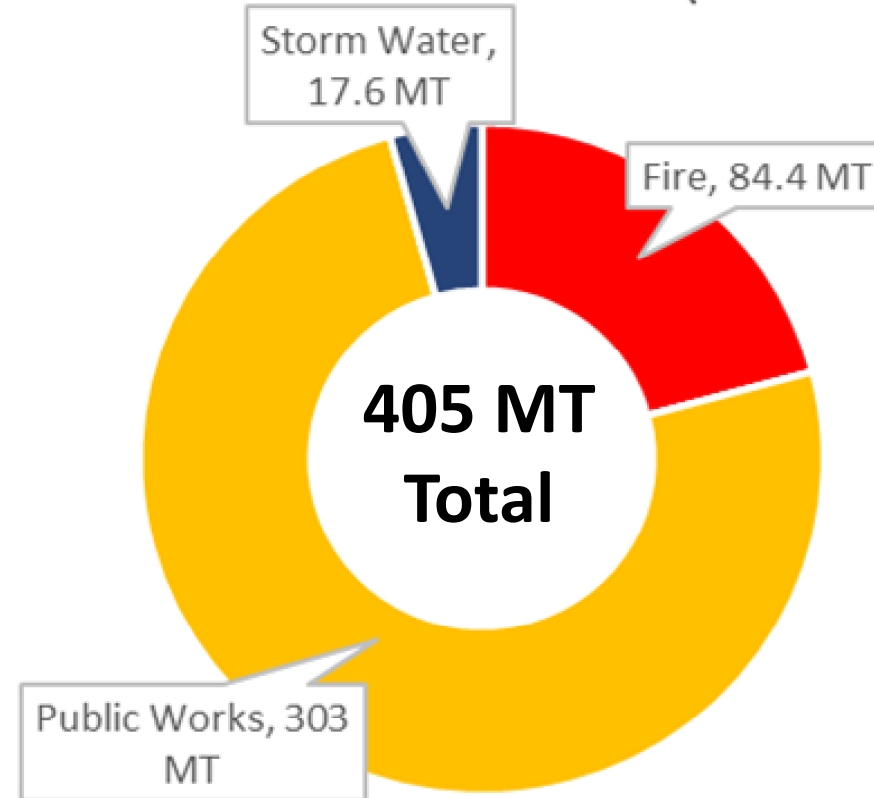
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# Vehicles (cont.)

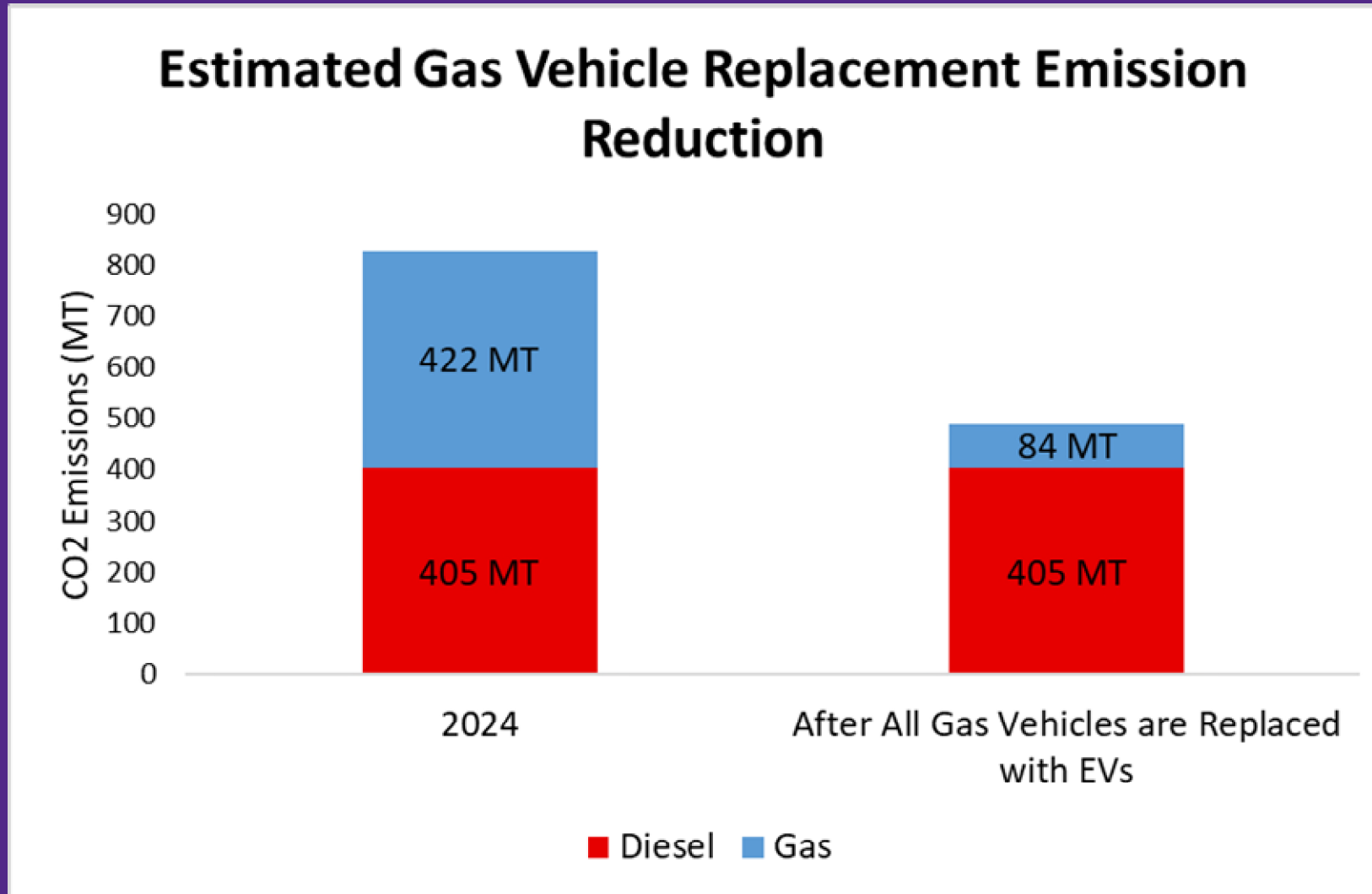


# Vehicles (cont.)

Diesel Vehicle Emissions (MTCO<sub>2</sub>e)



# Vehicles (cont.)



# EV Charger Projects

**Town Commons** – x8 ports, 80-amp chargers

19.2 kWh max charging speed

F150 Lightning Extended Range: 20% - 80% SOC = 4.5 hours

- 2 ports currently under construction
- Waiting for Duke Energy to start the next 6
  - Should have the plan by the end of the week 12/19



# EV Charger Projects (cont.)

**Civic Center** - x2 – 4 ports, DCFC

180 kWh max charging speed

F150 Lightning Extended Range (limited to 150kW charging speed):  
20% - 80% SOC = 39 minutes

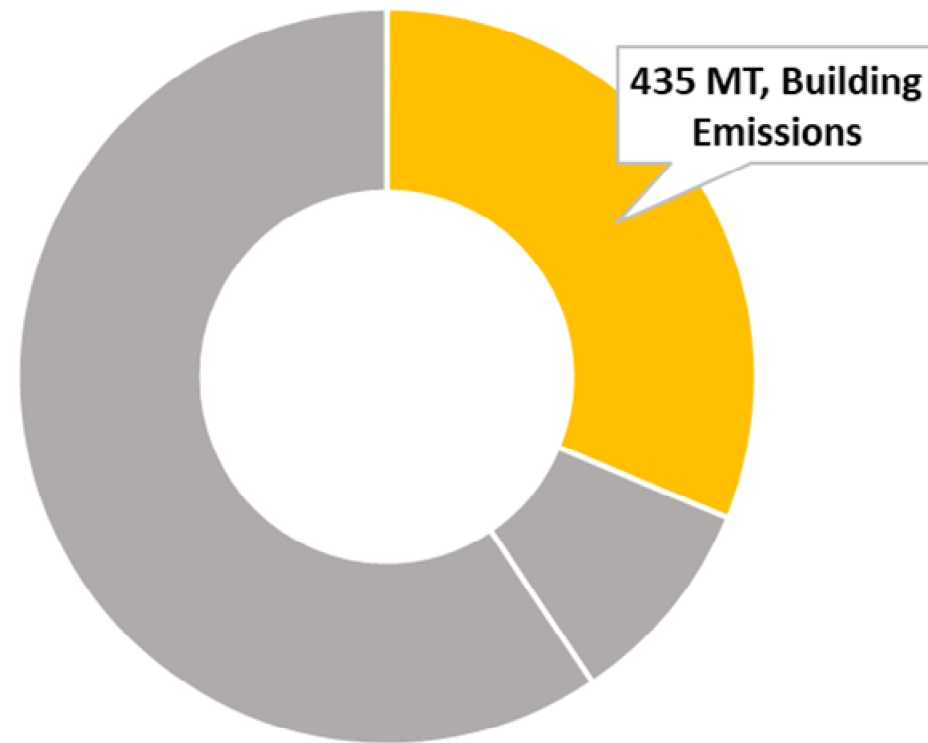
- *Dependent on infrastructure costs*

# Buildings



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# 2024 GHG Inventory



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# 2025 Carbon Emissions So Far

Century Center  
187 MT CO<sub>2</sub>e

Drakeford Library Complex  
172 MT CO<sub>2</sub>e

Old Public Works  
22 MT CO<sub>2</sub>e

110 E. Main St.  
5 MT CO<sub>2</sub>e

Fire Station 1  
50 MT CO<sub>2</sub>e

Fire Station 2  
38 MT CO<sub>2</sub>e

Town Hall  
32 MT CO<sub>2</sub>e

January 2025 – November 2025 = 532 MTCO<sub>2</sub>e

# Buildings

## Reduction in progress

- LED Retrofits
- Energy Efficiency Retrofits
- Increase HVAC energy efficiency
  - Building Controls
- Addition of Solar where possible
- Conservation!
  - Turn off lights
  - Turn down/up thermostats



# Energy Audits

*Performed by Alpha Facilities week of 11/3/2025*

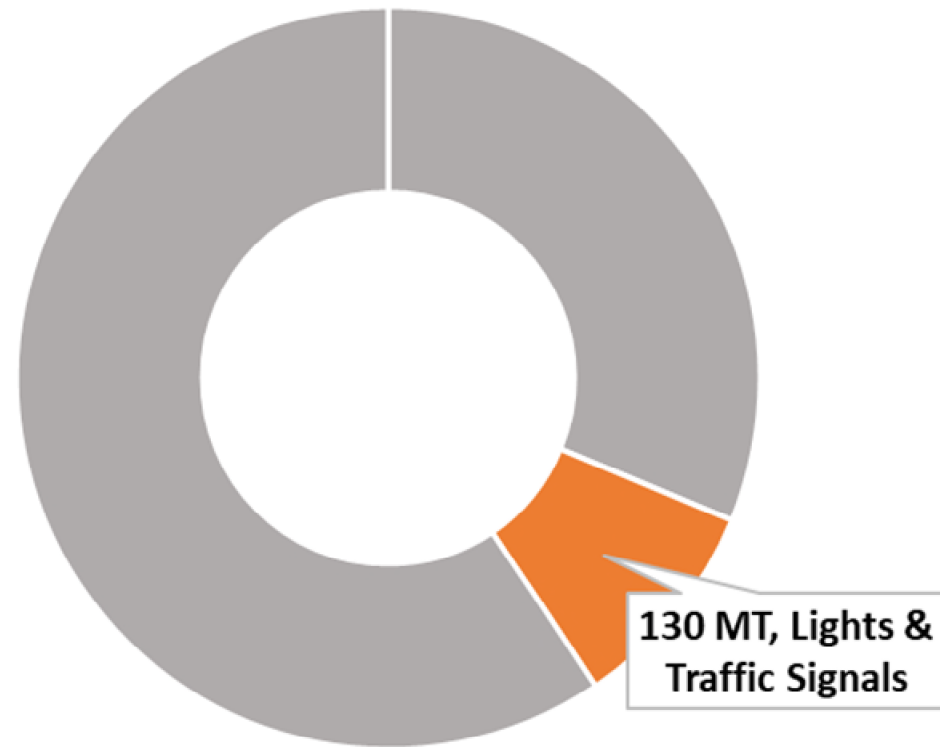
- Century Center (1920s) – New efficient chiller system
  - Leaky and inefficient building envelope
  - Still utilizes gas appliance including water heaters, stoves, & boiler
  - Diesel backup generator
  - No Solar
- Town Hall (1922) – A centralized HVAC system would improve energy efficiency
  - Leaky and inefficient building envelope
  - Dated and complex electrical system. 1 panel could be a possible fire hazard
  - No Solar
- Fire Station 1 (1960s)– Utilizes A roof top solar array, however shading from nearby tree is lowering energy output
  - Leaky and inefficient building envelope
  - Dated natural gas backup generator
  - 75 kW Solar Array
- Fire Station 2 (2010) – A centralized HVAC system would improve energy efficiency
  - Electrical panels are maxed out
  - Diesel backup generator
  - Solar thermal system needs repaired
  - No Solar

# Lights



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# 2024 GHG Inventory



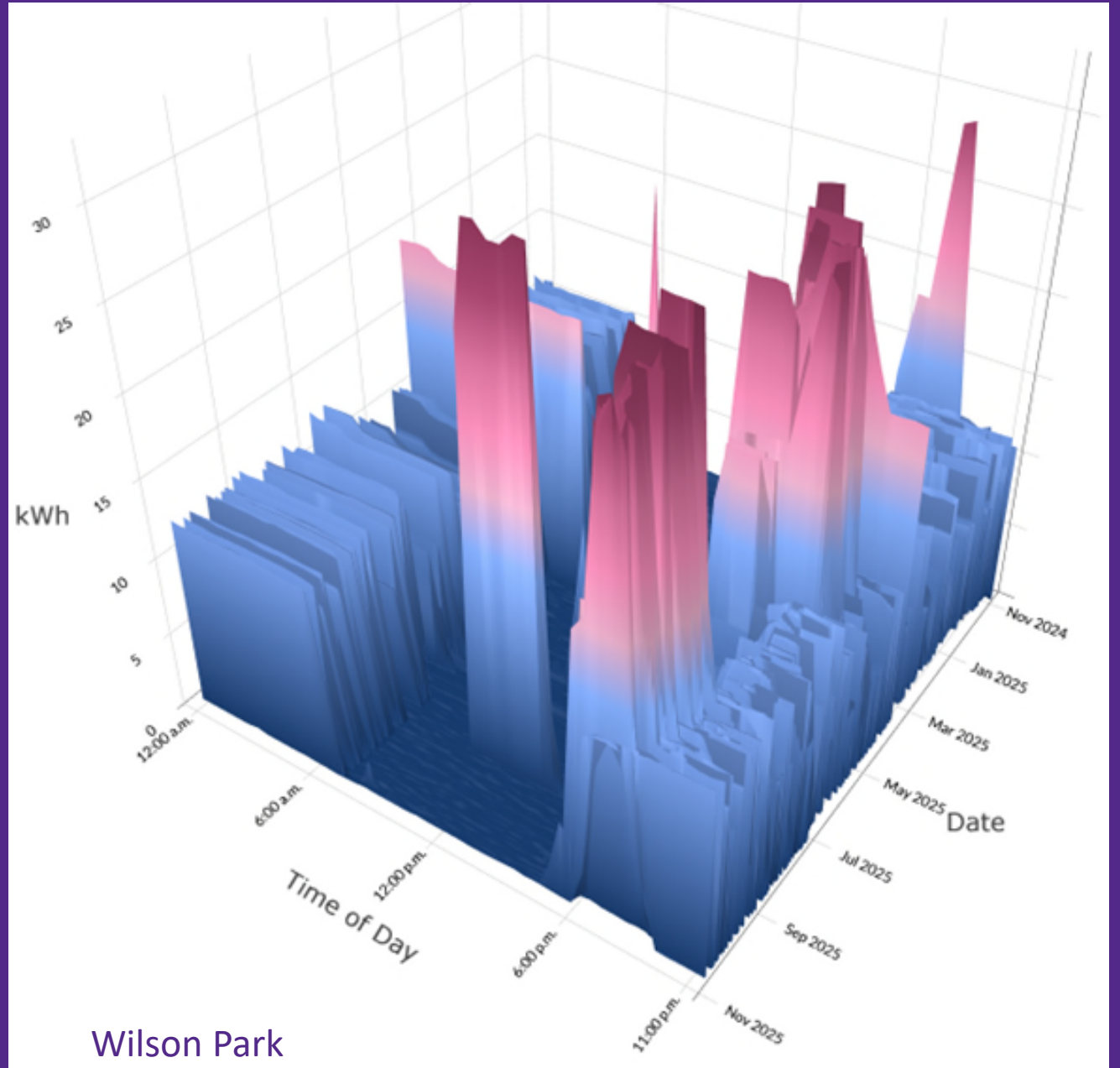
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# Lights

## What is in progress?

- Most Sports Field Lighting isn't LED
- Lighting at Wilson Park
  - 14 MTCO<sub>2</sub>e Annually
  - Estimated Cost - \$340,000
- Lighting Audit



Wilson Park

# Big Picture

## Vehicle Emissions

- EV adoption and EV charging infrastructure
- Stay up-to-date with medium- and heavy-duty EV vehicle technology

## Building Emissions

- Prioritize energy efficiency in new/renovation building projects
- Improve HVAC efficiency/ consolidate HVAC systems + LED retrofits
- Adding solar PV systems where possible

## Lights Emissions

- Lighting Audits
- Last few LED installations

# Thank you

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