



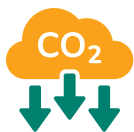
# ENVIRONMENTALLY RESPONSIBLE

**2024 REPORT** | HOW GUC IS FULFILLING ITS MISSION





# ELECTRIC



Energy supplier has **reduced Carbon emissions 48%** since 2005



## BEAT THE PEAK

- Residential load management program
- Reduced energy use by 1M kWh in 2024
- Reduced CO<sub>2</sub> emissions by 288 tons in 2024

## CONVERTING PEAK SHAVING GENERATORS

- Converting from diesel to natural gas reduces CO<sub>2</sub> output by 28.6%
- Reduced CO<sub>2</sub> emissions by 112 tons in 2024

## LED STREET LIGHTS

- All street lights inside Greenville have been converted
- 65% of GUC's nearly 23,000 street light and area lights are LED
- Multi-year project to convert the rest

## SMART THERMOSTAT PILOT

- Peak shaving system using customers' smart thermostats instead of peak shaving devices
- Estimated annual reduction of 2.5 tons of CO<sub>2</sub>
- 261 customers enrolled so far

## SOLAR INTERCONNECTION

- 194 residential and commercial accounts
- Annual estimated reduction of 158 tons of CO<sub>2</sub>
- 500kW community solar farm approved in 2024, will be operational in 2025

## PLANNING STAGE: ADVANCED METERING INFRASTRUCTURE (AMI)

- Potential to reduce 278,057 vehicle miles and 176.5 tons of CO<sub>2</sub> annually due to reduced truck rolls for meter reads & disconnects

## SUBSTATION VOLTAGE REDUCTION

- Lowered voltage at substations during peak times reduce system demands
- Reduced energy use by 1.2M kWh in 2024
- Reduced CO<sub>2</sub> emissions by 351 tons in 2024

# NATURAL GAS



GUC's offering of natural gas has **helped large customers avoid 268,465 tons of CO<sub>2</sub> emissions** in the last 11 years alone.



## CAST IRON PIPES

- Program started in the 1990s to replace cast iron pipes
  - » 30 years before the Federal Government started funding the replacements
- Reduces methane released into the atmosphere

## LEAK DETECTION

- Installed pressure monitors at gate stations to detect ruptures
- Use infrared to detect leaks
- Utilize worker/monitor regulators at gate stations to reduce emissions
- Conduct system surveys every 3 years instead of the federally-required 5 years

## INDUSTRY REDUCTION

- Methane Emissions from natural gas distribution have dropped 73% since 1990 while customers have increased 40%

## SLAM-SHUT REGULATORS

- Utilized, when appropriate, to minimize methane emission

## ON-SITE COMMERCIAL CNG PUMPS

- Now offering commercial CNG pumps for vehicles at local businesses
- Pumps are similar to EV charging stations

## COMPRESSED NATURAL GAS (CNG)

- CNG vehicles reduce CO emissions by 90-97%, CO<sub>2</sub> emissions by 25%, and NO emissions by up to 60% compared to gas or diesel
- CNG Filling Station opened in 2015
- Major customers: ECU transit and GFL (formerly Waste Industries)
- Approximately 1/3 of Gas Department vehicles use CNG
- Reduced 390 tons of CO<sub>2</sub> in 2024
- Reduced 3,394 tons of CO<sub>2</sub> since its opening

## COMBUSTIBLE GAS INDICATORS

- Used during purging operations to minimize methane emissions

## RENEWABLE NATURAL GAS (RNG)

- Started dispensing RNG at our CNG station in 2024
- RNG is methane captured from a landfill which would otherwise have been emitted into the atmosphere during natural decomposition
- Beginning in September of 2024, GUC is now purchasing RNG in quantities large enough to fuel the CNG station.
  - » Dispensed 75,516 GGE (gallons of gas equivalent) of RNG. That's equal to:
    - taking 159 passenger vehicles off the road for a year
    - planting 11,244 trees



# WATER & WASTEWATER



## WATER

### SOLAR BEE MIXERS

- Increases water quality in elevated tanks
- Reduces the need for extra chemicals to keep water fresh
- Utilizing solar technology, it reduces power consumption equivalent to about 20 homes
- Reduces CO<sub>2</sub> emissions by about 150 tons annually

### LED LIGHTING AT WATER TREATMENT PLANT

- Replaced HID lights at Water Treatment Plant with LED
- Installed motion detectors to turn lights on/off
- Reduced energy use by 75%

### BIOLOGICAL GRANULATED ACTIVATED CARBON FILTER MEDIA

- Reduces the amount of chlorine required

### SUPERPULSATOR

- Uses only 20-25% of the energy required by other clarifiers
- Requires half the footprint, building space, and associated energy necessary to light, heat, and cool the building

## WASTEWATER

### CONSERVATION EASEMENT

- 101 acres on the farm
- Utilizes 26,000 trees and plants to remove nitrogen and phosphorus from running into the Tar River
  - » Nitrogen: 227,302 lbs.
  - » Phosphorus: 14,640 lbs.
- Helps prevent algae blooms

### WASTEWATER TREATMENT PLANT FARM WETLANDS

- Sea Grant institute funded project
- Discharge up to 5 MGD to irrigate crops
- Recharges groundwater
- Keeps nutrients from flowing into the Tar River
- Helps prevent algae blooms

### TREATMENT PROCESS

- 100% biological, the wastewater treatment process is chemical-free

### AIR PIPING REPLACEMENT

- Increased efficiency of piping
- Reduced energy required to pump air to aeration tanks
- Installed turbo blower which uses half the electricity of older pumps

### UV DISINFECTANT UPGRADE

- Automated system with new bulbs
- 70-80% more efficient
- Eliminates need for chlorine gas, keeping it out of the Tar River

### LED LIGHTING

- Reducing energy demand
- Focused lights reduce light pollution