



Calendar Year 2023 Greenhouse Gas Inventory

Sustainability Committee
October 22, 2024

Agenda

- District Policies for Greenhouse Gases (GHGs)
- Water-Energy Nexus Protocol
- 2023 GHG Inventory Results
- Next Steps

Energy Policy and GHG Inventory Protocol

Energy Policy 7.07 (updated September 26, 2023)

- District goal is to be carbon neutral by 2030
- Prioritize actual emission reductions
- Purchase credits to mitigate residual emissions
- Track wastewater process emissions but not included in goal



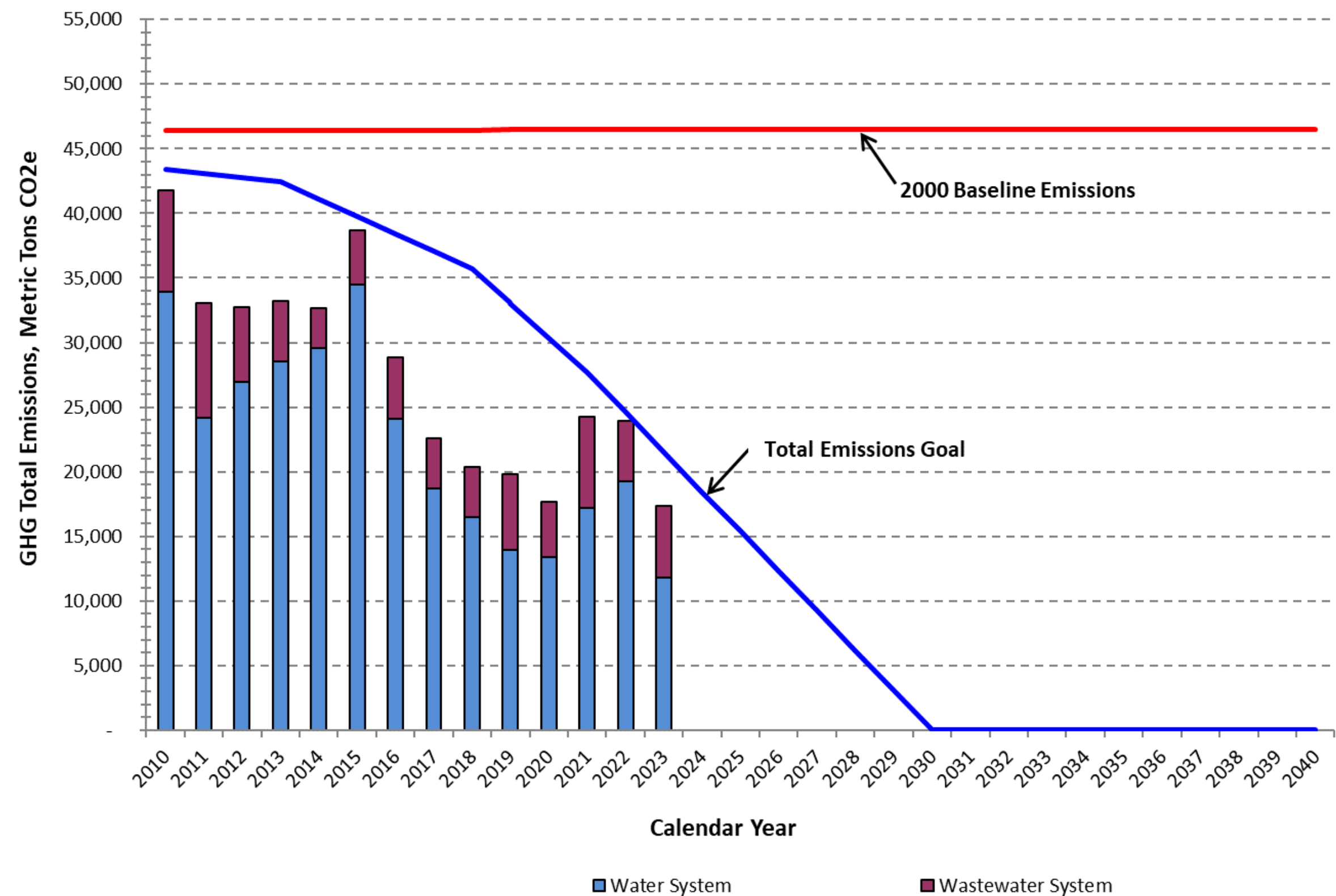
The Climate Registry

WEN 2.0 used to estimate GHG inventory

- All past year GHG data revised to match WEN 2.0
- Allows year-to-year comparison

District GHG Emissions

Annual GHG Total Emissions vs Goal



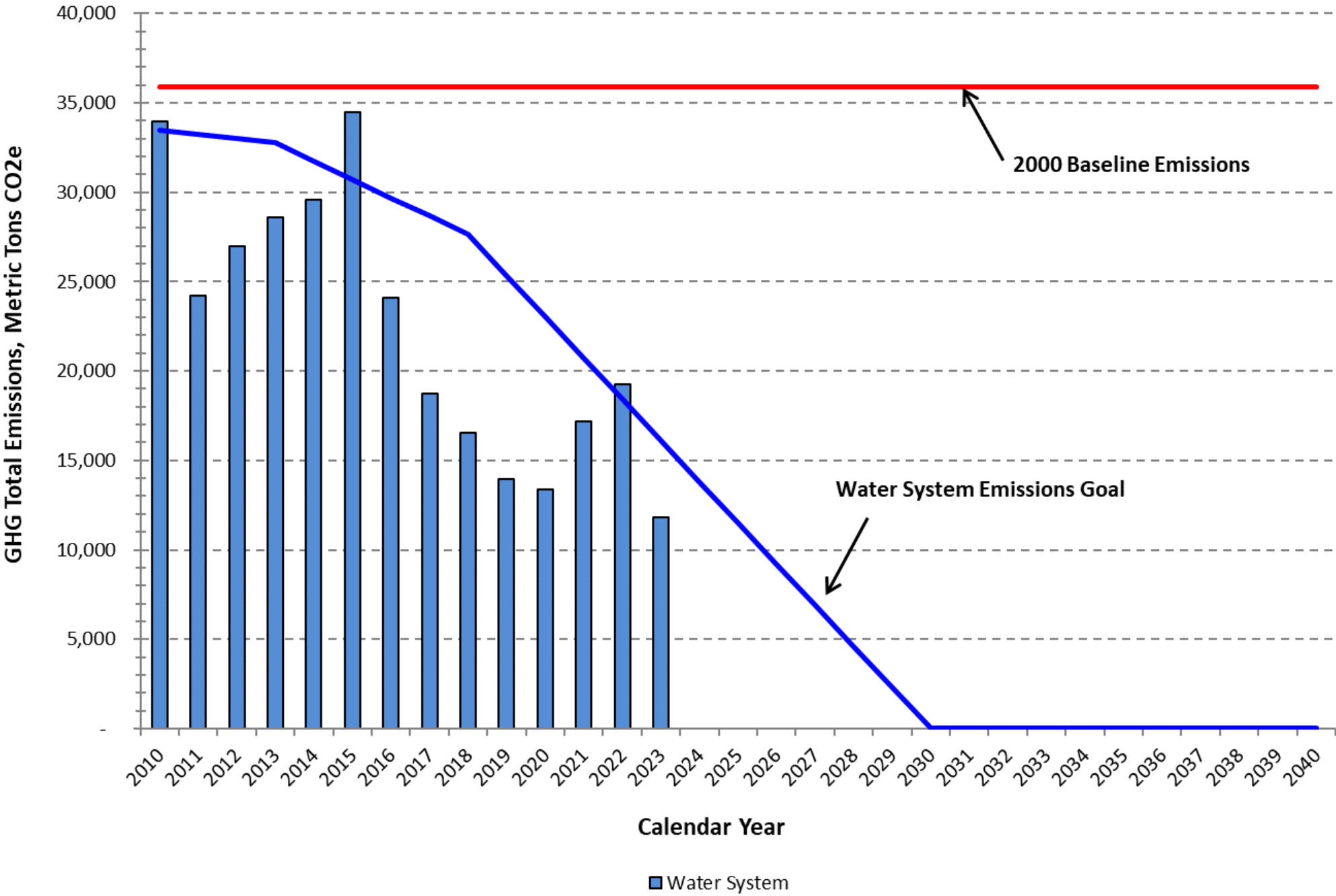
2023 Emissions	2023 Goal
17,322 MT CO2e	21,535 MT CO2e

MT CO₂e = Metric Tons of Carbon Dioxide equivalent

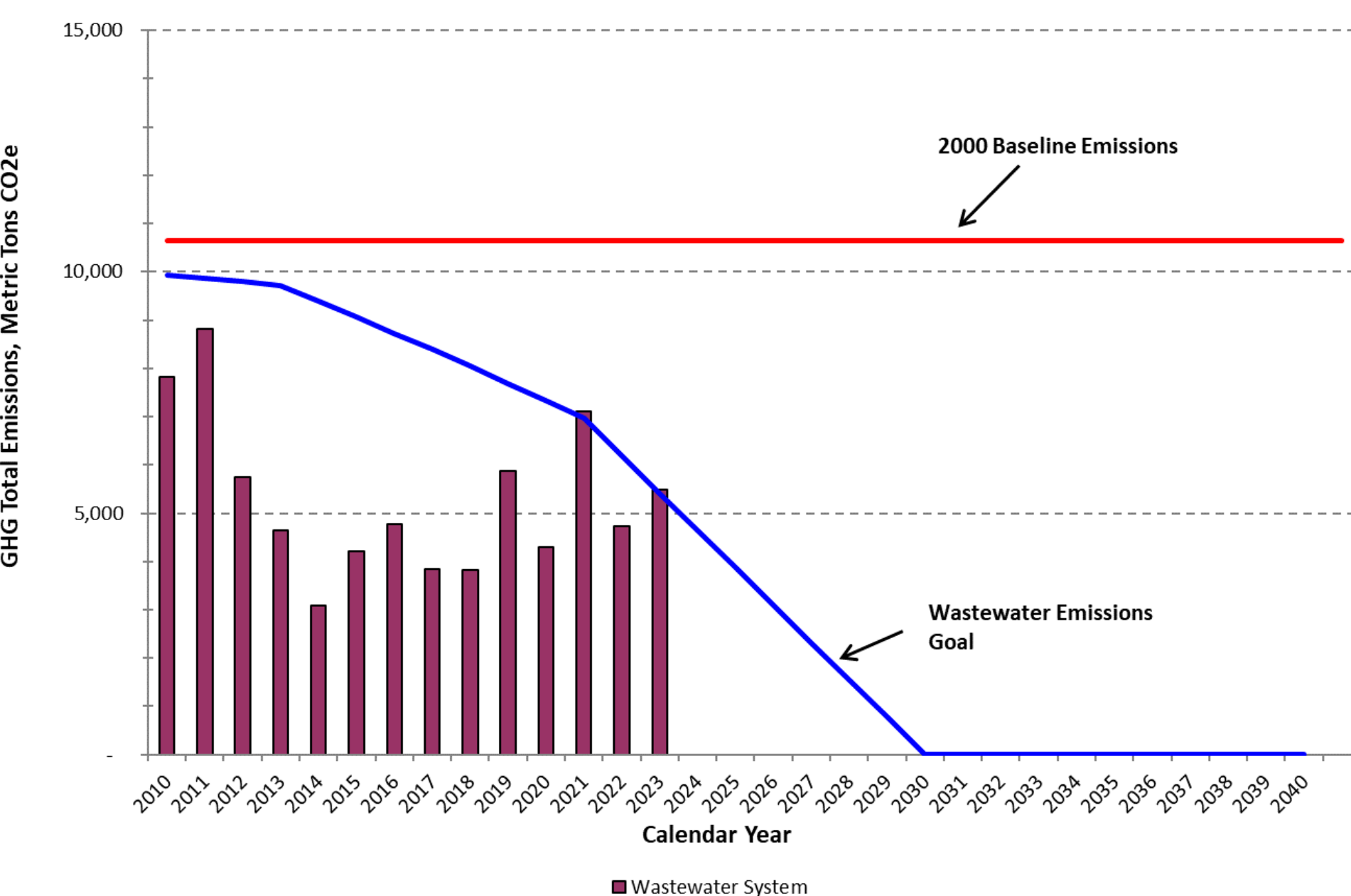
54% of these emissions
are from supplied
electricity

Water and Wastewater GHG Emissions

Water System GHG Total Annual Emissions vs Goal

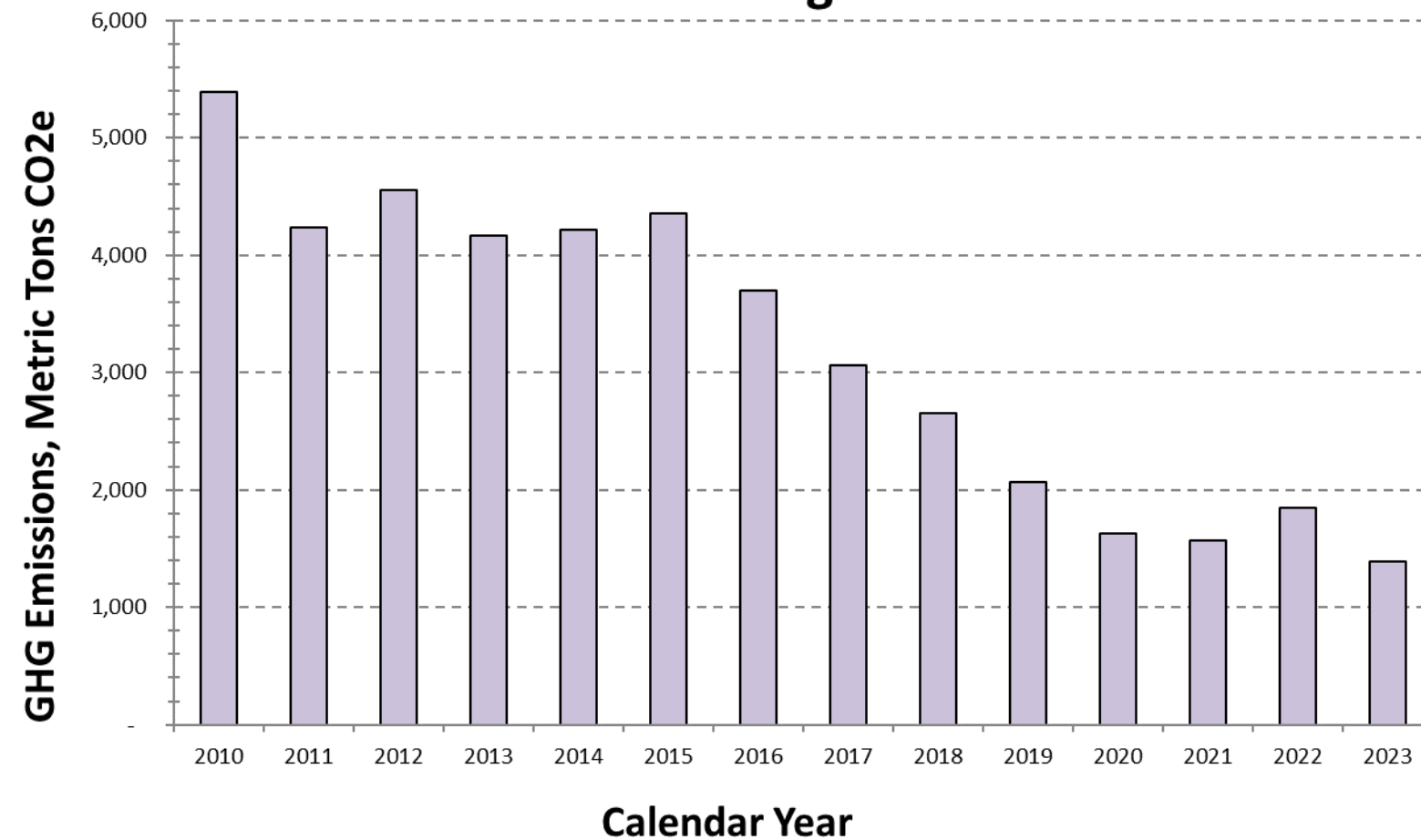


Wastewater System GHG Total Annual Emissions vs Goal



2023 Emission Profile by Sector

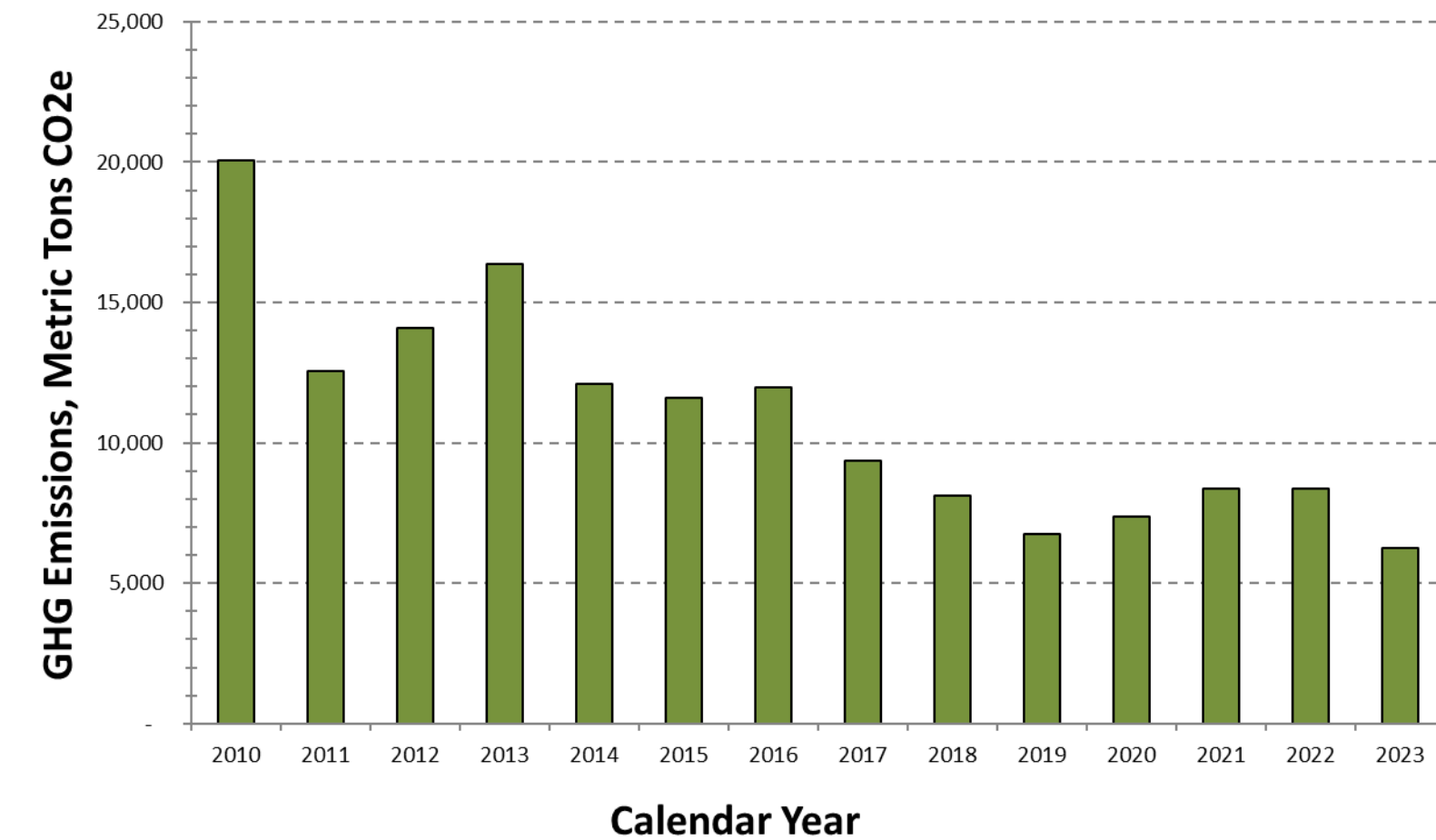
Buildings



Buildings Emissions (1,388 MT)

- Natural gas (43%)
- Electricity (26%)
- Refrigerants (15%)
- Diesel/propane Back-up Generators (14%)
- Other (SF6, Combustion Byproducts) (2%)

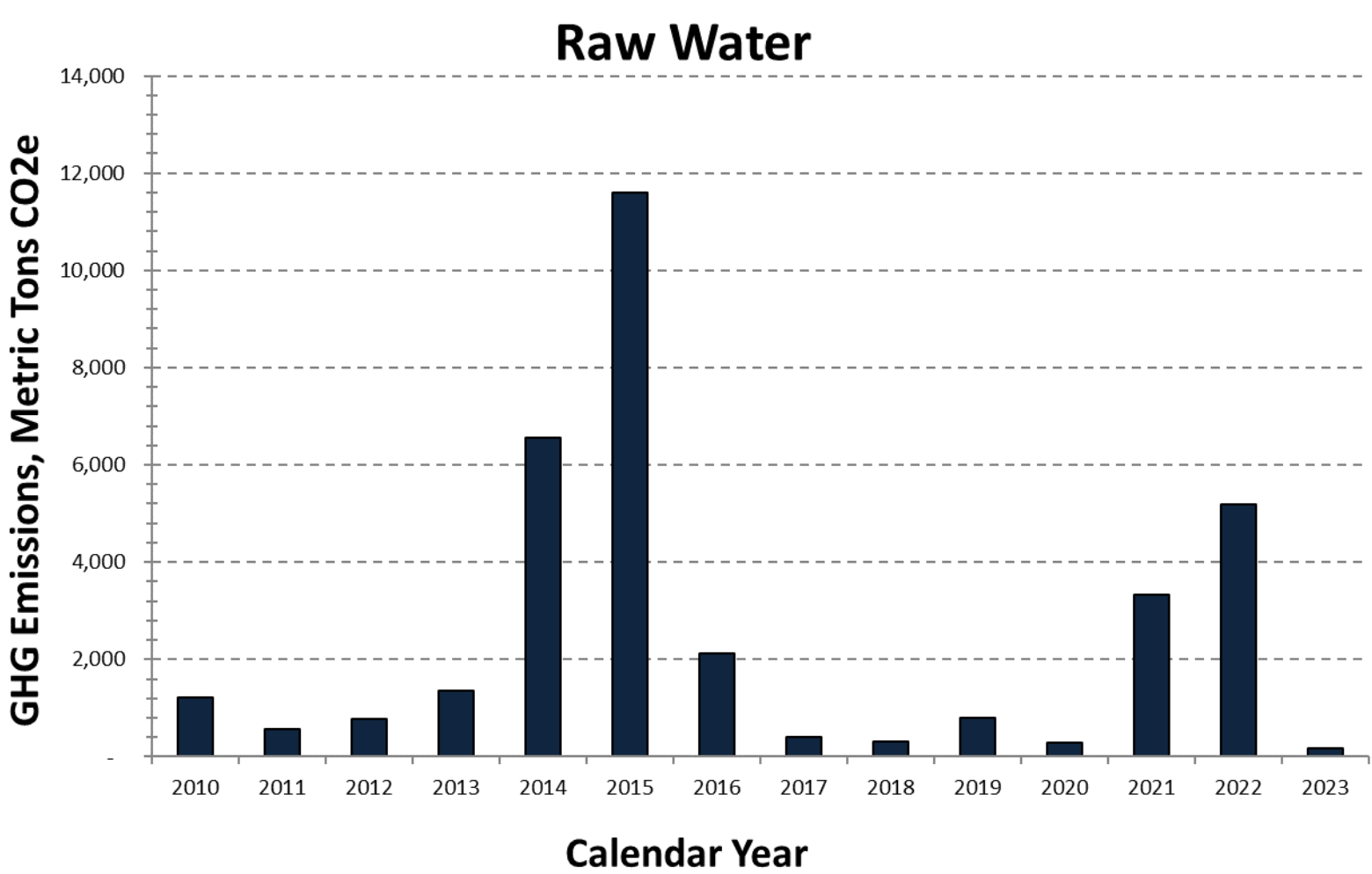
Water Treatment & Distribution



Water Treatment & Distribution Emissions (6,248 MT)

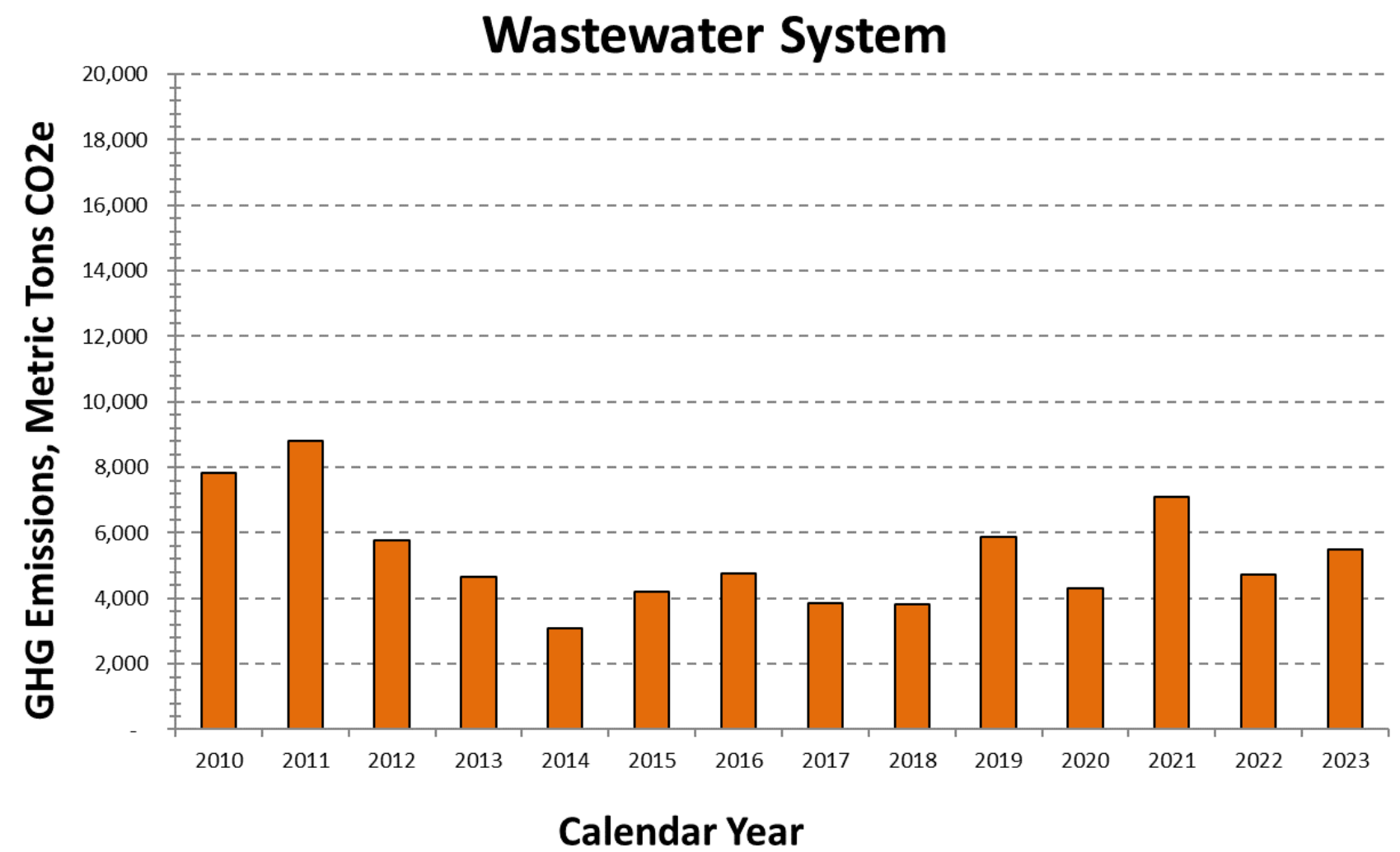
- Electricity (95%)
- Natural Gas (4%)
- Refrigerants/Combustion Byproducts (1%)

2023 Emission Profile by Sector



Raw Water Emissions (166 MT)

- Electricity (91%)
- Refrigerants (9%)

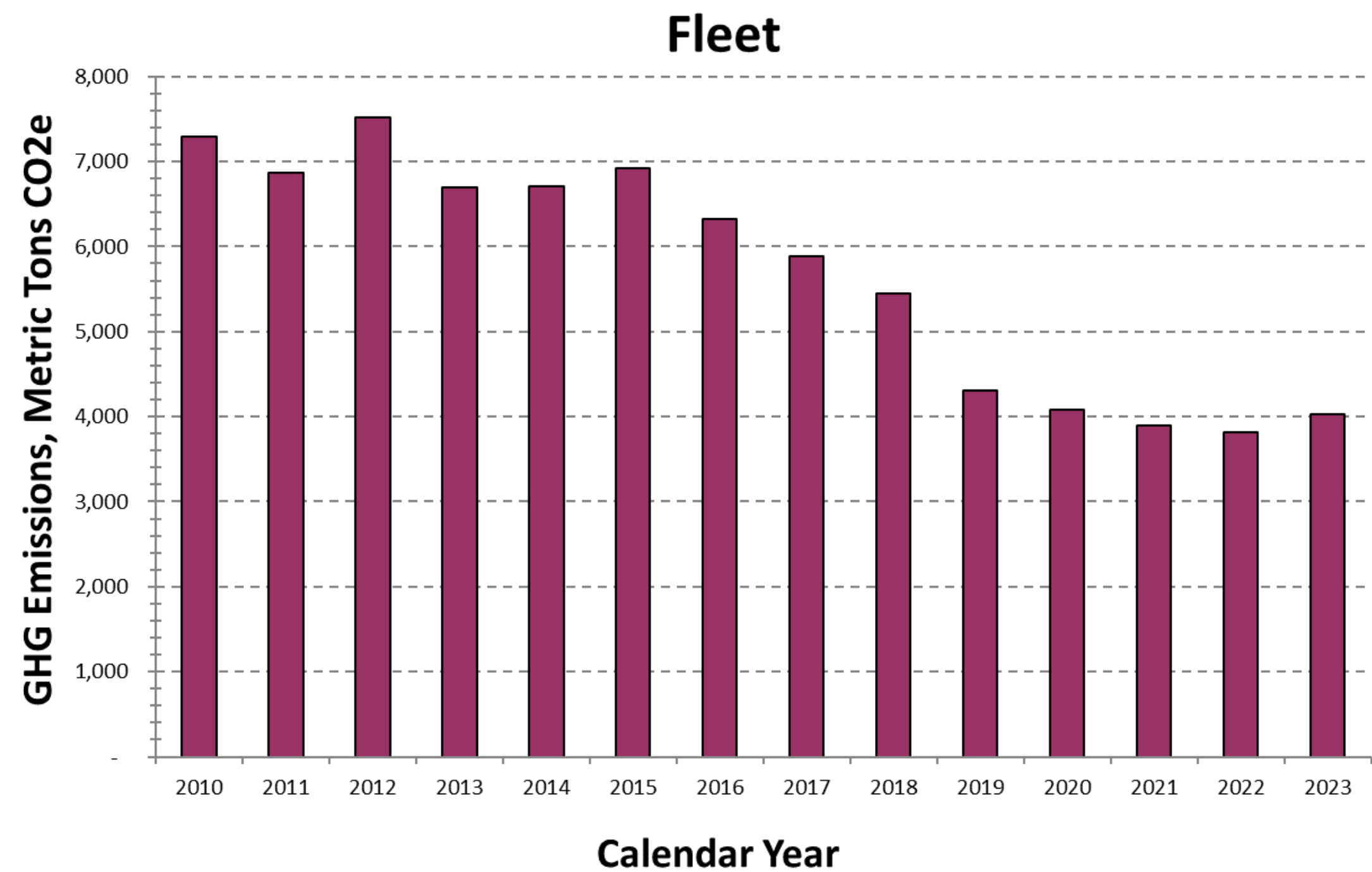


Wastewater Emissions (5,494 MT)

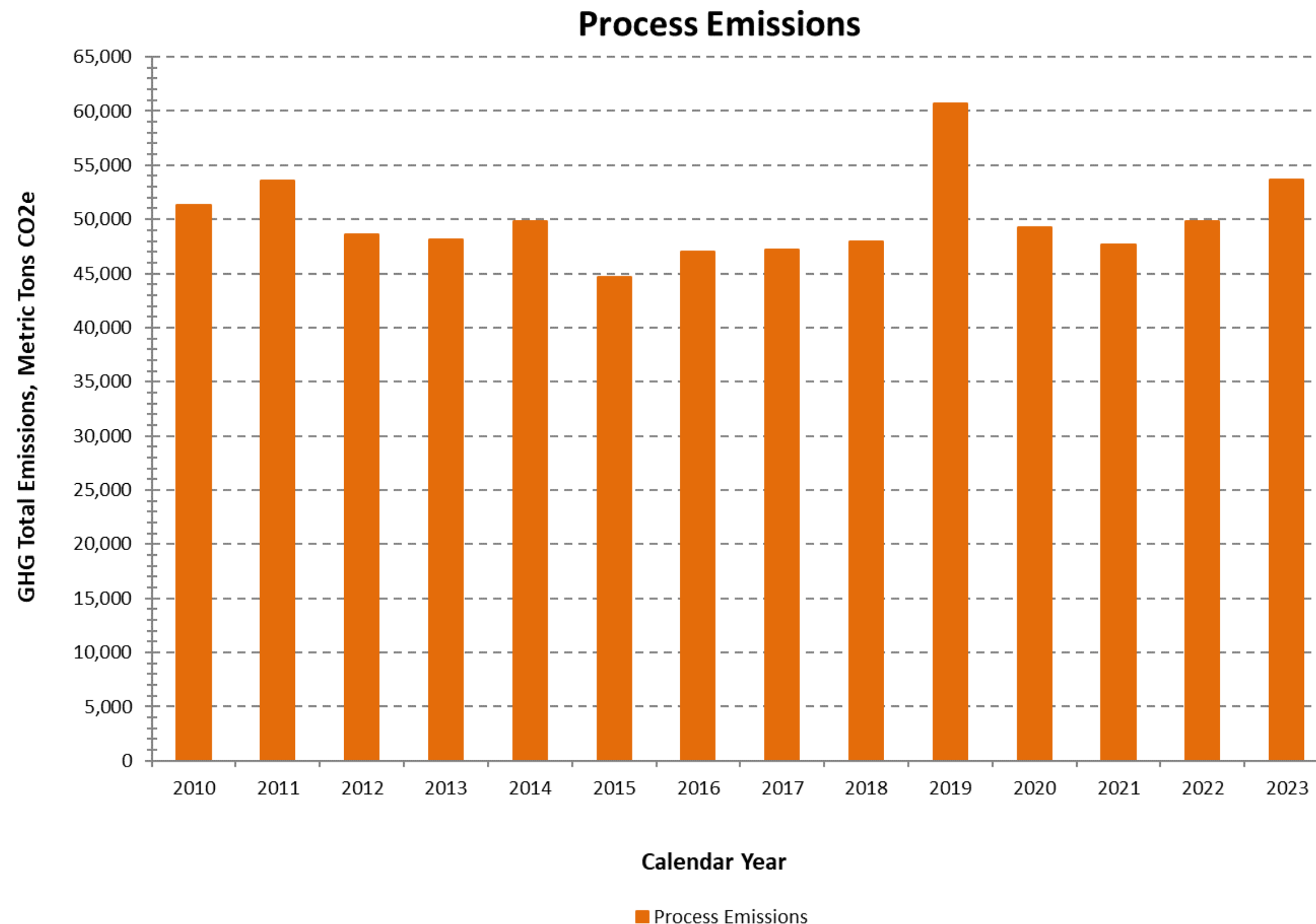
- Electricity (54%)
- Incomplete Combustion Methane (21%)
- Natural gas (17%)
- Refrigerants/Combustion Byproducts (4%)
- Cogen Diesel (4%)

2023 Emission Profile by Sector

- Fleet Emissions (4,026 MT)
- Gasoline (94%)
 - Diesel, non-renewable (4%)
 - Combustion Byproducts (2%)



Process GHG Emissions



- Process emissions include methane and nitrous oxide from wastewater treatment and discharge.
- These estimates are uncertain since the science is evolving in this area.

2023 Trends and 2024 Forecasted Emissions

District-wide emissions reduced by 28% compared to 2022

Largest reductions attributed to:

- Less electricity without supplemental water pumping
- Lower emission factors for purchased power

2024 on pace to meet District goals

- 2024 District goal: 18,458 MT CO₂e
- Estimated emissions: ~17,000 MT CO₂e

Assumptions:

- No supplemental water pumping in 2024
- Similar water demand to prior year
- Ava Community Energy accounts switched to PG&E

Next Steps

- Incorporate Western Area Power Administration (WAPA) Renewable Energy Credits into future inventories
- Stockton solar project online January 2025
- Oakport solar planned for completion in 2025
- Fleet Zero Emission Vehicles (ZEVs)
 - Continue converting fleet to ZEVs, as equipment is available and appropriate
 - Continue planning for alternative fueling in service centers (yards)
- Continue involvement with research into emerging GHG issues
- Monitor reported emission factors from power suppliers and adjust accounts when warranted

Questions?

