

City of Charlottesville Fiscal Year 2022 Annual Energy and Water Performance Report - Executive Summary



The City of Charlottesville’s Energy and Water Management Program (EWMP) has continued to monitor and manage energy and water usage of the City’s municipal sites which including both the local government and the public school facilities. The EWMP is focused on supporting the Charlottesville community-wide climate action goals, achieving a 45% reduction in greenhouse gas emissions by 2030 and carbon neutrality by 2050, by taking necessary actions that improve efficiency, reduce the reliance on fossil fuels, and decrease greenhouse gas emissions. The EWMP continues to track the energy and water usage at these facilities to gauge performance, coordinate with the City’s Facilities Maintenance and Facilities Development teams on building operations and improvement projects, work with staff to develop strategies that expand the renewable energy footprint of buildings, and engage with staff, faculty, and students to help lessen their impact on energy and water usage. Building on the previous energy and water performance reports, the [City of Charlottesville FY2022 Annual Energy and Water Performance Report \(LINK\)](#) outlines actions and the energy and water performance of over 70 municipal sites in the 2022 fiscal year (July 2021 – June 2022).

Fiscal Year 2022 – Key Performance Findings

FY2022 building operations were still not back to “pre-pandemic” levels with several City facilities still closed to the public and some staff continuing to work remotely. Schools and recreational facilities, however, opened back up and many of the buildings needed to be run close to normal to accommodate staff using the facilities. **In FY2022, the City (government and schools) spent**

over \$3.06 million on energy and water utilities, showing a rebound similar to FY2019 (pre-pandemic) costs (Figure 1). This increase in utility costs is associated with increasing utility rates, many facilities being open to the public and operated at pre-pandemic levels, and building occupancy returning to pre-pandemic levels as well. Electricity makes up the majority (74%) of the City’s utility costs, water and sewer being the next largest at 14% of costs, and natural gas making up 12% of utility costs. When compared to the portfolio’s baseline year of 2015, there was a 6% increase in utility costs; for utility consumption, there was a 7% decline in electricity, 3% decline in natural gas, 9% decline in water.

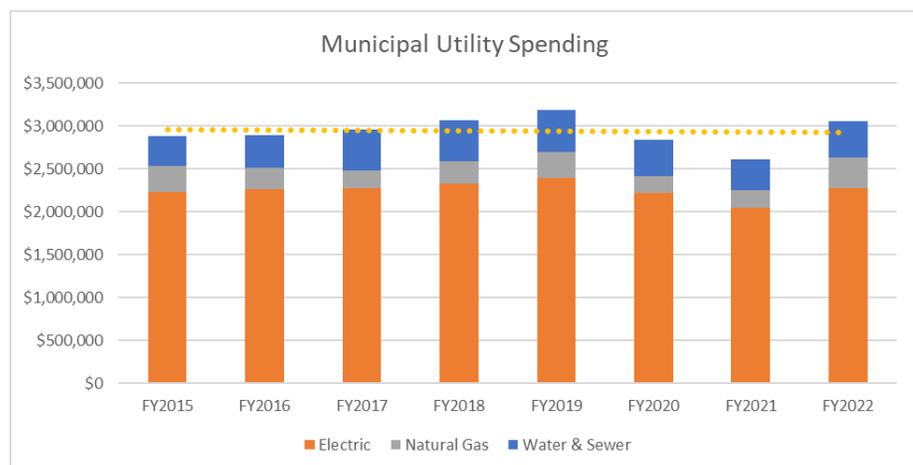


Figure 1: Total municipal utility spending for the past 8 years for each commodity type. The yellow dotted line is the overall trend in spending over time across all 8 years.

Most City building groups had, on average, a lower energy use intensity (EUI) in FY2022 compared to the regional average for their representative building groups, which represents a general improvement. Although upgrades to more efficient equipment and building to green building standards have contributed to this performance, in cases where occupancy was still reduced due to response to COVID-19, corresponding reductions in HVAC and lighting operations played a large role in reducing the EUI compared to previous years.

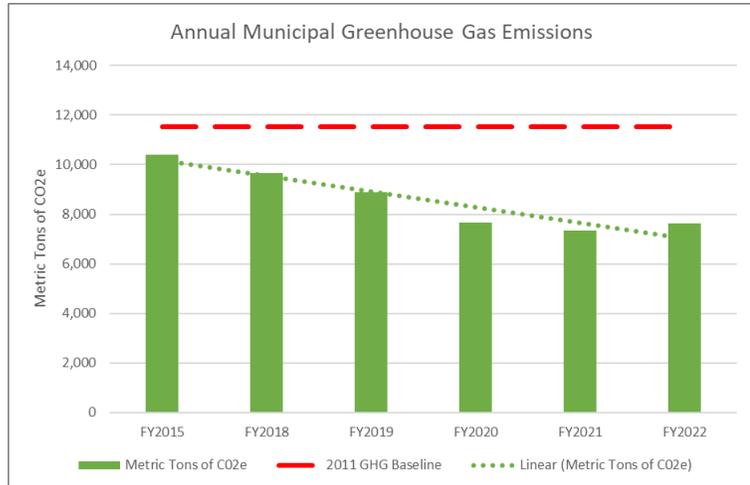


Figure 2: Greenhouse gas emissions for the past 5 fiscal years and FY2015 baseline year across all City and school facilities.

Since 2011, the portfolio has mostly seen a downward trend (9.8% reduction by FY2015 and 33.8% in total by FY2022) in greenhouse gas emissions due to the electric grid transformation and reductions in operations at facilities from COVID-19 in FY2020 and FY2021 (Figure 2). In FY2022, a rise in the annual greenhouse gas emissions occurred as buildings became more occupied and returned to normal operations.

FY22 Program Actions and Highlights

Operational Actions

- Reviews of and improved communication around **HVAC schedules** to ensure HVAC systems in municipal facilities operate only when needed and with variable building occupancy.
- Programming in the building automation systems (BAS) at several facilities to **limit the energy demand (load)** at the facility once it starts reaching a designated kilowatt (kW) threshold.

Technological Actions

- The EWMP selected an energy service company (ESCO) for an **energy performance contract (EPC)**. Over 40 facilities were audited for energy and water saving opportunities.
- **Replaced lighting and HVAC** equipment with higher efficiency models in various City facilities. Portions of lighting was upgraded to LED lighting at various facilities including CAT Transit Operations Center, Central Library, Charlottesville High School, Buford Middle School, and Gordon Avenue Library.
- **EnergyCAP Utility Tracking Software** is used to track and manage all utility accounts. A data dashboard can be viewed at [EnergyCAP FY2022 City Performance Report Dashboard \(LINK\)](#).

Behavioral Actions

- **Employee Outreach and Engagement** is an essential component of the EWMP including reminders to not use space heaters and unplug/shut down electronics during the holiday break.
- Continued **Energy and Water Management Campaign at CCS** with quarterly educational outreach efforts through announcements and activity sheets for students and staff, which included helpful information and tips on what they can do to save.