

City of Charlottesville Fiscal Year 2021 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 comprehensive energy and water performance baseline presented in the fiscal year (FY) 2020 report, this report outlines actions and the energy and water performance of over 70 municipal sites in the 2021 fiscal year (July 2020 – June 2021). The data and trends outlined in this report can inform management decisions around the municipal operations and spending related to utility costs, facility improvements, and the associated savings.

Fiscal Year 2021 – Key Performance Findings

Fiscal Year 2021 (FY21) continued to be heavily impacted by the Coronavirus (COVID-19), which influenced building use and performance. Reduced utility usage and costs were primarily driven by the low to no occupancy of City facilities as a result of COVID-19. In FY21, the City (government and schools) spent over \$2.61 million on energy and water utilities, which was well below a typical year where the City spends closer to \$2.97 million annually (Figure 1). Even with utility rates increasing, the portfolio saw a significant decline in cost because of the COVID-19 response and decreased building occupancy. Electricity makes up the majority (78%) of the City's utility costs, water and sewer is the next largest at 14% of costs, and natural gas makes up 8%

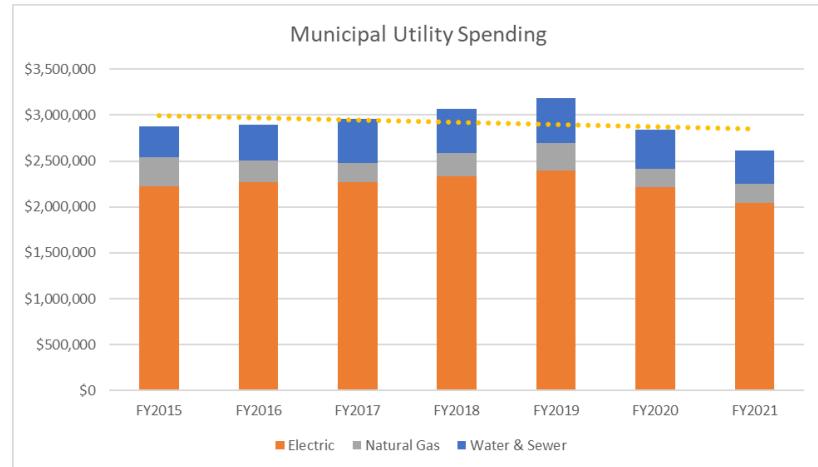


Figure 1: Total municipal utility spending for the past 7 years for each commodity type. The yellow dotted line is the overall trend in spending over time across all 7 years.



of utility costs. When compared to the portfolio's baseline year of 2015, there was a 15% decline in electricity usage, 19% decline in natural gas usage, and 25% decline in water usage.

Most City building groups had, on average, a lower energy use intensity (EUI) in FY2021 compared to the regional average for their representative building groups. Although upgrades to more efficient equipment and building to green building standards have contributed to this improved performance, building occupancy changes due to COVID-19 played a large role in reducing the EUI.

Since 2011, the portfolio has seen some fluctuation but mostly a downward trend (9.8% reduction by FY2015 and 36.3% in total by FY2021) in greenhouse gas emissions due to the electric grid transformation and reductions in operations at facilities from COVID-19 (Figure 2). When occupancy begins to return to pre-COVID levels, we can expect to see an increase in greenhouse gas emissions barring any efficiency improvements and further electric grid transformation.

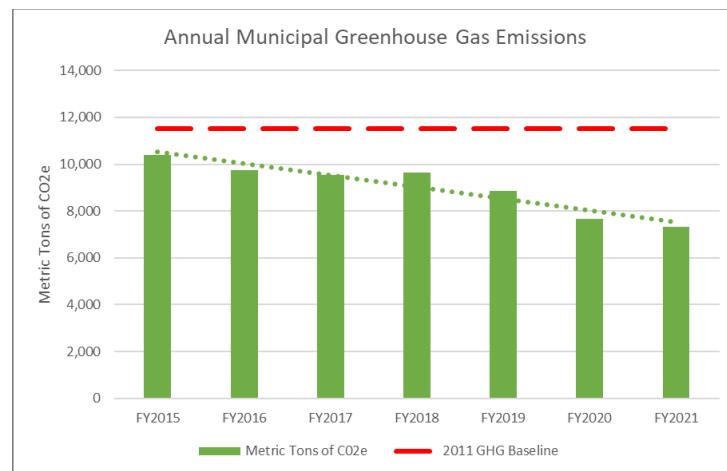


Figure 2: Greenhouse gas emissions for the past 7 years across all City and school facilities.

FY21 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.
- 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 EWMT has been working towards an **energy savings performance contract (ESPC)**: an alternative method for financing and implementing efficiency projects.
- As part of a COVID-19 mitigation effort, the City replaced faucets in several City facilities with **touchless faucets** that have sensors to turn on and turn off automatically after 30 seconds.
- **Replaced lighting and HVAC** equipment with higher efficiency models in various City facilities.
- **EnergyCAP Utility Tracking Software** is used to track and manage all utility accounts. A data dashboard can be viewed at [EnergyCAP FY2021 City Performance Report Dashboard](#).

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.
- Recipient of a **2020- 2021 Better Business Challenge** Champion Award.
- 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.

