

Service Business Plan



Service Name	Environment and Energy	Service Type	Internal
Service Owner Name	Lynn Robichaud	Budget Year	2019
Service Owner Title	Sr. Sustainability Coordinator		

Service Description

An internal service to provide environmental management of City operations and oversee/coordinate community environmental programs and energy management.

Current State

Customers & Their Expectations	<p>This service is provided to:</p> <p>Council and management, staff, facility managers, and the public, who expect improved environmental performance through:</p> <ul style="list-style-type: none"> • sustainability measures for City operations (e.g. green fleet, green procurement, green buildings and energy conservation) • reduced greenhouse gas and air emissions • conservation of natural resources • value for money invested (cost avoidance) • community engagement activities on local environmental issues.
Existing Service Delivery	<p>Monitor and report on energy consumption/energy avoidance. Introduce conservation and renewable energy measures. Deliver staff training on energy management and conservation. Oversee energy management technology measures (e.g. building automation system) in City facilities.</p> <p>Coordinate with community partners to implement actions in the Community Energy Plan related to energy efficiency; local energy generation; community engagement; and the built form (land use and transportation planning).</p> <p>Influence and guide sustainability of City operations and services by developing and implementing environmental policies and strategies (e.g. green fleet strategy, zero waste strategy). Deliver or support environmental programs, collaborating with environmental agencies, community groups and the City's Sustainable Development Committee.</p>
Existing Customer Engagement Tools / Methods	<p>Take Action Burlington blog and other social media; webpages (www.burlington.ca/environment and www.burlington.ca/SDC); email (environment@burlington.ca); lunch & learns; Burlington Post ads; update reports/newsletters; staff training; community displays; YouTube videos; community email distribution network; contests; media releases; participation in community events; presentations and library seminars.</p>
Is this Service Provincially Legislated?	<p>Yes Ont. Reg. 397, Green Energy Act 2009 Ont. Reg. 347 under the Environmental Protection Act 1990</p>

For this Service are there Approved Service Standards?	No N/A
--	--------

Sub-Services

Community Energy Plan	Coordinate and facilitate implementation of the Community Energy Plan with community stakeholder partners. Annual reporting on progress and targets.
Energy Management Plan (for City Operations)	Work with City departments to introduce energy efficiency measures identified in corporate energy audits. Train staff to manage energy efficiently. Implement energy efficient capital renewal projects. Monitor and report on energy consumption, and monitor and improve building systems (heating, cooling, lighting, electrical, etc.) through the building automation system.
Sustainability Initiatives	Work with city staff to develop and implement sustainability strategies for City operations (e.g. Green Fleet Strategy, Energy Policy, Green Building Policy, Green Procurement). Engage community members in programs to raise awareness of local environmental issues.

Recent Continuous Improvement Initiatives

Community Energy Plan actions:

- The City has partnered with Mohawk College and City of Hamilton to take action on climate change, creating the Bay Area Climate Change Office. Following an extensive community engagement process, key stakeholders are being invited to participate on the Bay Area Climate Change Council to identify key actions. Implementation teams will be formed to coordinate implementation of actions.
- Staff are supporting an initiative to assess the feasibility of implementing an integrated community energy system for city facilities at Central Park.
- 20 new electric vehicle charging stations have been installed in Burlington. During the day they are available for city vehicles and staff; and available for public use in the evenings.

Corporate Energy Management Plan actions:

- Updated lighting systems at Burlington Transit and Mainway Recreation Centre
- Improvements to HVAC systems at Burlington Seniors Centre
- Building specific energy awareness training is being rolled out to operations staff along with supplementary building automation training

Emerging Opportunities and Anticipated Risks

Emerging Opportunities	<p>Corporate Energy Management Plan:</p> <ul style="list-style-type: none"> - Staff are working to update the Corporate Energy Management Plan and identify a roadmap to achieve the long term strategic plan target for City operations to be net carbon zero by 2040 <p>Community Energy Plan:</p> <ul style="list-style-type: none"> - Staff are supporting an initiative to assess the feasibility of implementing an integrated community energy system for city facilities at Central Park. - The City is continuing its work with community stakeholders to review and update of the Community Energy Plan. - Staff are also engaged in the Halton Climate Collective with a number of other organizations, such as the Halton Environmental Network, Halton Region, Conservation Halton and the Town of Oakville to collaborate and take action to combat climate change.
Anticipated Risks	<p>Doing nothing makes the City vulnerable to increasing energy costs and effects of climate change, such as increasing temperatures and severe weather events. The City aims to minimize these risks by managing energy consumption effectively and efficiently, and introducing a local sustainable and integrated community energy system.</p> <p>Poor environmental performance can have a significant impact on the local environment and result in a negative effect on the City's reputation. Successful energy and sustainability initiatives shows the City as a progressive, sustainable corporate agency.</p>

Service Objectives

Target Completion

Investigate the implementation of a micro grid using renewable energy and waste heat at the Central Park campus of city facilities. Collaborate with adjoining facilities where possible.	Dec 2020
Support the Green Fleet Strategy update to identify actions to improve fleet efficiency and reduce greenhouse gas emissions.	Dec 2019
Research and prepare the State of the Environment Report for Burlington in collaboration with the Sustainable Development Committee.	Jun 2019
Implement HVAC (Heating, Ventilation, and Cooling) upgrades at City Hall and Appleby Arena, selected energy audits, and exterior lighting upgrades at Aldershot Arena and City Hall	Apr 2020
Investigate the opportunities to install renewable energy in city facilities to reduce greenhouse gas emissions.	Dec 2019
Assess implications and measures required for the City's operations to be net carbon zero by 2040 and how the City can achieve net carbon zero for the community as a whole through the review and updates of the Corporate Energy Management Plan and the Community Energy Plan.	Mar 2019

MEASURING SUCCESS

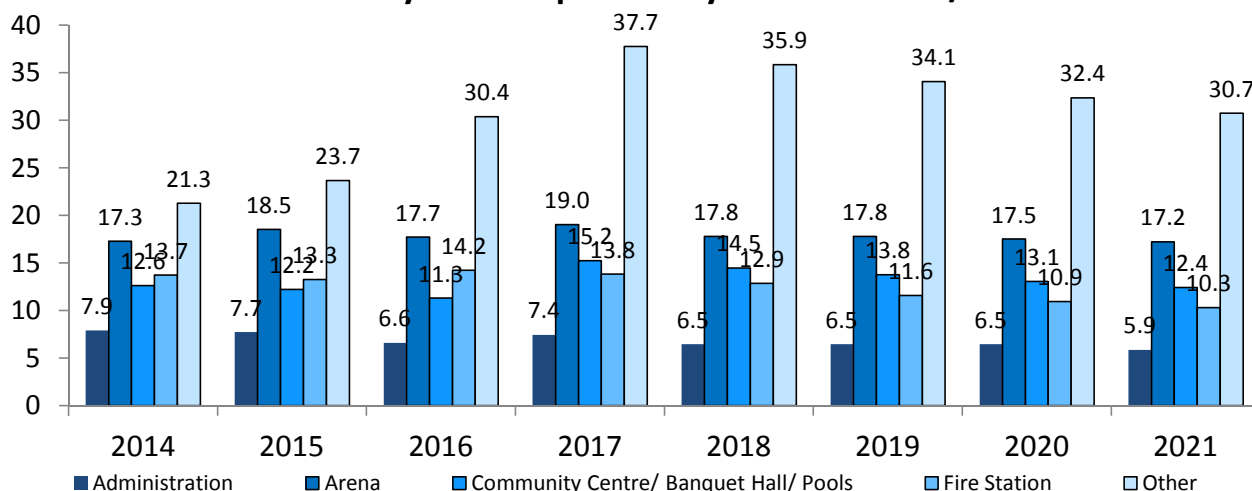
How much did we do?

Performance Measurement	2014 Actual	2015 Actual	2016 Actual	2017 Actual	2018 Forecast	2019 Forecast	2020 Forecast	2021 Forecast
Electricity consumption- City facilities & street lights (millions kWh)	25.4	25.3	26.7	22.0	23.0	24.0	24.0	23.0
Natural gas consumption- City facilities (millions cubic metres)	2.0	1.9	1.8	1.7	1.6	1.6	1.4	1.3
Greenhouse gas emissions- City operations, not including transit bus (tonnes)	8,390	8,711	7,666	8,084	7,700	7,400	7,100	6,900

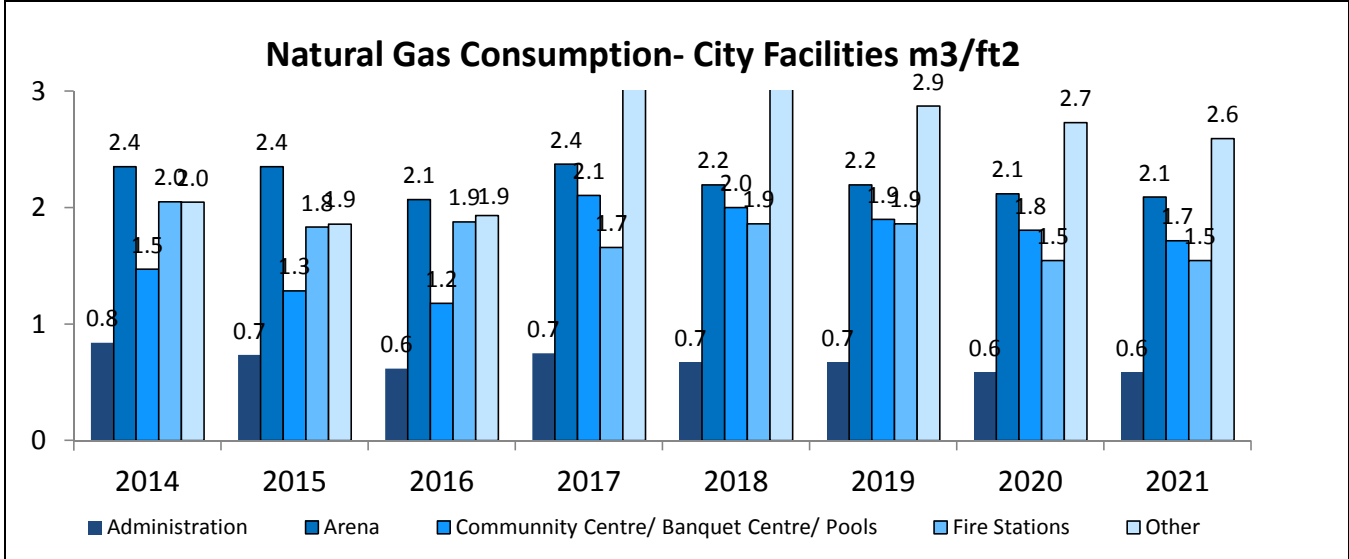
How well did we do it?

Performance Measurement	Electricity Consumption- City Facilities kWh/ft2
Story behind the data	2017 had an increase in electricity consumption . Some great increases above can be attributed to additional buildings added into sections as well as the addition of vehicle charging at various administration facilities. We can expect a steady usage in electricity as we move toward the city's goal of being carbon neutral by 2040. Electrification will be one of the strategies used to move the city toward its goal due to Ontario's relatively green electricity grid. Once the update to the corporate energy management plan is complete in 2019 we will have a better idea of the milestones and reductions to expect in future years.

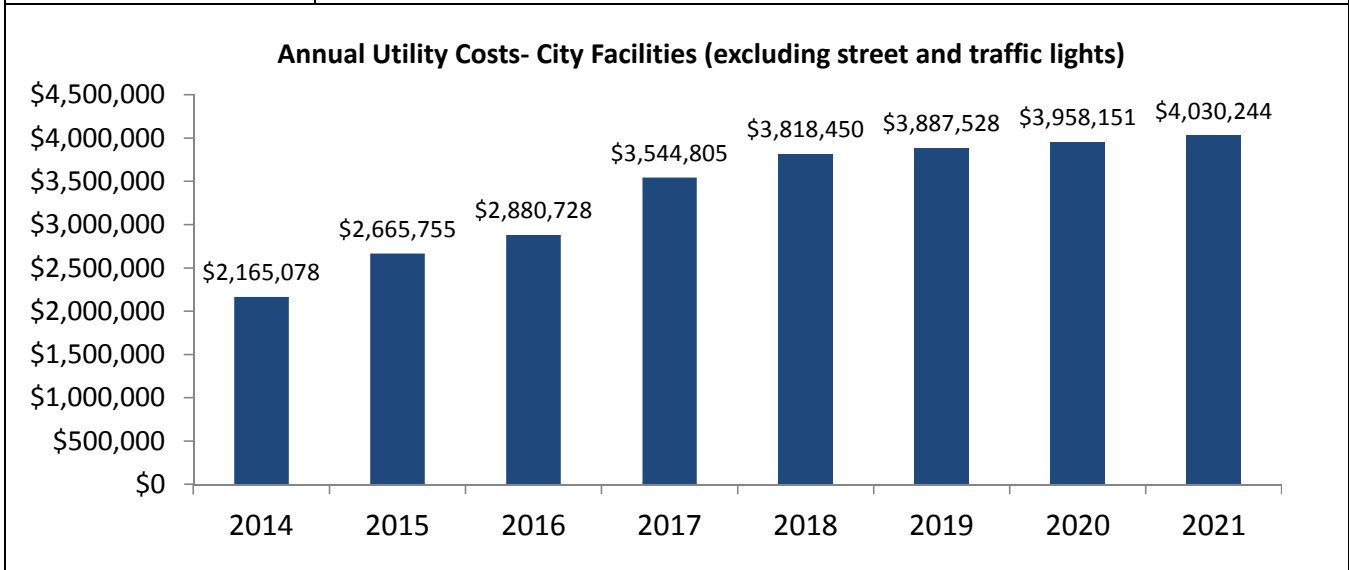
Electricity Consumption- City Facilities kWh/ft2



Performance Measurement	Natural Gas Consumption- City Facilities m3/ft2
Story behind the data	2017 had an increase in natural gas consumption . This can largely be attributed to colder weather in 2017 compared with 2016. Some great increases above can be attributed to additional buildings added into sections. We can expect a decline in natural gas usage as we move toward the city's goal of being carbon neutral by 2040. Once the update to the corporate energy management plan is complete in 2019 we will have a better idea of the milestones and reductions to expect in future years.

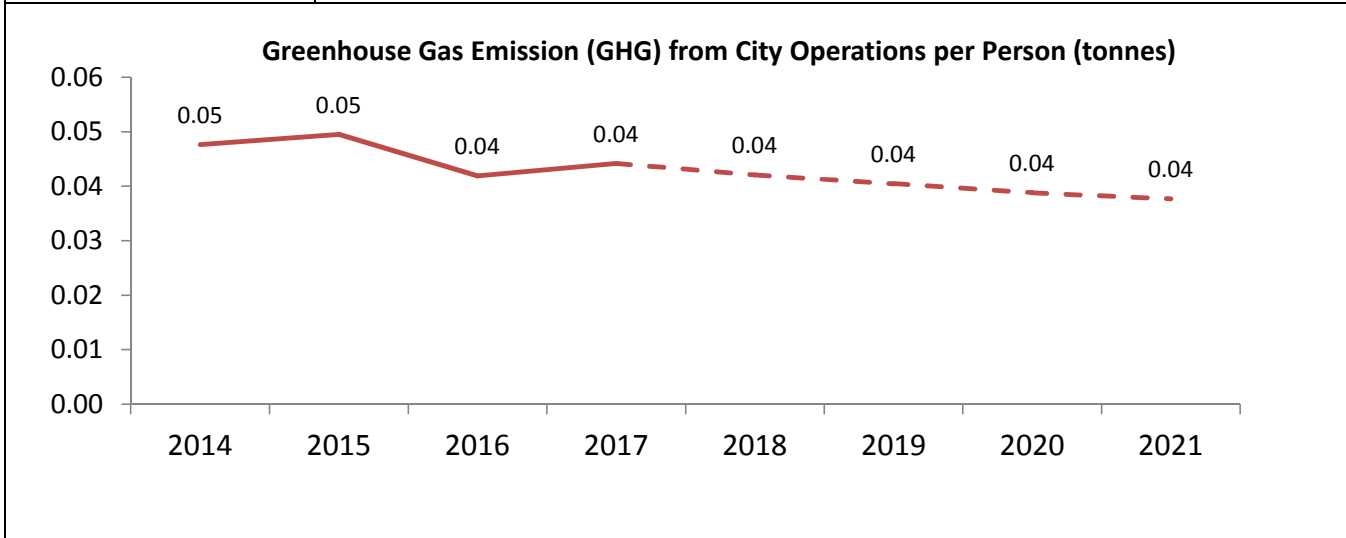


Performance Measurement	Annual Utility Costs- City Facilities (excluding street and traffic lights)
Story behind the data	2017 had an increase in natural gas consumption . This can largely be attributed to colder weather in 2017 compared with 2016 which can explain the increase in cost of Natural Gas as well as a slight increase for the introduction of cap and trade. Some great increases above can be attributed to additional buildings added into sections. A steady but lower increase in electricity costs can be expected over the course of the next five years and will increase our spending slightly with the move toward electrification of some assets as well as a shift to electric vehicles in some areas.



Is anyone better off?

Performance Measurement	Greenhouse Gas Emission from City Operations per Person (tonnes)
Story behind the data	Emissions from facility operations continue to fluctuate as energy consumption is impacted by different factors, including weather, facility usage, and other operational issues.
Where do we want to go?	Actions continue to be implemented to conserve energy and reduce emissions. In 2018, the conversion of streetlights to more efficient LED fixtures will be completed. Staff will also be updating the Corporate Energy Management Plan in 2018 and transformational actions will be necessary in the long term to meet the strategic plan target for city operations to be net zero carbon.



Performance Measurement	Community greenhouse gas emissions per person (tonnes).
Story behind the data	The major sources of greenhouse gas emissions in our community include heating for buildings and fuel for transportation. Community emissions continue to be on a slight downward trend. Most buildings use natural gas for heating, which is an inexpensive fuel. Fuel switching to electricity will reduce emissions but may increase costs. The uptake in electric vehicles will likely slow down due to the cancellation of the incentive program.
Where do we want to go?	In order to continue supporting the decline in greenhouse gas emissions, the city will update the Community Energy Plan to identify actions, particularly for improving energy efficiency of buildings, fuel switching and promoting electric vehicles. The city has also partnered with the City of Hamilton and Mohwak College on taking climate action.

