

Service Business Plan



Service Name Environment and Energy

Service Lead Name Lynn Robichaud

Service Lead Title Sr. Sustainability Coordinator

Service Description

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

Strategic Alignment with Vision to Focus Plan

Supporting sustainable infrastructure and a resilient environment

Service Goals

Reduce the carbon footprint and resilience of city operations and the community through action, collaboration and partnerships;
Promote local food production through the community garden program and partnerships and collaboration with local organizations; and,
Support the overall health and wellbeing of the local environment.

Current State

Customers & Their Expectations

This service is provided to:

Council and management, staff, facility managers, and the public, who expect improved environmental performance through:

- 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
- community gardens to support local food

Existing Service Delivery

Monitor and report on energy consumption and emissions. 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, sub-metering systems, and energy management systems).

	<p>Coordinate, collaborate and support community partners to implement actions in the Climate Action Plan to reduce the community carbon footprint and improve resiliency.</p> <p>Influence and guide sustainability of City operations and services towards net carbon neutrality by developing and implementing environmental policies and strategies (e.g. Corporate Energy & Emissions Management Plan, 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> <p>Coordinate and operate the City's community garden program to promote local food.</p>
Existing Customer Engagement Tools / Methods	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, and www.getinvolvedburlington.ca
Is this Service Provincially Legislated?	Yes Ont. Reg. 507/18 under Electricity Act 1998 Ont. Reg. 347 under the Environmental Protection Act 1990
For this Service are there Approved Service Standards?	No N/A
Programs	
Climate Action Plan	Coordinate, collaborate and facilitate implementation of the Climate Action Plan with community stakeholder partners. Annual reporting on progress and targets. Work with partnerships such as the Bay Area Climate Change Office and Council and the Halton Climate Collective to take action on climate change.
Energy Management Plan (for City Operations)	Implement the Corporate Energy & Emissions Management Plan working 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.

Community Garden Program	Administer the application process to assign garden plots and support gardeners, community events and tours and oversee garden programming, maintenance and rehabilitation. Collaborate with and provide support to local organizations to host community based garden plots. Coordinate expansion of gardens to other city park facilities.
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Recent Continuous Improvement Initiatives

Climate Action:

- Council declared a climate emergency in 2019 and directed staff to complete a Climate Action Plan and apply a climate lens to decision making
- Staff reported on the state of the Environment - Take Action Burlington using a climate lens for reporting. This includes an online compendium story map
- A Council workshop was held on climate change with presentations on climate impacts and resiliency and city operations
- Service Business Plans and budget business cases now include 'environmental' considerations
- The City continues to partner with Mohawk College and City of Hamilton on the Bay Area Climate Change Office and Council to take action on climate change. Community members participated in a three day Climate Action Forum earlier this year with a focus on community energy and buildings, economic development and transportation. A fourth day was hosted by Mohawk College and McMaster University for post-secondary students.
- The City is also participating in the Halton Climate Collective, a partnership facilitated by the Halton Environmental Network with the local municipalities, Halton Region, Conservation Halton and the local school boards. A youth 'unconference' is being planned for November on climate action.
- City staff continue to participate in the International Urban Cooperation program, administered by the European Union to foster international connections at the local level, with Vaxjo, Sweden. The cities are working together on action plans utilizing an ecosystem services approach and sharing best practices through webinars related to community engagement, stormwater management, carbon neutral communities and tall wood building structures.

Corporate Energy & Emissions Management Plan:

- Completion of the update Corporate Energy & Emissions Management Plan
- Building specific energy awareness training is being rolled out to operations staff along with supplementary building automation training
- An updated more efficient lighting system has been installed at Appleby Ice Centre
- Efficiency improvements have been made to the HVAC (heating, ventilation & air conditioning) systems at Roads, Parks & Forestry operations centre
- A corporate energy committee has been established

Environmental Considerations

The Environment and Energy Service Area is focused on carbon reduction, resiliency, sustainability and local food through the actions listed in the business plan.

Emerging Opportunities and Anticipated Risks

Emerging Opportunities	<p>Corporate Energy Management Plan:</p> <ul style="list-style-type: none">- Investigate potential deep energy retrofits in future capital renewal plans- Create solar energy capital plan- Skyway arena is being designed to be a low carbon operation with geothermal and City View Park Pavilion is being designed to be net carbon neutral operationally with solar panels- Continue to support an initiative to assess the feasibility of implementing an integrated community energy system for city facilities at Central Park.- Efficiency improvement to the HVAC systems at Appleby Ice Centre and City Hall <p>Climate Action:</p> <ul style="list-style-type: none">- Staff will report to council December 2019 with a new Climate Action Plan following a community engagement process- Staff reports will include consideration of climate implications- Roundtable discussions on climate action related to buildings and transportation in fall 2019 and a climate change forum in early 2020 to be hosted by the Bay Area Climate Change Council- 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- Staff will assess opportunities to expand EV charging stations on city property- Submit applications to participate in FCM's (Federation of Canadian Municipalities) and ICLEI's (Local Governments for Sustainability) Showcase Cities program and the Global Covenant of Mayors for Climate Action <p>Community Gardens</p> <ul style="list-style-type: none">- Staff are assessing the opportunity to develop a new community garden in 2021- Staff will be experimenting with different materials for the individual garden plot borders to assess their sustainability and longevity
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. 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>

Enterprise Risk Considerations	Climate change - Increasing Number of Severe Weather Events Financial Sustainability - Sustainability, Budget, Strategic Plan Election and Council - Change in Strategic Plan, Long Term Planning
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Service Initiatives	Target Completion
Create the new Climate Action Plan (which will replace the Community Energy Plan). Phase 1 will focus on the mitigation of greenhouse gas emissions.	Dec 2019
Complete phase 2 of the Climate Action Plan with a focus on adaptation.	Mar 2021
Implement HVAC (Heating, Ventilation, and Cooling) upgrades at City Hall and Appleby Ice Centre and complete energy audits at selected City facilities.	Apr 2020
Investigate the opportunities to install additional renewable energy in city facilities to reduce greenhouse gas emissions.	Apr 2020
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.	Jun 2021

MEASURING SUCCESS

How much did we do?

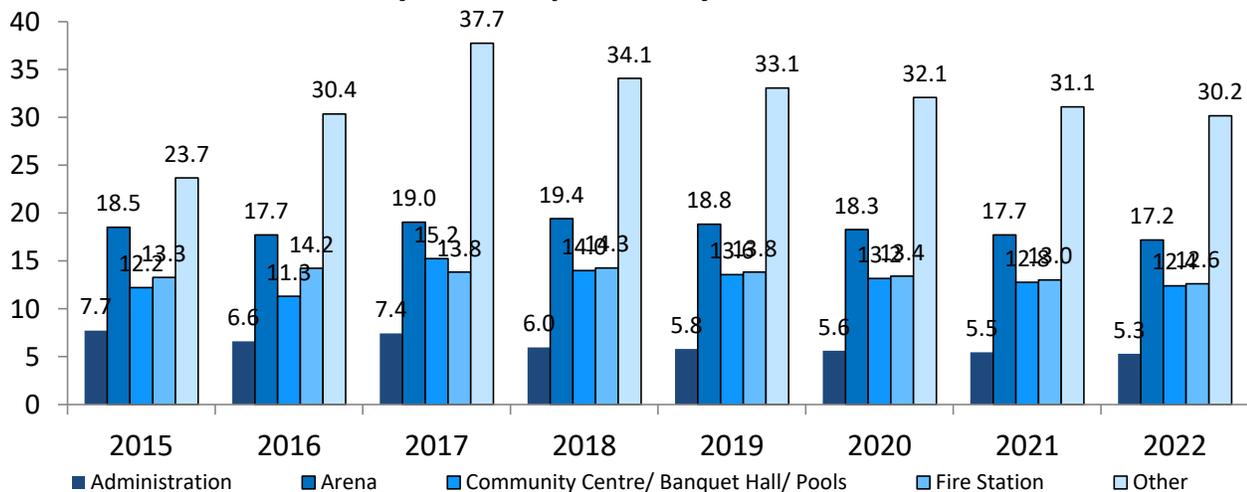
Performance Measurement	2015 Actual	2016 Actual	2017 Actual	2018 Actual	2019 Forecast	2020 Forecast	2021 Forecast	2022 Forecast
Electricity consumption- City facilities & street lights (millions kWh)	25.3	26.7	22.0	24.1	23.7	23.5	23.0	23.0
Natural gas consumption- City facilities (millions cubic metres)	1.9	1.8	1.7	2.2	2.2	2.3	2.2	2.1
Greenhouse gas emissions- City operations, not including transit bus (tonnes)	8,711	7,666	8,084	7,300	7,250	7,200	7,000	6,800

NOTE : As part of the new Corporate Energy and Emissions Management Plan building inventory and consumption considerations have been redefined throughout these measures and this data has been included for 2019 and forecasts beyond.

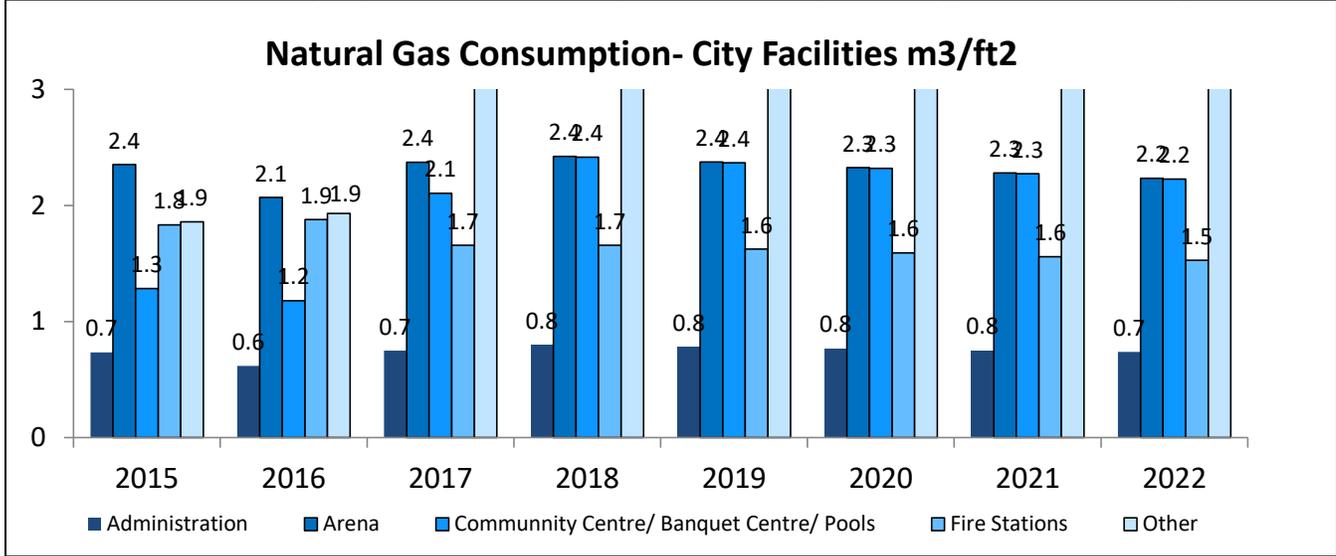
How well did we do it?

Performance Measurement	Electricity Consumption- City Facilities kWh/ft2
Story behind the data	2018 had an increase in electricity consumption in some areas and a decrease in others . This can largely be attributed to programming levels in both arenas and community centres. NOTE : As part of the new Corporate Energy and Emissions Management Plan building stock and consumption considerations have been redefined and this data is in included for 2018 and beyond.

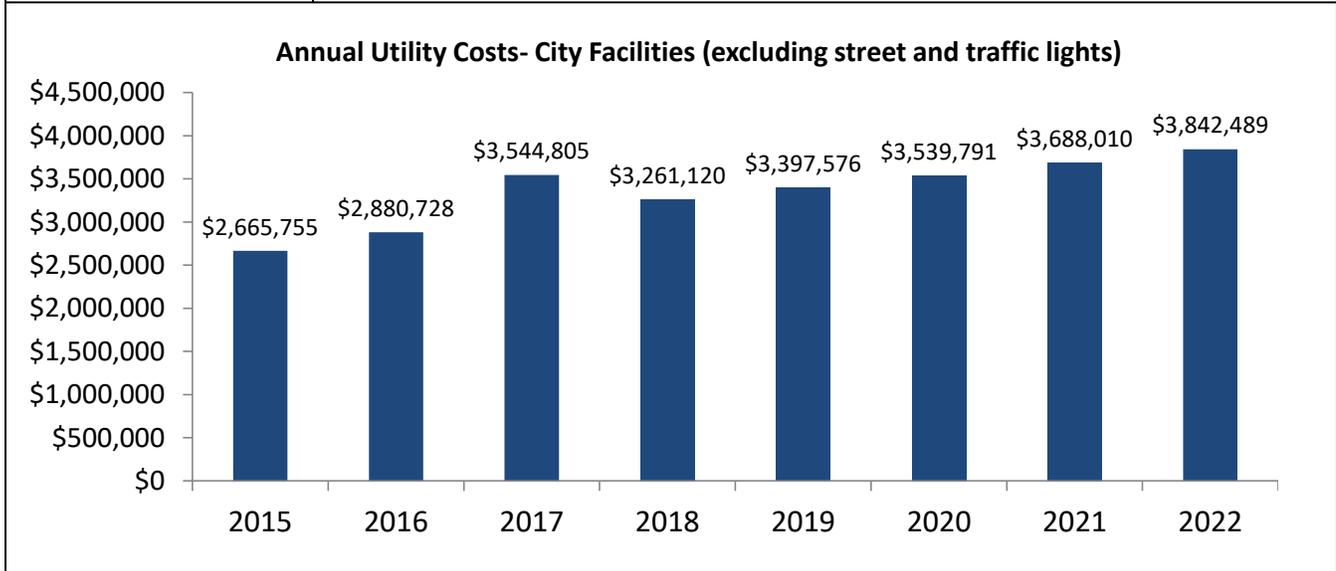
Electricity Consumption- City Facilities kWh/ft2



Performance Measurement	Natural Gas Consumption- City Facilities m3/ft2
Story behind the data	2018 had an increase in natural gas consumption . This can largely be attributed to colder weather in 2018 compared with 2017. We can expect a decline in natural gas usage as we move toward the city's goal of being carbon neutral by 2040 through identification of deep energy retrofits and switching from fossil fuels. We can expect to see a slight increase in electricity as we move to our carbon neutral target due to increased electrification of building systems as well as corporate fleet. This will be offset with net metered solar photovoltaic systems at which point we will see a sharper decrease. NOTE : As part of the new Corporate Energy and Emissions Management Plan

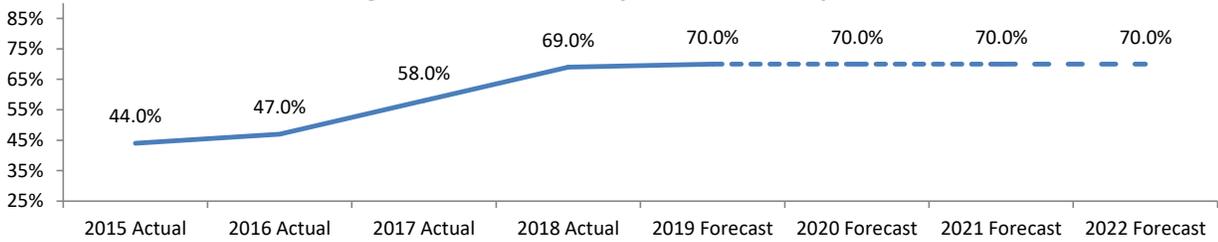


Performance Measurement	Annual Utility Costs- City Facilities (excluding street and traffic lights)
Story behind the data	Although we expect to see a decrease in consumption in both electricity and natural gas over the coming years. It is expected that the cost increases for both utilities will rise at a greater rate than our reduction until we can more clearly define the impacts of deep energy retrofits as well as offsets from solar photovoltaic generation. NOTE : As part of the new Corporate Energy and Emissions Management Plan building stock and consumption considerations have been redefined and this data is in included for 2018 and beyond.



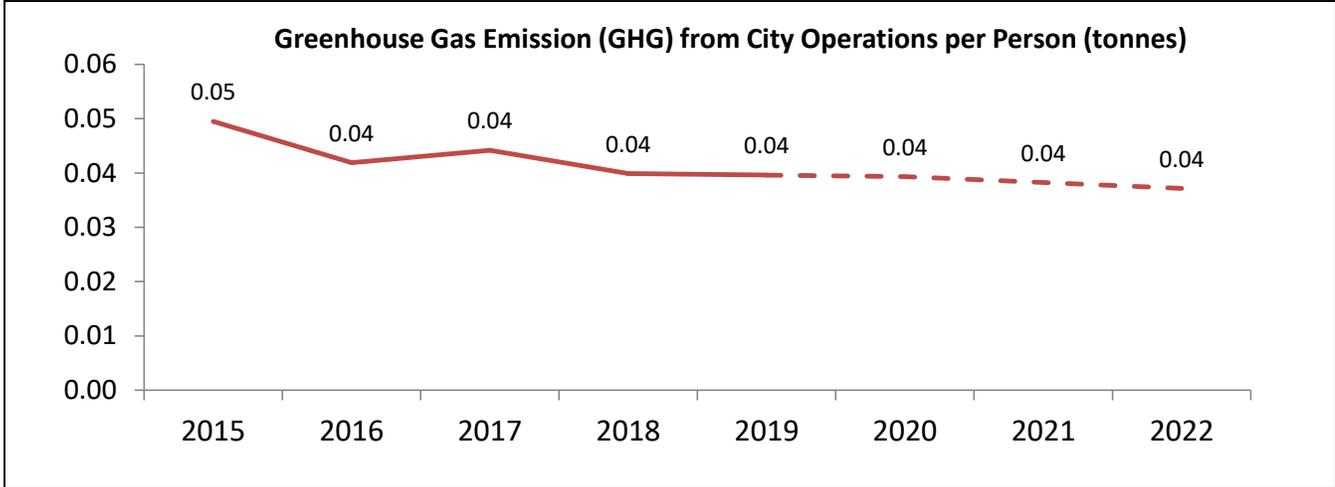
Performance Measurement	Percentage of Community Garden Requests Accommodated
Story behind the data	The percentage of community garden requests accommodated is an indicator of the percentage of applicants that were successful receiving a plot and also an indicator of the unmet demand for community garden plots. With the addition of new plots in 2018 the accommodation rate has risen, however the demand is outpacing the introduction of new garden plots. To raise the percentage accommodated, the city will need to consider development of additional plots in the Capital Budget as well as encouraging the development of Community based gardens on both city and private developments.

Percentage of Community Garden Requests Accommodated



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. The majority of buildings in the urban area are heated using natural gas although geothermal (groundsource heat pumps) is an option that some builders are selecting due to its efficiency and low carbon footprint. Community emissions continue to fluctuate due to weather and growth. Vehicles with internal combustion engines continue to dominate but zero and low emission vehicles are increasing.
Where do we want to go?	Burlington declared a climate emergency in 2019 and is developing a Climate Action Plan to provide a pathway to become a net zero community. Actions must be transformative to transition off fossil fuels with support for sustainable transportation options, low emission vehicles, deep energy retrofits, and renewable energy.

