

Service Business Plan



Service Name	Environment and Energy	Service Type	Internal
Service Owner Name	Lynn Robichaud	Budget Year	2017
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>Webpage (www.burlington.ca/environment); email (environment@burlington.ca); lunch & learns; Burlington Post ads; update reports/newsletters; community displays; Let's Talk Burlington online tool; YouTube videos; community email distribution network; contests; media releases, social media; 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
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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:

- Just under 6 megawatts of renewable energy have been installed in Burlington (mainly private solar PV projects)
- Burlington was successful in accessing a grant from the Federation of Canadian Municipalities to complete a business case for the development of a district energy system
- There are four community gardens on City property, with plans for more. Local food is more sustainable, supports community engagement and reduces greenhouse gas emissions.

Corporate Energy Management Plan actions:

- A number of applications were approved by the IESO to install rooftop solar panels on 14 City buildings through the FIT (Feed-in Tariff) program; the City will receive annual income through leasing of the building rooftops for the installations.
- A pool competition was held between City pools in 2015 and was successful in achieving accumulated energy consumption savings of 11%. The results translate to 160,000 ekWh (electricity and natural gas combined) and \$8,300 in savings.

Emerging Opportunities and Anticipated Risks

Emerging Opportunities	<p>Corporate Energy Management Plan:</p> <ul style="list-style-type: none"> - begin review to update Corporate Energy Management Plan and consider 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"> - complete business case for the implementation of an integrated community energy system such as district energy in Burlington. - research feasibility to expand car share opportunities in Burlington. - research feasibility of utilizing local improvement charges to support significant energy retrofits in the residential sector. - begin review and update of the Community Energy Plan.
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
Complete study considering opportunities for integrated community energy systems to improve local energy efficiency and security. Opportunities include renewable energy, heat recovery systems, energy storage and district energy (providing heating and cooling from a central plant).	Mar 2017
Support the Green Fleet Strategy update to identify actions to improve fleet efficiency and reduce greenhouse gas emissions.	Sep 2017
Consider the feasibility of a program to help homeowners implement energy efficiency measures. Investigate funding through a program using Local Improvement Charges, with a review of best practices by other municipalities.	Sep 2017
Implement energy efficiency measures at city facilities such as building recommissioning; de-ox systems at Mainway and Appleby arenas; LED lighting retrofit at Mainway arena; expand sub-metering at major energy consuming buildings; replace Tansley Woods cooling tower and gym HVAC units, among others.	Dec 2017
Expand solar energy generation installations at 14 City facilities.	Feb 2018
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,	Jun 2018

MEASURING SUCCESS

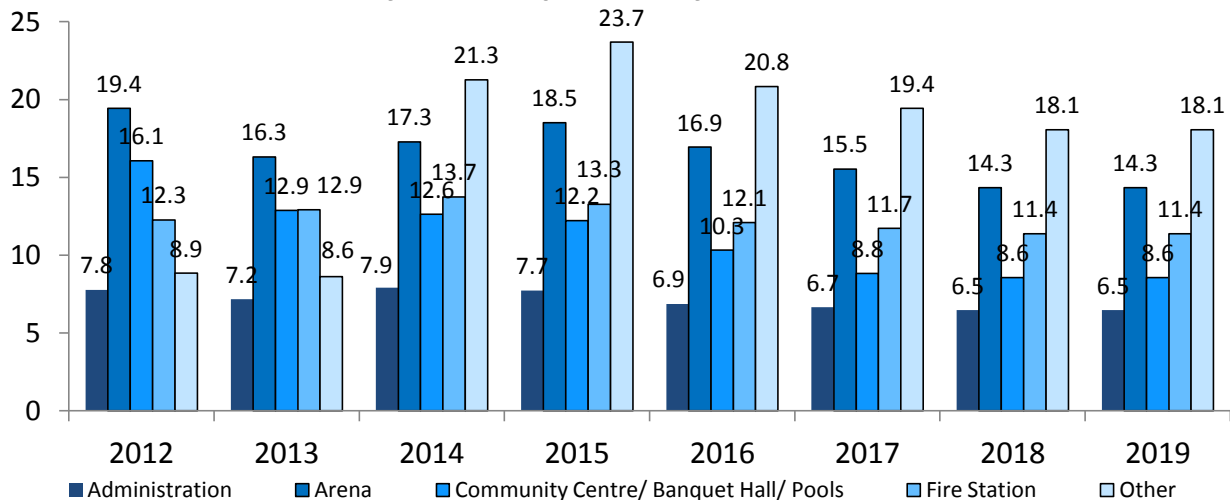
How much did we do?

Performance Measurement	2012 Actual	2013 Actual	2014 Actual	2015 Actual	2016 Projection	2017 Forecast	2018 Forecast	2019 Forecast
Electricity consumption- City facilities & street lights (millions kWh)	26.9	24.7	25.4	25.3	24.0	21.0	18.0	18.0
Natural gas consumption- City facilities (millions cubic metres)	2.0	2.3	2.0	1.9	1.8	1.7	1.6	1.6
Greenhouse gas emissions- City operations, not including transit bus (tonnes)	8,894	9,101	5,658	5,617	5,200	4,800	4,465	4,465

How well did we do it?

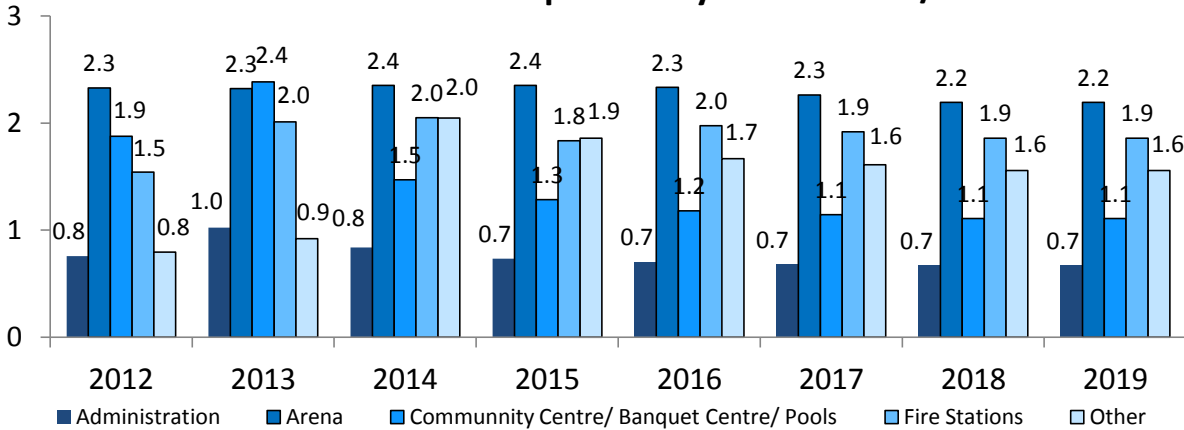
Performance Measurement	Electricity Consumption- City Facilities kWh/ft2
Story behind the data	Overall electricity consumption should decline due to improved building automation system controls, operational equipment control and monitoring, staff training and energy efficiency measures. The forecasted electricity consumption aligns with the targets established within the city's five year Energy Management Plan which includes comprehensive actions designed to manage the city's energy use. Note: Note that the 2014 data was updated to reflect the implementation of a new energy management tool which provides a more accurate picture of utility usage. Also, 2019 forecasts will be updated once new reduction targets have been set in the updated Corporate Energy Management Plan.

Electricity Consumption- City Facilities kWh/ft2



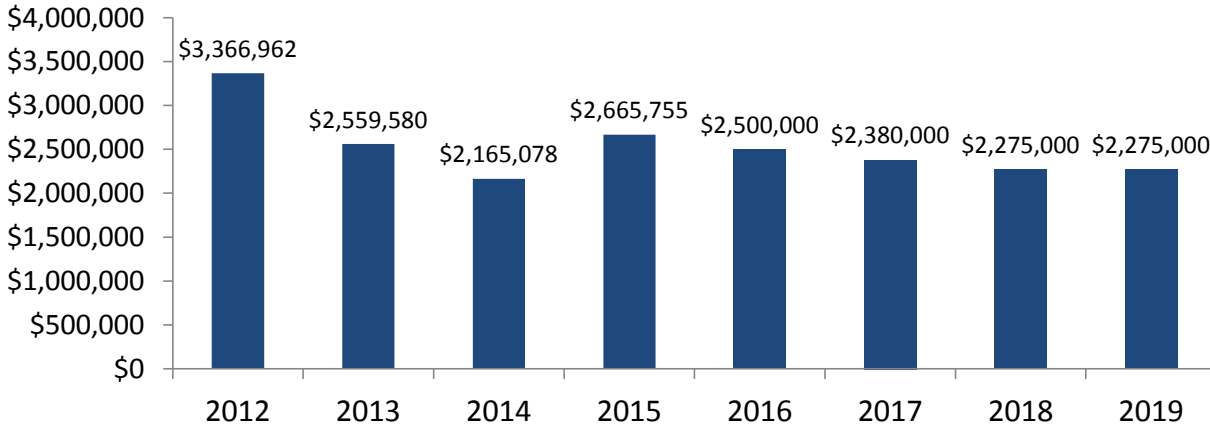
Performance Measurement	Natural Gas Consumption- City Facilities m3/ft2
Story behind the data	Overall natural gas consumption should continue to decline due to improved building automation system controls, operational equipment control and monitoring, staff training and energy efficiency improvements. The forecasted natural gas consumption aligns with the targets established within the city's five year Energy Management Plan which includes comprehensive actions designed to manage the city's energy use. Note: The 2014 data was updated to reflect the implementation of a new energy management tool which provides a more accurate picture of utility usage. Also, 2019 forecasts will be updated once new reduction targets have been set in the updated Corporate Energy Management Plan.

Natural Gas Consumption- City Facilities m3/ft2



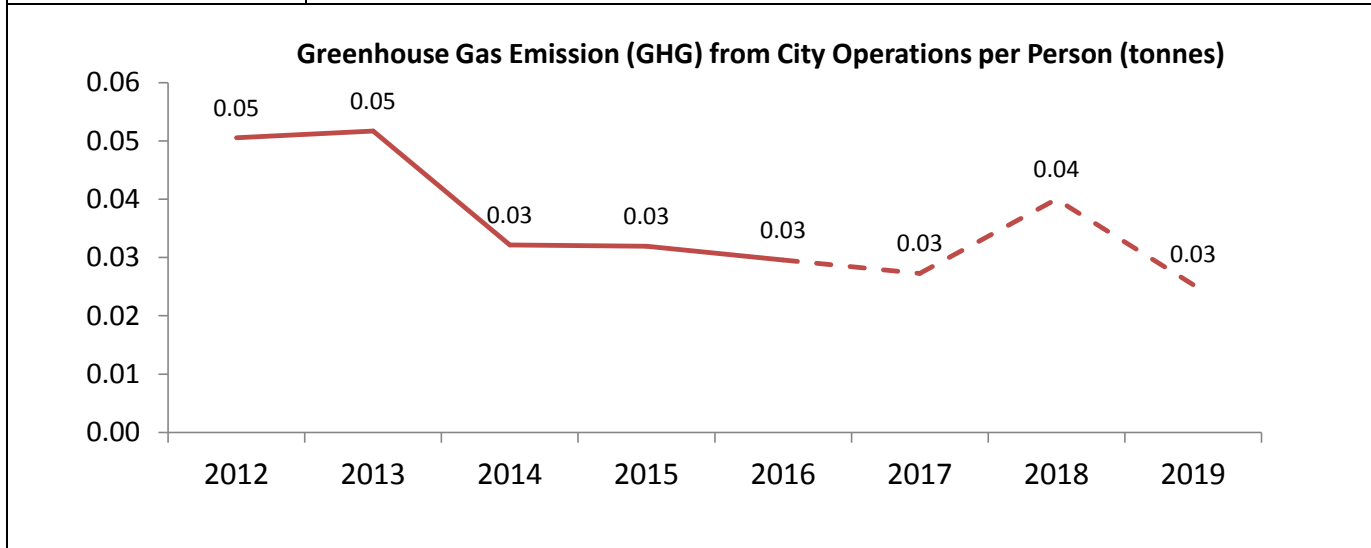
Performance Measurement	Annual Utility Costs- City Facilities (excluding street and traffic lights)
Story behind the data	The five year Energy Management Plan targets a 20% reduction in facility energy costs (adjusted for utility escalation rate). Planned expansion of renewable energy in City facilities will generate additional revenue. Note: The 2014 data was updated compared to previous reporting, to reflect differences with the implementation of a new energy management tool which provides a more accurate picture of utility usage.

Annual Utility Costs- City Facilities (excluding street and traffic lights)

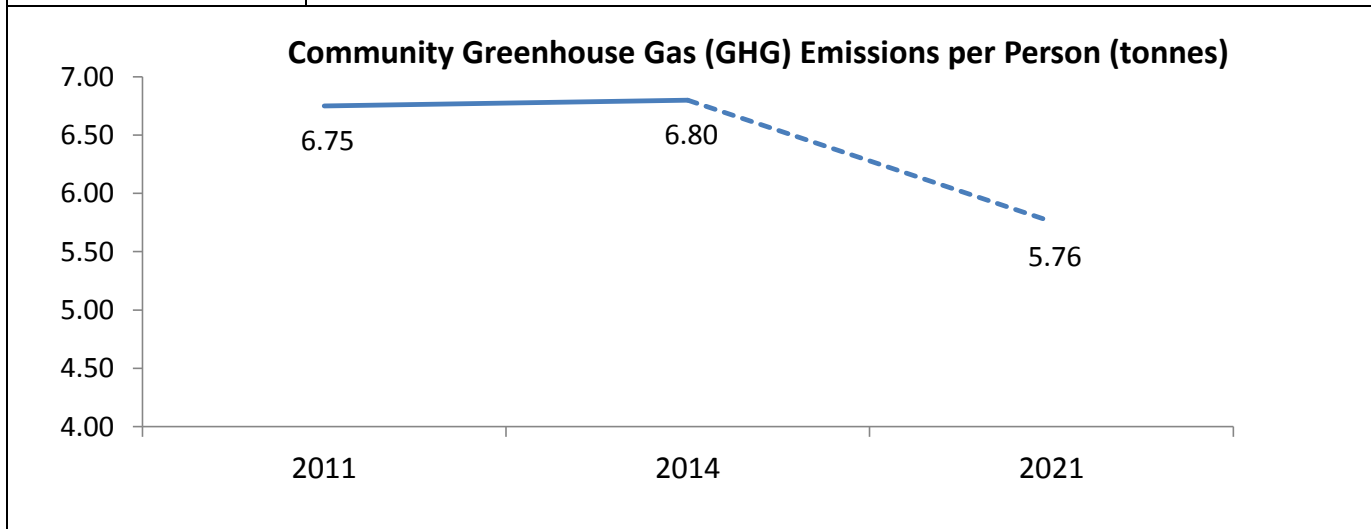


Is anyone better off?

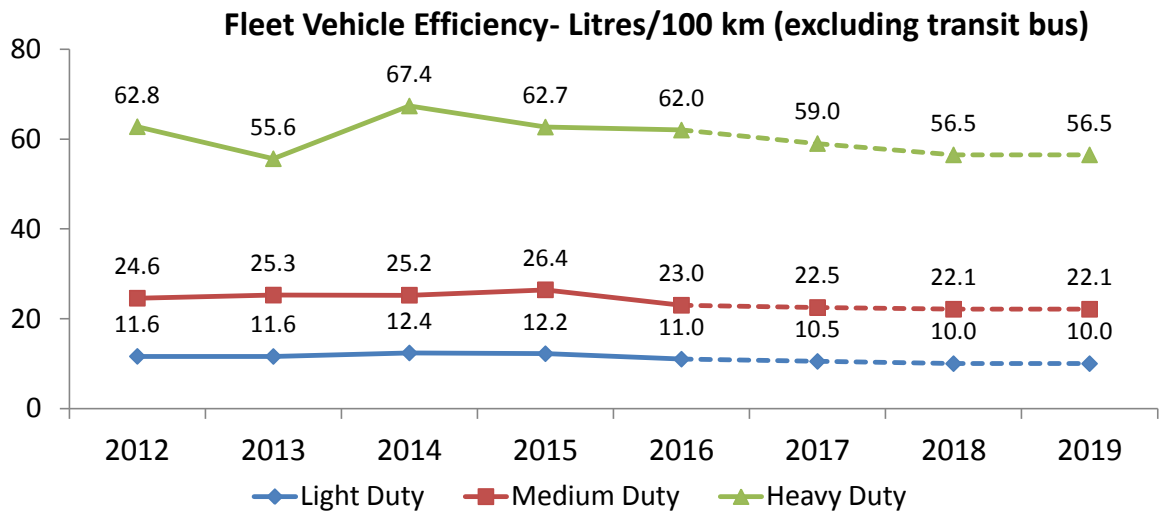
Performance Measurement	Greenhouse Gas Emission from City Operations per Person (tonnes)
Story behind the data	Greenhouse gas emissions have declined due to the implementation of energy efficiency measures and the retired coal fired electricity generating stations in the province. Note: 2019 forecast information will be updated once the Corporate Energy Management Plan has been updated with new energy and greenhouse gas emission reduction targets.
Where do we want to go?	Future change in greenhouse gas emission levels is not expected to be as dramatic, but should decline as the energy efficiency of City operations continues to improve.



Performance Measurement	Community greenhouse gas emissions per person (tonnes).
Story behind the data	Greenhouse gas emissions are produced by energy generation (natural gas fired generation plants), burning natural gas for thermal (heating) energy, and vehicles powered by fossil fuels. From 2011, to 2015, overall emissions dropped by approximately 6%. For 2016, population data will be adjusted once the census is available. 2016 - 2021 forecast data has been adjusted to reflect the drop in emissions from 2014 to 2015.
Where do we want to go?	The City's long term target for Community Greenhouse Gas Emissions is 5 tonnes of GHG emissions/person. Reducing greenhouse gas emissions on a per capita basis can be achieved through energy conservation measures and the implementation of sustainable transportation and building measures. Actions in the Burlington Community Energy Plan will assist in achieving the targets. Planning policies that support walking, cycling and transit should help to reduce community emissions.



Performance Management	City fleet vehicle efficiency- Litres/100km (excluding transit bus)
Story behind the data	A Green Fleet Strategy was implemented by the City in 2008 for the corporate fleet. Measures were implemented to improve the efficiency of the corporate fleet, such as an assessment process to right size fleet vehicles for the function required. However, significant efficiency improvements in the fleet have not been achieved, although no specific targets were set in the strategy. The Green Fleet Strategy will be under review by staff beginning in 2016 to identify areas of improvement.
Where do we want to go?	A 10% reduction in fuel consumption by 2018 in partnership with service areas from 2012 (Corporate Energy Management Plan). Note: Future targets past 2018 will be set as the Green Fleet Strategy is reviewed along with the Corporate Energy Management Plan.



SERVICE RESOURCE SUMMARY

Service Description

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

Service Owner Name

Lynn Robichaud

	2015	2016		2017 Proposed				
	Actual	Budget	Year End Projections	Base Budget	% Change vs. 2016 Budget	Business Cases	Total Budget	% Change vs. 2016 Budget
Human Resources	\$ 268,927	\$ 330,275	\$ 330,275	\$ 340,119	3.0%	\$ -	\$ 340,119	3.0%
Operating/Minor Capital Equip.	\$ 7,000	\$ 7,000	\$ 7,000	\$ 7,000	0.0%	\$ -	\$ 7,000	0.0%
Purchased Services	\$ 9,563	\$ 40,633	\$ 39,758	\$ 45,308	11.5%	\$ -	\$ 45,308	11.5%
Corp. Expenditures/Provisions	\$ 3,960	\$ 4,250	\$ 4,250	\$ 4,250	0.0%	\$ -	\$ 4,250	0.0%
Internal Charges & Settlements	\$ -	\$ -	\$ -	\$ -	n/a	\$ -	\$ -	n/a
TOTAL EXPENDITURES	\$ 289,450	\$ 382,158	\$ 381,283	\$ 396,677	3.8%	\$ -	\$ 396,677	3.8%
Controllable Revenues	\$ (91,249)	\$ (35,000)	\$ (35,000)	\$ (35,000)	0.0%	\$ -	\$ (35,000)	0.0%
General Revenues & Recoveries	\$ -	\$ -	\$ -	\$ -	n/a	\$ -	\$ -	n/a
TOTAL REVENUES	\$ (91,249)	\$ (35,000)	\$ (35,000)	\$ (35,000)	0.0%	\$ -	\$ (35,000)	0.0%
NET OPERATING BUDGET	\$ 198,200	\$ 347,158	\$ 346,283	\$ 361,677	4.2%	\$ -	\$ 361,677	4.2%