



PUBLIC WORKS COMMISSION

DATE: March 18, 2013

REPORT NO. PW2013-025

TO: Chair and Members
Committee of the Whole – Operations and Administration

FROM: Geoff Rae, MBA, P.Eng.
General Manager, Public Works Commission

1.0	TYPE OF REPORT	CONSENT ITEM []
		ITEM FOR CONSIDERATION [X]

2.0 **TOPIC**

City-Wide Energy Conservation and Demand Management Plan Strategy
Development

3.0 **RECOMMENDATION**

1. THAT Report No. PW2013-025, City-Wide Energy Conservation and Demand Management Plan Strategy Development, BE RECEIVED for information;
2. THAT the CITY POST THE RESULTS of the 2011 Energy Analysis as shown in “Appendix A - Energy Consumption and GHG Emission Template” on the City’s Website; and
3. THAT a copy of this report BE FORWARDED to the Minister of Energy before the July 1, 2013 deadline.

4.0 **PURPOSE**

The purpose of this report is to provide City Council with an update on the City’s progress towards meeting the requirements of the Green Energy Act, 2009. This report also presents a recommended work plan for ongoing compliance and the recommended implementation program for a long term reduction strategy.

5.0 **BACKGROUND**

Ontario Regulation 397/11, made under the *Green Energy Act, 2009* was published in August 2011. This Regulation requires that all public agencies

prepare an Energy Conservation and Demand Management Plan (“the Energy Plan”).

The Energy Plan has two parts:

- A listing of the annual energy consumption and greenhouse gas (GHG) emissions for the City’s facilities. The first report is due by July 1, 2013 for the 2011 calendar year and annually thereafter.
- An Energy Management Plan (EMP) that includes a description of previous, current and proposed measures for reducing the City’s energy consumption, and a forecast of the expected results. The first EMP is due on/before July 1, 2014, and is required every five years thereafter.

Following a review of the requirements of the Regulation, this Council Report was designed to address the first reporting requirement. In addition, the data compiled and contained within this report provides the City with a foundation to initiate the development of a formal Energy Management Plan.

6.0 CORPORATE POLICY CONTEXT

The development and implementation of a corporate-wide Energy Management Plan supports the City’s Strategic Plan’s vision element of Managed Growth and Environmental Leadership and Excellent in Governance and Municipal Management.

The following Strategic Actions are directly linked to the Energy Management Plan:

- Maintain the Infrastructure Management Strategy
- Develop a Green Infrastructure Strategy.
- Brantford will be recognized as a fiscally responsible and well-managed city that provides efficient and effective government services.

7.0 INPUT FROM OTHER SOURCES

Staff from various City Departments, Union Gas, Finance, Community Services and Corporate Services were consulted in the data compilation, review and development of this report. Staff from Brantford Power was also consulted regarding the availability of incentive programs to support the implementation of energy management initiatives.

8.0 ANALYSIS

Ontario Regulation 397/11, under the *Green Energy Act*, requires that on or before July 1, 2013, the City shall submit to the Minister, publish on its website

and make available to the public in printed form at City Hall, an Energy Consumption and Greenhouse Gas Emission Template for City operations conducted in 2011.

The Facilities and Asset Management Division within the Public Works Commission has compiled energy consumption records for all City accounts from the various energy utilities. At this time, the Regulation does not require the inclusion of Social Housing or Long Term Care within the data analysis.

Appendix A presents the Energy Consumption and GHG Emission Template. This template provides a summary of the data collected and is presented in the required format to meet the Ministry’s requirements.

For reporting purposes, the detailed data has been aggregated by facility type and function (Table 1 – Energy Use by Program Area). This summary information is useful as it presents a baseline of the energy use and will assist staff in quantifying the success of energy management initiatives within the City in the future. In summary, facilities such as arenas, pools and water/wastewater treatment facilities tend to consume the most energy. The facilities, in turn, could provide the greatest opportunities for implementing energy reduction programs.

Table 1 – Energy Use by Program Area

Average Energy Intensity ekWh/ft ²	
Public Works - Corporate	
	2011
Corporate Facilities (Administrative)	9.8
Works Yards	12.1
Farmer's Market	11.2
Market Parkade (Office)	17.4
Airport Records Building	4.3
Public Works - Corporate Average	12.9
Community Services	
	2011
Arenas/Pools (including Multi-Use)	26.9
Community Centers	10.7
Museum / Historical Sites	9.3
Tourism Center	18.8
Recreation Facilities	9.7
Cemeteries	3.3
Golf Operations	12.2
Community Services Average	11.5

City Services	2011
Fire/EMS	14.0
Libraries	13.1
Police	23.3
City Services Average	16.8

City Average	12.1
---------------------	-------------

Water, Wastewater and Storm Treatment Facilities

Average Energy Intensity kWh/ML
--

Public Works - Water and Wastewater	2011
Water Treatment & Distribution	172.4
Wastewater Treatment & Distribution	317.8
Public Works - Corporate Average	256.5

As required, the attached energy consumption template will be updated and posted on an annual basis on the City's website. The next report will be due on July 1, 2014 for the 2012 reporting period.

Energy Management Plan

In addition to collecting energy consumption and calculating GHG emission data, the Regulation stipulates that municipalities must develop a 5-year Energy Management Plan.

This plan requires that the City:

- Establish corporate goals and objectives for conserving energy consumption and managing energy demand,
- Identify conservation and demand management measures and associated costs and savings estimates; and
- Identify any renewable energy (solar, wind etc) infrastructure installed and quantity of energy produced.

The Energy Management Plan (EMP) must be endorsed by Council prior to its submission to the Ministry and it must be submitted on or before July 1, 2014. Updates to the plan including the City's progress in meeting the goals are required every 5 years.

Energy Management Plan Development Approach

The Regulation requires that the EMP includes an energy conservation goal and it will need to identify the recommended activities/projects to meet the goal. In order to establish realistic conservation targets, comprehensive energy audit(s) would be required to identify where energy conservation and renewable energy opportunities exist. Based on the potential for reduction and other considerations such as cost, budget availability, priorities and implementation schedules, a realistic energy reduction goal for the City can be established.

Although much work has been completed by City staff in the way of energy audits and implementation of energy efficient projects over the past few years, over the next year staff must build upon past projects and develop a holistic plan.

Proposed Approach for Developing an Energy Conservation and Demand Management Plan

In summary, staff proposes that the following activities be included in developing its EMP:

- Conducting focused energy auditing activities,
- Reviewing energy audit findings and recommendations, costing and prioritizing projects,
- Identifying resource requirements (financial and human),
- Developing the Plan based on a priority project listing, and
- Implementation and continuous improvement of the Plan

The recommended phases are as follows:

Phase #1 – Energy Auditing (July 2013 – October 2013)

- Staff will develop a terms of reference and secure services to conduct energy audits for the highest consumption facilities based on 2011 energy use, previous energy projects, inventory and equipment and potential reduction opportunities.
- Staff will review recent energy audit results and establish potential areas for improvements.
- All recommendations will include the potential savings and detailed cost estimates for equipment procurement, installation, staff training, monitoring, project management and ancillary expenses. Individual energy improvement project timelines and schedules will be prepared.

Phase #2 – Project Identification, Selection and Plan Development (October 2013 – January 2014)

- Staff will review energy audit results and prioritize any proposed projects with consideration for total cost, ease of implementation, return on investment, alignment with existing projects and potential energy savings for inclusion into the City's 2015 Capital Budget and Forecast. At this point the current budget forecast has an allocation of \$100,000 per year

identified for energy management. Depending on the projects identified, additional capital items will be introduced for Council consideration.

- Based on opportunities and background, results will be incorporated into the Energy Management Plan. The potential energy savings and GHG reductions from the recommended projects will serve as the basis to establish a City energy conservation target.
- Staff will present the proposed EMP and reduction targets to City Council for consideration.

Phase #3 – Energy Management Plan Implementation (February 2014 – February 2019)

- Utilize the energy audit findings and recommendations and upon approval by Council implement the plan including completion of various projects following City purchasing policies and budget processes.
- Identify future projects in the capital and/or operating budget and forecasts for Council's consideration.
- Review the success of projects in order to establish the actual energy savings achieved and validate progress toward the overall City goals.

The estimated cost to complete the initial energy audits and develop the Energy Management Plan is anticipated to be \$100,000 to be funded from currently available capital funding as shown in Table 1 within the Financial Implications Section. It should be noted that energy management projects will be coordinated with other required facilities management capital improvements where cost effective since completing stand-alone energy retrofit projects is often not cost effective.

Next Steps

Staff intend to proceed with the following activities:

- Submit and post the attached Energy and Greenhouse Gas Inventory Template (May 2013)
- Retain an energy auditing consultant (May/June 2013)
- Receive completed audits and establish recommendations for high priority, large consumption buildings (October 2013)
- Develop Energy Conservation and Demand Management Plan (February 2014)
- Present the Plan to Council for review (April 2014)
- Implement the EMP (April 2014 – 2019)

Individual building projects will be presented to Council via the Capital Budget process. Where significant new opportunities are identified during any phase of the project, in-year reports will be brought forward to Council.

9.0 FINANCIAL IMPLICATIONS

Based on the review of previously approved capital budgets that were established for Energy Conservation related initiatives (PM1007 [Energy Conservation](#), PM1107 [Energy Conservation](#), PM1205 [Energy Conservation](#)), there is sufficient funding to develop the energy plan and continue to implement select capital projects as required.

Through the implementation of the audits and the development of the energy plan, additional budget requirements will be introduced into the capital budget, as required.

BUDGET STATUS			
Project Number	Original Budget	Budget Spent	Available Funding
PM1007 Energy Conservation	\$100,000	\$87,442	\$12,558
PM 1107 Energy Conservation	\$100,000	\$26,176	\$73,824
PM 1105 Energy Conservation	\$100,000	\$0	\$100,000
Proposed Energy Management Plan Development			(\$100,000)
Total Capital Funding	\$300,000	\$113,618	\$86,382

It should be noted that local energy utilities have historically provided, and the City has received, grant funding to assist in completing energy audits and implementing energy savings projects.

Most recently, the City secured funding grants from Brantford Power and Brant County Power to assist with energy audits of the City's Social Housing portfolio. Brantford Power currently has a grant program for conducting energy audits. The program offers an opportunity to receive up to 50% of the cost of an energy audit. Other incentive based grant programs exist to encourage energy conservation including retrofit programs, process and system improvements and new construction grants. Staff will work with the local energy utilities to ensure that the City takes full advantage of available incentive programs.

10.0 CONCLUSION

Due to new regulatory requirements, the City must develop and implement an energy conservation and demand management plan by July 2014. Within this

Plan, the City must establish an energy conservation goal and identify initiatives that will improve energy efficiency.

Staff recommend that comprehensive energy audits be conducted in facilities where significant opportunities could exist. The program will utilize existing energy audits and new ones where none exist, as the baseline for the energy conservation and demand management plan.

As part of the future capital budgeting process, staff will be identifying capital needs for auditing and energy retrofit projects for the first five years of the EMP. Existing planned and approved retrofit projects will be reviewed to ensure that the most appropriate energy efficient approach is taken.

Staff will report back to Council at key milestones within the program development and implementation.

Geoff Linschoten
Director, Facilities & Asset Management

Geoff Rae, MBA, P.Eng.,
General Manager, Public Works Commission.

Jim Quin
Manager, Facilities & Asset Management

Attachments

- Appendix A - Energy and Greenhouse Gas Template

In adopting this report, is a by-law or agreement required? If so, it should be referenced in the recommendation section.

By-law required yes no

Agreement(s) or other documents to be signed by Mayor and/or City Clerk yes no

Is the necessary by-law or agreement being sent concurrently to Council? yes no

Appendix A - Energy and Greenhouse Gas Template (PW 2013-025).

Facility Name	Operation	Facility Specific	Year Built	Address	Total Floor Area (Sq. /ft.)	Hours of Operation:	Fuel Type	Equivalent Energy (ekWh/yr)	Energy Purchased in Natural Units (m3 & kWh)	GHG Emissions (tonnes CO2e/yr)	GHG Intensity (tonnes CO2e/gsf)	Energy Intensity (ekwh/gsf)
1. Administrative Office.												
City Hall	Administrative Office	Administration and Council Chambers	1965	100 Wellington St.	80,000	Mon - Fri - 8:30am - 4:30pm and weeknights (2 nights per week) 4:30 - 11:00	Electricity	475,992.0	475,992.0	99,958.3	1.2	5.9
							Natural Gas	1,718,904.6	163,705.2	3,265,918.7	40.8	21.5
Farmer's Market	Administrative Office	Administration and Retail	1965	79 Icomm Dr.	10,500	Fri - 7:00am - 5:00pm Sat - 7:00am - 2:00pm	Electricity	186,080.0	186,080.0	39,076.8	3.7	17.7
							Natural Gas	49,244.6	4,690.0	93,564.7	8.9	4.7
Information Technology & Hydro Building	Multi-use Administrative Office	Administration	1950	84 Market St.	18,450	Mon-Fri-8:00am-5:30pm	Electricity	54,575.0	54,575.0	11,460.8	0.6	3.0
							Natural Gas	25,931.9	2,469.7	49,270.5	2.7	1.4
Landfill Administration Building	Administrative Office	Administration	1955	511 Mohawk Rd.	2,800	8am-5pm Monday - Friday	Electricity	5,276.0	5,276.0	1,108.0	0.4	1.9
							Natural Gas	25,943.2	2,470.8	49,292.1	17.6	9.3
Landfill Administration & Scale House	Administrative Office	Administration and Scale House	1993	20 Morrison Rd.	400	8am-5pm Monday-Saturday	Electricity	5,457.5	5,457.5	1,146.1	2.9	13.6
Market Square Mall	Administrative Office	Administration	1985	220 Colborne St.	73,280	Mon - Fri-(7:30am - 10:00pm) Sat-Sun-(9:00am - 10:00pm)	Electricity	802,023.0	802,023.0	168,424.8	2.3	10.9
							Natural Gas	246,100.2	23,438.1	467,590.3	6.4	3.4
Parks Head Office Buildings	Administrative Office	Administration and Operations	1980	3 Sherwood Dr.	2700	Mon - Fri - 7:30am - 5:30pm	Electricity	39,210.0	39,210.0	8,234.1	3.0	14.5
							Natural Gas	17,293.5	1,647.0	32,857.7	12.2	6.4
Parks Head Office Buildings	Administrative Office	Administration and Operations	1940	1 Sherwood Dr.	10,800	Mon - Fri - 7:30am - 5:30pm	Electricity	93,120.0	93,120.0	19,555.2	1.8	8.6

Facility Name	Operation	Facility Specific	Year Built	Address	Total Floor Area (Sq. /ft.)	Hours of Operation:	Fuel Type	Equivalent Energy (ekWh/yr)	Energy Purchased in Natural Units (m3 & kWh)	GHG Emissions (tonnes CO2e/yr)	GHG Intensity (tonnes CO2e/gsf)	Energy Intensity (ekwh/gsf)	
1. Administrative Office.													
							Natural Gas	86,471.2	8,235.4	164,295.2	15.2	8.0	
Pollution Control / Facilities Group	Multi-use Administrative Office	Administration and Laboratory	1953	180 Greenwich Dr.	34,800	Mon-Fri 8:00am-4:00pm, plant and equipment run 24/7	Electricity	80,800.0	80,800.0	16,968.0	0.5	2.3	
							Natural Gas	282,736.3	26,927.3	537,199.0	15.4	8.1	
Provincial Offense Courthouse	Administrative Office	Administration	1965	102 Wellington St.	13,800	Mon - Fri - 7:30am - 5:30pm	Electricity	16,953.0	16,953.0	3,560.1	0.3	1.2	
							Natural Gas	429,726.2	40,926.3	816,479.7	59.2	31.1	
Visitor & Tourism Centre	Administrative Office	Administration and Retail	2002	399 Wayne Gretzky Pkwy	11,400	Mon -Fri - 8:00am - 5:00pm Sat - 10:00am to 4:00pm Sun - Noon to 4:00pm	Electricity	183,120.0	183,120.0	38,455.2	3.4	16.1	
							Natural Gas	246,100.2	23,438.1	467,590.3	41.0	21.6	
Total by Facility Type	Administrative Office								4,627,015.0	2,075,782.3	5,737,107.3	220.3	196.5
	Multi-use Administrative Office								444,043.2	164,772.0	614,898.3	19.2	14.8
Overall Administrative Offices Totals	All								5,071,058.2	2,240,554.3	6,352,005.6	239.6	211.3

Facility Name	Operation	Facility Specific	Year built	Address	Total Floor Area (Sq. /ft.)	Hours of Operation:	Fuel Type	Equivalent Energy (ekWh/yr)	Energy Purchased in Natural Units (m ³ & kWh)	GHG Emissions (tonnes CO2e/yr)	GHG Intensity (tonnes CO2e/gsf)	Energy Intensity (ekwh/gsf)
2. Public Libraries												
Brantford Public Library	Public Library	Library	1957	173 Colborne St.	61000	Mon-Thurs: 9am-9pm Fri: 9am-6pm Sat: 9am-5pm Sun: 1:30 p.m. - 5:00 p.m.	Electricity	762,660.0	762,660.0	160,158.6	2.6	12.5
							Natural Gas	158,300.2	15,076.2	300,770.4	4.9	2.6
St. Paul Library	Public Library	Library	1973	441 St. Paul St.	5750	Tues-Thurs: 9am-8pm , Fri & Sat-9am-5pm	Electricity	86,080.0	86,080.0	18,076.8	3.1	15.0
							Natural Gas	129,045.0	12,290.0	245,185.5	42.6	22.4
Overall Public Library Totals	All							1,136,085.2	876,106.2	724,191.2	53.3	52.5

Facility Name	Operation	Facility Specific	Year Built	Address	Total Floor Area (Sq. /ft.)	Hours of Operation:	Fuel Type	Equivalent Energy (ekWh/yr)	Energy Purchased in Natural Units (m ³ & kWh)	GHG Emissions (tonnes CO2e/yr)	GHG Intensity (tonnes CO2e/gsf)	Energy Intensity (ekwh/gsf)
3. Cultural Facilities (recreation facilities, community centers, art galleries, performing art centers, swimming pools etc.)												
Arrowdale Golf Course	Golf Operations	Administration and Retail	1927	282 Stanley St.	2000	Weekday - 7am-9pm (seasonal April 1 until November 1), rentable Hall between November 1 and April 1	Electricity	18404	18404	3864.84	1.9	9.2
							Natural Gas	30271.5	2883	57515.85	28.8	15.1
Arrowdale Golf Course	Golf Operations	Club House	1927	282 Stanley St.	4000	Weekday - 7am-9pm (seasonal April 1 until November 1), rentable Hall between November 1 and April 1	Electricity	42,942.9	42,942.9	9,018.0	2.3	10.7
							Natural Gas	70,633.5	6,727.0	134,203.7	33.6	17.7
Arnold Anderson Stadium	Recreation Facility	Baseball Stadium	1998	35 Sherwood Drive	1200	As per scheduled games and events	Electricity	10,466.0	10,466.0	2,197.9	1.8	8.7
Bell Homestead-Henderson	Museum / Historical Site	Historic Site	1845	94 Tutela Heights	3600	Tues - Sun: 9:30am - 4:30pm	Electricity	16,600.0	16,600.0	3,486.0	1.0	4.6
							Natural Gas	34,764.8	3,310.9	66,053.0	18.3	9.7
Bell Homestead-Reception	Museum / Historical Site	Historic Site	1982	94 Tutela Heights	6000	Tues - Sun: 9:30am - 4:30pm	Electricity	16,600.0	16,600.0	3,486.0	0.6	2.8
							Natural Gas	66,013.1	6,287.0	125,424.9	20.9	11.0
Bell Homestead-Main Facility Complex	Museum / Historical Site	Historic Site	1982	94 Tutela Heights	5400	Tues - Sun: 9:30am - 4:30pm	Electricity	16,600.0	16,600.0	3,486.0	0.6	3.1
							Natural Gas	35,797.1	3,409.2	68,014.4	12.6	6.6
Beryl Angus Child Care	Care Facility	Child Care	1982	220 Clarence St.	6000	Mon - Fri - 6:45am - 5:30pm	Electricity	80,160.0	80,160.0	16,833.6	2.8	13.4
							Natural Gas	35,004.6	3,333.8	66,508.7	11.1	5.8

Facility Name	Operation	Facility Specific	Year Built	Address	Total Floor Area (Sq. /ft.)	Hours of Operation:	Fuel Type	Equivalent Energy (ekWh/yr)	Energy Purchased in Natural Units (m ³ & kWh)	GHG Emissions (tonnes CO2e/yr)	GHG Intensity (tonnes CO2e/gsf)	Energy Intensity (ekwh/gsf)
3. Cultural Facilities (recreation facilities, community centers, art galleries, performing art centers, swimming pools etc.)												
Civic Centre	Arena	Arena	1967	69 Market St. S.	55000	Mon-Fri-8:30am - Midnight, As rentals dictate	Electricity	1,019,075.0	1,019,075.0	214,005.8	3.9	18.5
							Natural Gas	1,648,146.1	156,966.3	3,131,477.6	56.9	30.0
Eagle Place Community Centre	Community Centre	Community Centre	1975	333 Erie Ave.	11760	Mon-Fri- 8:30 am-Noon, 1:00-4:00pm, 6:00 - 10:00pm. Weekend programs as scheduled	Electricity	25,440.0	25,440.0	5,342.4	0.5	2.2
							Natural Gas	301,774.1	28,740.4	573,370.8	48.8	25.7
Earl Haig	Recreation Facility/Pool	Water Park/Pool	1987	101 Market St. S	8100	Mon-Sun: 11am – 8:30pm (June-September)	Electricity	77,160.0	77,160.0	16,203.6	2.0	9.5
							Natural Gas	37,344.3	3,556.6	70,954.2	8.8	4.6
Glenhyrst Art Gallery- Coach House	Museum / Historical Site	Art Gallery	1922	12 Ava Rd.	3000	Sat & Sun: 1pm-5pm Mon: Closed Tues-Fri: 10am-5pm	Electricity	32,266.5	32,266.5	6,776.0	2.3	10.8
							Natural Gas	51,639.0	4,918.0	98,114.1	32.7	17.2
Glenhyrst Art Gallery- Main Building	Museum / Historical Site	Art Gallery	1922	20 Ava Rd.	3900	Sat & Sun: 1pm-5pm Mon: Closed Tues-Fri: 10am-5pm	Electricity	32,266.5	32,266.5	6,776.0	1.7	8.3
							Natural Gas	51,639.0	4,918.0	98,114.1	25.2	13.2
Kanata Village	Museum / Historical Site	Cultural Facility	2000	440 Mohawk St.	6732	Mon-Fri: 9:00am - 5:00pm	Electricity	52,915.0	52,915.0	11,112.2	1.7	7.9
							Natural Gas	108,479.5	10,331.4	206,111.1	30.6	16.1
Lions Park	Arena	Arena	1971	20 Edge St.	36400	Mon-Sun 7am - Midnight (Oct - Mar) , As rentals dictate (April - Sept)	Electricity	554,293.0	554,293.0	116,401.5	3.2	15.2
							Natural Gas	394,840.7	37,603.9	750,197.4	20.6	10.8
Mohawk Park Pavilion	Recreation Facility	Pavilion	1980	51 Lynnwood Dr.	8500	Seasonal- 8am-10pm, Weekend rentals for special events. As rentals dictate	Electricity	92,146.0	92,146.0	19,350.7	2.3	10.8
							Natural Gas	125,130.1	11,917.2	237,747.3	28.0	14.7

Facility Name	Operation	Facility Specific	Year Built	Address	Total Floor Area (Sq. /ft.)	Hours of Operation:	Fuel Type	Equivalent Energy (ekWh/yr)	Energy Purchased in Natural Units (m ³ & kWh)	GHG Emissions (tonnes CO2e/yr)	GHG Intensity (tonnes CO2e/gsf)	Energy Intensity (ekwh/gsf)
3. Cultural Facilities (recreation facilities, community centers, art galleries, performing art centers, swimming pools etc.)												
Mt. Hope Cemetery	Cemetery	Administration	1872	169 Charing Cross St.	13500	Mon - Fri - 8:30am-4:00pm	Electricity	9,956.0	9,956.0	2,090.8	0.2	0.7
							Natural Gas	39,571.8	3,768.7	75,186.4	5.6	2.9
Northridge Golf Course - Pro Shop	Golf Operations	Administration and Retail	1957	320 Balmoral Dr.	7000	Weekday - 7am-9pm (seasonal April 1 until November 1), rentable hall between November 1 and April 1	Electricity	22,303.0	22,303.0	4,683.6	0.7	3.2
							Natural Gas	88,712.6	8,448.8	168,554.0	24.1	12.7
Northridge Golf Course - Club House	Golf Operations	Administration and Retail	1957	320 Balmoral Dr.	18000	Weekday - 7am-9pm (April 1 -November 1), rentable hall between November 1 and April 1	Electricity	261,179.0	261,179.0	54,847.6	3.0	14.5
							Natural Gas	266,133.0	25,346.0	505,652.7	28.1	14.8
Oakhill Cemetery	Cemetery	Administration	1993	17 Jennings Rd.	10500	Mon - Fri - 9am - 4:00pm	Electricity	18,445.0	18,445.0	3,873.5	0.4	1.8
							Natural Gas	80,353.1	7,652.7	152,670.9	14.5	7.7
Sanderson Centre	Performing Arts Centre	Performing Arts Centre	1919	88 Dalhousie St.	53112	Mon-Fri: 8:00am - 5:00pm as bookings dictate	Electricity	357,339.0	357,339.0	75,041.2	1.4	6.7
							Natural Gas	626,652.8	59,681.2	1,190,640.2	22.4	11.8
T.B Costain Community Centre	Community Centre	Community Centre and Child Care	1953	16 Morrel St.	21000	Mon-Fri - 9:00-4:00pm and as rentals dictate (weeknights/weekends)	Electricity	82,560.0	82,560.0	17,337.6	0.8	3.9
							Natural Gas	378,013.3	36,001.3	718,225.3	34.2	18.0
Tranquility Hall	Community Centre	Community Centre	1960	335 Francis St.	4400	As rentals dictate	Electricity	15,388.0	15,388.0	3,231.5	0.7	3.5
							Natural Gas	18,185.3	1,731.9	34,552.0	7.9	4.1
Wayne Gretzky Centre	Multi-use (Arena/Pool) WGSC	Multi-Use Sports Complex	1967	254 North park St.	130760	Weekdays 6:00am-10:00pm weekend rentals and sporting tournaments etc.	Electricity	5,455,758.0	5,455,758.0	1,145,709.2	8.8	41.7
							Natural Gas	5,928,514.0	564,620.4	11,264,176.6	86.1	45.3

Facility Name	Operation	Facility Specific	Year Built	Address	Total Floor Area (Sq. /ft.)	Hours of Operation:	Fuel Type	Equivalent Energy (ekWh/yr)	Energy Purchased in Natural Units (m ³ & kWh)	GHG Emissions (tonnes CO2e/yr)	GHG Intensity (tonnes CO2e/gsf)	Energy Intensity (ekwh/gsf)
3. Cultural Facilities (recreation facilities, community centers, art galleries, performing art centers, swimming pools etc.)												
Woodman Community Centre	Community Centre	Community Centre	1978	491 Grey St.	12500	Mon-Fri - 9:00-10:00pm and weekends as rentals dictate.	Electricity	118,240.0	118,240.0	24,830.4	2.0	9.5
							Natural Gas	232,073.1	22,102.2	440,938.9	35.3	18.6
Total by Facility Type	Golf Operations							800,579.5	388,233.7	938,340.2	122.4	97.9
	Cemetery							148,325.9	39,822.4	233,821.5	20.6	13.1
	Performing Arts							983,991.8	417,020.2	1,265,681.4	23.8	18.5
	Multi-Use or Arena/Pool							15,000,626.8	7,788,316.6	16,621,968.0	179.5	161.6
	Community Centre							1,171,673.8	313,083.9	1,817,828.9	130.1	85.4
	Care Facility							115,164.6	83,493.8	83,342.3	13.9	19.2
	Recreation Facility							342,246.4	195,245.8	346,453.6	42.8	48.4
	Museum / Historical Site							515,580.4	200,422.5	696,953.7	148.2	111.2
Overall Cultural Facilities Totals	All							19,078,189.2	9,425,638.8	22,004,389.5	681.4	555.3

Facility Name	Operation	Facility Specific	Year Built	Address	Total Floor Area (Sq. /ft.)	Hours of Operation:	Fuel Type	Equivalent Energy (ekWh/yr)	Energy Purchased in Natural Units (m ³ & kWh)	GHG Emissions (tonnes CO2e/yr)	GHG Intensity (tonnes CO2e/gsf)	Energy Intensity (ekwh/gsf)
4. Ambulance Stations												
Ambulance Station	Ambulance Station	Joint Use Facility	2006	400 Colborne St.	3900	24/7	Electricity	31,896.0	31,896.0	6,698.2	1.7	8.2
							Natural Gas	64,510.1	6,143.8	122,569.1	31.4	16.5
Overall Ambulance Totals								96,406.1	38,039.8	129,267.3	33.1	24.7

Facility Name	Operation	Facility Specific	Year Built	Address	Total Floor Area (Sq. /ft.)	Hours of Operation:	Fuel Type	Equivalent Energy (ekWh/yr)	Energy Purchased in Natural Units (m ³ & kWh)	GHG Emissions (tonnes CO2e/yr)	GHG Intensity (tonnes CO2e/gsf)	Energy Intensity (ekwh/gsf)
5. Fire Stations												
Fire Hall <u>1</u> (Clarence St)	Fire Station	Fire Station	2000	60 Clarence St.	15,556	24/7 Year round	Electricity	201,360.0	201,360.0	42,285.6	2.7	12.9
							Natural Gas	225,475.9	21,473.9	428,404.2	27.5	14.5
Fire Hall <u>2</u> (St. Paul Ave)	Fire Station	Fire Station	1959	311 St. Paul Ave.	3,400	24/7 Year round	Electricity	28,765.0	28,765.0	6,040.7	1.8	8.5
							Natural Gas	77,889.5	7,418.0	147,990.0	43.5	22.9
Fire Hall <u>3</u> (Lynden Rd)	Fire Station	Fire Station	1975	7 Lynden Rd.	5,000	24/7 Year round	Electricity	43,142.0	43,142.0	9,059.8	1.8	8.6
							Natural Gas	105,031.5	10,003.0	199,559.8	39.9	21.0
Fire Hall <u>4</u> (Colborne St)	Joint Use Facility	Fire / Ambulance Station	2006	400 Colborne St.	9,100	24/7 Year round	Electricity	74,424.0	74,424.0	15,629.0	1.7	8.2
							Natural Gas	141,813.7	13,506.1	269,446.1	29.6	15.6
Total by Facility Type	Fire Station							681,663.9	312,161.9	833,340.1	117.3	88.4
	Joint Use Facility							216,237.7	87,930.1	285,075.1	31.3	23.8
Overall Fire Department Totals	All							897,901.6	400,092.0	1,118,415.3	148.6	112.2

Facility Name	Operation	Facility Specific	Year Built	Address	Total Floor Area (Sq. /ft.)	Hours of Operation:	Estimated Hours Open/Used in 2011 (out of 8760 possible hours)	Fuel Type	Equivalent Energy (ekWh/yr)	Energy Purchased in Natural Units (m ³ & kWh)	GHG Emissions (tonnes CO2e/yr)	GHG Intensity (tonnes CO2e/gsf)	Energy Intensity (ekwh/gsf)
6. Police Stations													
Police HQ	Police Station	Police Station	1990	344 Elgin St.	65000	24/7 Year round	8760	Electricity	1,082,880.0	1,082,880.0	227,404.8	3.5	16.7
								Natural Gas	1,944,909.4	185,229.5	3,695,327.8	56.9	29.9
Overall Police Totals	All								3,027,789.4	1,268,109.5	3,922,732.6	60.3	46.6

Facility Name	Operation	Facility Specific	Year Built	Address	Total Floor Area (Sq. /ft.)	Hours of Operation:	Fuel Type	Equivalent Energy (ekWh/yr)	Energy Purchased in Natural Units (m ³ & kWh)	GHG Emissions (tonnes CO2e/yr)	GHG Intensity (tonnes CO2e/gsf)	Energy Intensity (ekwh/gsf)
7. Storage Facilities (Equipment/Vehicles, Fleet, Transit)												
Brantford Airport - Records Building	Airport Storage Facility	Administration and record storage.	1984	175 Aviation Dr.	14000	Mon to Fri- 8:30am-4:30pm	Electricity	12,087.0	12,087	2538.27	0.2	0.9
							Natural Gas	106,976.6	10,188.2	203,255.5	14.5	7.6
Harmony Square Garage	Community Services Storage Facility	Administration and garage.	2008	120 Colborne St.	2500	Mon to Fri- 8:30am-4:30pm, as weekend events dictate	Electricity	4,381.0	4,381.0	920.0	0.4	1.8
							Natural Gas	27,289.3	2,599.0	51,849.7	20.7	10.9
Herbert Street Storage	Community Services Storage Facility	Cemetery operations Facility.	1965	Herbert St.	2700	24/7	Electricity	1,986.0	1,986.0	417.1	0.2	0.7
							Natural Gas	43,899.1	4,180.9	83,408.3	30.9	16.3
Parks Workshop	Community Services Storage Facility	Operations Facility and Administration.	1940	20 Catharine Ave	3900	24/7	Electricity	2,168.0	2,168.0	455.3	0.1	0.6
							Natural Gas	73,314.6	6,982.3	139,297.8	35.7	18.8
Public Works Yard (Earl Ave)	Public Works Storage Facility	Operations Facility and Administration.	1967	100 Earl Ave.	20000	24/7	Electricity	205,813.0	205,813.0	43,220.7	2.2	10.3
							Natural Gas	500,550.0	47,671.4	951,045.0	47.6	25.0
Traffic Services	Public Works Storage Facility	Operations Facility and Administration.	1974	33 Earl Ave.	40000	24/7	Electricity	128,640.0	128,640.0	27,014.4	0.7	3.2
							Natural Gas	390,862.2	37,225.0	742,638.3	18.6	9.8
Transit Garage	Public Works Storage Facility	Administration and garage.	1970	400 Grand River Ave.	66000	Sun-Fri- All day, Sat-12am-1:30pm and 4:00pm to midnight	Electricity	861,671.0	861,671.0	180,950.9	2.7	13.1
							Natural Gas	1,271,532.7	121,098.4	2,415,912.1	36.6	19.3
Transit Terminal	Public Works Storage Facility	Operations Facility and Administration.	1988	64 Darling St.	3600	Mon to Sat 5:30am - 12:30am, Sun - 8:00am - 5:30pm.	Electricity	186,290.0	186,290.0	39,120.9	10.9	51.7

Facility Name	Operation	Facility Specific	Year Built	Address	Total Floor Area (Sq. /ft.)	Hours of Operation:	Fuel Type	Equivalent Energy (ekWh/yr)	Energy Purchased in Natural Units (m ³ & kWh)	GHG Emissions (tonnes CO2e/yr)	GHG Intensity (tonnes CO2e/gsf)	Energy Intensity (ekwh/gsf)
7. Storage Facilities (Equipment/Vehicles, Fleet, Transit)												
Total by Facility Type	Public Works Storage Facility							3,545,358.9	1,588,408.8	4,399,902.3	119.2	132.4
	Community Services Storage Facility							153,038.0	22,297.2	276,348.1	88.0	49.0
	Airport Storage Facility							119,063.6	22,275.2	205,793.8	14.7	8.5
Overall Storage Facilities Totals								3,817,460.6	1,632,981.2	4,882,044.2	221.9	189.9

Facility Name	Operation	Facility Specific	Year Built	Address	Total Megalitres (sewage or water) treated or pumped Annually (ML)	Hours of Operation:	Fuel Type	Equivalent Energy (ekWh/yr)	Energy Purchased in Natural Units (m ³ & kWh)	GHG Emissions (tonnes CO2e/yr)	GHG Intensity (tonnes CO2e/ML)	Energy Intensity (ekwh/ML)
8. Sanitary and Storm Facilities												
1. Empey Street Sanitary Pumping Station	Sewer Network	Waste Water Pumping Station	1965	33 Empey St.	6,089.0	24/7 year round	Electricity	369,900.0	369,900.0	77,679.0	12.8	60.7
2. Woodlawn Road Sanitary Pumping Station	Sewer Network	Waste Water Pumping Station	1975	85 Woodlawn Rd.	141.9	24/7 Year round	Electricity	55,080.0	55,080.0	11,566.8	81.5	388.1
3. Somerset Road Sanitary Pumping Station	Sewer Network	Waste Water Pumping Station	1970	87 Somerset Rd.	307.1	24/7 Year round	Electricity	100,440.0	100,440.0	21,092.4	68.7	327.1
4. Greenwich Street Sanitary Pumping Station	Sewer Network	Waste Water Pumping Station	1970	215 Greenwich St.	2,188.9	24/7 Year round	Electricity	203,640.0	203,640.0	42,764.4	19.5	93.0
5. Fifth Avenue Sanitary Pumping Station	Sewer Network	Waste Water Pumping Station	1965	25 Fifth Ave.	744.9	24/7 Year round	Electricity	92,520.0	92,520.0	19,429.2	26.1	124.2
6. St. Andrew's Drive Sanitary Pumping Station	Sewer Network	Waste Water Pumping Station	2002	119 St. Andrews Dr.	88.3	24/7 Year round	Electricity	32,520.0	32,520.0	6,829.2	77.3	368.2

Facility Name	Operation	Facility Specific	Year Built	Address	Total Megalitres (sewage or water) treated or pumped Annually (ML)	Hours of Operation:	Fuel Type	Equivalent Energy (ekWh/yr)	Energy Purchased in Natural Units (m ³ & kWh)	GHG Emissions (tonnes CO2e/yr)	GHG Intensity (tonnes CO2e/ML)	Energy Intensity (ekwh/ML)
8. Sanitary and Storm Facilities												
7. Lawren S. Harris Sanitary Pumping Station	Sewer Network	Waste Water Pumping Station	2001	8-14 Lawren S. Harris	99.7	24/7 Year round	Electricity	53,648.0	53,648.0	11,266.1	113.0	538.2
8. Hansford Drive Sanitary Pumping Station	Sewer Network	Waste Water Pumping Station	2007	4 Hansford Dr.	52.3	24/7 Year round	Electricity	26,640.0	26,640.0	5,594.4	106.9	509.1
9. Icomm Drive Storm Pumping Station	Sewer Network	Storm Pumping Station	1985	59 Icomm Dr.	895.3	24/7 Year round	Electricity	435,900.0	435,900.0	91,539.0	102.2	486.9
Waste Water Treatment Plant	Sewer Network	Waste Water Treatment Plant	1950	385 Mohawk Rd.	14,528.5	24/7 year round	Electricity	6,751,325.0	6,751,325.0	1,417,778.3	97.6	464.7
							Natural Gas	1,961,302.6	186,790.7	3,726,475.0	256.5	135.0
Total by Sanitary and Storm								10,082,915.6	8,308,403.7	5,432,013.7	962.2	3,495.3

Facility Name	Operation	Facility Specific	Year Built	Address	Total Megalitres (sewage or water) treated or pumped Annually (ML)	Hours of Operation	Fuel Type	Equivalent Energy (ekWh/yr)	Energy Purchased in Natural Units (m ³ & kWh)	GHG Emissions (tonnes CO2e/yr)	GHG Intensity (tonnes CO2e/ML)	Energy Intensity (ekwh/ML)
9. Water Facilities												
Albion Street Pumping Station Booster	Water Distribution	Pumping Station Booster	1960	182 Albion St.	1579.49	24/7 Year round	Electricity	61,600.0	61,600.0	12,936.0	8.2	39.0
Campbell Street Water Pumping Station & Reservoir	Water Distribution	Water Pumping Station & Reservoir	1963	310 Campbell St.	4554.11	24/7 Year round	Electricity	604,175.0	604,175.0	126,876.8	27.9	132.7
							Natural Gas	42,731.2	4,069.6	81,189.3	17.8	9.4
Kraemers Way Water Pumping Station & Reservoir	Water Distribution	Water Pumping Station & Reservoir	2004	5 Kraemers Way.	3180.92	24/7 Year round	Electricity	720,624.0	720,624.0	151,331.0	47.6	226.5
							Natural Gas	300,005.8	28,572.0	570,011.0	179.2	94.3
Tollgate Rd Water Pumping Station & Reservoir	Water Distribution	Water Pumping Station & Reservoir	1990	106 Tollgate Rd.	7348.11	24/7 Year round	Electricity	1,102,019.0	1,102,019.0	231,424.0	31.5	150.0
Water Treatment Plant	Water Distribution	Water Treatment Plant	2011	324 Grand River Ave.	12257.66	24/7 Year round	Electricity	7,585,334.0	7,585,334.0	1,592,920.1	130.0	618.8
							Natural Gas	1,327,965.4	126,472.9	2,523,134.3	205.8	108.3
Total by Facility Type								11,744,454.4	10,232,866.5	5,289,822.6	647.9	1,379.0
Overall Water Facility Total								21,827,370.1	18,541,270.2	10,721,836.3	1,610.1	4,874.3

Operation	Facility Specific	Year Built	Address	Total Floor Area (Sq. /ft.)	Hours of Operation:	Fuel Type	Equivalent Energy (ekWh/yr)	Energy Purchased in Natural Units (m ³ & kWh)	GHG Emissions (tonnes CO2e/yr)	GHG Intensity (tonnes CO2e/gsf)	Energy Intensity (ekwh/gsf)
10. Parking Garages											
Parking Lot / Administrative Offices	Parkade and By-Law office	1985	59 lcomm Dr.	2,500.0	Primary Use Mon-Fri -8am-6pm, Security in place 24/7	Electricity	43,590.0	43,590.0	9,153.9	3.7	17.4
Overall Parking Administration								43,590.0	9,153.9	3.7	17.4