



Finance, Administration and Operations Committee

Tuesday, November 15, 2016, 4:15 pm
City Hall, Council Chambers

Committee Members

Councillor J. Fullarton,
Chair
Councillor J. Baker
Councillor T. Blanchard
Councillor J. Earle
Mayor D. Henderson,
Ex-Officio

Areas of Responsibility:

Clerk's Office	CRCA
Environmental Services	Cemetery
Finance Department	Health Unit
Fire Department	Joint Services
Human Resources Dept.	Committee
Operations Department	PLMG
Airport Commission	Police Services Board
Arena Advisory Board	Safe Communities
Brockville Municipal	Coalition
Accessibility Advisory	St. Lawrence Lodge
Committee (BMAAC)	Management Board
	Volunteer Awards

All legal matters
[excepting the purchase
and sale of land]

Page

AGENDA

DISCLOSURE OF INTEREST

DELEGATION(S) AND PRESENTATION(S)

Nil.

CORRESPONDENCE

Nil.

Finance, Administration and Operations Committee
November 15, 2016

STAFF REPORTS

- 5 - 6 1. 2016-147-11
Request for Transfer of Funds

THAT Council authorizes the transfer of funds in the amount of \$12,444.64 from the Downtown Brockville (D.B.I.A.) Reserve Fund (GL 02-5-191927-6436) to be used as payment for the new Downtown Brockville self-watering hanging planter baskets.
- 7 - 60 2. 2016-142-11
Energy Management Information Systems
Audit Report

THAT Council receive the Energy Management Information Systems Audit report from Energy Performance Services (EPS) for consideration.
- 61 - 62 3. 2016-143-11
Contribution from Parkland Reserve Fund
for Repairs to Hardy Park

THAT Council authorize funding of \$47,634 from the Parkland Reserve Fund for repairs to the Hardy Park play structure.
- 63 - 64 4. 2016-144-11
Renewal of the Cleaning and
Janitorial Services
Contract 2013-2015

THAT the current Cleaning and Janitorial Service Contract with Jani-King for the Victoria Building and Gord Watts Municipal Centre be renewed for an additional 3 year term at a cost of \$63,616.68 plus HST, which represents an increase of 2% effective January 1, 2017, and an annual increase equivalent to the Consumer Price Index for Canada, but not to exceed 2%, for 2018 and 2019.

Finance, Administration and Operations Committee

November 15, 2016

65 - 67 5. 2016-146-11

Henry Street Boat Ramp Replacement
Contract 2016-25

THAT the tender from Cruickshank Construction Ltd. in the amount of forty-nine thousand, eight hundred and sixty-two dollars and forty cents (\$49,862.40), after HST rebate, for Contract 2016-25 - Henry Street Boat Ramp Replacement be accepted; and

THAT the project be funded from the projected surplus to date contained in the 2016 Parkland Equipment Program.

68 - 77 6. 2016-145-11

2016 Interim Variance Report

THAT Council receives the Interim Variance Report as at September 30, 2016 Report No. 2016-145-11, for information purposes.

78 - 79 7. 2016-148-11

Temporary Borrowing By-law

THAT Council hereby authorizes the passing of a Temporary By-Law providing for the Mayor and the Treasurer to borrow temporary working capital, as may be required for the Current Fund Operations, of up to \$5,000,000 for the year 2017; and

THAT the necessary by-law be enacted.

80 - 81 8. 2016-149-11

2017 Interim Tax Levy and Establishment of Due Dates

THAT Council authorize the City to impose its 2017 interim tax levy with a due date of February 28th, 2017; and

THAT Council establish the due date of August 31st, 2017 for the second and final tax levy for 2017; and

THAT the necessary by-law be enacted.

Finance, Administration and Operations Committee
November 15, 2016

- 82 - 83 9. 2016-150-11
Ontario Regulation 284/09
Budget Matters-Expenses

THAT Council adopt this report of expenses excluded from the 2017 Budget as a requirement of Ontario Regulation 284/09 passed under the Municipal Act, 2001.

NEW BUSINESS

Nil.

FAO - CONSENT AGENDA

ADJOURNMENT

THAT the Finance, Administration and Operations Committee adjourn its meeting until the next regular meeting scheduled for December 7, 2016.

November 3, 2016

Report to Finance & Administration Committee –

**2016-147-11
Downtown Brockville (D.B.I.A.)
Request For Transfer Of Funds**

**M. Plooy
Executive Director DBIA**

RECOMMENDATION

THAT Council authorizes the transfer of funds in the amount of \$12,444.64 from the Downtown Brockville (D.B.I.A.) Reserve Fund (GL 02-5-191927-6436) to be used as payment for the new Downtown Brockville self-watering hanging planter baskets.

BACKGROUND

The DBIA Board of Management researched, purchased and tested these self-watering planters in an effort to offset the increasing cost of seasonal watering.

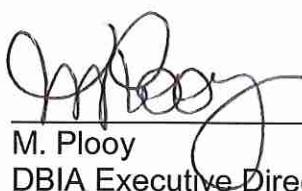
POLICY IMPLICATIONS

Council's approval is required to "transfer funds to" or "transfer funds from" a reserve fund.

FINANCIAL CONSIDERATIONS

There are sufficient monies with the Downtown Brockville (DBIA) Reserve Fund to cover the request.

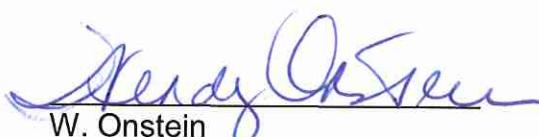
Attachment 1 is the minutes from the October 25th 2016 Downtown Brockville (D.B.I.A.) board meeting.



M. Plooy
DBIA Executive Director



David Dick, CA, CPA
Director of Corporate Services



W. Onstein
Chair DBIA



B. Casselman
City Manager

**Excerpt from the DBIA Board Meeting
October 25th 2016**

Request for funds transfer to purchase self-watering baskets

Attachment 1

7.1 BEAUTIFICATION – Anne Barabash

Anne Barabash put a motion on the floor that \$12,444.64 be taken out of the Reserve Fund to pay the invoice for the self-watering baskets.

After a lengthy discussion the motion was passed. CARRIED

November 3, 2016

REPORT TO FINANCE/ADMINISTRATION/OPERATIONS – NOVEMBER 15, 2016

2016-142-11

**ENERGY MANAGEMENT INFORMATION SYSTEMS
AUDIT RESULTS**

**B. CASSELMAN
CITY MANAGER
D. DICK
DIRECTOR OF
CORPORATE SERVICES
L. WHITE
MANAGER STRATEGIC
INITIATIVES**

RECOMMENDATION:

THAT Council receive the Energy Management Information Systems Audit report from Energy Performance Services (EPS) for consideration.

PURPOSE

To provide Members of Council with the Energy Audit report [Attachment 1] analyzing whether the City should pursue the Embedded Energy Manager funding.

BACKGROUND

In December 2015, Mr. Andrew Hejnar, Energy Manager, 3M Canada was invited by Councillor Deery to provide an overview of the saveONenergy Energy Manager Program as 3M has realized energy savings through this program by hiring a full-time Energy Manager using funds from the program.

The program helps commercial, institutional and industrial hydro customers develop and implement energy conservation measures and programs. There are two incentives available:

Salary Based Incentive:

- Equal to 80% of the Energy Manager's eligible costs
 - Maximum of \$80,000 per 12 month period
- Minimum annual savings requirement is equal to 2,000 MWH
 - 10% of Annual savings target must be attributable to new projects not receiving any other incentives.

Performance Based Incentive:

- Equal to \$40 per MWh of delivered electricity savings
 - Maximum of \$150,000 per 12 month period
- Minimum annual savings requirement equal to 1,000 MWH

Report 2016-142-11

Energy Management Information Systems Audit Results

-
- 10% of Annual savings target must be attributable to new projects not receiving any other incentives.

ANALYSIS

After a thorough analysis of the City's energy usage and systems, EPS has concluded that:

1. "The hiring of a full-time energy manager using funding from HydroOne (SaveONenergy) is not appropriate for the City of Brockville for the following reasons:
 - a. The required savings from the HydroOne program are much too high relative to the total electricity consumption of the City of Brockville;
 - b. The City of Brockville already has excellent personnel managing its Water Treatment, Water Pollution Control and Arena facilities. The barrier to better energy management is not the lack of a centralized energy manager, but rather the lack of the availability of high quality energy management information to better support operational decisions;
2. We do believe that the Water Treatment Plant and Water Pollution Control Centre can achieve additional energy savings through the availability of quality energy management information and the incorporation of said energy management information into operational practices (continued on page 2 of the report).
3. A consideration would be the addition of the HydroOne web interval data service for the Brockville Memorial Centre and Centennial Youth Arena...We recognize however that there may be substantial changes pending for these facilities and this may affect the merit of adding the Hydro One service at this time.

POLICY IMPLICATIONS

There are no policy implications.

FINANCIAL IMPLICATIONS

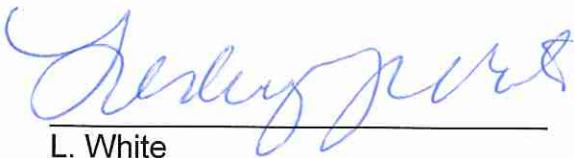
The Audit report was funded by a contribution of \$15,000 Fiscal Policy Reserve and a grant of \$6,000 from saveONenergy.

At this time, staff will evaluate the recommendation to install energy management information systems at either the Water Treatment Plant or Water Pollution Control Centre.

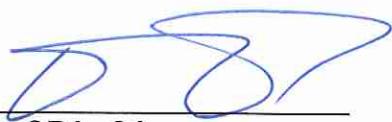
Report 2016-142-11
Energy Management Information Systems Audit Results

CONCLUSIONS

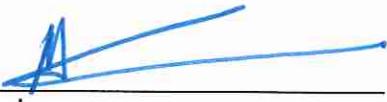
Although it is unfortunate that the report indicates the City would not be eligible for the Energy Manager program funding due to unachievable electricity consumption reduction, it is important to note the City has implemented many cost savings measures already and has a dedicated staff managing energy consumption and costs.



L. White
Manager Strategic Initiatives



D. Dick, CPA, CA
Director of Corporate Services



B. Casselman
City Manager



MAKING ENERGY VISIBLE.™

EMIS Audit Report

City of Brockville – Brockville, ON



November 10, 2016

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1 EXECUTIVE SUMMARY

The City of Brockville spent **\$2,227,865** on energy in 2015. Electricity represents the largest component of energy costs for the City of Brockville and electricity unit prices have been escalating at close to 10% per year during recent years. The City of Brockville has made substantial investments in *energy efficiency projects* over the last many years and is seeking to understand possibilities for further improvement in its energy performance.

EPS has carried out an analysis of energy consumption for the City of Brockville in order to evaluate the possibilities for improvement of energy performance through better energy management. EPS has evaluated the following possibilities for achievement of further energy savings via energy management as follows:

- *Hiring of a full-time energy manager using funds from HydroOne;*
- *Implementation of an improved energy management information system (EMIS) that can be used by existing personnel to incorporate energy management into day to day decision-making;*

Our conclusions are:

1. The hiring of a full-time energy manager using funding from HydroOne is not appropriate for the City of Brockville for the following reasons:
 - a. The required savings from the HydroOne program are much too high relative to the total electricity consumption of the City of Brockville;
 - b. The City of Brockville already has excellent personnel managing its Water Treatment, Water Pollution Control and Arena facilities. The barrier to better energy management is not the lack of a centralized energy manager, but rather the lack of the availability of high quality energy management information to better support operational decisions;

More details regarding this conclusion are found in **Section-3** of the report.

2. We do believe that the Water Treatment Plant (**WTP**) and Water Pollution Control Centre (**WPCC**) can achieve additional energy savings through the availability of quality energy management information and the incorporation of said energy management information into operational practices. The WTP and WPCC facilities are by far the largest energy consumers for the City of Brockville (see *Figure 1, page 5*). Both WTP and WPCC have excellent data historians in place which they use to monitor and control their processes. The integration of electricity energy information directly into these existing data historians would provide management & operating personnel with combined *energy and process* information. The Water Treatment Plant has already demonstrated its ability to convert energy management information into energy savings actions by using the HydroOne interval data web service. It is clear that the existing

facility managers are quite capable and willing to improve their energy use when provided with quality energy management information. An improved EMIS for these facilities is recommended.

3. A consideration would be the addition of the HydroOne web interval data service for the Brockville Memorial Centre and Centennial Youth Arena. The availability of daily electricity consumption data could enable better operational decisions regarding energy. We recognize however that there may be substantial changes pending for these facilities and this may affect the merit of adding the HydroOne service at this time. This requires further discussion. We have therefore excluded costs and savings for this option from our analysis.

We have estimated an annual energy savings from the systematic management of energy using EMIS at for the Water Treatment Plant and Water Pollution Control Centre at **\$32,639** per year. This represents a **2.6%** reduction in total electricity consumption. Further details on the energy consumption for the WTP and WPCC are found in **Section-2** of this report. Details on the estimated energy savings are found in **Section-5** of the report.

We have estimated an implementation cost for EMIS for WTP and WPCC of **\$83,574**. Further details on the cost estimate are found in **Section-6** of the report.

The projected cashflow for the recommended EMIS upgrade is provided below.

Table 1. Cash flow for project cost and potential savings.

	Year-1	Year-2	Year-3	Year-4	Year-5	Total
EMIS Implementation cost	-\$83,574					
Potential Energy Savings	\$32,639					
% of energy savings potential by year (assuming 10% escalation rate)	33%	66%	100%	100%	100%	
Energy Savings by year	\$10,771	\$23,935	\$35,903	\$39,493	\$43,442	\$153,543
Net cash flow annual	-\$72,804	\$23,935	\$35,903	\$39,493	\$43,442	\$69,969
Net cash flow cumulative	-\$72,804	-\$48,868	-\$12,966	\$26,527	\$69,969	

We wish to thank the personnel from the City of Brockville who helped us in gathering the information we used in producing this report.

2 ENERGY REVIEW

This section provides an overview of energy for the City of Brockville facilities in order to:

- define the costs of energy;
- understand the distribution of energy use between different types of facilities
- understand consumption and peak electricity patterns;
- develop statistical regression models that characterize the relationship between energy and relevant variables affecting energy;
- understand energy performance through statistical models in order to understand the ***fixed*** and ***variable*** energy contributions;

The following sections summarize this analysis.

2.1 Energy Analysis

2.1.1 Overview of City of Brockville Energy Use

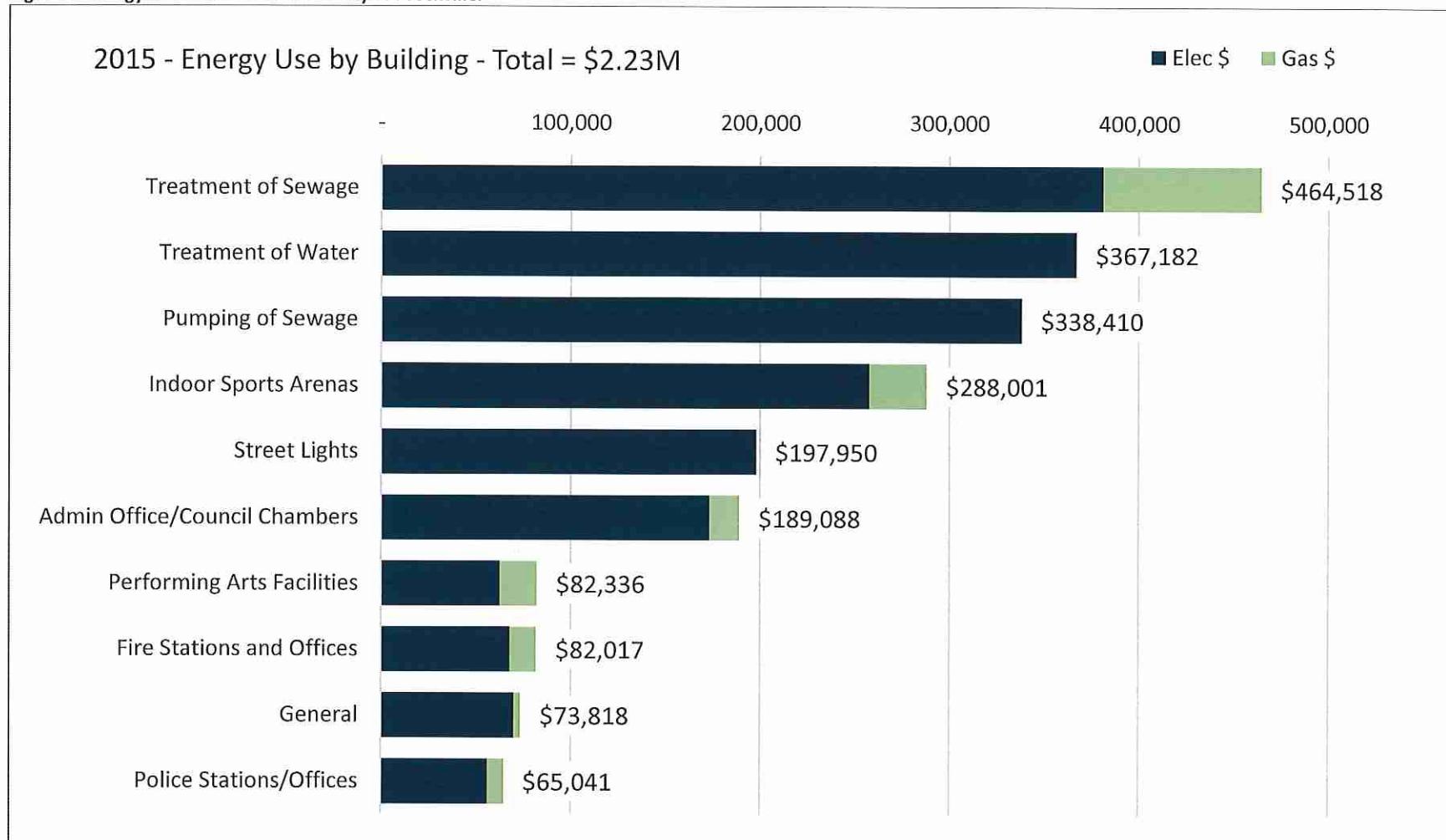
In 2015, the City of Brockville spent **\$2,227,865** on energy, of which 92% was on electricity and 8% on natural gas. The energy consumption and cost for this period is shown on the table below.

Table 2. Total energy consumption and costs for 2015.

Energy Type	Units	Consumption	Unit Price	Total Cost
Electricity	kWh	11,590,095	\$0.177	\$2,047,419
Natural Gas	m ³	527,341	\$0.342	\$180,446
Total				\$2,227,865

The picture below was constructed using billing data extracted from Facility Dude for electricity costs and from a summary spreadsheet of natural gas costs provided by the City of Brockville in order to illustrate the breakdown of energy costs by use in the City of Brockville's facilities.

Figure 1. Energy use distribution at the City of Brockville.



Based on the breakdown of energy use by facility illustrated in Figure 1 above, 50% of the electricity consumption for the City of Brockville is concentrated in the Water Pollution Control Centre, Water Treatment Centre and two Arenas. Based on discussions with the City of Brockville, the possible opportunities for the organization to manage and control energy operationally are in these four facilities. Our analysis regarding energy management potential has therefore concentrated in the facilities listed below:

- Water Treatment Plant
- Water Pollution Control Centre
- Brockville Memorial Centre
- Centennial Youth Arena

2.1.2 Water Treatment Plant

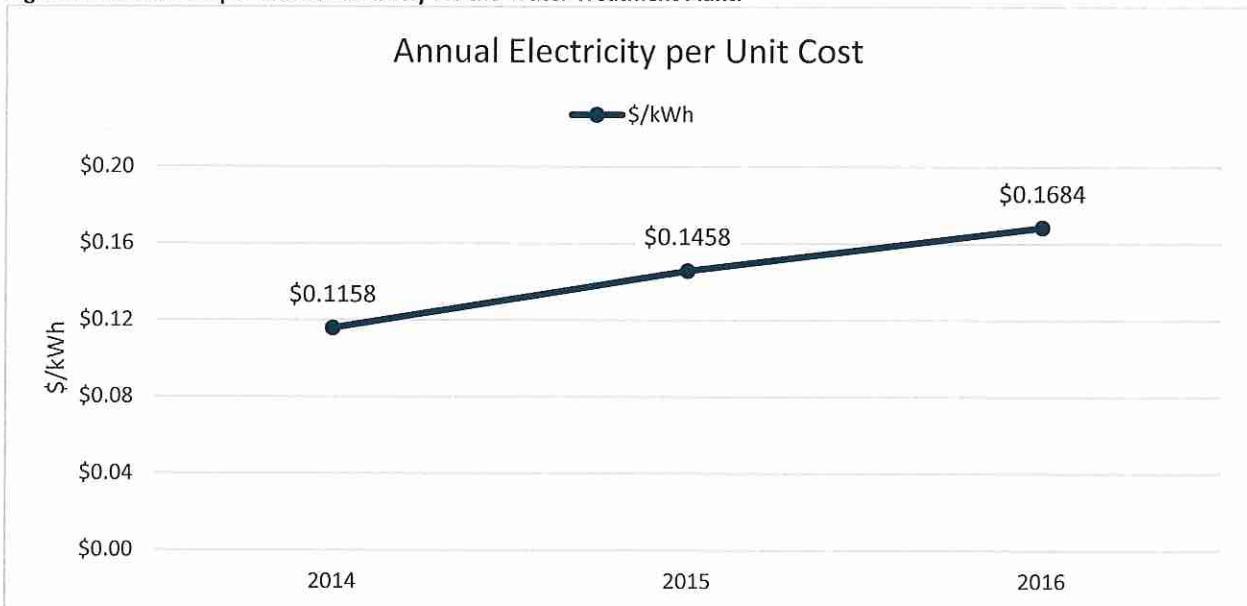
In 2015, the Water Treatment Plant spent **\$272,231** on electricity. The energy consumption and cost for this period is shown on the table below.

Table 3. Total energy consumption and costs for 2015.

Energy Type	Units	Consumption	Unit Price	Total Cost
Electricity	kWh	1,866,895	\$0.146	\$272,231
Total				\$272,231

Figure 2 below shows the trend on the blended per unit rate for electricity for the Water Treatment Plant for 2014-2016. The increase in the per unit cost of electricity from 2014 to 2016 is 37%.

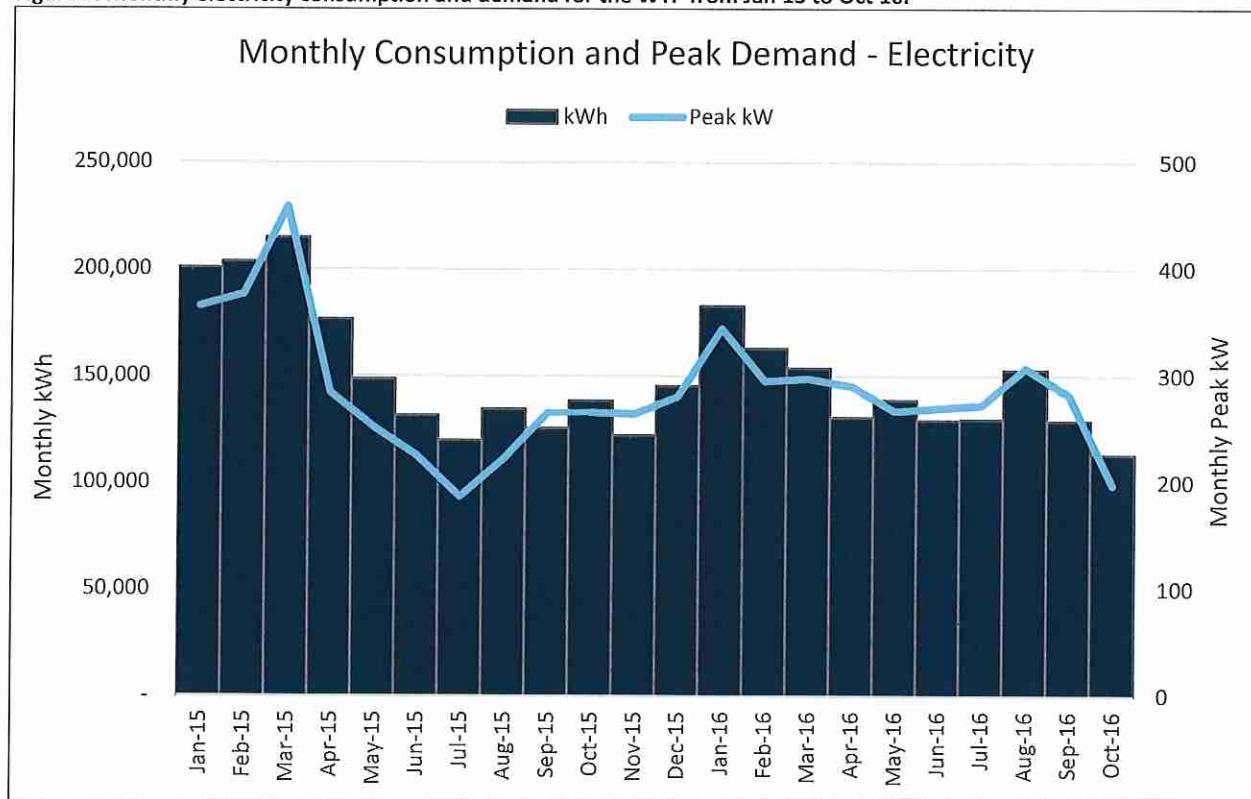
Figure 2. Annual cost per unit of electricity for the Water Treatment Plant.



2.1.2.1 Electricity

The average consumption per month for the period of January 2015 to October 2016 on the chart below is 149,316 kWh. The minimum consumption per month is in October 2016 at 113,108 kWh and the maximum consumption per month is in March 2015 at 214,877 kWh. We can observe a seasonal effect on the electricity consumption, where the consumption is higher during the heating season (November to March).

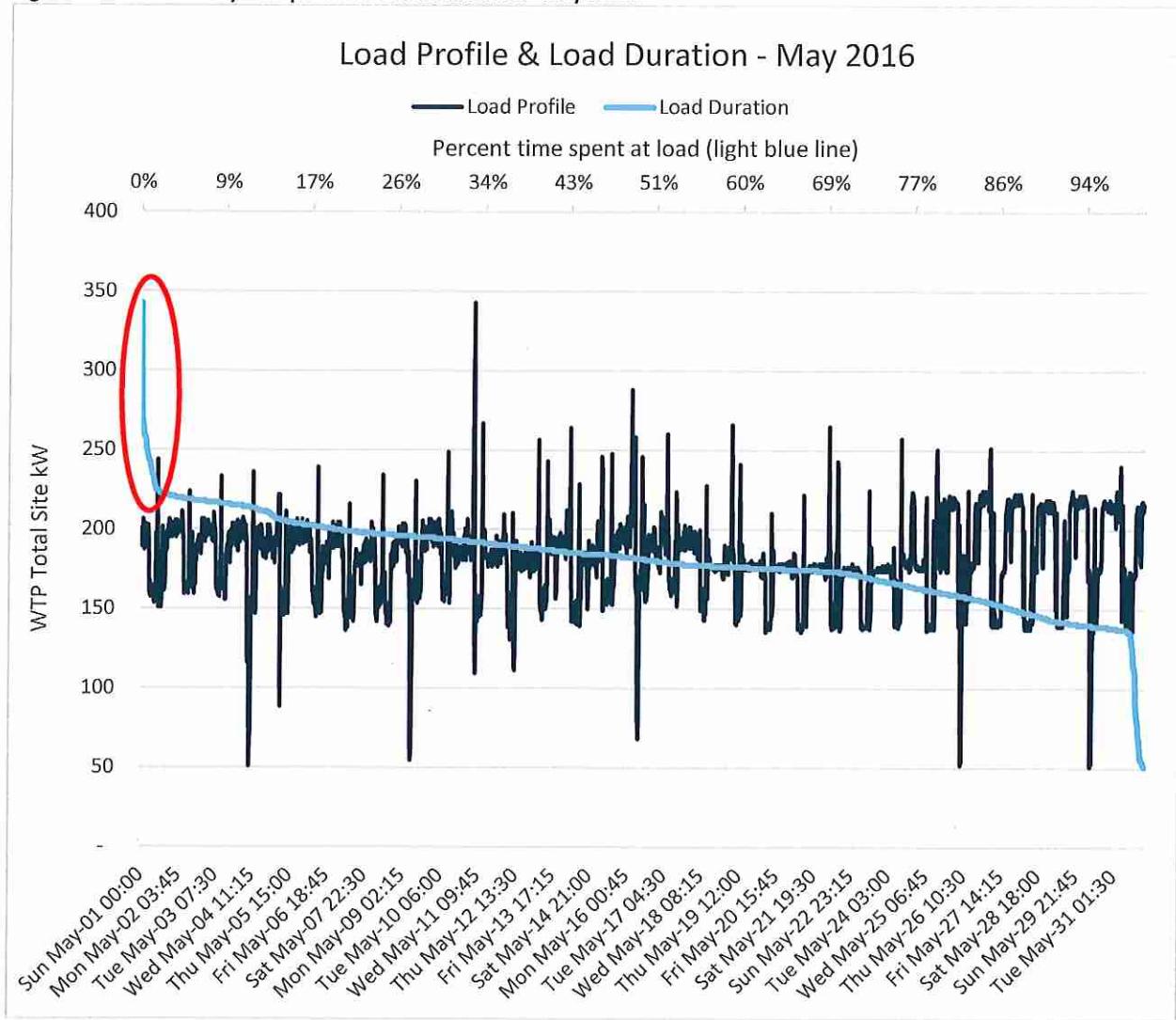
Figure 3. Monthly electricity consumption and demand for the WTP from Jan'15 to Oct'16.



The average monthly peak demand for the period on the chart is 285 kW. The minimum peak demand of 187 kW took place in July 2015. The maximum peak demand of 459 kW occurred in March 2015. We can observe a seasonal effect on the monthly peak demand, where the demand is higher in the heating season (November to March). Using the 15 min interval data available from the billing meter, we analyzed in more detail the load profile for May 2016.

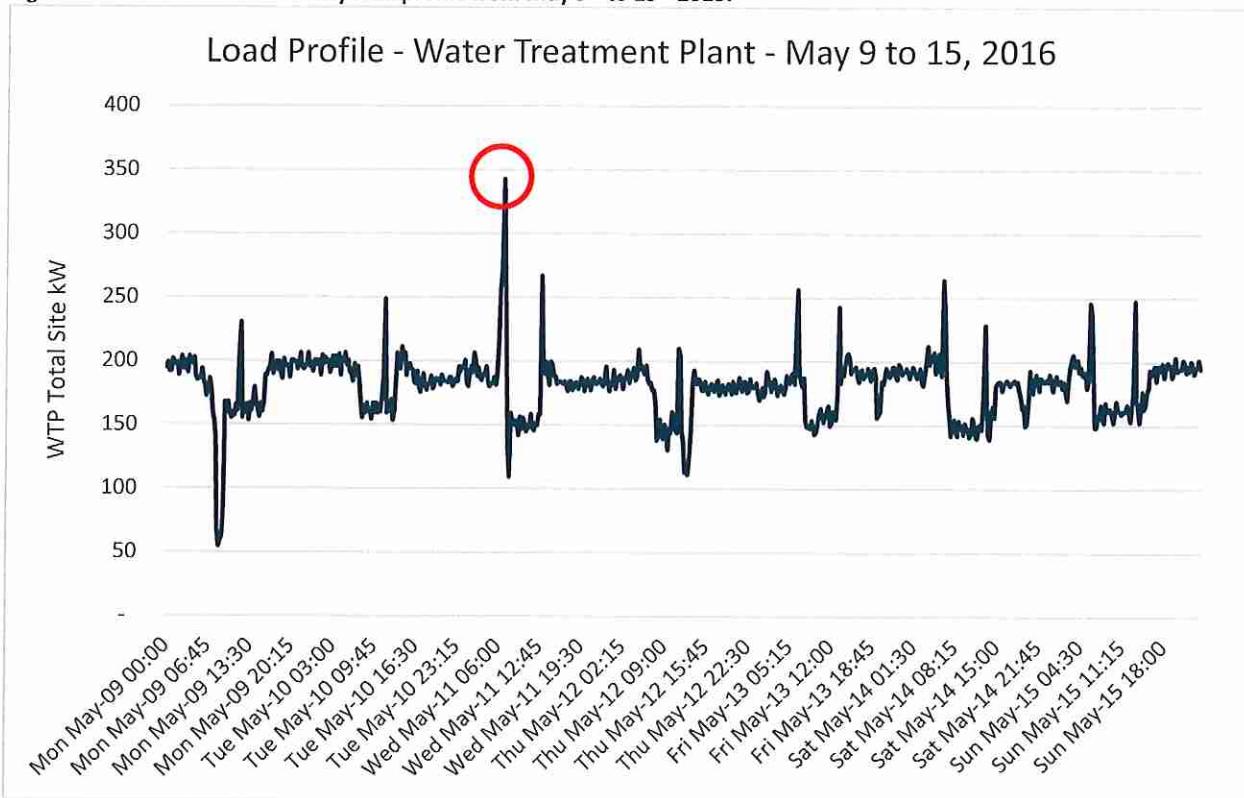
Figure 4 below shows the load profile for the month of May 2016, including also the load duration curve. The load duration curve is the light blue line and is used to determine what percentage of time the facility spends at a given load level. For example, in May, the facility was drawing at least 200 kW 20% of the time. The load duration curve can help to identify opportunities for peak management. There is a sharp increase in slope on the load duration curve in between 0% to 1% of the time. This means that for very short periods, the facility peak increases significantly. This can indicate a potential for peak demand control. The potential opportunity for peak demand control for this period is 104 kW (shown circled in red). This similar pattern is observed throughout 2015 and 2016 (with varying quantity of opportunity each month).

Figure 4. WTP electricity load profile and load duration - May 2016.



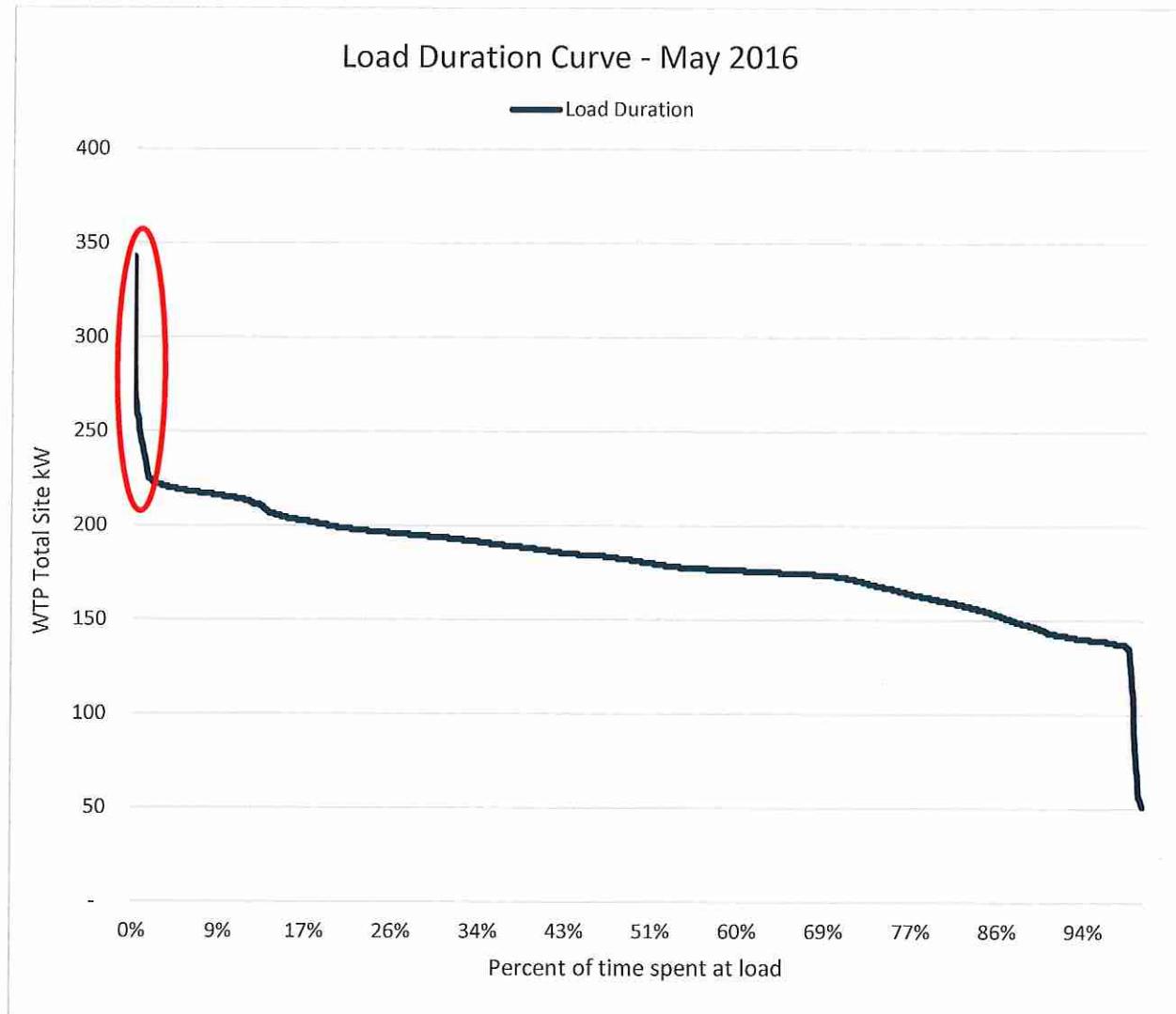
Using the 15min interval data, we were able to determine that the May peak event happened on May 11th at 6:45am. Figure 5 below shows the load profile for the week of May 9th to 15th. The peak demand event for May is shown in the red circle. On May 11th, the facility demand increases rapidly from 181 kW to the monthly peak demand of 343 kW. Having a better resolution into what equipment is driving the peak as well as a control process when approaching peak demand conditions could reduce the impact of the peak demand on electricity cost.

Figure 5. WTP Total site electricity load profile from May 9th to 15th 2015.



The peak demand potential savings are calculated by analyzing the load duration curve shown below. It is anticipated that with an operational peak control process, the facility would be able to reduce the kilowatts where it spends 0 to 1% of its time. This would have the effect of reducing the "spike" shown in the red circle. For May 2015, the reduction would be of approximately 104 kW. The same methodology was used to estimate the peak reduction potential from November 2015 to October 2016. The details are provided on the following page.

Figure 6. Load duration curve for May 2016.

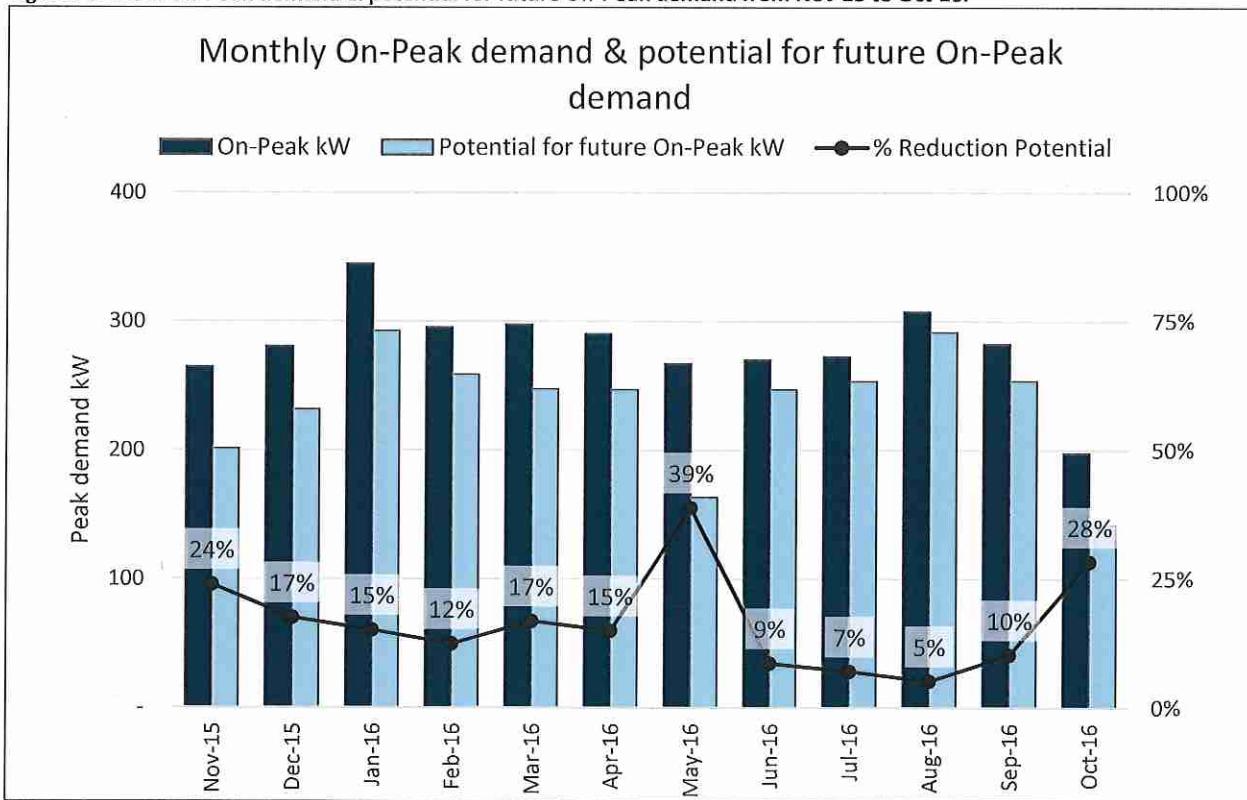


The peak opportunities for On-Peak hours from November 2015 to October 2016 are presented in Table 4 below. The monthly actual On-Peak demand and the potential for future On-Peak demand are presented in Figure 7.

Table 4. Monthly peak opportunity from Nov'15 to Oct'15.

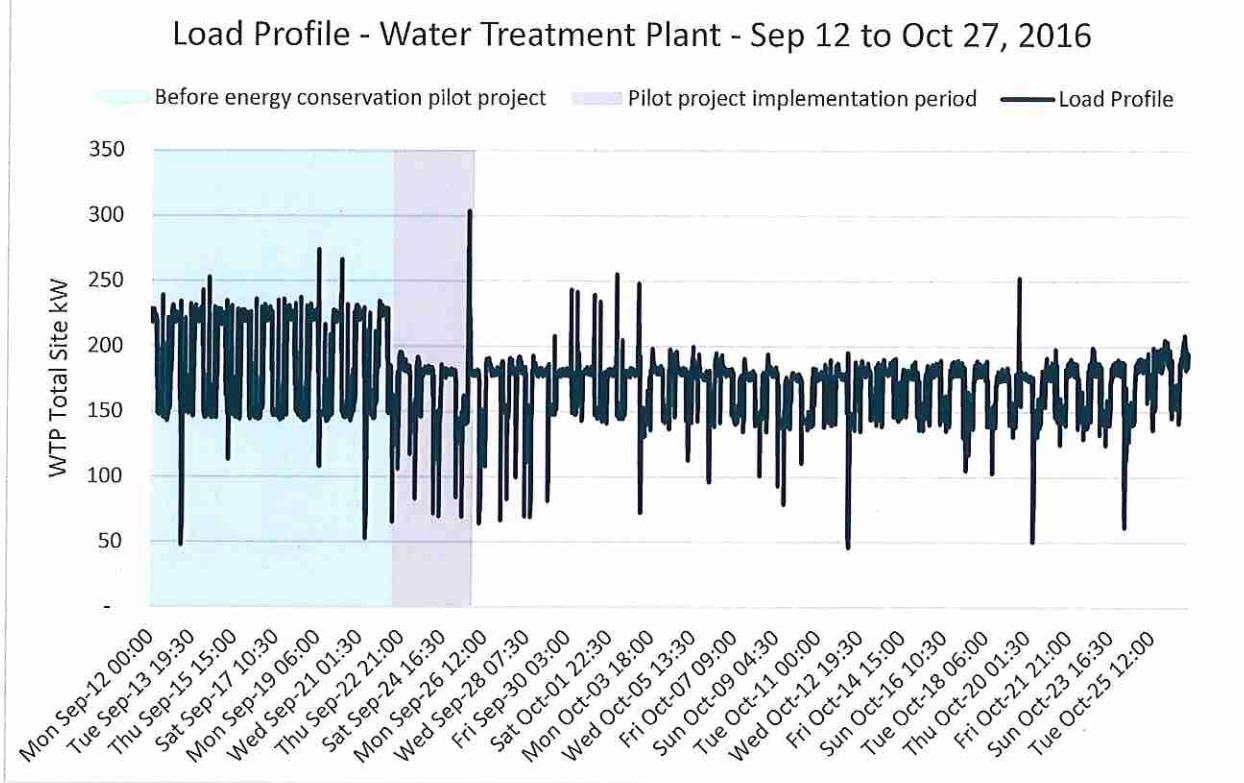
Month	Actual Peak kW	Potential for Reduction kW	% Reduction Potential	Potential Future Peak kW
November 2015	265	63	24%	225
December 2015	281	49	17%	232
January 2016	344	52	15%	293
February 2016	295	36	12%	259
March 2016	298	50	17%	248
April 2016	290	43	15%	247
May 2016	267	104	39%	163
June 2016	270	23	9%	247
July 2016	273	19	7%	254
August 2016	307	16	5%	292
September 2016	282	29	10%	254
October 2016	198	56	28%	142

Figure 7. Actual On-Peak demand & potential for future On-Peak demand from Nov'15 to Oct'16.



Beginning September 22nd, an energy conservation pilot project was implemented at the Water Treatment Plant to reduce their weekly peak demand and consumption by shutting down high lift pumps during backwashes. This pilot project resulted in a maximum peak demand reduction of 43% (from 303 kW to 195 kW), and a weekly electricity consumption reduction of 7% (from 30,000 kWh to 28,000 kWh).

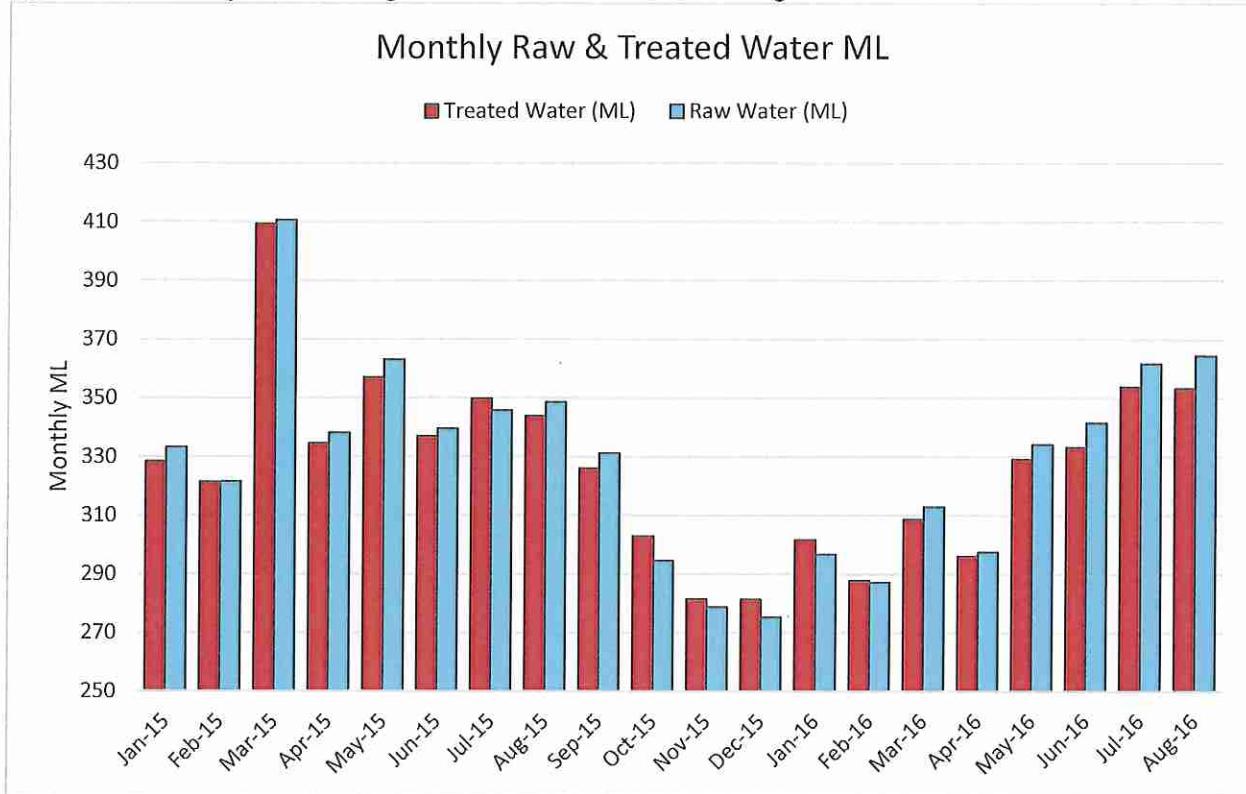
Figure 8. WTP Total site electricity load profile from September 12th to October 27th 2016.



2.1.2.2 Water

The average water usage per month for the period on the chart below is 329 ML. The minimum water usage is in December 2015 at 275 ML and the maximum water usage is in March 2015 at 411 ML.

Figure 9. WTP Monthly raw water usage and treated water from Jan'15 to Aug'16.



The average treated water per month is 327 ML. The minimum treated water usage is in December 2015 at 281 ML and the maximum treated water is in March 2015 at 409 ML.

2.1.3 Water Pollution Control Centre

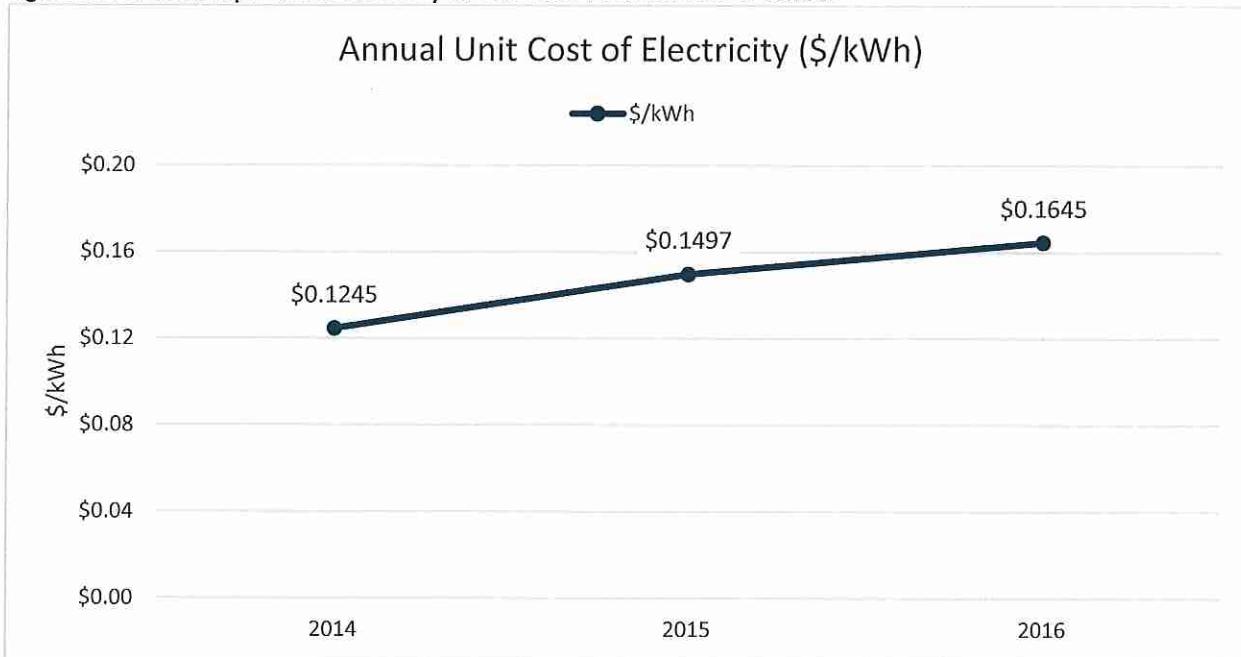
In 2015, the Water Pollution Control Centre facility spent **\$463,972** on energy, of which 82% was on electricity and 18% on natural gas. The energy cost for 2015 is shown on the table below.

Table 5. Total energy costs in 2015.

Energy Type	Units	Consumption	Unit Price	Total Cost
Electricity	kWh	2,541,696	\$0.150	\$380,543
Natural Gas	m ³	231,722	\$0.360	\$83,429
Total				\$463,972

Figure 10 below shows the trend on the blended per unit rate for electricity for the Water Pollution Control Centre for 2014-2016. The increase in the per unit cost of electricity from 2014 to 2016 is 28%.

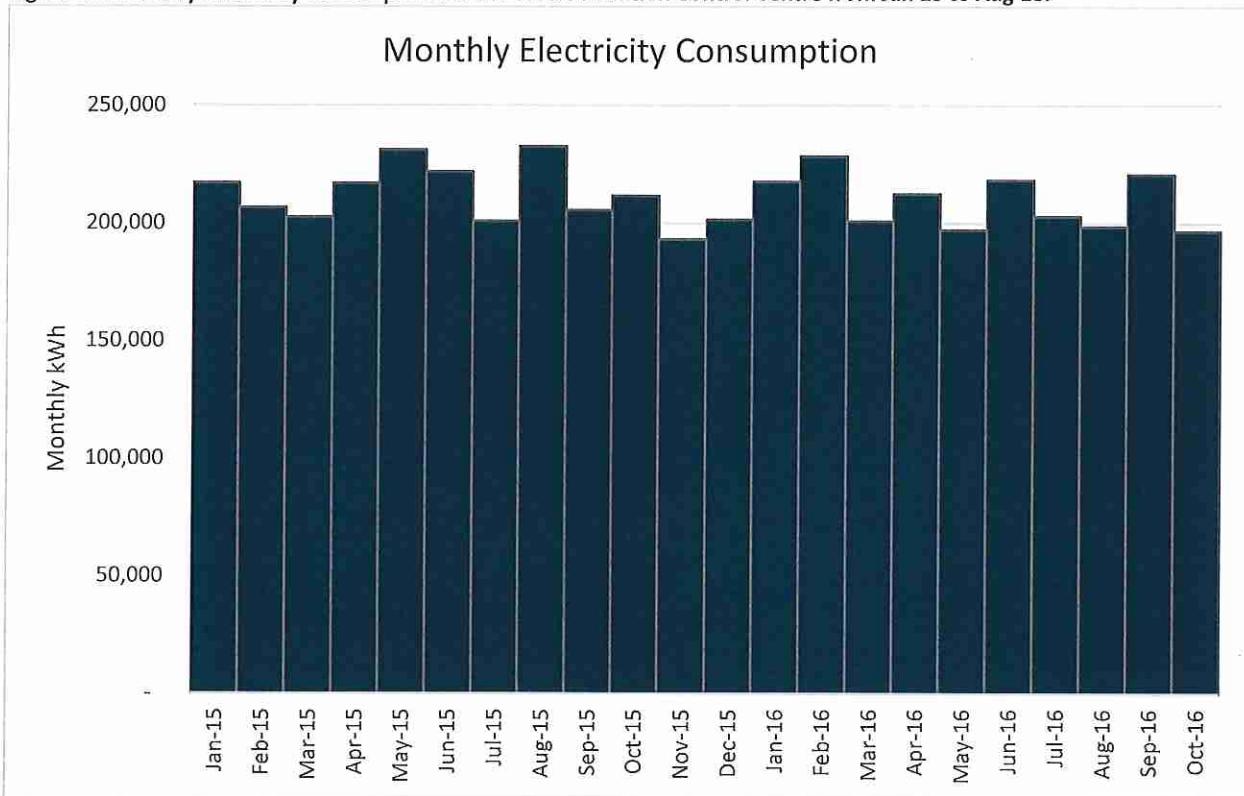
Figure 10. Annual cost per unit of electricity for the Water Pollution Control Centre.



2.1.3.1 Electricity

The annual expenditure in 2015 for the Water Pollution Control Centre on electricity was **\$380,543**. The average consumption per month for the period on the chart below is 210,456 kWh. The minimum consumption per month is in November 2015 at 193,138 kWh and the maximum consumption per month is in August 2015 at 232,654 kWh. The monthly electricity consumption is relatively constant at or near 210,000 kWh, with some slight variability.

Figure 11. Monthly electricity consumption for the Water Pollution Control Centre from Jan'15 to Aug'16.

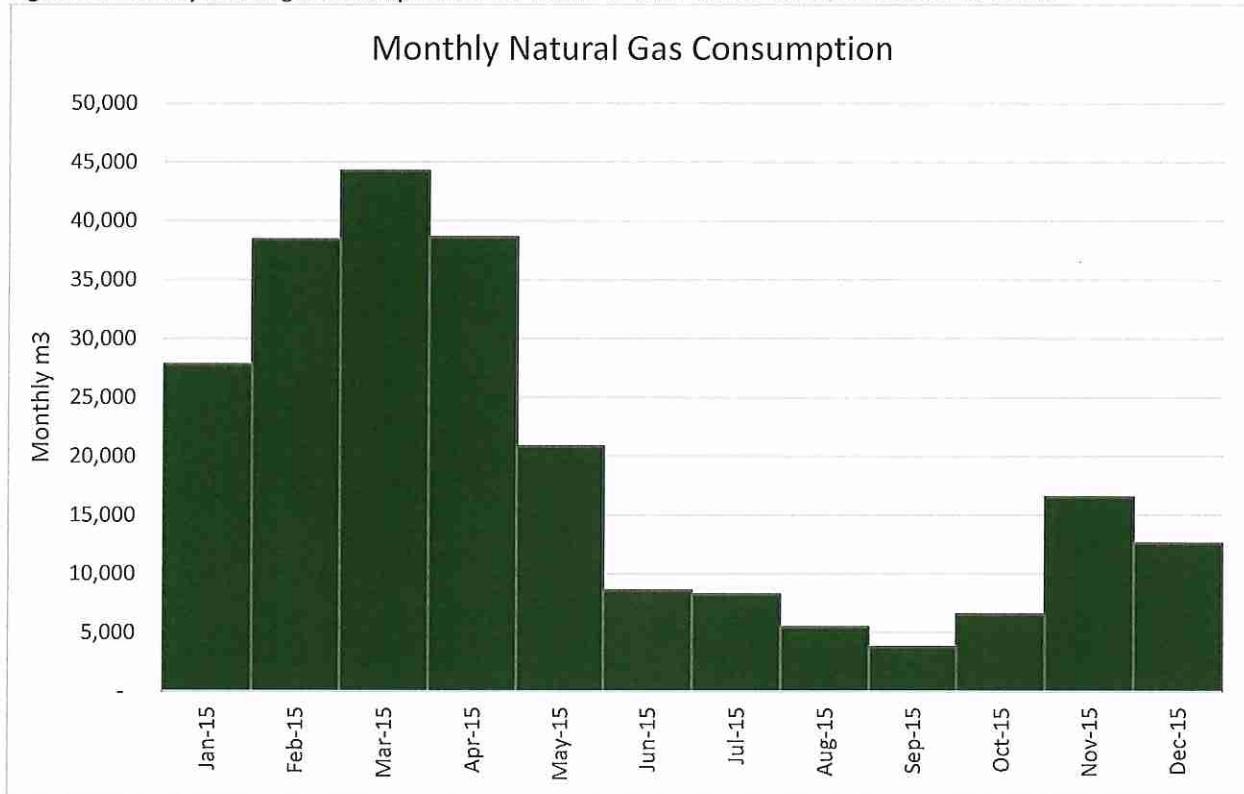


There is presently not a meter for the Water Pollution Control Centre that enables the storage and analysis of 15-minute interval data. We have consequently not been able to carry out an analysis of the peak patterns for this facility.

2.1.3.2 Natural gas

The annual expenditure in 2015 on natural gas was **\$83,429**. It represents 18% of the total energy costs at the Water Pollution Control Centre. The average consumption per month is 19,310 m³. The minimum consumption per month is in September 2015 at 3,792 m³ and the maximum consumption per month is in March 2015 at 44,247 m³.

Figure 12. Monthly natural gas consumption for the Water Pollution Control Centre from Jan'15 to Dec'15.



EPS has focused its analysis on electrical savings for the Water Pollution Control Centre due to the small relative cost of natural gas.

2.1.4 Brockville Memorial Centre

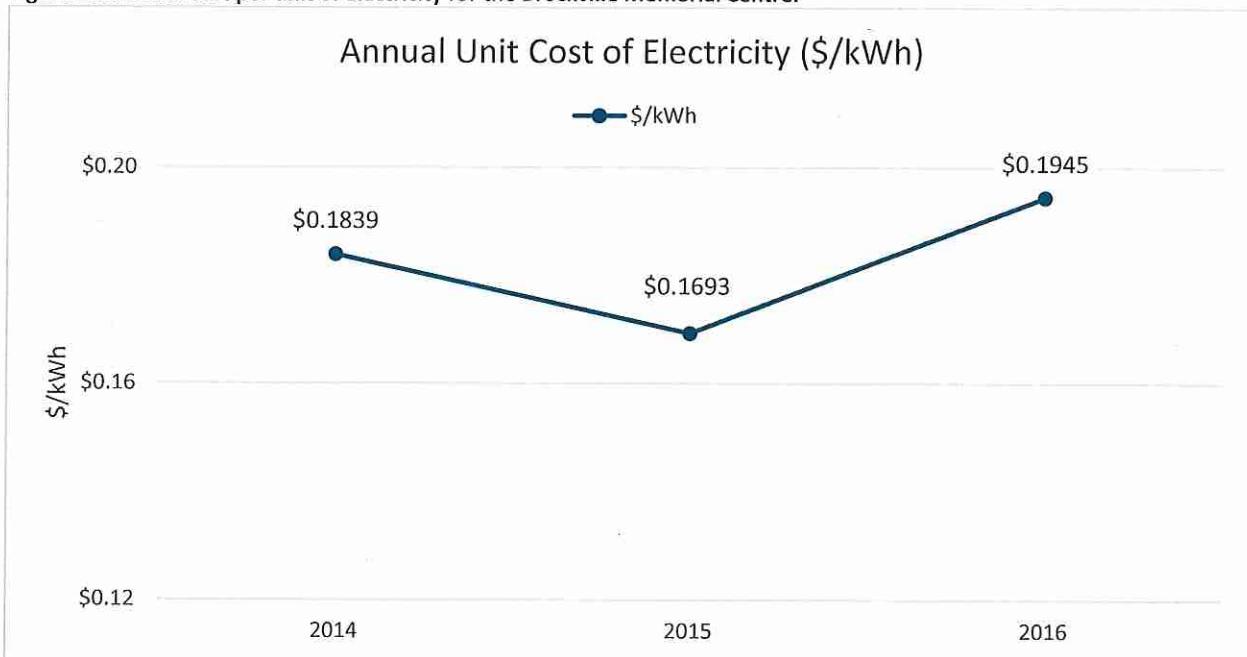
In 2015, the facility spent **\$179,133** on energy, of which 86% was on electricity and 14% on natural gas. The energy cost for 2015 is shown on the table below.

Table 6. Total energy costs in 2015.

Energy Type	Units	Consumption	Unit Price	Total Cost
Electricity	kWh	913,320	\$0.169	\$154,620
Natural Gas	m ³	81,259	\$0.302	\$24,513
Total				\$179,133

Figure 13 below shows the trend on the blended per unit rate for electricity for the Brockville Memorial Centre for 2014-2016.

Figure 13. Annual cost per unit of electricity for the Brockville Memorial Centre.

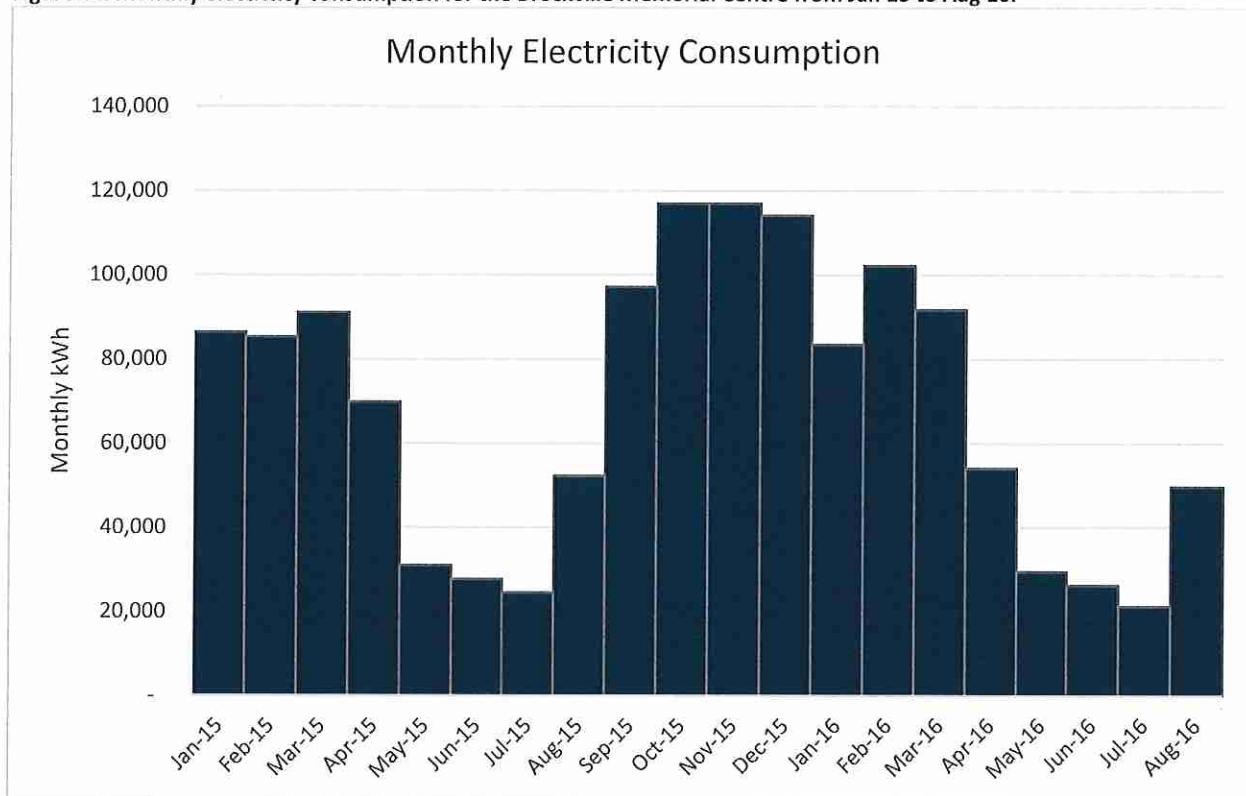


The above chart shows electricity prices increasing from 2014 to 2016. The increase in the per unit cost of electricity from 2014 to 2016 is 6%.

2.1.4.1 Electricity

The annual expenditure in 2015 on electricity was \$154,620. The average consumption per month for the period on the chart below is 70,838 kWh. The minimum consumption per month is in July 2016 at 21,240 kWh and the maximum consumption per month is in October 2015 at 117,000 kWh. We can observe a seasonal effect on the electricity consumption, where the consumption is higher during the months in which the ice rink is operational (September to April).

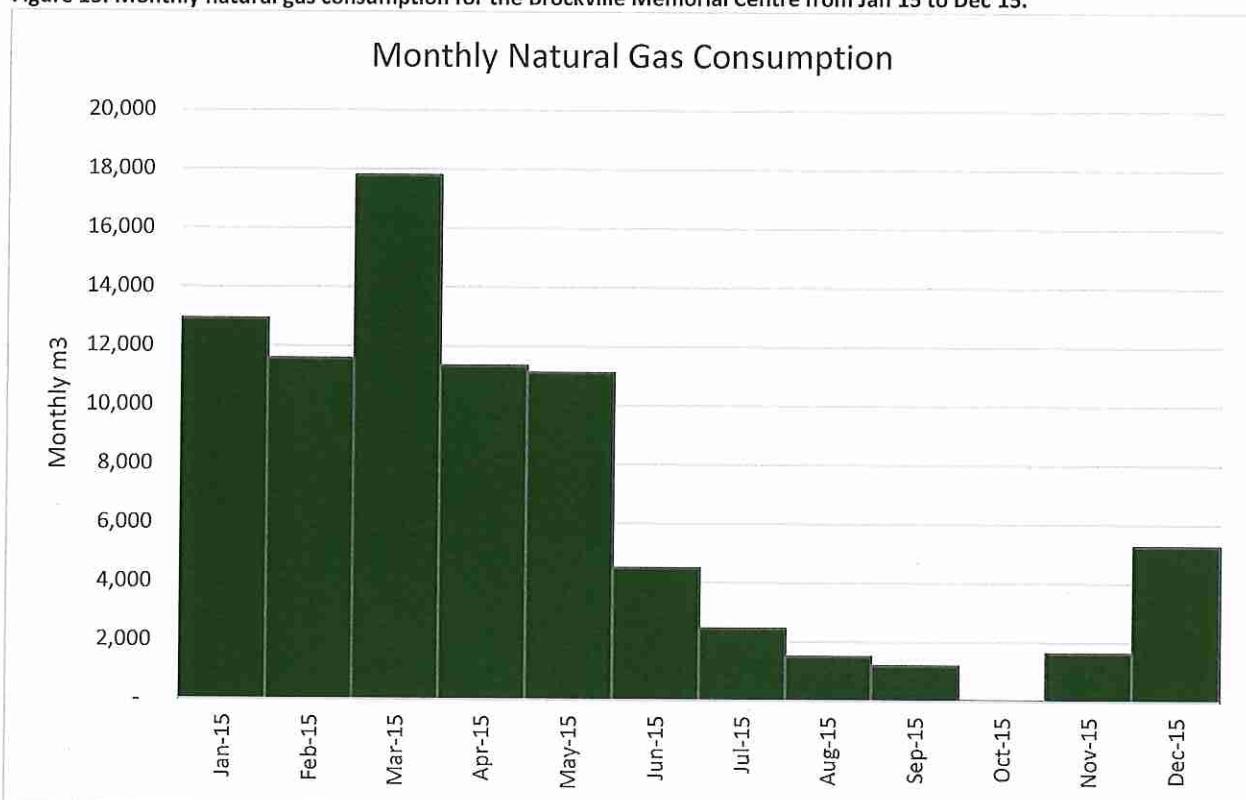
Figure 14. Monthly electricity consumption for the Brockville Memorial Centre from Jan'15 to Aug'16.



2.1.4.2 Natural gas

The annual expenditure in 2015 on natural gas was \$24,513. It represents 14% of the total energy costs. The average consumption per month is 6,772 m³. The minimum consumption per month is in October 2015 at 14 m³ and the maximum consumption per month is in March 2015 at 17,790 m³.

Figure 15. Monthly natural gas consumption for the Brockville Memorial Centre from Jan'15 to Dec'15.



2.1.5 Centennial Youth Arena

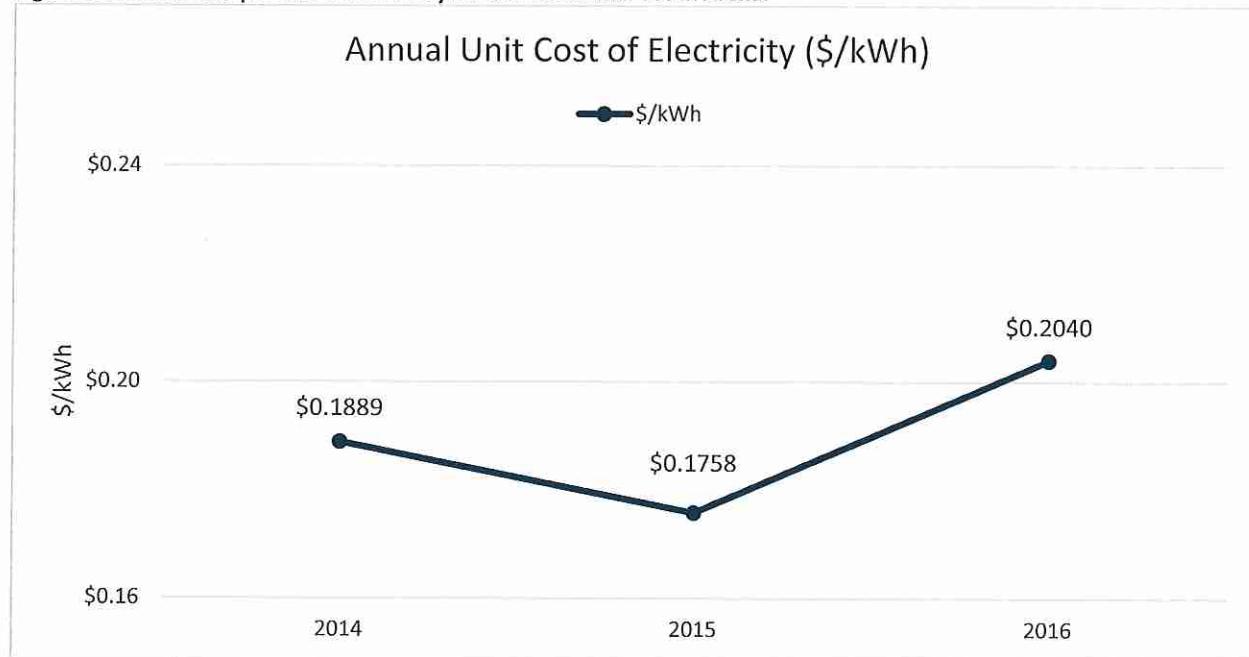
In 2015, the facility spent **\$97,073** on energy, of which 94% was on electricity and 6% on natural gas. The energy cost for 2015 is shown on the table below.

Table 7. Total energy costs in 2015.

Energy Type	Units	Consumption	Unit Price	Total Cost
Electricity	kWh	518,880	\$0.176	\$91,218
Natural Gas	m³	17,466	\$0.335	\$5,855
Total				\$97,073

Figure 16 below shows the trend on the blended per unit rate for electricity for the Centennial Youth Arena for 2014-2016.

Figure 16. Annual cost per unit of electricity for the Centennial Youth Arena.

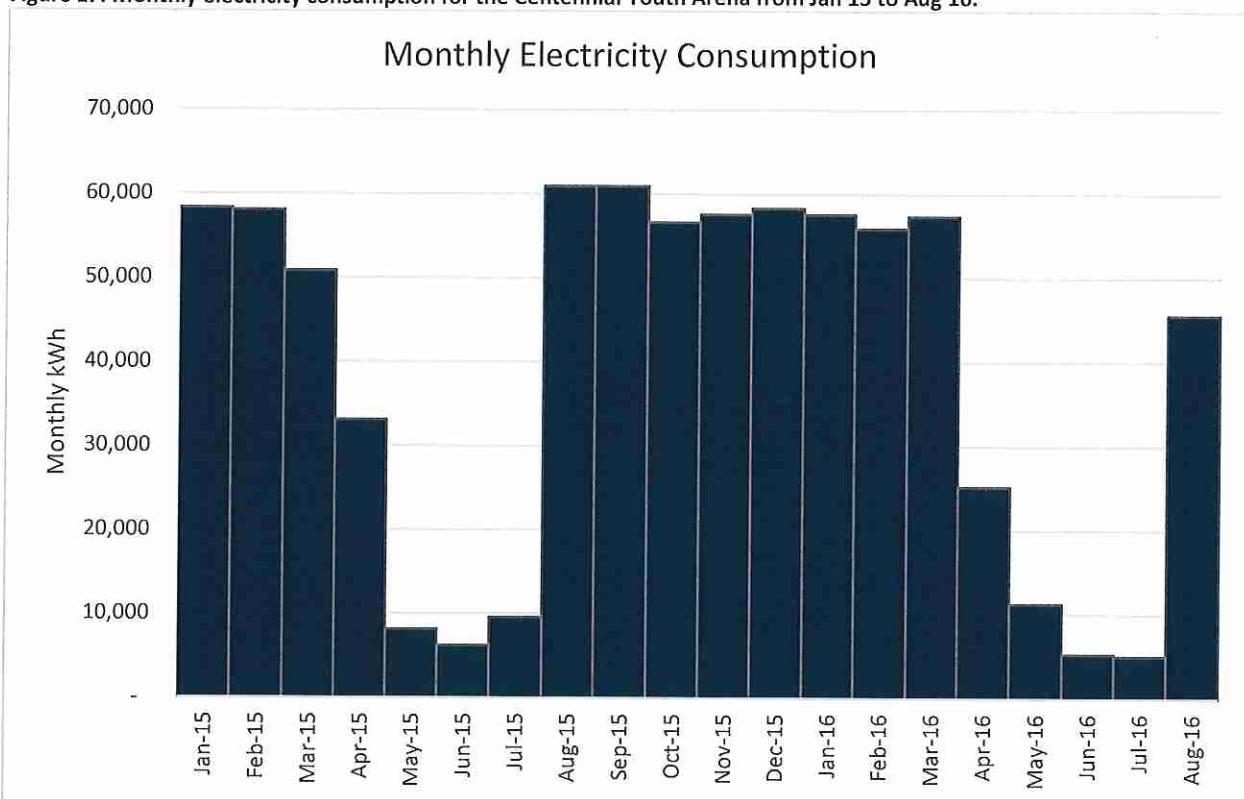


The above chart shows electricity prices increasing from 2014 to 2016. The increase in the per unit cost of electricity from 2014 to 2016 is 8%.

2.1.5.1 Electricity

The annual expenditure in 2015 on electricity was \$91,218. The average consumption per month for the period on the chart below is 40,789 kWh. The minimum consumption per month is in July 2016 at 5,040 kWh and the maximum consumption per month is in October 2015 at 60,960 kWh. We can observe a seasonal effect on the electricity consumption, where the consumption is higher during the months in which the ice rink is operational (September to April).

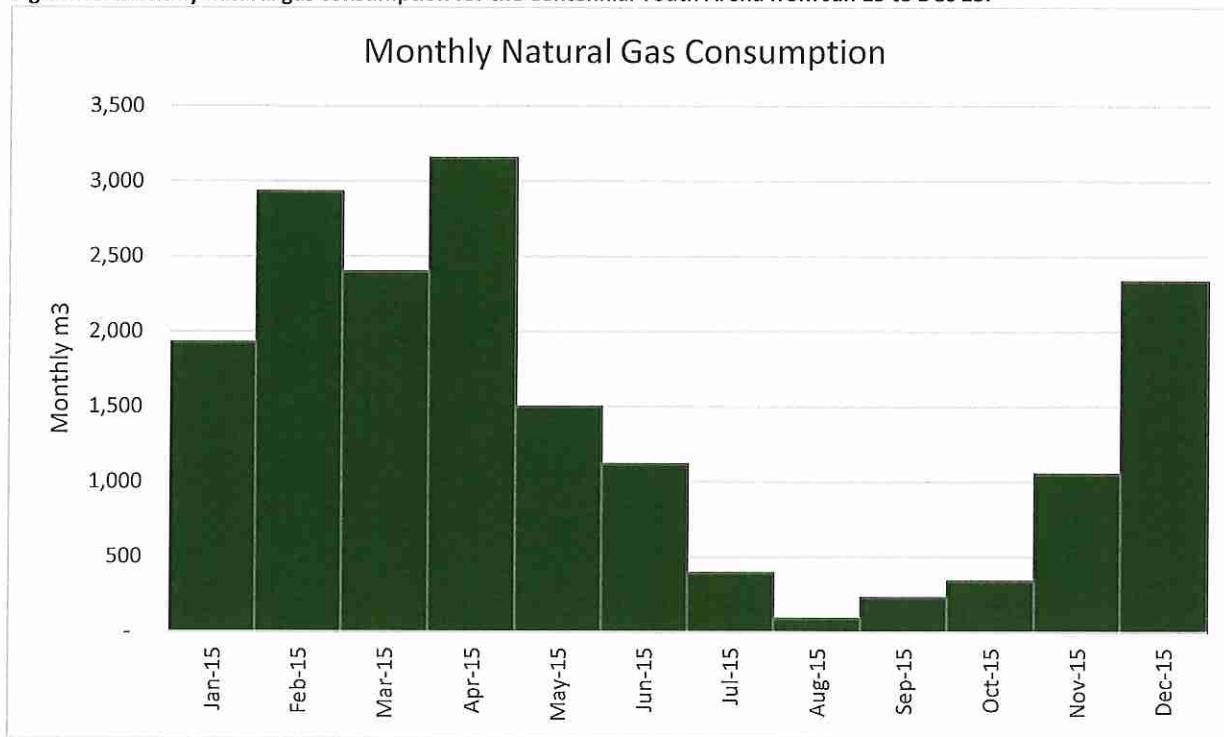
Figure 17. Monthly electricity consumption for the Centennial Youth Arena from Jan'15 to Aug'16.



2.1.5.2 Natural gas

The annual expenditure in 2015 on natural gas was \$5,855. It represents 6% of the total energy costs. The average consumption per month is 1,456 m³. The minimum consumption per month is in August 2015 at 89 m³ and the maximum consumption per month is in April 2015 at 3,155 m³.

Figure 18. Monthly natural gas consumption for the Centennial Youth Arena from Jan'15 to Dec'15.



2.2 Energy Models

In order to generate insights into the energy performance at the City of Brockville, we have built multi-variate linear regression models that characterize the relationships between energy and the variables (processed water, operation schedules, outside temperature, etc.) The models presented in this report meet the criteria of a baseline model as defined in “International Performance Measurement & Verification Protocol January 2012”. In order to qualify as an acceptable energy baseline model, IPMVP states that the models must meet the following (Section B-2 – Modeling):

- i. All variables in the model must have a t-stat greater than 2.0.
- ii. The R^2 for the regression must be at least 0.75.

The following energy models are presented in this report.

- Water Treatment Plant – Electricity
- Brockville Memorial Centre – Electricity
- Centennial Youth Arena – Electricity

Electricity interval data at the Water Pollution Control Centre was unavailable at the time of this analysis and the outdoor air temperature did not meet the statistical requirements for inclusion in the regression model.

2.2.1 Water Treatment Plant

2.2.1.1 Electricity model

The electricity consumption at the City of Brockville's Water Treatment Plant was analyzed using a multi-variate linear regression model using facility energy and process information. The regression analysis provides insight into what is driving electricity consumption at the Water Treatment Plant. A multi-variate linear regression was calculated using the daily electricity consumption against daily treated water values. The treated water values are the daily treated water flow data (in MLD) obtained from the City of Brockville.

The period from May 27th 2015 to June 19th 2016 provided the best results for the regression model and was used for deriving the results discussed in this report. The coefficient of determination (R^2) for this model is 0.79 which means the model is very good at explaining the variations in the daily electricity consumption and meets the baseline requirements as set forth by IPMVP. Table 8 shows the detailed model statistics from the regression model.

The resulting regression equation is

$$\begin{aligned} \text{kWh / Day} = & 2,399.18 + 163.47 * 05 \text{ Treated H2O Total Flow (Inline Instrument) MLD} \\ & + 65.62 * \text{Heating degree-days - } 16^\circ\text{C} +/ - 480.88 \text{ with 95% confidence} \end{aligned}$$

When evaluating the above regression equation, the actual daily electricity consumption will be the resulting value of the equation plus or minus 480.88 (this is the error term) with 95% confidence.

Figure 19 on the following page provides a visual representation of the actual daily consumption and the contribution from each variable to the model equation. From this chart, we can observe that the largest contributing factor to the electricity consumption is the fixed component. Fifty-two percent of the electricity consumption is explained by the fixed component (referred to as "baseload"), in other words 52% of the electricity in the facility does not vary with changes in water flows.

Only the treated water flow met the statistical requirements for inclusion in the regression model. The outdoor air temperature was also included in the regression model in the form of heating degree-days (HDD). Heating degree-days are calculated by taking the difference between the daily average temperature and the base temperature. The base temperature for calculating the Heating degree-days for this model is 16°C.

Figure 19. Actual daily electricity consumption for the WTP against energy drivers.

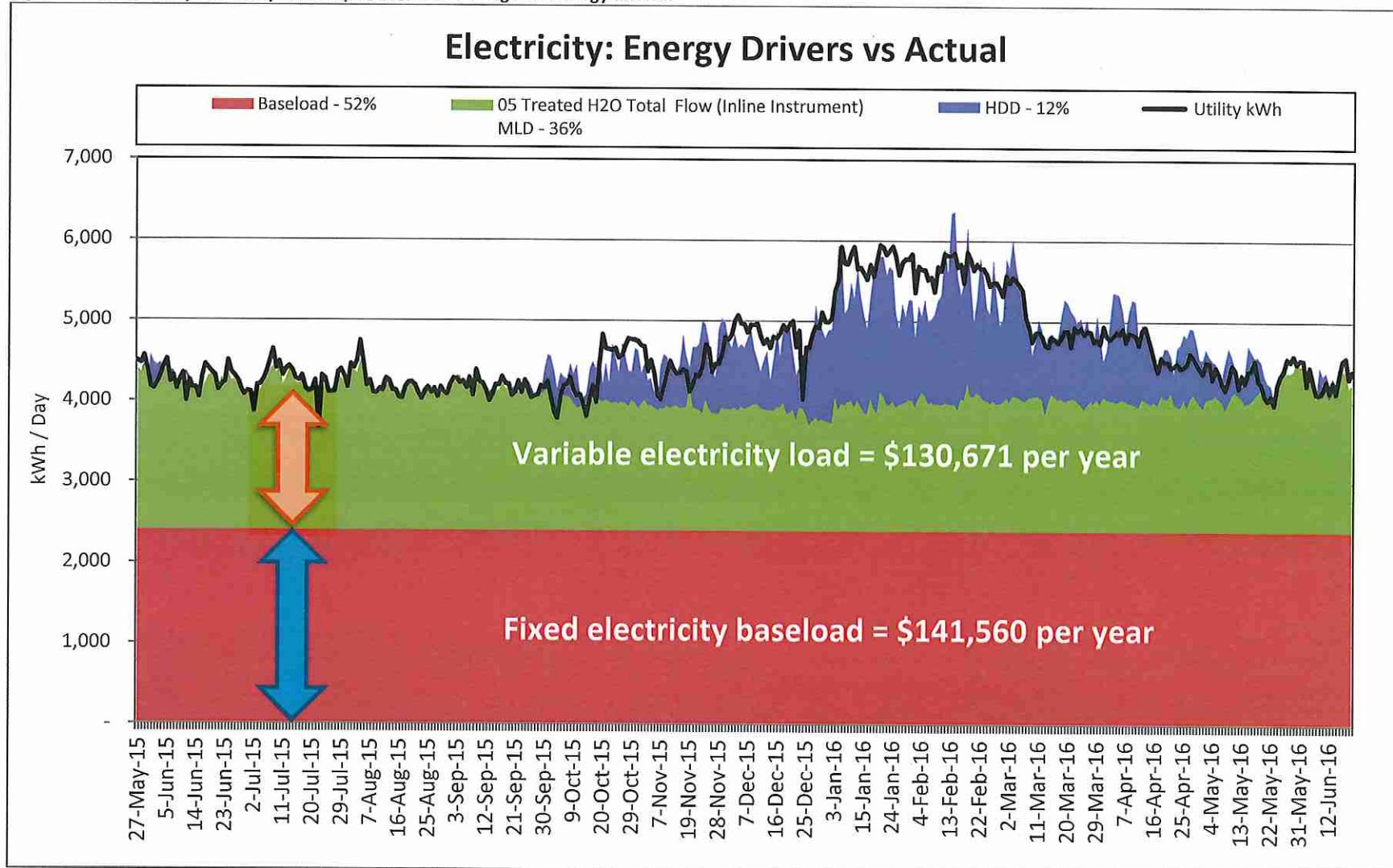


Table 8. Regression statistics for the WTP electricity model.

<i>Regression Statistics</i>						
Multiple R						0.889
R Square						0.790
Adjusted R Square						0.789
Standard Error						243.30
Observations						377
ANOVA						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	2	8.33E+07	4.17E+07	703.83	1.7E-127	
Residual	374	2.21E+07	59,193.30			
Total	376	1.05E+08				
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	2,399.18	189.85	12.64	9.93E-31	2,025.87	2,772.48
05 Treated H2O Flow (MLD)	163.47	17.42	9.38	6.31E-19	129.22	197.73
Heating degree-days (16°C)	65.62	1.92	34.25	2.3E-117	61.85	69.39

2.2.2 Brockville Memorial Centre

2.2.2.1 Electricity model

The electricity consumption at the City of Brockville's Brockville Memorial Centre was analyzed using a multi-variate linear regression model using facility energy consumption and operating schedule information. The regression analysis provides insight into what is driving electricity consumption at the Brockville Memorial Centre. A multi-variate linear regression was calculated using the monthly electricity consumption against a sum of daily ice rink operating hours.

The period from November 2014 to August 2016 provided the best results for the regression model and was used for deriving the results discussed in this report. The coefficient of determination (R^2) for this model is 0.82 which means the model is very good at explaining the variations in the monthly electricity consumption and meets the baseline requirements as set forth by IPMVP. Table 9 shows the detailed model statistics from the regression model.

The resulting regression equation is

$$kWh / Month = 38,611.44 + 1,947.77 * \# days ice rink open +/- 25,943.01 \text{ with 95\% confidence}$$

When evaluating the above regression equation, the actual daily electricity consumption will be the resulting value of the equation plus or minus 25,943.01 (this is the error term) with 95% confidence.

Figure 20 on the following page provides a visual representation of the actual monthly consumption and the contribution from each variable to the model equation. From this chart, we can observe that the largest contributing factor to the electricity consumption is the fixed component. Fifty-five percent of the electricity consumption is explained by the fixed component (referred to as "baseload"), in other words 55% of the electricity in the facility does not vary with changes in the operating schedule.

Only the number of days in which the ice rink is operational met the statistical requirements for inclusion in the regression model. Because the operation information during the summer is unknown, this regression does not accurately capture the electricity consumption in the summer months.

Figure 20. Actual monthly electricity consumption for the Brockville Memorial Centre against energy drivers.

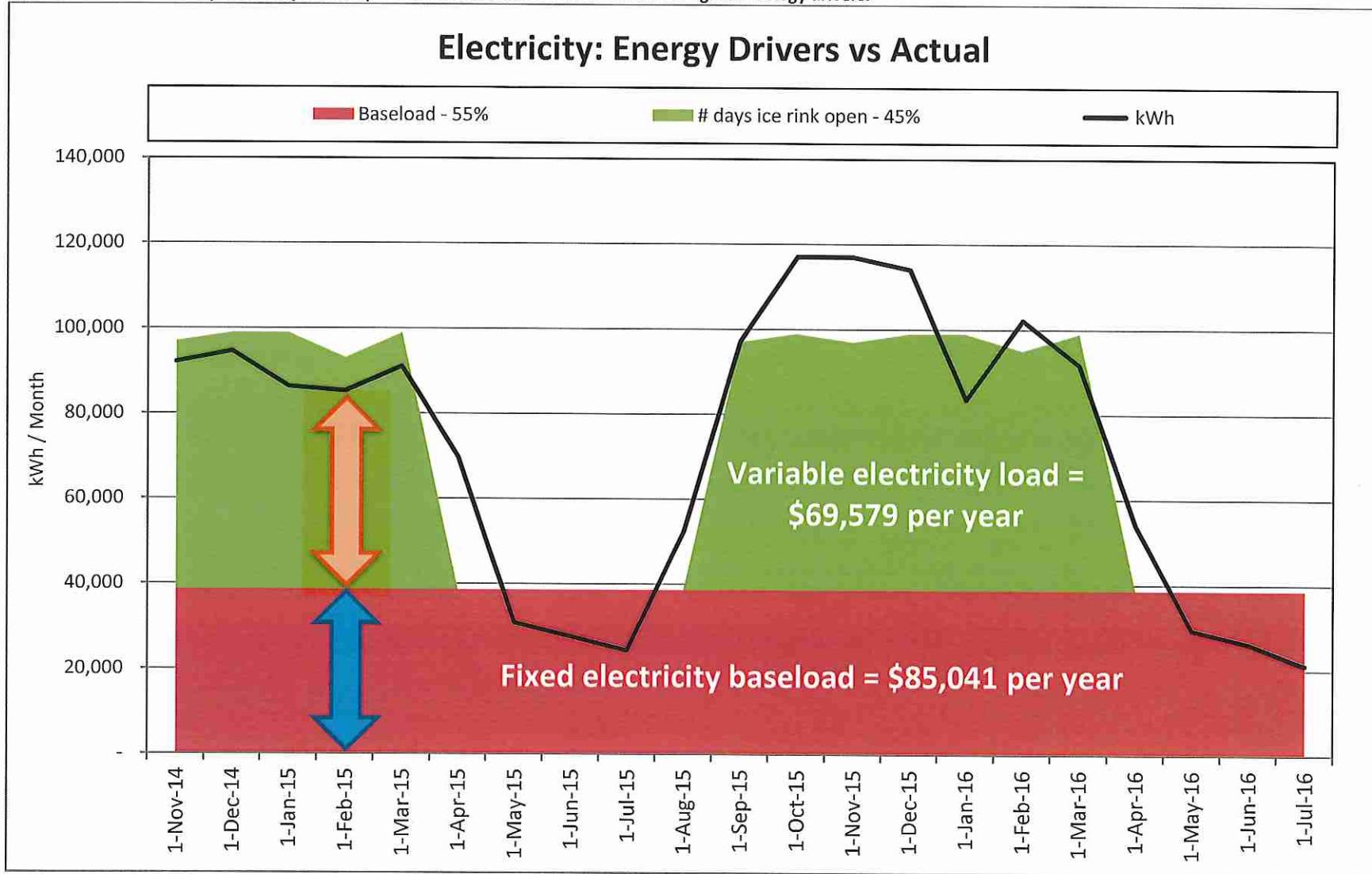


Table 9. Regression statistics for the Brockville Memorial Centre electricity model.

<i>Regression Statistics</i>	
Multiple R	0.908
R Square	0.825
Adjusted R Square	0.816
Standard Error	14,231.97
Observations	22

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	1.91E+10	1.91E+10	94.20	5.21E-09
Residual	20	4.05E+09	2.03E+08		
Total	21	2.31E+10			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	38,611.44	4,497.94	8.58	3.86E-08	29,228.90	47,993.98
# days ice rink open	1,947.77	200.68	9.71	5.21E-09	1,529.16	2,366.38

2.2.3 Centennial Youth Arena

2.2.3.1 Electricity model

The electricity consumption at the City of Brockville's Centennial Youth Arena was analyzed using a multi-variate linear regression model using facility energy consumption and operating schedule information. The regression analysis provides insight into what is driving electricity consumption at the Centennial Youth Arena. A multi-variate linear regression was calculated using the monthly electricity consumption against a sum of daily ice rink operating hours.

The period from November 2014 to August 2016 provided the best results for the regression model and was used for deriving the results discussed in this report. The coefficient of determination (R^2) for this model is 0.65 which means the model is good at explaining the variations in the monthly electricity consumption. Table 10 shows the detailed model statistics from the regression model.

The resulting regression equation is

$$kWh / Month = 21,102.35 + 1,188.49 * \# days ice rink open +/- 36,095.40 \text{ with 95\% confidence}$$

When evaluating the above regression equation, the actual daily electricity consumption will be the resulting value of the equation plus or minus 36,095.40 (this is the error term) with 95% confidence.

Figure 21 on the following page provides a visual representation of the actual monthly consumption and the contribution from each variable to the model equation. From this chart, we can observe that the largest contributing factor to the electricity consumption is the fixed component. Fifty-two percent of the electricity consumption is explained by the fixed component (referred to as "baseload"), in other words 52% of the electricity in the facility does not vary with changes in the operating schedule.

Only the number of days in which the ice rink is operational met the statistical requirements for inclusion in the regression model. Because the operation information during the summer is unknown, this regression does not accurately capture the electricity consumption in the summer months.

Figure 21. Actual monthly electricity consumption for the Centennial Youth Arena against energy drivers.

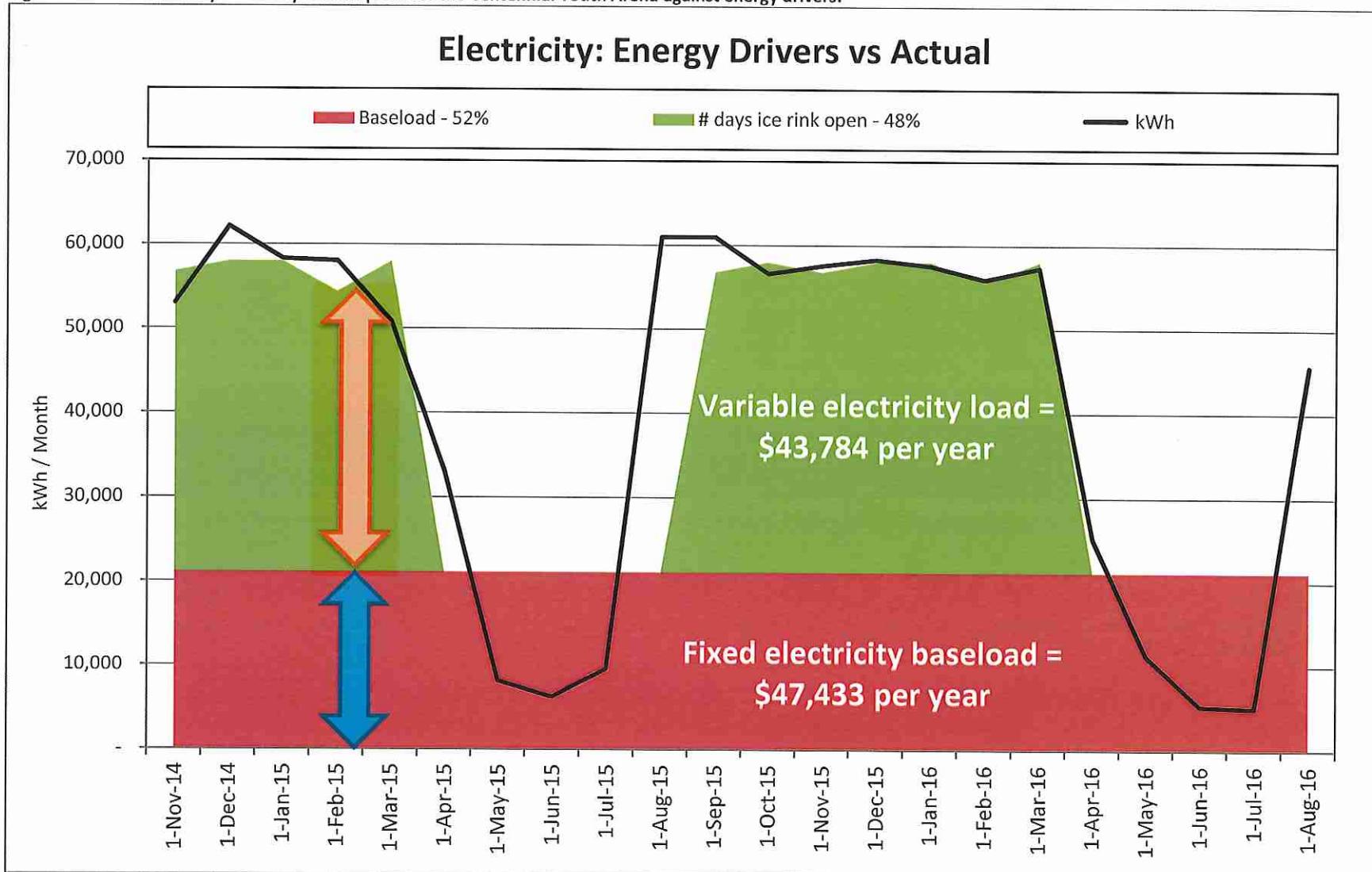


Table 10. Regression statistics for the Centennial Youth Arena electricity model.

<i>Regression Statistics</i>						
Multiple R					0.815	
R Square					0.665	
Adjusted R Square					0.648	
Standard Error					13,400.75	
Observations					22	
<i>ANOVA</i>						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	1	7.13E+09	7.13E+09	39.70	3.761E-06	
Residual	20	3.59E+09	1.8E+08			
Total	21	1.07E+10				
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	21,089.08	4,235.24	4.98	7.21E-05	12,254.52	29,923.63
# days ice rink open	1,190.66	188.96	6.30	3.76E-06	796.50	1,584.82

2.2.4 Summary of Energy Modeling

From the energy models in Section-2.2, we can see that a substantial portion of the energy consumed by the City of Brockville's 3 facilities are fixed baseload, representing 53% of the total electricity consumption listed in the table below. 47% of the electricity consumed varies directly with changes in process volumes, operation schedules and outside temperature. The following table provides a summary of the electrical energy at each site:

Table 11. Summary of fixed and variable energy at the City of Brockville.

Model	Fixed Energy	Variable Energy	TOTAL
	%	\$	\$
Water Treatment Plant - Electricity	52%	\$141,560	48%
Brockville Memorial Centre - Electricity	55%	\$85,041	45%
Centennial Youth Arena - Electricity	52%	\$47,433	48%
Total	53%	\$274,034	47%
			\$518,069

We assume that the fixed baseload for the Water Pollution Control Centre is at least as high as the Water Treatment Plant. From analysis of the absolute consumption data for the WPCC, we believe that this is a very conservative assumption. We can therefore conclude that a significant portion of the electricity used by the City of Brockville's 3 facilities that represent 50% of total electricity consumption is fixed baseload. This informs the energy management strategy for the City of Brockville's Water Treatment Plant, Water Pollution Control Centre, Brockville Memorial Centre and Centennial Youth Arena. EMIS needs to enable the City of Brockville to bring into focus fixed vs. variable energy so that improvement can be driven in reducing the fixed portion (elimination of energy waste) and in driving the variable portion down through the setting of standards for energy intensity by product type to decrease variability and standardize at best cost levels.

3 ENERGY MANAGER PROGRAM

EPS has evaluated the possibility for achievement of further energy savings via energy management by hiring of a full-time energy manager using funds from HydroOne. There are 2 program incentive options, the 'Salary Based Incentive', and the 'Performance Based Incentive' outlined below.

Salary Based Incentive:

- Equal to 80% of the Energy Manager's eligible costs
 - Maximum of \$80,000 per 12 mo. period
- Minimum annual savings requirement = **2,000 MWh**
 - 10% of Annual savings target must be attributable to new projects not receiving any incentives from the IESO or LDC or the Province of Ontario or the Government of Canada

Performance Based Incentive:

- Equal to \$40 per MWh of delivered electricity savings
 - Maximum of \$150,000 per 12 mo. period
- Minimum annual savings requirement = 1,000 MWh
 - 10% of Annual savings target must be attributable to new projects not receiving any incentives from the IESO or LDC or the Province of Ontario or the Government of Canada

3.1 Program Eligibility Requirements

The program eligibility requirements are as follows:

- "
- a) *Be a Distribution Customer of the LDC or a Portfolio comprised of two or more collaborating Distribution Customers or an Association representing multiple Distribution Customers;*
 - b) *Be a commercial, institutional, or industrial Distribution Customer;*
 - c) *Not be insolvent;*
 - d) *Demonstrate to the LDC(s) satisfaction the potential to reach the associated Annual Savings Target; and*
 - e) *Agree to the Release and Waiver."*

The following section outlines the savings requirements to be eligible for the Energy Manager Program incentive.

3.1.1 Savings requirements

The annualized savings target requirements for each incentive option is summarized below.

Table 12: Annualized savings target requirements.

Salary Based Incentive	Performance Based Incentive
2,000 MWh/ year	1,000 MWh/ year

In order to reach an annualized savings target of 1,000 MWh per year, as per the performance based incentive, an 8.6% reduction of the total electricity consumption at the City of Brockville would be required. By applying an 8.6% reduction across all facilities at the City of Brockville, the following electricity reductions are required at each of the following sub-groups.

Table 13: Energy Manager Program - Performance Based savings requirements.

2015 Energy Use	Actual kWh	kWh savings
Water/ Wastewater	6,468,301	558,089
Buildings etc.	2,395,025	206,644
Arena	1,493,640	128,872
Lighting	1,233,129	106,395
Sub-total	11,590,095	1,000,000
<i>Total % savings required</i>		<i>8.6 %</i>

Alternatively, by focusing the energy savings at the Water/ Wastewater facilities, a 15% reduction would be required, and for the Arenas, a 67% reduction would be required. The following table presents the savings requirements for each sub-group at the City of Brockville.

Table 14: Percent savings requirement for each individual sub-group at City of Brockville.

2015 Energy Use	Actual kWh	% of Total	% savings required to meet a 1,000 MWh reduction
Water/ Wastewater	6,468,301	56%	15%; or
Buildings etc.	2,395,025	21%	42%; or
Arenas	1,493,640	13%	67%; or
Lighting	1,233,129	11%	81%; or
Sub-total	11,590,095	100%	8.6%

These are very high annualized savings target requirements relative to the total electricity consumption at the City of Brockville, and we do not believe that these levels or reduction are realistic, even with the hiring of a full-time energy manager. It is for this reason that we do not believe that the energy manager program option is appropriate for the City of Brockville in achieving its objective for improved energy performance.

4 ENERGY MANAGEMENT INFORMATION SYSTEM (EMIS)

EPS does believe that potential for energy savings does exist through making better energy performance information available to the operations of the WTP, WPCC and the 2 arenas. We have focused on elaborating preliminary plans for EMIS for the WTP and WPCC facilities as we feel the best opportunity for better energy management using EMIS is in those two operations. We do believe that potential benefit might be derived from accessing interval meter data for the 2 arenas however substantial plans for modification to those facilities are underway and hence it does not seem appropriate to invest in metering for the arenas at this time. This section presents an overview of the proposed content of the EMIS envisioned for the Water Treatment Plant and Water Pollution Control Centres.

4.1 Water Treatment Plant

4.1.1 Energy Metering

The purpose of the energy metering is to provide a more detailed breakdown of energy consumption within the WTP as follows:

- **Water Treatment Plant**
 - *Total site*
 - *High Lift*
 - #1 Pump – 100 HP
 - #2 Pump – 150 HP
 - #3 Pump – 200 HP
 - #1 Backwash Pump – 125 HP
 - #2 Backwash Pump – 125 HP
 - *Low Lift*
 - #1 Pump – 100 HP
 - #2 Pump – 100 HP
 - #3 Pump – 100 HP
- **Water Pumping Stations**
 - *Parkdale*
 - *First Ave*
 - *Sunset*
 - *Lily Bay*

4.1.1.1 Power meters

There is currently 1 electricity billing account on site, and 4 electricity billing accounts at each of the pumping stations. EPS is proposing to connect in real-time to each of the HydroOne billing meters and route this information back to the existing data historian at WTP. The City of Brockville would be responsible for establishing communication to the meters and tie-in the signal to the control system (included in the cost estimate).

4.1.1.1.2 VFD connections

Power signals from a number of variable frequency drive (VFD) are already being stored in the iProficy historian. These signals will be leveraged to produce energy consumption detail in iProficy.

Figure 22 provides a visual representation of the existing metering at the Water Treatment Plant that will be integrated into iProficy to provide better energy performance information.

Figure 22. Existing meters at the Water Treatment Plant.

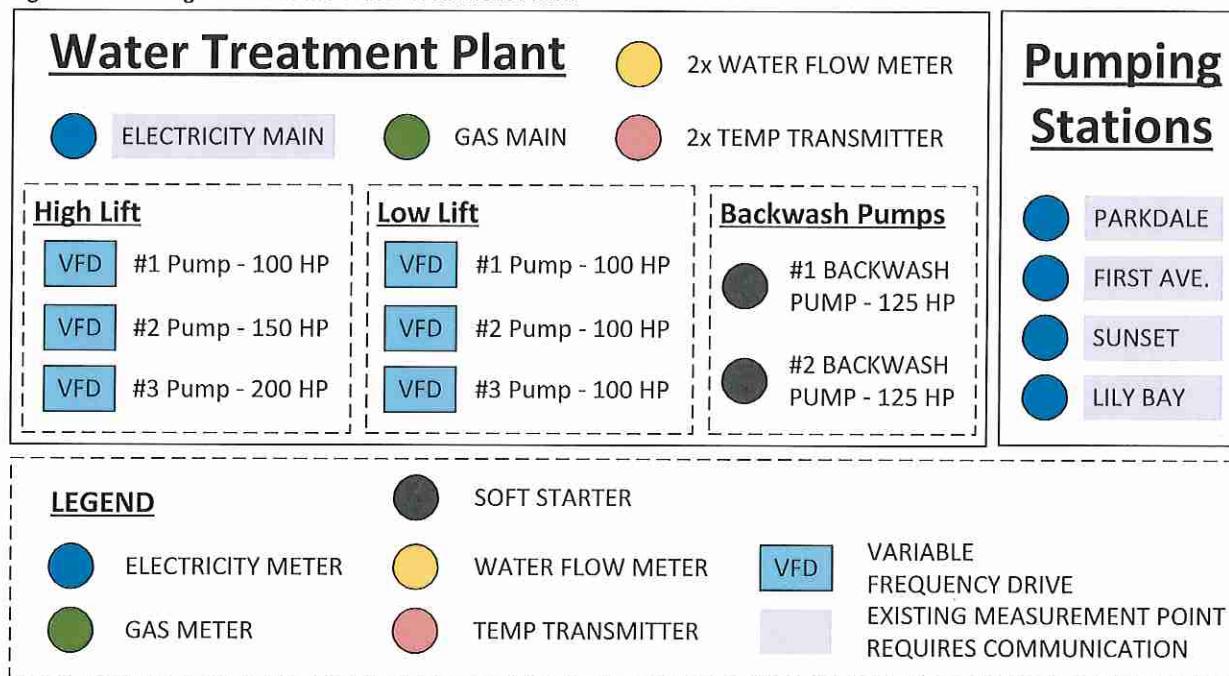


Table 15. List of existing EMIS measurement points at the WTP.

Area	Power Meter	VFD Connec.	Soft Starter	Nat. Gas	Water		Total
					Temp Transmitter	Flow Meter	
Total Water Treatment Plants	1			1	1	1	4
High Lift	# 1 Pump – 100 HP		1				1
	#2 Pump – 150 HP		1				1
	#3 Pump – 200 HP		1				1
Backwash	#1 Pump – 125 HP			1			1
	#2 Pump – 125 HP			1			1
Low Lift	# 1 Pump – 100 HP		1				1
	#2 Pump – 100 HP		1				1
	#3 Pump – 100 HP		1				1
Pumping Stations	Parkdale	1					1
	First ave.	1					1
	Sunset	1					1
	Lily Bay	1					1
Total		7	6		1	1	16

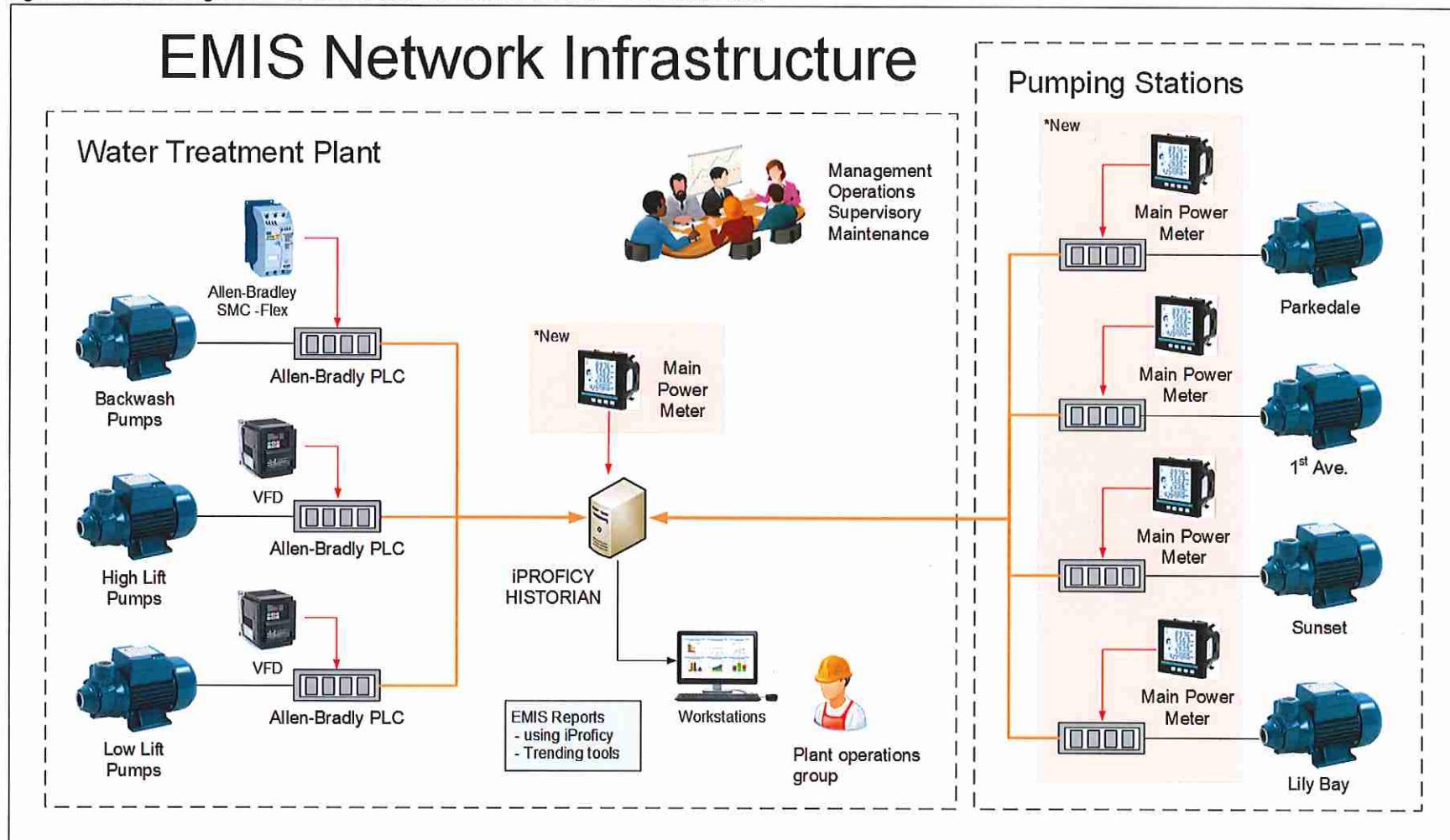
4.1.2 Data Capture & Storage

In order to provide the information automatically to the various stakeholders, it is necessary to capture the data provided by the various meters, VFDs, soft starters and the process data. The tool used for capturing the data from these multiple sources is OPC Server, the data will be stored in the existing iProficy historian for trending.

All data collected will be stored in the existing iProficy historian for trending, reporting and detailed analysis. EPS is estimating adding at most 50 tags to the historian for EMIS. It is assumed that there is server capacity to for these additional tags.

Figure 23 on the following page provides a visual representation of the flow of data from the meters to the various components in the network to people.

Figure 23. Network diagram of information flows for EMIS for the Water Treatment Plant.



4.2 Water Pollution Control Centre

4.2.1 Energy Metering

The Water Pollution Control Centre has a total site electricity meter and 2 Siemens sub-meters which are not presently communicating with the existing data historian (Rockwell Factory Talk). The facility also has extensive variable frequency drives throughout the facility which are communicating with the data historian however the power information available on the variable frequency drives is not presently being used to report energy consumption. The proposed energy measurement structure for Water Pollution Control Centre is as follows:

- **Water Pollution Control Centre**
 - *Total site*
 - *Siemens meter*
 - *Siemens meter*
 - *Variable frequency drives (VFDs)*
- **Wastewater Pumping Stations**
 - Bayview St.
 - Chelsea St.
 - Elizabeth St.
 - Hardy Cres.
 - King St. W.
 - Thomas St.
 - Central Ave.
 - 1 Crocker Cres.
 - 21 Riverview Dr.
 - 3410A Parkdale Ave.
 - 36 Georgina St.
 - 42 Water St.

4.2.1.1 Electricity measurement

4.2.1.1.1 Power meters

There is currently 1 electricity billing account on site, and 2 electricity sub-meters. EPS is proposing to connect in real-time to the HydroOne billing meter and the 2 electricity sub-meters. The City of Brockville would be responsible for establishing communication to the meters and tie-in the signal to the control system (included in the cost estimate).

4.2.1.1.2 VFD connections

There are an extensive number of VFDs connected to the existing data historian. There are 12 wastewater pumping stations that also have VFDs installed, from which we can pull kilowatt information in order to quantify energy and performance for each pumping station. These signals will be leveraged to produce energy consumption detail in the Rockwell Factory Talk data historian.

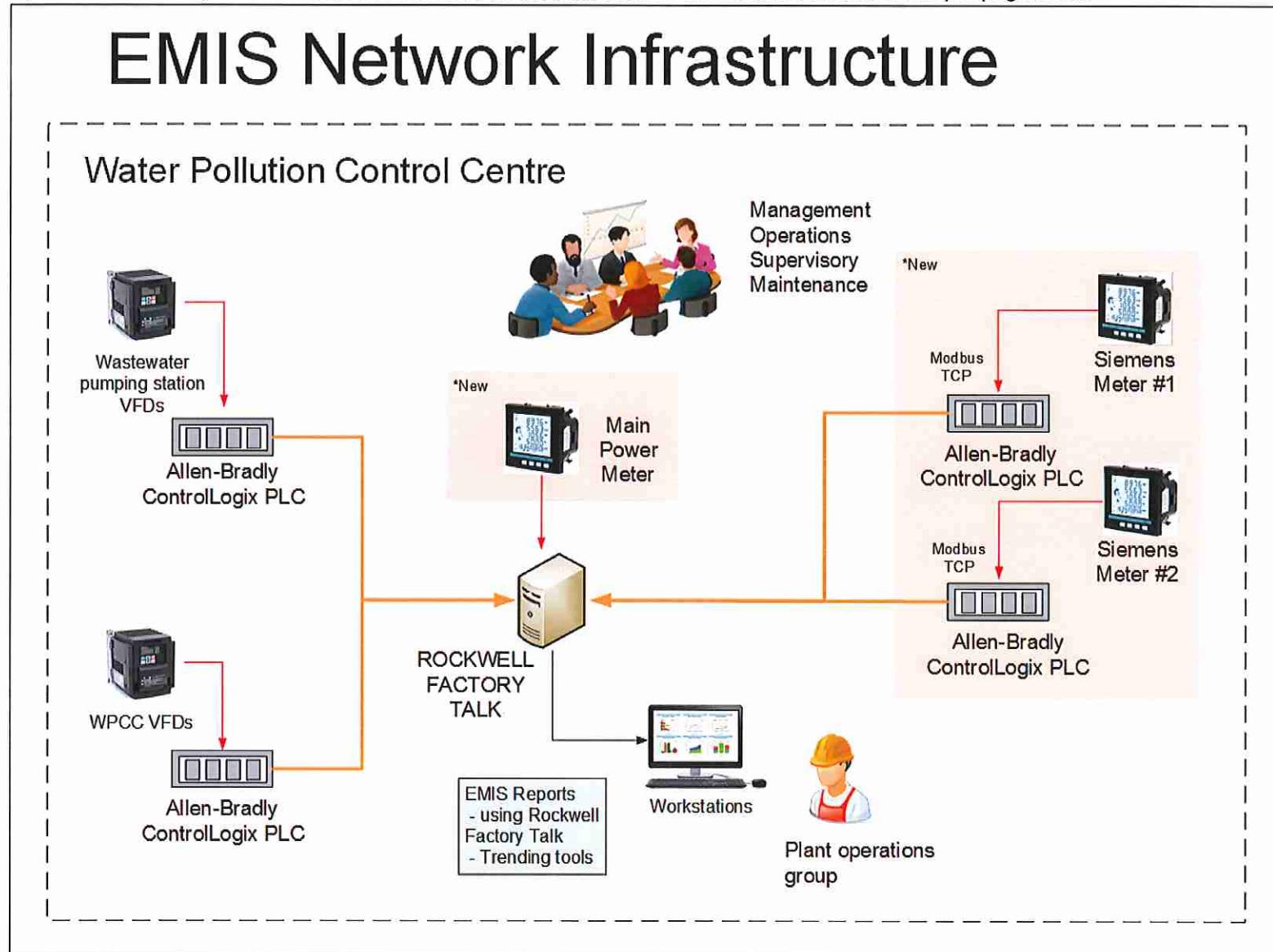
4.2.2 Data Capture & Storage

In order to provide the information automatically to the various stakeholders, it is necessary to capture the data provided by the various meters, VFDs, soft starters and the process data. The tool used for capturing the data from these multiple sources is OPC Server, the data will be stored in the existing Factory Talk data historian for trending.

All data collected will be stored in the existing historian for trending, reporting and detailed analysis. EPS is estimating adding at most 75 tags to the historian for EMIS. It is assumed that there is server capacity to for these additional tags.

Figure 24 on the following page provides a visual representation of the flow of data from the meters to the various components in the network to people.

Figure 24. Network diagram of information flows for EMIS for the Water Pollution Control Centre and wastewater pumping stations.



4.3 EMIS Implementation

In the event that the City of Brockville wishes to proceed with implementation of the recommendations, then EPS will conduct the following activities:

1. Carry out a detailed design on the selected scope and finalize a detailed scope of work, cost estimate and schedule for implementation;
2. Oversee connections and communication to existing power meters;
3. Configure tags in data historians;
4. Produce reporting design to clearly address reporting users and method of information transmission
5. Produce automatic energy reports using Excel add ins from data historians;
6. Provide report on-boarding to report users
7. Provide training to the City of Brockville for:
 - a. Data analysis
 - b. Ability to modify and produce new reports using EMIS tool;
8. Provide support to the City of Brockville for a 6-month period to ensure adequate use and optimization of the reporting;

5 ENERGY SAVINGS

We believe that the four categories of energy management activity listed below can result in an energy savings for the City of Brockville organization. For the purposes of financial justification for the project however, we have based our savings only reducing fixed energy baseload. We believe that this is a conservative approach.

Table 16. Energy saving strategy details.

Energy Saving Strategy	Focus Areas	EMIS
➤ Reduce fixed energy baseload	<ul style="list-style-type: none"> ○ Understand load patterns and equipment consumption to identify possibilities for energy reduction 	<ul style="list-style-type: none"> ○ Connect meters to make energy visible in finer increments of time and in real-time for the Water Treatment Plant and Water Pollution Control Centre.
➤ Control electricity peak demand	<ul style="list-style-type: none"> ○ Understand contribution of sub-systems to peak demand ○ Implement peak demand control plan 	<ul style="list-style-type: none"> ○ Detailed analysis of load contribution to peak ○ Better understanding of time of day of peak events
➤ Manage utility contracts	<ul style="list-style-type: none"> ○ Optimize tariff structures based on a better understanding of energy consumption patterns 	<ul style="list-style-type: none"> ○ Provide detailed energy usage analysis

EPS has developed an estimate of potential energy savings for the City of Brockville EMIS implementation. Until a proper regression analysis can be performed at the Water Pollution Control Centre, we have developed the savings analysis under the basis that the Water Pollution Control Centre follows a similar trend to the Water Treatment Plant, and has a fixed electricity baseload of 52%. Our energy savings estimate assumes a modest reduction in the fixed energy baseload portion of the electricity only for the WTP and WPCC. This equates to an overall reduction in electricity consumption of 2.6% for these two facilities. The overall strategy is to make energy more visible to the operations through EMIS and to then convert part of the fixed energy baseload into variable load through a better understanding of the details of energy consumption within the facility. From our experience with other facilities, this level of improvement is very conservative.

Figure 25. Savings opportunity from fixed baseload electricity reduction.

Site	Total Annual Electricity		Fixed Electricity Baseload		Baseload Reduction Savings						
	Consumption kWh	Cost \$	% Contribution	Consumption kWh	Cost \$	Target %	Target Cost	Cost Reduction	\$ Saved	kWh Saved	kWh % Reduction
Water Treatment Plant	1,866,895	\$272,231	52%	970,785	\$141,560	47%	\$127,949	5%	\$13,612	48,539	2.6%
Water Pollution Control Centre	2,541,696	\$380,543	52%	1,321,682	\$197,882	47%	\$178,855	5%	\$19,027	66,084	2.6%
Total	4,408,590	\$652,774	52%	2,292,467	\$339,442	47%	\$306,804	5%	\$32,639	114,623	2.6%

6 COST ESTIMATE

This section provides the cost estimate for the implementation of the EMIS infrastructure, the reporting system and the management process at WTP and WPCC.

Table 17. Summary of costs at the City of Brockville.

Category	WTP Costs	WPCC Costs	Total Costs
EMIS Equipment & installation			
Meter Hardware	\$11,250	\$4,550	\$15,800
Data Capture Hardware	\$2,393	\$1,776	\$4,169
Meter & Data capture installation & configuration	\$16,885	\$12,375	\$29,260
Sub-total	\$30,528	\$18,701	\$49,229
Contingency	\$6,106	\$3,740	\$9,846
Total cost for metering & installation	\$36,633	\$22,441	\$59,074
EMIS Implementation Services			
Detailed Design			\$4,000
Reporting			\$5,500
Training			\$4,500
EnMS process establishment			\$4,500
Project Management			\$3,500
Travel			\$2,500
Total cost for energy management services			\$24,500
Total Cost to the City of Brockville			\$83,574
Estimated annual energy savings			\$32,639

A number of assumptions were made in estimating the costs for the meter and variable frequency drive connections. A final cost estimate will be produced during the detailed design phase of the project if the City of Brockville wishes to proceed with the next stage of the project.

We have assumed no incentives from HydroOne for the financial analysis, however HydroOne may decide to provide some financial support to the project.

Details in support of the cost estimate are found on the following pages.

Table 18. Detailed summary of cost for the Water Treatment Plant.

Metering				
Category	Description	Qty	Unit Cost	Total
Meter	Connection to main electricity meter (Utility Meters)	5	\$1,500.00	\$7,500.00
Meter	Conduit / Fittings / Fuses / etc.	5	\$750.00	\$3,750.00
Meter	Contingency	20%	\$2,250.00	\$2,250.00
<i>sub-total</i>				\$13,500.00
Data Capture				
Category	Description	Qty	Unit Cost	Total
Data Capture	I/O Modules - Digital Input	5	\$308.57	\$1,542.86
Data Capture	OPC server Modbus Driver	1	\$850.00	\$850.00
Data Capture	Contingency	20%	\$478.57	\$478.57
<i>sub-total</i>				\$2,871.43
Installation				
Category	Description	Hrs	Hourly Rate	Total
Meter	Site preparation (pulling cables, mounting panels, etc.)	150	\$70.00	\$10,500.00
Meter	Connection to billing electricity meters	60	\$70.00	\$4,200.00
Data Capture	Installation of communication modules	10	\$70.00	\$700.00
Data Capture	Configuration of VFDs to show kW	12	\$80.00	\$960.00
Data Capture	Configuration of ADAM modules	8	\$70.00	\$525.00
Contingency	Contingency for meter installation	20%	\$3,377.00	\$3,377.00
<i>sub-total</i>				\$20,262.00

Table 19. Detailed summary of cost for the Water Pollution Control Centre.

Metering				
Category	Description	Qty	Unit Cost	Total
Meter	Connection to main elec meter (Utility Meters)	1	\$1,500.00	\$1,500.00
Meter	Connection to elec meter (Siemens Meters)	2	\$400.00	\$800.00
Meter	Conduit / Fittings / Fuses / etc.	3	\$750.00	\$2,250.00
Meter	Contingency	20%	\$910.00	\$910.00
<i>sub-total</i>				\$5,460.00
Data Capture				
Category	Description	Qty	Unit Cost	Total
Data Capture	I/O Modules - Digital Input	3	\$308.57	\$925.71
Data Capture	OPC server Modbus Driver	1	\$850.00	\$850.00
Data Capture	Contingency	20%	\$355.14	\$355.14
<i>sub-total</i>				\$2,130.86
Installation				
Category	Description	Hrs	Hourly Rate	Total
Meter	Site preparation (pulling cables, mounting panels, etc.)	40	\$70.00	\$2,800.00
Meter	Connection to billing electricity meters	12	\$70.00	\$840.00
Data Capture	Installation of communication modules	6	\$70.00	\$420.00
Data Capture	Configuration of VFDs to show kW	100	\$80.00	\$8,000.00
Data Capture	Configuration of ADAM modules	5	\$70.00	\$315.00
Contingency	Contingency for meter installation	20%	\$1,675.00	\$2,475.00
<i>sub-total</i>				\$14,850.00

7 BUSINESS CASE

We have built the following cash-flow table to illustrate the potential cash-flow for the project over a 5-year period. While we have estimated a possible energy saving of \$32,639 per year, we have assumed a ramp-up in achievement of this potential at the rate of 1/3 in year-1, 2/3 in year-2 and the full 3/3 in year-3. It is possible that WTP and WPCC could achieve the target savings at a faster rate however we believe that it is prudent to assume a ramp up. We also have assumed an escalation rate of 10% per year on the value of the energy savings.

Table 20. Five-year potential cash-flow.

	Year-1	Year-2	Year-3	Year-4	Year-5	Total
EMIS Implementation cost	-\$83,574					
Potential Energy Savings	\$32,639					
% of energy savings potential by year	33%	66%	100%	100%	100%	
Energy Savings by year	\$10,771	\$23,935	\$35,903	\$39,493	\$43,442	\$153,543
Net cash flow annual	-\$72,804	\$23,935	\$35,903	\$39,493	\$43,442	\$69,969
Net cash flow cumulative	-\$72,804	-\$48,868	-\$12,966	\$26,527	\$69,969	

8 CONCLUSION & NEXT STEPS

Energy consumption represents a significant operating cost for the City of Brockville and energy consumption also results in greenhouse gas emissions which is an environmental issue. As well, electricity costs in Ontario have been escalating at significant rates in recent years further impacting the City of Brockville operational costs. The City of Brockville has made substantial investments to date in energy efficiency projects in an attempt to be proactive in reducing energy consumption.

We conclude that the next step in advancing energy improvement for the City of Brockville would be to move to better management of energy through an improved energy management information system (EMIS). The Water Treatment Plant and the Water Pollution Control Centre represent a significant percentage of total energy cost for the City of Brockville. Establishment of better energy performance information systems (EMIS) coupled with the systematic use of the energy performance information to drive down consumption of energy represents a logical next step in the progression of the city towards its ongoing improvement of energy use.

In the event that the City of Brockville wishes to proceed with the recommendations, next steps would be:

1. Determine final scope for EMIS;
2. Detailed design and final cost estimate for selected scope;
3. Implementation of EMIS and reporting systems;
4. Training of the City of Brockville organization in the use of the new tools;
5. Measurement and reporting on energy savings from operational control actions;

October 25, 2016

REPORT TO FINANCE/ADMINISTRATION/OPERATIONS – NOVEMBER 15, 2016

2016-143-11

**CONTRIBUTION FROM PARKLAND RESERVE FUND
FOR REPAIRS TO HARDY PARK PLAY STRUCTURE**

**D. DICK
DIRECTOR OF
CORPORATE SERVICES
L. WHITE
MANAGER STRATEGIC
INITIATIVES**

RECOMMENDATION:

THAT Council authorize funding of \$47,634 from the Parkland Reserve Fund for repairs to the Hardy Park play structure.

PURPOSE

To request Council authorization \$47,634 from the Parkland Reserve Fund to pay for the repairs to the Hardy Park play structure.

BACKGROUND

In August 2015, the Hardy Park play structure was vandalized causing over \$100,000 worth of damage. The play structure is covered under the City's property insurance. The City's deductible for damage to property is \$50,000. When news of the play structure was shared in local media, The Carolyn Sifton Foundation came forth with a generous offer to fund the deductible of \$50,000. Other individuals and community groups also raised \$2,280 towards the repairs.

City Officials decided it would be more beneficial to pay for the repairs to the structure instead of making an insurance claim that could negatively impact future insurance premiums.

The total cost of the repairs was \$99,914, offset by \$52,280 in donations, leaving a net cost to the City of \$47,634.

ANALYSIS

The Hardy Park play structure is a very popular play structure in the City. Staff acted quickly to ensure the structure was reinstated as soon as possible.

Report 2016-143-11

Contribution from Parkland Reserve Fund for Hardy Park

POLICY IMPLICATIONS

There are no policy implications.

FINANCIAL IMPLICATIONS

The current balance of the Parkland Reserve Fund is \$103,794.

Although it is not known how much this claim would have impacted future insurance premiums, there is no question that it would have had a negative impact.

CONCLUSIONS

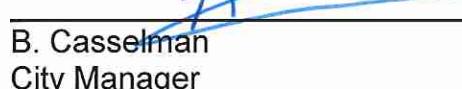
Although it was unfortunate that the structure was damaged, it has been restored thanks in part to a generous community.



L. White
Manager Strategic Initiatives



D. Dick *CPA, CA*
Manager of Corporate Services



B. Casselman
City Manager

03-November-2016

**REPORT TO FINANCE AND OPERATIONS COMMITTEE – NOVEMBER 15,
2016**

2016-144-11

**RENEWAL OF THE CLEANING AND
JANITORIAL SERVICES CONTRACT
(#2013-15) FOR VICTORIA
BUILDING AND GORD WATTS
MUNICIPAL CENTRE**

**C.J. COSGROVE, P. ENG.
DIRECTOR OF OPERATIONS
C. EARLE MOORE,**

ARENAS & FACILITIES SUPERVISOR

RECOMMENDATIONS

THAT the current Cleaning and Janitorial Service Contract with Jani-King for the Victoria Building and Gord Watts Municipal Centre be renewed for an additional 3 year term at a cost of \$63,616.68 plus HST, which represents an increase of 2% effective January 1, 2017, and an annual increase equivalent to the Consumer Price Index for Canada, but not to exceed 2%, for 2018 and 2019.

PURPOSE

This report recommends the renewal of the current cleaning and janitorial service contract (#2013-15) for Victoria Building and Gord Watts Municipal Centre.

ANALYSIS

Jani-King was the successful bidder for Contract 2013-15, a three year contract to provide janitorial services for the Victoria Building and the Gord Watts Municipal Centre.

Jani-King has provided the required and satisfactory level of service for the two facilities during the past three years. It is highly desirable to continue with their consistent janitorial services.

Jani-King, has agreed to continue with the current contract with an adjustment of 2% for 2017 and the remaining two years annual increase be a percentage amount equal to the annual increase of the Consumer Price Index for Canada as published by Statistics Canada, not to exceed 2% annually.

It is recommended that an amended agreement with Jani-King be accepted for an additional three years, January 1, 2017 to December 31, 2019 in an amount not to exceed 2% increase per year.

POLICY IMPLICATIONS

Purchasing By-law (090-2005) requires Council to approve non-competitive purchases of this amount.

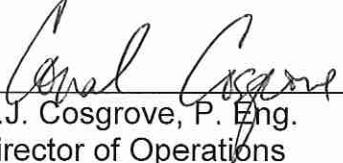
FINANCIAL CONSIDERATIONS

The proposed 2017 Budget includes \$63,616.68 plus HST for the janitorial contract, representing an increase of 2% for the costs of janitorial services for the Gord Watts Municipal Centre and Victoria Building.

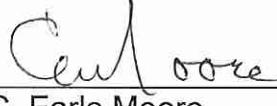
CONCLUSION

The janitorial services contract with Jani-King Eastern Region for the Victoria Building and Gord Watts Municipal Centre should be renewed for a three year period.


B. Casselman, City Manager


C.J. Cosgrove, P. Eng.
Director of Operations


D. Dick, CPA, CA.
Director of Corporate Services


C. Earle Moore,
Arenas & Facilities Supervisor

November 3, 2016

REPORT TO FINANCE, ADMIN. & OPERATIONS COMMITTEE – NOVEMBER 15, 2016

**2016-146-11
CONTRACT 2016-25
HENRY STREET BOAT RAMP
REPLACEMENT**

**R. FRASER
SUPERVISOR, PUBLIC WORKS/PARKS
C.J. COSGROVE
DIRECTOR OF OPERATIONS**

RECOMMENDATION

THAT the tender from Cruickshank Construction Ltd. in the amount of forty-nine thousand, eight hundred and sixty-two dollars and forty cents (\$49,862.40), after HST rebate, for Contract 2016-25 - Henry Street Boat Ramp Replacement be accepted; and

THAT the project be funded from the projected surplus to date contained in the 2016 Parkland Equipment Program.

PURPOSE

To replace the existing steel mesh/steel plate boat ramp with a precast concrete ramp.

BACKGROUND

The ramp to be replaced is situated at the southerly end of Henry Street. The existing ramp was constructed in 1986 employing a concrete cast in place ramp above water level connected by means of steel plates to a steel mesh ramp below water level. This steel mesh and steel plate portion of the ramp has been bent beyond repair by boat launching operations and now requires replacement. The new ramp will be precast concrete slabs thereby eliminating the problem of the steel plate and mesh being bent by contact with trailer jacks/tongues.

During the summer of 2016, portions of the ramp had to be closed due to the ramp being damaged. This ramp is heavily utilized by boaters annually between May 1 to September 30.

As per Cataraqui Region Conservation Authority requirements, no work can take place between March 15 and July 15 in any year. If the ramp is to be operational in 2017 without disruptions, the work must be carried out prior to March 15, 2017.

ANALYSIS

Tenders were opened at 1:15 p.m. on November 1, 2016 with the following results:

	<u>Price Incl. HST</u>	<u>Price After HST Rebate</u>
Cruickshank Construction Ltd. Morrisburg, ON	\$55,370.00	\$49,862.40
Kehoe Marine Construction Lansdowne, ON	\$67,348.00	\$60,648.96
Crains Construction Ltd. Maberly, ON	\$68,862.20	\$62,012.54

Operations Dept. Estimate: \$45,000

Total funds of \$49,862.40 after HST rebate are required to award this contract to the low bidder. As this work was not budgeted for in 2016, there are no funds allotted.

It is recommended that the project be funded from the projected surplus of \$69,800 contained in the 2016 Parkland Equipment Program accounts.

POLICY

As per Purchasing By-law 090-2005, Council approval for this contract is required as no funds have been allocated.

FINANCIAL ANALYSIS

The Parkland Equipment Reserve Fund has a total projected surplus of \$69,600 in the following accounts that can be utilized for this project.

<u>Account</u>	<u>Location</u>	<u>Surplus</u>
9701106-9970149	Memorial Park	\$8,402
99701105-9970140	Kelly Park	877
9701105-9970143	Kyle Court Park	5,258
9701105-9970145	Linden Park	317
9701105-9970147	Matthew Fraser Park	9,536

2016-146-11
Contract 2016-25, Henry Street Boat Ramp Replacement

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Cont'd

<u>Account</u>	<u>Location</u>	<u>Surplus</u>
9701105-9970155	Pearl St. Park	12,036
9701105-9970162	Scace Park	5,820
9701105-9970172	Victoria Park	6,463
9701106-9970137	Harvey Island	5,313
9701106-9970165	Skelton Island	4,809
9701106-9970169	Sparrow Island	5,232
9701105-9970123	Centeen Park	<u>5,737</u>
Total		\$69,800

CONCLUSION

It is recommended that the City award Contract 2016-25, Henry Street Boat Ramp Replacement to Cruickshank Construction Ltd.

C.J. Cosgrove, P.Eng.
Director of Operations

R. Fraser
Supervisor of Public Works/Parks

D. Dick, CA
Director of Corporate Services

per B. Casselman
City Manager

November 7, 2016

REPORT TO FINANCE & ADMINISTRATION & OPERATIONS COMMITTEE

November 15, 2016

2016-145-11

**2016 INTERIM VARIANCE REPORT
At September 30, 2016**

**D. Dick, Director of Corporate Service
L. Ferguson, Manager of Finance
C. Ward, Financial Analyst - General
M. Wing, Financial Analyst - General**

RECOMMENDATION

THAT Council receives the Interim Variance Report as at September 30, 2016 Report No. 2016-145-11, for information purposes.

PURPOSE

To report to Council the City of Brockville's projected financial position as at September 30, 2016 for General Operations, Water and Wastewater Operating Systems and for Capital projects.

BACKGROUND

The City's Corporate Financial Controls which Council adopted by Council resolution in April 2005 requires that staff prepare variance analysis of projected year-end results throughout the calendar year. The analysis is to be conducted at a sufficient level of detail so that variances of line item activities may be identified in conjunction with the parameters set by the Budgetary Control By-Law.

ANALYSIS/FINANCIAL IMPLICATIONS

This report represents the analyses of operating budgets – General, Water, and Wastewater, which are provided for information purposes. Attachment 1, 2 and 3 are the variance analysis for each department.

Major variances identified by departments are as follows:

Arts Centre: additional revenues generated primarily from movie night

Corporate Finance: Overall supplemental revenues are projected to be significantly under budget.

Finance: Wages charged to revenue department offset by savings in other departments.

Report 2016-145-11

Final Variance Report as at September 30, 2016

Page 2

Human Resources:

- Student grants budgeted for, not received
- Costs associated with various arbitration hearings

Information Services:

- Reallocation of software cost to IT department. Corresponding savings in other departments.

Operations:

- Reduction in ice rentals for spring and summer ice.
- Reduced fuel sales to outside agencies
- unbudgeted repairs to Henry Street boat ramp

Solid Waste:

- Revenues reduction due to slower tag sales
- Additional grant for household Hazardous Waste Days

Museum: Donations and program sales less than forecast**Debt:** Savings due to timing of issuance of debt**Water Rate Administration Budget**

The variance analysis is projecting a surplus for the Water Rate Budget of approximately \$120,000 due to:

• Reduction of debt charges of	\$25,000
• Revenue increase expected from change in rate structure	\$95,000

Wastewater Rate Administration

There is presently a variance being forecasted for the Wastewater Rate Budget of \$76,000 due to:

• Reduction on debt charges	\$75,000
• Consumption decline has resulted in a drop in revenues of	(\$35,000)
• Savings in wages	\$22,000

Report 2016-145-11

Final Variance Report as at September 30, 2016

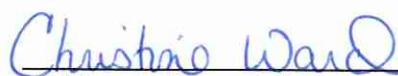
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Capital Projects

We are projecting overall variance of \$30,000.

CONCLUSION

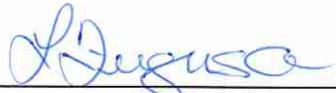
This variance report is being provided to provide council with staff's estimate of our financial projections to December 30, 2016.



C. Ward, Financial Analyst-General



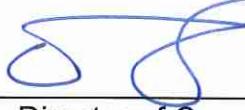
M. Wing, Financial Analyst-General



L. Ferguson, CPA, CGA, Manager of Finance



B. Casselman, City Manager



D. Dick, CPA, CA, Director of Corporate Services



**City of Brockville
General Variance Analysis
for period ending September 30, 2016**

	2016 YTD	2016 Budget	Projection for	Projected
			December 31, 2016	Surplus/(Deficit)
CITY MANAGEMENT & SERVICES				
Animal Control	56,377	78,512	85,802	(7,290)
Aquarium	204,758	210,000	210,000	0
Arts Centre	131,013	158,705	136,505	22,200
City Council/Mayor	159,828	211,527	211,527	0
City Manager	491,200	461,462	461,462	0
Clerk	223,590	266,009	271,709	(5,700)
Corporate Finance	2,934,288	3,426,732	3,594,232	(167,500)
Cultural Services	57,077	23,463	23,463	0
Economic Development	327,798	306,578	307,789	(1,211)
Finance	496,932	642,067	657,045	(14,978)
Fire Department	3,410,315	4,447,430	4,447,430	0
GIS	98,174	96,085	96,085	0
Human Resources	273,580	316,528	336,528	(20,000)
Information Services	302,953	386,411	396,411	(10,000)
Parking	(158,333)	(119,877)	(122,914)	3,037
Parking Rental	5,504	10,897	10,897	0
Planning	472,443	634,761	634,761	0
Tourism	324,380	192,016	192,016	0
CITY MANAGEMENT & SERVICES Total	9,811,877	11,749,306	11,950,748	(201,442)
OPERATIONS				
Facilities	353,742	334,146	423,829	(89,683)
Fleet	317,698	370,484	407,720	(37,236)
Operations/Parks Administration	212,220	266,517	266,517	0
Parks	777,125	1,142,029	1,121,637	20,392
Pedestrian Vehicle Infrastructure	419,870	608,367	602,308	6,059
Public Works	1,790,154	2,541,751	2,476,919	64,832
Transit	571,713	570,724	577,456	(6,732)
OPERATIONS Total	4,442,522	5,834,018	5,876,386	(42,368)
ENVIRONMENTAL SERVICES				
Engineering	47,116	96,372	97,286	(914)
Solid Waste	663,803	1,095,042	1,083,574	11,468
ENVIRONMENTAL SERVICES Total	710,920	1,191,414	1,180,860	10,554
CITY BOARDS & COMMITTEES				
Airport	63,884	85,773	79,684	6,089
Cemetery	68,850	94,605	94,605	0
Committee Of Adjustment	(1,721)	(170)	(170)	0
Heritage Brockville	271	9,350	9,350	0
Library	884	676,820	676,820	0
Museum	198,898	255,910	265,910	(10,000)
Police	5,108,083	7,141,259	7,141,259	0
CITY BOARDS & COMMITTEES Total	5,439,149	8,263,547	8,267,458	(3,911)
OUTSIDE BOARDS				
Cataraqui Reg. Conserv. Authority	181,164	181,441	181,441	0
Downtown Business Improvement Ass.	(103,962)	(255)	(255)	0
Long Term Care	713,022	920,757	920,757	0
Public Health Grants	314,695	406,729	406,729	0
OUTSIDE BOARDS Total	1,104,919	1,508,672	1,508,672	0
JOINT SERVICES				
Joint Services	2,636,081	3,519,677	3,519,677	0
JOINT SERVICES Total	2,636,081	3,519,677	3,519,677	0
DEBT CHARGES				
Debt Charges	1,005,188	1,810,997	1,537,997	273,000
DEBT CHARGES Total	1,005,188	1,810,997	1,537,997	273,000
SOCIAL SERVICES				
Hub	95,616	0	0	0
Special Program	7,121	0	0	0
SOCIAL SERVICES Total	102,737	0	0	0
Grand Total	25,253,394	33,877,631	33,841,798	35,833



City of Brockville
Water Variance Analysis
for period ending September 30, 2016

	2016 YTD	2016 Budget	Projection for December 31, 2016	Projected Surplus/(Deficit)
FINANCE - WATER	(1,761,337)	(2,568,062)	(2,663,169)	95,107
ADMINISTRATION	115,925	144,976	139,976	5,000
ELIZABETHTOWN	(56,921)	3,571	3,571	0
ENGINEERING	120,945	174,682	174,682	0
FLEET	31,053	45,784	45,684	100
WATER DISTRIBUTION MAINTENANCE	535,854	820,209	820,209	0
WATER TREATMENT	881,290	1,154,460	1,159,460	(5,000)
DEBT CHARGES	137,723	224,380	199,380	25,000
Grand Total	4,532	0	(120,207)	120,207



City of Brockville
Wastewater Variance Analysis
for period ending September 30, 2016

	2016 YTD	2016 Budget	Projection to December 31, 2016	Projected Surplus / (Deficit)
FINANCE - WASTEWATER	(2,243,873)	(3,642,754)	(3,607,557)	(35,197)
ADMINISTRATION	108,911	141,282	136,523	4,759
ENGINEERING	104,852	149,886	149,886	0
WASTEWATER COLLECTION	222,421	340,558	330,680	9,878
WATER POLLUTION CONTROL	1,662,259	2,474,329	2,452,329	22,000
DEBT CHARGES	84,018	536,699	461,699	75,000
Grand Total	(61,413)	0	(76,440)	76,440



Corporation of the City of Brockville
Capital Variance Report
as at September 30, 2016

Project	Budget Carry-Forward (<i>from previous years-UNAUDITED</i>)	2016 Budget	Total funds available (carry-forward + budget)	Project Balance at September 30, 2016	Projected Variance	Notes / Comments
BMAAC	74,928	0	74,928	69,286	0	
50 years of Our Flag	1,227	0	1,227	1,227	0	
Retrofit/Replacement of Windows - Victoria Building	56,355	100,000	156,355	63,941	0	
Building Maintenance	62,033	482,105	544,138	400,658	(44,974)	On Going
Fleet	499,837	1,913,720	2,413,557	1,764,233	676	On Going
Corporate Systems Upgrade	14,782	217,075	231,857	143,166	0	On Going
Computer Replacement Program	3,564	78,403	81,967	76,323	0	On Going
2015 Minor Capital	26,682	0	26,682	5,008	3,326	\$3,326 surplus from Public Works/Parks Program is completed
2016 Minor Capital	0	34,500	34,500	10,661	604	\$604.11 surplus from Public Works/Parks Program is completed
Asphalt/Concrete Program	33,305	690,000	723,305	491,071	(14,176)	Will be completed by September 30 2016.
Bridge Inspection Services	26,492	0	26,492	26,492	0	
Hardy Park Shoreline Restoration	(34,734)	0	(34,734)	(34,734)	(34,734)	Completed. Additional cost due to winter work.
Fencing - CN Railways	2,411	0	2,411	2,411	0	On going.
Kingston Bridge Repairs	95,000	0	95,000	95,000	0	Construction October/November.
Traffic Signal Controllers	0	66,000	66,000	61,484	0	Work to be completed this summer/fall.
Airport Fuel & Tank replacement	154,876	0	154,876	154,876	0	Completion of project to be deferred to 2017.

Corporation of the City of Brockville
Capital Variance Report
as at September 30, 2016

Project	Budget Carry-Forward (<i>from previous years-UNAUDITED</i>)	2016 Budget	Total funds available (carry-forward + budget)	Project Balance at September 30, 2016	Projected Variance	Notes / Comments
Parkedale Avenue Realignment	107,084	0	107,084	107,084	0	To be used for Traffic Signals at North Augusta/Waverly.
Parking Meters	22,678	0	22,678	22,678	0	
Pre-Engineering Services	3,951	10,000	13,951	11,568	0	On going.
Dechlorination Station Equipment	19,425	0	19,425	602	0	On going.
North Trunk Sanitary Sewer	110,000	0	110,000	110,000	0	On going.
Sewer Inflow/Infiltration Analysis	115,942	0	115,942	115,942	0	On going.
Water Service Upgrades	14,280	0	14,280	14,280	0	On going.
Stewart Blvd Storm Sewer	77,546	0	77,546	77,546	0	On going.

Centre St. Reconstruction	1,463,057	0	1,463,057	1,046,515	0	On going.
Victoria Ave Reconstruction Phase 2	0	810,000	810,000	264,576	0	On going.
James Street Reconstruction	0	330,000	330,000	75,400	0	On going.
Water/Wastewater Meter replacement	(55,871)	325,000	269,129	(27,844)		On going.
Water Pollution Control Plant Equipment	220,000	384,500	604,500	574,468	15,051	On going.
Water Treatment Plant Work	252,653	220,380	473,033	372,108	9,683	On going.
Expansion of the Zone 3 pressure area	40,452	0	40,452	40,452	0	On going.
Waste management study ED-19	25,360	10,000	35,360	35,360	0	On going.

Corporation of the City of Brockville
Capital Variance Report
as at September 30, 2016

Project	Budget Carry-Forward (<i>from previous years-UNAUDITED</i>)	2016 Budget	Total funds available (carry-forward + budget)	Project Balance at September 30, 2016	Projected Variance	Notes / Comments
Brock Trail Linkage	(21,689)	300,000	278,311	143,953	0	On going.
Parkland Equipment Management Program	174,655	331,554	506,209	389,170	33,743	Spent \$90,019.73 from Jan. 1 to Sept. 30, 2016. Work in progress.
Rotary Park Splash-Pad	332,973	50,000	382,973	230,686	0	On going.
St. Lawrence Park Design	16,951	0	16,951	16,951	0	
Railway Tunnel Tourism	224,158	75,000	299,158	224,285	0	On going.
Waterfront Public Use Study	5,459	0	5,459	5,459	0	
Storm water Management - Brockwoods	3,536	0	3,536	3,536	0	
Sidewalk contributions	45,615		45,615	45,615	0	On going.
SCBA Cylinder Replacement	7,914	36,000	43,914	43,914	0	On going.
Cycling Network	0	30,000	30,000	30,000	0	On going.
Fire Dispatch Upgrades	135,000	0	135,000	135,000	0	
Airport Runway Extension	204,680	0	204,680	204,680	0	Remaining balance of work to be completed this summer/fall.
Perth Street Bridge Repairs	120,000	0	120,000	120,000	0	Construction October/November.
Beecher Street - Directional Bore	30,000	0	30,000	30,000	0	On going.
Bartholomew St - Cap Main at Valves	10,000		10,000	10,000	10,000	Project cancelled; surplus funds.
Lead Service Replacement Program	35,000	75,000	110,000	105,752	0	On going.
Cemetery Drainage & Paving	22,395	100,000	122,395	(8,616)	(8,616)	Completed June 2016.



Corporation of the City of Brockville
Capital Variance Report
as at September 30, 2016

Project	Budget Carry-Forward (<i>from previous years-UNAUDITED</i>)	2016 Budget	Total funds available (carry-forward + budget)	Project Balance at September 30, 2016	Projected Variance	Notes / Comments
Parking Lot Improvements	0	40,000	40,000	40,000		
William St. CNR Overpass Repairs	0	500,000	500,000	500,000		Pre-engineering services commenced.
Stewart Blvd. Sewer Extension	0	50,000	50,000	50,000		On going.
WPCC Main Pumping Station	0	400,000	400,000	400,000		On going.
Public Wi-Fi	0	21,800	21,800	8,343		
Ange Gabriel/Kensington Safety Zone	0	30,000	30,000	30,000		Completed August 2016. Invoicing outstanding.
Brock Street - William to Wall	0	120,000	120,000	27,480		On going.
Hydrant Replacement (7 Hydrants)	0	55,000	55,000	39,655		On going.
Leak Detection Equipment		25,000	25,000	25,000		Equipment purchased.
Stewart Blvd. Reline	0	225,000	225,000	225,000		On going.
	5,036,204	10,056,037	15,092,241	11,343,269	(29,416)	

November 8, 2016

**REPORT TO FINANCE, ADMINISTRATION & OPERATIONS COMMITTEE –
November 15, 2016**

2016-148-11

TEMPORARY BORROWING BY-LAW

**D.DICK
DIRECTOR OF CORPORATE SERVICES
L. FERGUSON
MANAGER OF FINANCE**

RECOMMENDATION

THAT Council hereby authorizes the passing of a Temporary By-Law providing for the Mayor and the Treasurer to borrow temporary working capital, as may be required for the Current Fund Operations, of up to \$5,000,000 for the year 2017; and

THAT the necessary by-law be enacted.

PURPOSE

This temporary by-law gives the Mayor and Treasurer the ability to borrow funds for current operations if required throughout the 2017 fiscal period.

BACKGROUND

Municipalities are required annually to pass a temporary borrowing by-law for funds it deems it may require to accommodate operating expenditures until taxes are levied. The City of Brockville levies their taxes in two installments – currently the interim bill is due in late February and the final tax bill is due in late August.

This by-law authorizes both external borrowing from a financial institution and internal borrowing from our reserve fund accounts. Internal borrowing rates are based between the prime bank rate and the current investment rate. In this way, the reserve funds and the current fund investments / borrowing are optimized.

ANALYSIS

Cash flow has become tighter in the last few years due to the size of capital projects as well as the impact of reduced City reserves.

2016-148-11

Temporary Borrowing By-law

Page 2

Borrowing requirements are dependent upon spending requirements, debt repayment and the collection of taxes. Historically the City has not found it necessary to exercise the use of this by-law. It is necessary that a sufficient borrowing limit be established with the bank in order to make available a draw should it be needed.

FINANCIAL CONSIDERATIONS

There are no financial considerations at this time as there is no immediate requirement for borrowing.

CONCLUSION

This by-law is a contingency plan allowing the City to be prepared in the event of a short-fall in funds between tax billing due dates.



D. Dick, CPA, CA
Director of Corporate Services



L. Ferguson, CPA, CGA
Manager of Finance



B. Casselman, City Manager

November 8, 2016

**REPORT TO THE FINANCE, ADMINISTRATION & OPERATIONS COMMITTEE –
NOVEMBER 15, 2016**

2016-149-11 2017 INTERIM TAX LEVY AND ESTABLISHMENT OF DUE DATES	D. DICK DIRECTOR OF CORPORATE SERVICES L. FERGUSON MANAGER OF FINANCE S. FABER REVENUE SUPERVISOR/TAX COLLECTOR
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RECOMMENDED:

THAT Council authorize the City to impose its 2017 interim tax levy with a due date of February 28th, 2017; and

THAT Council establish the due date of August 31st, 2017 for the second and final tax levy for 2017; and

THAT the necessary by-law be enacted.

PURPOSE:

To authorize the interim tax levy for 2017 and establish the due dates for both instalments of the 2017 tax levy in an effort to assist ratepayers in their financial plans.

BACKGROUND:

Municipalities traditionally levy interim taxes in order to have operating funds until the annual budget is approved. A by-law must be passed to allow for the billing of these tax bills.

ANALYSIS / FINANCIAL IMPLICATIONS:

The interim taxes will be levied at 50% of the 2016 annualized taxes.

By establishing the two tax due dates at this time, property tax owners will have additional time to assist in their financial planning in regard to their property taxes.

POLICY IMPLICATIONS:

Section 317 of the Municipal Act establishes the rules for an interim tax levy.

317. (1) A local municipality, before the adoption of the estimates for the year under section 290, may pass a by-law levying amounts on the assessment of property in the local municipality rateable for local municipality purposes. 2001, c. 25, s. 317 (1).

By-law

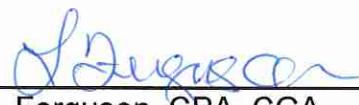
(2) A by-law under subsection (1) shall be passed in the year that the amounts are to be levied or may be passed in November or December of the previous year if it provides that it does not come into force until a specified day in the following year. 2001, c. 25, s. 317 (2); 2006, c. 32, Sched. A, s. 132.

CONCLUSION:

Upon approval of this by-law the interim tax due date will be February 28th, 2017 and the due date for the second and final tax levy for 2017 will be established as August 31st, 2017.



S. Faber,
Revenue Supervisor/Tax Collector



L. Ferguson, CPA, CGA
Manager of Finance



D. Dick CPA, CA
Director of Corporate Services



B. Casselman, City Manager

November 8, 2016

**REPORT TO FINANCE, ADMINISTRATION & OPERATIONS COMMITTEE –
NOVEMBER 15, 2016**

2016-150-11

**ONTARIO REGULATION 284/09
BUDGET MATTERS-EXPENSES**

**D. DICK
DIRECTOR OF CORPORATE SERVICES
L. FERGUSON
MANAGER OF FINANCE**

RECOMMENDED

THAT Council adopt this report of expenses excluded from the 2017 Budget as a requirement of Ontario Regulation 284/09 passed under the Municipal Act, 2001.

PURPOSE

The City is required under Ontario Regulation 284/09 to report on amortization, post-employment benefits, landfill closures and post-closure expenses that are excluded from the annual budget.

BACKGROUND

All municipalities in the Province are required to follow the PSAB accounting standards. With the introduction of PSAB 3150 and 1250, the accounting for municipal transactions now includes accounting on a full accrual basis as well as reporting tangible capital assets. Although a requirement for financial reporting purposes, similar disclosure is not required for budgetary purposes.

ANALYSIS

The annual City budget excludes amounts for amortization, post-employment benefits, landfill closure and post-closure expenses. Regulation 284/09 requires that the municipality report on the impact of these excluded costs before adopting a budget. Council also needs to adopt this report.

The City of Brockville's 2017 proposed budget excludes the following:

Amortization expenses estimated at	\$4,050,039
Future post-employment benefit expenses at	386,769
Landfill closure and post-closure costs at	(109,000)
The City's Accumulated Surplus would be impacted by	\$4,327,808

POLICY IMPLICATIONS

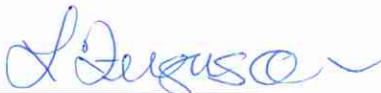
There are no policy implications however, this information is directly related to the financial sustainability of the City and is an important component of the City's Community Strategic Plan.

FINANCIAL CONSIDERATIONS

There are no financial considerations associated with this report.

CONCLUSION

Regulation 284/09 requires that Council be made aware of certain future liabilities that if budgeted for would have a sizable impact on the City's Accumulated Surplus. Council must adopt this report as acknowledgement of those future liabilities and the fact that they are excluded from the budget process.



L. Ferguson, CPA, CGA
Manager of Accounting



D. Dick, CPA, CA
Director of Corporate Services



B. Casselman
City Manager