



**Interim report
2016 progress on the
5-Year Energy Management Plan**

Waypoint Centre for Mental Health Care

July 2017

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Executive Summary

Energy Management is important at Waypoint because:

- The Government of Ontario has created the Green Energy Act, which requires all public sector (BPS) organizations to create conservation and demand management plans.
- The hospital is LEED Gold Targeted for Atrium Building.
- Waypoint and Project Co have established an annual Energy Target for the Atrium Building. This can only be accomplished through good energy management practices and policies.
- Lower energy costs provide more room in the operating budget for patient and facility services.
- As utility prices rise, lowering energy consumption is key to keeping energy costs manageable.
- Waypoint has grown by 125 447 sq. feet since the Atrium building opened and four (4) older buildings were demolished in 2014.
- Original Energy Management Report submitted to government July 1, 2014.

Key highlights for 2016:

- Energy profile for the campus is now stable with the addition of the Atrium building at full occupancy in spring 2014, and now emphasizes electricity consumption which is more expensive.
- Facility Operations and Maintenance invested in LED lights for the parking lots and rebalanced the hydronic heating and cooling systems in Toanche and Administration buildings, and added occupancy sensors where permitted
- Year over year energy consumption expense is down 3% (see Chart 1).

Waypoint was recognized for its' energy savings initiative of an LED parking lot and Roadway lighting retrofit by Powerstream in 2016 where enough energy was saved to power 217 homes.

Building Summary Post Construction:

		Add Atrium December 2013	Summer 2014 demolition
	Square Ft	Square FT	Square Ft
Administration Building	71,675	71,675	71,675
Atrium Building		341,579	341,579
Toanche Building	148,126	148,126	148,126
House 1	8,598	8,598	8,598
Brebeuf Building	31,535	31,535	
Bayfield Building	31,535	31,535	31,535
Oak Ridge & Visitor Building	155,685	155,685	
Power House	5,905	5,905	5,905
Residence 2	2,770	2,770	2,770
Residence 4 & 5	5,285	5,285	
Residence 8	4,252	4,252	4,252
House 6	1,485	1,485	1,485
Grounds Building	188	188	
Oakridge Activity Centre	23,439	23,439	
ESB	24,466	24,466	24,466
Hero Centre	6,258	6,258	6,258
Outpatients	6,314	6,314	6,314
Total	527,516	869,095	652,963

OUR COMMITMENT

Waypoint is committed to consuming energy in an efficient, cost effective, environmentally responsible manner. It is recognized that utilities and related costs are necessary to operate the facility but do not directly contribute to the quality of services offered at the Hospital. As such, as utility costs rise, it is imperative to reduce energy consumption in order to continue to provide services at or exceeding current standards.

Waypoint's commitment to energy efficiency will employ the following key energy management principles:

Informed Decision Making - Energy will be monitored and tracked. Waypoint will develop, understand and communicate the key metrics so that informed decisions leading to efficient energy use can be taken. Energy audits will be undertaken to ensure optimal building operations and to determine successes of energy initiatives, ongoing monitoring and auditing of building systems.

Retrofit Program - Advance toward internal operational efficiency through a process of continuous improvement. Energy efficiency will be a key driver for retrofits and will be considered in all renovations and retrofits. Waypoint will annually take steps to reduce its footprint.

Operator Training - An ongoing commitment to continuously train and upgrade Building Operators' knowledge and understanding of building systems. Waypoint will adopt a program for re-commissioning and tuning of building systems for optimal operation.

Comfort Guidelines – Adopt industry accepted standards for building operations regarding temperature, humidity and CO2 levels to ensure optimal patient and staff comfort.

Procurement - Purchase utilities to ensure that lowest cost is achieved. Procurement will support the acquisition of energy efficient devices and technologies for the hospital.

Partnerships - Partner with industry and the public to improve energy conservation explore and develop economically viable alternative fuel sources.

Awareness & Education - Foster awareness to reduce the environmental impact of hospital activities and support realization of the hospital's Energy goals. Effectively communicate the progress and success of energy initiatives.

Results –operating 2014 and 2015

Chart 1 - Normalized Comparison

Normalized Comparison

Baseline Period (normalized to 2016/17)	Area (ft ²)	Electricity (kWh/ft ²)				Natural Gas (ekWh/ft ²)			Total Energy (ekWh/ft ²)
		Total	Base	Heating	Cooling	Total	Base	Heating	
Apr/15 to Mar/16	652,963	15.6	14.9	0.0	0.7	12.0	4.1	7.9	27.6
Apr/16 to Mar/17	652,963	15.0	14.1	0.0	0.9	12.7	4.0	8.8	27.7
Total change:	0%	-4%	-5%	0%	18%	7%	-2%	11%	0%

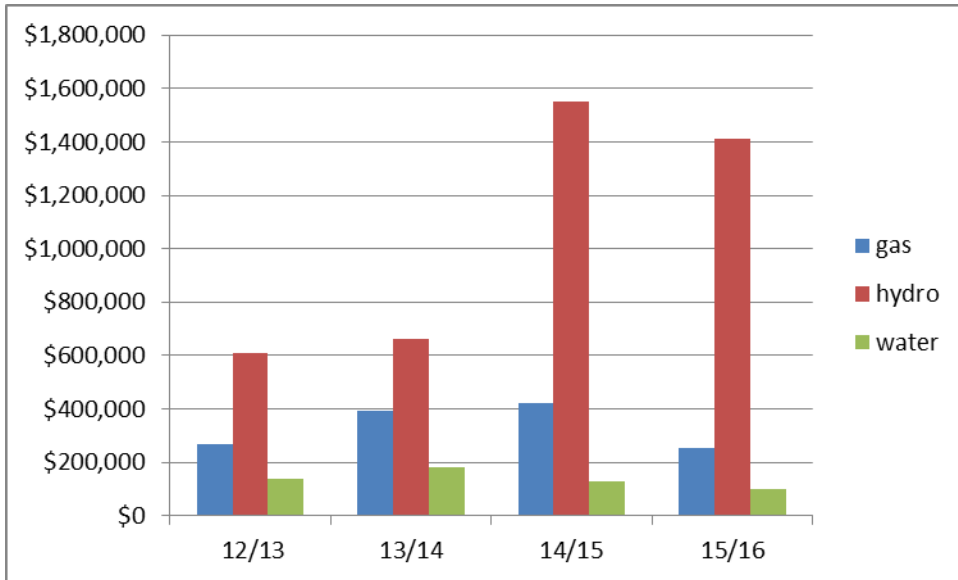
Chart 2

Actual Cost Change:		Electricity		Gas		Total Energy
2015		\$1,531,298		\$188,517		\$1,719,814
2016		\$1,467,009		\$200,999		\$1,668,008
Total:		-\$64,288		\$12,482		-\$51,806
% Change		-4%		7%		-3%

Chart 1 above compares year over year energy intensity usage on a per square foot basis for Waypoint. The comparison normalizes data for weather over the 2 years so we are comparing “apples to apples”. Over the 2 year period energy intensity is flat following a previous 2 year reduction of 17%. It appears that the Atrium Building has stabilized in terms of energy performance

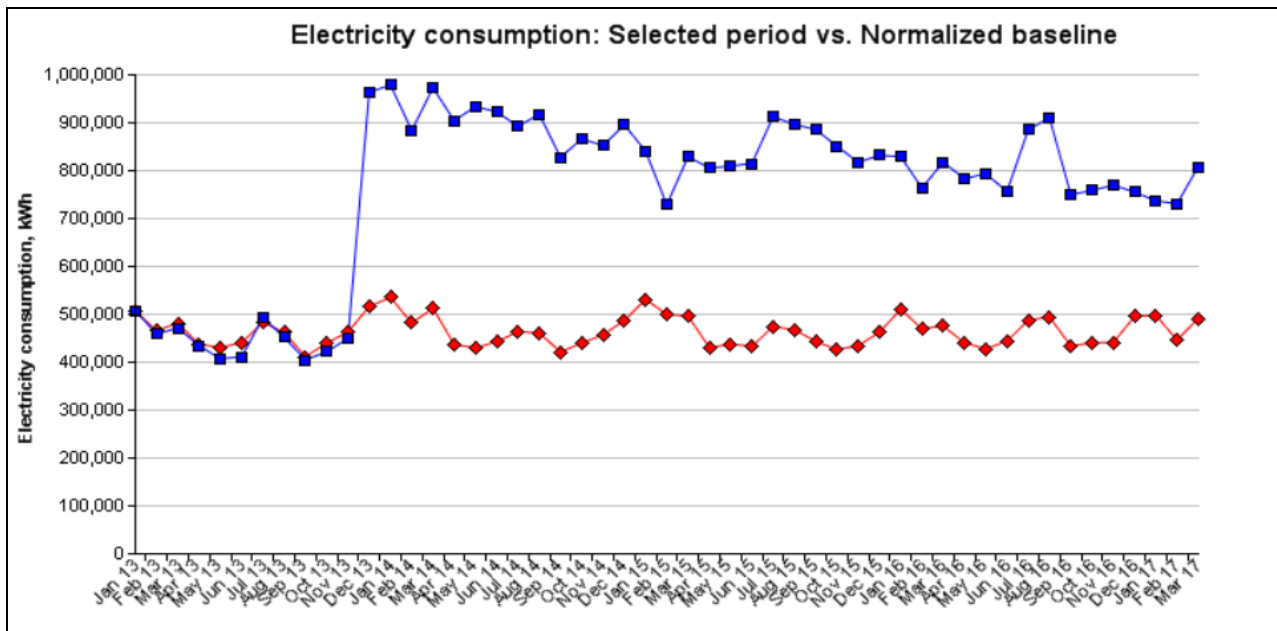
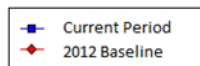
Chart 2 above highlights the total financial change on the organization arising from changes in utility consumption between the two comparator years of 2015/16 and 2016/17. In the same period utility prices rose. Clearly, price adjustments have been buffered somewhat by overall year-over-year consumption reduction.

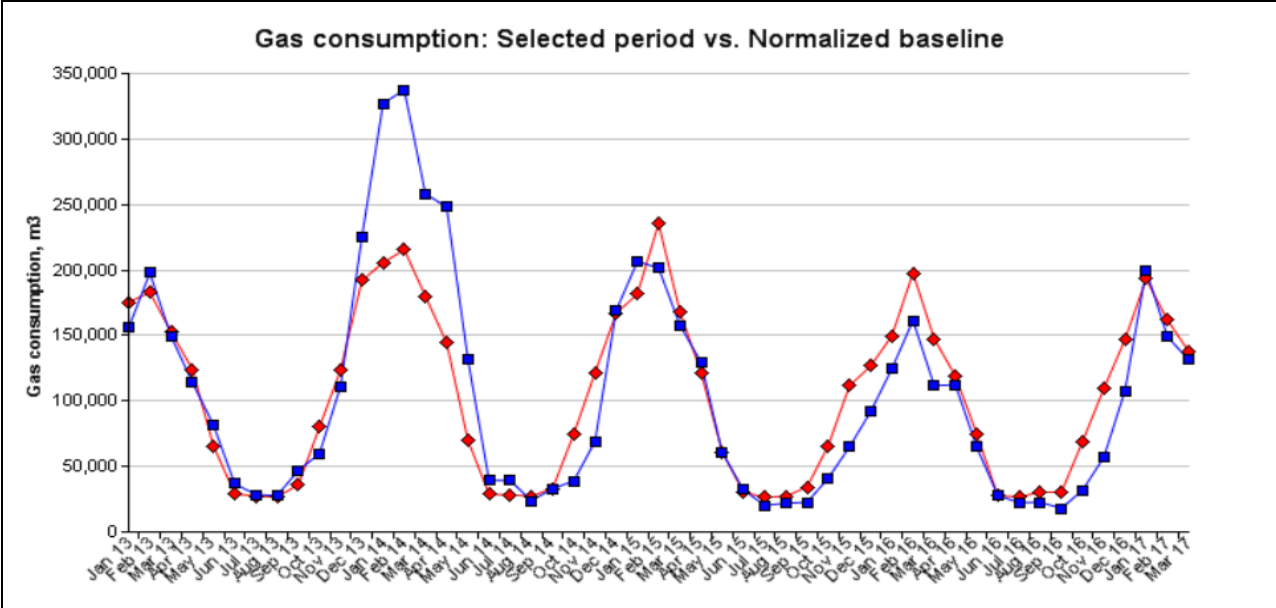
The chart below illustrates our annual utility expenditures for the last 4 years. Electricity expense has ballooned due to the energy profile of the new building, utility price increases and the Global Adjustment fees.



The graphs below provide a visual representation of the changes over time in blue with the red line illustrating the theoretical 2012 baseline.

Electricity – Jan 2013 – March 2017





1. OUR ACTIONS

Potential Projects								
Project Name	Description	Potential Electrical Savings (GJ)	Potential Natural Gas Savings (GJ)	Potential Cost Savings (Energy + Operational)	Projected Total Cost	Potential Incentive	Projected Simple Payback	Next Steps
VAV installation	Administration zone plan				\$150,000			Review with Facility Planning Committee- 3-5 yr horizon
LED replacement for fluorescent lighting 1000 tubes	Replace fluorescent 25 watt T8 bulbs with 9 watt LED tubes	140000 KWH		14000.00	18000.00	5000.00	1.0 Yrs	Fall 2017
Completed Projects								
Project Name	Description	Actual Electrical Savings KWH	Actual Natural Gas Savings (GJ)	Actual Cost Savings (Energy + Operational)	Actual Total Cost	Confirmed Incentive	Simple Payback	Next Steps
Hydronic Balancing					\$40,000			Complete Summer 2016
Return Air systems	Administration and Toanche							Complete Summer 2015
Air side/ waterside VFD's	Bayfield air handle VFD's and Admin waterside pump VFDs	\$ 68140	NA	\$ 6814	\$ 25159	\$ 7972.00	2.5	Complete Summer 2014
Insulation	Pineview, Admin attic spaces		Cannot calculate		\$91000			Complete Summer 2014
ECM motor installation	Main Kitchen fridges – 19 motors	17000KWH	NA		4950	1746	2	Complete Summer 2015
Parking lot Lighting Retrofit	400 watt to 120 watt LED including wall packs, parking lot lighting	\$ 64328	NA		\$60000	\$24000	2	Complete Fall 2015
Automation installation	Admin – add 13 control valves Bayfield control valves	NA	Cannot calculate		\$ 25000			Complete Summer 2014
Windows Phase 1 and 2	Administration Building	Cannot calculate	Cannot calculate		\$ 680000	0	0	Complete Summer 2015 and 2016

BAS reprogramming	Toanche chiller sequence of operation	Cannot calculate	Cannot calculate		\$ 3000.00			Complete Summer 2016
Hot water storage tanks	Heat Pump style water tanks				\$10000.00			Complete Fall 2016
Projects in Progress								
Project Name	Description	Electrical Savings KWH	Natural Gas Savings (GJ)	Cost Savings (Energy + Operational)	Total Cost	Incentive	Simple Payback	Status
TRIAL - LED replacement for fluorescent lighting	Replace fluorescent 25 watt T8 bulbs with 9 watt LED tubes	TBD		TBD	2000	TBD	TBD	200 LED trial Fall 2016
Reheat coil operation	Replace heat exchanger and add BAS - Toanche				\$ 10000			Completed
Boiler replacement Toanche	Phase 1 - HW boilers				\$250000			Complete Spring 2017
Behavioural/Education Programs								
Communication	Measure and monitor energy use. Develop, understand and communicate key metrics for decision-making							Awareness, behaviour changes – Facility Planning Committee to lead Confirm comfort guidelines including revisions
Building Operator Training	An ongoing commitment to continuously train and upgrade Building Operators knowledge and understanding of building systems							Develop skilled work force Ongoing commitment

NOTES