



ENERGY ASSESSMENT REPORT

Prepared for:

TOWN OF COBOURG, Cobourg, Ontario

Prepared by:

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CORNERSTONE HYDRO ELECTRIC CONCEPTS (CHEC)

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INTRODUCTION

As part of the initiative to reduce energy costs and consumption, the Town of Cobourg secured the services of Lakefront Utilities' Roving Energy Manager (REM) to perform an energy assessment for their wastewater, recreation and municipal buildings in Cobourg, Ontario.

WALK-THROUGH SUMMARY

The following table presents a summary of the energy efficient opportunities identified during the walk-throughs as well as potential saveONenergy funding for the identified opportunities.

January 9, 2014:

- Victoria Hall
- Market Place Building (Seniors Centre)
- Police Station

January 17, 2014:

- Public Works Office
- Marina

- Marie Dressler Building (Economic Development/Tourism)
- Fire Hall
- Parks Office Building

January 23, 2014:

- Wastewater Treatment Plant WWTP #1
- Wastewater Treatment Plant WWTP #2
- Brook Road SPS
- Division Street North Storm PS
- Division Street South Storm PS
- McGill Street SPS
- Forth Street SPS A
- Forth Street SPS B
- **Monk's Cove SPS**
- William Street Storm PS

January 28, 2014:

- Heenan Arena
- Memorial Arena
- Cobourg Community Centre

#	LOCATION	MEASURE	DESCRIPTION	DEMAND SAVINGS (kW)	ENERGY SAVINGS (kWh/year)	ESTIMATED PROJECT COST (\$)	saveONenergy INCENTIVE (\$)	SIMPLE PAYBACK (years)
1	VICTORIA HALL	LIGHTING	Replace the following Lighting Fixtures with Energy-efficient Lighting Fixtures: - (43) 75W Recessed Incandescent Lamps with (43) 15W CFLs - (86) 60W Incandescent Lamps with (86) 15W CFLs - (47) 150W Incandescent Lamps with (47) 30W LEDs - (13) 300W Incandescent Lamps with (13) 70W LEDs - (25) 1-Lamp F40T12 with (25) 1-F28T8 Fixtures - (30) 2-Lamp F40T12 with (30) 2-F28T8 Fixtures - (2) 4-Lamp F40T12 with (2) 4-F28T8 Fixtures - (3) MH175watt Wall-packs with (3) 50W LED Wall-packs - (10) 30W Exit Signs (incandescent) with (10) 3W LED Signs	17 kW	35,000 kWh	\$7,000	\$2,470	0.91
2		VFD	- Install (1) 50HP VFD on AHU#1 Supply Fan - Install (1) 15HP VFD on AHU#1 Return Fan - Install (1) 40HP VFD on AHU#2 Supply Fan - Install (1) 15HP VFD on AHU#2 Return Fan - Install (2) 10HP VFDs on Chilled Water Pumps - Install (2) 15HP VFDs on Condenser Water Pumps	20 kW	60,000 kWh	\$21,000	\$9,000	1.54
3	MARKET PLACE	LIGHTING	Replace the following Lighting Fixtures with Energy-efficient Lighting Fixtures: - (10) 2-Lamp F40T12 with (10) 2-F28T8 Fixtures	0.36 kW	800 kWh	\$300	\$170	1.63
4	POLICE STATION	LIGHTING	Replace the following Lighting Fixtures with Energy-efficient Lighting Fixtures: - (10) 2-Lamp F40T12 with (10) 2-F28T8 Fixtures - (10) 2-Lamp F96T12 with (10) 2-F32T8HP Fixtures - (41) 50W MR16 Halogen with (41) 5W LEDs - (13) 30W Exit Signs (incandescent) with (13) 3W LED Signs - (1) 75W Incandescent Lamp with (1) 15W CFL - Install (5) Occupancy Sensors in Washroom, Garage, Gym, Conf. Room, and Equipment Room	3.35 kW	20,000 kWh	\$2,000	\$1,500	0.25

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5	PUBLIC WORKS OFFICE	LIGHTING	Replace the following Lighting Fixtures with Energy-efficient Lighting Fixtures: - (7) 2-Lamp F40T12 with (7) 2-F28T8 Fixtures - (1) 60W Incandescent Lamp with (1) 15W CFL - Install (1) Occupancy Sensor in office	0.3 kW	900 kWh	\$350	\$120	2.56
6	MARINA	LIGHTING	Replace the following Lighting Fixtures with Energy-efficient Lighting Fixtures: - (15) 2-Lamp F40T12 with (15) 2-F28T8 Fixtures - (16) 75W Incandescent Lamps with (16) 15W CFLs - (8) 100W Incandescent Lamps with (8) 15W CFLs - Install (4) Occupancy Sensor in washrooms - Approximately (80) exterior lighting poles Metal Halide 250W with LED lighting (confirm number and lamp wattages)	14.18 kW	32,000 kWh	\$40,000	\$3,650	7.78
7		WASHERS DRYERS FREEZER	Replace the old/inefficient washers, dryers,, and freezer with Energy Star rated appliances - (2) Washers - (2) Dryers - (1) 2-door Freezer	--	--	--	--	--
8	MARIE DRESSLER	LIGHTING	Replace the following Lighting Fixtures with Energy-efficient Lighting Fixtures: - (6) 2-Lamp F40T12 with (6) 2-F28T8 Fixtures - (19) 60W Incandescent Lamps with (19) 15W CFLs - (7) 65W Incandescent Lamps with (7) 15W CFLs - (2) 30W Exit Signs (incandescent) with (2) 3W LED Signs	1.69 kW	2,500 kWh	\$600	\$600	0
9	FIRE HALL	LIGHTING	Replace the following Lighting Fixtures with Energy-efficient Lighting Fixtures: - (27) 2-Lamp F96T12HO (95W)with (27) 4-Lmap F32T8HP Fixtures - (2) 2-Lamp F40T12 with (2) 2-F28T8 Fixtures - (5) 30W Exit Signs (incandescent) with (5) 3W LED Signs	2.85 kW	10,000 kWh	\$3,500	\$2,809	0.7

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10	PARKS OFFICE	LIGHTING	Replace the following Lighting Fixtures with Energy-efficient Lighting Fixtures: - (33) 400W Metal Halide lamps with (33) 4-Lmap F54T5HO Fixtures	7.23 kW	15,000 kWh	\$6,000	\$3,465	1.27
11	WWTP #1	VFD	Install (1) 60HP VFD on the 60HP Digester Mixer	10 kW	60,000 kWh	\$6,000	\$3,220	0.5
12		CO-GEN	Explore the potential for installing a CHP Unit (65 kW to 100 kW)	65 kW	500,000 kWh	TBD	\$100,000	TBD
13		AIR BLOWER	Install a 60 HP Turbo Blower to replace the existing 200 HP Turbo Blower	41 kW	362,000 kWh	\$135,000	\$72,410	1.9
14	WWTP #2	VFD	Install (3) 60HP VFDs on the 60HP Air Blowers (currently inlet controlled)	20 kW	100,000 kWh	\$18,000	\$9,660	0.84
15		VFD	Install (3) 20 HP VFDs on the Digester Tank Pumps	4 kW	25,000 kWh	\$2,800	\$1,070	0.7
16		DEMAND RESPONSE DR3	Participate in saveONenergy DR3 Program by using the onsite Natural Gas Generator	150 kW	--	TBD	\$11,000/year	TBD

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17	HEENAN ARENA	LIGHTING	Replace the following Lighting Fixtures with Energy-efficient Lighting Fixtures: - (8) 2-Lamp F96T12HO (110W)with (8) 4-Lmap F32T8HP Fixtures	1.02 kW	2,000 kWh	\$1,500	\$800	2.5
18		VFD	- Install (1) 20 HP VFD on the Brine Pump and upgrade controls to run the pump only when needed - Upgrade the compressor control and sequencing	4 kW	17,000 kWh	\$3,500	\$1,070	1.43
19	MEMORIAL ARENA	LIGHTING	Replace the following Lighting Fixtures with Energy-efficient Lighting Fixtures: - (2) 2-Lamp F96T12HO (110W)with (2) 4-Lmap F32T8HP Fixtures	0.25 kW	600 kWh	\$300	\$200	1.67
20	CCC	DEMAND RESPONSE DR3	- participate in saveONenergy DR3 Program by curtailing the demand of the refrigeration/ice plant	150 kW	--	TBD	\$11,000/year	TBD
21		LIGHTING	Replace the following Lighting Fixtures with Energy-efficient Lighting Fixtures: - (210) 400W Induction Lighting Fixtures with (210) 250W LED Fixtures	44 kW	150,000 kWh	\$130,000	\$35,200	5