

ENERGY CONSERVATION AND DEMAND MANAGEMENT PLAN



JULY 2019 – JUNE 2024

Ontario Regulation 507/18, made under the Electricity Act, 1998¹, requires that public agencies report their energy consumption on an annual basis and make available to the public, its plans for conserving and otherwise reducing energy consumption and managing its demand for energy. The first plan was required on July 1, 2014. Every five years, every public agency shall make public the following:

1. A description of current and proposed measures for conserving and otherwise reducing energy consumption and managing its demand for energy.
2. A revised forecast of the expected results of the current and proposed measures.
3. A report of the actual results achieved.
4. A description of any proposed changes to be made to assist the public agency in reaching any targets it has established or forecasts it has made.

CURRENT & PROPOSED MEASURES FOR REDUCING ENERGY CONSUMPTION

Listed as objectives in the 2014 – 2019 plan were as follows:

1. Energy audit to have been conducted in all municipal facilities. Facilities that were audited prior to 2014 would not have to be re-audited.
2. Take advantage of incentive programs when available.
3. Operating and maintenance practices.
4. Employee training and awareness.
5. Monitoring and tracking systems.
6. Establish a Continual Energy Improvement Fund using the savings generated from the conversion of streetlights to LED.

¹ Modified on December 12, 2018 when the Green Energy Act, 2009 and its regulation 397/11 were revoked effective January 1, 2019.

REVISED FORECAST OF EXPECTED RESULTS

Listed as objectives in the 2014 – 2019 plan were as follows:

1. Total energy consumption, normalized to weather conditions, in municipal facilities to be reduced by 15%.
 - a. Recreation complex timetable was to have a 10% reduction by 2016 and a further 5% by 2019.

ACTUAL RESULTS ACHIEVED

Historical data is presented in the Appendices

Considerations when analyzing data:

- There is no accounting for weather.
- There is no accounting for costs. The goal is to reduce energy consumption. Fuel pricing and government rebates distort the quantity of energy used whether it be kilowatt hours or litres of propane and heating fuel.
- There is no adjustment for days of operations. For example, there were years when the arena did not offer summer ice. Swimming pool operations may change due to mechanical or staffing issues.
- Comparison will be made on the calendar year not the term of the plans.
- Propane and heating oil are based on purchases not usage.

Electricity (Appendix A)

Facilities (public works and administration)

In the three years prior to the first plan (2011 to 2013), the average annual usage was 873,314 kWh. In the five years of the first plan (2014 to 2018), the average annual usage decreased to 843,603 (3.4%)

Streetlights

Conversion to LED started in 2014. Prior to the first plan, the average annual usage was 409,645 kWh. In the last five years, the average annual usage decreased to 152,620 (63%)

Recreation Facilities

From 2011 to 2013, the average annual usage was 1,106,117. In the five year period to 2018, the average annual usage increased to 1,125,995 (1.8%)

- Arena – 713,452 to 770,336 (8%)
- Pool – 162,279 to 165,106 (1.7%)

Water

Kilowatt usage has gone up from 610,757 to 734,021 (20%) but the amount of megalitres treated has also increased from 731 to 1119 (53%). The amount of kWh used to treat a megalitre of water has decreased from 835.5 to 656.2 (21%).

Sewage

Kilowatt usage has decreased from 366,319 to 351,727 (4%) as well as the amount of megalitres treated has decreased from 377 to 374. The amount of kWh used to treat a megalitre of effluent has decreased from 970.9 to 940.3 (3%).

Propane (Appendix B)

For comparison reasons, the chart does not include the ski hill, landfill garage or the supportive housing complex because the facilities did not exist for the entire period of 2009 to 2018.

ANNUAL PURCHASE (LITRES)							
Years	Rec Complex	Works Garage	Carpenter	Airport	Library / Clinic	Fire Hall/OPP	Golf
2009 - 2013	86,666	24,410	2,721	15,472	11,907	8,777	4,892
2014 - 2018	86,838	27,238	3,605	15,882	11,029	10,974	4,809
Change	+ 0.2%	+ 11.6%	+32%	+2.3%	-7%	+ 25%	-1.7%

Heating Oil (Appendix C)

Consumed at Lakeview Community Hall

Prior to the first plan, 15,043 litres of heating fuel was being delivered to the facility each year. This has increased to 18,690 litres (24%).

Grand Total

Based on the total kilograms of greenhouse gas created by the consumption of energy

Year	Kilograms
2013	580,464
2014	479,564
2015	433,291
2016	397,963
2017	322,296
2018 not available yet	

PROPOSED CHANGES TO BE MADE TO REACH TARGETS

Capital projects have a mandatory component that we consider energy efficiency as a component of the greater project

I.e.: Road resurfacing projects always consider pulverizing asphalt to be used as road base, materials removed from site are always re-purposed as landfill cover, asphalt chunks are re-constituted as pot hole patch material.

APPENDIX A

		Kilowatt Hours Usage							
		2011	2012	2013	2014	2015	2016	2017	2018
PUBLIC WORKS									
<i>Water</i>									
Well 2		73,045	52,683	60,530	87,355	85,607	95,324	55,616	7,399
Well 3		66,525	52,850	63,027	77,120	108,146	106,486	119,536	148,807
Well 4		111,061	82,751	86,289	125,233	140,116	145,117	159,466	201,758
Well 5		121,935	93,867	96,529	143,134	147,245	151,029	167,598	205,627
Well 6		87,376	83,364	85,459	71,612	67,239	58,569	79,711	100,710
IP Booster		57,715	56,333	58,412	55,935	68,787	41,488	41,669	43,170
Penn Booster		149,982	158,642	133,896	98,249	132,607	90,240	115,200	127,200
TOTAL WATER		667,639	580,490	584,142	658,638	749,747	688,253	738,796	834,670
<i>Wastewater</i>									
Evergreen Lift		11,440	12,151	17,630	17,821	14,034	12,807	13,825	12,031
McCullough Lift		32,004	30,701	36,108	32,977	29,953	25,173	26,545	25,338
Sewage Treatment		310,667	335,869	312,387	337,907	329,186	315,120	292,320	273,600
TOTAL WASTEWATER		354,111	378,721	366,125	388,705	373,173	353,100	332,690	310,969
<i>Facilities</i>									
Garage		61,079	58,795	71,123	79,748	67,149	63,245	76,158	84,181
Carpenter Shop		10,417	15,576	13,680	9,765	12,794	9,623	12,149	13,551
Airport Terminal		69,889	75,567	95,103	95,222	71,585	78,160	76,960	98,000
Landfill Garage									8,591
Waste Tsf Station									36,988
Streetlights		414,084	409,800	405,051	332,818	114,949	108,317	106,256	100,760
TOTAL PUBLIC WORKS		1,577,219	1,518,949	1,535,224	1,564,896	1,389,397	1,300,698	1,343,009	1,487,710
RECREATION									
Arena		638,129	708,664	793,564	708,919	733,552	796,080	820,800	792,480
Pool		193,357	166,894	126,587	162,998	174,151	168,302	166,401	153,680
Lakeview		106,841	100,212	96,262	87,408	72,030	67,764	76,196	82,616
Penn Lake Park		18,007	22,882	22,129	22,099	22,255	26,775	30,159	24,494
Golf		124,396	108,502	91,925	93,955	86,098	81,720	81,720	97,320
TOTAL RECREATION		1,080,730	1,107,154	1,130,467	1,075,379	1,088,086	1,140,642	1,175,276	1,150,590
OTHER									
Town Hall		200,148	174,852	193,574	214,784	188,601	165,120	161,760	178,880
OPP/Fire Hall		286,472	249,548	296,305	301,686	267,832	246,480	238,800	248,160
Animal Pound		23,524	22,411	25,636	23,578	20,861	22,108	21,621	20,648
Library/Clinic		175,857	166,850	172,018	161,332	149,996	145,095	154,858	150,988
Visiter Info Centre		58,970	57,395	45,152	82,475	43,502	46,320	60,720	53,520
TOTAL OTHER		744,971	671,056	732,685	783,855	670,792	625,123	637,759	652,197
GRAND TOTAL		3,402,920	3,297,159	3,398,376	3,424,130	3,148,275	3,066,463	3,156,043	3,290,497

APPENDIX B

PROPANE USAGE (LITRES)										
	Rec Complex	Works Garage	Airport	Library / Clinic	Supportive Housing	Fire Hall / OPP	Golf	Carpenter s	Ski Hill (prior to 2015) now Landfill Garage	TOTAL
2009	84,918	22,212	15,511	14,469		8,367	6,804	3,242	2,202	157,725
2010	82,322	23,692	14,364	13,332		5,957	5,349	2,856	1,553	149,425
2011	85,428	25,597	17,357	10,213		5,682	2,965	3,315	-	150,557
2012	88,853	19,347	11,653	9,427		11,907	4,920	2,393	-	148,500
2013	91,807	31,201	18,476	12,095		11,972	4,420	1,802	-	171,772
2014	93,105	35,153	18,738	11,653		12,503	7,324	2,930	-	181,405
2015	90,468	29,902	19,137	9,803		6,566	4,085	4,756	-	164,716
2016	80,735	24,933	14,927	9,469		12,804	3,762	3,584	8,421	158,633
2017	87,277	22,859	13,191	8,708		9,019	4,325	2,631	7,170	155,178
2018	82,606	23,342	13,416	15,515	28,088	13,979	4,548	4,124	12,361	197,979
Average (2009 - 18)	86,752	25,824	15,677	11,468	28,088	9,875	4,850	3,163	3,171	160,341

APPENDIX C

Heating Oil Delivered to Lakeview Community Hall

YEAR	LITRES
2012	13,437
2013	18,266
2014	20,037
2015	17,377
2016	18,108
2017	13,519
2018	24,410

APPENDIX D

Solar Energy Revenue microFIT rate of \$80

	OPP/Fire		Rec Complex	
Purchase	(89,900.00)		(83,245.00)	
2012	10,721.17	11 mths	4,048.06	5 mths
2013	10,596.00		9,698.24	
2014	9,567.86		8,669.62	
2015	10,361.84		9,567.86	
2016	10,891.16		9,768.36	
2017	10,065.10		8,982.40	
2018	11,203.94		9,214.98	