



**THE TOWN OF ERIN**  
**Energy Conservation and Demand Management Plan**  
**for 2020 to 2025**

FINAL August 2019

Prepared in Consultation with Town Staff

Prepared by: Local Authority Services



## ABOUT THE TOWN OF ERIN

The Town of Erin is a picturesque rural community located in southern Wellington County, just north of the Greater Toronto Area. We have rolling countryside, meandering rivers, small settlement areas and a quaint village setting.

A few facts about Erin:

- The Town of Erin covers 360 square kilometres or 140 square miles
- There are 11,439 residents within the Town - 3900 households
- The Town of Erin Roads Department maintains 288.55 km of roads and 50 bridges
- The Town newspaper is "The Advocate" and they have a county wide newspaper, "The Wellington Advertiser"

The Town of Erin is part of the Hills of Headwaters tourism region. Step outside Toronto's back door to the headwaters of four southern Ontario watersheds, the hills of the Niagara Escarpment and the heartland of small-town Ontario.



<b>Table of Contents</b>	<u>Page</u>
I. <b>ABOUT THE TOWN OF ERIN</b>	1
II. <b>INTRODUCTION TO ENERGY CDM PLANNING</b>	3
a. Legislative Requirements	3
b. Energy CDM Planning	4
III. <b>THE TOWN OF ERIN’S FIRST ENERGY CDM PLAN (2014 to 2019)</b>	5
a. The Town’s first Energy CDM Plan Goals and Objectives	5
IV. <b>ENERGY CONSUMPTION AND COST INFORMATION</b>	6
a. The Town’s Energy Cost Centres	6
V. <b>ENERGY SUCCESS STORIES</b>	7
a. Renewable Energy	7
b. Hillsburgh Community Centre Arena Lighting Conversion	7
VI. <b>BASE YEAR COMPARATIVE REVIEW</b>	8
a. Energy Cost Percentages for 2017	8
b. Base Year Comparison – Energy Costs (\$)	9
c. Energy Cost Percentages for 2017	9
VII. <b>ENERGY CONSUMPTION AND ENERGY COST INFORMATION</b>	10
a. Energy Costs by Cost Centre for 2017	10
b. Energy Consumption (ekWh) by Cost Centre for 2017	10
VIII. <b>TOWN FACILITIES ENERGY OVERVIEW</b>	11
a. Area by Facility (Square Footage)	11
b. Energy Consumption by Facility for 2017 & 2012	11
c. Energy Use Comparison (Base Year vs. 2017) – For All Facilities	12
d. Electricity Use (kWh) – All Facilities	13
e. Natural Gas Use (m3) – All Facilities	13
f. Energy Intensity (ekWh) – All Facilities	13
g. Energy Intensity per Square Foot (ekWh/ft2) – All Facilities	14
h. Energy Costs (\$) by Facility (2017)	14
i. Total Energy Cost by Facility (2017)	15
IX. <b>TOWN PARKS ENERGY OVERVIEW</b>	15
X. <b>WATER TREATMENT FACILITIES ENERGY OVERVIEW</b>	16
a. Electricity Use (kWh) for Water Treatment Facilities	16
b. Electricity Use (kWh) Comparison	16
c. Total Electricity Costs (2017)	17
XI. <b>STREET LIGHTING ENERGY OVERVIEW</b>	18
a. Energy Efficient LED Street Lighting Conversion	18
b. Total Annual Electricity Usage (Street Lighting)	18
c. Total Annual Electricity Costs (Street Lighting)	19
XII. <b>THE TOWN’S NEW ENERGY CDM PLAN FOR 2020 – 2025</b>	20 to 23

## INTRODUCTION TO ENERGY CDM PLANNING

### Legislative Requirements

All public institutions in Ontario, including municipalities, are required, by provincial legislation, to annually report on their energy and water use and greenhouse gas emissions, and to develop and post their local or corporate **Energy Conservation and Demand Management (CDM)** Plan at least once every 5 years. This legislation falls under Ontario Regulation 507/18 of the Electricity Act 1988. This is a recent update to the previous Green Energy Act.

The new regulation states:

1. A public agency shall prepare, publish, make available to the public and implement energy conservation and demand management plans or joint plans in accordance with section 25.35.2 of the Act and with this Regulation.
2. An energy conservation and demand management plan are composed of two parts as follows:
  - a) A summary of the public agency's annual energy consumption and greenhouse gas emissions for its operations
  - b) A description of previous, current and proposed measures for conserving and otherwise reducing the amount of energy consumed by the public agency's operations and for managing the public agency's demand for energy, including a forecast of the expected results of current and proposed measures.

For more information on Ontario Regulation 507/18 visit [www.ontario.ca/laws/regulation/180507](http://www.ontario.ca/laws/regulation/180507)

## ENERGY CDM PLANNING

Today, all municipalities are faced with major challenges in addressing the issues of climate change, sustainability and resiliency within their communities. The purpose of energy planning is to take a systematic approach to controlling energy and water usage (consumption) and energy costs. Energy planning is also an important way of improving efficiency, reliability, and reducing our environmental footprint (GHG or greenhouse gas emissions).

Energy planning assists municipalities with:

- Managing their energy and water use.
- Mitigating rising energy costs.
- Reducing greenhouse gas emissions.
- Demonstrating leadership and commitment in energy and water conservation and sustainability.
- Reducing their carbon footprint, by reducing greenhouse gas emissions.
- Meeting legislative requirements (O. Reg. 507/18).
- Developing best practices for identifying and evaluating energy-saving opportunities.
- Comparing results and strategies to similar organizations across the province.
- Setting goals, targets and timelines for energy and emission reductions.
- Measuring and reporting on energy and water efficiency improvements (successes).
- Confirming the plan is supported by their local council and senior management.

This report is intended to address:

- 1) The legislative requirements covered under Ontario Regulation 507/18 of the Electricity Act 1988.
- 2) Review the Town's first Energy CDM Plan for 2014 – 2019.
- 3) Provide a Base Year Comparative Review (2012 vs. 2017). The progress of the Town's first Energy CDM Plan by measuring changes in energy consumption and costs in 2017 verses the plans base year of measurement (2012).
- 4) Provide an update on the Town's electricity, natural gas and fuel oil usage and costs for 2017, under its major cost centres: Corporate Facilities, Parks, Water Treatment Facilities and Street Lighting.
- 5) Introduce changes and updates to the Town's previous energy plan under its new 5-year Energy CDM Plan for 2020 - 2025.

## **THE TOWN OF ERIN'S FIRST ENERGY CDM PLAN (2014 to 2019)**

The Town of Erin's first Energy Conservation and Demand Management (CDM) Plan was for the 5-year period from 2014 to 2019.

### **The Town's first Energy CDM Plan Goals and Objectives**

- 1) To obtain and analyse critical data and information regarding the individual components within our Town buildings which consume energy.
- 2) To obtain professional engineering advice on ten of our buildings (five large, five small), concerning potential energy savings for the duration of the plan.
- 3) To commit a targeted amount of \$16,000 per annum, for the duration of the plan, towards investigating and implementing both short term and long-term energy conservation initiatives.
- 4) To cultivate, encourage and implement ideas from all staff with regard to behavioural actions that may be instituted to reduce energy consumption.
- 5) With respect to facilities where output can be measured in dollars (arenas), reduce the ratio of energy expense to revenue earned by 1% per annum.
- 6) With respect to facilities where output can be measured in units (pump houses), reduce the ratio of energy expense to units produced by 1% per annum.

### **The Town's Conclusion with its 1<sup>st</sup> Plan**

It is of critical importance that energy conservation and demand management strategies become part of the fabric of decision making at the Town of Erin. Not only are there operating costs to be saved annually, but particularly during the capital budgeting process, there is a window of opportunity to re-assess how we intend to deliver services in the future, which may reduce the demand for energy. We know intuitively that momentum down this path will require the input and consensus of Council, management, all staff, and particularly our service users. Our careful, common sense allocation of budgeted funds, and our energy conservation decisions (both current and future) must stand up to rigorous, non-emotional financial scrutiny, and our successes and failures must be both measurable and transparent.

For more information on the Town of Erin's 1<sup>st</sup> Energy CDM Plan please visit: <http://www.erin.ca>

## ENERGY CONSUMPTION AND COST INFORMATION

The Town of Erin’s energy cost centres are outlined in the table below. The Town’s Energy CDM Plan’s base year is 2012. The base year is used as a comparator to measure performance of the Town’s Energy CDM plan by tracking energy use and reductions for electricity, natural gas and fuel oil. The Town’s Energy Cost Centres for Electricity & Natural Gas are:

### The Town’s Energy Cost Centres

OPERATIONS NAME	SITE ADDRESS
<b>CORPORATE FACILITIES</b>	
Town of Erin Municipal Office	5684 Trafalgar Rd. Municipal Office
Roads Garage/ Equipment Depot	5684 Trafalgar Rd, Roads Shop
Water Shop	<i>1 Shamrock Road (Building Sold July 2018)</i>
<b>PARKS &amp; RECREATION</b>	
Ballinafad Community Centre	9382 Wellington Rd 42, Halton
Erin Community Centre	14 Boland Drive.
Hillsburgh Community Centre & Arena	95 Main Street, Erin
Barbour Fields Lights (Hillsburgh)	5808A 8th Line
Hillsburgh Ball Park	5808 8th Line
McMillan Park Kiosk	109 Main Street
Victoria Park	20 Mill Street
<b>FIRE HALLS</b>	
Erin Fire Hall	2 Erinville Drive
Hillsburgh Fire Hall	2 Station Street
<b>WATER TREATMENT FACILITIES</b>	
Bel-erin Pump	5403 County Rd 52
Delerin Pressure Tank Building	17A Delerin Cres
Glendevon Pump (Mill St. Pump)	13 Mill Street, Hillsburgh
Hillsburgh Booster Pumping Station	10 Mill Street, Hillsburgh
Hillsburgh Heights Pump	8 Conc, Lot WH26, Hillsburgh
Water Tower	0 Hill Street
Well No. E7 Water Treatment Plant	46 Shamrock Rd
Well No. E8 Water Treatment Plant	5555 8th Line, Erin
<b>STREET LIGHTING (Various Locations)</b>	

**Of Note:**

- The Town of Erin’s Water Treatment Facilities are owned by the Town and are operated by the Ontario Clean Water Agency (OCWA). The OCWA became the operator of the Erin and Hillsburgh residential water distribution systems on June 11, 2018.
- The Ballinafad Community Centre is owned by the Town of Erin and was previously operated by a group of volunteers. As of 2019, the Town has taken over the community centres operations.

**ENERGY SUCCESS STORIES**

**Renewable Energy**

The Town of Erin has two renewable generation, solar photo-voltaic (PV) roof top projects that were installed on two of its facilities. In 2016, solar PV panels were installed on the Hillsburgh Fire Hall. This is a 10-kilowatt MicroFIT project and is owned by the Town. The Town also leased roof space on the Erin Community Centre (*picture shown below*) to a third party who owns the solar panels. This is a 250-kilowatt system, which began commercial operation in the Fall of 2017.



**Hillsburgh Community Centre Arena Lighting Conversion**

In 2017 the Town replaced 21 x 400-watt metal halide fixtures with energy efficient LED fixtures. The project cost was \$10,970, with the IESO incentive of \$2,310, the net project cost was \$8,660. The project is expected to reduce electricity consumption by 22,387 kilowatt-hours or approximately \$3,500 annually.

## BASE YEAR COMPARATIVE REVIEW

In this section, the Town’s energy consumption for 2017 is compared to the Town’s base year of 2012. The base year is a reference year against which energy and emission increases, or reductions are measured. The year 2017 was the most recent year for which all utility consumption and cost data was available. With the transfer of the Town’s Water Treatment Facilities to OCWA operational control in June 2018, all utility billing was also transferred to OCWA. At the time of this report all data for the complete year of 2018 was not available. The year 2017 represents year 3 of the 5-year Energy CDM Program (2014 to 2019).

### Base Year Comparison to 2017 – Energy Consumption

The table below compares the Town’s total electricity (kWh), natural gas (m<sup>3</sup>), fuel oil (L) and overall total energy use in equivalent kilowatt hours between the base year of 2012 and 2017.

ENERGY CONSUMPTION	Base Year (2012)	2017	Base Year vs. 2017
<b>Electricity (kWh)</b>			
Corporate Facilities	155,177	130,783	-15.72%
Parks & Recreation	1,005,932	949,599	-5.60%
Fire Halls	51,857	98,661	90.26%
Water Treatment Facilities	490,859	491,939	0.2%
Street Lighting	510,035	525,224	2.98%
<b>Total Electricity Use:</b>	<b>2,213,860</b>	<b>2,196,206</b>	<b>-0.8%</b>
<b>Natural Gas (m3)</b>			
<b>Total Natural Gas Use:</b>	<b>77,780</b>	<b>86,796</b>	<b>11.59%</b>
<b>Fuel Oil (L)</b>			
<b>Total Fuel Oil Use:</b>	<b>2,911</b>	<b>3,179</b>	<b>9.21%</b>
<b>Energy Use (ekWh)</b>			
Corporate Facilities	384,148	384,808	0.17%
Parks & Recreation	1,568,707	1,516,092	-3.35%
Fire Halls	118,298	235,055	98.70%
Water Treatment Facilities	490.859	491,939	0.2%
Street Lighting	510,035	525,224	2.98%
<b>Total Energy Use (ekWh):</b>	<b>3,072,047</b>	<b>3,153,119</b>	<b>2.64%</b>

kWh = Kilowatt-hours, m<sup>3</sup> = Cubic Metres, L = Litres, ekWh = Equivalent kWh

## The Hillsburgh Fire Halls Impact on Base Year Comparisons

The Hillsburgh Fire Hall (HFH) was reconstructed in 2013. As a result, the footprint of this facility was increased from 4,360 to 13,368 square feet. Therefore, comparing the base year (2012) to future years (e.g. 2017) is not relevant. If the HFH was removed from the comparison above, the Town of Erin’s energy data would have shown an **overall reduction of -1.21%** in ekWh vs. the increase of 2.64% shown above.

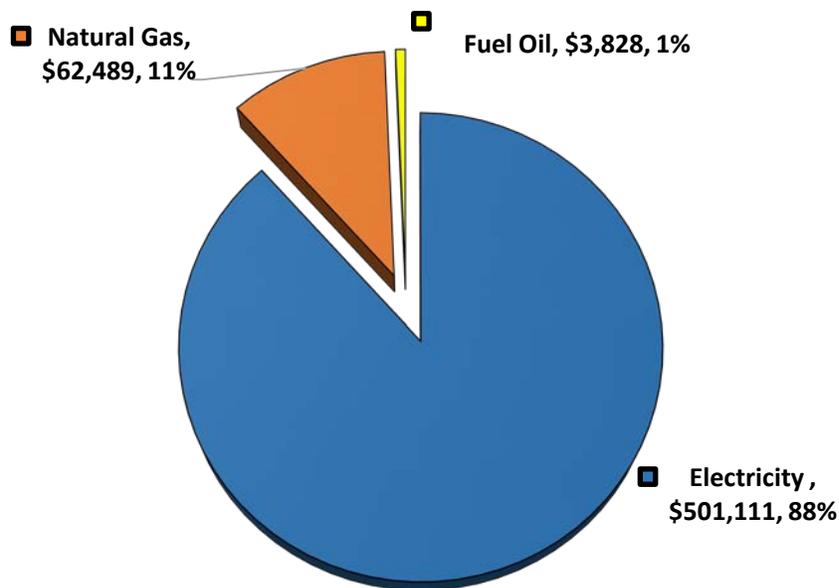
## Base Year Comparison – Energy Costs (\$)

Energy cost comparisons are provided later in this report within individual cost centres analysis, where data was available. **Note:** At the time of this report there was no cost data available for the Town’s Water Treatment Facilities for 2012 (base year).

## Energy Cost Percentages for 2017

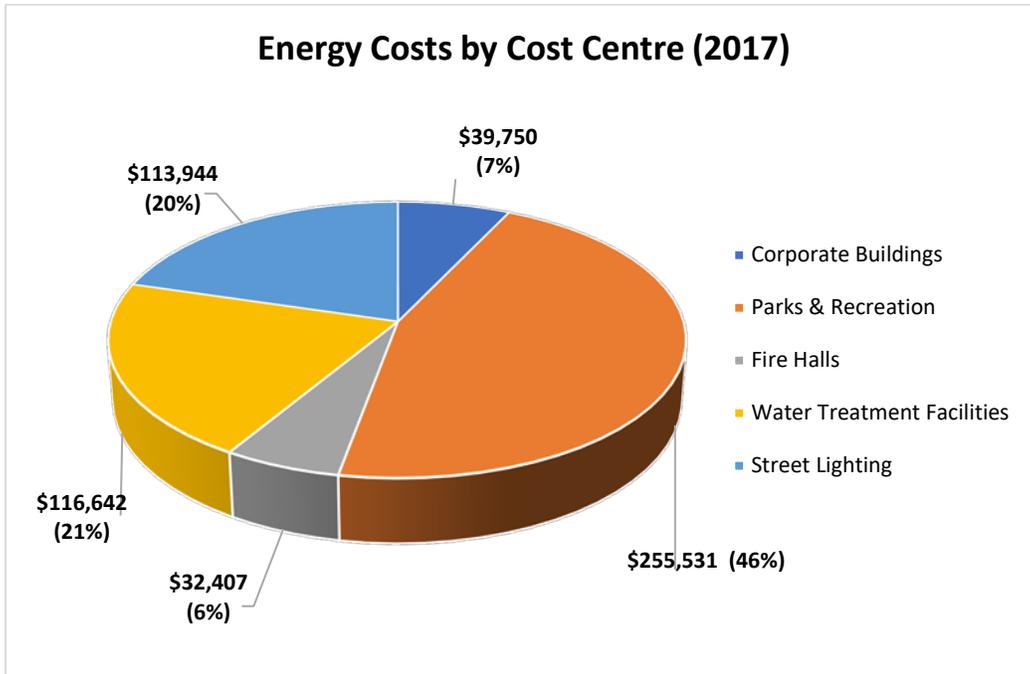
The graph below illustrates the percentage of energy costs between electricity, natural gas and fuel oil for the Town of Erin in 2017. Electricity represents approximately 88% of the Town’s total annual energy costs.

**Energy Costs as a Percentage (2017)**



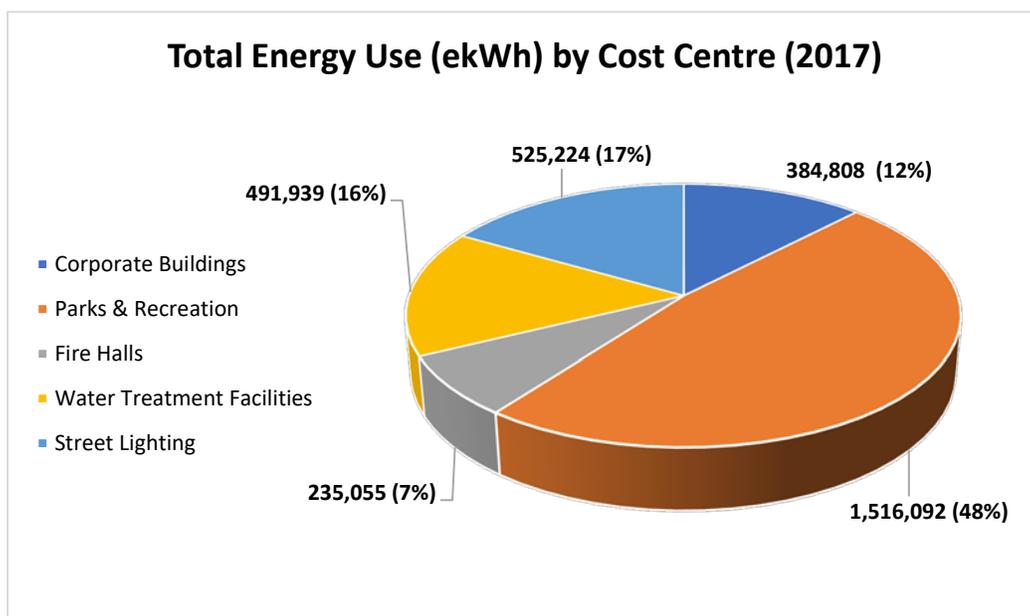
### Energy Costs by Cost Centre for 2017

The Town’s total energy costs for 2017 were \$558,274. This includes the combined costs of electricity, natural gas and fuel oil by each cost centre



### Energy Consumption (ekWh) by Cost Centre for 2017

The Town’s total energy consumption in equivalent kilowatt-hours for 2017 was 3,153,119 ekWh. The breakdown by cost centre is illustrated below.



## TOWN FACILITIES ENERGY OVERVIEW

The table below summarizes the square footage (Ft<sup>2</sup>) by town building for 2012 (base year) and from 2013 onward.

Note: the *Hillsburgh Fire Hall\** was reconstructed into a larger facility in 2013, which accounts for the change in square footage.

### Building Square Footage (Ft<sup>2</sup>)

Operations Name	2012	2013 >
Town of Erin Municipal Office	6,997	6,997
Roads Garage/ Equipment Depot	7,276	7,276
Water Shop	5,167	5,167
Ballinafad Community Centre	3,940	3,940
Erin Community Centre	47,426	47,426
Hillsburgh Community Centre & Arena	20,656	20,656
Erin Fire Hall	4,844	4,844
<i>Hillsburgh Fire Hall*</i>	<b>4,360</b>	<b>13,368</b>
<b>Totals:</b>	<b>100,665</b>	<b>109,673</b>

### Energy Consumption by Facility for 2017 & 2012

The data in the table below provides a breakdown of Electricity, Natural Gas, Fuel Oil, Total Energy Use (ekWh) and Energy Intensity by Square Foot (ekWh/ft<sup>2</sup>) by facility for 2017 and 2012.

Year 2017					
Facility/ Operation Name	Electricity Use (kWh)	Natural Gas Use (m3)	Fuel Oil Use (L)	Total Energy Use (ekWh)	Energy Intensity ekWh/ft <sup>2</sup>
Town of Erin Municipal Office	72,719	2,429	0	98,540	14.08
Roads Garage/ Equipment Depot	39,826	15,880	0	208,630	28.67
Water Shop (Building Sold 2018)	18,238	5,588	0	77,638	15.03
Ballinafad Community Centre	25,016	0	3,179	59,287	15.05
Erin Community Centre	590,758	30,644	0	916,503	19.32
Hillsburgh Community Ctr. & Arena	305,104	19,424	0	511,581	24.77
Erin Fire Hall	26,036	4,907	0	78,198	16.14
Hillsburgh Fire Hall	72,625	7,924	0	156,857	11.73
<b>Totals &amp; Average ekWh/ft<sup>2</sup>:</b>	<b>1,150,322</b>	<b>86,796</b>	<b>3,179</b>	<b>2,107,234</b>	<b>19.21</b>

<b>2012 (Base Year)</b>					
<b>Facility/ Operation Name</b>	<b>Electricity Use (kWh)</b>	<b>Natural Gas Use (m3)</b>	<b>Fuel Oil Use (L)</b>	<b>Total Energy Use (ekWh)</b>	<b>Energy Intensity ekWh/ft<sup>2</sup></b>
Town of Erin Municipal Office	92,901	2,440	0	118,838	16.99
Roads Garage/ Equipment Depot	40,217	12,937	0	177,738	24.43
Water Shop (Building Sold 2018)	22,059	6,163	0	87,572	16.95
Ballinafad Community Centre	31,586	0	2,911	62,967	15.98
Erin Community Centre	685,981	30,538	0	1,010,600	21.31
Hillsburgh Community Ctr. & Arena	259,066	19,452	0	465,841	22.55
Erin Fire Hall	36,015	3,764	0	76,026	15.70
Hillsburgh Fire Hall	15,842	2,486	0	42,272	9.70
<b>Totals &amp; Average ekWh/ft<sup>2</sup>:</b>	<b>1,183,667</b>	<b>77,780</b>	<b>2,911</b>	<b>2,041,854</b>	<b>20.28</b>

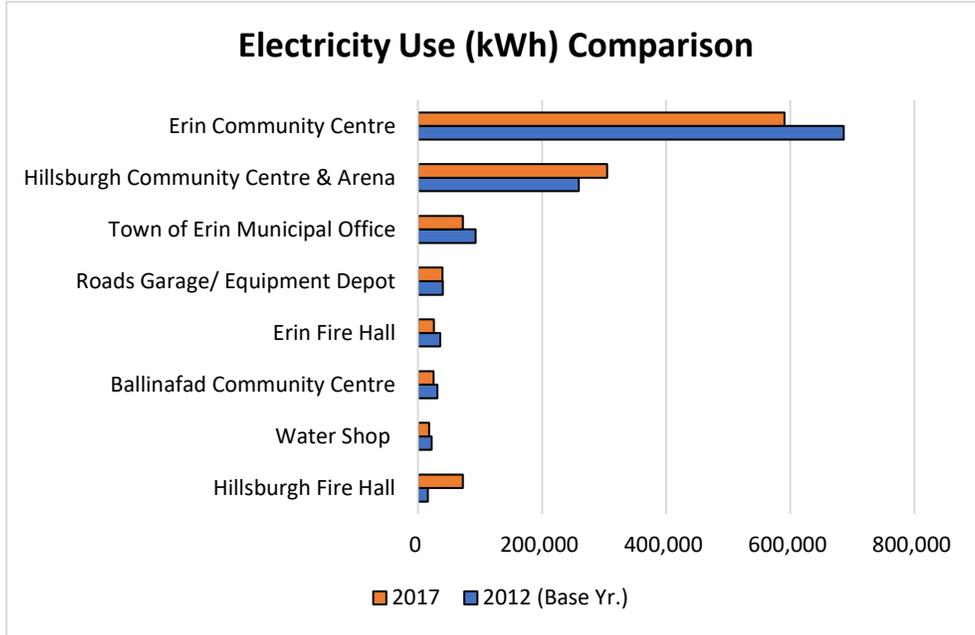
### Energy Use Comparison (Base Year vs. 2017) – For All Facilities

The table below provides a comparison between the base year (2012) and 2017 for Electricity (kWh), Natural Gas (m<sup>3</sup>), Fuel Oil (L), Total Energy Use (ekWh) and Energy Intensity by Square Foot (ekWh/ft<sup>2</sup>) by facility for 2017.

<b>ALL FACILITIES Energy Use (2012 vs. 2017)</b>	<b>Base Year (2012)</b>	<b>2017</b>	<b>Base Year vs. 2017</b>
Electricity	1,183,667	1,150,322	-2.8%
Natural Gas	77,780	86,796	11.6%
Fuel Oil	2,911	3,179	9.2%
Energy Intensity Totals (ekWh)	2,041,854	2,107,234	3.2%
Energy Intensity ekWh/ft <sup>2</sup>	20.28	19.21	-5.3%

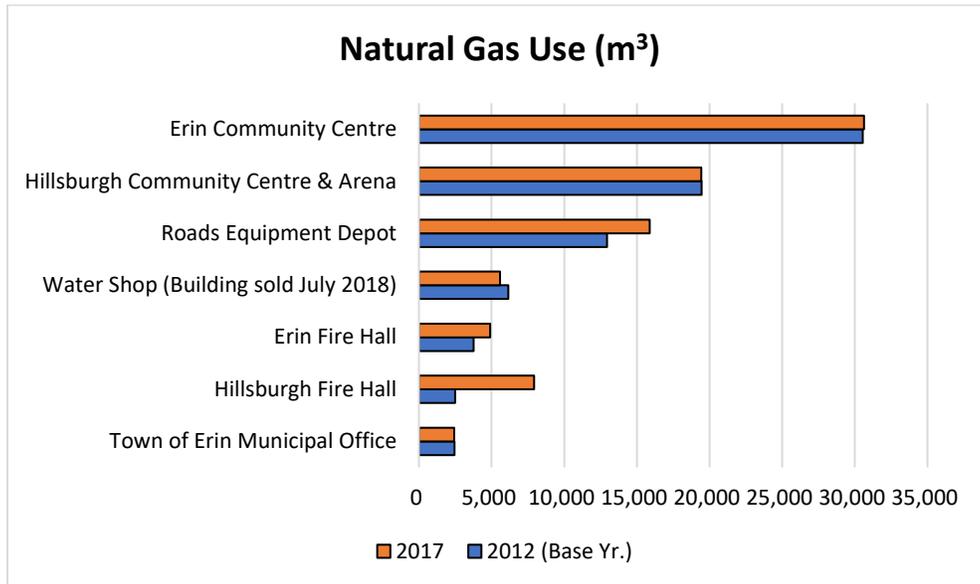
### Electricity Use (kWh) – All Facilities

Electricity Consumption (kWh) decreased -2.8% in 2017 over the base year of 2012. Without the Hillsburgh Fire Hall, this decrease would have been -7.7%.



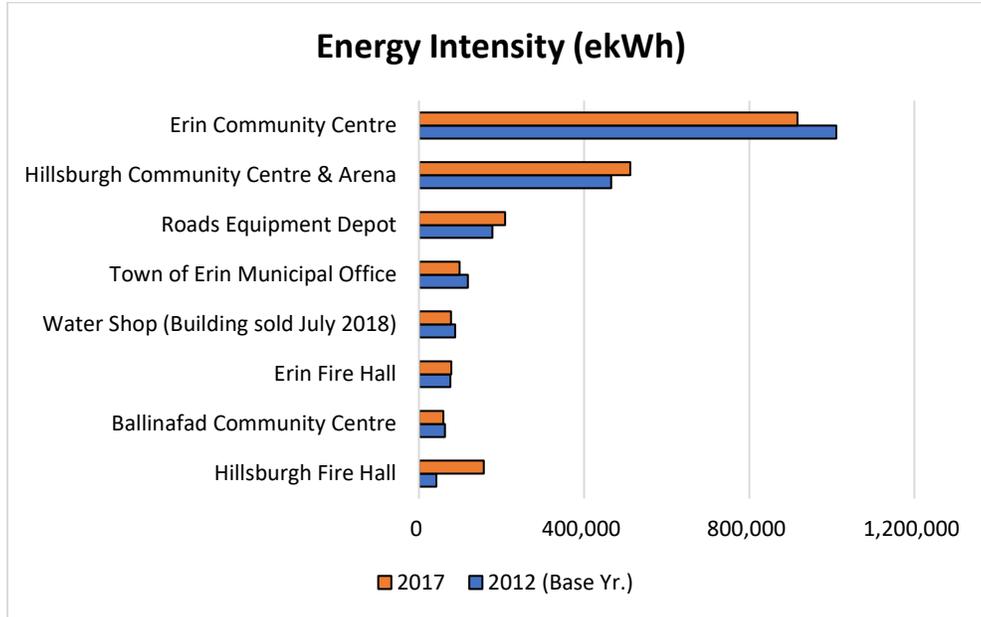
### Natural Gas Use (m³) – All Facilities

Natural Gas Use (m³) for 2012 was 77,780 and 86,796 for 2017. This represents an increase from the base year of 11.6%. A significant contributor to this consumption increase is due to the change in building footprint of the Hillsburgh Fire Hall (HFH) from its reconstruction in 2013. Without the HFH this increase would have been approximately 4.8%.



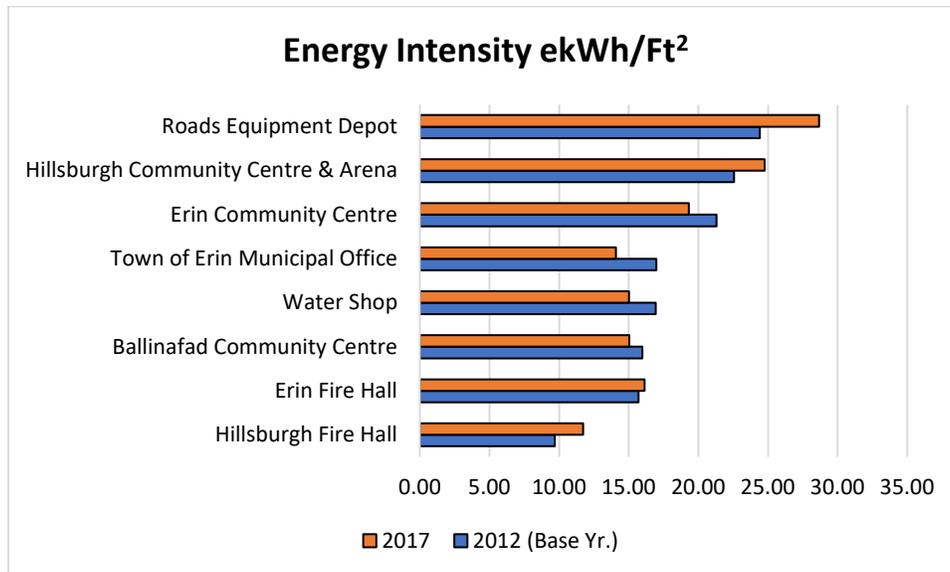
### Energy Intensity (ekWh) – All Facilities

Energy Intensity Totals (ekWh) for 2012 were 2,041,854 and 2,107,234 for 2017. This represents an increase from base year of 3.2%.



### Energy Intensity per Square Foot (ekWh/ft<sup>2</sup>) – All Facilities

The table below provides a breakdown of Energy Intensity ekWh/ft<sup>2</sup> by facility in 2017. The Energy Intensity per square foot (ekWh/ft<sup>2</sup>) for 2012 was 20.28 and 19.21 for 2017. This represents a reduction from the base year of -5.3%.



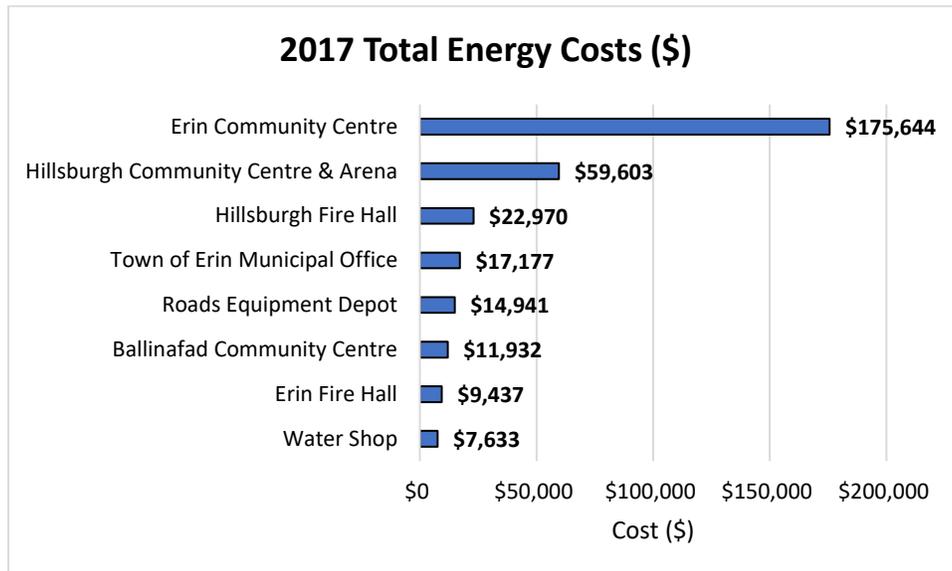
### Energy Costs (\$) by Facility (2017)

In 2017, the total energy cost for the Town of Erin was \$319,337. The table below outlines electricity, natural gas, fuel oil and total energy costs for the Town’s Facilities for 2017. This is an increase of 68.7% from 2012 which its total energy cost was \$190,357.

Facilities - Energy Costs (\$)	Electricity Cost (\$)	Natural Gas Cost (\$)	Fuel Oil Cost (\$)	Total Energy Costs (\$)
Ballinafad Community Centre	\$8,104	0	\$3,828	<b>\$11,932</b>
Erin Community Centre	\$139,058	\$36,586	0	<b>\$175,644</b>
Erin Fire Hall	\$6,789	\$2,648	0	<b>\$9,437</b>
Hillsburgh Community Centre & Arena	\$52,574	\$7,029	0	<b>\$59,603</b>
Hillsburgh Fire Hall	\$15,317	\$7,653	0	<b>\$22,970</b>
Roads Equipment Depot	\$8,120	\$6,820	0	<b>\$14,941</b>
Town of Erin Municipal Office	\$15,425	\$1,752	0	<b>\$17,177</b>
Water Shop	\$4,417	\$3,216	0	<b>\$7,633</b>
<b>Totals:</b>	<b>\$249,804</b>	<b>\$65,705</b>	<b>\$3,828</b>	<b>\$319,337</b>

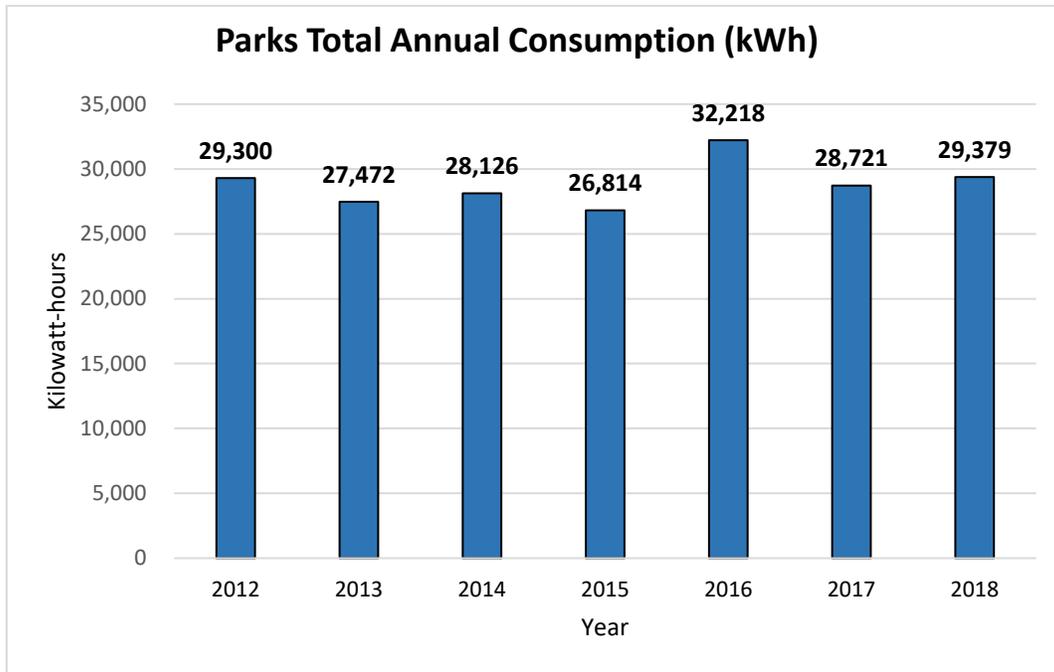
### Total Energy Cost by Facility (2017)

The top three energy cost facilities (Erin Community Centre, Hillsburgh Community Centre and the Hillsburgh Fir Hall) represent over 76% of the total energy costs of all corporate facilities.



## TOWN PARKS ENERGY OVERVIEW

The Town of Erin has four parks electricity accounts which are: The Barbour Field Lights, Hillsburgh Ball Park, McMillan Park Kiosk and Victoria Park.



## WATER TREATMENT FACILITIES ENERGY OVERVIEW

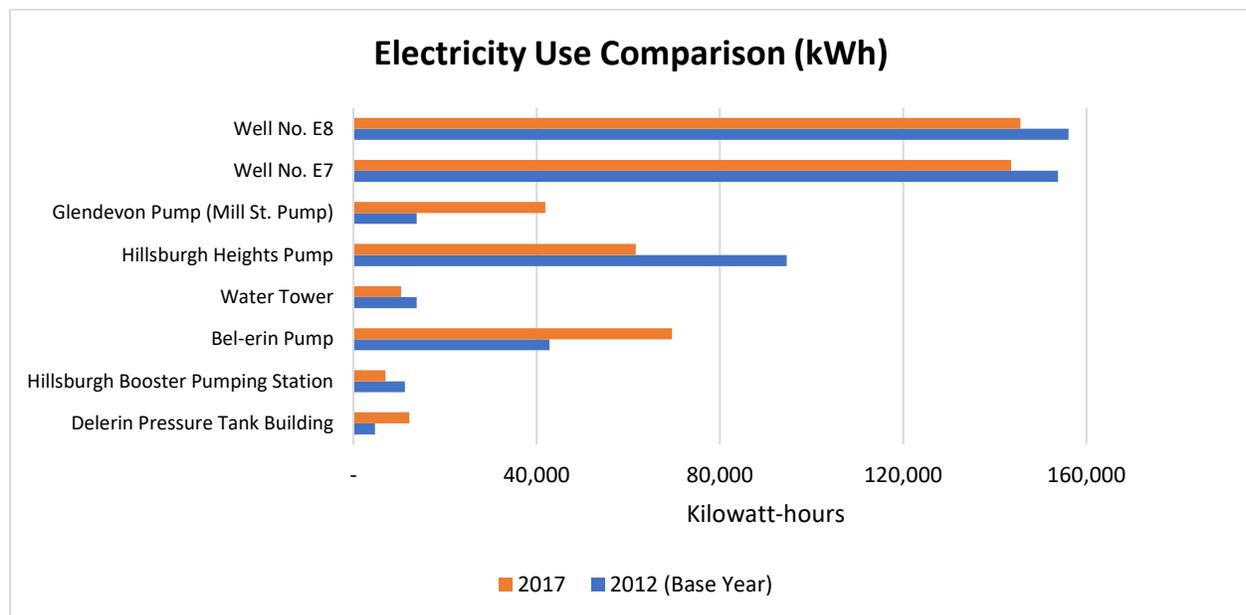
### Electricity Use (kWh) for Water Treatment Facilities

The table below outlines the total annual electricity consumption for the base year of 2012 and 2017 for the Town’s Water Treatment Facilities. The total increase in electricity use from 2012 to 2017 was 0.2%. This increase could be due to several factors such as weather and growth. Flow data was not available for comparative purposes.

Water Treatment Facilities Electricity Use (kWh)	2012 (Base Year)	2017	Base Year vs. 2017
Delerin Pressure Tank Building	4,743	12,234	158.0%
Hillsburgh Booster Pumping Station	11,220	7,041	-37.2%
Bel-erin Pump	42,800	69,551	62.5%
Water Tower	13,845	10,422	-24.7%
Hillsburgh Heights Pump	94,551	61,609	-34.8%
Glendevon Pump (Mill St. Pump)	13,800	41,882	203.5%
Well No. E7	153,799	143,600	-6.6%
Well No. E8	156,101	145,600	-6.7%
<b>Totals:</b>	<b>490,859</b>	<b>491,939</b>	<b>0.2%</b>

### Electricity Use (kWh) Comparison

The graph below illustrates the total annual electricity consumption for the base year of 2012 and 2017 for the Town’s Water Treatment Facilities.



## **Total Electricity Costs (2017)**

The electricity cost for the Town's Water Treatment Facilities in 2017 was \$116,642.

*Cost data for the base year 2012 was not available at the time of this report.*



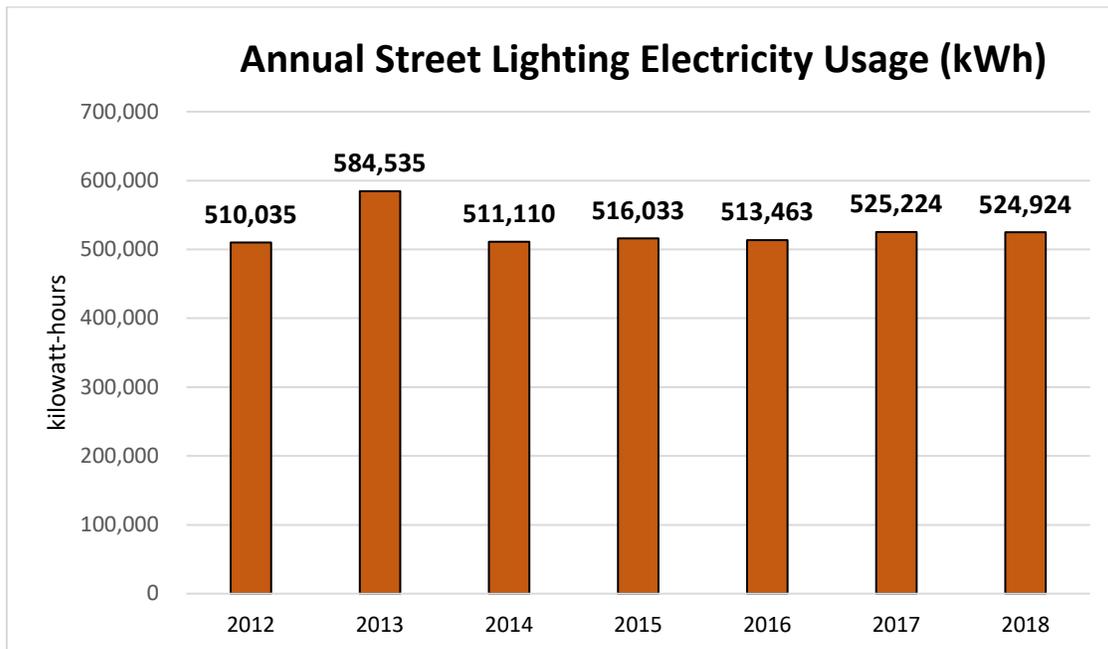
## STREET LIGHTING ENERGY OVERVIEW

### Energy Efficient LED Street Lighting Conversion

In 2018, the Town began converting its old inefficient High-Pressure Sodium (HPS) streetlights to new energy efficient LED streetlights. The total project cost is estimated at approximately \$350,000. The estimated electricity consumption (kWh) savings are 60%, and the electricity cost savings are estimated to be approximately 48%. The street lighting conversion project is being completed using an Energy Performance Contract. The estimated project incentive from the IESO is projected to be about \$48,000. This project was completed in 2019.

### Total Annual Electricity Usage (Street Lighting)

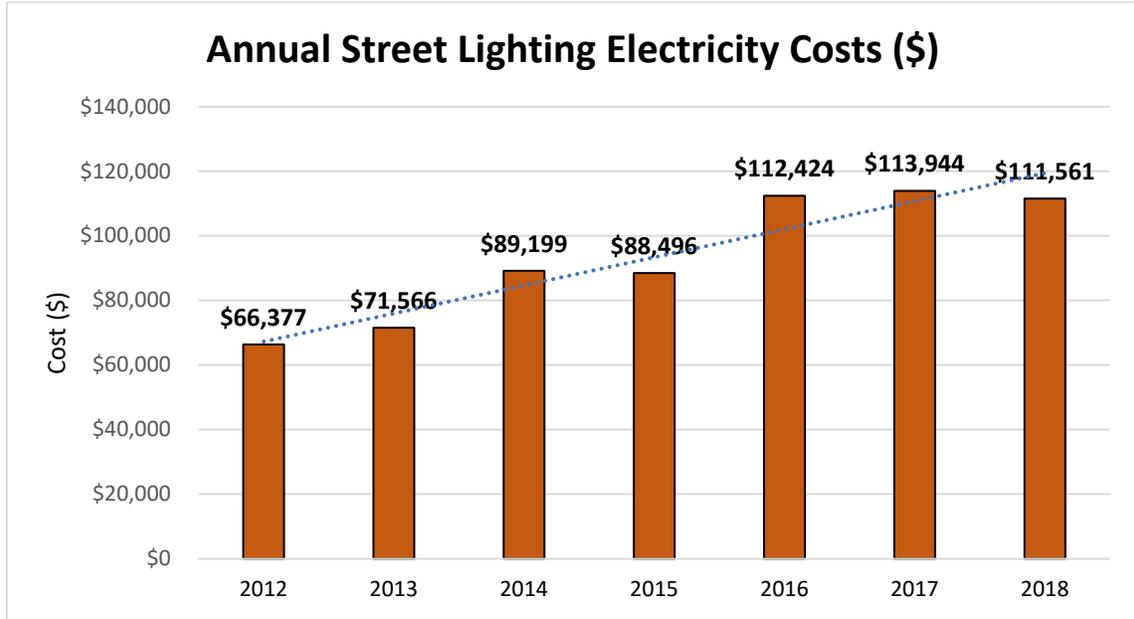
The Town’s annual street lighting electricity consumption (kWh) is shown in the graph below.



The Town of Erin’s LED Conversion project is expected to yield substantial reductions in electricity consumption and costs, beginning in 2019.

### Total Annual Electricity Costs (Street Lighting)

The annual cost of the Town’s street lighting is shown in the graph below. While electricity consumption has only increased approximately 3.0%, electricity costs have seen a significant increase in 2017 vs. the base year (2012) of 71.7%.



## **THE TOWN'S NEW ENERGY CDM PLAN FOR 2020 – 2025**

### **Water Conservation**

Water Conservation will be included the Town's 2020 to 2025 Energy CDM Plan.

Fresh, clean water is a limited resource. Water conservation is the practice of using water efficiently to reduce unnecessary water usage or waste. Using less water also puts less strain on municipal or regional water, wastewater and local septic systems. Water conservation includes policies, plans, strategies and activities to sustainably manage the natural resource of fresh water to meet current and future demands.

### **Energy Reduction Targets**

1. Energy and water consumption reduction targets for all municipal facilities and operations will be set as an average reduction target of 2.0% per year between 2020 and 2025 (10% over 5-years).
2. For targeting purposes, energy refers to electricity, natural gas and fuel oil. The town may consider developing targets to reduce diesel and gasoline use, as this is a significant contributor to GHG emissions.

### **Energy Billing & Data Tracking**

1. At least once a year, energy consumption, costs, intensity measures and greenhouse gas emissions, will be reported to Town Council. With this report an update will be included on the current performance of the Town's Energy CDM Plan and any incentives received from implementing energy CDM projects. Under Ontario Regulation 507/18 municipalities are also required to report on their annual energy consumption and greenhouse gas emissions for its facilities and operations.
2. The Town will record and track all its corporate energy and water accounts on a monthly basis. This will include all corporate facilities (e.g. community centres, fire halls, works yards etc.), parks, water treatment facilities and street lighting.
3. The Town will register with Hydro One and Enbridge to gain electronic access to its electricity and natural gas accounts. This will improve timely access and accuracy to energy consumption and cost data for reporting purposes.

## Energy & Sustainability Committee

The Town of Erin will establish an Energy & Sustainability Committee (*E&S Committee*). The Committee will be chaired by the Director of Public Works (or as designated by the Senior Management Team) and will include departmental representatives from all corporate energy and water consuming facilities and operations. The E&S Committee will also include representatives that support these operations e.g. Finance.

The E&S Committee will be responsible for the following:

1. The development, implementation and reporting of the Town's energy, water and GHG reduction targets as outlined in the Energy CDM Plan.
2. The E&S Committee will develop an Annual Corporate Energy and Water Conservation Action Plan for approval by the senior management team and Council. These plans may also include opportunities for renewable energy generation and energy storage.
3. The E&S Committee will meet at least quarterly.
4. The E&S Committee will be supported with necessary resources needed to meet the Energy CDM Plans reduction targets such as funding and expertise (feasibility/ engineering studies). Funding may be subject to Council approval.
5. All Town Departments and participating Boards or Agencies will be responsible for reporting to the E&S Committee at least annually on energy and water CDM projects implemented within their areas. Reporting will include a breakdown of the following:
  - a) Total project costs.
  - b) Total project costs less incentives.
  - c) Incremental project costs (Difference between base case and energy efficient option).
  - d) Energy consumption reductions (annual).
  - e) Energy or water cost reductions (annual).
  - f) Maintenance Savings (annual).
  - g) Emission reductions (annual).
  - h) Incentives or funding provided from external agencies e.g. utilities, other government agencies etc.
  - i) Financial benefits i.e., simple payback, life cycle costing, and any other financial measures as determined by Finance (e.g. ROI, IRR, NPV, SIR).
  - j) Support documentation i.e., engineering studies, audits, incentive applications.

6. The E&S Committee will be responsible for providing council with an Annual Corporate Energy and Water Conservation progress report as outline in Energy Billing & Data Tracking section, item 1 of this report. Once the report is approved or received by Council this report will then be posted for public view on the Town's website. This report will include the following:
  - a) A comparison the most recent full year's energy and water consumption, cost, and GHG emission data to the previous reporting year and with the base year, i.e., 2019 would be compared to 2018 and 2012 (the base year).
  - b) Report on the Town's ekWh, \$/ft<sup>2</sup> and energy intensity ekWh/sq.ft<sup>2</sup> for corporate facilities and \$/ML and ekWh/ML for water and wastewater stations at a minimum.
  - c) Report on the Town's corporate greenhouse gas emissions and emission reductions.
  - d) Report on overall progress of the current Energy CDM Plan and future plans or opportunities.
  - e) Highlight success stories (case studies) and the value of the Town's investments in energy and water conservation. Reports will include a brief summary of the project name, type of project e.g. energy efficient lighting, project location, reductions in energy or water consumption, costs, incentives, specialized funding, GHG emissions financial benefits.
  - f) Develop annual action plans which will identify new energy and water conservation opportunities to reduce energy and water consumption, costs and greenhouse gas emissions. This plan will review upcoming capital plans and recommend strategies for energy efficiency improvements.
  - g) The base year will remain as 2012, unless otherwise recommended by the E&S Committee and directed by Council.

## **New Energy Initiatives**

1. The Town will implement, at a minimum, ASHRAE Level 2 energy audits on its top 3 energy consuming facilities within the next calendar year. These 3 facilities represent over represent over 75% of the total energy costs of all the Town's corporate facilities. This was completed in September 2019.

2. Energy and water conservation efficiency projects/ programs developed by the E&S Committee where funding is not available, will be incorporated into the annual operating and capital budget process.
3. The E&S Committee will consider incorporating recommendations for corporate fleet vehicles and equipment fuel reduction strategies. Fuel (diesel and gasoline) along with fuel oil and natural gas are the largest corporate contributors to GHG emissions.
4. The Town will utilize available incentive funding and favourable financing opportunities to improve the financial return of energy and water conservation projects.
5. Business cases will be provided for energy and water CDM projects. Business cases will include the project base case(s) vs. the alternative CDM option(s). For CDM retrofit projects the “base case” is usually the existing equipment. For capital or life cycle replacement projects the “base case” is typically the standard efficiency replacement option (e.g. a mid efficiency boiler vs. a high efficiency boiler). Business cases will identify the following:
  - a) The base case and energy efficient option(s) being compared and why.
  - b) Project and equipment costs for each option. For capital replacement projects the business case will also include the incremental cost differences.
  - c) Energy or water consumption and energy demand, i.e., for both the base case and the proposed energy efficient option(s).
  - d) Annual energy and water consumption and cost savings.
  - e) Annual maintenance and operational savings.
  - f) Financial or utility incentive/ funding.
  - g) Life cycle costing, payback and other financial measures as determined by Finance.
5. Energy rate escalators will be factored into the business case analysis using most recent forecasts as determined by finance.
6. Consideration will be given to current and future costs e.g. carbon pricing impacts on Town operations. This may be considered as parts of the financial benefits of energy and water conservation initiatives.
7. The Town will continue work with the Ontario Clean Water Agency (OCWA) to explore and develop opportunities for energy and water CDM improvements. All capital requests must include options for energy efficiency improvements.



All energy consumption and cost data were provided by the Town of Erin. In some cases, supporting information was provided by LAS. Where information was not available estimates were made. In some cases, data was updated or revised from previous BPS reporting to reflect most recent known information. Utility data for 2018 was not available for the Town's Water Treatment Facilities at the time of this report.

