



**County of Essex**

**5-Year Corporate Energy  
Conservation and Demand  
Management Plan**

**July 2019**

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# Our Commitment to Energy Conservation

Insert signed client letter

## **Introduction**

### **Background**

The County of Essex's Energy Conservation and Demand Management (ECDM) Plan was developed in response to Ontario Regulation 507/18 which requires all public sector organizations to complete an update to their original 2014 ECDM Plan by July 1, 2019. To meet this regulatory requirement, as well as combat rising energy costs, the County of Essex has developed this Energy Conservation and Demand Management (ECDM) Plan. This comprehensive Plan effectively identifies energy conservation opportunities by selectively implementing the best projects and then measuring their effectiveness. The Plan has been developed to protect the interests of our taxpayers and ensure that the County of Essex obtains the best possible value from our operating budgets. In addition to meeting our regulatory obligations, the County believes that a strong commitment to energy conservation and a reduction of energy use is demonstrated evidence of our belief in becoming a more sustainable community while operating in a cost-effective manner that respects the value of taxpayer dollars.

### **Vision and Strategic Direction of Plan**

The 5-Year Energy Conservation and Demand Management Plan is designed to guide the County of Essex towards a more energy-efficient future. The policies, practices and energy conservation measures identified illustrate the importance the County places on acting responsibly towards energy consumption through the wise use of resources in County operations.

To enhance our understanding of energy use and return on investment through conservation, this document contains a thorough review of the measures implemented since the creation of the original plan, issued on July 1, 2014. Since then, the County has initiated several substantial energy projects, yielding significant savings results including:

- Major building envelope, equipment, controls and lighting upgrades at the Civic Centre (2015-17)
- Major upgrades at the Sun Parlor Home (2015-16)
- Operations equipment upgrades (throughout Plan period)

The wise and efficient use of energy are two of the lowest cost options for meeting energy demands. They also provide many other environmental, economic and social benefits, including reducing greenhouse gas (GHG) emissions, cost avoidance and savings. Along with the primary benefits, the responsible use of energy also promotes local economic development opportunities, energy system reliability, improved energy supply security and reduced-price volatility.

Following the path of our previous ECDM Plan, this document is a continuation of a process involving the:

- Integration of establishing and evaluating a baseline for performance to be measured against;
- Reviewing the effectiveness of previous conservation efforts while setting future performance goals and objectives;
- Continuous improvement through identification of energy conservation potential;
- Strategic alignment of improvement measure implementation and fiscal constraints; and,
- Evaluation, measurement and communication of results achieved.

The following report summarizes the significant efforts applied by the County of Essex to create a Plan that can be implemented responsibly, over time, to create lasting results. The Plan takes advantage of internal expertise as well as all available external financial incentives and rebates currently being offered to support the implementation of energy savings ideas. This Plan also refers to other County plans that have an energy component to ensure continuity, especially when goals and objectives are similar. The current energy picture for the County of Essex and our future Vision, Goals and Objectives as shown in the Corporate Energy Conservation and Management Policy, are outlined. Our strategic focus areas are discussed, as well as our 5-year Action Plan.

# 1.0 Historic Energy Performance

## Historical Energy Usage

Effectively managing energy requires the creation of a robust energy monitoring strategy and procedures and establishing an accurate energy baseline is an essential first step in this process. This baseline assists with energy conservation and greenhouse gas reduction target setting, energy procurement and budgeting, bill verification, energy awareness, and the selection and assessment of potential energy projects. The County of Essex, similar to many other communities, relies on utility bills to establish this energy baseline. For the past several years, the County has used Baseline and CUSUM (cumulative sum) analysis to track the energy consumption of our two largest users: the Civic Centre and the Sun Parlour Home. As mentioned, both facilities have undergone major retrofits and renovations to improve occupancy comfort and increase facility functionality, as well as reduce each buildings’ energy footprint.

Over the term of the previous plan (2014-2019) there have been some changes to the County’s facility fleet including:

- MS-Tecumseh Station: Decommissioned 2013 and is no longer in use.
- Sun Parlour Home – Victoria Street Manor: No longer County of Essex asset.
- RDS – Harrow Yard: Decommissioned 2017. No longer a County of Essex asset.
- RDS – West End Depot: Change in location from the “old” West End Depot to the new West End Depot. New facility opened in January 2017.
  - Previous West End Depot facility is still in use by Roads and EMS.

To evaluate the effectiveness of the County’s previous energy conservation measures, the year 2013 was chosen as the base year for measurement; this aligns with the Ministry of Energy’s Regulation 507/18 requirements for reporting. Overall, the County’s consumption in 2013 was 5.3 million kWh of electricity and 809,000 m<sup>3</sup> of natural gas. This usage equates to spending \$771,000 for electricity and \$219,000 for natural gas for the year (2013). The breakdown of energy use by facility type is as follows:

Figure 1-1 – Energy Use by Facility Type in 2013

Facility Type	Electricity Use (1,000's kWh)	Natural Gas Use (1,000's m3)
Administrative offices and related facilities, including municipal council chambers	4,727,528	714,350
Ambulance stations and associated offices and facilities	638,169	151,088
Public libraries	213,969	14,275

Between the reporting years of 2013 and 2014, the County eliminated two EMS facilities (EMS LaSalle and EMS Tecumseh) which had a combined consumption of approximately 51,000 kWh and 14,000 m<sup>3</sup> of natural gas annually. This is taken into consideration in our consumption analysis. During this time, two new facilities were added (EMS Lakeshore and EMS Dougall)

For comparative purposes, the raw energy consumption breakdowns by month since the original baseline for the County are as follows:

Figure 1-2 – Electricity Use (2014 – 2018)

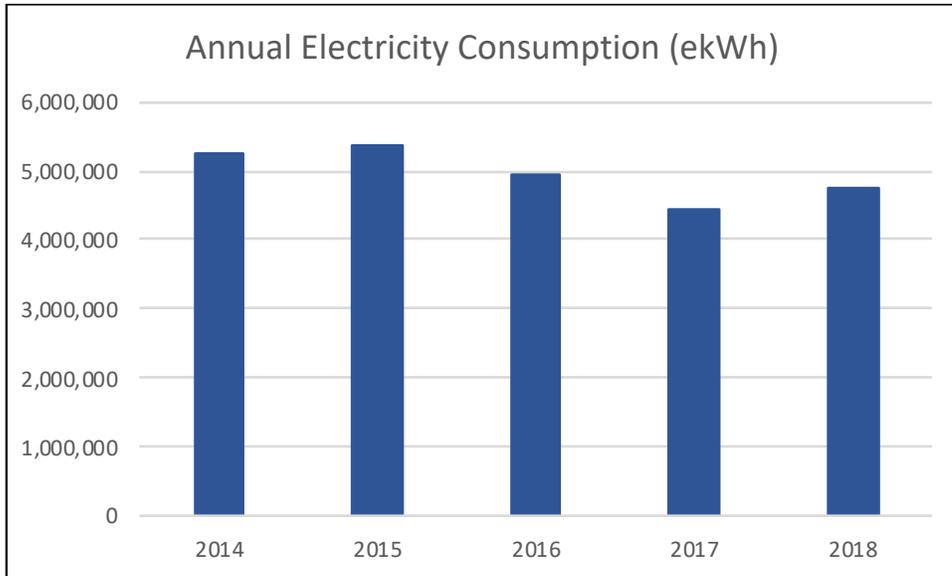


Figure 1-3 – Natural Gas Use (2014 – 2018)

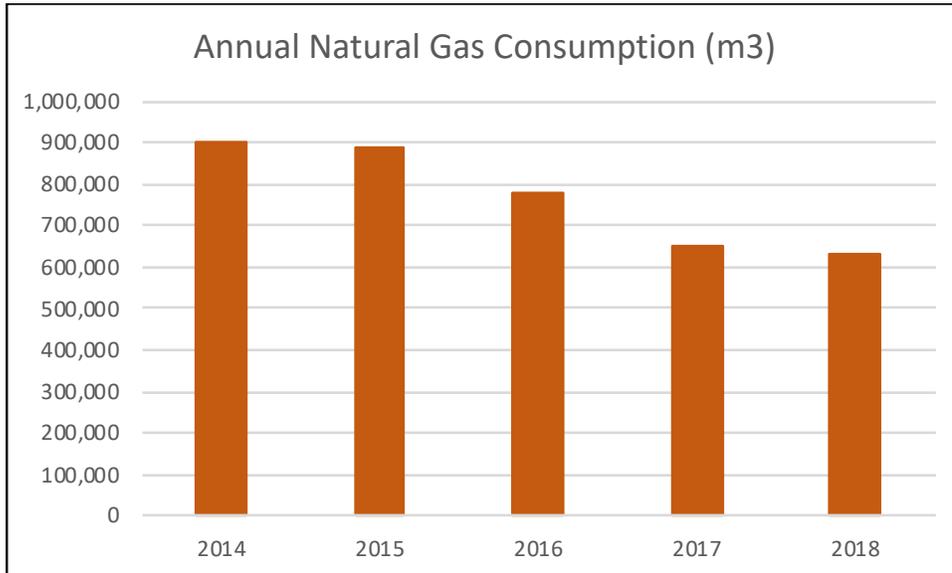
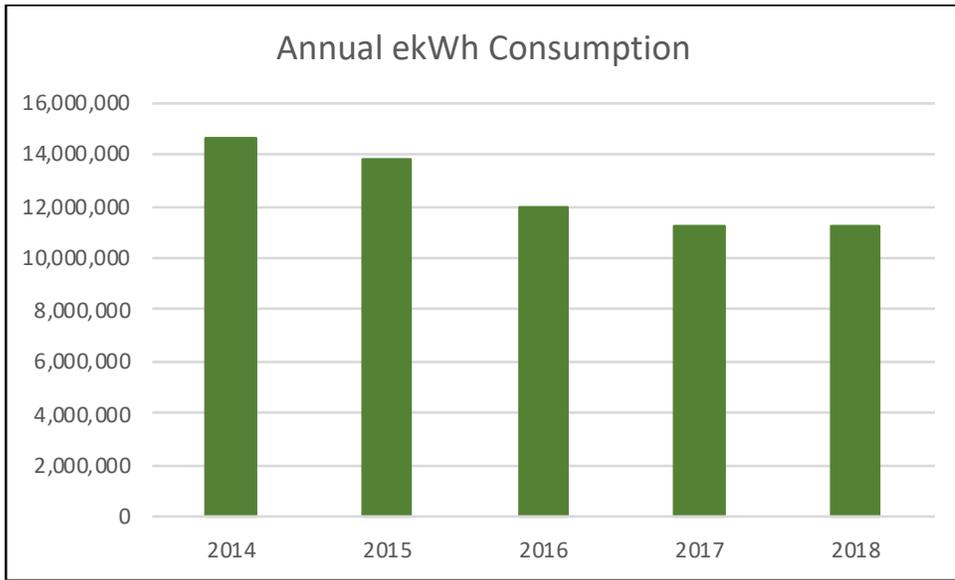


Figure 1-4 – Equivalent kWh (2014 – 2018)



In order to view the full energy picture, we have used equivalent kilowatt hours. This allows us to combine natural gas and electricity usage to provide a full analysis of consumption. Due to the large reduction in natural gas usage, ekWh consumption shows a 23% decline between 2014 and 2018.

## **Energy Conservation Project Successes**

Since the creation of the last 5-Year ECDM Plan, the County has initiated significant investments in energy efficiency and energy-cost reduction. These projects include:

### **Facility-Related Projects**

#### **Civic Centre**

- Complete replacement of building envelope (correction of poor and/or lacking insulation, new energy efficient glass and facility cladding materials)
- Electrical control component replacements
- New, resource conscious main floor washrooms – water conservation controls, LED censored lighting
- Replacement of all 4 HVAC units, original to the building, including addition of heating coils and electronic control dampers throughout the building
- New heating/cooling automation controls (BAS - building automation system)
- Removal of mechanical air dampers in renovated spaces to allow proper operation of the VFD's (variable frequency driver)
- Improvements to hot water loop within the building with variable speed motor
- New lighting in the ISD and EMS with sensors and smart controls
- LED lighting in parking lot

#### **Sun Parlor Home**

- New HVAC units
- Two new perimeter heating boilers
- Two new deep fryers

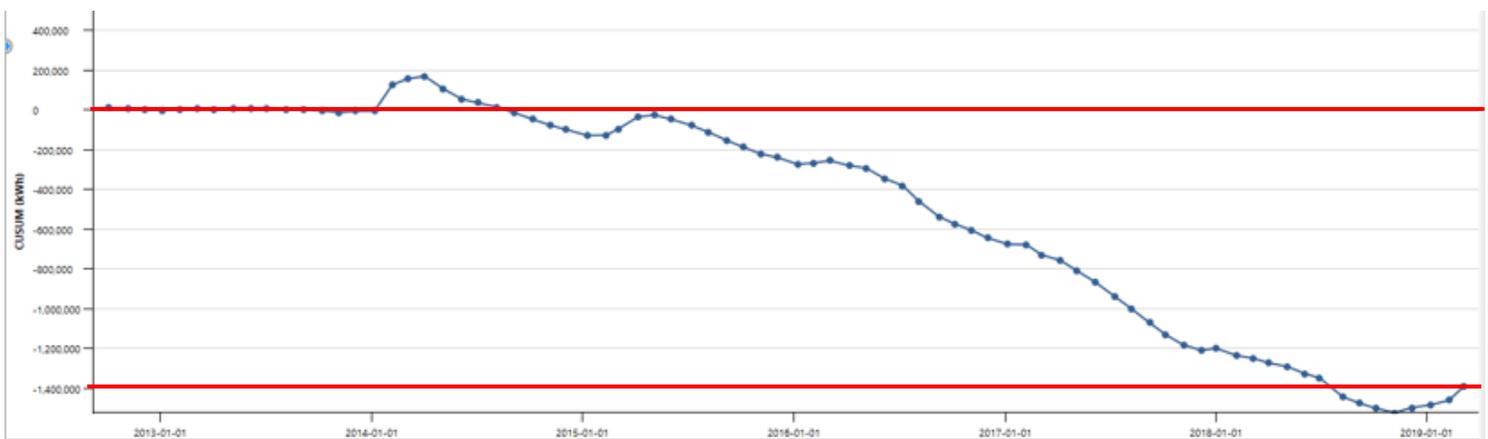
The County received incentive funding to complete these projects.

## Energy Consumption Baseline

To fully understand the impact of energy conservation projects on the overall energy consumption, the County of Essex has established a normalized energy baseline and CUSUM analysis for our two highest energy-users – the Civic Centre and the Sun Parlor Home. As we have completed major renovations and retrofits in these facilities, this analysis will also allow us to verify we receive and maintain the expected energy savings.

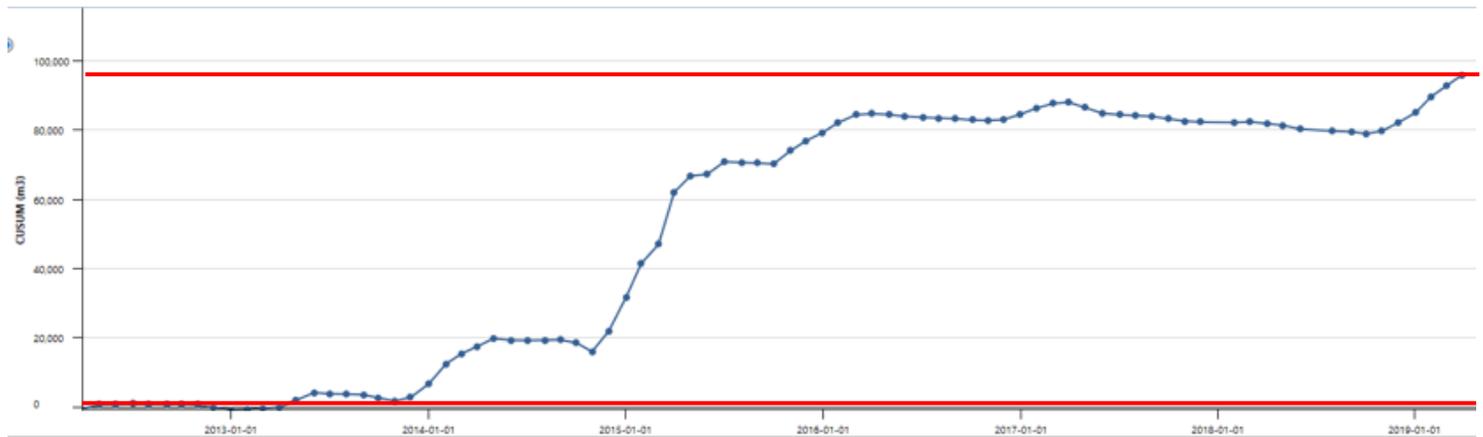
Creating a baseline illustrates the impact that temperature and weather fluctuations have in determining the true net impact of energy conservation measures. For the purposes of this ECDM Plan, we have used 2013 as the baseline to highlight the net positive influence that conservation has had on energy use in these two buildings since the 2014 ECDM Plan.

Figure 1-5 Civic Centre CUSUM Analysis – Electricity



Since mid-2015, the electricity consumption trend as compared to the baseline has shown a cumulative savings of 1.4 million kWh. This illustrates that the facility is operating more efficiently and consuming less electricity as a result of the upgrades done in the facility.

Figure 1-6 Civic Centre CUSUM Analysis – Natural Gas



Unlike electricity, the facility showed an increase in consumption patterns between January 2015 and January 2016. This increase in consumption can be attributed to increased demand following renovations (i.e. improved use of committee rooms, greater occupancy due to health unit staff). This increase has since subsided. It is expected that current efforts to update the building automation system and controls in this facility will lead to future savings.

Figure 1-7 Sun Parlor Home CUSUM Analysis – Electricity (Sun Parlor Home North Acct # 220528-00)

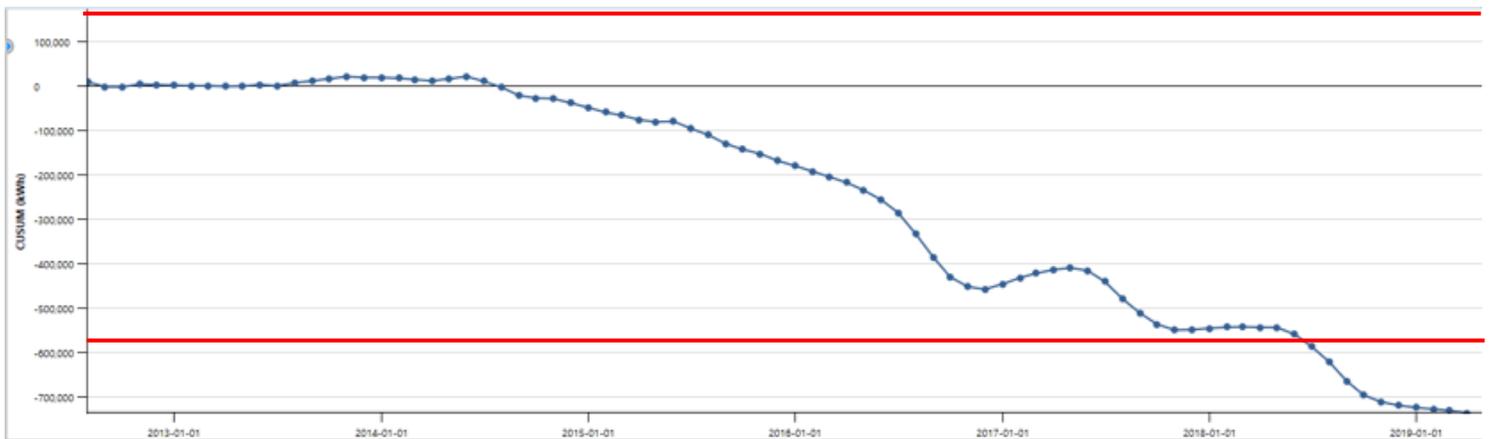
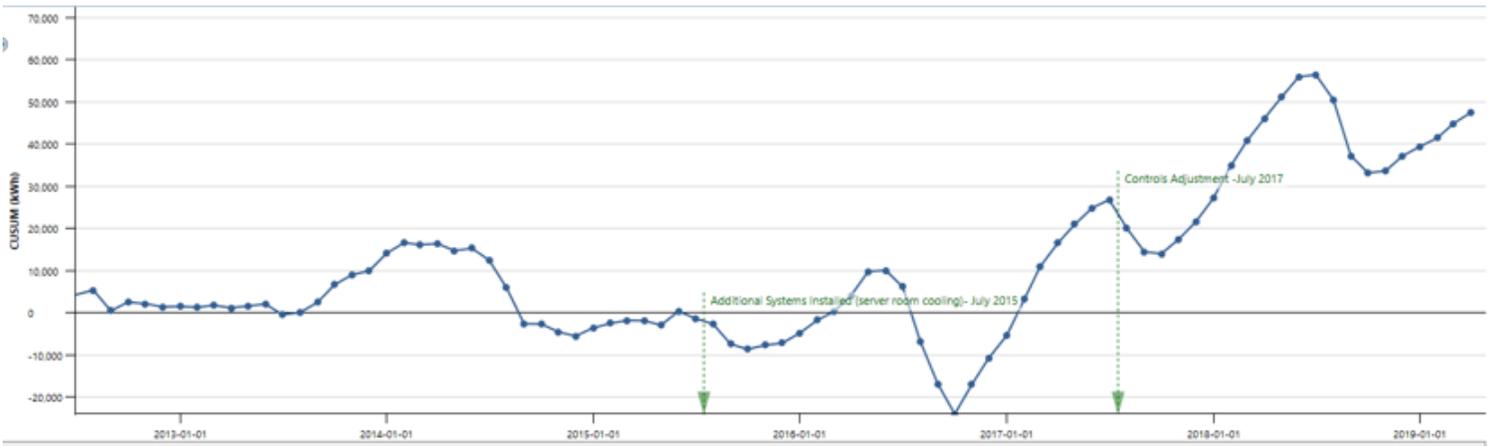


Figure 1-8 Sun Parlor Home CUSUM Analysis – Electricity (Sun Parlor Home South Acct # 220529-00)



Electricity at the Sun Parlor Home is supplied by two meters. We have reviewed these separately to achieve greater resolution in our analysis. The electricity baseline for the Sun Parlor Home North account shows a net savings since the original 2013 base year. This is also a reflection of the effectiveness of the conservation measures implemented at the site. The South Account shows an increasing pattern largely due to the installation of additional server room air conditioning capacity. When totaled together, the facility has seen a Net Savings of approximately 650,000 kWh over the period of the previous ECDM plan.

Figure 1- 9 Sun Parlor Home CUSUM Analysis – Natural Gas



Since the beginning of 2015, the natural gas consumption trend as compared to the baseline has shown a cumulative savings of 500,000 m<sup>3</sup>. This illustrates that the facility is operating more efficiently and consuming less natural gas as a result of the upgrades done in the facility.

## **2.0 Energy Conservation and Management Policy**

### **Our Commitment**

The County of Essex will allocate the necessary staff and resources to develop and implement our Energy Conservation and Demand Management (ECDM) Plan to conserve energy and reduce our environmental impact. As an organization, we value the notion of efficient operations and creating a more sustainable community.

We are committed to managing energy responsibly and will use energy efficiency practices throughout all of our facilities, fleet, operations and equipment wherever it is cost effective to do so.

### **Our Goals and Objectives**

As part of our 2019 ECDM Plan, the County created several strategic actions to achieve specific goals and targets with regards to energy management. We have re-examined our past objectives in order to create this updated version. Our renewed objectives include actions to:

1. Reduce energy consumption in County facilities by 5% by 2024 compared to our revised base year (2018). This is in addition to the reduction achieved between 2013 and 2018, based on our original 2011 base year.
2. Enhance our culture of conservation through training and outreach to staff, clients and business partners. All employees will have the appropriate knowledge and training to be empowered to reduce energy consumption.
3. Expand upon our corporate energy management practices by enhancing key existing business practices to consider energy efficiency standards and energy management best practices where it is financially responsible to do so.
4. Expand our energy monitoring and tracking program by providing access to our energy management system to make energy consumption visible to everyone in the Corporation and support facility / management decision-making.
5. Deliver energy cost savings through the identification and implementation of processes, programs and projects that will reduce energy consumption.
  - Re-assess and benchmark the top energy consuming facilities in the Corporation (2019)
  - Review previously identified energy savings opportunities through review of past energy audits and plan to renew energy audits and analysis of the capital asset renewal program (Ongoing)
  - Review and/or enhance standard operating and maintenance procedures to include energy conservation best practices (Ongoing)

- Seek funding for energy-related projects from various sources to enhance the payback and reduce implementation costs. (Ongoing)

### **Strategic Action Plan**

To achieve our new ECDM Plan, the County will employ strategic actions designed to ensure a positive outcome over the next 5 years. These key strategies support the delivery of our Goals and Objectives.

#### **Strategy 1. Corporate Practices**

Enhance our policies and practices that support the energy conservation effort and show leadership and commitment within the Corporation and community.

- Energy Management Team: Roles, Responsibilities and Accountability
- Energy Procurement

#### **Strategy 2. Education, Awareness & Outreach**

Provide the guidance, leadership and framework necessary to empower employees and develop a culture of conservation.

- Energy Skills Training Program
- Energy Awareness Training
- Outreach, Engagement and Recognition Programs
- Feedback System for Employee Suggestions
- Employee Brainstorming Sessions

#### **Strategy 3. Energy Conservation Action Plan and Energy Information Management**

Continually identify and deliver energy conservation processes, programs and projects in all areas of the Corporation (facilities, fleet, equipment, off-site depots, etc.). Demonstrate sound operating and maintenance practices to complement the energy efficiencies implemented through the capital asset renewal program. Employ an Energy Information Management System to ensure that all conservation activities are measured and verified to ensure the County receives and maintains specified energy reductions and savings.

##### **Energy Conservation Action Plan**

- Key facility energy audits and re/retro-commissioning
- Asset renewal plan and energy conservation project delivery
- Standard facility operations procedure review

##### **Energy Information Management**

- Maintenance of an up-to-date energy monitoring and reporting system (electricity, natural gas at minimum)
- Regular Energy Use Review presentations for the community, council, accountable staff and energy users
- Reporting requirements for Regulation 507/18 (formerly 397/11)
- Successful application of and continuous measurability of key performance indicators (KPIs) (i.e. cost, time, quality)

- Standardize and implement project measurement and verification

### **3.0 STRATEGY 1: Energy Management Corporate Practices**

The County of Essex will develop and implement essential corporate practices, including key personnel deployment, to ensure a strong focus on energy management and savings. These efforts remain a key component of our renewed ECDM Plan. The County will establish an Energy Management Team to initiate discussions on how to improve energy efficiencies by identifying opportunities in the following areas:

- New construction
- Technical standards
- Aging equipment replacement
- Operating strategies, alternative energy technologies
- Education and awareness

The Team will be led by Infrastructure Services and will meet regularly with others to develop strategies to reduce energy consumption, integrate best practices into daily operations, raise awareness of the consumption of energy within each department and track energy reduction.

#### **The Energy Management Team: Roles and Responsibilities**

##### **Energy Leader: Manager, Technical Services Division**

The dedicated Energy Leader has overall accountability for corporate energy management. This role is ultimately responsible for creating budgets, securing spending authority and resources for the program. This role is responsible for setting and/or legitimizing the program's high-level goals and objectives, keeping track of major project activities and approving resources and funding for the team and its approved projects. As well, the Energy Leader coordinates meetings, sets agendas, and delegates program assignments.

##### **Energy Champions: Building Maintenance**

The Energy Champions include representatives from SPH AND EMS; they have direct knowledge of the organization's major energy-using systems and are responsible for developing and maintaining the focus for the Energy Management Team. The County of Essex Energy Champions assist to manage tasks related to the Energy Management Team. This role will help the program maintain momentum particularly when barriers arise. The Energy Champions are also responsible for ensuring that the monitoring and tracking systems for energy are accurate, up-to-date and available for use by County employees.

##### **Corporate Energy Management Team**

The Corporate Energy Management Team functions on a strategic level to set expectations for each of the facilities, develop metrics for tracking overall energy improvement, and build accountability for energy management activities. In addition, this cross-functional team has direct responsibility for the consumption of energy within their respective departments. As a group, the team supports and

monitors the energy management initiatives (processes, programs, and projects) at the various facilities and across the Corporation.

The Energy Management Team currently includes the following positions:

- Manager, Technical Services Division
- Building Maintenance Supervisor

**Actions:** Continue to seek cross-departmental membership and support for the Energy Management Team. Meet regularly to discuss the Energy Management Program to ensure implementation of new savings ideas, as well as maintain positive momentum.

### **Energy Procurement**

Most County of Essex facilities currently use the energy procurement services provided by Local Authority Services (LAS). This program provides options for fixed-price energy procurement services to maintain predictable electricity and natural gas commodity costs where employed. In addition, the program permits the County to work together with a large number of other municipal entities throughout the province to create bulk-buying power to leverage aggregated energy purchasing opportunities.

**Actions:** Continue to review the LAS program annually and evaluate the County's level of participation. Review potential alternative programs for merit and analyze the net result of participation annually.

## **4.0 STRATEGY 2: Education, Awareness and Outreach**

The County's Education, Awareness and Outreach program has been utilized over the past 5 years to assist with the maintenance of a culture of conservation. The primary focus of the awareness campaigns has been the Civic Centre and has been achieved by raising the level of awareness, understanding and general knowledge amongst staff regarding energy spending, usage and conservation. The County will continue to utilize a successful combination of program engagement, direct awareness marketing and hands-on training to enhance our energy reduction efforts to support the achievement of our energy conservation goals and objectives. As well, energy will continue to be a regular agenda item at staff meetings to solicit new ideas for reduction of energy use, promote continued awareness of the cost of energy and ensure that energy conservation remains a key consideration for all employees.

The Education, Awareness and Outreach program provides guidance, leadership and the framework to empower employees and foster our culture of conservation. The program informs the organization of current energy use, operational practices as well as improvement opportunities, while ensuring that all employees have an opportunity to remain informed of the County's energy reduction efforts. This continued practice will foster the greatest possible impact of education and awareness.

The program is comprised of the following four focus areas:

### **Energy Skills Training Program**

The Energy Skills Training Program is a vehicle for employees to continue to develop a general awareness and understanding of current energy use within County facilities as well as skills to identify opportunities for improvement. The Training Program combines both general knowledge training and hands-on experience to gain maximum benefit.

Employee Brainstorming Sessions are an important part of the Energy Skills Training Program and are encouraged during the Energy Team meetings as a way of generating new ideas for energy conservation. As regular users and managers of County facilities, our employees are one of the our most valuable resources to both generate and implement our energy conservation strategies.

### **Outreach, Engagement, Recognition and Energy Awareness Training Program**

The County will continue to engage all users of its facilities (both staff and the general public) and recognizes that this is essential to the continued success of the energy management program. Our energy program will continue to employ a comprehensive approach to both engaging employees and recognizing the efforts of County staff who provide important support and ideas.

The Energy Awareness Training Program has been developed to provide consistent energy conservation messaging throughout all departments using Community-

Based Social Marketing (CBSM) techniques to engage all users of County facilities. Specific methods used to date include conservation tips, eye-catching posters and other relevant marketing tools. It is the intention of this Plan to expand our ability and focus to enable the County to become a 'clearinghouse' of information for local residents to discover ideas and incentives to improve their own energy usage practices.

### **Feedback System for Employee Suggestions**

The County will continue to employ a feedback system to encourage employees to provide input and ideas. The messages received will be responded to promptly by members of the Energy Management Team. The Energy Team members can engage relevant employees to ensure that all suggestions are captured and explored.

**Actions:** Review available energy training opportunities both generally (i.e. all staff) and for specific facilities (i.e. off-site depots). Establish and maintain at least annual Outreach and Engagement efforts to keep energy conservation 'top-of-mind' for staff and stakeholders.

## 5.0 STRATEGY 3: Energy Conservation Activities and Information Management

### Energy Conservation Action Plan

The Energy Conservation Action Plan forms the blueprint for implementing energy conservation and cost saving measures. The County has created a list of potential projects based on previous facility energy audits. The attached action plans have been created to guide the County of Essex through this process based on a prioritized implementation schedule. All available incentives and funding sources will be explored to minimize the implementation cost of each measure. In addition to the measures shown, the County anticipates that further energy audits, completed over the next 5 years, will augment the list of available energy conservation measures.

Below is a summary of the County of Essex's implementation strategy including a by-facility breakdown. The strategy highlights the measures that will be completed as part of our on-going maintenance program and those requiring further investigation to determine feasibility.

In all, the measures will target the following actions at the Civic Centre:

- New lighting and improved controls in our HVAC units is expected over the next 5 years from these renovations
- New lighting system and LED lights in common areas
- Enhanced mechanical contractor preventative maintenance program (started March 2019)
- Additional measures to be implemented as opportunities present themselves during ongoing renovation, including, but not limited to, washroom upgrades, office spaces, common/public space lighting and lighting controls, etc.

Additional measures will be added as funding becomes available on an annual basis. In general terms, our actions are expected to yield the following results:

- Education, Awareness and Outreach – 1-2% annual energy savings
- On-going regular reviews of consumption and baselines: .5% to 1% annual energy savings
- Re/retro Commissioning – 2-7% annual energy savings within the facilities where it is implemented (estimated to be 1% overall potential total annual savings)

**Actions:** Maintain a schedule of energy audit and re/retro-commissioning activities to ensure that our list of measures is up-to-date and that previous measures are still functional and providing savings. Perform periodic reviews of available incentives and stay up-to-date on potential sources of funding to offset the implementation costs of the proposed future measures. Review the list of measures at least annually and update as necessary.

## **Energy Information Management**

### **Online Energy Monitoring and Reporting System**

The County maintains an up-to-date system for managing and reporting on its energy consumption (electricity, natural gas, fuels). The motivation for this effort is the notion that “you can’t manage what you are not aware of”. By making our energy usage visual, and keeping the information real-time, all personnel with access to the information can benefit from understanding the nature of energy use in their facilities, as well as the impact their actions or inactions have on the County’s overall energy cost and budgeting. This information is also key in evaluating the potential of new conservation projects as well as measuring the effectiveness of initiatives already taken.

**Actions** Continue to gather and upload energy data into the Energy Information Management System regularly and analyze the data for patterns and savings opportunities.

### **Energy Management Presentations for the Community, Council, Accountable Staff and Energy Users**

To gain traction for the initiatives within this plan and ensure that the County reaches its stated reduction targets, it is imperative that information regarding energy usage and cost, as well as the energy conservation plans and projects, are well understood and top of mind of everyone from front-line employees to senior department heads and County Council. This broad awareness will lead to additional buy-in and support for the County’s continued efforts to reduce its energy usage and spending.

**Actions:** Make energy a key topic at staff and senior management meetings as well as provide an update on energy use and conservation to Council at least annually.

### **Key Performance Indicators (KPI’s) and Monitoring and Verification**

To ensure momentum continues, and the County of Essex receives value-for-money with regards to its energy conservation efforts, a rigorous program of establishing KPI’s and then monitoring and verifying ongoing savings is an essential element of this Plan. By establishing agreed upon KPI’s (as suggested in the table below) and then performing regular and frequent monitoring, not only will personnel be able to verify that savings expected from various projects is achieved, but that the savings continue for the duration of the project or retrofit’s useful life. This practice will protect the County’s investments as well as provide transparency and support for successful savings initiatives

Figure 5.1 – KPI Suggestions

Facility Type	Energy KPIs	Measured Variables
Administrative Offices	Baseline Electricity (Summer/Winter/Shoulder Season) <ul style="list-style-type: none"> <li>• kWh / month</li> <li>• Peak kW / month</li> </ul> Baseline Natural Gas <ul style="list-style-type: none"> <li>• m<sup>3</sup> / month</li> </ul> Other Energy Sources	<ul style="list-style-type: none"> <li>• Daily Weather</li> </ul>
Cultural Facilities/Libraries, and Community Centres	Baseline Electricity (Summer/Winter/Shoulder Season) <ul style="list-style-type: none"> <li>• kWh / month</li> <li>• Peak kW / month</li> </ul> Baseline Natural Gas <ul style="list-style-type: none"> <li>• m<sup>3</sup> / month</li> </ul> Other Energy Sources	<ul style="list-style-type: none"> <li>• Daily Weather</li> <li>• Occupancy Rates / month</li> <li>• Sheet rentals / month</li> </ul>
Off-Site Bases and Associated Offices	Baseline Electricity (Summer/Winter/Shoulder Season) <ul style="list-style-type: none"> <li>• kWh / month</li> <li>• Peak kW / month</li> </ul> Baseline Natural Gas <ul style="list-style-type: none"> <li>• m<sup>3</sup> / month</li> </ul> Other Energy Sources	<ul style="list-style-type: none"> <li>• Daily Weather</li> <li>• Occupancy</li> </ul>
Storage Facilities	Baseline Electricity (Summer/Winter/Shoulder Season) <ul style="list-style-type: none"> <li>• kWh / month</li> <li>• Peak kW / month</li> </ul> Baseline Natural Gas <ul style="list-style-type: none"> <li>• m<sup>3</sup> / month</li> </ul> Other Energy Sources	<ul style="list-style-type: none"> <li>• Daily Weather</li> </ul>
Street Lighting	Electricity	<ul style="list-style-type: none"> <li>• Number of Lights</li> </ul>
Recreation and Outdoor Lighting	Baseline Electricity (Summer/Winter/Shoulder Season) <ul style="list-style-type: none"> <li>• kWh / month</li> <li>• Peak kW / month</li> </ul>	<ul style="list-style-type: none"> <li>• Occupancy or Rentals / Month</li> <li>• Opening / Closing Dates</li> </ul>

**Actions:** Review all conservation initiatives to understand the most appropriate monitoring and verification process. Review the project savings at pre-defined regular intervals and report outcomes to senior management/Council.

**Ongoing Ontario Regulation 507/18 Reporting**

In addition to completing this Plan, the County of Essex is required to submit annual energy consumption and greenhouse gas emissions templates to the appropriate Ministry of Energy portal. Gathering and recording monthly energy invoices are necessary to complete these reports.

**Actions:** Complete all required regulatory reporting by July 1 of each year.