

Energy Conservation and Demand Management Plan 2024 - 2028

Updated: June 2024



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1.0 INTRODUCTION

In accordance with Ontario Regulation 25/23 (formerly 507/18), the County of Bruce (County), along with other various broader public sector (BPS) organizations (municipalities, schools, and hospitals, etc.) are required to report their energy use and greenhouse gas (GHG) emissions annually.

As part of the regulation, BPS organizations are also required to develop and implement a 5-year Energy Conservation and Demand Management (ECDM) plan. These ECDM plans are to be updated every 5 years.

The purpose of these plans is to assist BPS organizations in creating strategic priorities in order to improve energy conservation and demand management at the corporate level.

Background

In 2014, the County of Bruce developed their first ECDM plan, which proposed several measures to reduce energy consumption within four (4) County-owned buildings/facilities.

In 2019, the 5-year ECDM plan was updated and proposed several measures to reduce energy consumption within eight (8) County-owned buildings/facilities.

The two (2) previous versions of the ECDM plans can be found in Appendix 'A' for reference.

Purpose

The purpose of this update is to report on the energy reduction progress achieved to date, as well as build upon the County's initial plan to propose new conservation measures for the next 5 years (2024 - 2028). This report will analyze and update the commitments made in 2019, as well as analyze new data related to the County's petroleum and diesel consumption. This ECDM will build on the commitments made in the previous two (2) versions and offer new strategies aimed at reducing the County's Energy consumption over the next 5 years. The next update to this plan will be due in 2029.

2.0 COMMITMENT

Bruce County's Commitment

That the Corporation of the County of Bruce is committed to the allocation of the necessary resources to develop and implement a strategic energy conservation and demand management plan (ECDM); and,

That the Plan's strategic implementation will reduce our energy consumption aimed at providing positive environmental impacts; and,

That, in accordance with the 2023-2026 Strategic Plan, we will strive to increase our capacity to lead in sustainable environmental practices and meet Goal #7, which is to build capacity to adapt to, and mitigate, the impacts of climate change.

This plan was approved by County Council on , 2024, and is available online at [Corporate Services | Bruce County](#) or in hard copy at the Walkerton Administration Building located at 30 Park Street, Walkerton, Ontario.

Vision

We exercise stewardship in our use of finite energy resources to demonstrate leadership, optimize our delivery of services, and enhance the overall quality of life in our communities.

Goals

To continuously improve the energy efficiency of our facilities and processes to reduce our operating costs, our energy consumption, and the reduction of associated greenhouse gas emissions.

Overall Target

To study, and implement when cost-effective, all proposed energy savings projects listed in the County's most recent 5-year ECDM Plan.

Objectives

Examine new capital project plans for opportunities to improve energy efficiencies. Start tracking and monitoring petroleum-based emissions from the County's corporate fleet.

3.0 ANNUAL ENERGY USE

Within the time period of 2019-2020, the County of Bruce had ten (10) buildings that were reportable under O. Reg. 25/23. In 2021 the County had the addition of one (1) building (the Penetangore Hub), which came online in the spring of 2021 (May). In 2024, the new Paramedic Headquarters Station will be added to this list as well, making the total reportable number of buildings for the time period 2024-2028, twelve (12).

Table 1, which can be found below, outlines the Green House Gas (GHG) Emissions data that has been recorded for the reportable buildings through the 2019-2023 time period. The GHG values are reported in Kilograms of Carbon Dioxide emissions (Kg CO₂e). The GHG emissions 5-year average by building and 5-Year GHG Emissions Reductions by building have been provided in Figure 1 and 2. Figure 3 highlights the total GHG Emissions per year and depicts the decrease achieved over the 2019-2023 time period.

Table 1 - GHG Emissions for Reportable Facilities (O. Reg 25/23)

| Facility | 2019 GHG (Kg CO ² e) | 2020 GHG (Kg CO ² e) | 2021 GHG (Kg CO ² e) | 2022 GHG (Kg CO ² e) | 2023 GHG (Kg CO ² e) |
|-------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Administration Building | 41,677 | 42,322 | 45,100 | 43,234 | 42,084 |
| Museum and Cultural Centre | 179,139 | 148,425 | 171,600 | 152,615 | 153,604 |
| Warton Peninsula Hub | 9,327 | 8,847 | 9,600 | 9,445 | 8,404 |
| Penetangore Hub* | - | - | 2,455 | 2,967 | 1,684 |
| Lakeshore Hub | 10,516 | 9,608 | 7,600 | 7,426 | 7,460 |
| Walkerton Patrol Garage | 51,750 | 42,058 | 46,300 | 50,965 | 44,710 |
| Paisley Patrol Garage | 35,931 | 29,187 | 24,200 | 32,846 | 24,091 |
| Warton Patrol Garage | 28,041 | 27,228 | 21,500 | 28,616 | 16,467 |
| Lucknow Patrol Garage | 37,381 | 43,187 | 35,700 | 36,112 | 31,311 |
| Lindsay Tract Shop | 301 | 140 | 200 | 43 | 85 |
| Port Elgin Paramedic Headquarters** | - | - | - | - | - |
| Tobermory Ambulance Station | 4,158 | 5,471 | 5,700 | 5,311 | 2,143 |
| Total | 398,222 | 356,472 | 369,995 | 369,580 | 332,043 |

*Penetangore Hub not occupied until Spring 2021.

**Port Elgin Paramedic Headquarters not occupied until Spring of 2024.

The Penetangore Hub data for the year 2021 has been prorated to reflect the occupation date of May 1, 2021.

Section 6.0 of this report, which discusses growth, outlines some of the energy savings solutions that were considered and implemented with the Penetangore Hub (2021) and Paramedic Headquarters Station (2024) builds.

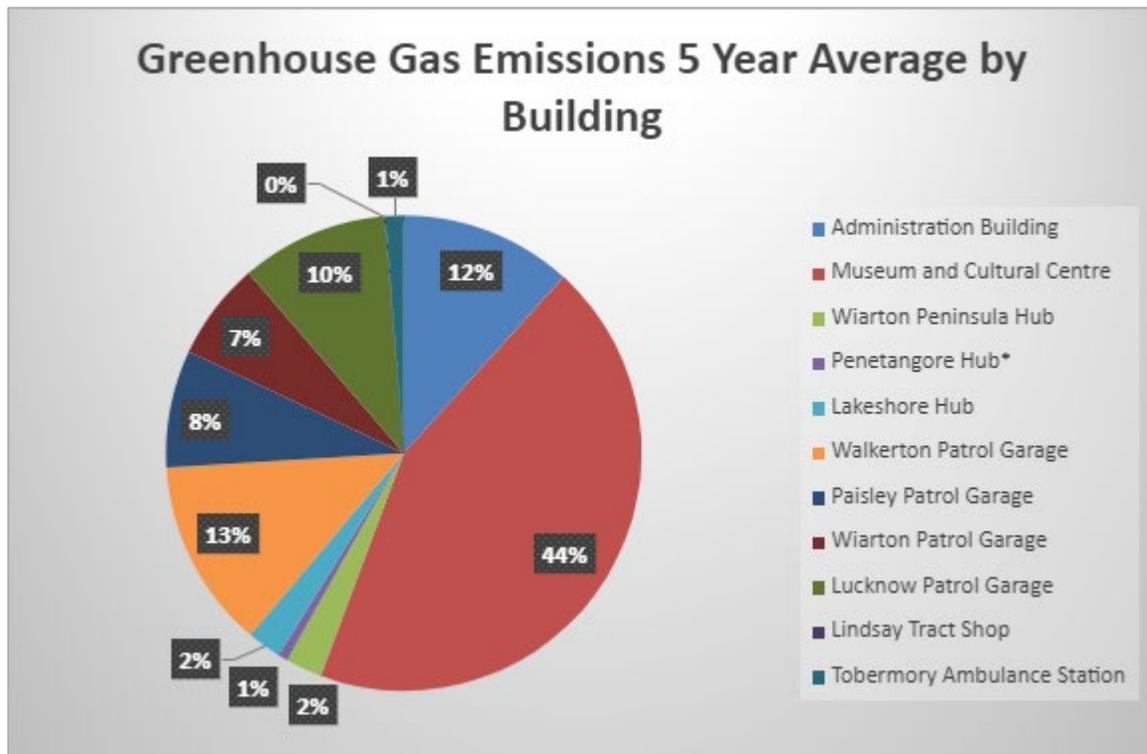


Figure 1: GHG Emissions - 5-Year Average by Building

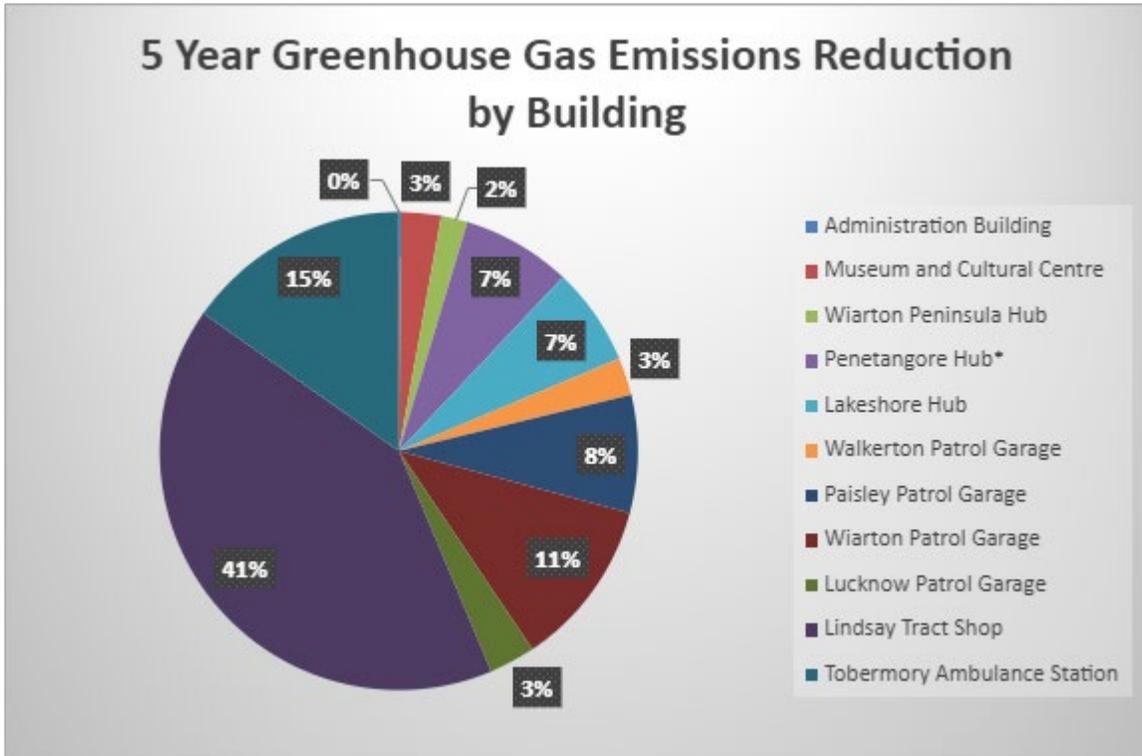


Figure 2: 5-Year GHG Reduction by Building

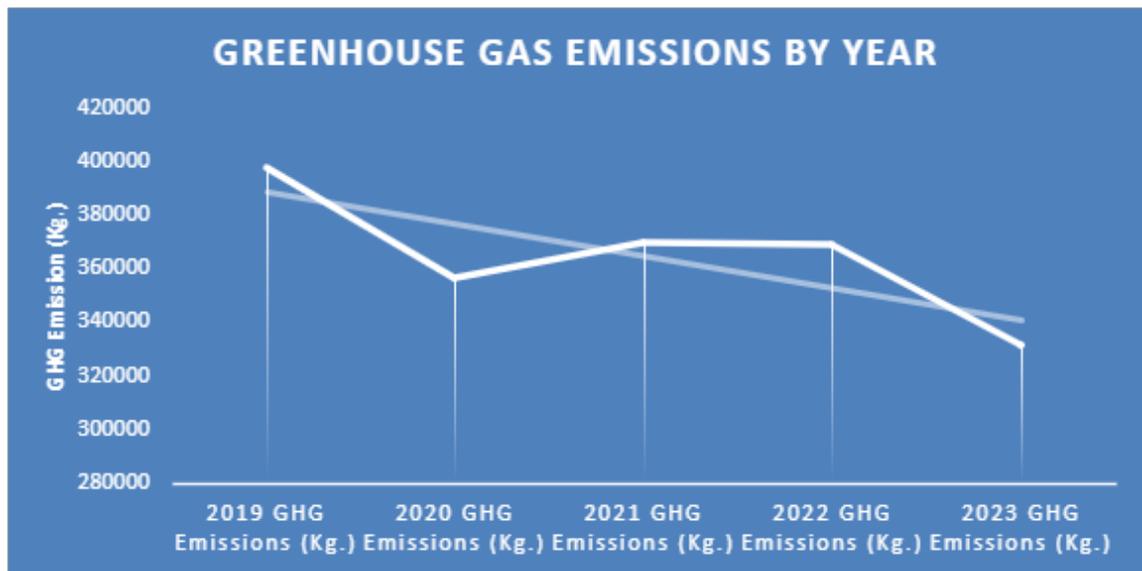


Figure 3: Total GHG Emissions by Year (GHG KgCO²e)

4.0 COMPARATIVE ANALYSIS

This section of the report will primarily focus on the energy use trends for the County of Bruce by comparing the data from the years 2019 and 2023. This information will provide insight into what direction the County is headed with respect to reducing the amount of energy consumed annually.

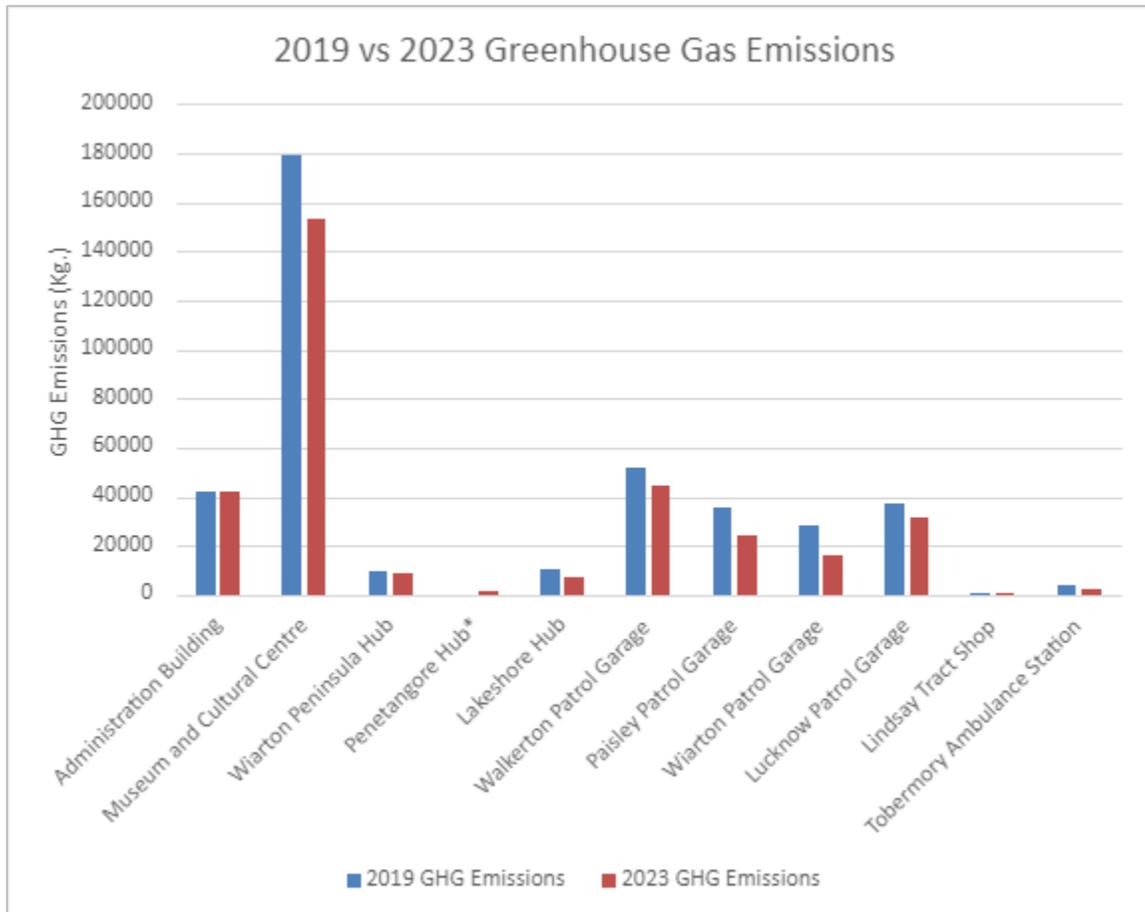


Figure 4: 2019 vs. 2023 GHG Emissions by Facility (GHG KgCO₂e)

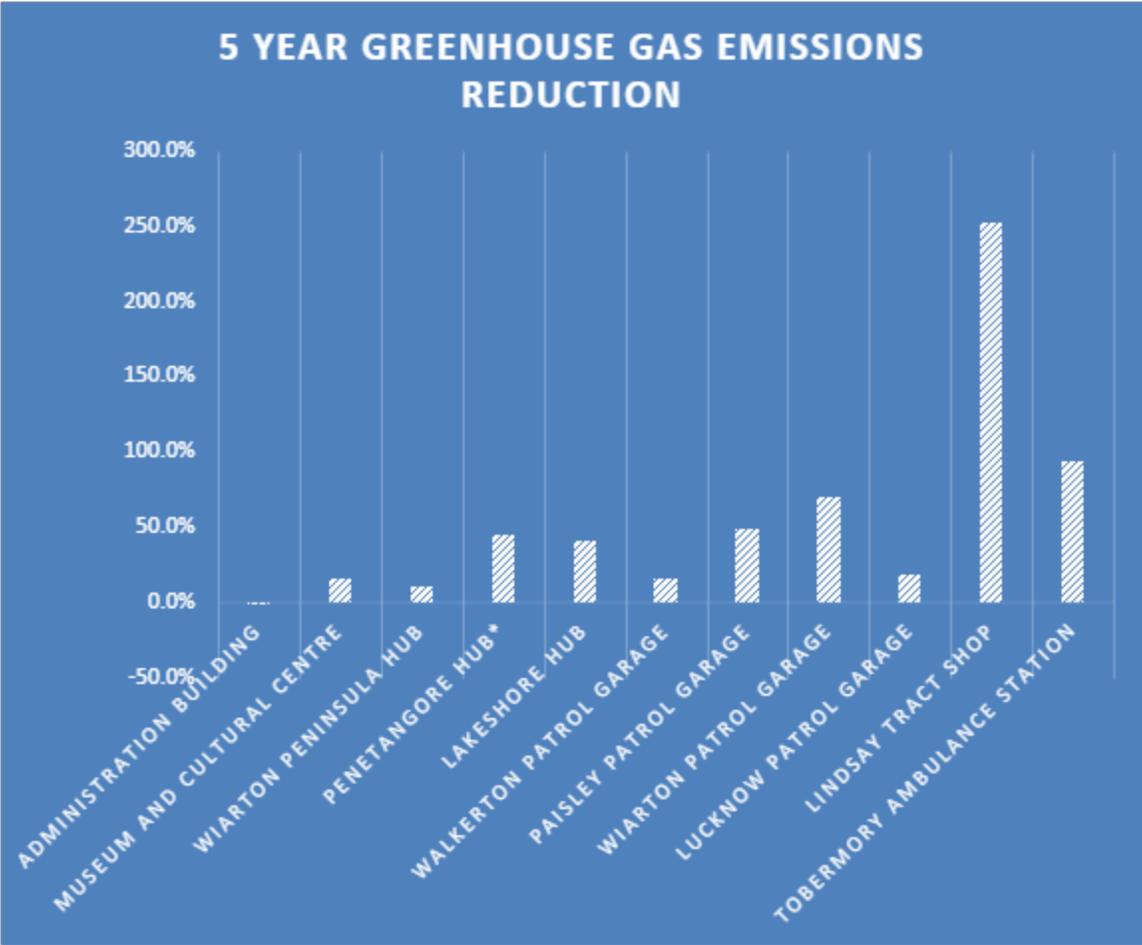


Figure 5: 5-Year GHG Reduction by Facility (%)

Figure 4 above, provides a detailed comparison of the total amount of energy (GHG CO²e) used by each of the County’s facilities in 2019 vs. 2023.

Figure 5 depicts the total percentage amount of energy reduction achieved for each facility by comparing the 2019 and 2023 energy usage.

This data suggests that the County’s facilities have achieved a total reduction of approximately 10% in GHG emissions (KgCO²e) during the 2019-2023 time period.

5.0 PETROLEUM BASED FLEET EMISSIONS

Although it is not technically required to report the total petroleum-based fuel consumed by the County's fleet under O. Reg 25/23, the County of Bruce has been collecting this information since 2020.

As part of the County's commitment to continued improvement in the reduction of GHG emissions, we will continue to track and monitor the total annual GHG emissions (KgCO₂e) produced by the County's gasoline and diesel fleet. Table 2 below shows the annual GHG emissions produced by the County's corporate fleet during the time period of 2020-2023. At this point, there is no target for GHG reduction in our fleet, however we will continue to monitor and report this data, with the expectation that a target will be set in a future 5-year ECDM report.

Table 2 - GHG Emissions for Fleet

| Year | Fleet Type | GHG EMISSIONS (Kg Co ² e) |
|------|------------|--------------------------------------|
| 2020 | Diesel | 611,662 |
| 2020 | Gasoline | 371,009 |
| 2021 | Diesel | 460,797 |
| 2021 | Gasoline | 426,218 |
| 2022 | Diesel | 690,219 |
| 2022 | Gasoline | 386,822 |
| 2023 | Diesel | 493,491 |
| 2023 | Gasoline | 406,498 |

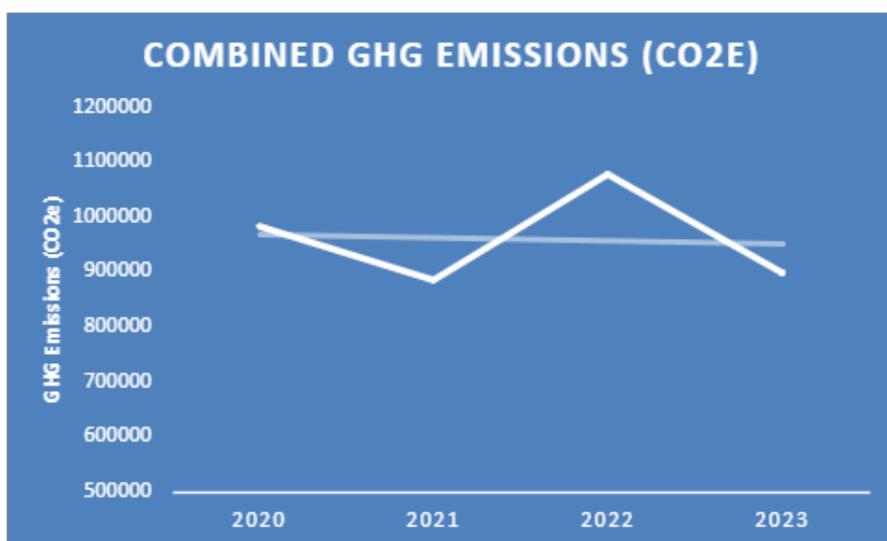


Figure 6: Combined GHG Emissions (CO₂E)

6.0 GROWTH

According to Statistics Canada data, between the years 2016 and 2021, the County saw an overall population growth rate of approximately 7.2% (5,249 persons) which works out to approximately 1.44% annually. The Census population for Bruce County in 2021 was 73,396.

Through various growth forecasting exercises completed on behalf of the County, it is expected that the County's population base will continue to grow at a projected rate of approximately 0.97% annually from 2021 through the year 2033 (9,646 persons).

With the continued growth, it is expected that the demand on services provided by the County will also increase, such as road maintenance operations, paramedicine services, public library services, long-term care services, housing services, etc. With this increase demand will come the need for more facilities and equipment to meet the increased demand.

As discussed in the annual energy use & 5-Year average section, the County of Bruce has added two (2) additional buildings to the facilities asset inventory since 2021. Both of these facilities were designed and built with the consideration of energy efficiency in mind.

As the number of facilities increases and older facilities are retired and replaced, energy efficiency measures should be considered as part of the County's best practices.

Below are the highlights of the energy efficiency measures that have been incorporated into the Penetangore Hub and Paramedic Headquarters facilities.

Architectural Measures Implemented

When constructing, renovating, even one-off replacements the County of Bruce always considers the most energy efficient design. The intent is to surpass the Ontario Building Code (OBC) minimum R value specifications, regarding insulating walls, attics, roofs, flooring, glass windows and exterior doors. The County strives to produce a more efficient building envelope with fenestration and a reflective roof cap system.

Mechanical and Electrical Measures Implemented

- LED Lighting Systems
- Motion Activated Lighting
- Variable speed air conditioning compressors
- Variable frequency drives (VFD) on HVAC systems
- Energy Recovery Ventilator (ERV)
- High efficiency boilers
- Ultra Hi-efficiency low temperature heat pumps

7.0 PROPOSED PROJECTS

As discussed in section 6.0 of this report, the demand for services provided by the County is increasing as the population base increases. Also, many of the facilities owned and utilized by the County are older and require renovations or replacement. As part of the County of Bruce's commitment to continuous improvements, with respect to energy conservation, the County is proposing several major renovations and/or new build projects within the next 5 (five) years. Each project will consider the most energy efficient design, aimed at reducing the consumption of energy. Below is a summary of projects that are expected to commence within the 2024-2028 ECDM Plan time period.

- Bruce County Museum - HVAC, building envelope and roof upgrades.
- Tobermory Paramedic Station - HVAC and building envelope upgrades.
- Inland Hub - HVAC and mechanical upgrades.
- Lakeshore Hub - HVAC, mechanical and building envelope upgrades.
- Peninsula Hub - HVAC, mechanical and building envelope upgrades.
- Fleet - Monitor and track Fuel Emissions. Develop long-term emission reduction plan and targets.
- Fleet - Ongoing installation of electric vehicle charging stations as seen fit.
- Analyze data for future decisions.
- Transportation Patrol Shops - lighting retrofits (Paisley & Walkerton)

APPENDIX A

Energy Conservation and Demand Management Plan January 1, 2019, to December 31, 2023

| Description | Facility | Contact | Start | End | Status | Cost | Save (ekWh/yr) | Save (\$) | ROI | Details |
|-------------------------------------|-------------------------|--------------------------------|------------|------------|--------------------|----------|----------------|-----------|------|--|
| Retrofit Exit signs with LED lights | Court house | Environmental Services Manager | 2019-05-01 | 2019-12-31 | Completed (100%) | \$300 | 0 | 0 | 0.00 | Replace existing lights in exit signs with more energy efficient LED lights |
| Lighting Retrofit | Court House | Environmental Services Manager | 2019-07-01 | 2019-12-31 | Completed (100%) | \$20,000 | 0 | 0 | 0.00 | Retrofit fluorescent tubes T8's 32w bulbs with LEDs. Include available incentives from Westario Power in costing. Rebate approx. \$1,000 |
| Controls Installation | Court House | Environmental Services Manager | 2019-01-01 | 2019-06-28 | Completed (100%) | \$12,790 | 0 | 0.00 | 0 | Changing controls on hot water heating system. Installation of the controls reduces water temperatures based on outside air temperatures within the heating system. Review in 2020 Union Gas invoices for savings. |
| Standby Generator | Lucknow Patrol Garage | Operations Manager | 2019-01-01 | 2020-12-31 | Completed (100%) | \$50,000 | 0 | 0.00 | 0 | Install a back-up generator. Require electrical engineer to develop specs. Provides owners with a means of emergency support during blackout events. Investigate incentive or rebate prior to installation. |
| Install Occupancy Sensors | Paisley Patrol Garage | Operations Manager | 2020-01-01 | 2021-12-31 | Not Completed (0%) | \$1,200 | 0 | 0.00 | 0 | Install occupancy sensors in common rooms. Apply for incentives. |
| Retrofit Lighting | Paisley Patrol Garage | Operations Manager | 2020-01-01 | 2021-12-31 | Not Completed (0%) | \$4,000 | 0 | 0.00 | 0 | Upgrade Exterior Lighting (HID flood lights, cobra head fixtures) to LED technology. Apply for incentives. |
| Install Occupancy Sensors | Walkerton Patrol Garage | Operations Manager | 2020-01-01 | 2021-12-31 | Not Completed (0%) | \$1,500 | 0 | 0.00 | 0 | Install occupancy sensors in common rooms. Apply for incentives. |

| Description | Facility | Contact | Start | End | Status | Cost | Save (ekWh/yr) | Save (\$) | ROI | Details |
|-------------------------|-------------------------|--------------------------------|------------|------------|--------------------|----------|----------------|-----------|-----|---|
| Retrofit Lighting | Walkerton Patrol Garage | Operations Manager | 2020-01-01 | 2021-12-31 | Not Completed (0%) | \$6,000 | 0 | 0.00 | 0 | Upgrade exterior lighting (HID wall packs and flood lights) to LED technology. Apply for incentives. |
| Fuel Management Program | Lucknow Patrol Garage | Operations Manager | 2019-09-01 | 2019-12-31 | Completed (100%) | \$18,000 | 0 | 0.00 | 0 | Add Lucknow Patrol Shop to the Fuel Master Management Program to help better understand fuel usage. Lucknow will be the last shop to be added. |
| Appliance Upgrade | Paisley Patrol Garage | Operations Manager | 2019-07-01 | 2019-12-31 | Completed (100%) | \$1,500 | 0 | 1,400 | 1 | Replace fridge with energy star unit. |
| Carpet Replacement | Court House | Environmental Services Manager | 2019-09-01 | 2019-12-31 | Completed (100%) | \$7,500 | 0 | 0.00 | 0 | Replace with Interface carpet tiles. All interface modular carpet sold in NA is third party verified climate neutral cool carpet. Cool Carpet zeros out all GHG emissions associated with the entire lifecycle of the carpet. 1,100 sqf. |
| Carpet Replacement | Administration Building | Environmental Services Manager | 2019-09-01 | 2019-12-31 | Completed (100%) | \$33,500 | 0 | 0.00 | 0 | Replace with Interface carpet tiles. All interface modular carpet sold in NA is third party verified climate neutral cool carpet. Cool Carpet zeros out all GHG emissions associated with the entire lifecycle of the carpet. 3,500 sqf. |
| Backup Generator | Bruce County Museum | Museum Maintenance Supervisor | 2020-01-01 | 2021-12-31 | Completed (100%) | \$50,000 | 0 | 0.00 | 0 | The BCM&CC has been identified as the alternate Emergency Operations Centre. |
| EV Charging Station | Bruce County Museum | Museum Maintenance Supervisor | 2020-12-01 | 2021-12-31 | Completed (100%) | \$10,000 | 0 | 0.00 | 0 | This will be a single station that can supply two cars at a time. Encouraging and enabling the use of hybrid and electric vehicles helps to reduce and/or eliminate greenhouse gas emissions linked to global warming. There is no savings expected for this measure. Identified as a project for the Federal Gas Tax funding - one time top up. Price includes station and labour. |

| Description | Facility | Contact | Start | End | Status | Cost | Save (ekWh/yr) | Save (\$) | ROI | Details |
|----------------------|----------------------------|--------------------|------------|------------|------------------|----------|----------------|-----------|-----|---|
| EV Charging Station | Wiaraton Peninsula Hub | Purchasing Manager | 2019-07-01 | 2019-12-31 | Completed (100%) | \$10,000 | 0 | 0.00 | 0 | This will be a single station that can supply two cars at a time. Encouraging and enabling the use of hybrid and electric vehicles helps to reduce and/or eliminate greenhouse gas emissions linked to global warming. There is no saving expected for this measure. Price includes station and labour. |
| EV Charging Stations | Kincardine Penetangore Hub | Purchasing Manager | 2022-01-01 | 2022-12-31 | Completed (100%) | \$25,000 | 0 | 0.00 | 0 | This will be two single stations that can supply two cars at a time. Encouraging and enabling the use of hybrid and electric vehicles helps to reduce and/or eliminate greenhouse gas emissions linked to global warming. There is no saving expected for this measure. Price includes stations and labour. |

APPENDIX B

Energy Conservation and Demand Management Plan January 1, 2014, to December 31, 2018

| Description | Facility | Contact | Start | End | Status | Cost | Save (ekWh/yr) | Save (\$) | ROI | Details |
|--|-------------------------|--------------------------------|------------|------------|------------------|----------|----------------|-----------|-----|--|
| Replace Existing Boiler with Higher Efficiency Unit | Administration Building | Environmental Services Manager | 2014-07-01 | 2018-12-31 | Completed [100%] | \$60,000 | 0 | 0.00 | 0 | Replacement of old and aging equipment. |
| Install Occupancy Sensors | Gateway Haven LTC Home | Environmental Services Manager | 2014-09-10 | 2015-07-31 | Completed [100%] | | \$9,338 | 0.00 | 0 | Install 70 occupancy sensors in lower use rooms and resident rooms. Incentives received from Hydro One. |
| Replace A/C Unit with more Energy Efficient Model | Bruce County Library HQ | | 2014-03-07 | 2014-11-09 | Completed [100%] | | \$855 | 0.00 | 0 | Two Keeprite CHGK125 air conditioning units were installed. One unit was replaced in 2012. The remaining unit needs to be replaced in the short-term. New unit selected is Lennox single-stage, 5ton, Model SC 17-060-230 with 5ton cased coil Model CH33-60D-2F. 12.7 EER |
| Replace Gas Furnace with more Energy Efficient Model | Bruce County Library HQ | | 2014-08-01 | 2014-11-09 | Completed [100%] | | 0 | 0.00 | 0 | Originally had two Lennox G61MP-60D-135-08 94.1% AFUE gas-fired furnaces installed in 1995. One furnace was already replaced a few years ago. The other unit needs to be replaced in the short-term due to increase service calls. Lennox currently provides various furnace models ranging up to 98% AFUE (energy efficiency). Installed new Lennox 2 stage gas furnace with ECM motor EL296UH135XV60D and new digital programmable thermostat. Furnace rated 96% AFUE. |

| Description | Facility | Contact | Start | End | Status | Cost | Save (ekWh/yr) | Save (\$) | ROI | Details |
|---------------------------|-------------------------|--------------------------------|------------|------------|------------------|-----------|----------------|-----------|-----|---|
| Lighting Retrofit | Gateway Haven LTC Home | Environmental Services Manager | 2016-07-01 | 2018-02-01 | Completed [100%] | \$124,700 | \$192,400 | \$32,200 | 3 | Instant Fit LED retrofit for T8's, CFL, MR16, HID floodlights, wall packs and outdoor pole lights. Included in Energy Performance Savings (EPS) contract with EcoSystem. Incentives received included in cost. |
| Replace Boiler | Administration Building | Environmental Services Manager | 2017-07-01 | 2017-12-04 | Completed [100%] | \$52,000 | \$71,400 | \$,1700 | 30 | Replace Non-Condensing Boiler with Condensing Boiler. Cost includes incentive rebate received. Est. savings 6,800 m3 natural gas. |
| Install LED Lights | Administration Building | Environmental Services Manager | 2017-07-01 | 2018-07-15 | Completed [100%] | \$73,000 | \$89,400 | \$14,400 | 5 | Instant Fit LED retrofit for T8 lights throughout building and downlights in Council Chambers. LED retrofit for 100W and 400W incandescent lights. LED retrofit for HID floodlights, wall packs and outdoor pole lights. Included in Energy Performance Savings (EPS) contract with EcoSystem. Cost includes incentive rebate received. |
| BAS Replacement | Administration Building | Environmental Services Manager | 2016-07-01 | 2017-08-31 | Completed [100%] | \$42,000 | \$32,700 | \$5,900 | 7 | Add Building Automation System controls to the boiler, cooling tower and pumps in the mechanical room. Included in EPS contract with Ecosystem. Incentive rebate included in price. |
| Heat Pump Replacement | Administration Building | Environmental Services Manager | 2016-07-01 | 2017-12-19 | Completed [100%] | \$87,800 | \$10,500 | \$1,600 | 54 | Replaced 13 heat pumps that are 28 years old or older. Included in Energy Savings Performance (ESP) contract with Ecosystem. Incentive rebate included in price. |
| Variable Frequency Drives | Administration Building | Environmental Services Manager | 2017-10-01 | 2018-01-15 | Completed [100%] | \$10,600 | \$7,500 | \$1,100 | 9 | VFDs will be installed on the 15HP cooling tower motor. Included in Energy Performance Savings (EPS) contract with Ecosystem. Cost includes incentive rebate received. |

| Description | Facility | Contact | Start | End | Status | Cost | Save (ekWh/yr) | Save (\$) | ROI | Details |
|---------------------------------|-----------------------------|--------------------------------|------------|------------|------------------|-----------|----------------|-----------|-----|---|
| Low Flush Fixtures | Administration Building | Environmental Services Manager | 2017-09-01 | 2018-03-31 | Completed [100%] | \$10,000 | \$3,150 | \$800 | 12 | Replace 6L/flush toilets with 3.8L/flush urinals with 0.5 L models. Included in Energy Performance Savings (EPS) contract with Ecosystem. Incentive rebate included in price. |
| Lighting Retrofit | Brucelea Haven LTC Home | Environmental Services Manager | 2016-07-01 | 2017-08-31 | Completed [100%] | \$132,600 | \$231,000 | \$33,900 | 3 | Instant Fit LED retrofit for T8's, CFL, MR16, HID floodlights, wall packs and outdoor pole lights. Included in Energy Performance Savings (EPS) contract with EcoSystem. Incentives received included in cost. |
| BAS Replacement | Brucelea Haven LTC Home | Environmental Services Manager | 2016-07-01 | 2017-08-31 | Completed [100%] | \$249,000 | \$140,400 | \$24,500 | 10 | Add Building Automation System controls to the boiler, cooling tower and pumps in the mechanical room. Included in Energy Performance Savings (EPS) contract with Ecosystem. Incentive rebate included in price. |
| Control System Recommissioning | Brucelea Haven LTC Home | Environmental Services Manager | 2016-07-01 | 2017-08-31 | Completed [100%] | \$14,900 | \$67,900 | \$11,800 | 1 | Optimize ventilation system airflow. Include in Energy Performance Savings (EPS) contract with EcoSystem. Price includes incentive rebate received. |
| Replace Booster Pump Set (VFDs) | Brucelea Haven LTC Home | Environmental Services Manager | 2017-11-01 | 2018-01-01 | Completed [100%] | \$45,300 | \$26,100 | \$3,600 | 12 | Domestic booster pump skid replaced with a new skid equipped with RFDs. Included in Energy Performance Savings (EPS) with Ecosystem. Incentive rebate included in cost. |
| Variable Frequency Drive | Brucelea Haven Nursing Home | Environmental Services Manager | 2017-01-01 | 2018-01-01 | Completed [100%] | \$33,000 | \$24,300 | \$3,350 | 9 | Domestic booster pump skid replaced with a new skid equipped with VFDs. VFDs will be installed on the two 5HP primary heating pumps and on the two 10HP chilled water pumps. Included in Energy Performance Savings (EPS) contract with |

| Description | Facility | Contact | Start | End | Status | Cost | Save (ekWh/yr) | Save (\$) | ROI | Details |
|---------------------------------------|-----------------------------|--------------------------------|------------|------------|------------------|-----------|----------------|-----------|-----|--|
| | | | | | | | | | | Ecosystem. Incentive rebate included in price. |
| Chiller Replacement | Brucelea Haven Nursing Home | Environmental Services Manager | 2017-08-01 | 2017-08-31 | Completed [100%] | \$172,600 | \$37,000 | \$5,100 | 33 | Current chiller uses refrigerant R-22 that will no longer be available in Canada by 2020. Replacement chiller would use R0410 or equivalent refrigerant. Included in Energy Performance Savings (EPS) contract with Ecosystem. Incentive rebate included in price. |
| Partial Boiler Replacement | Brucelea Haven Nursing Home | Environmental Services Manager | 2018-05-01 | 2018-12-23 | Completed [100%] | \$319,100 | \$291,900 | \$6,700 | 47 | Retrofit measure to include: 3 new boilers, piping modifications, and controls to suit. Included in Energy Performance Savings (EPS) contract with Ecosystem. Incentive rebate included in price. |
| Control System Recommissioning | Gateway Haven Nursing Home | Environmental Services Manager | 2016-07-01 | 2018-01-15 | Completed [100%] | \$19,800 | \$51,000 | \$9,900 | 2 | Optimize ventilation system airflow. Included in Energy Performance Savings (EPS) contract with Ecosystem. Incentive rebate included in price. |
| Install "Smart" Kitchen Hood Controls | Gateway Haven Nursing Home | Environmental Services Manager | 2016-07-01 | 2018-01-01 | Completed [100%] | \$16,600 | \$12,700 | \$4,500 | 3 | Install sensors in kitchen hoods and a VFD to the exhaust motor to improve efficiency. Included in Energy Performance Savings (EPS) contract with Ecosystem. Incentive rebate included in price. |
| Variable Frequency Drives | Gateway Haven Nursing Home | Environmental Services Manager | 2016-07-01 | 2018-06-15 | Completed [100%] | \$24,500 | \$14,900 | \$2,300 | 10 | VFD's will be installed on the two 3 HP primary heating pumps and on the two 7.5 HP chilled water pumps. Included in Energy |

| Description | Facility | Contact | Start | End | Status | Cost | Save (ekWh/yr) | Save (\$) | ROI | Details |
|----------------------------|-----------------------------|--------------------------------|------------|------------|------------------|-----------|----------------|-----------|-----|--|
| | | | | | | | | | | Performance Savings (EPS) contract with Ecosystem. Incentive rebate included in price. |
| Partial Boiler Replacement | Gateway Haven Nursing Home | Environmental Services Manager | 2018-05-01 | 2018-12-23 | Completed [100%] | \$231,098 | \$150,150 | \$3,500 | 66 | Retrofit measure to include: 2 new boilers, piping modifications, and controls to suit. Included in Energy Performance Savings (EPS) contract with Ecosystem. Incentive rebate included in price. |
| Kitchen & Laundry A/C | Gateway Haven Nursing Home | Environmental Services Manager | 2018-05-01 | 2018-06-01 | Completed [100%] | \$13,019 | \$13,019 | \$0.00 | 0 | Add additional cooling capacity in these two rooms. Included in Energy Performance Savings (EPS) contract with Ecosystem. Incentive rebate included in price. |
| Chiller Replacement | Brucelea Haven Nursing Home | Environmental Services Manager | 2016-07-01 | 2017-08-31 | Completed [100%] | \$173,205 | \$31,000 | \$4,900 | 35 | Current chiller uses refrigerant R-22 that will no longer be available in Canada by 2020. Replacement chiller would use R0410 or equivalent refrigerant. Included in Energy Performance Savings (EPS) contract with Ecosystem. Incentive rebate included in price. |
| BAS Replacement | Gateway Haven Nursing Home | Environmental Services Manager | 2016-07-31 | 2017-08-31 | Completed [100%] | \$192,900 | \$115,000 | \$22,900 | 8 | Add Building Automation System controls to the boiler, cooling tower and pumps in the mechanical room. Included in Energy Performance Savings (EPS) contract with Ecosystem. Incentive rebate included in price. |
| Lighting Retrofit | Bruce County Museum | Maintenance Supervisor | 2016-07-01 | 2018-06-15 | Completed [100%] | \$23,400 | \$43,100 | \$7,200 | 3 | Instant Fit LED retrofit for T8's, CFL, MR16, HID floodlights, wall packs and outdoor pole lights. Included in Energy Performance Savings (EPS) Contract with EcoSystem. Incentives received included in cost. |

| Description | Facility | Contact | Start | End | Status | Cost | Save (ekWh/yr) | Save (\$) | ROI | Details |
|------------------------|---------------------|------------------------|------------|------------|------------------|----------|----------------|-----------|-----|---|
| BAS Replacement | Bruce County Museum | Maintenance Supervisor | 2016-07-01 | 2017-10-31 | Completed [100%] | \$78,800 | \$123,700 | \$20,100 | 3 | Installed 4 Liebert units on the Building Automation system. Included in Energy Performance Savings (EPS) contract with Ecosystem. Incentive rebate included in price. |
| Low Flush Fixtures | Bruce County Museum | Maintenance Supervisor | 2016-07-01 | 2017-12-01 | Completed [100%] | \$7,800 | \$8,400 | \$2,100 | 3 | Replace 6L/flush toilets with 3/L and 3.8/flush urinals with 0.5L models. Included in Energy Performance Savings (EPS) contract with Ecosystem. Incentive rebate included in price. |
| Humidifier Replacement | Bruce County Museum | Maintenance Supervisor | 2016-07-01 | 2018-06-15 | Completed [100%] | \$66,098 | \$82,000 | \$11,500 | 5 | Replace the 4 electric humidifiers on each of the 4 handling units with evaporative media humidification. Included in Energy Performance Savings (EPS) contract with Ecosystem. Incentive rebate included in price. |



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