

2019-2024

**ESPANOLA REGIONAL
HOSPITAL AND
HEALTH CENTRE**

**CONSERVATION AND DEMAND
MANAGEMENT PLAN**



Espanola Regional Hospital
825 McKinnon Dr.
Espanola, ON
P5E 1R4

RE: RENEWAL OF 5-YEAR CONSERVATION AND DEMAND MANAGEMENT (CDM) PLAN

July 2024

We are happy to confirm the enclosed Conservation and Demand Management Plan for Espanola Regional Hospital has been approved by our senior leadership team.

The implementation of this plan will continue to influence our budgeting, strategic plan, purchasing policy, preventative maintenance plans, environmental management plan, and the policy development processes. A communication plan will also be deployed to convey our energy efficiency commitment and priority to staff, patients, visitors, and other stakeholders.

Espanola Regional Hospital staff will incorporate energy efficiency considerations into all business processes and modify them as necessary as part of the ongoing cycle of program review.

Should you have any questions or concerns, please do not hesitate to contact the undersigned

We look forward to providing an update on this plan in 2029.

Sincerely,



Jane Battistelli

Chief Executive Officer

Espanola Regional Hospital & Health Centre

table of contents

Introduction	Page 5
Energy Management Goals	Page 6
Guiding Principles for Strategic Energy Management	Page 6
Energy Consumption 2018-2023	Page 8
Results of Previous Conservation Demand Initiatives	Page 10
Conservation and Demand Management Goals	Page 12
Going Forward	Page 13

ESPANOLA REGIONAL HOSPITAL AND HEALTH CENTRE

Espanola Regional Hospital and Health Centre (ERHHC) is a fully integrated care organization, serving the health care needs of Espanola and the surrounding communities. Espanola Regional Hospital and Health Centre (ERHHC) serves a population of approximately 15,000. Our 79-bed facility boasts a modern state of the art hospital that features a very busy, newly renovated, 24-hour emergency department, acute care, long-term care, and a full range of services including a medical lab, diagnostic imaging (e.g. x-ray and ultrasound), cardiac program, physiotherapy as well as a 30-unit Seniors Apartment Building and a 19-unit Assisted Living Complex and a Family Health Team that is equipped for six physicians and a team of allied health professionals. We are also home to an on-site Pharmacy, a 6-bed sleep lab and a Community Care Access Centre.



Espanola Regional Hospital and Health Centre is often referred to as a model health campus. Organizations such as the Ontario Hospital Association, the Ontario Ministry of Health and Long-Term Care (MOHLTC), the Northeast Local Health Integration Network and other well-respected healthcare organizations, believe that our health campus is a great example of how healthcare facilities and communities can integrate and coordinate health services all within shared walls – creating a “one-stop shop” for patients and their families.

Our facility is staffed with a team of dedicated and talented individuals who have many years' experiences and more importantly, render care that always puts patients first. We are committed to continuous learning and quality improvement and as a result, staff members regularly participate in ongoing education and training events to enable the provision of improved patient care.

MISSION

Your Partners for Better Health & Wellness

VISION

Caring for the Health of our Community

VALUES

Patients First, Integrity, Compassion, Respecting Diversity, Contribution of All

Introduction

Under Ontario Regulation 25/23 all public agencies are required to prepare, publish, and make available on their website an energy Conservation and Demand Management (CDM) plan as well as update the plan on every fifth anniversary. Espanola Regional Hospital's CDM plan, which we first completed in 2014, is a step to understanding the impact of our operations on Greenhouse Gas (GHG) emissions, and to act by setting GHG reduction targets. This 2024 plan reflects on what we have completed, monitored, and outlines our plans going forward towards achieving our organizations sustainability goals.

The table below illustrates Espanola Regional Hospital's progress towards reducing our annual electricity and natural gas consumption, as well as our Greenhouse Gas (GHG) emissions and Energy Use Intensity (EUI). The values from the baseline year (2018) were compared to the last year covered in the previous plan (2023) to quantify our changes over the initial five-year term.

	Electricity [kWh]	Natural Gas [m ³]	GHG [kg CO ₂ e]	Energy Use Intensity [ekWh/ft ²]
2018	2,108,587	302,481	657	62.84
2023	2,212,867	296,683	648	63.37
2018 vs. 2023	-5%	+2%	+1%	-1%

As our caring capabilities continue to grow, and our demand for energy to power our medical equipment continues to increase, ERHHC is committed to identifying areas to improve efficiencies and finding ways to decrease our overall environmental impact.

To further strengthen and obtain full value from energy management activities, a strategic approach will be taken: the organization will fully integrate energy management into its business decision-making, policies, and operating procedures.

Active management of energy related costs and risks in this manner will provide a significant economic return to the organization and will support other key organizational objectives.

Energy Management Goals

As communicated in our previous plans, ERHHC's goal is to maintain a comfortable environment for our patients and staff while continuously looking for ways to reduce energy consumption will remain constant. In addition, we will continue to look for opportunities to convert existing technologies to newer more energy efficient methods.

Guiding Principles for Strategic Energy Management

ERHHC's energy management will be guided by the following principles when considering energy management initiatives:

Supporting Mission-Critical Goals:

Strategic energy management will directly support ERHHC's mission-critical goals of caring for the environment and the community, improving the healing and working environment, while reducing unnecessary energy costs. It will also serve to optimize the capacity of existing energy systems to meet current and expanding operational needs, while improving the operational resiliency of the organization. The impacts of ERHHC's energy management efforts on those goals will be tracked and reported wherever possible.

Pursuing Long-Term Change to Core Business Practices:

The core of a strategic approach is the consistent incorporation of energy management into our organization's everyday practices and decision making. It also needs to be an integral part of the strategic planning and budgeting processes. Change in energy-related business practice will cover all applications of energy management – new construction and major renovations, existing facility operations and upgrades, and the economic analysis and procurement practices underlying these practices.

Fostering Organizational Commitment and Involvement:

Executive and organizational commitment and involvement is critical to successful strategic energy management. Top management at ERHHC will work with facility managers and other key staff to ensure that adequate organizational support and resources are provided to maximize the benefits of energy management to ERHHC's Energy management will also be integrated into the strategic planning and capital budgeting processes.

Obtaining Solid Economic Returns:

Energy management investments will yield solid economic returns that meet ERHHC's standards applied through the hospital's capital budgeting process. ERHHC will apply consistent financial analysis methods, including life-cycle costing, to reduce total cost of facility ownership and operation.

Optimizing the Use of Resource:

Recognizing that many of the most effective energy conservation and demand initiatives are expensive, ERHHC will continue to work with national, regional and local sources for strategic, technical and financial assistance to help achieve our goals. For example, leveraging the use of such programs as The Ministry of Health and Long-Term Care's Hospital Infrastructure Renewal Fund (HIRF) to help implement projects which complement our energy management values.

Strengthened Community Leadership and Environmental Stewardship

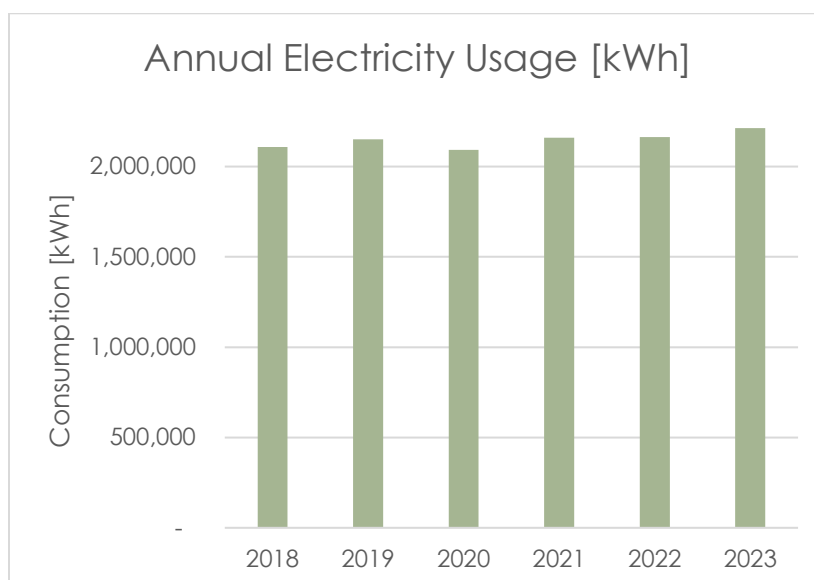
Energy management is a visible public commitment to the community and environment. Through energy management, the hospital can provide leadership in promoting sustainable communities, efficient business practices, and environmental stewardship. Faced with a tough market environment that has forced cutbacks on hospital support for community activities, this is an excellent opportunity to provide leadership and reduce costs at the same time.

Energy Consumption 2018-2023

As part of Ontario Regulation 25/23 under the Electricity Act, 1998, ERHHC prepares, publishes and makes available to the public its annual energy consumption and resulting Greenhouse Gas (GHG) production. Additional information including the Hospital's total floor area of indoor space, its annual operational hours, and energy intensity factors are also reported. A summary of ERHHC's reporting information dating back to 2018 has been included below.

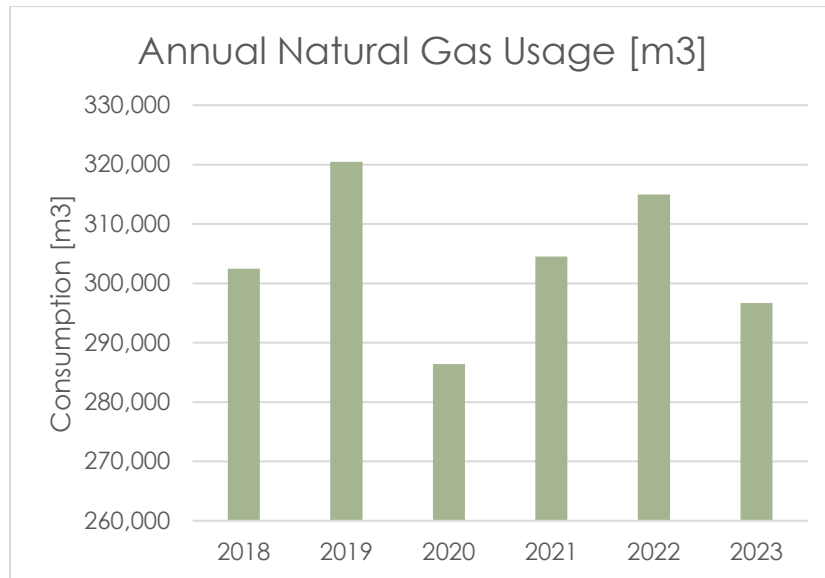
Year	Electricity (kWh)	Natural Gas (m ³)	GHG Emissions (tCO ₂ e)	Energy Intensity (ekWh/ft ²)
2018	2,108,587	302,481	657	62.84
2019	2,151,141	320,466	691	65.57
2020	2,092,812	286,395	620	60.65
2021	2,159,247	304,529	662	63.70
2022	2,163,890	314,963	683	65.05
2023	2,212,867	296,683	648	63.37

The total annual electricity and natural gas consumption values have been plotted from 2018 to 2023 to better demonstrate ERHHC's trends over the past five years. Our monthly consumption trends have also been included in Appendix A.



Other than 2020, the electricity usage has slightly increased since the first reporting year of 2018. A primary driver for this increased usage is services being offered at the

hospital. As new services are introduced, electricity demand increases with the new equipment, lighting and HVAC needs. Without the conservation measures outlined below in place the escalation of power usages would have been far worse.



Natural gas usages have seen a lot more variability due to overall winter temperature changes and HVAC equipment reaching the end of life and needed to be replaced. For example, a new boiler was installed in October 2023 which has resulted in 1.64% reduction in weather normalized (considering the impacts of a warmer/colder winter) natural gas usage in the past 2023/24 winter. The benefits of this project are expected to continue over the useful life of the boiler.

Results of Previous Conservation Initiatives

In July 2019, ERHHC developed goals and green initiatives to decrease the facilities annual energy consumption and resulting greenhouse gas emissions. Since then, ERHHC has implemented no fewer than ten Energy Conservation Measures (ECMs) which include managing overall energy consumption, lowering annual operating costs, and reducing greenhouse gas emissions. A summary of the major ECMs implemented are outlined below.

Interior Lighting Retrofit

Replacing old inefficient lights such as compact fluorescent with highly efficient LEDs can drive significant energy savings especially for hospital which requires 24/7 lighting in significant portions of the building. Just as important, LED lights typically provide better lighting levels and quality improving staff/patient safety and experience while reducing maintenance costs because of their prolonged life cycle. ERHHC has continued to undertake lighting upgrades throughout the hospital whereby approximately 150 32W fluorescent lamps were exchanged with LEDs. In addition, 165 42W pot lights were also replaced with LEDs.

As part of these projects, ERHHC worked with our local electricity utility to capture incentives while recycling old lamps which diverted glass, metals, phosphor, mercury, porcelain, and plastic from landfills.

New Walk-in Cooler & Freezer

Replacing end of life appliances and equipment with more energy efficient models is often an effective way to reduce overall energy intensity. In most cases, not only is a reduction in energy usage achieved but performance and safety are also improved. ERHHC replaced the dietary walk-in cooler & freezer which was at the end of its useful life. In some cases, new appliances can reduce overall energy usage by up to 25%. In addition to more efficient compressors, some of the other energy saving measures associated with this project include:

- ✓ Increased R-value providing better insulation for the cooled space.
- ✓ LED lighting equipped with automatic shut off.
- ✓ Automatic door closers

Roofing Replacement

Replacing a roof presents an excellent opportunity to increase the insulation which prevents heat loss in the winter and heat penetration during the summer. The extent to which insulation resists heat flow is measured as an R-value. The higher the R-value, the more the resistance and the better the material is at insulating a building.

Since 2019 ERHHC has replaced just over half (49,022 ft²) of the entire hospital's roof while increasing the overall R-Value. This project will increase the efficiency of the building, reducing overall heating and cooling requirements while providing a more comfortable environment for patients and staff.

Replacing Air Handling Units

When replacing air handling units' new technologies allow for better control of air flow which in turn reduces overall energy usage with improved comfort. One of the major advancements which drive these efficiencies is Variable Frequency Drives (VFDs) which can be throttled to meet specific demand versus older technology which operates at more of an all or nothing. Over the past 5 years, ERHHC has replaced two Make Up Air handling (MUA) units in the hospital kitchen and a second in the long-term care facility. Air Handling Unit (AHU) #15 was also replaced at the hospital.

Cooling Tower Replacement

To ensure ongoing cooling during the warmer summer months, cooling towers assist the chillers in removing heat from the hospital. In the spring of 2024, ERHHC replaced the cooling tower as the previous one was no longer meeting the hospitals needs. The newer unit provides sufficient cooling in tandem with recent repairs to the chillers. By properly maintaining and sizing equipment their electricity efficiency is optimized.

Replaced Domestic Hot Water Boiler

ERHHC has worked to replaced two end of life boilers with a new high efficiency natural gas condensing boilers. In addition, the three domestic hot water tanks, piping, and headers were replaced ensuring maximum use of thermal energy. As mentioned above, these new units are not only providing the hospital with heat but also reducing overall natural gas usages.



Conservation and Demand Management Goals

The following are proposed measures that ERHHC intends to implement:

Adoption of Energy Conservation and Demand Management Plan

- Executive approval and resources.
- Support from key staff (financial management, purchasing/procurement, construction, building operations, etc.).
- Creation of mechanisms/processes to make resources available.
- Clarification and communication of staff roles and responsibilities, performance goals, and energy management reporting.

Implement Strategic Energy Management Practices

✓ **Purchasing Specifications for Energy Efficient Equipment & Services**

- Utilize purchasing specifications that minimize life-cycle costs for energy efficient equipment and services.
- Establish efficiency specifications for standard equipment routinely replaced (e.g. lights, motors, and unitary HVAC equipment).
- Promote efficiency guidelines that apply LCCA for custom equipment purchases (e.g. chillers).
- Implement equipment and system upgrades where justified by life-cycle cost analysis.
- Expand use of qualified service providers as needed. Develop standard RFP documents, contract terms, and reporting standards.

✓ **Improve Building Operating Performance**

- Equipment tune-up and improved operations and maintenance (O&M) will achieve the following results while supporting patient care, and facility comfort and safety.
- Reduce/mitigate operating costs for existing facilities.
- Maintain or reduce energy intensity below current levels of 63.37 ekWh/ft².

Going Forward

Building off the significant list of ECMs implemented since 2019, ERHHC has already identified several new projects that will continue our focus on green initiatives and energy efficiency that we have strived for over the past five years.

Continued Roofing Upgrades

Replacing the roof on the remainder of the hospital is major priority. Not only does this ECM provide improved energy performance for the hospital but also ensures the integrity of building envelope. Upgrading older roofs ensure water from rain and melting snow do not penetrate the building.

Window Replacement

Similar to the roof, windows can account for a significant (up to 25%) source of heat and/or cooling loss, impacting both gas and electricity usages. The measure of how well a window insulates is measured by the U-Factor but in this case the lower the value the better it insulates. In addition, new window installation if done correctly can reduce air leakage. Typically, when looking to procure replacement windows, looking for the ENERGY STAR certification ensures the product adheres to strict energy performance standards. NRCAN states “ENERGY STAR” certified windows are about 20% more energy efficient than the average window.”

As such, ERHHC will ensure the older end of life windows are replaced with replaced with ENERGY STAR rated products.

Exterior Lighting Upgrades

To enhance energy efficiency and improve lighting quality, ERHHC will look to replace all exterior lighting with new energy efficient LEDs. This upgrade will reduce energy consumption significantly, provides better illumination while lowering maintenance costs over time.

As always, the success and these projects relies heavily on funding from a variety of sources such as Health Infrastructure Renewal Fund (HIRF) along with incentives from a variety of programs such as SaveonEnergy and local utilities like Enbridge.

Appendix A

