

South Huron Hospital Association Five Year Energy Conservation and Management Plan 2019 -2023

BACKGROUND INFORMATION

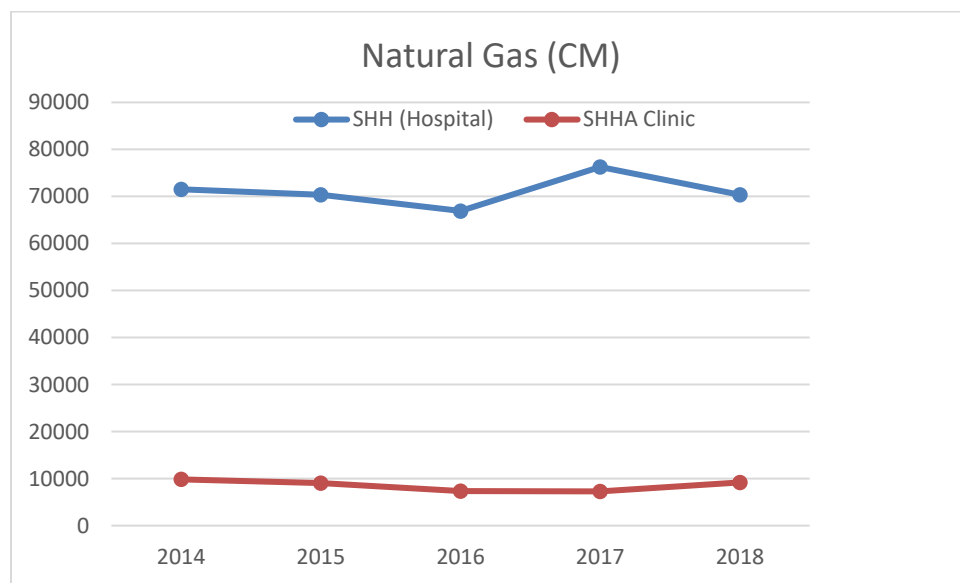
Properties Included:

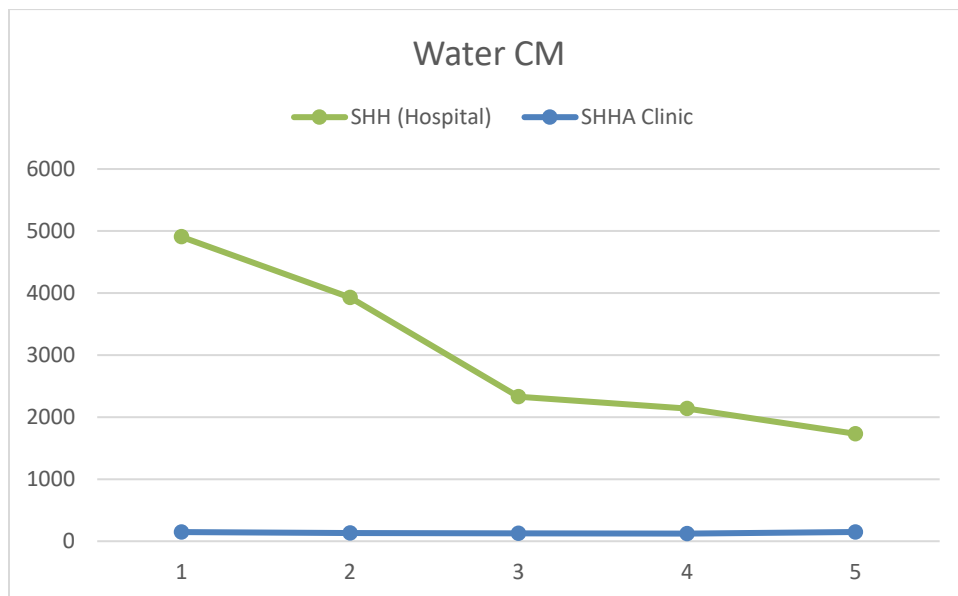
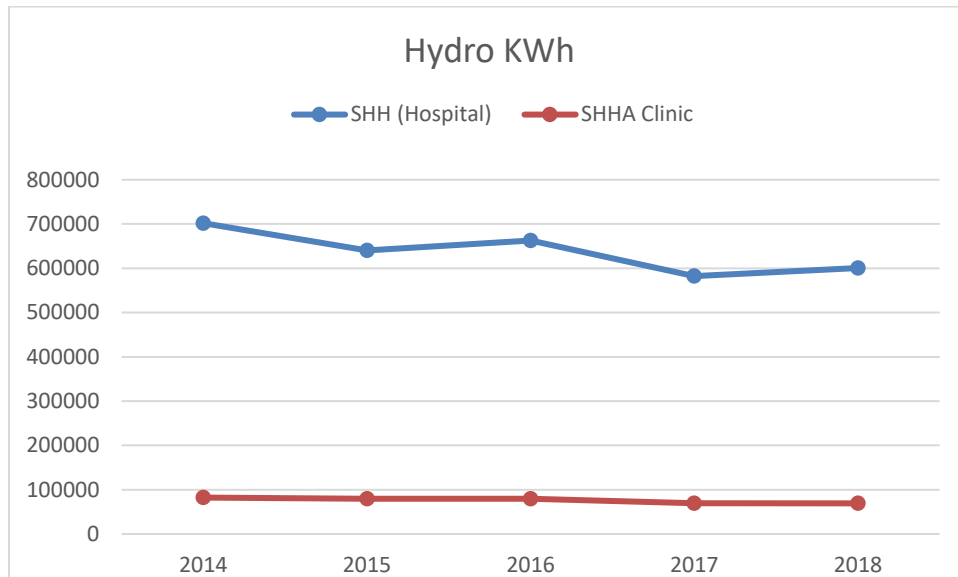
- (1) South Huron Hospital Association (SHHA) – 24 Huron Street West, Exeter ON, N0M 1S2
- (2) South Huron Hospital Medical Clinic – 23 Huron Street West, Exeter ON, N0M 1S2

Floor Space of Properties:

- (1) ~ 34, 500 ft²
- (2) ~ 4,376 ft²

Current State Energy Consumption from 2014-2018 Data:





Energy Conservation and Demand Management Plan 2013-18:

As part of Ontario regulation 397/11 (Green Energy Act), all public facilities are mandated to submit annual energy consumption data. In addition, at the start of year two of the Act, facilities are mandated to develop a five year energy conservation and demand management plan which is to be readily available to the public in hard copy as well as electronically on the Hospital website. Moving forward, facilities are mandated to develop new plans on a rolling five year basis.

Key ingredients of the plan must include:

- 1): Current state for the most recent 5 years that full data is available for (see above).
- 2): SHHA's goals and objectives for conserving energy over the next 5 years.
- 3): SHHA's proposed measures to realize the goals and objectives outlined in 2) as well as the projected costs savings associated with these measures.
- 4): Any renewable energy generated if appropriate
- 5): Confirmation that the plan has been approved by SHHA's Senior Management Team.

PLAN DETAILS 2014-18

Goals and Objectives:

Given the documented modest energy consumption over several years and limited scope for significant savings on a return of significant capital investment for large scale system replacements SHHA are now considering a different strategy. Savings can be obtained in gas and electricity costs by:

- SHHA indented to improve the awareness of all staff re Energy Efficiency using CHESTER.
- Replacement of the Main Boilers was planned
- Potential of Co Gen to be investigated
- Retrofitting the aged and poorly design distribution system of the hot water heating and HVAC conditioning systems and associated controls for the same
- Retrofitting the distribution system for the hot and cold domestic water systems
- Upgrade the aged electrical switchgear and distribution grid as it has been at maximum capacity for several years limiting the ability for new installations as would be required to rework the hot water heat and HVAC systems as outlined above.
- Include Energy Efficiency in all Capital Projects as one of the primary decision drivers.

Implementation Plan:

With the new implementation strategy we still anticipate a phased in approach due to the sheer magnitude of the projects, however each stage will be designed such that it is prioritized as phase 1 when direct Patient care is positively impacted (eg. Clinical areas of the facility prior to non-clinical areas). It is understood that this plan is reliant upon securing suitable funding through a combination of both the Hospital Infrastructure Renewal Funding Scheme as well as grants available for retrofits/upgrades of this type.

Actions Completed – 2014-18

SHHA submitted funding requests to the Ministry of Health for HIRF (Healthcare Infrastructure Renewal Funding) to allow for upgrading of the facility. Below is list of projects that impacted Energy Usage.

- The first submission approved was the updating of the Domestic Hot Water Storage tank system with new tanks and complete insulation. The work was completed in spring of 2016.
- The next submission approved allowed the updating of the Domestic Hot Water and Cold Water distribution system. This project replaced all of the old piping in the Patient Care, Administration and Kitchen areas on both floors. This project included full insulation of hot and cold water piping and proper control & monitoring on the Building Automation system including a scald prevention system. Work on this project was completed in March of 2018. This project was Phase 1 of 2.
- The next project was the first of 3 phases to update the Hot Water Heating (HWH) system. The system had no control, no insulation and was leaking in spots. Phase #1 included the replacement of all piping and new Rads in the two Patient Care Wings (both floors). Individual room control was added along with insulation. Work was completed in March 2018.
- The next project was the replacement of the Kitchen RTU/MUA (Roof Top Unit/Make Up Air) HVAC system with an new more energy efficient unit. The unit was failing at time of replacement with work completed in March 2018
- Update to plumbing using low flow fixtures where possible to reduce water usage.
- The Awareness campaign was placed on hold pending significant Infrastructure upgrades to allow for staff participation in operation
- The replacement of main boilers was placed into the 2019-2023 plan to allow for improvements to HWH distribution first which would make new boilers effective
- CO Gen was placed on hold pending funding review
- Improvements in equipment and facility over the five years have related to reduced Hydro usage ~15% and ~280% in water usage.

2018-19 Projects (HIRF) – Completed in March 2019

- Two HVAC (RTU) units where replaced , one feeding the CSR(MDRD) area and one feeding the Physio Clinic. Work included new controls , link to Building Automation and environmentally friendly refrigerants.
- The first phase of roofing replacement using more insulation was completed over the Patient Care wings.
- Exterior lighting was upgraded with LED fixtures.
- The main sliding doors at ER Entrance where replaced.
- The Staff Entrance doors on A wing where replaced.
- Two sets of exterior entrance doors where replaced – All doors use energy efficient glass partitions.

HEEP 2017-18

SHHA also included a funding request to the HEEP program (Hospital Energy Efficiency Program) . Three projects were approved. Work was completed in 2018

- Upgrade to the Building Automation system to allow for better control and monitoring of the facility
- Replacement of an old HVAC RTU that supplied the lab area. Work included new controls and a more energy efficient unit. A heating unit was added to allow for improved heating and control in the lab. All new RTU units also include more environmentally friendly refrigerants.
- Phase #1 of Interior Lighting upgrade on main level using new LED fixtures in the Patient Care and Kitchen Corridor, Kitchen/dining room, and Patient Care Bedded areas.

Save on Energy 2014-2018

SHHA has been working with both Union Gas and Hydro One to obtain Energy Incentives thru the Ontario Government Save on Energy program. SHHA has been successful in receiving grants from both organizations for work completed on the 2017-18 projects. Grants are under review for work on the 2018-19 projects.

Energy Awareness/Awards Programs 2014-2018

SHHA is participating in two major energy awareness programs. The first is the Ontario Regulation 397/11 Energy Conservation annual reporting each year in July. Currently SHHA have posted the required results for 2011 thru 2016 on both the Government and the SHHA web sites.

The second program is the Green Hospital Scorecard from OHA (greenhealthcare.ca) which uses the Energy and Waste Management reporting to rank individual Hospitals to both their peer hospitals and all Hospitals in Ontario. SHHA submitted its first data for 2017 in March of 2019 and is looking forward to seeing how it ranks among both peer and all hospital groupings.

2019-2023 Plan

Over the next 5 years SHHA is considering the following actions/projects that will positively impact energy usage. SHHA will promote these actions/projects under both capital and HIRF funding models.

- Continue to submit for Energy grants
- Review Equipment purchases with regard to meeting EnerGuide or other Energy Efficiency ratings



- Continue to review operation of Building Automation to maintain/improve the facility operation
- Phase #2 of the work on Domestic hot and cold water would include ER/DI wing in 2023-2025 plan
- Phase #2 of the HWH system upgrade is planned for the 2019-2023 time line once funding is approved. It will follow phase #1 work with new piping, rads, insulation and controls. Work would be in the Kitchen and Administration wings (both floors). Work in the Boiler room would include updated pumps and controls
- Phase #3 of the HWH system would be in the DI/ER zone and is not required until later in the 2019-2023 plan
- Phase #2 of the lighting upgrade would be in the Administration on level 1 and clinic area of the basement.
- Phase #3 of the lighting upgrade would be the remainder of the basement
- Phase #4 of the Lighting would be the Two floors of the DI/ER wing
- Roofing over the Administration and Kitchen wings
- Domestic Hot Water Supply system (HEX) upgrade
- HVAC replacements of RTU units to improve both energy and environmental impacts
- Main HWH boiler replacement

Senior Management Team Approval of Plan:

As indicated by signature below, the plan has been approved by the Senior Management Team of the South Huron Hospital Association.

_____ Bruce Quigley President and CEO