# HORNEPAYNE COMMUNITY HOSPITAL

## COMMUNAUTAIRE DE HORNEPAYNE

# CONSERVATION AND DEMAND MANAGEMENT PLAN

# 2019-2024

Hornepayne Community Hospital
278 Front Street
Hornepayne, Ontario
P0M 1Z0

July 2019

The Senior Team at Hornepayne Community Hospital is excited and pleased to present the enclosed five-year Energy Conservation and Demand Management (CDM) plan. This plan renews our 2014 CDM plan while providing an update on our successes and outlining possible opportunities for future conservation.

Our organization realizes that conservation takes many forms and provides benefits which include but are not limited to:

- Improved patient and employee experience
- Reduced utility bills to focus money on direct patient care
- Limiting our Green House Gas Emissions

In line with our initial CDM Plan in 2014, this document will act as a foundation for procurement, operational, and behavioural efforts over the coming years.

We look forward to providing an update on our efforts via our annual reporting and 2024 CDM Plan.

Sincerely,

Senior Team

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## About HPCH and Our Energy management Plan

Hornepayne Community Hospital (HPCH) is a fully accredited 20 bed facility with 12 long-term care and eight acute care beds. HPCH has a total floor space of 29,000 $ft^2$ and is used for hospital, long-term care, emergency and family medicine purposes. We are committed to excellence and accountability through our six main principles: respect, quality, education, partnerships, advocacy and accountability.

The Conservation and Demand Management (CDM) plan, originally completed in 2014, is a way of making a commitment to our community, patients and staff to work towards improving the hospital from an efficiency standpoint. The plan is intended to promote good stewardship of our environment and community resources to both reduce our carbon footprint and create a better healing space. In keeping with our core values of efficiency, concern for the environment, and financial responsibility, HPCH's CDM plan will reduce our overall energy consumption, operating costs, and greenhouse gas emissions. It will also enable us to provide compassionate service to a greater number of persons in the community.

The below table compares HPCH's electricity, Greenhouse Gas (GHG) emissions and Energy Use Intensity (EUI) from before the first plan was made in 2014 and its current annual values. HPCH is happy to report that we have successfully reduced our total GHG emissions across all our facilities by 48,834 kg $CO_2e$ since 2013. Note that electricity is continuously becoming greener in Ontario due to the increase in renewable energies powering the grid.

| | Electricity | GHG Emissions | EUI |
|---|---|---|---|
| **270 Front St.** | +14% | -74% | +14% |
| **272 Front St.** | -8% | -79% | -8% |
| **278 Front St.** | +6% | -76% | +6% |

As this plan is a renewal of our focus on reducing our GHG emissions, we will strive to achieve the following results by 2024:

- 3% reduction in total energy use across all sites.
- 1,564-kilogram reduction in $CO_2e$.
- $5,728 Annually to the bottom line ($28,639 over 5 years).

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.

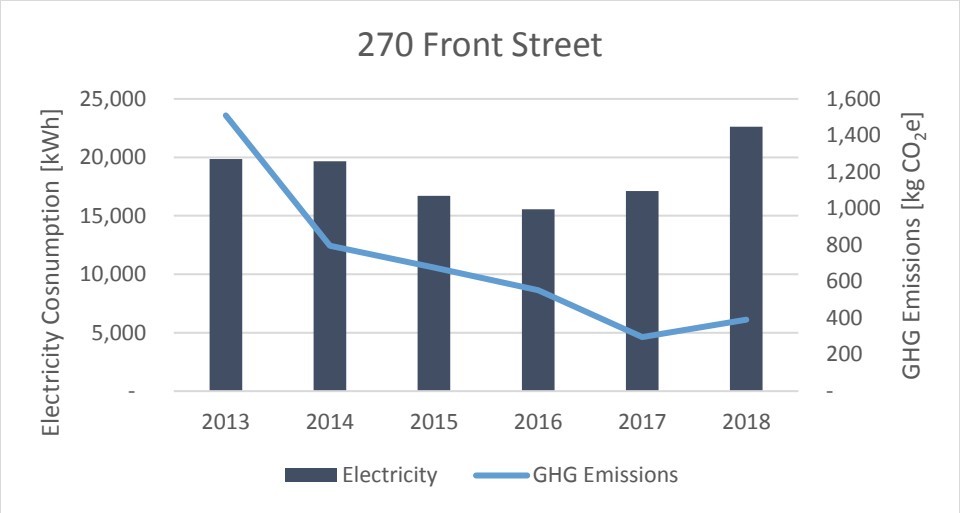
Active management of energy related costs and risks in this manner will provide a significant economic return to the organization and will support other key organizational objectives.

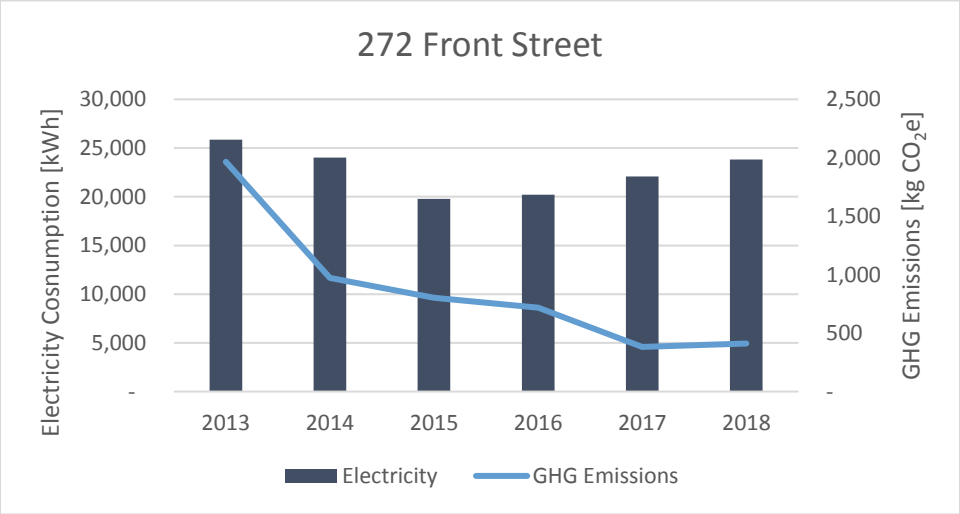
## HPCH'S ENERGY CONSUMPTION 2013-2018

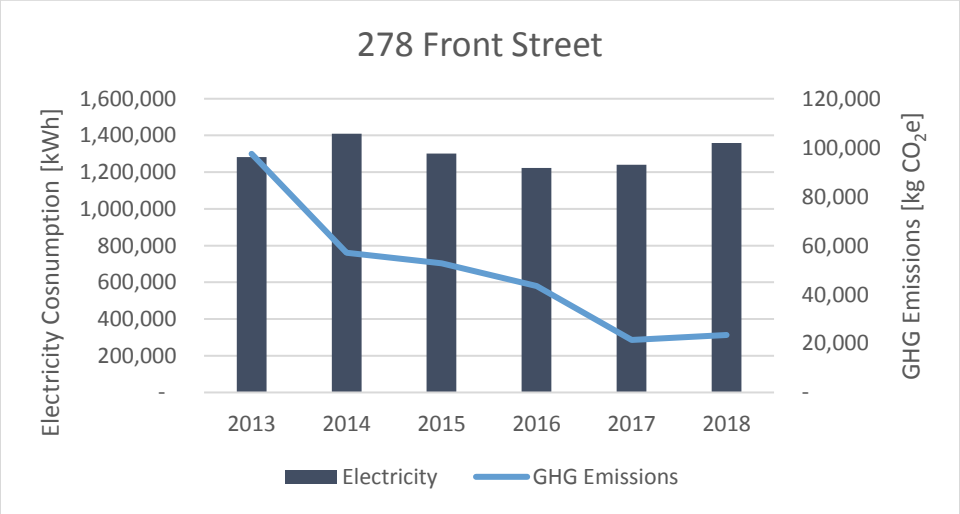
As part of Ontario Regulation 507/18 under the Electricity Act, 1998, HPCH prepares, publishes and makes available its annual energy consumption and resulting greenhouse gas (GHG) production. HPCH's energy consumption is from electricity usage only; we have been reporting our annual electricity consumption for our three locations since 2011. The table below summarizes our annual reporting values. Note: we expanded to include the facility at 52 Neesomadina Avenue in November 2016 and reporting requirements are for two years prior. As such, this address will be reported for the first time in 2019 for its 2017 usage.

| Year | Address | Floor Space [$ft^2$] | Electricity [kWh] | GHG Emissions [kg $CO_2e$] | EUI [ekWh/$ft^2$] |
|---|---|---|---|---|---|
| **2013** | 270 Front St. | 1,500 | 19,863 | 1,510 | 13.24 |
| **2014** | 270 Front St. | 1,500 | 19,667 | 797 | 13.11 |
| **2015** | 270 Front St. | 1,500 | 16,717 | 677 | 11.14 |
| **2016** | 270 Front St. | 1,500 | 15,550 | 552 | 10.37 |
| **2017** | 270 Front St. | 1,500 | 17,118 | 296 | 11.41 |
| **2018** | 270 Front St. | 1,500 | 22,614 | 391 | 15.08 |
| **2013** | 272 Front St. | 1,500 | 25,864 | 1,966 | 17.24 |
| **2014** | 272 Front St. | 1,500 | 24,003 | 972 | 16.00 |
| **2015** | 272 Front St. | 1,500 | 19,797 | 802 | 13.20 |
| **2016** | 272 Front St. | 1,500 | 20,209 | 717 | 13.47 |
| **2017** | 272 Front St. | 1,500 | 22,077 | 382 | 14.72 |
| **2018** | 272 Front St. | 1,500 | 23,817 | 412 | 15.88 |
| **2013** | 278 Front St. | 19,831 | 1,282,842 | 97,496 | 64.69 |
| **2014** | 278 Front St. | 19,831 | 1,410,373 | 57,120 | 71.12 |
| **2015** | 278 Front St. | 19,831 | 1,302,276 | 52,742 | 65.67 |
| **2016** | 278 Front St. | 19,831 | 1,223,596 | 43,438 | 61.70 |
| **2017** | 278 Front St. | 19,831 | 1,240,262 | 21,454 | 62.54 |
| **2018** | 278 Front St. | 19,831 | 1,358,865 | 23,506 | 68.52 |
| **2016** | 52 Neesomadina Ave | 3,000 | 12,053 | 428 | 4.02 |
| **2017** | 52 Neesomadina Ave | 3,000 | 56,233 | 973 | 18.74 |
| **2018** | 52 Neesomadina Ave | 3,000 | 63,360 | 1,096 | 21.12 |

As Ontario's power grid continues to become greener through renewable energies such as wind, solar and water, the GHG emissions associated with electricity generation decreases. As such, HPCH's GHG emissions have decreased over the years despite our fluctuating annual usages. The electricity and GHG emissions for the three facilities located on Front St. were plotted against each other and have been included on the following page.


270 Front Street
Electricity Cosnumption [kWh]
25,000
20,000
15,000
10,000
5,000
-
1,600
1,400
1,200
1,000
800
600
400
200
-
GHG Emissions [kg $CO_2e$]
2013
2014
2015
2016
2017
2018
Electricity
GHG Emissions


272 Front Street
Electricity Cosnumption [kWh]
30,000
25,000
20,000
15,000
10,000
5,000
-
2,500
2,000
1,500
1,000
500
-
GHG Emissions [kg $CO_2e$]
2013
2014
2015
2016
2017
2018
Electricity
GHG Emissions


278 Front Street
Electricity Cosnumption [kWh]
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
120,000
100,000
80,000
60,000
40,000
20,000
-
GHG Emissions [kg $CO_2e$]
2013
2014
2015
2016
2017
2018
Electricity
GHG Emissions

## RESULTS OF PREVIOUS CDM INITIATIVES

In July 2014, HPCH developed goals and green initiatives to decrease the facilities annual energy consumption and resulting greenhouse gas emissions. The following activities, completed between 2014 and 2019, are the results and successes of these past measures and include managing overall energy consumption, lowering annual operating costs, and reducing greenhouse gas emissions.

| Project | Electricity Savings [kWh/yr] | GHG Reduction [kg $CO_2e$/yr] | Annual Savings [$/yr] |
|---|---|---|---|
| **Replaced exterior doors on lower level** | 8,112 | 140 | $1,055 |
| **LED Retrofit** | 95,472 | 3,389 | $12,411 |
| **Roof Replacement** | N/A | N/A | N/A |
| **TOTAL** | **103,584** | **474,460** | **$13,466** |

Energy savings estimates were not available for the roof replacement, but this type of infrastructure improvement would see electricity savings. The replacement saw an increase in the roof's thermal insulation, which would reduce air-leakage and lessen the demand on our boilers and chillers. In addition, HPCH undertook several other infrastructure upgrades which would not result in reduced energy usages but improved patient and staff safety and experience. Included in these efforts were the installation of new baseboard electric heaters, parking lot plug ins and a new master switch for the load bank.

We have also focused our efforts on creating an energy-wise community. We are aware of our individual effects on the hospitals consumption and have been trying to raise awareness about the little things that staff, and patients can do to reduce their environmental footprint. Prior to our 2014 plan, we already had an energy-wise program in place which included:

- Turning lights off when not in use
- Turning heat/cooling down on weekends
- Unplugging non-essential equipment when not in use (kettles, heaters, etc.)

We have seen the benefits of this program over the past five years, and as such, will continue to make it a basis for our 2019 CDM Plan is focus.

## HPCH's Strategic Energy Management Goals

Over the next five years, HPCH will continue to be conscious of our energy consumption. We will work towards implementing the following practices and will strive to reach each goal by 2024. Our success in doing this will see a reduction in energy usage and thereby our GHG emissions, as well as cleaner and more efficient health care facility.

### Fostering Organizational Commitment and Involvement:

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

### 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 cut backs on hospital support for community activities, this is an excellent opportunity to provide leadership and reduce costs at the same time.

### Establish Purchasing Specifications for Energy Efficient Equipment & Services

HPCH will establish and consistently use purchasing specifications that minimize life-cycle costs for energy efficient equipment and services. Developing efficiency specifications for standard equipment routinely replaced (e.g. lights, motors, and unitary HVAC equipment) will ensure energy efficient options are chosen.

### Improve Building Operating Performance

Equipment tune-up and improved operations and maintenance (O&M) will achieve favourable results while supporting patient care, and facility comfort and safety. Ensuring that hospital equipment is operated at the proper settings and building automation/systems are set to the manufacturer's specifications can help to optimize building performance.

### Monitor, Document, and Reward Progress

HPCH will monitor and document our energy consumption over the next five years to see the results of our CDM initiatives. Doing so will allow us to continuously track our progress towards reaching our goals. In addition, we will be able to identify areas for improvement and can thus learn from any setbacks we encounter.

## FUTURE PROJECTS

In addition to our strategic energy management goals, HPCH has several projects planned for the coming five years. These projects will improve the infrastructure and efficiency of our hospital, which in turn will reduce our electricity consumption. We have already applied to the Provincial Hospital Infrastructure Renewal Fund (HIRF) for funding and will strive to complete these projects within the next five years.

- **Elevator Upgrade –** redeveloping our elevators will see a direct reduction in our electricity consumption. New technologies, along with energy efficient upgrades such as LED cab lighting and auto-shut off for the cab lighting and fans will reduce the electricity demand of the elevators. These upgrades will also provide a smoother and more comfortable ride for our patients, staff, and visitors.
- **Boiler Replacement –** newer designs can see boiler efficiency in the 90%. Upgrading our boilers will improve its efficiency, which in turn will reduce the systems demand substantially. In addition, the new boilers will provide more reliable temperature control which will improve our patient's comfort.
- **Exterior Window Replacement –** HPCH's exterior windows have become worn and need replacing. The replacements will see better weather stripping and high thermal insulation (R-values) which will prevent less heating and cooling leakage. This will lessen the demand on our HVAC systems, thereby decreasing our electricity consumption.
- **Exterior Store Front Doors –** Similar to the windows, replacing our exterior store front doors will decrease the demand on our heating and cooling systems. The replacement doors will be air-tight and have an increased R-value to reduce the possibility of air-leakage.