Waypoint Centre for Mental Health Care

Energy Summary Report

2023 Update

Contents

Reporting Requirements

Waypoint's 2023 Energy Summary Report will facilitate meeting the reporting requirements of the Ontario Regulation 25/23 made under the Electricity Act (1998), Broader Public Sector: Energy Reporting and Conservation and Demand Management Plans.

The regulation requires that prescribed public agencies:

- Summarize annual energy consumption and greenhouse gas emissions and provide these annually to the ministry through the use of Portfolio Manager

- Prior to July 1, 2024 and on or before July 1 of every fifth year thereafter, publish on its website, and make available in printed form, the energy conservation and demand management plan as approved by senior management.

Ontario Regulation 25/23 and its requirements replaces Ontario Regulation 507/18 which has been revoked.

An Introduction to Our Organization

About Waypoint Operations

Waypoint Centre for Mental Health Care (Waypoint) is a mental health hospital serving residents from Penetanguishene, Midland, Barrie, Orillia, Collingwood, Parry Sound, Muskoka and surrounding communities on their path to mental health wellness. The main campus is comprised of 11 main buildings on approximately 200 acres, has 315 patient beds and is the North Simcoe area's largest employer.

The main Waypoint campus includes six regional specialized inpatient programs (Acute Assessment, Bayview Program for Dual Diagnosis, Georgianwood Program for Concurrent Disorders, Horizon Program for Geriatric Psychiatry, Sans Souci Program for Transition and Recovery, and the Brebeuf Program for Regional Forensics) where patients benefit from an environment focused on caring, compassion, and hope. Waypoint's main campus is also home to the Ontario's only High Security Forensic Program, providing assessment and treatment to clients served by both the mental health and justice system.

There are also community-based programs operating at off-site locations (HERO Centre, Outpatient Services, Ontario Structured Psychotherapy (OSP), Family, Child and Youth Program (FC&Y), North Simcoe Youth Wellness Hub (NSYWH), and Specialized Geriatrics Services (SGS)) providing a variety of mental health services to seniors, adults and youth in Simcoe County.

The hospital is also home to the Waypoint Research Institute, formally launched in 2013, building on over 40 years of internationally recognized research committed to providing excellence in mental health care rooted in the best scientific evidence.

The Effects of COVID-19

COVID-19 has created numerous challenges for all types of healthcare facilities and their operations.

Since the beginning of the pandemic in early 2020, Waypoint has dealt with multiple directives, orders, policy changes, procedural changes, staffing challenges, and health crises all of which affected day-to-day operations and disrupted previously planned energy initiatives.

Our Commitment to Responsible Energy Use

Waypoint is committed to consuming energy in an efficient, cost effective, and environmentally responsible manner when possible. It is recognized that utilities and related costs are necessary to operate the facility but do not directly contribute to the quality of services offered at the Hospital. As utility costs rise, it is imperative to reduce energy consumption in an effort to control costs, ultimately allowing continued outstanding customer service to our patients.

Waypoint's commitment to energy efficiency employs the following key energy management principles:

Informed Decision Making – Energy will be monitored and tracked. Waypoint will develop, understand and communicate the key metrics so that informed decisions leading to efficient energy use can be taken. Energy audits will be undertaken to ensure optimal building operations and to determine successes of energy initiatives, ongoing monitoring and auditing of building systems.

Retrofit Program - Advance toward internal operational efficiency through a process of continuous improvement. Energy efficiency will be a key driver for retrofits and will be considered in all renovations and retrofits. Waypoint will annually take steps to reduce its footprint.

Operator Training - An ongoing commitment to continuously train and upgrade Building Operators' knowledge and understanding of building systems. Waypoint will adopt a program for re-commissioning and tuning of building systems for optimal operation.

Comfort Guidelines – Adopt industry accepted standards for building operations regarding temperature, humidity and CO2 levels to ensure optimal patient and staff comfort.

Procurement - Purchase utilities to ensure that lowest cost is achieved. Procurement will support the acquisition of energy efficient devices and technologies for the hospital.

Partnerships - Partner with industry and the public to improve energy conservation explore and develop economically viable alternative fuel sources.

Awareness & Education - Foster awareness to reduce the environmental impact of hospital activities and support realization of the hospital's Energy goals. Effectively communicate the progress and success of energy initiatives.

Building and Equipment Profiles

The following is a brief description of current systems employed at Waypoint.

Regional Buildings (Main Campus)

Administration

Gross Floor Area
6,659 m^2

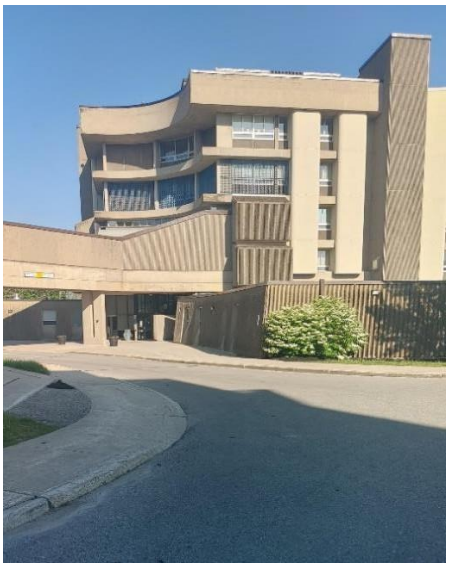
Heating System(s)
Three boilers supplying radiators and fan coils

Cooling System(s)
Portable spot cooling as required

Ventilation System(s)
Variable volume AHU with VFDs

Hot Water system(s)
Two hybrid electric heat pump water heaters

Toanche



Gross Floor Area
13,761 m^2

Heating System(s):
Four boilers supplying radiators, panels, and fan coils

Cooling System(s):
One chiller and cooling tower supplying MUA units

Ventilation System(s
Air handling units equipped with VFDs, VAV

Hot Water system(s):
Storage tanks heated by two steam boilers

Bayfield

Gross Floor Area
2,930 m^2

Heating System(s):
Three boilers supplying radiators and fan coils

Cooling System(s
Air handler and condensing unit

Ventilation System(s
Air handling units equipped with VFDs, VAV

Hot Water system(s):
Storage tanks heated by the boilers

House 1 (Pineview)

Gross Floor Area
799 m^2

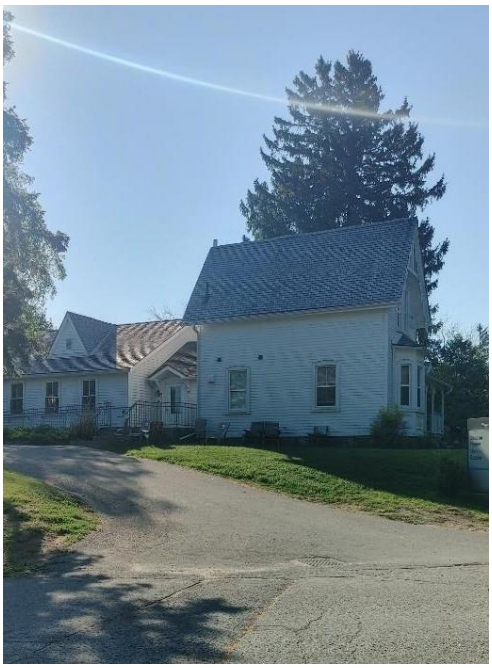
Heating System(s):
Two boilers supplying radiators

Cooling System(s):
Two split DX units

Ventilation System(s
Operable windows

Hot Water system(s):
Residential gas water heater

House 2 (Beacon House)



Gross Floor
257 m^2

Heating System(s):
Natural gas furnace

Cooling System(s
Central AC unit

Ventilation System(s):
Operable windows

Hot Water system(s):
Residential gas water heater

House 6

Gross Floor Area
138 m^2

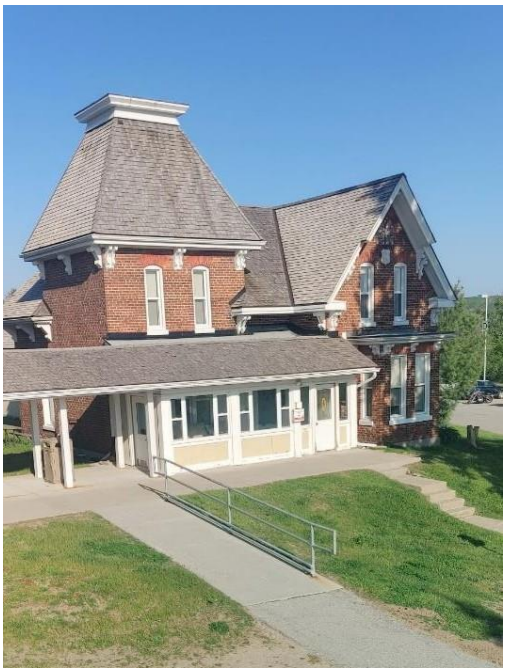
Heating System(s
Natural gas furnace

Cooling System(s):
Central DX unit

Ventilation System(s):
Operable windows

Hot Water system(s):
Residential gas water heater

House 8



Gross Floor Area
395 m^2

Heating System(s
One boiler supplying radiators

Cooling System(s):
Window mounted AC

Ventilation System(s):
Operable windows

Hot Water system(s):
Residential gas water heater

Power House

Gross Floor Area
549 m^2

Heating System(s
Two boilers supplying radiators and force flow units

Cooling System(s):
Split DX unit

Ventilation System(s):
Thermostat-controlled exhaust fans and exhaust interlocked with the diesel generators

Hot Water system(s):
One electric water heater

Environmental Services

Gross Floor Area
2,273 m^2

Heating System(s):
Two boilers supplying reheat coils and unit heaters

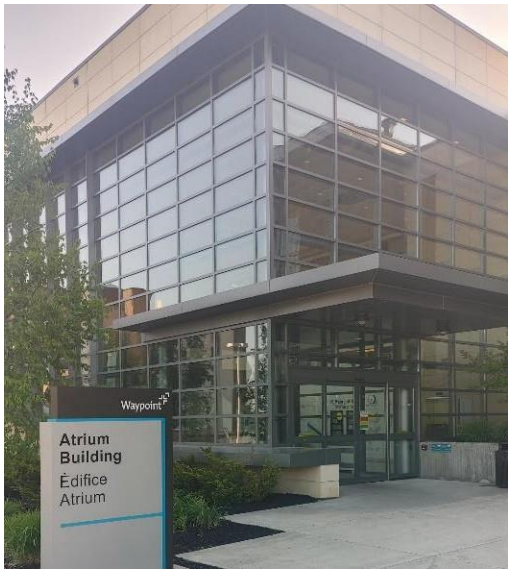
Cooling System(s):
DX with rooftop condenser

Ventilation System(s):
Air handling unit equipped with VFDs, VAV

Hot Water system(s):
Storage tanks heated by the boilers

Provincial Buildings (Main Campus)

Atrium



Gross Floor Area
31,732 m^2

Heating System(s):
Ground source heat pump with boilers providing peak capacity*

Cooling System(s):
Ground source heat pump with chillers providing peak capacity*

Ventilation System(s):
Air handling units equipped with VFDs, VAV

Hot Water system(s):
Storage tanks heated by the boilers

The Atrium Building receives heating and cooling through a ground source heat pump system with chillers and boilers providing peak cooling and heating capacity, respectively. The ground source system operates to provide simultaneous heating and cooling when the outside air temperature is above -12°C.

In total, the ground source heat pump provides 296 kW of peak heating and 222 kW of peak cooling. At outside air temperatures below -12°C, the heat pumps can be switched back to cooling mode for cooling the IT rooms, for a total peak capacity of 230 kW. The heat rejected in this mode from the heat pumps can be used for building heating as needed or rejected to the ground. The chillers provide 5,950 kW of supplemental cooling, coupled with a two-cell induced draft cooling tower (5,451 kW total). The chilled water side of the system includes an economizer cycle that allows chilled water to be produced directly through the cooling tower when outside conditions permit, reducing the number of operating hours for the chillers.

Two near condensing boilers (3,212 kW total) and one condensing boiler (1,225 kW) provide supplemental heating. Energy consumption on both sides of the heat pump is measured to quantify the amount of energy this device is diverting from boiler and cooling tower consumption.

Community Buildings

Community Health Hub

Gross Floor Area
3,803 m^2

Heating System(s):
Two boilers supplying VAV boxes

Cooling System(s):
Natural gas commercial DX rooftop units

Ventilation System(s):
Air handling units equipped with VFDs, VAV

Hot Water system(s):
Commercial gas heater

Waypoint Jones Road

Gross Floor Area
802 m^2

Heating System(s):
Natural gas rooftop air handling units

Cooling System(s):
Packaged DX rooftop units

Ventilation System(s):
Air handling units equipped with VFDs, VAV

Hot Water system(s):
Electric heater

Energy Consumption

The following table summarizes total energy use at Waypoint's Main Campus for recent years.

Year	Energy Type	Consumption	Cost	Totals	Intensity (ekWh/m^2)
2019	Electricity	10,113,843 kWh	$ 1,376,969	20,567,729 ekWh $ 1,505,726	346
	Natural Gas	1,005,665 m^3	$ 128,757		
2020	Electricity	10,162,995 kWh	$ 1,455,417	19,823,143 ekWh $ 1,595,754	333
	Natural Gas	929,307 m^3	$ 140,338		
2021	Electricity	9,080,856 kWh	$ 1,106,438	18,364,643 ekWh $ 1,267,745	309
	Natural Gas	893,101 m^3	$ 161,307		
2022	Electricity	9,266,970 kWh	$ 1,172,700	19,989,813 ekWh $ 1,419,336	336
	Natural Gas	1,031,539 m^3	$ 246,637		

* Some consumption and cost values were adjusted since last year's report to reflect new and more reliable data made available.

The following table summarizes total energy use at the Community Health Hub for recent years.

Year	Energy Type	Consumption	Cost	Totals	Intensity (ekWh/m^2)
2021	Electricity	559,976 kWh	$ 87,992	1,430,308 ekWh $ 104,263	376
	Natural Gas	83,726 m^3	$ 16,217		
2022	Electricity	761,548 kWh	$ 116,592	2,361,006 ekWh $ 149,462	621
	Natural Gas	153,868 m^3	$ 32,870		

The year-over-year increase in energy use described in the previous table appears considerable; however, the building's occupancy was brief and the operations inconsistent for a variety of reasons. There is not enough data at this point to describe the building's consumption profile. Electricity and natural gas consumption will further summarized in the following sections.

The following table summarizes total energy use at Waypoint Jones Road for the most recent year.

Year	Energy Type	Consumption	Cost	Totals	Intensity (ekWh/m^2)
2022	Electricity	38,704 kWh	$ 5,917	153,163 ekWh $ 10,473	190
	Natural Gas	11,011 m^3	$ 4,556		

Electricity Consumption

Electricity Metering

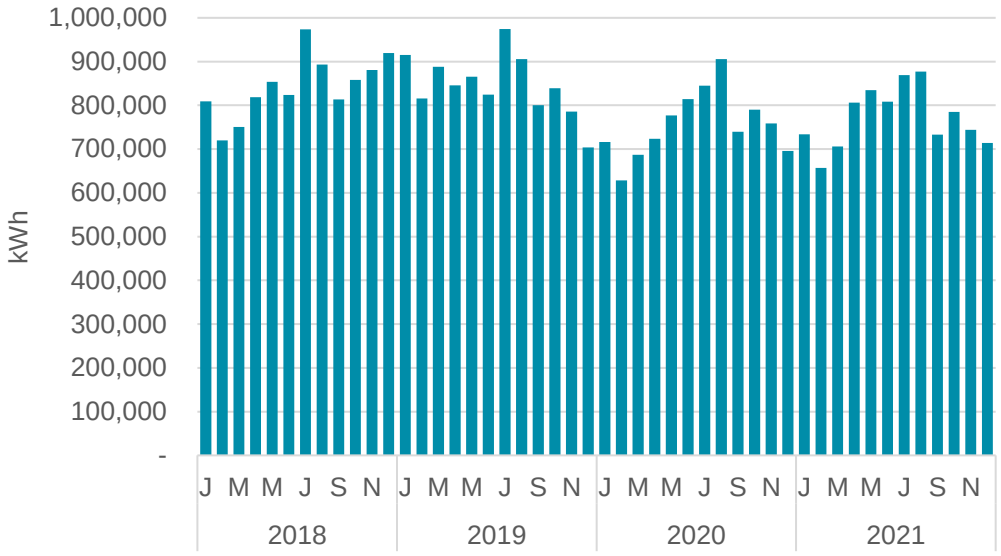
There is one billed electricity meter at each of Waypoint's locations. The accounts are summarized in the following table.

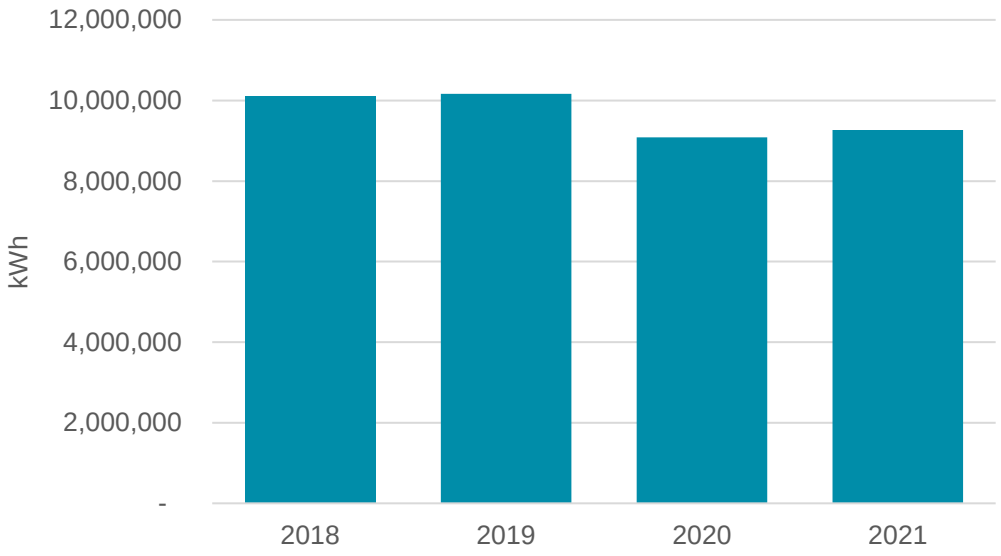
Site	Provider	Account Number	Meter Number
Waypoint Main Campus	Alectra	2768520000	HZN7191262
Community Health Hub	Newmarket Hydro (Midland PUC)	00657368-00	MD20112
Waypoint Jones Road	Newmarket Hydro (Midland PUC)	00657075-02	MD20499

Electricity Consumption History

Main Campus

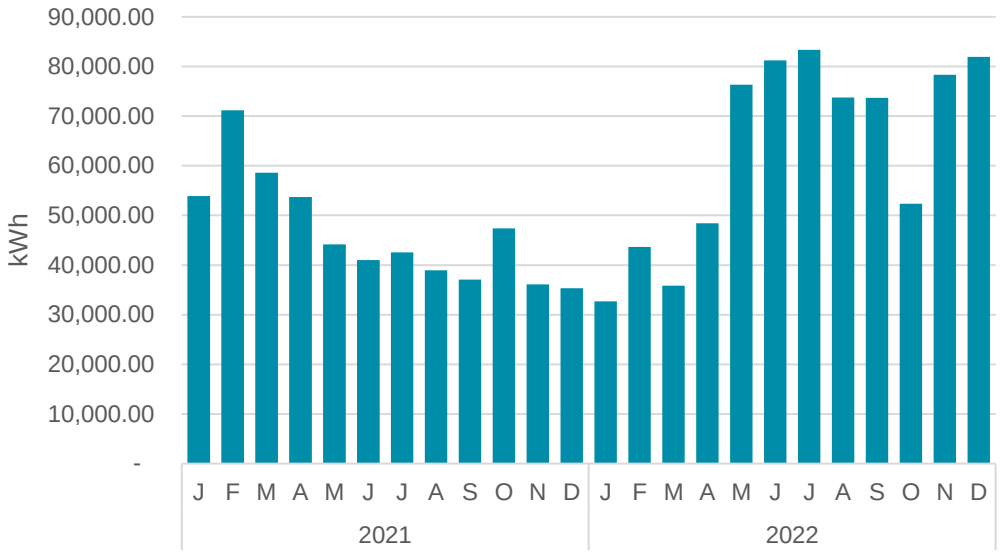
Past electricity consumption is illustrated in the following graphs. The four most recent complete years are shown below.

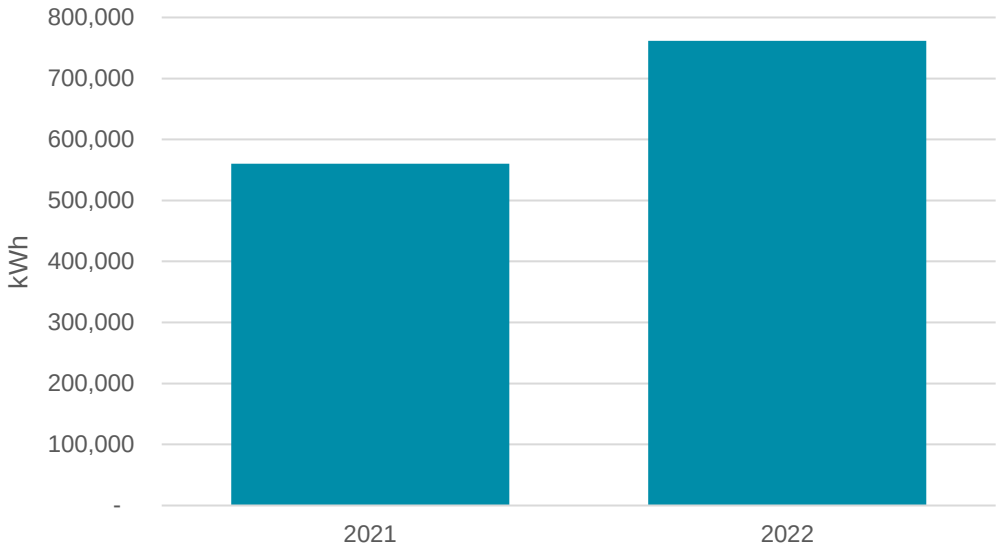




Community Health Hub

Past electricity consumption is illustrated in the following graphs.

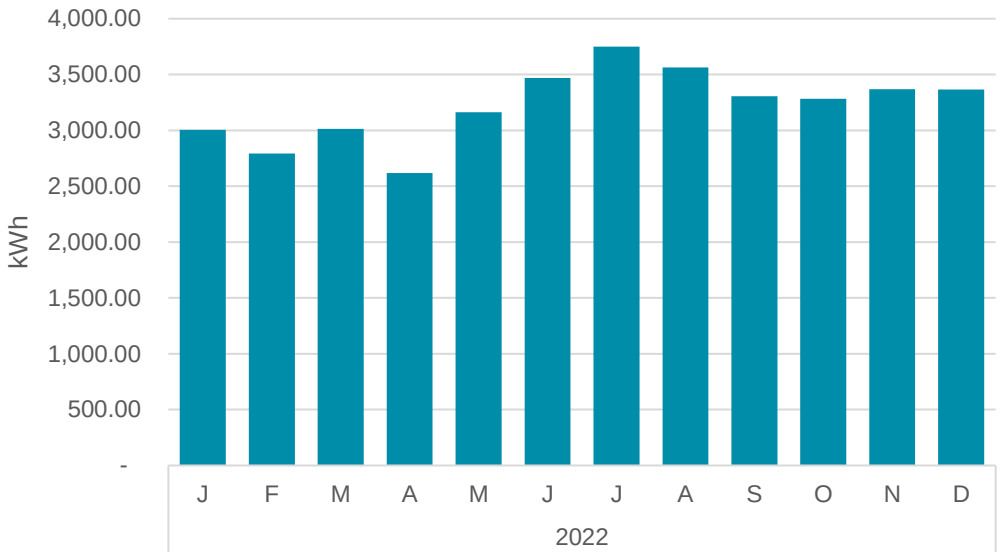




Electricity consumption at this relatively newly constructed building has yet to stabilize. HVAC challenges have required system modifications and inconsistent system operations. Paired with the building's modified occupancy and operations as a result of COVID restrictions, we don't have enough data at this point establish a reliable consumption profile.

Waypoint Jones Road

Past electricity consumption is illustrated in the following graphs.



Natural Gas Consumption

Natural Gas Metering

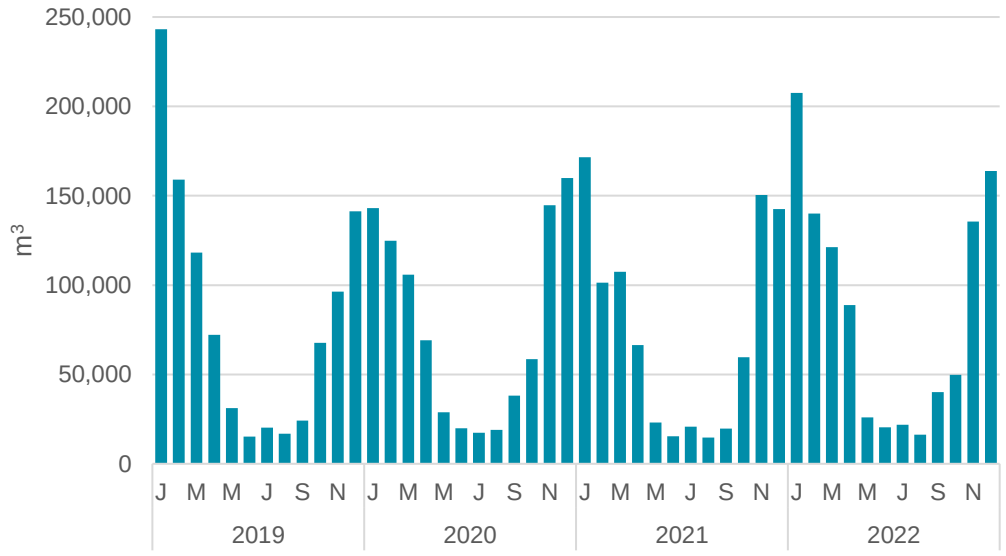
There are several natural gas meters servicing Waypoint's various locations and buildings. The accounts are summarized in the following table.

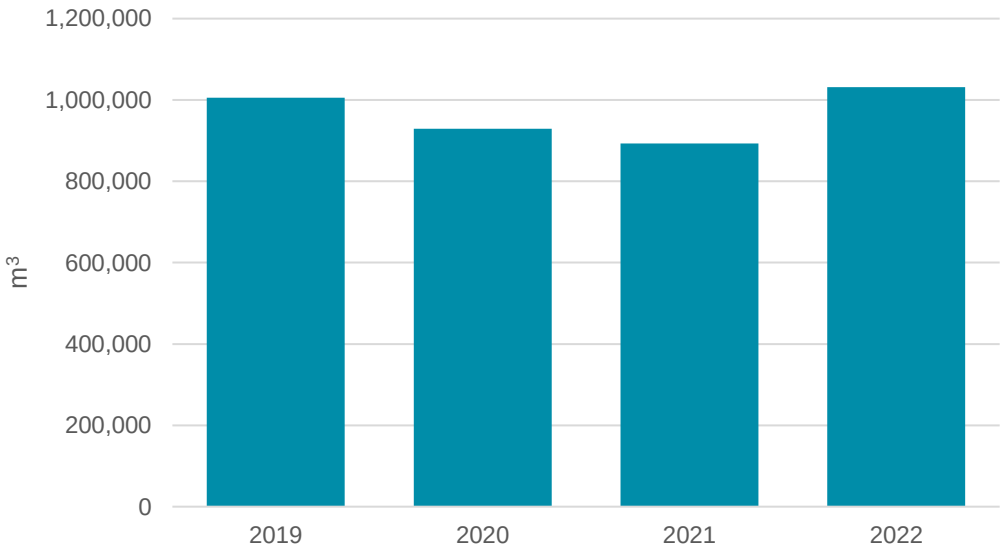
Site/Building	Account Number	Meter Number
Main Campus – Bayfield	91 00 06 68776 2	950124
Main Campus – Environmental Services	91 00 04 13268 6	335678
Main Campus – Administration	85 33 87 62999 0	345731
Main Campus – Atrium	93 06 10 07702 1	1008770
Main Campus – Toanche	85 30 98 81999 4	1008693
Main Campus – Power House	07 53 45 78453 2	909099
Main Campus – House 1	07 53 45 37101 0	1098368
Main Campus – House 2	0 753 45 37001 1	3318764
Main Campus – House 6	91 00 04 09771 1	3219521
Main Campus – House 8	07 53 45 37601 2	2064473
Community Health Hub	93 06 10 14160 6	1006668
Waypoint Jones Road	91 00 37 75649 2	3859395

Natural Gas Consumption History

Main Campus

Past natural Gas consumption is illustrated in the following graphs. The four most recent complete years are shown below.



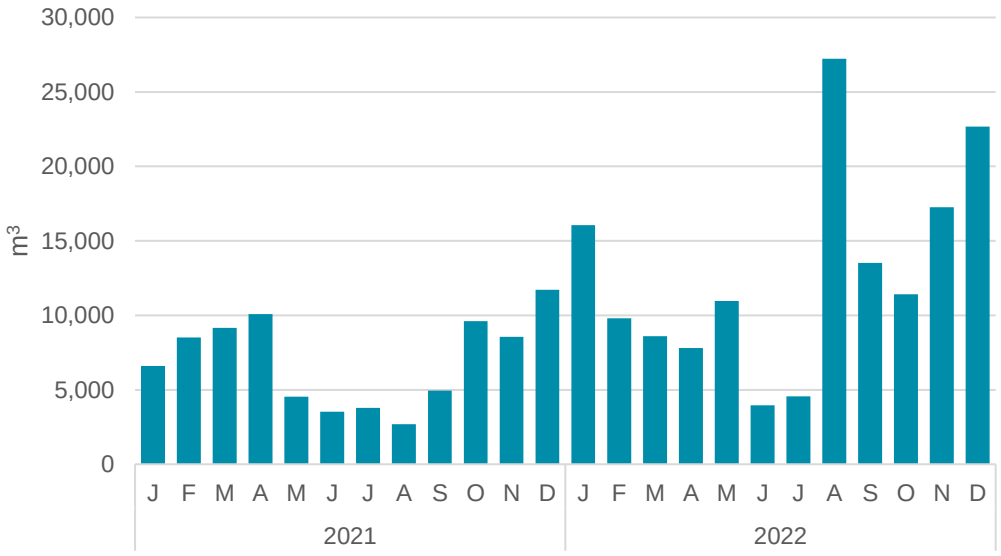


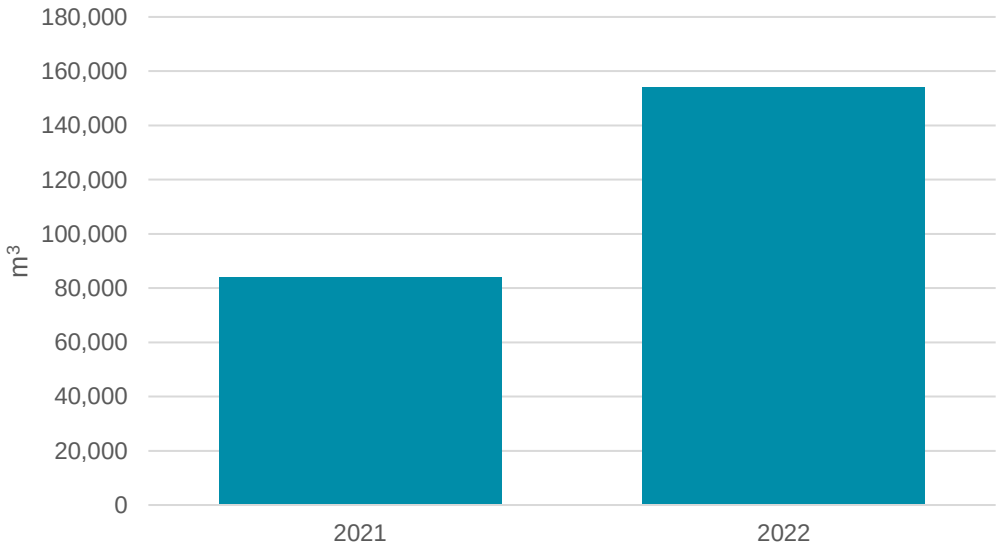
As mentioned in previous annual energy update reports, the natural gas meter at the Bayfield Building had not been operating properly. This resulted in that building's consumption being artificially low in 2020 and 2021. The meter has since been replaced and the building's true

consumption is now included in the 2022 data which could explain a portion of the increase in consumption noted in the chart.

Community Health Hub

Past natural gas consumption is illustrated in the following graphs. There are currently two complete years of data available.

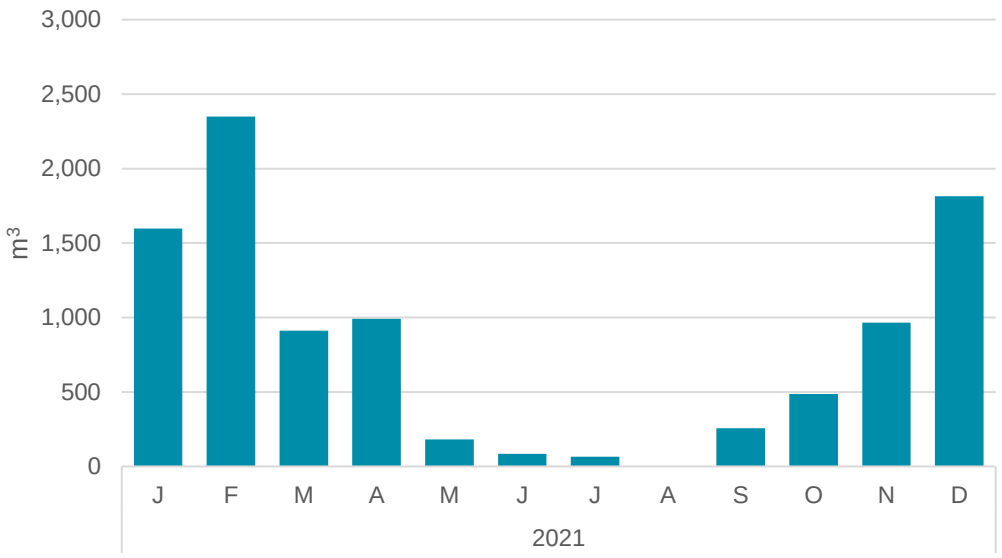




As mentioned in the electricity consumption summary, consumption in this newly constructed building has yet to stabilize. HVAC challenges have required system modifications and inconsistent system operations. We don't have enough data at this point establish a reliable consumption profile; however, we expect a benchmark to be established as systems and operations normalize.

Waypoint Jones Road

Past natural Gas consumption is illustrated in the following graphs. Only one full year of data is available since Waypoint has become a tenant.



Notable Projects Impacting Energy Use

Completed Projects

2019 Window Replacement House 1 (Pineview)	The renovations to House 1 (Pineview) included a replacement of existing single pane windows with double pane wood frame windows. The replacements reduce heat loss and improve occupant comfort.
2019 Lighting Replacement Bayfield	There were ceiling fixtures in the Bayfield Building containing predominantly 13 W CFL lamps. Over time these lamps became inconsistent in colour when replacements took place. The fixtures have been replaced with 11 W LED fixtures. In addition to a limited amount of electricity savings, the occupants will benefit from better and consistent output colour in their living space and maintenance sees a decrease in the costs associated with individual lamp replacements after failures.
2021 Roof Upgrade Bayfield	There was an upgrade performed on the Bayfield Building's roof which has improved the insulating properties by approximately R12. It is anticipated the replacements will reduce heat loss and improve occupant comfort.

2021 Load Shedding Project Hospital Campus	Waypoint embarked on a project with the utility company consisting of installing a battery bank connected to the main incoming power line in order to be able to go “OFFLINE” approximately 20 days per year, including the 5 highest days of electrical demand to reduce the stress on utility infrastructure. The additional benefit to Waypoint is that the global adjustment on future electricity invoices are eliminated as long as the requirements are met.
2022 Exit Sign Replacement Administration, Environmental Services, Toanche, Bayfield	The previous signs used in the buildings identified are older technology of various vintages and are no longer considered efficient. Most existing exit signs are either 7 W or 14 W incandescent lamps. In addition to being dated, these lamps fail on a regular basis, causing staff to require changing the lamps. The existing models were replaced with LED units with battery backups using approximately 4 W. This change will improve reliability, reduce energy and maintenance costs, and give a more professional appearance to the buildings.
2022 Building Automation Tuning All BAS Controlled Buildings	The BAS fine tuning involves adjusting set-points, reprogramming algorithms, modifying schedules and controls and ensuring proper operation resulting in more efficient operations.
2022 Pipe Insulation Environmental Service, Toanche, Administration	Waypoint engaged an insulation company to apply a PVC jacketing to several runs of piping in numerous mechanical rooms to reduce the impact of the surrounding environment on the pipe contents.

Ongoing and Future Projects

Window Replacement Administration	This is a continuation of the Administration Building window project replacing the remaining single pane windows with more efficient alternatives
Toanche Air System/Radiant Panel Integration Toanche	The current heating system is a mixture of radiant and air systems which often do not work together. This measure involves a modification to building controls to better regulate two different heating systems to improve operations.
Optimize Unit and Zone Schedules Atrium	Optimize schedules based on facility occupancy.
Improve Heat Pump COP Atrium	Tune heating and cooling plant control setpoints to improve efficiency.
Fluorescent Lighting Retrofit Toanche Administration Bayfield	Replace existing linear fluorescents lamps (various T8) with LED replacements. Most retrofits will reduce each lamp from approximately 25W to 15W. In addition to electricity savings, replacements will also result in less maintenance since the new lamps should have a greater lifespan.

CFL Lighting Retrofit Atrium	Install LED bulbs in areas where CFL were provided during construction
Sub-Metering Project Hospital Campus	The hospital currently only receives one monthly electricity invoice for the entire campus making it difficult to determine where energy is being used. There are currently a limited number of sub-meters installed whose intention was to better understand where energy is being sent; however, the electrical systems underwent a significant change during site redevelopment including the Atrium Building construction and the meters no longer measure as intended. A redesign and installation of additional meters would help Waypoint in informed decision making moving forward.

Load Shedding Project Details

Waypoint is always looking for ways to reduce energy costs and implement green initiatives.

Waypoint has entered an agreement to undertake a battery storage project that will reduce the hospital's electricity demand at times when provincial demand is highest. During forecasted peak demand periods, Alectra signals the newly installed battery storage system to provide electricity in place of the normal supply from the electricity grid. This process helps relieve strain on the utility grid at times of peak demand.

As a result of this load shedding initiative, Waypoint's global adjustment charge on electricity invoices is expected to be reduced by approximately $200,000 annually.

The batteries arrived on site in April of 2021, and the system is now operational.

Endorsement

Waypoint Centre for Mental Health Care's senior management has reviewed and approved this Energy Conservation and Demand Management Plan.

David Griffin

David Griffin
Director, Hospital Services

June 11, 2023

Date

Contact Information

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