



# **ENERGY CONSERVATION & DEMAND MANAGEMENT PLAN 2024**



**Lake of the Woods  
District Hospital**

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# 1. Regulatory Update

**O. Reg. 397/11: Conservation and Demand Management Plans** was introduced in 2013. Under this regulation, public agencies were required to report on energy consumption and greenhouse gas (GHG) emissions and develop Conservation and Demand Management (CDM) plans the following year.

Until recently, O. Reg. 397/11 was housed under the Green Energy Act, 2009 (GEA). On December 7, 2018, the Ontario government passed Bill 34, Green Energy Repeal Act, 2018. The Bill repealed the GEA and all its underlying Regulations, including O. Reg. 397/11. However, it re-enacted various provisions of the GEA under the Electricity Act, 1998.

As a result, the conservation and energy efficiency initiatives, namely CDM plans and broader public sector energy reporting, were re-introduced as amendments to the Electricity Act. The new regulation is now called **O. Reg. 507/18: Broader Public Sector: Energy Conservation and Demand Management Plans (ECDM)**.

As of January 1, 2019, O. Reg. 397/11 was replaced by O. Reg. 507/18, and BPS reporting and ECDM plans are under the Electricity Act, 1998 rather than the Green Energy Act, 2009.

As of February 23, 2023, O. Reg. 507/18 was replaced by **O. Reg. 25/23, and BPS reporting and ECDM Plans** are under the Electricity Act, 1998 rather than the Green Energy Act, 2009.

## 2. Executive Summary

The purpose of this Energy Conservation and Demand Management (ECDM) Plan from Lake of the Woods District Hospital (“LWDH”) is to outline specific actions and measures that will promote good stewardship of our environment and community resources in the years to come. The Plan will accomplish this, in part, by looking at future projections of energy consumption and reviewing past conservation measures.

In keeping with LWDH’s core values of efficiency, concern for the environment and financial responsibility, this ECDM outlines how the hospital will reduce overall energy consumption, operating costs and greenhouse gas emissions. By following the measures outlined in this document, we will be able to provide compassionate service to more people in the community. This ECDM Plan is written in accordance with O. Reg. 25/23 of the recently amended Electricity Act, 1998.

Through past conservation and demand initiatives, LWDH has achieved the following results:

- 1,096,079 m<sup>3</sup> decrease in natural gas use

Today, utility and energy related costs are a significant part of overall operating costs. In 2023:

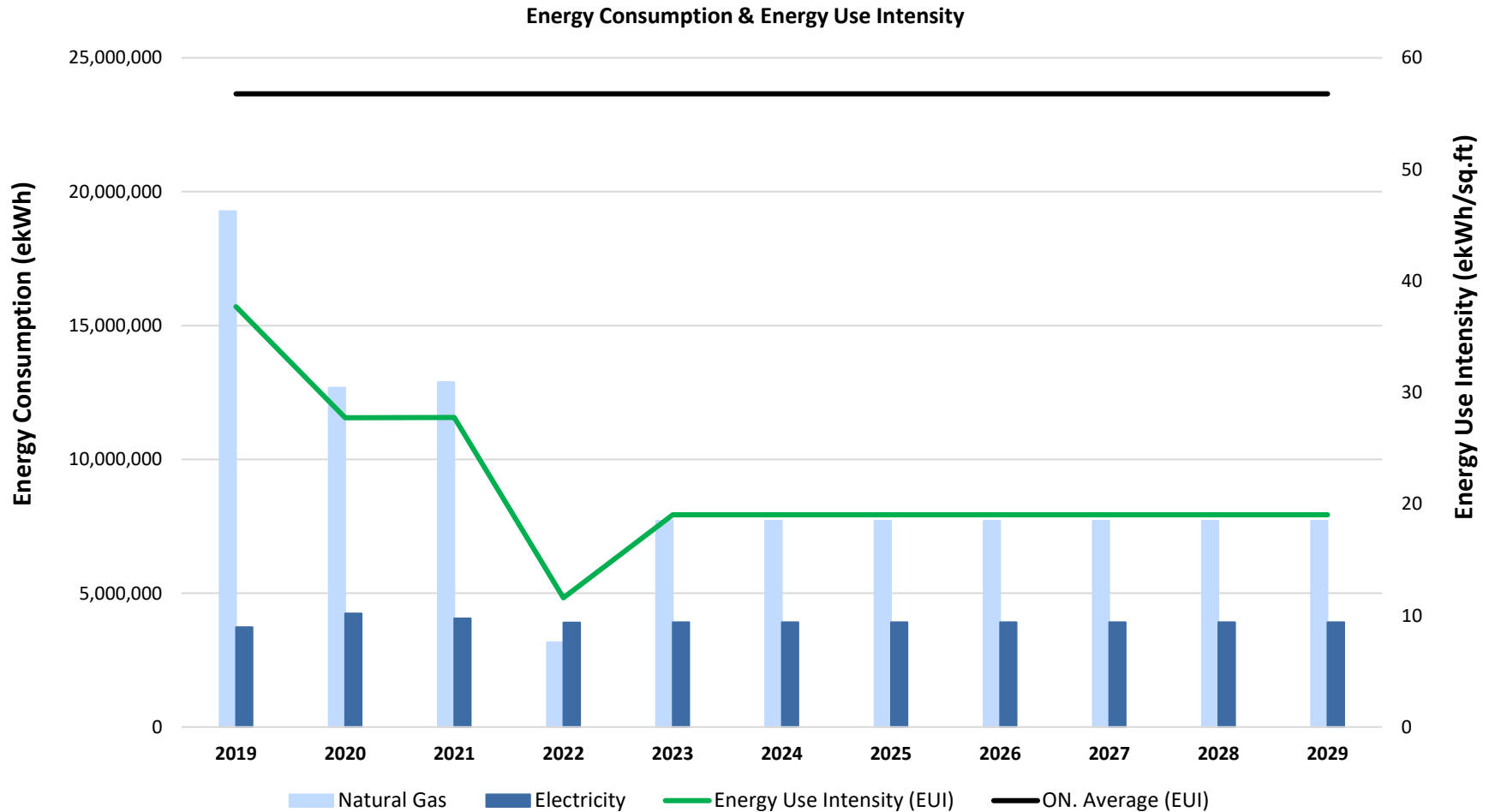
- Energy Use Index (EUI) was 19.03 ekWh/ft<sup>2</sup>
- Energy-related emissions equaled 1,725 tCO<sub>2</sub>e

To obtain full value from energy management activities, LWDH will take a strategic approach to fully integrate energy management into its business decision-making, policies and operating procedures. This active management of energy-related costs and risks will provide a significant economic return and will support other key organizational objectives.

Please note that LWDH is engaging in planning a new development in the next 5 years. With such a plan in mind, there are no proposed energy conservation and greenhouse gas reduction measures at this time. LWDH is committed to reviewing opportunities as they arise, and will ensure the redevelopment takes energy conservation and demand management into consideration.

## Lake of the Woods District Hospital's Energy Performance and Path Forward

The results and the progress of the ECDM activities implemented over the past five years, and the projected impact of the new ECDM Plan is presented in the graph below.



*\*The 2022 natural gas data is skewed due to missing meter data at Lake of the Woods District Hospital from the utility resulting in lower-than-normal consumption.*

**Figure 1. Site-Wide Energy Consumption Trends & Projections**

## 3. About Lake of the Woods

The Lake of the Woods District Hospital was built in 1897 and serves the residents of the City of Kenora, as well as a large surrounding area, including several First Nations Communities. Treating over 30,000 people per year, we are Northwestern Ontario's largest hospital outside of Thunder Bay. The Hospital's core programs include emergency and ambulatory care, chronic care, mental health, maternal and child health, and acute care services which include general medicine, intensive care and surgical services.

### *Our Mission*

To support patients and families along their health care journey.

### *Our Vision*

Extraordinary care for every patient.

### *Our Values*

**Compassion:** We are empathetic, sensitive and understanding to the unique needs of our patients, their families, our staff and our communities.

**Collaboration:** We are stronger together, working as a team and with our partners to improve the health of our patients.

**Excellence:** We are committed to quality care and service excellence for every patient. We stay current on evolving science and share our expertise.

**Integrity:** We are committed to honesty, confidentiality and trust. We act in a professional and ethical manner to best meet the needs of our patients, their families, our staff and our communities.

**Respect:** We embrace the strength in our diversity and treat patients, families, staff and partners with dignity. We value each individual and bring trust to every relationship.

In order to obtain full value from energy management activities, and to strengthen our conservation initiatives, a strategic approach must be taken. Our organization will strive to fully integrate energy management into our practices by considering indoor environmental quality, operational efficiency and sustainably sourced resources when making financial decisions.

# 4. Site-Wide Historical Analysis

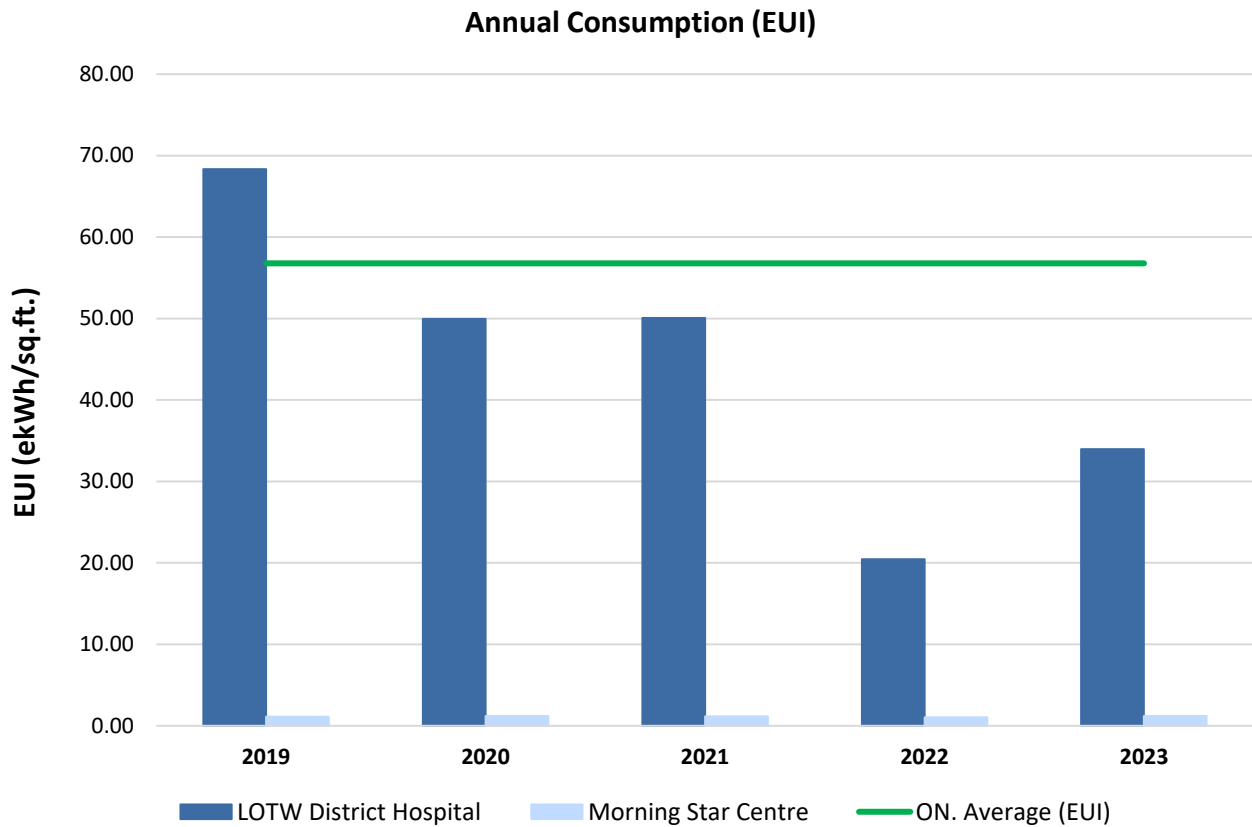
## 4.1. Site-Wide Historical Energy Intensity

Energy Utilization Index is a measure of how much energy a facility uses per square foot. By breaking down a facility’s energy consumption on a per-square-foot-basis, we can compare facilities of different sizes with ease. In this case, we are comparing our facility to the industry average for Ontario hospitals (derived from Natural Resources Canada’s Commercial and Institutional Consumption of Energy Survey), which was found to be **56.77 ekWh/sq. ft.**

Site	2019	2020	2021	2022	2023
Lake of the Woods District Hospital	68.34	49.95	50.06	20.44	33.97
Morningstar Centre	1.14	1.22	1.15	1.03	1.21
New St. Joseph’s Health Centre	N/A	N/A	N/A	N/A	N/A
Total	37.69	27.72	27.75	11.58	19.03

*\*The 2022 natural gas data is skewed resulting in a skew in the 2022 EUI, due to missing meter data at Lake of the Woods District Hospital from the utility resulting in lower-than-normal consumption.*

*Table 1. Historic Energy Utilization Indices for all Sites*



*\*The 2022 natural gas data is skewed resulting in a skew in the 2022 EUI, due to missing meter data at Lake of the Woods District Hospital from the utility resulting in lower-than-normal consumption.*

*Figure 2. Historic Annual Energy Utilization Indices for all Sites*

## 4.2. Site-Wide Historical GHG Emissions

Greenhouse gas (GHG) emissions are expressed in terms of equivalent tonnes of Carbon Dioxide (tCO<sub>2</sub>e). The GHG emissions associated with a facility are dependent on the fuel source — for example, hydroelectricity produces fewer greenhouse gases than coal-fired plants, and light fuel oil produces fewer GHGs than heavy oil.

Electricity from the grid in Ontario is relatively “clean”, as the majority is derived from low-GHG nuclear power and hydroelectricity, and coal-fired plants have been phased out. Scope 1 (natural gas) and Scope 2 (electricity) consumptions have been converted to their equivalent tonnes of greenhouse gas emissions in the table below. Scope 1 represents the direct emissions from sources owned or controlled by the institution, and Scope 2 consists of indirect emissions from the consumption of purchased energy generated upstream from the institution.

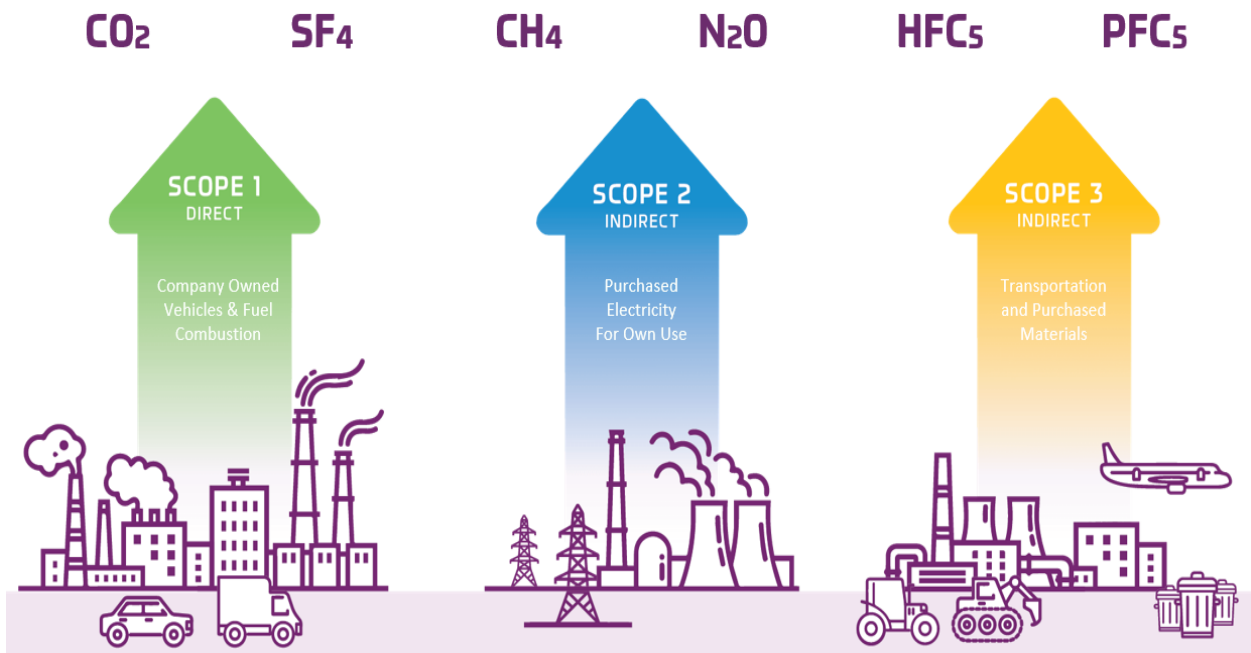


Figure 3. Examples of Scope 1 and 2



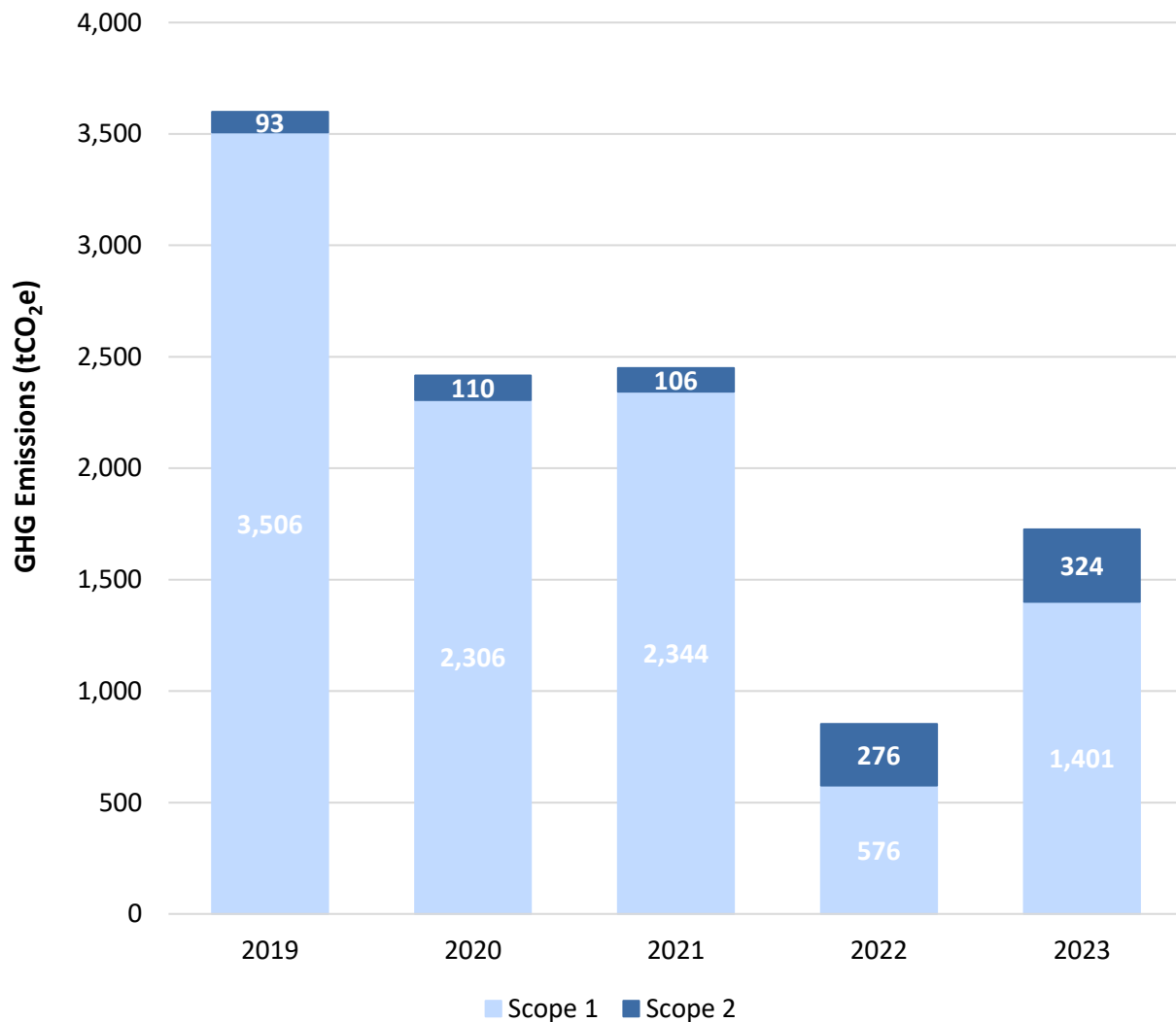
The greenhouse gas emissions for Lake of the Woods District Hospital have been tabulated and are represented in the table and graph below.

GHG Emissions (tCO <sub>2</sub> e)	2019	2020	2021	2022	2023
Electricity (scope 2)	93	110	106	276	324
Natural Gas (scope 1)	3,506	2,306	2,344	576	1,401
<b>Total Scope 1 &amp; 2 Emissions</b>	<b>3,600</b>	<b>2,416</b>	<b>2,450</b>	<b>852</b>	<b>1,725</b>

*\*The 2022 natural gas data is skewed due to missing meter data at Lake of the Woods District Hospital from the utility resulting in lower-than-normal consumption.*

*Table 2. Historic Greenhouse Gas Emissions for all Sites*

### Historical Site-Wide Emissions



*\*The 2022 natural gas data is skewed due to missing meter data at Lake of the Woods District Hospital from the utility resulting in lower-than-normal consumption.*

*Figure 4. Historic Greenhouse Gas Emissions for all Sites*

# 5. Site Analysis

The following section will introduce each of our sites and provide a brief description about the building and its operations, energy & greenhouse gas (GHG) emissions trends, and specific conservation measures.

## 5.1. Lake of the Woods District Hospital



Picture 1. Lake of the Woods District Hospital

Facility Information	
Facility Name	Lake of the Woods District Hospital
Facility Type	Healthcare Services
Address	21 Sylvan Street W, Kenora, ON
Gross Area (Sq. Ft)	221,000
Average of Operational Hours in a Week	168
Number of Floors	4
Number of Beds	71

Table 3. Lake of the Woods District Hospital Facility Information

# New St. Joseph's Health Centre



Picture 2. New St. Joseph's Health Centre

Facility Information	
Facility Name	New St. Joseph's Health Centre
Facility Type	Community Healthcare Centre
Address	21 Wolsley Avenue, Kenora, ON
Gross Area (Sq. Ft)	20,000
Average of Operational Hours in a Week	40
Number of Floors	2

Table 4. New St. Joseph's Health Centre Facility Information

The New St. Joseph's Health Centre is part of the Lake of the Woods portfolio. It has been included in this section as it has no natural gas consumption, and the electricity data comes from the central plant as part of the main hospital. The electricity consumption in the following section is the combination of both sites.

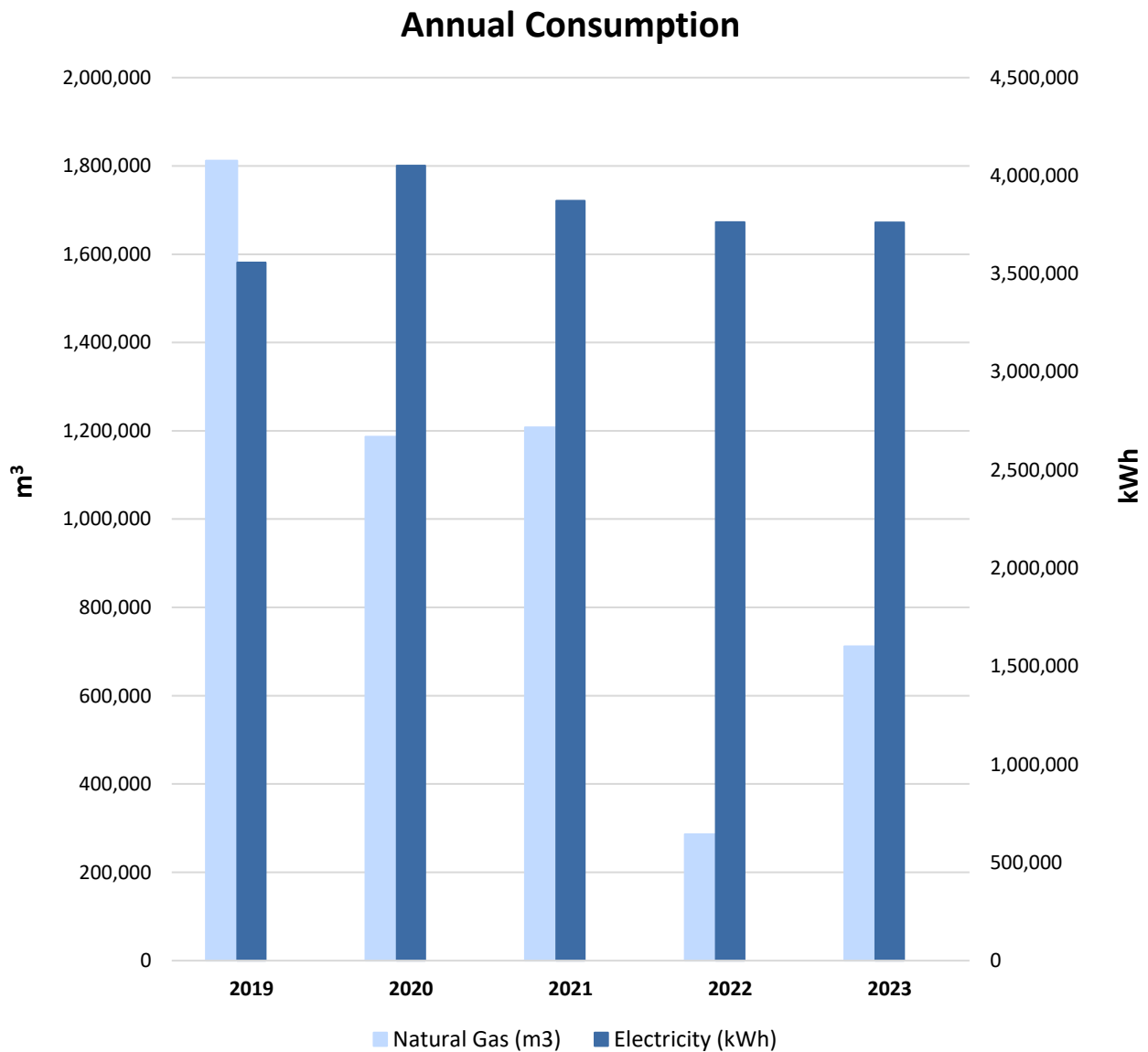
### 5.1.1. Utility Consumption Analysis

Utilities to the site are electricity and natural gas. The following table summarizes the accounts for each utility. Consumption for each respective utility has been adjusted to fit a regular calendar year (365 days).

Utility	2019	2020	2021	2022	2023
Electricity (kWh)	3,557,000	4,051,945	3,872,185	3,763,726	3,761,460
Natural Gas (m <sup>3</sup> )	1,811,946	1,186,795	1,207,531	286,167*	711,989

\*The 2022 natural gas data is skewed due to missing meter data from the utility resulting in lower-than-normal consumption.

Table 5. Historic Annual Utility Consumption for the Hospital



\*The 2022 natural gas data is skewed due to missing meter data from the utility resulting in lower-than-normal consumption.

Figure 5. Historic Annual Utility Consumption for the Hospital

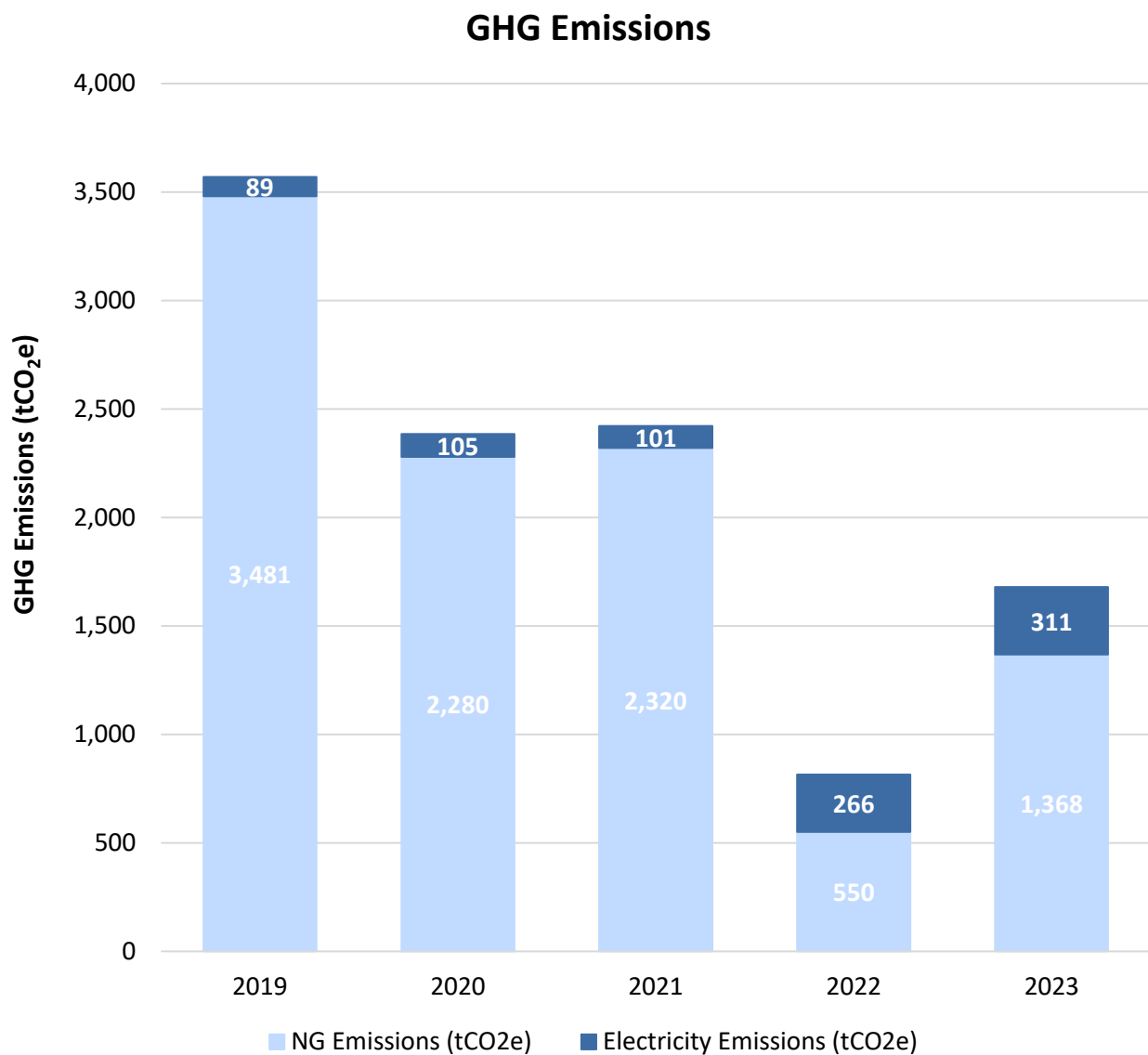
### 5.1.2. GHG Emissions Analysis

The greenhouse gas emissions are calculated based on the energy consumption data analyzed in the following table.

Utility Source (tCO <sub>2</sub> e)	2019	2020	2021	2022	2023
Electricity (scope 2)	89	105	101	266	311
Natural Gas (scope 1)	3,481	2,280	2,320	550	1,368
<b>Totals</b>	<b>3,570</b>	<b>2,384</b>	<b>2,421</b>	<b>815</b>	<b>1,679</b>

*\*The 2022 natural gas data is skewed due to missing meter data from the utility resulting in lower-than-normal consumption.*

*Table 6. Historic Annual Greenhouse Gas Emissions for the Hospital*



*\*The 2022 natural gas data is skewed due to missing meter data from the utility resulting in lower-than-normal consumption.*

*Figure 6. Historic Annual Greenhouse Gas Emissions for the Hospital*

## 5.2. Morningstar Centre



*Picture 3. Morningstar Centre Logo*

Facility Information	
Facility Name	<b>Morningstar Centre</b>
Facility Type	Healthcare Services
Address	6 Matheson Street South, Kenora, ON
Gross Area (Sq. Ft)	8,240
Average of Operational Hours in a Week	168
Number of Floors	1

*Table 7. Morningstar Centre Facility Information*

### 5.2.1. Utility Consumption Analysis

Utilities to the site are electricity and natural gas. The following table summarizes the accounts for each utility. Consumption for each respective utility has been adjusted to fit a regular calendar year (365 days).

Utility	2019	2020	2021	2022	2023
Electricity (kWh)	176,400	194,200	186,300	140,515	154,385
Natural Gas (m <sup>3</sup> )	13,328	13,687	12,568	13,735	17,206

Table 8. Historic Annual Utility Consumption for the Morningstar Centre

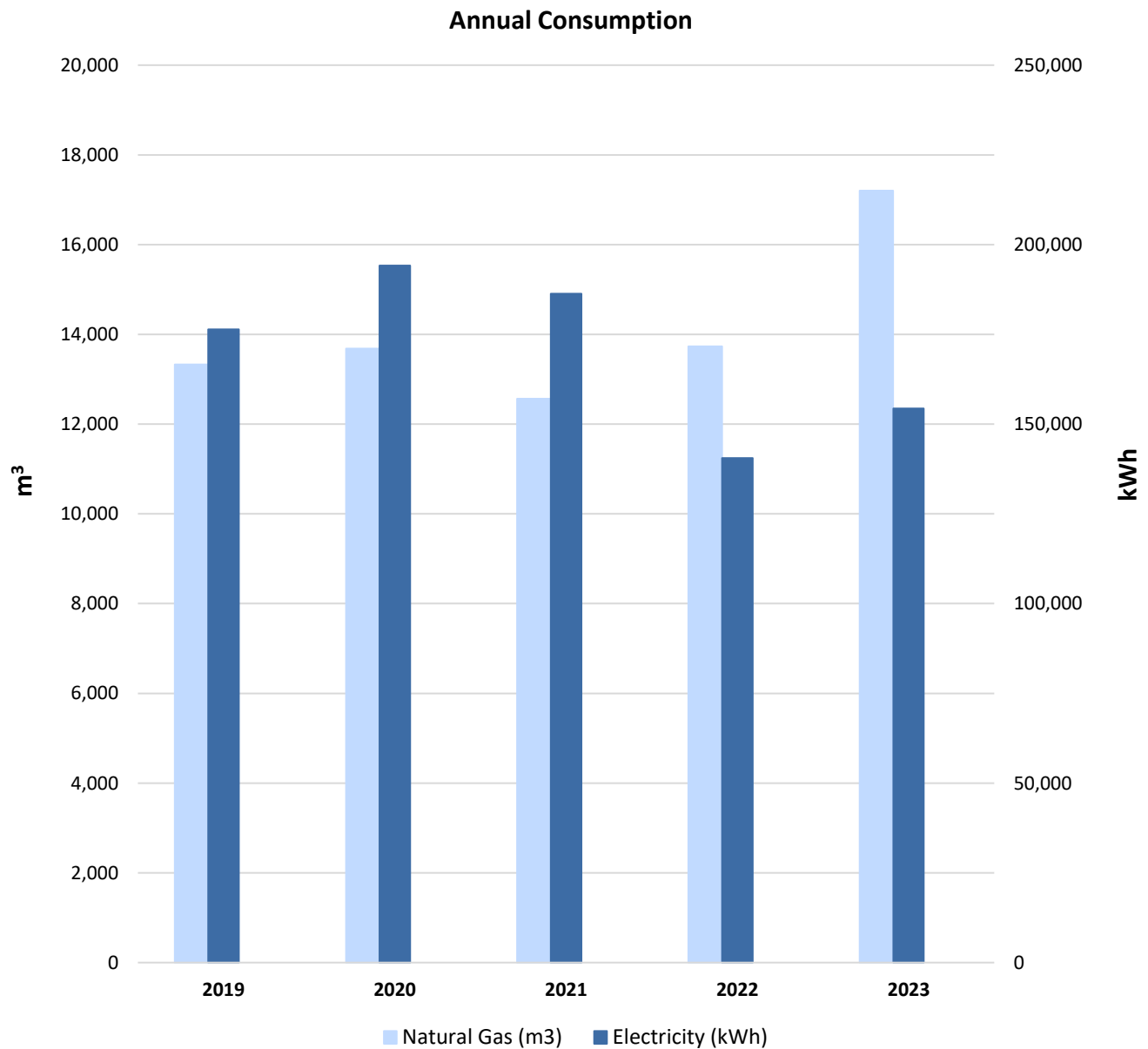


Figure 7. Historic Annual Utility Consumption for the Morningstar Centre

### 5.2.2. GHG Emissions Analysis

The greenhouse gas emissions are calculated based on the energy consumption data analyzed in the following table:

Utility Source (tCO <sub>2</sub> e)	2019	2020	2021	2022	2023
Electricity (scope 2)	4	5	5	10	13
Natural Gas (scope 1)	26	26	24	26	33
<b>Totals</b>	<b>30</b>	<b>31</b>	<b>29</b>	<b>36</b>	<b>46</b>

Table 9. Historic Annual Greenhouse Gas Emissions for the Morningstar Centre

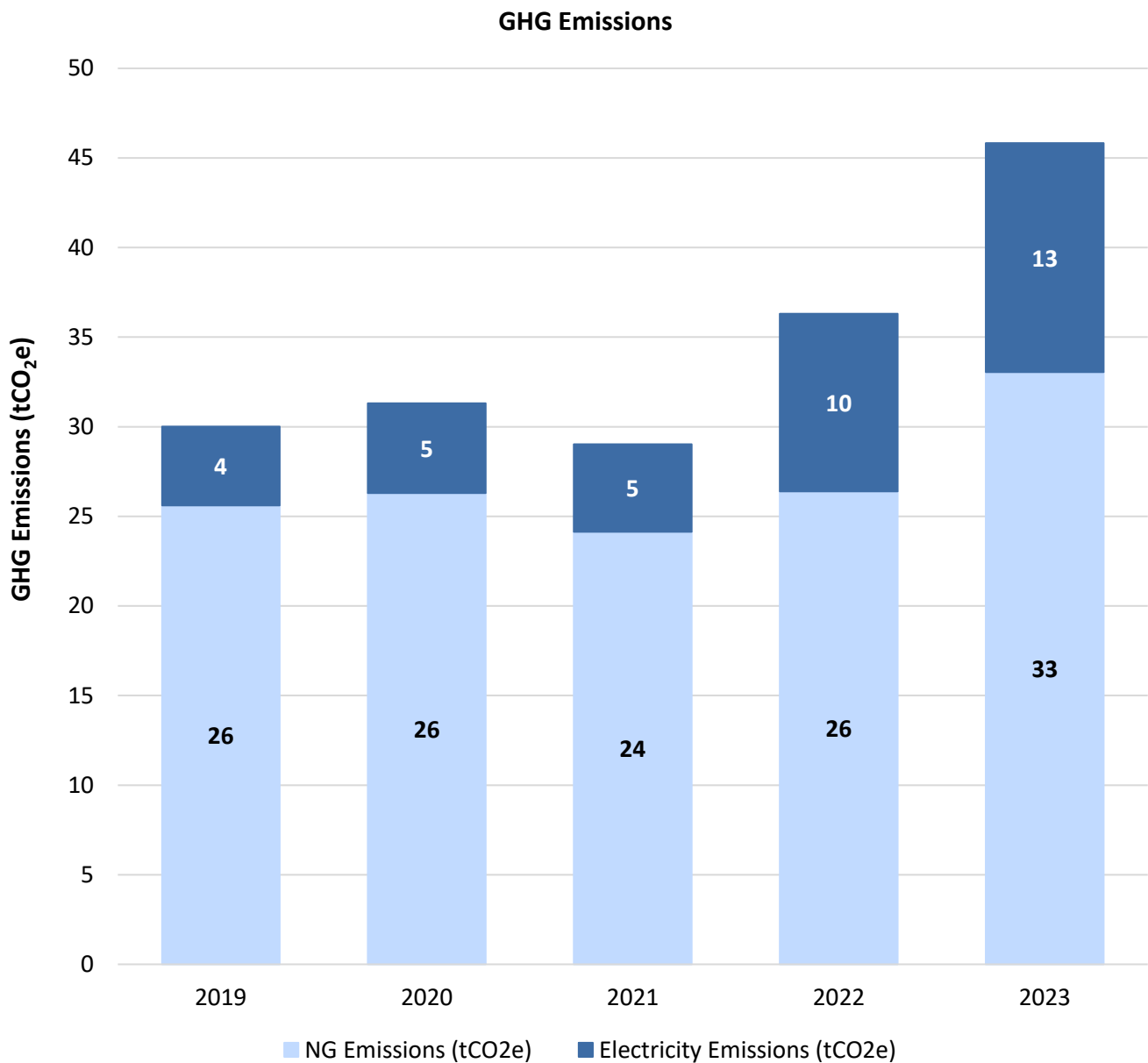


Figure 8. Historic Annual Greenhouse Gas Emissions for the Morningstar Centre



# 6. Site Outlook

## 6.1. Site-Wide Utility Consumption Forecast

By implementing the energy conservation measures stated in the previous sections, in each respective site, Lake of the Woods District Hospital’s site-wide projected electricity and natural gas use could be forecasted based on the utility savings generated from individual measures. The site-wide forecasted utility consumption is tabulated below. The percentage of change is based off the data from the baseline year of 2023.

	2024		2025		2026		2027		2028		2029	
	Units	% Change	Units	% Change	Units	% Change	Units	% Change	Units	% Change	Units	% Change
Electricity (kWh)	3,915,845	0%	3,915,845	0%	3,915,845	0%	3,915,845	0%	3,915,845	0%	3,915,845	0%
Natural Gas (m <sup>3</sup> )	729,195	0%	729,195	0%	729,195	0%	729,195	0%	729,195	0%	729,195	0%

Table 10. Forecast of Annual Utility Consumption for all Sites

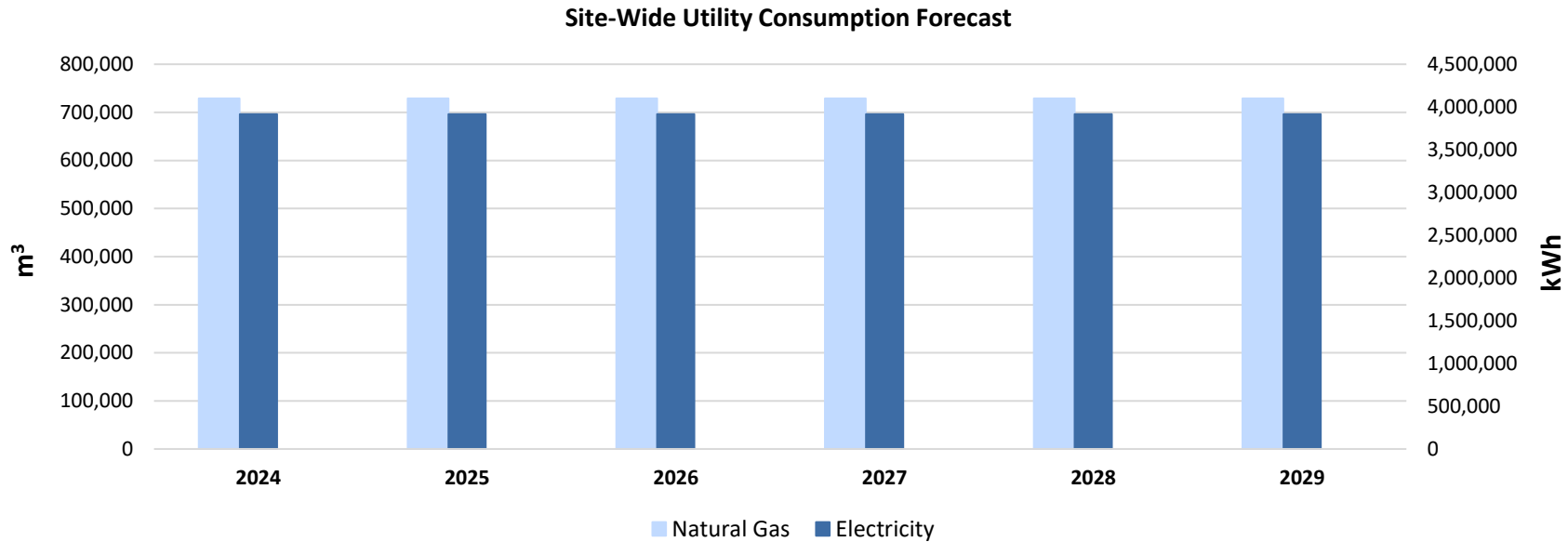


Figure 17. Forecast of Annual Utility Consumption for all Sites

## 6.2. Site-Wide GHG Emissions Forecast

The site-wide forecasted greenhouse gas emissions for Lake of the Woods District Hospital are calculated based on the site-wide forecasted energy consumption data analyzed in the previous section and are tabulated in the following table. The percentage of reduction is based off the data from the baseline year of 2023.

Utility Source (tCO <sub>2</sub> e)	2024	2025	2026	2027	2028	2029
Electricity (scope 2)	256	344	300	341	295	271
Natural Gas (scope 1)	1,401	1,401	1,401	1,401	1,401	1,401
<b>Totals</b>	<b>1,657</b>	<b>1,745</b>	<b>1,701</b>	<b>1,742</b>	<b>1,696</b>	<b>1,672</b>
Reduction from Baseline Year (2023)	4%	-1%	1%	-1%	2%	3%

Table 11. Forecast of Annual Greenhouse Gas Emissions for all Sites

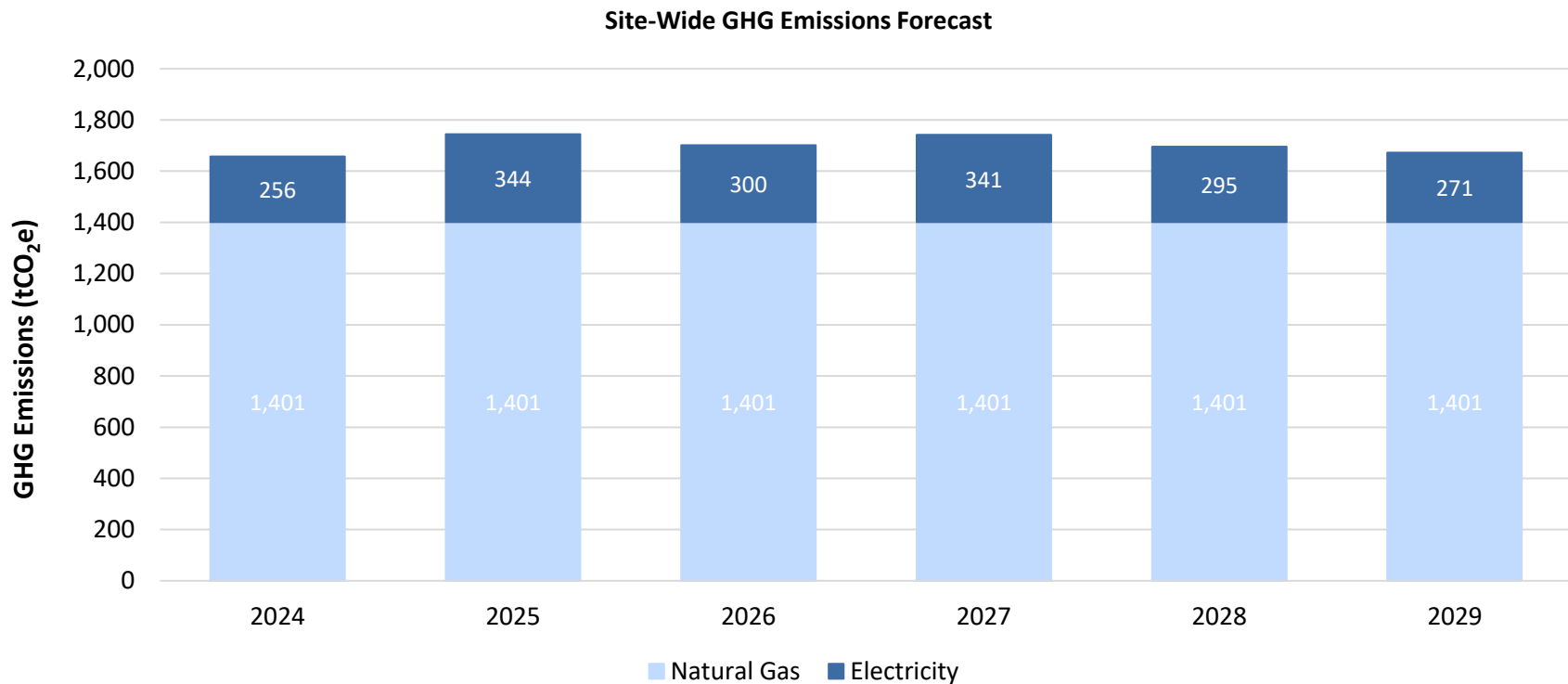


Figure 18. Forecast of Annual Greenhouse Gas Emissions for all Sites

## 7. Closing Comments

Thank you to all who contributed to Lake of the Woods District Hospital's Energy Conservation & Demand Management Plan. We consider our facility a primary source of care, and an integral part of the local community. The key to this relationship is being able to use our facilities efficiently and effectively to maximize our ability to provide the highest quality of healthcare services while integrating environmental stewardship into all aspects of facility operations.

On behalf of the senior management team here at Lake of the Woods District Hospital, we approve this Energy Conservation & Demand Management Plan.

X Alison Wesley-James

*This ECDM plan was created through a collaborative effort between Lake of the Woods District Hospital and Blackstone Energy Services.*

# 8. Appendix

## 8.1. Glossary of terms

Word	Abbreviation	Meaning
Baseline Year		A baseline is a benchmark that is used as a foundation for measuring or comparing current and past values.
Building Automation System	BAS	Building automation is the automatic centralized control of a building's heating, ventilation and air conditioning, lighting and other systems through a building management system or building automation system (BAS)
Carbon Dioxide	CO2	Carbon dioxide is a commonly referred to greenhouse gas that results, in part, from the combustion of fossil fuels.
Energy Usage Intensity	EUI	Energy usage intensity means the amount of energy relative to relative to a buildings physical size typically measured in square feet.
Equivalent Carbon Dioxide	CO2e	CO2e provides a common means of measurement when comparing different greenhouse gases.
GHG Protocol		GHG Protocol refers to the recognized international standards used in the measurement and quantification of greenhouse gases.
Greenhouse Gas	GHG	Greenhouse gas means a gas that contributes to the greenhouse effect by absorbing infrared radiation, e.g., carbon dioxide and chlorofluorocarbons.
Metric Tonnes	t	Metric tonnes are a unit of measurement. 1 metric tonne = 1000 kilograms
Net Zero		A net-zero energy building, is a <a href="#">building</a> with zero net <a href="#">energy consumption</a> , meaning the total amount of energy used by the building on an annual basis is roughly equal to the amount of <a href="#">renewable energy</a> created on the site,
Variable Frequency Drive	VFD	A variable frequency drive is a device that allows for the modulation of an electrical or mechanical piece of equipment.

## 8.2. List of Pictures, Tables and Figures

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