2024 Energy Conservation and Demand Management Plan

Township of Enniskillen

From: 2019-01-01 to 2023-12-31

_____

Mayor

_____

Clerk

Dated this 5th day of February 2024

2024 Energy Conservation and Demand Management Plan

Township of Enniskillen

From: 2019-01-01 to 2023-12-31

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Executive Summary

The former Ontario Green Energy Act Regulation 397/11 (now Ontario Regulation 507/18 of the Electricity Act) requires Municipalities to report their 'goals and objectives' for conserving and otherwise reducing energy consumption and managing its demand for energy.

Every public agency shall publish on its website and intranet site a summary of:

- its annual energy consumption and greenhouse gas emission for its operations, and
- a description of previous, current and proposed measures for conserving and otherwise reducing the amount of energy consumed by the public agency's operations and for managing the public agency's demand for energy, including a forecast of the expected results of current and proposed measures.

Commitment

Declaration of Commitment

The Township of Enniskillen will allocate the necessary resources to develop and implement a strategic Energy Management Plan that will reduce our energy consumption and its related environmental impact.

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Vision

The Corporation of the Township of Enniskillen will continue to reduce energy consumption and mitigate costs through the wise use of energy. This will involve a collaborative effort to increase the education, awareness and understanding of energy management within the Corporation. Total energy consumption includes electricity and natural gas used at Township owned facilities. This vision can be achieved through the integration of operational efficiencies and by building the foundation for a culture of energy awareness and knowledge within the corporation. Commitment from Council and Senior Administration will demonstrate the leadership and commitment required to ensure the fulfillment of the Municipal Energy Management Plan.

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Goals

The Township of Enniskillen's Energy Management Plan was completed to help achieve the following goals

* To continuously improve the energy efficiency of our facilities and processes

* To reduce our operating costs

* To reduce our energy consumption and greenhouse gas emissions

* To provide the guidance and leadership necessary for the adoption of a culture of sustainability

Overall Target

The Township of Enniskillen will attempt to reduce our consumption of natural gas and electricity in our municipal operations.

Objectives

The primary objective of this plan is to improve the management of the Township of Enniskillen's energy consumption in municipal facilities. It is also the objective of this plan to improve the Township's understanding of energy consumption which is essential to meet the energy management goals.

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Organizational Understanding

Summary of Current Energy Consumption, Cost and GHGs

**** See Appendix A**

Renewable Energy Utilized or Planned

The Township of Enniskillen entered into a joint agreement in 2016 with the Village of Oil Springs and Bluewater Power Renewable Energy Inc. to install solar panels on the Oil Springs Fire Hall.

The Township of Enniskillen does not have any additional renewable energy projects planned.

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Structure Planning

Staffing requirements and duties

The Township of Enniskillen will incorporate energy efficiency into standard operating procedures and the knowledge requirements for operational positions.

Resources Planning

Energy Leader

The Township of Enniskillen will designate leadership and overall responsibility for corporate energy management. A Municipal Energy Conservation Officer (MECO) will be appointed by Council. The MECO will be the primary point of contact for Council and staff on all energy related operations.

Energy Training

The Township of Enniskillen will develop and deliver energy training for relevant staff and Council members. This training will be offered to employees with involvement with energy consuming equipment and employees who make decisions affecting consumption of energy.

Procurement Planning

Consideration of energy efficiency of acquired equipment

The purchasing procedures will be modified as required to incorporate energy efficiency into the criteria for selection of materials and equipment.

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Projects Execution

Municipal Level

The Township of Enniskillen will carry out the required development of business procedures and communication programs and implement them methodically according to the planned time lines within the resources constraints that apply.

Asset Level

In order to sustain a corporate culture of conservation, staff must be engaged in an effective awareness and education program. Although public works staff have the lead responsibility in ensuring municipal facilities operate efficiently, all staff should be familiar with and utilize energy efficient measures where possible.

Township of Enniskillen

From: 2019-01-01 to: 2023-12-31

Review

Energy Plan Review

The MECO, in collaboration with Council and staff will review and evaluate the Municipal Energy Plan, revising and updating it as necessary.

Evaluation Progress

Energy Consumption

Facility	Date	Energy Reduction Event/Details
Shiloh Community Centre	2013	Demolition
Public Works Garage	2013	Replaced T12 with T8 light bulbs
Water Reservoir and Pumping Station	2015	Upgraded heating to natural gas from electricity
Enniskillen Community Centre	2018	Demolition
Water Reservoir and Pumping Station	2018	Replaced pumps and drives
LaSalle Pump Station	2018	Replaced pumps
Oil City Sewer Pump Station	2018	Replaced pumps
Township Office	2021	Replaced 2 x 2 light fixtures with LED 4K light fixtures in Municipal Office/Council Chambers
Township Office/Public Works Garage	2022	Installed back up generator to provide automatic back up power to the township office and public works

The Township of Enniskillen will recommend processes and projects that will reduce energy consumption. To date, examples of completed projects include the changing of T12 to T8 light bulbs at the Municipal Office, Public Works garage and the Water Reservoir. The disposal/sale of the Shiloh Community Centre and the demolition of the Enniskillen Community Centre are complete. The upgrades of the heating units, pumps and drives at the Water Reservoir were completed in 2018. The replacement of pumps at the LaSalle pump station and the Oil City sewer pump station will see a reduction in electrical usage. Interior lights have been changed to LEDs at the Township office. An auto back-up generator was installed at the Municipal Office/Public Works garage to provide continuity of operations at the facility.

Appendix "A"

2011

Facility Type	Total Area	Avg Hours/ Day	Fuel Type	Consumption	Cost ($)	Energy (ekWh/yr)	GHG Emissions (kgCO2e/yr)	GHG Intensity (kgC)2e/ m2)	Energy Intensity (ekWh/m2)
Recreational Facilities	425	3.5	NG	7643	1766	81228	14450	171	961
			Electricity	7094	1265	7094	695	5	46
			Oil	1483		15983	4056	18	72
Municipal Office	425	6	NG	5521	1429	58676	10438	25	138
			Electricity	28263	3737	28263	2771	7	67
Public Works Facilities	914	78	NG	7318	1747	77774	13836	20	111
			Electricity	127917	35468	127914	12541	49	90504

2012

Facility Type	Total Area	Avg Hours/ Day	Fuel Type	Consumption	Cost ($)	Energy (ekWh/yr)	GHG Emissions (kgCO2e/yr)	GHG Intensity (kgC)2e/ m2)	Energy Intensity (ekWh/m2)
Recreational Facilities	425	3.5	NG	5,337	1,570	55,516	10,166	103	578
			Electricity	7,399	2,220	7,399	725	5	47
			Oil	1,216	1,346	13,106	3,326	15	59
Municipal Office	425	6	NG	3,758	893	3,9939	7,105	17	94
			Electricity	25,894	3,602	25,894	2547	6	61
Public Works Facilities	914	78	NG	4,594	1,091	48,824	8,686	12	70
			Electricity	136,787	22,464	136,787	13,411	606	105,073

2013

Facility Type	Total Area	Avg Hours/ Day	Fuel Type	Consumption	Cost ($)	Energy (ekWh/ yr)	GHG Emissions (kgCO2e/yr)	GHG Intensity (kgC)2e/ m2)	Energy Intensity (ekWh/m2)
Recreational Facilities	425	3.5	NG	7,183	1,997	76,339	13,580	130	730
			Electricity	7,614	2,307	7,614	746	5	47
			Oil	1,897	1,269	20,445	5,189	23	92
Municipal Office	425	6	NG	4,030	863	42,830	7,619	18	101
			Electricity	24,882	4,113	24,882	2,439	6	59
Public Works Facilities	914	78	NG	4,926	1,055	52,352	9,313	13	75
			Electricity	143,891	24,411	143,891	14,107	572	113,423

2014

Facility Type	Total Area	Avg Hours / Day	Fuel Type	Consumption	Cost ($)	Energy (ekWh/ yr)	GHG Emissions (kgCO2e /yr)	GHG Intensity (kgC)2 e/m2	Energy Intensity (ekWh/m2)
Recreational Facilities	202	3.13	NG	8,963	2,481	95,257	16,946	177	995
			Electricity	4,274	1,528	4,274	325	3	34
Municipal Office	425	5.7	NG	6,273	1,423	66,668	11,859	27.91	157
			Electricity	26,078	4,499	26,078	1,982	4.66	61
Public Works Facilities	914	78	NG	7,667	1,739	81,483	14,495	20.71	116
			Electricity	155207	26785	155207	11,798	538	123,379

2015

Facility Type	Total Area	Avg Hours / Day	Fuel Type	Consumption	Cost ($)	Energy (ekWh/ yr)	GHG Emissions (kgCO2 e/yr)	GHG Intensity (kgC)2 e/m2	Energy Intensity (ekWh/m2)
Recreational Facilities	202	3.13	NG	7,890	2,524	83,853	14,917	145	818
			Electricity	4,174	1,470	4,174	317	3	34
Municipal Office	425	5.7	NG	4,807	1,359	51,088	9,088	21	120
			Electricity	25,266	4,762	25,266	1,920	5	59
Public Works Facilities	914	78	NG	6,469	1,986	68,751	12,230	21	6,391
			Electricity	170362	32426	170362	12,949	543	139,585

2016

Facility Type	Total Area	Avg Hours / Day	Fuel Type	Consumption	Cost ($)	Energy (ekWh/yr)	GHG Emissions (kgCO2e/yr)	GHG Intensity (kgC)2e/m2	Energy Intensity (ekWh/m2)
Recreational Facilities	202	3.13	NG	6,359	1,675	67,582	12,023	120	676
			Electricity	3,537	1,438	3,537	143	1	28
Municipal Office	425	5.7	NG	3,743	588	39,779	7,077	17	94
			Electricity	24,438	5,494	24,438	991	2	58
Public Works Facilities	914	78	NG	6,585	1,337	69,984	12,450	31	21,442
			Electricity	132594	29,618	132594	5,376	276	102,769

2017

Facility Type	Total Area	Avg Hours / Day	Fuel Type	Consumption	Cost ($)	Energy (ekWh/yr)	GHG Emissions (kgCO2e/yr)	GHG Intensity (kgC)2e/m2	Energy Intensity (ekWh/m2)
Recreational Facilities	202	3.13	NG	6,308	2,269	67,040	11,926	120	675
			Electricity	3,715	1,391	2,715	132	1	29
Municipal Office	425	5.7	NG	4,009	1,147	42,606	7,579	18	100
			Electricity	22,184	3,686	22,184	789	2	52
Public Works Facilities	914	78	NG	4,791	2,229	50,918	9,058	28	23,856
			Electricity	106446	19751	106446	3,784	177	79,370

2018 Note – The reporting template has changed effective 2018

Facility Name	Facility Type	Total Energy (ekWh)	Electricity (ekWh)	Natural Gas (ekWh)	ekWh / m2	Cost ($)	Emissions (GHG - tonnes)
	Municipal Totals	**332,044.68**	**136,196.00**	**195,848.68**	**5,314.91**	**28,714.86**	**38,864.79**
Gorman Park	Recreation	26,321.19	230.00	26,091.19	424.54	1,216.35	4,648.29
LaSalle Pump Station	W/WW	13,786.00	13,786.00	0.00	2,757.20	2,496.51	407.35
Municipal Office	Administrative	87,163.35	24,130.00	63,033.35	205.09	5,604.44	11,926.30
Oil City Sewer Pump Station	Other	6,634.00	6,634.00	0.00	1,326.80	1,345.34	196.02
Public Works	Administrative	106,522.13	29,492.00	77,030.13	152.17	6,849.86	14,574.69
Water Reservoir	W/WW	91,618.01	61,924.00	29,694.01	449.11	11,202.36	7,112.14

2019

Facility Name	**Facility Type**	**Total Energy (ekWh)**	**Electricity (ekWh)**	**Natural Gas (ekWh)**	**ekWh / m2**	**Cost ($)**	**Emissions (GHG - tonnes)**
	Municipal Totals	**322,109.81**	**127,664.00**	**194,445.81**	**6,248.35**	**26,023.70**	**38,481.22**
Gorman Park	Recreation	22,305.38	274.00	22,031.38	359.76	1,135.78	3,927.62
LaSalle Pump Station	W/WW	20,911.00	20,911.00	0.00	4,182.20	3,593.94	637.22
Municipal Office	Administrative	84,169.96	21,668.00	62,501.96	198.05	4,551.08	11,779.07
Oil City Sewer Pump Station	Other	4,670.00	4,670.00	0.00	934.00	1,065.13	142.31
Public Works	Administrative	102,865.83	26,484.00	76,381.83	146.95	5,562.44	14,394.98
Water Reservoir	W/WW	87,187.64	53,657.00	33,530.64	427.39	10,115.33	7,600.02

2020

Facility Name	Facility Type	Total Energy (ekWh)	Electricity (ekWh)	Natural Gas (ekWh)	ekWh / m2	Cost ($)	Emissions (GHG - tonnes)
	Municipal Totals	**277,279.42**	**121,168.00**	**156,111.42**	**6,200.71**	**24,816.84**	**30,854.91**
Gorman Park	Recreation	17,926.88	221.00	17,705.88	289.14	933.14	3,155.41
LaSalle Pump Station	W/WW	20,158.00	20,158.00	0.00	4,031.60	3,325.26	512.98
Municipal Office	Administrative	68,426.01	20,059.00	48,367.01	161.00	4,570.99	9,114.70
Oil City Sewer Pump Station	Other	6,009.00	6,009.00	0.00	1,201.80	1,190.22	152.92
Public Works	Administrative	83,628.70	24,517.00	59,111.70	119.47	5,586.76	11,139.58
Water Reservoir	W/WW	81,130.83	50,204.00	30,926.83	397.70	9,210.47	6,779.32

2021

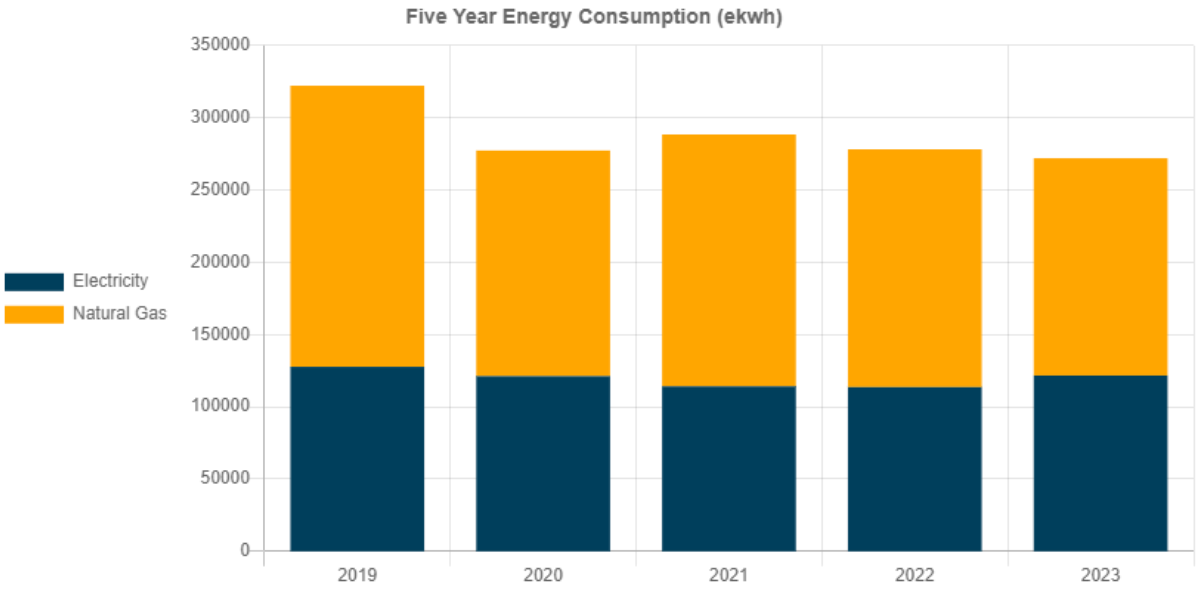
Facility Name	Facility Type	Total Energy (ekWh)	Electricity (ekWh)	Natural Gas (ekWh)	ekWh / m2	Cost ($)	Emissions (GHG - tonnes)
	Municipal Totals	**288,407.66**	**114,144.00**	**174,263.66**	**5,312.76**	**25,627.41**	**34,989.18**
Gorman Park	Recreation	23,397.44	197.00	23,200.44	377.38	992.17	4223.27
LaSalle Pump Station	W/WW	16,134.00	16,134.00		3,226.80	2,886.21	467.89
Municipal Office	Administrative	73,703.05	18,970.00	54,733.05	173.42	4,832.44	10,499.93
Oil City Sewer Pump Station	Other	5,071.00	5,071.00		1,014.20	1,136.11	147.06
Public Works	Administrative	90,076.23	23,185.00	66,891.23	128.68	5,906.33	12,832.37
Water Reservoir	W/WW	80,025.94	50,587.00	29,438.94	392.28	9,874.15	6,818.66

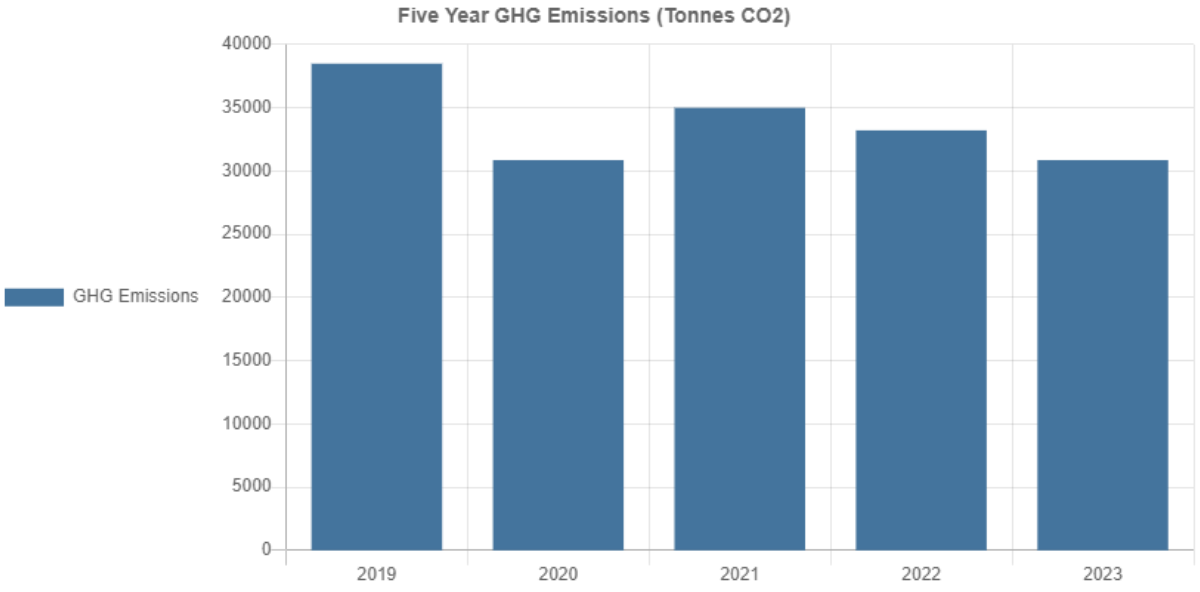
2022

Facility Name	Facility Type	Total Energy (ekWh)	Electricity (ekWh)	Natural Gas (ekWh)	ekWh / m2	Cost ($)	Emissions (GHG - tonnes)
	Municipal Totals	**278146.24**	**113607.00**	**164,539.24**	**5286.37**	**28,307.06**	**33,205.83**
Gorman Park	Recreation	15,387.84	222	15,165.84	248.19	1,265.13	2763.40
LaSalle Pump Station	W/WW	16,360.00	16,360.00		3,272.00	3,165.88	474.44
Municipal Office	Administrative	73,056.66	18,855.00	54,204.66	171.90	5,336.66	10,400.00
Oil City Sewer Pump Station	Other	5,406.00	5,406.00		1,081.20	1,293.20	156.77
Public Works	Administrative	89,287.93	23,045.00	66,242.93	127.55	6,522.58	12,710.46
Water Reservoir	W/WW	78,647.80	49,719.00	28,928.81	385.53	10,723.61	6,700.76

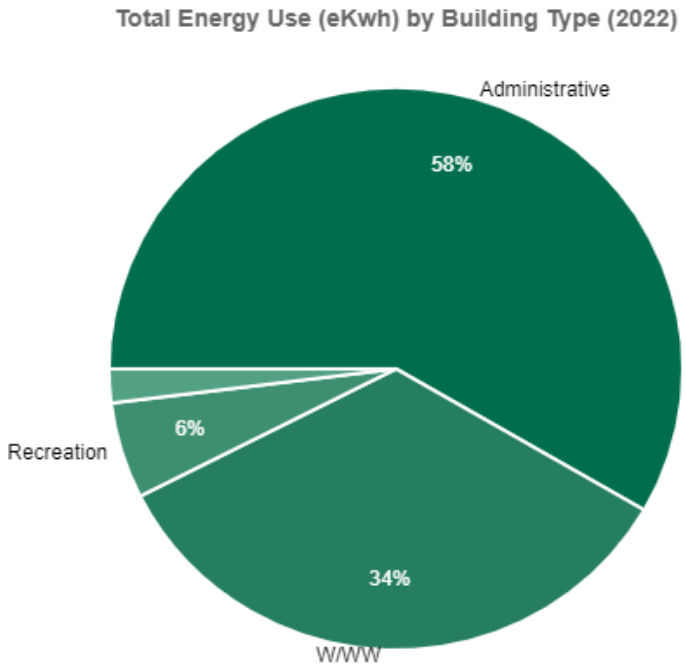
2023

Facility Name	Facility Type	Total Energy (ekWh)	Electricity (ekWh)	Natural Gas (ekWh)	ekWh / m2	Cost ($)	Emissions (GHG - tonnes)
	Municipal Totals	**271,967.90**	**121,638**	**150,329**	**6,467.68**	**31,052.37**	**30,855.65**
Gorman Park	Recreation	18,609	213	18,396.68	300.16	1,482.87	3,350.47
LaSalle Pump Station	W/WW	19,947	19,947		3,989.40	3,846.72	578.46
Municipal Office	Administrative	68,095.76	20,207.00	47,888.76	160.23	5,923.16	9,291.60
Oil City Sewer Pump Station	Other	7,671.00	7,671.00		1,534.20	1,697.59	222.46
Public Works	Administrative	83,225.17	24,698.00	58,527.17	118.89	7,239.42	11,355.77
Water Reservoir	W/WW	74,419.29	48,902.00	25,517.29	364.80	10,862.61	6,056.89

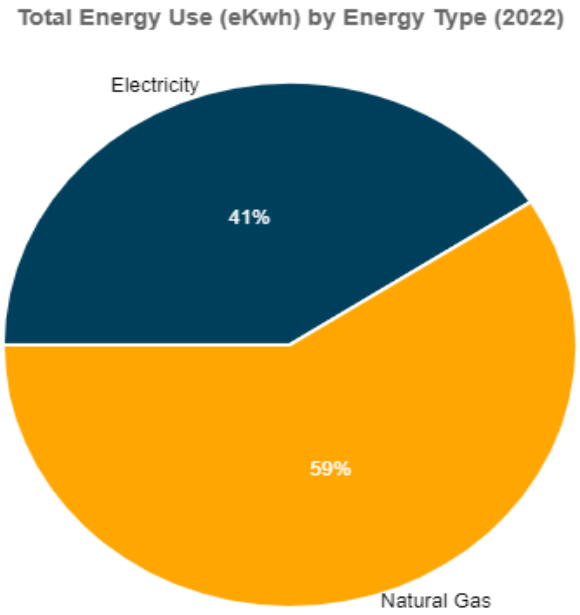

Five Year Energy Consumption (ekwh)
350000
300000
250000
200000
150000
100000
50000
0
2019
2020
2021
2022
2023
Electricity
Natural Gas


Five Year GHG Emissions (Tonnes CO2)
40000
35000
30000
25000
20000
15000
10000
5000
0
2019
2020
2021
2022
2023
GHG Emissions

Energy Trends – 2022



Our largest user of energy was Administrative facilities followed by Water/Waste Water, Recreation, and Other.



Our largest source of energy is Natural Gas, making up 59.2% of the total.

Appendix B: Facility Details

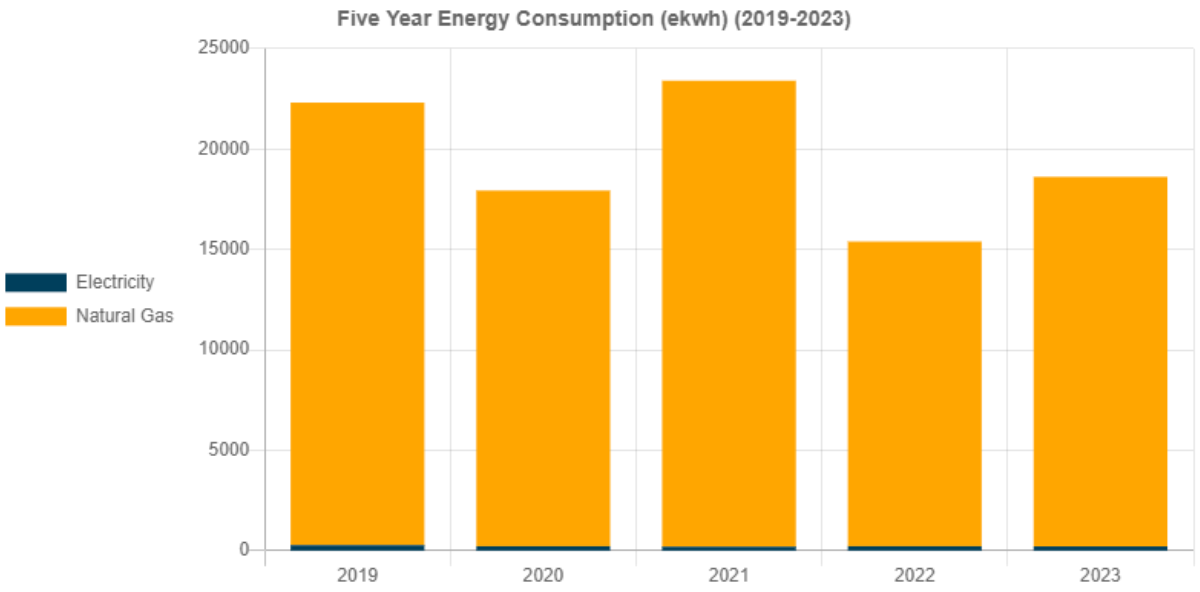
Gorman Park

4455 Shamrock St, Oil City

62 square meter floor space

936 Annual Hours of Operation

Over the past 4 years this building has decreased energy consumption by 41.5%



LaSalle Pump Station

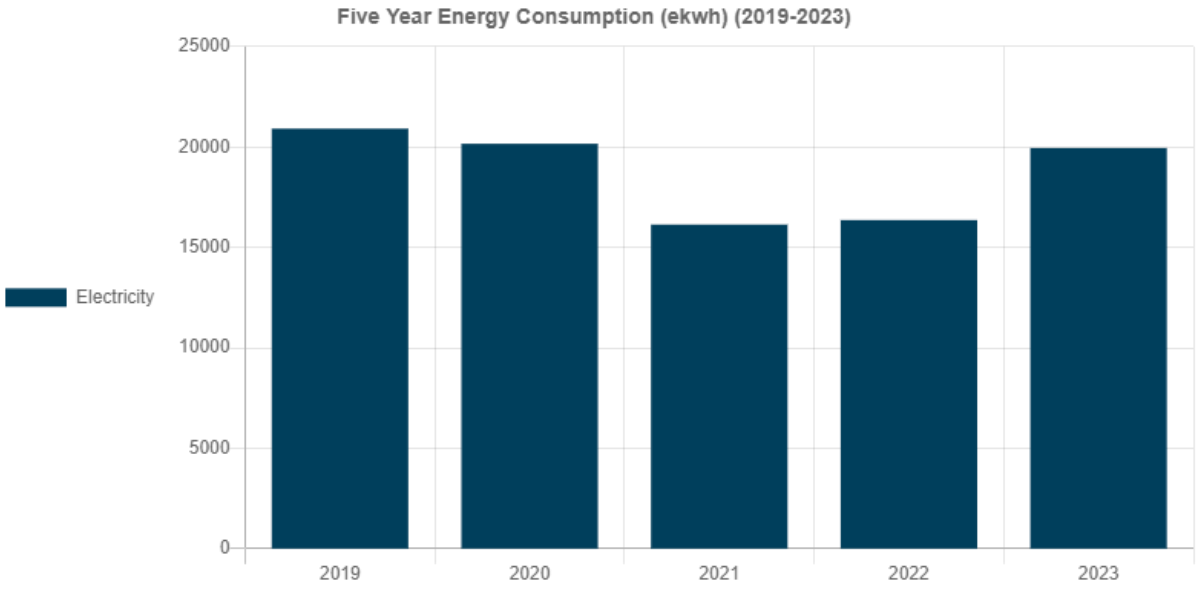
6201 LaSalle Line

Water booster pump

5 square meter floor space

8759 Annual Hours of Operation

Over the past 4 years this building has increased energy consumption by 18.7%



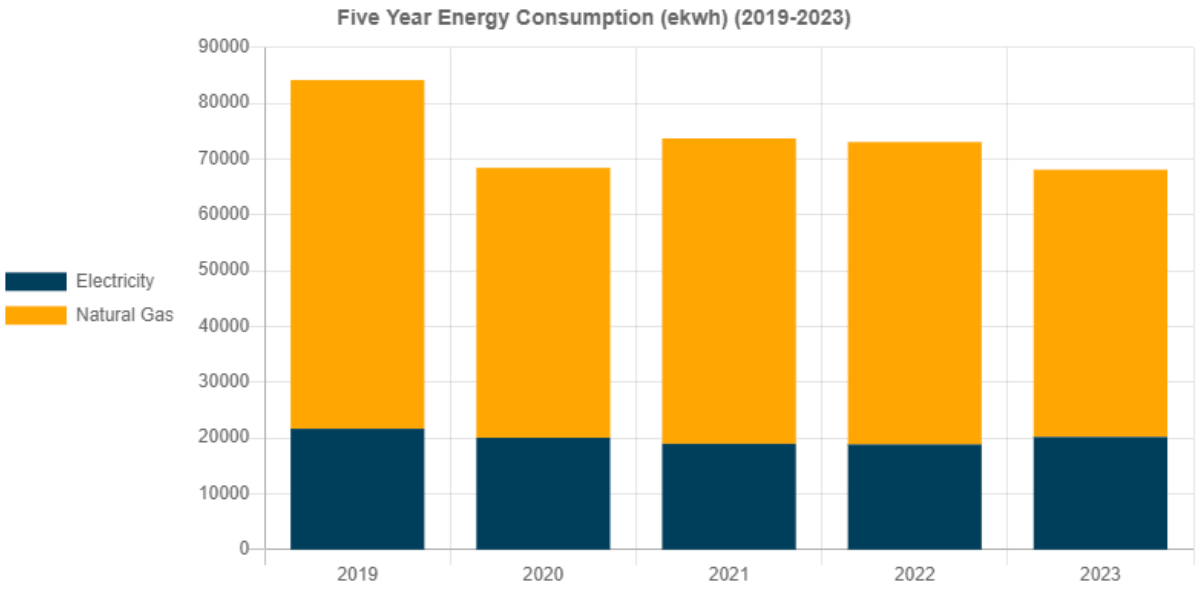
Municipal Office

4465 Rokeby Line

425 square meter floor space

2080 Annual Hours of Operation

Over the past 4 years this building has decreased energy consumption by 16.2%



Oil City Sewer Pump Station

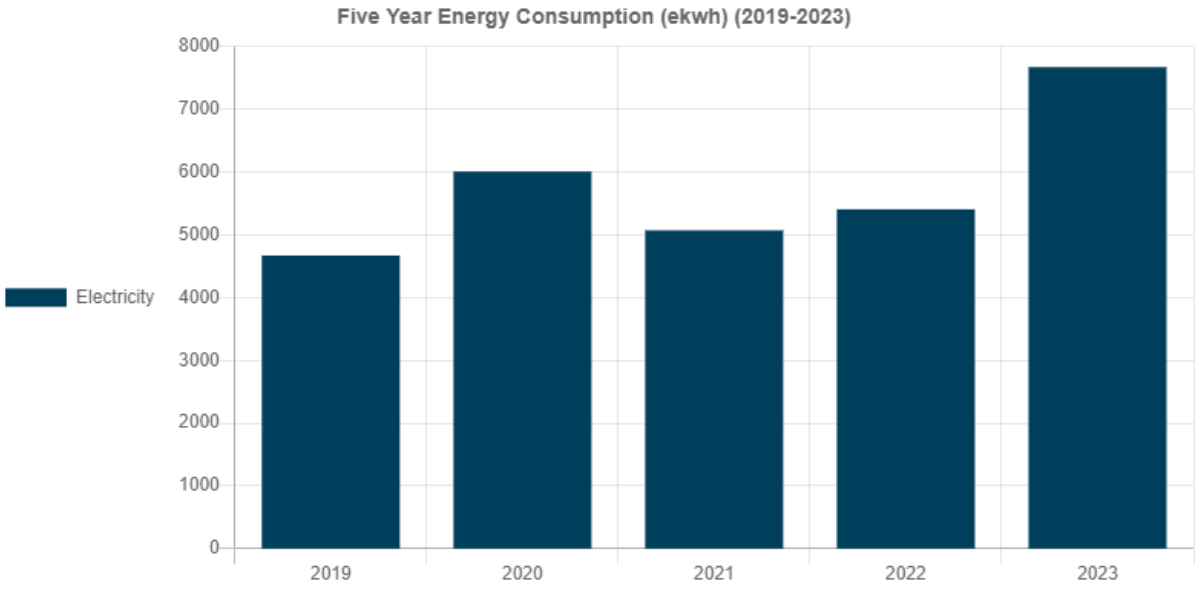
Main Street, Oil City

Sewer pump station

5 square meter floor space

8759 Annual Hours of Operation

Over the past 4 years this building has decreased energy consumption by 18.5%



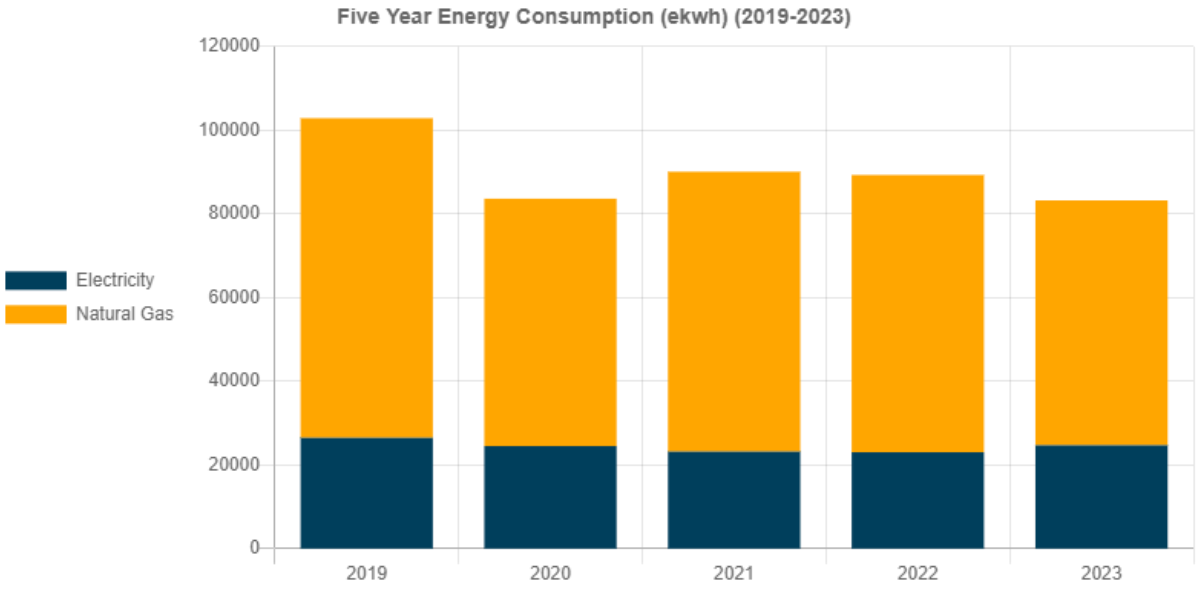
Public Works

4465 Rokeby Line

700 square meter floor space

2080 Annual Hours of Operation

Over the past 4 years this building has decreased energy consumption by 16.2%



Water Reservoir

2868 Oil Heritage Road

204 square meter floor space

8759 Annual Hours of Operation

Over the past 4 years this building has decreased energy consumption by 14.2%