

ENERGY CONSERVATION AND DEMAND MANAGEMENT PLAN

2024 - 2029



middlesex
centre

in the centre of it all

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1.0 INTRODUCTION AND BACKGROUND

The Municipality of Middlesex Centre developed its first Energy Conservation and Demand Management (ECDM) Plan in 2014 in accordance with the former Ontario Regulation (O.Reg.) 397/11 under the Green Energy Act, 2009. The Green Energy Act was subsequently revoked in early 2019; however, an updated ECDM Plan was still required to be in compliance with O.Reg. 507/18 under the Electricity Act, 1998. In February of 2023, O.Reg. 507/18 was replaced with the current regulation, O.Reg. 25/23: Broader Public Sector: Energy Reporting and Conservation and Demand Management Plans.

Similar to the previous regulations, O.Reg. 25/23 requires municipalities to publicly report on energy consumption and associated greenhouse gas (GHG) emissions annually. The regulation also continues the prescribed requirement for publication of an updated ECDM Plan. This plan meets the requirements of this regulation including:

- Description of goals and objectives for conserving and otherwise reducing energy consumption and managing the Municipality's demand for energy.
- Description of actual results achieved.
- Description of previous, current, and proposed measures for conserving and reducing the amount of energy consumption including a forecast of the expected results or current and proposed measures.

This ECDM Plan is a living document and to be used as a tool by the Municipality of Middlesex Centre to manage its energy consumption in order to reduce its carbon footprint and to control the energy costs for heated and cooled facilities for electrical power and natural gas. The Plan will be available on the Municipality's website <https://middlesexcentre.ca/>.

2.0 DECLARATION OF COMMITMENT

The Middlesex Centre Council is committed in allocating necessary resources to develop and implement a five-year Energy Conservation and Demand Management (ECDM) Plan as required under Ontario Regulation 25/23 (Broader Public Sector: Energy Reporting and Conservation and Demand Management Plans) of the Electricity Act, 1998. This ECDM Plan will strive to reduce its energy consumption and its related environmental impact as outlined in the overall target. Council and staff will monitor continuous progress towards the objectives set in this plan and will update as required under O.Reg. 25/23 or any subsequent legislation.

3.0 VISION

The Municipality of Middlesex Centre will exercise stewardship in the use of finite energy resources to demonstrate leadership, optimize delivery of services, and enhance the overall quality of life of the community.

4.0 GOALS

The Municipality of Middlesex Centre will continuously improve the energy efficiency of facilities and processes in order to reduce operating costs, energy consumption and the concomitant greenhouse gas emissions. The Municipality of Middlesex Centre's Energy Conservation and Demand Management Plan will strive to achieve the following goals:

- Maximize fiscal resources and avoid cost increases through direct and indirect energy savings.
- Reduce the environmental impact of the Municipality's operations.
- Increase the comfort and safety of staff and users of the municipal facilities.
- Improve the reliability of municipal equipment and reduce maintenance costs.
- Promote a culture of energy conservation within the municipality.

5.0 TARGET

The Municipality's first ECDM Plan was developed in 2014 and approved by Council to outline the goals and objectives with respect to conservation and reducing energy consumption. A target of 1% energy consumption per annum was set.

6.0 STRATEGIC OBJECTIVES

This ECDM Plan reaffirms the following goals and objectives which have been updated to reflect current policies and best practices:

- To create a culture of conservation within the Municipality to reduce GHG emissions and to ensure the wise use of resources and fiscal accountability through savings and cost avoidance which will lead to both direct and indirect savings.
- To demonstrate leadership within the Municipality and community and to commit to energy management and the investigation of new and emerging technologies.

- To demonstrate sound operating and maintenance practices to complement the energy efficiencies implemented through the capital asset renewal program.
- To provide a forum for discussion within the Municipality on energy management to be able to explore new ideas and trends. The forum will ensure energy management is a consideration in all operations and facility-based decisions. The integration of operational processes, facility-based infrastructure improvements and staff awareness is critical to move the Municipality towards the goal of reducing GHG emissions and transition to a carbon neutral future.

7.0 ENERGY CONSUMPTION BASELINE

O.Reg 25/23 requires the ECDM Plan to focus on buildings and facilities the municipalities own and operated that are heated or cooled, including those related to the treatment of water and sewage. The following are summary of buildings and facilities owned and operated by the Municipality of Middlesex Centre. Refer to Appendix A for full list of heated and/or cooled municipal facilities.

Building/Facility	Number
Administrative offices and related facilities, including municipal council chambers	1
Cultural facilities, indoor recreational facilities and community centres, including art galleries, performing arts facilities, auditoriums, indoor sports arenas, indoor ice rinks, indoor swimming pools, gyms and indoor courts for playing tennis, basketball or other sports.	6
Fire stations and associated offices and facilities	5
Storage facilities where equipment or vehicles are maintained, repaired, or stored.	2
Building facilities related to the treatment of water and sewage	2
Total number of facilities reported	16
Total floor area	23,696 m²

Table 1: The Municipality of Middlesex Centre does not own and operate any public libraries, ambulance stations, police stations or parking garages.

The first reporting year for the Municipality’s energy consumption and GHG emissions was in 2012, and as such this will form the baseline from which energy reductions are evaluated. Based on the 2012 Energy Consumption and Greenhouse Gas Emissions Reporting, the total energy consumption for electricity is 4,588,052 kWh and natural gas is 11,415 GJ for all buildings and facilities.

8.0 ENERGY CONSUMPTION AND GHG EMISSIONS

Under the first ECDM Plan, the Municipality committed to reducing its impact on the environment by reducing consumption of fuels and electricity in all municipal operation by 1% per year. In reporting the accomplishments at the end of the first ECDM Plan, the Municipality has made substantial progress towards incorporating energy conservation initiatives into corporate policies and practices.

Tables 2, 3, and 4 below outline the overall performance of the Municipality’s facilities portfolio in terms of energy consumption and GHG emissions, starting from the 2012 baseline year. Note that numbers are adjusted to account for the impact of increased utilization rates. Since the inception of the first ECDM Plan, the Municipality of Middlesex Centre has seen a substantial increase in demands for services due to growth. Based on Statistics Canada Census¹ and the Municipality’s Building Services Department reports, the total private dwellings increased by 24.5% between 2012 and 2023. As such, electricity and natural gas consumptions are adjusted to reflect this increase.

Table 2 shows the Municipality’s electricity consumptions. For the period of nine years, consumption decreased by 11.72% , or an average of 1.30% decrease annually.

Year	Electricity Use – Grid Purchase (kWh)	Year-Over-Year Change	Private Dwelling Growth	Adjusted Year-Over-Year Change
2012 (Base Year)	4,588,052.30			
2015	4,401,115.90	-4.07%	1.54%	-5.61%
2016	4,454,431.30	1.21%	1.62%	-0.41%
2017	3,821,537.60	-14.21%	2.25%	-16.46%
2018	3,733,679.90	-2.30%	1.99%	-4.29%
2019	4,173,318.60	11.77%	2.58%	9.19%
2020	3,427,402.90	-17.87%	4.08%	-21.95%
2021	3,963,192.90	15.63%	5.46%	10.17%
2022	4,597,766.50	16.01%	2.70%	13.31%
2023	4,901,173.80	6.60%	2.27%	4.33%
9-Year Total				-11.72% ↓
9-Year Average				-1.30% ↓

Table 2: The Municipality of Middlesex Centre Electricity Consumption for Period 2015 - 2019 with Base Year 2012.

Table 3 is the Municipality’s natural gas consumption for the same period. Natural gas consumption dropped by 14.08% in the nine-year period or an average of 1.56% decrease annually.

Year	Natural Gas Use (GJ)	Year-Over-Year Change	Private Dwelling Growth	Adjusted Year-Over-Year Change
2012 (Base Year)	11,415.20			
2015	11,921.00	4.43%	1.54%	2.89%
2016	9,592.70	-19.53%	1.62%	-21.15%
2017	11,234.80	17.12%	2.25%	14.87%
2018	11,737.00	4.47%	1.99%	2.48%
2019	11,692.20	-0.38%	2.58%	-2.96%
2020	11,861.80	1.45%	4.08%	-2.63%
2021	14,261.90	20.23%	5.46%	14.77%
2022	11,800.20	-17.26%	2.70%	-19.96%
2023	11,786.60	-0.12%	2.27%	-2.39%
9-Year Total				-14.08% ↓
9-Year Average				-1.56% ↓

Table 3: The Municipality of Middlesex Centre Natural Gas Consumption for Period 2015 - 2019 with Base Year 2012.

With the steady decrease in both electricity and natural gas consumption, the Municipality's GHG emissions are reduced by 12.36% or 1.37% annual average as presented in Table 4.

Year	Direct GHG Emissions (Metric Tons CO2e)	Year-Over-Year Change	Private Dwelling Growth	Adjusted Year-Over-Year Change
2012 (Base Year)	564.00			
2015	596.20	5.71%	1.54%	4.17%
2016	480.90	-19.34%	1.62%	-20.96%
2017	563.50	17.18%	2.25%	14.93%
2018	590.10	4.72%	1.99%	2.73%
2019	587.80	-0.39%	2.58%	-2.97%
2020	596.50	1.48%	4.08%	-2.60%
2021	717.2	20.23%	5.46%	14.77%
2022	593.20	-17.29%	2.70%	-19.99%
2023	592.20	-0.17%	2.27%	-2.44%
9-Year Total				-12.36% ↓
9-Year Average				-1.37% ↓

Table 4: The Municipality of Middlesex Centre GHG Emissions for Period 2015 - 2019 with Base Year 2012.

Refer to Appendix B for a detailed listing of energy consumption and GHG emissions for all municipal facilities.

9.0 ENERGY CONSERVATION MEASURES

The Municipality of Middlesex Centre aspires to show leadership in the promotion and development of strategic energy management that are compatible with asset management and land use planning objectives. Below are few highlights of energy efficiency initiatives at the Municipality of Middlesex Centre:

Project	Details and Locations	Year Completed
Lighting Retrofit	Komoka Wellness & Recreation Complex – Over the rinks LED	2017
	Ilderton Arena – Over the rink LED	2017
	All indoor recreational facilities – Wall pack LED conversion	2022
	All outdoor recreational facilities – lighting timers (including “Astral”) between sun set and sundown times	2022
	Delaware Community Centre – LED upgrade	2024
High Efficiency HVAC Conversions	Komoka Community Centre	2023
	Bryanston Community Centre	2023
	Delaware Community Centre	2021
	Ilderton Community Centre	2024
	Komoka Wellness & Recreation Complex	2024
VFD on Motors/Pumps	Komoka Wellness & Recreation Complex - VFD cooling towers and water circulation	2024
	Denfield Booster Pumping Station & Rechlorination	2018
	Delaware Bypass Pumping Station	2018
	Kilworth Sewage Pump Station #2 and Forcemain	2017
	Ilderton Sewage Pump Station #1	2014
	Komoka-Kilworth Intermediate Booster Pump Station	2014
Demand Control Ventilation	All Municipal facilities have been outfitted with programmable thermostats on all HVAC units to utilize night setbacks.	2022
Chiller Replacements	Ilderton Arena	2023
Solar Photovoltaic System	Komoka Wellness & Recreation Complex	2014
	Coldstream Fire Station	2018
	Ilderton Wastewater Treatment Facility	2019
Green Fleet	Level Ice Laser system and FastICE	2022
	Light Duty – full electric/Hybrid vehicles	2018
Refrigeration Plants Upgrades	6000E BAS has been reprogrammed to better utilize setbacks and unoccupied times	2022

	The capturing of waste heat using hydronic heating loops and thermos-store tank to heat domestic water	2022
	Installation of cooling tower full clean and high flow nozzles improving efficiency while saving water	2022
	Switch to Moss in water tank to control water chemistry allowing for less water cycles.	2022
	Installation of mini plates and frames for jacket cooling thus saving run hours on compressors.	2022
	Installation of condenser clean plus nozzle improving heat rejections.	2022

10.0 RENEWABLE ENERGY GENERATION

01. SOLAR PHOTOVOLTAICS (PV)

The Municipality of Middlesex Centre has a “net metering” arrangement with Hydro One to produce energy on site that can be used in the facility. Any excess energy is sent to the grid and credited to the billing account for the specific location. This allows for a system to overproduce energy during the summer and use the credits from excess generation in the winter. The Municipality currently has three net-meter solar PV assets producing electricity as follows:

- PV power 15kW off grid supplying the lighting at the Ilderton Wastewater Treatment Facility.
- The solar photovoltaic system on the rooftop of the Komoka Wellness & Recreation Complex has reduced the electricity demand off the grid by 11.21% for a five-year period.
- Coldstream Fire Station, Canada’s First Net Zero Fire Station, utilizes photovoltaic power. The extra energy generated from the system is sent to the adjacent Municipal Office saving the Municipality over \$21,000 in electricity to date.

02. HEAT PUMPS AND GROUND SOURCE ENERGY

Ground-source heat pump (geo-thermal/exchange) system is being utilized at the Coldstream Fire Station, Canada’s First Net Zero Fire Station. The system extracts thermal energy from the earth for heating during colder months and work in reverse during warmer months to optimize facility cooling. The system supports heating and cooling for the entire building; there are no GHG emissions from natural gas combustion for heating at this location.

11.0 FUTURE MEASURES

This 2024 – 2029 ECDM Plan will build on the successes from the previous Plan to continue to reduce its carbon footprint. The Municipality’s success over the next five years will be measured against a target energy reduction of an average of 1% year after year.

Facility renewal priorities are identified through ongoing asset management planning with input from frontline operations and maintenance of which proposed capital expenditures are reviewed annually as part of the capital budget process. Capital budgets are approved on a yearly basis, the implementation plan is fluid and will adjust based on funding availability and asset renewal requirements.

The following are sampling of potential upcoming projects that will allow the Municipality to further decrease its carbon footprint. It should be noted that the projected costs have been calculated based on Class D estimates and are based on 2024 dollars. As these estimates precede the comprehensive design phase, it is anticipated that the final costs for constructions may increase as the project progresses.

Facility Name	Potential Project	Estimated Cost	Timeframe
Komoka Wastewater Treatment Facility	Aeration, Blower, and HVAC Improvements	\$ 625,000	Immediate
Ilderton Arena & Curling Club	Arena Upgrade	\$ 3,500,000	Immediate
Ilderton Arena & Curling Club	Green Fleet – Electric Ice Resurfacer	\$ 225,000	2 – 5 Years
Various Locations	Street EV Charging Stations	\$ 500,000	2 – 5 Years
Denfield Operations Centre	PWE Works – Energy Generation Project	\$ 300,000	2 – 5 Years
Denfield Operations Centre	LED Lighting Retrofit	\$ 80,000	2 – 5 Years
Ilderton Community Centre	LED Lighting Upgrade	\$ 40,000	2 – 5 Years

Komoka Wellness & Recreation Complex	Refrigeration Plant Generator Replacement	\$ 225,000	2 – 5 Years
Komoka Wellness & Recreation Complex	Supplementary Dehumidifier on Canadian Ice Pad	\$ 80,000	2 – 5 Years
Komoka Wastewater Treatment Facility	Wastewater Treatment Facility Upgrade	\$ 23,570,000	2 – 5 Years
Ilderton Wastewater Treatment Facility	Wastewater Treatment Facility Upgrade	\$ 9,780,000	2 – 5 Years

12.0 ENERGY LEADER

The Director of Community Services is designated as leader of energy planning and has been given overall responsibility for the Energy Conservation & Demand Management Plan. The Director of Community Services is supported in this role through collective decision making of the Management Team represented by the CAO, Departmental Directors and Supervisors across all municipal departments

13.0 PROJECT EXECUTION – MUNICIPAL LEVEL

The administration and implementation of this plan will be responsibility of the Director of Community Services. Since we all use energy in our daily activities, it will also be the responsibility of all Municipal staff to be aware of their energy use and work towards a culture of conservation. Through staff training and web-based energy management tools, staff will be able to see the results of their efforts, and benchmark between corporate facilities and with industry standards.

14.0 ENERGY PLAN REVIEW

The Senior Management Team will review and evaluate the Municipality of Middlesex Centre's Energy Conservation and Demand Management Plan annually, revising and updating as necessary within the corporate budget planning process.

15.0 CONFIRMATION OF APPROVAL

This updated ECDM Plan was endorsed by the Municipality of Middlesex Centre Council on _____.

16.0 APPENDIX A: LIST OF HEATED AND/OR COOLED MUNICIPAL FACILITIES

Facility Name	Operation Type	Address	Total Floor Area (m ²)
Arva Fire Station	Fire stations and associated offices and facilities	14352 Medway Road, Arva	418.0
Bryanston Fire Station/Community Centre	Fire stations and associated offices and facilities	15321 Plover Mills Road, Bryanston	372.0
Coldstream Community Centre	Community centres	10227 Ilderton Road, Ilderton	557.0
Coldstream Fire Station (NET ZERO)	Fire stations and associated offices and facilities	10284 Ilderton Road, Ilderton	195.0
Delaware Community Centre	Community centres	2652 Gideon Drive, Delaware	1,021.0
Delaware Fire Station	Fire stations and associated offices and facilities	11563 Longwoods Road, Delaware	418.0
Delaware Operations Centre	Storage facilities where equipment or vehicles are maintained, repaired or stored	805 Gideon Drive, Delaware	1,839.0
Denfield Operations Centre	Storage facilities where equipment or vehicles are maintained, repaired or stored	23053 Denfield Road, Denfield	11,540.0
Ilderton Arena & Curling Club	Indoor ice rinks	13168 Ilderton Road, Ilderton	3,716.0
Ilderton Community Centre	Community centres	13168 Ilderton Road, Ilderton	372.0
Ilderton Firehall	Fire stations and associated offices and facilities	22531 Hyde Park Road, Ilderton	465.0

Ilderton Wastewater Treatment Facility	Facilities related to the treatment of sewage	147 Meadowcreek Drive, Ilderton	220.0
Komoka Community Centre	Community centres	133 Queen Street, Komoka	1,114.0
Komoka Wastewater Treatment Facility	Facilities related to the treatment of sewage	22280 Komoka Road, Komoka	1,522.0
Municipal Office	Administrative offices and related facilities, including municipal council chambers	10227 Ilderton Road, RR2, Ilderton	557.0
Komoka Wellness & Recreation Complex	Indoor recreational facilities	1 Tunks Lane, Komoka	10,033.0

17.0 APPENDIX B: DETAILED ENERGY CONSUMPTION AND GHG EMISSIONS REPORTING

2023			
OPERATION NAME	ELECTRICITY (kWh)	NATURAL GAS (GJ)	DIRECT GHG EMISSIONS (Metric Tons CO2e)
Arva Fire Station	18,948.90	194.80	9.80
Bryanston Fire Station/Community Centre	25,120.40	209.70	10.50
Coldstream Community Centre	72,929.10	50.20	2.50
Coldstream Fire Station (NET ZERO)	-	-	-
Delaware Community Centre	45,144.50	347.20	17.40
Delaware Fire Station	9,356.40	133.80	6.70
Delaware Operations Centre	109,724.70	490.60	24.70
Denfield Operations Centre	212,688.00	1,134.90	57.00
Ilderton Arena & Curling Club	35,784.30	352.20	17.70
Ilderton Community Centre	638,034.10	1,686.30	84.70
Ilderton Firehall	15,603.40	181.60	9.10
Ilderton Wastewater Treatment Facility	660,572.20	670.30	33.70
Komoka Community Centre	69,016.80	519.90	26.10

Komoka Wastewater Treatment Facility	737,801.40	96.00	4.80
Municipal Office	72,929.10	458.70	23.10
Komoka Wellness & Recreation Complex	2,177,520.30	5,260.40	264.40

2022			
OPERATION NAME	ELECTRICITY (kWh)	NATURAL GAS (GJ)	DIRECT GHG EMISSIONS (Metric Tons CO2e)
Arva Fire Station	19,218.30	161.30	8.10
Bryanston Fire Station/Community Centre	29,169.80	222.90	11.20
Coldstream Community Centre	82,043.50	49.70	2.50
Coldstream Fire Station (NET ZERO)	-	-	-
Delaware Community Centre	41,937.40	380.20	19.10
Delaware Fire Station	9,711.90	134.20	6.70
Delaware Operations Centre	93,690.10	514.10	25.80
Denfield Operations Centre	175,875.50	1,048.10	52.70
Ilderton Arena & Curling Club	655,823.40	1,643.20	82.60
Ilderton Community Centre	51,847.20	343.40	17.30
Ilderton Firehall	16,072.80	187.10	9.40

Ilderton Wastewater Treatment Facility	590,789.40	701.50	35.30
Komoka Community Centre	51,043.50	585.20	29.40
Komoka Wastewater Treatment Facility	690,040.10	37.50	1.90
Municipal Office	82,043.50	352.90	17.70
Komoka Wellness & Recreation Complex	2,008,460.10	5,438.90	273.50

2021			
OPERATION NAME	ELECTRICITY (kWh)	NATURAL GAS (GJ)	DIRECT GHG EMISSIONS (Metric Tons CO₂e)
Arva Fire Station	22,489.50	119.10	6.00
Bryanston Fire Station/Community Centre	20,431.00	259.70	13.10
Coldstream Community Centre	69,540.50	57.10	2.90
Coldstream Fire Station (NET ZERO)	-	-	-
Delaware Community Centre	29,971.40	311.60	15.70
Delaware Fire Station	8,799.90	134.80	6.80
Delaware Operations Centre	106,299.20	554.50	27.90
Denfield Operations Centre	209,383.90	1,154.60	58.00
Ilderton Arena & Curling Club	490,444.40	2,353.20	118.30

Ilderton Community Centre	22,726.30	525.90	26.40
Ilderton Firehall	16,552.20	188.10	9.50
Ilderton Wastewater Treatment Facility	614,266.60	736.20	37.00
Komoka Community Centre	40,875.50	579.40	29.10
Komoka Wastewater Treatment Facility	592,315.70	51.30	2.60
Municipal Office	69,540.50	341.30	17.20
Komoka Wellness & Recreation Complex	1,649,556.30	6,895.10	346.70

2020			
OPERATION NAME	ELECTRICITY (kWh)	NATURAL GAS (GJ)	DIRECT GHG EMISSIONS (Metric Tons CO2e)
Arva Fire Station	15,427.00	96.90	4.90
Bryanston Fire Station/Community Centre	17,789.00	214.70	10.80
Coldstream Community Centre	60,741.00	69.10	3.50
Coldstream Fire Station (NET ZERO)	-	-	-
Delaware Community Centre	23,052.00	318.20	16.00
Delaware Fire Station	7,284.00	144.50	7.30
Delaware Operations Centre	81,892.00	232.80	11.70

Denfield Operations Centre	191,859.00	1,342.20	67.50
Ilderton Community Centre	16,550.00	257.40	12.90
Ilderton Arena & Curling Club	407,364.00	1,610.70	81.00
Ilderton Firehall	15,363.00	214.20	10.80
Ilderton Wastewater Treatment Facility	496,079.90	601.40	30.20
Komoka Community Centre	20,274.00	838.40	42.20
Komoka Wastewater Treatment Plant	578,395.90	13.80	0.70
Municipal Office	60,741.00	379.90	19.10
Komoka Wellness & Recreation Complex	1,434,591.10	5,527.60	277.90

2019			
OPERATION NAME	ELECTRICITY (kWh)	NATURAL GAS (GJ)	DIRECT GHG EMISSIONS (Metric Tons CO2e)
Arva Fire Station	21,525.70	121.60	6.10
Bryanston Fire Station/Community Centre	26,280.70	249.00	12.50
Coldstream Community Centre	85,042.90	236.40	11.90
Coldstream Fire Station (NET ZERO)	1.00	-	-
Delaware Community Centre	48,033.40	487.50	24.50

Delaware Fire Station	9,933.00	151.10	7.60
Delaware Operations Centre	88,136.90	298.30	15.00
Denfield Operations Centre	231,979.30	1,379.00	69.30
Ilderton Community Centre	40,211.10	312.90	15.70
Ilderton Arena & Curling Club	554,279.90	1,682.60	84.60
Ilderton Firehall	19,152.40	203.40	10.20
Ilderton Wastewater Treatment Facility	535,500.00	-	-
Komoka Community Centre	70,596.30	702.10	35.30
Komoka Wastewater Treatment Plant	414,599.90	-	-
Municipal Office	85,042.90	236.40	11.90
Komoka Wellness & Recreation Complex	1,943,003.20	5,631.90	283.20

2018			
OPERATION NAME	ELECTRICITY (kWh)	NATURAL GAS (GJ)	DIRECT GHG EMISSIONS (Metric Tons CO2e)
Arva Fire Station	18,654.60	139.60	7.00
Bryanston Fire Station/Community Centre	28,369.60	305.20	15.30
Coldstream Community Centre	5,053.80	283.90	14.30

Coldstream Fire Station	5,676.50	-	-
Delaware Community Centre	46,627.20	551.70	27.70
Delaware Fire Station	8,961.50	175.30	8.80
Delaware Operations Centre	68,880.00	658.80	33.10
Denfield Operations Centre	181,597.90	1,316.00	66.20
Ilderton Community Centre	31,600.00	321.70	16.20
Ilderton Arena & Curling Club	598,229.90	1,624.80	81.70
Ilderton Firehall	16,237.10	199.10	10.00
Ilderton Wastewater Treatment Facility	400,080.00	-	-
Komoka Community Centre	59,280.00	761.20	38.30
Komoka Wastewater Treatment Plant	409,559.90	62.00	3.10
Municipal Office	5,053.80	283.90	14.30
Komoka Wellness & Recreation Complex	1,849,818.10	5,053.80	254.10

2017

OPERATION NAME

ELECTRICITY
(kWh)

NATURAL GAS
(GJ)

DIRECT GHG
EMISSIONS (Metric
Tons CO2e)

Arva Fire Station	20,606.00	127.90	6.40
Bryanston Fire Station/Community Centre	22,949.00	240.80	12.10
Coldstream Community Centre	2,400.00	61.50	3.10
Coldstream Fire Station	13,491.00	106.10	5.30
Delaware Community Centre	43,525.00	476.50	23.90
Delaware Fire Station	10,592.00	136.20	6.80
Delaware Operations Centre	73,680.00	483.30	24.20
Denfield Operations Centre	196,005.00	392.50	19.70
Ilderton Community Centre	45,520.00	261.20	13.10
Ilderton Arena & Curling Club	711,240.00	1,632.90	81.90
Ilderton Firehall	15,319.00	155.80	7.80
Ilderton Wastewater Treatment Facility	544,079.90	-	-
Komoka Community Centre	45,520.00	631.60	31.70
Komoka Wastewater Treatment Plant	45,520.00	57.30	2.90
Municipal Office	21,629.00	246.10	12.30
Komoka Wellness & Recreation Complex	2,009,461.70	6,225.10	312.30

OPERATION NAME	ELECTRICITY (kWh)	NATURAL GAS (GJ)	DIRECT GHG EMISSIONS (Metric Tons CO2e)
Arva Fire Station	17,073.60	144.20	7.20
Bryanston Fire Station/Community Centre	24,326.90	238.60	12.00
Coldstream Community Centre	1,280.00	83.10	4.20
Coldstream Fire Station	14,084.10	106.60	5.30
Delaware Community Centre	44,570.40	443.20	22.20
Delaware Fire Station	10,632.00	138.90	7.00
Delaware Operations Centre	91,200.00	541.00	27.10
Denfield Operations Centre	162,681.80	12.50	0.60
Ilderton Community Centre	36,480.00	240.20	12.00
Ilderton Arena & Curling Club	695,039.90	1,487.90	74.60
Ilderton Firehall	17,976.60	162.80	8.20
Ilderton Wastewater Treatment Facility	541,199.90	-	-
Komoka Community Centre	57,280.00	554.90	27.80
Komoka Wastewater Treatment Plant	456,359.90	-	-
Municipal Office	12,522.40	343.00	17.20
Komoka Wellness & Recreation Complex	2,271,723.80	5,095.80	255.50

2015			
OPERATION NAME	ELECTRICITY (kWh)	NATURAL GAS (GJ)	DIRECT GHG EMISSIONS (Metric Tons CO2e)
Arva Fire Station	14,360.00	193.20	9.70
Bryanston Fire Station/Community Centre	23,447.00	268.20	13.40
Coldstream Community Centre	1,280.00	91.20	4.60
Coldstream Fire Station	10,236.00	150.40	7.50
Delaware Community Centre	46,762.00	597.90	29.90
Delaware Fire Station	10,415.00	186.20	9.30
Delaware Operations Centre	125,839.90	663.30	33.20
Denfield Operations Centre	169,856.00	-	-
Ilderton Community Centre	31,752.00	276.40	13.80
Ilderton Arena & Curling Club	665,279.90	1,623.60	81.20
Ilderton Firehall	10,883.00	211.20	10.60
Ilderton Wastewater Treatment Facility	550,560.00	-	-
Komoka Community Centre	51,680.00	686.10	34.30
Komoka Wastewater Treatment Plant	443,339.90	-	-

Municipal Office	11,680.00	396.50	19.80
Komoka Wellness & Recreation Complex	2,233,745.20	6,576.80	328.90

ⁱ <https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/details/page.cfm?Lang=E&SearchText=middlesex%20centre&DGUIDlist=2021A00053539033&GENDERlist=1&STATISTIClist=1&HEADERlist=0>