Item 14.j.1
Public Works Department
June 20, 2024

To: **David Creery, Chief Administrative Officer**

From: **Dan Locke, Director of Public Works**

Re: **2025-2029 Energy Conservation Demand Management Plan (CDM)**

AIM

To obtain Council's approval of the 2025-2029 Energy Conservation Demand Management (CDM) Plan.

BACKGROUND

Under the Electricity Act the Provincial Government requires public agencies, including municipalities, to report on their energy consumption and greenhouse gas (GHG) emissions annually and to develop and implement CDM Plans every five years.
The 2025-2029 CDM Plan is Woodstock's third Plan under the legislation. The 2020-2024 Plan was Woodstock's second plan approved by Council June 20th,2019. The City's first Plan for 2014-2019 was approved by Council on June 19th, 2014.

The new CDM Plan must be completed and posted on the City's website by July 1st, 2024.

COMMENTS

Woodstock's 2025-2029 CDM Plan aims to provide the next phase for implementing improvements to facilities which reduces energy consumption, greenhouse gas emissions, and their associated costs. This plan establishes goals and objectives for facilities for the next five (5) years in conjunction with the City's capital budget process. The purposed Plan is attached to this report for Council's review.

RECOMMENDATION

That Woodstock City Council approve the 2025-2029 Energy Conservation Demand Management Plan.

Authored by: Angela Hills, Public Work Environmental Technologist

Approved by: Dan Locke, C.E.T., Director of Public Works

Approved by: David Creery, P.Eng., MBA, Chief Administrative Officer

The City of Woodstock's 2025-2029 Energy Conservation and Demand Management Plan

City of Woodstock

1.0 Table of Contents

2.0 Introduction

The City of Woodstock's (the City) Energy Conservation and Demand Management (CDM) plan has been developed to help better understand, track, manage and reduce energy consumption. The Ontario Provincial Government requires public agencies, including municipalities, to report on their energy consumption and greenhouse gas (GHG) emissions annually and to develop and implement CDM plans every five years. Our 2025-2029 CDM plan is the third plan to be published under the legislation. The two previous Plans 2020-2024 CDM plan and 2014-2019 CDM plan, and the required annual energy consumption and GHG emissions reporting can be found on the City's website.

Woodstock's 2025-2029 CDM plan aims to continue to provide the next phase for implementing improvements to facilities which reduce energy consumption, greenhouse gas emissions, and their associated costs. This plan establishes goals and objectives for the next five (5) years in conjunction with the capital budget and planning process.

2021 the reporting platform changed the way these numbers are calculated and become available. O.Reg. 25/23 reporting obligations require an annual report of usage numbers, but to have normalized data calculated monthly submissions are required. We have included two different comparisons of Energy Intensity for this reason.

3.0 The 2015-2019 CDM Plan, & 2020-2024 CDM Plan & the 2025-2029 CDM Plan

The City focused on RTU replacements and installation of building automation systems (BAS). RTU replacements help to conserve energy by using high efficiency electric motors and variable frequency drive, adding ventilation control which cuts down the intake of fresh air when it is not needed, including programmable thermostats for set-back times, and improving efficiency for the natural gas burners. BAS computer control systems of all HVAC equipment in a building ensures maximum system efficiency and performance levels are obtained.

Action Items

The following outlines the measures and actions the City planned to put in place at various facilities from 2015-2019 outline in our first CDM, and our 2020-2024 CDM plan to conserve and reduce energy consumption.

Community Complex

Action Item	Forecast of the expected results	Savings estimate	Estimated time	Complete
RTU #5 and RTU #7 replacement	2,364 kWh reduction per year per unit	$2,094 per year ($236 per unit for	20 years	RTU #5 complete

Action Item	Forecast of the expected results	Savings estimate	Estimated time	Complete
(estimated cost of $4,375)	811 m3 reduction per year per unit	electrical savings and $811 per unit for natural gas savings)		RTU #7 complete
RTU #9 replacement (estimated cost of $8,750)	4,893 kWh reduction per year 1,281 m3 reduction per year	$909 per year ($489 per unit for electrical savings and $420 per unit for natural gas savings)	20 years	Complete
RTU #10 and RTU #11 replacement (estimated cost of$33,500)	16,975 kWh reduction per year per unit 4,877 m3 reduction per year per unit	$6,592 per year ($1,697 per unit for electrical savings and $1,599 per unit for natural gas savings)	20 years	RTU #10 complete RTU #11 complete
Building Automation System (estimated cost of $43,000)	37,785 kWh reduction per year 19,548 m3 reduction per year	$10,229 per year ($3,778 for electrical savings and $6,451 for natural gas savings	25 years	Complete

Police Station

Action Item	Forecast of the expected results	Savings estimate	Estimated time	Complete
Energy efficient lighting replacement	93,900 kWh reduction per year	$9,390 per year	25 years	Complete

Southgate Centre

Action Item	Forecast of the expected results	Savings estimate	Estimated time	Complete
Southgate Center RTU replacement – every year until 2018	2,200 kWh reduction per year per unit 900 m3 reduction per year per unit	$450 per year *per unit*	20 years	Complete

City wide Action Items

Action Item	Forecast of the expected results	Savings estimate	Estimated time	Complete
Art Gallery Replace RTU with a more efficient unit, $75,000	Electrical savings 16,000 kWh/year, 12 W Gas savings 4,600 m3/year	Electrical savings $1,600/year Gas savings $730/year	20 years	Complete
Police Station Replace RTU with a more efficient unit $30,000	Electrical savings 4,800 kWh/year, 3.5 kW Gas savings 1250 m3/year	Electrical savings $480/year Gas savings $200/year	20 years	Complete
Police Station HVAC automation System $35,000	Facility runs 24 hours so only minor savings expected		20 years	Complete
Library Replace boiler with high efficiency unit, $80,000	Gas savings 4000 m3/year	Gas savings $640/year	25 years	Complete
City Hall HVAC automation System, $100,000	Electrical savings 20,000 kWh/year Gas savings 4800 m3/year	Electrical savings $2,000/year Gas savings $750/year	20 years	Complete
Cowan Park Indoor sports field LED lighting retrofit and controls, $75,000	Unknown	Electrical savings $17,000/year for lights and $9,000/year for controls	15 years	Complete
Market Theatre	Electrical savings 17,000 kWh/year, 12 kW	Electrical savings $1,700	20 years	Complete

Action Item	Forecast of the expected results	Savings estimate	Estimated time	Complete
Replace RTU with a more efficient unit, $115,000	Gas savings 4,500 m3/year	Gas savings $720		
Van Ave Fire Hall HVAC Replacement, $40,000	Electrical savings 2,300 kWh/year, 1.5 kW Gas savings 800 m3/year	Electrical savings $250/year Gas savings $150/year	25 years	Not Complete
Community Complex Replace RTUs with more efficient units, $30,000 each year	Electrical savings 4,800 kWh/year, 3.5 kW Gas savings 1,200 m3/year	Electrical savings $480/year Gas savings $200/yea	20 years	Complete
Southside Pool HVAC automated controls, $28,000	Electrical savings 40,000 kWh/year Gas savings 13,000 m3/year	Electrical savings $4,000/year Gas savings $2,000/year	20 years	Complete
Southside Pool LED lighting retrofit $15,000	Electrical savings 40,000 kWh/year	Electrical savings $4,000/year	15 years	Complete

Above and Beyond the Plan

In addition to the above noted energy conservation measures, the City also completed the following items over the course of the last ten (10) years and recorded in the 2020-2024 plan:

- Market Centre – installed West End HVAC building control system (2018)
- 447 Hunter Street – Window replacement (2018)

In addition to the future retro fits in the 2020-2024 plan the following have been completed:

- Engineering Office replaced a RTU with a more efficient unit (2023).

Community Complex

One of the goals and objectives of the 2014-2019 CDM plan was to:

- Use the information obtained by the comprehensive energy audit conducted at the City District Community Complex in 2013 to reduce the energy consumption of the facility by 5%.

Most of the planned items for 2014-2019 were focused on the Community Complex. In the 2020-2024 plan we showed a comparison chart for 2012-2016, the measures taken helped to reduce GHG consumption by 40% and the energy intensity by 24%. We have updated this chart below to include 2020 numbers from the most up to date normalized data. Our numbers now show a decrease GHG consumption by 7%, and energy intensity decreased by 8% comparing 2012 to 2020 numbers.

Community Complex	2012		2016		2020	
	GHG (kg)	Energy Intensity (eWh / HDD / sqft)	GHG (kg)	Energy Intensity (eWh / HDD / sqft)	GHG (kg)	Energy Intensity (eWh / HDD / sqft)
Goff Hall	36932.50	11.067	22233.20	8.422	34420.52	10.177
Gym Club/Dance Studio	66893.91	11.067	40269.83	8.422	62343.6	10.177
Arena	656381.50	11.042	396298.06	8.422	613534.02	10.177

Bus Storage Facility and Fire Halls

One of the goals and objectives of the 2014-2019 CDM plan was to:

- Reduce energy consumption by 10% in the top 3 facilities identified in the benchmark comparison and conduct energy audits on each facility to help identify areas for conservation and reduction.

The facilities to be audited were the Bus Storage, the Parkinson Road Fire Hall and the Vansittart Avenue Fire Hall. An energy audit was performed at each facility in 2015. The audits were meant to help gain a better understanding of energy consumption and identify opportunities for savings and efficiency improvements to work towards the goal of a 10% reduction in consumption in each facility. The recommendations of the energy audits were as follows:

Bus Storage

- An interior and exterior lighting retro fit (complete)
- Setback/programmable thermostats (complete)

- Lowering the hot water temperature on the power washer (complete)
- Replacement of the electrical heating with heat pumps (not complete and not currently in the 5-year capital budget)

Parkinson Road Fire Hall

- An interior and exterior lighting retro fit (complete)
- Setback/programmable thermostats (complete)
- Replacement of the electrical heating with heat pumps (not complete)

Vansittart Avenue Fire Hall

- An interior and exterior lighting retro fit (complete)
- Setback/programmable thermostats (complete)
- Replacement of the AC unit (not complete)

The implemented recommendations of the audits had no significant impact on energy and GHG savings and reductions, as can be seen in the 2012 to 2016 comparison chart below. As such, energy audits on facilities were no longer goals and objectives in the 2020-2024 CDM plan. However, energy audits will be considered in the future if major renovations are performed on a facility.

	2012		2016	
	GHG (kg)	Energy Intensity (eWh/HDD/sqft)	GHG (kg)	Energy Intensity (eWh/HDD/sqft)
Bus Storage	86386.89	13.000	89000.81	12.440
Fire Dept – Parkinson Road	45385.44	7.637	35144.58	7.473
Fire Dept – Vansittart Ave.	29719.05	9.873	31155.07	10.557

4.0 Energy Consumption

A requirement of the legislation is to include the annual energy consumption data for City facilities for the last year for which complete information is available for a full year. The consumption data for 2021 is found below:

Operation Name	Address	Total Square Footage	Electricity (kWh)	Natural Gas (Cubic Metre)
Bus Storage	65 Clarke St	11,790	35,343	35,247
City Hall	500 Dundas St	23,996	276,073	28,541
Civic Centre Arena	895 Nellis St	28,529	180,135	15,5586

Operation Name	Address	Total Square Footage	Electricity (kWh)	Natural Gas (Cubic Metre)
Community Complex Goff Hall	381 Finkle St	7,486	113,454	12,354
Community Complex Gym Club	381 Finkle St	13,559	205,471	22,374
Community Complex Arena	381 Finkle St	133,435	2,022,354	220,179
Engineering Garage	944 James St	20,018	240,766	48,016
Engineering Offices	944 James St	8,600	103,433	20,628
Fire Department	251 Vansittart Ave	5,868	49,455	15,823
Fire Department	1203 Parkinson Rd	19,369	162,396	22,166
Lion's Pool	245 Vansittart Ave	2,567	13,409	5,872
Market Centre	22 Reeve St	25,200	79,407	17,513
Park's Offices	192 Wellington St S	1,920	8,448	3,134
Park's Workshop	192 Wellington St S	7,320	32,208	11,947
Recycling Facilities	63 Clarke St S	11,520	39,037	27,817
Small Business Centre	453 Dundas St	5,225	16,779	1,826
Southside Aquatic Centre	315 Finkle St	16,154	409,534	96,765
Woodstock Art Gallery 4th flr	449 Dundas St	6,763	2,488	3,569
Woodstock Art Gallery	449 Dundas St	26,976	198,765	14,225
Woodstock Museum	466 Dundas St	13,628	282,615	16,028
Woodstock Police Department	615 Dundas St	33,712	415,566	38,096
Woodstock Public Library	445 Hunter St	24,470	186,688	27,355
Work Storage	944 James St	6,461	50,997	4,522
Cowan Park	895 Ridgewood Dr.	65,757	473,118	56,978

In accordance with O.Reg. 25/23 our CDM plan to be made publicly available, the City will publish the current CDM 2024-2029 Plan on or before July 1, 2024, on the City's Website and hard copies available upon request.

Energy Intensity

The chart below shows the normalized data for Energy Intensity (eWh/HDD/sqft) for each facility from 2012 to 2020. Normalized data for 2021 is unavailable due to the changes on the reporting portal. The second chart has Site Energy Use Intensity (kBtu/ft2) from 2016 to 2021. The changes are reflected in the end column.

Energy Intensity (eWh/HDD/sqft) % Change From 2012 to 2020

	2012	2013	2014	2015	2016	2017	2018	2019	2020	% Change 2012-2020
Bus Storage	13.00	12.12	12.71	14.10	12.44	12.37	13.04	14.09	12.89	-0.8
City Hall	6.68	6.08	5.53	6.90	6.90	6.81	7.51	6.59	11.46	71.6
Civic Centre Arena	6.69	5.41	5.22	6.06	5.99	6.58	5.93	5.84	4.03	-39.8
Community Complex Goff Hall	11.07	9.00	8.55	8.78	8.422	7.22	9.02	9.65	10.18	-8.0
Community Complex Gym Club	11.07	9.00	8.55	8.78	8.42	7.22	9.02	9.65	10.18	-8.0
Community Complex Arena	11.04	9.00	8.55	8.79	8.42	7.22	9.02	9.65	10.18	-7.8
Engineering Building Garage	7.77	7.37	7.39	8.04	6.79	7.11	6.18	7.56	10.27	32.1
Engineering Building Offices	7.77	7.37	7.39	8.04	6.79	7.11	6.13	7.56	9.07	16.7
Fire Department-Parkinson	7.64	7.53	7.39	6.77	7.47	6.7	7.16	5.44	5.71	-25.2
Fire Department Van Ave	9.87	10.09	9.93	7.17	10.56	10.27	10.42	10.2	9.94	0.7
Lion's Pool	4.48	6.65	8.58	8.71	13.94	10.27	7.45	5.48	13.2	194.5
Market Centre	2.79	2.56	2.35	2.41	2.62	2.67	3.2	3.18	2.84	2.0
Park's Offices	-	-	7.59	6.68	5.3	4.88	3.28	4.81	5.7	-24.9
Park's Workshop	6.09	5.69	7.59	6.68	5.3	4.88	3.28	4.81	5.7	-6.5
Recycling Facilities	6.05	5.93	6.28	7.38	5.3	6.31	6.11	7.83	8.22	36.0
Small Business Centre	1.85	1.91	2.02	2.03	2.17	2.24	2.59	2.42	2.31	25.0
Southside Aquatic Centre	28.5	23.81	22.58	25.34	23.8	29.34	29.91	30.55	25.23	-11.5
Storage Facilities	1.75	1.39	0.19	0.22	0.29	-	-	-	-	-83.3
Woodstock Art Gallery	5.66	4.18	3.37	3.97	4.54	4.41	4.57	5.04	3.34	-41.1
Woodstock Art Gallery-4thflr	1.77	1.39	1.41	1.56	1.32	1.18	1.22	0.09	1.33	-25.1
Woodstock Museum	13.6	11.96	10.92	10.55	10.05	10.55	11.69	11.38	16.63	22.3
Woodstock Police Department	9.81	9.16	8.34	9.15	9.62	10.51	11.1	6.78	7.28	-25.8
Woodstock Public Library	8.51	6.72	6.3	6.98	6.66	6.61	7.82	8.18	8.59	0.6
Work Storage	7.95	8.88	9.14	10.05	7.58	9.38	10.56	11.06	11.25	41.5
Cowan Park	-	-	-	-	-	-	-	4.24	5.97	40.9

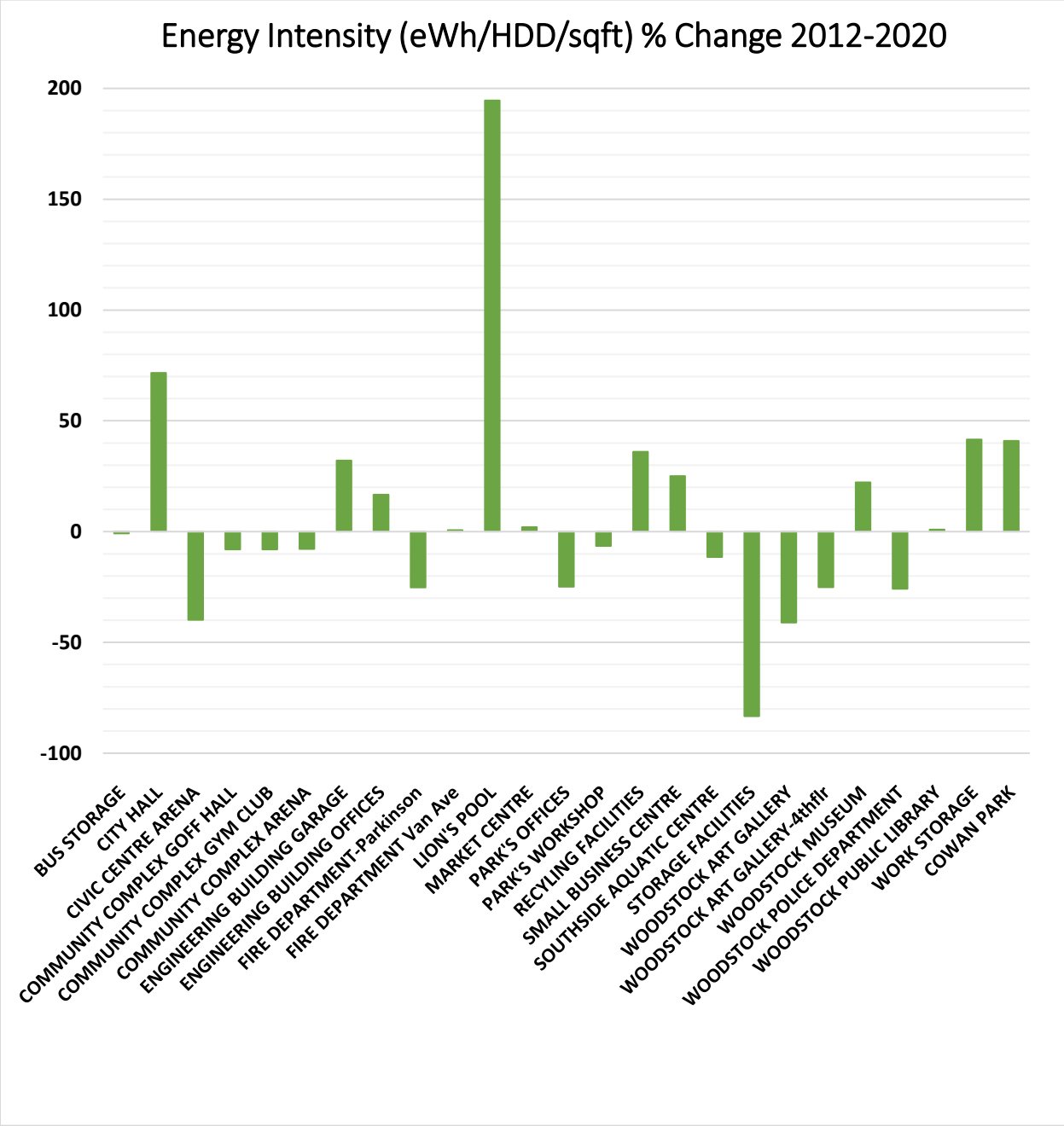

Figure 1 – Energy Intensity (eWh/HDD/sqft) % Change 2012 – 2020

The largest decrease in Energy Intensity was the Storage Facilities, with 83% change. The largest increase was the Lion's Pool, with a 195% change when comparing 2012 values to 2020.

Site Energy Use Intensity (kBtu/ft2) % Change From 2016 to 2021

	2016	2017	2018	2019	2020	2021	% change 2016-2021
Bus Storage	155.9	154.5	176.3	193.6	161.3	119.1	-23.6
City Hall	86.3	84.9	101.3	90.3	143.2	82.6	-4.3
Civic Centre Arena	74.8	82	80	80.1	50.3	41.4	-44.7
Community Complex Goff Hall	105.3	90	121.8	132.3	127.1	111.8	6.2
Community Complex Gym Club	105.3	90	121.8	132.3	127.1	111.8	6.2
Community Complex Arena	105.3	90	121.8	132.3	127.1	111.8	6.2
Engineering Building Garage	84.9	88.7	82.7	103.8	128.3	128.4	51.2
Engineering Building Offices	84.9	88.7	82.7	103.8	128.3	128.4	51.2
Fire Department-Parkinson	93.5	83.5	96.7	74.6	71.4	70.3	-24.8
Fire Department-Van Ave	132.2	120.3	140.9	140.1	124.3	127	-3.9
Lion's Pool	174.5	128.2	100.6	75.3	165	101.1	-42.1
Market Centre	32.8	33.3	43.2	43.7	35.5	36.1	10.1
Park's Offices	66.3	60.9	44.3	66	71.2	74.5	12.4
Park's Workshop	66.3	60.9	44.3	66	71.2	74.5	12.4
Recycling Facilities	66.4	78.8	82.5	107.6	102.8	99.5	49.8
Small Business Centre	25	25.9	31.8	31	26.5	23.7	-5.2
Southside Aquatic Centre	1070.2	1315.1	1450.3	1506	1131.9	1093.8	2.2
Storage Facilities	-	-	-	-	-	-	-
Woodstock Art Gallery	56.7	54.9	61.5	69	41.6	44.3	-21.9
Woodstock Art Gallery-4thflr	16.5	14.8	16.5	-	16.6	20.5	24.2
Woodstock Museum	125.6	131.5	157.7	156.1	207.7	113.6	-9.6
Woodstock Police Department	120.3	131	149.8	92.9	90.9	83.2	-30.8
Woodstock Public Library	83.3	82.4	105.6	112.2	107.4	66.8	-19.8
Work Storage	94.9	117.1	142.7	151.9	120.7	108.8	14.6

	2016	2017	2018	2019	2020	2021	% change 2016-2021
Cowan Park	-	-	-	58.1	74.5	56.1	-3.4

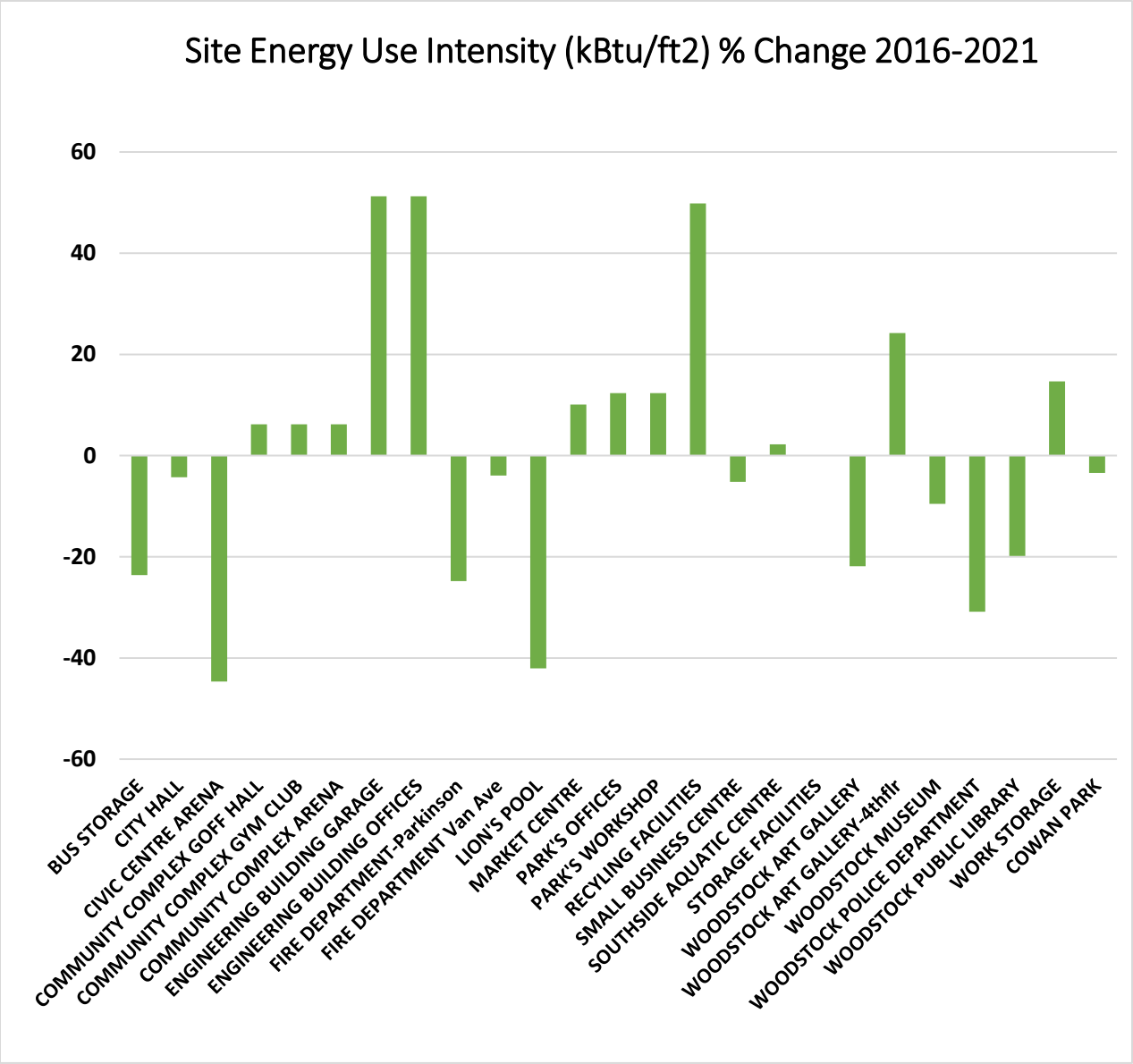

Figure 2 - Site Energy Use Intensity % change from 2016-2021

The largest drops of energy intensity are seen in the Civic Center Arena with a 45% drop, and 42% drop at Lion's Pool. The largest increase is shown at the Engineering Buildings, but it is difficult to truly compare year over year when the building was renovated with additional square footage.

Green House Gas Consumption

The chart below shows the data for GHG (Tonne) consumption for each facility from 2012 to 2021. The first graph showing 2012- 2021 changes and the second changes from 2016-2021.

GHG (Tonne) Consumption % Change from 2012 to 2021

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	% Change 2012-2021	% Change 2016-2021
Bus Storage	86.4	161.6	111.1	112.5	89.0	88.6	103.0	113.6	93.3	69.1	20	22
City Hall	67.0	103.0	60.0	72.6	62.7	58.9	73.7	65.6	130.7	62.9	-6	0
Civic Centre Arena	81.0	4796.9	70.7	75.5	60.0	56.2	67.2	63.2	46.4	35.2	-57	-41
Community Complex Goff Hall	36.9	49.8	30.6	28.0	22.2	16.8	29.7	32.6	34.4	27.0	-27	21
Community Complex Gym Club	66.9	90.1	55.3	50.8	40.3	30.5	53.7	59.1	62.3	49.0	-27	22
Community Complex Arena	656.4	887.0	544.5	499.5	396.3	299.8	528.8	581.3	613.5	482.1	-27	22
Engineering Building Garage	78.7	140.2	91.3	91.8	65.5	65.9	61.9	83.8	93.6	99.5	26	52
Engineering Building Offices	33.8	60.2	39.2	39.4	28.1	28.3	26.6	36.0	33.5	42.8	27	52
Fire Department-Parkinson	45.4	82.9	51.6	39.1	35.1	29.3	42.8	49.7	45.1	47.4	4	35
Fire Department-Van Ave	29.7	1.8	37.4	22.2	31.2	34.4	35.9	35.6	30.8	32.0	8	3
Lion's Pool	5.5	14.3	13.5	11.9	18.4	13.9	10.4	7.2	18.4	11.7	114	-36
Market Centre	32.4	51.9	31.1	28.0	25.3	25.0	37.9	40.5	35.2	36.1	11	42
Park's Offices	-	-	9.9	7.7	5.2	4.7	3.1	5.4	5.8	6.3	-36	20

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	% Change 2012-2021	% Change 2016-2021
Park's Workshop	31.1	56.0	37.7	29.5	20.0	17.8	12.0	20.5	22.0	24.0	-23	20
Recycling Facilities	37.1	559.5	47.7	48.0	30.4	36.5	39.5	56.2	54.9	54.8	48	81
Small Business Centre	4.3	7.3	5.3	5.2	3.7	3.5	5.40	5.1	4.6	4.0	-6	7
Southside Aquatic Centre	234.0	363.6	229.4	231.8	202.0	240.7	267.2	281.1	201.5	198.4	-15	-2
Storage Facilities	0.4	0.3	0.2	0.2	0.2	-	-	-	-	-	-	-
Woodstock Art Gallery	45.92	49.1	37.5	39.0	32.9	24.8	32.3	43.7	26.9	33.1	-28	1
Woodstock Art Gallery 4thflr	13.9	20.8	7.1	7.1	5.4	4.8	5.5	0.1	5.5	7.0	-50	29
Woodstock Museum	82.41	830.2	71.8	59.2	47.0	46.1	62.0	64.0	99.6	38.9	-53	-17
Woodstock Police Department	105.0	171.0	99.9	98.6	87.4	83.3	116.7	95.8	86.0	85.2	-19	-2
Woodstock Public Library	99.8	16.1	83.9	88.7	71.5	66.1	95.3	101.4	104.6	58.1	-42	-19
Work Storage	26.2	55.6	37.9	38.4	25.2	31.7	32.3	41.4	38.7	29.5	12	17
Cowan Park	-	-	-	-	-	-	-	119.0	181.0	123.3	4	-

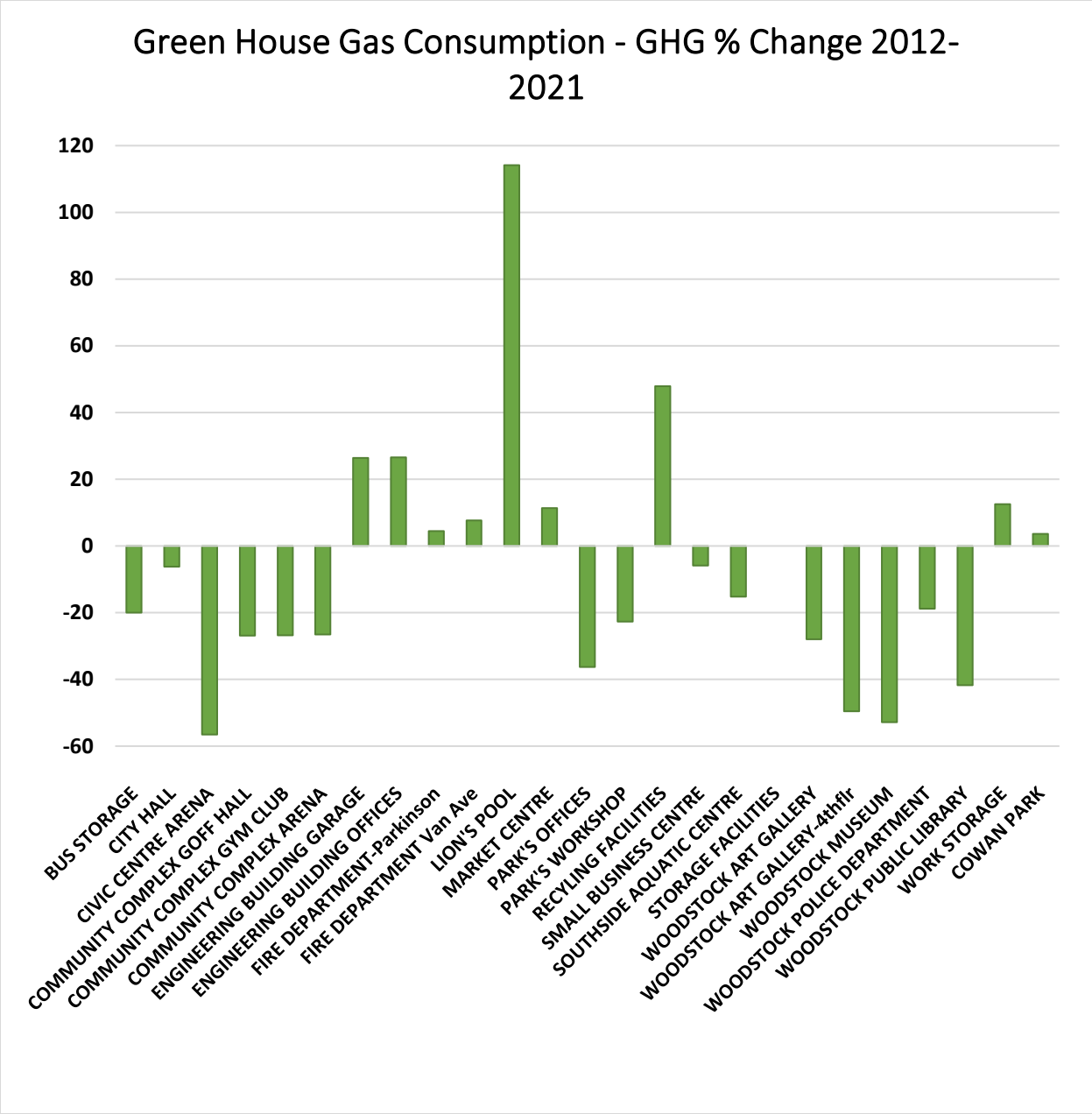

Figure 3 - Green House Gas Comparison (GHG) % change 2012 to 2021

The largest reduction can be seen at the Civic Centre Arena with a decrease of 57% GHG consumption. The highest increase during this time comparison can be seen in Lion's Pool with 114% change.

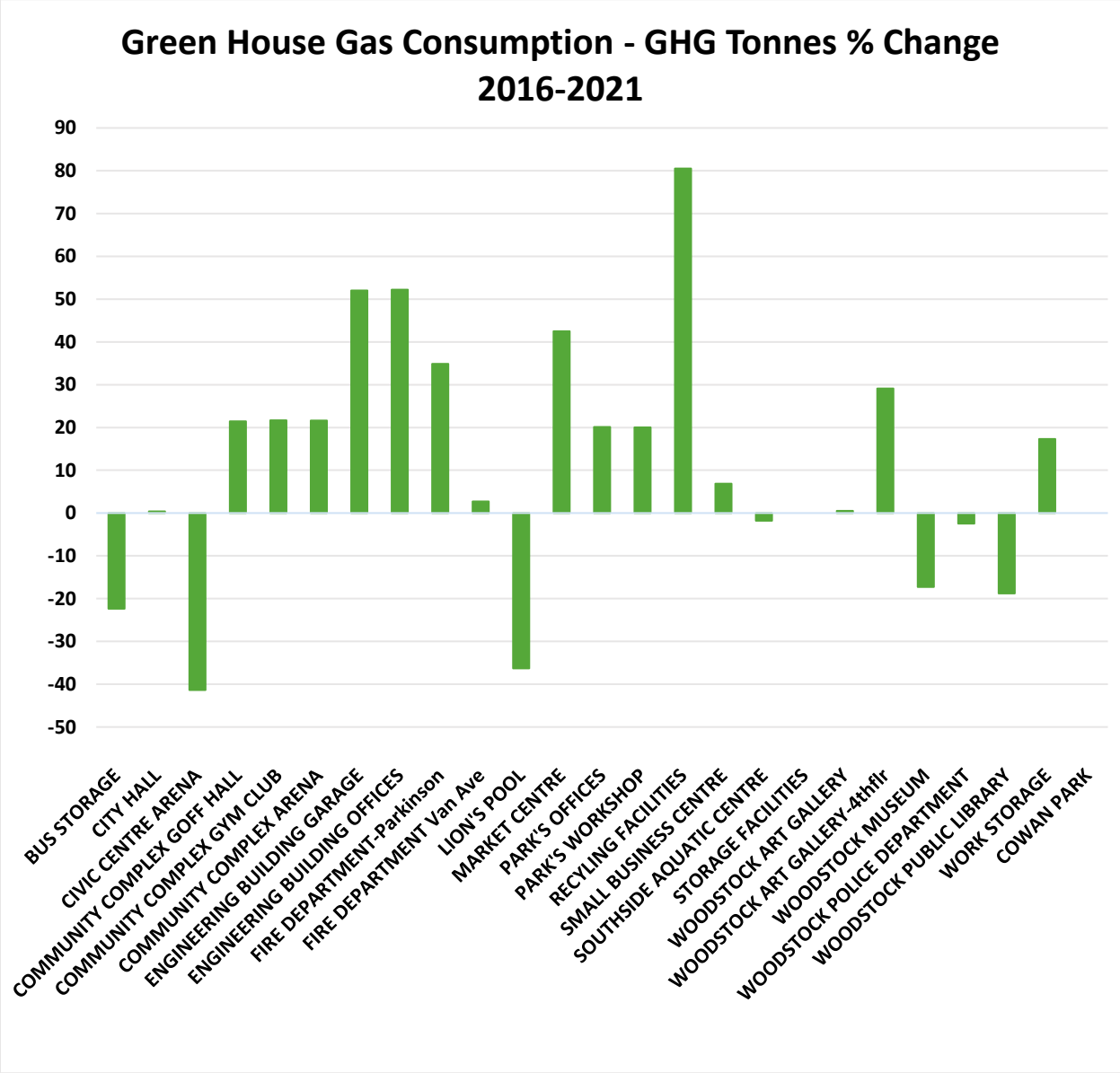

Figure 4 - Green House Gas consumption % change from 2016 to 2021

The largest increases in consumption are seen at the Recycling Facilities with 81%. The Civic Arena had the largest drop with 41% decrease in GHG consumption.

5.0 Goals and Objectives

The City had developed the following goal for conserving and reducing energy consumption and managing demand for energy as part of the 2025-2029 CDM plan.

Continue to improve energy conservation efforts in all City facilities, through the capital budget and planning process. Through implementing improved systems and reviewing new and innovative options.

The City focused and continues to do so, on RTU replacements and installation of automated systems. RTU replacements help to conserve energy by using high efficiency electric motors and variable frequency drive, adding ventilation control which cuts down the intake of fresh air when it is not needed, including programmable thermostats for set-back times, and improving efficiency for the natural gas burners. Automated systems of all HVAC equipment in a building ensures maximum system efficiency and performance levels are obtained. Also, upgrading lighting throughout the City to more energy efficient options.

The 2025-2029 plan will focus on Green Initiatives to continue to strive towards our goals of energy conservation through the capital budget and planning process. The City will continue to implement energy saving measures and take part in Governmental grants and program where feasible. The City will strive for continual improvement towards our energy savings goals.

6.0 The Plan

This section outlines the measures and actions the City will put in place at various facilities over the next five (5) years to conserve and reduce energy consumption and work towards meeting the goals and objectives outlined in this plan.

Action Item and Cost Estimate	Forecast of the Expected Results	Savings Estimate	Estimated Time	Year
Engineering Office Replace RTU with a more efficient unit, $20,000 per year	Electrical savings 3,200 kWh/year, Gas savings 800 m3/year	Electrical savings $320/year Gas savings $128/year	20 years	2024-2026
Community Complex Complex upgrade to LED lights system, $45,000	Minimal savings expected – swapping LEDs for brighter LEDs		10 years	2024

Scheduled Building Projects

Year	Improvements
2025	Cowan Park Roof replacement
2025	Bus Storage Roof Replacement
2024	City Hall Roof Replacement
2024 - 25	Engineering Office Roof Replacement
2025 - 27	Community Complex Roof Replacement
2025	Transit Storage Building Roof Replacement
2025	Library Upper Roof Replacement
2024	Southside Aquatic Centre Roof Replacement
2024	Community Complex sports field lighting systems replacements - exploring options for energy efficiency upgrades.

Year	New Building or Expansions
2024	Public Works Building Expansion
2025	Public Works Building Expansion Cont.
2025	Southside Pool expansion
2026	Cowan Fields Arena (New build) replacing Civic Center Arena (retiring) within 3-5 years
2026	Police Station – New addition
2027	Fire Dept Substation
2028	City Hall Expansion

Staff may consider putting forward to Council, the suggestion in implementing a *No Idling policy for City vehicles*, and signage in City parking areas for staff, contractors, and visitors. The policy and signage would aim is to reduce harmful emissions and reduce gas consumption.

7.0 Renewable Energy

The City supports the expansion of renewable energy and is leading by example. The City currently has a total of 13 solar photovoltaic installations across the City. The chart below outlines the data for each installation as of June 2024. Springbank Ave (2) is owned and operated by Hydro One. The Transit Department is expecting to install 12 new solar panels at bus shelters throughout 2025-2027. In 2024 Transit is to have installed 6 solar panels to power lights at dark bus stop locations. With the possibility of future locations as well.

Location	Installation Date	Lifetime Energy (MWh)	Lifetime Revenue	Environmental Benefits	
				CO2 Emissions Saved (kg)	Equivalent Trees Planted
Commerce Way	7/6/2014	99.08	$ 39,341.09	38,840.91	129.8
Universal Road	7/16/2014	97.1	$ 38,696.29	38,062.01	127.2
Parkinson Road	7/17/2014	95.62	$ 37,179.30	37,482.47	125.26
Keyes Drive	11/1/2013	45.84	$ 39,413.38	17,969.30	60.05
Finkle Street (Complex)	7/17/2014	100.39	$ 40,364.84	39,352.51	131.51
Finkle Street (Aquatics)	7/23/2014	23.6	$ 11,858.53	9,252.47	30.92
Vansittart Avenue	7/24/2014	5.71	$ 32,451.59	2,237.49	7.48
Wellington Street	11/1/2013	59.07	$ 32,430.88	23,156.49	77.39
Springbank Avenue	6/12/2012	113.65	$ 58,186.42	45,549.06	148.88
Main Street	6/28/2012	69.3	$ 45,456.60	27,166.22	90.79
Ingersoll Avenue	4/25/2012	125.52	$ 66,693.70	49,204.72	164.43
Sutherland Drive	4/24/2012	77.66	$ 39,298.54	30,443.51	101.74
Springbank Avenue (2)	4/23/2012	63.62	$ 40,841.66	24,937.60	83.34
	Total	**976.16**	**$ 522,212.82**	**383,654.76**	**1,278.79**

8.0 Senior Management Approval

Once approved by senior management and presented to council, the Plan will be updated in this section. Also, can add any commitments from management or council.

9.0 Conclusion

The City of Woodstock's Energy Conservation and Demand Management plan has been developed so that the City can better understand, manage, conserve and reduce energy consumption. This plan provides a guide for the City to move forward on implementing improvements to facilities that reduce energy consumption and greenhouse gas emissions and their associated costs. The City is committed to the CDM plan and the annual energy consumption data submitted to the Ministry of Energy will continue to be used to track our progress and extrapolate trends within our facilities.