Town of Wasaga Beach
2024 - 2034
Energy Conservation and Demand Management Plan

June 7, 2024

Contents

1. Executive Summary

The purpose of this Energy Conservation and Demand Management Plan (ECDM Plan) is to document and guide the energy performance improvement initiatives for the Town of Wasaga Beach following the completion of comprehensive ASHRAE Level II Energy Audits across 11 Buildings. The Town of Wasaga Beach's Energy Conservation and Demand Management Plan (ECDM Plan) has been designed to meet the requirements of Ontario Regulation 25/23 under the Electricity Act (1998). This regulation requires public agencies develop a five-year ECDM Plan and update it every five years.

This ECDM Plan details the Town's progress towards meeting those goals, and its plans to reduce energy and Greenhouse Gas (GHG) emissions across corporate operations, including:

Facilities and buildings owned and operated by the Town of Wasaga Beach;

- Archives
- Fire Halls 1 & 2
- Library
- Oakview Woods Complex
- Public Works
- Recplex/YMCA
- Town Hall
- Wasaga Sports Park
- Wasaga Stars Arena
- Youth Centre

The ECDM Plan will form the foundation and guide the Town towards conducting business more sustainably with energy conservation, energy efficiency and renewable resources top of mind. The ECDM Plan will be a "living document", and is expected to grow, change and be updated over time. The Town is committed to improving its environmental and economic performance while maintaining and improving service delivery.

1. Ontario Regulation 25/23

In February of 2023, the Provincial Government introduced Ontario Regulation 25/23 (O.Reg. 25/23) under the Electricity Act, 1998. This regulation requires certain public agencies – Municipalities, Municipal Service Boards, School Boards, Post-Secondary Educational Institutions, and Hospitals – to report on their energy consumption and greenhouse gas (GHG) emissions annually. This also mandates that public agencies develop, and update every five (5) years, an Energy Conservation and Demand Management (CDM) Plan. The intent of this regulation is to help the broader public sector (BPS) organizations better understand and report their energy consumption, help benchmark, encourage energy conservation and demand management activities within their organizations, and then ultimately make this information available to its public.

In order to comply with O.Reg. 25/23 – which supersedes the previous O.Reg. 397/11 and O.Reg.507/18 – the Municipality is required to submit annual energy consumption and GHG emissions for each calendar year for facilities that the Municipality owns or leases, that are:

a) The building or facility is heated or cooled and the public agency is issued the invoices and is responsible for making the payments for the building or facility's energy consumption; or

b) The operation is related to the treatment of water or sewage, whether the building or facility is heated or cooled, and the public agency is issued the invoices and is responsible for making the payments for the building or facility's energy consumption.

2. Introduction

The Town of Wasaga Beach has undertaken a strategic initiative to conduct detailed energy audits for a portfolio that spans 150,524 square feet, including properties built from the 1930s to the 2010s. This ECDM Plan is a culmination of these audits and a key tool for future planning. Reducing utility consumption, which currently includes natural gas, electricity, and water for all existing and new developments, is a major priority for the Town of Wasaga Beach.

Both Federal and Provincial governments have set various GHG and energy targets to transition Canada to a low carbon economy. In the Government of Canada's climate strategy, as outlined in the Pan-Canadian Framework on Clean Growth and Climate Change, they have set the following targets:

1. Reduce GHG emissions by 30% below 2005 levels by 2030, and to have a net-zero emissions economy by 2050
2. Generate 90% of electricity from non-emitting sources by 2030
3. Improve building energy efficiency by 3% annually, and implement a Net Zero Energy Ready building code by 2030

In Ontario's Made in Ontario Environment Plan, they have set a GHG emissions targets:

4. Reduce GHG emissions by 30% below 2005 levels by 2030, and to achieve net-zero emissions by 2050.

There is a clear need to reduce overall emissions and to continue to prepare for the Town of Wasaga Beach's climate future. This Energy Conservation and Demand Management Plan (ECDM Plan) sets out the 10-year course for the Town of Wasaga Beach to do just that. The plan is a guideline to helping achieve the goals of the Town but it will be reviewed and remain flexible to ensure it will stay current with industry and municipality developments.

3. Guiding Principles

Seven guiding principles were created to inform decision-making processes, the selection of Energy Conservation Measures (ECMs) to include in the plan, and the overall development and implementation of the ECDM Plan. When developing the various initiatives outlined in this report, the seven guiding principles were used as the primary method of evaluation. The impact of the ECMs on the guiding principles were evaluated and re-evaluated as the ECDM Plan progressed and were used to determine the effectiveness and potential success (or failure) of each initiative.

The relationship between the guiding principles and the initiatives presented has been considered, potential issues (and solutions to these issues) have been identified and have been deemed implementable under these criteria.

1. **Reduction of greenhouse gases**:
   To reduce or eliminate greenhouse gases from the Town of Wasaga Beach's portfolio to align with Municipal, Provincial, and Federal goals.

2. **Reduction in energy consumption**:
   To meet or exceed the energy targets set in the approved Municipal energy management plan.

3. **Minimize operating complexity**:
   To reduce the number of different building systems and equipment across the Town of Wasaga Beach's portfolio.

4. **Integrate a holistic systems perspective when selecting equipment**:
   To assess how new building systems will integrate with existing systems, upgrading building systems when justified, and to assess the performance of buildings as a system.

5. **Tenant impact & staff education**:
   To consider the tenant impact for all projects. Conduct outreach and education efforts throughout a project's lifecycle to gain buy-in and to promote behaviour changes.

6. **Climate change adaptation**:
   To consider future climate patterns and how that will impact buildings and tenants.

7. **Consider conservation as part of all capital projects**:
   In light of the imperative for conservation in capital projects, there is a shift away from the traditional 'replace like-for-like' system replacement methodology. The focus is now on maximizing energy and utility efficiency in each capital project undertaken. This strategy entails evaluating opportunities for upgrading to more energy-efficient systems or components at the time of replacements. The financial viability of this approach becomes apparent when considering the incremental costs associated with energy-efficient upgrades versus standard replacements. An initial investment in more efficient options promises considerable long-term energy savings, aligning both fiscal prudence and environmental stewardship in capital project planning.

4. Energy Management Plan Development Process

Development of the Town of Wasaga Beach's ECDM Plan included completion of ASHRAE Level II energy audits across the Town of Wasaga Beach's entire building portfolio.

This ECMD Plan has been developed to have the Town of Wasaga Beach meet or exceed the 25% energy reduction and 25% GHG reduction targets relative to pre-repair or pre-renewal performance as required as part of CMHC's repair and renewal program funding requirements, while also aligning the Town of Wasaga Beach with Municipal, Provincial, and Federal energy and GHG reduction targets.

This ECDM Plan includes a 10-year project work plan that coincides with the 10-year funding horizon of the CMHC funding and can be implemented between 2024 – 2034 also keeping mind these timelines are subjected to financial constraints or municipal directive.

The evaluation tools used in the development of the ECDM plan included DesignBuilder, RETScreen Expert model, case studies and experience from market research.

5. Baseline Utility Consumption, Costs, and Greenhouse Gas Emissions

The table below outlines the total energy and GHG emissions across the Town of Wasaga Beach's portfolio that was audited by IESC for the 2021 year and will act as the baseline on which energy and GHG reductions will be compared:

Table 1: Total baseline energy consumption, GHG emissions, and energy costs

	2021
Electricity (kWh)	1,311,194
Natural Gas (ekWh)	1,669,951
Total Energy Consumption (ekWh)	2,981,145
GHG Emissions (tCO_2e)	340

Overall, the portfolio can be separated and grouped into different architectural categories.

Community Centers,
Fire Stations,
Offices,
Operations and Recreation Centres

The table below and the figures on the following page show the energy consumption and GHG emissions across each of the Town of Wasaga Beach's assets:

Table 2: Energy consumption and GHG emissions per building

Building	Size	Energy Consumption		GHG Emissions	
	sqft	ekWh	% of total	tCO2e	% of total
Oakview Wood Complex	3,154	216,386	7.26%	15	4.51%
Wasaga Sports Park	1,996	104,688	3.51%	16	4.74%
Wasaga Stars Arena	27,317	931,512	31.25%	107	31.55%
Fire Hall #2	4,137	114,603	3.84%	17	5.12%
Public Works	17,028	433,503	14.54%	56	16.63%
Archives	2,442	59,695	2.00%	10	2.92%
Library	5,057	109,411	3.67%	14	4.06%
Town Hall	17,326	290,711	9.75%	30	8.78%
Fire Hall #1	14,853	236,468	7.93%	25	7.34%
Youth Centre	3,882	61,370	2.06%	8	2.23%
Recplex	53,332	422,799	14.18%	41	12.12%
TOTAL	150,524	2,981,145		340	

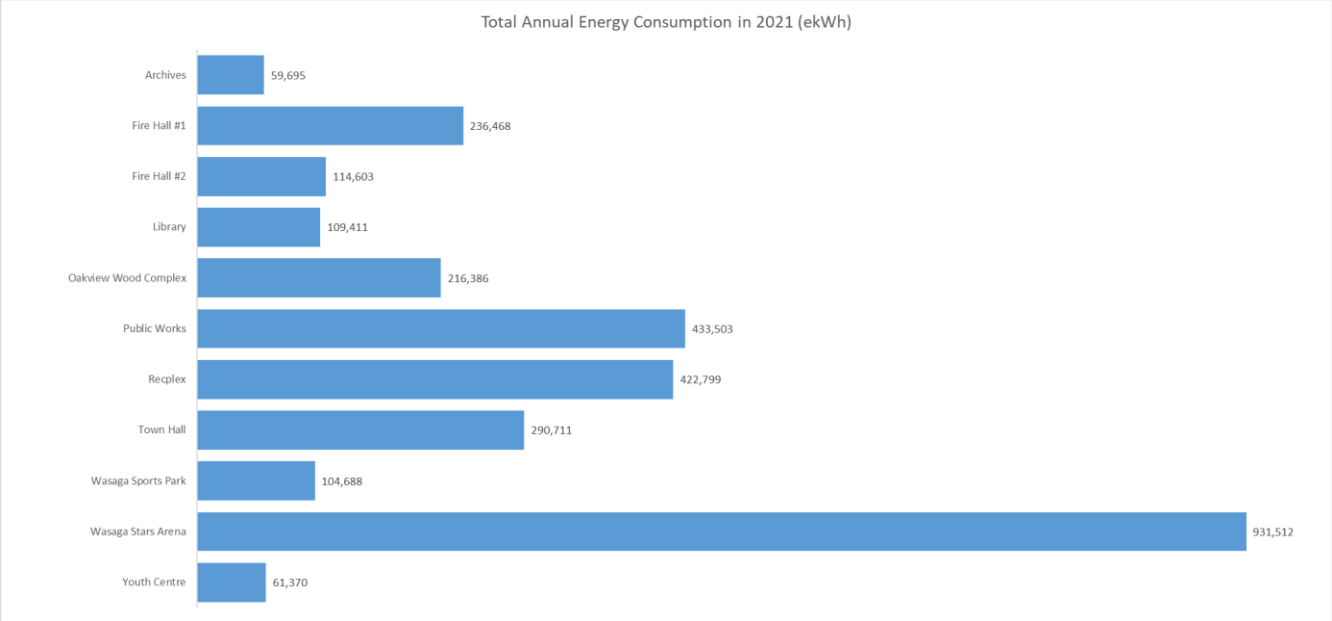


Figure 1: Energy consumption per building

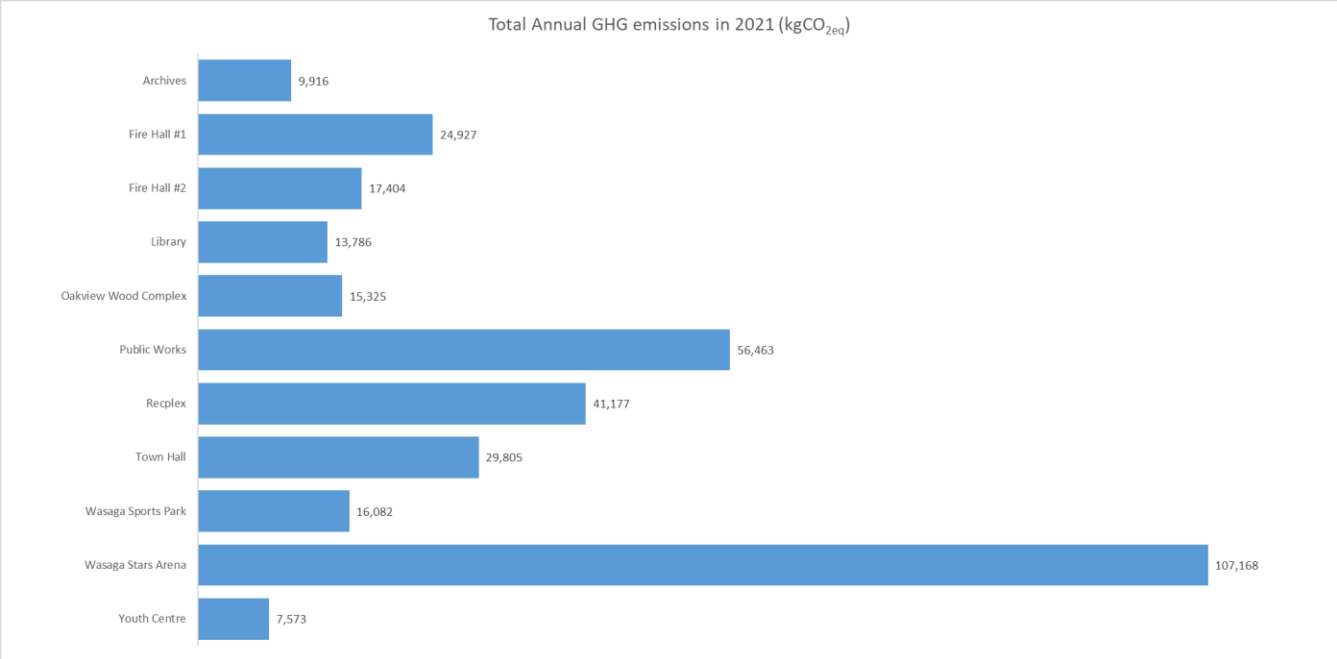


Figure 2: GHG Emissions per building

6. Energy and Greenhouse Gas Intensity

Typically, organizations with a larger number of assets consume more energy, and in general, larger buildings tend to consume more energy. Instead of looking at the absolute energy consumption, Energy Use Intensity (EUI) is an industry accepted metric used to define the total equivalent kilowatt-hours per unit of floor area. This allows the data to be normalized based on total floor area for buildings within a portfolio, or for a portfolio over time, while controlling for building size, or for increases or decreases in the number of assets.

The table below and figures on the following page show the energy, water and GHG intensity on a per building basis across the Town of Wasaga Beach's portfolio of buildings. Highlighting the buildings on an energy, water or GHG intensity basis allows the identification of the high-energy consuming, high-water consuming or high GHG emitting buildings relative to their size. These buildings could be prioritized as they may have the most potential energy or GHG savings.

Table 3: Energy and GHG intensity per building

Building	Size	Energy Intensity		GHG Intensity	
	sqft	ekWh	ekWh/sqft	tCO2e	$kgCO_2e/sqft$
Oakview Wood Complex	3,154	216,386	68.6	15	4.9
Wasaga Sports Park	1,996	104,688	52.4	16	8.1
Wasaga Stars Arena	27,317	931,512	34.1	107	3.9
Fire Hall #2	4,137	114,603	27.7	17	4.2
Public Works	17,028	433,503	25.5	56	3.3
Archives	2,442	59,695	24.4	10	4.1
Library	5,057	109,411	21.6	14	2.7
Town Hall	17,326	290,711	16.8	30	1.7
Fire Hall #1	14,853	236,468	15.9	25	1.7
Youth Centre	3,882	61,370	15.8	8	2.0
Recplex	53,332	422,799	7.9	41	0.8
AVERAGE			28.26		3.4

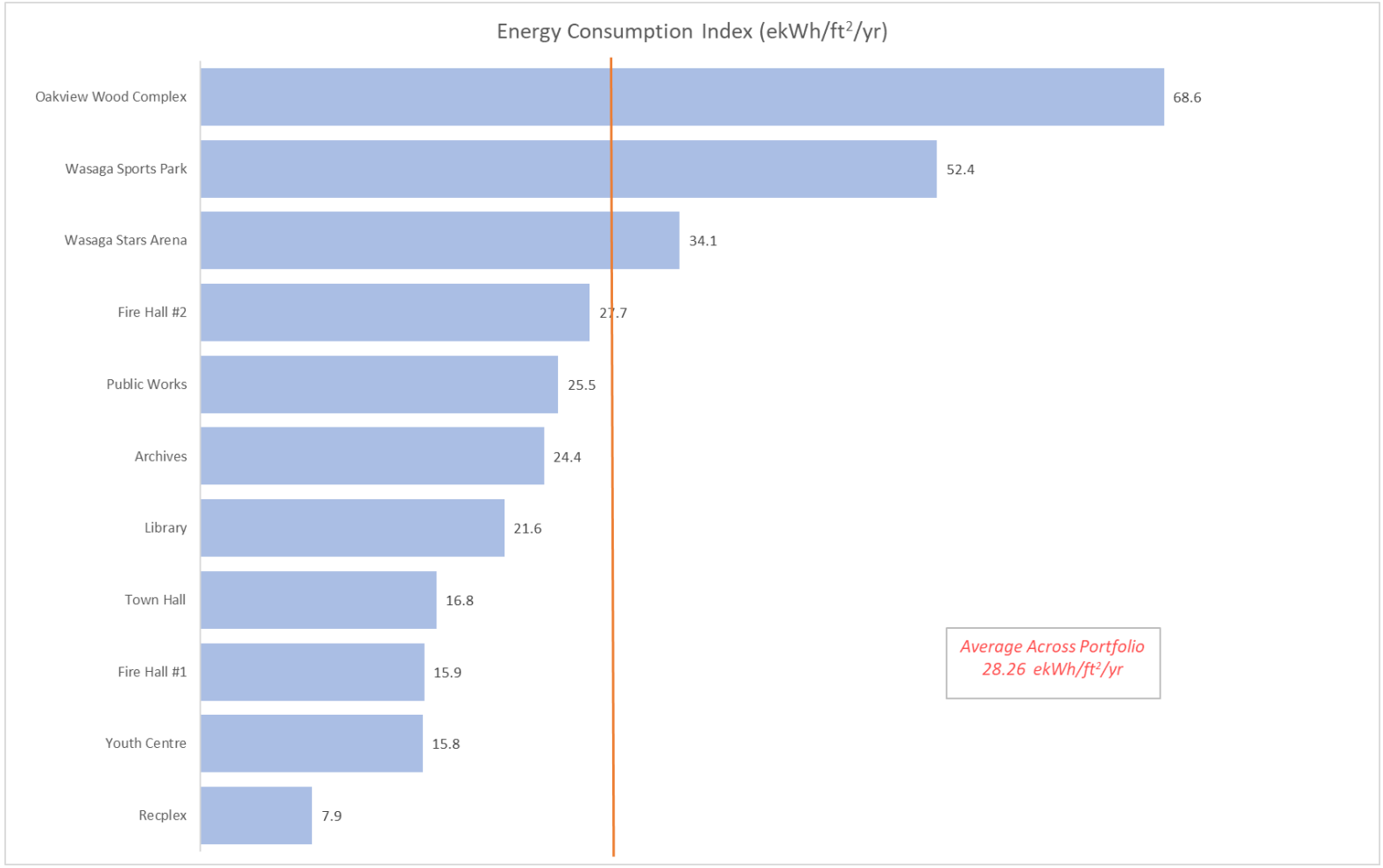


Figure 3: Energy intensity per building

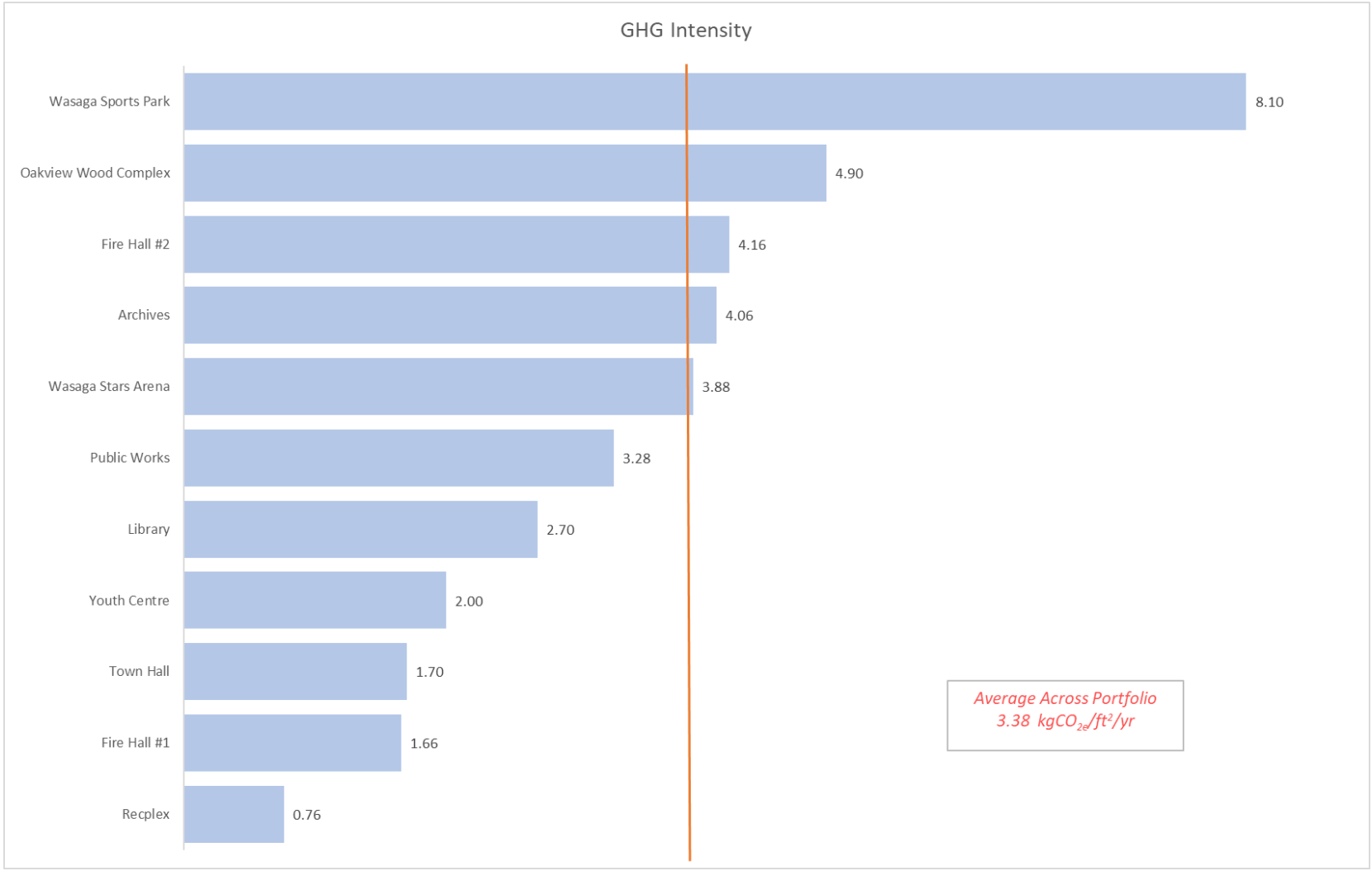


Figure 4: GHG emissions intensity per building

7. Implementation Plan (2024 – 2028)

The main objective of the ECDM Plan is to establish a plan covering the period of 2024 – 2028 (within 5 years) as well as 5 years and beyond that will see the Town of Wasaga Beach meet or exceed the 25% energy reduction and 25% GHG reduction targets required as part of CMHC's repair and renewal program, while also aligning with City, Provincial, and Federal energy and GHG reduction targets.

The initiatives are intended to achieve reductions in energy consumption by installing proven technologies which will reduce the energy consumption and GHG emissions of the Town of Wasaga Beach's buildings.

The projects in the plan were identified through ASHRAE Level II energy audits completed for the Town of Wasaga Beach's portfolio of buildings, as well as additional analysis and studies completed over the course of EMP development.

7.1. Prioritizing Initiatives and Budgeting

When determining how to prioritize the initiatives in the plan, several different approaches can be used. When determining the implementation schedule, the following criteria was considered:

- **Future Plans:**
  As building systems require renewal, it makes the most sense to increase energy performance beyond like for like replacement at that time as spending money to replace systems that had only recently been replaced would not be a prudent use of capital. Therefore, future capital expenditures at each of the buildings in the Town of Wasaga Beach's portfolio will be considered when developing the plan to ensure prudent financial spending.

- **Life Safety and Code Compliance:**
  Any building systems that could potentially affect Life Safety at the facilities or which currently do not meet current government regulations were identified and given highest priority in the plan.

- **Capital Cost:**
  Up-front capital costs can be a barrier to project implementation. Any plan developed has to be done with the recognition that there is a limit to the capital subsidy available annually and that project costs would need to be divided across the length of the plan.

- **Resource Allocation:**
  Besides the capital costs required, project implementation also requires significant resources to manage the projects. In some cases, this can be an even greater barrier compared to finding the necessary capital. The plan will be developed recognizing the available human resources on an annual basis to manage implementation of projects.

- **Funding and Incentives:**
  Certain technologies have financial incentives available from local utilities or other sources which can significantly lower the overall implementation cost, improving the return on investment.

- **Savings**:
  Utility savings, and cost savings were both important considerations when assessing projects. Projects that have significant savings and short paybacks were scheduled earlier to realize greater savings over the life of the plan.

- **Economies of Scale:**
  Similar projects that will be done at a number of buildings may benefit from being implemented at the same time. This will allow us to take advantage of the number of facilities in the portfolio and lower project costs to levels which would not be attained if they were implemented individually.

- **Technological Maturity:**
  Mature technologies have demonstrable, reliable returns on investment. Higher priorities will be assigned to mature technologies than to less mature ones. For example, LED lighting is now nearing a peak, both in technology, quality, and in lower prices. It makes sense for us to complete lighting projects that use LED lights now to take advantage of these improved technologies and lower prices.

There are many factors affecting the ranking of the projects based on a particular building's history, tenant behaviour, and specific project details. When prioritizing initiatives for the plan, the Town of Wasaga Beach took all performance indicators into account.

7.2. Ability to Access Capital

The work that has been completed through the energy audits, and through development of this plan, establish the key energy and cost benchmarks for accessing additional capital through government programs, or the private sector to support energy efficiency upgrades such as:

- **FCM GHG impact retrofit:**
  This program provides municipalities who aim to achieve minimum 30% GHG reduction with financing, through a combination of a grant and a loan, for up to 80% of total eligible project costs, up to a maximum of $5 million in support of achieving a minimum of a 30% reduction in GHG Emissions. More details can be found here.

- **Green Finance:**
  There has been an increased interest with 'green' financial instruments, to help support energy efficiency and clean energy projects. Vendors are now able to provide a variety of flexible financing instruments to support energy efficiency and renewable energy projects.

- **Energy Savings Performance Contracts:**
  Through this type of contract, the company would pay all costs involved in identifying and installing new or upgraded energy-efficient equipment. The energy upgrades are then paid for by a portion of the cost savings resulting from these improvements over a set term. At the end of the ESPC, the Town of Wasaga Beach would own all the improvements and receives all of the continuing savings. This approach would allow for energy efficiency upgrades to be implemented with no additional capital expenditures on the part of the Town of Wasaga Beach.

The Town of Wasaga Beach will continually monitor new programs or opportunities that are available to support implementation of the plan.

7.3. Projects to be Implemented

The implementation plan includes a combination of implementation strategies including:

Various no or low-cost energy conservation measures, energy conservation measures, water conservation measures, and building renewal measures across the Town of Wasaga Beach's remaining portfolio including but not limited to:

- LED lighting retrofits
- Domestic water fixture and toilet retrofits
- Installation of heating control and management systems
- Mechanical system upgrades
- Replace Existing Electric Baseboards & Wall Mounted AC Units with ASHP's
- DHW heater or boiler replacement with high efficiency condensing units
- Replace MUA units with high efficiency condensing units
- Replace existing in-suite thermostats with programmable units
- Replacing windows
- Installation of EIFS to increase building insulation and airtightness
- Increasing attic insulation

7.4. Capital Costs

The following table illustrates the capital costs needed for implementation of the plan for the first 5 years, and for 5 years and beyond:

Year	Capital Cost
2024 - 2028	$2,465,401
2029 and beyond	$4,598,999
TOTAL	$7,064,400

Appendix A includes a detailed implementation plan per building, outlining the expected capital costs, utility consumption, GHG emissions, and utility cost savings for each project included in the plan[1].

[1] The total energy and GHG savings in Appendix A will not match the totals presented in the rest of this document, as the savings in Appendix A were calculated individually on a per measure basis, whereas the total savings presented in this document utilize whole building energy modelling to consider the interactive effects of the various conservation measures and provide a more accurate estimate. However, they have been included in Appendix A to provide an idea of the energy and GHG savings impact associated with individual energy conservation measure. All the details of all buildings are provided in the EMP Excel tool.

2024 – 2028 Capital Investments:

Row Labels	Sum of Capital Cost
Archives	$60,180
Fire Hall #1	$209,295
Fire Hall #2	$76,480
Library	$92,390
Oakview Wood Complex	$80,572
Public Works	$449,300
Recplex	$58,000
Town Hall	$260,915
Wasaga Sports Park	$88,741
Wasaga Stars Arena	$1,076,300
Youth Centre	$13,228
Grand Total	$2,465,401

2029 and Beyond Capital Investments:

Row Labels	Sum of Capital Cost
Archives	$17,986
Fire Hall #1	$95,293
Fire Hall #2	$38,635
Library	$73,987
Oakview Wood Complex	$30,331
Public Works	$121,022
Recplex	$3,421,420
Town Hall	$314,000
Wasaga Sports Park	$43,660
Wasaga Stars Arena	$278,082
Youth Centre	$164,582
Grand Total	$4,598,999

7.5. Energy, Greenhouse Gas, and Utility Savings

Upon successful implementation of the proposed measures in our energy efficiency plan, we anticipate achieving significant energy and greenhouse gas (GHG) reductions across each of the buildings in the audit.

Disclaimer: It is important to note that the absolute savings values may not be directly additive across different sites. This is because the implementation of specific energy-saving measures can interact and influence the effectiveness of others, potentially leading to a scenario where the combined savings exceed 100%. Therefore, the individual energy or GHG savings for each site should be interpreted with consideration of these interactive effects

The Town has been actively addressing energy consumption, and GHG emissions. Initiatives such as retrofitting of streetlights and traffic signals to LED's, installation of high efficiency mechanical equipment, and new construction initiatives implemented in the last five years have helped to significantly offset rising overall energy consumption and costs due to portfolio expansion, and rising utility rates. The Town has undertaken several past initiatives in a committed effort to reduce its energy consumption and continues to implement energy efficiency measures as below:

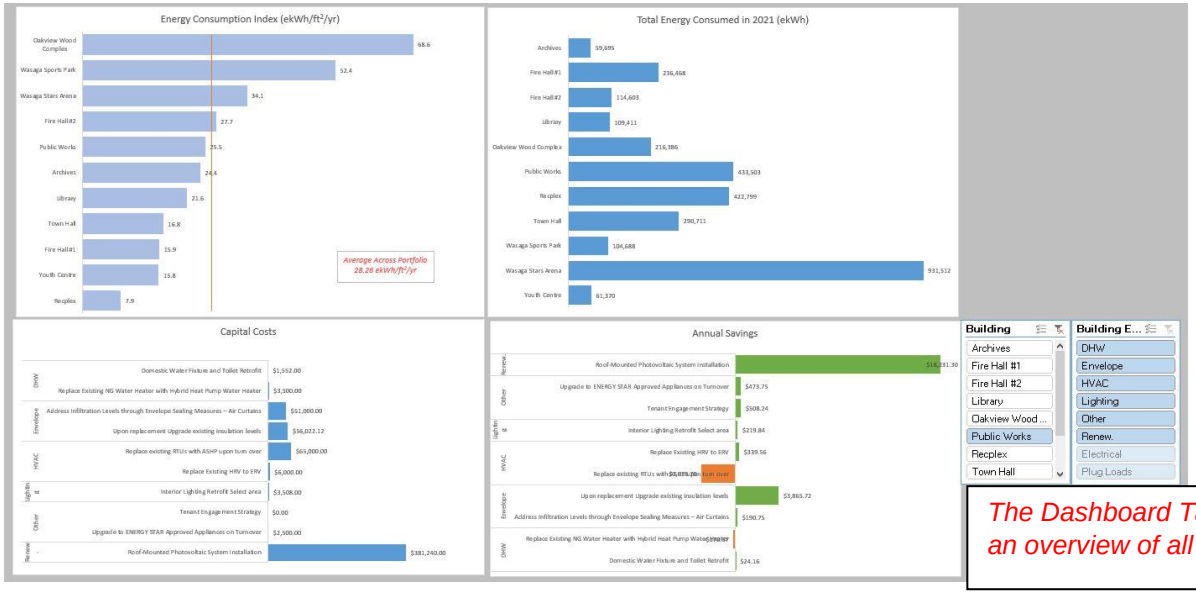
- LED Street Lighting Conversion
- Interior and Exterior LED Lighting Conversions
    - Replacement of Metal Halide (MH) fixtures with fluorescent T5 or LED equivalents;
    - Replacement of High Intensity Discharge (HID) fixtures with LED equivalents;
    - Replacement of fluorescent T8 lighting with LED equivalents;
    - Replacement of High Bay lighting with LED equivalents; and
    - Replacement of exterior High-Pressure Sodium and MH lighting with LED fixtures.
- HVAC VFD Controls and Upgrades
- Maintenance Equipment Electrification
- Various HVAC Upgrades across the building Portfolio
    - Installation of energy efficient unitary AC units
    - Installation of Variable Frequency Drives
    - Installation of energy efficient rooftop ventilation units
    - Replacement of an air-cooled chiller with a more efficient water-cooled chiller

8. Conclusion

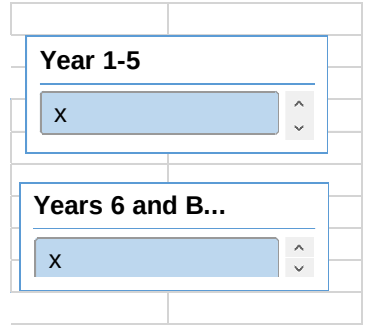
By implementing this ECDM Plan, and achieving the milestones set forth in this plan, the Town of Wasaga Beach will successfully contribute to the critically important goal of reducing energy consumption and GHG emissions across its building portfolio. The completion of the proposed measures should lead to an overall decrease in energy consumption, energy costs, GHG emissions, and energy intensity for each building. This ECDM Plan will identify the anticipated benefit for each of the measures, noting them as minimal, moderate, or significant. Also, in larger buildings with multiple opportunities for energy reductions, the implementation of a specific measure could have a significant aggregate benefit. As more information becomes available, such as new technologies, incentives, or other considerations, the Town of Wasaga Beach will continually review and revise the plan. The 2024-2028 Energy Conservation and Demand Management Plan for the Town of Wasaga Beach will assist the Municipality in meeting energy related goals, reporting requirements as per O.Reg. 25/23, and striving for continuous improvement related to both industry best practices and internal practice improvements. These goals will be established annually through Council's approved budget.

9. Appendix A – Detailed Capital Investments

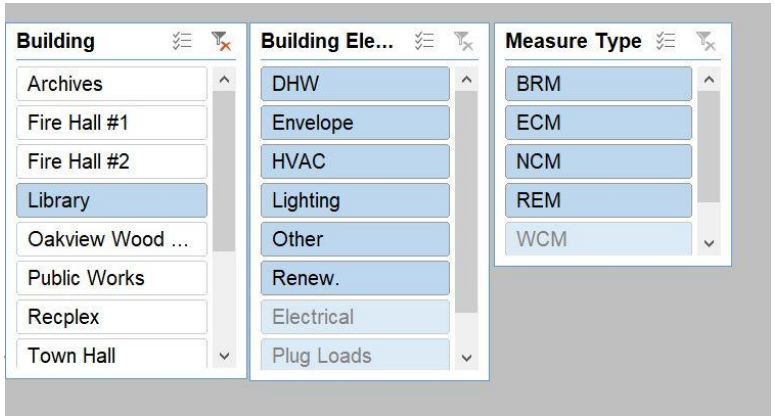
- *Note – All the data presented in this report and in the appendix are available for analysis on the ECDM Plan Excel tool developed by IESC. All the data can be filtered by building, type of Energy Conservation Measure or Building Renewal Measure, and all the detailed capital costs as well as energy, water and GHG savings are available in this tool. The following is a summary of the capital costs and cost savings only.*



The Dashboard Tab gives an overview of all buildings.



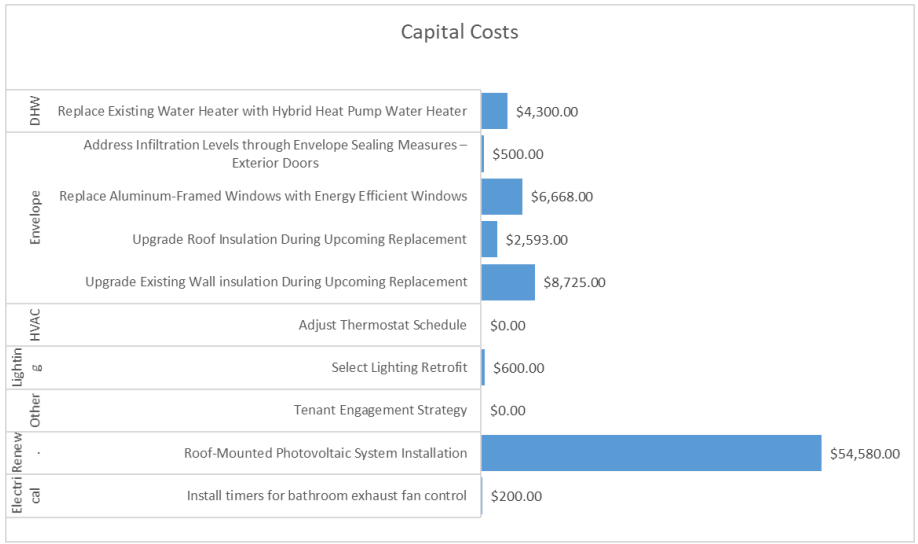
Splicer tables allow to filter the data by timeframe.

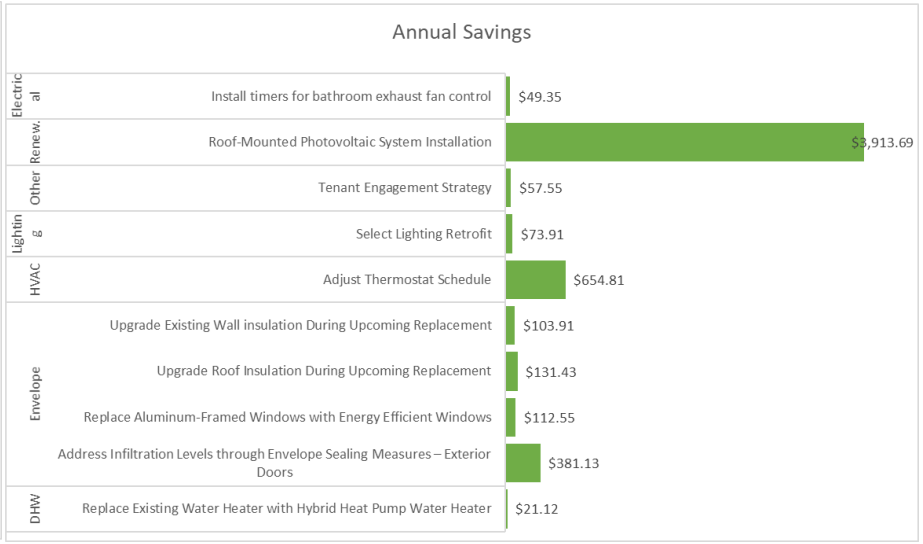


Splicer tables allow to filter the data by building, building element and measure type.

Archives

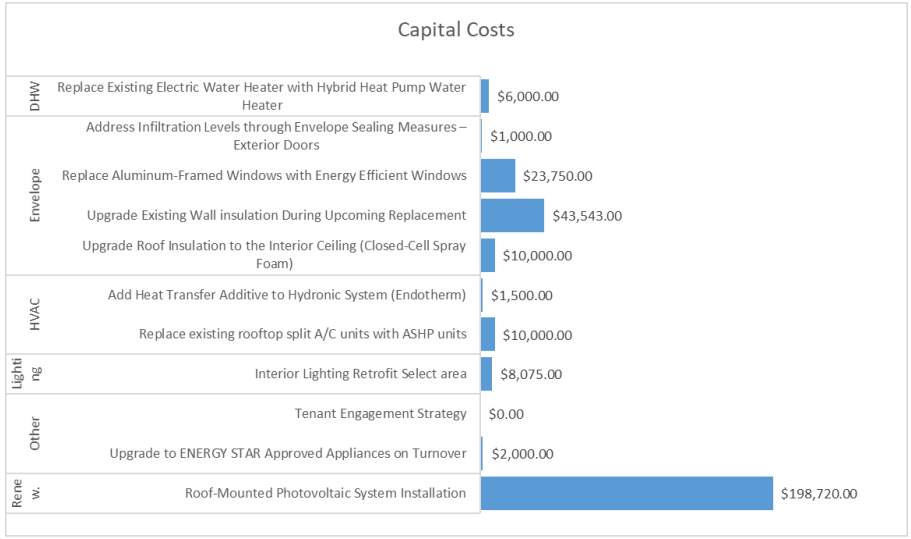
Sum of Capital Cost	Column Labels	
Row Labels	Archives	Grand Total
DHW	**$4,300.00**	**$4,300.00**
Replace Existing Water Heater with Hybrid Heat Pump Water Heater	$4,300.00	$4,300.00
Envelope	**$18,486.00**	**$18,486.00**
Address Infiltration Levels through Envelope Sealing Measures – Exterior Doors	$500.00	$500.00
Replace Aluminum-Framed Windows with Energy Efficient Windows	$6,668.00	$6,668.00
Upgrade Roof Insulation During Upcoming Replacement	$2,593.00	$2,593.00
Upgrade Existing Wall insulation During Upcoming Replacement	$8,725.00	$8,725.00
HVAC	**$0.00**	**$0.00**
Adjust Thermostat Schedule	$0.00	$0.00
Lighting	**$600.00**	**$600.00**
Select Lighting Retrofit	$600.00	$600.00
Other	**$0.00**	**$0.00**
Tenant Engagement Strategy	$0.00	$0.00
Renew.	**$54,580.00**	**$54,580.00**
Roof-Mounted Photovoltaic System Installation	$54,580.00	$54,580.00
Electrical	**$200.00**	**$200.00**
Install timers for bathroom exhaust fan control	$200.00	$200.00
Grand Total	**$78,166.00**	**$78,166.00**

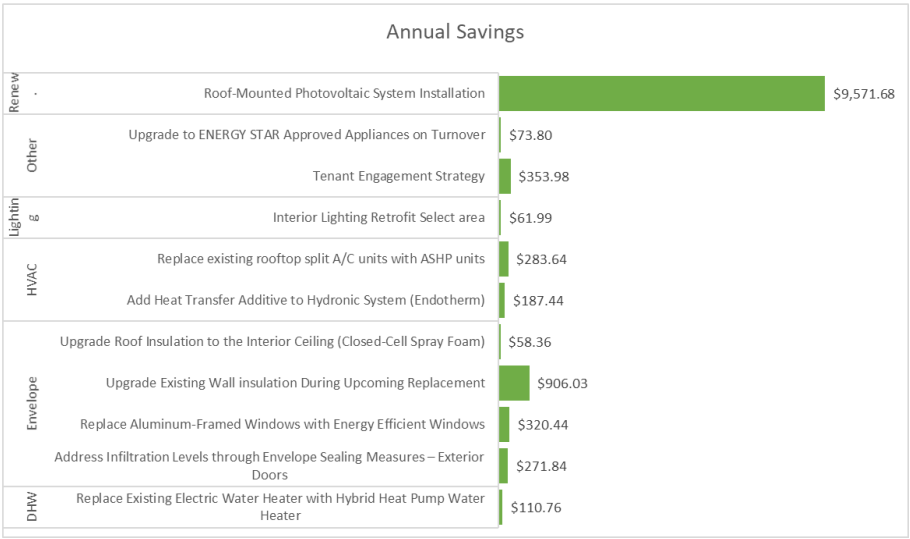




Fire Hall #1

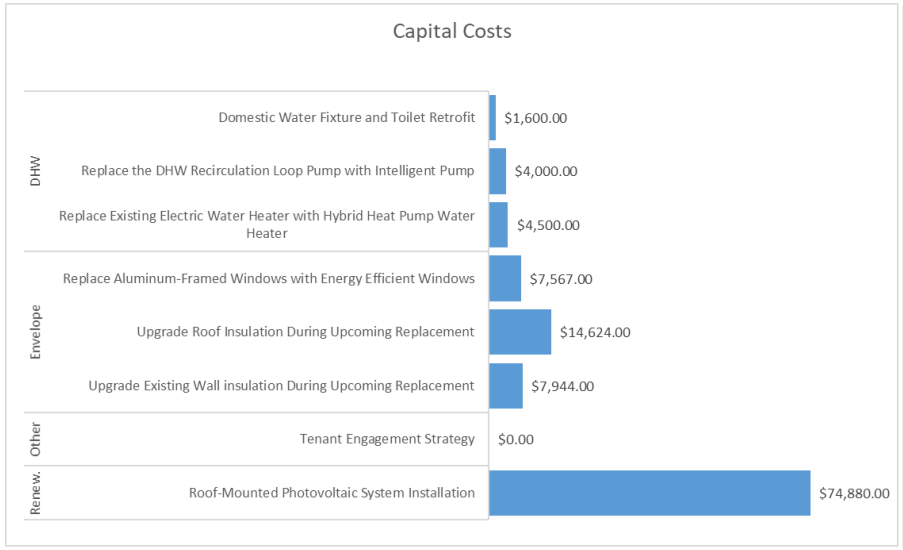
Sum of Capital Cost Row Labels	Column Labels Fire Hall #1	Grand Total
DHW	**$6,000.00**	**$6,000.00**
Replace Existing Electric Water Heater with Hybrid Heat Pump Water Heater	$6,000.00	$6,000.00
Envelope	**$78,293.00**	**$78,293.00**
Address Infiltration Levels through Envelope Sealing Measures – Exterior Doors	$1,000.00	$1,000.00
Replace Aluminum-Framed Windows with Energy Efficient Windows	$23,750.00	$23,750.00
Upgrade Existing Wall insulation During Upcoming Replacement	$43,543.00	$43,543.00
Upgrade Roof Insulation to the Interior Ceiling (Closed-Cell Spray Foam)	$10,000.00	$10,000.00
HVAC	**$11,500.00**	**$11,500.00**
Add Heat Transfer Additive to Hydronic System (Endotherm)	$1,500.00	$1,500.00
Replace existing rooftop split A/C units with ASHP units	$10,000.00	$10,000.00
Lighting	**$8,075.00**	**$8,075.00**
Interior Lighting Retrofit Select area	$8,075.00	$8,075.00
Other	**$2,000.00**	**$2,000.00**
Tenant Engagement Strategy	$0.00	$0.00
Upgrade to ENERGY STAR Approved Appliances on Turnover	$2,000.00	$2,000.00
Renew.	**$198,720.00**	**$198,720.00**
Roof-Mounted Photovoltaic System Installation	$198,720.00	$198,720.00
Grand Total	**$304,588.00**	**$304,588.00**

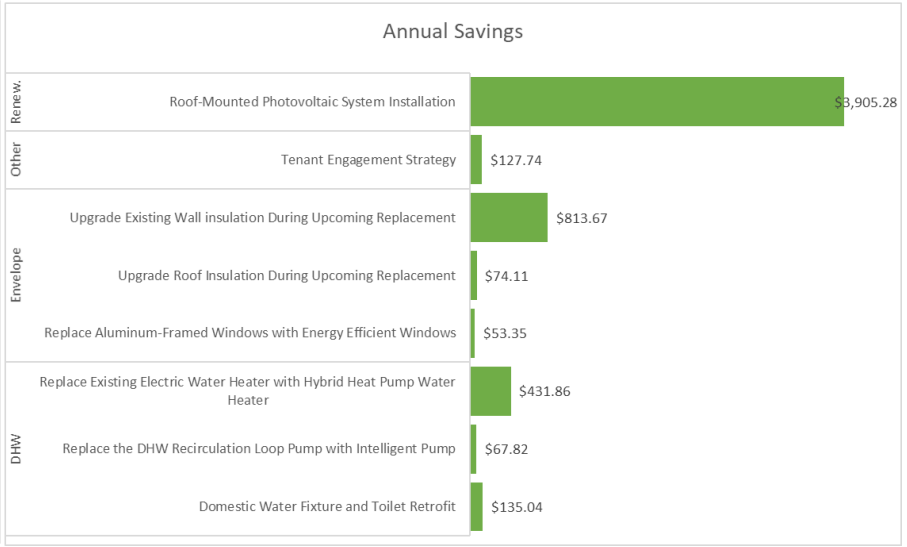




Fire Hall #2

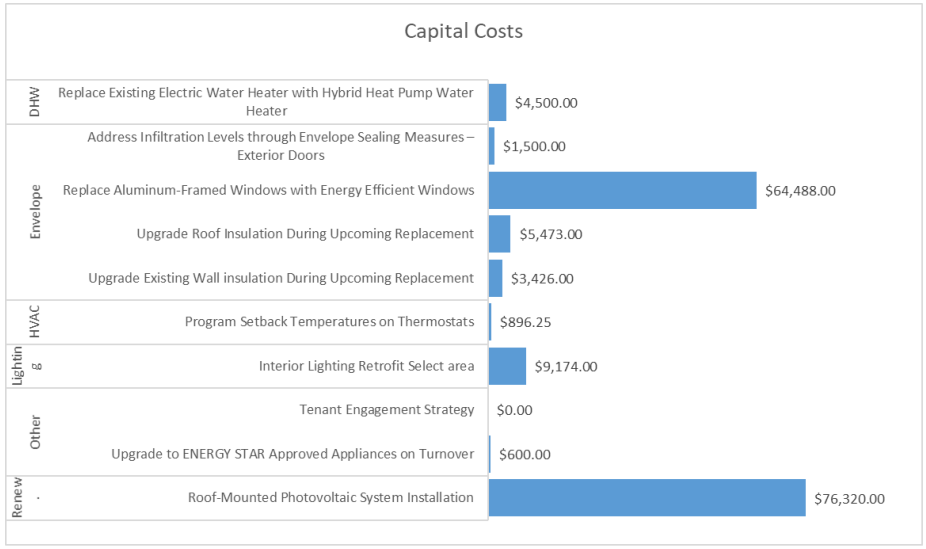
Sum of Capital Cost Row Labels	Column Labels Fire Hall #2	Grand Total
DHW	**$10,100.00**	**$10,100.00**
Domestic Water Fixture and Toilet Retrofit	$1,600.00	$1,600.00
Replace the DHW Recirculation Loop Pump with Intelligent Pump	$4,000.00	$4,000.00
Replace Existing Electric Water Heater with Hybrid Heat Pump Water Heater	$4,500.00	$4,500.00
Envelope	**$30,135.00**	**$30,135.00**
Replace Aluminum-Framed Windows with Energy Efficient Windows	$7,567.00	$7,567.00
Upgrade Roof Insulation During Upcoming Replacement	$14,624.00	$14,624.00
Upgrade Existing Wall insulation During Upcoming Replacement	$7,944.00	$7,944.00
Other	**$0.00**	**$0.00**
Tenant Engagement Strategy	$0.00	$0.00
Renew.	**$74,880.00**	**$74,880.00**
Roof-Mounted Photovoltaic System Installation	$74,880.00	$74,880.00
Grand Total	**$115,115.00**	**$115,115.00**

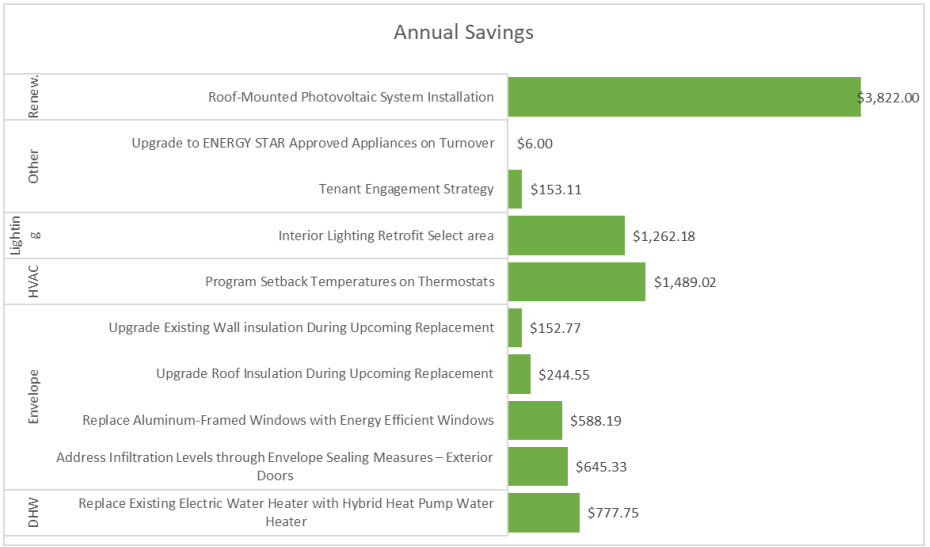




Library

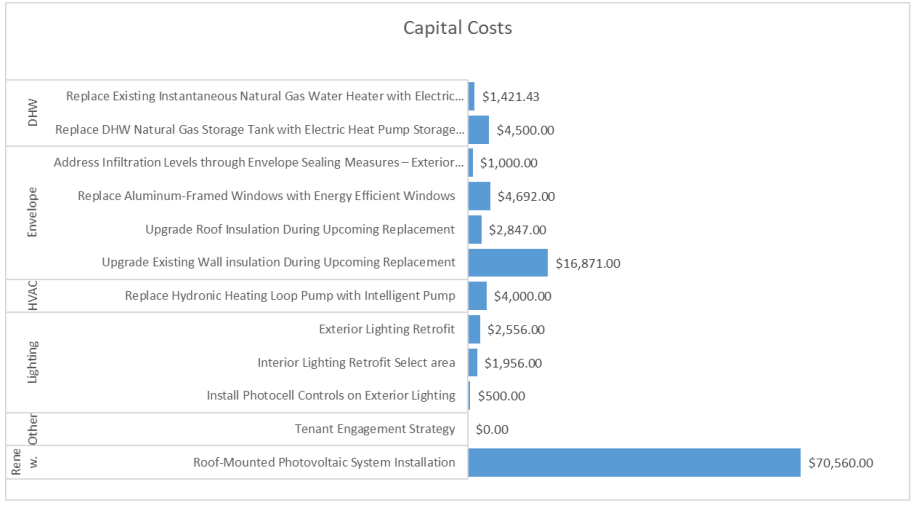
Sum of Capital Cost Row Labels	Column Labels Library	Grand Total
DHW	**$4,500.00**	**$4,500.00**
Replace Existing Electric Water Heater with Hybrid Heat Pump Water Heater	$4,500.00	$4,500.00
Envelope	**$74,887.00**	**$74,887.00**
Address Infiltration Levels through Envelope Sealing Measures – Exterior Doors	$1,500.00	$1,500.00
Replace Aluminum-Framed Windows with Energy Efficient Windows	$64,488.00	$64,488.00
Upgrade Roof Insulation During Upcoming Replacement	$5,473.00	$5,473.00
Upgrade Existing Wall insulation During Upcoming Replacement	$3,426.00	$3,426.00
HVAC	**$896.25**	**$896.25**
Program Setback Temperatures on Thermostats	$896.25	$896.25
Lighting	**$9,174.00**	**$9,174.00**
Interior Lighting Retrofit Select area	$9,174.00	$9,174.00
Other	**$600.00**	**$600.00**
Tenant Engagement Strategy	$0.00	$0.00
Upgrade to ENERGY STAR Approved Appliances on Turnover	$600.00	$600.00
Renew.	**$76,320.00**	**$76,320.00**
Roof-Mounted Photovoltaic System Installation	$76,320.00	$76,320.00
Grand Total	**$166,377.25**	**$166,377.25**

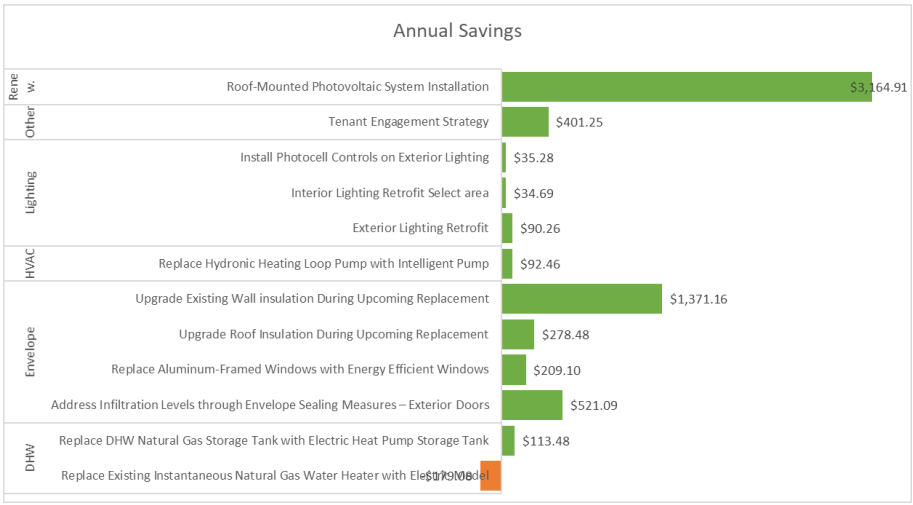




Oakview Wood Complex

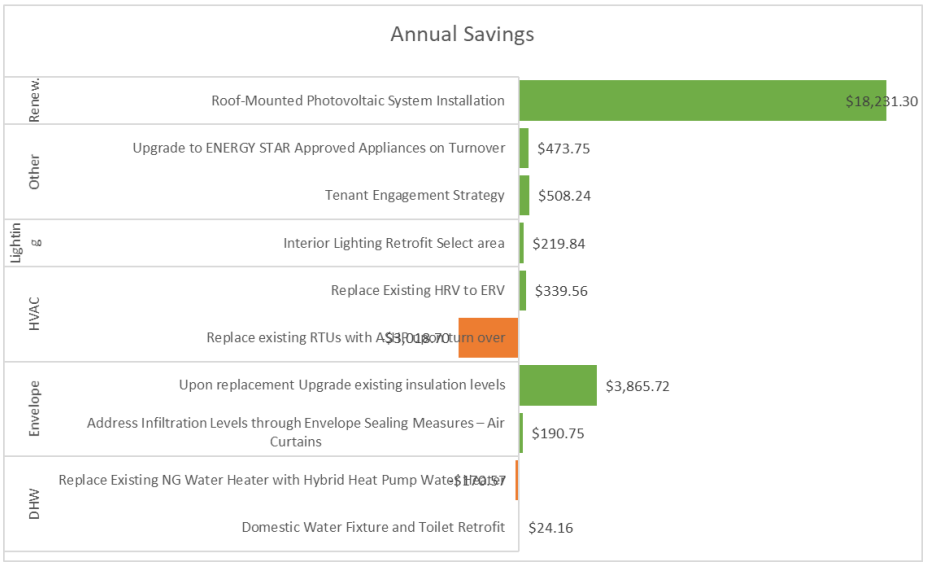
Sum of Capital Cost	Column Labels	
Row Labels	Oakview Wood Complex	Grand Total
DHW	**$5,921.43**	**$5,921.43**
Replace Existing Instantaneous Natural Gas Water Heater with Electric Model	$1,421.43	$1,421.43
Replace DHW Natural Gas Storage Tank with Electric Heat Pump Storage Tank	$4,500.00	$4,500.00
Envelope	**$25,410.00**	**$25,410.00**
Address Infiltration Levels through Envelope Sealing Measures – Exterior Doors	$1,000.00	$1,000.00
Replace Aluminum-Framed Windows with Energy Efficient Windows	$4,692.00	$4,692.00
Upgrade Roof Insulation During Upcoming Replacement	$2,847.00	$2,847.00
Upgrade Existing Wall insulation During Upcoming Replacement	$16,871.00	$16,871.00
HVAC	**$4,000.00**	**$4,000.00**
Replace Hydronic Heating Loop Pump with Intelligent Pump	$4,000.00	$4,000.00
Lighting	**$5,012.00**	**$5,012.00**
Exterior Lighting Retrofit	$2,556.00	$2,556.00
Interior Lighting Retrofit Select area	$1,956.00	$1,956.00
Install Photocell Controls on Exterior Lighting	$500.00	$500.00
Other	**$0.00**	**$0.00**
Tenant Engagement Strategy	$0.00	$0.00
Renew.	**$70,560.00**	**$70,560.00**
Roof-Mounted Photovoltaic System Installation	$70,560.00	$70,560.00
Grand Total	**$110,903.43**	**$110,903.43**





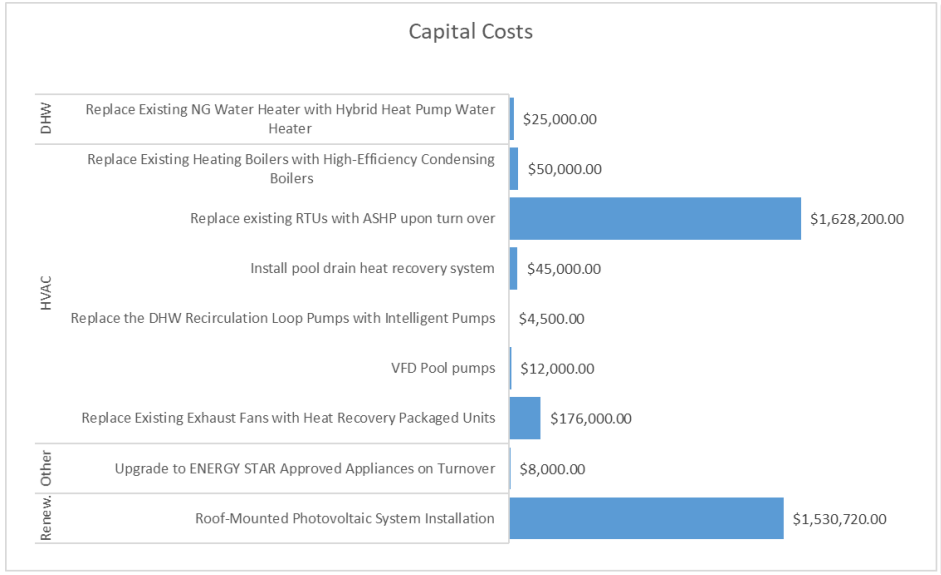
Public Works

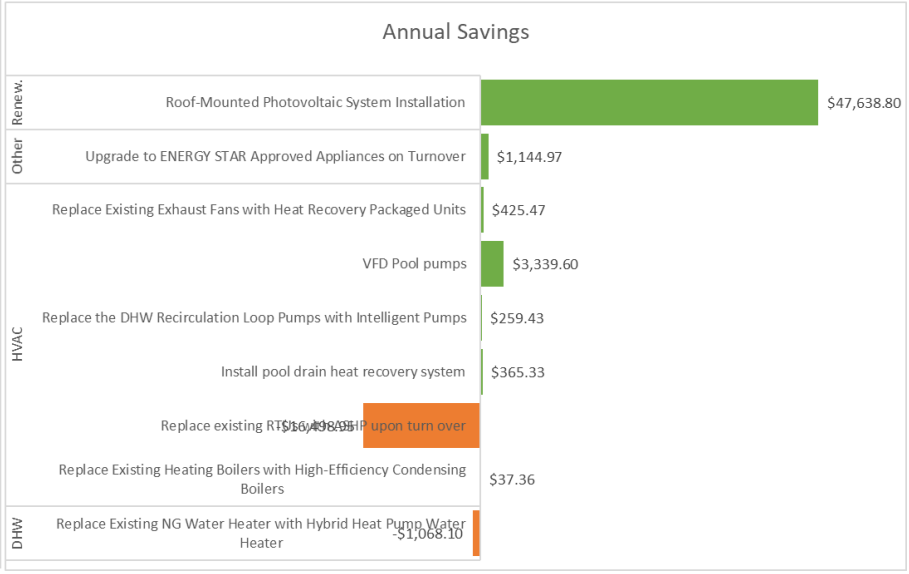
Sum of Capital Cost Row Labels	Column Labels Public Works	Grand Total
DHW	**$5,052.00**	**$5,052.00**
Domestic Water Fixture and Toilet Retrofit	$1,552.00	$1,552.00
Replace Existing NG Water Heater with Hybrid Heat Pump Water Heater	$3,500.00	$3,500.00
Envelope	**$107,022.12**	**$107,022.12**
Address Infiltration Levels through Envelope Sealing Measures – Air Curtains	$51,000.00	$51,000.00
Upon replacement Upgrade existing insulation levels	$56,022.12	$56,022.12
HVAC	**$71,000.00**	**$71,000.00**
Replace existing RTUs with ASHP upon turn over	$65,000.00	$65,000.00
Replace Existing HRV to ERV	$6,000.00	$6,000.00
Lighting	**$3,508.00**	**$3,508.00**
Interior Lighting Retrofit Select area	$3,508.00	$3,508.00
Other	**$2,500.00**	**$2,500.00**
Tenant Engagement Strategy	$0.00	$0.00
Upgrade to ENERGY STAR Approved Appliances on Turnover	$2,500.00	$2,500.00
Renew.	**$381,240.00**	**$381,240.00**
Roof-Mounted Photovoltaic System Installation	$381,240.00	$381,240.00
Grand Total	**$570,322.12**	**$570,322.12**



Recplex

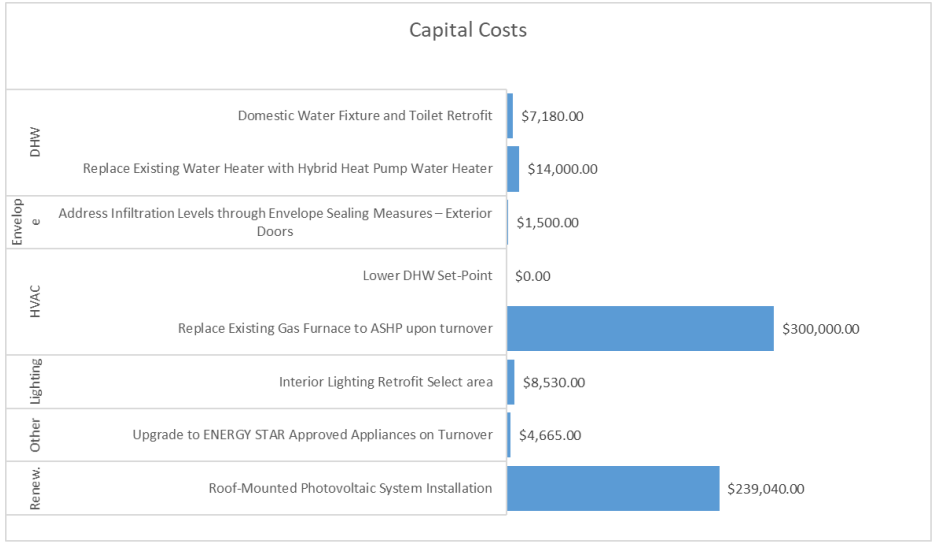
Sum of Capital Cost Row Labels	Column Labels Recplex	Grand Total
DHW	**$25,000.00**	**$25,000.00**
Replace Existing NG Water Heater with Hybrid Heat Pump Water Heater	$25,000.00	$25,000.00
HVAC	**$1,915,700.00**	**$1,915,700.00**
Replace Existing Heating Boilers with High-Efficiency Condensing Boilers	$50,000.00	$50,000.00
Replace existing RTUs with ASHP upon turn over	$1,628,200.00	$1,628,200.00
Install pool drain heat recovery system	$45,000.00	$45,000.00
Replace the DHW Recirculation Loop Pumps with Intelligent Pumps	$4,500.00	$4,500.00
VFD Pool pumps	$12,000.00	$12,000.00
Replace Existing Exhaust Fans with Heat Recovery Packaged Units	$176,000.00	$176,000.00
Other	**$8,000.00**	**$8,000.00**
Upgrade to ENERGY STAR Approved Appliances on Turnover	$8,000.00	$8,000.00
Renew.	**$1,530,720.00**	**$1,530,720.00**
Roof-Mounted Photovoltaic System Installation	$1,530,720.00	$1,530,720.00
Grand Total	**$3,479,420.00**	**$3,479,420.00**

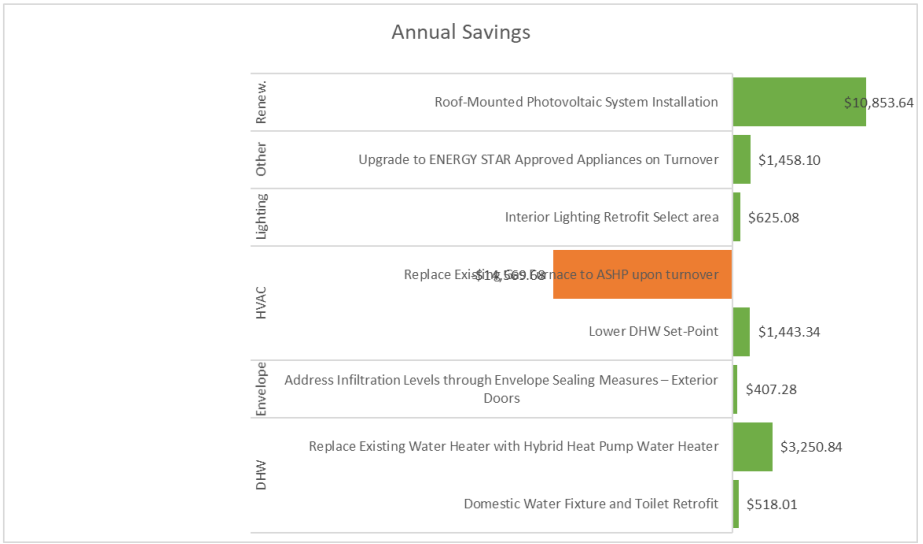




Town Hall

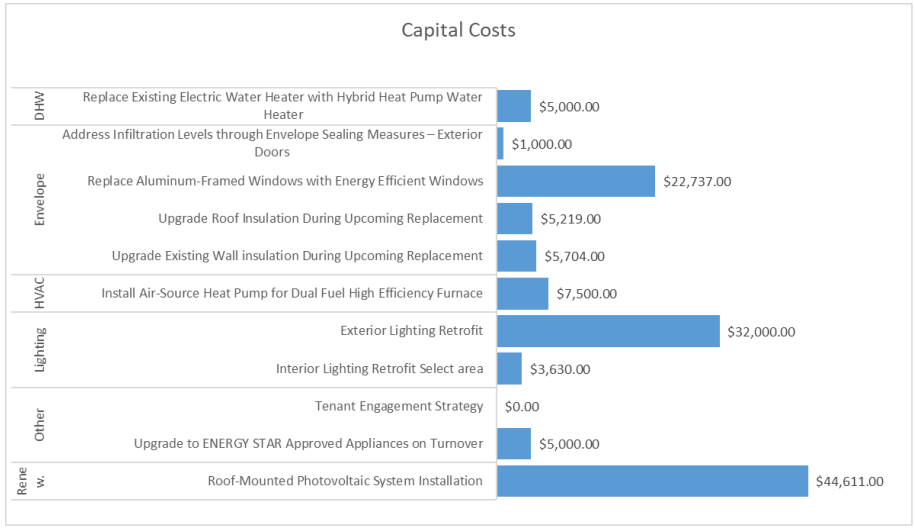
Sum of Capital Cost Row Labels	Column Labels Town Hall	Grand Total
DHW	**$21,180.00**	**$21,180.00**
Domestic Water Fixture and Toilet Retrofit	$7,180.00	$7,180.00
Replace Existing Water Heater with Hybrid Heat Pump Water Heater	$14,000.00	$14,000.00
Envelope	**$1,500.00**	**$1,500.00**
Address Infiltration Levels through Envelope Sealing Measures – Exterior Doors	$1,500.00	$1,500.00
HVAC	**$300,000.00**	**$300,000.00**
Lower DHW Set-Point	$0.00	$0.00
Replace Existing Gas Furnace to ASHP upon turnover	$300,000.00	$300,000.00
Lighting	**$8,530.00**	**$8,530.00**
Interior Lighting Retrofit Select area	$8,530.00	$8,530.00
Other	**$4,665.00**	**$4,665.00**
Upgrade to ENERGY STAR Approved Appliances on Turnover	$4,665.00	$4,665.00
Renew.	**$239,040.00**	**$239,040.00**
Roof-Mounted Photovoltaic System Installation	$239,040.00	$239,040.00
Grand Total	**$574,915.00**	**$574,915.00**

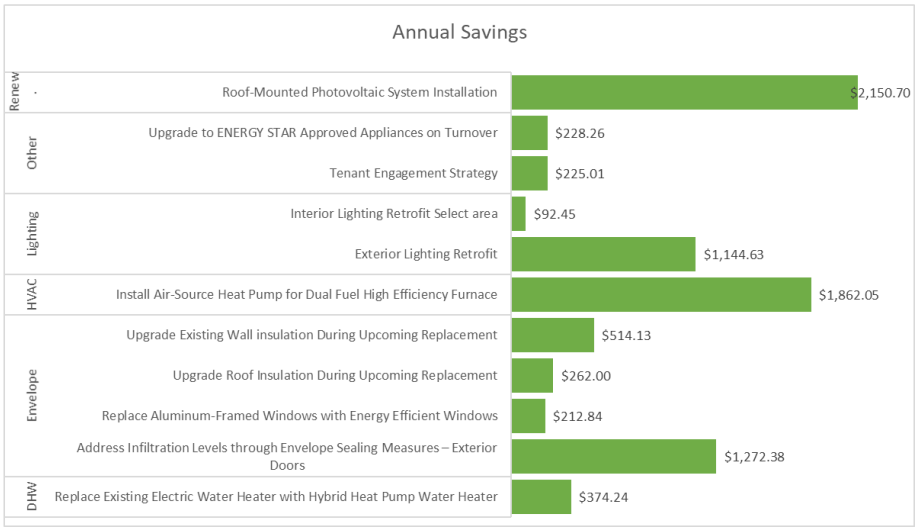




Wasaga Sports Park

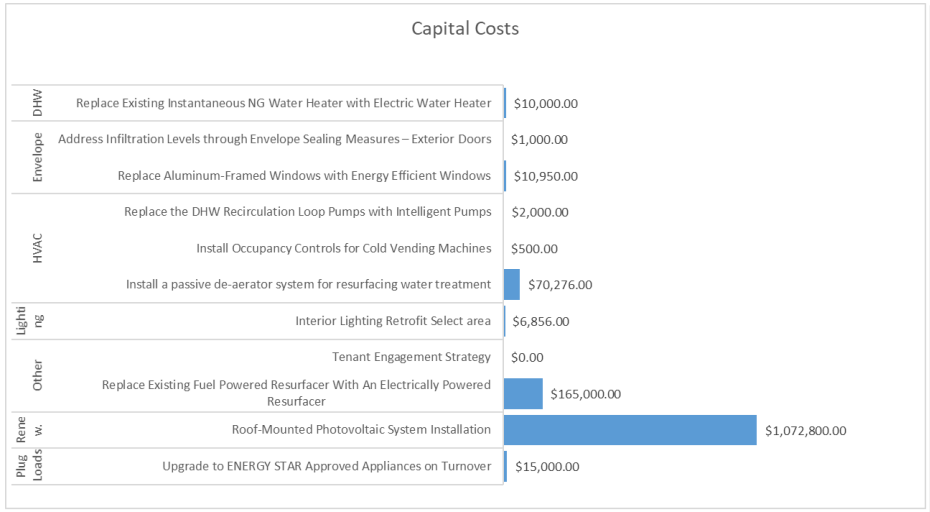
Sum of Capital Cost Row Labels	Column Labels Wasaga Sports Park	Grand Total
DHW	**$5,000.00**	**$5,000.00**
Replace Existing Electric Water Heater with Hybrid Heat Pump Water Heater	$5,000.00	$5,000.00
Envelope	**$34,660.00**	**$34,660.00**
Address Infiltration Levels through Envelope Sealing Measures – Exterior Doors	$1,000.00	$1,000.00
Replace Aluminum-Framed Windows with Energy Efficient Windows	$22,737.00	$22,737.00
Upgrade Roof Insulation During Upcoming Replacement	$5,219.00	$5,219.00
Upgrade Existing Wall insulation During Upcoming Replacement	$5,704.00	$5,704.00
HVAC	**$7,500.00**	**$7,500.00**
Install Air-Source Heat Pump for Dual Fuel High Efficiency Furnace	$7,500.00	$7,500.00
Lighting	**$35,630.00**	**$35,630.00**
Exterior Lighting Retrofit	$32,000.00	$32,000.00
Interior Lighting Retrofit Select area	$3,630.00	$3,630.00
Other	**$5,000.00**	**$5,000.00**
Tenant Engagement Strategy	$0.00	$0.00
Upgrade to ENERGY STAR Approved Appliances on Turnover	$5,000.00	$5,000.00
Renew.	**$44,611.00**	**$44,611.00**
Roof-Mounted Photovoltaic System Installation	$44,611.00	$44,611.00
Grand Total	**$132,401.00**	**$132,401.00**

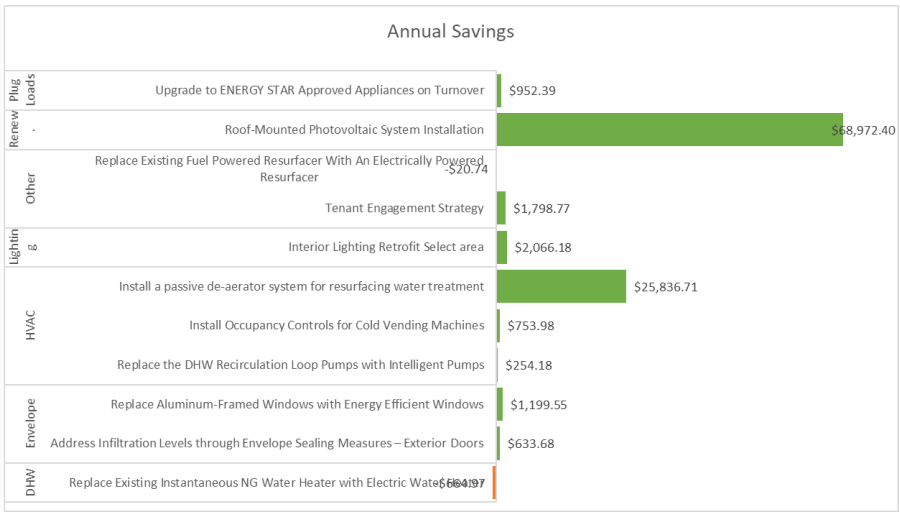




Wasaga Stars Arena

Sum of Capital Cost Row Labels	Column Labels Wasaga Stars Arena	Grand Total
DHW	**$10,000.00**	**$10,000.00**
Replace Existing Instantaneous NG Water Heater with Electric Water Heater	$10,000.00	$10,000.00
Envelope	**$11,950.00**	**$11,950.00**
Address Infiltration Levels through Envelope Sealing Measures – Exterior Doors	$1,000.00	$1,000.00
Replace Aluminum-Framed Windows with Energy Efficient Windows	$10,950.00	$10,950.00
HVAC	**$72,776.00**	**$72,776.00**
Replace the DHW Recirculation Loop Pumps with Intelligent Pumps	$2,000.00	$2,000.00
Install Occupancy Controls for Cold Vending Machines	$500.00	$500.00
Install a passive de-aerator system for resurfacing water treatment	$70,276.00	$70,276.00
Lighting	**$6,856.00**	**$6,856.00**
Interior Lighting Retrofit Select area	$6,856.00	$6,856.00
Other	**$165,000.00**	**$165,000.00**
Tenant Engagement Strategy	$0.00	$0.00
Replace Existing Fuel Powered Resurfacer With An Electrically Powered Resurfacer	$165,000.00	$165,000.00
Renew.	**$1,072,800.00**	**$1,072,800.00**
Roof-Mounted Photovoltaic System Installation	$1,072,800.00	$1,072,800.00
Plug Loads	**$15,000.00**	**$15,000.00**
Upgrade to ENERGY STAR Approved Appliances on Turnover	$15,000.00	$15,000.00
Grand Total	**$1,354,382.00**	**$1,354,382.00**





Youth Centre

Sum of Capital Cost Row Labels	Column Labels Youth Centre	Grand Total
DHW	**$5,540.00**	**$5,540.00**
Domestic Water Fixture and Toilet Retrofit	$1,040.00	$1,040.00
Replace Existing Natural Gas Water Heater with Hybrid Heat Pump Water Heater	$4,500.00	$4,500.00
Envelope	**$12,262.00**	**$12,262.00**
Address Infiltration Levels through Envelope Sealing Measures – Exterior Doors	$500.00	$500.00
Replace Aluminum-Framed Windows with Energy Efficient Windows	$11,762.00	$11,762.00
HVAC	**$34,860.00**	**$34,860.00**
Replace Existing Heating Furnace with High-Efficiency Condensing Furnace	$7,500.00	$7,500.00
Replace Existing Heating Furnace with ASHP	$27,360.00	$27,360.00
Lighting	**$1,188.00**	**$1,188.00**
Interior Lighting Retrofit Select area	$1,188.00	$1,188.00
Other	**$3,000.00**	**$3,000.00**
Tenant Engagement Strategy	$0.00	$0.00
Upgrade to ENERGY STAR Approved Appliances on Turnover	$3,000.00	$3,000.00
Renew.	**$120,960.00**	**$120,960.00**
Roof-Mounted Photovoltaic System Installation	$120,960.00	$120,960.00
Grand Total	**$177,810.00**	**$177,810.00**