

MUNICIPALITY OF THE COUNTY OF  
**ANTIGONISH**

**Request for Proposal**

Project Management Services -Net Zero Community Buildings

**INTRODUCTION**

The Municipality of the County of Antigonish is inviting proposals to provide Project Management (PM) Services for the Municipality's Investing in Canada Infrastructure Program (ICIP) funded Net Zero Community Buildings project. The PM will be responsible to provide the leadership and management needed to facilitate the energy efficiency upgrades and renewable energy installations with community partners outlined in the project. This project will facilitate energy retrofits and upgrades and the installation of PV solar systems at nine community buildings throughout Antigonish County.

**BACKGROUND**

On July 19, 2022, the federal and provincial governments announced funding through the Green Infrastructure Stream of the Investing in Canada Infrastructure Program to upgrade nine community buildings, including six community centres, to improve energy efficiency and reduce emissions. These improvements include replacing heating systems, lighting, and installing solar panels on each building to reach net-zero energy once the retrofits are completed. The project will offset the municipality's carbon footprint through the production of a total of 297 kW of renewable solar energy.

All the community buildings in this project are community owned and volunteer run. Effective communication skills to navigate the varying leadership and governance structures is vital for success. The PM will also be responsible to liaise with Efficiency NS, Community members, to ensure project stays on track, on budget and all available rebates and purchasing options are accessed to support the project.

Please see Appendix A for Project and Community Building Details.

**DETAILS OF WORK TO BE INCLUDED IN PROPOSAL:**

Reporting to the Director of Sustainable Communities, the Project Manager will coordinate and successfully implement the Net Zero Community Buildings project based on the approved funding application, contribution agreement and budget.

Successful implementation of this project will require the PM to complete or procure the following activities:

- Completion of building assessments and detailed designs for efficiency upgrades and solar PV installations.
- Procurement of labour & materials to facilitate efficiency upgrades and solar PV installations within the parameters of the Municipality's procurement policy and provincial procurement act.
- Coordination and supervision of contractors retained to complete work.
- Coordination of project management meetings with appropriate stakeholders.
- Plan, prepare, monitor, and manage construction schedules with contractors, partners, within project requirements.
- Ensure contractors are performing in compliance with applicable standards including OHS.
- Travel between worksites throughout the county.
- Maintain constructive working relationships with all stakeholders, suppliers, and contractors.
- Conduct project administration tasks as required, including status reports, provincial reports, invoice reconciliation and presentations.
- Application for additional rebate opportunities to support the project outcome.
- Completion of a final report detailing project implementation and potential next steps or other opportunities.

In evaluating proposals, the Municipality will assess the following key attributes:

- Capacity for and success in project planning.
- Stakeholder communications including municipal, provincial, and federal government officials, contractors, suppliers, and volunteer facility owners / managers.
- Budgeting and reporting.
- Experience with real property management and/or construction.

All outcomes and activities are to be achieved within the parameters set out in the approved project application, contribution agreement and municipal policies.

This is a five-year project with a \$1.4M total budget, beginning in the fall of 2022 and completing in 2027.

### **SUBMISSION GUIDELINES:**

Based on the scope of work above and any follow-up discussions a budget shall be proposed by you, the proponent, should you choose to submit a proposal.

If you are interested in submitting a proposal, I would invite you to do so by, **Friday, August 19<sup>th</sup>, 2022, at 4:30pm** local time. This proposal should detail a formal scope of work, timeline and budget that will serve as an agreement between the Municipality and yourself, should you be the successful proponent.

Proposals will be accepted by mail or electronically and are to be submitted to Tammy Feltmate, Director of Sustainable Communities Municipality of the County of Antigonish, 285 Beech Hill Road, Beech Hill, NS, B2G 0B4 or [tammy.feltmate@antigonishcounty.ns.ca](mailto:tammy.feltmate@antigonishcounty.ns.ca). Questions can be directed to Ms. Feltmate at the same email address or 902.863.1117. When submitting a proposal please clearly mark **“RFP- MCA-ICIPNZ2022- Project Management Services”**.

### **ADDITIONAL INFORMATION:**

- Any submissions received past the deadline will not be considered.
- This RFP neither expresses nor implies any obligation on the part of the Municipality to enter a contract with any party submitting a response or responses.
- The Municipality reserves the right to reject all or any proposals, not be obligated to accept the lowest proposal, accept any proposal that it considers to be in the Municipality’s best interest and reject any proposal that the Municipality feels is incapable of providing the necessary resources to perform the work in a satisfactory manner.
- No adjustments will be allowed to any submitted proposals, proposals may be withdrawn by written request prior to the closing date and time for the submission of proposals.
- The Municipality of the County of Antigonish shall not pay a fee to any proponent for the preparation and delivery of its proposal in response to the Municipality’s RFP.
- This RFP neither expresses nor implies any obligations on the part of the Municipality to enter a contract with any proponent submitting a proposal.

### **Law**

The law applicable to this RFP and any subsequent agreements shall be the law in force in the Province of Nova Scotia. In responding to this RFP, Proponents warrant their compliance with all appropriate Municipal, Provincial and Federal regulations, laws and orders. Respondents must agree to indemnify the Municipality and its employees if they fail to comply, and the Municipality reserves the right to cancel any agreement arising from this RFP if the proponent fails to comply with the above.

The selected individual or firm shall indemnify the Municipality, its officers and employees against any damage caused to the Municipality because of any negligence or unlawful acts of the successful proponent or its employees. Similarly, the successful proponents shall agree to indemnify the Municipality, its officers and employees against any claims or costs initiated by third parties as a

result of any negligence or wrongful acts of the successful proponent or its employees.

In addition to these general Terms and Conditions this RFP is subject to Atlantic Provinces Standard Terms and Conditions for Goods and Services, <http://www.atlanticsuppliers.ca/acts-regulations/atlantic-provinces-standard-terms-and-conditions-goods-and-services/#2>

## **Payment**

Each proponent is to propose a payment schedule, based on this a schedule will be discussed and confirmed with successful proponent to align with the funding agreement and workplan developed.

## **Contract**

The successful Proponent shall enter into a contract within 45 days of award.

## **Exclusion Clause**

Except as expressly and specifically permitted in these instructions to proponents, no proponent shall have any claim for any compensation of any kind whatsoever, as a result of participating in this RFP and by submitting a proposal, each proponent shall be deemed to have agreed that it has no claim.

## **Evaluation Criteria**

Proposals will be evaluated and ranked according to the following criteria:

- Experience – 20%
  - Experience with project management of this sort and References
  - Stability/years in business
  - Personnel qualifications and Accreditation
- Quality of Proposal – 30%
  - level of effort, presentation, response to need and processes, technology proposed, thoroughness, etc. Demonstrated knowledge and understanding of renewable and energy retrofits as well as working with community will be a component of this score as will acknowledgement of current supply chain and economic impact on budget.
- Price – 35%
- Safety & Safety Qualifications\* – 15%
  - Safety plan understanding this work involves varied work sites and could involve various contractors and suppliers.

## **CONFIDENTIALITY**

The Municipality of the County of Antigonish shall make every effort to safeguard the confidentiality of each proposal. However, all proposals may be subject to the provisions of Nova Scotia's *Freedom of Information and Protection of Privacy Act*, as amended.

Appendix A is below, the complete RFP document is 27 pages.

## **APPENDIX A**

The following report will provide additional details on the project scope, community buildings included, and type of work being proposed. These initial assessments and audits along with several structural audits were completed in 2020. Some buildings have undertaken efficiency upgrades since those initial assessments. All building representatives and identified stakeholders will need to meet in early days of the project to discuss and update the report. Readiness assessments of each of the nine buildings, along with review and completion of the structural assessments will be an important first component of an effective and efficient roll out of the project.

## **APPENDIX A continued**



# REPORT

## ICIP APPLICATION SEPT 2020

EFFICIENCY TO RENEWABLES, REDUCING GHG EMISSIONS AND INCREASING SUSTAINABILITY.

Initial Report Developed and Submitted By:

**David Brushett** edited by Tammy Feltmate for use in this RFP,  
July 2022.

# TABLE OF CONTENTS

Executive Summary	2
Keppoch Mountain Lodge	4
Highlander Curling Club	6
St Andrews Community Centre	8
Heatherton Community Centre	10
Havre Boucher Community Centre	12
St Joseph Community Centre	14
Lochaber Community Centre	16
Arisaig Parish Hall	18
Minitrail Community Centre	20

# EXECUTIVE SUMMARY

The consultant team of David Brushett and Mohsin Khan were hired by the Municipality of the County of Antigonish to design an energy project for submission under the Climate Change Mitigation Sub Stream of the Investing in Canada Infrastructure Program. The funding provides cost sharing from the Federal and Provincial governments for projects with the potential to reduce greenhouse gas emissions. To meet eligibility requirements the project was designed to meet the following criteria:

- Minimum project value of \$1 Million
- Multi-year project with completion date by October 2027
- Grouping of projects for public use and benefit
- Reduces greenhouse gas emissions
- Buildings Category focusing on deep energy retrofits

The consultants drew opportunities from a list of 17 buildings provided by the municipality. The following table summarizes the breakdown of project costs, funding, energy and cost savings for the group of community buildings. Estimated incentives from Efficiency Nova Scotia's Small Business Energy Solutions program for measures that reduce electricity usage are also provided. **Note:** December 2021 the building list was reduced to nine community buildings (T Feltmate., July 2022)

The total project is expected to cost \$1.49 Million. The federal and provincial governments would pay 73.3% of the cost (40% federal and 33.3% provincial). Efficiency Nova Scotia is estimated to provide 4.6% of project costs. This would require a funding contribution from the municipality of 21.7% or which could be recouped in the coming years from a reduction in annual capital costs contributions to the community organizations. The project is expected to save 741,715 kWh or \$112,088 per year. The project would pay for itself in 3.01 years.

The project would have a number of benefits in addition to cost savings including.

- GHG savings of 440 tons of CO<sub>2</sub> per (20,000 tree equivalent)
- Improved comfort conditions,
- Reduction in maintenance and future capital expenditures
- Local employment and economic activity. (An investment of \$1 Million in spending on energy efficiency typically generates a 4x multiplier in economic activity) The following sections of the report provide a detailed breakdown of the individual buildings and projects cost/savings estimates.

## Energy Project Summary

Facility	Project Cost	Federal Incentive 40%	Provincial Incentive 33.3%	Efficiency NS Rebate	Antigonish Co. Contribution	Energy Savings	Cost Savings	Simple Payback
Keppoch Mountain Lodge	\$33,600	\$13,440	\$11,190	\$2,184	\$6,786	13,900 kWh	\$2205	3.1 Years
Highlander Curling Club	\$184,715	\$73,886	\$61,565	\$10,130	\$39,134	86,476 kWh	\$13,667	2.9 Years
St. Andrews Community Centre	\$51,754	\$20,702	\$17,234	\$7,831	\$5,987	34,410 ekWh	\$5,364	1.1 Years
Heatherton Community Centre	\$189,020	\$75,608	\$63,000	\$8,454	\$41,958	97,118 ekWh	\$14,292	2.9 Years
Havre Boucher Community Centre	\$201,415	\$80,566	\$67,072	\$8,374	\$45,403	88,157 kWh	\$13,929	3.3 Years
St Joseph's Community Centre	\$83,510	\$23,422	\$19,323	\$3,115	\$12,695	51,848 kWh	\$7,521	1.7 Years
Arisaig Parish Hall	\$55,485	\$22,194	\$18,494	\$2,923	\$11,874	22,746 ekWh	\$3,214	3.7 Years
Lochaber Community Centre	\$75,000	\$30,000	\$25,000	\$3,160	\$16,840	31,360 kWh	\$4,955	3.4 Years
Lakevale Mini-Trail Community Centre	\$40,000	\$16,000	\$13,333	\$1,200	\$9,467	12,000 kWh	\$1,896	5.0 Years
<b>Total</b>	<b>\$914,499</b>	<b>\$355,818</b>	<b>\$296,211</b>	<b>\$47,371</b>	<b>\$190,144 +</b>	<b>438,015kWh</b>	<b>\$67,043</b>	<b>3.01 yrs</b>

**Note: These costs and savings estimates are pre-Covid; new calculations will have to be done.**

# KEPPOCH MOUNTAIN LODGE



Building Address	193 Keppoch Road, Antigonish, NS B2G 1R9	
Building Details	2,400 ft <sup>2</sup>	Construction/Major renovation 1980/2012
Building Usage	Outdoor recreation lodge, office, kitchen	
Building Hours	Year round, 7 days per week, 8 hours per day: 2800 hours/year	
2019 Energy Usage	13,946 kWh" <i>*Wood fireplace not included</i>	\$2,203
Energy Usage Intensity	Actual: 5.8 kWh/ft <sup>2</sup>	Median Similar Building: 31.9 kWh/ft <sup>2</sup>
2019 GHG Emissions	8.8 Tons CO <sub>2</sub> e	404 Trees

System Description	
Space Heating/Cooling	Mini-split heat pumps, electric baseboards, wood fireplace.
Service Water Heating	Electric Water Heating Tank
Ventilation	Heat Recovery Ventilator
Windows	Single hung, double glazed, good condition
Insulation	Walls: R-20, Attic R-40 assumed, Slab on Grade Foundation
Controls	No Centralized Controls. Wall mounted thermostats.
Lighting	4' T8 Fluorescent

Recommended Facility Improvement Measures						
	Measure	Cost	Est. ENS Incentive	Energy Savings	\$ Savings	Simple Payback
FIM 1	LED Lighting	\$1,100	\$474	1,899 kWh	\$300	2.1 Years
FIM 2	Higher Efficiency Heat Pumps	\$10,500	\$840	3360 kWh	\$530	18.2 Years
FIM 3	8 kW Solar PV	\$22,000	\$870	8,700 kWh	\$1,375	15.4 Years
<b>Total</b>		<b>\$33,600</b>	<b>\$2,184</b>	<b>13,900 kWh</b>	<b>\$2,205</b>	<b>14.2 Years</b>

# RECOMMENDED FACILITY IMPROVEMENT MEASURES



## FIM 1: LED LIGHTING UPGRADE

The current lighting is 2 lamp T8 fluorescent. Upgrading these to TLEDs with new ballasts would result in energy savings. Cost of this measure is expected to be \$1,100. Annual savings are expected to be 1,899 kWh or \$300. The rebate through Efficiency Nova Scotia's Small Business Energy Solutions program is expected to be \$474. Simple payback for the measure is 2.1 years.

## FIM 2 HEAT PUMP UPGRADE:

The existing mini-split heat pumps are at the end of life and could be replaced by higher efficiency models. Two 18,000 btu/hr mini-split heat pump replacements are recommended to increase the efficiency of heating. Cost of this measure is expected to be \$10,500. Annual savings are expected to be 3,360 kWh or \$530. The rebate through Efficiency Nova Scotia's Small Business Energy Solutions program is expected to be \$840. Simple payback for the measure is 18.2 years.

## FIM 3: SOLAR PV INSTALLATION

The south facing roof is well suited to host a Solar PV installation. A net-metered 8 kW solar pv installation has the potential to bring the facility to net zero assuming FIM 1 and FIM 2 are also implemented. Cost of this measure is expected to be \$22,000. Annual savings are expected to be 8,700 kWh or \$1,375. The rebate through Efficiency Nova Scotia's Small Business Energy Solutions program is expected to be \$870. Simple payback for the measure is 15.4 years. A roof structural assessment was outside the scope of the energy audit and should be undertaken prior to implementation. Allowance should also be made for annual maintenance of the system.

# HIGHLANDER CURLING CLUB



Building Address	3916 NS 316, St Andrews, NS, B0H1X0	
Building Details	13,200 ft <sup>2</sup>	Construction: Early 1990's
Building Usage	Curling Club	
Building Hours	Season Oct 15 <sup>th</sup> -Mar 31, 45 hours per week, 990 hours per year	
2019 Energy Usage	86,725 kWh	\$15,820
Energy Usage Intensity	Actual: 6.6 kWh/ft <sup>2</sup>	Median Similar Curling Rink: 23.2 kWh/ft <sup>2</sup>
2019 GHG Emissions	54.6 Tons CO <sub>2</sub> e	2,508 Trees

System Description	
Space Heating/Cooling	Electric Resistance,+ Mini-splits, Desuperheater for dehumidification
Service Water Heating	Desuperheater and Electric Water Heating Tank
Ventilation	Unused Heat Recovery Ventilator, natural ventilation
Windows	Double Glazed, Single hung, good condition
Insulation	Walls: R20, Attic R-32, Slab on Grade Foundation
Controls	No Centralized Controls. Space Heating controls by wall thermostats
Lighting	T8 Fluorescent elsewhere. CFLs, HID wall pack exterior.
Specialty System	Packaged R-404a Ice Plant , Kool-air Dehumidification Unit

Recommended Facility Improvement Measures						
	Measure	Cost	Est. ENS Incentive	Energy Savings	\$ Savings	Simple Payback
FIM 1	LED Lighting	\$9,215	\$1140	7,318 kWh	\$1160	7.0 Years
FIM 2	Attic Insulation	\$10,000	\$1040	4,158 kWh	\$656	13.6 Years
FIM 3	Mini-split Heat Pump in Kitchen	\$3,500	\$750	3,000 kWh	\$475	5.8 Years
FIM 4	65 kW Solar PV	\$162,000	\$7200	72,000 kWh	\$11,376	13.6 Years
<b>Total</b>		<b>\$184,715</b>	<b>\$10,130</b>	<b>86,476 kWh</b>	<b>\$13,667</b>	<b>12.8 Years</b>

# RECOMMENDED FACILITY IMPROVEMENT MEASURES



## FIM 1: LED LIGHTING UPGRADE

The current lighting is a combination of T8 Fluorescent, CFLs, and HID Exterior Wall Packs. Upgrading these to LEDs would result in energy savings. Cost of this measure is expected to be \$9,215 . Annual savings are expected to be 4,564 kWh or

\$. The rebate through Efficiency Nova Scotia's Small Business Energy Solutions program is expected to be \$. Simple payback for the measure is years.

## FIM 2 HEAT PUMP UPGRADE:

A mini-split heat pump could be added to the kitchen area. A 12,000 btu/hr mini-split heat pump installation is recommended to increase the efficiency of heating. Cost of this measure is expected to be \$3,500. Annual savings are expected to be 3,000 kWh or \$475. The rebate through Efficiency Nova Scotia's Small Business Energy Solutions program is expected to be \$750. Simple payback for the measure is 5.8 years.

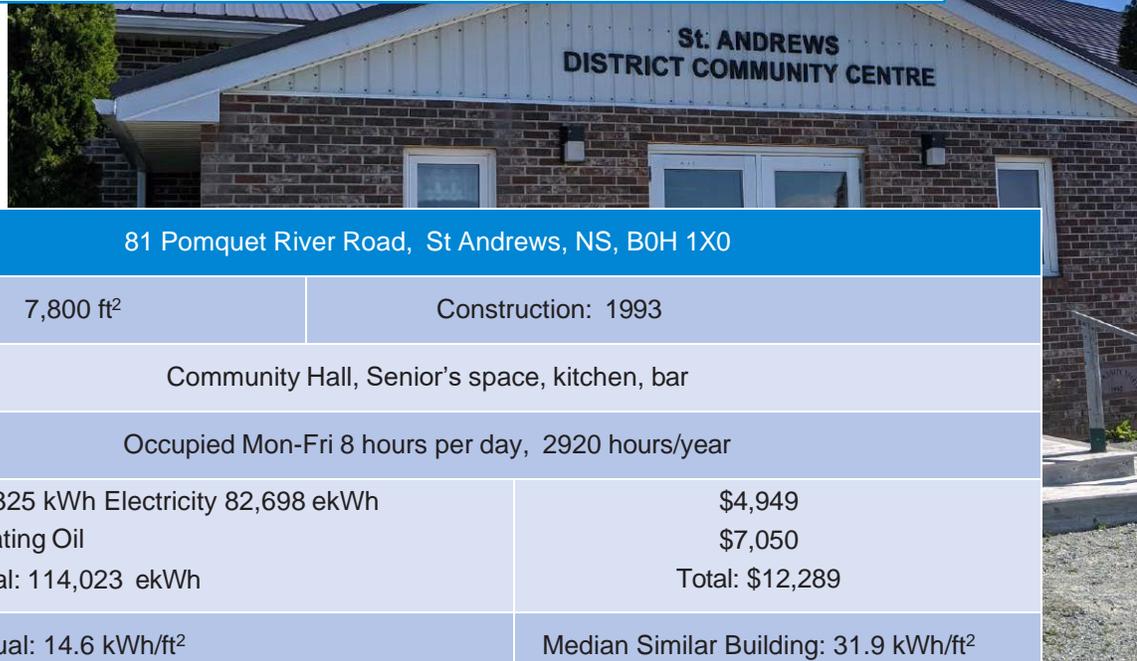
## FIM 3: ATTIC INSULATION

The attic insulation is a combination of batt insulation and blown in fiberglass. The insulation levels are uneven. It is estimated that the average thermal resistivity is R-32. Increasing this insulation value to R-50 would cost about \$10,000 and result in savings of 4,158 kWh or \$656. It is estimated that a rebate of \$1,040 would be received through Efficiency NS's Small Business Energy Solutions program. Simple payback for the measure would be 13.6 Years.

## FIM 4: SOLAR PV INSTALLATION

The south facing roof is well suited to host a Solar PV installation. A net-metered 65 kW solar pv installation has the potential to bring the facility to net zero assuming FIM 1, FIM 2, and FIM 3 are also implemented. Cost of this measure is expected to be \$162,000. Annual savings are expected to be 72,000 kWh or \$11,376. The rebate through Efficiency Nova Scotia's Small Business Energy Solutions program is expected to be \$7,200. Simple payback for the measure is 13.6 years. A roof structural assessment was outside the scope of the energy audit and should be undertaken prior to implementation. Allowance should also be made for annual maintenance of the system.

# ST. ANDREWS COMMUNITY CENTRE



Building Address	81 Pomquet River Road, St Andrews, NS, B0H 1X0	
Building Details	7,800 ft <sup>2</sup>	Construction: 1993
Building Usage	Community Hall, Senior's space, kitchen, bar	
Building Hours	Occupied Mon-Fri 8 hours per day, 2920 hours/year	
2019 Energy Usage	31,325 kWh Electricity 82,698 ekWh Heating Oil Total: 114,023 ekWh	\$4,949 \$7,050 Total: \$12,289
Energy Usage Intensity	Actual: 14.6 kWh/ft <sup>2</sup>	Median Similar Building: 31.9 kWh/ft <sup>2</sup>
2019 GHG Emissions	42.9 Tons CO <sub>2</sub> e	1969 Trees

## System Description

Space Heating/Cooling	Oil fired boiler, air conditioning unit for hall, mini-split heat pump in seniors' room
Service Water Heating	Indirect oil storage tanks
Ventilation	Naturally Ventilated + Exhaust Fans
Windows	Double glazed , good condition
Insulation	Walls: R20, Attic R-32, Slab on Grade Foundation
Controls	No Centralized Controls. Space Heating controls by wall thermostats
Lighting	T12 Fluorescent, incandescent. HID wall pack exterior.

## Recommended Facility Improvement Measures

	Measure	Cost	Est. ENS Incentive	Energy Savings	\$ Savings	Simple Payback
FIM 1	LED Lighting	\$5,745	\$3,842	15,369 kWh	\$2,428	0.8 Years
FIM 2	Attic Insulation	\$6,000	\$0	3,085 ekWh	\$415	14.5 Years
FIM 3	16 kW Solar PV	\$40,000	\$3,989	15,956 kWh	\$2,521	14.3 Years
Total		\$51,754	\$7,831	34,410 ekWh	\$5,364	8.2 Years

# RECOMMENDED FACILITY IMPROVEMENT MEASURES



## FIM 1: LED LIGHTING UPGRADE

The current lighting is a combination of T12 fluorescent and exterior high intensity discharge wall packs. Upgrading these to LEDs would result in energy savings. Cost of this measure is expected to be \$5,745. Annual savings are expected to be 15,369 kWh or \$2,428. The rebate through Efficiency Nova Scotia's Small Business Energy Solutions program is expected to be \$3,842. Simple payback for the measure is 0.8 years.

## FIM 2: ATTIC INSULATION

The attic insulation is insulated to approximately R-32. Increasing this insulation value to R-50 would cost about \$6,000 and result in savings of 3085 kWh of oil or \$415. This measure would not be eligible for an Efficiency NS rebate as it is non-electric. Simple payback for the measure would be 14.5 years.

## FIM 3: SOLAR PV INSTALLATION

A net-metered 16 kW solar PV installation has the potential to bring the facilities net-annual electricity usage to zero assuming FIM 1 is also implemented. Cost of this measure is expected to be \$40,000. Annual savings are expected to be 16,000 kWh or \$2,520. The rebate through Efficiency Nova Scotia's Small Business Energy Solutions program is expected to be \$1,600. Simple payback for the measure is 14.5 years. The ideal solar orientation is due South so there is a slight loss of productivity for eastern or western facing installation. A roof structural assessment was outside the scope of the energy audit and should be undertaken prior to implementation. Allowance should also be made for annual maintenance of the system.

# HEATHERTON COMMUNITY CENTRE



Building Address	42 Summerside Road, Heatherton, NS, B0H 1R0	
Building Details	23,270 ft <sup>2</sup>	Construction/Addition: 1965/1988
Building Usage	Community Events, Fitness Centre, Gym, rental space	
Building Hours	occupied average of 15 hours per week, 720 hours per year	
2019 Energy Usage	57,000 kWh Electricity Unavailable ekWh Heating Oil Total: Unavailable ekWh	\$9,120 \$Unavailable Total:
Energy Usage Intensity	Actual: Unavailable kWh/ft <sup>2</sup>	Median Similar Building: 31.9 kWh/ft <sup>2</sup>
2019 GHG Emissions	Unavailable Tons CO <sub>2</sub> e	Unavailable Trees

System Description	
Space Heating/Cooling	Oil fired boilers, mini-splits heat pump in various spaces
Service Water Heating	Electric Water Heater
Ventilation	Naturally Ventilated + Exhaust Fans
Windows	Double glazed , good condition
Insulation	Walls, Slab on Grade Foundation
Controls	Unused centralized controls for boiler hot water reset and nighttime setback . Space Heating controls by wall thermostats
Lighting	T8 Fluorescent

Recommended Facility Improvement Measures						
	Measure	Cost	Est. ENS Incentive	Energy Savings	\$ Savings	Simple Payback
FIM 1	LED Lighting	\$9,020	\$1,254	5,014 kWh	\$792	9.8 Years
FIM 2	Mini-split Heat Pumps	\$17,500	\$0	20,104 ekWh	\$2,500	7.0 Years
FIM 3	65 kW Solar PV	\$162,500	\$7,200	72,000 kWh	\$11,000	14.1 Years
<b>Total</b>		<b>\$189,020</b>	<b>\$8,454</b>	<b>97,118 ekWh</b>	<b>\$14,292</b>	<b>12.6 Years</b>

# RECOMMENDED FACILITY IMPROVEMENT MEASURES



## FIM 1: LED LIGHTING UPGRADE

The current lighting is primarily T8 Fluorescent. Upgrading these to LEDs would result in energy savings. Cost of this measure is expected to be \$9,020. Annual savings are expected to be 5,015 kWh or \$792. The rebate through Efficiency Nova Scotia's Small Business Energy Solutions program is expected to be \$1,254. Simple payback for the measure is 9.8 years.

## FIM 2 HEAT PUMP UPGRADE:

Mini-split heat pump could be added to 5 additional spaces. Five x 12,000 btu/hr mini-split heat pumps are recommended to increase the efficiency of heating. Cost of this measure is expected to be \$17,500. Annual savings are expected to be 20,104 kWh or \$2,500. The rebate through Efficiency Nova Scotia's Small Business Energy Solutions program is expected to be \$0. Simple payback for the measure is 7.0 years.

## FIM 3: SOLAR PV INSTALLATION

A net-metered 65 kW solar PV installation has the potential to bring the facilities net-annual electricity usage to zero assuming FIM 1 and FIM 2 are also implemented. The heat pump upgrade will save oil but will increase electricity usage allowing for a larger solar installation. Cost of this measure is expected to be \$189,020. Annual savings are expected to be 72,000 kWh or \$11,000. The rebate through Efficiency Nova Scotia's Small Business Energy Solutions program is expected to be \$7,200. Simple payback for the measure is 14.1 years. A roof structural assessment was outside the scope of the energy audit and should be undertaken prior to implementation. Allowance should also be made for annual maintenance of the system. ■

# HAVRE BOUCHER COMMUNITY CENTRE



Building Address	12,401 Highway #4	
Building Details	10,000 ft <sup>2</sup>	Construction: 2007
Building Usage	Community Centre for social and recreational events and gatherings	
Building Hours	occupied on average 70 hours per week, 3,500 hours per year	
2019 Energy Usage	86,680 kWh Electricity No Propane Bills Received Total: ? ekWh	\$13,565 ? Total: ?
Energy Usage Intensity	Actual: ? kWh/ft <sup>2</sup>	Median Similar Building: 31.9 kWh/ft <sup>2</sup>
2019 GHG Emissions	? Tons CO <sub>2</sub> e	? Trees

System Description	
Space Heating/Cooling	Ducted Heat Pumps, mini-splits, propane furnace backup
Service Water Heating	Electric Water Heater
Ventilation	Heat Recovery Ventilator
Windows	Double glazed , good condition
Insulation	R-20 Walls, R-50 Ceiling
Controls	Wall thermostats in gym control 2 heating zones
Lighting	TLED + LED interior, HID +LED Wall Packs on Exterior

Recommended Facility Improvement Measures						
	Measure	Cost	Est. ENS Incentive	Energy Savings	\$ Savings	Simple Payback
FIM 1	Exterior LED Lighting	\$1,040	\$164	657 kWh	\$104	8.4 Years
FIM 2	Timer on HRV	\$350	\$210	5,500 kWh	\$869	0.2 Years
FIM 3	Schedule Night Setback on Programmable Thermostats	\$25	0	2,000 kWh	\$316	0.1 Years
FIM 4	72 kW Ground Mount PV System	\$200,000	\$8,000	80,000 kWh	\$12,640	15.2 Years
<b>Total</b>		<b>\$201,415</b>	<b>\$8,374</b>	<b>88,157 ekWh</b>	<b>\$13,929</b>	<b>14.5 Years</b>

# RECOMMENDED FACILITY IMPROVEMENT MEASURES



## FIM 1: LED LIGHTING UPGRADE

There are 2 exterior high intensity discharge wall packs. Upgrading these to LEDs would result in energy savings. Cost of this measure is expected to be \$1,040. Annual savings are expected to be 657 kWh or \$104. The rebate through Efficiency Nova Scotia's Small Business Energy Solutions program is expected to be \$164. Simple payback for the measure is 8.4 years.

## FIM 2 TIMER ON HRV

The facility has a 60% efficiency, 600 cfm HRV with a ¼ hp blower that runs at constant speed 24/7. By installing a timer, heating and fan energy can be saved by turning the unit off during unoccupied periods at night. This measure was modeled using Ret Screen software. It is estimated that this would save 5,500 kWh or \$869 annually. The rebate from the Efficiency Nova Scotia Small Business Energy Solutions program is estimated to be \$210. The simple payback is 0.2 years.

## FIM 3 SCHEDULE NIGHT SETBACK

Space heating and cooling in the facility is controlled by two programmable thermostats. There are currently no nighttime setbacks scheduled. By scheduling a 4-degree setback during unoccupied periods at night it is estimated that savings of 2,000 kWh can be achieved. This would save \$300 annually with an almost instantaneous payback.

## FIM 4: SOLAR PV INSTALLATION

A net-metered 72 kW solar PV installation has the potential to bring the facilities net-annual electricity usage to zero assuming FIM 1, FIM 2, and FIM 3 are also implemented. Since the roof will need replacement in medium-term, a ground mount PV system was considered. Cost of this measure is expected to be \$200,000. Annual savings are expected to be 80,000 kWh or \$12,640. The rebate through Efficiency Nova Scotia's Small Business Energy Solutions program is expected to be \$8,000. Simple payback for the measure is 15.2 years. Allowance should also be made for annual maintenance of the system. Land acquisition is not an eligible cost under the Green Infrastructure Fund.

# ST JOSEPH COMMUNITY CENTRE



Building Address	2752 Ohio East Rd, Antigonish, NS B2G 2K8	
Building Details	9,870 ft <sup>2</sup>	Construction/Expansion: 2006
Building Usage	Community Centre. Used for community events including weddings, community kitchen and a proposed gym.	
Building Hours	20 hours a week on average	
2019 Energy Usage	23,880 kWh Electricity 72,002 ekWh Oil Total: 95,882	\$4,110 Electricity \$6,125 Oil Total: \$10,235
Energy Usage Intensity	Actual: 5.0 kWh/ft <sup>2</sup>	Median Similar Fire Station: 19.4 kWh/ft <sup>2</sup>
2019 GHG Emissions	35.1 Tons CO <sub>2</sub> e	1,579 Trees

System Description	
Space Heating/Cooling	Oil fired boiler. Roof top air conditioning unit
Service Water Heating	Electric Water Heating Tank
Ventilation	Naturally Ventilated + Exhaust Fans. Exhaust hoods in kitchen
Windows	Single hung, double glazed, good condition
Insulation	Walls: R-20, Roof R-32, Slab on Grade Foundation
Controls	No Centralized Controls. Space Heating controls by combination of wall thermostats and baseboard thermostats.
Lighting	4' T8 Fluorescent. Some incandescent in the main hall. LED wall pack exterior.

Recommended Facility Improvement Measures						
	Measure	Cost	Est. ENS Incentive	Energy Savings	\$ Savings	Simple Payback
FIM 1	LED Lighting	\$3,955	\$1,062	4,248 kWh	\$671	4.3 Years
FIM 2	Heat Pumps	\$21,000	\$0	24,500 kWh	\$3,200	6.6 Years
FIM 3	21 kW Solar PV	\$52,500	\$2,053	23,100 kWh	\$3,650	13.8 Years
Total		\$58,555	\$3,115	51,848 kWh	\$7,521	7.3 Years

# RECOMMENDED FACILITY IMPROVEMENT MEASURES



## FIM 1: LED LIGHTING UPGRADE

The current lighting is primarily T8 Fluorescent. Retrofitting existing fixtures with LEDs would result in energy savings. Cost of this measure is expected to be \$3,955. Annual savings are expected to be 4,248 kWh or \$671. The rebate through Efficiency Nova Scotia's Small Business Energy Solutions program is expected to be \$1,062. Simple payback for the measure is 4.3 years. It is recommended to use occupancy sensors throughout the Centre.

## FIM 2 HEAT PUMP UPGRADE:

Most of the area is heated by an oil-fired boiler. To decrease energy usage and emissions, mini-split heat pumps are recommended in the gym areas. The gym area is proposed to become a community fitness which will result in increased usage of the space. Three 2-ton mini-splits are recommended for the gym area.

## FIM 3: SOLAR PV INSTALLATION

Current flat roof has leak issues and should be either replaced or extensively repaired to extend its life before solar installation is considered. A net-metered 21 kW solar PV installation has the potential to bring the facilities close to net-annual electricity usage to zero assuming FIM 1 and FIM 2 are also implemented. The heat pump upgrade will save oil but will increase electricity usage allowing for a larger solar installation. Cost of this measure is expected to be \$52,500. Annual savings are expected to be 23,100 kWh or \$3,650. The rebate through Efficiency Nova Scotia's Small Business Energy Solutions program is expected to be \$2,053. Simple payback for the measure is 13.8 years. A roof structural assessment was outside the scope of the energy audit and should be undertaken prior to implementation. Allowance should also be made for annual maintenance of the system.

# LOCHABER COMMUNITY CENTRE



Building Address	1555 Nova Scotia Trunk 7, Antigonish, NS B2G 2L3	
Building Details	6400 ft <sup>2</sup>	Construction: 2014
Building Usage	Community Hall, Kitchen, Meeting Space, Fitness	
Building Hours	Sporadic Usage: 15 hours per week avg.	
2019 Energy Usage	31,360 kWh	\$4,955
Energy Usage Intensity	Actual: 4.9 kWh/ft <sup>2</sup>	Median Similar Community Hall: 31.9 kWh/ft <sup>2</sup>
2019 GHG Emissions	19.7 Tons CO <sub>2</sub> e	890 Trees

System Description	
Space Heating/Cooling	Geothermal Heat Pump from Lake
Water Heating	Geothermal Hot Water
Ventilation	2 VanEE HRV's only on during events
Windows	Double Glazed, Energy Efficiency
Insulation	R-20 Walls, R-40 attic assumed, slab on grade
Controls	Wall thermostats, wall hrv controls
Lighting	LED Lighting

Recommended Facility Improvement Measures						
	Measure	Cost	Est. ENS Incentive	Energy Savings	\$ Savings	Simple Payback
FIM 1	30 kW Solar PV Installation	\$75,000	\$3,160	31,360 kWh	\$4,955	14.5
Total		\$75,000	\$3,160	31,360 kWh	\$4,955	14.5

# RECOMMENDED FACILITY IMPROVEMENT MEASURES



## FIM 1: SOLAR PV INSTALLATION

The building is well suited to host a solar PV installation. A net-metered 30 kW solar pv installation has the potential to bring the facility to net zero. Cost of this measure is expected to be \$75,000. Annual savings are expected to be 31,360 kWh or \$4,955. The rebate through Efficiency Nova Scotia's Small Business Energy Solutions program is expected to be \$3,1360. Simple payback for the measure is 14.5 years. The ideal solar orientation is due South so there is a slight loss of productivity for East/West facing installation. A roof structural assessment was outside the scope of the energy audit and should be undertaken prior to implementation. Allowance should also be made for annual maintenance of the system.

# ARISAIG PARISH HALL



Building Address	5548 Highway 245, Maryvale, NS, B2G 2L1	
Building Details	3,985 ft <sup>2</sup>	Construction: 1989
Building Usage	Community Hall, Social Gathering, Pickleball	
Building Hours	Average 40 Hour Per Week	
2019 Energy Usage	46,472 ekWh Oil 17,000 kWh Electricity Total \$63,472	\$4,733 Oil \$2,686 Electric Total: \$7,419
Energy Usage Intensity	Actual: 15.8 kWh/ft <sup>2</sup>	Median Similar: 31.9 kWh/ft <sup>2</sup>
2019 GHG Emissions	23.8 Tons CO <sub>2</sub> e	1094 Trees

System Description	
Space Heating/Cooling	Oil forced-air furnace, Electric Baseboard kitchen, mini-split heat pumps in hall
Ventilation	Naturally Ventilated
Windows	Double glazed, good condition
Insulation	Old: Attic R-20 fiberglass, Ralls R-12, new R-20 Walls, R-20 attic assumed
Controls	No Centralized Controls.
Lighting	T8 Fluorescently and CFL on exterior

Recommended Facility Improvement Measures						
	Measure	Cost	Est. ENS Incentive	Energy Savings	\$ Savings	Simple Payback
FIM 1	LED Lighting	\$2,985	\$1,523	6,094 kWh	\$964	1.5 Years
FIM 2	1.5 Ton Mini-Split in Kitchen	\$5,000	\$500	2,000 kWh	\$300	15 Years
FIM 3	R-50 Attic Insulation	\$7,500	\$0	5,652 ekWh	\$500	15 Years
FIM 4	9 kW Solar PV+Roof Repairs	\$40,000	\$900	9,000 kWh	\$1,450	26.9 Years
<b>Total</b>		<b>\$55,485</b>	<b>\$2,923</b>	<b>22,746 ekWh</b>	<b>\$3,214</b>	<b>16.3 Years</b>

# RECOMMENDED FACILITY IMPROVEMENT MEASURES



## FIM 1: LED LIGHTING UPGRADE

The lighting is T8 fluorescent. Upgrading these to LEDs would result in energy savings. Cost of this measure is expected to be \$2,985. Annual savings are expected to be 6,094 kWh or \$964. Rebate from Efficiency Nova Scotia would be \$1,523. Simple payback for the measure is 1.5 years.

## FIM 2: HEAT PUMP UPGRADE

The kitchen is currently heated with electric baseboards. An 18,000 btu/hr mini-split heat pump is recommended to increase the efficiency of heating. Cost of this measure is expected to be \$5,000. Annual savings are expected to be 2,000 kWh or \$300. Simple payback for the measure is 15 years.

## FIM 3: ATTIC INSULATION

The attic insulation is insulated to approximately R-20. Increasing this insulation value to R-50 would cost about \$7,599 and result in savings of 5,652 kWh of oil or \$500. This measure would not be eligible for an Efficiency NS rebate as it is non- electric . Simple payback for the measure would be 15 years.

## FIM 4: SOLAR PV INSTALLATION

A net-metered 9 kW solar pv installation has the potential to offset much of the facility's electricity costs. Cost of this measure is expected to be \$40,000 and includes roof repairs. Annual savings are expected to be 9,000 kWh or \$1,450. The rebate through Efficiency Nova Scotia's Small Business Energy Solutions program is expected to be \$900. Simple payback for the measure is 26.9 years. A roof structural assessment was outside the scope of the energy audit and should be undertaken prior to implementation. Allowance should also be made for annual maintenance of the system.

# MINITRAIL COMMUNITY CENTRE

The audit team was not able to get access to this site during trips to Antigonish. Only solar energy was therefore considered.

Building Address	4382 Highway 337, Lakevale, NS, B2G 2L2	
Building Details	4,500 ft <sup>2</sup>	Construction/Expansion: 1965
Building Usage	Community Hall, classrooms, kitchen, office	
Building Hours	Unavailable	
2019 Energy Usage	Oil: 36,564 ekWh Electric: 12,000 kWh Propane: 1,332 ekWh Total: 49,896 ekWh	Oil: \$3,834 Electric: \$1,896 Propane: \$188 Total: \$5,918
Energy Usage Intensity	Actual: 11.1 kWh/ft <sup>2</sup>	Median Similar Building: 31.9 kWh/ft <sup>2</sup>
2019 GHG Emissions	Tons 17 CO <sub>2</sub> e	782 Trees

## Recommended Facility Improvement Measures

	Measure	Cost	Est. ENS Incentive	Energy Savings	\$ Savings	Simple Payback
FIM 1	11 kW Solar PV	\$40,000	\$1,200	12,000 kWh	\$1,896	20.5 Years
Total		\$40,000	\$1,200	12,000 kWh	\$1,896	20.5 Years

### FIM 1: SOLAR PV INSTALLATION

A net-metered 11 kW solar pv installation has the potential to offset the facility's electricity usage. Cost of this measure is expected to be \$40,000. Annual savings are expected to be 12,000 kWh or \$1896. The rebate through Efficiency Nova Scotia's Small Business Energy Solutions program is expected to be \$1,200. Simple payback for the measure is 20.5 years. A roof structural assessment was outside the scope of the energy audit and should be undertaken prior to implementation. Allowance should also be made for annual maintenance of the system.



Report was initially submitted  
September 7, 2020