

# Smart Cities Challenge: Milestone #8 Report

Project Activities from September 2, 2022, to March 1, 2023

Submitted April 6, 2023

Town of Bridgewater  
ENERGIZE BRIDGEWATER

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## Supplementary Documents

- I. *Energize Bridgewater Expenditures & Revenues Report*
- II. *Schedule C1: Declaration of Completion*

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# Town of Bridgewater Smart Cities Challenge

## Milestone #8 Report

### Introduction

The Town of Bridgewater continues to work towards the goal of reducing the energy poverty rate in Bridgewater by 20% by 2026, through a complement of innovative programs developed in collaboration with a diverse network of community partners. The following report summarizes the Energize Bridgewater Energy Poverty Reduction Program's progress on activities and outcomes from September 2, 2022, to March 1, 2023, and marks the completion of Phase 1, as outlined in Schedule A.2, Amendment 2 of the Smart Cities Contribution Agreement finalized in March of 2022.

The Energize Bridgewater project continues to be guided by three key goals:

1. To reduce energy poverty in our community
2. To reduce greenhouse gas emissions
3. To reduce and stabilize energy costs for residents

This work would not have been successful without the ongoing support provided by Infrastructure Canada, and the EB team appreciates the continued guidance as we design and deliver this project.

## Project Activities from September 2, 2022, to March 1, 2023

As required by Section 9.2 of the Canada – Town of Bridgewater Smart Cities Challenge Agreement for Energy Poverty Reduction Project (“the Agreement”), this claim contains the following:

1. A declaration by a senior official designated in writing by the Recipient as deemed acceptable to Canada, in the form set out in Schedule C.1 (Declaration of Completion – Milestone) and it must list all relevant documents as identified under Section 10 (Reporting):
  - ◇ Attached is a completed and signed copy of Schedule C.1 (Declaration of Completion – Milestone)
  - ◇ Section 10 describes the requirement for annual financial reporting.
  - ◇ Per the Agreement, Milestone 8 is not considered an annual financial reporting Milestone. Annual financial reporting will occur following Milestone 9.
  - ◇
  
2. A description of the Milestone(s) claimed and a breakdown of Project revenues and expenditures, consistent with Schedule A (The Project), including but not limited to Schedule A.2 Milestones and Cashflow) of this Agreement and in a format acceptable to Canada:
  - ◇ Attached is the Milestone #8 Expenditures and Revenues Report
  
3. A report that includes a summary of the Project’s progress on activities and outcomes achieved to date and the information identified in Schedule B (Reporting Requirements):
  - ◇ The Milestone Report on the following pages is laid out according to the requirements of Schedule B.1: Progress Report.

# Milestone Report

## A. Project Progress

*General description of the Project progress and major achievements to date (including any variations to the original activities, timelines, and outcomes)*

As we move into the implementation phase of the Energy Poverty Reduction Program, this report describes the activities of the program from September 2, 2022 to March 1, 2023, and marks the completion of Phase 1 of the project, which emphasized partnership development, detailed service and technical design, service procurement, stakeholder consultation, and privacy impact assessment (PIA).

## Program Governance, Management, & Evaluation

- Program Governance
  - Guidance continues to flow from Town Council and the Energize Bridgewater Advisory Committee to the project team through bi-monthly meetings.
  - The Town of Bridgewater Data Governance Committee has continued the implementation of the *Open Smart Community Pilot Policy*. Opportunities for privacy and security improvement are being identified, and the work will inform the development of a Privacy Management Program that will govern Town operations, as well as improvements to records management systems.
  - This reporting period saw the completion of the draft Preliminary Privacy Impact Assessment by Valencia Risk Consultants, which is currently under review by Town of Bridgewater staff.
  
- Program Management
  - Recruitment and retention continue to represent a challenge to the success of the project that is not unique to Bridgewater among Smart Cities winners, and also continues to be experienced across the Energize Bridgewater project partners in governmental, private sector, and non-profit organizations. These challenges have been in evidence since the beginning of the project and have presented one of the most significant barriers to the completion of Phase 1 project activities. A full accounting of staffing changes through the project are outlined in the Phase 1 Completion Report.
  - Recruitment for a replacement for the Senior Energy Manager, who left the project in November of 2021, continues to present significant challenges. Subsequently, the IT Consultant has continued to provide contracted services toward the successful development and completion of the lab proof of concept for the Energy Management Information System (EMIS) as part of Energize Bridgewater's partnership with the Nova Scotia Community College (NSCC).
  - Recruitment for a new SEM resulted in a successful candidate in October of 2022, however complications related to permanent residency status have delayed their start

date with the project multiple times. They are currently forecast to join the team in April of 2023.

- The Onsite Energy Manager left the project in December of 2022. Although they are still available to the project in a limited advisory capacity, the loss of this resource without the successful recruitment of a new SEM has caused further delays, particularly in the development of the next phase of EMIS design and testing.
  - A Data Science Analyst was successfully recruited in December of 2022 through Dalhousie University. The position is funded in part by the Nova Scotia Co-operative Education Incentive. The Data Science Analyst is currently working with the collaborative EMIS team on the development of the MVP and field testing.
  - The Project Coordinator left the project for a position internal to the Town of Bridgewater in July 2022. Recruitment for a replacement was successful, however the candidate was delayed in joining the project due to immigration processes. Consequently, the outgoing Project Coordinator continued in the role at a 50% capacity until November of 2022, when the new Project Coordinator joined the project.
  - The Policy Analyst left the project in December of 2022. The position remains vacant while the Project Director evaluates changing resourcing needs as the Energy Poverty Reduction Program begins Phase 2 and focus shifts to program implementation.
  - The EMIS Project Assistant joined the project in September of 2022 to provide additional support and capacity for the EMIS design, testing, and procurement in the absence of the Senior Energy Manager, and in anticipation of additional administrative and records management needs during the MVP and field testing of the EMIS in collaboration with NSCC.
  - Additional discussion on the challenges and risks related to Project Management can be found under Section E of this report.
- Performance Measurement & Evaluation
    - The Phase 1 Completion Report will be submitted at a later date and will provide a full summary of all activities to date.
  - Risk Management & Quality Control
    - The EB team continues to track risk management and conducts regular reporting and review activities.
  - Communications & Engagement
    - Energize Bridgewater was invited to deliver a presentation at the American Planning Association's National Planning Conference 2022 (Online version, May 18-20, 2022), in conjunction with Sustainability Solutions Group (SSG) which had authored Bridgewater's 2018 Community Energy Investment Plan. The presentation, titled "How to Power Past that Retrofitting Inertia," focused on the innovations of the Energize Bridgewater program including its financing model, Coordinated Access System, and IT technologies. Attendees heard about how the Energize Bridgewater program is seeking to stimulate deep energy retrofits with equity and accessibility in mind.

- The Planner 1 continues to conduct interviews and engagement activities with landlords and developers to understand their perspectives on split incentives for energy retrofits, what they believe their role is in providing affordable housing in the Town, and whether they are willing to work with government agencies or non-profits to provide affordable housing to Bridgewater residents. Feedback continues to be used to inform program development. For more information about these ongoing conversations see Section E.
  - Energize Bridgewater is now working with a planning student at Dalhousie University who is completing an honours thesis about split incentive issues in Bridgewater through conducting a series of interviews with landlords about energy efficiency incentives.
  - The Planner 1 completed International Association of Public Participation engagement training and presented a workshop to Energize Bridgewater staff based on course materials.
  - Work with the communications consultant is ongoing, and has included photography and video related to program delivery, press releases, website maintenance and content development, and a social media campaign promoting Energize Bridgewater Home Upgrades as part of program activation.
  - Media attention from press releases included interview requests fielded by the Planner 1.
  - Communications activities for Energize Bridgewater and the Home Upgrades program also included newspaper ads, transit ads, posters around town, door hangers, and brochures.
  - Additional communications and engagement activities are described in Section F.
  - EB collaborated with SSODA to host an event on National Housing Day (November 22), which served as the official launch for SSODA and the announcement of the upcoming launch of Energize Bridgewater Home Upgrades on December 1.
  - The day's events included opening ceremonies led by a Mi'kmaq Elder, engagement activities focussed on gathering feedback for future affordable housing development, a presentation from an affordable housing developer from New Brunswick, speeches from the Mayor of Bridgewater, the Executive Director of SSODA and a presentation about the Home Upgrades program by Energize Bridgewater staff, and complementary refreshments.
  - The Planner 1 also contributed content about Energize Bridgewater programming to INFC communications staff for inclusion on the Smart Cities website.
  - The Project Director completed an interview with Dr. Peter Carr with the University of Waterloo, Department of Management Sciences as part of the *Impact of information technology on organizations and society* (4<sup>th</sup> year Undergraduate course).
- Program Funding
    - The Energy Management Information System (EMIS) design and procurement processes continue to be supported by a Community Innovation Grant from the Atlantic Canada Opportunities Agency.

- Community Efficiency Financing from the Federation of Canadian Municipalities continues to contribute Bridgewater’s Property-Assessed Clean Energy (PACE) program (Clean Energy Financing or CEF). The program has now also been integrated into the Housing Energy Management System (Energize Bridgewater Home Upgrades).
  - The funding agreement contains a grant component that is calculated at 5% of the total amount loaned to homeowners. Should the Town manage to issue the full \$5.2M (\$4.88M from FCM plus \$400K from Town borrowing), the grant component would grow to \$264K. This grant was originally intended to be used as a loan-loss reserve fund. However, FCM has converted it to a grant for the Town to use more broadly to support the PACE/CEF program within certain restrictions. On January 30, 2023, Town Council approved the use of this grant to provide \$250 subsidy to each EBHU participant. This is used to waive the PACE administration fee for any Clean Energy Financing needed to complete the retrofits recommended to achieve a 52% reduction in GHGs.
- The Data Science Analyst position is funded in part by a Province of Nova Scotia Co-operative Education Incentive.

*For more information about ongoing financial contributions to the project, please refer to the attached the Milestone 8 Expenditures and Funding Report.*

### Coordinated Access System

The South Shore Open Doors Association continues to provide Coordinated Access to Bridgewater residents as part of their agreement with Energize Bridgewater and has expanded to provide housing support services to residents of Lunenburg County and the Region of Queens under contract to the Province of Nova Scotia.

The following data are compiled from SSODA’s most recent quarterly report to the Town of Bridgewater, and provide a snapshot of homelessness, housing insecurity, and energy poverty within Bridgewater and the larger community:

- 67: New intakes completed from October 1, 2022, to December 31, 2022
- 191: Total number of intakes completed since May 2022
- 87: Total number of identified households experiencing homelessness. Within that, there are the following:
  - 78 families
  - 119 children
  - 44 Senior-led households
  - 3 veterans
  - 15 Indigenous-led households
  - 5 African Nova Scotian-led households
  - 1 Latin/Hispanic-led household
  - 3 youth-led households



- 43 households identify as chronically homeless (6+ months in a 12-month period or 18+ months in a 3-year period)
- 57 households identified as experiencing energy poverty, totalling \$51,647.15 in arrears to Nova Scotia Power. All 57 households were identified as "renting."
- 89 households state they require housing located within the Town of Bridgewater due to employment, medical needs, reliance on transit, or access to community support. It is important to note that not all households are currently residing in Bridgewater.

Breakdown of community of origin:

- 7 households from Chester
- 10 households from Lunenburg
- 82 households from Bridgewater
- 62 households from the Municipality of the District of Lunenburg
- 13 households from Queens County
- 4 households from Mahone Bay
- 13 households did not disclose community of origin

Since June 2022, staff has assisted 66 households in finding and obtaining long-term housing.

Key Performance Indicator Updates:

- By-Name List (BNL): Data reliability testing began September 1, 2022. During this time the team identified issues with the intake, which led to inconsistent responses. SSODA reviewed the intake and performed the needed updates. As well, SSODA has hired a System Planner, who has been reviewing all files and updating the BNL as needed. SSODA resumed testing data reliability January 30, 2023.
- Homeless Individuals and Families Information System (HIFIS): Due to funding restructuring within the community, the use of HIFIS is now limited to two agencies: SSODA and Harbour House. All other agencies are not eligible for HIFIS use but will refer into the system for SSODA to capture data within HIFIS.
- Number of households at-risk served by program (cumulative) and projections for Smart Cities project goal of 350 households by March 31, 2026: 178 households residing in Lunenburg County have been served by SSODA from May 25 to December 31, 2022. The current average indicates a rate of 32 intakes per month. If the rate of intakes does not decrease, our projections indicate we will serve 2300 households by March 31, 2025 (approximately 6.5 times more households than our established goal).

### [Housing Energy Management System: Energize Bridgewater Home Upgrades](#)

The Housing Energy Management System has now fully transitioned to service delivery under the "Energize Bridgewater Home Upgrades" brand and was officially launched on December 1, 2022.

The Energize Bridgewater Home Upgrades program works by stacking federal and provincial incentives along with Clean Energy Financing to make it easier for homeowners and landlords to afford energy efficient improvements. Current eligible upgrades include heat pumps, insulation, and draft proofing.

Any homeowner or landlord within the Town of Bridgewater struggling to afford energy bills is eligible, including owners of single-family homes, semi-detached homes, and mobile homes. The program does not currently extend to renters, though it does include landlords who want to reduce the running costs of a single-unit rental home. Owners of multi-unit buildings are not currently eligible for the program, but staff are working in collaboration with partners at EfficiencyOne to develop a program offering for owners of multi-unit residential buildings.

The Home Upgrades Program Navigator supports participants in finding the best-fit financing and figuring out which improvements will best reduce home heating bills, blending the incentives, funding, and expertise of our partner organizations to maximize energy savings. The Program streams participants to the right financing option depending on homeowner needs, considering income and life situation.

The process begins and ends with a home energy assessment to measure before-and-after results, with the post-upgrade assessment confirming projected cost savings. Program administrators schedule Home Energy Advisors and contractors for assessments and upgrades so that participants don't need to hire and manage their own contractors.

Since its launch Home Upgrades has completed 23 intakes into the program, with participants currently proceeding with funded and financed retrofits for insulation, electrical panel upgrades, heat pumps, and draft-proofing.

Some barriers to inclusion in the Home Upgrades program have been observed. Two potential applicants could not participate because their household income was too high (low-income cut-offs for EfficiencyOne programs are in the process of being evaluated and readjusted to align with more recent census data). Three potential applicants were unsuccessful because they are landlords with multi-unit rental properties and are not currently eligible for funding or financing streams offered through Home Upgrades. In collaboration with EfficiencyOne, Energize Bridgewater staff are currently developing a new offering within the Home Upgrades program specifically for landlords and tenants to address this barrier.

A larger and more significant barrier to inclusion has been reported by SSODA. Of their intakes since Home Upgrades began in December, only one was eligible to be referred to the program. During that same period, as noted above, they completed intakes with 57 households who were identified as experiencing energy poverty, with combined arrears to Nova Scotia Power totalling \$51,647.15. All 57 households were identified as "Renting." Staff are continuing to evaluate the ability of the EBHU to address energy poverty among renters, and seeking new funding opportunities that might allow for their inclusion in EBHU in the future.

Program applicants are currently being assessed for inclusion in the Home Upgrades program by an Energize Bridgewater staff member acting in the role of program navigator in addition to fulfilling their other role (either as Planner 1 or EMIS administrative assistant). The utility of the role, along with the impact on internal staffing capacity was evaluated in January and March 2023. It was concluded that the position requires a dedicated position either within Energize Bridgewater or contracted to a community partner organization. There may be significant advantages to leveraging the experience and capacity of

larger partners in delivering retrofit services, particularly in consideration of the ultimate program goals of scalability and transferability.

Under the terms of the HEMS pilot service delivery agreement, EfficiencyOne (E1) is managing retrofit services to program participants. E1 coordinates and applies incentives from federal, provincial, and municipal programs towards eligible energy efficiency measures to reduce the project cost to participants. Cost-sharing for HEMS is between E1 (existing programs) and Town of Bridgewater (incremental administration), with the balance will be paid for by the homeowner or property owner through Clean Energy Financing (CEF), which is administered by the Clean Foundation and provided by the Town of Bridgewater. For more details related to the Federation of Canadian Municipalities' *Community Efficiency Financing Program* and the \$4.88M in low-interest financing available to residents through the Town of Bridgewater's Property Assessed Clean Energy (PACE) financing mechanism please see Milestone Reports 5 & 6).

Referrals to SSODA were made by the Navigator in cases where a participant was experiencing housing insecurity or in need of other assistance outside the offerings of the EBHU. A participant might be referred SSODA while also being referred to EBHU.

*Energize Bridgewater Intake Data: December 1, 2022 – March 1, 2023*

INTAKES	December	January	February	March	Total
Total Intakes	12	14	7		33
From the total intakes, the following warm referrals were made. Some households are referred to more than one program.					0
EBHU Warm Referral	10	8	5		23
CEF Warm Referral	2	6	2		10
SSODA Warm Referral	2	0	0		2
Based on completed intakes, the energy poverty and housing security rates for participants are below.					0
Energy Poverty Rate	75%	38%	14%		
Housing Insecurity Rate	25%	0%	0%		25%

### Continuous Energy Management Support

The development of a Continuing Energy Management Support (CEMS) service as part of the HEMS and EMIS has been recommended by the Onsite Energy Manager. The core objectives of CEMS are to:

- Enhance participant understanding of energy usage
- Enable participants to act on opportunities for reducing energy use identified through EMIS and other sources
- Enhance core objectives of HEMS of reducing energy poverty and reducing annual energy expenses and annual GHG emissions for residents

CEMS is currently included within HEMS but will also be closely aligned with EMIS. The team is drafting a concept intention and scope of work for the CEMS that is being informed by the ongoing testing and development of the EMIS in partnership with Nova Scotia Community College and the EBHU. Finalization of the concept intention and scope of work will follow the completion of the MVP and field testing of the EMIS, once the new Senior Energy Manager is in place on the project team.

### Energy Management Information System

- Per the previous Milestone Report, the Energy Management Information System (EMIS) Lab Proof of Concept (POC) was conducted over the spring and summer of 2022 under the supervision of the IT Consultant and the Onsite Energy Manager, in partnership with Dr. Wayne Groszko and the energy research team at the Applied Research division of the Nova Scotia Community College (NSCC). The Lab POC completed its core objectives (data transmission from sensor to database to reporting dashboard) far ahead of schedule, and the team has shifted to planning the next phase of EMIS testing to determine a minimum viable product (MVP) and then conduct field testing in homes.
- Following from the findings of the Lab POC, the sensors, database, and other technologies to be deployed for the community EMIS have been selected. Bearing in mind that these technologies are now being deployed as part of the next phase of EMIS testing to develop the minimum viable product and proceed to field trials, this may not be the final combination of technologies that is judged most useful, accessible, and cost effective for Bridgewater residents, particularly participants in energy poverty. Specific details about the selections are available upon request.
- In order to proceed into the next phase of EMIS development, a Request for Standing Offer was prepared and issued in February 2023 to solicit IT personnel on a temporary basis to complement the core project team. Pricing for five (5) specific resources were sought.
- The Town also negotiated a second Collaborative Research Agreement with the Applied Research division of the Nova Scotia Community College, led by Dr. Wayne Groszko. This contract will be in place to for the Minimum Viable Product and Field Testing phase of the EMIS development.

### Community Energy Systems

#### ***Feasibility Assessment***

The work on the Community Energy Systems stream to date has identified significant regulatory and financial barriers that need to be overcome before any further progress can be made. The Town of Bridgewater continues to identify and evaluate relevant changes in Community Energy Systems (CES) feasibility areas first assessed for the Town by SNC-Lavalin Inc. (SNC-L) in a 2020 Renewable Energy Resource Assessment.

Current feasibility of the development of a community energy system by the Town of Bridgewater was evaluated by Tapestry Community Capital as part of their work toward detailed design and procurement planning of the investment system. Tapestry's key findings included the following:

*“The Current policy environment in Nova Scotia is not supportive of small-scale community energy projects. This may change with new Department of Natural Resources and Renewables programs on the horizon, such as the Community Solar Program and new net-metering legislation.*

- *Non-utility scale solar is not financially viable without public grants and incentives, or new business models that allow producers to sell clean power at above market rates. Models that could be considered include a power purchase agreement (PPA) with a large energy user, PPA with the municipality, or a resident subscription model (in cooperation with Nova Scotia Power).*
- *Grant funding would support the viability of a CES development. There are many federal and provincial grant programs that would be a good fit for a CES project in Bridgewater.*
- *Lenders are eager to invest in renewable energy projects –their decision to do so hinges on a viable business model, not a lack of capital or interest to deploy.*
- *To receive investment from a CEDIF [Community Economic Development Investment Fund], the CES would need to be a for-profit entity.”*

Following from these findings, Bridgewater Town Council has directed the Economic Development Officer to explore interest in a community renewable energy project with existing local CEDIFs.

Tapestry’s findings add to the Town’s existing research around the development of large-scale Community Energy Systems. The 2020 SNC-Lavalin Renewable Energy Resource Study (RERS) found that wind and solar community energy systems are technically feasible. However, Tapestry’s findings reiterated that the core barrier for project development is financial. The current regulatory framework does not permit such projects to obtain a favourable Power Purchase Agreement (PPA). The PPA, which is based on a system’s annual power production and a defined revenue rate per kilowatt hour generated, defines the revenue for the project which is needed to fully assess a project’s economic feasibility and financial risk.

In 2022, the Town’s Energy Manager carried out a literature review to see if new programs or opportunities had developed since the completion of the RERS. As part of this review, it was noted that in early 2022, Customer First Renewables, on behalf of the Province of Nova Scotia, released a Request for Proposal (RFP) for Rate Based Procurement to attract Renewable Low-Impact Electricity solutions through a competitive process. The RFP invited Independent Power Producers (IPP) to submit their project for consideration along with fixed energy rate of no greater than \$58 / MWh (\$0.058 / kwh) for establishing a PPA. Other requirements include a grid impact assessment and engineering design.

Consequently, it was the Energy Manager’s opinion that regardless of the development pathway chosen by the Town to implement a community-scale energy system, the engineering design on one or more sites with one or more technologies should occur to de-risk future development, prepare for future provincial and federal funding opportunities, enhance stakeholder collaboration discussions, and to position the Town as an IPP in future Rate Based Procurement RFPs or provincial programs.

The current cost for undertaking engineering design is estimated to be in the range of \$200K - \$400K, depending on the type and scale of the project(s). Barriers to undertaking this work include internal financial and human resource limitations. Given that funding for a Community Energy System is not part of the Smart Cities agreement, the Town of Bridgewater is not able to support the next phase of this work without securing new funding opportunities. The Town is prohibited from owning or investing in

an entity that could provide financing to a CES. It is important to note that program outcomes will not be negatively impacted by a lack of progress in the development of CES at this time.

### Investment System

The Town retained the services of a financial consultant who is supporting the detailed design and planning of the Investment System. Tapestry Community Capital has progressed the detailed design of the Investment system and has completed a financial model after conducting stakeholder consultations, as well as a resource plan containing recommendations related to internal and external service provision.

Tapestry's report has been completed and reviewed by staff. Their recommendations were provided to Bridgewater council, who, as noted above, directed staff to reach out to existing Nova Scotia CEDIFs and assess their willingness to engage in business opportunities for the development of the energy efficiency retrofit and community energy systems sectors in Bridgewater.

Municipal capitalization opportunities have shifted substantially since 2019, with the creation and expansion of energy efficiency programs for low- and middle-income earners by federal and provincial granting agencies and departments. As such, the funding and financing opportunities that can be stacked as part of the EBHU have increased and improved dramatically over the last two years. Therefore, the project is prioritizing this stream as the most effective and immediate path to energy poverty reduction for Bridgewater residents.

The Town continues to offer Bridgewater homeowners access to low-interest financing through the Town's Clean Energy Financing (CEF) mechanism, supported by the Federation of Canadian Municipalities' *Community Efficiency Financing Program*. CEF is now fully integrated into the funding and financing opportunities that are available to participants in the Energize Bridgewater Home Upgrades program. The Town of Bridgewater has entered into a renewed agreement with the Clean Foundation for five years of CEF administration. Council has approved changes to the program terms to make them more affordable for residents who are participating in Home Upgrades, including waiving administration fees.

For more details about the project's FCM funding and CEF financing program see the Milestone 5, 6, and 7 Reports.

## B. Performance Indicators

Updated data on performance indicators listed in Schedule A.1 (Project Description) compared to the start of the Project

Core Outcomes Table

Core Outcome	Key Performance Indicator	Update
Reduce energy poverty rate (Outcome 1)	Percent of Bridgewater households living in energy poverty	<ul style="list-style-type: none"> <li>No reporting this Milestone.</li> </ul>
Reduce and stabilize energy expenses for residents (Outcome 7)	Spending on home energy consumption for participating residential properties	<ul style="list-style-type: none"> <li>No reporting this Milestone.</li> </ul>
Reduce greenhouse gas emissions (Outcome 16)	Greenhouse gas emissions from home energy consumption in participating residential properties	<ul style="list-style-type: none"> <li>No reporting this Milestone.</li> </ul>

Performance Indicators Table

Service Area	Activities, Outputs, Outcome Measures	Performance Indicator	Update
Program Governance, Management, and Evaluation	Presentation at annual national or international event		Presentation at APA, May 2022. For details see page 6.
	Annual local public event		Housing Day event hosted by Energize Bridgewater, November 2022. For details see page 7.
	Phase 1 Completion Report		To be submitted separately from the Milestone 8 Report.
Housing Energy Management System	EMIS Set-up Complete	Tech Selection	Preliminary tech. selection complete. Details on page 12.
	Dwelling Units served by program (cumulative)	# served (cumulative)	23 total intakes into EBHU program since December 1, 2022.

Service Area	Activities, Outputs, Outcome Measures	Performance Indicator	Update
Community Energy System	CES Strategic Review	Annual Review/Pivot point	Annual review complete. See page 13.
Investment System	Partnership development and detailed program design	Complete	Completed by Tapestry Community Capital, see page 14.

**C. Community Employment Benefits**

*Overview and progress update about the Community Employment Benefits strategy Project, including a qualitative narrative and quantitative data as applicable for the targets set for the Project.*

The Energize Bridgewater project continues to prioritize Community Employment Benefits within the limitations of human resource requirements. The project focuses on representation of immigrants, youth, and female-identified candidates in recruitment processes. The current Energize Bridgewater staffing ratio is four women and two men, which will increase to three men when the Senior Energy Manager joins the team in April. Currently two staff are recent immigrants, one of whom is also a youth. As part of recruitment for a new Project Coordinator, and to attempt to mitigate ongoing challenges in recruitment across the organization, the team continues to consult with the Nova Scotia Department of Immigration and Population Growth to ensure the Town is knowledgeable and equipped to consider international candidates. During this reporting period, the Town of Bridgewater became a *Designated Employer* under the [Atlantic Immigration Program](#). As part of this designation process, the full Senior Management Team for the organization participated in an Intercultural Competency Training.

In addition, Energize Bridgewater continues to be in communication with the province to ensure that our CEB strategy aligns with provincial standards.

**D. Privacy Impact Assessment**

*Overview and progress update on the implementation of the privacy impact assessment and on any mitigation measures, activities and follow-up measures that are required to be performed during the Project implementation as a result of the assessment.*

Ontario-based consultancy Valencia Risk was engaged through the RFP process noted in the Milestone 6 Report to produce the Privacy Impact Assessment for the Energize Bridgewater Smart Cities project through the development of a Privacy Management Program (PMP) for the Town of Bridgewater.

Valencia worked closely with the Town’s Data Governance Committee and the Energize Bridgewater team to develop the Privacy Management Program (PMP). The first draft PMP submission was not accepted, and Town staff directed Valencia to modify the report to include an implementation plan that was reflective of the provincial context and size of the Town organization. Findings included that the



Town requires a dedicated resource, such as a full-time privacy officer position, to oversee the finalization and implementation of the PMP for the organization. Staff have proposed such a position in the 2023-24 budget, to be funded in part by Energize Bridgewater. Bridgewater Town Council is set to make a decision about the position during budget deliberations in April of 2023.

Valencia Risk has also been developing the Privacy Impact Assessment process for the Energize Bridgewater program. They interviewed Energize Bridgewater staff as well as the project's external partners, during this reporting period. And the completed Interim Privacy Impact Assessment was delivered in January of 2023. The Interim PIA is currently under review by staff. Once it is accepted, it will then be refined and reassessed over the next two years through the development and piloting of Energize Bridgewater programs, with each new program component being reviewed as it reaches the implementation stage. Valencia is engaged to provide the complete PIA for March 31, 2025.

## E. Risk Factors

*Issues, areas of concern or risk factors that may affect completion, the schedule, or the budget of the project as per original plans and the proposed mitigation strategies to correct the situation.*

### **Housing Energy Management System**

The risks identified in the Milestone 7 report have been resolved.

### **Lack of Indigenous Engagement**

This risk continues to pose a challenge for the project. Because there is no reserve within the boundaries of the Town of Bridgewater, the team is seeking to mitigate this risk through tailoring the Energy Poverty Reduction Program to support off-reserve Indigenous people living in Bridgewater.

- SSODA continues to have two Mi'kmaq staff and are providing expertise and Indigenous perspectives to the Coordinated Access System (CAS). CAS intake data collection includes demographic information and SSODA has been monitoring the number of Indigenous individuals and families who are experiencing housing insecurity, including energy poverty, in the community. As of March 1, 2023, SSODA is working with fifteen housing-insecure households who self-identify as Indigenous.
- In addition, the partnership with EfficiencyOne for HEMS service delivery through EB Home Upgrades, and the successful recruitment of the HEMS Program Manager, are providing opportunities for learning more about how Efficiency Nova Scotia's existing programs supporting energy efficiency initiatives in Indigenous communities, and for evaluating the potential for elements of Efficiency Nova Scotia's Mi'kmaq Home Energy Efficiency Project to be integrated into the HEMS.

## **Affordable Housing**

Increases in rental rates and house prices in the past 12-24 months have been further complicated by rising inflation, which continues to increase the energy poverty challenges that the Energize Bridgewater program is trying to address. Bridgewater Town Council is seeking ways to intervene, through policy, incentives, and others means, to encourage property owners to maintain or build more affordable housing. Significant barriers to increasing affordable housing stock include construction timelines, which as noted have been further extended by ongoing supply chain issues, and according to local industry stakeholders typically run about three years from initial design and development approval to completed construction. The following actions were undertaken to mitigate and address the overall issue of enough affordable housing in the community, beyond the focus of energy poverty alleviation:

- Approval on October 11, 2022, of amendments to the Town’s Municipal Planning Strategy and Land Use By-law to facilitate additional housing units without major impact to the community (e.g. neighbourhood, wastewater, etc.), effective December 14, 2022.
- Research and development of a new, localized definition of “affordable housing” for the Town of Bridgewater based on local income levels and the 2021 census data. This proposal is being brought forward to Council within the next reporting period for Energize Bridgewater.
- Approval on February 27, 2023, to sell Town-owned land to the South Shore Open Doors Association for the development of up to 14 units of affordable housing for the nominal fee of \$1, subject to meeting certain conditions.

## **Energy Cost Increases**

Ongoing energy cost increases remain outside of our control and present a major risk to the success of the Energize Bridgewater project and there are no opportunities to mitigate this risk. As noted in Milestones 6 and 7, Nova Scotia Power proposed a rate increase for households, which was increased from their initial request in January 2022 of 10% to 11.6% (over three years), and finally to 14% over two years. This increase was approved by the Nova Scotia Utilities and Review Board (UARB) in February of 2023 and will impact projections for energy cost reductions for Bridgewater residents as outlined in Energize Bridgewater’s Smart Cities challenge application and may prevent the Energy Poverty Reduction Program from reaching projected reductions in energy costs for program participants by 2026.

These increases disproportionately impact residents experiencing energy poverty and can have a significant effect on housing insecurity. Evidence of these impacts may already be surfacing through the Coordinated Access System, as noted above: as of January 2023, SSODA has identified 57 households experiencing energy poverty collectively holding \$51,647.15 in arrears to Nova Scotia Power Inc., a situation that is preventing them from accessing housing.

## **Energy Management Information System (EMIS) Procurement**

The EMIS-related risks identified in Milestone 7 continue to pose challenges to the project. Combined with the delay in the SEM joining the team, this is an area of concern and attention. The following measures have been employed during the reporting period:

- Creating and maintaining the EMIS Project Assistant role to provide dedicated human resource capacity to focus on documentation, contract negotiation, and maintenance of key relationships.
- Successfully recruiting a new staff member to the Data Science Analyst position to bring specific IT expertise into the team complement.
- Developing a Request for Standing Offer to provide on-demand IT personnel to complement the core project team. Pricing for five (5) specific resources were sought: cloud engineer, full stack developer, user interface developer, data engineer and an energy subject matter expert.
- The Town also negotiated a second Collaborative Research Agreement with the Applied Research division of the Nova Scotia Community College, led by Dr. Wayne Groszko. This contract confirms that the team of professionals from the Proof-of-Concept phase are available to work on this next phase to develop the Minimum Viable Product and move into Field Testing. This includes the continued contribution of the IT consultant previously engaged by the Town.

NSCC is also supporting the EMIS work through their Energy Sustainability Engineering Technology (ESET) program, with students funded by NSERC's MITACS program set to work with Energize Bridgewater on the MVP and field testing.

Another emerging risk identified to the success of EMIS development is currently the substantial cost of Microsoft Azure Cloud services. This is being monitored very closely as a potential barrier to ultimate EMIS deployment. Although this is a major risk, it is currently being partly mitigated by the Data Science Analyst enrolling in an Azure certification course that includes a costing component.

Personal data collection in a cloud environment also constitutes a significant risk which is being mitigated by ongoing privacy work with Valencia Risk Consultants as well as industry best-practices expertise from the EMIS consultant.

## **Ongoing Human Resource and Pandemic-Driven Retrofit Costing Challenges**

The risks identified in the Milestone 7 report continue to exist as they are wholly outside the control of the project. Supply chain issues and an acute labour shortage continue to affect many sectors of the pandemic-era economy, and retrofit-related technology, supplies, and skilled labour represent particularly hard-hit areas. In addition, challenges in the areas of IT human resources and costing have continued to create barriers to the successful development of the EMIS. Emerging risks in both areas have been identified by the Energize Bridgewater team and confirmed by our partners. Inflation is further compounding recruitment and costing challenges.

## Landlord Engagement and Participation

The team is continuing to monitor the risks related to landlord participation in the program. Landlord engagement is a continuing project priority, and the multi-unit stream of EBHU currently in development will mitigate elements of this risk. Concerns remain about the ability of EBHU to overcome previously identified challenges in engaging landlords and developers in order to help renters in energy poverty (see *Emerging Risk Factors*, Milestone 7, for more information). Rental rates and demand for housing in Bridgewater remains high. Staff also continue to evaluate the limitations of the current EBHU eligibility, and a major risk remains that the program will not be able to bring renters into the program as originally envisioned.

Mitigative measures include developing a multiunit residential EBHU program, set to launch in the next reporting period, and focused interdepartmental work between Energize Bridgewater, Planning, and Economic Development staff to engage with and create incentives for Bridgewater landlords and developers to provide affordable, energy efficient housing.

## F. Communications

*Highlights of communication activities of the Project during the reporting period*

The list below contains highlights of the media interest received since the Milestone #7 Report.

Date	Publication / Source	Topic
<b>Fall/Winter 2022</b>	NSFM Municipal Observer	<a href="#">Using Data to Reduce Energy Poverty</a>
<b>Dec 2, 2022</b>	CKBW Radio	Interview about Energize Bridgewater Home Upgrades
<b>Dec 21, 2022</b>	South Shore Breaker	Bridgewater launches Home Upgrades program
<b>Jan 3, 2022</b>	CBC	NS is a leader in encouraging heat pumps, but programs can be confusing

Conferences and Speaking Engagements:

Date	Receiving Person / Body	Topic / Mode / Comments
<b>May, 2022</b>	National Planning Conference/American Planning Association	Presented in conjunction with Sustainability Solutions Group (SSG), authors of Bridgewater's 2018 Community Energy Investment Plan. The presentation was titled "How to Power Past that Retrofitting Inertia"
<b>November 2022</b>	Intelligent Cities Summit	Participated as a panelist, alongside Guelph & Montreal, moderated by Evergreen: "Exploring

		the Community Innovation Agenda from the Ground Up”
<b>January 2023</b>	University of Waterloo	Interviewed for a course titled “Impact of Information Systems on Society”
<b>February 2023</b>	Federation of Canadian Municipalities	Participated in a plenary session titled “Local democracy for net-zero transitions” at the Sustainable Communities Conference.
<b>March 1, 2023</b>	Nova Scotia Community College	Provided a project overview to an audience of students, industry, and government at the “Clean Energy Connector” event.

The Town has also actively maintained its project websites [[www.bridgewater.ca/smartcities](http://www.bridgewater.ca/smartcities), [www.energizebridgewater.ca](http://www.energizebridgewater.ca), and [bridgewater.tracking-progress.org](http://bridgewater.tracking-progress.org)] and social media channels [[EnergizeBridgewater](https://www.facebook.com/EnergizeBridgewater), [@BridgewaterEnrG](https://twitter.com/BridgewaterEnrG)] with regular project updates.

**G. Other Reporting**

*Any other reporting requirements in accordance with Section 10 (Reporting) and Section 11 (Audit, Evaluation, and Monitoring for Compliance) that may be due at the time the Milestone claim is submitted to Canada.*

No other reporting is required for the current Milestone claim.

**This report has been carefully prepared with input from the entire Energize Bridgewater Team. We acknowledge Infrastructure Canada's supportive enthusiasm, and we are greatly appreciative of their ongoing guidance, collaboration, and collegiality, as we undertake this important work.**