

Smart Cities Challenge: Milestone #9 Report

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

Submitted September 22, 2023

Town of Bridgewater
ENERGIZE BRIDGEWATER

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Supplementary Documents

- I. *Energize Bridgewater Expenditures & Revenues Report*
- II. *Schedule C1: Declaration of Completion*
- III. *McGill Energy Needs, Housing, and Wellbeing Study Report*

Town of Bridgewater Smart Cities Challenge

Milestone #9 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 and expanding network of community partners. The following report summarizes the Energize Bridgewater Energy Poverty Reduction Program's progress on activities and outcomes from March 2, 2023, to September 1, 2023.

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 Energize Bridgewater team appreciates the continued guidance as we design and deliver this project.

Project Activities from March 2, 2023, to September 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, 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 #9 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 and Major Achievements to Date

(Including any variations to the original activities, timelines, and outcomes)

This report describes the activities of the program from March 2, 2023, to September 1, 2023. Energize Bridgewater staff are now fully immersed in the implementation phase of the Energy Poverty Reduction Program, and the activities and deliverables described in this report demonstrate the skill and commitment of staff in driving a particularly challenging and productive phase of the project.

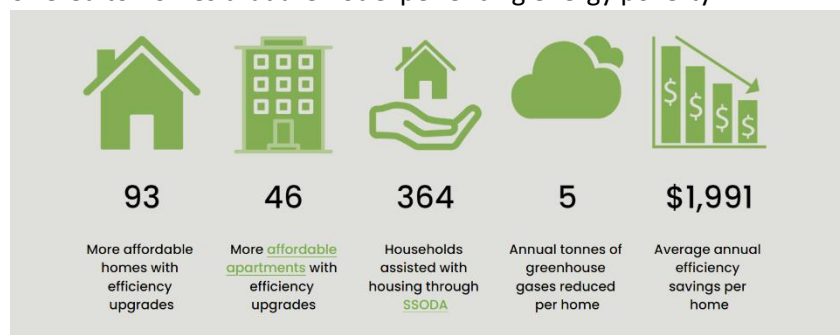
Program Governance, Management, & Evaluation

- Program Governance
 - Guidance continues to flow from Town Council and the Energize Bridgewater Advisory Committee to the project team through bi-monthly meetings. The June 14th EBAC meeting included a tour of Bridgewater's Michelin manufacturing facility to learn about the plant's expansion and current energy management practices.
 - 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. Valencia's 2023/24 Scope of Work was also approved. Their primary focus will be the Privacy Impact Assessment of the Energy Management Information System (EMIS).
 - The Town is moving forward with the Open North data governance roadmap and advisory services, which will inform Energize Bridgewater data governance requirements.
- 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 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.
 - Recruitment for a new Senior Energy Manager resulted in a successful candidate in October of 2022, however complications related to permanent residency status continued to delay their start date with the project. Their open work permit was not approved until July of 2023, and the Senior Energy Manager is now set to join the EB team full-time in October of 2023, following completion of their post-doctoral research contract at UBC. As an interim measure, the Town entered into a collaborative research

contract with the UBC Clean Energy Research Centre from May to September, allowing the incoming Senior Energy Manager and other researchers to help move the EMIS project forward while waiting for immigration processes to proceed.

- A Data Science Analyst who joined the project in January 2023 as a co-op student from Dalhousie University has been engaged in a full-time term position with EB following the end of the co-op term in April of 2023. The analyst is currently working with the team on the development of the minimum viable product and field testing of EMIS.
 - Two additional Data Science co-op students joined the project on May 1, partially funded through the NS Co-op Education Incentive. Following the completion of their co-op placements, they joined the team full-time on August 28th and are employed for the duration of the minimum viable product and field testing of EMIS.
 - Project Understory was engaged to provide contracted writing services for the project. They will work with the team to create monthly blog posts and handle technical writing tasks for the EMIS.
 - The EMIS Project Assistant has transitioned into the role of EB Program Navigator. The Project Coordinator is now providing project management support through the minimum viable product and field-testing phases of EMIS development.
 - The Program Navigator is continuing to support EMIS development as Continuous Energy Management Support (CEMS) lead.
 - The Program Navigator position was created to provide accessible and trauma-informed support to EBHU program participants and build relationships with stakeholders. Initially the Planner 1 was providing this support, but it became clear that a dedicated role was needed to fully support participants as they move through the program. Services provided by the Program Navigator include (1) participant on-boarding, (2) participant-focused problem solving, (3) continuous energy management support, (4) participant feedback and evaluation, (5) common data management, and (6) off-boarding.
 - Working with the Data Science Analysts and the EB Planner 1, the Program Navigator has developed a public facing dashboard on the EB website to share program statistics with Bridgewater residents. An internal dashboard for staff use was also created during the reporting period.
 - Additional discussion on the challenges and risks related to Project Management can be found under Section E of this report.
- Performance Measurement & Evaluation
 - Contract evaluation was completed for EB's contract with South Shore Open Doors Association (SSODA).
 - The Town and Efficiency Nova Scotia completed an evaluation of the first year of program development and service delivery for the Energize Bridgewater Home Upgrades program. Overall findings were that the pilot is beginning to deliver results, but that more time is needed to assess whether the pilot objectives will be achieved. A follow-up assessment will be completed in November 2023, and an extension to the pilot timeline and scope will be explored.

- McGill University released the *Energy Needs, Housing, and Well Being in the Town of Bridgewater* Final Report on April 20. [See report, blog post, and press release here](#). The finalized report confirmed the baseline energy poverty rate for the community at 38% and provided recommendations for energy poverty interventions and ongoing research.
- Building on the successful 2022 research collaboration, the Town of Bridgewater and McGill University have developed an agreement for the next 2+ years of upcoming energy poverty research in Bridgewater. The collaboration includes a follow-up community-wide energy poverty survey to be conducted in 2025 to measure the impact of the Energize Bridgewater program.
- Risk Management & Quality Control
 - The EB team continues to track risk management and conducts regular reporting and review activities.
 - TwelveDot, a technology and security consultancy based in Ottawa, has been engaged to oversee security on the project going forward. This will include an initial security review of EMIS business requirements to ensure they align with existing security policies and standards, with recommendations for additional security standards needed for EMIS. Five phased security reviews of the EMIS development process will follow, including a draft threat and risk assessment report for each phase. Intrusion testing will also be conducted during field trials, and a final threat and risk assessment will be submitted once field trials are complete.
- Communications & Engagement
 - During this reporting period, EB staff developed, finalized, and implemented the 2023-24 communications and engagement plan for the program.
 - Staff conducted door-to-door outreach in neighbourhoods with housing stock identified as having high potential for efficiency interventions.
 - Regular blog posts were created for the EB website updating the public about program activities. A series of promotional social media posts were created which aimed to drive uptake of both EBHU streams.
 - A dashboard displaying current program metrics was designed and added to energizebridgewater.ca. The dashboard is updated monthly. This public dashboard includes data from the Town's stand-alone Clean Energy Financing program which is offered to homes that are not experiencing energy poverty:



- A full list of media coverage during the reporting period can be found on page 21.
 - EB staff participated in two conferences during the reporting period: the Canadian Institute of Planners annual national conference, where EB and Community Development staff gave a presentation about how the Town is tackling energy poverty through policy and smart cities innovation. The EB Project Director participated in a panel at the #Together | Ensemble conference to discuss how the research partnership with the NSCC and our Energize Bridgewater project are aligned with the United Nations Sustainable Development Goals (SDGs). The yearly national conference is devoted to tracking progress on these goals. For more details see page 21.
 - Outreach with target communities: EB sponsored a meal at Soul's Harbour Rescue Mission, a local non-profit drop-in centre and lunch program, and spoke with attendees about EBHU. SSODA representatives also attended.
 - Local event planning and promotion: Co-hosted by Energize Bridgewater, the South Shore Sustainability Summit will take place September 22-23, 2023.
- 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 positions are 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 9 Expenditures and Funding Report.

Coordinated Access System

The South Shore Open Doors Association (SSODA) 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.

SSODA's Annual Report was completed and accepted on April 24, 2023. SSODA's mandate has expanded significantly since its inception and its funding sources have also diversified. TOB's contributions represent less than 21% of their total revenues for the fiscal year ending March 2023.

SSODA is currently focused on building affordable housing units on the South Shore, but they have not yet been able to secure land within Bridgewater.

The following data are compiled from SSODA's monthly reports to the Town of Bridgewater, and provide a snapshot of homelessness, housing insecurity, and energy poverty within Bridgewater and the larger community:

- Total SSODA intakes from March 2, 2023 – July 31, 2023: 106
- Total SSODA intakes to date (May 25, 2022-July 31, 2023): 364
- SSODA intakes referred to EBHU to date: 0
- Total number of intakes experiencing energy poverty: 124 (\$99,654.80 in total arrears to NS Power).
- SSODA has connected 89 households to housing since May 2022
- SSODA has identified 43 households currently experiencing chronic homelessness in the community (chronic homelessness, as defined by [Reaching Home: Canada's Homelessness Strategy](#), means "recurrent experiences of homelessness over the past 3 years, with a cumulative duration of at least 18 months)."

Housing Energy Management System: Energize Bridgewater Home Upgrades (EBHU)

The Housing Energy Management System, operating under the "Energize Bridgewater Home Upgrades" (EBHU) brand, has been serving Bridgewater residents since December 2022. Under the terms of the pilot service delivery agreement, Efficiency Nova Scotia (ENS) is the primary accountable party managing the retrofit services to program participants. ENS coordinates and applies incentives from federal, provincial, and municipal programs towards eligible energy efficiency measures to reduce the project cost to participants. A smaller set of program participants is being served through the Town of Bridgewater's Clean Energy Financing program, administered by the Clean Foundation. The Home Upgrades program consists of two separate streams:

- **Single Unit Stream:** The single unit stream of Home Upgrades started taking applications in December 2022. Managed fully by ENS, qualifying owners of single unit dwellings in Bridgewater can receive substantial free energy upgrades including insulation improvements, heat pumps, draft proofing, and more. In addition to the free upgrades, homeowners have the option of acquiring further upgrades through low interest financing from the Town of Bridgewater. The work is fully managed by ENS and conducted by the program's Delivery Agents – contractors

specializing in residential energy retrofits. Since program launch, the HEMS program has completed 112 intakes into the program, with 12 retrofits fully completed.

While program startup was slower than anticipated, participants are now moving through the program at an accelerated pace. ENS has retained two additional Delivery Agents to service the program, expanding program capacity and reducing service timelines. Clean Foundation continue to move participants through the Clean Energy Financing program – 4 new active participants joined the program since the previous Milestone Report.

- Multi-Unit Stream:** The multi-unit stream of Home Upgrades was launched on April 4, 2023. Managed fully by ENS, qualifying owners of apartment buildings, co-operative housing developments, and rooming houses can now access rebates of up to 80% of the cost of energy efficiency upgrades. In exchange, landlords sign a Comprehensive Affordable Housing Agreement to keep rents at an affordable rate for 12 years. The agreement covers 4 units or 30% of the units in the building, whichever number is higher. The rental rates are defined by ENS:

Unit Type	Includes No Utilities	Includes Heat Only	Includes Heat & Electricity
Bachelor	\$548	\$576	\$604
1 Bedroom	\$668	\$703	\$737
2 Bedroom	\$893	\$939	\$985
3 Bedroom	\$1,007	\$1,059	\$1,111
4+ Bedroom	\$1,525	\$1,601	\$1,681

Note that these rates are subject to change without notice. The units that are not covered under the agreement would be rented at market rates while conforming to the Nova Scotia Residential Tenancies Act and any other provincial regulations that may apply to the landlord and tenant relationship. For the units that are rent controlled as part of the agreement, rental rate increases can happen yearly but cannot exceed the Nova Scotia all-item Consumer Price Index (CPI) for the duration of the agreement.

Under this program stream, landlords can make investments in their properties that will pay off now and in the long-term. The program helps fund the expense of recommended upgrades, which may include space and water heating, window and door replacements, and attic, wall, and basement insulation. The launch of the multi-unit stream has filled a significant gap in the development of the Energize Bridgewater program because energy poverty is particularly prevalent among renters. Program enrolment now includes 5 multi-unit buildings that comprise a total of 46 dwelling units. Energy assessments have been completed, and upgrade plans and installations are underway. It is still too early to provide detailed program outcome statistics—this data will be included in the next Milestone Report.

Home Type	Intake + Assessment	Approval + Install	Complete	Total
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Single Unit Dwellings	39	15	12	66
Multi-Unit Dwellings	4	42	0	46
Total	43	57	12	112

Dwelling units served (cumulative)

A mid-point evaluation of the HEMS Pilot contract was completed by the Town and ENS (August 2023), which found that significant progress has been made in the start-up and delivery of the 2-year HEMS Pilot. Opportunities for improvement were identified and are being addressed.

Following an analysis in April 2023 which concluded that EBHU program navigation services should be provided by Energize Bridgewater staff rather than be procured externally, the position of Program Navigator was established and filled with a full-time staff member (June 2023). The enhanced level of program navigation support is generating clear benefit to community members who may otherwise have difficulty understanding the program offering, completing application forms, finding out the status of their file, or being referred to other community services. In this way, the Navigator is reducing barriers to program participation, as documented in the last Milestone Report.

Continuous Energy Management Support

The development of a Continuing Energy Management Support (CEMS) service as part of the HEMS and EMIS, as recommended by the Onsite Energy Manager, has continued through the reporting period. 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/EBHU but will also be closely aligned with EMIS. The team has continued the development of a draft concept intention and scope of work for the CEMS that is being informed by the ongoing testing and development of the EMIS. This work continues in partnership with Nova Scotia Community College. The team has begun to integrate CEMS content into the technical development of EMIS through the development of a participant portal. The Program Navigator is conducting interviews with participants to collect data about how participants engage in and understand energy management in their homes. These interviews will inform CEMS development to better support behaviour change through the program. This information is being integrated into the final design of the EMIS and associated Continuous Energy Management Support (CEMS) services. CEMS services are being designed to enhance participant understanding of energy usage to enable them to act on opportunities for reducing energy use identified through EMIS and other sources, and to enhance the overall core objectives of HEMS/EBHU of reducing energy poverty and reducing annual energy expenses and annual GHG emissions for residents. 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

- In March of 2023, RFP activities to secure a standing offer for IT services and senior energy management services were completed and two proponents were successful.
- NSCC's agreement with TOB was finalized in April of 2023, and the IT consultant continues to support the project through this contract.
- EB and NSCC co-hosted a two-day workshop in May with all external vendors on the project. The event included sessions to discuss business requirements for EMIS and the goals of the system implementation, and a presentation outlining the activities of the POC. It was attended by the full EB and NSCC project teams, staff from BAAR Technologies, Valencia Risk, and EfficiencyOne, and Dr. Mylene Riva (McGill University), and incoming EB Senior Energy Manager, Dr. Asad Hussein (UBC).
- NSCC is currently evaluating potential sensors to be used in homes for field testing according to cost and functionality. Once NSCC has created a database comparing all the specs for each sensor, EB will then choose the best combination of sensors based on this evaluation.
- BAAR Technologies (vendor on standing offer) has been tasked with creating the administrative and consumer portals for the EMIS. Screen designs (interface) are currently being developed for CEMS.
- A contract was developed with TwelveDot security consultants for EMIS security services.

Community Energy Systems

No updates at this time. Please see Milestone 8 for further details.

Investment System

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.

As reported in the previous Milestone, following the recommendations in Tapestry Community Capital's report, Bridgewater council 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.

The Town's Economic Development Officer was tasked with undertaking the next steps following the Tapestry report. The Economic Development Officer resigned from their position in August without having initiated the work. Recruitment to fill the position is underway and the work will fall to the incoming staff.

For more details about project deliverables for the Investment System this milestone, see page 18. For more details about the project's FCM funding and CEF financing program see the Milestone 7 and 8 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"> Update not required in this Milestone Report.
Reduce and stabilize energy expenses for residents (Outcome 7)	Spending on home energy consumption for participating residential properties	<ul style="list-style-type: none"> See table below
Reduce greenhouse gas emissions (Outcome 16)	Greenhouse gas emissions from home energy consumption in participating residential properties	<ul style="list-style-type: none"> See table below

Performance Indicators Table

Service Area	Activities, Outputs, Outcome Measures	Performance Indicator	Update
Housing Energy Management System	Dwelling units served by program	# served (cumulative)	<p>112 units (66 single unit / 46 multi-unit) in process of being served:</p> <ul style="list-style-type: none"> 43 units undergoing intake and assessment <ul style="list-style-type: none"> 39 single unit 4 multi-unit 57 units undergoing approval and installation <ul style="list-style-type: none"> 15 single unit 42 multi-unit 12 single units with completed upgrades (0 multi-unit)

Service Area	Activities, Outputs, Outcome Measures	Performance Indicator	Update
	Spending on home energy consumption for participating residential properties	Improvement (cohort)	<p>For the first cohort of participating dwelling units:</p> <ul style="list-style-type: none"> • Average annual spending on energy before retrofits is estimated at \$2,375 <ul style="list-style-type: none"> ○ \$4,782 for single units ○ \$1,688 for multi-units • Average annual spending on energy after retrofits is estimated at \$1,534 <ul style="list-style-type: none"> ○ \$3,083 for single units ○ \$1,091 for multi-units • Average annual reduction in energy costs is estimated at \$842 (35%) <ul style="list-style-type: none"> ○ \$1,699 (36%) for single units ○ \$597 (35%) for multi-units <p><i>Note that a portion of estimates are generated from properties that have not yet fully implemented their retrofits - final figures are subject to change. On activation of EMIS services, actual reductions in spending on energy can begin to be demonstrated for a subset of participating properties.</i></p>
	Greenhouse gas emissions reduction from home energy consumption in participating residential properties	Improvement (cohort)	<p>For the first cohort of participating dwelling units:</p> <ul style="list-style-type: none"> • Average annual GHG emissions before retrofits is estimated at 6.8 tonnes <ul style="list-style-type: none"> ○ 15.2 tonnes for single units ○ 4.4 tonnes for multi-units • Average annual GHG emissions after retrofits is estimated at 5.1 tonnes <ul style="list-style-type: none"> ○ 12.2 tonnes for single units

Service Area	Activities, Outputs, Outcome Measures	Performance Indicator	Update
			<ul style="list-style-type: none"> ○ 3.1 tonnes for multi-units ● Average annual reduction in GHG emissions is estimated at 1.7 tonnes (25%) <ul style="list-style-type: none"> ○ 3.0 tonnes (20%) for single units ○ 1.7 tonnes (30%) for multi-units <p><i>Note that a portion of estimates are generated from properties that have not yet fully implemented their retrofits - final figures are subject to change. On activation of EMIS services, actual GHG emissions reductions can begin to be demonstrated for a subset of participating properties.</i></p>
Investment System	De-risk affordable energy investments in the community	Increase from baseline	<p>For the first cohort of participating dwelling units:</p> <ul style="list-style-type: none"> ● Average modelled marginal carbon abatement cost is estimated at \$340 per tonne of GHG emissions reduced over the lifetime of the retrofit <ul style="list-style-type: none"> ○ \$291 for single units ○ \$352 for multi-units <p><i>Marginal carbon abatement cost has been calculated as the capital cost of the upgrade (materials + labour) divided by the estimated tonnes of GHG emissions over the Effective Useful Life (EUL) of the retrofit, which is estimated at 20 years (EfficiencyOne, 2019).</i></p>

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 four men, which will increase to five men when the Senior Energy Manager joins the team in October. Currently four staff are recent immigrants, three of whom are also youth. As part of recruitment for the Project Coordinator and Senior Energy Manager, 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. The Town of Bridgewater is now a *Designated Employer* under the [Atlantic Immigration Program](#).

In addition, Energize Bridgewater continues to be in communication with the Province of Nova Scotia 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

Valencia Risk has completed the 2022 Interim Privacy Impact Assessment for EB and the Town of Bridgewater. Valencia identified privacy issues related to both the project and the Town of Bridgewater's organizational environment which are now in the process of being addressed. The report is available on request.

Valencia's Scope of Work for fiscal year 2023/24 was approved. The primary focus will be to conduct a Privacy Impact Assessment of the EMIS, which will include:

- Legislative Compliance and Privacy by Design
- Consent, Transparency, and User Rights
- Data Minimization and Anonymization
- Data Security and Access Controls
- Data Retention, Deletion, and Accountability

Valencia will complete this assessment prior to the public deployment of the system.

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

Previously Identified Risk Factors

Housing Energy Management System

- Two-year pilot HEMS service delivery program contract with EfficiencyONE (Efficiency Nova Scotia) continues to partially mitigate previously identified risks to the success of the HEMS in terms of the ownership of assets and the ability of the Town to provide subsidized retrofits. Through this partnership, the HEMS, known publicly as Energize Bridgewater Home Upgrades (EBHU), leverage EfficiencyONE's experience and expertise in the retrofit landscape, and EfficiencyONE's existing Efficiency Nova Scotia (ENS) programs that provide rebates and incentives to participants. As with many partnerships, the pilot has also presented challenges that the team continue to address and resolve, including:
- Data sharing: ENS and EB continue to identify and address issues related to initial discrepancies in each organization's understanding of information sharing as outlined in the contract. The impact so far has been a delay in receiving detailed participant data required for milestone reporting of program deliverables.
- Contracting service delivery to a partner has also revealed some limitations resulting from a lack of control in the overall participant process. EBHU is the first contact and main communicator with participants, but moving participants through the retrofit process is under ENS control.
- EfficiencyONE/Efficiency Nova Scotia has expanded many of their programs and made significant modifications to others during the last reporting period, and these changes have impacted timelines for participation in their existing provincial efficiency programs, which means the EBHU pilot program is not progressing at the speed originally intended. The trade-off is that the changes to the program offerings result in more subsidized upgrades and less financing requirements for program participants.
- EB staff have mitigated these risks by changing reporting and tracking mechanisms for the partnership. EB and ENS are in discussions to determine if changes are required to processes, contract language, or other elements of the pilot program.

Energy Management Information System (EMIS) Procurement

The EMIS-related risks identified in Milestones 7 and 8 continue to pose challenges to the project. Combined with the delay in the Senior Energy Manager (SEM) joining the team, this is an area of concern and attention. The following measures have been employed during the reporting period:

- Successfully recruiting three Data Science Analysts as co-op students and retaining them after graduation in full-time term positions to bring specific technical expertise into the team.

- A successful Request for Standing Offer to provide on-demand IT expertise 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. Successful proponents are now engaged on multiple project activities.
- 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. Under this contract, the team of professionals from the Proof-of-Concept phase are now working on the 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 now also working with Energize Bridgewater on the MVP and field testing.

Another emerging risk identified to the success of EMIS development is the substantial cost of Microsoft Azure Cloud services. This continues to be monitored very closely as a potential barrier to ultimate EMIS deployment. Although this is a major risk, it is currently being partly mitigated by a Data Science Analyst completing an Azure certification course that included a costing component, and by contracting a vendor to manage Azure services for the project.

Personal data collection in a cloud environment also constitutes a significant risk which continues to be mitigated by ongoing privacy and data security work with Valencia Risk and TwelveDot consultants, as well as industry best-practices expertise from the EMIS consultant.

Affordable Housing

Issues of housing affordability continue to be a risk to the overall project. This is a complicated issue that is not easily mitigated. SSODA has reported that the number of their intakes identified as households experiencing homelessness has increased from 83 in August 2022, to 123 as of August 31, 2023. The number of households experiencing energy poverty has increased from 31 to 129 during the same period. In Milestone 8 the Town reported on several mitigative actions. Since that time, the following has taken place:

- The proposed sale of Town-owned land to the South Shore Open Doors Association ultimately could not proceed. Instead, the Town has a conditional sale of the same land to the Housing Trust of Nova Scotia to build affordable housing for low-wage health care workers. The Town continues to work with and support SSODA in their pursuit of building affordable, supportive housing for their clients.
- Work on a new, localized definition of "affordable housing" for the Town of Bridgewater continues. This was put on hold due to staffing changes in the Community Development Department and remains on Town Council's strategic priorities for 2023-24.
- Town has applied to the Canada Mortgage and Housing Corporation Housing Accelerator Fund with six co-related initiatives that work together to accelerate the permitting of housing stock over the next ten years in alignment with the fund's priority objectives to promote the development of affordable, inclusive, and diverse communities that are low-carbon and

climate-resilient. With HAF funding, the Town can speed up support the work on affordable housing.

Emerging Risk Factors

EMIS: Participants’ comfort with technology:

- The team has identified risks related to whether participants are responsive to technology, specifically their comfort level with the tech being used in their homes. This risk is being partially mitigated through the awareness of the data scientists and the EMIS team. Considerations are being made for the broadest range of user accessibility. Screen design development is also considering this with a voice over text component, but this has presented a budget challenge at this stage. Consultation with the Regional Accessibility Coordinator to assess the current proposed user interface will also mitigate this risk.

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 previous Milestone #8 Report.

Date	Publication / Source	Topic
April 8, 2023	Coastal Villages Community Radio	Interview with Mayor David Mitchell on several topics, including Energize Bridgewater
April 20, 2023	CKBW Radio	McGill Study Finds 2 in 5 Bridgewater Homes is Dealing with Energy Poverty
August 16, 2023	South Shore Breaker	Network of Information Technology Centered in Bridgewater

The Town was also invited to present aspects of the Smart Cities project at a national conference since the previous Milestone #8 Report:

Date	Receiving Person / Body	Topic / Mode / Comments
June 8, 2023	#Together Ensemble Conference	Panel: How research, education and practice are collaborating to advance UNSDGs
June 28, 2023	Canadian Institute of Planners National Conference	“Small Town, Smart Cities: tackling energy poverty and housing affordability”

The Town has also actively maintained its project websites [www.bridgewater.ca/smartcities, www.energizebridgewater.ca, and 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 Requirements

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.