P.O. Box 1749
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Item No. 15.3.1
Halifax Regional Council
November 12, 2024

TO: Mayor Fillmore and Members of Halifax Regional Council

FROM: Councillor Tony Mancini, Chair, Environment and Sustainability Standing Committee

DATE: October 3, 2024

SUBJECT: HalifACT 2023/24 Annual Progress Report

ORIGIN

October 3, 2024 meeting of Environment and Sustainability Standing Committee, Item 13.1.1.

RECOMMENDATION

The Environment and Sustainability Standing Committee recommend that Halifax Regional Council receive and have a presentation on the HalifACT 2023/24 Annual Progress Report.

BACKGROUND

Environment and Sustainability Standing Committee received a staff recommendation report dated August 29, 2024 to consider the HalifACT 2023/24 Annual Progress Report.

For further information refer to the attached staff report dated August 29, 2024.

DISCUSSION

Environment and Sustainability Standing Committee considered the staff report dated August 29, 2024 and approved the recommendation to Halifax Regional Council as outlined in this report.

FINANCIAL IMPLICATIONS

Financial implications are outlined in the attached staff report dated August 29, 2024.

RISK CONSIDERATION

Risk consideration is outlined in the attached staff report dated August 29, 2024.

COMMUNITY ENGAGEMENT

Meetings of the Environment and Sustainability Standing Committee are open to public attendance and members of the public are invited to address the Standing Committee for up to five (5) minutes during the Public Participation portion of the meeting. Meetings are live webcast on Halifax.ca. The agenda, reports, video, and minutes of the Standing Committee are posted on Halifax.ca.

For further information on Community Engagement refer to the attached staff report dated August 29, 2024.

ENVIRONMENTAL IMPLICATIONS

Environmental implications are outlined in the staff report dated August 29, 2024.

ALTERNATIVES

Alternatives are outlined in the attached staff report dated August 29, 2024.

LEGISLATIVE AUTHORITY

Legislative Authority is outlined in the attached staff report dated August 29, 2024.

Administrative Order One, *Respecting the Procedures of the Council Administrative Order*, Schedule 5 Environment and Sustainability Standing Committee Terms of Reference, subsection 1(2)(b) and subsection 7(b) provide:

Purpose

(2) The other purposes of the Environment and Sustainability Standing Committee are to

…

(b) assist the Council in meeting sustainability and energy objectives.

Climate Change Mitigation and Adaptation

7. The Environment and Sustainability Standing Committee shall:

…

(b) promote community adoption of climate change mitigation and adaptation measures.

ATTACHMENTS

Attachment 1 – Staff recommendation report dated August 29, 2024.

Report Prepared by: Dorothy Maponga, Legislative Assistant, Municipal Clerk's Office 902.478.2408

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Item No. 13.1.1
Environment and Sustainability Standing Committee
October 3, 2024

TO: Chair and Members of Environment and Sustainability Standing Committee

FROM: Cathie O'Toole, Chief Administrative Officer

DATE: August 29, 2024

SUBJECT: HalifACT 2023/24 Annual Progress Report

ORIGIN

June 23, 2020, Regional Council motion (Item No.9.1.6):

MOVED by Councillor Austin, seconded by Councillor Mason

THAT Halifax Regional Council:

1. Authorize the direction contained in the HalifACT 2050: Acting on Climate Together plan, as contained in Attachment A of the staff report dated May 4, 2020;

2. Direct the Chief Administrative Officer to carry out the actions contained in the HalifACT 2050: Acting on Climate Together plan as part of the multi-year budgeting and business planning process, including establishing a target of net-zero municipal operations by the year 2030.

3. Direct the Chief Administrative Officer to prioritize efforts in the following critical core areas:

    a. Create new retrofit, resilience, and renewable energy programming;
    b. Develop a detailed and costed plan for retrofitting existing municipal buildings to be net-zero ready and climate resilient;
    c. Develop an electric vehicle strategy, increase charging infrastructure, and replace fleet vehicles with electric vehicles;
    d. Explore opportunities to require net-zero standards for new buildings in the municipality;
    e. Develop a framework for assessing and protecting critical infrastructure;
    f. Support communities for climate adaptation and climate-related emergencies; and
    g. Develop a financing strategy to operationalize the HalifACT 2050 plan over 30 years.

4. Accept in principle the need to resource the plan and direct the CAO to return to Council with a resource plan for consideration in the 2021/22 budget; and

5. Request that the Chief Administrative Officer provide annual progress reports on the implementation of the HalifACT 2050: Acting on Climate Together plan, to Regional Council through the Environment and Sustainability Standing Committee.

EXECUTIVE SUMMARY

Halifax's climate is changing, and the impacts are already being felt by residents. Projections indicate that Halifax will continue to experience higher temperatures, more heat waves, more rain and an increasing number of more severe storms, flooding events, and wildfires. These impacts cost the Municipality and residents more each year that passes. Three recent extreme weather events: Hurricane Fiona in September of 2022, the Tantallon wildfire in May of 2023, and flooding in July of 2023, were estimated to have resulted in insured damages of more than $1 billion. The actions listed in HalifACT are crucial to limiting future climate change impacts and preparing for those that are already happening. HalifACT strives for a resilient, net-zero, connected, equitable, and prosperous community.

Highlights of progress for the 2023/24 fiscal year include:

- **Emissions Reductions**: Since the baseline year of 2016, corporate and community emissions have decreased by approximately 31.0% and 17.9% respectively.

- **Public Charging Infrastructure:** In coordination with Nova Scotia Power, public charging infrastructure is being deployed in accordance with the *Municipal Electric Vehicle Strategy*, filling gaps in the current network. By July 2025, staff intends to install 46 level 2 and 10 level 3 chargers for public use.

- **Resilient Critical Infrastructure:** Foundational mapping and prioritization projects are underway to identify critical infrastructure. This work will help identify and prioritize regions of the municipality to increase the resilience of infrastructure at greatest risk to current and future climate impacts.

- **HalifACT Governance Model Launch:** The Climate Governance Model began with initial meetings in February and a launch event in March. Six working groups were established across Business Units. The goal of the model is to accelerate the implementation of HalifACT by addressing key barriers and driving action at the necessary speed and scale.

Collective progress and action towards the targets of HalifACT have resulted in the Municipality being recognized across various platforms as outlined at the end of this report.

RECOMMENDATION

It is recommended that the Environment and Sustainability Standing Committee forward the HalifACT 2023/24 Annual Progress Report to Halifax Regional Council for information, discussion, and a presentation.

BACKGROUND

HalifACT: Acting on Climate Together (HalifACT)[1] is the municipality's long-term climate action plan to reduce emissions and enhance resiliency to a changing climate, while also promoting social equity and economic development. It was approved unanimously by Council on June 23, 2020, and is one of Canada's most ambitious climate action plans.

HalifACT contains three themes of action; Decarbonized and Resilient Infrastructure, Prepared and Connected Communities, and Governance and Leadership. Within these, there are 17 subareas and 46 actions that are necessary to meet the targets established in the plan. HalifACT addresses the municipality's climate emergency declaration put forward by Council in January 2019 and aligns with the 1.5°C pathway recommended by the Intergovernmental Panel on Climate Change (IPCC).

Acting quickly and effectively to address the climate emergency is complex and cannot be accomplished in isolation. HalifACT is a community plan, requiring not only the Halifax Regional Municipality, but all major stakeholders and residents of the Halifax region to collaborate and take collective action.

DISCUSSION

HalifACT is a community-wide and multi-organizational commitment for ambitious, yet critical climate action. The sheer scale of action required to meet targets means that action cannot only occur at the municipal level, but must also take place across businesses, other levels of government, non-profits, academia, the community, and at the individual level. At its core, HalifACT calls for Acting on Climate Together. The state of the Municipality's progress on HalifACT actions over the 2023/24 fiscal year is detailed in Attachment A. Highlights from key external partners and stakeholders that contribute to HalifACT's community-wide targets can be found in Attachment B.

Corporate and Community Emissions

HalifACT establishes a corporate target of net-zero emissions by 2030, a community-wide target of a 75% emission reduction from the baseline year of 2016 by 2030, and net-zero community-wide emissions by 2050. Figures 1 and 2 summarize the progress to date for corporate and community targets, respectively.

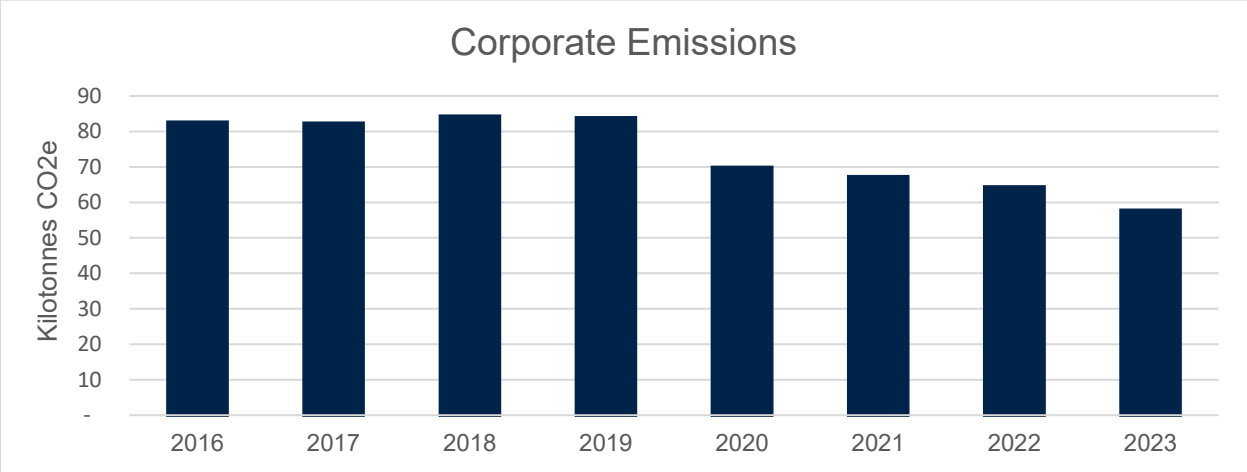

Figure 1. Corporate emissions in kilotonnes of CO2 equivalent

[1] HalifACT – Acting on Climate Together, Halifax Regional Council Package.
https://www.halifax.ca/sites/default/files/documents/cityhall/regional-council/200623rc916.pdf

Corporate emissions are a direct result of energy use related to buildings, street lighting, and vehicles (public works, fleet, rentals) owned and operated by the municipality as well as contracted residential solid waste collection vehicles. It excludes public transit and solid waste emissions associated with landfill gases. From 2022 to 2023, corporate emissions have decreased approximately 10.6%. Since the baseline year of 2016, emissions have decreased by approximately 31.0%. To reduce emissions further, the municipality is investigating two opportunities to purchase renewable electricity for corporate use. One is through the Province of Nova Scotia's Green Choice Program and the other is via a Power Purchase Agreement with Roswall Development/Renewall Energy Inc.

This decrease is attributed to several factors and initiatives including the reduced need for municipal office floor space due to hybrid working, replacing almost all streetlights with LEDs, adding solar to municipal buildings, performing fuel switching and energy efficiency retrofits in partnership with Efficiency Nova Scotia, and a cleaner electricity grid.

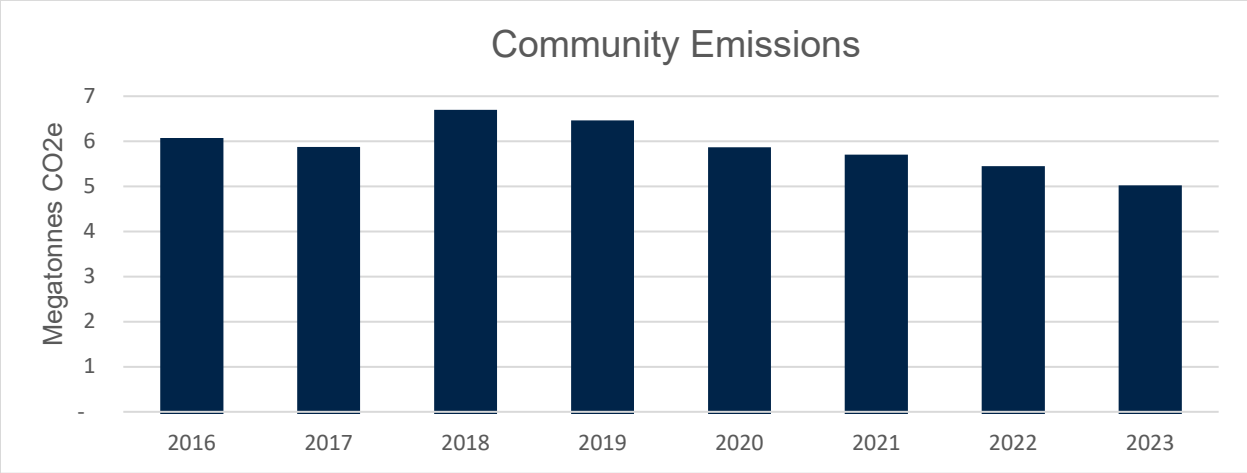

Figure 2. Community Emissions in megatonnes of CO2 equivalent

Community emissions are a direct result of all energy use within the boundaries of the Halifax Regional Municipality. This includes all corporate emissions, public transportation, private commuter vehicles, heavy transport, industrial processes, energy generation, and buildings. Like corporate emissions, community emissions are trending downward, primarily from the continued decarbonization of the provincial electricity grid, and the reduction of electricity and natural gas consumption in the industrial sector.

Despite the population growing by 77,000 (4%) between 2022 and 2023, Halifax has seen a significant decrease in overall greenhouse gas emissions of 8% compared to 2022. Since the baseline year of 2016, emissions have decreased approximately 17.9%. Per capita emissions have decreased from 14.13 to 9.76 tonnes of CO_2 equivalent.

Of note is the higher actual emission levels in 2023 (Figure 3) when compared to the forecasted business-as-usual (BAU) scenario presented in the HalifACT Low-Carbon Technical Report[2]. The BAU scenario illustrates the anticipated emissions associated with population and employment growth projections for the municipality if no additional policies, actions or strategies to address emissions are implemented. The BAU scenario forecast annual community emission values based on metrics like changes in population, emission intensity of the electricity system and the impact of climate change to heating and cooling out to 2050. As mentioned above, population growth has increased far more significantly than forecast and emission

[2] Halifax Regional Municipality, Low-Carbon Technical Report. https://cdn.halifax.ca/sites/default/files/documents/about-the-city/energy-environment/Technical%20Report.pdf

intensities from the electrical grid have not decreased at the rate expected. Despite this, community emissions are reducing at a rate greater than the model to achieve the low carbon targets of HalifACT. This accelerated rate of decrease must continue to close the gap of 1.3 megatonnes of emissions and achieve the low carbon future outlined in HalifACT.

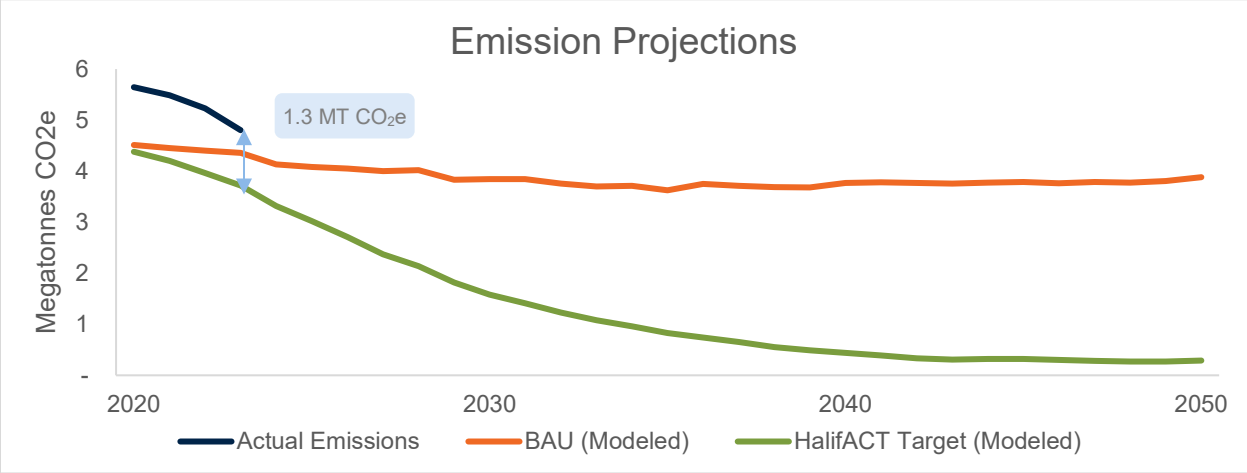

Figure 3. Modeled emission projections versus actual emissions

Progress on HalifACT – Overview

Overall, the current status of implementing HalifACT is considered to be "at risk". Many actions are progressing, but not at the pace and scale necessary to meet the science-based targets. The 2023/24 fiscal year represents a crucial point as HalifACT shifts from planning to implementation. As one of the first Canadian municipalities to implement many of these actions, staff are being faced with various challenges both external and internal. Externally, there are regulatory limitations, a need for more coordinated collaboration with other levels of government, as well as supply chain and workforce constraints. Internally there are resource constraints, competing priorities amongst Business Units and the sheer complexity of implementing many of the actions in HalifACT.

To overcome some of the challenges outlined above, staff launched the **HalifACT Governance Model** this spring. The model is designed to address both the organizational prioritization of the work and the way individual employees approach the work in their day-to-day operations. Two approaches serve as the foundation for the model: Transformative Climate Leadership and Prosci Change Management. This model led to the formation of working groups dedicated to addressing key challenges and opportunities associated with corporate net-zero buildings, corporate fleet electrification, greening transit, resilient critical infrastructure, resilient communities, and nature-based solutions. In addition to the model, improved indicators and metrics are being developed for each action so that progress can be more accurately measured and prioritized.

Climate Impacts and Investment

In the past 18 months, the Halifax region experienced the destructive impacts of three extreme weather events. In September 2022, Hurricane Fiona, marked as the costliest weather event in Atlantic Canada, caused extensive damage with its powerful winds and heavy rainfall. In May 2023, the Upper Tantallon wildfire swept through the region, damaging approximately 200 properties and prompting the evacuation of 16,000 people. In July 2023, the Halifax region witnessed severe flooding due to an atmospheric river event that resulted in over 250 millimeters of rain in less than 24 hours in some areas. Estimates of insured damages from these events exceed $1 billion and as of March 31, 2024, the Municipality has incurred $22.7

million in costs for emergency response, vehicle and equipment replacement and repairs to municipal assets due to these three events.

As outlined in the 2022/23 Budget, a Climate Action Tax was approved to directly support the first four years of HalifACT implementation. This investment is being used primarily for acquiring electric vehicles and buses, constructing net-zero buildings, and leading projects that improve the resiliency of communities and infrastructure (Table 1). This fund will also be used to leverage climate action funding from the private sector, and federal and provincial governments.

Investing in both reducing emissions and increasing resiliency will generate long-term savings for residents and the Municipality. Reducing emissions increases affordability by reducing electricity consumption, lowering carbon costs and future proofing against volatile fuel increases. Mitigation of climate impacts through resilient infrastructure will result in reduced costs for maintenance and repair from both chronic and acute climate events. According to the Canadian Climate Institute, investments in resilient infrastructure have an estimated return on investment of $15 in future averted losses for every $1 spent proactively[3].

Table 1. 2023/24 Project Budget Available (in thousands)

	Available	Spent	Committed	Total Spent & Committed
Electric Bus Procurement	110,266.7	8,624.5	86,655.5	95,280.0
Municipal Building Retrofits	20,891.7	6,169.8	10,291.0	16,460.9
Public Charging Infrastructure	3,840.1	365.5	1,041.1	1,406.6
Fleet Electrification	6,586.7	2,483.3	3,930.6	6,413.9
Shore Rd. Resilience Improvements	756.7	234.9	520.3	755.2
Flood Mitigation: Fall River, Dartmouth	93.4	93.4	-	93.4
Critical Infrastructure Projects	2,848.8	141.1	121.0	262.0
Small Projects Bundle	3,725.8	798.4	853.2	1,651.6
	149,009.9	**18,911.0**	**103,412.7**	**122,323.7**

Electric Buses – Phase 1

This supports the transition to a zero-emissions public transit fleet. Work includes the purchase of 60 electric buses and the expansion of the Ragged Lake Transit Centre. The expansion will include charging infrastructure, 1,000 kW of rooftop solar, air-to-water heat pumps, variable frequency drives for heat recovery ventilators, and demand-controlled ventilation.

The first electric bus was delivered and is currently being tested. The construction of the expansion at the Ragged Lake Transit Centre is underway and charging equipment for the electric buses has been delivered.

Municipal Building Retrofits

Municipal buildings are the largest source of corporate emissions. This work will include fuel switching, heat recovery systems, enhanced building controls, envelope upgrades, LED lighting, demand-controlled ventilation, and rooftop solar. The Municipality is leveraging funding from all levels of government and Efficiency Nova Scotia to support these retrofits.

With respect to new construction, the Halifax Regional Municipality adopted an Administrative Order (2021-002-OP) in 2021, which mandates that all new corporate buildings be designed and constructed to either a net-zero or net-zero ready standard.

[3] Damage Control, Canadian Climate Institute. Damage Control: Reducing the costs of climate impacts in Canada. (climateinstitute.ca)

Notable deep energy retrofits nearing completion this fiscal include the MacPhee House, Acadia Centre, Bi-Centennial Theatre, Keshan Goodman Library, Sackville Terminal, and Black Point Fire Station. Projects underway include the Eastern Shore Arena, the Upper Hammonds Plains and Chocolate Lake Community Centres. Design work is progressing for the Wallace Lucas, East Preston and North Preston Community Centres.

Public Charging Infrastructure

This supports the implementation of the *Municipal Electric Vehicle Strategy* that will position the Halifax region as an EV-ready municipality. Work includes the design, deployment and operation of public charging infrastructure that will ease range anxiety, fill gaps in the current charging network and stimulate EV adoption. While it is anticipated that utility and private investors will support public charging deployment as the adoption of EVs increases across the province, the municipality is leading in the short term.

In December 2023, a contract for the supply, installation and operation of public charging was awarded, and substantial design was completed for ten sites. These sites align with the direction of the *Municipal Electric Vehicle Strategy*, filling gaps in the current network. In January 2024, on behalf of the municipality, Mayor Mike Savage publicly accepted $980,000 in funding from the Natural Resources Canada Zero Emission Vehicle Infrastructure Program to help install these chargers. In coordination with Nova Scotia Power, designs are being finalized and construction has begun at some sites. By July 2025, staff intends to install 56 public EV chargers of varying capacities across the municipality. The current status of deployment can be found on our EV Strategy webpage[4].

Light-Duty Fleet Electrification

Guided by *the Municipal Electric Vehicle Strategy*, this work includes replacing existing fleet vehicles near their end of life with a suitable electric option and installing charging infrastructure at fleet depots.

In 2023/24, the Municipality awarded the contract for the supply of fleet charging infrastructure. Several level 2 chargers have been installed at various depots to support the deployment of electric vehicles. Staff continue to work with the utility and design consultant to finalize designs for the first two large scale fleet charging installations. Once complete, these designs will be tendered through a public procurement process.

Approximately 62 EV, plug-in hybrid electric vehicle (PHEV) and electric units (vehicles and equipment) have been delivered, with 42 of those now in service. More orders are expected this coming fiscal once charging infrastructure is in place.

Shore Road Resilience Improvements

This supports the implementation of natural infrastructure along Shore Road in Eastern Passage. Shore Road is a bus route, community access corridor, emergency evacuation route, and plays a critical role in ensuring the safety and well-being of the Eastern Passage community. Several sections along Shore Road are becoming increasingly damaged with the impacts of climate change. The ongoing “Shore Road: Building with Nature” project involves the construction of a nature-based approach for erosion mitigation along a 480 metre stretch of road between Norman’s Lane and Oceanlea Drive.

In 2023/24 a geotechnical investigation, wave monitoring and topographic surveys were completed. The municipality has also initiated consultation with First Nations and is in communication with Kwilmu’kw Maw-klusuaqn to investigate the potential for archaeological resources and burials.

[4] Electric Vehicle Strategy, Halifax Regional Municipality. https://www.halifax.ca/about-halifax/energy-environment/electric-vehicle-strategy

Flood Mitigation

This funding supported hydrologic and hydraulic modeling to determine flood extents and mechanisms, as well as the development of conceptual design options for flood mitigation. Two locations have been completed during the 2023/24 fiscal year, Highway 2 in Fall River and Pleasant Street in Dartmouth.

Critical Infrastructure

This funding supports the protection and strengthening of critical infrastructure to withstand more serious and frequent extreme weather events to increase the safety of people and property, and to decrease disruptions of essential services. Work includes baseline climate hazard exposure maps and a review of extreme water levels to enable strategic, data-informed, and climate-aligned decision-making around critical infrastructure prioritization, emergency management, and planning. In 2023/24, Pluvial, Fluvial, and Coastal Flood Hazard Maps for the municipality were developed. Funding is also being allocated to the design of the Bedford Outdoor Pool parking lot to increase its resiliency.

Small Projects Bundle

This bundled account supports climate action across Business Units, including solar installations, green infrastructure projects, and demonstration projects. It also enables the municipality to capitalize on relevant funding opportunities and to pilot innovative technologies. This account allows for projects to shift to be more climate-aligned and is supporting the mainstreaming of climate thinking and action across the organization.

Notable projects include the Tree Giveaway, an anti-fouling coating for the Rita Joe ferry to reduce emissions, the purchase of an electric sidewalk sweeper, a contribution to the purchase of an electric forklift and a contribution to the purchase of mobile water stations.

Achievements and Awards

Collective progress and action towards the targets of HalifACT has resulted in being recognized across various platforms.

2023 Corporate Knight's Sustainable Cities Index: Halifax ranked 11th among 70 cities in the 2023 Corporate Knights' Sustainable Cities Index (CKSCI). The CKSCI measures and evaluates environmental sustainability performance in 70 cities around the globe. Cities are evaluated based on data collected from public sources or directly from the cities themselves. There are 12 CKSCI indicators, including public spaces, air pollution, water quality, energy systems, the efficiency of buildings, and solid waste generation.

2022 Carbon Disclosures Project Cities A List: Halifax was recognized in 2023 as one of 122 cities worldwide to receive the highest score possible (an A) for environmental action and transparency by Carbon Disclosure Project (CDP) 2022 reporting. Cities receiving an A score demonstrate climate leadership through concerted and effective action and take three times as many mitigation and adaptation measures as non-A List cities. CDP is a global, non-profit charity that runs the world's disclosure system for investors, companies, cities, states and regions to assess their environmental impact and drive the urgent action needed to reduce greenhouse gas emissions, safeguard water resources, and protect forests. CDP reporting is a commitment of Regional Council through the Global Covenant of Mayors, the Partners for Climate Protection, and HalifACT.

Global Covenant of Mayors Badges: The Global Covenant of Mayors for Climate and Energy (GCoM), a project funded by the European Union in Canada, recognizes the commitment of each Canadian city to their ambitious climate actions, contributing to a historic and powerful response by local governments worldwide to address the climate crisis. In the 2023 cycle, Halifax was awarded 7 badges along with 14 other cities in Canada, highlighting progress and achievements in implementing climate commitments.

The GCoM's badge system is organized around three pillars: Mitigation, Adaptation, and Energy Access and Poverty. These badges capture the progress of signatory cities through different phases and milestones of their climate journey, from commitment to the GCoM to planning, implementation, and monitoring. This badge system not only recognizes the cities' achievements but also provides an overview of their participation, facilitating connections with opportunities, resources, and other cities at similar stages.

FINANCIAL IMPLICATIONS

There are no financial implications associated with this recommendation report.

RISK CONSIDERATION

No risk considerations were identified.

COMMUNITY ENGAGEMENT

Significant community engagement was completed during the development of the HalifACT plan and there has been ongoing stakeholder engagement during the early implementation of the plan. Stakeholders were asked to contribute updates on their respective actions for HalifACT implementation, which are included in this report.

ENVIRONMENTAL IMPLICATIONS

There are significant positive environmental implications associated with the implementation of HalifACT.

LEGISLATIVE AUTHORITY

Halifax Regional Municipality Charter, SNS 2008 c 39:

7A The purposes of the Municipality are to (a) provide good government; (b) provide services, facilities and other things that, in the opinion of the Council, are necessary or desirable for all or part of the Municipality; and (c) develop and maintain safe and viable communities.

79A (1) Subject to subsections (2) to (4), the Municipality may only spend money for municipal purposes if (a) the expenditure is included in the Municipality's operating budget or capital budget or is otherwise authorized by the Municipality; (b) the expenditure is in respect of an emergency under the Emergency Management Act; or (c) the expenditure is legally required to be paid.

ALTERNATIVES

That Environment and Sustainability Standing Committee refuse to forward the report to Halifax Regional Council. This is not recommended as a presentation and discussion with Halifax Regional Council offers increased transparency and understanding with respect to the implementation of HalifACT.

ATTACHMENTS

Attachment A	HalifACT Report Card – 2023/24
Attachment B	Community Updates – 2023/24

Report Prepared by: Colleen Gosse, Environmental Professional, Property, Fleet & Environment 782.641.4013
Kevin Boutilier, Clean Energy Manager, Property, Fleet & Environment 902.719.8567

Attachment A

HalifACT Progress Report Card 2023/24

This report summarizes the initiatives that have contributed to each action listed in the HalifACT plan (*HalifACT 2050: Acting on Climate Together).* Progress is measured by comparing updates provided by each Business Unit to what is described in the *Low-Carbon Technical Report*. Note that this report reflects the progress made from April 1, 2023, to March 31, 2024. It does not reflect the progress that has been made since this period.

The HalifACT plan originally contained 46 actions. Several of these actions have since been subdivided to support improved progress tracking and to better align with the municipality's structure.

The state of progress is defined according to the following:

- **Green:** Progress was made on this action in 2023/24 and the work is tracking towards associated HalifACT targets.
- **Yellow:** Some progress was made on this action in 2023/24, however the action is at risk of falling behind in its associated HalifACT targets.
- **Red:** Minimal progress was made on this action in 2023/24 and the action is falling behind in its associated HalifACT targets.
- **Blue:** Action progress in 2023/24 is contingent on/awaiting action from other stakeholders like the Government of Canada or the Province of Nova Scotia.
- **Future Action:** Action begins in a future year.

A summary of progress for each action is shown in the table below, with further detail to follow.

Summary

HalifACT Actions	Intended Start Date	Action Lead	Progress 2023/24
1. Net-zero & climate resilient new construction	2020	P&D – Engineering & Building Standards	
2. Residential and non-residential deep retrofit program	2020	PFE – Environment & Climate Change	
3. Industrial coalition and support program	2026	PFE – Environment & Climate Change	**Future Action**
4. Rooftop solar PV and energy storage program	2020	PFE – Environment & Climate Change	
5. Community scale solar PV and wind generation	2020	PFE – Environment & Climate Change	
6. Create Coalition to expand and decarbonize district energy systems	2026	PFE – Corporate Facility Design & Construction	**Future Action**

HalifACT Actions	Intended Start Date	Action Lead	Progress 2023/24
7. Advocate and support provincial electricity grid decarbonization	2022	PFE – Environment & Climate Change	
8A. Expand transit infrastructure	2020	Halifax Transit – Planning & Customer Engagement	
8B. Expand active transportation infrastructure	2020	PW – Project Planning & Asset Management and Parking Services	
9. Community-wide EV strategy	2024	PFE – Environment & Climate Change	
10. EV planning and policy	2020	P&D – Regional Planning	
11A. Net-zero municipal operations – municipal buildings	2022	PFE – Facility Design & Construction	
11B. Net-zero municipal operations – transit	2022	Halifax Transit-Planning & Customer Engagement	
11C. Net-zero municipal operations – solid waste	2022	PW – Solid Waste	
11D. Net-zero municipal operations – municipal fleet	2022	PFE – Corporate Fleet	
12. Net-zero water and wastewater operations	2024	Halifax Water	
13A. Climate-informed water supply strategy – municipal service boundary	2024	Halifax Water	
13B. Climate-informed water supply strategy - outside service boundary	2024	PFE – Environment & Climate Change	**Future Action**
14. Climate-informed stormwater management plan and program	2020	P&D – Engineering & Building Standards	
15. HLRA for critical infrastructure in the municipality	2020	PFE – Environment & Climate Change	
16. Risk and vulnerability analysis for critical infrastructure owned and operated by the municipality	2020	PFE – Environment & Climate Change	
17. Zero emissions back-up power in critical infrastructure	2026	PFE – Facility Design & Construction	**Future Action**
18A. Develop inspection procedures for high-risk infrastructure - transportation	2026	PW – Infrastructure Maintenance & Operations	**Future Action**
18B. Develop inspection procedures for high-risk infrastructure - buildings	2026	PFE – Facility Design & Construction	**Future Action**
19A. Updated and climate-informed design standards for new infrastructure - transportation	2022	PW – Design & Construction Services	

HalifACT Actions	Intended Start Date	Action Lead	Progress 2023/24
19B. Updated and climate-informed design standards for new infrastructure - buildings	2022	PFE – Facility Design & Construction	
20A. Fund and implement Green Network Plan	2020	P&D – Regional Planning	
20B. Fund and implement Urban Forest Master Plan	2020	PW – Infrastructure Maintenance & Operations	
21. Implement region-wide naturalization program	2020	P&R – Parks	
22. Implement region-wide tree planting and re-greening program	2020	PW – Infrastructure Maintenance & Operations	
23. Integrate climate into land-use planning	2022	P&D – Regional Planning	
24. Planning policy to enable district energy and microgrids	2024	P&D – Regional Planning	**Future Action**
25. Land protection and conservation on private lands	2020	P&D – Regional Planning	
26. Preservation of natural areas	2020	P&D – Regional Planning	
27. Detailed coastal risk and vulnerability analysis	2020	PFE – Environment & Climate Change	
28. Develop coastal adaptation strategy	2024	PFE – Environment & Climate Change	**Future Action**
29. Integrate climate into emergency planning	2020	CS – Emergency Management	
30. Improve emergency management communication and coordination	2020	CS – Emergency Management	
31. Neighbourhood resilience and disaster support hubs	2020	CS – Emergency Management	
32. Widely available emergency management training	2020	CS – Emergency Management	
33. Undertake neighbourhood climate planning	2024	PFE – Environment & Climate Change	**Future Action**
34. Broad, deep, and collaborative engagement	2020	PFE – Environment & Climate Change	
35. Improve food security and food-systems resilience	2020	CS – Food Security	
36. Expand workforce and technology development programs	2024	PFE – Environment & Climate Change	**Future Action**

HalifACT Actions	Intended Start Date	Action Lead	Progress 2023/24
37. Resilient decarbonized businesses program	2026	PFE – Environment & Climate Change	**Future Action**
38. Integrate climate into financial decision-making	2020	FAM – Procurement and Accounting & Financial Reporting	
39. Establish new mechanisms for financing climate action	2020	FAM – Accounting & Financial Reporting	
40. Green municipal investments	2020	FAM – Revenue	
41. Establish a central Climate Change Office	2020	CAO	
42. Increase staff capacity for implementation	2020	CAO	
43. Annual Indicators Report	2020	PFE – Environment & Climate Change	
44. Carbon offsets framework	2024	PFE – Environment & Climate Change	**Future Action**
45. Consumption-based emissions inventory	2026	PFE – Environment & Climate Change	**Future Action**
46. Include embodied carbon in new construction standards	2026	P&D – Buildings & Compliance	**Future Action**

Efficient Buildings

Action 1 – Net Zero and Climate Resilient New Construction - Contingent on action from other stakeholders

Starting in 2020, develop, adopt, and apply a net-zero and climate resilient program for new construction that:

- *Sets standards and requirements for energy efficiency, renewable energy generation, climate resilience, EV charging, indoor air quality, and solid waste for new residential and non-residential construction so that by 2030, all new construction is net-zero and is designed and built to withstand future climate conditions; and*
- *Is applied to all new residential and non-residential development and is applied to new construction of municipal buildings.*

Action 1 is rated as "contingent on action from other stakeholders" because the Province of Nova Scotia announced that it is indefinitely postponing the adoption of the 2020 National Energy Code for Buildings.

Nova Scotia Tiered Building Code: In August 2023, the Province of Nova Scotia released a list of proposed amendments to the Nova Scotia Building Code Regulations to align them with the 2020 National Building Code (NBC) and 2020 National Energy Code for Canada for Buildings. In its proposal, the province presented its plan to begin mandating – on January 1, 2024 – the least stringent of the NBCs' compliance tiers (tier 1), followed by the rollout of tiers 2 and 3 over the next four years.

In September 2023, the Municipality submitted feedback requesting that the proposal be modified to allow municipalities in Nova Scotia the ability to adopt the more stringent, upper tiers of the NBCs (tiers 4 and 5), according to their needs.

On December 28, 2023, the Province of Nova Scotia announced that it is indefinitely postponing the adoption of the 2020 NBC, stating that this delay will allow time for more education and training within industry.

Industry Support: Halifax Regional Municipality is a foundational partner in the development of the Building to Zero Exchange (BTZx). The mandate of BTZx is to engage stakeholders throughout the building sector (Developers, Architects, Construction Industry, Post Secondary, Not for Profits and Government) who are committed to supporting energy efficient and low-carbon construction. BTZx aims to amplify work already being done by the building sector, encourage innovation and fill gaps in the industry. This will include research, training, demonstration projects, and stakeholder engagement. The Municipality supported the planning and hosting of the initial BTZx Action Accelerator on Green and Affordable Housing on February 20, 2024.

Administrative Order for Net-Zero Construction: In 2021, Halifax Regional Municipality adopted an Administrative Order (*2021-002-OP*) which mandates that all new corporate buildings be designed and constructed to either a net-zero or net-zero ready standard. See Action 11A for more detail on net-zero corporate buildings.

Climate Resilient New Construction: A jurisdictional review of climate adaptation and resilience codes, standards and guidelines was conducted. As a result, Halifax-specific climate resilient standards for new construction of corporate buildings are being developed and will be incorporated into the Municipal Design Guidelines. See Action 19B for more detail.

Action 2 – Residential and Non-Residential Deep Retrofit Program - Some progress

Starting in 2020, develop a retrofit program to enable and fast-track energy and climate resilience retrofits in the

residential and non-residential sector, so that by 2040, 100% of existing buildings undergo deep retrofits.

Action 2 is rated as “some progress” because the program is still under development. For a large-scale program to be deployed, significant funding and support from other levels of government is required. Further consultation with third-party financial institutions is also required.

Community Deep Energy Retrofit Program: A pilot program is nearing completion that is aimed at supporting property owners to perform a deep energy retrofit that achieves a minimum 50 per cent energy reduction. Through the pilot property owners are offered attractive financing and a dedicated project manager to help navigate the retrofit and rebate programs.

As the pilot period of this program ends, the next steps are being considered to develop a full-scale, sustainable program in collaboration with Efficiency Nova Scotia, the Province of Nova Scotia, and the Federation of Canadian Municipalities.

Resilient Retrofit Initiative: In partnership with Partners for Action at the University of Waterloo, a thorough review of resilient retrofits for eight hazards was completed on five building architypes. The hazards included wildfires, extreme heat, extreme wind, extreme precipitation, drought, coastal and overland flooding, ice and snow. The Resilient Retrofit Initiative supports the incorporation of resiliency retrofits into the Municipality's retrofit program through exploration of techniques, discussions across sectors and creation of a guidebook for homeowners.

Resiliency Retrofit Pilot: In partnership with the Town of New Glasgow and the Clean Foundation, the Municipality is piloting a climate resiliency retrofit program for 20 homeowners (ten in each region). The pilot is designed to increase the homes' resiliency to flooding events, build knowledge of flooding and insurance impacts and address capacity and financial barriers. The pilot will provide free flood prevention retrofits and empower homeowners with the skills to maintain the retrofits. This will include a public education component to help communities understand and plan for localized flood risk. The prospective completion date of the pilot project is December 2024.

The neighbourhoods of Spryfield and Upper Hammonds Plains were selected for the pilot in the Halifax region. Based on flood risk and socioeconomic considerations, 9 homes were selected to undergo free flood risk reduction retrofits.

Action 3 – Industrial coalition and support program - Future Action

With partners, develop an industrial coalition and support program that brings together industry and partners in the form of a "coalition of the willing" that seeks to reduce emissions in the industrial sector through improving industrial process efficiency by 75% by 2040.

Action 3 is rated as “future action” because the action is slated to begin in 2026.

CEO Climate Charter: In February 2023, the Halifax Partnership and the Halifax Regional Municipality launched the CEO Climate Action Charter. Co-created in partnership with business leaders across Halifax, the purpose of the CEO Climate Action Charter is to encourage each signatory to take meaningful climate action using the unique operational levers of their respective organizations, while demonstrating leadership to the community. The Charter outlines ten core actions and by signing, the signatories and their respective businesses agree to share information and best practices with the goal of continuously improving climate action strategies, programming and performance.

Renewable Energy

Action 4 – Rooftop Solar PV and Energy Storage Program - Some progress

Significantly scale up or revamp the existing Solar City program to fast-track rooftop solar PV installations and energy storage with the target of installing 1,300 MW solar PV by 2030.

Action 4 is rated as "some progress" because the program is underway but is not growing at a rate that will reach the target for 2030.

Solar City Program: In 2023, 102 Solar City Participant Agreements were executed, bringing the program total to 877 Agreements and $24 million in financing. These systems are expected to save property owners a total of $1.7 million annually in utility costs and reduce annual greenhouse gas emissions in the community by approximately 7,200 tonnes of carbon dioxide equivalent. To date, the Solar City Program has installed 8.8 megawatts (MW) of renewable energy in the municipality, as of March 31, 2024.

Action 5 – Community-Scale Solar PV and Wind Generation - Some progress

With partners, develop and/or participate in local community renewable energy initiative that coordinates and advances the development of utility-scale renewable energy generation. Target of 300 MW ground mount solar and 280 MW wind by 2050.

Action 5 is rated as "some progress" as there are limited resources internally to develop a utility scale renewable energy coalition or progress through the Province of Nova Scotia's Community Solar Program. Additionally, the municipality does not have the legislative authority to mandate utility scale renewables aside from ensuring supportive land-use policies are in place.

The Community Solar Program: In the winter of 2024, the Province of Nova Scotia launched the Community Solar Program which enables the development of utility scale solar farms. The renewable electricity generated by the farms can then be sold to existing Nova Scotia Power Inc. account holders, increasing solar access to those who live in an apartment or do not have a suitable roof for solar. The municipality has investigated the feasibility of a solar farm at the closed Highway 101 Landfill. Among other findings, the results of the investigation found that the landfill site could support up to a 4.8-megawatt (MW) direct current solar electric system (approximately 8,200 panels). Staff have held various meetings with potential vendors and are investigating procurement and ownership models.

Utility Scale Renewables: The Municipality is currently engaged with Roswall Development to purchase renewable electricity from wind turbines to meet its renewable energy targets. Roswall is an approved Licensed Retail Supplier through the Province of Nova Scotia's Renewable to Retail program. This approval allows Renewall Energy Inc., Roswall's public facing retail entity, to sell locally produced renewable electricity directly to consumers.

The municipality prepared an application to acquire 25 per cent of its current corporate electricity consumption from renewable sources, though the Province of Nova Scotia's Green Choice Program (GCP). The GCP allows entities that consume more than 10,000 MW-hours of metered electricity annually the opportunity to purchase renewable electricity from future wind developments. The Minister will decide on applicants during the summer of 2024 before participant agreement negotiations can begin.

Supporting these initiatives will contribute to the increase of utility scale renewable development within the province.

Action 6 – Create Coalition to expand and decarbonize district energy systems - Future Action

With partners, establish a district energy initiative or coalition that brings together district energy owners and operators in the form of a "coalition of the willing" that seeks to decarbonize existing district energy systems by developing a strategy to fuel switch existing district energy systems to 100% renewable sources by 2050.

Action 6 is rated as "future action" because the action is slated to begin in 2026.

Action 7 – Advocate and support decarbonization of the provincial electricity grid – Some progress

Actively support, advocate and partner with Nova Scotia Power Inc., the Province, and others to decarbonize the provincial electricity grid.

Action 7 is rated as "some progress" because the municipality is supporting all initiatives and opportunities to collaborate on grid decarbonization, but there haven't been many opportunities this year.

Green Choice Program: The Province of Nova Scotia and Nova Scotia Power are partnering in the delivery of the Green Choice Program (GCP). The GCP allows entities that consume more than 10,000 MW-hours of metered electricity annually the opportunity to purchase renewable electricity from future wind developments. The Municipality is engaged and plans to participate in this program.

CEO Climate Charter: Nova Scotia Power and its parent company, Emera, are key signatories of the CEO Climate Action Charter, alongside the Municipality's Chief Administrative Officer. This Charter, established in 2023 by the Halifax Partnership and the Halifax Regional Municipality, encourages each signatory to take meaningful climate action using the unique operational levers of their respective organizations while demonstrating leadership in the community.

Grid-Scale Batteries: With support from the Municipality, Nova Scotia Power is piloting the installation of a 50-megawatt grid-scale battery storage facility in the Waverly region. This pilot is aimed at enhancing grid reliability.

Decarbonizing Transportation

Action 8A – Build out transit infrastructure according to Integrated Mobility Plan – Some progress

By 2030, build out the transit infrastructure needed to achieve the 2030 mode share targets set out in the Integrated Mobility Plan.

Action 8A is rated as "some progress" as there have been project delivery challenges due to land acquisition and increased capital costs.

Note: Action 8A links to the implementation of the Integrated Mobility Plan (IMP), which was adopted in 2017 to direct investment in transportation demand management, transit, active transportation, and the roadway network. The IMP lays out a roadmap for achieving mode share targets set in the 2014 Regional Plan, which are to achieve at least 30% of all trips made by walking, rolling or transit and no more than 70% of trips made by private vehicle.

Priority Transit Corridors: In 2023/24, the Municipality has continued working on transit priority corridors including Robie Street, Young Street, Bayers Road, Herring Cove Road, Portland Street, Bedford Highway, and Windmill Road.

Action 8B – Build out active transportation infrastructure according to Integrated Mobility Plan – Some progress

By 2030, build out the transit infrastructure needed to achieve the 2030 mode share targets set out in the Integrated Mobility Plan.

Action 8B is rated as "some progress" as there have been project delivery challenges due to property acquisition, development encroachments, increased project complexity and sector capacity.

Note: Action 8B links to the implementation of the IMP, as detailed above in 8A.

Regional All Ages and Abilities (AAA) Bike Network: The Regional Centre AAA Bike Network is a project to implement safer, more accessible and multi-modal connected pathways in the regional center. In 2023/24, approximately 8 kilometres of "quick-build" bike facilities were implemented. This included more protected bike lanes on Devonshire Avenue, safer local street corridors on Slayter Street in Dartmouth and in the North End of Halifax, and the addition of bollard separators to Bell Road. Additionally, permanent segments of bikeway were added to the Cogswell District and the Penhorn Greenway in Dartmouth. The network has now reached 60 per cent of the targeted distance.

Action 9 – Community-wide Electric Vehicle Strategy – Some progress

Starting in 2020, establish an electric vehicle (EV) joint venture with partners to significantly increase the uptake of personal and commercial EVs in Halifax.

Action 9 is rated as "some progress" as planned public charging installs have been delayed due to extended contract negotiations, utility constraints, and equipment lead times.

Public Charging: In December 2023 a contract for the supply, installation, and operation of public charging was awarded and substantial design was completed for ten sites. These sites align with the direction of the Municipal Electric Vehicle Strategy, filling gaps in the current network. In January 2024, on behalf of the Municipality, Mayor Mike Savage publicly accepted $980,000 in funding from the Natural Resources Canada Zero Emission Vehicle Infrastructure Program to help install these chargers. In coordination with Nova Scotia Power Inc., designs are being finalized and construction is expected to begin at some sites in summer 2024.

User Fees: In April 2023 *By-law U-100* was amended to include user fees for public EV charging stations that will be owned and operated by the Municipality. The fees were set at $0.03 per minute for Level 2 charging and $0.75 per minute for Level 3 charging. The fees were designed to cover ongoing fixed and variable operational costs of the chargers.

Education: Throughout the summer of 2023, the Municipality partnered with the Clean Foundation's Next Ride program to host EV test drive events in each electoral district. Team members were available to answer questions and share information about EVs, rebates, and the Municipal Electric Vehicle Strategy.

Action 10 – Electric Vehicle Planning and Policy - Progressing

Prepare for and catalyze EV uptake through Halifax Regional Municipality planning and policy.

Action 10 is rated as "progressing".

User Fees: In April 2023 *By-law U-100* was amended to ensure proper enforcement of public charging

station usage. As such, all parking stalls with public charging infrastructure will be equipped with an official parking restriction sign (RB-52) with "except when charging" listed. When a vehicle is parked in these stalls and not actively charging, they will be subject to the standard parking fine under the Motor Vehicle Act and potentially towed. The amendments also clarify that electric vehicles may only be charged at a clearly marked, designated electric vehicle charging stations. In areas where there is already a fee for parking, users will be required to pay separate fees for both charging and parking their vehicle.

Electric Vehicle Infrastructure in New Construction: A draft Regional Plan for public consultation was released in June 2023. It included a policy to require infrastructure that can support future EV charging in new construction for residential and commercial uses where the proposed development includes parking spaces. Public engagement performed in the summer 2023 strongly supported this direction.

Greening Government Operations

Action 11A – Net-zero municipal operations (Municipal buildings) – Some progress

Adopt a commitment, develop a costed plan and implement net-zero municipal operations by 2030, including net-zero and climate resilient new buildings; retrofitting existing buildings by 2030; electrification of municipal fleets; and renewable energy generation and purchase.

Action 11A is rated as "some progress" due to staffing challenges and current procurement processes that are delaying efficient construction.

New Construction: In 2023/24, the Halifax Common Pool and Met Field washrooms were constructed to align with *Administrative Order 2021-002-OP*, described in Action 1. Construction tenders were also awarded for the BLT Community Centre and the new combined fire headquarters and community fire station in Bedford. The design of the new Eastern Shore Lifestyles Centre will commence this coming fiscal year.

Existing Buildings: Staff continue to track energy consumption data in ENERGY STAR Portfolio Manager. Notable deep energy retrofits that were nearing completion in the 2023/24 fiscal year included: the MacPhee House, Acadia Centre, Bi-Centennial Theatre, Keshen Goodman Library, Sackville Terminal, and Halifax Regional Fire & Emergency Station 56, Black Point. Projects that were underway during the 2023/24 fiscal year included: the Eastern Shore Arena, the Upper Hammonds Plains and Chocolate Lake Community Centres. Design work was underway for the Wallace Lucas, East Preston and North Preston Community Centres. Finally, a batch energy audit project was awarded for 7 facilities.

Renewable Electricity: Notable solar installations that were completed or underway during the 2023/24 fiscal year included: the Sackville Bus terminal, East Preston Community Centre, Carroll's Corner Community Centre, and Ragged Lake Transit Centre, which is designed to have close to 1 megawatt of solar capacity. Designs for solar installations were underway for the Keshen Goodman Library and Sackville Sports stadium. In addition to solar installations, staff are currently pursuing options to purchase renewable electricity.

Action 11B - Net-zero municipal operations (Transit) – Some progress

Adopt a commitment, develop a costed plan and implement net-zero municipal operations, including the electrification of municipal transit and other transit fleet vehicles, including ferries.

Action 11B is rated as "some progress" because while work is being done to electrify a portion of the bus and ferry fleet, staff are still determining the best path forward to fully decarbonizing.

Electric Buses: In May 2022, Halifax Regional Council authorized the purchase of sixty 40-foot battery electric buses and chargers. The first electric bus was delivered to the Municipality in December 2023 and is being used for training, road testing and public engagement activities. The delivery of the remaining 59 buses is expected by the end of 2024.

Ragged Lake Transit Centre: The Ragged Lake Transit Centre (RLTC) project includes a 4,600 square meter net-zero energy expansion of the existing Operations Centre and equipment installation to support 60 new battery-electric buses. In 2023/24, the RLTC expansion was under construction.

Mill Cove Electric Ferry: In June 2021, Halifax Transit commissioned a study to explore technology options for a new ferry from Mill Cove in Bedford to downtown Halifax. The study found that five electric ferry vessels is most feasible option that aligns with HalifACT. Funding from all three levels of government was announced in March 2024 to support the purchase of the electric ferries and both the design and the construction of the ferry terminals.

Action 11C - Net-zero municipal operations (Solid waste) – Some progress

Adopt a commitment, develop a costed plan and implement net-zero municipal operations by 2030, including the reduction of emissions from waste.

Action 11C is rated as "some progress" because while there several initiatives underway, including an update to the Solid Waste Strategy, the current Solid Waste Strategy does not align with the targets set in HalifACT.

Strategy Review: Phase 1 of the Solid Waste Strategy Review was nearing completion in 2023/24. It is intended to improve waste diversion and align with HalifACT, while also exploring extended producer responsibility, waste reduction, and additional program evaluations.

Organics Management: Diversion of organics from landfill disposal is a critical piece in managing emissions from solid waste management systems. The municipality has a long and successful track record of organics diversion which started with the implementation of a source-separated organics program in the late 1990s. Given the population growth within the municipality and aging of the existing composting facilities, in December 2020, Regional Council awarded a contract for the establishment of a new composting facility to replace the two existing facilities and to support the continued success of the municipal green cart program. Construction activities for the facility continued in 2023 and the facility is expected to be commissioned in fall 2024. The new organics facility will support organics diversion in the municipality over the next 25-35 years.

Landfill Gas Collection at Highway 101 Landfill: Highway 101 is a closed landfill which stopped receiving waste in December 1996. The collected landfill gas was used to generate electricity through a third-party contract between 2002 to 2020. Considering the continued decline in landfill gas quality and quantity on site and aging of collection infrastructure, power production at the site is not currently feasible.

In 2023/24, the Municipality completed a wellfield improvement program on site to mitigate the uncontrolled, direct release of landfill gas through existing wells within the waste footprint. Further, a consultant was retained to review the condition of the cover system as well as the landfill gas quality and quantity to provide recommendations for potential technologies that can be used to collect the landfill gas.

Action 11D - Net-zero municipal operations (Municipal fleet) – Some progress

Adopt a commitment, develop a costed plan and implement net-zero municipal operations by 2030, including

electrification of municipal fleets; and renewable energy generation and purchase.

Action 11D is rated as "some progress" due to extended vehicle procurement lead times, utility constraints and uncertainty of operational impacts within business units.

Charging infrastructure: In 2023/24, the Municipality awarded the contract for the supply of fleet charging infrastructure. Several level 2 chargers have been installed at various depots to support the deployment of electric vehicles. Staff continue to work with the utility and design consultant to finalize designs for the first two large scale fleet charging installations. Once complete, these designs will be tendered through a public procurement process.

Vehicle orders: Approximately 62 EV, plug-in hybrid EV and electric units (vehicles and equipment) have been delivered, with 42 of those now in service. More orders are expected this coming fiscal year once charging infrastructure is in place.

Water

Action 12 – Net-zero water and wastewater operations – Some progress

Adopt a commitment and develop a plan to achieve net-zero water and wastewater operations by 2030.

Action 12 is rated as "some progress" because while there are several initiatives underway and planned in the future to decarbonize energy sources, reaching this target may be challenging without additional resources.

Renewable Electricity: Halifax Water continued to invest in renewable electricity with solar energy systems being designed and are planned for installation at the Burnside depot and at Halifax Water Head Office on Cowie Hill Road. Additionally, an application for the Province of Nova Scotia's Green Choice Program was submitted in March of 2024. This program will support Halifax Water in sourcing renewable energy from other external producers.

Cogswell District Energy System: Halifax Water continued to advance the Cogswell District Energy project within the Cogswell Redevelopment Area. In 2023/34 an engineering consultant was hired, the design of the district energy system's Energy Centre has continued, and the distribution piping system continued to be installed.

Aerotech Biosolids Processing Facility: This project will update the infrastructure to be able to capture greenhouse gases generated by the anaerobic digesters and convert it into renewable natural gas (RNG). After considering the complicated procurement and approval process, the tendering to select a design consultant occurred in August 2023. The award is expected in late 2025, after a detailed proposal review process. In 2024/25, Halifax Water will also commence negotiations for regulatory approvals as appropriate for this unique project.

Action 13A – Climate informed water supply strategy in the municipal boundary – Progressing

Develop a holistic water supply strategy with climate as its core focus.

Action 13A is rated as "progressing".

Climate Action Plan: Halifax Water is developing a Climate Action Plan which will guide Halifax Water's planning and investment decisions to ensure long-term resiliency and greenhouse gas reduction. It will

also provide recommendations for the utility to establish targets and track the progress of mitigation measures and adaptation strategies. The Climate Action Plan has been developed as a strategic document to be incorporated into the Integrated Resource Plan and will guide the utility's climate change management program.

Water Safety Plan: Halifax Water is developing a Water Safety Plan which will be a comprehensive and adaptive risk assessment and risk management approach to water quality from source to tap. In 2023/24, a draft Framework was prepared to support the completion of the Water Safety Plan. A risk identification process was developed with categories of source water, treatment, distribution, organization and administration and climate/future risks.

Safe Yield Study: Halifax Water is seeking a better understanding of the safe yield of each water source for planning purposes. In 2023/24, Halifax Water installed hydrometric stream gauges, in partnership with Water Survey of Canada, at Bennery Lake and Tomahawk Lake. These and additional lake monitoring locations will allow for site specific data collection to support future safe yield analysis.

Action 13B – Climate-informed water supply strategy outside of Halifax Water service boundary – Future Action

Develop a holistic water supply strategy with climate as its core focus.

Action 13 is rated as "future action" because the action is slated to begin in 2024.

Action 14 - Climate informed stormwater management plan and program – Some progress

Develop a holistic integrated stormwater management plan and program with climate as its core focus.

Action 14 is rated as "some progress" because there is currently no strategy in place for stormwater management that includes all recommendations of the HalifACT technical report.

HRM-Wide Floodplain Mapping: HRM-wide floodplain mapping was completed at a high-level using best available climate projections and LiDAR data. Staff are working on releasing maps to the public. This mapping is a foundational step in the development of an integrated stormwater management plan and will be incorporated into the Climate Vulnerability Mapping project. More information about the project is detailed in Action 16.

Sackville River Land Use By-Law Update for Floodplain: Following detailed floodplain mapping of the Sackville and Little Sackville Rivers, changes to the land use by-law for those areas within the Sackville River watershed are being updated to restrict certain developments within the floodplain.

Development of a Climate Action Plan for Halifax Water: As described in Action 13A above, Halifax Water is developing a Climate Action Plan which will guide climate informed stormwater management plans and programs.

Stormwater Management Best Practices: Halifax Water and the Municipality are working to develop and maintain stormwater best management practice standards for use in the public right-of-way.

Baseline Climate Hazard Exposure Maps: This project generated baseline climate hazard exposure maps to enable staff to make strategic, data-informed, and climate-aligned decisions around critical infrastructure prioritization, emergency management, and planning. The outputs of the analysis are a set of climate

projections and associated maps that include extreme values for multiple indicators of six climate hazards. These hazards include extreme heat, meteorological drought, extreme rainfall, extreme snowfall, extreme wind, and changing winter temperatures.

Critical Infrastructure Prioritization Project: Work is ongoing to assess the risk and vulnerability of critical infrastructure owned and operated by the Municipality. Based on this, increasing the resilience of infrastructure at greatest risk from current and future climate impacts will be prioritized. This is informed by the baseline climate hazard exposure maps mentioned above.

Low-Impact Development Training: Staff from various Business Units received certification from McMaster University after completing Low-Impact Development Training. The training covered low-impact development designs, maintenance and inspection, which will be helpful for both municipal designs and when reviewing development applications.

Critical Infrastructure and Services

Action 15 - High-Level Risk Assessment for critical infrastructure in the municipality – Some progress

Conduct a High-Level Risk Assessment, with internal and external stakeholders, to assess the ability of critical infrastructure systems in the municipality to operate and withstand future climate and extreme weather.

Action 15 is rated as "some progress" because the assessment is underway, however the data is not yet available for decision makers.

Hazard, Risk and Vulnerability Analysis: The Hazard, Risk and Vulnerability Analysis (HRVA) assesses known potential hazards and how the geographic exposure and community socioeconomic situation can impact a community's resiliency. A two-year resource was hired to support and develop the HRVA alongside a consultant. Engagement sessions were held to inform residents of the process and to gather local knowledge on historical hazards, their likelihood of recurrence, and areas of importance. Engagement sessions were completed in December of 2023 and focus group sessions continue into 2024.

Action 16 – Risk and Vulnerability Analysis for critical infrastructure owned and operated by the municipality – Some progress

Conduct a spatially-based risk and vulnerability analysis of municipally owned and operated critical infrastructure at the asset class and system level.

Action 16 is rated as "some progress" because the assessment is underway, however the data is not yet available for decision makers.

Note: Action 16 is linked to Action 15 as the community and municipal risk and vulnerability analysis will be used for both actions.

Critical Infrastructure Prioritization Project: Work is ongoing to assess the risk and vulnerability of critical infrastructure owned and operated by the Municipality. Increasing the resilience of infrastructure at greatest risk from current and future climate impacts will be prioritized. This is informed by the baseline climate hazard exposure maps. More information is detailed in Action 14.

Action 17 – Zero emissions back-up power in critical infrastructure – Future Action

Install zero emissions back-up power in municipally owned and operated critical infrastructure.

Action 17 is rated as “future action” because the action is slated to begin 2026.

Action 18A – Develop inspection procedures for high-risk infrastructure - transportation – Future Action
Develop inspection procedures for high-risk infrastructure.

Action 18A is rated as “future action” because the action is slated to begin in 2026.

Action 18B – Develop inspection procedures for high-risk infrastructure - buildings – Future Action
Develop inspection procedures for high-risk infrastructure.

Action 18B is rated as “future action” because the action is slated to begin in 2026.

Action 19A – Updated and climate-informed design standards for new infrastructure – transportation – Progressing
Update standards for both new municipal and private infrastructure that incorporates forward-looking climatic information to ensure infrastructure is built to be low/zero-carbon and climate resilient. Work with external standard-setting organizations to advance this work.

Action 19A is rated as “progressing”.

Standards Update: To reflect climate change impacts as it relates to the cross section of roadways, the Cross Sections chapter of the Transportation Association of Canada’s Geometric Design Guide requires updating. The Geometric Design Guide is a fundamental reference document for roadway design practitioners in Canada. The document has been reviewed to evaluate the design guidance’s climate risks. The Director of Design & Construction for Public Works is serving as the Chair of the newly formed project steering committee to support updates to the document.

Action 19B – Updated and climate-informed design standards for new infrastructure – buildings – Minimal progress
Update standards for both new municipal and private infrastructure that incorporates forward-looking climatic information to ensure infrastructure is built to be low/zero-carbon and climate resilient. Work with external standard-setting organizations to advance this work.

Action 19B is rated as “minimal progress” because while the Municipality has advocated for new construction standards, there are no current plans in place to ensure that all new construction will be net-zero and climate resilient.

Climate Resilient New Construction: A jurisdictional review of climate adaptation and resilience codes, standards, and guidelines was conducted. As a result, Halifax-specific climate resilient standards for new construction of corporate buildings are being developed and will be incorporated into the Municipal Design Guidelines. One notable example of this is the new Eastern Shore Lifestyle Centre. The design work for this project will include a Climate Change Resilience Assessment and a return-on-investment assessment to consider climate resilience structural options, best practices options and value through the long-term life span of the proposed infrastructure. Action 19B is related to Action 1.

Natural Areas and Green Infrastructure

Action 20A – Fund and implement the Green Network Plan – Some progress

Fund and implement the Green Network Plan

Action 20A is rated as "some progress" due to development pressures and resource requirements, however these are expected to be mitigated through the draft Regional Plan Review.

Regional Plan: A draft Regional Plan Review for public consultation was released in June 2023. It included for consideration policy support for implementing actions from the Halifax Green Network Plan, including defining and protecting Wildlife/Ecological Corridors. There was a high level of engagement supporting strengthened policy and programming for the Plan. As of March 31, 2024, staff are considering refinements to policy and regulation. Staff also supported a pilot project to assess ecological connectivity between the Blue Mountain-Birch Cove Lakes Wilderness Area and the Chebucto Peninsula. Finally, a Project Manager was hired to implement all actions of the Green Network Plan in coordination with various business units.

Action 20B – Fund and implement the Urban Forest Master Plan – Some progress

Fund and implement the Urban Forest Master Plan

Action 20B is rated as "some progress" because there are many initiatives underway, including an update to the plan, but the current plan has not been implemented.

Draft Regional Plan: The 2023 draft Regional Plan included for consideration policy support for developing and implementing the Urban Forest Master Plan (UFMP). Public engagement performed in summer 2023 strongly supported this direction.

Urban Forest Master Plan Update: The current UFMP is ten years old and implementing the actions within it has been challenging. This year, staff began updating the plan with the objective of better understanding how the community values the urban forest, including measurable targets and indicators, providing an overview of current approaches to urban forest management and creating a practical long-term plan to achieve a sustainable, healthy, and accessible urban forest in the Halifax Region.

Street Tree Planting and Maintenance: The planting target for the 2023/24 fiscal year was 3,100; however, due to cost increases only 2,678 trees were planted. In addition to planting, close to 2,000 trees were pruned under the cyclic pruning program.

To properly inventory municipally owned street trees, a procedure was created to incorporate imagery-based data capture technology. Districts 4 and 16 were successfully captured and migrated to the asset registry. There are currently 9 districts captured in the registry and the remaining districts will be completed in the coming years. Finally, with the support from co-op students, new tree planting inventories were captured.

Red Book Tree Chapter: As part of the Municipal Design Guidelines, a new chapter was developed specific to supporting and maintaining street trees throughout the Halifax Region. Capital and development related construction in the municipality continue to be guided by this chapter, ensuring best management practices for the establishment and protection of urban tree canopy and associated natural infrastructure. This chapter has been helpful with respect to infill development, and in providing guidance to major capital projects such on Spring Garden Road, the Cogswell area, Dutch Village Road and Brunswick Street.

Dalhousie University Research & Monitoring: Initiated when the UFMP was approved, this partnership

leverages resources and students to assist with monitoring of the street tree planting program as well as assisting with public education, outreach and research initiatives related to the urban forest and naturalization.

Action 21 – Region-wide naturalization program – Progressing

Continue the naturalization program through pilot projects, public education and awareness to support the development of region-wide naturalization programming.

Action 21 is rated as "progressing", though a bulk native plant supplier has been difficult to source and previous forestry and naturalization programming was limited to the urban core.

Naturalization Pilot Program: A Naturalization Coordinator was hired and there are plans to develop a pollinator garden and naturalized sites in Tantallon, Woodside, and Halifax.

Communications: A naturalization media campaign was developed, and naturalization specific information is being added to the Municipality's website. Additionally, the Naturalization Coordinator was made available to answer inquiries from the public.

Action 22 – Implement region-wide tree planting program – Minimal progress

With partners, develop and implement a region-wide tree planting and re-greening program.

Actions 22 is rated "minimal progress" for 2023/24 as no program has been designed. The program design will be incorporated into the Urban Forest Master Plan Update.

Public Tree Planting: In summer 2023, tree giveaway events were held in Lower Sackville and North End Halifax, providing 1,200 trees to interested residents.

Planning

Action 23 – Integrate climate into land-use planning – Progressing

Integrate climate into land use planning policies and processes to reduce the upward trend of emissions associated with growth and ensure it is more resilient to the impacts of climate change.

Action 23 is rated as "progressing" because the draft Regional Plan Review is considering the points laid out in HalifACT. Potential challenges include development pressures in hazard-prone areas.

Draft Regional Plan: The 2023 draft Regional Plan Review included for consideration the promotion of infill development (with transit-oriented development and community access to green spaces), advancing work in watershed and natural asset management, enabling large scale solar, requiring electric vehicle charging infrastructure as part of development, increasing watercourse buffers, limiting development on coastlines and islands and tools for donating land for conservation. Throughout engagement in summer 2023 there was a high level of support for these initiatives. As of March 31, 2024, staff are considering refinements to policy and associated regulations. Community Planning staff have also responded to the need to integrate climate into land use planning through proposed Urgent Changes to Planning Documents for Housing. These proposed amendments include direction to enable more housing options in the urban area, increase density close to transit (including on suburban opportunity sites), reduce parking requirements and refine built form regulations to better enable more sustainable options for construction (such as mass timber).

Sackville River Land Use By-Law update for Floodplain: Following detailed floodplain mapping of the Sackville and Little Sackville Rivers, changes to the land use by-law within the Sackville River watershed are

being updated to restrict certain developments within the floodplain.

Action 24 – Planning policy to enable district energy and microgrids – Future Action
Plan for the deployment of carbon-neutral district energy and microgrid systems through integrating these considerations early in the land use and infrastructure planning process.

Action 24 is rated as "future action" because the action is slated to begin in 2024.

Action 25 – Land protection and conservation on private lands – Some progress
Increase land protection and conservation on private lands through partnerships, collaboration and municipal planning requirements.

Action 25 is rated as "some progress" because land protection and conservation are being considered in the draft Regional Plan Review, but not all recommendations within HalifACT have been explored.

Note: Action 25 is linked to the Green Network Plan. See Action 20A for more details.

Draft Regional Plan: The 2023 draft Regional Plan Review included policies for consideration supporting the conservation of public and private lands and the protection of watercourse buffers.

Action 26 – Preservation of natural areas and green space planning – Some progress
Prioritize the protection and expansion of green spaces through land use planning policies and mechanisms.

Action 26 is rated as "some progress" because several of the land use policy recommendations have been implemented, but not all have been incorporated. A change to the Halifax Regional Municipality Charter, which would allow for the Municipality to acquire conservation lands, has been requested of the province, but not granted.

Draft Regional Plan: The 2023 draft Regional Plan Review included policies supporting Regional Nature/Wilderness Parks and Parks Priorities Planning to consider access to green space and nature as a critical component for healthy and complete communities. Planning documents also consider supporting opportunities for parkland dedication to facilitate improved access to green spaces and coastal areas and for parkland in ecologically valuable areas and ecological corridors. The draft planning documents also enable conservation easements and promotes options to donate land for conservation.

Natural Assets Pilot Project in Nine Mile River: Following the natural assets inventory project, a pilot to evaluate the benefits that natural assets provide in stormwater management was conducted. Additional co-benefits were evaluated, including carbon sequestration, recreation, mental and physical health, and cultural values. Staff held a Levels of Service workshop in the fall of 2023 and collected datasets to be used in the modeling of co-benefits throughout the winter months. The project will conclude fall 2024.

Low-Impact Development Training: Staff from various business units received certification from McMaster University after completing Low-Impact Development Training. The training covered low-impact development designs, maintenance and inspection, which will be helpful for both municipal designs and when reviewing development applications.

Coastal Preparedness

Action 27 – Detailed coastal risk and vulnerability analysis – Progressing

Conduct a detailed spatially-based risk and vulnerability analysis of Halifax's coastal, waterfront and shoreline areas.

Action 27 is rated as "some progress" because while a coastal risk and vulnerability assessment has taken place, the analysis does not include sediment transport, water chemistry or erosion. The regional scale of the coastal hazard mapping project requires significant computational resources, resulting in delays.

HRM-wide Floodplain Mapping: Informed by the Coastal Extreme Water Level Mapping project completed in 2023, the HRM-wide Floodplain Mapping project was completed at a high-level using the best available climate projections and LiDAR data. The project included coastal flood hazard mapping, incorporating sea level rise under multiple climate scenarios.

Hazard, Risk and Vulnerability Analysis: The Hazard, Risk and Vulnerability Analysis (HRVA) assesses known potential hazards and how the geographic exposure, and community socioeconomic situation can impact a community's resiliency. More information about the HRVA is detailed in Action 15.

Baseline Climate Hazard Exposure Maps: This project generated baseline climate hazard exposure maps to enable staff to make strategic, data-informed, and climate-aligned decisions around critical infrastructure prioritization, emergency management, and planning. The outputs of the analysis are a set of climate projections and associated maps that include extreme values for multiple indicators of six climate hazards. Projections about changes in wind intensity will inform climate change considerations of wave action along coasts in the Halifax region.

Shore Road: Building with Nature: Several sections along Shore Road are becoming increasingly damaged due to the impacts of climate change. The ongoing "Shore Road: Building with Nature" project involves the construction of a nature-based infrastructure for erosion mitigation along a 480-metre stretch of road. In 2023/24, a geotechnical investigation was completed along with wave monitoring and topographic surveys. With this, a preliminary design is underway, and permit applications have been submitted.

Action 28 – Develop coastal adaptation strategy – Future Action

Building on the results of the risk and vulnerability analysis (Action 27), develop a coastal-specific adaptation strategy.

Action 28 is rated as "future action" because the action is slated to begin 2024.

Additional information:

Updates to the Regional Plan: Revisions to the draft Regional Plan Review regarding coastal protection included for consideration: updating the required coastal elevation for new development, defining a minimum 30 metre horizontal coastal buffer for development with restricted activities within the buffer; and limiting development on islands and existing undersized lots that are prone to hazards such as storm surge and coastal erosion.

The proposed Regional Plan policy also sets consideration for future work, including: considering the adoption of a coastal-specific adaptation policy using a Protect, Accommodate, Retreat, Avoid or Ecosystem Based Adaptation Framework, maintaining, protecting and/or restoring natural coastal ecosystems, encouraging use of nature-based and/or hybrid infrastructure on coastlines and minimizing the use of hard infrastructure on coastlines such as armour stone and seawalls through best management practices, public education and guidelines.

Emergency Management

Action 29 – Integrate climate into emergency management planning – Some progress

Integrate climate into emergency management planning, including:

- *Ensure systematic, transparent and up-to-date plans for emergency management that incorporate/integrate climate considerations.*
- *Integrate climate risk and vulnerability mapping with climate vulnerable populations.*
- *Develop a registration system for individuals who need help or want to be checked on.*
- *Develop a heat response plan to address the growing public health risks of increasing extreme heat.*
- *Develop evacuation plans for flooding, wildfire and coastal storm surge.*
- *Review the Municipality's ability to provide for the needs of extreme event evacuees.*
- *Update Community Emergency Response Training (CERT) curriculum to incorporate climate-change hazards (e.g. heatwaves).*

Action 29 is rated "some progress" because climate considerations are being integrated into emergency planning, but much work remains.

Community Emergency Plan: Upon completion of the Hazard, Risk and Vulnerability Analysis (HRVA) the municipal emergency plan will be updated. This update will support the Municipality in making risk-based decisions to address vulnerabilities and climate hazards.

Vulnerable persons registry: A voluntary vulnerable persons registry has been created and currently has 190 registrants. This voluntary, self-referral list is only open to residents of the Halifax Regional Municipality who may require support during emergency situations.

Heat response strategy: The Heat Response Strategy will be a comprehensive plan to prepare for and respond to extreme heat events. As of March 31, a jurisdictional scan of heat strategies across Canada had been completed, internal and external stakeholders have been identified and heat projections for the municipality have been analyzed.

Evacuation Plans: The development of evacuation plans for communities at high risk for wildfires is underway with plans for the highest risk communities to be completed first. The Hazard, Risk, and Vulnerability Analysis (HRVA) will be used to support the development of these plans in areas at high risk of flooding.

Community Emergency Response Training: The Emergency Management Office coordinates emergency training for communities. The current curriculum includes some climate hazards but not all. The HRVA will be used to update the emergency training curriculum.

Organizational Capacity Assessment: The organizational capacity assessment process was finalized, and a framework has been completed along with a stakeholder engagement plan. The information and available datasets have been entered into the HRVA.

Action 30 – Improve emergency management communication and coordination - Some progress

Improve emergency management communication and coordination, including:

- *Convening a coalition of emergency, social service and health agencies to identify gaps and needs for service delivery and improve communications and coordination.*
- *Develop new internal and external institutional alliances to increase resiliency.*
- *Improve communications with general public around extreme weather events.*
- *Ensure back-up for communication systems.*

Action 30 is rated as “some progress” because there are not yet plans to address all the recommendations listed in HalifACT for this action.

Joint Emergency Management Teams: Community-based Joint Emergency Management (JEM) teams continue to support collaboration between the Municipality and community before, during, and after emergency events. For detailed information about JEM teams see Action 32.

Emergency Communications: Additional staff have been hired to support the management of emergency alerts. A dedicated administrator will be responsible for hfxALERT, the Municipality’s mass notification system. A crisis communications plan and the emergency information on the Municipality’s website is being updated. Backup emergency communication systems are available, including radios and SIM cards for multiple cellular providers.

SATURN (Situational Awareness software): This software will be used for emergency responses and as a planning tool for emergency preparedness including location of critical infrastructure, comfort centres, road closures and more.

Community Capacity

Action 31 – Neighbourhood resilience and disaster support hubs – Some progress

Create Disaster Support Hubs or Community Resilience Hubs for community self-sufficiency.

Action 31 is rated as “some progress” because while the Municipality offers comfort centres during emergencies, these spaces aren’t dedicated hubs for building community resilience outside of emergency events.

Comfort Centres: The Municipality offers comfort centres during emergency events and, depending on the type of emergency, offers visitors a comfortable space to visit, a power supply, and refreshments. Comfort centres are coordinated using SATURN software. With the increasing number of intense extreme heat events, the Municipality is exploring offering cooling centres. Comfort centres are staffed by JEM teams and Community Mobilization Teams and in 2023/24, comfort centres were opened to support residents through various extreme weather events.

Storm Kits: With help from municipal Community Mobilization Teams, YMCA Immigrant Services and Halifax Public Libraries, 450 Storm kits were deployed in advance of Hurricane Lee with educational materials available in five languages.

Action 32 – Widely available emergency management training – Some progress

Train local residents to plan for and respond to emergencies through making emergency management and CERT training widely available to residents and businesses.

Action 32 is rated as “some progress” as training is not widely available to all residents due to limited funding and resources.

Joint Emergency Management Teams: Joint Emergency Management (JEM) is a concept developed by the Halifax Regional Municipality's Emergency Management Office to allow community organizations to prepare for and respond quickly to emergencies. JEM volunteers are experienced and highly trained community members who offer support by setting up comfort centres where residents can receive up-to-date information, assistance with food, warmth, and access to power during emergencies. JEM volunteers

have held several engagements with residents at various events throughout the municipality where they share emergency preparedness resources with residents and are available to answer questions.

Community Mobilization Teams: Community Mobilization Teams are community volunteers working together to support families and communities by bridging the gap with service providers during times of critical incidents.

Action 33– Undertake neighbourhood climate planning – Future Action

Undertake bi-annual (at a minimum) climate planning sessions with neighbourhood organizations.

Action 33 is rated as "future action" because the action is slated to begin in 2024.

Community Risk Assessments: Halifax Regional Fire & Emergency's Wildland Mitigation Manager has completed 24 Community Risk Assessments and Fire Smart Assessors completed 124 Firesmart home assessments.

Action 34 – Broad, deep and collaborative engagement - Progressing

Work purposefully, meaningfully and collaboratively with residents, including Mi'kmaq and Indigenous community leaders, African Nova Scotian communities and marginalized communities on the continued development and implementation of HalifACT.

Action 34 is rated as "progressing" because engagement is a critical part of HalifACT and there is a dedicated team supporting this work.

Halifax Public Libraries: In partnership with the Halifax Public Libraries, pop-up public engagement sessions were held in 16 branches and on Shape Your City. Results were shared with the community in a Climate Community Engagement Final Report. In March of 2023, three smaller "pop-up human libraries" were held to showcase opportunities for Climate Action in suburban communities. These were held at the Tantallon Public Library, the Musquodoboit Harbour Public Library, and the Sackville Public Library.

"A Call to Climate Action: HalifACT Human Library and Ideas Fair" was hosted on November 10, 2023, to showcase climate actions and invite commitment. The event was well received, which led to an expansion of a host events for Earth Day under the name "Earth Fest".

Earth Fest: In partnership with the Ecology Action Centre, Every One Every Day and Halifax Public Libraries, Earth Fest was held, which was intended as a "Nocturne for Climate Change". This five-day event included dozens of workshops and programs led by community organizations across the municipality.

Climate Equity: A Climate Equity Framework continues to be explored to provide guidance around the "Just Transition" principle of HalifACT. Intentional outreach to African Nova Scotian (ANS) communities around climate was continued. ECC joined the advisory to the African Nova Scotian Ambassadors Project led by Dr Inrid Waldron. The Municipality collaborated with North Preston's Futures to explore ANS youth engagement, and sponsored One North End (ONE) in their youth "Climate Challenge for EveryONE". Finally, engagement continued with the Community Safety and Diversity and Inclusion teams.

Climate Action Challenge (CAC): Completed the third cycle of the CAC in collaboration with the Halifax Partnership. Seven teams were funded with start-up projects and new ideas in the areas of: Green & Resilient Buildings, Green Jobs, Renewable Energy, Clean Transportation, and Community Resilience.

Community Climate Education: Continued the collaboration with How We Thrive, Climate Connections Course (CCC). A Train the Trainer session was held with staff and community members who will then offer the CCC to community groups and residents in the summer and fall of 2024.

Youth Climate Engagement: Supported the completion of the Climate Futures Lab with Youth Challenge International. This program engaged a cohort of 51 youth aged 16-24 to develop Climate Action Projects based on HalifACT.

Food

Action 35 – Improve food security and food-systems resilience - Progressing

Fund and implement a Food Action Plan, including climate as a core component.

Action 35 is rated as "progressing", though challenges exist in finding alignment between JustFOOD and the Nova Scotia Food and Beverage Strategy.

JustFOOD Action Plan: In March of 2023, Regional Council endorsed Part A of the JustFOOD Halifax Action Plan, establishing 56 recommendations for action towards a more healthy, just, and resilient food system. At the end of the 2023/24 fiscal year, the JustFOOD team were prepared to present Part B of the plan and the Strategies to advance the Year 1 priorities (2024/25) to Council in April of 2024. Work is underway on these priorities with a focus on supporting collaborative governance and community action, establishing the municipal food team, maximizing municipal assets for food, increasing understanding of community vulnerabilities and strengths, and strengthening emergency food planning and responses. JustFOOD is closely connected to HalifACT, recognizing the interplay between food and climate change. The teams are working together to increase community resilience and strengthen municipal planning and climate action.

JustFOOD also includes research and indicators aimed at tackling food-related challenges, including climate change. JustFOOD is expanding its Monitoring Framework and using the Milan Urban Food Policy Pact indicators to holistically track the impact of the plan as well as the state of food security and the food system, environment and social infrastructure.

Business and Economy

Action 36 – Workforce and technology development programs – Future Action

Expand workforce and technology development programs and funding to grow skills and trades for decarbonization and resilience.

Action 36 is rated as "future action" because the action is slated to begin 2024.

Action 37 – Resilient decarbonized businesses program – Future Action

Develop a resilient decarbonized businesses program to support businesses to reduce emissions and prepare for climate impacts.

Action 37 is rated as "future action" because the action is slated to begin 2026.

Mainstreaming Climate into Municipal Operations

Action 38 – Integrate climate into financial decision-making - Some progress

Integrate climate into municipal financial decision-making through:

- *Climate-related financial disclosures.*
- *Cost of carbon and social cost of carbon in financial analysis, capital and business planning.*
- *Municipal carbon budget.*
- *Climate lens on capital planning.*
- *Financial impacts of climate risks and emissions in asset management and service delivery.*

Action 38 is rated as "some progress" because not all recommendations of HalifACT are currently being addressed.

Climate-Related Financial Disclosures: HRM's first TCFD report was presented alongside the Consolidated Financial Statements in August of 2024. An iterative approach is being taken, similar to other municipalities and as per the advice published by CPA Canada.

Procurement Process: Many solicitations handled by procurement contain social value, which includes environmental considerations. Social Value is now part of Procurement's Strategic framework and will be continuously refined, finding new ways to include social value in solicitations.

Action 39 – New mechanisms for financing climate action - Some progress

Explore and establish new mechanisms for financing climate action, including private sources of finance.

Action 39 is rated as "some progress" because research is ongoing in this area, new mechanisms have not yet been implemented.

Private Sector Financing Opportunities: A Third-Party financing study was completed that investigated leveraging public-private partnerships to administer and fund community-wide deep energy retrofits at scale. After significant engagement with municipal staff and key stakeholders, various options were presented that are currently being investigated.

Strategic Initiative funding and reserve framework: Review of reserves was deferred until the next year to align with the incoming new Council. The review is expected to be expanded to be a full review of funding needs and options.

Action 40 – Green municipal investments - Progressing

Incorporate Environmental, Social, Governance (ESG) principles, specifically as they relate to climate, into management of municipal funds.

Action 40 is rated as "progressing".

ESG Monitoring & Reporting: Finance continues to perform counterparty (investment firm) reviews on eligible counterparties' ESG scores. The municipality invests mostly with banks. During 2023/24 the municipality purchased a $35 million Ontario Green bond that matures in February 2025.

HRM Pension Plan: In September 2023, the HRM Pension Plan became a member of the ESG Data Convergence Initiative ("EDCI"). The EDCI is an open partnership of private equity stakeholders committed to streamlining the private investment industry's historically fragmented approach to collecting and reporting Environmental, Social & Governance data.

Governance and Capacity

Action 41 – Establish a central Climate Change Office – Some progress

Establish a central Climate Office, that reports directly to the CAO, with a distributed network of coordinated support.

Action 41 is rated as "some progress" because efforts have been made to connect Environment and Climate Change to the CAO with regular meetings, however this division is not part of the Executive Leadership Team.

HalifACT Governance Model: The HalifACT Governance Model launched in February 2024 after being approved and supported by the Executive Leadership Team. The goal of the model is to mainstream and accelerate the implementation of HalifACT through the formation of Working Groups to address key barriers and opportunities.

The working groups that were created (or re-established) include:

> Corporate Net-Zero Buildings: This working group is focused on HalifACT Action 11A: Net-Zero Municipal Buildings.
>
> Corporate Fleet Electrification: This working group is focused on HalifACT Action 11D: Net-Zero Corporate Fleet. This group will help to ensure the systematic rollout and strategic deployment of corporate fleet electrification initiatives.
>
> Greening Transit: This working group is focused on HalifACT Actions 8A and 11B: Expanding Transit Infrastructure and Net-Zero Municipal Transit Operations.
>
> Resilient Critical Infrastructure: This working group is focused on HalifACT Actions 15, 16, 17, 18 and 19 which are related to: infrastructure risk assessments, critical infrastructure upgrades and infrastructure protocols, codes, and standards.
>
> Resilient Communities: This working group is focused on HalifACT Actions 31, 32, 33, 34 and 35 which are related to: climate resiliency support hubs, climate emergency management training, neighbourhood climate action planning, community engagement and collaboration, and food security and resilience.
>
> Nature-Based Solutions: This working group is focused on HalifACT Actions 20, 21, 22, 23, 25 and 26 which are related to: the Green Network and Urban Forest Plans, naturalization planning, tree planting and re-greening, and land preservation and conservation.

Mainstreaming Climate Action & Building Capacity: Climate change awareness and action across Business Units continues to be promoted by operationalizing the HalifACT governance framework, supporting teams with leadership roles in HalifACT and creating opportunities for connection and collaboration with HalifACT stakeholder workshops and events.

Action 42 – Increase staff capacity for implementation - Progressing

Significantly increase staff capacity for implementation.

Action 42 is rated as "progressing".

Staff capacity: As of year-end 2023/24, there were 27 funded positions directly supporting the implementation of HalifACT.

Monitoring and Reporting

Action 43 – Annual Indicators Report – Some progress

Develop an Annual Indicators Report and report annually.

Action 43 is rated as "some progress" because while the report is published each year, many actions don't yet have defined metrics to accurately assess their progress.

HalifACT Online Hub: An online HalifACT hub is currently under development which will highlight progress on all actions and offer transparency on projects and spending.

Reporting: Annual reporting continues with updates on all actions and based on feedback from supporting Business Units, barriers to action progress are included in this report.

Metrics and KPIs: More transparent progress metrics are being developed in partnership with action leads and subject matter experts.

Carbon Accounting

Action 44 – Carbon offsets framework – Future Action

Develop a values-based framework for carbon offsets.

Action 44 is rated as "future action" because the action is slated to begin in 2024.

Action 45 – Consumption-based emissions inventory – Future Action

Develop a consumption-based inventory.

Action 45 is rated as "future action" because the action is slated to begin in 2026.

Action 46 – Embodied carbon – Future Action

Include embodied carbon in new construction standards for buildings.

Action 46 is rated as "future action" because the action is slated to begin in 2026.

Attachment B

HalifACT Community Updates 2023/24

The Halifax Regional Municipality has been working collaboratively with stakeholders to implement HalifACT with a sense of urgency and innovation. External partnerships and leveraged funding are crucial for success. With many stakeholders, it is difficult to adequately capture all the important work being done in the Halifax Region. This section showcases a selection of highlights from external partners.

Government of Canada

Environment and Climate Change Canada, and Natural Resources Canada both offer programs that have supported the municipality in implementing HalifACT.

Canada Green Buildings Strategy (CGBS): The CGBS aims to decarbonize and improve the resiliency of Canada's building stock while supporting affordability, job creation, and economic growth. The CGBS centers around accelerating retrofits, building green and affordable at the beginning, and shaping the buildings sector of the future

Programs, such as the Canada Greener Homes Loan and Oil to Heat Pump Affordability Program, help residents retrofit their homes to be more energy-efficient and affordable.

Clean Electricity Strategy: In February 2024, the Government of Canada provided an update to the Clean Electricity Regulations. The Regulations are being developed using three core principles:

- Enable significant emission reductions to help transition towards a net-zero electricity grid;
- Enable provinces and territories to maintain electricity affordability for Canadians and businesses; and
- Enable provinces and territories to maintain grid reliability as Canada's electricity needs grow.

Permanent Public Transit Funding: In July 2023, the Government of Canada released a report titled *Permanent, Integrated, and Locally Responsive: New Foundations for Public Transit Funding in Canada*. The report outlines key feedback shared by participants across the country. This feedback will help inform the Government of Canada's approach to maintaining, upgrading, and expanding public transit and active transportation networks in urban, rural, and Indigenous communities.

Electric Vehicle Strategy: The Electric Vehicle Availability Standard was released in December 2023. Under the new standard, auto manufacturers and importers must meet annual zero-emission vehicle (ZEV) regulated sales targets. The targets begin in 2026 with 20% of all new light-duty vehicles sold must be a ZEV, increasing to 60% percent by 2030 and 100% by 2035.

Advancing Clean Energy: Natural Resources Canada continues to support the transition to net-zero emissions by 2050 through investments in renewable energy and grid modernization projects. This includes the recapitalization of the Smart Renewables and Electrification Pathways Program, which focuses on deploying market-ready technologies to generate environmental, social, and economic benefits. Through this Program, the Government of Canada will invest $1.56 billion over eight years to advance smart renewable energy projects that modernize the clean grid of the future.

National Adaptation Strategy: This Strategy aims to mitigate the risks accentuated by climate change. In coordination with all levels of government, Indigenous peoples, and academia, the strategy will provide an integrated approach to reducing climate change risks.

Government of Nova Scotia

The province has legislated an overall goal of reducing emissions to 53% below 2005 levels by 2030 and achieving net-zero emissions by 2050. *Our Climate, Our Future: Nova Scotia's Climate Change Plan for Clean Growth* outlines 68 supporting measures, including a new pledge to reduce emissions from electricity by 90% by 2035, and to reduce home heating oil use by at least 20% by 2030.

The Government of Nova Scotia releases an annual progress report in July, which highlights the progress on the 68 supporting measures.

Renewable Energy: Nova Scotia released its Clean Power Plan that outlines how the province plans to achieve its goal of 80% renewable electricity generation by 2030. The plan includes sourcing 50% of its energy through wind energy generation. As of March 2024, 43% of electricity produced by Nova Scotia Power comes from renewable sources.

Energy Efficiency and Affordability: Low-income Nova Scotians are eligible for free heat pumps and other home upgrades through the HomeWarming program. This program has supported just over 2,300 low-income households, saving each an average of $1,100 on their annual energy bills.

Carbon Pricing: The output-based pricing system introduced in 2023 has been implemented. This system sets facility-level performance standards for electricity generators and large industrial emitters, with mandatory participation for facilities emitting more than 50,000 tonnes of emissions per year. There are currently seven companies and 15 facilities registered under this system.

Coastal Protection Act: In February 2024 the provincial government announced it would not proclaim the Coastal Protection Act. Alternatively, the province has released a Coastal Protection Plan that provides information and tools to property owners, governments, communities, and business owners to consider when developing coastal properties.

Building Code: In August 2023, the Province of Nova Scotia released a list of proposed amendments to the Nova Scotia Building Code Regulations to align them with the 2020 National Building Code and 2020 National Energy Code for Canada for Buildings. In its proposal, the province presented its plan to begin mandating tier 1 of the Codes on January 1, 2024, followed by the rollout of tiers 2 and 3 over the next four years.

On December 28, 2023, the Province of Nova Scotia announced that it is indefinitely postponing the adoption of the Codes, stating that this delay will allow time for more education and training within the industry.

Protecting Nature: Through a three-year agreement with the federal government, the province will receive $28.5 million in funding to increase protected areas and advance an integrated approach to the protection, conservation, and recovery of biodiversity. Of these funds, $3.5 million will support Mi'kmaw leadership in the conservation and care of nature. The agreement aims to protect 82,500 hectares by 2026.

Halifax Port Authority

Port of Halifax Decarbonization Plan: A Decarbonization Plan is being developed that is aimed at achieving a 40% reduction in emissions by 2030 over 2022 levels and net-zero emissions by 2050. The plan will focus on implementing cost-effective strategies and technologies to drive sustainable practices within port operations.

Green Shipping Corridors Funding Proposal: Greening the Halifax-Hamburg shipping corridor will position Halifax as the greenest ultra-class port on the East Coast of North America. In April 2024, the Halifax Port Authority (HPA) submitted a multi-million-dollar funding proposal to Transport Canada, outlining a comprehensive plan with five key initiatives aimed at decarbonizing port operations and promoting sustainable shipping practices. These initiatives include preparing for alternative fuel-powered vessels, deploying one of Nova Scotia's first hydrogen demonstration projects, enhancing container terminal electrification, implementing green shipping technology, launching workforce development programs, and creating an Intermodal Green Incentives Program. By focusing on these areas, HPA aims to remove barriers to emission-reducing equipment adoption, incentivize industry partnerships for low-carbon fuel adoption, and improve overall port efficiency while reducing environmental impact.

Nova Scotia Power Inc.

Transportation Electrification: Nova Scotia Power (NSP) has been collaborating with the Municipality on the electrification of public transit, both buses and ferries, and the deployment of public charging infrastructure across the Halifax region.

Grid Decarbonization: NSP continues work to support the provincial and federal goals of grid decarbonization by 2030. Since 2005, the makeup of renewable electricity on the grid has increased from 9% to 43% and the use of coal to generate electricity has reduced by 60.5%.

Other highlights include supporting the Ragged Lake Transit Centre expansion and the Cogswell Redevelopment project. NSP is also piloting the installation of a 50-megawatt grid-scale battery in the municipality (Waverly) that is aimed at enhancing grid reliability.

Eastward Energy (formerly Heritage Gas)

Hydrogen Development: Eastward Energy has partnered with Dalhousie University to establish the Dalhousie Hydrogen Applications Research Lab to explore green hydrogen applications required to achieve net-zero emissions by 2050. Under this partnership, Dalhousie researchers will test the safety and performance of blending hydrogen into the natural gas system.

Natural Gas Absorption Heat Pump Trials: Eastward Energy progressed this multi-year project to demonstrate and evaluate the performance, energy savings, operating cost, and emissions reductions for three different gas absorption heat pumps. The project will be completed in 2025.

Renewable Natural Gas: Eastward Energy is supporting the development of renewable natural gas (RNG) production projects. Two potential projects could produce 200,000 GJ of RNG annually, enough to heat over 2,500 homes.

Efficiency Nova Scotia

EfficiencyOne (Efficiency Nova Scotia's parent organization) continued to offer programs and services to Nova Scotians that reduce energy consumption, energy costs, and emissions. These programs have resulted in over $4.8 billion in lifetime energy savings since 2011, including over $500 million for low-income homeowners and renters, and a reduction of over 111,000 tonnes of emissions. Additionally, EfficiencyOne

has partnered with over 380 Nova Scotia businesses employing more than 4,000 people, including heat pump installers, lighting specialists, solar PV installers, and builders. Finally, they have supported over 2,400 Nova Scotians through their low-income, Mi'kmaq and other Diverse Communities programs, including upgrades to over 200 shelters, transition houses, and affordable rentals.

Halifax Climate Investment, Innovation and Impact Fund

This year, the Halifax Climate Investment, Innovation, and Impact Fund (HCi3) awarded $500,000 in grants to 14 projects that will support work in building decarbonization, low-carbon affordable housing, electrification of transportation, and community capacity building. 29% of the grant funding went to projects led or co-led by equity-deserving groups, and almost 60% went to projects that benefited equity-deserving groups.

HCi3 was part of a successful application led by the ReCover Initiative to implement a Deep Retrofit Accelerator in Atlantic Canada. The project resulting from the successful application will focus on accelerating deep energy retrofits in commercial, institutional, and multi-unit residential buildings. Work will include publishing a strategic roadmap for the deep retrofit industry, providing services and support to property owners and developers, and building industry capacity.

HCi3 continued to build its pipeline for impact investing and joined the Atlantic Canada Cleantech Investor Challenge run by Spring Activator. Through this partnership, HCi3 worked with other investors to assess a curated group of cleantech ventures and award a pooled fund of $100,000 to Acuicy, which provides business intelligence to companies seeking to reduce Scope 3 greenhouse gas emissions.

In February 2024, HCi3 co-launched the Youth Climate Pitch Competition in partnership with Tribe Network. This competition is focused on encouraging racialized entrepreneurs, innovators, and students aged 16-30 to design or expand ideas for effective climate action.

HCi3 is a foundational partner of the Building to Zero Exchange and has supported municipal climate events like the Human Library, the Climate Action Challenge, and transformative scenario planning.

Clean Foundation

Resilient Home Retrofits: Clean Foundation launched their Resilient Home Retrofits pilot program in May of 2023. Resilient Home Retrofits aims to increase a home's ability to withstand and recover from overland flooding through resiliency upgrades inside and outside a home. 18 homes received flood risk assessments with nine homes chosen to receive free retrofits. To date, all but one home retrofit has been completed. The most common retrofits through this program include sump pumps with battery backups, new eavestrough systems with leaf guards, interior drainage/weeping tile systems, and rain gardens.

Next Ride: Next Ride continued its mandate to bring free electric vehicle (EV) test drives to the public throughout the province. Their relationship with HalifACT has created a collaborative experience for residents wanting to learn about and test drive an EV. In the summer of 2023, over 18 events were supported by HalifACT through free venue space, event promotion, and staff resources.

Electric Avenue was held in September 2023 at the Canada Games Centre. This event brought together partners, dealerships, and enthusiasts to help the public learn more about EVs. The event saw 350 participants getting behind the wheel of an EV, 31 e-bike test drives, and discussions with over a hundred residents. Participation increased by 40% over the previous year's event.

Electrify Nova Scotia Rebate Program: Since 2021, this program has issued over $12 million in rebates towards electric vehicle and bike purchases across the province. This fiscal, close to 900 residents of the Halifax Regional Municipality received a rebate for an electric vehicle purchase, and close to 1,000 received

a rebate for an e-bike purchase.

Ecology Action Centre

The Ecology Action Centre (EAC) is one of the largest environmental charities in Nova Scotia, advocating on issues of climate change, biodiversity, and environmental justice. Representing more than 5,000 members, their work and mandate cover many areas directly impacted and aligned with climate action.

Buildings: With support from the Low Carbon Communities program, the Clean Foundation, Efficiency Nova Scotia, and Faith & the Common Good, the EAC is offering free energy audits to up to 50 faith buildings across the province. Working with VIDA Living, Zzap Architecture & Planning, and RDH building science, a panelized retrofit toolkit was released which includes success stories from across Canada and a case study of an affordable multi-unit residential building in Dartmouth. A report titled *A Way Forward* was released in partnership with the Energy Poverty Task Force. This report outlines a costed plan to drastically reduce energy poverty in Nova Scotia.

Transportation: Work has continued with the Halifax Regional Centre for Education to increase the adoption of electric school buses. The EAC's 'Let's Walk, Roll & Ride, Spryfield!' event series saw collaboration with local community groups to gather feedback on how they currently move about the neighborhood and any changes they would like to see. The Pop-Up Bike Hub and Pop-Up Bike Mini mobile bike repair programs repaired 349 bikes collectively across 10 communities in the municipality.

Engagement & Workforce Development: EAC continued hosting its Better Building Speaker Series promoting deep energy retrofit techniques, technologies, and science to property owners and building professionals. EAC is commissioning a study that looks at the jobs being created by energy efficiency retrofits, how to use those opportunities to fill employment gaps in equity-deserving communities, and that identifies training gaps and opportunities.

Dalhousie University

This year, Dalhousie University received grants to study the ocean's critical role in climate change and to build the country's first university-based battery prototyping and fabrication facility. A deep energy retrofit at the Killam Library is ongoing, with a focus on expanding the connectivity of the university geothermal system. In support of active transportation, the Dal Bike Society is installing another Bike Center on the Sexton Campus by upcycling an old sea can. Finally, the university is working with 17 partners to assess how shifting to plant-focused diets can address climate change.