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Summerside takes green energy to the limit

Prince Edward Island planning for climate change

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Presidents' Address



Bruce MacDougall
President, FPEIM

Welcome to our new magazine! The Federation of PEI Municipalities (FPEIM) is pleased to collaborate on this publication with our sister associations in Nova Scotia (NSFM), New Brunswick (UMNB), and Newfoundland and Labrador (MNL).

This magazine is timely, as municipalities across the region encounter more complex issues. As the stories illustrate, our municipalities are both at the forefront of responding to climate change and emergencies and on the leading edge of making changes to adapt.

The publication provides a valuable forum to explore municipal issues, share success stories, and gain knowledge from the experiences of others. Thank you to everyone who played a role in production. We hope readers enjoy the stories in these pages.



Andrew Black
President/Président, UMNB

Last year was a challenging year for municipalities across New Brunswick. From municipal reform to difficult weather events, our members continue to provide strong leadership during hard times. The Union of Municipalities of New Brunswick (UMNB) is excited to partner with the other Atlantic associations to bring you this first edition of the *Atlantic Municipal Magazine* on emergency management preparedness and climate change.

L'année dernière a été une année difficile pour les municipalités du Nouveau-Brunswick. De la réforme municipale à des événements climatiques difficiles, les municipalités du N-B continuent d'assurer un leadership solide dans leurs communautés. L'UMNB est ravie de s'associer aux associations de l'Atlantique pour vous présenter cette première édition du magazine municipal de l'Atlantique sur la préparation aux situations d'urgence et les changements climatiques.



Amy Coady
President, MNL

Municipalities in Atlantic Canada are seeing the effects of climate change firsthand. From hurricanes to fires to coastal erosion, the impact on communities, as you will read in this issue, is significant. Often, municipalities are on the front lines of dealing with the impacts of climate change.

In Newfoundland and Labrador, severe weather events of the past year have shown the importance of maintaining and updating emergency plans. It is not enough to just make the plan then put it on the shelf – these plans need to be practiced and trialed through tabletop exercises or mock scenarios.

By sharing the experiences of responding to emergencies and climate events, municipal leaders can learn from each other to be better prepared. Whether through partnerships or through knowledge sharing, municipalities are stronger together.



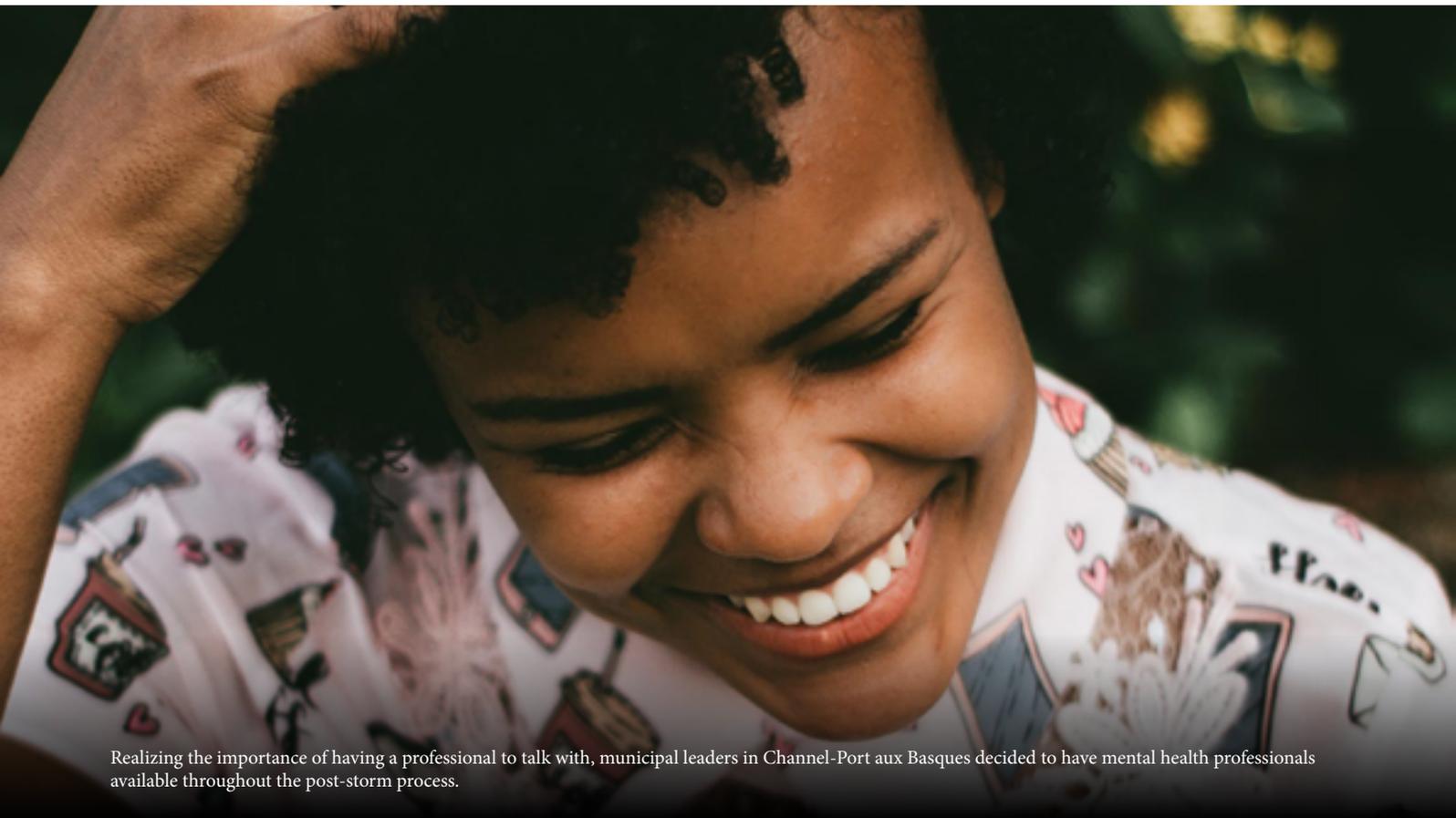
Brenda Chisholm-Beaton
President, NSFM

This new magazine is designed to be a place to highlight issues that are close to our Atlantic communities.

We've all heard the line about the proximity of municipal politicians to their communities, and we've seen for ourselves what recovery from climate disasters looks like in our communities. If Hurricanes Fiona and Dorian were a preview of what we must look forward to, then we should all heed the lessons learned and shared in these pages to come.

I'm very excited that our colleagues agreed to join us and collaborate on this magazine, and I look forward to the discussions this magazine will bring.

Emergency planning and the importance of mental health supports



Realizing the importance of having a professional to talk with, municipal leaders in Channel-Port aux Basques decided to have mental health professionals available throughout the post-storm process.



Tobias Romaniuk is the Communications and Marketing Officer at Municipalities Newfoundland and Labrador.

The morning that Hurricane Fiona hit Channel-Port aux Basques, Mayor Brian Button grabbed his copy of the municipal emergency plan and headed out to meet the others who would be co-ordinating the town's emergency response efforts.

Normally, this is done at the town hall, but as Fiona continued to batter the town, the damage and storm surge made the town hall completely inaccessible. They headed to the hospital, which had backup power and a boardroom they could use. Button slapped the emergency plan down on the table, called a state of emergency, and they got to work.

The toll of ecological grief

An emergency plan, explains Button, is not the sort of thing you follow to the letter. It is more of a guideline, since things can change quickly during an emergency, and there may be things you

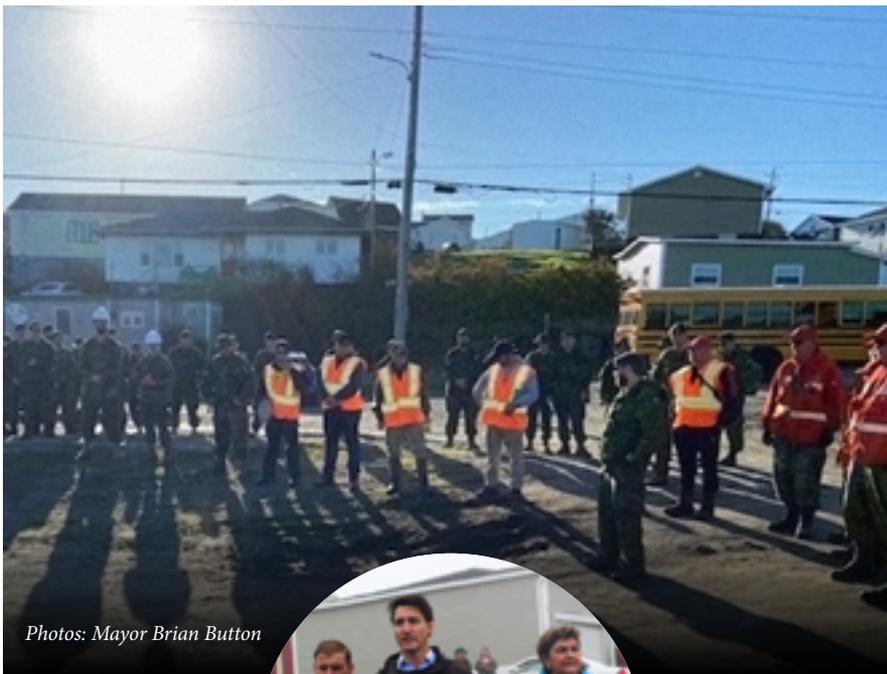
did not anticipate. Such as, for instance, about a half dozen homes disappearing into the sea and the mental health impacts caused by that trauma.

Ecological grief is the term used to describe mourning or sadness related to the loss of ecosystems, landscapes, and ways of life. A paper published in *Nature Climate Change* outlines three types of ecological grief causes:

- physical losses, such as the loss of species or landscapes;
- loss of environmental knowledge, such as how a sea behaves during a storm or where the best fishing may be; and
- future loss that could cause anticipatory sadness.

In Port aux Basques, the storm created conditions to foster all three types of ecological grief.

Button describes himself as being a mentally strong person with a background in dealing with emotionally



Photos: Mayor Brian Button



difficult situations. But, during the aftermath of this recent storm, he found his breaking point, and leaned on the support of mental health workers in town.

Realizing the importance of having a professional to talk with, town leaders decided to have mental health professionals available throughout the post-storm process. When they knocked on doors telling people to leave, when they again contacted people to tell them the homes they left were now condemned, and when first responders needed someone to talk to, there were also mental health professionals available.

“When you’re making a list of who’s in your plan, and you’re listing down all your first responders, mental health services should be at the top of the list,” says Button.

Even though they took the weather reports seriously, the damage was far beyond what Button was expecting.

“I would have never thought something like this could have happened in this community. Not in a million years,” says Button. “I know climate change is real. I know things are changing. I know our storms are more intense. But could I have ever imagined that we were going to take out 85 to 100 homes in this region? I never would have imagined

that in a million years.”

Don’t plan for emergencies during an emergency

They expected damage to infrastructure. They expected homes would be impacted, as would sheds and wharfs. But to watch entire homes wash out to sea, while others were flattened in place ...

“No town is really prepared for that,” says Button, adding that water and sewer lines have been twisted, broken, and clogged with debris across town. Because of the way the municipality is laid out along the coast – as many are across the province – and due to the severity of the storm, the damage stretches across the entire community.

As cleanup efforts continue, and crews work to get as much done as they can before the oncoming winter, Button is now able to look back and assess how the town handled the emergency and what changes need to be made, including the incorporation of mental health components in an emergency situation. But an emergency situation is not the only time council should look at their emergency plan.

“It’s important that you get them off the shelf, you look at them, you update them, you make sure you have things in them that may not necessarily be in them today,” says Button. [AMM](#)



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Summerside takes green energy to the limit



A crew in the City of Summerside works to restore power following post-tropical storm Fiona. Photo: City of Summerside



Lori Mayne is the Communications and Member Services Officer at the Federation of P.E.I. Municipalities.

The City of Summerside plans to generate 65 percent of its electricity from renewable sources by spring 2023. Municipal services director Greg Gaudet agrees it is an ambitious endeavour for green energy.

“There’s a lot of talk about how far you can go,” he says. “Summerside is definitely pushing the limits.”

With a population of approximately 16,000 people, the city is the second-largest municipality in Prince Edward Island. It also owns its own electrical utility, which serves about 10 percent of the province’s market.

The city’s most recent green energy project is the Summerside Sunbank, a \$66-million, 21-megawatt solar power farm (48,000 solar panels) with 10 megawatts/28 megawatt-hours of battery storage. The project is a partnership with Samsung Renewable Energy.

The Summerside Sunbank project

When the solar farm begins commercial operations in 2023, it is expected to generate 20 percent of Summerside Electric’s energy. Over 45 percent will come from wind: 12 megawatts from

a city wind farm and nine megawatts purchased from West Cape Energy. The remaining power will be purchased from NB Power.

Gaudet says generating electricity from renewables reduces pollution, cuts greenhouse gas emissions, and improves quality of life for residents. Generating power from local sources means the community has a more secure supply, and renewables help add to the diversity of sources. Generating power from renewable sources can also mean that power has a more secure cost.

“Once you get over the capital cost, it’s really low cost to operate,” he says of wind and solar energy. “The fuel is free.”

Projects like Sunbank also contribute to economic development. Mike Thususka, the city’s economic development director, notes a clean-tech project brings not only the investments that come with the project itself, but also spin-offs in terms of other jobs, training, and research and development.

Thususka adds that green infrastructure helps the city promote itself as a place to live and invest: “Come to a



The Summerside Sunbank in progress, as of late fall 2022. The solar energy project sustained minimal issues due to Fiona, with about 50 of 14,000 installed panels damaged during the storm. *Photo: City of Summerside*

municipality that cares about the environment – and is doing something about it.”

Addressing renewable energy challenges

The largest challenge with renewable energy lies in its variability – the utility cannot control when the wind blows or the sun shines. It’s also challenging to store such power.

For example, to avoid damage during post-tropical storm Fiona last September, Summerside shut down its wind turbines. However, the storm damaged the main line to the city’s wind farm. To restore power, the city first had to rely on its aging diesel generators and then NB Power until the line could be repaired four days after the storm. Still, the city had restored the majority of power (90 per cent) within two days.

Gaudet says the City of Summerside plans to boost dispatchable generation – power that, unlike wind and sun, can be controlled or flicked on with a switch. To replace old generators and build capacity, the city is considering the feasibility of using wind and solar power to fuel hydrogen-powered generators.

“That becomes green hydrogen, since it’s created from renewables,” Gaudet explains. The Sunbank battery can also add some storage for the city, perhaps enough for two hours of power.

Gaudet notes capital costs can still make renewable energy more expensive when compared with traditional

power sources in North America. To produce green power without increasing rates, Summerside takes advantage of low-interest loans, provincial and federal government funding, and support from the Federation of Canadian Municipalities.



Greg Gaudet, Municipal Services Director for the City of Summerside.

Lessons learned from Summerside’s green energy projects

Gaudet says even municipalities without their own utility could approach utilities in their region or their provincial government to discuss the potential for local power projects.

After all, he says, municipalities typically have strong relationships with other orders of government. Further, he says municipalities can explore projects other than power infrastructure to generate revenue. “If you’re successful in building an asset that is profitable, it’s another revenue source for communities to look at, to support other services in the community,” Gaudet says.

For instance, profits from the city wind farm combined with reductions in purchases from NB Power have meant an additional \$2.5 million in Summerside’s coffers for local projects.

Summerside has gained a reputation for high-quality recreation, such as the Credit Union Place recreation facility, multipurpose dome, and lit ballfields.

“Would it be to the same level if they weren’t able to create revenue other than taxation?” Gaudet asks. “I’m not sure.” **AMM**

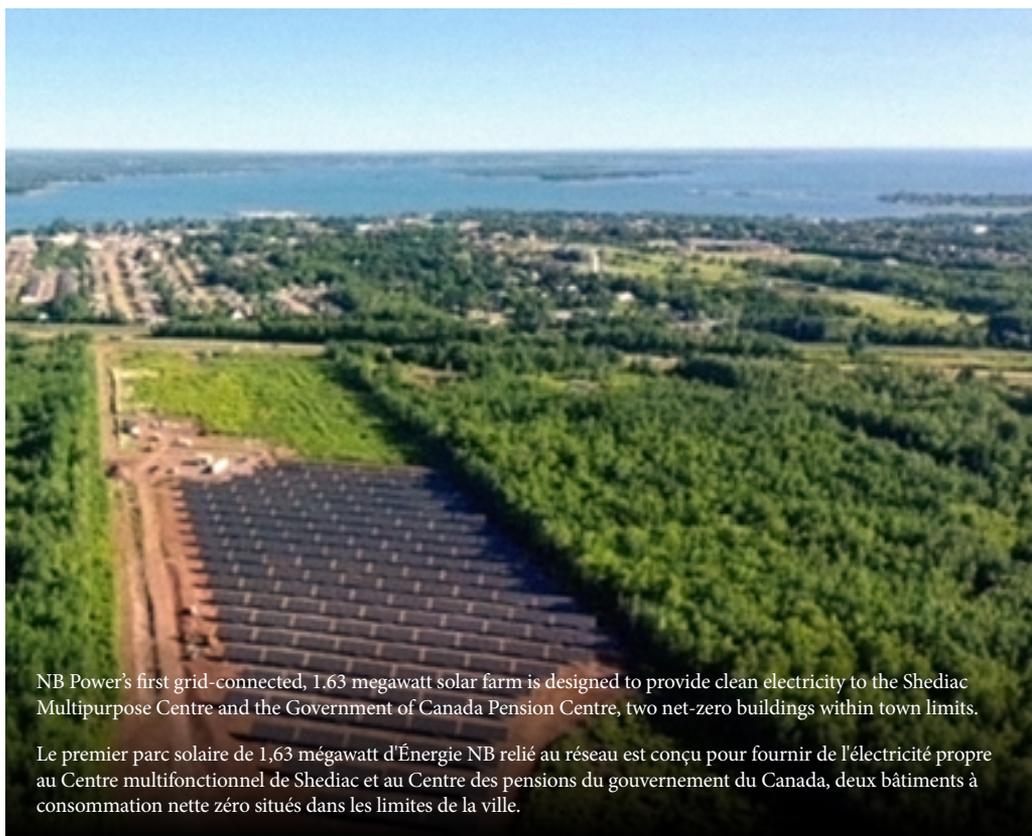
Smart energy community: Shediac leads the way for New Brunswick municipalities

Une collectivité énergétiquement intelligente : Shediac ouvre la voie aux autres municipalités du Nouveau-Brunswick



Vanessa Pettersson is the Communications and Events Officer with the Union of the Municipalities of New Brunswick.

Vanessa Pettersson est Agent des communications et des événements avec Union des municipalités du Nouveau-Brunswick.



NB Power's first grid-connected, 1.63 megawatt solar farm is designed to provide clean electricity to the Shediac Multipurpose Centre and the Government of Canada Pension Centre, two net-zero buildings within town limits.

Le premier parc solaire de 1,63 mégawatt d'Énergie NB relié au réseau est conçu pour fournir de l'électricité propre au Centre multifonctionnel de Shediac et au Centre des pensions du gouvernement du Canada, deux bâtiments à consommation nette zéro situés dans les limites de la ville.

After a 2014 ice storm left the Town of Shediac in the dark for almost three days, the town turned to NB Power to ask, "Is there anything a municipality could do to help?"

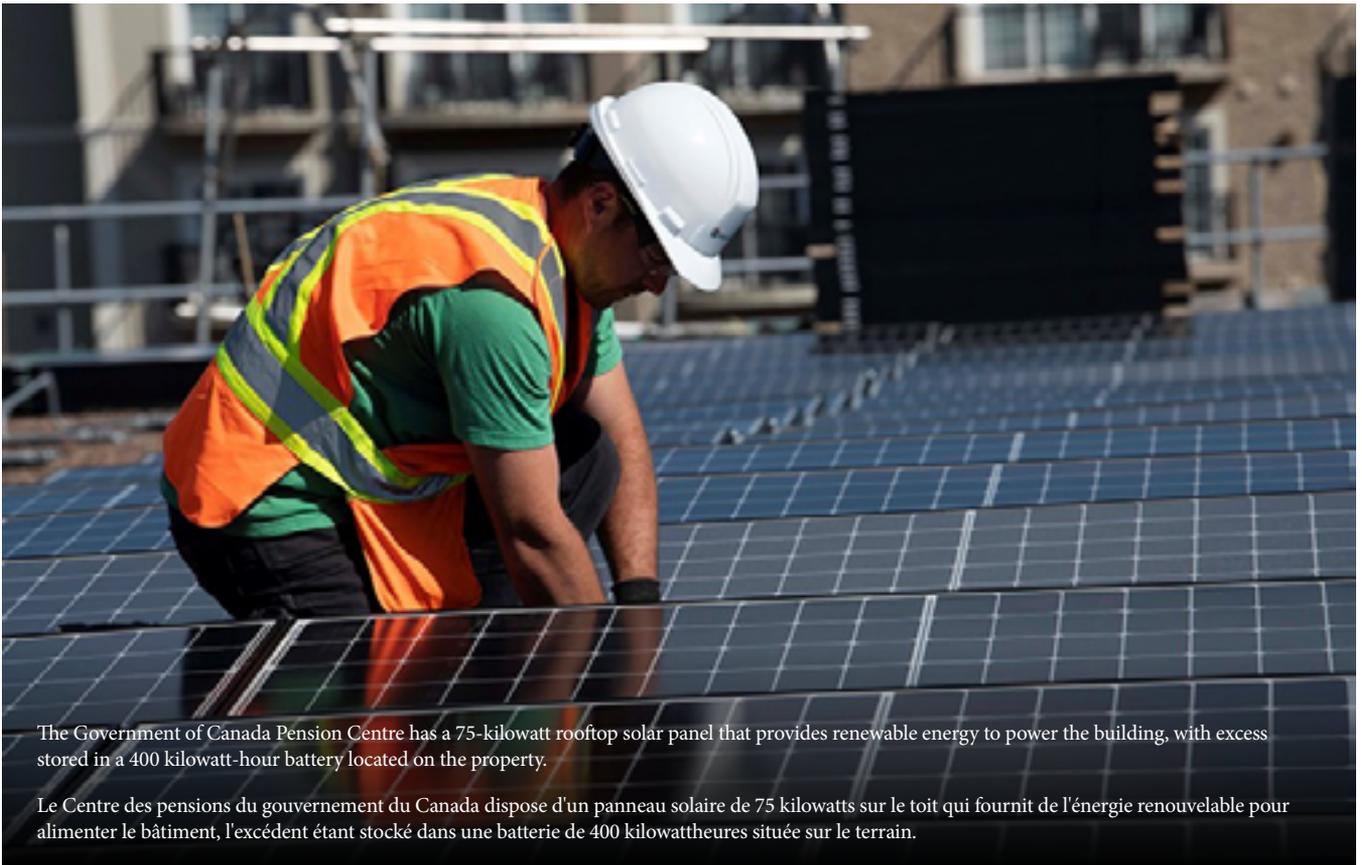
A relationship prospered and, as a result, the Smart Energy Community Project was created. NB Power was looking for ways to test smart technologies to see how customers could have more energy-efficient homes. As the town and NB Power were looking for partners and funding to make their plans a reality, Siemens Canada and the National Research Council of Canada (NRC) became crucial parts of this project.

"To do the research component of this project is essentially a world-first. This type of project and scope of study was not being done in any other country at that time," said Roger Caissie, Mayor of Shediac. "This Smart Energy Community Project will benefit more than just Shediac – more than the

Suite à une tempête de verglas qui, en 2014, a laissé la ville de Shediac dans l'obscurité pendant près de trois jours, la ville s'est tournée vers Énergie NB pour demander « Y a-t-il quelque chose qu'une municipalité pourrait faire pour aider à la situation?

Une relation s'est alors nouée, puis renforcée, donnant lieu à la création d'un projet communautaire sur l'énergie intelligente. Énergie NB cherchait des façons de tester diverses technologies intelligentes pour voir comment les maisons de leurs clients pourraient devenir plus efficaces au niveau énergétique. Et, comme la ville et Énergie NB cherchaient des partenaires et du financement pour transformer leurs plans en réalité, Siemens Canada et le Conseil national de recherches du Canada (CNR) sont ainsi devenus des participants essentiels dans ce projet.

La réalisation de la partie recherche de ce projet est essentiellement une première mondiale. Un projet de ce type, avec



The Government of Canada Pension Centre has a 75-kilowatt rooftop solar panel that provides renewable energy to power the building, with excess stored in a 400 kilowatt-hour battery located on the property.

Le Centre des pensions du gouvernement du Canada dispose d'un panneau solaire de 75 kilowatts sur le toit qui fournit de l'énergie renouvelable pour alimenter le bâtiment, l'excédent étant stocké dans une batterie de 400 kilowattheures située sur le terrain.

province – and will benefit a lot more folks in the future across the world.”

The project was divided into three parts: the residential energy study, converting two commercial buildings to net-zero, and a community solar farm.

Smart Energy project a valuable resource

The Residential Energy Study partnered with 400 homeowners to conduct a study with the NRC to install, test, and monitor different smart technologies, including solar panels and battery energy storage, smart thermostats, smart water heaters, and thermal storage heat pumps. The study was designed to:

- determine how to best integrate renewable energy into the power grid;
- determine whether cost savings are achieved when customers use smart technologies;
- understand the customer’s experience of those who received smart technologies or not; and
- test the potential benefits of time-of-day electricity rates on peak electricity demand.

For the project to move from the drawing board to reality, the community needed 400 homeowners to volunteer. The council played a big role in public outreach to get enough volunteers from the town.

“I made phone calls myself. I knew if we could get 30 seconds on the phone then I could explain why volunteering for this project was a benefit for you,” said Caissie.

Being able to connect on a personal level allowed many members of the community to step forward. Over the last three years, houses were assessed and selected for what technologies would be added.

une étude d’une telle envergure, n’avait lieu dans aucun autre pays à ce moment-là », a indiqué Roger Caissie, le maire de Shediac. « Et ce projet communautaire sur l’énergie intelligente ne profitera pas seulement à Shediac; ses retombées iront au-delà de la province, profitant dans l’avenir à de nombreuses autres personnes, dans le monde entier.

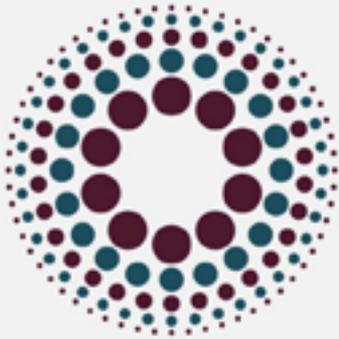
Le projet a été divisé en trois parties; une étude sur l’énergie résidentielle, la conversion de deux immeubles commerciaux pour atteindre une consommation énergétique nette zéro, ainsi qu’un parc solaire communautaire.

Le projet Smart Energy, une ressource précieuse

Le projet sur l’énergie résidentielle consistait en une étude avec le CRN, en partenariat avec 400 propriétaires privés, visant l’installation, l’analyse et le suivi de diverses technologies intelligentes, incluant des panneaux solaires et des piles de stockage d’énergie, des thermostats intelligents, des chauffe-eau intelligents et des thermopompes à stockage thermique. L’étude avait pour objectif de :

- déterminer la meilleure façon d’intégrer de l’énergie renouvelable dans le réseau électrique;
- déterminer si des économies de coûts sont réalisées lorsque les clients utilisent des technologies intelligentes;
- comprendre les expériences vécues par les clients ayant bénéficié, ou non, de technologies intelligentes et;
- évaluer les avantages potentiels des coûts d’électricité variant selon l’heure de la consommation sur la demande de pointe d’électricité.

Pour que ce projet puisse passer de la planche à dessin à la réalité, la collectivité avait besoin de 400 propriétaires résidentiels volontaires. Le conseil a alors joué un grand rôle de



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The solar farm sits on just over four hectares of land and includes large-scale battery storage capacity. The solar farm was fully commissioned in February 2023.

Le parc solaire s'étend sur un peu plus de quatre hectares et comprend une capacité de stockage par batterie à grande échelle. Le parc solaire a été entièrement mis en service en février 2023.

The project is bringing significant changes to commercial buildings in the town. The Shediac Multipurpose Centre and the Government of Canada Pension Centre are working toward becoming the first net-zero commercial buildings in New Brunswick. The goal is to reduce energy consumption and switch to the use of renewable energy. These two buildings have solar panels installed, and they are connected to the solar farm within the town limits.

The third part of the project, the community solar farm, provides clean electricity to the Shediac Multipurpose Centre and the Government of Canada Pension Centre, and excess electricity goes back into the community. It is also the first grid-connected solar farm in New Brunswick.

Need for diversifying electricity sources

The solar farm has already proven to be a valuable resource to the community. During Hurricane Fiona, both town buildings and 75 residents with solar panels did not see a lapse in power, while many areas of the town saw hours or days without electricity.

Caissie was pleased to see how NB Power could use the technology in place to prepare for Hurricane Fiona.

“NB Power can send power to the smart batteries on houses with solar panels. With the technology that was there, NB Power charged those residents’ batteries to have them completely full before Fiona hit Shediac. It would be like fueling up your generator. It was neat that NB Power decided to do that. It was not part of the project itself, but it was a feature that the technology allows you to do,” said Caissie.

This project is unique as it was created and envisioned from the partnership between NB Power and the Town of Shediac. These smart technologies have provided stability to residents to withstand the quick-changing weather in Atlantic Canada.

With climate change affecting seaside communities more and more, there is a need to find ways to diversify electricity sources and help communities be more resilient. The Shediac Smart Energy Community prospect is an important tool in climate change. [AMM](#)

sensibilisation publique afin de recruter assez de volontaires dans la ville.

J'ai fait moi-même des appels téléphoniques. Je savais que si je réussissais à retenir l'attention de quelqu'un pendant 30 secondes, je pourrais lui expliquer pourquoi se porter volontaire pour ce projet serait avantageux », a précisé le maire Caissie.

Le fait qu'on ait réussi à créer un contact avec eux sur le plan personnel a incité plusieurs membres de la collectivité à accepter de se prêter au jeu. Ainsi, au cours des trois dernières années, plusieurs résidences ont été évaluées et sélectionnées selon les technologies qui pourraient leur être ajoutées.

Le projet engendre également des changements significatifs pour des immeubles commerciaux de la ville. Ainsi, le Centre multifonctionnel de Shediac et le Centre des pensions du gouvernement du Canada sont en voie de devenir les premiers immeubles commerciaux à consommation nette zéro au Nouveau-Brunswick. L'objectif est de réduire la consommation énergétique et de passer à l'utilisation d'énergie renouvelable. On a procédé, dans ces deux immeubles, à l'installation de panneaux solaires et ils ont également été branchés au parc solaire situé à l'intérieur des limites de la ville.

La troisième partie du projet, le parc solaire communautaire, fournit de l'électricité propre au Centre multifonctionnel de Shediac et au Centre des pensions du gouvernement du Canada. L'électricité produite en surplus est retournée à la collectivité. Il s'agit aussi du premier parc solaire branché au réseau électrique au Nouveau-Brunswick.

Nécessité de diversifier les sources d'électricité

Le parc solaire a déjà prouvé sa valeur en tant que ressource pour la collectivité. Durant l'ouragan Fiona, ces deux immeubles, ainsi que les 75 résidents détenteurs de panneaux solaires, n'ont pas du tout manqué d'électricité, alors que plusieurs zones de la ville ont passé plusieurs heures, ou même des jours, sans électricité.

Le maire Caissie a été très heureux de voir comment Énergie NB a pu utiliser la technologie en place pour se préparer à l'arrivée de l'ouragan Fiona.

Énergie NB peut envoyer de l'énergie aux piles intelligentes des résidences dotées de panneaux solaires. Grâce à la technologie en place, Énergie NB a donc pu charger les piles de ces résidences, pour que celles-ci soient à pleine capacité avant que Fiona ne frappe la ville de Shediac. C'est comme faire le plein d'essence de votre génératrice. C'était génial qu'Énergie NB ait décidé de faire cela. Ça ne faisait pas partie du projet comme tel, mais c'est une fonction permise par cette technologie », a ajouté le maire Caissie.

Ce projet est unique, car il a été créé et imaginé à partir d'un partenariat entre Énergie NB et la ville de Shediac. Ces technologies intelligentes ont apporté de la stabilité aux résidents, en leur permettant de résister aux changements météorologiques rapides qui touchent le Canada atlantique.

Comme les changements climatiques affectent de plus en plus les collectivités maritimes, il est nécessaire de trouver des façons de diversifier nos sources d'électricité et d'aider les collectivités à devenir plus résilientes. Le projet communautaire sur l'énergie intelligente de Shediac est un outil important dans la lutte contre les changements climatiques. [AMM](#)

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Victoria County weathers the storm



Recent storms have increased the encroachment of the tides and erosion on the shores of Victoria County.



Kyle MacKay is the Communications Advisor for the Nova Scotia Federation of Municipalities.

Situated along the northeastern shore of Cape Breton Island, a world-famous tourist destination with rural outposts and hundreds of kilometres of rocky coastline, Victoria County finds itself on the front lines of the battle against climate change.

Each year, the storms that regularly pound the island, bearing down from the Atlantic Ocean, have been increasing in intensity. In return, the county has been fighting back through excellence in emergency management and planning.

“We had two significant storms recently: one last November, and then Fiona this fall,” says Bruce Morrison, Warden for Victoria County. “We’re starting to see them much more often and much more severe. I don’t think anyone could properly prepare for Fiona – just based off of last year’s torrential rain, we knew roughly what to expect. What we didn’t expect was the amount of wind and tidal damage that we had, and we weren’t hit as strongly as the eastern coast of Cape Breton Island.”

Storms are on the radar

This is an area that finds itself in what could be ground zero for some of the worst storm action in the province as the climate crisis deepens.

“We have 14 volunteer fire departments in our service area,” says Morrison. “Our emergency management coordinator is a first responder himself, so their communication with

each other is top notch. People are starting to take the education piece seriously and they’re very cognizant of the importance of preparation.”

A significant shift in the importance of preparation is the idea of educating residents and having an emergency management coordinator who is equipped, integrated, and willing to put in the work to ensure that the county is prepared for whatever is hurled at it by the Atlantic Ocean.

“I hate to say it, but the proof is in the pudding if you look at the last two storms from the past year,” says Morrison. “It’s a constant reminder, and we do our best to keep it on our radar all the time. These storms have brought a lot of awareness – we have a lot of areas that are fairly rural, we have a lot of seniors, and we learned a lot about access to fuel for generators and service stations.”

Fiona knocked down most of the access to fuel in the area. As outages stretched out from days to over a week, access to resources, ensuring generators could run, ensuring continuity of emergency services, and making sure recovery efforts could continue unabated became an increasing concern for the county.

This was the tale of most of Cape Breton Island, as the winds from Fiona laid bare forests and roads were destroyed from unprecedented amounts of storm surge.

“You need somebody on the ground, with experience, who knows how to interface with first responders and your emergency plan,” says Morrison. “You must have somebody that knows what they’re doing and doesn’t panic. Our biggest lesson was about access to comfort centres. We were fortunate that this happened in October. If we had these outages in the winter, we would’ve been into deep water keeping up with demand for comfort centres and getting people into areas with heat, food, and care.”

Emergency management and response

A critical piece is that you do not want people moving too early while the event is still on, says Morrison.

“You need to make sure that roads are safe for travel, that bridges aren’t out, and you don’t have residents creating more stress for first responders on the ground. This comes down to good communications and good coordination. This was an extended period of time for a lot of people – losing food, losing water. We’re seeing the impact of climate change now. It’s here. You have to be prepared – and we’re very fortunate we didn’t have any casualties.”

Each Nova Scotia municipality is required through the *Municipal Government Act* to have an emergency management office. In Victoria County, this is coordinated by Lyle Donovan.

“We have to worry about our residents, and our ability to be able to move around,” says Donovan. “Every time we prepare for a storm, we have to prepare for road closures, power outages, access to food and water, and extended outages – which is everything from industrial operations to grocery stores to pharmacies.”

With slightly over 7,000 residents, Victoria County is quite large and rural. Proximity to the ocean and distance between residents can become a significant hurdle when managing the response to a historic weather event. For example, the county opens a single comfort centre for storm responses – which, for some residents, can be as far away as two hours. With staff and responders covering such an expanse, the issues begin to mount.

“Like everywhere, COVID really opened our eyes to what could be done virtually,” says Donovan. “We can now coordinate emergency responses remotely instead of meeting in a central location. This means we can stand up and respond much quicker, and we’re affected much less by the physical impacts of the event. With Zoom we can still meet on a regular basis, and it’s become a lot easier.”

An additional concern when managing a crisis across a large geographical area is the idea of expectation management. From the initial onset, to the days and even weeks to follow, it can take many hours of work to return services and reopen infrastructure. Preparing residents for these closures and educating them on the need for preparation to shorten those return-to-service times is a key role for the emergency management coordinator.

“Communication with the community is huge,” says Donovan. “They just want to know that something is being done, someone is there, and that if they need to pick up the phone and call somebody, they will get an answer. They want to know that action is happening ... and our councillors have been excellent at outreach. As long as we educate the public, we can navigate times of emergencies.” **AMM**



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Planning for climate change

Expert offers three approaches for municipalities of all sizes



Lori Mayne is the Communications and Member Services Officer at the Federation of P.E.I. Municipalities.



The Town of Stratford, P.E.I., partnered with residents on a tree-planting program to increase shade, sequester carbon, offer wind protection, and add to aesthetics. *Photo: Town of Stratford*

When people think about planning for climate change, they often focus on development and buildings. Hope Parnham suggests municipalities take a broader lens.

Parnham is a planner, landscape architect, and former senior adaptation policy advisor for the Province of Prince Edward Island. “Planning is not just about development control,” she says. “It’s really about forward thinking and prioritizing what is most important for communities.”

Parnham says planning for climate change can seem overwhelming. A municipality’s size, capacity, human resources, and leadership all play a role in its ability to adapt. However, she offers three approaches for municipalities of all sizes.

1. Start small

Municipalities don’t have to wait for an expensive or time-consuming official plan review or risk assessment to start climate change planning. Parnham advises municipalities to work with partners – non-governmental organizations (NGOs), watershed groups, property owners, residents, and school groups – to start small projects right away.

As an example, she points to the Town of Stratford, which has partnered with residents on a tree-planting program supported in the first year by the PEI Climate Challenge Fund. Residents could apply to get at least one large native species tree for their yard at about a quarter of the regular cost.

The resident dug the hole and town staff planted the tree. Katie Sonier, the town’s environmental sustainability coordinator, says the program required only a handful of staff to deliver approximately 160 trees from 2021-2022. She says the trees increase shade, sequester carbon, offer wind protection, and add to aesthetics.

The involvement of residents boosts environmental awareness. “It gets them thinking of the benefits of the tree beyond the way it looks,” Sonier says.

2. Start with existing problems

Parnham says climate change exacerbates problems that municipalities already face. “If you already have a stormwater management issue, when it rains, that’s going to get worse,” she says. “That doesn’t require a new study.”

As an example, she points out many municipalities face challenges in housing supply, and the unhoused are most vulnerable to the effects of climate change. “A complete community offers a wide range of housing options,” she says.

Parnham says the Town of Kensington has been working to boost its housing supply by encouraging higher-density residential development through its official plan.

Kensington CAO Geoff Baker says high-density development has largely been prompted by market demand, but it also helps address environmental concerns and land shortages. He says the town has seen a shift to residents, particularly seniors,



Hope Parnham is a planner, landscape architect, and former senior adaptation policy advisor for the Province of P.E.I.



Geoff Baker is the CAO for the Town of Kensington.

looking for single-level, energy-efficient units instead of traditional houses on one-acre lots.

“It’s a lot of wasted land when we’re dealing with a housing crisis,” he says of more traditional single-residential development. The town is also looking at other options, such as tiny home sub-divisions, to increase density and provide residents with walkable access to services – such as medical services, shopping, and businesses – in the town core. “We’re not a big fan of sprawling development.”

3. Understand vulnerabilities and risk

Each municipality should understand its unique risks, instead of copying the priorities of a neighbour, Parnham says.

For example, she notes the City of Charlottetown completed a flood program in 2021 to address one neighbourhood’s specific vulnerability to overland flooding. Under the pilot, funded by the PEI Climate Challenge Fund, staff completed risk assessments with homeowners and offered rebates for upgrades and repairs. In 2022, the city created a larger rebate program for home improvements that reduce flooding risks.

Overall, Parnham says when municipalities plan for climate change, they should focus on people.

“People come first. We can always fix our infrastructure and development plans,” she says. “Providing services that are the priorities to the residents – that’s really the baseline of what planning is all about.” [AMM](#)



Union of the Municipalities of
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When the forest burns



Convincing people there is an emergency in progress when everything seems fine is hard enough, but it is complicated by the difficulty of ensuring everyone is notified quickly.



Tobias Romaniuk is the Communications and Marketing Officer at Municipalities Newfoundland and Labrador.

The summer of 2022 was abnormally dry in Central Newfoundland. The grass was crispy. The forest had given up its moisture. Mud cracked, leaves withered, and groundcover was tinder dry.

When a lightning storm blew through the area without any rain, three fires started by ground strikes. The closest fire to Grand Falls-Windsor, a municipality of about 14,000 straddling the Trans-Canada Highway and surrounded by forest, was about 40 kilometres away. The fire moved closer to town and smoke forced the closure of a highway, cutting off several smaller towns on the Connaigre Peninsula.

For Coun. Amy Coady, also President of Municipalities Newfoundland and Labrador, it brought back memories of the last big fire, which happened in the 1980s when she was a teenager. Then, like now, cabins in the area were at risk of being surrounded by flames,

and people were advised to leave cabin country. Coady now sits on the town's emergency operations committee, which faced a unique problem of convincing people there was actually an emergency in progress.

The fire had been burning for 11 days when John Hogan, Newfoundland and Labrador's Minister of Justice and Public Safety, declared a state of emergency for the areas of Grand Falls-Windsor, Bishop's Falls, and the Connaigre as a precautionary measure.

Smoke, and the associated visibility and breathing issues, was the immediate cause of concern in Grand Falls-Windsor. But in the town, it was a glorious, clear summer day, with only the faintest hint of smoke.

"That's why it was so hard for us to communicate with our residents to be ready to go," says Coady. "It was so gorgeous here that they were like, 'It can't be that bad. We don't even see any

smoke here.’ But it was only for that wind to change, and all of that heavy smoke would have been on us.”

Communicating during an emergency is not easy

The municipality posted updates and notices on social media, along with live video updates from the mayor. This was all part of an effort to convince residents that, yes, the fire could be a threat to the town, should the wind change. Once that happened, it would be too late to begin evacuating people.

Convincing people there is an emergency in progress when everything seems fine is hard enough, but it is complicated by the difficulty of ensuring everyone is notified quickly.

The postal service is excellent for delivering messages to every household, but it takes days in a time when things can change by the hour.

Social media, on the other hand, is excellent for immediate updates, but it is not good at ensuring everyone is reached.

Knocking on doors is effective but requires plenty of people to ensure all homes are notified.

The Town of Grand Falls-Windsor opted for regular social media updates and a plan to knock on doors in the event of a mandatory evacuation.

Emergency alert systems delivered through mobile devices are a potential solution for reaching residents quickly, and one that council has discussed.

Before the fire struck, council had talked about options for an alert service to notify all residents of important information. It would be a similar concept to what schools currently use to inform parents of school closures and other important notices.

“We’ve been talking about implementing a plan like that for important messages – if there’s a road closure, a water line break, a forest fire, a threat of evacuation,” says Coady, adding that it would have been useful for quickly getting messages to residents during the state of emergency caused by the fire, with better coverage than that offered by social media.

Lessons learned

Municipal emergency plans typically detail the roles and contact information

of people involved in emergency response. But what happens if a person is out of town when an emergency strikes?

In Grand Falls-Windsor, this is exactly what happened. The director of public works, the mayor, and Coady were all out of town. Although all three were able to return to fulfil their emergency response duties, it highlighted the need to assign alternates to roles in the emergency plan, says Coady.

“And another big piece as well was the need for mental health counselors. We need to have people in place who can help facilitate and speak with and guide anybody who’s suffering from mental health issues or illnesses to make sure that they have the information that they need,” says Coady, noting that emergency responders and town staff should also be offered mental health supports.

For those new to council or emergency planning, it is important to know what exactly what the threats to your community are and what are definitely not threats, Coady says. If the community is not in a flood plain or in an area prone to coastal flooding, then flooding would not be an emergency planning priority, in the same way that a town with no nearby trees would be wasting time planning for forest fires.

“Identify risks to your community, and make sure that you’re prepared and planning around those risks,” says Coady. “If you focus on the threat areas, then you’re not spinning your wheels or wasting time worrying about something that probably may never affect you.”

It’s also a good idea to be aware of what capacity nearby communities have. “Know what services they have available to them,” says Coady. “Know what they can help contribute to you if you’re in need or what you can contribute to them if they need something and ask how you can pool your resources together.”

It is not enough just to have an emergency plan – it needs to be practiced, whether in tabletop exercises or mock scenarios or some other manner. After each emergency, there should be a debrief to review the plan, make updates, and make suggestions for how the plan can be improved for next time. [AMM](#)

The Grand Falls-Windsor Fire Timeline

July 26, 2022 – After a long dry spell, a dry lightning storm starts three forest fires. The fires spread, encouraged by constant winds and undeterred by the efforts of fire crews. Smoke billows into the otherwise clear sky.

Aug. 6, 2022 – With the fire still burning out of control, and no rain in the forecast, Newfoundland and Labrador’s Minister of Justice and Public Safety, John Hogan, declares a state of emergency for the areas of Grand Falls-Windsor, Bishop’s Falls, and the Connaigre Peninsula as a precautionary measure. Smoke, and the associated visibility and breathing issues, is the immediate cause of concern in Grand Falls-Windsor, although the fire itself could become a serious threat, should the wind change.

Aug. 7, 2022 – In the afternoon, Grand Falls-Windsor Mayor Barry Manuel releases the first of four near-daily video updates to residents through Facebook.

Aug. 9, 2022 – The town releases its updated optional evacuation plan. An emergency shelter is set up in Deer Lake, about 200 kilometres from Grand Falls-Windsor, and coach buses are running back and forth twice a day. Anyone who is concerned for their safety or bothered by the smoke is urged to leave. There are closer communities, like Springdale, but there is also a concern that if the fire continues to spread they would have to evacuate everyone yet again. It is decided that it is better to travel a bit farther and only set up once.

Aug. 12, 2022 – After a few days of rain, fire crews are able to contain the fire and declare it officially under control. The state of emergency is lifted. People can return home.

Originally some 40 kilometres away from town, the fire – at its closest – was about 15 kilometres away from Grand Falls-Windsor, despite the wind blowing away from town.

This time, the town was untouched by the flames, although about a half dozen cabins were lost to the fire.

Q&A with Mayor Brittany Merrifield, Town of Grand Bay-Westfield

Q et R avec la mairesse Brittany Merrifield, de la ville de Grand Bay-Westfield



Left to Right: Mark McAloon (Chief Executive Officer, The Smart Energy Company), Jeff McAloon (Chief Revenue Officer, The Smart Energy Company), Mayor Brittany Merrifield (Town of Grand Bay-Westfield), David Taylor (Development Officer, Town of Grand Bay-Westfield).

De gauche à droite: Mark McAloon (Directeur général, The Smart Energy Company), Jeff McAloon (Directeur des revenus, The Smart Energy Company), le maire Brittany Merrifield (Ville de Grand Bay-Westfield), David Taylor (Agent de développement, Ville de Grand Bay-Westfield).



Vanessa Pettersson is the Communications and Events Officer with the Union of the Municipalities of New Brunswick.

Vanessa Pettersson est Agent des communications et des événements avec Union des municipalités du Nouveau-Brunswick.

Climate change continues to be a concern for all municipalities. From challenging floods to vicious hurricanes, Atlantic Canada gets hit with dangerous weather every year. Grand Bay-Westfield has been on the front lines for some of these events and has made climate adaptation a priority for their community, completing 17 major climate change accomplishments since 2003.

The Union of Municipalities of New Brunswick (UMNB) recently sat down with Grand Bay-Westfield Mayor Brittany Merrifield to discuss the impacts of climate change on her community and how they continue to look for sustainable options.

How has climate change impacted your community?

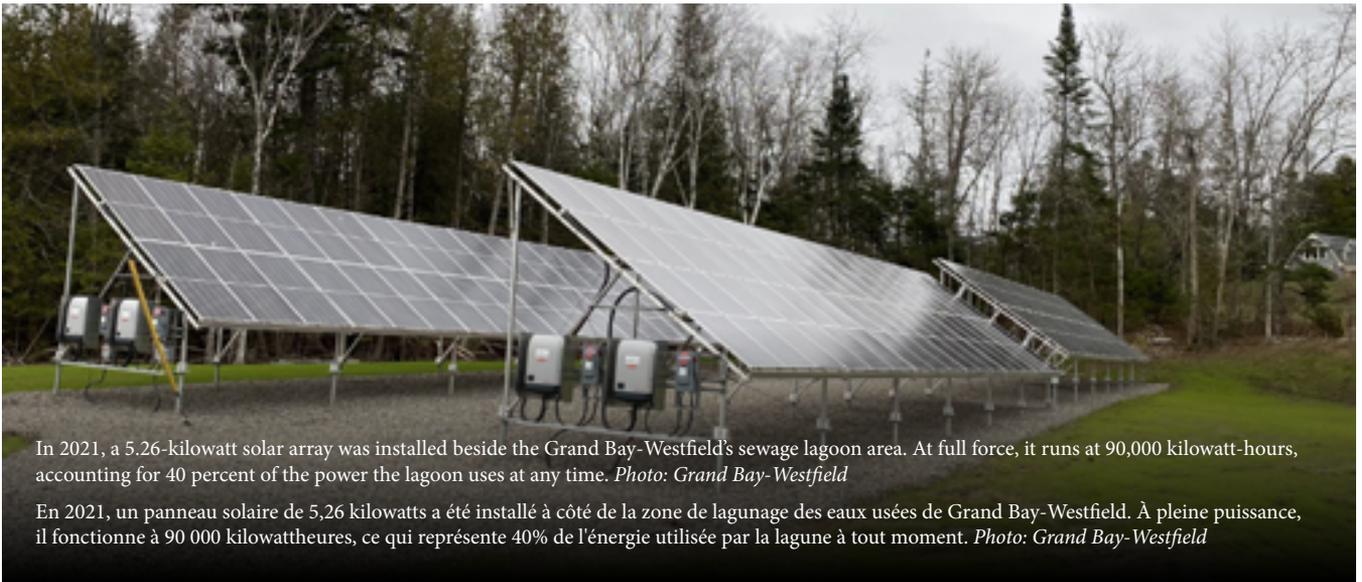
Grand Bay-Westfield has been directly impacted by the effects of climate change. In 2018 and 2019, the town had two 100-year floods. Municipalities are where the rubber hits the road in terms of climate change. We are the ones that are dealing with residents that are hitting the road, seeing damaged infrastructure,

Les changements climatiques continuent d'être une préoccupation pour toutes les municipalités. Tous les ans, le Canada atlantique fait face à des conditions météorologiques périlleuses, qu'il s'agisse d'importantes inondations ou d'ouragans violents. La ville de Grand Bay-Westfield, qui s'est retrouvée en première ligne lors de certains de ces événements, a fait de l'adaptation climatique une priorité pour sa collectivité. Et, depuis 2003, elle a réussi à mener à bien 17 accomplissements majeurs liés aux changements climatiques.

L'Union des municipalités du Nouveau-Brunswick (UMNB) a récemment rencontré la mairesse de Grand Bay-Westfield, Brittany Merrifield, pour discuter des répercussions des changements climatiques dans sa collectivité et de sa recherche constante de solutions durables.

De quelle façon les changements climatiques ont-ils touché votre collectivité?

Grand Bay-Westfield a été touchée directement par les effets des



In 2021, a 5.26-kilowatt solar array was installed beside the Grand Bay-Westfield's sewage lagoon area. At full force, it runs at 90,000 kilowatt-hours, accounting for 40 percent of the power the lagoon uses at any time. *Photo: Grand Bay-Westfield*

En 2021, un panneau solaire de 5,26 kilowatts a été installé à côté de la zone de lagunage des eaux usées de Grand Bay-Westfield. À pleine puissance, il fonctionne à 90 000 kilowattheures, ce qui représente 40% de l'énergie utilisée par la lagune à tout moment. *Photo: Grand Bay-Westfield*

and the impacts on mental and social health and, of course, productivity.

It's important that municipalities take a leadership role when it comes to climate change. One of the things Grand Bay-Westfield has done is that we have stuck pretty close to our 2018 Climate Adaptation and Greenhouse Gas Emissions plan. The plan was based on 2015 data, but with the commissioning of the new solar array at our wastewater treatment facility, we're at 75 percent of our greenhouse gas emissions goals, which is about 48 tons. The goals were supposed to be obtained by 2025, and Grand Bay-Westfield is almost there now.

How did the solar array project at the wastewater treatment facility come about, and was everyone on council in favour of the project?

This is where our council stood on the shoulders of other councils.

The council before us started this project. They committed to the Climate Change Adaptation and Greenhouse Gas Emission Plan back in 2018. They did the work, such as changing out all the lightbulbs to more energy-efficient LEDs and changing out heating systems because the lights in our buildings were actually one of the largest energy consumers. They also committed to a pilot project for a solar array in the sewage lagoon area. We looked at how it would work, what kind of savings we would get, and how it would get us to move the needle in terms of our climate adaptation goals and our greenhouse gas emissions goals.

In 2021, the Smart Energy Company (a company from Quispamsis, N.B.) installed a smaller 5.28-kilowatt solar array right beside the lagoon and, based on the data from that project, the current council decided to go ahead with the full project. When the array is running at full force, it is running at 90,000 kilowatt-hours. That project accounts for about 40 percent of the power the sewage lagoon uses at any given time. It was noted that when the system was running at 100 percent, it produces the same amount of power that would be used by five residential households. The council was unanimous in support of this project.

changements climatiques. En 2018 et 2019, la ville a subi deux des pires inondations des cent dernières années. Nos municipalités se situent exactement là où le bât blesse, en matière de changements climatiques. Nous sommes parmi ceux qui doivent composer avec des résidents qui ne pensent qu'à partir, nous voyons les dommages subis par nos infrastructures, ainsi que les répercussions sur la santé mentale et sociale et, évidemment, sur la productivité.

Il est très important que les municipalités fassent preuve de leadership lorsqu'il est question de changements climatiques. L'une des réalisations de Grand Bay-Westfield est que nous avons suivi de très près notre plan de 2018 sur l'adaptation climatique et les émissions de gaz à effet de serre. Ce plan était fondé sur des données de 2015 mais, avec la mise en service de nouveaux panneaux solaires à notre station de traitement des eaux usées, nous sommes à 75 % de nos objectifs en matière d'émissions de gaz à effet de serre. Ce qui représente environ 48 tonnes, soit le but que nous étions censés atteindre d'ici 2025. Et Grand Bay-Westfield y est presque déjà.

Comment le projet de panneaux solaires pour la station de traitement des eaux usées est-il né, et tous les membres du conseil étaient-ils en faveur de ce projet?

Voilà un endroit où notre conseil s'est appuyé sur les épaules d'autres conseils.

Ainsi, c'est le conseil qui nous a précédés qui a mis en branle ce projet. En 2018, ses membres se sont engagés à suivre un plan d'adaptation aux changements climatiques et de réduction des émissions de gaz à effet de serre. Ils ont fait des changements nécessaires, comme le remplacement de toutes les ampoules électriques par des DEL à plus grande efficacité énergétique, ainsi que le remplacement des appareils de chauffage, parce que l'éclairage de nos immeubles était en fait l'un des plus grands consommateurs d'énergie. Le conseil qui nous a précédés s'est engagé à tester un projet pilote de panneaux solaires dans la zone du bassin de stabilisation des eaux usées. Nous avons examiné comment il fonctionnerait, quel genre d'épargne nous pourrions réaliser et comment il nous aiderait à prendre le bon virage en ce qui concerne nos



Mayor Brittany Merrifield, Town of Grand Bay-Westfield, NB
Maire Brittany Merrifield, Ville de Grand Bay-Westfield, NB

With 17 climate change accomplishments since 2003, what are you hoping to see next?

We would like to meet and exceed our climate adaptation goals and look at what our plan is going forward – that is very important. We would like to see more solar, and there is room at the sewage treatment lagoon for more solar banks. We would like to eventually see our fleet turn electric, EV, or some sort of alternative energy.

I think there is always room for improvement. Eventually, we would like to see our municipal buildings use solar or something similar because if you look at the pie graph in the report (Climate Adaptation Plan), a large amount of the greenhouse emissions come from municipal buildings. There is more work to do there.

What steps did the council take to ensure your community was prepared for emergencies through an EMO lens?

We have done something fairly unique in terms of municipalities. Recently, our full council and our Emergency Measures Organization (EMO) team took training together. This was to ensure when there is an emergency, EMO is there, and they know how to work with council and our fire and rescue.

To be frank, we have been through this a number of times already. We have some actual real-world training on what happens, who does what, who's responsible for what, and we get through it as safely as possible for our residents and the properties. I think it was really important for the council to go through this training to develop that relationship and have an understanding of the process that happens when an emergency response is required.

Any additional comments you would like to make?

I want to shout out the leadership team at the town, particularly David Taylor. He was the one that led the recent solar array project. His work was supported by the rest of our municipal staff as well. A lot of work has gone on before me, so previous councils deserve a ton of credit for this as well. [AMM](#)

objectifs d'adaptation climatique et d'émissions de gaz à effet de serre.

En 2021, la Smart Energy Company (une entreprise de Quispamsis, N.-B.) a installé un plus petit système de panneaux solaires de 5,28 KWatt juste à côté du bassin puis, en se basant sur les données découlant de ce projet, le conseil actuel a décidé d'aller de l'avant avec le projet complet. Lorsque le système fonctionne à pleine capacité, il produit 90 000 KWatt/hrs. Ce projet représente environ 40 % de l'énergie utilisée par le bassin de stabilisation des eaux usées, à n'importe quel moment. Il faut aussi préciser que, lorsque le système fonctionne à 100%, il produit la quantité d'énergie qui serait utilisée par cinq foyers résidentiels. Le conseil s'est prononcé en faveur de ce projet, à l'unanimité.

Avec 17 accomplissements à votre actif en matière de changements climatiques depuis 2003, qu'espérez-vous réaliser ensuite?

Nous aimerions atteindre, et même dépasser, nos objectifs d'adaptation climatique, puis examiner un plan pour l'avenir, c'est un point très important. Nous voudrions miser davantage sur l'énergie solaire. Il y a de la place au bassin de stabilisation des eaux usées pour plus d'installations solaires.

Nous voudrions que notre parc de véhicules soit un jour entièrement électrique, ou utilise une énergie alternative. Je pense qu'il y a toujours place à l'amélioration. Finalement, nous aimerions que nos immeubles municipaux utilisent l'énergie solaire ou quelque chose de similaire parce que, lorsqu'on regarde le graphique circulaire dans le rapport (Plan d'adaptation climatique), on voit qu'une grande quantité des émissions de gaz à effet de serre provient des immeubles municipaux. Il y a encore du travail à faire dans ce domaine.

Quelles sont les mesures prises par le conseil pour s'assurer que votre collectivité soit prête à faire face à des situations d'urgence, à travers l'objectif de l'OMU?

Nous avons fait quelque chose de passablement unique en termes de municipalités. Récemment, tout notre conseil ainsi que notre équipe d'OMU ont suivi une formation ensemble. Cela pour s'assurer que, advenant une situation d'urgence, l'OMU soit là et qu'elle puisse travailler avec le conseil et avec nos services d'incendie et de sauvetage.

Pour être franche, nous avons déjà testé cela plusieurs fois déjà. Nous avons eu une formation basée sur la vraie vie, sur ce qui se passe, qui fait quoi, qui est responsable de quoi, et comment passer au travers de la manière la plus sécuritaire possible pour nos résidents et pour les propriétés. Je pense qu'il était vraiment important pour le conseil de suivre cette formation, d'abord pour développer des relations, et aussi pour bien comprendre le déroulement de tout le processus lorsqu'une réponse d'urgence est nécessaire.

Aimeriez-vous ajouter d'autres commentaires?

Je voudrais ajouter une mention spéciale pour l'équipe de direction de la ville, en particulier David Taylor. C'est lui qui a dirigé le récent projet de panneaux solaires, avec le soutien du reste de notre personnel municipal. Une grande partie du travail a eu lieu avant mon arrivée, c'est pourquoi les conseils qui nous ont précédés méritent eux aussi une tonne de crédit pour ces accomplissements. [AMM](#)

THREE STEPS TO COST-EFFECTIVE HOME FLOOD PROTECTION

Step 1: Maintain what you've got at least twice per year

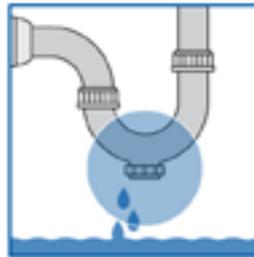
Do it yourself, \$0



- 1 Remove debris from nearest storm drain or ditch and culvert



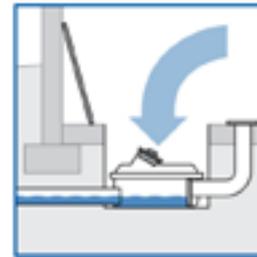
- 2 Clean out eavestroughs



- 3 Check for leaks in plumbing, fixtures and appliances



- 4 Test your sump pump

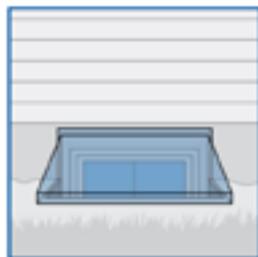


- 5 Clean out your backwater valve

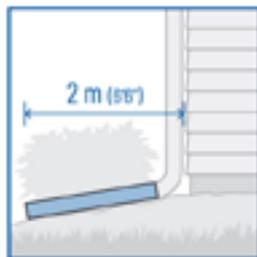


Step 2: Complete simple upgrades

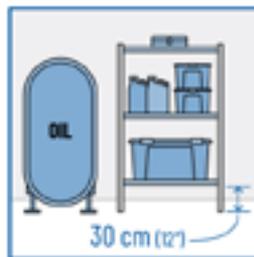
Do-it-yourself, for under \$250



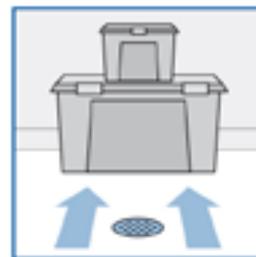
- 1 Install window well covers (where fire escape requirements permit)



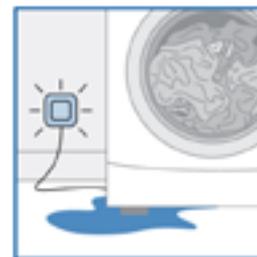
- 2 Extend downspouts and sump discharge pipes at least 2 m from foundation



- 3 Store valuables and hazardous materials in watertight containers and secure fuel tanks



- 4 Remove obstructions to floor drain



- 5 Install and maintain flood alarm

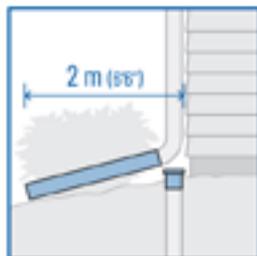


Step 3: Complete more complex upgrades

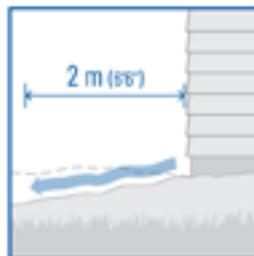
Work with a contractor, for over \$250



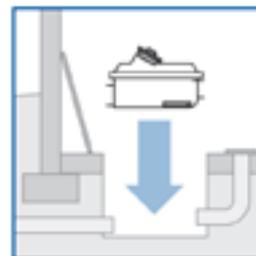
- 1 Install window wells that sit 10-15 cm above ground and upgrade to water resistant windows



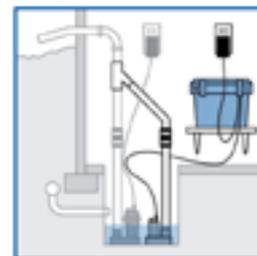
- 2 Disconnect downspouts, cap foundation drains and extend downspouts to direct water at least 2 m from foundation



- 3 Correct grading to direct water at least 2 m away from foundation



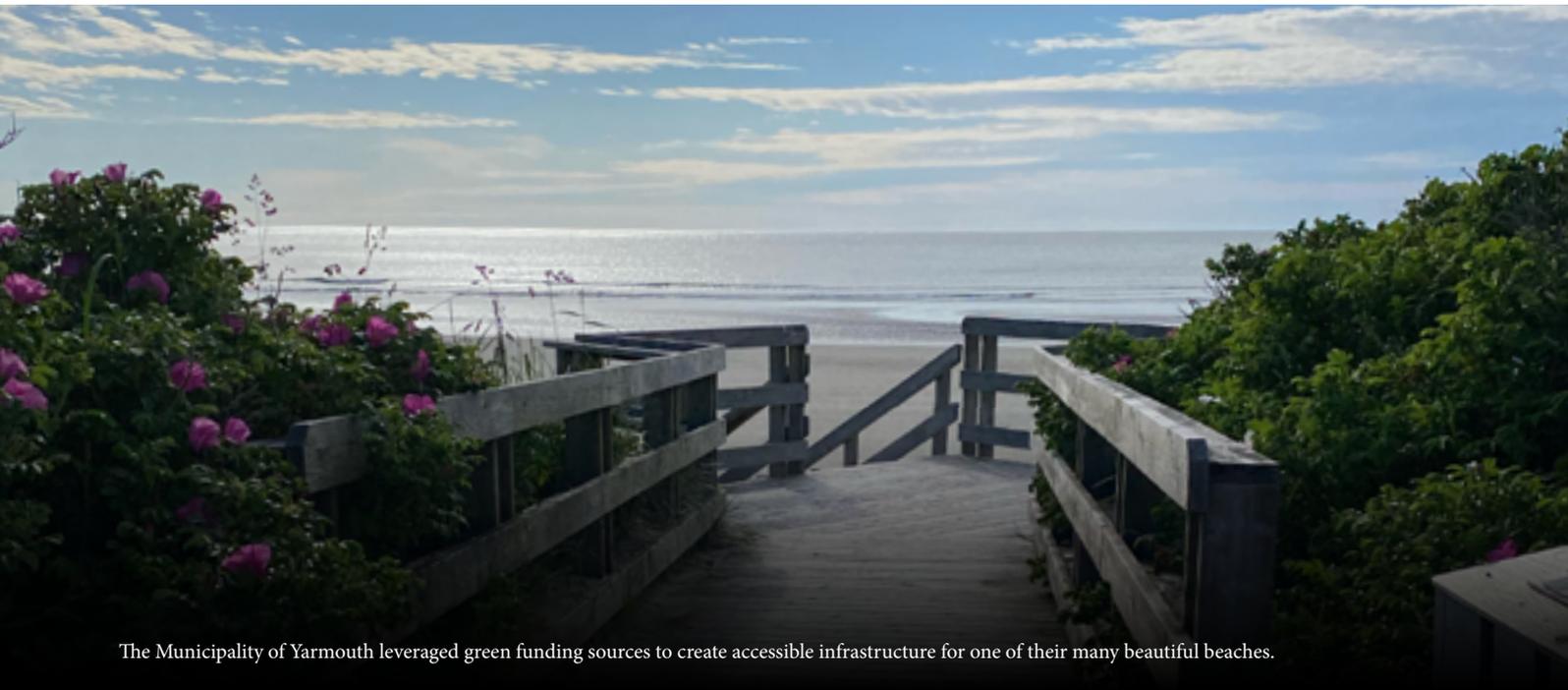
- 4 Install backwater valve



- 5 Install backup sump pump and battery



Municipalities can learn from each other in climate change fight



The Municipality of Yarmouth leveraged green funding sources to create accessible infrastructure for one of their many beautiful beaches.



Kyle MacKay is the Communications Advisor for the Nova Scotia Federation of Municipalities.

Coun. Juliana Barnard with the Town of Truro has taken on a passion that is becoming common across the municipal landscape: climate activism. Speaking at the Nova Scotia Federation of Municipalities (NSFM) Fall Conference about the steps that municipalities can take to enter the climate fight, Barnard says councillors across the country can take action to ensure victory.

“Municipalities control or influence around 50 percent of all greenhouse gas [GHG] emissions in Canada,” says Barnard. “We have a responsibility to act. We end up dealing with the effects of climate change. Whatever we invest now is going to help us in the future.”

Importance of resiliency, accessibility, and communication

It is about building a sustainable and equitable community, says Barnard.

“It even goes beyond that, into resiliency. We need to build communities where people have what they need to have a good life: they can live affordably, have access to food, clean water, and clean air. They need ways to move around the community that are

accessible to them and don’t create emissions – or create few emissions. I think that includes energy sources that do not pollute and that are affordable and accessible to everyone.”

Accessibility is a key word that many in the municipal space may recognize. It is a common thread that runs through a lot of the discussions, legislation, and actions taken in greening. Green communities develop economically in ways that are equitable and accessible, even if those steps are not very large in the beginning.

“We need to use all of the building blocks at our disposal,” says Barnard. “Nothing is too small to be important. For example, here in Truro we just had electric car chargers installed near our farmers’ market. That’s going to reduce carbon emissions, and we won’t be adding those drops to the bucket. When we look at emissions and levels of CO₂ in the atmosphere right now, nothing is unimportant. Everything we do is going to make a difference.”

Creating discussion amongst councils, municipally elected officials, and staff is key for finding ways forward that are unique and effective for each



Public consultation is an important piece of creating effective green infrastructure. Above: an open house for the Mainstreets Project in Canning, 2011.

community. There are solutions at the local level that require a certain amount of grassroots thinking and creativity to find the next step for your community.

“As we do this, we’re going to learn from and inspire each other,” says Barnard. “It all goes a long way to contributing to other municipalities that find solutions to fit their community. The effect will be cumulative, the more of us that are doing it, the faster things will take shape and take effect.”

Local approach to municipal climate action

This localized approach means it is difficult to give specific direction for all municipalities to immediately apply. To this end, the Municipal Climate Caucus released a councillors’ handbook that suggests a couple of ways to begin.

First, create and apply a climate screening tool for council decisions. If your municipality has a climate action plan, you probably already have developed such a tool. If not, the councillors’ handbook gives examples of simple ways to start. For example, North Saanich, B.C., uses the following list of simple questions that are included in reports and requests for decision making:

- Will it decrease the use of fossil fuels?
- Will it help us capture GHGs?
- Are there partnerships and/or programs we can leverage to increase impact?
- Does it consider the full lifecycle of infrastructure?
- Does it hinder or enable equity and access for all?

Second, act to reduce GHG emissions in priority areas like transportation, buildings, and waste, and increase resilience through protection of natural assets by taking steps toward natural asset management.

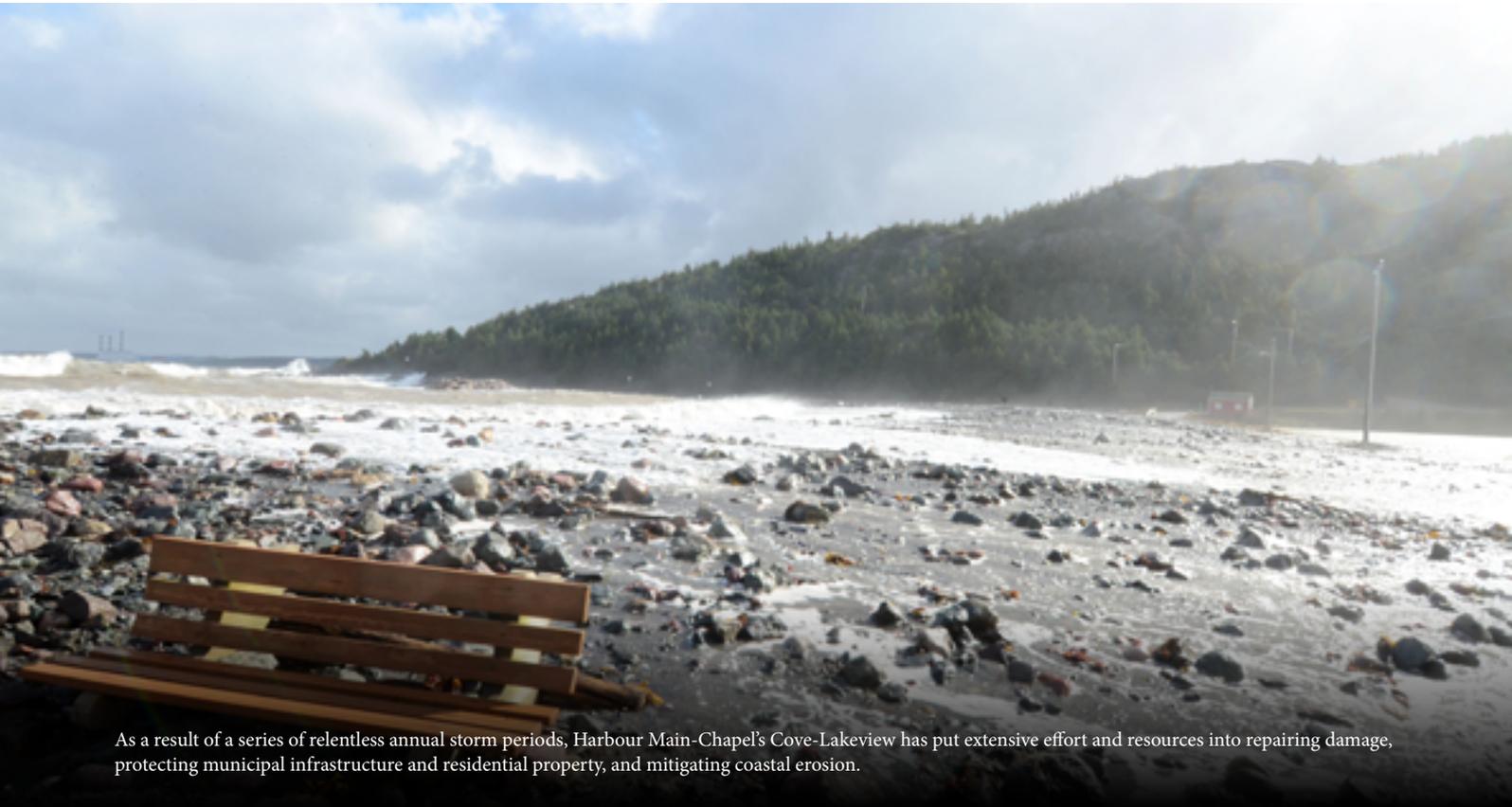
“When you look at all of the municipalities that are taking action across Canada, and in our Atlantic region, it looks like there is a natural interest on the part of municipalities to become involved in climate change action,” says Barnard. “It’s obvious to us that we need to take action so that we stop adding to the carbon in the atmosphere and we get ready to become more resilient. If you look at Partners for Climate Protection, there were more than 400 members in January. When I looked back more recently, they were more than 500.”

Barnard says there’s a vast variety of ways to become involved with climate action, and it is not always about earth-shaking changes and massive investments. It is thinking and acting locally, inspiring communities, and wanting to do more each day.

Barnard plans to continue speaking about Municipal Climate Action through the Climate Caucus.

“In Nova Scotia alone, when I started following projects, it was very inspiring,” says Barnard. “Municipalities are doing so many things right now, and they always want to do more. So why is it important? When we’re elected, we’re meant to promote our communities so that they can be the best they can be. The way forward is through climate action, which creates a better quality of life for everyone.” [AMMM](#)

Chapel's Cove: The old beach and the sea



As a result of a series of relentless annual storm periods, Harbour Main-Chapel's Cove-Lakeview has put extensive effort and resources into repairing damage, protecting municipal infrastructure and residential property, and mitigating coastal erosion.



Tobias Romaniuk is the Communications and Marketing Officer at Municipalities Newfoundland and Labrador.

Mayor Mike Doyle stands on the rocky beach in Chapel's Cove, a small coastal community on Newfoundland's Avalon Peninsula, looking at the houses bordering this stretch of exposed shoreline.

As a result of a series of relentless annual storm periods, the municipality he leads – Harbour Main-Chapel's Cove-Lakeview – has put extensive effort and resources into repairing damage, protecting municipal infrastructure and residential property, and mitigating coastal erosion.

"I used to bring my grandchildren down here and we used to love walking around here and picking sea glass and stuff. And now the storms have washed all that sort of tourism away," says Doyle.

Coastal erosion of the beach and surrounding shoreline, and the impact on town infrastructure and emergency services access, is a serious problem, says Doyle, as he explains how the recent series of storms has reshaped the beach.

Based on climate science projections, the reshaping and erosion will most likely continue to worsen.

Planning for sea level rise

According to the National Collaborating Centre for Environmental Health, "High emissions scenarios including expected melt in Antarctica suggest sea levels may rise as much as 175 centimetres in parts of Canada by 2100. The most significant sea level rise will be experienced in Atlantic Canada; however, a larger population will be impacted in British Columbia."

Today, a gravel and rock berm, segmented by beach access paths, defines the edge of the Chapel's Cove beach. On one side of the berm, the dirt road remains protected – although the berm has yet to be tested by a strong nor'easter or hurricane. On the other, the sea has pushed the beach rocks up against the berm.

The berm is not a final solution. According to Doyle, it is just a stop-gap measure, built by the town's public works staff of two using the available debris material from the beach that was washed across the road.

The more permanent solution is a breakwater out in the cove. But it will

cost \$1 million dollars, which is equal to the municipality's annual operating budget. Help from the federal and provincial governments is a necessity.

"We're on our third attempt of an application to try to get a breakwater in here," says Doyle, explaining the multiple failed efforts to get help under the NL Disaster Financial Assistance Program, which administers federal funds.



Failed financial assistance attempts

The first attempt was after Snowmageddon, a blizzard that dumped 76 centimetres of snow on the area amid 130 kilometres per hour winds on Jan. 17, 2020.

At the Chapel's Cove beach, the storm surge damaged wooden cribbing supporting a wooden bridge, removed armour stone boulders, and demolished a wooden slipway. The surge also eroded a section of wooden cribbing and shoreline back to the paved shoulder, pushing debris and culverts across Point Road, a provincial roadway, and eventually depositing it on the lawns of residents while leaving homes inaccessible.

The town received \$116,079.45 in funding from the provincial government to cover repairs, but the request for \$968,271.25 required to install a breakwater was not approved. The town was told the fund covered pre-existing conditions, not new projects.

The second attempt came in December of 2021, after the remnants of Hurricane Sam damaged the beach and covered the road in debris. This time, the municipality was left to fund the cleanup entirely on its own, as damage repair costs were not eligible for funding under the provincial disaster financial assistance program.

Left with no other option, the town bore the full cost burden to clean up the beach, coming in at over \$20,000.

Attempt three happened in early 2022, when the town applied for just over \$1 million through the federal

Disaster Mitigation and Adaptation Fund (DMAF). That application was also rejected, with a lack of supporting data cited as the main reason.

Doyle noted that Infrastructure Canada, the federal department responsible for the DMAF, were encouraging in their response, in that they recognized the value of the project to protect community infrastructure from climate change impacts.

The problem always comes down to accessing available funds, especially for small towns. Currently, the DMAF small-scale project stream still has a minimum \$1-million project threshold and covers only 40 percent of a project's costs. Small communities still need to cost share.

Financial assistance success?

In October of 2022, the town applied to the Province of Newfoundland and Labrador under their Municipal Capital Works 2023 funding program to cover the cost of installing a breakwater. This iteration of the proposed project would cost \$296,064.43, with the municipality covering their share of \$118,425.77.

The town is still awaiting a response. Doyle is feeling optimistic – to a point – but notes the council had to prioritize this project over others, like improving drinking water and fire services, because it is a matter of risk management.

"We just really had to say, as a council, that when you look at that risk profile [for property and municipal infrastructure], we have to do something here," says Doyle. "And if it means using our municipal infrastructure money to get a breakwater in here to protect these residents and get our shoreline back here, then that's what we have to do. And so that was a really, really hard decision for council to make this year. But, you know, we believe it was the right decision to make." [AMM](#)



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P.E.I. plans next reception centre response



Lori Mayne is the Communications and Member Services Officer at the Federation of P.E.I. Municipalities.



The Rural Municipality of West River had an estimated 3,000 to 4,000 visits at its two reception centres following post-tropical storm Fiona. *Photo: Rural Municipality of West River*

After post-tropical storm Fiona tore down trees and power lines, thousands of Islanders needed places to recharge their electronic devices, stay cozy, and perhaps get a hot coffee or meal.

Many municipalities opened reception centres in response. Some centres simply offered electricity and a place to gather with neighbours. Others, like the Rural Municipality of West River, provided Wi-Fi and hot meals.

“It was a long three weeks, but it was awesome to be able to do it,” says Coun. Shaun MacArthur, Emergency Measures Organization chair in West River. “It was fun to see the community come together.”

According to the P.E.I. government’s Municipal Affairs division, 38 of the Island’s then 59 municipalities opened at least one reception centre after Fiona.

With 95 percent of Islanders losing power and restoration taking more than three weeks, many municipalities found themselves operating centres much longer than the typical one or two days during past outages.

Climate change means extreme weather events are expected to increase, and Island municipalities and the province are reviewing how best to prepare.

Some challenges with operating reception centres stem from the state of P.E.I.’s municipal boundaries. Municipalities cover only 35 percent of the island, leaving 65 percent of the province without municipal government. Though local community organizations and groups also provide reception centres, many P.E.I. municipalities serve residents from unincorporated areas beyond their borders.

Supplies: Plan for more than you expect

The Rural Municipality of West River is looking at bumping up supplies for future emergency responses. Incorporated in 2020, the municipality has a population of approximately 3,500. Their two centres had an estimated 3,000 to 4,000 visits over three weeks after Fiona. “We had way more people than we expected,” MacArthur says. “I can’t believe how much coffee I made!”

During most of the three weeks, West River offered three meals a day at one location – usually running out of something for every dinner. In addition to increasing supplies, MacArthur says the municipality would like to offer visitors personal care kits – with items like toothbrushes, toothpaste, and wet wipes.

Finally, he suggests reception centres could open earlier, noting three families in the municipality had to leave damaged homes during Fiona and sleep at the fire department for a night. “The warming centres should have been opened before the storm ever started.”

Space must be evaluated

The Town of Cornwall, with a population of approximately 6,500, is considering facility needs for future responses. For more than two weeks after Fiona, the town welcomed 100 to 500 people a day at the Cornwall Civic Centre – offering one meal a day for a large part of that period. Some days, the centre filled.

“If this was in January, we’d be in real trouble,” says CAO Kevin Coody, adding if the power outages had occurred



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during freezing weather, more people would have visited – and many would have needed sleeping accommodations. With greater numbers, the civic centre would not have had room for those accommodations – even though the town has an agreement with the Red Cross to provide cots. The town is considering the possibility of accessing a larger facility for future events.

Important role of volunteers

Among its preparations, the City of Charlottetown plans to create a volunteer registry for reception centres. Frank Quinn, manager of parks and recreation, says the capital operated three main centres for a week after Fiona, reducing hours and locations over the next week as power was restored. The city has a population of approximately 39,000 people. He estimates the centres received 12,000 to 15,000 visits after Fiona.

Quinn says the city had lined up staff to operate the centres for a few days. As operations continued, many staff had to return to work. “A lot of them were back to their regular jobs – and cleanup was huge.”

He says volunteers, businesses, and community organizations all stepped up to support the centres, but a registry would provide vetted volunteers to complement staff. The city also plans to have more detailed agreements with food service providers.

Centre organization and co-ordination

As municipalities review their centres, the province is taking a holistic look at how centres are organized.

Marley Kingston, senior municipal advisor, and Danny Jenkins, manager, of Municipal Affairs say P.E.I. has not had a co-ordinated approach to reception centre locations.

Municipalities can choose to identify centres under their required emergency management plans, which get provincial approval. However, no standards outline what services they should provide.

“The emergency management plan asks you to think about those questions, but there’s no legislative framework to say, ‘You shall provide X, Y, and Z in case of emergency,’” Jenkins says.

Extreme weather events may require centres to provide services like Wi-Fi, sleeping accommodations, showers, and meals. Jenkins and Kingston say the province will review where centres are located and what they should provide, with a view to ensuring all Islanders have access to necessary services. They are quick to say Islanders found support after Fiona. However, overall co-ordination could:

- ensure more consistency of services in both municipalities and unincorporated areas;
- avoid duplication; and
- concentrate resources for lengthy emergency responses.

Jenkins and Kingston credit councils, staff, and community volunteers – many working long hours – for ensuring Islanders had places of refuge.

“The thing that’s consistent throughout the province is that, like in municipal government, everybody cares,” Jenkins says. “They all want to do what’s best for their community.” [AMM](#)



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