



A year of bold investments

Green Municipal Fund
2018–2019 Annual Report



FEDERATION
OF CANADIAN
MUNICIPALITIES

FÉDÉRATION
CANADIENNE DES
MUNICIPALITÉS



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[Visit our website](#) to read the appendices.

Canada¹

The Green Municipal Fund™ (GMF) supports initiatives that advance innovative solutions to environmental challenges. These projects improve air, water and land quality, reduce greenhouse gas emissions, and generate economic and social benefits to local communities. Through GMF, municipalities share lessons learned and successful new models for advancing sustainability in communities of all sizes in all regions across Canada. GMF is a \$625 million¹ program, delivered by the Federation of Canadian Municipalities and funded by the Government of Canada.

¹ As per Appendix G, the additional \$125 million was received in April 2018 and is excluded from the amounts mentioned in this annual report.

Letter to stakeholders

Few investments achieve results comparable to those of the Green Municipal Fund (GMF) at the Federation of Canadian Municipalities (FCM). In light of our fund's successes—and importantly, with your support—the Government of Canada recently announced an additional \$950 million investment in GMF's endowment. The Federal Government has truly doubled down on its commitment to helping all Canadian municipalities face growing environmental challenges and improve residents' quality of life.

GMF is a scalable, flexible and responsive solution to environmental issues in Canadian municipalities. Now in our 19th year, we're a nationally recognized sustainability leader and a true Canadian success story.

We have, for example, preserved every dollar of our \$625 million federal endowment and still committed \$862 million to 1,310 approved municipal sustainability initiatives across the country since GMF's inception. That's the result of exceptional financial management.

The funding has helped Canadian municipalities and their partners plan, design and implement sustainability initiatives and address the effects of climate change. Together, they've protected communities from flooding, restored toxic sites to productive use, improved access to clean drinking water, and expanded cost-saving energy efficiency and clean energy systems.

We're excited to tell you about this inspiring work. To that end, we offer you the *Green Municipal Fund 2018-2019 Annual Report*, which includes examples of funded initiatives and describes how they benefit communities of all sizes across Canada.

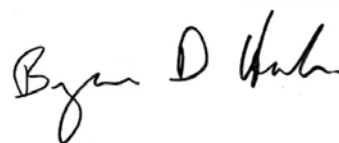
We're proud of the confidence you've placed in us through recent investments, and are eager to move into an incredible next chapter. Thank you again for your support.

Sincerely,



Bill Karsten

Councillor, Halifax Regional Municipality, NS
FCM President




Ben Henderson

Councillor, City of Edmonton, AB
Chair, GMF Council



Overview: An exceptional year



Our dedicated team at GMF began a new chapter in 2019. The Federal Government's commitment of an additional \$950 million to the endowment fund means we can improve the environment and quality of life for more Canadians. The funding meaningfully expands our ability to drive energy efficiency and clean energy in communities of all sizes across Canada.

This investment acknowledges years of fruitful teamwork and program successes. In the past 19 years, we've used a unique mix of training, resources and funding to help communities deliver sustainability initiatives. That has meant cleaner air and water, more recycling and waste minimization, more energy-efficient buildings and energy systems, and more successful infrastructure projects across the country.

How does our team achieve success year after year? Via continuous improvements. They're a hallmark of our work.

Our deliverables in 2018–2019

Stakeholder engagement

In 2018–2019 we consulted key stakeholders to be sure our offerings aligned with their real needs on the ground. Our stakeholders included current and past clients, and they inspired a wide range of improvements that are already benefiting the municipalities we serve.

Examples include:

- Advance disbursements
- The Signature Initiatives pilot
- Sector scans
- Roadmaps
- Leader's Exchange forums
- A webinar series
- Offerings for small, rural and remote municipalities

Stakeholder feedback

Advance disbursements

Their feedback led, for example, to a pilot of advance disbursements for GMF-funded projects. Municipalities used to receive funding after they incurred costs on a project. That sometimes meant delays and increased costs for municipalities that had to bridge the gap with other funding sources. With advance disbursements, we're able to give recipients a percentage of their costs up front to help kick-start projects. We've piloted this successfully and, when the rollout is complete later this year, municipalities and their partners will move to the finish line faster.

We also adjusted our approval process for plans and studies, so municipalities find out one month sooner whether they'll receive funding from us. That's especially important for smaller communities. It's all part of making life easier for municipalities when they do the right thing.

Signature Initiatives pilot

The stakeholder consultations also inspired a two-year pilot of our Signature Initiatives funding category to bridge a gap that exists for highly innovative and impactful initiatives. Projects that use cutting-edge approaches and ingenious solutions don't always meet our eligibility criteria for other GMF funding offers. Funding isn't readily available for such progressive projects elsewhere in the sector, so we launched Signature Initiatives to support their worthwhile and ambitious work and reward them for cutting-edge innovation, impact and implementation.

Signature Initiatives have no pre-set environmental targets or thresholds, and we evaluate their proposals on a case-by-case basis. We give preference to projects that encourage replication, a key goal in our strategic plan. It's important to support these leading-edge, environmental municipal projects, as funding for particularly bold initiatives is sorely lacking and difficult to access in the municipal sector.





Sector scans

In 2018–2019, we also introduced better ways to collect, analyze and share relevant information and knowledge about the highest impact environmental opportunities in the municipal sector. This informs our funding and capacity-building offers. We conducted sector scans for transportation, water, waste and land use (previously focused specifically on brownfields). These scans identify best practices and the top opportunities to reduce environmental impacts and achieve triple bottom line benefits.

Roadmaps

Our team also started work on the first in a series of roadmaps this year. These guides for municipalities and their partners identify the most viable solutions to sustainability challenges, while taking region, climate and demographics into account. We'll complete our first roadmap—a guide to all aspects of municipal energy consumption—by fall 2019. Each roadmap sets out effective, replicable solutions, which encourages municipalities to have more confidence and interest in adopting sustainable practices. They're more likely to adopt a solution if we can show them it works from an environmental, economic and social perspective. Notably, the funding announced in Budget 2019 will go a long way to helping municipalities adopt this type of solution.

Leader's Exchange forums

We introduced several targeted, online Leader's Exchange forums this year to pilot a new approach to peer learning among municipal officials. In each forum, experts shared best practices and described the lessons they've learned from completing innovative environmental infrastructure projects. They covered topics such as high-efficiency fire halls, wastewater centralized biomechanical plants, wastewater lagoons and constructed wetlands. We'll use lessons from these successful events to inform future peer exchange programs.

Webinar series

In response to a demand from municipalities across Canada in 2019, we delivered a webinar series about plastic waste management solutions for Canadian municipalities. A record number of participants—more than 1,300—learned about solutions to managing plastic waste and how to incorporate circular-economy concepts into recycling programs. There was a clear need for support in this area, and we were pleased to help municipalities discover viable solutions.

Offerings for small, rural and remote municipalities

It's important to note the shift we've made to providing more programs, resources and knowledge-sharing forums for small, rural and remote communities (i.e. fewer than 10,000 people). Their unique challenges require special attention, and we've heard from them directly over the years, indicating that they need more support to address the effects of climate change and improve the quality of their air, water and soil. We're creating more and more targeted programs to help these municipalities tackle their environmental challenges head-on.

Project successes

We're particularly proud of a number of projects that came to fruition in the past year:



The **City of Maple Ridge** completed a study to determine the technical and financial feasibility of implementing energy-efficiency guidelines for its community centre.

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Rosemont-La Petite-Patrie, a densely populated section of Montréal, improved its environmental performance by developing the *Défi zéro déchet* (Zero Waste Challenge).

page 25



The small, northern **Town of Neepawa** outgrew its wastewater treatment facility's capacity, and solved the problem by applying a proven technology in a new way—something we love to encourage. It upgraded its wastewater system using an approach that's unusual in cold weather climates. This will inform initiatives in other northern communities facing similar challenges.

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THESE OUTSTANDING COMMUNITIES' FULL STORIES, AND OTHERS, ARE PART OF THIS ANNUAL REPORT.

There's more on the way...

We want to support projects like the ones mentioned above for years to come. That's why we incorporate lessons learned into everything we do and align our work with our clients' and stakeholders' priorities. When we combine this approach with the objectives in our 2018–2023 GMF Strategic Plan, we prepare ourselves to reliably support the next generation of sustainability solutions. That means municipalities can continue to adopt new models, practices and processes, and our funding will be there to support them.

The recent federal investments will only amplify the work we've done in the past year and carry GMF into a new and exciting chapter. We're eager to continue our work with communities and stakeholders across Canada. Together, we're going beyond business as usual and driving the entire sector forward.

Year in review

Environmental benefits

Greenhouse gas (GHG) reductions



2.6 million tonnes
of GHG emissions avoided



Equivalent to eliminating
the emissions from
594,000 cars

Energy savings



853,045 GJ
of energy savings
per year



Equivalent to
one year of power for
8,750
households

Wastewater and drinking water treated



244,752,512
cubic metres
of water treated



Equivalent to
97,900 Olympic-size
swimming pools

Water saved



641,300
cubic metres
of water saved per year



Equivalent to the amount
of potable water
consumed in the City of
Charlottetown
in two months

Waste diverted from landfill



173,596 tonnes
of waste diverted
per year



Equivalent to contents of
24,800
garbage trucks

Media managed



191,768 cubic metres
of media (soil, groundwater
and sediment) managed



Equivalent to contents of
4,900
shipping containers

Land reclaimed



94 hectares
of land reclaimed



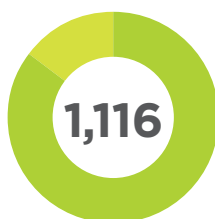
Equivalent to
158
football fields

All information is since the inception of the Fund.

Economic benefits

GMF's investments in sustainable initiatives create multiple economic benefits for people in local communities and for Canada as a nation. Our investments stimulate local economic activity and contribute to municipal prosperity. We use the Local Economic Development (LED) model to calculate the economic impact of our investments in plans, studies, pilots and capital projects.

Since GMF's inception



1,116 initiatives completed in total

- 952 plans, studies and pilots completed
- 164 capital projects completed

Financial leverage

Below is the financial leverage of completed projects across the country for the 837 initiatives in which our investment represented at least 30 percent of the project's total value (all numbers include direct and indirect results, but induced effects are not included):

\$897.5M

of national GDP

10,738

person-years of
national employment

\$517.9M

of national wages and salaries
paid to households

Breakdown by province

Alberta

111 projects completed
\$57.5M of provincial GDP
543 person-years of
national employment

Atlantic provinces (NB, NS, PE, NL)

127 projects completed
\$149.7M of provincial GDP
2,184 person-years of
national employment

British Columbia

204 projects completed
\$190M of provincial GDP
2,074 person-years of
national employment

Manitoba

36 projects completed
\$22.4M of provincial GDP
274 person-years of
national employment

Ontario

370 projects completed
\$321.6M of provincial GDP
3,780 person-years of
national employment

Quebec

205 projects completed
\$139.1M of provincial GDP
1,701 person-years of
national employment

Saskatchewan

40 projects completed
\$14M of provincial GDP
148 person-years
of national employment

Territories (NT, NU, YT)

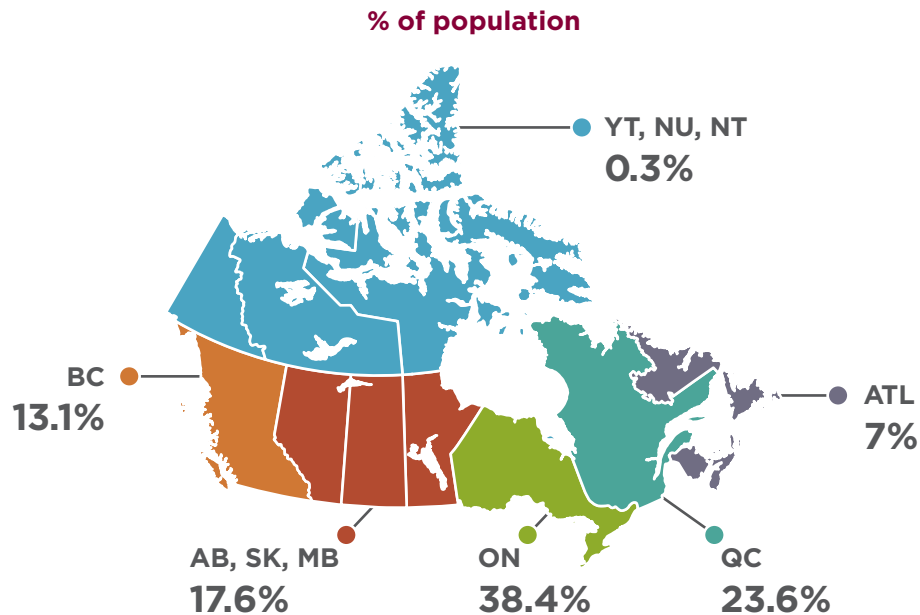
23 projects completed
\$3.1M of territorial GDP
34 person-years
of national employment

By the numbers

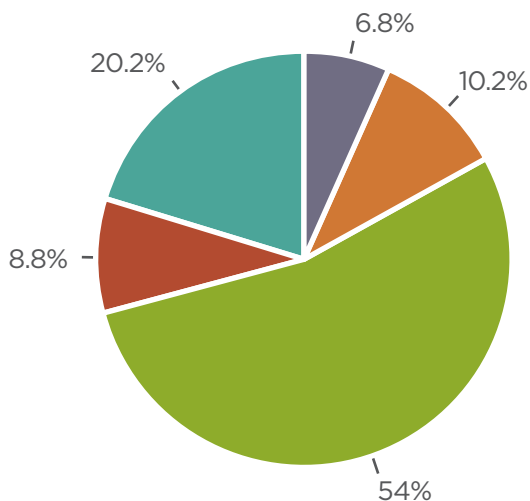
In 2018–2019, we approved nearly \$56.9 million in loans and grants for 11 capital projects and more than \$4.6 million in grants for 46 plans, studies and pilot projects across the country.

Approved initiatives by region

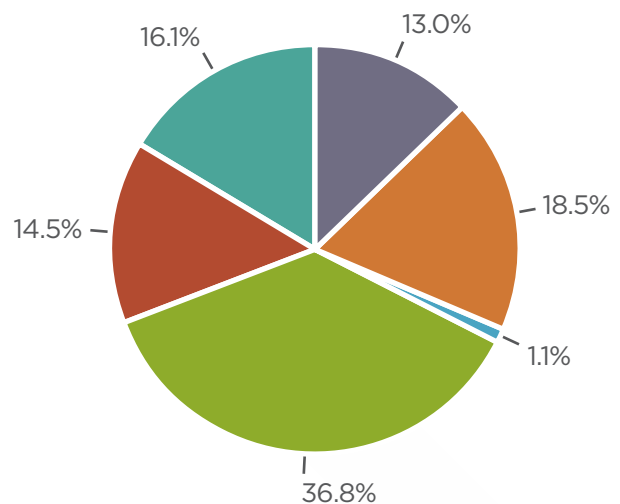
(Includes plans, feasibility studies, pilot projects and capital projects; for additional details, see Appendix A, Table A5)



Total net approved in 2018–2019*



Total net approved since inception*



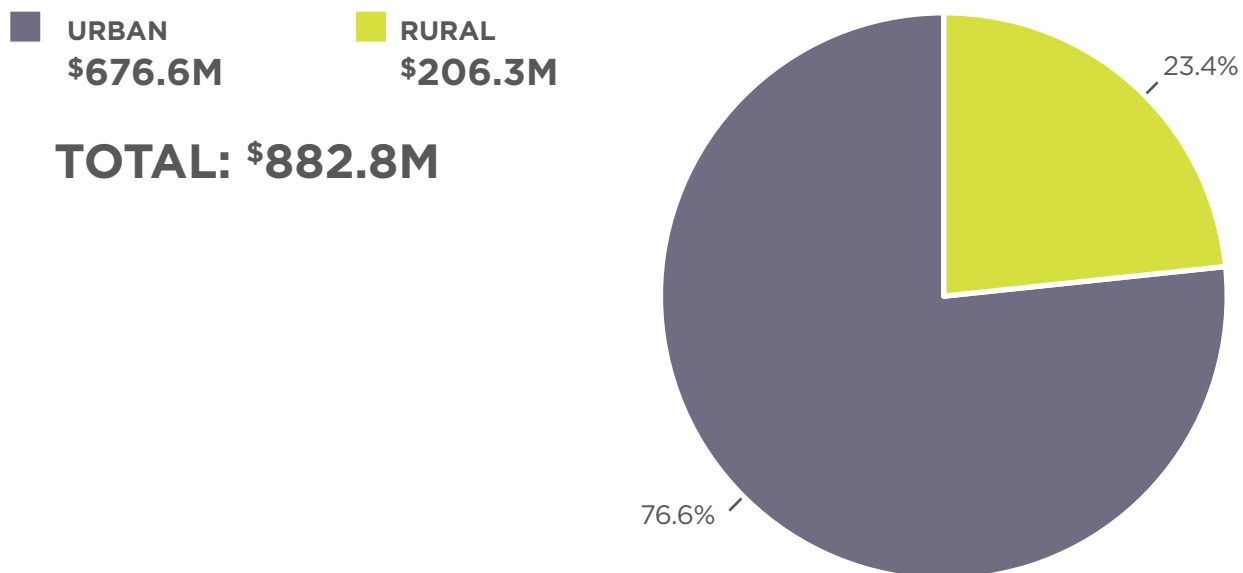
* The total net approved includes the original board-approved amount plus any additional approved amount, less the amounts withdrawn, closed or cancelled.

Urban-rural balance of all approved initiatives

(This includes plans, feasibility studies, pilot projects and capital projects. For additional details, refer to Appendix A, Table A6)

% of urban / rural population**Urban / rural distribution of total net approved grants and loans in 2018–2019****

TOTAL: \$61.5M

Urban / rural distribution of total net approved grants and loans since inception**

TOTAL: \$882.8M

* This includes municipalities with populations of fewer than 10,000 people.

** The total net approved since inception includes the original board-approved amount plus any additional approved amount, less the amounts withdrawn, closed or cancelled.

Key result areas / work packages

We completed year one of our five-year strategic plan in 2018–2019, and emphasized sector research as a way to inform new approaches. Our team made program improvements that responded directly to our clients' needs, bolstered innovation and replication and enhanced our evaluation framework.

We did all of this to get the best results possible from GMF-funded projects, and the outcomes in our work packages show that it's working. Below are key work packages from our strategic plan and initiatives that exemplify this year's achievements in each work package.

WORK PACKAGE 1

Empower innovation

It's clear that municipalities and their partners still face significant challenges when they propose innovative sustainability solutions in their communities, but GMF-funded projects have had excellent results to date. If Canada is going to meet international and domestic climate change mitigation targets, its municipalities have to significantly reduce their GHG emissions, increase the number of sustainable projects they implement, increase densification, hit water conservation and protection targets and increase waste diversion rates in the next two decades. Here's what we're doing to help communities of all sizes achieve these objectives and overcome their challenges:

- Piloting Signature Initiatives to fund highly innovative and impactful projects that test bold technologies, models and approaches
- Developing an Energy Sector Roadmap to identify the most viable, sustainable solutions to address municipalities' needs
- Funding innovative capital projects (net-zero buildings, the electrification of fleets, etc.)

WORK PACKAGE 5

Be responsive to clients' needs

We conducted extensive stakeholder consultations so we would be able to understand and respond to our clients' needs. The team aimed to make it faster and easier to identify, fund and deploy solutions in communities. Our process included:

- Reviewing and approving funding requests for plans and studies to reduce the application processing time by one month
- Creating processes to pilot advance payments for capital project funding disbursements

WORK PACKAGE 6

Leverage and mobilize GMF's knowledge, decision tools and capacity-building support for planning and executing sustainable projects

The team identified skills gaps by analyzing our completed, funded projects and peer learning programs. We're bridging these gaps by connecting municipalities to quality information and capacity development, as well as creating new content. Here are a few of the tasks we engaged in this year:

- Continuing to connect, inspire and build the capacity of participants to redevelop contaminated sites through the LiBRE network (This award-winning peer learning program has been a catalyst for brownfield redevelopment across Canada and continues

to engage members through online and face-to-face meetings.)

- Conducting three online Leader's Exchange forums to share lessons learned and best practices from funded GMF projects (Topics included high-efficiency fire halls, mechanical wastewater treatment and lagoons/constructed wetlands. Municipal participants included those that are implementing or considering new projects.)
- Hosting a webinar series for more than 1,300 people across Canada, to explore opportunities and solutions to plastic waste management (e.g. improving recycling rates, reducing contamination, exploring new ways to manage and reuse plastic waste, applying a circular economy approach)

WORK PACKAGE 7

Collect and develop data to help direct the efforts of the municipal sector and its partners

Municipal staff, non-governmental organizations, private sector stakeholders and other groups want to know the biggest sources of emissions, pollution and waste in communities, as well as the best market opportunities to make improvements. The data simply isn't there, so we're working to collect it and make it available to them. It's critical that we help identify easily implemented sustainability solutions that get positive environmental and economic results. To move this forward in 2018–2019, we took several steps, including:

- Conducting scans of the transportation, waste, water and land-use sectors, with a focus on examining current municipal best practices, challenges and opportunities
- Completing an energy sector scan to identify the biggest GHG emissions reduction opportunities through our Energy Sector Roadmap

WORK PACKAGE 10

Inspire municipalities and their partners by defining, recognizing and communicating the successes, lessons learned and triple bottom line benefits of sustainable solutions

We've supported more than 1,310 projects since GMF launched 19 years ago, and we've generated valuable lessons learned, best practices and more. If we want projects to succeed year after year, we have to understand which factors contribute to great results. Then we can promote the *right* solutions and ensure the long-term success of GMF and the municipal projects we support. To that end, and in this first year of our five-year strategic plan, we continued to share information about our funded projects and projects of interest, including:

- Developing updated worksheets (aligned with international standards) to calculate the GHG emissions reductions in our funded projects
- Establishing easy-to-communicate and replicable tools that calculate the impact of our funded projects in the transportation sector—these also give applicants standardized models and approaches they can use to evaluate their own applications and allow us to compare projects on a like-for-like basis
- Producing and disseminating videos and project guides (in both official languages) of presentations by the 2018 Sustainable Communities Awards winners
- Engaging in strategic collaboration on topics of interest to municipalities, including:
 - Hosting a Sustainable Public Procurement Workshop in collaboration with the International Institute for Sustainable Development
 - Providing support and direction on the Recycling Council of Ontario's 2019 Circular Procurement Summit

These results make us proud to support municipalities as they implement sustainable solutions. We know that their work—and ours—has a very real environmental impact and improves the lives of Canadians in every region.

Knowledge services highlights

Our Knowledge Services team produces tools and resources and offers training about our funded sectors to municipal staff and elected officials.

This year's activities addressed a range of topics, from reducing energy consumption and GHG emissions to adopting new approaches in plastic waste management towards a circular economy approach. The team also held a range of consultations as part of preparations to pilot and develop new products in the coming year.

A focus on small, rural and remote municipalities

This year, we placed a particular emphasis on capacity-building programs that benefit small, rural and remote communities (i.e. fewer than 10,000 people). These municipalities face unique challenges when they confront the effects of climate change and take on environmental concerns regarding their air, water and land.

The reality is, they don't have access to the same resources as larger municipalities. They have fewer human resources to run environmental

programs, fewer easily accessible experts and less funding for innovative projects, among many other challenges. They've been clear in expressing their need for more support at critical stages in their environmental initiatives.

Our team is proud of the effort we've made to create customized programs that help these municipalities build their capacity.





Here are a few examples of what the participating communities accomplished this year:

- The *Réseau Leadership en réhabilitation de sites contaminés* (LRSC) is the francophone cohort of the LiBRe network. At its annual face-to-face meeting in November 2018 Justine Fecteau-Fortin travelled from Plessisville, QC (population: 7,195 in 2016) to present her municipality's critical work on a potentially contaminated site (currently in Phase II environmental site assessment). The municipality is in the concept development phase for an “eco-quartier” and she received helpful feedback and advice from other LRSC members. She noted in her evaluation form that this meeting was among the most useful aspects of the LRSC program.
 - Luke Sales is the director of planning at Qualicum Beach, BC (population: 8,943 in 2016; GMF project number 13091). He was on the conference call for a Leader's Exchange forum in 2018, when speakers shared lessons learned about their energy-efficient fire halls with their peers from other municipalities. Luke noted that he found it very worthwhile and wished he had been in contact with conference participants five years previous when his municipality was in the midst of such a project.
 - During 2019's Leader's Exchange forum on wastewater mechanical, we featured a presenter from the City of Selkirk, MB (population: 10,278 in 2016). There were also rural participants (e.g. Town of Devon, AB; Town of Sundre, AB; Town of Drayton Valley, AB; Village of Point Edward, ON; Municipality of Argyle, NS; Municipality of Portugal Cove-St. Philip's, NL).
 - The rural Village of Salmo, BC (population: 1,141 in 2016) won a Sustainable Communities Award (2018), for its asset management planning.
- We're using events like these to bring examples from small, rural and remote areas into the spotlight. The communities are taking note that there's more relevant information available to them now through GMF.

Our broader accomplishments

The highlights below are additional projects we undertook in 2018–2019 to serve municipalities of every size across Canada. This data was collected between April 1, 2018, and March 31, 2019.

2018

APR

Sustainable Communities Awards: Winners

APRIL 1

We presented the 2018 Sustainable Communities Awards in February 2018 at the Sustainable Communities Conference. This year, the winners delivered TED-talk-style presentations, which we turned into videos and accompanying project guides (in both official languages) and released in April 2018:

- Nine guidebooks:
Downloaded 770 times
- Seven videos:
Viewed 2,225 times



The videos were some of the most influential pieces we produced this year, as were the guides, which contain best practices and lessons learned so municipalities can replicate successful projects.

Before the conference, we also published nine case studies that were viewed 3,632 times in 2018–2019.

JUN

In-person workshop

JUNE 12

We held our annual, face-to-face LiBRE meeting in Kingston, ON, and presented it in collaboration with the City of Kingston. This one-day event brought together 20 municipal staff involved in brownfield

redevelopment in their communities. It encouraged them to network and share knowledge, and increased their awareness of innovative brownfield initiatives in Kingston.

In-person workshop

JUNE 14

At the Canadian Brownfields Network Annual Conference, 20 brownfield practitioners participated in a breakout group discussion on the future of brownfield redevelopment from the municipal perspective. The discussion was titled *The Brownfields Industry in Canada: State of the Union*.

The *Colloque internationale : Éducation à l'environnement auprès des adultes* included a workshop titled, *Former les leaders environnementaux au Canada en milieu municipal*. There, 25 academics and municipal practitioners shared lessons learned about capacity building in the municipal sector.

2018

JUN

Webinars

Fostering brownfield redevelopment

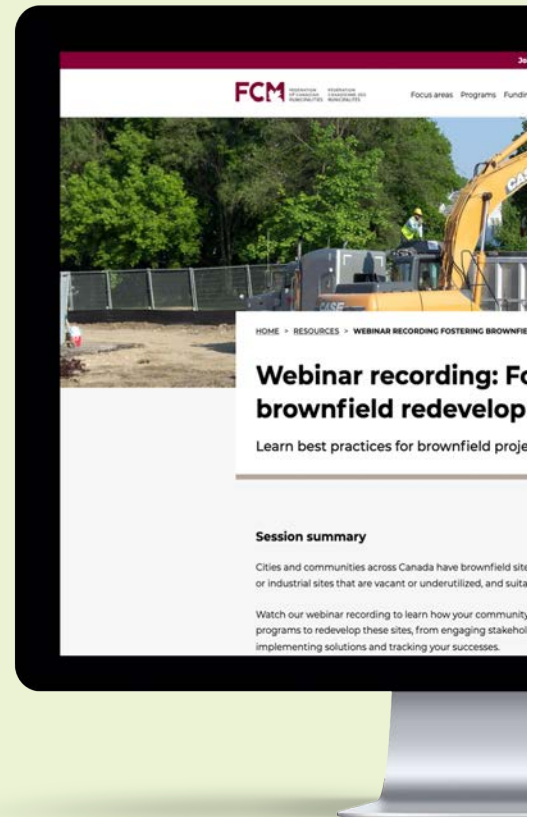
JUNE 20

We held two webinars to help people working in the brownfield sector understand how to redevelop their brownfield sites. The English webinar had 87 participants and the French one had 17 participants. We also covered the key steps involved in starting an initiative, from developing a strategy to implementing solutions and learning how to track successes and impacts. The participants learned about brownfield resources and the funding on offer here at FCM.

Effective financing strategies for stormwater management

JUNE 26

This English webinar had 54 participants and explored strategies to finance long-term stormwater management solutions and the challenges posed by extreme weather in developed urban areas. In it, we also shared strategies used by two municipalities that have successfully overcome these challenges.



JUL



In-person workshop

JULY 19

We held the *Canadian Brownfield Redevelopment: Stories of Revitalization* workshop at the Canadian Institute of Planners Annual Conference in the City of Winnipeg, MB. The 60 participants learned about the LiBRe network's best practice framework and heard success stories from brownfield practitioners from Windsor and Brantford, ON.

2018

OCT

Web meetings: LiBRe network

OCTOBER

FCM's LiBRe network connects municipal staff from Canadian communities of all sizes. These municipalities have committed to remediating and redeveloping brownfield sites to revitalize their communities. In 2018–2019, we supported two cohorts of the network: a francophone cohort called *Réseau Leadership en réhabilitation de sites contaminés* (LRSC) with eight municipal members, and an anglophone cohort with 23 municipalities. The network held four online meetings and two in-person meetings, one each in English and French. We are currently recruiting new members to this program.

The October meetings accomplished several objectives:

- **OCTOBER 9:** We raised awareness about the innovative features of the Zibi project in Ottawa, ON/Gatineau, QC and encouraged knowledge sharing among our French-speaking participants.

- **OCTOBER 16:** We raised awareness about the innovative features of Zibi project, the International Urban Cooperation (IUC) Programme and brownfield/ planning best practices in Spain and encouraged knowledge sharing among our English-speaking members.

Two other meetings occurred this year:

- **JANUARY 22, 2019:** We raised awareness about Saskatoon, SK's transit hubs initiative and encouraged networking among English-speaking network members.
- **FEBRUARY 25, 2019:** We offered a presentation about Montreal-Est, QC's development plans and encouraged knowledge sharing among French-speaking network members.

Web meeting: The Leader's Exchange forum

OCTOBER 17

Through the Leader's Exchange forum, we're piloting new capacity-building approaches and activities that bring municipal experts together. The first online forum included project leaders

from three completed, GMF-funded, high-efficiency fire halls. They interacted with municipal staff from communities across Canada that are interested in developing net-zero fire halls.

NOV

In-person workshop

NOVEMBER 27

The French language peer learning network (LRSC), met for a full-day workshop in Quebec City, QC, and 10 municipal staff participated. They networked to share knowledge and experiences, discovered

best practices for brownfield redevelopment, discussed challenges and identified solutions. They also participated in site visits to brownfield redevelopment and eco-neighbourhood projects.

2019

FEB

Webinar series

Plastic waste management solutions for Canadian municipalities

FEBRUARY 14 TO MARCH 14

This webinar series' attendees learned how communities benefit by applying better plastic waste management solutions and implementing circular economy approaches. There were five sessions in English and five in French. We hosted the first two English sessions in collaboration with the National Zero Waste Council and the Smart Prosperity Institute.

The series was very well-attended, with a total of 1,329 participants.

The sessions covered several topics:

- A circular economy approach to plastics: A review of global case studies
- Toward a circular economy for plastics: Canadian perspectives and approaches
- Raising recycling awareness through education initiatives
- Partnering with your sorting centre: How to optimize plastic waste management
- Closing the loop: From plastics to products

Web meetings: Leader's Exchange Forum

FEBRUARY 21 AND 27

Our Leader's Exchange Forum brought municipal experts together online to share lessons learned and best practices from active and completed GMF-funded projects. The participants included municipal staff and others interested in designing and delivering innovative wastewater systems.

The two sessions had different points of focus:

- **FEBRUARY 21, 2019:** This session was about wastewater centralized biomechanical plants (two project presentations; attended by 24 people).
- **FEBRUARY 27, 2019:** This session was about wastewater lagoons and constructed wetlands (two project presentations; attended by 17 people).

MAR

Webinar

Introduction to RETScreen Expert for municipalities

MARCH 6 AND 7

We hosted a webinar together with CanmetENERGY Varennes (Natural Resources Canada) to showcase how municipalities can use RETScreen to identify opportunities for energy and cost savings, and assess the technical and financial viability of clean energy projects. A total of 131 participants attended the webinars, which we held in English and French.

RETScreen is a world-leading tool that empowers professionals and decision-makers to rapidly identify, assess and optimize the technical and financial viability of potential clean energy projects. RETScreen is developed and disseminated by CanmetENERGY Varennes (Natural Resources Canada).

Partners for Climate Protection (PCP) program

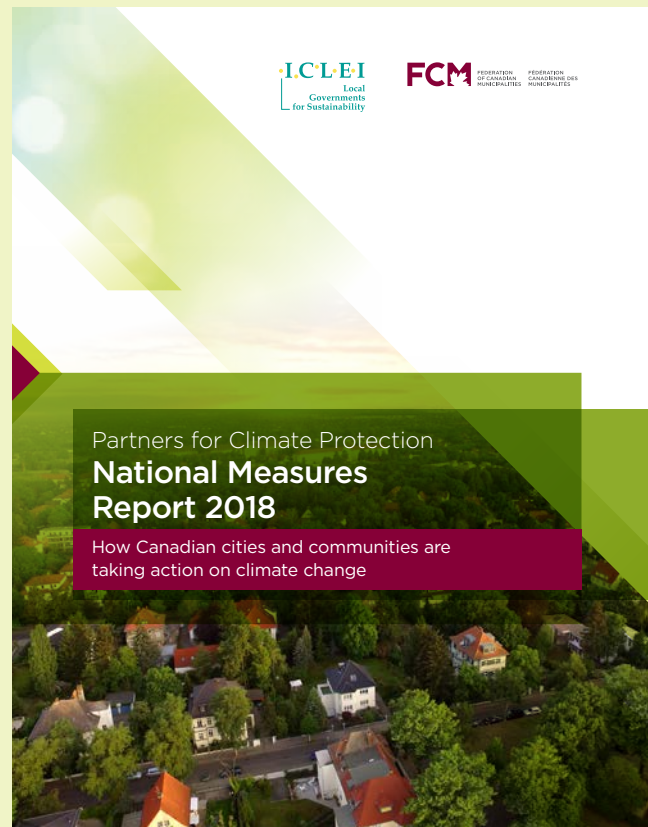
The PCP program is a partnership between ICLEI – Local Governments for Sustainability and FCM. It is a national network of more than 350 Canadian municipalities.

In 2018–2019, PCP had an active and successful year. The program grew by 40 members and held two regional recognition events.

It also published a range of tools and resources, including:

- An updated online milestone tool, supporting municipalities who are completing their GHG inventories and action plans
- The *2018 National Measures Report*, highlighting municipal climate actions
- Five “Milestone 5” case studies profiling municipalities that reached this milestone

FCM’s contributions to PCP are supported by GMF and the Municipalities for Climate Innovation Program, and are funded by the Government of Canada.



Access to every GMF project

Municipalities can learn about best practices from across the country through our Funded Projects Database. That’s where they can read summaries and final reports about any GMF-funded initiative’s business case and its social and economic benefits. We add projects to the database as soon as they’re approved, so anyone can read about ongoing and completed projects. That includes projects like the Ken Soble Tower Transformation, which brings environmental solutions to affordable housing, for example.



SPOTLIGHT

GMF from coast to coast to coast

SPOTLIGHT: CAPE BRETON, NS

Bike path becomes a central community link

Nova Scotia's longest, scenic, paved bike path is now in Cape Breton.



TYPE: Capital project

FCM GRANT: \$100,000

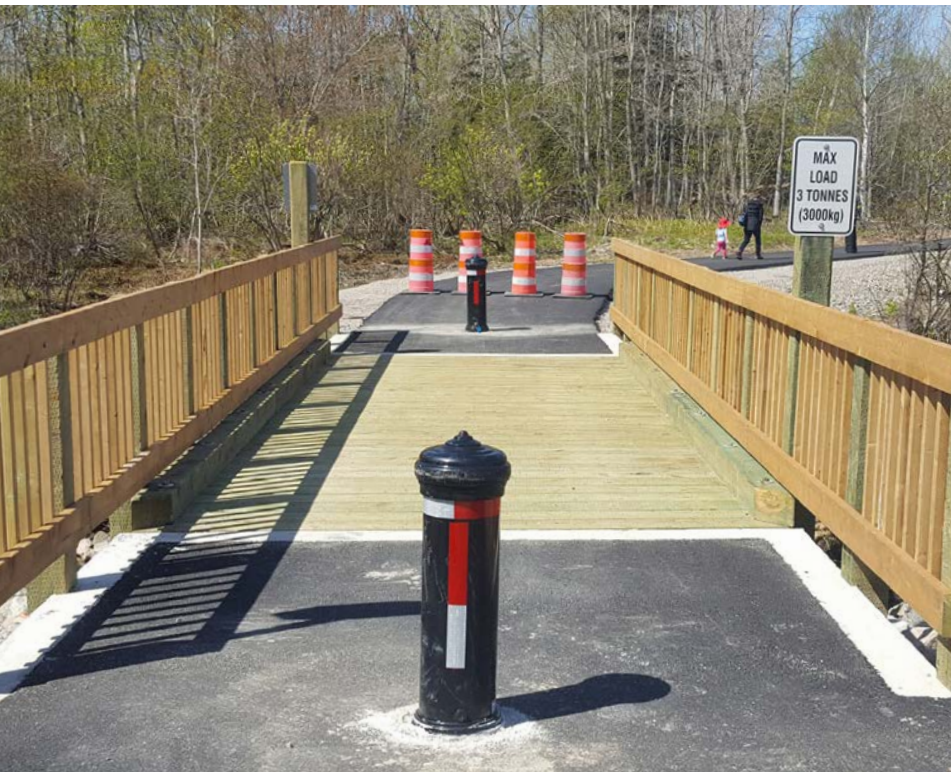
FCM LOAN: \$1,000,000

Bike paths are an anomaly in Nova Scotia, and this project was the largest component of the Cape Breton Regional Municipality's (CBRM) Active Transportation (AT) plan. In 2007–2008, it carried out public consultations, including focus groups, five public open houses and an online survey. An advisory committee met regularly after the study to monitor the project's progress. Its representatives included:

- The municipality
- The Nova Scotia Department of Transportation
- Velo Cape Breton
- The Regional Health Authority
- Mayflower Mall
- Cape Breton University
- Heart and Stroke Foundation

The path is expected to:

- Remove 1,240 vehicles from the road
- Reduce vehicle kilometres travelled by 7,936,000 per year
- Reduce greenhouse gas emissions by more than 1.5 million kg of CO₂e per year
- Stimulate economic growth by increasing interaction between Sydney and Glace Bay, as well as the university
- Serve approximately 4,000 students and 450 staff at the university
- Serve approximately 1,400 students and 170 staff at the Nova Scotia Community College (Marconi Campus)



Many of their design suggestions were incorporated into the final plan.

The 10-kilometre multi-use path links Sydney, Glace Bay and Cape Breton University. It's an off-road, AT corridor, where people can walk, bike, inline skate or skateboard with minimal vehicular interactions. It's a safe alternative transportation route in a corridor that was previously served only by the Grand Lake Road—a four-lane highway. The pathway is wheelchair accessible.

This new route will enhance Mayflower Mall's economic viability by connecting it to nearby residential areas. It's the region's largest shopping centre. The 570 students living on campus can now access shopping and employment opportunities by bicycle, reducing their personal travel costs. Other students and university employees from Sydney and Glace Bay can now bike to campus.



I think this project truly showed that we can make huge improvements in our communities if we apply ourselves and commit to the implementation of our AT plan. My hope is that people will see this and realize the potential we have in regards to converting existing rail beds and trails into functioning AT corridors."



—Malcolm Roach
Operations Supervisor,
Public Works East,
New Waterford and
Area, Cape Breton
Regional Municipality



The feedback from our membership has been overwhelmingly positive... Though designed as a transportation corridor, it is proving to be recreational, especially for new cyclists and families with young cyclists."



—Andree Crepeau
Vice-President,
Velo Cape Breton

SPOTLIGHT: MAPLE RIDGE, BC

BC community centre supports families and children

Great things happen when a community comes together.



TYPE: Feasibility study

FCM GRANT: \$21,300

When the City of Maple Ridge saw a need for improved and sustainable recreational services, it birthed the idea of a community centre in the Albion area. Around the same time, the school district was preparing to start public consultations for a new elementary school to serve 500+ students. And so, a joint planning and consultation process began. It emphasized shared space, a connection to nature and a green building design with an educational component.

The city completed a GMF-funded study to determine the technical and financial feasibility of implementing energy efficiency guidelines for the centre. This study was a result of an extensive community-wide consultation, including:

- An open house
- Neighbourhood workshops with students
- Interviews with major stakeholders, including the Katzie and Kwantlen First Nations, School District, Metro Vancouver Regional District and facility operators

This feasibility study allowed the community to develop:

- A review of net-energy reduction in a building that is atypical and doesn't meet various sustainable program standards
- Energy modeling that determined how changes in architectural, mechanical and electrical systems would impact the building's cost and performance
- An exploration and understanding of sustainability paths that allowed the city council to make better funding decisions



- A series of community-wide surveys
- 25 community partner outreach meetings
- Information sharing through local media, the city and school district's websites and social media platforms

The city investigated four highly reputable programs currently in place to advance green building in British Columbia. Given the limitations of this location (i.e. it is remote and certain codes don't apply to institutional buildings), it became clear that a LEED Silver certification was likely the highest level the building could achieve. The results suggested that the new design would use 62 percent less energy than a baseline building designed to minimum code standards.

The community voiced its strong support for the concept of a co-located elementary school and neighbourhood community centre. The designers focused on incorporating the existing landscape into the design and showcased some sustainable approaches as part of its educational approach. The centre will also serve as a major node to natural trail connections in the surrounding riparian area.



I think the centre will enhance our community greatly. ... There is an overall need in the area to support children and families, so it is really wonderful to see these synergies."



—Rick Delorme
Director of
Maintenance and
Facilities, School
District 42 Maple
Ridge-Pitt Meadows



To me, the best part about this project is the interface between the elementary school and the green building education. This centre is also an example of the great partnership between the school and the city, and is one of our many mutual projects. In the long run, it will save taxpayer dollars and provide better services to the community."



—Don Cramb
Senior Recreation
Manager, Maple
Ridge Parks,
Recreation &
Culture

SPOTLIGHT: ROSEMONT-LA PETITE-PATRIE, MONTREAL, QC

Quebec community serves as a model zero-waste example



TYPE: Pilot project

FCM GRANT: \$32,700

ABOVE, LEFT TO RIGHT: **Roxanne Comtois**, representative of a *Défi zéro déchet* centre, **Laure Caillot**, specialist, *Défi zéro déchet*, and **Claudette Therrien**, representative of a *Défi zéro déchet* centre.

Rosemont-La Petite-Patrie is a densely populated central part of Montreal with nearly 140,000 residents. In 2016, 63 percent of its household garbage ended up in a landfill, so the borough developed the *Défi zéro déchet* (Zero Waste Challenge) to reduce that number.

The program was inspired by the concept of zero waste, a movement that is gaining momentum in Quebec municipalities and other cities around the world, which focuses on five principles:

- Refuse
- Reduce
- Reuse
- Recycle
- Compost

Out of 569 applications, 50 households participated in the pilot between October 2018 and June 2019, and each one weighed its waste throughout the project. The organizers also recruited three professional zero-waste specialists, who worked closely with each household.

Rosemont-La Petite-Patrie estimates that this pilot project should:

- Reduce household waste by 30 to 50 per cent (i.e., reduce the waste per person, per year by 109 to 181 kg)
- Reduce 16,390 tonnes in household waste per year at the district level, in the long term



ABOVE, LEFT TO RIGHT: Gabrielle Lamontagne-Hallé, Amélie Côté, Laure Caillot, Bchira Dhoub, Douglas Besson

LEFT: *Défi zéro déchet* participant

“Midway through the project, the volunteers had reduced their waste by 20 percent on average—a remarkable outcome four months into the challenge,” states Marilou Deschênes, a sustainable development research officer of the borough.

Participants were offered support activities based on their needs, including telephone support, individual and group meetings, special thematic workshops and a private Facebook group. The public could access information about the participants on a website, along with their testimonies, goals and achievements.

The borough estimates that in its first edition, *Défi zéro déchet* will reduce the total household waste generated by 10 to 17 tonnes.

Overall, the goal of the challenge is to position borough citizens as leaders in reducing waste before it goes to landfills. The pilot aims to test an innovative solution that is replicable and inspires other communities.

“The Zero Waste Challenge, as small as it may seem, has enormous potential to turn Montreal into a sustainable city. The fact that the project was so popular shows that municipalities have a role to play in helping residents transition to a low-impact lifestyle.”



—**Marilou Deschênes**
Sustainable Development Research Officer, Communications Division, Borough of Rosemont-La Petite-Patrie

“During the challenge, I was able to enjoy workshops and the feeling that I was part of a community, with all the support that entails. ... My responsible consumption is my own contribution to the fight against climate change.”



—**Jean Gagnon Doré**
Défi zéro déchet participant

SPOTLIGHT: NEEPAWA, MB**Manitoba town leads innovation in northern communities**

What can a small northern community do when its population outgrows its wastewater treatment facility's capacity? Apply a proven technology in a new way.

**TYPE:** Capital project**FCM LOAN:** \$4,368,300**FCM GRANT:** \$655,200

In 2016, the growing Town of Neepawa had pushed its lagoon system to the brink. The community decided to upgrade its wastewater system while taking future growth and sustainable development into consideration.

The town's conventional lagoon system can accommodate sewage waste from 4,500 residents. The Moving Bed Biofilm Reactor (MBBR) technology, upon which the town's new design is based, can serve a population of 7,500. This approach, not usually used in cold weather climates, will inform initiatives in other northern communities facing similar challenges. The technology is compact, can be easily replicated and maintained and works well where land is at a premium or limited.

The upgraded process will allow the town to meet nutrient removal limits and extend the lagoon system's lifespan so it can easily accommodate future growth and the community's needs. Another key advantage of this new system is that its design is self-adapting to seasonal changes and will be able

We expect this project to:

- Reduce total suspended solids (TSS) by 85 percent
- Increase treatment capacity from 611,000 m³ per year to 1,007,400 m³ per year (65 percent increase)
- Reduce energy consumption by 2,690 GJ per year



AT RIGHT: The Town of Neepawa's current lagoon system



to accommodate extremely low temperatures in winter. Furthermore, the organic treatment process could divert approximately 30 percent of the waste currently going to a landfill.

Neepawa's MBBR project will provide efficient and effective wastewater treatment and will result in continuous discharge into the water system. This differs from conventional storage which, at given times of the year, can emit an offensive odor. The MBBR will also help address the significantly increased load that's been put on the system in the last decade, via the expansion of a local processing plant. That expansions will also increase the community's labour opportunities.



The wastewater processing has not always been adequate, and MBBR is entirely new technology that will lead to better results. I think the biggest highlight for me is that this project will increase the capacity for our community. It will allow industrial, commercial and residential growth."



—Ken Waddell
Publisher: Neepawa
Banner & Press,
Rivers Banner
(see: myWestman.ca)



The incorporation of the new technology will modernize the way effluent is treated. The entire community will benefit from this project, not only in relation to efficient wastewater treatment, but by repurposing the two lagoon cells into a licensed compost and an area for water retention."



—Colleen Synchishyn
Chief Administrative
Officer, Town of
Neepawa

SPOTLIGHT: TORONTO AND HAMILTON, ON



Improving health and comfort for residents in the GTA

**PROJECT TYPE:** Capital project**GRANT:** \$750,000**LOAN:** \$5 million

ABOVE, LEFT TO RIGHT: **Julia Langer**, CEO, TAF at the podium; **Kevin Marshman**, CEO, Toronto Community Housing Corporation; **Marco Mendicino**, MP and Parliamentary Secretary to the Minister of Infrastructure and Communities; Toronto-Danforth MP **Julia Dabrusin**; Toronto Mayor **John Tory**; Kitchener Mayor **Berry Urbanovic**

Nearly 44 percent of people in urban areas live in apartments and condos, as stated in a report by The Toronto Atmospheric Fund (TAF). If retrofitted to become more energy-efficient, these types of buildings could support national efforts to reduce GHG emissions. A key barrier is the lack of information available to support the technical and economic feasibility of these types of projects. The Accelerating Deep Energy Retrofits (ADER) project is changing that.

TAF, in partnership with the City of Toronto, is working to implement retrofits to four multi-residential buildings in the downtown Toronto area and in the City of Hamilton. The buildings, totaling 791 households, represent a range of ownership structures and residents, from young families to seniors, and include:

- Rental apartments
- A condominium
- Two low-income social housing buildings

The City of Hamilton will help develop lessons learned and best practices for future scale-up efforts, and will add a multi-unit residential complex to the initiative.

This project will:

- Reduce GHG emissions by 546 tonnes CO₂e per year
- Reduce energy consumption and GHG emissions in the four buildings by at least 40 percent
- Reduce water consumption with the installation of new low-flow fixtures and ultra-low-flow toilets



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**CLOCKWISE FROM ABOVE:**

Marie Dynes, Resident (Hamilton); TAF's **Devon Calder** monitoring heat pump performance at a retrofit site; **Diane Laidley**, Resident



We're excited about this project's ability to accelerate the adoption of retrofits around the country. My favourite thing about it is the opportunity to improve health and comfort for building residents, even as we reduce energy costs and carbon emissions. For example, heat pump technology not only dramatically reduces heating energy use, it also provides highly efficient air conditioning."



—Bryan Purcell
Vice-President,
Policy and Programs,
The Toronto
Atmospheric Fund

© TAF

The average number of days above 30°C in the Toronto area has increased by more than 50 per cent. This means residents of older, multi-family buildings are increasingly exposed to unhealthy temperature extremes. This project aims to dramatically reduce this type of exposure. TAF has already installed air-source heat pumps at two sites in the past year and has undertaken design work on the remaining buildings. These deep energy retrofits can reduce operating costs, improve indoor environmental quality and resident comfort and create local jobs.

"This is the best thing that has been done for [our] housing. It lowers [our] energy bills, provides heating and cooling. It's a lot colder in the


summer and a lot warmer in the winter. You have more freedom and control," says Diane Laidley, a resident at one of the Toronto ADER sites.

As a way to see first-hand how residents can benefit from the heating and cooling retrofits, TAF will also undertake a comprehensive monitoring and verification process to help ensure that the expected energy savings continue to materialize throughout the newly installed systems' life cycles.

The participants will widely share the knowledge gained from these projects through case studies, white papers and presentations.



To summarize...



Now in our 19th year, GMF is well-established as one of Canada's national sustainability leaders. That's the result of pairing exceptional financial management with finely tuned offerings that serve the needs of municipalities, no matter their size or location.

We have unique offerings in the municipal environmental project landscape and bolster innovation at every turn. Thanks to our funding, many local leaders across Canada are more able than ever to successfully plan and implement sustainability initiatives.

Our team has a plan in place to ensure we succeed year after year. That includes holding annual consultations with clients and stakeholders, and amending our products and educational offerings based on front-line needs. This focus on a direct response has proven highly effective and will serve us in the years to come.

The Government of Canada's 2019 announcement of an additional \$950 million investment in our endowment fund is a tribute to our remarkably effective operating model. The Federal Government has received great returns on its investments and knows that our team has cracked the code on helping municipalities address environmental issues and improve quality of life for all residents.

Between this additional funding and our *Five-Year Plan: 2018-2023*, more Canadians will directly benefit from municipal sustainability projects. Our team will continue to tackle long-standing sustainability issues in the energy, transportation, water, waste, land use and integrated planning sectors. And we will broaden our reach to include areas that need more support.

We're entering an exciting new chapter of exponential growth. With a long history of success and a massive injection of funding, there are amazing possibilities ahead. We look forward to supporting even more success stories across Canada in the years to come.