



Making Nature Count

OPPORTUNITIES TO FUND MUNICIPAL NATURAL ASSET MANAGEMENT PROJECTS: AN OVERVIEW OF SIX FEDERAL INFRASTRUCTURE FUNDING PROGRAMS

APRIL 2019



INVEST IN NATURE

The Municipal Natural Assets Initiative (MNAI) is changing the way municipalities deliver everyday services, increasing the quality and resilience of infrastructure at often lower costs and reduced risk. The MNAI team provides scientific, economic and municipal expertise to support local governments in identifying, valuing and accounting for natural assets in their financial planning and asset management programs, and in developing leading-edge, sustainable and climate resilient infrastructure.

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1. Introduction and Purpose

The Municipal Natural Assets Initiative (MNAI) was launched in 2015 with the purpose of refining and scaling-up a pioneering approach by which the value of natural assets to municipal services can be understood, measured and managed within an asset management framework (or “*municipal natural asset management*”). The MNAI’s ultimate goal is to make this approach a mainstream practice in municipalities across Canada.

Natural assets refer to natural capital or natural ecosystems such as wetlands, forests, rivers, creeks and foreshores. These assets provide many of the same services to communities (e.g. stormwater management, flood protection, provision of drinking water) as engineered assets. A wetland, for example, provides stormwater management and flood mitigation services that would have to be replaced by an engineered alternative if the wetland was lost.

Increasingly, municipalities realize that protected and well-managed natural assets can provide equivalent or even better services than many engineered assets, while often achieving significant cost savings with respect to engineered or constructed solutions, and usually with co-benefits such as additional ecosystem services and increased community resilience to variable weather events. This is corroborated by the results from the MNAI’s first five pilot projects, documented in our report, *Results from the First National Cohort: Decision-Maker Summary*,¹ and in the case studies available on the MNAI website.² For example, in the City of Nanaimo pilot project, the cost to replace the stormwater management services provided by the Buttertubs Marsh Conservation Area (55 hectares of reclaimed wetland and floodplain) with stormwater management ponds or constructed wetlands would be \$4.7 million, and this replacement cost would increase to \$6.6 million under median climate change scenarios.³

The growing evidence of the value proposition of municipal natural asset management provides the rationale for funding of natural assets through infrastructure funding programs. Infrastructure funding programs are designed to deliver and improve services for communities. Investing in natural assets and the management of natural assets is often a cost-effective approach. However, eligibility requirements, such as the restricting of funding to tangible capital assets under some infrastructure programs, can make it potentially more difficult to fund specific investments in natural assets projects and natural asset management.

This report reviews six of Canada’s major infrastructure funding programs through the lens of a manager seeking to fund a municipal natural asset project. In the following, Section 2 provides an overview of considerations in determining project eligibility and of the programs available, while Section 3 provides specific details for the six funds.

2. Overview: Opportunities to Fund Natural Asset Management Through Six Infrastructure Funding Programs

Federally-funded infrastructure programs were surveyed to assess current opportunities for funding natural asset management for municipalities within Canada. Six infrastructure funding programs were identified that may offer potential upcoming opportunities for funding of natural asset management projects. Several of these programs are funding programs associated with the Pan-Canadian Framework on Clean Growth and Climate Change, and the Government of Canada’s *Investing in Canada* plan, which is investing over \$180 billion over 12 years in infrastructure projects. The programs include:

- Investing in Canada Infrastructure Program - Green Infrastructure Stream
- Disaster Mitigation and Adaptation Fund
- Canada Infrastructure Bank
- Federal Gas Tax Fund
- Green Municipal Fund
- Municipalities for Climate Innovation Program

The eligibility of municipal natural asset projects for these funds depends on each program's parameters for eligible projects and eligible expenditure. Other important factors, regardless of whether the project is engineered or natural infrastructure, are minimum eligible cost thresholds, the ability to bundle projects or applications, whether the funds are being delivered directly to municipalities or through provinces and territories, and what level of matching funds are available. In reviewing these opportunities, municipal natural asset managers will need to consider:

- **Eligible projects:**
 - Is the program restricted to tangible capital assets as defined by the Public Sector Accounting Board (see Box 1)? Or does the program allow natural infrastructure to be considered a capital asset?
 - Is natural infrastructure explicitly eligible? Is so, how is it defined?
- **Eligible expenditures:**
 - Is land acquisition eligible? If it is, is there a stipulation that the land must be converted to public lands or can it remain in private ownership?
- **Climate lens assessment:**
 - Is a climate lens assessment required?
- **Minimum cost thresholds and maximum contributions:**
 - What is the minimum eligible costs threshold?
 - What is the program's maximum contribution to eligible expenditures?
- **Project bundling and joint applications:**
 - Does the program accept project bundling or joint applications to meet minimum eligible cost thresholds?
- **Delivery of funding:**
 - Is the funding being delivered through bilateral agreements with provinces and territories, through a third party such as FCM or directly to municipalities?
- **Matching Fund Calculation:**
 - How much of the project funding is required to be covered by each of the three levels of governments? Is project stacking available?

Box 1: Tangible Capital Assets and Natural Assets

The definition of tangible capital assets under Generally Accepted Accounting Principles of the Public Sector Accounting Board currently excludes from recognition *inherited* natural resources such as forests, water and mineral resources, in part on the presumption that the costs, benefits, and economic value of such items cannot be reasonably and verifiably quantified using existing methods. Current accounting standards allow recognition only for *purchased* natural assets where they meet certain criteria. For further discussion see [Report on the Public Meeting of the Public Sector Accounting Discussion Group](#), November 18, 2016, p.15-24.



The growing evidence of the value proposition of municipal natural asset management provides the rationale for funding of natural assets through infrastructure funding programs.

These features are summarized in Table 1.

Table 1: Key Features of Six Infrastructure Funding Programs for Municipal Natural Asset Managers

	<i>Investing in Canada Plan</i>					
	Program Restricted to PSAB “Tangible Capital Assets”?	Land Acquisition?	Climate Lens Assessment?	Minimum Project Threshold?	Maximum Federal Contribution?	Bundling/Joint Applications?
	N	N	Y	N	Y	N/A
<i>Investing in Canada Infrastructure Program - Green Infrastructure Stream</i>	Eligible Projects: <ul style="list-style-type: none"> Eligible projects support public infrastructure defined as tangible capital assets primarily for public use and/or benefit. For the purpose of accessing ICIP funds, INFC considers natural infrastructure projects to be capital assets Natural infrastructure refers to the use of naturally occurring resources (e.g aquifer, wetland, forest, shoreline etc.) and engineered use of natural resources (e.g. green roofs, rain gardens, trees) to deliver infrastructure services or to complement grey infrastructure services, or to adapt public infrastructure to the impacts of climate change and climate-related disaster mitigation The two sub streams (Adaptation, Resilience and Disaster Mitigation; and Environmental Quality) support respectively: <ul style="list-style-type: none"> Traditional built and natural infrastructure projects that will result in increased infrastructure capacity to withstand and adapt to climate change impacts and climate-related disaster mitigation; and Infrastructure projects that will result in increased capacity to treat and manage water and wastewater, and capacity to reduce or remediate soil and air pollutants Funding includes investments in natural infrastructure 					
	Criteria: <ul style="list-style-type: none"> Meet one or more outcomes including <u>increased</u>: <ul style="list-style-type: none"> Structural capacity and/or increased natural capacity to adapt to climate change impacts, natural disasters and/or extreme weather events Capacity to treat and/or manage wastewater and stormwater Access to potable water Capacity to reduce and/or remediate soil and/or air pollutants Climate lens assessment required, costs eligible for reimbursement for approved projects 					
	Eligible expenditures and matching contributions: <ul style="list-style-type: none"> Maximum contributions to local and regional governments: 40% of eligible expenditures from federal government, minimum 1/3 from provincial 					

Disaster Mitigation and Adaptation Fund (DMAF)	Program Restricted to PSAB “Tangible Capital Assets”? N	Land Acquisition? Y	Climate Lens Assessment? Y	Minimum Project Threshold? Y	Maximum Federal Contribution? Y	Bundling/ Joint Applications? Y
	Eligible Projects: <ul style="list-style-type: none"> Projects must have a minimum of \$20 million in eligible expenditures New construction of public infrastructure including natural infrastructure, and modification and/or reinforcement, rehabilitation and expansion of existing public infrastructure including natural infrastructure Investments to reduce socio-economic, environmental and cultural impacts of natural hazards and extreme weather events when considering current and potential future climate change impacts Project bundling allowed for projects including multiple assets that work in a systematic manner to reduce the risk in the same time period which can demonstrate links to reduced risks from common hazard within program lifetime Projects must be completed by 2027-2028 					
	Criteria: <ul style="list-style-type: none"> Meet one or more <u>national</u> significance criteria, including reducing impacts on: <ul style="list-style-type: none"> Critical infrastructure and essential services Amount of critical infrastructure at high risk Health and safety of Canadians Significant disruptions in economic activity Costs of recovery and replacement Vulnerable regions Must comply with environmental assessment or federal policy, ensure Aboriginal consultations and/or modern treaty obligations satisfied Climate lens assessment required – costs of greenhouse gas (GHG) mitigation assessments eligible for reimbursement for approved projects 					
	Expenditures: <ul style="list-style-type: none"> Eligible expenditures may include design and planning, capital cost, as well as costs related to meeting specific program requirements Land acquisition is eligible only for natural infrastructure and under specified program conditions: Minimum total value of \$20 million in eligible expenditures, consistent with program objective to fund large-scale infrastructure projects 					
Canada Infrastructure Bank	Program Restricted to PSAB “Tangible Capital Assets”? Y	Land Acquisition? TBD	Climate Lens Assessment? TBD	Minimum Project Threshold? TBD	Maximum Federal Contribution? TBD	Bundling/ Joint Applications? TBD
	Eligible Projects: <ul style="list-style-type: none"> New or “greenfield” infrastructure, and large, transformative potential projects and investment opportunities that provide greatest economic, social and environmental returns Guided by federal infrastructure policy objectives in Investing in Canada Plan and Pan-Canadian Framework on Clean Growth and Climate Change 					
	Criteria: <ul style="list-style-type: none"> Revenue-generating infrastructure projects in public interest 					
	Expenditures: <ul style="list-style-type: none"> Criteria still under development 					

Gas Tax Fund	Program Restricted to PSAB “Tangible Capital Assets”?	Land Acquisition?	Climate Lens Assessment?	Minimum Project Threshold?	Maximum Federal Contribution?	Bundling/Joint Applications?
	Y	Y	N	N/A	N/A	N/A
	Eligible Projects: <ul style="list-style-type: none"> Acquiring, planning, designing, constructing or renovating tangible capital asset Strengthening ability of local governments to improve local and regional planning and asset management 					
	Criteria: <ul style="list-style-type: none"> Projects that contribute to cleaner air, cleaner water and reduced greenhouse gas emissions, including: <ul style="list-style-type: none"> Drinking water and wastewater Recreational, cultural and tourism infrastructure Brownfield redevelopment Disaster mitigation Capacity building 					
Green Municipal Fund	Expenditures:					
	<ul style="list-style-type: none"> Tangible capital asset constraint Studies, strategies, or systems related to asset management, including software acquisition and implementation, training directly related to asset management planning and long-term infrastructure plans 					
	Federation of Canadian Municipalities					
	Program Restricted to PSAB “Tangible Capital Assets”?	Land Acquisition?	Climate Lens Assessment?	Minimum Project Threshold?	Maximum Federal Contribution?	Bundling/Joint Applications?
Green Municipal Fund	N	N	N	N	Y	N
	Eligible Projects: <ul style="list-style-type: none"> Capital asset projects can include natural asset projects under the stormwater management funding stream Plans, feasibility studies, pilot projects and capital projects that improve air, water and soil, and reduce greenhouse gas emissions 					
	Criteria: <ul style="list-style-type: none"> Retrofitting, construction, replacement, expansion or purchase and installation of fixed assets or infrastructure that will improve environmental performance in municipal, energy, transportation, waste, or water or some combination of these sectors Stormwater management projects must aim to remove Total Suspended Solids from runoff from site: 80% for municipal projects and 60% for neighbourhood projects involving multiple properties or sites 					
	Expenditures: <ul style="list-style-type: none"> Feasibility Studies: up to 50% eligible costs to maximum \$175K Pilot projects: up to 50% eligible costs to maximum \$350K Capital projects: up to 80% of eligible costs, through mix of low-interest loans to maximum of \$5 million for most projects and grants for 15% of loan amount (high-ranking projects may be eligible for twice these maximums) 					

Next intake:
Year-round for feasibility studies and pilot projects;
twice/year for capital projects (March 1st and August 1st)

	Program Restricted to PSAB “Tangible Capital Assets”?	Land Acquisition?	Climate Lens Assessment?	Minimum Project Threshold?	Maximum Federal Contribution?	Bundling/Joint Applications?
	N	N	N	N/A	N/A	N/A
Municipalities for Climate Innovation Program – Climate and Asset Management Network <i>Next intake: 2019 (TBC)</i>	Eligible Projects: <ul style="list-style-type: none"> Peer-learning opportunities, training and grant funding to help municipalities better integrate climate change and sustainability goals into decision-making about infrastructure assets and services 					
	Criteria: <ul style="list-style-type: none"> Climate lens assessment not required specifically, but entire program climate-focussed 					
	Expenditures: <ul style="list-style-type: none"> Will be defined with next intake 					

Note: A number of other funding programs⁴ have supported natural assets in the past, but they have completed their final intakes and are not included.

3. Investing in Canada Plan

The Federal Government’s *Investing in Canada* plan was announced in Budget 2016 and expanded on in Budget 2017. In total, the plan provides over \$180 billion to support local, provincial and territorial infrastructure projects up to 2028.⁵ The funding is being delivered through 14 federal departments and 58 funded programs under five main infrastructure priorities (see Figure 1).

The three key objectives of the plan are:

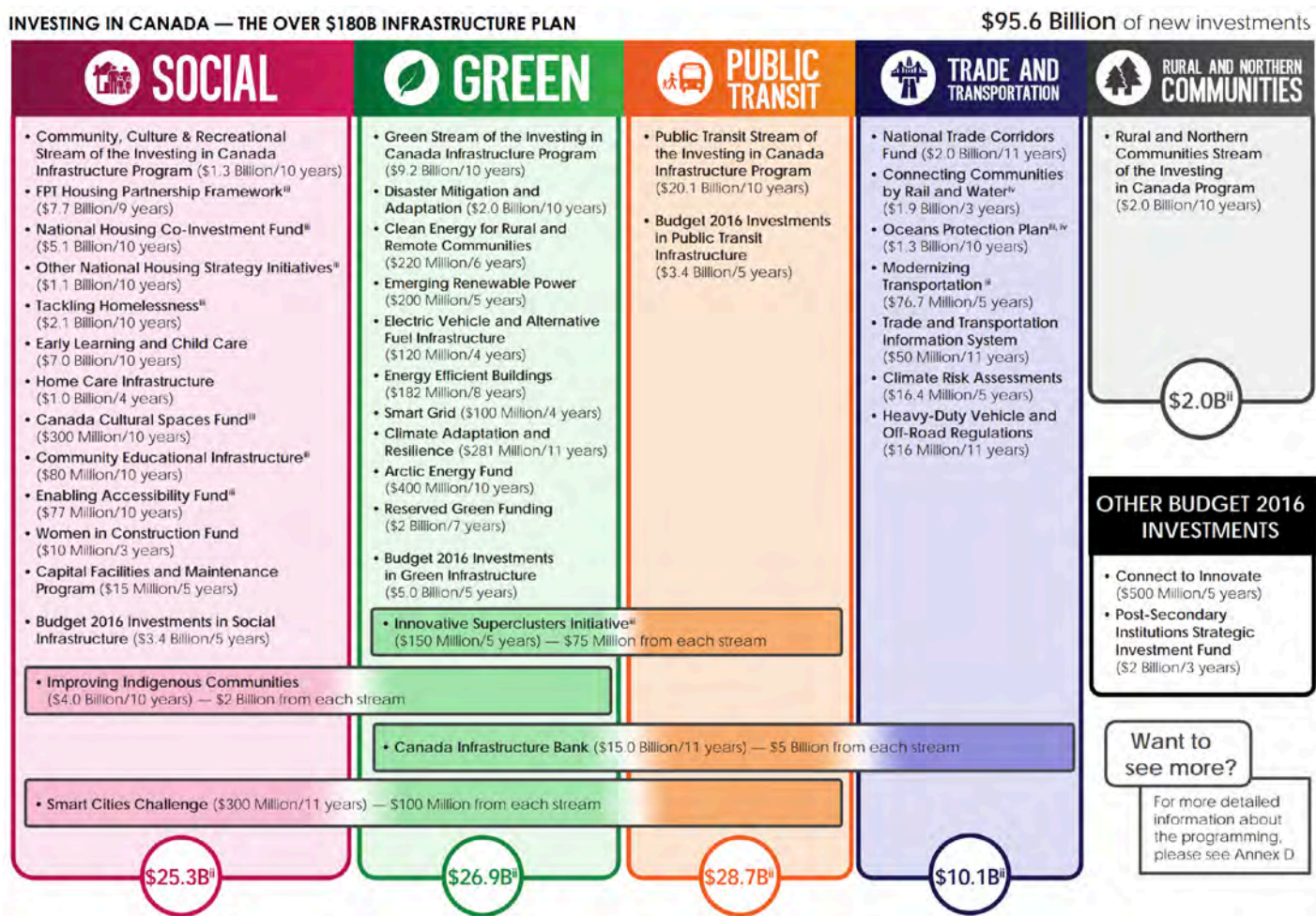
1. Grow the economy and create jobs for the middle class,
2. Build inclusive communities where everyone has access to opportunities, and
3. Support a low-carbon, green economy.

Budget 2016 committed \$14.4 billion to provide funding for the rehabilitation, repair and modernization of existing public transit, green infrastructure and social infrastructure. Budget 2017 made an additional \$81.2 billion of funding available across five priority infrastructure streams: public transit, green infrastructure, social infrastructure, trade and transportation, and rural and northern communities’ infrastructure. \$9.2 billion of that \$81.2 billion is for green infrastructure under the *Investing in Canada Infrastructure Program* (ICIP), which will be delivered to provinces and territories over the next decade through Integrated Bilateral Agreements (IBAs) (see Section 3.1). A further \$5 billion will be available for green infrastructure projects through the *Canada Infrastructure Bank* (see Section 3.3). In addition, the *Disaster Mitigation and Adaptation Fund* (DMAF) will invest \$2 billion to support large-scale infrastructure projects, including natural infrastructure, to help communities manage the risks of climate change and natural hazards (see Section 3.2).

Infrastructure Canada has developed a Climate Lens guidance document. The Climate Lens is a horizontal requirement applicable to two of these programs: Infrastructure Canada’s *Investing in Canada Infrastructure Program* (ICIP), and *Disaster Mitigation*

and Adaptation Fund (DMAF). The Lens has two components: the greenhouse gas (GHG) mitigation assessment that measures the GHG emissions impact of an infrastructure project; and the climate change resilience assessment that applies a risk management approach to measure the risks of climate change impacts.

Figure 1: Investing in Canada Plan, By Stream



From : Investing in Canada – Canada’s Long-Term Infrastructure Plan. Infrastructure Canada. Ottawa, Canada. <http://www.infrastructure.gc.ca/alt-format/pdf/plan/icp-pic/IC-InvestingInCanadaPlan-ENG.pdf>

3.1 Investing in Canada Infrastructure Program (ICIP) – Green Infrastructure Stream

The Investing in Canada Infrastructure Program (ICIP) funding has been allocated to each of the provinces and territories through Integrated and Infrastructure Bilateral Agreements (IBAs). A total of \$9.2 billion over the 2018-2028 period is allocated to the Investing in Canada Infrastructure Program – Green Infrastructure Stream. Under the Green Infrastructure Stream, each province and territory received a base amount of \$200 million, with the remaining funds allocated according to population, based on 2016 Statistics Canada Census data.⁶

The Provinces and Territories must pay out these allocations in accordance with ICIP general program requirements as well as the outcomes of priority stream requirements. The objectives of the Green Infrastructure Stream funding in the Integrated Bilateral Agreements (IBAs) are to support greenhouse gas (GHG) emission reductions, greater adaptation and resilience to the impacts of climate change and climate-related disaster mitigation, as well as to ensure that more communities can provide clean air and safe drinking water.⁷

The ICIP funds projects that support public infrastructure defined as tangible capital assets primarily for public use and/or benefit. However, for the purpose of accessing ICIP funds, INFC considers natural infrastructure projects as capital assets. Under the ICIP, natural infrastructure refers to the use of naturally occurring resources (e.g. aquifer, wetland, forest, shoreline, etc.) and the engineered use of natural resources (e.g. green roofs, rain gardens, trees), to deliver infrastructure services or to complement grey infrastructure services, or to adapt public infrastructure to the impacts of climate change and climate-related disaster mitigation.⁸


The Green Infrastructure Stream has three sub-streams: (i) climate change mitigation; (ii) adaptation, resilience and disaster mitigation; and, (iii) environmental quality (Table 2). Eligible projects must provide at least one of the related outcomes. Natural infrastructure is eligible under the latter two categories, which are respectively described as *“helping to make communities more resilient by investing in projects that enable them to better withstand and mitigate the impacts of climate change”* and *“building healthier communities through investments in clean, safe drinking water, sewage treatment, and reducing or remediating soil and air pollutants.”*

The Adaptation, Resilience and Disaster Mitigation, and the Environmental Quality sub-streams specifically support natural infrastructure projects, including:

- Built and natural infrastructure projects that will result in increased infrastructure capacity to withstand and adapt to climate change impacts and climate-related disaster mitigation; and
- Infrastructure projects that will result in increased capacity to treat and manage water and wastewater, and capacity to reduce or remediate soil and air pollutants.

Land acquisition is not eligible, meaning that natural assets must already be publicly owned or must be purchased through separate funding.

The maximum federal contribution to a local or regional government project under this stream is 40% of eligible expenditures. Provinces are only required to cost share 33% of the costs of municipal projects. Costs for the requisite climate lens assessment may be incurred prior to project approval.

A scenic landscape photograph featuring a river with a small waterfall in the foreground. The water flows over dark, wet rocks, creating white foam. In the background, a calm lake reflects the surrounding trees and sky. The trees are in various stages of autumn, with some showing vibrant orange and yellow leaves, while others are still green. A small building with a green roof is visible on the far shore. The sky is a clear, pale blue. In the bottom right corner, there is a small, bare tree branch with a few yellow leaves. The overall atmosphere is peaceful and natural.

There is high potential for funding of municipal natural asset projects through the Green Infrastructure Stream of the Investing in Canada Infrastructure Program.

Table 2: Green Infrastructure Stream Outcomes for Integrated Bilateral Agreements

Climate Change Mitigation Outcomes	Increased capacity to manage more renewable energy
	Increased access to clean energy transportation
	Increased energy efficiency of buildings
	Increased generation of clean energy
Adaptation, Resilience and Disaster Mitigation Outcomes	Increased structural capacity and/or increased natural capacity to adapt to climate change impacts, natural disasters and/or extreme weather events
Environmental Quality Outcomes	Increased capacity to treat and/or manage wastewater and stormwater
	Increased capacity to reduce and/or remediate soil and/or air pollutants
	Increased access to potable water

Relevance for Municipal Natural Asset Management

There is high potential for funding of municipal natural asset projects through the Green Infrastructure Stream of the *Investing in Canada Infrastructure Program* (ICIP), delivered through INFC's Integrated Bilateral Agreements.

While natural assets generally do not qualify under the Public Sector Accounting Board's definition of "tangible capital assets" (see Box 1), INFC has clarified that for the purpose of accessing ICIP funds, they will consider natural assets as capital assets under this funding program, as well as the ability of natural assets to 'support' built capital assets. In addition, natural asset projects have the potential to meet more than one of the required Green Infrastructure Stream outcomes. As a result, the Green Infrastructure Stream of the ICIP Fund is a strongly viable source of funding for municipal natural infrastructure/asset projects.

The adaptation, resilience and disaster mitigation sub-stream of the Green Infrastructure Stream requires a climate change resilience assessment for all project proposals, and a GHG mitigation assessment only for projects with total eligible costs of \$10 million or more. The climate change mitigation sub-stream requires the climate lens GHG mitigation assessment for all proposals, and the climate change resilience assessment for projects with total eligible costs of \$10 million or greater. Other sub-streams require both types of assessments for projects with total eligible costs of \$10 million or more.

Examples of Funded Projects⁹

1. Reclamation and Naturalization of Existing Urban Watercourses Rehabilitation Plan Preparation – London, Ontario.
2. Reduce Lake Erie phosphorus loading rehabilitating 8 wetland as part of the regional stormwater conveyance and management system – Blandford-Blenheim, Erin, London, Wellesley, Ontario.
3. Climate Change Mitigation Business Plan – Saskatoon, Saskatchewan.

3.2 Disaster Mitigation and Adaptation Fund

The Disaster Mitigation and Adaptation Fund (DMAF)¹⁰ was launched in 2018 as a national program under the federal government's *Investing in Canada Plan*, and to support the *Pan-Canadian Framework on Clean Growth and Climate Change*. Budget 2017 earmarked \$2 billion over 10 years for the fund.

DMAF is a national, competitive, merit-based program to support large-scale infrastructure projects, including natural infrastructure projects, to help communities better manage the risks associated with current and future natural hazards — including floods, wildfires and droughts. The DMAF contributes to the *Pan-Canadian Framework on Clean Growth and Climate Change*'s objectives to build climate resilience through infrastructure and reduce climate-related hazards and disaster risks.

DMAF projects must have a minimum of \$20 million in eligible expenditures. Project bundling is possible. Investments under the DMAF must support infrastructure, which is defined as tangible and fixed capital assets that are primarily for public use or benefit, including natural infrastructure. Eligible investments must be aimed at reducing the socio-economic, environmental and cultural impacts triggered by natural hazards and extreme weather events, and take into consideration the current and potential future impacts of climate change in communities and infrastructure at high risk.

Box 2: DMAF Definition of Natural Infrastructure

“...the use of naturally occurring resources or engineered use of natural resources, to provide adaptation or mitigation services to the gradual and/or sudden impacts of climate change or natural hazards.”

The DMAF has a two-stage application process including: Step I: Expression of Interest (EOI) application; and Step II: Full Application. Eligible projects under Step I are invited to submit a Full Application. Under the first DMAF intake process the EOI closed on July 31, 2018, and the Full Application closed on January 11, 2019. Project approvals are expected in Spring 2019. The Program expects to have at least one more intake period.

The Climate Lens is a requirement applicable to DMAF funding approvals. The Lens has two components: the GHG mitigation assessment that measures the GHG emissions impact of an infrastructure project; and the climate change resilience assessment that applies a risk management approach to measure the risks of climate change impacts. The resilience assessment is integrated in the DMAF therefore DMAF applicants only required to conduct the GHG mitigation assessment. Recipients are also responsible to report on Community Economic Benefits (CEB) for specific vulnerable populations.

Expressions of Interest submitted to the DMAF will be shared with and reviewed by the Canada Infrastructure Bank (CIB) to determine whether any projects could benefit from CIB support (see CIB profile, Section 3.3.)

Key program details:

- Eligible investments for infrastructure projects under the DMAF include:
 - o New construction of public infrastructure, including natural infrastructure; and
 - o Modification and/or reinforcement including rehabilitation and expansion of existing public infrastructure including natural infrastructure.

- Eligible expenditures are costs considered direct and necessary for successful implementation of an eligible project, such as design and planning, capital costs and meeting specific program requirements. Costs incurred before the project start are not eligible, except for the climate lens assessment noted below.
 - o Land acquisition is eligible for natural infrastructure projects. Eligibility is conditional on: justification of the need to acquire the land as part of the project; demonstration of how land will be used for natural infrastructure; demonstration of how land will remain protected in perpetuity; and attestation that the price is at or below fair market price. However, land acquisition is not eligible where it is the sole project component.
 - o For projects that are approved, the costs for the Greenhouse Gas assessment component of the Climate Lens assessment are retroactively eligible up to a maximum of one year before project approval in principle.
- Under the DMAF, the cost sharing is based on asset ownership. The federal cost-sharing and stacking limits of total eligible project costs are as follows:
 - o Up to 50% for provinces;
 - o Up to 40% for municipalities and not-for profit organizations in provinces;
 - o Up to 75% for, and in, territories;
 - o Up to 75% for Indigenous Recipients in provinces and territories; and
 - o Up to 25% for for-profit private sector Recipients.

In the Full Application the applicant must also inform INFC if the proposed asset is or will be included in an asset management plan.

Projects under DMAF are assessed based on their national significance, and how they will reduce impacts on one or more of the criteria outlined in Table 3. Projects must be completed by 2027-28.

Table 3: DMAF Criteria for Assessing National Significance

Reduce impacts on critical infrastructure, including essential services, from impacts of climate change, disasters triggered by natural hazards and extreme weather events
Reduce the amount of critical infrastructure that is at high risk
Reduce impacts on health and safety of Canadians
Reduce significant disruptions in economic activity from impacts of climate change, disasters triggered by natural hazards and extreme weather events
Reduce costs of recovery and replacement
Reduce impact on Canada's vulnerable regions, as identified in the PCF including Indigenous, northern, coastal and remote communities

Eligible Recipients may submit a bundled DMAF project application that includes more than one mitigation/adaptation investment (e.g., a project comprising several sub-projects with a total value of more than \$20 million in eligible costs). These projects must demonstrate that each of the multiple mitigation/adaptation investments (e.g., sub-projects) identified in the application work systematically to reduce the risk, and that they mitigate, and/or provide an adaptive benefit within the same time period.

Relevance for Municipal Natural Asset Management

Eligible investments for infrastructure projects under the DMAF explicitly include natural infrastructure. Natural infrastructure is defined under the Program as referring to the use of naturally occurring resources or engineered use of natural resources, to provide adaptation or mitigation services to the gradual and/or sudden impacts of climate change or natural hazards. Natural infrastructure projects tend to be low cost in comparison to engineered projects, which may present a barrier because of the DMAF, \$20 million project threshold. However, the Program does allow for the bundling of several sub-projects within a single watershed.

INFC is responsible for the implementation of the DMAF Program, including reimbursement of claimed expenses incurred by recipients. Therefore, the funds flow directly to the recipient (e.g. province or territory, municipality or regional government, public sector body, public or not-for-profit post-secondary institution, private sector/non-profit organization,* Indigenous government).

Examples of Potential Projects

Eligible projects under the DMAF must be \$20 million or greater. As such, a potential project could include a number of communities' projects to manage, monitor, restore and rehabilitate natural assets in a single and/or neighbouring watersheds to reduce flood risk, for example. Or natural asset projects could be bundled with engineered asset projects.

3.3 Canada Infrastructure Bank

As part of the Investing in Canada Plan, the Government of Canada established the Canada Infrastructure Bank (CIB)¹¹, with funding of up to \$35 billion for investment in transformative infrastructure projects to 2028. At least \$5 billion will be invested through the CIB in green infrastructure projects (see Section 3.1).

The CIB is a Crown Corporation with a mandate to make investments into revenue-generating infrastructure projects that are in the public interest and seek to attract investment from private sector and institutional investors to those projects. Priority areas are public transit systems, green infrastructure projects, and trade and transportation corridors.

Project eligibility is guided by federal infrastructure policy objectives, as outlined in the *Investing in Canada* plan and the *Pan-Canadian Framework on Clean Growth and Climate Change*.

As noted above (Section 3.2), Expressions of Interest submitted under the DMAF will be shared with and reviewed by the CIB to determine if they are applicable, though the two processes will remain separate. Projects may receive support from both programs.

* For profit organizations must collaborate with one or more of the eligible public recipients or with an eligible Indigenous recipient

Relevance for Municipal Natural Asset Management

The focus of the CIB is to use federal support to attract private sector and institutional investment for new or “greenfield” infrastructure – large, transformative infrastructure projects with economic, social and environmental returns. Projects must be revenue-generating and in the public interest. It may be challenging for natural asset management projects to meet all of these eligibility requirements.

The CIB is still establishing its governance and project criteria, and as such specific economic and investment criteria are still under development. Similar to the DMAF, natural asset projects may have a disadvantage in regards to accessing the CIB investment opportunities because they may not be viewed as national or transformative projects.

Examples of Potential Projects

Specific investment criteria remain under development, so examples are not yet available.

3.4 Federal Gas Tax Fund

The federal Gas Tax Fund provides municipalities with a permanent, stable and predictable source of long-term funding, and is provided twice-a-year to support local infrastructure priorities. Approximately \$2 billion per year is indexed at 2% per year, and included in the *Investing in Canada Plan*.¹² In British Columbia and Ontario, the Union of BC Municipalities and the Association of Municipalities of Ontario, respectively, administer the Gas Tax Fund, which is flowed to all local governments on a per capita basis for projects that contribute to cleaner air, cleaner water and reduced greenhouse gas emissions.¹³ Elsewhere, the Fund is administered by the Province or Territory.

Key program details include:

- Eligible Projects:
 - o Limited to Tangible Capital Assets, as defined by Generally Accepted Accounting Principles¹⁴ (see Box 1). Because these standards limit recognition of natural assets to purchased natural assets (not inherited natural resources), a natural asset might need to be part of another more commonly understood asset (i.e. on a municipally purchased property) in order to qualify.
 - o Eight of the eligible project categories are relevant for municipal natural assets, see Table 4.
- Eligible Expenditures: The eligible expenditures relevant for municipal natural asset management are those associated with
 - o Acquiring, planning, designing, constructing or renovating a Tangible Capital Asset.
 - o Strengthening of the ability of Local Governments to improve local and regional planning, including capital investment plans, integrated community sustainability plans, life-cycle cost assessments and Asset Management Plans. The expenditures could include developing and implementing studies, strategies or systems related to asset management, which may include software acquisition and implementation; training directly related to asset management planning; and, long-term infrastructure plans.

Table 4: Eligible Project Categories Relevant to Municipal Natural Assets under the Gas Tax Fund¹⁵

Drinking water – infrastructure that supports drinking water conservation, collection, treatment and distribution systems.

Wastewater – infrastructure that supports wastewater and storm water collection, treatment and management systems.

Recreational Infrastructure – recreational facilities or networks.

Brownfield Redevelopment – the remediation or decontamination and redevelopment of a brownfield site within Local Governments boundaries, where the redevelopment includes: the construction of public infrastructure as identified in the context of any other eligible project category under the GTF, and/or the construction of Local Government public parks and publicly-owned social housing.

Cultural Infrastructure – infrastructure that supports arts, humanities and heritage.

Tourism Infrastructure – infrastructure that attracts travelers for recreation, leisure, business or other purposes.

Disaster mitigation – infrastructure that reduces or eliminates long-term impacts and risks associated with natural disasters infrastructure that reduces or eliminates long-term impacts and risks associated with natural disasters.

Capacity building – includes investments related to strengthening the ability of Local Governments to develop long-term planning practices. This category can include integrated community sustainability plans, lifecycle cost assessments and Asset Management Plans.

Relevance for Municipal Natural Asset Management

This Program is limited to tangible capital assets. The list of eligible funding categories does not explicitly state natural assets as an eligible category, but there are a number of Eligible Project Categories under which purchased natural assets could fit. In order to qualify, municipalities may need to explicitly identify the ecosystem services provided by the natural asset.

Examples of Potential Projects

Funding for a municipality's wetland could be sought under the category of disaster mitigation if flood-water storage is identified as a service, or a forest could be categorized under culture, tourism or recreational infrastructure if recreational services of the asset are highlighted.

4. Federation of Canadian Municipalities

The Federation of Canadian Municipalities (FCM) is responsible for the delivery of several federally funded programs, two of which have strong potential for supporting municipal natural asset management.

For close to twenty years, FCM has administered the Green Municipal Fund (GMF). In 2017, FCM launched the Municipal Climate Innovation Program (MCIP), a five-year program that provides funding, training and resources to help Canadian municipalities adapt to the impacts of climate change and reduce greenhouse gas (GHG) emissions. The MCIP is scheduled to end in 2021-2022, with the next intake in 2019 for its Climate and Asset Management Network.¹⁶

4.1 Green Municipal Fund

The Green Municipal Fund (GMF) was initially established in 2000 as a \$125-million federal endowment administered by FCM to promote sustainable community development.¹⁷ Since then, the Government of Canada has continued to provide funding to the Program. Between 2000 and 2005, the endowment increased to \$550 million,¹⁸ and in the 2016 Federal Budget, an additional \$125 million was endowed to FCM,¹⁹ “to enhance the Green Municipal Fund, including for projects that reduce greenhouse gas emissions.” In 2015-2016 alone, \$58 million in loans and grants were approved through the GMF.²⁰

There is significant opportunity for support of municipal natural asset management under GMF. In particular, the stormwater management funding stream could fund natural asset projects.

Key program details include:

- Eligible projects are those that aim to improve air, water or soil, or reduce greenhouse gas emissions, under six focus areas (Table 5).
- Eligible expenditures include plans, feasibility studies, pilot projects or capital projects.
- The GMF provides low-interest loans, in combination with grants, directly to municipal governments.
- Funding allocations are made twice per year based on peer review scores, funding priorities, available funding and the recommendation of the GMF Council (March 1st and August 1st for capital project intakes).
- Intake for plans, feasibility studies, pilot projects and brownfield capital projects are on-going and are assessed with the best projects approved for funding.
- Capital projects are assessed through a competitive process.

Table 5: Eligible Focus Areas under the Green Municipal Fund

Sustainable neighbourhood and brownfield action plans
Energy efficiency and recovery
Transportation and fuel efficiency
Water quality and conservation
Waste management and diversion
Brownfields

Relevance for Municipal Natural Asset Management

Previously funded projects provide a strong indication of the variety of natural asset management projects that can access funding through the Green Municipal Fund. For example, the GMF has funded projects that restore and rehabilitate wetlands and forests, watershed management planning, erosion control projects and urban natural asset planning. The funding is accessible directly by municipalities through a competitive project process.

Examples of Funded Projects:

1. Flood Erosion Control Project on Stoney Creek Mountain, Hamilton, Ontario: A feasibility study to restore the natural watercourses, wetlands and forest features, creation of a conservation area, naturalization of marginal agricultural land and study to reduce stormwater runoff.²¹
2. Action Plan for All Lakes in the Town of Sainte-Anne-des-Lacs: Funding for the development of a watershed management plan.²² Funding enabled education of the effects of pollution, prohibition of fertilisers, pesticides, motorboats, protection and rejuvenation of buffer strips along waterways.
3. Burdenet Creek Erosion Control Optimisation Study: A study sought to understand how to address erosion control problem along the banks of a creek in Markham, Ontario that was at risk because of urban development, to increase water quality and protect downstream ecosystems.²³
4. CITYgreen project, Ottawa: Funding for Ottawa to adopt an assessment tool that inventories tree cover to better integrate canopy benefits, including carbon reductions, into planning and policy development.²⁴
5. Natural Environment Protection and Development Plan for the City of St. Agathe-des-Montes: Development of a plan to better protect St. Agathe's natural environment and sustainably manage its natural resources. Plan developed recommendations to reduce water pollution, waterway bank erosion and develop indicators to assess success on objectives.²⁵
6. Municipality of Lac-des-Plages – Sustainable Development Plan: A roundtable meeting and the services of a consultant to create a common strategy, targets, action plan and a follow-up program to sustainably manage of Lac-des-Plages' natural resources.²⁶

4.2 Municipalities for Climate Innovation Program/ Climate and Asset Management Network

The Municipalities for Climate Innovation Program (MCIP) was launched in February 2017 with \$75 million in funding over five years from the Government of Canada. MCIP provides funding, training and resources to help municipalities prepare for, and adapt to, climate change, and reduce greenhouse gas emissions.

The MCIP's Climate and Asset Management Network program stream will open for applications again in 2019.²⁷ This network offers peer-learning opportunities, training and grant funding to help municipalities better integrate climate change and sustainability goals into decision-making about infrastructure assets and services. The network includes staff from multiple departments in participating municipalities (i.e. public works, finance, planning sustainability). Participating municipalities also pursue individual projects, such as developing or updating an asset management strategy to integrate climate considerations. More advanced municipalities can focus on levels of service, risk assessment or life cycle management.²⁸

Relevance for Municipal Natural Asset Management

Natural assets clearly fall within the MCIP program's scope. Under the now-closed Climate Adaptation Partner Grants, MCIP funded the Municipal Natural Assets Initiative's second cohort of pilot projects,²⁹ focussing on assessing and comparing the costs of natural assets and gray infrastructure to manage risks from climate impacts.

The MCIP's focus is on building the capacity of municipalities, including local elected officials and municipal staff, to better understand the risks and opportunities, plan and take action on climate change. The program is unique in its focus on integrating climate change considerations and asset management.

Previously funded projects provide a strong indication of the variety of natural asset management projects that can access funding through the MCIP. For example, the program has funded climate change planning and asset management planning. The funding is accessible directly by municipalities through a competitive project process and through partner organizations such as International Council for Local Environmental Initiatives (ICLEI) and the Clean Air Partnership.

Examples of Funded Projects³⁰

1. Reducing climate risk through asset management and peer learning – City of Selkirk, Manitoba: Project to connect their climate change planning and asset management practices, identifying long term infrastructure enhancements and the financial strategies required to support them. Directed at addressing the annual spring flooding events on the Red River over the past 10 years due to heavier snowfall downstream and overland flooding caused by more frequent and severe rainstorms.
2. Improving regional climate resilience through vulnerability analysis and planning – Fraser Basin Council, British Columbia: Fraser Basin Council working with six municipalities in Northeast British Columbia to prepare for the risks and vulnerabilities of the changing climate. The project will develop a regional report on climate projections for Northeast BC and develop community-based vulnerability assessments.

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