



The Corporation of the Town of Tecumseh

Public Works & Environmental Services

To: Mayor and Members of Council

From: Phil Bartnik, Director Public Works & Environmental Services

Date to Council: July 23, 2019

Report Number: PWES-2019-02

Subject: Disaster Mitigation and Adaptation Fund
Special Spring 2019 Flooding Intake
Expression of Interest and Full Application

Recommendations

It is recommended:

That Administration **be authorized** to submit an Expression of Interest and the Full Application to the federal government for funding under the Disaster Mitigation and Adaptation Fund (DMAF) for the following projects:

- (i) Scully & St. Mark's Storm Pump Station Improvements
- (ii) P.J. Cecile Storm Pump Station Improvements

And that Administration **be authorized** to complete any business case(s), application(s), and/or to provide all information/documentation as required in order to constitute the application under DMAF;

And further that the Treasurer **be authorized** to sign any required documents necessary to complete the Expression of Interest and the Full Application to DMAF;

And furthermore that the Mayor and Clerk **be authorized** to sign any documents/agreements (if required) for the Expression of Interest and Full Application to DMAF, in a form satisfactory to the Town's Solicitor, financial content satisfactory to the Town's Treasurer and technical content satisfactory to the Town's Engineer.

Background

The Government of Canada launched the Disaster Mitigation and Adaptation Fund (DMAF), a national merit-based program that will invest \$2 billion to support large-scale infrastructure projects to help communities better manage the risks of disasters triggered by natural hazards. DMAF projects will support the Government of Canada's objectives laid out in the Pan-Canadian Framework on Clean Growth and Climate Change.

DMAF projects must have a minimum of \$20 million in eligible expenditures. Project bundling is possible under the DMAF (i.e. a project comprising several sub-projects with a total value of more than \$20 million in eligible costs). The federal cost sharing and stacking limits for DMAF projects are up to 40% for municipalities.

The full details of the DMAF program are contained within Attachment No.1 to this report.

Town of Tecumseh, First Intake of DMAF

At the July 24, 2018 Regular Meeting of Council, Council approved the recommendations (Motion RCM-232/18) of Report No. PWES-2018-19 titled "Disaster Mitigation and Adaptation Fund – Expression of Interest" that authorized Administration to proceed with submitting the Expression of Interest and subsequent Full Application under the first intake of DMAF.

In the fall of 2018, the Town was successful with our Expression of Interest under DMAF and invited to proceed with the submission of the Full Application under the program. The Town submitted the Full Application in January 2019, which included the following bundled projects for a total of \$30.70M:

- Manning Road Improvements, Phases 2 & 3 (\$11.99M)
- Riverside Drive Trunk Sanitary Sewer (\$2.80M)
- Scully & St. Mark's Storm Pump Stations & Riverside Drive Trunk Storm Sewers (\$15.91M)

On Friday May 31, 2019 the Town was made aware that we were unsuccessful with our Full Application under the first intake under DMAF.

Comments

Special Spring 2019 Flooding Intake of DMAF

On July 5, 2019 the Town received a letter from the Ministry of Infrastructure, Ministry of Municipal Affairs and Housing, and the Ministry of Natural Resources which identified a limited expedited intake to DMAF for projects supporting efforts for flood mitigation.

A subsequent email dated July 10, 2019 from the Ministry of Municipal Affairs and Housing provided additional details for the application process and deadlines. For municipalities that have a project (or bundled project) that can meet the minimum \$20M project threshold, both

the Expression of Interest and the Full Application would need to be submitted to Infrastructure Canada by **August 1, 2019**.

Recommended Bundled Projects – Special Spring 2019 Flooding Intake of DMAF

DMAF projects must have a minimum of \$20 million in eligible expenditures, and project bundling is possible under the DMAF in order to achieve this minimum.

Administration has compiled the following bundled projects by conducting a review of the current PWES 5-year Capital Works Plan and 10-year Outlook and the Town's Asset Management Plan for individual projects that would be:

- (i) Relevant to the Town's Strategic Priorities;
- (ii) Identified within the Town's Flood Mitigation Strategy;
- (iii) Identified within the Town's Storm Drainage Master Plan (2019);
- (iv) Have the ability to be designed and constructed within the DMAF program timelines;
- (v) Based on the eligibility criteria and merit criteria listed for the Full Application under DMAF.

1) Scully & St. Mark's Storm Pump Station Improvements (\$17.05M)

There are currently three vertical turbine pumps installed at the existing Scully pump station. No upgrades have been completed since the station was put into operation in 1974. The electrical equipment is approaching the end of its life. The St. Mark's pump station currently has two vertical turbine pumps and was constructed in 1957 and is also reaching its end of life. The current pump station structures on both sites cannot be expanded to accommodate the increased flow.

Based on the age of the pump station infrastructure at this location and through the modelling analysis, it is recommended that a new pump station is constructed at the Scully pump station site to handle flow from a consolidated service area of the Scully and St. Mark's pump stations. The new station would utilize vertical submersible axial flow pumps. The station would be located north of the existing structure and will require a new inlet and outfall pipe, and expanded outfall structure. The existing pump stations would be kept in service during construction.

Storm trunk sewer improvements and the redirection of storm drainage along Riverside Drive are required between Arlington Boulevard and the proposed consolidated storm pump station on the Scully site to convey flows from the existing St. Mark's storm pump station service area. The design of the storm trunk along Riverside Drive ranges from 1350 mm to 1500 mm in diameter.

With the proposed improvements of the storm trunk sewer along Riverside Drive and redirection of flows from the St. Mark's service area to the location of the consolidated Scully/St. Mark's storm pump station within the existing Scully site, sanitary sewer improvements are required along Riverside Drive due to potential conflicts with private drain connections of properties fronting Riverside Drive. To accommodate the new Riverside Drive storm trunk sewer from Arlington Boulevard to the new storm pump

station at the Scully storm pump station site, the following works are required beyond the storm sewer improvements:

- Lowering of the local Riverside Drive sanitary sewer by approximately 0.50 m between Arlington Boulevard and St. Mark's Road which currently outlets into the St. Mark's sanitary sewer. This local Riverside Drive sanitary sewer is proposed to be redirected to the Arlington sanitary sewer; and
- Lowering of the local Riverside Drive sanitary sewer by approximately 0.50 m between St. Mark's Road and Edgewater Drive and maintain the existing outlet to the Edgewater sanitary sewer.

2) P.J. Cecile Storm Pump Station Improvements (\$9.70M)

There are currently two vertical turbine pumps installed at the pump station both equipped with 40 hp motors. No upgrades have been completed since the station was put into operation in 1974. The electrical equipment is approaching the end of its life.

Based on the age of the pump station infrastructure at this location and through the modelling analysis, it is recommended that a new pump station is constructed at the PJ Cecile PS site. Due to site restraints, the new pump station is proposed to be constructed over the footprint of the existing structure. The new station would utilize vertical submersible axial flow pumps. The installation of temporary pumps using portable pump stations is recommended to provide servicing during the construction. A new outfall pipe will be required to provide increased flow capacity. At this time, it is recommended to extend the new outfall to the northern end of the jetty bank to eliminate additional flow from entering the Beach Grove harbour, which is the location of the existing outfall. The inlet pipe to the pump station will be replaced with a larger diameter pipe in the existing alignment.

Bundled Project Timelines and Distribution of Costs

Year / Project	Scully & St Marks Storm PS Improvements (\$ Millions)	P.J. Cecile Storm PS Improvements (\$ Millions)	Totals (\$ Millions)
2018	-	-	-
2019	-	-	-
2020	\$0.90	-	\$0.90
2021	\$1.28	-	\$1.28
2022	\$1.00	-	\$1.00
2023	\$7.13	\$0.80	\$7.93
2024	\$3.88	\$1.50	\$5.38
2025	\$2.86	\$3.94	\$6.80
2026	-	\$2.59	\$2.59
2027	-	\$0.87	\$0.87
2028	-	-	-
Totals	\$17.05	\$9.70	\$26.75

Consultations

Financial Services
 Dillon Consulting Limited

Financial Implications

Should the Expression of Interest and the Full Application for funding be successful, the following financial implications arise if the grant application is approved:

Total net eligible project costs: \$26.75 M
 Requested federal funding (max 40%): \$10.70 M
Amount to be funded by Town: \$16.05 M

Additional review will be undertaken to determine final funding sources but initial consideration would be to fund the Town's share of bundled projects from the following reserve funds:

Reserve Fund / Project	Scully & St. Mark's Storm PS Improvements (\$ Millions)	P.J. Cecile Storm PS (\$ Millions)	Total (\$ Millions)
Road Lifecycle Reserve	\$1.11	-	\$1.11
Watermain RF	\$0.41	-	\$0.41
Wastewater Sewers RF	\$0.37	-	\$0.37
Storm Sewer Lifecycle*	\$9.81	\$4.35	\$14.16
Total	\$11.70	\$4.35	\$16.05

*DMAF Grant Applied between the projects

The current allocation to the Lifecycle - Storm Sewer Reserves (\$902,700) is intended for the replacement of the existing assets and not meant for 'level of service improvements'. There was no significant increase in the Lifecycle - Storm Sewer Reserves within the 2019 budget, however, it was intended that the 'level of service improvements' may be funded from the New Infrastructure Reserve (NIR) in the interim. This approach may find storm infrastructure projects competing for funding with other Council initiatives such as the Multi-Use Sportsplex and the Main Street CIP Streetscape project.

The Town's Asset Management Plan (AMP), last updated in 2018, incorporated the Town's 2016 Storm Pump Station condition assessment review, which included estimated rehabilitation costs. The rehabilitation costs contemplated did not consider level of service improvements. The review found that the pump stations were generally in good to fair condition and that rehabilitation costs of approximately \$1.5 million would be necessary in the short-term.

However, the results of the Town's recent Storm Drainage Master Plan (2019 – northern urban area of Town) recommend significant improvements to the Town's storm pump station infrastructure in order to address surface flooding that will occur in extreme rainfall events, such as what the Town experienced in September 2016. Included in this Master Plan are the recommended improvements to the Scully/St. Mark's pump station service area and improvements to the PJ Cecile pump station service area with total estimated cost of \$35.56 million related to storm infrastructure only. Of the total \$26.75M costs for the bundled projects described in the previous section, \$24.86M is attributable to storm infrastructure, specifically the three storm pump stations and the trunk storm sewers on Riverside Drive required to facilitate their construction.

The Town's AMP identified an annual funding shortfall of \$1.2 million over the 20-year planning period incorporating the recommendations of the 2016 Pump Station condition assessment. This annual funding shortfall increases considerably should the Town pursue the recommendations contained within the Storm Drainage Master Plan.

Funding of new infrastructure or infrastructure enhancements should generally come from the New Infrastructure Reserve (NIR), however, it must be noted that the current annual allocation to NIR does not incorporate the results of the Town’s recently completed Storm Drainage Master Plan.

Based on the projects identified in this report, the annual allocation to Lifecycle – Storm Sewer Reserves and NIR would have to increase by a combined amount of about \$700,000 to reach an annual combined allocation of \$1.6 million that would generate \$16 million over a 10-year period allowed to complete these works to satisfy DMAF requirements.

Administration intends to undertake a funding strategy study for storm sewer infrastructure in 2020 as part of the annual PWES Capital Works Plan, which will include a review of the implementation of stormwater charges. The funding strategy study will be brought forward for Council approval through a separate report.

Link to Strategic Priorities

Applicable	2019-22 Strategic Priorities
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- Make the Town of Tecumseh an even better place to live, work and invest through a shared vision for our residents and newcomers.
- Ensure that Tecumseh’s current and future growth is built upon the principles of sustainability and strategic decision-making.
- Integrate the principles of health and wellness into all of Tecumseh’s plans and priorities.
- Steward the Town’s “continuous improvement” approach to municipal service delivery to residents and businesses.
- Demonstrate the Town’s leadership role in the community by promoting good governance and community engagement, by bringing together organizations serving the Town and the region to pursue common goals.

Communications

Not applicable

Website Social Media News Release Local Newspaper

This report has been reviewed by Senior Administration as indicated below and recommended for submission by the Chief Administrative Officer.

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Reviewed by:

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Director Financial Services & Chief Financial Officer

Recommended by:

Margaret Misek-Evans, MCIP, RPP
Chief Administrative Officer

Attachment Number	Attachment Name
1	DMAF Applicant's Guide
2	July 5, 2019 DMAF Letter



Infrastructure
Canada

DISASTER MITIGATION AND ADAPTATION FUND



Strengthening the
**Resilience of
Canadian Communities**

APPLICANT'S GUIDE

Canada

Contact:

Infrastructure Canada
180 Kent Street, Suite 1100
Ottawa, Ontario K1P 0B6
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This publication is available at: <http://www.infrastructure.gc.ca/dmaf-faac/application-eng.html>

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Strengthening the Resilience of Canadian Communities - Disaster Mitigation and Adaptation Fund (DMAF) - Applicants' Guide
Catalogue No.: T94-10/2018E-PDF
ISBN: 978-0-660-26613-8

Aussi offert en français sous le titre :

Renforcer la résilience des collectivités canadiennes : Fonds d'atténuation et d'adaptation en matière de catastrophes (FAAC) - Guide du demandeur

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INTRODUCTION

Residential homes on rue Jacques-Cartier in Gatineau, Quebec during severe flooding in 2017.

Over the past decade, almost every jurisdiction in Canada has experienced significant weather-related events or disasters triggered by natural hazards. The impacts of climate change are already becoming evident across Canada, with observed changes in air temperature, precipitation, snow and ice cover and other indicators.

In response to these threats, the Government of Canada has developed the Disaster Mitigation and Adaptation Fund (DMAF) to invest in the public infrastructure we need to mitigate the potential economic, environmental and social impacts of climate change, and strengthen our resilience to disasters triggered by natural hazards and extreme weather events.

The Climate Lens is a horizontal requirement applicable to DMAF. It has two components: the GHG mitigation assessment, which will measure the anticipated Greenhouse Gas (GHG) emissions impact of an infrastructure project, and the climate change resilience assessment, which will employ a risk management approach to anticipate, prevent, withstand, respond to, and recover from a climate change related disruption or impact.

The Climate Lens resilience assessment is integrated in the DMAF resilience assessment which is compatible with ISO 31000 on Risk Management. The DMAF resilience assessment also aligns with the guiding principles of systematic analysis of risk, pursuit of multiple benefits, and avoidance of unintended consequences. Therefore, DMAF Applicants are only required to conduct the GHG mitigation assessment (see Annex K).

DMAF Recipients will be responsible to report on Community Employment Benefits (CEB) for specific vulnerable populations.

This Applicant's Guide has been developed to provide Applicants with information about the DMAF application requirements and the evaluation and approval process, including the nature and type of information required to ensure a complete application.

1. DMAF OBJECTIVE AND PROGRAM ALLOCATION

Objective:

The DMAF is aimed at strengthening the resilience of Canadian communities through investments in large-scale infrastructure projects, including natural infrastructure projects, enabling them to better manage the risk associated with current and future natural hazards, such as floods, wildfires and droughts.

In doing so, the DMAF will contribute to the objectives of the Pan-Canadian Framework (PCF) on Clean Growth and Climate Change relating to building climate resilience through infrastructure and reducing climate-related hazards and disaster risks.

Program Allocation:

Budget 2017 earmarked \$2 billion over 10 years for the DMAF.

2. PROGRAM DETAILS

The DMAF is a national, competitive, merit-based contribution program administered according to the Treasury Board (TB) Policy on Transfer Payments. All DMAF project proposals will be subjected to a merit assessment, with clearly defined point values for each of the merit criteria.

DMAF projects must have a minimum of \$20 million in eligible expenditures. Project bundling is possible under the DMAF (details in Annex F).

3. ELIGIBLE RECIPIENTS

To apply for DMAF funding, the Applicant must be a legal entity capable of entering into legally binding agreements.

The eligible Recipients for DMAF funding are:

- a Canadian province or territory;
- a Canadian municipal or regional government established by or under provincial or territorial statute;
- a public sector body established by or under a Canadian provincial or territorial statute or by regulation or that is wholly-owned by a Canadian provincial, territorial, municipal or regional government;
- a Canadian public or not-for-profit post-secondary institution that is authorized - under the terms of a Canadian provincial, territorial or federal statute, or Royal Charter – to deliver post-secondary courses or programs that lead to recognized and transferable post-secondary credentials, that is working in collaboration with a Canadian municipality;
- a Canadian private sector body, including for-profit organizations and not-for-profit organizations. For-profit organizations will need to work in collaboration with one or more of the entities referred to above or with an eligible Indigenous recipient as defined in the first three sub-bullets listed under “eligible Indigenous recipients”;
- eligible Indigenous recipients:
 - ▶ a band council within the meaning of section 2 of the Indian Act;
 - ▶ a First Nation, Inuit or Métis government or authority established pursuant to a Self-Government Agreement or a Comprehensive Land Claim Agreement between Her Majesty the Queen in right

of Canada and an Indigenous Peoples of Canada, that has been approved, given effect and declared valid by federal legislation;

- ▶ a First Nation, Inuit or Métis government that is established by or under federal, provincial or territorial legislation that incorporates a governance structure; and
- ▶ a not-for-profit organization whose central mandate is to improve Indigenous outcomes, in collaboration with one or more of the Indigenous entities referred to above, a municipality, or province or territory.

IMPORTANT INFORMATION:

- Federal entities, including federal Crown corporations, are not eligible for funding.
- In the case of not-for-profit organizations whose mandate is to improve Indigenous outcomes, Applicants must provide INFC with a letter of support from one of the eligible Indigenous recipients indicated above, a municipality, or province or territory.
- Communities in Quebec will submit their projects directly to Infrastructure Canada, but, as is the current practice in existing Infrastructure Canada programs, all agreement will be signed with the Province of Quebec for projects administered by entities governed by the Loi sur le ministère du Conseil Exécutif, Chapitre M-30. The Province of Quebec will be responsible for the flow of funds to the recipients, who are responsible for project implementation.

4. COST SHARING AND STACKING LIMITS

The federal cost sharing and stacking limits for DMAF projects are as follows:

- up to 50% for provinces;
- up to 40% for municipalities and not-for profit organizations in provinces;
- up to 75% for, and in, territories;
- up to 75% for Indigenous recipients in provinces and territories (see Note below); and
- up to 25% for for-profit private sector recipients.

NOTE:

Indigenous recipients can access additional funding from any applicable federal source to a maximum federal contribution of 100% from all sources. Total Canadian government assistance will not exceed one hundred percent (100%) of total eligible costs for any project funded under this program.



Residential homes on rue Jacques-Cartier in Gatineau, Quebec during severe flooding in 2017.

5. ELIGIBLE EXPENDITURES AND INVESTMENTS

Investments under the DMAF must support infrastructure, which is defined as tangible capital assets that are primarily for public use or benefit, including natural infrastructure.

To be considered eligible, investments must be aimed at reducing the socio-economic, environmental and cultural impacts triggered by natural hazards and extreme weather events, taking into consideration current and potential future impacts of climate change in communities and infrastructure at high risk.

Eligible investments for infrastructure projects under the DMAF are:

- New construction of public infrastructure including natural infrastructure
- Modification and/or reinforcement including rehabilitation and expansion of existing public infrastructure including natural infrastructure

Eligible expenditures are costs considered by INFC to be direct and necessary for the successful implementation of an eligible project, not including those listed in section 6, below.

Eligible expenditures may include design and planning, capital cost, as well as costs related to meeting specific program requirements, such as the Climate Lens assessment(s), as well as creating CEB plans. Project expenditures become eligible as of the date of project approval, except for expenditures associated with Climate Lens assessments, which are retroactively eligible up to one year (12 months) maximum before the project approval in principle. However, these costs can be cost-shared only if a project is approved, a contribution agreement (CA) has been signed, and the conditions outlined in the CA have been met.

Expenditure for land acquisition is eligible under the DMAF only for natural infrastructure projects. Eligibility will be conditional on the recipient submitting:

1. a justification, acceptable to INFC, of the need to acquire land as part of the project;
2. a demonstration of how the land will be used as natural infrastructure;
3. a demonstration of how the land will remain protected in perpetuity by a provincial, territorial and municipal government;
4. an attestation that the price is at or below fair market value.

An attestation template is included for guidance in Annex J.

NOTE:

All project cost estimates must be accounted for in accordance with the Public Sector Accounting Standards in effect in Canada.

6. INELIGIBLE EXPENDITURES AND INVESTMENTS

- a. expenditures related to all emergency services infrastructure;
- b. expenditures incurred before project approval, except for expenditures associated with the GHG assessment;
- c. expenditures incurred for cancelled projects;
- d. expenditures of relocating entire communities;
- e. publicly-owned land acquisition;
- f. land acquisition not directly linked to the development of natural infrastructure;
- g. land acquisition in cases where it is the sole project component.
- h. leasing of land, buildings and other facilities; leasing of equipment other than equipment directly related to the construction of the project; real estate fees and related expenditures;
- i. any overhead expenditures, including salaries and other employment benefits for any employees of the recipient, direct or indirect operating or administrative costs of recipients including expenditures related to planning, engineering, architecture, supervision, management and other activities normally carried out by its staff, with the following exceptions:
 - the eligible recipient is able to demonstrate to Canada's satisfaction that it is not economically feasible to tender a contract; or
 - the arrangement is approved in advance and in writing by Canada.
- j. financing charges, legal fees, and loan interest payments including those related to easements (e.g., surveys);
- k. any goods and services expenditures which are received through donations or in-kind;
- l. provincial sales tax and GST/HST, for which the recipient is eligible for a rebate, and any other expenditures eligible for rebates;
- m. expenditures associated with operating expenses and regularly scheduled maintenance work;
- n. expenditures related to furnishing and non-fixed assets which are not essential for the operation of the asset/project; and,
- o. all capital expenditures, including site preparation and construction expenditures, until INFC is satisfied that the Environmental Assessment and Aboriginal consultation obligations have been met and continue to be met.

Bundling is permitted under the DMAF. Please refer to Annex F for more information.

IMPORTANT NOTE:

Any expenses related to contracts signed prior to the date of the project's approval in principle are ineligible except for those related to the GHG Assessment (details in section 5).

7. PROGRAM REQUIREMENTS

To be eligible for federal funding, all projects under the DMAF must:

1. comply with environmental assessment or federal policy requirements, ensure any Aboriginal consultations, and/or modern treaty obligations have been satisfied;
2. meet or exceed the applicable energy efficiency standards for buildings outlined in the [PCF](#);
3. reflect the principles underlining the Federal Government's policies to promote linguistic duality and promote the development of official language minority communities;
4. meet or exceed the requirement of the highest published accessibility standard in a jurisdiction, defined as the requirements in the Canadian Standards Association Technical Standard Accessible Design for the Built Environment (CAN/CSA B651-12), in addition to applicable provincial or territorial building codes, and relevant municipal by-laws;
5. report on CEB for infrastructure projects. The framework for CEB has been designed to encourage Recipients to consider measures to increase access for specified groups to employment and other economic opportunities generated by their projects. These groups include apprentices, Indigenous peoples, women, persons with disabilities, veterans, youth, and new Canadians, as well as small, medium-sized and social enterprises (e.g., a business operated by a charity or non-profit organization);
6. comply with the Climate Lens, specifically the GHG assessment requirement; and
7. comply with the federal visibility requirements.

8. PROJECT APPLICATION PROCESS

DMAF Application Process

The DMAF has a two-stage application process:

- Step I: The “**Expression of Interest**” (EOI) **Application** (see guidance at [Annex B](#)); and
- Step II: The “**Full Application**” (see guidance at [Annex C](#)).

Step I: EOI Application

The completed EOI Application Form must be submitted to INFC before the deadlines, EOI timelines are available at <http://www.infrastructure.gc.ca/dmaf-faac/index-eng.html>. **The EOI Application is a mandatory component of the DMAF application process.**

Step II: Full Project Application:

Applicants with EOIs deemed eligible by INFC will be invited to submit a Full Application. The Full Application timelines are available at <http://www.infrastructure.gc.ca/dmaf-faac/index-eng.html>. Applicants must not submit a Full Application without receiving an invitation from INFC.

The Full Application is designed to capture information needed to assess the proposed project against the DMAF merit criteria and other federal requirements.

QUESTIONS:

Questions during the application process are to be submitted by email to infc.dmaf-faac.infcc@canada.ca

9. PROJECT ASSESSMENT AND APPROVAL PROCESS

After the submission deadline for the EOI, INFC performs an eligibility assessment on all EOIs received.

After the deadline for submission of the Full Application, INFC conducts a merit assessment on all project applications.

IMPORTANT NOTE:

No applications will be considered after the EOI and Full Application deadlines.

To help ensure applications are finalized within the time allowed, INFC staff will be available to respond to any questions or concerns from Applicants.

As a final step, INFC prepares a recommendation for approval. The Minister of Infrastructure and Communities has authority to approve projects below \$50 million in federal share.

NOTE:

- All Applicants will be notified of the outcome of their application.
- Projects outside the Minister's delegated authority will require additional time and information to support the TB approval.
- Projects that would require TB approval include:
 - ▶ Projects within the Minister's riding
 - ▶ Projects that involve federal assets
 - ▶ Projects submitted by for-profit recipients
 - ▶ Projects that require sole source contracting, unless:
 - > The procurement contract is under \$25,000
 - > The procurement contract is under \$100,000 where the contract is for the acquisition of architectural and/or engineering services
 - > A contract is with a public sector entity or
 - > Only one person or entity is capable of performing the contract

In cases where the Minister of Infrastructure and Communities, in consultation with the Minister of Public Safety and Emergency Preparedness, has identified a specific area of concern due to urgent and emergent situations, projects could be considered outside of the competitive intake process.

The Minister of Infrastructure and Communities approves in principle successful projects. However, Applicants should ensure that conditions outlined in the letter are respected. INFC will prepare a draft CA for the Applicants review and signature.

IMPORTANT NOTE:

The CA, signed by all parties, constitutes the formal approval of the project, therefore, INFC will not be able to reimburse any costs incurred until the CA is signed by Canada and the successful Applicant.

10. ROLES AND RESPONSIBILITIES

INFC is responsible for the implementation of the DMAF program, including reimbursement of claimed expenses incurred by Recipients, ensuring the proper use of federal funding, and monitoring projects and results.

INFC's role in a project is limited to making a financial contribution to the recipient for a specific project and consequently, INFC will have no involvement in the implementation of that project or its operation. INFC is neither a decision-maker nor an administrator of a Project. INFC will not be financially responsible for any ineligible expenditures or cost overruns for a Project.

Applicants are responsible for filling in the application forms (EOI and Full Application) with true, accurate, and reliable information based on professional knowledge and the best available science.

Successful Applicants will be responsible for implementing the approved project(s) in accordance with the signed CAs.

11. CANADA INFRASTRUCTURE BANK

As part of the Government of Canada's *Investing in Canada Plan*, the Government established a new Canada Infrastructure Bank (CIB), providing up to \$35 billion for investment in transformative infrastructure projects.

These investments will focus on large projects in the broad public interest, such as public transit systems, green infrastructure projects, and transportation projects of national or significant regional importance. At least \$5 billion will be invested through the CIB in green infrastructure projects, including projects directed at the mitigation of and adaptation to the impacts of climate change and disaster triggered by natural disasters.

EOIs submitted to the DMAF will be shared with and reviewed by the CIB to determine whether any projects could benefit from CIB support. If so, the CIB may contact Applicants to discuss potential collaboration, but working with the CIB is optional and at the discretion of local jurisdictions. Please note the Bank's process would be separate from the DMAF process.

To learn more about the CIB, please visit the following web page:

<http://www.infrastructure.gc.ca/CIB-BIC/index-eng.html>

Wetland around White Trout Lake in Algonquin Park, Ontario.

12. PROJECT ASSESSMENT CRITERIA

The following table provides Applicants with guidance on the assessment criteria and related methodologies.

Table 1: Project evaluation details

EXPRESSION OF INTEREST	
Expected Output: A list of eligible and ineligible projects	
Screening Criteria	Methodology
1. Quality and Completeness	All fields are mandatory. An incomplete Application Form will not be considered for assessment.
2. Address a natural hazard	Every project needs to address at least one <u>natural hazard</u> .
3. Public and Indigenous engagement	Engagement with stakeholders such as Provinces and Territories (PTs), Indigenous communities, affected municipalities, and the general public is mandatory during the planning and/or design phase of the proposed project.
Eligibility Criteria	Methodology
1. Project schedule	Within the DMAF timeline (from May 2018 to March 31, 2028)
2. Minimum Threshold	\$20 million total eligible costs
3. Cost Sharing and Stacking	Recipients need to meet this requirement. Details included in <u>section D.2</u> .
4. Recipient Type	Municipal, Regional, Provincial, Territorial, For Profit, Not-For-Profit and Indigenous communities. Details included in <u>section 3</u>
5. Nature of the Project	New construction, rehabilitation and/or expansion of an existing asset
6. Asset Ownership, Use or Benefit	The DMAF focuses on public infrastructure. Privately owned assets need to demonstrate public benefit.
7. National Significance	DMAF projects need to meet at least one of the national significance criteria (details in <u>Annex B section C.5</u> .)
8. Alignment with the Program Objectives	As described in <u>section 1</u> , DMAF projects must align with the program objectives.

FULL APPLICATION

Expected Output: A list of projects assessed against the merit criteria

Screening Criteria	Methodology
1. Quality and Completeness	An incomplete Application Form will not be considered for assessment.
Merit Criteria	Methodology
1. Assessment of the hazard risk	<p>The DMAF focuses on the <u>likelihood</u> of the hazard risk in consideration of the current and future climate change impacts within the asset lifespan. The DMAF also considers socio-economic <u>impacts</u> including four key indicators (loss of lives, directly affected people as a percentage of the total population, local GDP loss, and population without <u>essential services</u>) as indicated in Annex C <u>section J</u>.</p> <p>Strong proposals include risk assessments that consider <u>climate change impacts within the life cycle of the asset applying reliable quantitative and/or qualitative data such as Indigenous Traditional Knowledge and studies</u>.</p>
2. Extent to which the project strengthens resilience	<p>Applicants must provide information on the expected risk <u>impacts</u> as indicated in Annex C <u>section J</u> for both before and after the project completion including quantifiable data for four indicators (expected number of lives lost; expected percentage of people affected including displaced, ill and injured; expected percentage of local GDP loss; and expected percentage of population without <u>essential services</u>). This quantifiable data for before and after the project will provide the basis to assess the improved <u>resilience</u> provided by the projects.</p> <p>Strong proposals demonstrate a substantial improvement to the <u>asset resilience</u>, in order to decrease socio-economic impacts on the population(s) exposed to a natural hazard risk.</p>
3. Return on Investment (ROI)	<p>The DMAF awards merit to projects that result in an <u>ROI</u> higher than 2:1. The <u>ROI</u> ratio measures the estimated <u>disaster</u> losses avoided within the asset life cycle.</p> <p>Details included in Annex C <u>section D.5</u>.</p> <p>Strong proposals demonstrate the capacity of the asset to reduce or avoid losses due to future natural disaster(s).</p>

CONTINUED...

<p>4. Project rationale</p>	<p>Applicants must provide an investment rationale which could include the options considered for their investment decision such as: ‘do nothing’/ status quo, <u>innovation/natural infrastructure</u>, <u>ROI</u>, and GHG reduction. Additionally, Applicants must describe why the proposed project is the best and most appropriate option of addressing the natural hazard risk.</p> <p>Strong proposals demonstrate that the proposed project is the most effective infrastructure solution to the socio-economic impacts of the main natural hazard risk.</p>
<p>5. Promote the use of <u>innovation</u></p>	<p>Applicants are required to provide details on how <u>innovation</u> is considered as part of their project including <u>natural infrastructure</u>, innovative technologies and/or global best practices in the asset design, operations, and management processes to better cope with a particular <u>natural hazard risk</u> and the <u>risks</u> posed by the increasing <u>exposure</u> to severe climate events. The DMAF awards merit to projects that offer effective solutions through unique innovative ideas to advance the DMAF objectives as indicated in <u>section 1</u>.</p> <p>Strong proposals consider innovative solutions that are proven to be effective in reducing the socio-economic impacts of the main natural hazard risk.</p>
<p>6. Project risk transfer management measures</p>	<p>Applicants must demonstrate that the proposed project comprehensively addresses the broad <u>impacts</u> of the hazard risk.</p> <p>An example of poor risk transfer management would be the construction of new dikes along a river to protect a segment of the floodplain that will confine the river, raise water levels upstream and increase the velocity (and therefore erosive power) of the river downstream. The new dike may reduce the hazard in the segment of river immediately adjacent to the structure, but will transfer risk to upstream and downstream communities. In this particular example, the objective of overall risk reduction will not be achieved.</p> <p>Strong proposals consider infrastructure solutions that address comprehensively and effectively the upstream and downstream impacts of the natural hazard risk.</p>

CONTINUED...

<p>7. Alignment with relevant plans, strategies and frameworks approved by the Municipal/ Provincial/ Territorial/Regional /National Government</p>	<p>DMAF projects are required to align with existing Municipal/Provincial/Regional/Territorial/National plans, strategies, and frameworks as well as legislation and regulations more broadly. Projects that are non-compliant with legislation and regulations will not be considered. INFC will seek confirmation from Provinces and Territories on the required compliance. Additionally, there is merit in projects that advance the objectives of or are aligned with climate adaptation and mitigation plans, strategies, frameworks, policies, related asset management plans and land-use plans, etc., as this demonstrates strategic and coordinated action across levels of government.</p> <p>Strong proposals advance approved national and provincial/territorial/ Municipal adaptation and mitigation plans, strategies, and/or frameworks.</p>
<p>8. Public and Indigenous Engagement</p>	<p>Applicants must demonstrate that they have engaged or will engage with the province(s) or territory(ies) in which the project is situated, affected communities including Indigenous communities and the general public, external subject matter experts and/or academia, for profit and not-for-profit stakeholders.</p> <p>Strong proposals will provide details on engagement activities with relevant stakeholders during the project planning and design phases.</p>
<p>9. Risks associated with project management and implementation</p>	<p>Applicants must demonstrate the potential risks they could encounter during the project implementation.</p> <p>Strong proposals outline key risks and related mitigation strategies.</p>
<p>10. Project Benefits</p>	<p>The DMAF awards merit to projects that offer additional benefits to Canadians, such as addressing multiple hazards, and providing environmental value and/or protecting valuable cultural assets. For example, in order to limit critical infrastructure development in a floodplain, a DMAF project acquires flood-prone land to create an interconnected network of green space through land use and natural infrastructure solutions such as wetland restoration. The restored wetland will absorb, filter, and store rainwater. It could also provide additional benefits, such as: enhance the aesthetic value of space, improve air quality and contribute to public health.</p> <p>Strong proposals will offer infrastructure solutions that provide additional benefits to the community such as cultural and environmental value.</p>



ANNEX A

DEFINITIONS

The aftermath of the 2015 forest fire in Jasper National Park in Alberta where over 5000 hectares of forest land were destroyed.

Adaptation

Adaptation refers to adjustments in ecological, social, or economic systems in response to actual or expected climatic stimuli and their effects or impacts. It refers to changes in processes, practices, and structures to moderate potential damages or to benefit from opportunities associated with climate change.

Actions / measures that reduce the negative impacts of climate change, while taking advantage of potential new opportunities.

Asset Dependency

One-directional reliance of an asset, system, network, or collection thereof, within and/or across sectors, on input, interaction, or other requirement from other sources in order to function properly.

Asset Interdependency

Mutual, shared or reciprocal Dependencies.

Source: PS

Co-benefits

The positive effects that a policy or measure with one objective might have on other objectives, irrespective of the net effect on overall social welfare. Co-benefits are often subject to uncertainty and depend on local circumstances and implementation practices, among other factors. Co-benefits may also be referred to as ancillary benefits.

Climate Change

Climate change refers to a statistically significant variation in either the mean state of the climate or in its variability, persisting for an extended period (typically decades or longer).

Sources: Intergovernmental Panel on Climate Change (IPCC)

Cultural Value

Cultural heritage assets that have been recognized as such by the community and/or any order of government.

Critical Infrastructure

Critical infrastructure refers to processes, systems, facilities, technologies, networks, assets and services essential to the health, safety, security or economic well-being of Canadians and the effective functioning of government.

Disaster

A serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts.

Source: United Nations International Strategy for Disaster Reduction (UNISDR)

Disaster Mitigation

A measure taken to reduce the negative impact of a disaster in order to protect lives, property, and the environment and reduce economic disruption.

Disaster Risk

The potential loss of life, injury, or destroyed or damaged assets which could occur to a system, society or a community in a specific period of time, determined probabilistically as a function of hazard, exposure, vulnerability and capacity.

Source: UNISDR

Disaster Risk Reduction

Disaster risk reduction is aimed at preventing new and reducing existing disaster risk and managing residual risk, all of which contribute to strengthening resilience and therefore to the achievement of sustainable development.

Source: UNISDR

Environmental Value

The value or worth a natural environment provides to a community or society that depends on that environment in one or more ways.

Essential Services

Essential services are those that contribute to the health, safety, security or economic well-being of Canadians and the effective functioning of government (e.g., communications, transportation networks, water supply, and reliable energy supply).

In the context of DMAF, these assets could include but are not limited to roads, bridges, public transit, power system, safety, and water and wastewater systems.

Exposure

A measure of the spatiotemporal extent (amount of space and time) that a person or asset is in the hazard area.

Source: UNISDR

Extreme Weather Events

Extreme weather includes unexpected, unusual, unpredictable severe or unseasonal weather; weather at the extremes of the historical distribution—(e.g., the range that has been seen in the past).

Source: IFWG State of Play Report (Natural Resources Canada Adaptation Platform)

Hazard

A potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation.

Hazard Scenarios

Descriptions of what could happen in different circumstances/locations—including the potential hazard, the geographic location, the likelihood, the vulnerabilities, and the potential impacts.

Impacts

Refers primarily to the effects of one or more hazards on natural and human systems. Impacts generally refer to effects on lives, livelihoods, health status, ecosystems, economic, social, and cultural assets, services (including environmental), and infrastructure due to the interaction of one or more hazard events occurring within a specific time period and the vulnerability of an exposed society or system.

Source: IPCC

Indigenous

Refers to “Aboriginal” in the context of the meaning assigned by the definition *aboriginal peoples of Canada* in subsection 35(2) of the *Constitution Act, 1982*. An “Indigenous group” refers to a group, community or people that hold rights recognized and affirmed by section 35 of the *Constitution Act, 1982*.

Innovation

Solutions and technology, including the use of natural infrastructure, that result in better ways to manage increasing risks including those related to climate change.

Likelihood

The chance of an event or an incident happening, whether defined, measured or determined objectively or subjectively.

Multi-hazards

Refers to the multiple, different major hazards for a particular location.

Natural Hazard

A source of potential harm originating from a hydro-meteorological, environmental, geological or biological event. Examples include tornadoes, floods, glacial melt, extreme weather, wildland fires, earthquakes, tsunamis, etc. Each hazard is characterized by its location, intensity or magnitude, frequency and probability. (UNISDR, 2017)

Source: PS All Hazard Risk Assessment Guide (glossary)

Natural Infrastructure

Natural Infrastructure refers 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.

Pan-Canadian Framework (PCF) on Clean Growth and Climate Change

The Pan-Canadian Framework on Clean Growth and Climate Change is the plan developed with the provinces and territories and in consultation with Indigenous peoples to meet our emissions reduction targets, grow the economy, and build resilience to a changing climate. This plan includes a pan-Canadian approach to pricing carbon pollution, and measures to achieve reductions across all sectors of the economy. It aims to drive innovation and growth by increasing technology development and adoption to ensure Canadian businesses are competitive in the global low-carbon economy. It also includes actions to advance climate change adaptation and build resilience to climate impacts across the country.

Public Use or Benefit

Privately or publicly owned infrastructure that provides services essential to the health, safety, security or economic well-being of Canadians and the effective functioning of government.

Recovery and Replacement Cost

The cost eligible for disaster relief assistance from provincial and territorial governments.

Resilience

Resilience refers to the ability of a system, community or society exposed to hazards to resist, absorb, accommodate to, adapt to, transform and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions through risk management.

Source: Sendai Framework and the UNISDR 2016

Risk

The potential loss of life, injury, or destroyed or damaged assets which could occur to a system, society or a community in a specific period of time, determined probabilistically as a function of hazard, exposure, vulnerability and capacity.

Source: UNISDR 2017

Risk Assessment

The overall process of risk identification, risk analysis and risk evaluation.

Risk Transfer

The process of formally or informally shifting the financial consequences of particular risks from one party to another.

Source: UNISDR

Return on Mitigation/Adaptation Investment (ROI)

A measurement of the estimated disaster losses avoided within the asset life cycle related to the DMAF project eligible expenditures.

Structural Assets

Includes man-made facilities such as dams, dikes, and other structures. Structural mitigation assets enable cities to be built along waterways and coastal areas.

Vulnerability

A condition or set of conditions determined by physical, social, economic and environmental factors or processes that increases the susceptibility of an asset or a community to the impact of hazards.

Flooded and frozen pond and forest in Prince-Edward-Island.



ANNEX B

DMAF EXPRESSION OF INTEREST FORM GUIDANCE

IMPORTANT INFORMATION:

All fields in the Application Form are mandatory. Incomplete applications will not be assessed.

A. RECIPIENT IDENTIFICATION

A.1. Lead applicant organization

Under section **A.1.a**, the Applicant must provide the full legal name of the applicant organization. This can include the province, territory, municipality, regional government, or other eligible entity that is applying to receive funds to deliver the project(s).

Under section **A.1.b**, Applicants are required to provide their mailing address.

Under section **A.1.c**, in cases where multiple Applicants are collaborating to submit a bundled project, it is expected that one Applicant will be responsible for the application on behalf of the other Applicants. The lead Applicant must provide its mandate, role in the project(s) and why it is best suited to undertake the project leadership role.

A.2. Applicant's primary and secondary contact information

Under **A.2.a**, Applicants must provide the name and title of the Applicant's primary contact. Under **A.2.b**, Applicants must provide the Applicant's secondary contact for the organization. Both contacts must be authorized to make decisions and representations on the project(s) including the mailing address, telephone number, and e-mail address. Under **A.2.c**, Applicants must provide the contacts for Environmental Assessment and Duty to Consult where it is different from **A.2.a** and **A.2.b**.

A.3. Lead Applicant Type

Applicants must choose the Recipient type of the lead organization. Check one only:

- Municipal
- Regional
- Provincial
- Territorial
- Indigenous Community
- Not-for-Profit Organization
- For-Profit Organization
- Post-secondary institution

IMPORTANT INFORMATION:

A partnership condition is required for post-secondary, for profit and not-for-profit organizations whose mandate is to improve Indigenous outcomes as per section 3.

A.4. Type of required partnership (for post-secondary, for-profit and not-for-profit organizations only)

Applicants must choose one of the following options:

- Municipal
- Provincial
- Territorial
- Indigenous communities
- Not-for-Profit

IMPORTANT INFORMATION:

This field applies only to for-profit organizations, not-for-profit organizations whose mandate is to improve Indigenous outcomes, and post-secondary institutions.

A.5. Project type

Applicants are required to specify whether the project is “Single” (single Applicant and/or location) or “Bundled” (multiple Applicants and/or locations).

A.6. Full legal names of other recipients (for bundled project only)

List of all Applicants included in the project application.

IMPORTANT INFORMATION:

All Recipients including the lead organization and others must be eligible as per section A.3 above.

A.7. Full legal names of the required partners (for post-secondary, for profit and not for profit organizations only)

Applicants must provide the full legal names of all partner organizations.

For example, a for-profit organization must establish a formal collaborative relationship through an agreement (e.g., Memorandum of Understanding (MOU)) with a municipality and/or province, and/or territory, and/or not-for-profit organization, and/or regional government, and/or Indigenous community.

IMPORTANT INFORMATION:

When used in reference to 1) for-profit organizations, 2) not-for-profit organizations whose mandate is to improve Indigenous outcomes, and 3) post-secondary institutions, the term “in collaboration” means DMAF eligible Recipients agree to work together (funding or in-kind) on a project or projects for their mutual interest.

B. PROJECT IDENTIFICATION

B.1. Project identifier

A unique alphanumeric value assigned by the Applicant. If the Applicant does not have a particular identifier for the project, INFC will generate a number.

B.2. Project title

A concise but meaningful description of the asset (structural and/or natural) to be built or enhanced and the hazard (s) to be addressed.

IMPORTANT INFORMATION:

Applicants must provide a description of the asset and the main natural hazard to be addressed (e.g., “Construction of a new floodwall (size) to retain recurrent river flooding for X, X, X municipalities located in floodplain in X province”).

B.3. Project Description

A brief but meaningful description of the project, the scope of the project (including all major quantifiable components), and the expected project output(s).

IMPORTANT INFORMATION:

This information should be in plain language and suitable for public communications purposes.

B.4. Project Objectives

Applicants must outline the main project objectives and demonstrate alignment with the DMAF objectives.

B.5. Province(s) and/or territory(ies)

The province(s) or territory(ies) where the project would be located. If the project is in multiple jurisdictions, check all that apply.

B.6. Project location(s) (municipality/county/other)

Location of the project at the municipal level. If the project crosses different jurisdictions check all that apply.

B.7. Project civic address and gps location (geo-coordinates)

Under **B.7.a**, provide the civic address of the project (e.g., the address of the site where construction activity will occur, e.g., 180 Kent Street, Ottawa ON, K1P 0B6). For projects to be built over a large geographic area, use an address that represents the approximate center of the project, or the location where most of the construction will occur.

Under **B.7.b**, Applicants must provide the geo-coordinates including the latitude and longitude in the degrees, minutes, seconds format, (e.g., 45°25'04.9"N 75°42'05.5"W). Geo-coordinates will enable INFC to map investments for public information purposes.

C. PROJECT DETAILS

C.1 Nature of the project

Under section **C.1.a**, the DMAF Application Form provides three options, Applicants must check all that apply:

- New construction (new physical works)
- Rehabilitation (does not alter the purpose of existing infrastructure)
- Expansion (involves an increase e.g., raising, lengthening or widening to the exterior dimensions or the production capacity of the infrastructure)

NOTE:

Each of these options may include natural infrastructure.

C.2. Project schedule

The project timelines must be within the program timelines (2018-2028). Under section **C.2.a**, Applicants are required to provide the estimated project site preparation date; under section **C.2.b**, the construction start date; and under section **C.2.c**, the estimated construction completion date.

C.3. Project results

List of the expected outcomes from the project(s), (e.g., “Structurally reinforced dike of 3 metres long by 2 metres high to handle X volume sea level increase over the next 50 years located on the northwest coast of the City of XXXX in the province of XXX.”)

C.4. Key milestones schedule

Applicants are required to provide the schedule for key project milestones e.g., “Planning (Sept 2019 to Jan. 2020); Permit Approvals (Feb. to May 2020); Construction (Jun. 2020 to Sept. 2025).”

C.5. Project national significance

Projects will be assessed on their national significance, therefore under section **C.5.a**, Applicants must choose one or more of the following criteria that will apply to their investment:

1. Reduce impacts on critical infrastructure, including essential services, from impacts of climate change, disasters triggered by natural hazards, and extreme weather events;
2. Reduce the amount of critical infrastructure that is at high risk;
3. Reduce impacts on health and safety of Canadians;
4. Reduce significant disruptions in economic activity from impacts of climate change, disasters triggered by natural hazards, and extreme weather events;
5. Reduce costs of recovery and replacement (e.g., to the Government of Canada's Disaster Financial Assistance Arrangements (DFAA));and
6. Reduce impact on Canada's vulnerable regions, as identified in the PCF including Indigenous, northern, coastal, and remote communities.

Under section **C.5.b**, Applicants are required to provide a detailed description on how the proposed project will support the criteria selected.

C.6. Number of assets

Applicants must provide the number of proposed assets for funding under DMAF.

IMPORTANT INFORMATION:

C.7 to C.11 applies to each asset. Besides the asset number, Applicants must provide the name of each asset (e.g., new sea wall, bridge seismic reinforcement) (50 words maximum per asset name).

C.7. Type of assets

Under the DMAF, eligible infrastructure investments will support public infrastructure, defined as tangible capital assets, including natural infrastructure, primarily for public use or benefit.

Please indicate the type of asset being constructed or modified, Applicants need to choose one or both of the following options:

- Structural
- Natural

EXAMPLES:

- Structural: This would include projects such as the enhancement of a bridge to increase its structural capacity to withstand earthquakes. A sea wall and a retention basin would also be considered structural assets.
- Natural: A natural wildfire barrier and setback levees would all be considered natural infrastructure assets.

C.8. Asset lifespan

The lifespan of an asset is an estimation of the length of time the asset can reasonably be used to generate a benefit to the community. Useful lifespan of an asset depends upon the asset's age, the frequency of its use, the climate related impacts and the asset's maintenance policy. Additional factors that affect an asset's useful life include anticipated technological improvements, changes in laws/regulations and economic changes.

For existing assets, Applicants should specify any life extension to be achieved through the DMAF investment.

C.9. Is the asset considered critical infrastructure?

Applicants must indicate whether the asset is a critical infrastructure, (e.g., provides essential services to Canadians). If "No", it is not necessary to respond to **C.10**.

C.10. Essential service(s) provided by the asset (IF response to C.9 is “yes”)

Applicants must indicate the essential services provided by the proposed asset by choosing one or more of the following:

- Transportation Systems
- Power Systems
- Water Systems
- Wastewater Systems
- Stormwater Systems
- Safety
- Other

C.11. Asset ownership, use or benefit

Under section **C.11.a**, please indicate the type of asset ownership:

- Public
- Private
- Both

Under section **C.11.b**, certain conditions apply to assets that are privately owned. Applicants must choose one or more of the following uses or benefits:

- Benefits are direct and tangible to the community;
- Investments focus on essential services to Canadians (health, safety, security or economic);
- DMAF investments benefit all potential beneficiaries, and not particular individuals; and/or
- Public benefit surpasses private benefit.

IMPORTANT INFORMATION:

Applicants must ensure the assets are eligible under DMAF.

C.12. Project alignment with strategic mitigation and adaptation planning

Applicants are required to identify whether the project advances, aligns with or does not contradict existing and relevant plans, strategies and frameworks. These can include mitigation and adaptation plans, asset management plans, particular hazard strategic plans, climate change strategy or framework, and land-use plans at the municipal, regional, provincial/territorial, and national/federal levels. Please check related requirements under section K.5.

IMPORTANT INFORMATION:

- “Advance” means the project contributes to the achievement of the objectives of a specific plan, strategy and/or framework (e.g., “The FireSmart initiative advances the objectives of the Canadian Wildfires Strategy as it has been identified as an element of this strategy.”)
- “Align” means the project is consistent with the objectives of a specific plan, strategy and/or framework, even though it may not contribute directly to the achievement of its objectives (e.g., the development of a specific fire prevention standard may align with the Canadian Wildfires Strategy but not be identified as a key element of the strategy).

Under section **C.12**, Applicants can choose one or more of the following types of documents to demonstrate the proposed project’s alignment with existing planning initiatives:

- Legislation/Regulation
- Strategies
- Guidelines
- Frameworks
- Land-Use Plans
- Asset Management Plans
- Others

For each type of document, Applicants must provide details from **C.12a** to **C12.d**.

Under section **C.12.a**, Applicants must indicate the level of support the proposed project will provide to each of the options selected under **C.12**.

- Advances
- Aligns
- Does not contradict

Under section **C.12.b**, Applicants must indicate the order of government to which the documents selected under **C.12.a** belong to:

- Federal
- Provincial/Territorial
- Municipal/Regional

For each relevant document, Applicants must provide:

- Under section **C.12.c**, the title of the document
- Under section **C.12.d**, the web link(s) for each document (if available)
 - ▶ If a link is not available, Applicants must upload the documents

C.13. Public and Indigenous Engagement/Support

This section requires Applicants to provide details on the level of consultation and engagement that has taken place or will take place during the planning and design phases.

Under section **C.13.a.1**, Applicants must confirm whether they have engaged or will engage with relevant stakeholders such as provinces/territories, Indigenous communities, affected jurisdictions (including potential risk transfer impacts outside the province or territory), and the general public during the planning and/or design phase of the proposed project. Applicants should refer to related requirements in [section K.3](#). Under section **C.13.a.2**, Applicants must provide details on stakeholder and engagement activities.

Details of Indigenous engagement must be provided, such as:

- Under section **C.13.b**, a list of Indigenous groups notified. Applicants should refer to related requirements in [section K.4](#).
- Under section **C.13.c.1**, confirmation of the interest of Indigenous groups in the project, and under section **C.13.c.2**, concerns or information gaps expressed by Indigenous groups, including details of particular concerns or information gaps
- Under section **C.13.d.1**, a confirmation that any outstanding concerns, issues or information gaps have been addressed and, if “no”, Applicants must provide an explanation as to why they are outstanding under section **C.13.d.2**.

IMPORTANT INFORMATION:

C.13.f.1 and C.13f.2 must be answered at the Full Application Step II.

Under section **C.13.f.1**, Applicants must provide details on the engagement activities conducted during project planning and design with other relevant stakeholders including the general public, subject matter experts and/or academia, for-profit and not-for-profit organizations.

Under section **C.13.f.2**, Applicants must provide details of particular concerns raised by any of the groups indicated in **C.13.f.1**, as well as the means used to engage these groups including, but not limited to letters of support, consultation, and/or informal discussions.

C.14. Has the applicant considered a revenue model for this project?

A revenue model implies that the proposed project will be able to generate income (e.g., user fees, rentals). This information will be useful to the CIB (see [section 11](#)).



Street flooded under a viaduct in Laval-on-the-Lake Quebec, in May 2017.

D. PROJECT FINANCIALS

D.1. Total eligible cost

- Estimated Total Eligible Cost: provide an estimate of the total (e.g., all federal and non-federal) eligible cost for the project
- Estimated Total Federal Eligible Cost: provide an estimate of the total federal eligible cost for the project)
- Estimated Total non-Federal Eligible Cost: provide an estimate of the total non-federal eligible cost for the project

D.2. Project cost share

Under section **D.2.a**, Applicants must provide information on the federal cost-share funding. Under the DMAF, the federal cost-sharing and stacking limits of total eligible project costs are as follows:

- Up to 50% for provinces;
- Up to 40% for municipalities and not-for profit organizations in provinces;
- Up to 75% for, and in, territories;
- Up to 75% for Indigenous Recipients in provinces and territories (see **Note 1**); and
- Up to 25% for for-profit private sector Recipients.

Note 1:

Indigenous Recipients can access additional funding from any applicable federal source to a maximum federal contribution of 100% from all sources.

Under sections **D.2.b**. and **D.2.c**, Applicants must provide details for other sources of funding.

D.3. Cash Flow

Applicants must provide a breakdown of the cash flow per fiscal year (the federal fiscal year is from April 1 to March 31). The breakdown must be based on when expenditures will be submitted to Canada for reimbursement, not when they will be incurred. For example, if expenditures will be incurred in February 2019, but will not be claimed for reimbursement until April 2020, they would be listed in the 2020-21 fiscal year.

D.4. Class estimates

Under section **D.4.a**, Applicants must choose one of the following four options:

- **Class D:** estimates at the “Conceptual Design” stage. Contingency within 20% to 30%.
- **Class C:** estimates at the “Preliminary Design” stage, and may be referred to as pre-tendering estimates. Contingency within 15% to 20%.
- **Class B:** estimates made at the “Detailed Design” stage, when the project is ready for tendering. Contingency within 10% to 15%.
- **Class A:** estimates made after bids for a project have been received, evaluated, verified, and a contract has been awarded. Contingency within 5% to 10%.

Under section **D.4.b**, Applicants must indicate the percentage of project financial contingency included in the project estimates that are related to the total eligible expenditures.

EOI application attestation:

The EOI Application must be signed by an authorized senior official such as: Chief Financial Officer (CFO), Chief Administrative Officer (CAO), Chief Executive Officer (CEO), Certified Planner, and/or a Certified Engineer.

ANNEX C

DMAF FULL APPLICATION FORM GUIDANCE

Applicants whose projects pass the screening and eligibility assessment criteria (Step I) will be advised by INFC that they may proceed with the Full Application (Step II).

Project details submitted in parts A1 to D4 of the EOI Application will be available for Applicants during assessment of the Full Application; Applicants do not need to repeat the same information.

IMPORTANT INFORMATION:

Applicants must indicate whether information provided under the EOI Application has changed, and provide details of any changes to INFC. Major changes could affect the eligibility of the project.

D.5. Expected ROI ratio

The ROI is measured by the projected climate and disaster related losses avoided. An ROI ratio for the DMAF of 2:1 means that for every dollar spent under DMAF at least two dollars are anticipated to be saved in future natural disaster losses.

Under D.5.a., Applicants must provide their project ROI and the formula used. The methodology outlined below is recommended for comparative purposes across all applications.

The following elements frame the ROI estimation approach:

- estimated quantifiable socio-economic and environmental damages (see Annex D for guidance);
- frequency of the main natural hazard events is based on its expected likelihood (e.g., once in 10 years, once in 20 years, once in 100 years);
- estimated damages on a yearly basis;
- number of years of the remaining lifespan of the funded asset including any life extension from DMAF investments; and
- DMAF project investment (total eligible cost).

Under section D.5.b, Applicants must provide each element of the formula including each amount:

- Estimated cost of damages in a yearly basis = Total estimated cost of damages / Frequency of the main natural hazard events (once in X years)
- Cost of damages during the asset life cycle = estimated damages in a yearly basis * number of years of the remaining life span of the funded assets
- ROI = Cost of damages during the asset life cycle / DMAF project total eligible cost

The example below provides guidance on the ROI methodology developed for DMAF projects, however, Applicants can use other robust methodologies that consider losses/savings over the life cycle of the proposed asset related to the total eligible project cost. In either case, Applicants are required to provide the formula used for the ROI estimation.

EXAMPLE:

If a natural hazard is expected once every 10 years with estimated cost of damages of \$100 million and the total eligible cost is \$50 million:

$$\begin{aligned} & \$100 \text{ million estimated cost of damages} / 10 \text{ years} \\ & = \$10 \text{ million yearly} * 40 \text{ years (remaining asset life span including an extension from the DMAF investments)} \\ & = \$400 \text{ million cost of potential damages over the life span of the asset} / \$50 \text{M project investment} \\ & = 8:1 \text{ (ROI)} \end{aligned}$$

E. PROJECT PLANNING

E.1. Project rationale

Applicants must provide a rationale for the selection of the proposed project to mitigate or to adapt to the identified natural hazards risk(s). This could include outlining options considered such as “do nothing/ status-quo”, ROI, innovation, structural versus natural infrastructure, performance capacity, low carbon, implementation timing, scalability, capital cost, operations and maintenance cost, and feasibility.

Applicants must also provide details on how the proposed project would respond to the estimated risk impacts and why it is the best means of addressing that risk. (Please refer to section J).

E.2. Innovation (if applicable)

Applicants to the DMAF are encouraged to adopt innovative solutions such as natural infrastructure that could result in better ways to manage the increasing risks of natural hazards including those related to climate change.

Natural infrastructure could be innovative by design, operations and/or management process (e.g., strategically designed and managed wetlands could absorb pollutants before they flow into waterways, and protect downstream water supplies by directing more clean water to cities, thus controlling water flows and preventing sediment buildup that would otherwise choke streams and rivers).

Conventional grey infrastructure could offer innovative solutions to mitigate the impact of natural disasters such as pervious surfaces which make transportation more resilient by decreasing ponding and runoff during rainstorms.

E.2.a. Applicants must choose one of more of the following options:

- Design
- Functionality
- Process
- Other
- None

E.2.b. Applicants must provide details on how the innovative solution enables the project to meet its objectives.

E.3. Is the proposed asset included in an Asset Management Plan?

Applicants must confirm whether the proposed asset(s) is or will be included in an asset management plan.

E.4. Land acquisition

Under section **E.4.a.**, Applicants must confirm if land acquisition is necessary and under section **E.4.b.**, Applicants must provide the date when it is expected to be secured.

Land acquisition costs are eligible under the DMAF only for natural infrastructure.

IMPORTANT INFORMATION:

In order to ensure that land acquisition is related to natural infrastructure only, proponents will be required to meet the information requirements indicated in section 5.

Under section **E.4.c.1**, indicate the project land ownership including federal, provincial/territorial, municipal, private and other. In case of multiple ownership, check all that apply. Under section **E.4.c.2**, in case of federal ownership, indicate the federal owner/administrator by choosing from the seven options:

- Indian Reserve Lands – Northern Affairs Canada’s (INAC)
- Indian Reserve Lands – First Nation
- National Park or Protected Area – Parks Canada
- Federal Agricultural lands – Prairie Farm Rehabilitation Administration
- Federal Airport lands – Airport Authority
- Federal Port lands – Port Authority
- Other (please specify)

Under section **E.4.c.3**, in case of “Other”, Applicants must provide name of the organization, (e.g., the National Capital Commission or the Department of National Defence).

Under section **E.4.d**, Applicants must confirm if land acquisition is the sole project component.

E.5. Project benefits

Applicants must indicate if the proposed project offers additional benefits, Applicants must choose one or more of the following options: co-benefits, multi-hazard solution, GHG reduction, environmental and cultural value. For each option selected, Applicants must detail the expected additional benefit(s).

F. PROJECT MANAGEMENT

F.1. Project risk transfer management

Applicants must identify risks in the immediate area of the project, and must ensure that the proposed project does not transfer the risk to a neighbouring area or community (e.g., downstream effects of a flood protection project). Applicants must also provide a description of any risk transfer management strategies, guidelines or measures that will be adopted during the design and implementation of the proposed project.

F.2. Sole source contract

Under section **F.2.a**, Applicants must indicate if sole source procurement will be used.

If yes under section **F.2.b**, indicate who will be conducting the work, the amount of the contract, and the nature of the work under each sole source contract, for example:

Name of the Company/Consultant/\$40,000,000/
Project Supervision

Under section **F.2.c**, Applicants must explain why sole source contracting will be used (e.g., specific and unique expertise and/or particular technology to address an important issue).

F.3. Project risks and related mitigation measures

DMAF projects can be complex. They may involve the use of innovative technologies; require proponents to coordinate activities with multiple Recipients; assess and address different type of hazards; and manage varying availability of consultants and supplies, among other challenges.

Applicants must detail the expected risks to the project as well as identify measures to mitigate their impacts.

G. LEGAL, REGULATORY AND OTHER REQUIREMENTS

G.1. Legal, Regulatory and other Requirements that apply to the Project

Applicants must identify any legal, regulatory and/or other requirements that apply to the project, and demonstrate how the project will adhere to all applicable federal and provincial legislation. Additionally, Applicants should identify any particular standards that will be applied to address a specific hazard(s).

G.2. Environmental Assessment requirements under a Modern Treaty /Northern Regime

Under section **G.2.a**, Applicants must confirm if the project is subject to the environmental assessment requirements under a Modern Treaty and/or Northern Regime.

Under section **G.2.b**, Applicants must confirm if the project is designated according to the Canadian Environmental Assessment Act, 2012 related to physical activities at either of two levels:

- 1) The project involves the construction, operation, decommissioning or abandonment of the following infrastructure:
 - a) Electrical transmission lines
 - b) Electrical generating facility
 - c) Structure for the diversion of water including dam, dyke or reservoir
 - d) Canal, lock or structure to control water level
- 2) If any part of the project or activities are proposed within a wildlife area or migratory bird sanctuary.

If the project is designated under section **G.2.b**, Applicants must indicate in section **G.2.c** whether a project description has been provided to the Canadian Environmental Assessment Agency (CEAA) according to Section 8(1) of the Act.

G.3. Environmental impacts

Under section **G.3.a**, Applicants must indicate whether the project requires vegetation clearing. If yes, under section **G.3.b**, indicate the type of area(s) where vegetation will be cleared by selecting one or more of the following:

- Along a roadside
- Forested area
- Wetland
- Developed area
- Undeveloped area

Details are to be provided under section **G.3.b.2**.

Under section **G.3.c**, indicate if the project involves water by selecting one or more of the options provided:

- In water
- In a wetland
- Over/under water
- That could cause impacts to water
- Within 30 meters of a water body
- N/A

G.4. Other environmental impacts

Additionally, under section **G.4.a**, Applicants must indicate if the project is expected to have other environmental impacts. If yes, Applicants must provide details under section **G.4.b**, (e.g., excess noise or dust, or impacts on land access, archaeological, cultural, or ceremonial sites).

G.5. Contaminated sites

Under **G.5.a**, Applicants must indicate if the project is located partly or entirely on land that may be contaminated by previous activities. If yes, under **G.5.b**, Applicants must provide the type of environmental assessment(s) that has been undertaken. Please check related requirements under section K.1.

G.6. Other government requirements and involvement

Under **G.6.a**, Applicants must state whether the project requires a provincial environmental assessment.

Under **G.6.b**, Applicants must confirm whether another order of government has a legal duty to consult Indigenous groups in relation to the project.

G.7. Permits required for this project

Under **G.7.a**, provide the list of all provincial or territorial environmental permits that may be required for the project.

Under **G.7.b**, provide the name of other federal departments/agencies that require or may require the proponent to obtain an environmental permit, authorization or license for the project.

Under **G.7.c**, indicate the status of the construction permit required for the project. This information will enable INFC to understand the project readiness status.

G.8. Description of the high standards and/or best practices to address the main natural hazard

Applicants must identify any particular high standards (such as the Canadian Standards Association (CSA) and International Organization for Standardisation (ISO)), or best practices that will be applied to address a particular hazard(s).

G.9. Net increase or net reduction in GHG emissions after the project completion

A Climate Lens - GHG Mitigation Assessment following the ISO 14064-2 specifications will provide meaningful insight into the degree to which the project is able to reduce GHG emissions and encourage improved investment options that are consistent with shared federal, provincial, and territorial objectives articulated in the PCF. This includes the broader commitment to reduce Canada's GHG emissions by 30 percent below 2005 levels by 2030.

Based on the GHG assessment, Applicants must choose one of the GHG net reduction or increase ranges provided in the Application Form.

- Increasing greater than 20%
- Increasing between 10% and 20%
- Increasing between 0% and 10%
- Reducing between 0% and 10%
- Reducing between 10% and 20%
- Reducing greater than 20%
- Not available at this time

G.10. Accessibility standards

Under **G.10.a**, Applicants must indicate if the standards belong to the federal/national, provincial-territorial, municipal government, other, none and, under **G.10.b**, the title of the applicable standards (e.g., CAN/CSA-B651-04).

G.11. Energy efficiency requirements

Under **G.11.a**, Applicants must choose one or more of the following seven options to indicate the energy efficiency standard they propose to meet with their project (e.g., asset design and operations):

- PCF standards
- Energy efficiency regulations
- Energy Code
- National Building Code
- Provincial/Territorial codes
- Other (such as LEED)
- None

If “Other” is selected, Applicants must give details in **G.11.b**.

G.12. Public sensitivities

G.12.a requires Applicants to indicate whether there are any concerns related to public or media perception of the project, or any investment priority changes to consider.

If yes, details are to be provided in section **G.12.b**.



Bridge across the Elbow River in Calgary, Alberta in 2013.

H. MAIN NATURAL HAZARD

The Hazard Risk Assessment (details in Annex E)

Applicants are required to confirm the data source and type for hazard risk indicators as per section H.1.

For the main hazard in an affected area,

Applicants must provide **two risk assessments**:

1. **Current Risk Assessment** (e.g., the identified hazard impacts on the identified area, before the DMAF project is completed); and
2. **Future Risk Assessment** (e.g., the identified hazard impacts on the identified area, **after** the DMAF project is completed to demonstrate the expected improvement in resilience after project completion).

Applicants must demonstrate how the proposed project will reduce the identified natural hazard risks on the identified area. Consideration of climate change impacts and the asset vulnerabilities must also be included in each of the two risk assessments.

H.1. Data type and sources?

Under section **H.1.b**, Applicants must provide the data sources for the following indicators:

IMPORTANT INFORMATION:

These data relate to the indicators used under sections I, and J.

- Main hazard likelihood as indicated in section I
- Loss of lives and missing people as indicated in section J.1
- Directly affected people as indicated in section J.2
- Local GDP losses as indicated in section J.3
- Population without essential services as indicated in section J.4

Data sources must be provided following this template:

Author-Creator/Title/Publication Date/Identifier or Web link

Author/Creator - This could either be the personal name of the researcher, or the institution that collected the data.

Title - Include the full title as it appears in the record for the dataset.

Publication date - Most datasets include a publication date.

Identifier and/or Web Link - Most published datasets should have some sort of a unique identifier and a URL address.

EXAMPLES:

Statistics Canada/CANSIM-381-0036/Q42017/web link

Chiotti, Q. and Lavender, B/Impacts to Adaptation: Canada in a Changing Climate /2007/web link

Under **H.1.a**, Applicants must choose the primary data source type including historical (past events), and projected (future events in consideration to climate change impacts within the asset lifespan).

Additionally under **H.1.b**, Applicants must choose if the primary data is qualitative (e.g., Indigenous Traditional Knowledge, interviews, focus groups) and/or quantitative data (surveys, modelling, studies, specific indicators) using the best available science.

H.2. Main natural hazard

Applicants must indicate the main natural hazard the project(s) is/are addressing such as flood, hurricane, tsunami, earthquake, wildland/urban interface fires, sea level rise, drought, erosion, or permafrost thaw. Additional hazards the project is addressing should be indicated as project benefits in section E.5.

IMPORTANT INFORMATION:

Human-caused or malicious hazards are not eligible under DMAF.

H.3. Hazard details

Applicants must provide a detailed description of the hazard, including:

- **Context:** describe the threats of concern and how they may affect the community.
- **Type of natural hazard:** *climatological* (e.g., extreme temperatures, drought and wildfires); *geophysical* (e.g., earthquakes, landslides, tsunamis); *hydrological* (e.g., avalanches and floods); *meteorological* such as (hurricanes and storms/wave surges).
- **Magnitude rate** (e.g., the Richter Scale) or **intensity scale** (e.g., Saffir-Simpson wind scale for hurricanes).
- **Speed of onset:** slow-onset hazards (e.g., drought, sea level rise, and coastal erosion) and rapid-onset hazards (e.g., floods, wildland fires, and earthquakes).
- **Duration:** seasons or years, days or weeks, minutes or hours.

H.4. Total area exposed

Applicants must provide an estimate of the area in square metres, square kilometres or hectares that would be impacted by the hazard.

H.5. Asset's vulnerabilities to the main natural hazard (for existing assets only)

H.5.a requires Applicants to identify key vulnerabilities to existing asset(s).

Applicants must select all the options that apply (where the information is available) including location, structure (including cumulative impacts of natural hazards), materials, age, dependencies (physical, cyber, geographic and logical), interdependencies (between assets that could produce a cascading effect), performance, compliance, accessibility, monitoring, other.

Under **H.5.b**, Applicants must provide details on how the consequences of these vulnerabilities are factored into the expected impacts (section J).

H.6. Current risk management capacity (for existing assets only)

Applicants must choose one or more options concerning the asset risk management capacity, including strategies (e.g., Access/stability of the asset site, built-in redundancies and lifelines back-up, warning systems) and controls that enable them to identify, evaluate, and control the expected risks. This will ensure effective and efficient asset operations that could minimize potential infrastructure failures and related interruptions in essential services.

H.7. Name of community(ies) at risk

Identify the community or communities at risk, using the legal name of each community.

H.8. Total population at risk

Applicants must provide the total population at risk (e.g., 500,000 people).

H.9. Affected Area – geographical boundaries

Provide the geo-coordinates of the area at risk, expressed in the degrees, minutes, seconds format (e.g., Latitude boundaries: 42°10'00" N to 83°01'11"N and Longitude boundaries: 53°10'01" W to 141°01'10"W).

H.10. Measures adopted to improve the asset resilience

Provide a description of the structural and/or management measures adopted to improve the resilience of the asset towards the main natural hazard.

I. LIKELIHOOD

I.1. Likelihood of occurrence

Applicants must indicate the likelihood (taking into account current and future climate change impacts) of the specified natural hazard by selecting one of the following:

- Once in 10 years or less
- Once in 10-30 years
- Once in 30-100 years
- Once in 100-200 years
- Once in 200 years or more

IMPORTANT INFORMATION:

For slow onset hazards not triggered by a specific event (e.g., sea level rise, erosion), Applicants must choose the timeframe for the likelihood based on the impacts they propose to address.

Flooded area around the Stampede Grounds in Calgary, Alberta.



J. IMPACTS (BEFORE AND AFTER THE PROJECT)

The expected impacts should include consideration of magnitude or intensity of the main natural hazard of concern, the exposure and vulnerability of the population and the asset, as well as the capacity of the community to cope with the expected impacts. The impacts should be calculated before and after project completion.

Applicants are expected to incorporate disaster risk reduction and adaptation measures into the proposed project to better position communities to reduce and manage disaster impacts more broadly.

J.1. Loss of life/missing people

Choose one of four options:

- Greater than 30 lives lost or people missing
- Greater than or equal to 10 and lower than or equal to 30
- Less than 10
- Unknown

J.2. Percentage of people directly affected

This refers to the percentage of people who may be affected (e.g., displaced, ill, injured as a result of the specified hazard risk, expressed as a percentage of the population in the affected area). For most disasters triggered by natural hazards, the number of people affected is significantly higher than the number of lives lost or missing people. Applicants must choose one of the following four options:

- Greater than 15%
- Greater than or equal to 5% and lower than or equal to 15%
- Less than 5%
- Unknown

J.3. Percentage of local Gross Domestic Product (GDP) loss

The DMAF measures direct economic loss attributed to disasters in relation to the local GDP. The GDP measures economic activity that generates income through wages, profits, or the use of capital. It does not measure direct losses to wealth or assets, such as homes or vehicles, nor does it measure the impacts to critical infrastructure or private capital, but is nonetheless an important way to gauge local economic impact.

Applicants are required to estimate the expected local GDP loss based on total cost of the estimated damages (total estimated damages/local GDP 2018). The GDP is available through Statistics Canada's quarterly GDP figures at the census metropolitan area (CMA) level as well as 9 non-CMA regions within the country. For municipalities not included from these two Statistics Canada data sets, Applicants could use alternative indicators to measure the economic impact such as provincial GDP or loss of property value (%) through changes in municipal asset inventory (total estimated damages/municipal asset inventory 2018).

Applicants must choose one of the following four options:

- Greater than 5%
- Greater than or equal to 2% and lower than or equal to 5%
- Lower than 2%
- Unknown

J.4. Percentage of population without essential services

One of the DMAF objectives is to protect communities from critical infrastructure failures and related interruptions in essential services. Applicants are required to estimate the impact on critical infrastructure that provide essential services to their communities, taking into consideration elements indicated in section H.5 and section H.6. Applicants must indicate the percentage of the population in the affected area that could be without essential services by choosing one of the following four options:

- Greater than 20%
- Greater than or equal to 2% and lower than or equal to 20%
- Less than 2%
- Unknown

K. REQUIRED DOCUMENTS

K.1. Environmental assessment reports

In the case of contaminated sites, Applicants must provide a copy of the assessment reports in .pdf format including (if applicable):

- Phase I
- Phase II
- Phase III
- Other

K.2. Project location map

Applicants must provide a map of the project location in .KML format. (Instructions on the use of .KML files are provided in Annex I.)

K.3. Indigenous concern tracking table (consultation records)

Applicants must provide records of consultations with Indigenous groups. If a legal duty to consult with and accommodate, where appropriate, Indigenous groups arises, Applicants must follow the template included in Annex G. The file must be submitted to INFC in Word format.

K.4. Indigenous communications log (consultation record)

If applicable, Applicants must provide an Indigenous Communications Log, any letters of support and a sample of a notification letter to Indigenous groups (see Annex H).

K.5. Mitigation and adaptation plans, strategies and frameworks

If available, Applicants must submit adaptation and mitigation related plans, strategies and frameworks, legislation, regulations, policies at the Municipal, Provincial/ Territorial, Regional and/or National levels in pdf format.

K.6. Land acquisition attestation

For DMAF projects that include land acquisition, DMAF applicants must provide an attestation sign by a senior official including the options indicated below (Full Application Attestation) (see Annex J).

K.7. GHG Assessment

The DMAF project should include a GHG assessment that follows ISO 14064-2 and it must be validated by a qualified engineer or a GHG Accountant certified under ISO 14064-3 or ISO 14065.

FULL APPLICATION ATTESTATION:

The Full Application needs to be signed by an authorized senior official such as: Chief Financial Officer (CFO), Chief Administrative Officer (CAO), Chief Executive Officer (CEO), Certified Planner, and/or a Certified Engineer.



Flooded fire hall in New Brunswick after an ice jam on the surrounding river.

ANNEX D

ESTIMATED SOCIO-ECONOMIC, ENVIRONMENTAL AND HERITAGE/CULTURAL DAMAGES

What are the damages/losses that your infrastructure project could prevent?

Damages and losses caused by natural disaster can include direct, indirect, tangible and intangible costs. An estimation of the amount of damage/loss to be addressed by the proposed infrastructure solution during its useful life cycle is essential to calculating the ROI.

Applicants must consider the kinds and extent of damages that apply to their projects in current dollars as of the year of the application:

Economic

- Public Infrastructure and utilities damages (e.g., bridges, roads, highways, ports, airports, water and wastewater systems)
- Essential service interruption (e.g., power, transportation, water supply, communications)
- Commercial and institutional building and structure damages
- Housing damages
- Business losses
- Local GDP losses
- Agriculture damages and losses (e.g., livestock, crops and pastures/land)
- Emergency response cost

Social

- Deaths and injury cost
- Displacement cost
- Employment, retention, hiring losses
- Health cost (e.g., chronic diseases, mental health, drugs and alcohol)
- Community well-being losses
- Productive capacity losses
- Homelessness cost
- Violence and crime cost
- Water, soil and air pollution cost

Environmental

Natural disasters could produce mixed outcomes for the environment: benefits to some parts of the natural system and losses to others; both should be considered in estimating the net impact.

- Bio-diversity losses
- Natural ecosystems and related impact to wildlife (e.g., damages to plants, forests, wetlands, ground water, soils)

Heritage and Cultural

These can be difficult to calculate. Applicants may wish to consult national, provincial and/or municipal inventories to obtain estimates of the dollar value assigned to these types of assets.

- Archeological and historical site losses
- Cultural and historical asset losses

ANNEX E

HAZARD RISK ASSESSMENT

The DMAF aims to encourage communities to advance their risk management objectives and increase their resilience.

The full process of risk management includes:

- assessing and understanding natural hazard and related risk;
- stakeholder and community engagement;
- evaluating options;
- implementing mitigation/adaptation measures;
- monitoring the strategy (including re-evaluation of risk and planning for any unmitigated risks).

Risk exists when *PEOPLE OR ASSETS* are exposed to a hazard and are vulnerable to that hazard



1. **Assessing and Understanding Hazard(s) taking into consideration the current and future climate change impacts and related risks**

Natural hazards exist due to geographical and meteorological processes. Moreover, climate change makes natural hazards even more unpredictable in the long-term.

A risk assessment provides communities with essential information about which MITIGATION/ADAPTATION INVESTMENTS will produce the greatest economic and societal benefits. It allows a community to combine the knowledge of the natural hazard likelihood (in consideration of climate change impacts within the lifespan of the asset) with the vulnerability of the people and assets (structures and systems) exposed to the natural hazard(s) and assess the potential impacts.

The natural hazard likelihood is determined by modelling the extent, intensity, and likelihood of occurrence (hazard scenarios).

Under the DMAF, impacts are determined by socio-economic indicators (details in section J).

2. **Stakeholder and Community Engagement**

Effective investment decisions involve assessing the community's understanding of and tolerance for living with the potential risks, enabling the community itself to participate in deciding whether and what action should be taken. The DMAF encourages Applicants to engage with key stakeholders to promote these discussions early in the planning and design stages.

3. **Evaluating Options**

In order to increase effective action, communities in Canada must manage both existing and anticipated risks. Existing risks may be managed by protection (e.g., structural), accommodation (e.g., retrofitting and warning systems) or managed retreat (e.g., property acquisition). New risks may be best avoided by not exposing people or assets to the natural hazard (e.g., through land-use planning).

4. **Implementing Measures**

Risk reduction measures are put in place. These include any project investments under DMAF.

5. **Monitoring the Strategy**

Risk reduction measures should be monitored over the life of the asset to ensure risk levels continue to be mitigated as designed. Due to the unpredictable nature of climate change, it is advisable to re-assess risks periodically to identify any new variables such as changes to population or climate. It is difficult to completely eliminate risk.

The DMAF encourages proactive risk management planning to improve Canadian communities' resilience in order to limit the impacts of recurring disasters.

IMPORTANT INFORMATION:

Involving the community throughout the entire risk management process—from natural hazard identification through monitoring and assessment of results—promotes trust and ensures informed decision-making. Informed stakeholders help to create an environment of shared responsibility for improving community resilience.

ANNEX F

PROJECT BUNDLING REQUIREMENTS

The DMAF was created to provide funding for large-scale infrastructure projects that provide mitigation and/or adaptation benefits to at-risk communities. As such, the minimum threshold for any DMAF project is \$20 million in total eligible costs.

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 cost).

DMAF Project applications that undertake the bundling approach 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.

The framework for DMAF project bundling is dependent on the following factors:

1. All recipients must be eligible under DMAF
2. DMAF's cost sharing and stacking limits apply for every type of recipient and related asset ownership
3. Identification of the common main natural hazard and risk assessment for all involved projects and locations.

A bundled project requires a lead eligible Recipient to:

- a. coordinate the application, development and implementation of bundled projects;
- b. prepare and submit claims to INFC on behalf of the other eligible Recipients;
- c. process payments for other eligible Recipients according to the respective cost sharing and staking limits;
- d. represent all projects at the Oversight Committee;
- e. coordinate inputs to the progress and outcomes reporting; and
- f. respond to any INFC information requests.

Forest fires in the mountains of British Columbia.

ANNEX G

INDIGENOUS CONCERN TRACKING TABLE

Indigenous Group	Indicate the name of the group
#	1
Comment/ Concern/ Question Received	List all comments/ concerns/ questions from Indigenous groups. NOTE: include detail of any further communication with the Indigenous group regarding content included in this entry, and the date(s) of the communication from the Indigenous group.
Accommodation Suggested by Indigenous Group	
Response	Text here should describe how the concern is addressed by the response, or explain why the concern does not need to be addressed.
Accommodation (if applicable) proposed by proponent	Please include the text of the mitigation measure or accommodation measure that was implemented to address the identified issue/concern.
Issue Status ¹	Examples: <ul style="list-style-type: none"> • Issue resolved and no further action required • Issue unresolved or irresolvable • Issue ongoing and when/how it will be dealt with (e.g., regulatory decision, through environmental management plan, etc.)

1. For issue status, consider creating a legend with symbols for each possible status, e.g. ✓ for issue resolved, X for irresolvable, O for ongoing.

ANNEX H

INDIGENOUS COMMUNICATIONS LOG

Date	From	To	Indigenous Group Contact Details	Medium (e.g., email, letter, phone call) ²	Communication Description	Nature of Concern(s)	Follow-up required? (yes/no)
dd/mm/yyyy	Proponent Name	Indigenous group Name	Contact Person Name Title (Chief) Mailing Address Phone Number Email	Letter	E.g. Requested a map showing the official limits of Indigenous reserves in proximity to location X	Fishing rights	Yes
dd/mm/yyyy	Proponent Name	Indigenous group Name	Contact Person Name Title (Chief) Mailing Address Phone Number Email	Phone call	E.g. Follow-up phone call to Indigenous group requesting a map showing the official limits of Indigenous reserves in proximity to location X be sent to the proponent.	Fishing rights	Yes
dd/mm/yyyy	Indigenous Group Name	Proponent Name	Contact Person Name Title (Chief) Mailing Address Phone Number Email	Email	E.g. Map was sent to proponent on xx/xx/xxxx date.	Fishing rights	No

2. The proponent should ensure that any letters of support are sent to INFC for our files, including a sample of outgoing letters to Indigenous groups from the Applicants. INFC could require all correspondence with Indigenous communities/groups. To ensure transparency, Applicants should clearly communicate to Indigenous groups that information gathered during community engagement will form a component of the project submission to government; therefore, the engagement is not 'off the record', also termed without prejudice.

ANNEX I

HOW TO CREATE A .KML FILE

Applicants must provide their project location in one single format as a .KML file as described in [section K.2](#). This simple file type is designed specifically for the visualization of geographic data, and it is compatible with the work we need to perform and provides an accurate and detailed representation of the project location.

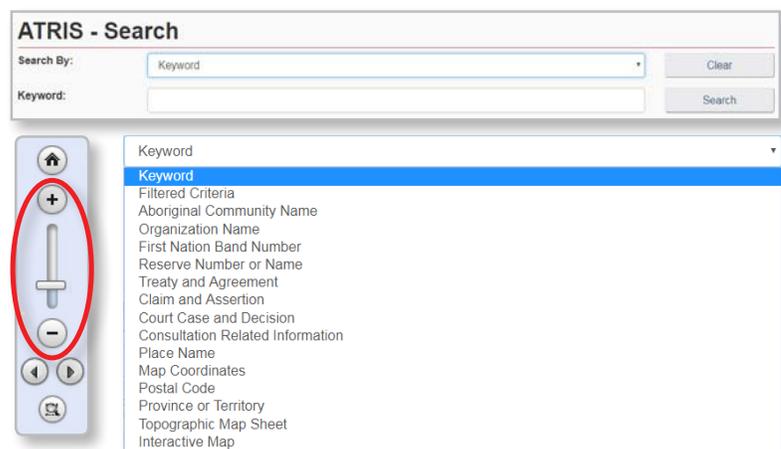
Using a .KML allows a variety of point, polygon, and line data to be represented spatially with detail and consistency. A .KML file can be created easily by anyone using INAC publicly available Indigenous & Treaty Rights Information System (ATRIS) web-based application or Google Earth.

Using ATRIS:

1. **Navigate to INAC's** publicly available ATRIS web-based application using this link:

http://sidait-atris.aadnc-aandc.gc.ca/atris_online/Content/Search.aspx

2. **Navigate to the project location in the map viewer**, either by clicking, dragging, and scrolling to zoom, or using the various search options available in the “Search By:” drop down menu.

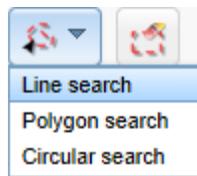


3. **Draw the project on the map** in the exact location using the “Draw on map” tools located in the top right of the ATRIS interface. Applicants may draw as many components of varying types (point*, line, polygon) as necessary to be saved as one single .KML file.

*ATRIS users will not be able to create a “point” geometry type in GIS terms, but the “Circular Search” option allows users to create circular polygons able to mimic points in terms of scale.



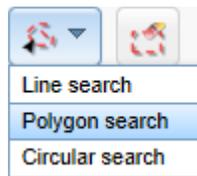
Drawing tools



Linear project components

Click as many times as necessary to create a line that represents the project feature. Double click to complete.

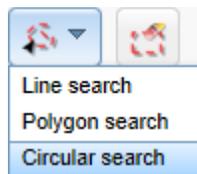
Examples include: roads, sewer lines, railways, pipelines, trails, transmission lines, etc.



Polygon project components

Click as many times as necessary to create a closed polygon that represents the project feature. Double click to complete.

Examples include: building footprints, vegetation cuts, sewer/wastewater lagoons, etc.



Point or circular project components

Click on the map to automatically create a circle. To create a smaller circle similar to a point, zoom in as close as possible on the map before clicking. Alternatively, click and drag, then release to draw a circular project feature yourself.

Examples include: wells, outfalls, culverts, etc.

Erase		<p>Erase by Extent: Click and drag to create a shape around what needs to be deleted. Anything intersecting the box will be deleted when the mouse is released.</p>
		<p>Global Erase: This will erase everything on the map. Click OK when prompted to clear the map viewer and start fresh.</p>
Export the file	<p>Export</p> 	<p>The .KML file will download as 'SearchAreas.kml' (unless you have specified otherwise) to the location your browser is configured to save downloads to.</p> <p>The file name can be changed to something that reflects the project name before sending it to INFC. Once saved, the .KML file is now ready to be uploaded or sent via email.</p>
Questions?	<p>Should you need any further assistance with ATRIS, please visit the following link to find more information about ATRIS training webinars:</p> <p>https://www.aadnc-aandc.gc.ca/eng/1100100014686/1100100014687#sec1_1</p>	

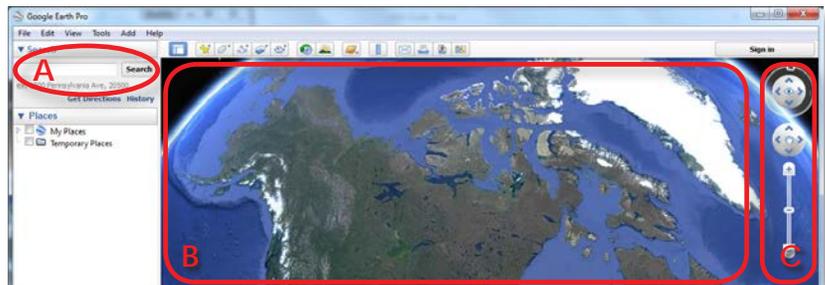


Forest fires of July 2017 in the eastern side of Glacier National Park in British Columbia.

Using Google Earth:

1. **Installation**
2. **Navigate to the project location** using one or more of the following options:

<https://www.google.com/earth/desktop/>



- A. Typing an address or coordinates in the search bar
- B. Clicking, dragging, and scrolling in the map viewer
- C. Using the navigation tools

3. **Draw the project on the map** in the exact location using the placemark, polygon, and path tools (pictured below). Applicants may draw as many components of varying types (point, line, polygon) as necessary.



Aftermath on New Brunswick roads after floods.

Drawing Tools

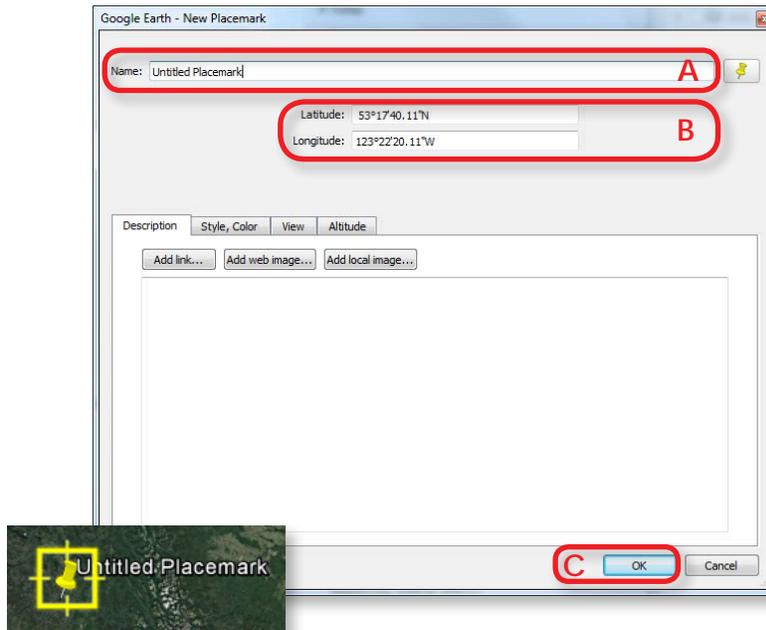


Placemark: point project components.

Clicking this button will add a placemark to the map and bring up a corresponding dialogue box (see below).

Examples include: wells, outfalls, culverts, etc.

- A. Applicants can move the placemark by clicking and dragging it to the desired location, or entering the desired latitude and longitude coordinates in the dialogue box (a).
- B. Applicants can rename the placemark by changing the entry in the 'Name' field of the dialogue box (b).
- C. Click "OK" when finished (c).

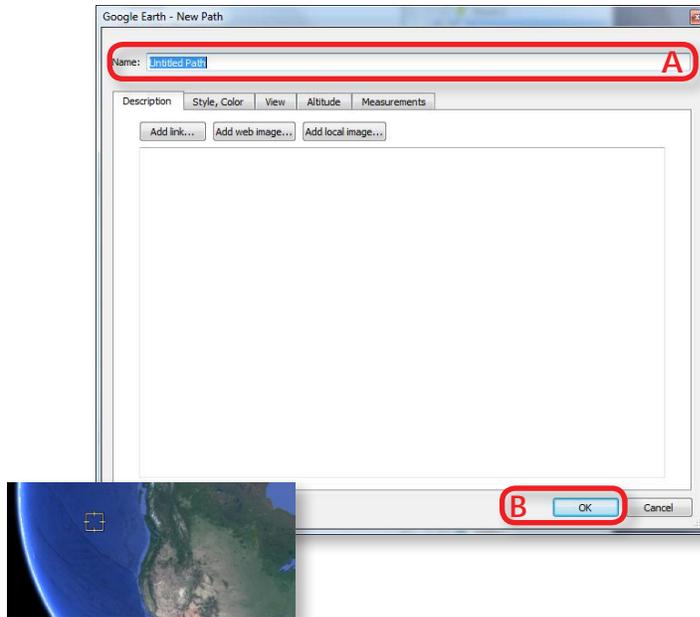




Polygon: project components that consist of an area of any shape.

Clicking this button will bring up a dialogue box and a crosshair cursor (see below). Click as many times as necessary to create a closed polygon that represents the project feature.

- A. Applicants can rename the polygon by changing the entry in the 'Name' field of the dialogue box (a).
- B. Click 'OK' when finished (b).





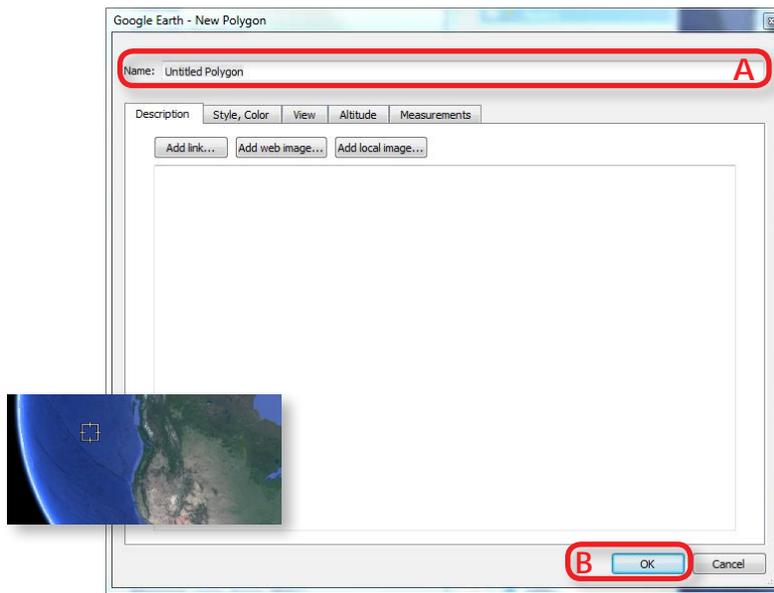
Path: linear project components.

Clicking this button will bring up a dialogue box and a crosshair cursor (see below). Click as many times as necessary to create a line that represents the project feature.

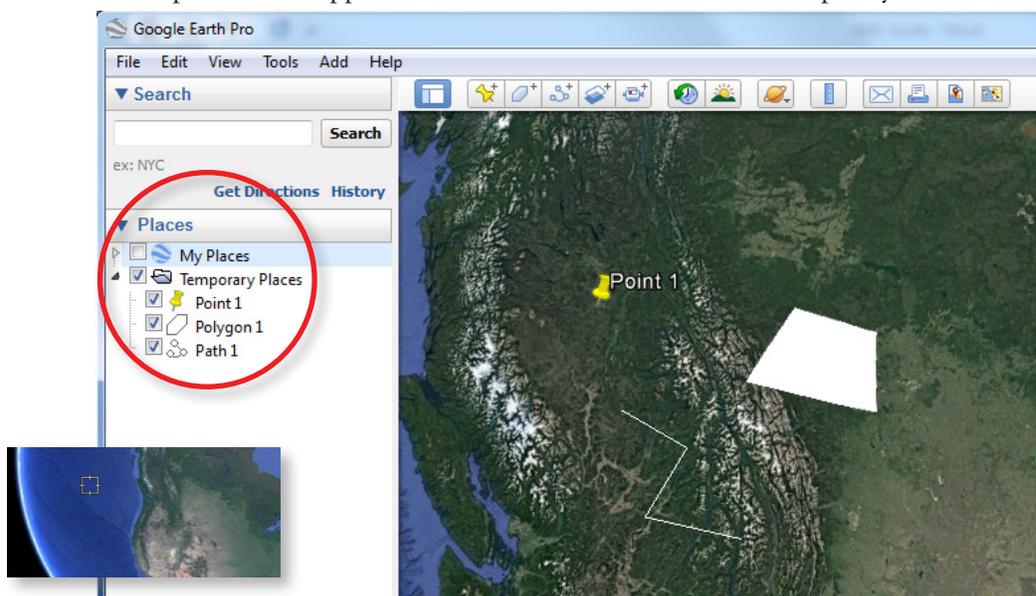
Examples include: roads, sewer lines, railways, pipelines, trails, transmission lines, etc.

A. Applicants can rename the polygon by changing the entry in the 'Name' field of the dialogue box (a).

B. Click 'OK' when finished (b).



All drawn components will appear in the 'Places' sidebar under the 'Temporary Places' folder.

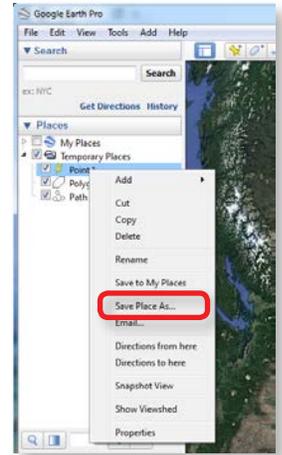


Export to .kml format

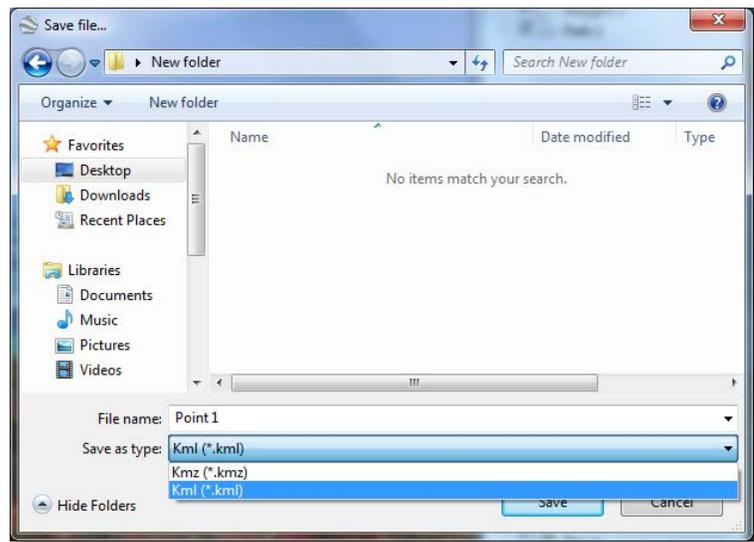
IMPORTANT INFORMATION:

If there are multiple shapes, it is necessary to export them individually as separate .KML files.

- Right click on the component in the 'Places' sidebar and click 'Save Place As...'
- Change the file type from .KMZ to .KML using the 'Save as type:' drop down menu. Choose the location where to save the file in the file browser. Applicants will need to locate it later on to send it to INFC.



Click 'Save' when finished. Applicants are now ready to upload or email the file to INFC.



Repeat Step 4 for as many project components as created if there is more than one.

ANNEX J

LAND ACQUISITION - LETTER OF ATTESTATION

<Date>

Infrastructure Canada
Program Operations
180 Kent St. Suite 1100
Ottawa, ON K1P 0B6

To Whom It May Concern,

I hereby attest that land acquisition is required as an integral aspect of the <title of the project> DMAF project.

The lot (s) is/are located in x province, x municipality or other level of government, parcel number <and section, if any>, property identifier <if any, lot, part lot or other unit, size in metres or hectares and lot boundaries>.

Land represents x percent of the total eligible cost of this project. Land acquisition is required for/to <add details and justification>.

I also attest that the land will be used exclusively as natural infrastructure and it will remain protected in perpetuity by a provincial or territorial or municipal or Indigenous government <as indicated in X document> approved and signed by <X order of government authority>.

A professional appraisal was conducted on this <date> by <x firm>, according to this report, the price of the land described is below or at the fair market value.

I declare that the above statement is true and accurate to the best of my knowledge.

Signature

Name:

Title:

ANNEX K

GHG ASSESSMENT REQUIREMENTS

THE CLIMATE LENS

The Climate Lens is a horizontal requirement applicable to Infrastructure Canada's Investing in Canada Infrastructure Program (ICIP), Disaster Mitigation and Adaptation Fund (DMAF) and Smart Cities Challenge. It has two components:

- the GHG mitigation assessment, which will measure the anticipated GHG emissions impact of an infrastructure project, and
- the climate change resilience assessment, which will employ a risk management approach to anticipate, prevent, withstand, respond to, and recover from a climate change related disruption or impact.

Under the Disaster Mitigation and Adaptation Fund, the Climate Lens is being applied after a project successfully completes the Expression of Interest stage, and the resilience assessment component is incorporated into the application process for all projects.

GHG MITIGATION ASSESSMENTS UNDER THE CLIMATE LENS

The objective of the GHG mitigation assessment is to encourage improved choices by project planners consistent with shared federal, provincial, and territorial objectives articulated in the Pan-Canadian Framework for Clean Growth and Climate Change—including a commitment to reduce Canada's GHG emissions by 30% below 2005 levels by 2030.

To respond to the requirements of the Climate Lens, all applicants to the DMAF are required to submit a project-level GHG mitigation assessment. This assessment will demonstrate the project's impact on emissions relative to a business-as-usual / baseline scenario over the asset's full useful life.

For approved projects, assessment costs are retroactively eligible for federal cost-sharing.

IMPORTANT NOTE FOR DMAF APPLICANTS:

- New, modified or reinforced assets could integrate solutions to reduce GHG emissions. DMAF awards merit to project that reduce GHG emissions.
- Climate change must be factored in the GHG estimates
- Natural infrastructure could reduce GHG emissions by absorbing and storing carbon dioxide in tree biomass, understory vegetation, and soils, it could also mitigate the impacts of extreme heat.

Ministry of Infrastructure

Infrastructure Policy Division

777 Bay Street, 4th Floor, Suite 425
Toronto, Ontario M5G 2E5

Ministère de l'Infrastructure

Division des politiques infrastructurelles

777, rue Bay, 4 étage, Suite 425
Toronto (Ontario) M5G 2E5



JUL 05 2019

Dear Municipal Official:

The Ministry of Infrastructure, the Ministry of Municipal Affairs and Housing, and the Ministry of Natural Resources and Forestry would like to offer support as your community works to address the impacts of the major flooding in your region.

As you may know, the federal government will accept applications under the Disaster Mitigation and Adaptation Fund (DMAF) for areas of the province impacted by flooding in Spring 2019. A previous intake of the DMAF closed in January 2019, however, projects supporting efforts for flood mitigation in your region may now be submitted to Infrastructure Canada (INFC) through a limited expedited intake. We anticipate projects should be submitted in the near future to best allow for timely federal approval.

The Disaster Mitigation and Adaptation Fund (DMAF) is a \$2 billion national program administered by the federal government and cost-shared with recipients. Funding is intended to strengthen climate resilience through investments in large-scale public infrastructure projects including natural infrastructure. The minimum total project cost is \$20 million. More information about the Disaster Mitigation and Adaptation Fund can be found at: <https://www.infrastructure.gc.ca/dmaf-faac/dmaf-guide-faac-eng.html>.

Eligible projects must meet the federal program guidelines and also address Ontario's natural hazard policies in the Provincial Policy Statement (2014) and relevant natural hazard technical guidelines issued by the Ministry of Natural Resources and Forestry (MNRF).

We are aware that the \$20 million project threshold may present challenges for your community and are exploring bundling opportunities. If your community has a smaller project to put forward that does not meet the federal threshold, but focuses on addressing riverine or lake related flooding, please submit your project to the Province and we will review for potential bundling opportunities with projects from other communities. Should you need assistance in completing your applications, or would like to explore bundling opportunities, please immediately reach out to your local Municipal Services Office who would be pleased to assist you.

.../2

Ontario has a long history of managing flooding—focusing on prevention—by regulating development and advancing the use of non-structural measures to mitigate the effects of flooding, while supporting the appropriate application of small-scale structural methods for flood mitigation. As we look toward further planning and mitigation methods for reducing impacts triggered by natural hazards and extreme weather, we would like to encourage you to consider applying to the DMAF.

Sincerely,



for Adam Redish
Assistant Deputy Minister
Infrastructure Policy
Division
Ministry of Infrastructure



Marcia Wallace
Assistant Deputy Minister
Municipal Services
Division
Ministry of Municipal
Affairs and Housing



Craig Brown
Assistant Deputy Minister
Policy Division
Ministry of Natural
Resources and Forestry

Attachment: Municipal Services Offices Contact Information

**Ministry of Municipal Affairs and Housing
Municipal Services Offices**

Municipal Services Office	Contact
Central Municipal Services Office General Inquiry: 416-585-6226 or 1-800-668-0230	Diane Ploss diane.ploss@ontario.ca 416-585-6381
Eastern Municipal Services Office General Inquiry: 613-545-2100 or 1-800-267-9438	Lisa Harvey lisa.harvey@ontario.ca 613-545-2120 Kent Fitzhugh kent.fitzhugh@ontario.ca 613-545-2124
Northern Municipal Services Office General Inquiry: 705-564-0120 or 1-800-461-1193	Jason Innis Jason.Innis@ontario.ca 705-564-6857
Western Municipal Services Office General Inquiry: 519-873-4020 or 1-800-265-4736	Tim Ryall tim.ryall@ontario.ca 519-873-4030 Megan Flaherty megan.flaherty@ontario.ca 519-873-4037