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NATIONAL DISASTER MITIGATION PROGRAM (NDMP)

GUIDELINES

(2016)

This document is available on the Internet at: www.publicsafety.gc.ca

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Section I – National Disaster Mitigation Program

1.1 Introduction

In recognition of increasing disaster risks and costs, Budget 2014 earmarked a total of $200 million over five years to establish the National Disaster Mitigation Program (NDMP) as part of the Government's commitment to building safer and more resilient communities. Of that $200 million, $183.8 million is allocated as contribution funds for NDMP projects that will be cost-shared with provinces and territories. The remaining NDMP funds will be used to fund specific targeted investments, including: developing specific tools, research activities, and public awareness activities at the national level. The NDMP will address rising flood risks and costs, and build the foundation for future informed mitigation investments that could reduce, or even negate, the effects of flood events.

The NDMP fills a critical gap in Canada's ability to effectively mitigate, prepare for, respond to and recover from, flood-related events foremost by building a body of knowledge of flood risks in Canada, and investing in foundational flood mitigation activities (e.g. risk assessments and flood mapping). Knowledge that is up-to-date and accessible will not only help governments, communities and individuals to understand flood risks and employ effective mitigation strategies to reduce the impacts of flooding, but will also further discussions on residential flood insurance.

These Guidelines must be used in conjunction with the approved Terms and Conditions under which the NDMP is managed. The approved Terms and Conditions take precedence over any element of the guidelines in the event of any apparent inconsistency with these guidelines. The NDMP Terms and Conditions are available on the Public Safety Canada (PS) website at www.publicsafety.gc.ca.

1.2 Objectives

The objective of the NDMP is to reduce the impacts of natural disasters on Canadians by:

1) Focusing investments on significant, recurring flood risks and costs; and
2) Advancing work to facilitate private residential insurance for overland flooding.

1.3 Definitions

For the purposes of these Guidelines, the following definitions apply:

Allocation	The amount of funding approved by Treasury Board for the administration of the NDMP in a given fiscal year.
Annual Updates	This document is published annually by PS and describes any changes to the administration of the Program and any updates regarding funding allocations. Changes generally come into effect in the fiscal year following the publication date, unless otherwise indicated.

Community Resilience	Resilience is the capacity of a system, community or society to adapt to disturbances resulting from hazards by persevering, recuperating or changing to reach and maintain an acceptable level of functioning. It is built through a process of empowering citizens, responders, organizations, communities, governments, systems and society to share the responsibility to keep hazards from becoming disasters.
Flooding	The overflow of natural drainage channels, natural shorelines and/or human-made facsimiles leading to partial or complete inundation from the overflow of inland or tidal waters, and/or the accumulation or runoff of surface waters from any source. **<u>Types of flooding (non-exhaustive):</u>** • Riverine: including overflow of any natural drainage channels (e.g. rivulets, brooks, streams, rivers) and of various nature (e.g. rainfall, snowmelt, frazil, ice jam, break-up) • Coastal: including overflow of all natural shorelines (e.g. lake shorelines, ocean coasts) • Urban: including overflow of human-made facsimiles (e.g. swales, ditches, streets, sewers, foundation drains) • Accidental breakage of water retaining structures (dams, dikes protecting against floods and check valves for storm / sanitary sewers, dams and dikes protecting polders) • Debris/mud flow
Fiscal Year (FY)	The period from April 1 to March 31.
Flood Mapping	The delineation of flood lines and elevations on a base map, typically takes the form of flood lines on a map that show the area that will be covered by water, or the elevation that water would reach during a flood event. The data shown on the maps, for more complex scenarios, may also include flow velocities, depth, other risk parameters, and vulnerabilities. Current/Valid Flood Map: The age of the flood map and the context in which the map may be used must be considered when determining whether it is current or valid, including changes in the demography or environment covered by and surrounding the map, the techniques utilized to create the map, the age of the information and data used to complete the map, the flood map's interoperability and sharability, and if it has been approved by council and/or the affected communities.

In-kind Contribution	A contribution of goods or services as opposed to money (i.e. existing equipment, supplies, use of space or staff time).
Interim Claim	An interim payment made for expenditures incurred once a pre-identified progress point has been reached.
Local Government	A settlement, which has municipal equivalency status under provincial legislation or functions in a manner similar to a municipality, including a "council of the band" within the meaning of Section 2 of the Indian Act (R.S.C. 1985, c. I-5) or a government or authority of an Aboriginal community (First Nation or Inuit) established by an act of Parliament or legislature.
Merit-Based Competitive Process	The process by which annual NDMP funds will be allocated by comparing similar projects to one another using specific merit criteria to determine which projects receive approval.
Multi-Year Project	A project that will take more than one fiscal year to complete.
Non-structural Mitigation	Non-physical measures that incorporate the measurement and assessment of the risk environment and contribute to comprehensive, proactive risk reduction investments (e.g., floodplain mapping, risk assessments; insurance incentives; public awareness programs; regulating land use (building codes and enforcement); acquiring property on the floodplain and relocating structures; and reusable equipment used to undertake flood mitigation).
Prevention/mitigation measures	Proactive measures taken to eliminate or reduce the negative impact of natural disasters in order to protect lives, property, the environment, and reduce economic disruption. There are two types of mitigation measures: Structural mitigation and non-structural mitigation.
Risk	Risk is the probability of a negative consequence to something of value. The measure of consequence is the function of the measures of the intensity of a hazard event, the exposure to that hazard event and the vulnerability to that hazard event. The measure of probability is a function of the probabilities of the intensity of a hazard event, the exposure to that hazard event and the vulnerability to that hazard event.
Structural Mitigation	Physical measures designed to mitigate the impact of hazards (e.g., channel improvement [construction of floodways and dykes], flow regulation (diversions, creating upstream storage), flood proofing measures (reinforcing or raising homes to minimize vulnerability to floods).

Section II – Eligibility Criteria

2.1 Eligible Recipients

Eligible recipients of NDMP funds are P/T governments.

However, P/Ts may collaborate with, and redistribute funding to the following entities:

a. A municipality and other local governments, including a “council of the band” within the meaning of section 2 of the *Indian Act* (R.S.C. 1985, c. I-5) or a government or authority of an Aboriginal community (First Nation or Inuit) established by an act of Parliament or legislature.

b. A public sector entity that is established by or under provincial or territorial statute or by regulation or is wholly owned by a province, territory, municipal or other local government.

c. Private sector entity that is incorporated and capable of entering into a legal agreement with the recipient, including for-profit and not-for-profit organizations, charitable organizations and private academic institutions.

d. International non-governmental organizations, including bodies associated/affiliated with organizations of which Canada is a member, which have as their purpose supporting public safety as a priority, and capable of entering into a legal agreement with the recipient.

e. A combination of the aforementioned entities.

Federal entities, including Crown corporations, are not eligible recipients.

If the proposed project is a submission for two or more jurisdictions, one P/T would be the recipient for the funding, with the other(s) identified as project partners.

2.2 Eligible Projects

NDMP funds may be provided for the following types of mitigation projects:

a. New projects or existing projects that have been developed but have not been identified for funding; and

b. Non-structural or small scale structural mitigation projects.

The NDMP is a merit-based program consisting of four project streams: Risk Assessments (Stream 1), Flood Mapping (Stream 2), Mitigation Planning (Stream 3), and Investments in Non-Structural and Small Scale Structural Mitigation Projects (Stream 4).

P/Ts may submit a project proposal for any project stream. However, they must demonstrate that they have met the requirements for that stream, as applicable.

2.3 Eligible and Ineligible Costs

The list of eligible and ineligible costs is included in these guidelines at pages 25 and 26, and in the NDMP Terms and Conditions.

A list of all eligible and ineligible costs for the NDMP is also included in the NDMP form (Section D: Budget template).

Section III - Program Administration and Cycle

3.1 Funding Allocation

NDMP funding allocations for upcoming NDMP cycles will be determined as part of the call for proposals and review process. This prioritization exercise is intended to maximize the use of available funds for approved and anticipated project proposals. These funding allocations are set out in the Annual Updates (AUs), along with other modifications to the NDMP, such as updated requirements and deadlines.

3.2 Maximum Amount Payable and Duration

The maximum federal NDMP funding allotment for P/Ts is $183.8 million over five (5) years starting in fiscal year 2015-2016 and continuing through to the end of fiscal year 2019-2020. The maximum amount payable for an individual project submitted by a P/T shall not exceed the identified level of funding for any given fiscal year or stream.

The maximum federal contribution amount for eligible small-scale structural projects (Stream 4) is $1.5 million for provinces and $2.25 million for territories.

3.3 Funding Share

The Program operates through a 50% federal and 50% provincial funding model for provinces. For the territories, the funding model is 75% federal and 25% territorial (with the exception of private sector businesses in territories, which will be cost-shared at 50%).

3.4 Multi-Year Projects

Depending on the time frame of an initiative, single year or multiyear funding agreements may be used. The maximum length of time that a contribution shall be approved for the same project shall not exceed 24 months (i.e. 2 fiscal years, starting April 1 and ending March 31), and not exceed the 2019-2020 fiscal year.

3.5 Stacking

For this contribution program, the maximum level of assistance from all federal institutions, including PS, must not exceed 50% of total eligible project costs for provinces. The maximum level of assistance from all federal institutions, including PS, must not exceed 75% of total eligible project costs for territories (with the exception of private sector businesses in territories, which will be cost-shared at 50%). In the event that actual total federal government funding to a recipient exceeds the stacking limit, it will be necessary for PS to adjust its level of funding to ensure the stacking limit is not exceeded.

On a case-by-case basis, PS may allow on-Reserve First Nations to utilize Aboriginal Affairs and Northern Development Canada (AANDC) mitigation funding to contribute to the P/T portion of the NDMP project. In these cases, the federal contribution, through the AANDC and NDMP, could be up to 100% of the project costs.

3.6 In-kind Contributions

In-kind contributions involve non-cash transactions (e.g. securities, land, buildings, equipment, use of facilities, labour, goods) that are provided by interested parties such as recipients, stakeholders, departments or other government bodies, in support of a federally approved transfer payment project or initiative.

The maximum amount of in-kind contribution may not exceed 15% of the P/T's cash contribution.

Calculation for determining a P/T's maximum "in-kind" amount:

Total P/T cash contribution x 0.15 = P/T's maximum "in-kind" amount.

3.7 Monitoring and Reporting of Approved Projects

P/Ts must monitor the progress of all of their respective projects and report on their status in accordance with their respective contribution agreement(s). These reports must be submitted to the appropriate PS Regional Office, and outline the results achieved for each project funded under the NDMP. The report should include, for example, project titles, completion dates, related costs, project outcomes, any change in project risk, explanations and comments.

Provincial/territorial reports must be received by Public Safety Canada for approval in accordance with the project's contribution agreement.

3.8 Amendments

The PS Regional Office is the point of contact for all amendments and any changes to the original project or its accompanying detailed cost breakdown. The PS Regional Office must be promptly advised of any proposed amendments in order to obtain the required approval. Once a project is approved and started, it is expected to be completed as per the arrangements outlined in the contribution agreement. If/when a P/T becomes aware that the project is unlikely to meet its completion deadline, the PS Regional Office must be informed immediately.

3.9 Information Management

All information/data obtained from P/Ts will be safeguarded and the appropriate storage, maintenance and management of this information will be done in accordance with Government of Canada policies.

At present, files will be saved electronically in PS's information management system and saved at the unclassified level. Files that cannot be saved electronically (due to format type, size, etc.) will be stored in a secure container at PS.

P/Ts are responsible for reviewing the sensitivity of their materials prior to sending them to PS.

3.10 Information Sharing

NDMP Project Proposals:
During the submission, review, assessment and approval phases of the NDMP, all NDMP project proposals will be stored securely and the information will be kept secure and confidential. Only PS staff members that have a clear role in the reviewing and administration of these project proposals will have access to these files. Some P/T members may also have limited access to the NDMP project proposals as part of their responsibilities for the NDMP's Technical Assessment Committee (TAC).

Furthermore, all persons who play a role in reviewing these project proposals will be required to sign a "Conflict of Interest and Confidentiality Form for Reviewers" to ensure that the process remains confidential and free from real, apparent or potential conflicts of interest.

PS will set access rights to allow only specific PS staff to access this information (i.e. access rights in PS will be on a "need-to-know" basis).

PS will not share P/Ts' submitted materials outside of interested Government of Canada departments without the explicit written consent of that P/T.

Approved NDMP Projects:
Following the approval of a NDMP project by the Minister of Public Safety and Emergency Preparedness, the P/T will be required to sign a Contribution Agreement before starting the project and incurring eligible costs for the approved project.

Information resulting from a P/T's approved NDMP project(s) is required to be shared with the Government of Canada. This information includes:

- Risk information/data, including the completed risk assessment information template;
- Flood maps and associated data, based on the criteria established by PS, for inclusion in a national flood database; and
- Other relevant project information, such as lessons learned.

The information that arises out of or under a P/T's approved NDMP project may be copied and made available to Canada's government institutions and any province:

a) In order to verify the P/T's compliance with the terms of the Contribution Agreement;
b) In order to verify the P/T's project compliance with the terms and conditions of the Program and/or evaluate the Program; and
c) To promote a better understanding of disaster mitigation in Canada and support their emergency management activities.

The information that arises out of or under a P/T's approved NDMP project may be copied and made available to Canada's government institutions, any province, foreign state, international organization or any other entity to promote a better understanding of disaster mitigation in Canada and support their emergency management activities.

3.11 Intellectual Property

If a funded project produces intellectual property, the recipient retains copyright for any work produced by its project. PS will encourage the recipient to transfer knowledge acquired or developed through NDMP projects to PS and the emergency management community.

However, in situations where PS wishes to use the intellectual property produced by a specific project, the department will negotiate with the recipient, a non-exclusive license for the Crown to have the right to use, or to confer to a third party the right to use, the intellectual rights acquired or developed through the project.

Section IV – Preparation of Applications

The NDMP has four distinct project streams: Risk Assessments (Stream 1), Flood Mapping (Stream 2), Mitigation Planning (Stream 3), and Investments in Non-Structural and Small Scale Structural Mitigation Projects (Stream 4)**.**

Stream 1: Risk Assessment(s)

Generally, a risk assessment includes the identification of the potential hazards that are present within a defined geographical area, and an assessment of their likelihoods of occurrence, potential impact(s) to people, economy, structures and networks, the natural environment, *et cetera,* and the community's vulnerabilities with respect to each of the aforementioned elements.

Once the hazards have been identified and assessed, a risk tolerance or "risk threshold" for managing these hazards should be determined. Risk thresholds serve as an informal decision-making support tool, and help to communicate the level of effort to be deployed to reduce the likelihood of a risk event occurring, or of the consequences should it occur. Risk thresholds can also be used to inform the prioritization and selection of mitigation projects identified as beneficial to address risk(s) identified within the area studied.

Note: Approved Stream 1 projects will receive NDMP funding to produce a comprehensive risk assessment. However, a comprehensive assessment of a flooding risk cannot be completed in this Stream. While it is understood that flooding is a hazard risk which commonly requires flood mapping and/or modelling to be fully understood and assessed, these flood-specific assessment activities are eligible in a separate stream in the NDMP (Stream 2). P/Ts that undertake a Stream 1 project may identify and assess flooding as a hazard risk using the best information that is available.

A completed risk assessment that identified flooding as a hazard risk and provided a current assessment of that hazard risk may be used as part of a NDMP proposal for a Stream 2 project (Flood Mapping).

Stream 2: Flood Mapping

The need to undertake a flood mapping project is informed by a risk assessment. If flooding was identified as a significant risk for a community, that community should consider undertaking a flood mapping activity to further assess how it would be specifically affected by a flooding event. A flood map identifies the geographical boundaries of a flooding event based on the type and likelihood (e.g. “1 in 100 years”, “1 in 300 years”, *et cetera*), and this information is used to help identify the structures, people and assets that are within the flood zone that are most likely to be impacted by the defined flood event. Flood mapping information and data that is acquired from a flood mapping activity should then be used to update an area’s existing risk assessment(s). With this information, a community can more accurately determine its vulnerability(ies) in relation to a flooding event, and the flooding risk to the community.

Stream 3: Mitigation Planning

Mitigation planning is the process by which a community reflects on its identified risks, and uses this information to make more informed planning decisions. First, it must identify its broad mitigation goals. Second, it should identify the objectives/strategies required to meet those goals. Finally, the key activities that will be required to accomplish those objectives and meet the stated mitigation goals should be clearly identified and explained. The key activities that are identified in the mitigation plan may also be planned mitigation projects.

A good mitigation plan provides a roadmap for action, a justification for the implementation of specific mitigation projects, and a demonstration of the engagement of the community in its success.

Stream 4: Investments in Non-Structural and Small Scale Structural Mitigation Projects

Stream 4 is the actual implementation of a specific mitigation project. The proposed mitigation project must have a detailed implementation plan including the resources, time, costs, agreements, materials and other factors required to complete the mitigation project.

Some examples of disaster mitigation projects are: delivering education programs, updating building codes and enforcement policies, acquiring property in high risk areas and relocating structures to safer areas, create hydro flow regulation measures such as diversions and upstream storage, and flood proofing structures by reinforcing and/or raising them to minimize their vulnerability to floods.

4.1 Application Requirements

To be eligible for NDMP funding, each project proposal must contain the following:

- Identify the project stream for the proposed project;
- Describe how the proposed project addresses one or more high-risk communities, and/or advances flood mapping in the jurisdiction;
- Demonstrate how the proposed project would benefit implicated and adjacent communities and how it may also be of interest to surrounding communities;

- Describe how the proposed project meets the specific criteria identified within the stream for which funding is requested;
- Explain how the proposed project objectives align with the NDMP's overall objectives;
- Describe the expected outcomes for each of its objectives;
- Include a proposed budget that clearly outlines the categories of work and expenditures for which the financial contribution is being requested for each fiscal year, as well as other sources of revenue and in-kind support where applicable;
- Include a clearly articulated work plan outlining all activities for which the financial contribution is being requested for each fiscal year;
- Identify potential stakeholders/partnerships and describe their level of engagement, as applicable;
- Identify potential project implementation risks that may impact the recipient's ability to deliver on the project, and outline mitigation measures to address them;
- Include a commitment to share information with the Government of Canada, including: risk information/data and overall risk assessment; flood maps and associated data; and all relevant project information such as lessons learned;
- Include a commitment to publicly recognize the federal government's contribution in any announcement;
- Describe the internal measures to conduct implementation monitoring and performance management;
- Include a declaration to prevent the risk of conflicts of interest; and
- Indicate whether and how the needs of official language minority communities were considered, where appropriate (such as for proposed stakeholder engagement activities)

4.2 Specific Merit Criteria and Requirements

In addition to the application requirements, streams 2, 3 and 4 also have specific eligibility requirements. All of the NDMP project streams also have specific merit criteria against which they will be assessed.

Project proposals are assessed and given an overall score. Project proposals are then compared with other project proposals in the same project stream (e.g. Stream 1 projects are only compared to other Stream 1 projects).

Stream 1: Risk Assessment(s)

Information/Document(s) Required for Merit Criteria Assessment

- Identification of the proposed Methodology/Tool that will be used for the proposed Risk Assessment
- List of the community stakeholders who will be engaged in the undertaking of a risk, hazard, impact and/or vulnerability assessment
- Prioritized list of all projects proposed for the Risk Assessment stream
- Rationale/Justification paragraph for each Stream 1 criterion

Stream 2: Flood Mapping

To be eligible for funding under Stream 2, NDMP applicants must demonstrate that they have completed a risk assessment and complete the risk assessment information template (see Annex A) for the geographic area of their proposal.

Information/Document(s) Required for Merit Criteria Assessment

- Copy of completed NDMP risk assessment information template (the risk assessment information template and guidelines are at Annex A)
- Copies of all existing Flood Maps for the area being proposed (i.e. paper and digital formats)
- Prioritized list of all projects proposed for the Flood Mapping stream
- Rationale/Justification paragraph for each Stream 2 criterion

Stream 3: Mitigation Planning

To be eligible for funding under Stream 3, NDMP applicants must:

1. Demonstrate that they have completed a risk assessment and a valid flood map for their geographic area of their proposal; and
2. Complete the risk assessment information template (see Annex A) for the geographic area of their proposal.

Information/Document(s) Required for Merit Criteria Assessment

- Copy of up-to-date NDMP risk assessment information template (the risk assessment information template and guidelines are at Annex A)
- List of the community stakeholders who will be engaged in the mitigation planning process
- Prioritized list of all projects proposed for the Mitigation Planning stream
- Rationale/Justification paragraph for each Stream 3 criterion

Stream 4: Investments in Non-Structural and Small Scale Structural Mitigation Projects

To be eligible for funding under Stream 4, NDMP applicants must:

1. Demonstrate that they have completed a risk assessment, a valid flood map and a mitigation plan for the geographic area of the proposal; and
2. Complete the risk assessment information template for the geographic area of their proposal.

Information/Document(s) Required for Merit Criteria Assessment

- Copy of up-to-date NDMP risk assessment information template (the risk assessment information template and guidelines are at Annex A)
- List of the community stakeholders who will be engaged in the project implementation process
- Estimated Return on Investment (ROI);
- Description/summary of the work that determined the project's ROI (ROI guidelines are at Annex B)
- Description on how the proposed project aligns with the goals, objectives and key activities identified in the mitigation plan
- Prioritized list of all projects proposed for the Mitigation Project stream and
- Rationale/Justification paragraph for each Stream 4 criterion

Note:

Under certain conditions, P/Ts may submit non-structural projects for Stream 4 funding without having met the requirements of Streams 1 to 3. To apply directly for Stream 4 funding, projects

must demonstrate that failure to meet the requirements of Streams 1 to 3 have little or no impact on non-structural projects. Examples of potential projects that can be submitted directly for Stream 4 funding are: communication projects focusing on education regarding general flood mitigation; development of databases for the collection and analysis of flood data; and building community partnerships.

4.3 NDMP Project Proposal Form

How to Fill Out the NDMP Project Proposal Form:

This section provides guidance on how to answer each of the questions in the NDMP Project Proposal Form. For your reference, the NDMP Project Proposal Form can be found on the Public Safety Canada website (**www.publicsafety.gc.ca**).

A) Applicant Contact Information

- **Note: See the NDMP Terms and Conditions (Ts&Cs), Sections 5.2 and 5.3, or section 2.1 in these guidelines for more details regarding the Eligible Recipients and Entities.**

i) Province/Territory (P/T) (Questions 1-7)

- **Enter the P/T's contact information. This information is used to identify the contact information of the individual(s) who is representing the province or territory for this proposed NDMP project.**

ii) Original Applicant(s) (i.e. "the entity/ies", if applicable) (Questions # 1-7)

- **This information identifies the "original" applicant(s), if applicable. (i.e. the group who submitted their NDMP proposal to their P/T Emergency Management Organization)**
- **The information entered into this section (A, ii) also identifies the "entities" for this proposed project. "Entities" must be identified in order to be able to receive redistributed NDMP funds from its province or territory.**
- **If the project proposal is filled-in by the province or territory itself, leave this section blank. (i.e. this is a P/T led project, and no "entities" are identified for redistribution of NDMP funds for this proposed project).**

B) Project Details and Attestations

Question # 8: Project Stream

Identify the NDMP Project Stream relative to this project submission.

Note: Each project stream has different requirements and merit criteria.

See **Section C** for specifics on each stream.

- **The NDMP contains four (4) project "streams": Risk Assessments, Flood Mapping and Modelling, Mitigation Planning, and small-scale structural and non-structural mitigation projects.**
- **Select the stream that you are applying for (select only one)**

Question # 9: Project Title

- **Enter the title of the proposed NDMP project. (i.e. "Risk Assessment – Port Hawkesbury, Nova Scotia")**
- **Always use the same title when referring to this project proposal.**

Question # 10: Project Timeline

a) Duration of Project (in months and years)

- **Enter the estimated amount of time that the project will take to complete (i.e. "1 year and 3 months")**

b) Projected Start Date of proposed project

- **Enter the projected start date of the proposed project (i.e. April 1, 2017)**

c) Projected End Date of proposed project

- **Enter the projected end date of the proposed project. (i.e. projected end date is June 30, 2018)**

Note: The projected end date should align with the information provided in Questions 10 (a) and (b)

Question # 11: Estimated Total Cost of Project

Please complete the Budget Template (Section D).

- **Complete the Budget Template first.**
- **Using the information from the Budget Template, include the key costs for this question (a, b, and c).**

a) Total of non-federal costs: _____

- **This is the total amount (cash and in-kind) that is <u>not</u> from the federal government.**

b) Total federal costs: _____

- **This is the total amount (cash and in-kind) that is from the federal government (i.e. "Total Federal Government Funding" section in the Budget Template).**

c) Total Project cost (i.e. a + b): _____

- **This is the total of all eligible expenses for this project.**
- **This amount should be equal to the total of all sources of revenue in the budget template (i.e. "Total Revenues" section in the Budget Template) as well as the total of all eligible expenses in the budget template (i.e. Amount in the cell on the right side of the "Total Expenditures" section in the Budget Template).**

Project Budget
Revenues for Fiscal Year (April 1 – March 31)
20__ - 20__

Notes:

- **Each Budget for each fiscal year should have a "Revenues" section and an "Eligible Expenses" section.**
- **Fiscal years in the "Revenues" section should match the fiscal years is the "Eligible Expenses" section.**

Project Title: _____

- **Enter Project Title here.**
- **This title should be identical to what is entered for question # 9 in the NDMP proposal form.**

Government Funding: Cash (municipal, provincial, territorial, and federal) **(Note:** For federal funding, please specify the federal government department)	**Amount**
In each cell in this column for this section ("Government Funding: Cash"), enter a Source of Revenue from a government body that is providing cash for this project (i.e. Public Safety Canada, P/T government, A federal Government department, municipal government). **All government sources of revenue that are providing cash for this project must be included in this section.**	**Enter the amount of cash funds that the governmen t source of Revenue (identified on the left of this cell) is, or will be, providing.**
Subtotal – Cash **This is the total of all amounts of cash provided by all of the government sources of revenue (listed above)**	**Enter the total of all cash amounts from all governmen tal sources of revenue here.** **(i.e. the total of all amounts in**

	the above cells in this column)
Government Funding: In-Kind (municipal, provincial, territorial, and federal) **(Note:** For federal funding, please specify the federal government department) Notes: 1. **The maximum amount of "in-kind" contributions from a P/T** (including any other source of revenue that is within the P/T's jurisdiction) **is 15% of the P/T's cash contribution** (i.e. total of P/T's cash contribution x 0.15 = maximum allowed "in-kind" contribution). 2. **All "In-kind" contributions must be identified in the Budget.** 3. **"In-kind" contributions will be tracked financially** (i.e. financial reports).	**Amount**
In each cell in this column of this section, enter the Source of Funds from a government body that is providing an "in-kind" contribution **Note: Public Safety Canada does not provide "in-kind" contributions for NDMP projects.**	For each cell in this column for this section, enter the **value ($) of the "in-kind" contribution** from the government source of funds (noted on the left of this cell).
Subtotal – In-kind This is the total amount of all noted "in-kind" contributions from government sources of revenue (listed above in this column for this section)	**Enter the total value of all "In-Kind" amounts from all governmental sources of revenue here.**

	(i.e. the total of all amounts in the above cells in this column)
Total Government Funding (subtotal of Cash + subtotal of In-kind from municipal, provincial, territorial, and federal government sources) Add the subtotal of Cash + subtotal of "in-kind" for all government sources of revenue listed above (i.e. fed, P/T, municipal).	**Enter the total of all cash and "in-kind" amounts from all governmental sources of revenue here.**
Total Federal Government Funding (subtotal of Cash + subtotal of In-kind from all federal government sources) **Enter the total amount of funds from FEDERAL GOVERNMENT SOURCES ONLY (Cash + "in-kind")** **(This information is used to manage "stacking" limits)**	**Enter the total of all cash and "in-kind" amounts from all FEDERAL governmental sources of revenue here.**
Proportion of Federal Government Contribution *(Note: The maximum Federal Contribution is **50%** for Provinces and **75%** for Territories)* **1.** The maximum **federal contribution for any NDMP project in a province is 50% of the total amount of the project (including the province's "in-kind" contributions)** **2.** **The maximum federal contribution for any NDMP project in a territory is 75% of the total amount of the project (including the Territory's "in-kind" contributions)** 3. **Where NDMP projects in the territories are undertaken by a private sector business(es) (i.e. no funds from the territory), the maximum contribution from the federal government is 50%**	_____ % **Enter the percent of funding for this project that is being provided by any federal government body. This % reflects the sources of revenue from the federal government noted above in the "Government funding" sections (Cash and In-Kind)**
Non-government Funding and other: Cash	**Amount**
In each cell in this column and for this section, enter the Source of Revenue from any non-government body (i.e. private sector, NGO, volunteer group, etc.) that is providing cash for this project.	**In each cell in this column and for this section, enter the amount of**

	cash funds that the non-government source of Revenue (identified on the left of this cell) is, or will be, providing.
Subtotal – Cash **This is the total of all amounts of cash provided by the non-government sources of revenue (listed above in this column for this section)**	**Enter the total of all cash amounts from all non-government sources of revenue here. (i.e. the total of all amounts in the above cells in this column for this section)**
Non-government Funding and other: In-Kind Notes: 1. **The maximum amount of "in-kind" contributions from a P/T** (including any other source of revenue that is within the P/T's jurisdiction) **is 15% of the P/T's total cash contribution** (i.e. total amount of cash from inside the P/T x 0.15 = maximum allowed "in-kind" contribution). 2. **All "In-kind" contributions must be identified in the Budget.** 3. **"In-kind" contributions will be tracked financially** (i.e. financial reports).	**Amount**
In each cell in this column for this section, enter a **Source of Funds** from a non-government body (i.e. NGO, volunteer group, private sector, etc.) that is providing an "in-kind" contribution	For each cell in this column for this

	section, enter the **value ($) of the "in-kind" contribution** from the non-government source of funds (noted on the left of this cell).
Subtotal – In-kind **This is the total amount of $ from all noted "in-kind" contributions from non-government sources of revenue (listed above in this column in this section)**	**Enter the total of all "In-Kind" amounts from all non-government sources of revenue here.** **(i.e. the total of all amounts in the above cells in this column for this section)**
Total Non-government Funding and other (subtotal of Cash + subtotal of In-kind from non-government funding and other sources) **Add the subtotal of Cash + subtotal of "in-kind" for all non-government sources of revenue identified above.**	**Enter the total of all cash and "in-kind" amounts from all NON-GOVERNMENT sources of revenue here.**
Total Revenues	**Enter the total of all**

(**Total of <u>government funding</u> + total of <u>non-government funding and other</u>**) **This is the total of all revenues for the proposed project (total of governmental funding (cash and "in-kind") + total of non-governmental funding (cash + "in-kind")**	**cash and "in-kind" amounts <u>from all sources of revenue</u> here.**

1. Cash: actual dollar value or revenues/funding received
2. In-Kind: non-cash input which is given a cash value

Project Budget
Eligible Expenses for Fiscal Year (April 1 – March 31)
20__ - 20__

Notes:

- **Each Budget for each fiscal year should have a "Revenues" section and an "Eligible Expenses" section.**
- **Fiscal years should match the information on the "Revenues" section.**

Project Title: _____

- **Enter Project Title here.**
- **This title should be identical to what is entered for question # 9 in the NDMP proposal form.**

Eligible Costs (i.e. Categories of Work)	**Details**	**Eligible Expenditures: Cash**			
		Public Safety Canada Funding (NDMP Funds)	Other Government Funding	Non-Government Funding and other	Total
Applicant should enter the eligible category of work that is related to the proposed NDMP project (see list further below). This ensures that the noted activity is indeed an eligible expense.	**Applicant enters details about the activity noted on the left of this cell (i.e. expands on what is being done under the category of work noted on the left side of the same row)**	**Applicant enters the amount of funds from Public Safety Canada that will be devoted to the category of work noted on the left of this cell (in the same row)**	**Applicant enters the amount of funds from other governments (i.e. Other federal government department, P/T, and municipal) that will be devoted to this category of work (noted on the left of this cell in the same row)**	**Applicant enters the amount of funds from non-government sources that will be devoted to this category of work (noted on the left of this cell in the same row)**	**Applicant enters the total of all cash amounts in the same row**

Subtotal – Cash:		Total amount of funds from Public Safety Canada (i.e. total of all cash amounts in the cells above in this this column). This amount should match Public Safety Canada's cash amount noted in the "Revenue" portion of the budget.	Total amount of cash from other government sources (i.e. total of all cash amounts from other government sources noted in the cells above in this column). This amount should match the cash amount from other government sources, noted in the "Revenue" portion of the budget.	Total amount of cash from non-government sources (i.e. total of all cash amounts from non-government sources noted in the cells above in this column). This amount should match the cash amount from other government sources, noted in the "Revenue" portion of the budget.	1. Total of all cash amounts noted in the above cells in this column. 2. Total of all cash amounts in the "Subtotal – cash" row. (the total should be the same amount in both calculations)
Eligible Costs (i.e. Categories of Work)	**Details**	**Eligible Expenditures: In-Kind**			
		Public Safety Canada Funding (NDMP Funds)	Other Government Funding	Non-Government Funding and other	Total
Applicant should enter the eligible category of work that is related to the proposed NDMP project (list is below). This ensures that the activity is an eligible expense.	Applicant enters details about this work activity (i.e. expands on what is being done under the category of work noted on the left side of the same row)	PS does not provide "in-kind" contributions for NDMP projects. Leave this column blank.	Applicant enters the value of the "in-kind" contributions from other governments (i.e. P/T, municipal, etc.) that will be devoted to this category of work (noted on the left side of the same row)	Applicant enters the value of the "in-kind" contributions from non-government sources (i.e. P/T, municipal, etc.) that will be devoted to this category of work (on the left side of the same row)	Total amount of all "in-kind" contributions noted in the same row (same category of work).

Subtotal – In-kind	**PS does not provide "in-kind" contributions for NDMP projects.** **This value should be "0".**	**Total of all "in-kind" contributions from other government sources** **(i.e. total of all "in-kind" amounts from other government sources in this column).** **This amount should match the total "in-kind" amount from other government sources, noted in the "Revenue" portion of the budget, above.**	**Total amount of "in-kind" contributions from non-government sources** **(i.e. total of "in-kind" amounts from non-government sources in this column).** **This amount should match the "in-kind" amount from other non-government sources, noted in the "Revenue" portion of the budge, above.**	**Total of all "in-kind" amounts** **The total "in-kind" amount is entered here. It should be the same amount when adding all cells in this column, or adding all cells in this row)**
Total Expenditures: (Subtotal of Cash + subtotal of In-kind)	**Total of PS funding for all of the listed expenditures (i.e. all categories of work).** **This amount should be equal to the amount of cash revenues from PS (noted in the "Revenues" portion of the budget, above).**	**Total of Other government funding (cash + "in-kind") for all of the listed expenditures (i.e. all categories of work).** **This amount should be equal to the "Total Government Funding" amount, minus the PS amount in the "Revenues" portion of the budget, above.**	**Total of amount of funding from non-government sources for all of the listed expenditures (i.e. all categories of work).** **This amount should be equal to the amount of revenues from "non-government and other" sources (noted in the "Revenues" portion of the budget, above).**	**Total of all cash and in-kind amounts.** **(amount in "Subtotal - In-kind" cell + amount in "Subtotal - Cash" cell = total project cost)** **This value should be equal to the "Total Revenues" in the "Revenue" portion of the budget, above.**

1. Cash: actual dollar value or revenues/funding received
2. In-Kind: non-cash input which is given a cash value

List: Eligible Costs

1	New research and data collection.
2	Flood mapping and forecasting.
3	Flood resistant construction techniques.
4	Hazard mapping and forecasting.
5	Professional services support
6	Purchase of equipment used to undertake mitigation and/or support the implementation of permanent structural mitigation measures
7	Building community partnerships for the purpose of disaster risk reduction.
8	Consultant fees.
9	Hazard, impact, risk, vulnerability and assessments.
10	Development of disaster mitigation plans.
11	Public awareness and education.
12	Building standards and enforcement.
13	Non-structural retrofitting.
14	Land use planning controls.
15	Planning and feasibility activities for structural mitigation investments
16	Land purchases
17	Non-structural measures that will enhance proactive whole-of-community flood mitigation measures and resilience to associated hazards and risks
18	Small-scale structural flood mitigation measures
19	Construction of new permanent structural measures designated to mitigate the impacts of flooding
20	Improvement or modernization of existing permanent structural measures.
21	Post-flood finishing costs for measures undertaken within the eligible period.
22	Measures taken to protect primary residences only.
23	Other permanent structural flood mitigation measures and costs related to post-flood finishing measures
24	Exceptional salary costs, benefits and incidentals.
25	Exceptional administrative costs.
26	Materials.
27	Facilities.
28	Exceptional transportation costs.
29	Other incurred costs that are directly attributed to the implementation of permanent structural and non-structural flood mitigation measures.

List: Ineligible Costs

1	Costs relating to events and equipment which are considered to be the routine responsibility of provincial ministries or first responder agencies such as police, fire and ambulance.
2	Ongoing operating and maintenance costs for NDMP initiatives following completion of the project.
3	The value assigned to data that was procured or collected prior to the establishment of the project Contribution Agreement.
4	Administrative costs which are not directly related to a specific NDMP project. Each recipient is expected to absorb the routine costs of doing business. Examples such as regular salaries and

	benefits, audit costs, office furniture, equipment, office supplies, committee work, administration and supervision of NDMP, are not to be cost-shared. It is recognized that certain proposals incur extraordinary administrative expenses, which are incremental to the routine costs of providing government services; these expenses can be considered for cost-sharing and shall be clearly identified in detail at the proposal stage.
5	Hospitality costs.
6	Mitigation project that would yield only temporary measures (e.g., use of sandbags).
7	Mitigation projects that would create ongoing need for funds from the federal government or from its recipient that cannot be absorbed in their current budget.
8	Any expenditures related to a project already started prior to application for funding and prior to approval.
9	Damages and interests resulting from any action or omission causing harm to a third party for which the Recipient is held civilly liable by a Court and has to pay; or fines under any municipal, provincial, territorial or federal legislation resulting from a transgression by the Recipient, or any amount resulting from any settlement entered into by the Recipient, or imposed by a Court, including an Arbiter, to the Recipient in relation with the funded NDMP project.
10	Taxes other than the PST or provincial part of the HST.
11	Projects that address needs that are not related to prevention/mitigation.
12	Costs reimbursed under another Government of Canada program.

Question # 12: a) Provide a brief description of your proposed project

- **Describe what you are proposing to do; why this activity is being proposed; and how it will be implemented.**

b) Describe how this project addresses one or more high risk communities and/or a flood mapping activity.

Note: part (b) is not applicable for Stream 1 (Risk Assessments).

- **Name the high-risk communities that will be positively impacted by this proposed project (i.e. better information via risk assessment, flood map, etc.);**
- **Identify the risks that are expected to be reduced/mitigated as a result of this project (i.e. flooding in specific areas, lack of public awareness, etc.); and**
- **Describe how this proposed project would contribute to a flood mapping activity (if applicable) (i.e. mapping, modelling, updating old maps, etc.)**

Question # 13: a) How will this project benefit the defined geographical area and the surrounding communities?

- **Identify all of the ways that this proposed project will provide a benefit for the geographic area that is within its 'reach', including the communities that are within that geographic area and adjacent to it.**

b) Were surrounding communities informed of this project proposal?

- **Check either "yes" or "no".**
- **Provide a comment(s) or explanation(s) for your answer in the "comments" section. (i.e. Why was information not shared? What information was provided? To whom? How it was shared? What was the response(s)?)**
- **First Nations communities that might be affected by the proposed project must be contacted and informed of the proposed project.**

Question # 14: Affected Community(ies)

Notes: a) Identify all communities that are affected by this project;
b) Indicate the population of all identified communities;
c) Indicate if each identified community has been engaged in relation to this proposed project (E); and
d) Indicate if each identified community has committed to support this proposed project (C).

- **All First Nations communities that are believed to be affected by the proposed project must be contacted and informed of the proposed project. Following this step, the project applicant must also obtain the following information from each of those First Nations communities:**
  - **A confirmation that it has been informed of the proposed project;**
  - **Its level of support for the proposed project (i.e. is supportive, has no opinion, or is not supportive), and if this position is final, preliminary or conditional; and**
  - **Any issues or concerns that the First Nation community has in relation to this proposed project.**

If the proposed project is approved, the information gathered here will be required as part of the contribution agreement process.

Question # 15: How will this project contribute to:

a) Reducing impacts of disasters on Canadians?
(i.e. Describe, in bullet form, how the proposed mitigation project will reduce or negate the impact and/or likelihood of disasters)

- **This question is asking for the clear objective(s) of the project with respect to reducing the impacts of disasters on Canadians**

b) Reducing disaster related financial liabilities for all levels of government?

- **How will this project reduce financial liabilities for all levels of government? (i.e. potential recovery costs for DFAA, P/T and municipal costs?)**

c) Reducing risk, developing capacity and/or enhancing resilience?

- **How does this project reduce one or more risk(s)? How does it help the community develop its capacity (i.e. knowledge/awareness, skills, training, preparedness, resilience, etc.)? How does the project make the community and surrounding area more capable of withstanding one or more hazard events?**

Question # 16: Prioritized List of all project proposals in this Project Stream

- **Question # 16 is filled out by the P/T.**

a) Provide your prioritized list of all proposed projects (E.g. #1 equals the highest priority project, #2 equals the second highest priority, etc.)

- **In (a), the P/T enters its complete list, in order of priority, of all the NDMP projects that are in the same stream as this proposed project, for this NDMP submission cycle.**

b) Indicate the priority ranking of this particular project.

- **In (b), the P/T enters the priority number of this project proposal (which should be the same number as in the priority list in (a).**

Question # 17: Provide a rationale/justification for implementing this mitigation activity instead of the other mitigation projects on the prioritized project list.

- **The P/T explains why the implementation of this project is being sought instead of the other listed projects. (i.e. feasibility, highest priority, cost-benefit, timeliness, cost, etc.)**

Question # 18: Work Plan Template

Activities	Tasks	Deliverable(s)/ Product(s)	Resources	Timelines (Start and End Dates)	Considerations/ Comments
1. **Identify each work activity in each cell in this column (one work activity per row)**	**Identify the tasks that are related to the work activity noted on the left.**	**Identify all of the deliverables and/or products that will be created as a result of completing the work activity noted on the left (i.e. outputs).**	**Identify the resources (i.e. people, materials, supplies, facilities, etc.) that are required to achieve and complete the work activity noted on the left.**	**1. Identify the Start Date of this work activity (noted on the left). 2. Identify the End Date of this work activity (noted on the left).**	**Identify any additional comments that will help describe the work activity (noted on the left), any potential impediments related to achieving this work activity, and/or any other instructions or clarifications.**
2.					
3.					

Question # 19: Stakeholder Template

a) Identify all stakeholders/partnerships and describe their current and/or potential level of engagement, as applicable.

- **See instructions in template below**

b) Identify those stakeholders/partners who have committed, in-cash or in-kind, support for the proposed project.

- **See instructions in template below**

c) Provide a description/summary of the stakeholder list, and how this information provides a rationale/justification for implementing this mitigation activity.

- See instructions in template below

NDMP: Stakeholder Template

Part 1: Stakeholder Identification and Level of Engagement					
Name of Stakeholder	Title, Organization	Level of Engagement/Commitment (current and/or potential in the future)	Financial Support		
			In-Kind Contribution (Name of Items)	Value of In-Kind Contribution ($)	In-Cash ($)
Enter the name of the stakeholder (person's first name and last name). If the stakeholder is a group, name the group.	Enter the title and organization of the stakeholder (that is identified in the cell on the left of this cell), if applicable. You may also include a short description of the stakeholder, if you wish.	Enter if the stakeholder is engaged (i.e. has been contacted and replied that they are interested/engaged is this proposed project), or if the stakeholder is committed (i.e. has provided cash or in-kind support, or has committed to provide support in the near future).	Enter the type of In-kind support (i.e. what services and/or materials are they providing?) Notes: In-kind support that is listed in this stakeholder template, but not in the budget template, will be tracked in an activity report (and not a financial report). In-kind support that is listed in this stakeholder template, but not in the budget template, will not be included as part of the "15% maximum P/T in-kind contribution" calculation.	Enter the estimated value of that in-kind support (i.e. what would be the estimated market value of these identified services/materials?)	If the stakeholder is committed to support the project with a cash donation, enter the amount of CASH here. Note: CASH donations must also be entered in the budget template (enter the same stakeholder and same amount).
Part 2: Description/Summary **How does the engagement of these stakeholders support and/or justify the implementation of this mitigation activity?**					
P/T should describe in this section how each of the identified stakeholders will support and/or contribute to this proposed project.					

Question # 20: **Project Implementation Risks**

a) Identify any project implementation risks that may impact your ability to deliver the project as planned/scheduled.

- **P/T indicates any/all possible impediments to consider that could impact the implementing of the project, such as weather, procurement, staff, equipment, labour issues, political issues, etc.**

b) Outline the mitigation measures that you will take to minimize and/or address your project's implementation risks

- **P/T identifies the ways that it will mitigate the project implementation risks noted in (a).**
- **Consider: contingency plans, alternate methods for completing work activities, re-prioritization of work activities, etc.**

Question # 21: **Monitoring and Performance Management**

Describe the internal measures that you will implement to monitor your project and manage performance.

- **Indicate how this project will be monitored and managed. (i.e. how will you remain aware of the work activities taking place and their progress (or lack thereof)?)**
- **Consider cash flow reports, work/activity progress reports, reviewing project timelines, addressing needs for resources, procurement plan and roll out, etc.**

Question # 22: **Official Languages**

In order to support Public Safety Canada's obligations under Part VII of *the Official Languages Act*, indicate whether the needs of official language minority communities were considered, where appropriate (such as for stakeholder engagement activities).

a) Have the needs of official language minority communities been considered?

- **"yes" or "no" must be checked.**

b) What will the (lead) province or territory do to address official languages requirements for linguistic minorities, as per the Official Languages Act, with respect to this project?

- **The applicant must describe how the needs of the official language minority community/ies will be addressed.**

Questions # 23 – 26: **Project Attestations**

- **The applicant must agree to these program conditions (by checking the "I agree" box) for the project proposal to meet the NDMP's eligibility requirements and Terms and Conditions.**

Question # 27:

NDMP contributions may be provided for the following types of mitigation projects:

a) new projects or existing projects that have been developed but have not been identified for funding; and

b) non-structural or small scale structural projects.

Does your proposed NDMP project meet this description?

- **Check "yes" or "no".**
- **Only project proposals that have checked "yes" for this question are considered eligible for NDMP funding.**

C) Additional Required Information for Each NDMP Stream (1-4)

- **Applicant must only provide answers for the Stream that was checked in Part B, question #8.**

Stream 1: Risk Assessment(s)

Question # 1:

A) Methodology/ies

The applicant must outline the methodology/ies proposed for use to complete each of the following elements:
a) hazard identification;
b) vulnerability analysis;
c) likelihood assessment; and
d) risk assessment.

The applicant should also outline the methodology proposed for use to identify:
e) climate change considerations;
f) assess climate change impacts; and
g) to assess community resilience.

- **The applicant must identify and briefly describe the methodology/ies that will be used to complete each of the elements (a-g).**

B) Rationale/Justification

Provide a rationale/justification for utilizing these methodologies, which may include reference to supporting documentation and information sources that assisted in the determination of the assessment methodology(ies)/process(es).

- **The applicant must explain why the methodologies noted in Part A were used (instead of other possible methodologies), and explain why these methodologies were the most appropriate for their particular set of circumstances.**

Question # 2: Project Output Attestation

a) This project will produce a Risk Assessment;
b) The NDMP Risk Assessment Information Template (RAIT) will be completed and provided to Public Safety Canada shortly after this project is completed; and

This project will respect the applicable guidelines, standards and/or methodologies of the province/territory in which it is being undertaken.

- **This attestation is new in this version of the proposal form. This attestation ensures that the applicant is aware of what must be produced and provided to Public Safety Canada as part of this project. It also helps ensure that the applicant understands that s/he should be following his/her P/T's applicable guidelines, standards and methodologies.**

Stream 2: Flood Mapping

Question # 1: Was a copy of your completed and up-to-date NDMP risk assessment information template (RAIT) covering the geographic area related to this proposed project provided to PS?

- **The applicant must check at least one of the boxes: "yes, previously", "yes, attached", or "no".**
- **The applicant may check both "yes" boxes, as the applicant may have previously provided one or more copies, and is also providing additional copies with this new proposal.**
- **If the applicant checks the "yes, previously" box, s/he must enter the file/reference number(s) for the previously submitted project proposal(s).**
- **If the applicant checks the "yes, attached" box, s/he must attach a copy of the most recent, completed and up-to-date NDMP risk assessment information template(s) that are relevant to the project proposal (i.e. covering the geographic area(s) where this flood mapping activity will occur.**
- **If the applicant checks the "no" box, the proposed project is not eligible for NDMP funding, as the provision of a risk assessment information template is a requirement for STREAM 2 projects.**

Question # 2: Provide a description/Summary of your risk assessment findings.

- **The applicant should identify the top risks and hazards that are identified in the risk assessment(s) that is/are related to the area that is relevant to the proposed flood mapping activity, along with the probabilities and potential impacts of those top risks and hazards.**

Question # 3: Project Description

a) Check the activities that apply for this project.
Note: Flood maps that are updated or newly created must be produced in digital format.

Note: The activities related to flood mapping have been expanded from the previous version of the form. These added descriptions help to describe more clearly what will be done as part of this project.

- **Check all of the boxes that describe the activities planned for this proposed project.**
- **If the applicant selects "Other geospatial, mapping and modelling activities", s/he must provide additional details in the "comments" section immediately below.**

b) Describe the final output(s) that will be created as a result of this project.

- **This question allows the applicant to clearly identify what output(s) will be produced as a result of this project (i.e. "a new 300-year flood map for the county of Nipissing"; "an updated flood map for the city of Edmonton and the surrounding area at the 100-year flood level"; a report identifying the flood information that was acquired and an analysis of the data"; etc.)**

c) Identify and describe the methodology/ies that you will use for this project.

- **The applicant must identify what methodology/ies will be used to undertake this project, and provide a clear and brief description of each of those methodologies.**

Question # 4: Area Covered by Flood Mapping Activity (km²)

- **The applicant must enter the approximate number of square kilometres that will be covered by the proposed flood mapping activity.**

Question # 5: Watershed(s) related to the flood mapping activity/ies (km²)

Please identify the watershed(s) where the project activity/ies will take place, and indicate the total square kilometres of the area(s) covered by the watershed(s).

- **The applicant must enter the name(s) of the watershed(s) where the proposed flood mapping activity/ies will take place.**
- **The applicant must enter the estimated area (i.e. number of square kilometres) that is covered by each of the identified watersheds.**

Question # 6: Type of Flood Mapping

What type of flood mapping will this project be doing?

- **The applicant must check all boxes that apply.**
- **The applicant may check more than one box.**
- **Boxes that have been checked should align with the proposed project's description (provided in Part B, question #12 a).**
- **If the applicant checks the "not applicable" box, s/he must provide comments in the "comments" section to briefly clarify the proposed project.**

Question # 7: How does this project address the impacts of climate change?

- **The applicant must explain how climate change impacts (past, present and future) have been considered as part of this proposed project.**

Question # 8: Have copies of all existing flood maps that cover some or all parts of the area related to this project proposal been provided to Public Safety Canada?

- **The applicant must check at least one of the boxes: "yes, previously", "yes, attached", or "no".**
- **The applicant may check both "yes" boxes, as the applicant may have previously provided one or more copies, and is also providing additional copies with this new proposal.**
- **If the applicant checks the "yes, previously" box, s/he must enter the file/reference number(s) for the previously submitted project proposal(s).**
- **If the applicant checks the "yes, attached" box, s/he must attach a copy/ies of the most recent, completed and up-to-date flood maps that are relevant to the project proposal (i.e. covering the geographic area(s) where this flood mapping activity will occur.**
- **If the applicant checks the "no" box, the proposed project is not eligible for NDMP funding, as the provision of all existing relevant flood maps is a requirement for STREAM 2 projects.**

Question # 9: Provide a description/summary of these existing flood maps.

- **The applicant must provide a brief description of the existing flood maps (i.e. their age(s), the area covered by each map, quality of each map, weaknesses, etc.)**

Question # 10: Describe how the information in your Risk Assessment(s) and flood map(s) provide(s) a rationale/justification for implementing this mitigation activity.

- **The applicant must describe how the information gained from the risk assessment(s) and previous flood map(s) support the proposed flood mapping activity.**

Question # 11: Project Output Attestation:

a) NDMP-funded flood maps must be compliant with relevant Treasury Board standards and guidelines (for reference, see: http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=16553).
b) All Stream 2 projects, upon completion, must provide a copy of the flood map(s) to Public Safety Canada in the appropriate format and associated data as outlined in the contribution agreement.
c) All Stream 2 projects must provide Public Safety Canada with an updated NDMP risk assessment information template (RAIT), which includes the newly-created flood mapping information resulting from this project.
d) This project will respect the applicable guidelines, standards and/or methodologies of the province/territory in which it is being undertaken.

- **This attestation is new in this version of the proposal form. This attestation ensures that the applicant is aware of what must be produced and provided to Public Safety Canada as part of this project. It also helps ensure that the applicant understands that s/he should be following his/her P/T's applicable guidelines, standards and methodologies.**

Stream 3: Mitigation Planning

Question # 1: Was a copy of your completed and up-to-date NDMP risk assessment information template (RAIT) covering the geographic area related to this proposed project provided to PS?

- **The applicant must check at least one of the boxes: "yes, previously", "yes, attached", or "no".**
- **The applicant may check both "yes" boxes, as the applicant may have previously provided one or more copies, and is also providing additional copies with this new proposal.**
- **If the applicant checks the "yes, previously" box, s/he must enter the file/reference number(s) for the previously submitted project proposal(s).**
- **If the applicant checks the "yes, attached" box, s/he must attach a copy of the most recent, completed and up-to-date NDMP risk assessment information template(s) that is relevant to the project proposal (i.e. covering the geographic area(s) which this mitigation planning activity will address).**
- **If the applicant checks the "no" box, the proposed project is not eligible for NDMP funding, as the provision of a risk assessment information template is a requirement for STREAM 3 projects.**

Question # 2: Description/Summary of your risk assessment findings.

- **The applicant should identify the top risks and hazards that are identified in the risk assessment(s) that is/are related to the area that is relevant to the proposed flood mapping activity, along with the probabilities and potential impacts of those top risks and hazards.**

Question # 3: a) Copy(ies) of the valid flood map(s) covering the geographic area related to this proposed project.

Was a copy of all valid/current maps provided?

- **The applicant must check at least one of the boxes: "yes, previously", "yes, attached", or "no".**
- **The applicant may check both "yes" boxes, as the applicant may have previously provided one or more copies, and is also providing additional copies with this new proposal.**

- **If the applicant checks the "yes, previously" box, s/he must enter the file/reference number(s) for the previously submitted project proposal(s).**
- **If the applicant checks the "yes, attached" box, s/he must attach a copy of the most recent, completed and valid flood maps that are relevant to the project proposal (i.e. covering the geographic area(s) which this mitigation planning activity will address).**
- **If the applicant checks the "no" box, the proposed project is not eligible for NDMP funding, as the provision of all relevant flood maps is a requirement for STREAM 3 projects.**

b) Description/Summary
Provide a description/summary of your valid/current map(s).

- **The applicant must provide a brief description of these relevant flood maps (i.e. their age(s), the area covered by each map, quality of each map, weaknesses, etc.)**

Question # 4: Describe how the information in your risk assessment(s) and flood map(s) provide(s) a rationale/justification for completing this mitigation activity.

- **The applicant must describe how the information gained from the risk assessment(s) and previous flood map(s) support the proposed mitigation planning activity.**

Question #5: Project Output Attestation:

a) All Stream 3 projects must produce a comprehensive mitigation plan and provide it to Public Safety Canada upon completion.

b) This project will respect the applicable guidelines, standards and/or methodologies of the province/territory in which it is being undertaken.

- **This attestation is new in this version of the proposal form. This attestation ensures that the applicant is aware of what must be produced and provided to Public Safety Canada as part of this project. It also helps ensure that the applicant understands that s/he should be following his/her P/T's applicable guidelines, standards and methodologies.**

Stream 4: Investment in Non-Structural or Small Scale Structural Mitigation

Question # 1: Was a copy of your completed and up-to-date NDMP risk assessment information template (RAIT) covering the geographic area related to this proposed project provided to PS?

- **The applicant must check at least one of the boxes: "yes, previously", "yes, attached", or "no".**
- **The applicant may check both "yes" boxes, as the applicant may have previously provided one or more copies, and is also providing additional copies with this new proposal.**
- **If the applicant checks the "yes, previously" box, s/he must enter the file/reference number(s) for the previously submitted project proposal(s).**
- **If the applicant checks the "yes, attached" box, s/he must attach a copy of the most recent, completed and up-to-date NDMP risk assessment information template(s) that is relevant to the project proposal (i.e. covering the geographic area(s) where this proposed non-structural or small scale structural mitigation activity will take place).**
- **If the proposed project is a <u>small scale structural project</u> and the applicant checks the "no" box, the proposed project is not eligible for NDMP funding, as the provision of all relevant risk assessment information templates is a requirement for <u>STREAM 4 small scale structural</u> projects.**
- **If the proposed project is a <u>non-structural project</u> and the applicant checks the "no" box, the applicant must provide an explanation in the "comments" section.**

- **Note: Under some conditions, P/Ts may submit non-structural projects for Stream 4 funding without having met the requirements of Streams 1 to 3. To apply directly for Stream 4 funding, projects must demonstrate that failure to meet the requirements of Streams 1 to 3 have little or no impact on non-structural projects. Examples of potential projects that can be submitted directly for Stream 4 funding are: communication projects focusing on education regarding general flood mitigation; development of databases for the collection and analysis of flood data; and building community partnerships.**

Question # 2: Provide a description/summary of your risk assessment findings.

- **The applicant should identify the top risks and hazards that are identified in the risk assessment(s) that is/are related to the area that is relevant to the proposed mitigation activity, along with the probabilities and potential impacts of those top risks and hazards.**

Question # 3: a) Was a copy(ies) of all relevant flood maps covering the geographic area related to this proposed project provided to Public Safety Canada?

- **The applicant must check at least one of the boxes: "yes, previously", "yes, attached", or "no".**
- **The applicant may check both "yes" boxes, as the applicant may have previously provided one or more copies, and is also providing additional copies with this new proposal.**
- **If the applicant checks the "yes, previously" box, s/he must enter the file/reference number(s) for the previously submitted project proposal(s).**
- **If the applicant checks the "yes, attached" box, s/he must attach a copy of the most recent, completed and valid flood maps that are relevant to the project proposal (i.e. covering the geographic area(s) which this mitigation planning activity will address).**
- **If the proposed project is a small scale structural project and the applicant checks the "no" box, the proposed project is not eligible for NDMP funding, as the provision of all relevant flood maps is a requirement for STREAM 4 small scale structural projects.**
- **If the proposed project is a non-structural project and the applicant checks the "no" box, the applicant must provide an explanation in the "comments" section.**
- **Note: Under some conditions, P/Ts may submit non-structural projects for Stream 4 funding without having met the requirements of Streams 1 to 3. To apply directly for Stream 4 funding, projects must demonstrate that failure to meet the requirements of Streams 1 to 3 have little or no impact on non-structural projects. Examples of potential projects that can be submitted directly for Stream 4 funding are: communication projects focusing on education regarding general flood mitigation; development of databases for the collection and analysis of flood data; and building community partnerships.**

c) Description/Summary: Provide a description/summary of your valid/current map(s).

- **The applicant must provide a brief description of the relevant flood maps that have been submitted as part of this proposed project (i.e. their age(s), the area covered by each map, quality of each map, weaknesses, key information, etc.)**

Question # 4: Was a copy of your Mitigation Plan provided to Public Safety Canada?

- **The applicant must check at least one of the boxes: "yes, previously", "yes, attached", or "no".**
- **The applicant may check both "yes" boxes, as the applicant may have previously provided one or more copies, and is also providing additional copies with this new proposal.**
- **If the applicant checks the "yes, previously" box, s/he must enter the file/reference number(s) for the previously submitted project proposal(s).**
- **If the applicant checks the "yes, attached" box, s/he must attach a copy of the most recent, completed and mitigation plan that is relevant to the project proposal (i.e. covering the geographic area(s) that is relevant to this mitigation project).**
- **If the proposed project is a small scale structural project and the applicant checks the "no" box, the proposed project is not eligible for NDMP funding, as applicants are required to demonstrate that they have completed a mitigation plan for STREAM 4 small scale structural projects.**

- **If the proposed project is a non-structural project and the applicant checks the "no" box, the applicant must provide an explanation in the "comments" section.**

Note: Under some conditions, P/Ts may submit non-structural projects for Stream 4 funding without having met the requirements of Streams 1 to 3. To apply directly for Stream 4 funding, projects must demonstrate that failure to meet the requirements of Streams 1 to 3 have little or no impact on non-structural projects. Examples of potential projects that can be submitted directly for Stream 4 funding are: communication projects focusing on education regarding general flood mitigation; development of databases for the collection and analysis of flood data; and building community partnerships.

Question # 5: How does the proposed mitigation project align with the goals, objectives and key activities identified in the mitigation plan?

- **The applicant's mitigation plan that is relevant to this planned mitigation project should have clearly identified and outlined its goals, objectives, and key activities.**
- **The applicant must describe how the planned project aligns with each of the goals, objectives and key activities (i.e. how does this project support the stated goals in the mitigation plan? How does this project help to meet some or all of the stated objectives? Is this project one of the stated key activities in the mitigation plan? Does this project help to achieve one or more of the stated key activities in the mitigation plan?).**

Question # 6: Identify the communities/regions that may be impacted as a result of this mitigation project.

- **Before undertaking this planned mitigation project, especially a structural project, the applicant must consider the implications of completing that project. (see Question #8, below)**
- **A mitigation project can have "downstream" effects impacting other surrounding areas and communities, and these effects may also be experienced a long distance away from the project (i.e. a dam can divert water in one place and cause flooding in another place much further downstream).**
- **For this question, the applicant must identify all communities that s/he has identified as being potentially impacted by this project. The applicant's prior research/analysis related to identifying the potential impact(s) of this project supports the identification these identified communities.**

Question # 7: Describe the potential impacts of the mitigation project on these neighbouring communities/regions.

- **This question is a follow-up to Question #6 (i.e. the applicant has identified the communities that may be impacted as a result of the planned project).**
- **Now, the applicant must identify what those potential impacts are in each community that was identified in Question #6.**

Question # 8: How were the potential impacts of this proposed mitigation project identified?

- **How did the applicant research this project and its potential impacts for the surrounding area once it is completed? (i.e. Modelling? Consulting? Hazard impact analysis, hazard and risk scenarios? Hydrologic and/or Hydraulic analyses? Etc.)**

Question # 9: What is the estimated Return on Investment (ROI) for this proposed mitigation project?

- **See Annex B in the NDMP guidelines for information on determining the estimated ROI for a mitigation project.**
- **Provide the estimated ROI amount (only) for this question.**

Question # 10: Explain how you determined this estimated ROI.

- **See Annex B in the NDMP guidelines for information on determining the estimated ROI for a mitigation project.**

- **For this question, the applicant must explain how the ROI was calculated (i.e. "show your work").**

Question # 11: Project Output:

a) What will be the final output(s) (i.e. product(s)) of this mitigation project?

- **This is a new question from the previous version. This question allows the applicant to clearly state what the project will actually produce in the end. (i.e. "new building codes"; "berms to re-inforce the river bank"; "Public Awareness Plan and key messages", etc.)**

Question # 12: Attestation:

a) All Stream 4 projects must provide a project report to Public Safety Canada upon completion of the project; and
b) This project will respect the applicable guidelines, standards and/or methodologies of the province/territory in which it is being undertaken.

- **This attestation is new in this version of the proposal form. This attestation ensures that the applicant is aware of what must be produced and provided to Public Safety Canada as part of this project. It also helps ensure that the applicant understands that s/he should be following his/her P/T's applicable guidelines, standards and methodologies.**

Section V – Assessment and Approval Process

5.1 Project Proposal Assessment Process

Each P/T must prepare a **list of prioritized projects** for each of the NDMP project streams (1-4) and provide it to the appropriate **PS Regional Office**. A P/T's list of prioritized projects identifies each project proposal for each NDMP project stream in a numerical fashion, with "1" being the top priority, "2" being the second priority, and so on.

Each P/T's NDMP project proposal template must be fully completed to be considered eligible. The PS Regional Offices review the project proposals to ensure that they meet the eligibility criteria and application requirements (screening criteria). Project proposals that meet the screening criteria are then further assessed.

All NDMP project proposals that meet the screening criteria are assessed by an assessment committee, which is chaired by PS and made up of provincial and territorial government representatives and officials from federal departments and agencies responsible for emergency management, mitigation, flooding, or other relevant areas. Members of the assessment committee are appointed by their respective department/agencies or governments. Each project proposal is assessed and given a score in relation to how well it meets the merit and general assessment criteria for its respective project stream.

PS uses these scores to compare and rank each project proposal in relation to all other project proposals in the same project stream.

PS will then create a list of recommended projects for consideration by the Minister of Public Safety and Emergency Preparedness.

Section VI: Key Activities and Required Outputs

Stream 1: Risk Assessments

Key Activities

- Produce a risk assessment for a defined geographic area (i. e. P/T, watershed, community, etc.).

Required Outputs

- All Stream 1 projects must provide PS with a completed NDMP risk assessment information template after project completion.

Stream 2: Flood Mapping

Key Activities

- Acquisition of elevation data and mapping;
- Plotting of historical data and inundation mapping; and
- Modelling of hydrological and hydrometric data and other geospatial, mapping and modelling activities.

Required Outputs

- NDMP-funded flood maps must be compliant with relevant Treasury Board standards and guidelines (for reference, see: http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=16553);
- All Stream 2 projects must provide a copy of the flood map(s) to PS, in the appropriate format as outlined in the contribution agreement;
- All Stream 2 projects must provide PS with an updated NDMP risk assessment information template, which incorporates the flood mapping information.

Stream 3: Mitigation Planning

Key Activities

- Mitigation planning that incorporates the community, neighbouring First Nations communities, and other key local stakeholders to address areas of flood vulnerability.

Required Outputs

- All Stream 3 projects must produce a comprehensive mitigation plan and provide it to PS upon completion.

Stream 4: Investments in Non-Structural and Small Scale Structural Mitigation Projects

Key Activities

- Non-structural mitigation measures and small-scale structural mitigation measures.

Required Outputs

- All Stream 4 projects must provide a project report to PS upon completion of the project.

Annex A

National Disaster Mitigation Program (NDMP)
Risk Assessment Information Template Users' Guide

1. Overview

Following severe flooding in Saskatchewan, Manitoba and Quebec in 2011, Economic Action Plan 2012 proposed the Government discuss with provinces and territories (P/Ts) the development of a National Disaster Mitigation Program (NDMP), recognizing that mitigation can lessen the impact of natural disasters on vulnerable communities and reduce the costs associated with these events.

Of the four components of emergency management, mitigation is the most effective means to reduce or eliminate the impacts of disasters. While preparedness, response and recovery help ensure that, once a disaster strikes, the impacts are managed efficiently, mitigation measures can prevent the impacts from occurring at all, or reduce the negative consequences if they do occur.

Investment in disaster mitigation leads to significant relative savings in future response and recovery costs (compared to costs if no mitigation measures were taken). While future disaster costs cannot be predicted with certainty, the relative savings generated by mitigation investments have been demonstrated by governments, international organizations, and private industry world-wide.

A key element of any sound mitigation program is an understanding of both the potential risk of an event occurring, as well as the potential impacts should the risk be realized. Utilizing a risk assessment process, emergency management planners can begin to make proactive, risk-based decisions regarding the potential events that might impact their communities, and determine what priority measures can be taken, if possible, to improve the safety and resilience of their communities.

Risk assessments can be used by federal, provincial/territorial and municipal governments, as well as other stakeholders, to inform emergency management (EM) decision making across all four components of EM. The assessment process allows stakeholders to identify and prioritize those risks that are likely to create the most disruption to them. The assessment also helps decision-makers to identify and describe hazards and assess impacts and consequences based upon the vulnerability or exposure of the local area, or its functions to that hazard.

The risk assessment approach aims to understand the likely impacts of a range of emergency scenarios upon community assets, values and functions. As such, risk assessments provide an opportunity for multiple impacts and consequences to be considered enabling collaborative risk treatment plans and emergency management measures to be described.

The outputs of the assessment process can be used to better inform emergency management planning and priority setting, introduce risk action plans, and ensure that communities are aware of and better informed about hazards and the associated risks that may affect them.

2. NDMP Data and Information Collection for Identified Hazards

The NDMP risk assessment information template is a basic tool that has been developed by Public Safety Canada (PS) in consultation with other government departments, experts in risk assessment best practices, and international leaders in this area, for the input of risk information by funding applicants, based on a completed risk assessment process. The template was designed to allow comparability of information and data outputs from a variety of risk assessment methodologies that may be used.

The risk information will be used to support the application for which mitigation funding is being sought. All applicants must complete a risk assessment information template for funding consideration under streams two, three and/or four of the NDMP. In addition to the risk assessment information template, PS encourages all applicants to submit their detailed risk assessments as supporting documentation, thereby providing PS with a broader understanding of risk across Canada.

The completed risk assessment information template should outline and describe local risk, including an estimate of the likelihood of occurrence, potential magnitude and type of consequences or impacts. This should present factual supporting information.

Risk event descriptions should include, where possible, historical context, which allows for research into trends and longer term analysis. Information based on current risk, as well as future risk such as that brought upon by climate change, should be included.

Applicants should also ensure that prevention, mitigation and preparedness activities for the proposed area take into account existing infrastructure, technologies and community/regional capabilities. Local experts and experts from agencies at other government levels, may be invaluable resources to help gain important information regarding specific risk criteria.

3. Consequence/Impact Assessment

The following section provides a description of the different impact criteria that should be completed within the risk assessment information template. In addition, descriptions of the risk ranking and definitions associated with the five-point scale used to define the impacts are presented. The impact risk rating definitions are based on qualitative and quantitative elements referenced from a diverse array of risk and resilience methodologies and external risk management models.

a. People and Societal Impacts

It is a priority at the municipal, provincial and federal levels to protect the health and safety of Canadians. Impacts on people are considered pertinent in the

assessment process given that natural hazards can result in significant societal disruptions such as evacuations and relocations as well as injuries, immediate deaths, and deaths resulting from unattended injuries or displacement. As such, the following impact criteria will be assessed on a 1 to 5 scale:

- number of fatalities;
- ability for local healthcare resources to address injuries; and
- number of individuals displaced and duration of displacement.

b. Environmental Impacts

A priority for municipal, provincial and federal governments is to protect Canada's natural environment for current and future generations. As such, environmental impacts were included in the assessment to measure the risk event in relation to the degree of damage and predicted scope of clean-up and restoration needed following an event. The definitions consider the direct and indirect environmental impacts within the defined geographic area on a 1 to 5 scale, and include an assessment of air quality, water quality and availability (exclusive to on land and in-ground water), and various other nature indicators.

c. Local Economic Impacts

There may be impacts on the local economy that are the result of a risk event occurring. Local economic impacts attempt to capture the value of damages or losses to local economically productive assets, as well as disruptions to the normal functioning of the community's/region's local economic system. The definitions consider the local economic impacts within the defined geographic area on a 1 to 5 scale, and should consider direct and indirect economic losses (i.e. productivity losses, capital losses, operating costs, financial institutions and other financial losses).

d. Local Infrastructure Impacts

There are several local infrastructure components, as per a variety of risk assessment and management sources and guidelines that are fundamental to the viability and sustainability of a community/region. Those components that appear most pertinent to assess impacts resulting from natural hazards, such as floods, include: energy and utilities; information and communication technology; transportation; health, food and water; and safety and security. At a minimum, an assessment of the aforementioned components must be completed, defined on a 1 to 5 scale, and should consider both direct and indirect impacts.

It is important to note that Critical Infrastructure, in Canada, includes the following ten sectors: energy and utilities, information and communications technology, finance, healthcare, food, water, transportation, safety, government and manufacturing. Currently, the National Disaster Mitigation Program attempts to leverage those elements thought to be most relevant to identify and assess local flood risk to communities while complementing other Government initiatives, such as the *National Strategy and Action Plan for Critical Infrastructure*.

e. **Public Sensitivity Impacts**
   Public sensitivity was included as an impact criterion given that credibility of governments is founded on the public's trust that all levels of government will respond effectively to a disaster event. The definitions consider the impacts on public visibility on a 1 to 5 scale, and include an assessment of public perception of government institutions, and trust and confidence in public institutions.

4. Confidence Levels

The risk assessment process requires confidence levels to be defined, particularly since confidence levels can vary considerably depending on the availability of quality data, availability of relevant expertise to feed the risk assessment process, and the existing Canadian body of knowledge associated with specific natural hazards and natural disaster events.

Confidence levels have been defined using letters ranging from A to E, where 'A' is the highest confidence level and 'E' is the lowest. This approach was taken to ensure all applicants can determine the confidence in their risk assessment in a simplified, straightforward manner, which also ensures that a more consistent representation of confidence levels is being determined across all submissions.

Applicants are required to indicate in the risk assessment information template, their level of confidence in the likelihood estimate and impact risk ratings associated with the natural hazard risk event. Applicants can also provide a justification for the confidence level in the risk assessment information template, including references and sources to support the assigned confidence level.

Annex B

Return on Investment

Applicants for stream 4 projects can use any recognized methodology for determining the Return on Investment (ROI) of the proposal. However, applicants are encouraged to clearly demonstrate the following two steps associated with the ROI:

1. Loss Estimation Analysis; and
2. Return on Mitigation Investment.

All costs associated with the ROI calculation should be based on the direct losses that would be incurred if the proposed project was not undertaken. Similarly, only costs that can be directly attributed to the proposed mitigation activity should be used in assessing the ROI. For proposed projects that are part of a broader program or series of activities related to flood mitigation, please determine the impact for only the project activity being proposed.

Loss Estimation Analysis

Loss Estimate Analysis (LEA) determines the dollar value estimate of the damage that would have resulted from flooding, had the mitigation project not been completed versus the costs that would be incurred if the mitigation project were completed. The losses (damages) are calculated for scenarios where no mitigation actions are taken for a given flood depth for a storm/flow event. Similarly, the losses (damages) are calculated for the same flood depth if the mitigation project were completed. The difference between the costs associated with each of the two scenarios determines the estimated loss avoided (in dollars).

The loss estimate analysis can be presented as follows:

$$MP_A – MP_c = LA$$

Where: MP_A = Mitigation Project Absent
MP_C = Mitigation Project Complete
LA = Loss Avoided

Categories of loss generally include physical damage to assets and infrastructure, loss of function, and emergency management costs.

Table 1: Loss estimation categories and types

Loss Type	Loss Category
Physical	Buildings Contents Roads and Bridges Landscaping Environmental Impacts Vehicles/Equipment
Loss of Function	Displacement Expense Loss of Rental Income Loss of Business Income Loss of Wages Disruption Time of Residents Loss of Public Services Economic Impact of Utility Loss Economic Impact of Road/Bridge Closure
Emergency Management	Debris Cleanup Government Expense

(FEMA 2007)

Finally, all losses avoided should be calculated in present-day values.

Return on Mitigation Investment

The return on investment (ROI) is calculated using the Loss Avoided (calculated above) in relation to the proposed Project Cost (PC). These results can vary depending on the number of events evaluated for different assets and the resulting level of damage. For instance, if the mitigation measure is determined to protect an asset from more than one event during the course of the amortization period, the multiple cost avoidance should be calculated.

The proposed Project Cost (PC), is the total investment estimated for the project being evaluated, or in the case of acquisition projects, the fair market cost to acquire and restore the property. Project cost should represent the total investment for the project made by all parties involved.

Based on the information from the Loss Avoided and the determination of the Project Cost, the ROI should represent the following:

$$\frac{\text{LA (\$)}}{\text{PC (\$)}} = (\%)\text{ROI}$$

Where: LA ($) = Loss Avoided in dollars
PC ($) = Project Cost in Dollars
ROI = Return on Investment as a percentage

Amortization
All ROI calculations should be amortized over a 25 year period. If an alternative timeframe is used for the ROI calculation, clearly indicate the proposed timeframe.