Annex A

National Disaster Mitigation Program (NDMP)
Risk Assessment Information Template (RAIT) 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 (RAIT) 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 (RAIT) for funding consideration under streams two, three and four of the NDMP. In addition to the risk assessment information template (RAIT), 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 (RAIT) 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 (RAIT). 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/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 (RAIT), 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 (RAIT), including references and sources to support the assigned confidence level.