



National Disaster Mitigation Program (NDMP) Risk Assessment Information Template

Risk Event Details		
Start and end dates	Provide the start and end dates of the selected event, based on historical data.	
Severity of the risk event	Provide details about the risk event, including: <ul style="list-style-type: none">• Speed of onset and duration of event;• Level and type of damaged cause;• Insurable and non-insurable losses; and• Other details, as appropriate.	
Response during the risk event	Provide details on how the defined geographic area continued its essential operations while responding to the event.	
Recovery method for the risk event	Provide details on how the defined geographic area recovered.	
Recovery costs related to the risk event	Provide details on the costs, in dollars, associated with implementing recovery strategies following the event.	
Recovery time related to the risk event	Provide details on the recovery time needed to return to normal operations following the event.	



National Disaster Mitigation Program Risk Assessment Information Template

Risk Event Identification and Overview	
<p>Provide a qualitative description of the defined geographic area , including:</p> <ul style="list-style-type: none"> • Watershed/community/region name(s); • Province/territory; • Area type (i.e., city, township, watershed, organization, <i>et cetera</i>); • Population size; • Population variances (e.g., significant change in population between summer and winter months); • Main economic areas of interest; • Special consideration areas (e.g., historical, cultural and natural resource areas); and an • Estimate of the annual operating budget of the area. 	
Methodologies, processes and analyses	
<p>Provide the year in which the following processes/analyses were last completed and state the methodology(ies) used:</p> <ul style="list-style-type: none"> • Hazard identification; • Vulnerability analysis; • Likelihood assessment; • Impact assessment; • Risk assessment; • Resiliency assessment; and/or • Climate change impact and/or adaptation assessment. <p><i>Note:</i> It is recognized that many of the processes/analyses mentioned above may be included within one methodology.</p>	



National Disaster Mitigation Program Risk Assessment Information Template

Hazard Mapping	
<p>To complete this section:</p> <ul style="list-style-type: none"> • Obtain a map of the area that clearly indicates general land uses, neighbourhoods, landmarks, <i>et cetera</i>. For clarity throughout this exercise, it may be beneficial to omit any non-essential information from the map intended for use. Controlled photographs (e.g. aerial photography) can be used in place of or in addition to existing maps to avoid the cost of producing new maps. • Place a grid over the maps/photographs of the area and assign row and column identifiers. This will help identify the specific area(s) that may be impacted, as well as provide additional information on the characteristics within and affecting the area. • Identify where and how flood hazards may affect the defined geographic area. • Identify the mapped areas that are most likely to be impacted by the identified flood hazard. <p>Map(s)/photograph(s) can also be used, where appropriate, to visually represent the information/prioritization being provided as part of this template.</p>	
Hazard identification and prioritization	
<p>List known or likely flood hazards to the defined geographic area in order of proposed priority. For example: (1) dyke breach overland flooding; (2) urban storm surge flooding; and so on.</p>	
<p>Provide a rationale for each prioritization and the key information sources supporting this rationale.</p>	
Risk event title	
<p>Identify the name/title of the risk event. An example of a risk event name or title is: "A one-in-one hundred year flood following an extreme rain event."</p>	
Type of flood hazard	
<p>Identify the type of flood hazard being described (e.g., riverine flooding, coastal inundation, urban run-off, <i>et cetera</i>).</p>	



National Disaster Mitigation Program Risk Assessment Information Template

Secondary hazards	
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<p>Describe any secondary effects resulting from the risk event (e.g., flooding that occurs following a hurricane).</p>	
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Primary and secondary organizations for response	
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<p>Identify the primary organization(s) with a mandate related to a key element of a natural disaster emergency, and any supporting organization(s) that provide general or specialized assistance in response to a natural disaster emergency.</p>	
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Risk Event Description	
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Description of risk event, including risk statement and cause(s) of the event	
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<p>Provide a baseline description of the risk event, including:</p> <ul style="list-style-type: none"> • Risk statement; • Context of the risk event; • Nature and scale of the risk event; • Lead-up to the risk event, including underlying cause and trigger/stimulus of the risk event; and • Any factors that could affect future events. <p><i>Note:</i> The description entered here must be plausible in that factual information would support such a risk event.</p>	
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National Disaster Mitigation Program Risk Assessment Information Template

Location	
<p>Provide details regarding the area impacted by the risk event such as:</p> <ul style="list-style-type: none">• Province(s)/territory(ies);• Region(s) or watershed(s);• Municipality(ies);• Community(ies); and so on.	
Natural environment considerations	
<p>Document relevant physical or environmental characteristics of the defined geographic area.</p>	
Meteorological conditions	
<p>Identify the relevant meteorological conditions that may influence the outcome of the risk event.</p>	



National Disaster Mitigation Program Risk Assessment Information Template

Seasonal conditions	
Identify the relevant seasonal changes that may influence the outcome of the risk assessment of a particular risk event.	
Nature and vulnerability	
Document key elements related to the affected population, including: <ul style="list-style-type: none">• Population density;• Vulnerable populations (identify these on the hazard map from step 7);• Degree of urbanization;• Key local infrastructure in the defined geographic area ;• Economic and political considerations; and• Other elements, as deemed pertinent to the defined geographic area.	



National Disaster Mitigation Program Risk Assessment Information Template

Asset inventory	
<p>Identify the asset inventory of the defined geographic area , including:</p> <ul style="list-style-type: none"> • Critical assets; • Cultural or historical assets; • Commercial assets; and • Other area assets, as applicable to the defined geographic area. <p>Key asset-related information should also be provided, including:</p> <ul style="list-style-type: none"> • Location on the hazard map (from step 7); • Size; • Structure replacement cost; • Content value; • Displacement costs; • Importance rating and rationale; • Vulnerability rating and reason; and • Average daily cost to operate. <p>A total estimated value of physical assets in the area should also be provided.</p>	
Other assumptions, variability and/or relevant information	
<p>Identify any assumptions made in describing the risk event; define details regarding any areas of uncertainty or unpredictability around the risk event; and supply any supplemental information, as applicable.</p>	
Existing Risk Treatment Measures	
<p>Identify existing risk treatment measures that are currently in place within the defined geographic area to mitigate the risk event, and describe the sufficiency of these risk treatment measures.</p>	



National Disaster Mitigation Program Risk Assessment Information Template

Likelihood Assessment

Return period

Identify the time period during which the risk event might occur. For example, the risk event described is expected to occur once every X number of years. Applicants are asked to provide the X value for the risk event.

Period of interest

Applicants are asked to determine and identify the likelihood rating (i.e. period of interest) for the risk event described by using the likelihood rating scale within the table below.

Likelihood Rating	Description
5	The event is expected and may be triggered by conditions expected over a 30 year period.
4	The event is expected and may be triggered by conditions expected over a 30 - 50 year period.
3	The event is expected and may be triggered by conditions expected over a 50 - 500 year period.
2	The event is expected and may be triggered by conditions expected over a 500 - 5000 year period.
1	The event is possible and may be triggered by conditions exceeding a period 5000 years.

Provide any other relevant information, notes or comments relating to the likelihood assessment, as applicable.

Impacts/Consequences Assessment

There are 12 impact categories within 5 impact classes rated on a scale of 1 (least impact) to 5 (greatest impact). Conduct an assessment of the impacts associated with the risk event, and assign one risk rating for each category. Additional information may be provided for each of the categories in the supplemental fields provided.



Ottawa, Canada
K1A 0P8

National Disaster Mitigation Program Risk Assessment Information Template

A) People and societal impacts			
	Risk Rating	Definition	Assigned Risk Rating
Fatalities	5	Could result in more than 50 fatalities	
	4	Could result in 10 - 49 fatalities	
	3	Could result in 5 - 9 fatalities	
	2	Could result in 1 - 4 fatalities	
	1	Not likely to result in fatalities	
Supplemental information (optional)			
Injuries	5	Injuries, illnesses and/or psychological disablements cannot be addressed by local, regional, or provincial/territorial healthcare resources; federal support or intervention is required	
	4	Injuries, illnesses and/or psychological disablements cannot be addressed by local or regional healthcare resources; provincial/territorial healthcare support or intervention is required	
	3	Injuries, illnesses and/or psychological disablements cannot be addressed by local or regional healthcare resources; additional healthcare support or intervention is required from other regions, and supplementary support could be required from the province/territory	
	2	Injuries, illnesses and/or psychological disablements cannot be addressed by local resources through local facilities; healthcare support is required from other areas such as an adjacent area(ies)/municipality(ies) within the region	
	1	Any injuries, illnesses, and/or psychological disablements can be addressed by local resources through local facilities; available resources can meet the demand for care	
Supplemental information (optional)			



National Disaster Mitigation Program Risk Assessment Information Template

		Risk Rating	Definition	Assigned Risk Rating
Displacement	Percentage of displaced individuals	5	> 15 % of total local population	
		4	10 - 14.9 % of total local population	
		3	5 - 9.9 % of total local population	
		2	2 - 4.9 % of total local population	
		1	0 - 1.9 % of total local population	
	Duration of displacement	5	> 26 weeks (6 months)	
		4	4 weeks - 26 weeks (6 months)	
		3	1 week - 4 weeks	
		2	72 hours - 168 hours (1 week)	
		1	Less than 72 hours	
Supplemental information (optional)				
B) Environmental impacts				
	5	> 75 % of flora or fauna impacted or 1 or more ecosystems significantly impaired; Air quality has significantly deteriorated; Water quality is significantly lower than normal or water level is > 3 meters above highest natural level; Soil quality or quantity is significantly lower (i.e., significant soil loss, evidence of lethal soil contamination) than normal; > 15 % of local area is affected		
	4	40 – 74.9 % of flora or fauna impacted or 1 or more ecosystems considerably impaired; Air quality has considerably deteriorated; Water quality is considerably lower than normal or water level is 2 – 2.9 meters above highest natural level; Soil quality or quantity is moderately lower than normal ; 10 - 14.9 % of local area is affected		
	3	10 – 39.9 % of flora or fauna impacted or 1 or more ecosystems moderately impaired; Air quality has moderately deteriorated; Water quality is moderately lower than normal or water level is 1 - 2 meters above highest natural level; Soil quality or quantity is moderately lower than normal; 6 - 9.9 % of area affected		



Ottawa, Canada
K1A 0P8

National Disaster Mitigation Program Risk Assessment Information Template

	2	< 10 % of flora or fauna impacted or little or no impact to any ecosystems; Little to no impact to air quality and/or soil quality or quantity; Water quality is slightly lower than normal, or water level is less than 0.9 meters above highest natural level and increased for less than 24 hours; 3 - 5.9 % of local area is affected	
	1	Little to no impact to flora or fauna, any ecosystems, air quality, water quality or quantity, or to soil quality or quantity; 0 - 2.9 % of local area is affected	
Supplemental information (optional)			
C) Local economic impacts			
	Risk Rating	Definition	Assigned Risk Rating
	5	> 15 % of local economy impacted	
	4	10 - 14.9 % of local economy impacted	
	3	6 - 9.9 % of local economy impacted	
	2	3 - 5.9 % of local economy impacted	
	1	0 - 2.9 % of local economy impacted	
Supplemental information (optional)			



National Disaster Mitigation Program Risk Assessment Information Template

D) Local infrastructure impacts			
	Risk Rating	Definition	Assigned Risk Rating
Transportation	5	Local activity stopped for more than 72 hours; > 20 % of local population affected; lost access to local area and/or delivery of crucial service or product; or having an international level impact	
	4	Local activity stopped for 48 - 71 hours; 10 - 19.9 % of local population affected; significantly reduced access to local area and/or delivery of crucial service or product; or having a national level impact	
	3	Local activity stopped for 25 - 47 hours; 5 - 9.9 % of local population affected; moderately reduced access to local area and/or delivery of crucial service or product ; or having a provincial/territorial level impact	
	2	Local activity stopped for 13 - 24 hours; 2 - 4.9 % of local population affected; minor reduction in access to local area and/or delivery of crucial service or product; or having a regional level impact	
	1	Local activity stopped for 0 - 12 hours; 0 - 1.9 % of local population affected; little to no reduction in access to local area and/or delivery of crucial service or product	
Supplemental information (optional)			
Energy and Utilities	5	Duration of impact > 72 hours; > 20 % of local population without service or product; or having an international level impact	
	4	Duration of impact 48 - 71 hours; 10 - 19.9 % of local population without service or product; or having a national level impact	
	3	Duration of impact 25 - 47 hours; 5 - 9.9 % of local population without service or product; or having a provincial/territorial level impact	
	2	Duration of impact 13 - 24 hours; 2 - 4.9 % of local population without service or product; or having a regional level impact	
	1	Duration of impact 0 - 12 hours; 0 - 1.9 % of local population without service or product	



National Disaster Mitigation Program Risk Assessment Information Template

Supplemental information (optional)			
Information and Communications Technology	5	Service unavailable for > 72 hours; > 20 % of local population without service; or having an international level impact	
	4	Service unavailable for 48 - 71 hours; 10 - 19.9 % of local population without service; or having a national level impact	
	3	Service unavailable for 25 - 47 hours; 5 - 9.9 % of local population without service; or having a provincial/territorial level impact	
	2	Service unavailable for 13 - 24 hours; 2 - 4.9 % of local population without service; or having a regional level impact	
	1	Service unavailable for 0 - 12 hours; 0 - 1.9 % of local population without service	
Supplemental information (optional)			
Health, Food and Water	5	Inability to access potable water, food, sanitation services, or healthcare services for > 72 hours; non-essential services cancelled; > 20 % of local population impacted; or having an international level impact	
	4	Inability to access potable water, food, sanitation services, or healthcare services for 48-72 hours; major delays for non-essential services; 10 - 19.9 % of local population impacted; or having a national level impact	
	3	Inability to access potable water, food, sanitation services, or healthcare services for 25-48 hours; moderate delays for non-essential services; 5 - 9.9 % of local population impacted; or having a provincial/territorial level impact	
	2	Inability to access potable water, food, sanitation services, or healthcare services for 13-24 hours; minor delays for non-essential; 2 - 4.9 % of local population impacted; or having a regional level impact	
	1	Inability to access potable water, food, sanitation services, or healthcare services for 0-12 hours; 0 - 1.9 % of local population impacted	



National Disaster Mitigation Program Risk Assessment Information Template

Supplemental information (optional)			
Safety and Security	5	> 20 % of local population impacted; loss of intelligence or defence assets or systems for > 72 hours; or having an international level impact	
	4	10 - 19.9 % of local population impacted; loss of intelligence or defence assets or systems for 48 – 71 hours; or having a national level impact	
	3	5 - 9.9 % of local population impacted; loss of intelligence or defence assets or systems for 25 – 47 hours; or having a provincial/territorial level impact	
	2	2 - 4.9 % of local population impacted; loss of intelligence or defence assets or systems for 13 – 24 hours; or having a regional level impact	
	1	0 - 1.9 % of local population impacted; loss of intelligence or defence assets or systems for 0 – 12 hours	
Supplemental information (optional)			



National Disaster Mitigation Program Risk Assessment Information Template

E) Public sensitivity impacts			
	Risk Rating	Definition	Assigned Risk Rating
	5	Sustained, long term loss in reputation/public perception of public institutions and/or sustained, long term loss of trust and confidence in public institutions; or having an international level impact	
	4	Significant loss in reputation/public perception of public institutions and/or significant loss of trust and confidence in public institutions; significant resistance; or having a national level impact	
	3	Some loss in reputation/public perception of public institutions and/or some loss of trust and confidence in public institutions; escalating resistance	
	2	Isolated/minor, recoverable set-back in reputation, public perception, trust, and/or confidence of public institutions	
	1	No impact on reputation, public perception, trust, and/or confidence of public institutions	
Supplemental information (optional)			

Confidence Assessment
<p>Based on the table below, indicate the level of confidence regarding the information entered in the risk assessment information template in the “Confidence Level Assigned” column. Confidence levels are language-based and range from A to E (A=most confident to E=least confident).</p>



National Disaster Mitigation Program Risk Assessment Information Template

Confidence Level	Description	Confidence Level Assigned
A	<p>Very high degree of confidence Risk assessment used to inform the risk assessment information template was evidence-based on a thorough knowledge of the natural hazard risk event; leveraged a significant quantity of high-quality data that was quantitative and qualitative in nature; leveraged a wide variety of data and information including from historical records, geospatial and other information sources; and the risk assessment and analysis processes were completed by a multidisciplinary team with subject matter experts (i.e., a wide array of experts and knowledgeable individuals on the specific natural hazard and its consequences) Assessment of impacts considered a significant number of existing/known mitigation measures</p>	
B	<p>High degree of confidence Risk assessment used to inform the risk assessment information template was evidence-based on a thorough knowledge of the natural hazard risk event; leveraged a significant quantity of data that was quantitative and qualitative in nature; leveraged a wide variety of data and information including from historical records, geospatial and other information sources; and the risk assessment and analysis processes were completed by a multidisciplinary team with some subject matter expertise (i.e., a wide array of experts and knowledgeable individuals on the specific natural hazard and its consequences) Assessment of impacts considered a significant number of potential mitigation measures</p>	
C	<p>Moderate confidence Risk assessment used to inform the risk assessment information template was moderately evidence-based from a considerable amount of knowledge of the natural hazard risk event; leveraged a considerable quantity of data that was quantitative and/or qualitative in nature; leveraged a considerable amount of data and information including from historical records, geospatial and other information sources; and the risk assessment and analysis processes were completed by a moderately sized multidisciplinary team, incorporating some subject matter experts (i.e., a wide array of experts and knowledgeable individuals on the specific natural hazard and its consequences) Assessment of impacts considered a large number of potential mitigation measures</p>	
D	<p>Low confidence Risk assessment used to inform the risk assessment information template was based on a relatively small amount of knowledge of the natural hazard risk event; leveraged a relatively small quantity of quantitative and/or qualitative data that was largely historical in nature; may have leveraged some geospatial information or information from other sources (i.e., databases, key risk and resilience methodologies); and the risk assessment and analysis processes were completed by a small team that may or may not have incorporated subject matter experts (i.e., did not include a wide array of experts and knowledgeable individuals on the specific natural hazard and its consequences). Assessment of impacts considered a relatively small number of potential mitigation measures</p>	



National Disaster Mitigation Program Risk Assessment Information Template

E	<p>Very low confidence</p> <p>Risk assessment used to inform the risk assessment information template was not evidence-based; leveraged a small quantity of information and/or data relating to the natural risk hazard and risk event; primary qualitative information used with little to no quantitative data or information; and the risk assessment and analysis processes were completed by an individual or small group of individuals little subject matter expertise (i.e., did not include a wide array of experts and knowledgeable individuals on the specific natural hazard and its consequences).</p> <p>Assessment of impacts did not consider existing or potential mitigation measures</p>	
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Rationale for level of confidence

<p>Provide the rationale for the selected confidence level, including any references or sources to support the level assigned.</p>	
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Key information sources

<p>Identify all supporting documentation and information sources for qualitative and quantitative data used to identify risk events, develop the risk event description, and assess impacts and likelihood. This ensures credibility and validity of risk information presented as well as enables referencing back to decision points at any point in time.</p> <p>Clearly identify unclassified and classified information.</p>	
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National Disaster Mitigation Program Risk Assessment Information Template

Description of the risk analysis team	
<p>List and describe the type and level of experience of each individual who was involved with the completion of the risk assessment and risk analysis used to inform the information contained within this risk assessment information template.</p>	