




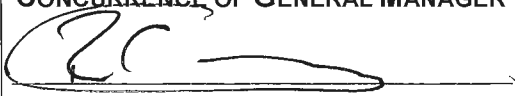

**To:** Public Works and Transportation Committee      **Date:** September 30, 2016  
**From:** John Irving, P.Eng. MPA      **File:** 10-6060-01/2016-Vol  
Director, Engineering      01  
**Re:** **2016 Submission to the National Disaster Mitigation Program:  
Steveston Island Flood Mitigation Planning Project and the Flood Mitigation  
Strategy Update**

**Staff Recommendation**

1. That the submission to the National Disaster Mitigation Program requesting funding for up to 100 % of the \$2,120,000 cost for Steveston Island Flood Mitigation Planning Project and the Flood Mitigation Strategy Update be endorsed;
2. That the Chief Administrative Officer and the General Manager of Engineering and Public Works be authorized to enter into funding agreements with the Government of Canada and/or the Province of BC for the above mentioned projects should they be approved for funding by the Government of Canada; and
3. That, should the above mentioned projects be approved for funding by the Government of Canada, the 2017 Capital Plan and the 5-Year Financial Plan (2017-2021) be updated accordingly.

  
John Irving, P.Eng. MPA  
Director, Engineering  
(604-276-4140)

Att. 3

<b>REPORT CONCURRENCE</b>		
<b>ROUTED TO:</b>  Finance Department Sewerage & Drainage	<b>CONCURRENCE</b>  <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<b>CONCURRENCE OF GENERAL MANAGER</b>  
<b>REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE</b>	<b>INITIALS:</b>  DW	<b>APPROVED BY CAO</b>  

## Staff Report

This report supports Council's 2014-2018 Term Goal #5 Partnerships and Collaboration:

*Continue development and utilization of collaborative approaches and partnerships with intergovernmental and other agencies to help meet the needs of the Richmond community.*

This report supports Council's 2014-2018 Term Goal #6 Quality Infrastructure Networks:

*Continue diligence towards the development of infrastructure networks that are safe, sustainable, and address the challenges associated with aging systems, population growth, and environmental impact.*

*6.1. Safe and sustainable infrastructure.*

This report supports Council's 2014-2018 Term Goal #7 Strong Financial Stewardship:

*Maintain the City's strong financial position through effective budget processes, the efficient and effective use of financial resources, and the prudent leveraging of economic and financial opportunities to increase current and long-term financial sustainability.*

*7.4. Strategic financial opportunities are optimized.*

## Origin

On September 22, 2016, Emergency Management BC (EMBC) announced a call for proposals from local governments for the National Disaster Mitigation Program (NDMP). Each project is eligible to receive up to 50% federal funding and up to 50% provincial funding. Funding under the NDMP is intended to reduce, or even negate, the effects of flood events. Funding is available for risk assessments, flood mapping, mitigation planning and investments in non-structural and small scale structural mitigation projects. A summary of the program is included (Appendix 1) for information. EMBC will review and prioritize all submissions and forward their recommendations to the Government of Canada for funding consideration.

The deadline for proposals was October 7, 2016. Given the short deadline, staff submitted two proposals: the Steveston Island Flood Mitigation Planning Project and the Flood Mitigation Strategy Update. The purpose of this report is to seek Council's endorsement on the submission to EMBC for the NDMP grant funding for up to 100% of the cost of both projects of \$2,120,000.

## Analysis

In recognition of increasing disaster risks and costs, the Federal Budget 2014 earmarked \$200 million over five years to establish the National Disaster Mitigation Program (NDMP) as part of the Federal Government's commitment to build safer and more resilient communities. The NDMP is intended to address rising flood risks and costs, and build the foundation for informed mitigation investments that could reduce, or even negate, the effects of flood events.

The NDMP will be an annual program, with a yearly intake to the Province of BC through EMBC every October 31, following this initial intake. The Province will apply on behalf of the

submitted projects they have prioritized and redistribute the funds to municipal and regional governments responsible for disaster mitigation.

Four funding streams have been identified by the program:

1. Risk Assessments
2. Flood Mapping
3. Mitigation Planning
4. Investments in Non-structural and Small Scale Structural Mitigation Projects

Staff submitted two projects to NDMP requesting grant funding:

<b>Project</b>	<b>Total Estimated Cost</b>	<b>Category</b>	<b>Potential Provincial Contribution</b>	<b>Potential Federal Contribution</b>
<b>Steveston Island Flood Mitigation Planning</b>	\$1,620,000	Mitigation Planning	Up to 50% of eligible costs (\$810,000)	Up to 50% of eligible costs (\$810,000)
<b>Flood Mitigation Strategy Update</b>	\$500,000	Mitigation Planning	Up to 50% of eligible costs (\$250,000)	Up to 50% of eligible costs (\$250,000)
<b>Total Request</b>	\$2,120,000			

Steveston Island Flood Mitigation Planning is in the 5 Year Financial Plan for 2017 and will be brought forward for Council's consideration as part of the 2017 Capital Plan.

Flood Mitigation Strategy Update includes the Dike Master Plan Phase 3, Flood Management Strategy Update and Pump Station Condition Assessment Update. There is existing capital funding for the Dike Master Plan Phase 3. The Flood Management Strategy Update and Pump Station Condition Assessment Update are in the 5 Year Financial Plan for 2017 and will be brought forward for Council's consideration as part of the 2017 Capital Plan.

### **Funding Details**

The NDMP operates through a 50% federal and 50% provincial funding model. The maximum level of assistance from all federal institutions must not exceed 50% of total eligible project costs for provinces. The Province of BC has indicated that if there is no funding available from the Provincial Government, the City of Richmond will only receive up to 50% funding from the Government of Canada.

Should the funding requests be successful, the City would be required to enter into funding agreements with the Province of BC and/or the Government of Canada. The agreements are standard form agreements provided by senior levels of government and include an indemnity and release in favour of the Provincial and Federal Government. As with any submission for funding to external sources, funding is not guaranteed to be granted to assist with this project.

### Financial Impact

The City of Richmond will be requesting up to \$2,120,000 for funding for two mitigation planning projects from the National Disaster Mitigation Program through Emergency Management BC. The fund may grant up to 100 % of total eligible costs.

Steveston Island Flood Mitigation Planning will be brought forward for Council's consideration as part of the 2017 Capital Plan.

Flood Mitigation Strategy Update includes the Dike Master Plan Phase 3, Flood Management Strategy Update and Pump Station Condition Assessment Update. There is existing capital funding for the Dike Master Plan Phase 3. The Flood Management Strategy Update and Pump Station Condition Assessment Update will be brought forward for Council's consideration as part of the 2017 Capital Plan.

### Conclusion

Staff are seeking Council's endorsement on two projects already submitted to the National Disaster Mitigation Program. The projects have been submitted to the Province of BC and will be initially evaluated through Emergency Management BC. Richmond is requesting up to 100% funding for Steveston Island Flood Mitigation Planning Project and the Flood Mitigation Strategy Update.



Lloyd Bie, P. Eng  
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(604-276-4075)



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LB:ch

- Att. 1: National Disaster Mitigation Program Summary
- 2: National Disaster Mitigation Program Project Proposal Form - Steveston Island Flood Mitigation Planning Project
- 3: National Disaster Mitigation Program Project Proposal Form - Flood Mitigation Strategy Update

## **Attachment 1: National Disaster Mitigation Program Summary**

### **National Disaster Mitigation Program (NDMP)**

#### **Overview**

In recognition of increasing disaster risks and costs, Budget 2014 earmarked \$200 million over five years to establish the National Disaster Mitigation Program (NDMP) as part of the Government's commitment to build safer and more resilient communities. The NDMP will address rising flood risks and costs, and build the foundation for 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 by building a body of knowledge on flood risks in Canada, and investing in foundational flood mitigation activities. 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 developing a residential flood insurance market in Canada.

#### **Main Objectives**

The NDMP was established in April 2015 to reduce the impacts of natural disasters on Canadians by:

- Focusing investments on significant, recurring flood risk and costs; and
- Advancing work to facilitate private residential insurance for overland flooding.

#### **Eligibility**

Provincial and territorial governments are the eligible recipients for funding under the NDMP. However, provincial and territorial authorities may collaborate with, and redistribute funding to eligible entities, such as municipal or other local governments, public sector bodies, private sector bodies, band councils, international non-government organizations or any combination of these entities.

#### **Program Components**

Of the NDMP's \$200 million, the NDMP has an allotment of approximately \$183 million for NDMP projects that will be cost-shared with the provinces and territories (up to 50 per cent of eligible provincial projects and up to 75 per cent of eligible projects in the territories). Projects will be selected for funding through a competitive, merit-based process using objective and measurable criteria.

There are four funding streams available under the NDMP:

### **Risk Assessments**

This stream provides funding for the completion of risk assessments to inform flood risks. Risk assessments are the foundational step in disaster mitigation. These risk assessments will identify flood hazards; potential impacts; and community and infrastructure vulnerabilities as well as the overall flood risk profile for the area.

### **Flood Mapping**

This stream provides funding for the development and/or modernization of flood maps to further address flood risks. A flood map identifies the boundaries of a potential flood event based on type and likelihood and can be used to help identify the specific impacts of a flood event on, for example, structures, people and assets.

### **Mitigation Planning**

This stream provides funding for the development and/or modernization of mitigation plans to address flood risks. A comprehensive mitigation plan allows applicants to develop realistic and sustainable mitigation solutions by clearly outlining the plan's objectives, key activities, expected outputs, timelines, and roles and responsibilities.

### **Investments in Non-structural and Small Scale Structural Mitigation Projects**

This stream provides funding for other non-structural and small scale structural disaster mitigation projects. Eligible projects would include actions such as the replacement of storm culverts, or projects that improve flood resilience by proactively preventing or mitigating damages and losses.

In general, provinces and territories can access any funding stream; however, there must be evidence to indicate that proposals are evidence-based. For example, applicants for flood mapping funding must indicate that their perceived need for flood mapping was informed by a risk assessment. Applicants for mitigation planning must demonstrate that their proposals reflect a need to prevent or mitigate identified and significant flood risks.

Further, provinces and territories can apply to access different streams of funding for different projects.

In addition to the funds that will be dedicated to cost-shared projects with provinces and territories, the NDMP will also assist in building the foundation for future, informed proactive prevention and mitigation by investing \$17 million in three key areas:

- Risk, resilience and return on investment tools to provide provinces, territories and communities with the needed information and capacity to plan and evaluate their flood mitigation projects;
- A risk and resilience repository that will collect, store, manage and share NDMP information to inform future policy and program direction for all levels of government; and
- Public awareness and engagement activities

# National Disaster Mitigation Program

## Project Proposal Form

### A) Applicant Contact Information

#### i) Province/Territory

*Note:* If more than one province/territory is involved in this proposed project, please identify the province/territory that will be leading this project.

1) Name: Province of British Columbia	2) Title:	
3) Organization (i.e. Province/Territory): Emergency Management BC (EMBC)	4) Telephone Number: (604) 586-4390	5) Facsimile Number: (604) 586-4334
6) Email Address: embcfloodprotection@gov.bc.ca	7) Date (dd/mm/yyyy):	

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

1) Name: Denise Tambellini	2) Title: Manager Intergovernmental Relations and Protocol Unit	
3) Organization: City of Richmond	4) Telephone Number: (604) 276-4349	5) Facsimile Number: (604) 276-4222
6) Email Address: dtambellini@richmond.ca	7) Date (dd/mm/yyyy): 30/09/2016	

### B) Project Details and Attestations

<b>8) Project Stream</b> Identify the NDMP Project Stream relative to this project submission. <i>Note:</i> Each project stream has different requirements and merit criteria. See <b>Section C</b> for specifics on each stream.	<input type="checkbox"/> Stream 1: Risk Assessment(s) <input type="checkbox"/> Stream 2: Flood Mapping <input checked="" type="checkbox"/> Stream 3: Mitigation Planning <input type="checkbox"/> Stream 4: Investment in Non-Structural or Small Scale Structural Mitigation
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9) Project Title: Flood Mitigation Strategy Update
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10) Project Timeline:			
a) Duration of Project:	b) Projected Start Date or proposed project: (dd/mm/yyyy)	c) Projected End Date of proposed project: (dd/mm/yyyy)	
Months: 3	Years: 1	01/01/2017                      31/03/2018	

11) Estimated Total Cost of Project  (Please complete the <b>Budget Template [Section D]</b> ).	a) Total of non-federal costs: \$250,000.00 b) Total federal costs: \$250,000.00 c) Total Project cost (i.e. a + b): \$500,000.00
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<b>12) Project Description</b> a) Provide a brief description of your proposed project. Climate change scientists estimate that sea level will rise approximately 1 m over the next 100 years. Combined with 0.2 m of subsidence that is expected in that same time period, Richmond will be required to raise dikes by 1.2 m to accommodate these changes.  As a city surrounded by ocean and river, the City of Richmond is under constant threat of flooding. In our Flood Protection Strategy, the City has identified risks, mitigation goals, and objectives/strategies required to make more informed planning decisions for the citizens and businesses that call Richmond home.  The Flood Mitigation Strategy Update includes the mitigation planning for the Dike Master Plan Phase 3, Flood Management Strategy Update and Pump Station Condition Assessment Update.
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- Environmental Permitting and Monitoring (for Investigation Work only)
- Archaeological Permitting and Monitoring (for Investigation Work only)

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

*Note:* b) is not applicable for Stream 1: Risk Assessment(s). Risk Assessments will help identify areas that may be at risk, as well as help to determine the level of risk.

(Please provide your responses in bullet form.)

The City of Richmond is at the forefront of flood protection in the Province of BC as the entire community is contained within the floodplain of the Fraser River, below historic high water levels and subject to freshet events, tidal flood events and internal drainage challenges. Richmond is approximately 1m above mean sea level and protected by 49 km of dike. Climate change scientists estimate that sea level will rise approximately 1 m over the next 100 years. Combined with 0.2 m of subsidence that is expected in that same time period, Richmond will be required to raise and build new dikes to meet future water levels. This project addresses the flood mitigation planning required to build a new dike on Steveston Island as recommended and endorsed by Council through Richmond's Dike Master Plan Phase 1.

Disaster mitigation is essential to protect not only residents, farms and businesses, but municipal, Provincial and Federal infrastructure. On land, this includes Highway 99 which is the main thoroughfare connecting the I5 freeway from Seattle to Vancouver and Vancouver International Airport (YVR). On water, Richmond is along a major shipping route to the port terminals along the Fraser River. Other risks to Richmond include toxic spills along the Fraser River, train and aircraft accidents as Richmond is home to YVR. Partners that may be impacted without disaster mitigation infrastructure from this project include YVR, Transport Canada, BC Ministry of Transportation and Infrastructure and others.

Approximately 220,000 people, \$50 billion worth of assets and over 13,000 businesses that employ 140,000 people call Richmond home. The rapidly growing City Centre has over 4,000 businesses, total commercial space of almost 10 million ft<sup>2</sup> and over 30,000 employees. The City Centre population is anticipated to increase by 30,000 residents in the next 10 years. Without this disaster mitigation planning as delivered under the Flood Mitigation Strategy Update, the impact on human lives and Canada's economy that would result from a flood disaster is tremendous and cannot be quantified.

13)

a) How will this project benefit the defined geographical area and the surrounding communities?

(Please provide your response in bullet-form.)

- The existing Steveston dike is in close proximity to commercial and residential buildings. Increasing the elevation of this current dike would be extremely disruptive to the community.
- Additionally, historic assets are out of the dike and prone to seasonal flooding.
- The Steveston Island alignment preserves the heritage nature of Steveston while providing long term protection from climate change induced sea level rise for Richmond.

b) Were surrounding communities informed of this projected proposal?

Yes     No

Comments:

Through the Dike Master Plan Phase I, between September and December 2012, a series of key stakeholder meetings were held. Key stakeholders generally favoured the creation of a new dike alignment on Steveston Island based on minimizing community disruption and maximizing scope for long-term dike upgrades. Key stakeholders included:

- Steveston 20/20
- Provincial Inspector of Dikes
- Steveston Harbour Authority
- Department of Fisheries and Oceans
- Port Metro Vancouver
- Provincial Land Tenure Department
- The City's Advisory Committee for the Environment
- The City's Heritage Commission
- The Urban Development Institute

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).

Name:	Population:	(E)	(C)
City of Richmond	220,000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Name:	Population:	(E)	(C)
Metro Vancouver (including Richmond)	2,464,000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



Name: Musqueam Indian Band	Population: 1,500	(E) <input checked="" type="checkbox"/>	(C) <input checked="" type="checkbox"/>								
<p><b>15) How will this project contribute to the following?</b> (please provide your responses in bullet-form)</p> <p>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)</p> <ul style="list-style-type: none"> <li>- The Steveston Dike Upgrade Project will provide future flood protection to all of Richmond to address long-term sea level rise and associated flood risks. Building a long-term diking solution on Steveston Island will protect \$50 billion worth of assets on Lulu Island.</li> <li>- Flooding is a primary risk for the City of Richmond and maintaining a high level of flood protection is the primary goal of this program.</li> <li>- The Dike Master Plan Phase 1 outlined two distinct alignment concepts for Steveston. One alignment option was to raise the dike along the current alignment with some local variations and the second alignment was to re-align the dike along Steveston Island to close the harbour. The recommendation out of the Dike Master Plan Phase 1 was the second alignment to re-align the dike along Steveston Island and this recommendation was endorsed by Council.</li> <li>- The 3km long section of dike that stretches between Garry Point Park and London Farm will require raising and strengthening over the long term to address the changes in flood risk posed by climate change induced sea level rise.</li> <li>- The Steveston Island Flood Mitigation Planning Project will identify geotechnical, environmental and archaeological conditions on Steveston Island to determine if appropriate for dike construction.</li> <li>- If the Steveston Island Flood Mitigation Planning does not proceed, construction of the long-term dike alignment on Steveston Island will not be possible. If construction of the long-term dike alignment on Steveston Island does not occur, Steveston and potentially Richmond will be inundated by climate change induced sea level rise.</li> </ul> <p>b) Reducing disaster related financial liabilities for all levels of government? The Steveston Island dike will protect over \$50 billion in assets, including Highway 99, rail facilities, and Port of Vancouver shipping facilities.</p> <p>c) Reducing risk, developing capacity and/or enhancing resilience? Will protect Richmond from flooding that could result from climate change induced sea level rise.</p>											
<p><b>16) Prioritized List of all project proposals in this Project Stream:</b></p> <p>a) Provide your prioritized list of all proposed projects (E.g. #1 equals the highest priority project, #2 equals the second highest priority, etc.)</p> <table border="1"> <tr> <td>Number:</td> <td>Project Title:</td> </tr> <tr> <td>1</td> <td>Steveston Island Flood Mitigation Planning</td> </tr> <tr> <td>Number:</td> <td>Project Title:</td> </tr> <tr> <td>2</td> <td>Flood Mitigation Strategy Update</td> </tr> </table> <p>b) Indicate the priority ranking of this proposed project. # : 1</p>				Number:	Project Title:	1	Steveston Island Flood Mitigation Planning	Number:	Project Title:	2	Flood Mitigation Strategy Update
Number:	Project Title:										
1	Steveston Island Flood Mitigation Planning										
Number:	Project Title:										
2	Flood Mitigation Strategy Update										
<p><b>17) Provide a rationale/justification for implementing this mitigation activity instead of the other mitigation projects on the prioritized project list. (500 characters max.)</b></p> <p>Richmond's 2008-2031 Richmond Flood Protection Strategy identified the need to "Prepare and implement a comprehensive dike improvement program." Richmond's Dike Master Plan Phase I identified Steveston Island as the long-term diking solution for Steveston. As the next step for implementing this long-term solution, Richmond obtained tenure from the Province to complete Steveston Island Flood Mitigation Planning. The tenure expires April 2018 and this project must be completed by that date.</p>											
<p><b>18) Work Plan:</b></p> <p>The proposed project's work plan should clearly articulate all activities (i.e. tasks, deliverables, resources, timelines, etc.) for which the financial contribution is being requested for each fiscal year.</p> <p>The work plan should include all products, methods, information materials, protocols, agreements, etc. that will be created to support the completion of this proposed project.</p> <p>Please complete the <b>Work Plan Template (Section D)</b>.</p>											

**19) Stakeholders:**

- a) Identify all stakeholders/partnerships and describe their current and/or potential level of engagement, as applicable.
- b) Identify those stakeholders/partners who have committed support, either in-cash or in-kind, for the proposed project.
- c) Provide a description/summary of the stakeholder list, and how this information provides a rationale/justification for implementing this mitigation activity.

Please provide your answers in the Stakeholders Template (Section D).

**20) Project Implementation Risks (Please provide your response in bullet-form):**

- a) Identify any project implementation risks that may impact your ability to deliver the project as planned/scheduled
  - Steveston Island Mitigation Planning project scheduling is dependent upon appropriate timing windows as described in detail in the Preliminary Investigation Management Plan by Golder Associates to accommodate active breeding season for species at risk, in-water drilling during the window of least risk for the Fraser River Estuary to protect fish and site prep and drilling outside of breeding bird season where possible. Optimization of project schedule is crucial to reduce potential environmental effects.
- b) Outline the mitigation measures that you will take to minimize and/or address your project's implementation risks
  - Complete field survey in advance of other investigation components so that the preliminary dike design and alignment can be confirmed prior to laying out actual test hole locations
  - Investigation, survey work, Phase 1 ESA and initial-ecological assessment be carried out at the same time and in advance of drilling and environmental investigations
  - Geotechnical and Phase 2 ESA drilling be combined to reduce potential disturbance to environmentally sensitive areas.

**21) Monitoring and Performance Management (Please provide your response in bullet-form):**

- Describe the internal measures that you will implement to monitor your project and manage performance.
- Hire a consultant to full-time project manage the scope of the Steveston Island Mitigation Planning Project
  - Hold weekly conference calls between the City and the consultant to ensure targets and major milestones are met
  - Hold monthly meetings between the City and consultant to manage performance

**22) Official Languages**

In order to support Public Safety Canada's obligations under Part VII of the Official Languages Act, the applicant must 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  No
- 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?  
All needs and considerations of official language minority communities have been addressed as part of the project's ongoing community stakeholder consultations.

**Project Attestations**

23) The province or territory responsible for the implementation of this project agrees to share information with the government of Canada, including 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 all other relevant project information, such as lessons learned.

I agree

24) The province or territory responsible for the implementation of this project agrees to report, in accordance with its contribution agreement, on topics such as the project implementation status, measures for successful implementation, project risk mitigation measures, and financial expenditures.

I agree

25) The province or territory responsible for the implementation of this project agrees to publicly recognize the federal government's contribution in any announcement

I agree

26) The province or territory responsible for the implementation of this project agrees to ensure that it takes all necessary steps to prevent the risk of conflicts of interest, including:

- Disclosure of any apparent, actual or potential conflict of interest in compliance with Canada or the Province's laws, regulations or policies, as the case may be, and disclosure of the involvement of any former public servants or public office holders subject to the *Values and Ethics Code for the Public Sector*, the *Conflict of Interest Act*, and the conditions of the *Parliament of Canada Act*;
- Registrant as lobbyists as required under the Lobbying Act (applicants shall provide assurance that, where lobbyists are utilized, they are registered in accordance with the Lobbying Act and that no actual or potential conflict of interest exists nor any contingency fee arrangement);
- Role of any Government of Canada official, if a Government of Canada official is to participate on an advisory committee or board. Such involvement must not be seen to be exercising control on the committee or board on the use of funds.

I agree

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 meet this description?

Yes

No

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

### Stream 3: Mitigation Planning

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?

Yes, Previously - File #: \_\_\_\_\_  Yes, Attached  No

2) Description/Summary of your risk assessment findings.  
(500 characters max.)

Flood Risk Economic Assessments conducted for the City indicates a clear need to improve the perimeter ring dike protections for the City. Upgrading 49 kilometres of dike to accommodate climate change induced sea level rise will be performed over the next 25 years in alignment with current sea level rise predictions. The City of Richmond has identified the Steveston Island Flood Mitigation Planning Project as a priority project.

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?

Yes, Previously - File #: \_\_\_\_\_  Yes, Attached  No

b) Description/Summary

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

Richmond's primary line of defense against flooding during freshet events or tidal surges is the existing perimeter diking system. As the elevation of Lulu Island is generally below high water, the area would be flooded without this system during extreme events. The estimated economic damage from an event similar to the 1894 Fraser River flood is \$7.1 billion.

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

Increasing mitigation planning is in direct response to climate change induced sea level rise and increasing rainfall intensity. Flooding is a primary risk for the City of Richmond and maintaining a high level of flood protection is the primary goal of this project. Approximately 220,000 people, \$50 billion in assets, and a high value of economic activity are protected by the City's flood protection system and the Steveston Island Flood Mitigation Planning Project is necessary for mitigation.

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.

I agree

## D) Templates

### 1. Budget Template

Add Template

Remove Template

**Project Budget**  
**Revenues for Fiscal Year (April 1 - March 31)**  
 2017 - 2018

Project Title: Steveston Island Mitigation Planning

<b>Government Funding: Cash</b> (Municipal, provincial, territorial, and federal) <b>(Note:</b> For federal funding, please specify the federal government department)	<b>Amount</b>
City of Richmond	\$810,000.00
Federal Government	\$810,000.00
<b>Subtotal – Cash</b>	<b>\$1,620,000.00</b>
<b>Government Funding: In-Kind</b> (Municipal, provincial, territorial, and federal) <b>(Note:</b> For federal funding, please specify the federal government department)	<b>Amount</b>
<b>Subtotal – In-Kind</b>	<b>\$0.00</b>
<b>Total Government Funding</b> (subtotal of Cash + subtotal of In-Kind from municipal, provincial, territorial, and federal government sources)	<b>\$1,620,000.00</b>
<b>Total Federal Government Funding</b> (subtotal of Cash + subtotal of In-Kind from all federal government sources)	<b>\$810,000.00</b>
<b>Proportion of Federal Government Contribution</b> (Note: The maximum Federal Contribution is <b>50%</b> for Provinces and <b>75%</b> for Territories)	<u>50 %</u>
<b>Non-government Funding and other: Cash</b>	<b>Amount</b>
<b>Subtotal – Cash</b>	<b>\$0.00</b>
<b>Non-government Funding and other: In-Kind</b>	<b>Amount</b>
<b>Subtotal – In-Kind</b>	<b>\$0.00</b>
<b>Total Non-government Funding and other</b> (subtotal of Cash + subtotal of In-Kind from non-government funding and other sources)	<b>\$0.00</b>
<b>Total Government Funding</b> (Total of <b>government funding</b> + total of <b>non-government funding and other</b> )	<b>\$1,620,000.00</b>

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)**  
2017 - 2018

Project Title: Steveston Island Flood Mitigation Plan

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
Consultant Fees	Project Management	\$27,000.00	\$27,000.00		\$54,000.00
Professional Services Support	Geotechnical Investigation - Off-shore and on-shore investigation work, including bore holes, electronic CPTs, marine investigation activities	\$600,000.00	\$600,000.00		\$1,200,000.00
Professional Services Support	Field and Bathymetric Survey	\$75,000.00	\$75,000.00		\$150,000.00
Professional Services Support	Environmental Site Assessment - Phase 1 and Phase 2, including aquatic and wildlife habitat identification, at risk species identification and Environmental Protection Plan	\$30,000.00	\$30,000.00		\$60,000.00
Consultant Fees	Environmental Permitting and Monitoring (for investigative work)	\$60,000.00	\$60,000.00		\$120,000.00
Consultant Fees	Archaeological Permitting and Monitoring (for investigative work)	\$15,500.00	\$15,500.00		\$31,000.00
Professional services support	For building a business case	\$2,500.00	\$2,500.00		\$5,000.00
<b>Subtotal – Cash</b>		\$810,000.00	\$810,000.00	\$0.00	\$1,620,000.00
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
					\$0.00
<b>Subtotal – In-Kind</b>		\$0.00	\$0.00	\$0.00	\$0.00
<b>Total Expenditures:</b> (Subtotal of Cash + subtotal of In-Kind)		\$810,000.00	\$810,000.00	\$0.00	\$1,620,000.00

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

**List: Eligible Costs**

#	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**

#	<b><u>Ineligible Costs</u></b>
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	Any expenditures related to a project already started prior to 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. application for funding and prior to approval.
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.

2) Work Plan Template

Activities	Tasks	Deliverable(s)/ Product(s)	Resources	Timelines (Start and End Dates)	Considerations/ Comments
RFP for Steveston Island Mitigation Planning Project	Draft and release and award RFP	RFP	Staff	Start Date: 01/01/2017 End Date: 28/02/2017	Staff will be pre-draft RFP for public tender
Geotechnical Investigation	Off-shore and on-shore investigation work, including bore holes, electronic CPTs, marine investigation activities	-includes minimum of 3 detailed test holes (10m to 20m depth) for every 300 linear meters of new dike construction, test holes will be across the dike cross-section at these intervals - Additional test holes at specialized structures such as flood gates and pump house structures	Consultant - Solid or hollow stem auger techniques for on-shore holes - mud-rotary techniques for off-shore holes - on-shore CPT locations will use a track-mounted drill rig - marine CPT locations will use a drill rig stationed on a floating or jack-up barge platform	Start Date: 15/07/2017 End Date: 28/02/2018	- In-water drilling to be complete between July 16 and February 28, this is least risk for the Fraser River Estuary for the protection of fish - Site preparation on-shore and drilling to be complete between August 18 and March 18, to prevent disturbance of bird nests
Field and Bathymetric Survey	Survey	- Field survey for on-shore areas - Bathymetric survey for off-shore areas	Consultant - off-shore survey requires motorized boat using a side-scan sonar to determine bottom profiling	Start Date: 01/02/2017 End Date: 30/06/2017	None
Environmental Site Assessment	Phase 1 and Phase 2, including aquatic and wildlife habitat identification, at risk species identification and Environmental Protection Plan	-Phase 1 - Desktop study to determine the potential for soil and/or groundwater contamination within the proposed dike footprint - Phase 2 - includes field investigation, sampling and testing	Consultant	Start Date: 01/02/2017 End Date: 30/06/2017	- Phase 2 is dependent upon results of Phase 1 - At-risk wildlife species survey should be conducted during active breeding season (early spring, but dependent upon weather) - At-risk plant species should occur during growing season (March to September, but dependent upon weather)
Environmental Permitting and Monitoring	For investigative work	- identification of documented fisheries resources and aquatic habitats, wildlife and wildlife habitat and species at risk within geotechnical investigation footprint	Consultant	Start Date: 01/02/2017 End Date: 30/06/2017	None

Archaeological Permitting and Monitoring	For investigative work	- Archaeological overview assessment (AOA) that includes desktop assessment of the project area and undertake preliminary field reconnaissance - obtain First Nations Heritage Investigation Permits - if avoidance of heritage sites not possible, obtain Alteration Permit(s) prior to undertaking investigative work	Consultant	Start Date: 01/02/2017	- complete prior to conduction geotechnical investigation activities
				End Date: 30/06/2017	
Report	Results of studies	Draft Steveston Island Flood Mitigation Planning report Review and final approval	Staff Consultants Council	Start Date: 01/11/2017	Staff to review and comment City Council to finalize and accept
				End Date: 31/01/2018	
Sharing	Provide report to NDMP	Steveston Island Flood Mitigation Planning report	Staff Federal Government	Start Date: 01/02/2018	For sharing of knowledge and best practices in flood planning and mitigation
				End Date: 31/03/2018	

### 3) Stakeholder Template

**Notes:**

- a) Identify all stakeholders/partnerships and describe their current and/or potential level of engagement, as applicable.
- b) Identify those stakeholders/partners who have committed, in-cash or in-kind, support for the proposed project.
- c) Provide a description/summary of the stakeholder list, and how this information provides a rationale/justification for implementing this mitigation activity.

<b>Part 1: Stakeholder Identification and Level of Engagement</b>					
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 (\$)
	Steveston 20/20		N/A	\$0.00	\$0.00
	Provincial Inspector of Dikes		N/A	\$0.00	\$0.00
	Steveston Harbour Authority		N/A	\$0.00	\$0.00
	Department of Fisheries and Oceans		N/A	\$0.00	\$0.00
	Port Metro Vancouver		N/A	\$0.00	\$0.00
	Provincial Land Tenure Department		N/A	\$0.00	\$0.00
	The City's Advisory Committee for the Environment		N/A	\$0.00	\$0.00
	The City's Heritage Commission		N/A	\$0.00	\$0.00
	The Urban Development Institute		N/A	\$0.00	\$0.00
<b>Part 2: Description/Summary</b>					
<b>How does the engagement of these stakeholders support and/or justify the implementation of this mitigation activity?</b>					
Key stakeholders generally favoured the creation of a new dike alignment on Steveston Island based on minimizing community disruption and maximizing scope for long-term dike upgrades. The Steveston Island dike alignment is consistent with long term harbour improvements proposed by the Steveston Harbour Authority.					

# National Disaster Mitigation Program

## Project Proposal Form

### A) Applicant Contact Information

#### i) Province/Territory

**Note:** If more than one province/territory is involved in this proposed project, please identify the province/territory that will be leading this project.

1) Name: Province of British Columbia	2) Title:	
3) Organization (i.e. Province/Territory): Emergency Management BC (EMBC)	4) Telephone Number: (604) 586-4390	5) Facsimile Number: (604) 586-4334
6) Email Address: embcfloodprotection@gov.bc.ca		7) Date (dd/mm/yyyy):

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

1) Name: Denise Tambellini	2) Title: Manager Intergovernmental Relations and Protocol Unit	
3) Organization: City of Richmond	4) Telephone Number: (604) 276-4349	5) Facsimile Number: (604) 276-4222
6) Email Address: dtambellini@richmond.ca		7) Date (dd/mm/yyyy): 30/09/2016

### B) Project Details and Attestations

<p>8) Project Stream Identify the NDMP Project Stream relative to this project submission. <b>Note:</b> Each project stream has different requirements and merit criteria. See <b>Section C</b> for specifics on each stream.</p>	<input type="checkbox"/> Stream 1: Risk Assessment(s) <input type="checkbox"/> Stream 2: Flood Mapping <input checked="" type="checkbox"/> Stream 3: Mitigation Planning <input type="checkbox"/> Stream 4: Investment in Non-Structural or Small Scale Structural Mitigation
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9) Project Title: Steveston Island Flood Mitigation Planning
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10) Project Timeline:		
a) Duration of Project:	b) Projected Start Date or proposed project: (dd/mm/yyyy)	c) Projected End Date of proposed project: (dd/mm/yyyy)
Months: 3	Years: 1	01/01/2017
		31/03/2018

11) Estimated Total Cost of Project  (Please complete the <b>Budget Template [Section D]</b> ).	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">a) Total of non-federal costs:</td> <td style="text-align: right;">\$810,000.00</td> </tr> <tr> <td>b) Total federal costs:</td> <td style="text-align: right;">\$810,000.00</td> </tr> <tr> <td>c) Total Project cost (i.e. a + b):</td> <td style="text-align: right;">\$1,620,000.00</td> </tr> </table>	a) Total of non-federal costs:	\$810,000.00	b) Total federal costs:	\$810,000.00	c) Total Project cost (i.e. a + b):	\$1,620,000.00
a) Total of non-federal costs:	\$810,000.00						
b) Total federal costs:	\$810,000.00						
c) Total Project cost (i.e. a + b):	\$1,620,000.00						

12) Project Description  a) Provide a brief description of your proposed project. The Steveston Island Flood Mitigation Planning is intended to provide future flood protection to the City of Richmond. Previous studies evaluating various options for flood protection have been completed and Steveston Island has been identified as the long term barrier for potential flooding caused by climate change induced sea level rise. The scope of this project is identifying geotechnical, environmental and archaeological as part of a feasibility level assessment of Steveston Island for the purpose of diking. Please see attached Risk Assessments and engineering reports for more details.  Key study activities include:  <ul style="list-style-type: none"> <li>• Geotechnical Investigation (Off-shore and On-shore Investigation Work)</li> <li>• Field and Bathymetric Survey</li> <li>• Phase 1 and Phase 2 Environmental Site Assessment</li> </ul>
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b) Describe how this project addresses one or more high risk communities and/or a flood mapping activity.  
*Note:* b) is not applicable for Stream 1: Risk Assessment(s). Risk Assessments will help identify areas that may be at risk, as well as help to determine the level of risk.

(Please provide your responses in bullet form.)

The City of Richmond is at the forefront of flood protection in the Province of BC as the entire community is contained within the floodplain of the Fraser River, below historic high water levels and subject to freshet events, tidal flood events and internal drainage challenges. Richmond is approximately 1m above mean sea level and protected by 49 km of dike. Climate change scientists estimate that sea level will rise approximately 1 m over the next 100 years. Combined with 0.2 m of subsidence that is expected in that same time period, Richmond will be required to raise and build new dikes to meet future water levels. This project addresses the flood mitigation planning required to make more informed planning decisions for the citizens and businesses that call Richmond home.

Disaster mitigation is essential to protect not only residents, farms and businesses, but municipal, Provincial and Federal infrastructure. On land, this includes Highway 99 which is the main thoroughfare connecting the I5 freeway from Seattle to Vancouver and Vancouver International Airport (YVR). On water, Richmond is along a major shipping route to the port terminals along the Fraser River. Other risks to Richmond include toxic spills along the Fraser River, train and aircraft accidents as Richmond is home to YVR. Partners that may be impacted without disaster mitigation infrastructure from this project include YVR, Transport Canada, BC Ministry of Transportation and Infrastructure and others.

Approximately 220,000 people, \$50 billion worth of assets and over 13,000 businesses that employ 140,000 people call Richmond home. The rapidly growing City Centre has over 4,000 businesses, total commercial space of almost 10 million ft<sup>2</sup> and over 30,000 employees. The City Centre population is anticipated to increase by 30,000 residents in the next 10 years. Without this disaster mitigation planning as delivered under the Flood Mitigation Strategy Update, the impact on human lives and Canada's economy that would result from a flood disaster is tremendous and cannot be quantified.

13)

a) How will this project benefit the defined geographical area and the surrounding communities?

(Please provide your response in bullet-form.)

- The existing perimeter diking system was originally constructed to the provincial design standards and levels to withstand the 1:200 period storm surge and the 1894 Fraser River flood profile. Significant diking improvements will be required over the next 25 years to maintain the current level of flood protection and meet provincial standards. Sea level is expected to rise approximately 1 m over the next 100 years due to climate change. The increasing sea level will increase the probability of inundation if Richmond does not improve the height of its dikes in keeping with sea level rise. The Flood Mitigation Strategy Update which includes the Dike Master Plan Phase 3 and the Flood Management Strategy Update addresses these issues.
- Climate change science also indicates that storms will become more intense in the coming decades. As such, drainage system capacity must be improved to accommodate the storms of tomorrow. If the pump station capacity projects are not completed, flooding from rainfall events will become more common and will cause significantly more property damage. The mitigation planning upgrade and subsequent improvement of the City's drainage pump stations that are part of the Flood Mitigation Strategy Update are critical to the protection of lives, essential for the maintenance and safeguarding of a community, and consistent with the goal and guiding principles of the National Disaster Mitigation Strategy.
- Upgrading the flood protection offered by the perimeter dike generally takes the form of increasing dike height and increasing dike strength. Improving pumping capacity to deal with water behind the dike from seepage or rainfall events is also an essential part of the perimeter dike system. Upgrading 49 kilometres of dike cannot be done instantly but getting it done as quickly as possible is a priority for the City of Richmond and essential to reducing the flood risk in Richmond.

b) Were surrounding communities informed of this projected proposal?  Yes  No

Comments:

The City of Richmond, Metro Vancouver (including Richmond) and the Musqueam Indian Band

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).

Name:	Population:	(E)	(C)
City of Richmond	220,000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Metro Vancouver (including Richmond)	2,464,000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Name: Musqueam Indian Band	Population: 1,500	(E) <input checked="" type="checkbox"/>	(C) <input checked="" type="checkbox"/>
<b>15) How will this project contribute to the following?</b> (please provide your responses in bullet-form)			
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)			
<ul style="list-style-type: none"> <li>- The existing perimeter diking system was originally constructed to the provincial design standards and levels to withstand the 1:200 period storm surge and the 1894 Fraser River flood profile. Significant diking improvements will be required over the next 25 years to maintain the current level of flood protection and meet provincial standards. Sea levels are expected to rise approximately 1 m over the next 100 years due to climate change . The increasing sea levels will increase the probability of inundation if Richmond does not improve the height of its dikes in keeping with sea level rise. The Flood Mitigation Strategy Update which includes the Dike Master Plan Phase 3 and the Flood Management Strategy Update addresses these issues.</li> <li>- Climate change science also indicates that storms will become more intense in the coming decades. As such, drainage system capacity must be improved to accommodate the storms of tomorrow. If the pump station capacity projects are not completed, flooding from rainfall events will become more common and will cause significantly more property damage. The mitigation planning upgrade and subsequent improvement of the City's drainage pump stations that are part of the Flood Mitigation Strategy Update are critical to the protection of lives, essential for the maintenance and safeguarding of a community, and consistent with the goal and guiding principles of the National Disaster Mitigation Strategy.</li> </ul>			
b) Reducing disaster related financial liabilities for all levels of government? Building and planning a long-term diking and flood mitigation solution will protect \$50 billion worth of assets on Lulu Island (Richmond).			
c) Reducing risk, developing capacity and/or enhancing resilience? There are \$50 billion worth of assets on Lulu Island, building and planning for a long-term diking and flood mitigation solution will ultimately reduce the risk of flood impact on these assets.			
<b>16) Prioritized List of all project proposals in this Project Stream:</b>			
a) Provide your prioritized list of all proposed projects (E.g. #1 equals the highest priority project, #2 equals the second highest priority, etc.)			
Number:	Project Title:		
1	Steveston Island Flood Mitigation Planning		
Number:	Project Title:		
2	Flood Mitigation Strategy Update		
b) Indicate the priority ranking of this proposed project. # : 2			
<b>17) Provide a rationale/justification for implementing this mitigation activity instead of the other mitigation projects on the prioritized project list. (500 characters max.)</b>			
Richmond's 2008-2031 Richmond Flood Protection Strategy identified the need to "Prepare and implement a comprehensive dike improvement program." Upgrading 49 kilometres of dike cannot be done instantly but getting it done as quickly as possible is a priority for the City of Richmond and essential to reducing the flood risk in Richmond. The City of Richmond has identified the Flood Mitigation Strategy as a priority project.			
<b>18) Work Plan:</b>			
The proposed project's work plan should clearly articulate all activities (i.e. tasks, deliverables, resources, timelines, etc.) for which the financial contribution is being requested for each fiscal year.			
The work plan should include all products, methods, information materials, protocols, agreements, etc. that will be created to support the completion of this proposed project.			
Please complete the <b>Work Plan Template (Section D)</b> .			
<b>19) Stakeholders:</b>			
a) Identify all stakeholders/partnerships and describe their current and/or potential level of engagement, as applicable.			
b) Identify those stakeholders/partners who have committed support, either in-cash or in-kind, for the proposed project.			
c) Provide a description/summary of the stakeholder list, and how this information provides a rationale/justification for implementing this mitigation activity.			
Please provide your answers in the <b>Stakeholders Template (Section D)</b> .			
<b>20) Project Implementation Risks (Please provide your response in bullet-form):</b>			

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

None.

- b) Outline the mitigation measures that you will take to minimize and/or address your project's implementation risks
- Engage a consultant to full-time project manage the scope of the Flood Mitigation Strategy Update
  - Hold weekly conference calls between the City and the consultant to ensure targets and major milestones are met
  - Hold monthly meetings between the City and consultant to manage performance

**21) Monitoring and Performance Management (Please provide your response in bullet-form):**

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

- Engage a consultant to full-time project manage the scope of the Flood Mitigation Strategy Update
- Hold weekly conference calls between the City and the consultant to ensure targets and major milestones are met
- Hold monthly meetings between the City and consultant to manage performance

**22) Official Languages**

In order to support Public Safety Canada's obligations under Part VII of the Official Languages Act, the applicant must 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  No
- 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?  
All needs and considerations of official language minority communities have been addressed as part of the project's ongoing community stakeholder consultations.

**Project Attestations**

23) The province or territory responsible for the implementation of this project agrees to share information with the government of Canada, including 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 all other relevant project information, such as lessons learned.

I agree

24) The province or territory responsible for the implementation of this project agrees to report, in accordance with its contribution agreement, on topics such as the project implementation status, measures for successful implementation, project risk mitigation measures, and financial expenditures.

I agree

25) The province or territory responsible for the implementation of this project agrees to publicly recognize the federal government's contribution in any announcement

I agree

26) The province or territory responsible for the implementation of this project agrees to ensure that it takes all necessary steps to prevent the risk of conflicts of interest, including:

- Disclosure of any apparent, actual or potential conflict of interest in compliance with Canada or the Province's laws, regulations or policies, as the case may be, and disclosure of the involvement of any former public servants or public office holders subject to the *Values and Ethics Code for the Public Sector*, the *Conflict of Interest Act*, and the conditions of the *Parliament of Canada Act*;
- Registrant as lobbyists as required under the Lobbying Act (applicants shall provide assurance that, where lobbyists are utilized, they are registered in accordance with the Lobbying Act and that no actual or potential conflict of interest exists nor any contingency fee arrangement);
- Role of any Government of Canada official, if a Government of Canada official is to participate on an advisory committee or board. Such involvement must not be seen to be exercising control on the committee or board on the use of funds.

I agree

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 meet this description?  Yes  No

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



### Stream 3: Mitigation Planning

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?

Yes, Previously - File #: \_\_\_\_\_  Yes, Attached  No

2) Description/Summary of your risk assessment findings.

(500 characters max.)

Flood Risk Economic Assessments conducted for the City indicates a clear need to improve the perimeter ring dike protections for the City. Upgrading 49 kilometres to accommodate for climate change sea level rise will be performed over the next 25 years in alignment with current sea level rise predictions. The City of Richmond has identified the Flood Mitigation Strategy as a priority project.

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?

Yes, Previously - File #: \_\_\_\_\_  Yes, Attached  No

b) Description/Summary

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

Richmond's primary line of defense against flooding during freshet events or tidal surges is the existing perimeter diking system. As the elevation of Lulu Island is generally below high water, the area would be flooded without this system during extreme events. The estimated economic damage from an event similar to the 1894 Fraser River flood is \$7.1 billion.

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

Increasing mitigation planning is in direct response to climate change induced sea level rise and increasing rainfall intensity. Flooding is a primary risk for the City of Richmond and maintaining a high level of flood protection is the primary goal of this program. Approximately 220,000 people, \$50 billion in assets, and a high value of economic activity are protected by the City's flood protection system and the Flood Mitigation Strategy Update is necessary for mitigation.

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.

I agree

**D) Templates**

**1. Budget Template**

Add Template

Remove Template

**Project Budget**  
**Revenues for Fiscal Year (April 1 - March 31)**  
2017 - 2018

Project Title: Flood Mitigation Strategy Update

<b>Government Funding: Cash</b> (Municipal, provincial, territorial, and federal) <b>(Note:</b> For federal funding, please specify the federal government department)	<b>Amount</b>
City of Richmond	\$250,000.00
Federal Government	\$250,000.00
<b>Subtotal – Cash</b>	\$500,000.00
<b>Government Funding: In-Kind</b> (Municipal, provincial, territorial, and federal) <b>(Note:</b> For federal funding, please specify the federal government department)	<b>Amount</b>
<b>Subtotal – In-Kind</b>	\$0.00
<b>Total Government Funding</b> (subtotal of Cash + subtotal of In-Kind from municipal, provincial, territorial, and federal government sources)	\$500,000.00
<b>Total Federal Government Funding</b> (subtotal of Cash + subtotal of In-Kind from all federal government sources)	\$250,000.00
<b>Proportion of Federal Government Contribution</b> (Note: The maximum Federal Contribution is <b>50%</b> for Provinces and <b>75%</b> for Territories)	<u>50 %</u>
<b>Non-government Funding and other: Cash</b>	<b>Amount</b>
<b>Subtotal – Cash</b>	\$0.00
<b>Non-government Funding and other: In-Kind</b>	<b>Amount</b>
<b>Subtotal – In-Kind</b>	\$0.00
<b>Total Non-government Funding and other</b> (subtotal of Cash + subtotal of In-Kind from non-government funding and other sources)	\$0.00
<b>Total Government Funding</b> (Total of government funding + total of non-government funding and other)	\$500,000.00

- 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)**  
2017 - 2018

Project Title: Flood Mitigation Strategy Update

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
Consultant Fees	Dike Master Plan Phase 3	\$100,000.00	\$100,000.00		\$200,000.00
Consultant Fees	Pump Station Condition Assessment Update	\$75,000.00	\$75,000.00		\$150,000.00
Consultant Fees	Flood Management Strategy Update	\$72,500.00	\$72,500.00		\$145,000.00
Professional Services Support	Building a business case	\$2,500.00	\$2,500.00		\$5,000.00
<b>Subtotal – Cash</b>		\$250,000.00	\$250,000.00	\$0.00	\$500,000.00
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
					\$0.00
<b>Subtotal – In-Kind</b>		\$0.00	\$0.00	\$0.00	\$0.00
<b>Total Expenditures: (Subtotal of Cash + subtotal of In-Kind)</b>		\$250,000.00	\$250,000.00	\$0.00	\$500,000.00

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

**List: Eligible Costs**

#	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**

#	<b>Ineligible Costs</b>
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	Any expenditures related to a project already started prior to 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. application for funding and prior to approval.
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.

## 2) Work Plan Template

Activities	Tasks	Deliverable(s)/ Product(s)	Resources	Timelines (Start and End Dates)	Considerations/ Comments
RFP for Flood Mitigation Strategy Update	Draft and release RFPs for each update: Dike Master Plan Phase 3, Pump Station Condition Assessment Update, and Flood Management Strategy Update	RFPs	Staff	Start Date: 01/01/2017 End Date: 31/01/2017	Staff will be pre-draft RFPs for public tenders
RFP Award	Submission review	Awarded contract based on response to public tenders.	Staff	Start Date: 31/01/2017 End Date: 28/02/2017	Assumes funding approvals in place
Studies	Dike Master Plan Phase 3; Flood Management Strategy Update; and Pump Station Condition Assessment Update	Respective studies for Flood Mitigation Strategy Update	Staff Consultants	Start Date: 01/03/2017 End Date: 31/10/2017	None
Report	Results of studies	Draft Flood Mitigation Strategy Update report review and final approval	Staff Consultants Council	Start Date: 01/11/2017 End Date: 31/01/2018	Staff to review and comment; City Council to finalize and accept
Sharing	Provide report to NDMP	Flood Mitigation Strategy Update report	Staff Federal Government	Start Date: 01/02/2018 End Date: 31/03/2018	For sharing of knowledge and best practices in flood planning and mitigation

**3) Stakeholder Template**

**Notes:**

- a) Identify all stakeholders/partnerships and describe their current and/or potential level of engagement, as applicable.
- b) Identify those stakeholders/partners who have committed, in-cash or in-kind, support for the proposed project.
- c) Provide a description/summary of the stakeholder list, and how this information provides a rationale/justification for implementing this mitigation activity.

**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 (\$)
City of Richmond	City of Richmond		N/A	\$0.00	\$250,000.00
Metro Vancouver	Metro Vancouver		N/A	\$0.00	\$0.00
Musqueam Indian Band	Musqueam Indian Band		N/A	\$0.00	\$0.00

**Part 2: Description/Summary**

**How does the engagement of these stakeholders support and/or justify the implementation of this mitigation activity?**

Approximately 220,000 people and over 13,000 businesses that employ 140,000 people call Richmond home. The rapidly growing City Centre has over 4,000 businesses, total commercial space of almost 10 million ft<sup>2</sup> and over 30,000 employees. The City Centre population is anticipated to increase by 30,000 residents in the next 10 years. Without this disaster mitigation planning as delivered under the Flood Mitigation Strategy Update, the impact on human lives and Canada’s economy that would result from a flood disaster is tremendous and cannot be quantified.