



DISTRICT OF WEST VANCOUVER
750 17TH STREET, WEST VANCOUVER BC V7V 3T3

10.7.

COUNCIL REPORT

Date:	February 3, 2025
From:	Emily Dicken, Director, North Shore Emergency Management
Subject:	Disaster Resilience and Innovation Funding Program – Disaster Risk Reduction Action Plan for the North Shore
File:	

RECOMMENDATION

THAT:

1. The “Disaster Risk Reduction Action Plan for the North Shore” Full Proposal submitted to the Disaster Resilience and Innovation Funding Program in the amount of \$997,000.00 be endorsed; and,
2. Council supports the District of North Vancouver, in partnership with North Shore Emergency Management, to provide overall grant management for the project and funds.

1.0 Purpose

The purpose of this report is to seek resolution and Council support for the Disaster Risk Reduction Action Plan for the North Shore Full Proposal submitted to the Disaster Resilience and Innovation Funding (DRIF) Program.

North Shore Emergency Management (NSEM) has applied, on behalf of the three North Shore municipalities, to the DRIF Program for a project titled “Disaster Risk Reduction Action Plan for the North Shore.” Although not formal partners, Squamish Nation and Tsleil-Waututh Nation have been engaged in the development of the project and support the approach and proposed outcomes.

2.0 Legislation/Bylaw/Policy

The development of a Multi-Hazard Risk Assessment and Regional and Municipal Business Continuity Plans is in alignment with the *Emergency and Disaster Management Act* requirements.

3.0 Council Strategic Objective(s)/Official Community Plan

This project closely aligns to many aspects of the DWV Official Community Plan that address resiliency. Specifically, in the policy section of Parks and Environment, key areas of this work fall within policies 2.6.19

through 2.6.23, as well as many of the key OCP actions within the Social Well-Being section.

4.0 Financial Implications

NSEM has requested \$997,000 for the Disaster Risk Reduction Action Plan for the North Shore project and will contribute an additional \$60,000 from the NSEM budget for a total budget of \$1,057,000. In addition, NSEM will also be providing in-kind staff support throughout the project.

5.0 Background

The goal of the DRIF Program is to provide funding for First Nations and local governments to improve their resilience to natural and climate-driven disasters through improved understanding of risks, vulnerabilities and risk reduction options through the development and implementation of structural or non-structural risk reduction projects.

In September 2024, NSEM submitted an Expression of Interest (EOI) to the DRIF Program and in December 2024, NSEM was selected to submit the Disaster Risk Reduction Action Plan for the North Shore Full Proposal for funding.

The Disaster Risk Reduction Action Plan for the North Shore Full Proposal was submitted on January 31, 2025, and Council resolutions from all partners, which can be submitted after the fact, are required to complete the submission.

6.0 Analysis

6.1 Discussion

In September 2023, the three North Shore municipalities, in partnership with Squamish Nation and Tsleil-Waututh Nation embarked on the North Shore Resilience Strategy led by NSEM. This work placed high value on strengthening regional relationships and identified an actionable path for resilience. One of the core recommendations to emerge from this work was the identified need for an action plan specific to disaster risk reduction, as was addressing municipal staff resilience to effectively manage the increasing frequency and intensity of hazards. These learnings, coupled with the significant impacts of the October 2024 Atmospheric River event, identified three deliverables to move this work forward: creation of a Disaster Risk Reduction Action Plan; development of a Multi-Hazard Risk Assessment; and development of Regional and Municipal Business Continuity Plans. This work will build on the foundation of improved understanding of risks and vulnerabilities on the North Shore.

It is widely recognized that the frequency, intensity and duration of hazards due to climate change is increasing. From the 2021 Heat Dome

to the 2024 Atmospheric River event, the North Shore has experienced significant impacts. The creation of a North Shore Disaster Risk Reduction Action Plan, which addresses a multi-hazard assessment, is a regional project that addresses disaster risk reduction through the lens of cascading and cumulative natural hazard events, recognizing the interconnected nature of risk and vulnerabilities across the North Shore.

In addition to the physical multi-hazard assessment and interplay with critical infrastructure, the assessment will also aim to address disaster risk reduction through an approach that recognizes disproportionate impacts of disaster events for equity denied communities and people experiencing intersectional disadvantage on the North Shore.

6.2 Other Communication, Consultation, and Research

NSEM has engaged the Strategic Leadership Committee and consulted with municipal staff in various departments from all three North Shore municipalities on the Full Proposal. NSEM will continue to work with municipal staff from related departments to ensure the specific needs of each municipality are considered in this project.

7.0 Conclusion

The Disaster Risk Reduction Action Plan for the North Shore aims to take a multi-hazard approach to disaster risk reduction. This project aims to: support a coordinated prioritization approach to disaster reduction mitigation activities to enable regional priority setting and collaboration for large scale projects; create a multi-hazard risk assessment for the North Shore; and, create regional and municipal business continuity plans to allow for the prioritization of critical municipal services to address the challenges being experienced by the communities across the North Shore as a result of increasing multi-hazard events.

Author:



Emily Dicken

Appendices: (List and label)

1. 2025 DRIF Disaster Risk Reduction Action Plan for the North Shore Full Proposal Application
2. 2025 DRIF Disaster Risk Reduction Action Plan for the North Shore Detailed Cost Estimate

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Community Resilience and Adaptation Funding Tool (CRAFT)

The Corporation of the District of North Vancouver ⋮

Submission Details for DRIF-FP-1013

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General Info

Step 1

Project Contact Information

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Partnering Proponents

- District of North Vancouver
- City of North Vancouver
- District of West Vancouver

Is this a regional project?

Yes

If yes, please provide context below

This project is a partnership between the three municipalities on the North Shore: District of North Vancouver, District of West Vancouver and the City of North Vancouver. This project also supports the relationships and provide opportunities for

collaboration with the Squamish Nation and Tsleil-Waututh Nation as well as identifies partnerships with Critical Infrastructure partners.

What is the title of the Project?

Disaster Risk Reduction Action Plan for the North Shore

What is the main deliverable of this project? Please see section 3.1 of the Program Guide for guidance on this question.

There are three main deliverables associated with this work: 1. North Shore Disaster Risk Reduction Action Plan 2. North Shore Multi-Hazard Assessment 3. Regional and Municipal Business Continuity Plans

Land Details

Step 2

Will the project will be in BC on land that the proponent has legal access to either through ownership, right of way, or other at the time the Shared Cost Agreement is signed?

Yes

If No, please provide context below

(Optional)

Is the proponent a First Nation/local government/regional district in British Columbia who has the authority and ownership to develop, implement, maintain and operate the proposed project?

Yes

Will the proponent own and be able to operate and maintain the resulting infrastructure (if applicable) over the long term?

Not Applicable

Please provide context below

n/a

In the case of a First Nations proponent, a resolution from its band council or council/board, or the appropriate authorization/endorsement as determined by the eligible proponent's governance structure?

Not Applicable

In the case of a local government proponent, a resolution from its council/board?

Yes

Please provide context below

This project has been reviewed and supported by the NSEM Strategic Leadership Committee. This Committee is comprised of two representatives for each of the three North Shore municipalities. In addition, Council resolutions from all three municipalities will be provided. Through Indigenous Engagement Requirements (IER), Squamish Nation and Tsleil-Waututh Nation have been engaged through the North Shore Governance Tables to ensure that their top priorities are heard and addressed within the resilience strategy and subsequent work. Although they are not formal project partners, they have been engaged on the development of the project and support the approach and proposed outcomes.

Project Area

Step 3

Location Description

This project is situated within the regional context on the North Shore. It is a regional partnership between the three North Shore municipalities and supported in principle by the Squamish Nation and Tsleil-Waututh Nation. This project addresses disaster risk reduction through an actionable plan and supports an all-hazards and all-of-society approach to reducing risk through the lens of resilience.

Estimated Size of Project Area

Area Size	Unit of Measure
260	SqKm

Related Hazard(s)

Drought and water scarcity, Extreme Temperature, Flood, Geohazards (for example, avalanche, landslide), Sea Level Rise, Seismic, Other

Other

Hazardous substances and Wildfires

How is the community/project area susceptible to the identified related hazards? This can include natural hazards, impacts, and/or specific events.

The North Shore's Disaster and Climate Risk and Resilience Assessment (DCRRA) highlights eight key hazards due to their likelihood of occurrence and/or their potential impact on the North Shore. The eight hazards include: clearwater floods, coastal floods, extreme heat, earthquakes, landslide debris flow, hazardous material spills, wildfires and windstorms. All of these hazards have the possibility of creating a significant impact on communities, especially for equity-denied, vulnerable

populations who are disproportionately impacted by disaster on the North Shore. Understanding the cascading and cumulative risks these hazards pose will allow each of the three municipalities on the North Shore to take steps to ensure future planning and land-use decisions consider hazard mitigation. It is well understood that climate change is resulting in the increased frequency and magnitude of disasters. This recognition also extends to the increased interplay in the cumulating and cascading nature of hazards. This understanding is a current gap on the North Shore.

How might the people in your community be impacted by the hazard(s) directly or indirectly. Include vulnerable populations where applicable.

Given the multi-hazard nature of this proposal and its regional scope, the impact to community would stretch across the three North Shore municipalities and impact a total population of roughly 200,000. Specific to equity denied populations, we would be considering a sub-set of the entire population that is inclusive of: seniors, people living with a disability, newcomers with language barriers and cultural distinctions, members of the insecurely housed community and those living with other intersectional disadvantage. Additionally, due to the increased frequency and intensity of climate driven natural hazards, considerable pressure is being experienced on the delivery of municipal services. This requires the prioritization of mission critical municipal services to address the challenges being experienced by the communities across the North Shore.

Estimated Number of People Impacted

100,001 +

Critical Infrastructure Impacted

Is there critical infrastructure that will or may be impacted by the hazards you have listed?

Yes

Infrastructure Impact

drinking water supply for Lower Mainland

Infrastructure Impact

Lonsdale Energy Corporation energy provider for the North Shore

Infrastructure Impact

utilitieswastewater treatment facilities supports Metro Vancouver

Infrastructure Impact

finance finance

Infrastructure	Impact
transportation	transportation

Infrastructure	Impact
health	health

Infrastructure	Impact
information	information

Infrastructure	Impact
key supplies (e.g., Chemtrade)	provides 40% of liquid chlorine in Can.

Project Plan

Step 4

Anticipated Project Dates

Anticipated Project Start Date	Anticipated Project End Date
2025-10-01	2028-10-01

Project Description

In September 2023, the three North Shore municipalities, in partnership with Squamish Nation and Tsleil-Waututh Nation embarked on the North Shore Resilience Strategy which was led by NSEM. This work placed a high value on strengthening regional relationships and identified an actionable path for resilience. One of the core recommendations to emerge from this work was the identified need for an action plan specific to disaster risk reduction, as was addressing municipal staff resilience to effectively manage the increasing frequency and intensity of hazards. The deliverables identified through this DRIF submission will enable this work to move forward. The proposed Disaster Risk Reduction (DRR) Action Plan, Multi-Hazard Risk Assessment and Regional and Municipal Business Continuity Plans for the North Shore directly aligns with DRIF goals through the following actions:

- This is an innovative, collaborative, best practice informed regional project that brings together three local governments to improve resilience to natural and climate driven disasters.
- This work builds on the foundation of improved understanding of risks and vulnerabilities on the North Shore. The proposal builds towards developing a regional disaster risk reduction action plan.
- This action plan will direct the development, prioritization and implementation of non-structural and structural risk reduction projects on the North Shore.
- This project is developed in collaboration with and supported in principle by Tsleil-Waututh Nation and Squamish Nation.

Proposed Activities

Activity	Anticipated Project Start Date	Anticipated Project End Date
Project Planning	2025-10-01	2028-09-29

Related tasks (i.e. "sub activities")	Deliverables/Products
project management; engagement (municipal, First Nations, Critical Infrastructure, NGOs/CBOs), creation of the project governance structure & key roles, financial management of the grant & procurement	North Shore DRIF Work Plan & Governance

Activity	Anticipated Project Start Date	Anticipated Project End Date
Project	2026-01-12	2027-03-15

Related tasks (i.e. "sub activities")	Deliverables/Products
project management, municipal engagement, facilitation/graphics	North Shore Disaster Risk Reduction Action Plan

Activity	Anticipated Project Start Date	Anticipated Project End Date
Assessment	2025-10-01	2027-12-17

Related tasks (i.e. "sub activities")	Deliverables/Products
project management; procurement of engineering expertise; data sharing agreements; engagement of critical infrastructure and their risk data; First Nations engagement & Indigenous knowledge	North Shore Multi-Hazard Assessment

Activity	Anticipated Project Start Date	Anticipated Project End Date
Project		

Related tasks (i.e. "sub activities")

project management, consulting fees for BCP design, municipal and departmental engagement, facilitation & graphics, training & exercising, Critical Infrastructure interdependencies

Deliverables/Products

Regional and Municipal Business Continuity Plans

What type of foundational or previous work led to the proposed solution?

Foundational project completed - risk assessment, Event - natural hazard, Foundational project completed - mapping, Foundational project completed - other, Baseline Resilience Policy Assessment for the North Shore, Creates EDMA alignment, Next steps from the North Shore Resilience Framework, Lessons learned from the 2024 Atmospheric River event

How was the need for the project identified?

Following the significant impacts of the October 2024 Atmospheric River event, coupled with the learnings from the North Shore Resilience Strategy, an acute need was identified for a coordinated North Shore wide approach to Disaster Risk Reduction. Additionally, a 6-month long engagement on the current status of resilience highlighted the following concerning trends: 1) hazard-specific initiatives (instead of multi-hazard); 2) projects tied to funding opportunities instead of an overall strategy; 3) site-specific and ad-hoc (lacking a North Shore-wide regional strategic approach); 4) lacking systematic investments for reducing risk for disproportionately impacted, equity-denied communities; 5) few projects have engaged with critical infrastructure regionally (a new requirement under EDMA); and 6) throughout an internal survey, business continuity planning was identified as one of the priorities for the municipalities, which aligns with the Emergency and Disaster Management Act (EDMA) requirements.

What is included in this project to address the identified risk(s) and/or hazard(s)?

Through a coordinated, inclusive, and collaborative DRR Action Plan, the three North Shore municipalities in collaboration with Tsleil-Waututh Nation and Squamish Nation and Critical Infrastructure partners, will be able to reduce existing risk and empower citizens, organizations, and communities, to share the responsibility to reduce disaster risk and adapt to climate change. In particular, the DRR Action Plan will provide the overarching governance strategy to support meaningful municipal representation with the aim of implementing key EDMA requirements aligned with the Sendai Framework:

- Focus on all four phases of emergency management: mitigation, preparation, response, and recovery. Our analysis shows that historically, response and recovery have been prioritized over mitigation and preparedness on the North Shore.
- Address disproportionate impacts: in partnership with 40+ community-based organizations and non-governmental organizations representing the interests of equity-denied communities, NSEM will co-develop a multi-hazard assessment that is inclusive of equity-denied members of the North Shore
- Connect climate change adaptation with emergency management
- Develop proactive relationships and shared disaster risk reduction framework with Critical Infrastructure owners
- Strengthen staff resilience by creating a regional business continuity plan (in addition to municipal plans)
- Facilitate agreements, consultation, and cooperation with Tsleil-Waututh Nation and Squamish Nation with respect to emergency management.
- Incorporate into emergency management policy, plans and bylaws lessons learned in recent years in responding to floods, wildfires, and the COVID-19 pandemic.
- Modernize and improve consistency of language across policies, plans and bylaws across the North Shore in alignment with EDMA.

How does this project improve the understanding of disaster risk and invest in disaster risk reduction to improve resilience?

NSEM is the coordinating agency for the three North Shore municipalities and has partnered with them to develop a DRR Action Plan to multiple hazards which are expected to become worse due to climate change. This work has been identified as a critical next step in better understanding the growing risks of cumulative and cascading hazards as well as address the continuity of municipal services to support the increased frequency and magnitude of natural disasters. This work builds on this critical need based off the assessments conducted over the past 3 years on the North Shore. These are presented below organized by the Sendai Framework for Disaster Risk Reduction priorities which are based on global best practices: Priority 1: Understanding disaster risk • 2024 Tri-municipal Disaster and Climate Risk and Resilience Assessment (formally HRVA, internally funded) and online Storymap (internally funded) • 2024 Extreme heat mapping (CEPF grant – all five communities) • 2024 Tri-municipal Baseline resilience assessment and priority setting on the North Shore (in part funded by Pacific Institute for Climate Solutions) • 2024 Lived experience with emergencies on the North Shore (internally funded) Priority 2: Strengthening disaster risk governance • 2024 Cultural safety and humility training (CEPF grant) and relationships building across five North Shore communities (response focused for staff with key EOC roles) • 2024 Establishment of North Shore Resilience Governance Tables to bring together the North Shore resources and foster a coordinated sub-regional approach to resilience (proactive planning focused) – all five communities.

What is the rationale for your funding request? This may include recent history, such as evacuation orders and flooding events, as well as threat levels and/or any evidence of how the hazard is being assessed.

Following the October 2024 Atmospheric River event and the significant cost to the municipalities, residents and the province, this project aims to take a multi-hazard approach to disaster risk reduction on the North Shore. Although the true costs are still being accounted for, the October 2024 event will result in municipal and private sector costs across the North Shore ranging in the tens of millions of dollars. As a Multi-Jurisdictional Emergency Management Organization, NSEM will be leading this work to facilitate the implementation of legislative requirements under EDMA for the three municipalities on the North Shore. The North Shore is susceptible to a wide range of hazards and risks. These include natural hazards (e.g., earthquakes, forest fires, landslides, flooding, and extreme weather events) and human-induced hazards (e.g., technological and industrial accidents). Recent risk assessments show that disaster losses are likely to increase into the future due to climate change, critical infrastructure interdependence, and shifting demographics.

To what extent were alternate project options considered?

This is a non-structural disaster risk reduction project. This project is based on an extensive engagement at the departmental and municipal level as well as First Nations engagement through Indigenous Engagement Requirements (IER). Throughout this engagement and the priority setting exercise, the North Shore DRR Action Plan was identified as an emerging priority to strengthen an all of society and all hazards approach to resilience.

Engage

Step 5

Have you meaningfully engaged with local First Nations regarding this project proposal?

Yes

Describe engagement

NSEM has partnered with Tsleil-Waututh Nation and Squamish Nation to develop a process that is responsive to unique hazards, risks, opportunities and governance context on the North Shore. This process is built on and supports the following foundations: 1) cultural safety and humility training hosted by NSEM and Squamish Ocean Canoe Family. Led by Tsleil-Waututh Nation and Squamish Nation Knowledge Keepers, 60 municipal staff with key EOC and resilience planning roles and 60 PSLV volunteers and frontline municipal staff were trained, 2) a baseline policy review was completed to understand how the North Shore is already planning for disaster and climate resilient communities, and where there are opportunities to increase resilience looking forward. 3) Strategically aligned with the legislated EDMA requirements, a five-community resilience strategy is being developed on the North Shore that focuses on all four phases of emergency management. Based on this work and the provincial IER

activities, NSEM in partnership with Tsleil-Waututh Nation and Squamish Nation developed the process based on the below engagement principles: - BUILD RELATIONSHIPS across all five communities through IER: In partnership with the Squamish Ocean Canoe Family, ensure that the process is Indigenous hosted and supported by Indigenous businesses (e.g. Indigenous catering). - LEARN DIRECTLY from Tsleil-Waututh Nation and Squamish Nation leaders, Knowledge Keepers and Elders about respectful Indigenous Knowledge protocols to inform emergency management practices. - ADDRESS KEY PRIORITIES identified through the baseline assessment. - ENSURE STRATEGIC ALIGNMENT with the legislated EDMA requirements.

Have you effectively engaged with neighbouring jurisdictions, and other impacted or affected parties (for example, equity organizations, agricultural sector, critical infrastructure owners) as appropriate for the project?

Yes

List impacted or affected parties that have been engaged with

For-profit and non-profit organizations

Describe engagement

NSEM is in conversation with 40+ community-based organizations and non-governmental organizations representing the interests of equity-denied communities to develop a North Shore NGO/CBO Governance Table to address disproportionate impacts of emergencies with a focus on post-disaster housing and co-developing a community resilience strategy.

How does the proposed project contribute to a comprehensive, cooperative, and regional approach?

This is a tri-municipal project developed in collaboration with and supported in principle by Tsleil-Waututh Nation and Squamish Nation to develop a strategy to create an action plan that prioritizes activities to increase disaster risk reduction through a multi-hazard lens across the North Shore. There has been collective recognition that collaboration is needed for successful emergency management programming.

Climate Info

Step 6

Does the project incorporate future climate conditions and consider climate change in the project methodology, including considering future impacts of the project on the environment?

Yes

Describe how the project will incorporate future climate conditions and consider climate change in the project methodology, including considering future impacts of the project on the environment.

Each of the three municipalities on the North Shore have their own climate change adaptation strategies that use best available science, a wide range of climate assessment tools and climate expertise to develop their visions for climate resilience. However, these are not connected to emergency management as per EDMA requirements. NSEM facilitates the North Shore Climate and Emergency Management Resilience Forum which includes representation from the five North Shore communities and the Vancouver Fraser Port Authority. The Forum was formed to further implement approaches and findings identified within the North Shore Sea Level Rise Risk Assessment and Adaptive Management Strategy, as it pertained to sea level rise. The purpose of the Forum has since evolved to a more comprehensive scope that maintains its foundation with sea level rise strategies and projects but now includes climate resilience and adaptation projects and strategies, emergency management theories, and Indigenous knowledge and voices. The Forum will allow members to share adaptation work and project progress, lessons learned, ideas, and opportunities for funding or partnership. Additionally, the Forum will co-construct a framework of overarching principles for how stakeholders across the North Shore approach sea level rise, climate resilience, and emergency management with intentional integration of Indigenous knowledge.

Has your project used/consulted any Climate Change assessment tools?

Yes

Select the Climate Change assessment tools used by your project

HAZUS building damage and population displacement modelling, extreme heat risk assessment and hot spot mapping, Public Health Heat Mapping, business disruption modelling which considers power outages due to flooding of electrical substations

Describe how you used these tools to benefit your project

A large variety of climate and risk assessment tools have been used across the North Shore for various strategies and plans (e.g., HAZUS building damage and population displacement modelling; extreme heat risk assessment and hot spot mapping; business disruption modelling which considers power outages due to flooding of electrical substations, etc). All three North Shore municipalities have made mitigating and adapting to climate change a priority through the goals outlined in the guiding documents described below: - The City of North Vancouver's Climate Change Adaptation Plan (2013) - The District of North Vancouver's Climate Adaptation Strategy (2017) - The District of West Vancouver's Climate Action Strategy (2024) - District of West Vancouver is in the process of finalizing Climate Strategy which prioritizes coastal adaption and other co-benefits. - North Shore Sea Level Rise Risk Assessment and Adaptive Management Strategy (2021) - North Shore Extreme Heat Mapping Project

(2024) While emergency management is seen as a priority in some of these policies and documents, the response phase of emergency management has historically been a focus on the North Shore. This grant will work to ensure existing and future policies are also in alignment with the EDMA which includes focusing on disaster mitigation, preparedness, response and recovery and connects emergency management and climate change.

Regs & Permits

Step 7

Will the project be completed to acceptable provincial guidelines and standards? This may include guidelines, standards, and assessments related to various factors, such as archeology, the environment, finances, and so on.

Yes

List Provincial Standards relevant to the Project

Standards Category

Archaeology

List Provincial Standards relevant to the Project

Archaeological Impact Assessment Guidelines - BC Government

Standards Category

Environment - Mapping and Landscape

List Provincial Standards relevant to the Project

Specifications for Airborne LiDAR for the Province of British Columbia

Standards Category

Environment - Seismic

List Provincial Standards relevant to the Project

Professional Practice Guidelines – Use and Development of Seismic Microzonation Maps in B.C.

Standards Category

Environment - Water (includes Rivers, Flooding, etc.)

List Provincial Standards relevant to the Project

Coastal Floodplain Mapping – Guidelines and Specifications, Coastal Flood Risk Assessment Guidelines for Buildings & Infrastructure Design, Engineers and Geoscientists of BC (EGBC, aka APEGBC) - Flood Mapping in BC: APEGBC - Professional Practice Guidelines V1.0

Please provide context below

The data sets identified above are specific to the potential use regarding the multi-hazard risk assessment portion of this project. Along with the data sets, best practice guidelines mentioned above will also be considered.

Will applicable regulated Qualified Professionals be providing technical guidance or oversight on the project. It is understood that not all projects will require regulated Qualified Professionals. If this is not applicable to the project, please select "N/A" below.

Yes

Select any applicable regulated Qualified Professionals who will be providing technical guidance or oversight on the project.

Professional engineer

Additional context can be provided below:

For the multi-hazard risk assessment, we will secure a qualified engineering firm to lead the development of this deliverable.

Please list any Knowledge Holders (including Elders and Cultural Practitioners), experts, professionals or others who will be providing oversight, advice, or expertise to the project.

As an outcome of the IER funding and consultation, operational processes were identified between the Squamish Nation and Tsleil-Waututh Nation Emergency Management programs and NSEM. Archaeological processes were identified as a technical and cultural need in hazard assessment processes. As part of this proposed work, technical archaeology oversight will be provided at the guidance from Squamish Nation and Tsleil-Waututh Nation.

Will the project meet the necessary regulatory requirements?

Yes

Explain the steps taken for this project to meet regulatory requirements. Include details of discussions with applicable agencies, as well as related considerations, such as fisheries windows, right of way, and so on.

One of the main objectives of this project is to ensure municipal alignment to EDMA.

Is this project designed to meet all of the requirements for permits, licenses and authorizations?

No

Provide details about these requirements, including any permits, licences, or authorization that have been requested or granted.

This is a non-structural project and permits are not applicable.

Project Results

Step 8

Will the project be for broad public use or benefit?

Yes

Please expand on why or why not

It is widely recognized that the frequency, intensity and duration of hazards due to climate change is increasing. From the 2021 Heat Dome to the 2024 Atmospheric River event, the North Shore has experienced significant impacts. The creation of the North Shore DRR Action Plan, which addresses a multi-hazard assessment is a regional project that addresses disaster risk reduction through the lens of cascading and cumulative natural hazard events, recognizing the interconnected nature of risk and vulnerabilities across the North Shore. In addition to the physical hazard assessment and interplay with critical infrastructure, this assessment will also aim to address disaster risk reduction through an approach that recognizes disproportionate impacts of disaster events for equity denied communities and peoples experiencing intersectional disadvantage on the North Shore. A component of this work will also include a regional roadmap that will support coordinated prioritization of disaster risk reduction mitigation activities. This will enable regional priority setting and collaboration for large scale projects and reduce inter-municipal competition for grants and other funding sources. This was identified as a regional consideration for success in the North Shore Resilience Strategy. The creation of Regional and Municipal Business Continuity Plans will allow for the prioritization of critical municipal services to address the challenges being experienced by the communities across the North Shore as a result of increasing multi-hazard events.

Will this project reduce costs? For example, emergency response costs, recovery costs, and so on.

Yes

If yes, what types of costs will this project reduce? (select all that apply)

The project will streamline prioritization of mitigation and disaster risk reduction of compounding hazards and allow for a regional approach with the goal of reducing

response and recovery costs, reducing inter-municipal competition on grants by having a coordinated and regional approach, streamlining staff time by creating a framework to the prioritization of DRR projects .

Explain how these costs will be reduced by the project, if applicable?

As a direct finding within the North Shore Resilience Strategy, funding was indicated as a limiting factor for almost all projects specific to hazard related work or mitigation activities. This identified lack of access to funding includes the human resource considerations to carry out the work as well as the financial considerations to execute activities. By acknowledging this limitation, the North Shore DRR Action Plan aims to create a prioritization framework for disaster risk reduction strategies on the North Shore. Beyond development of the framework, decision making governance will also be an outcome to streamline staff time and will consolidate regional resources for grant application processes, while eliminating jurisdictional competition for limited grant resources.

Will this project produce co-benefits? For example, cultural co-benefits, environmental co-benefits, social co-benefits, and so on.

Yes

If yes, what co-benefits will this project produce? (select all that apply)

Cultural Co-benefits (e.g. protecting valuable cultural assets), Economic Co-benefits (e.g. increase in tourism, support for businesses, increase in property value), Corporate co-benefits, Environmental Co-benefits (e.g. reducing greenhouse gas emissions, enhancing biodiversity), Multi-hazard Approach (e.g. assessing multiple natural hazards), Social Co-benefits (e.g. improving community health and wellbeing, supporting youth voices)

How will the project produce these co-benefits, if applicable?

The methodological approach for the creation of the DRR Action Plan for the North Shore takes an all-hazards and all-of-society approach to disaster risk reduction. In doing so, the co-benefits identified above are central to the assessment and the deliverables tied to this grant funding. Specifically, the North Shore Multi-Hazard Assessment considers the compounding and cumulative nature of hazards through an approach that considers the natural environment, infrastructure, economic landscape, social fabric and culture considerations across the North Shore. This work will be an evolution of the current North Shore Disaster and Climate Risk and Resilience Assessment (DCRRA), which is based on 2018 data and, although it took a highly intersectional approach to disaster risk and resilience, it only assessed hazard and risk through a single hazard assessment. Due to the complex interplay between hazards and climate change there is an acute need to not only take an intersectional approach to this type of assessment but to recognize the cumulative and compounding nature of hazards on the North Shore. As an example, due to the changes in forest health through invasive species and drought, the risks for wildfire are exponentially

escalating and it is understood that following the impacts of wildfire, the North Shore will be at greater risk for landslides and debris flow which are also a direct result of the increase in frequency and intensity of atmospheric river events. To effectively address mitigation measures, it is critical to understand this interplay of hazards through a multi-hazard lens.

In what way will the proposed project increase resiliency during and after a natural disaster/event? For example, coordination and engagement, knowledge, new infrastructure, and so on.

Coordination and Engagement, Knowledge, Knowledge/Community Education, Planning and Preparedness

Please provide context below

The North Shore Resilience Strategy will be completed in the Fall of 2025 and the findings from this strategy have set the intent and direction for the proposed North Shore DRR Action Plan. While emergency management is seen as a municipal priority, response has historically been a focus on the North Shore. A critical finding of the Resilience Strategy is that all three municipal Official Community Plans and strategic plans prioritize resilience. All three communities have made mitigating and adapting to climate change a priority through their policies. That said, a core finding of the Resilience Strategy is that "we often talk about [disaster] mitigation as a priority but there isn't clear governance on this on the North Shore. [Disaster] Mitigation is the weakest link". The North Shore DRR Action Plan will ensure an emphasis and prioritization is placed on disaster mitigation and that regional collaboration and governance sit at the core of this work. Specific to resilience building work, the North Shore as a region has made successful strides towards greater collaboration between communities, creating a stronger collective vision for the future state of resilience. A few examples of this work include: Cultural Safety and Humility Training for Community Resilience and EOC (2024); Extreme Heat Mapping Forum (2024); North Shore Poverty Reduction Strategy (2023); Diversity, Equity and Inclusion Report (2022); Sea Level Rise Strategy (2021); Open Door Community Hub (2021); Mackay-Mosquito Watershed Integrated Stormwater Management Plan (2020) and Dementia-friendly North Shore Action Plan (2018).

Project Risks

Step 9

Will project complexity risks be mitigated during this project? For example, a highly technical or complex project, a remote geographic location, unpredictable weather, and so on.

Yes

If yes, which project complexity risks will be mitigated during this project? (select all that apply)

HR recruitment for a project manager with the necessary skillset to lead this work, procurement of an engineering professional or firm for the multi-hazard assessment

How will project complexity risks be mitigated during this project, if applicable?

An identified risk is the ability to secure a qualified project manager for this project. Currently, NSEM does not have the capacity or the technical expertise to lead this project as it exceeds daily duties of staff. Securing a qualified professional in an era of workforce crisis in emergency management may be a challenge. To mitigate this risk, if the application is successful, we will start advertising and recruiting for this position as soon as funding is confirmed (e.g. end of March) to ensure the person can start in the fall. NSEM will work with District of North Vancouver HR to move through this process. NSEM will work with District of North Vancouver procurement regarding the RFP for a qualified engineer and engineering firm to lead the multi-hazard assessment and a consulting firm that specializes in Business Continuity Planning. To ensure tri-municipal support, all three municipalities will take part in the selection process. Knowing that there is a very small pool of experts that do this work, NSEM will initiate this procurement process once funding is confirmed.

Will project readiness risks be mitigated during this project? For example, land hasn't been acquired, potential issues with permits or authorizations, non-DRIF funding sources are not secured, and so on.

Yes

If yes, which project readiness risks will be mitigated during this project? (select all that apply)

Industry supply may not be able to meet demand

How will project readiness risks be mitigated during this project, if applicable?

Although the start date for the project is set for October 2025, once successful notification of this grant was received, NSEM will begin the recruitment process for a project manager and the procurement process for a qualified engineering firm to lead the multi-hazard risk assessment. This would mitigate risks tied to project readiness specific to finding qualified candidates.

Will project sensitivity risks be mitigated during this project? For example, project has received negative media attention, certain stakeholders have been vocal about the project, and so on.

Yes

If yes, which project sensitivity risks will be mitigated during this project? (select all that apply)

There may be ongoing concerns regarding municipal liability as a result of the October 2024 Atmospheric River event., NSEM is mindful of public concern over risk maps - this requires public education and engagement.

How will project sensitivity risks be mitigated during this project, if applicable?

NSEM will work in partnership across all relevant municipal departments. This will ensure that issues of concern tied to past events are addressed and a path forward can be developed. Specific to the ongoing recovery work tied to the Atmospheric River event in October 2024, there may be information that needs to be considered within the context of the broader event. Additionally, when risk-based information is provided to the public, it must be done so in a way the appropriately communicates and translates this information in an accessible way for public consumption.

Will project capacity challenge risks be mitigated during this project? For example, limited human resources or technical expertise to complete the project, and so on.

Yes

If yes, which project capacity challenge risks will be mitigated during this project? (select all that apply)

Limited human resources to complete the project, Limited technical expertise to complete the project

How will the project capacity challenge risks be mitigated during this project, if applicable?

Yes, the capacity risks associated with this project will be effectively managed. With in-kind support being provided by NSEM staff, there will be additional technical capacity to support elements of this project. A similar model was used for the recent North Shore Resilience Strategy project. This model led to wonderful and collaborative outcomes between the project manager and the NSEM team.

By completing this project, is risk being increased or transferred to any parties or to the environment?

No

Budget

Step 10

Total Project Cost

\$1,057,000.00

Eligible DRIF Program Funding Request from EOI

\$997,000.00

Year-over-Year DRIF Funding Request

Fiscal Year	Estimated Amount
--------------------	-------------------------

2024/2025	\$0.00
-----------	--------

Fiscal Year	Estimated Amount
--------------------	-------------------------

2025/2026	\$166,168.00
-----------	--------------

Fiscal Year	Estimated Amount
--------------------	-------------------------

2026/2027	\$332,332.00
-----------	--------------

Fiscal Year	Estimated Amount
--------------------	-------------------------

2027/2028	\$332,332.00
-----------	--------------

Fiscal Year	Estimated Amount
--------------------	-------------------------

2028/2029	\$166,168.00
-----------	--------------

Total DRIF Program Funding Request

\$997,000.00

Your updated DRIF program funding request is different from the eligible amount in your EOI. Explain what has changed.

(Optional)

Does the project have other funding sources?

Yes

Other Funding Sources

Estimated Amount	Name of Grant/Funding Source
-------------------------	-------------------------------------

\$60,000.00	Special projects funds - In kind staff support
-------------	--

Type of Funding

Self-funded

Excess Funding

\$0.00

Describe how the project activities are cost effective (for example, locally sourced resources, shared contract resources, minimalized travel)

As a tri-municipal organization, NSEM will administratively lead this work. This reduces overhead costs and supports a consolidated effort towards financial management, procurement, contracts and well as governance. Additionally, due to the pre-existing NSEM governance structure, processes around engagement and decision making have also been streamlined, resulting in less overhead costs. Specific to the multi-hazard assessment, it will be critical to engage with an engineering consultant who has detailed knowledge and awareness of the North Shore, for many reasons, a focused will be on procuring engineering knowledge local to the North Shore -- this will insure localized knowledge but will also reduce travel costs. When possible, NSEM has been working with the Native Friendship Centre to provide catering. This Indigenous owned and operated company also uses its profits to support its meal service for the Downtown East Side. This has been a powerful way to support ethical business opportunities and when needed, nourish meeting participants to traditional Indigenous foods.

Are there previous emergency response costs that the proposed project is designed to mitigate?

Yes

Previous Response Costs

\$20,000,000.00

Provide details on previous response costs

Over the past 20 years, the North Shore has experienced a number of large-scale disaster events that have resulted in considerable financial impact to the municipalities, residents and the province. Some of the most significant events include:

- 2024 North Shore Atmospheric River Event -- resulted in public and private costs into the tens of millions of dollars (the full extent of the costs are still being assessed).
- 2023 District of North Vancouver Mt. Seymour Wildfire - 2023 District of West Vancouver Whyte Lake Wildfire - 2022 District of West Vancouver King Tide Event and Ambleside Seawall -- impacts resulted in costs over \$1 million - 2021 District of West Vancouver Capilano River Landslide Event - 2021 Heat Dome - although the financial impact was minimal, there was considerable loss of time due to this event. - 2014 North Shore Flooding Event from Extreme Rain in November -- impacts resulted in costs over \$?????? (Jas to confirm details) - 2005 District of North Vancouver Berkeley Landslide resulted in a cost of about \$7 million

Do cost considerations apply to this project? For example, cost stacking, in-kind contributions, phased costs, and so on.

Yes

If yes, which cost considerations apply?

In-kind contributions

Explain cost considerations, if applicable

Based on previous experience with this level of work, success requires engagement and support from across the NSEM team. The following in-kind contributions will be provided: - NSEM Director - will provide overall leadership and accountability for this project - NSEM Administrative support - will provide necessary administrative support (e.g., support with meeting logistics) - NSEM Team - will support with elements of project design and delivery. Will also support with elements of facilitation, documentation or other elements of large-group engagement.

Attach Files

Step 11

Detailed cost estimate

File name	Comments
DRIF program_Detailed Cost Estimate_Stream 1_NSEM.xlsx	attached

[Download](#)

Site plan, if applicable to the type of project being proposed

(Optional)

Preliminary design, if applicable to the type of project being proposed

(Optional)

Is resolution document available to attach to this form now?

No

Other Supporting Documentation

File name

FINALDRAFT_2024 North Shore Resilience_Baseline_DRIF_V6.pdf

Comments

North Shore Resilience Baseline Assessment

[Download](#)

File name

Paddles-Across-the-North-Shore_Our-Journey_digital.pdf

Comments

Paddles Across the North Shore

Download

Summary & Consent

Step 12

Authorized Representative Contact Information

First Name	Last Name	Position/Title	Department
Jenn	Suggitt	Manager, Planning and Resilience	NSEM

Phone	Email
778-338-6313	jsuggitt@nsem.ca

For disaster mitigation funding support, contact:
EMCR.DisasterMitigation@gov.bc.ca.

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