



Regional District of Bulkley-Nechako
Electoral Area D (Fraser Lake Rural)
Hazard, Risk & Vulnerability Analysis
February 3, 2023

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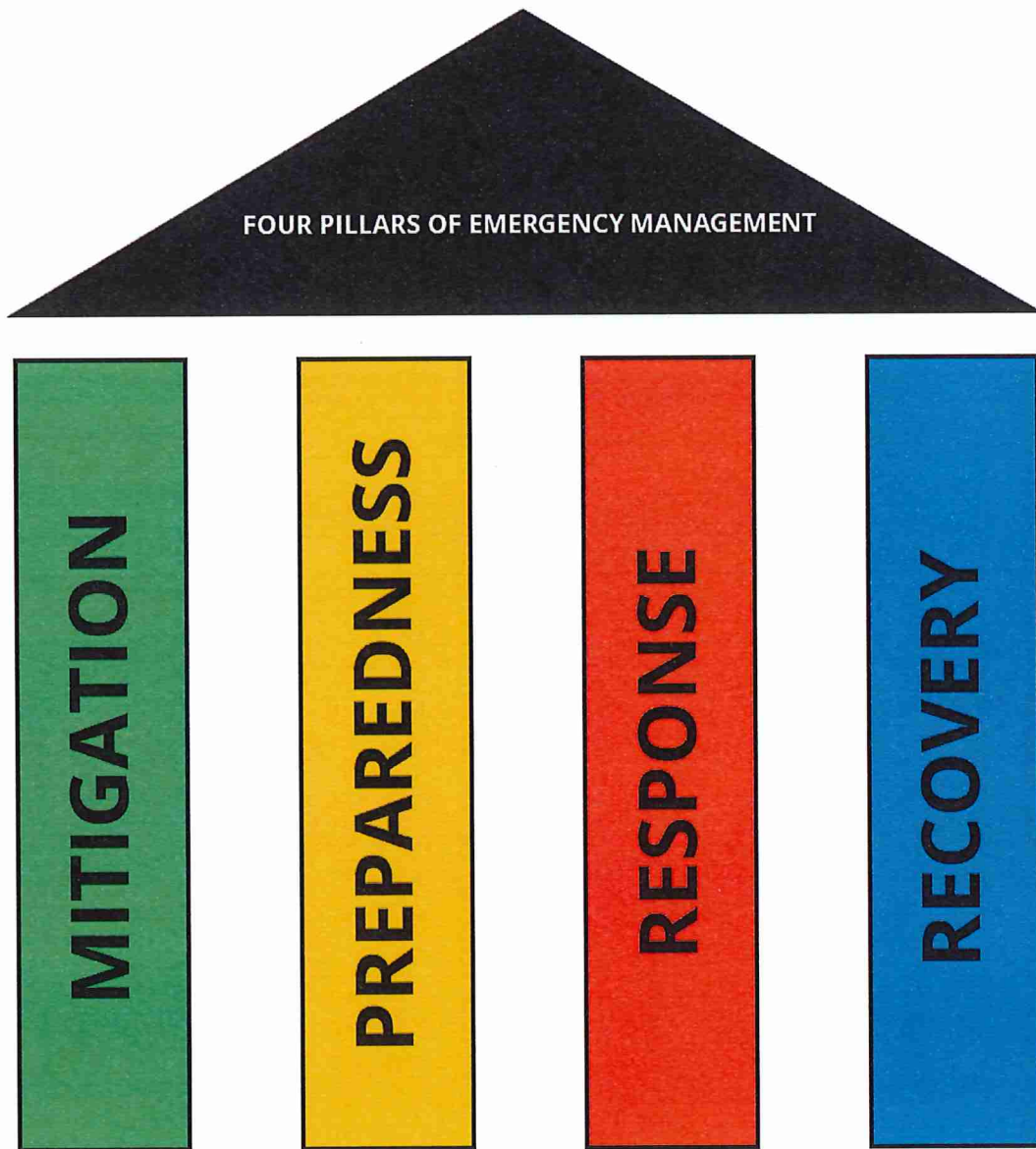
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Regional District of Bulkley-Nechako

Emergency Management Mission Statement

Building a safer future through effective partnerships with local government, First Nations, emergency services agencies, private sector, volunteer agencies, and the residents of the Regional District of Bulkley-Nechako to save lives, protect property, and reduce the effects of emergencies through mitigation, preparedness, response, and recovery activities.



Revision History

Revision #	Date	Summary of Changes	Revised By
00		Initial Document	Deborah Jones-Middleton

Definitions

Within the Comprehensive Emergency Management Plan there are several acronyms used, below is a list of the acronyms and the definition.

CEMP	Comprehensive Emergency Management Plan
EA	Electoral Area D
EPA	<i>Emergency Program Act 1996</i>
HRVA	Hazard, Risk & Vulnerability Analysis
SAR	Search & Rescue
LAEMR	<i>Local Authority Emergency Management Regulation</i>
RDBN	Regional District of Bulkley-Ne-Nechako



INTRODUCTION

"In its analysis, an HRVA considers several factors, including the unique geographical area and functions of a community or organization, and any societal, environmental, economic, political, or reputational risks. The results of an HRVA give the emergency management program the information it needs to develop an emergency plan, set priorities for action, and allocate time and resources accordingly."

British Columbia Emergency Management System

General

The HRVA is a foundational step towards enhancing the RDBN Emergency Management Program. The objective of this process is to increase regional awareness and resilience to natural, technological, and conflict-related hazards by informing the CEMP. The HRVA will be an appendix of the CEMP and is a living document that guides the RDBN Emergency Management Program.

Purpose Statement

As environmental-based hazards are increasing in scope, intensity, and frequency, the RDBN continues to explore and invest in improvement opportunities to increase the resiliency of the region. The most significant hazards in the RDBN include flooding and wildfire in wildland urban interface areas. Hazards like these expose the Region's vulnerabilities and create increasing risks to residents.

The previous HRVAs were all conducted in 2002. Since the current RDBN Emergency Preparedness Plan was written in 2003 and updated in 2011, there have been significant changes in agency, best practices, and terminology.

In the summer of 2018, the RDBN responded to 16 interface wildfires, resulting in 64 evacuation orders, alerts and extensions that affected approximately 3,475 people. This emergency and the subsequent independent review highlighted this "new normal" of large-scale emergencies, their consequences, and the stress these events put on the RDBN's limited resources. The need for innovative solutions, and engagement of residents in emergency management.

The HRVA supports the development of a collective community understanding of hazards and the development of activities to enhance our regional awareness and resilience. The findings from this analysis will serve as a tool in updating the CEMP and determining the work plan for the Protective Services Department.

Scope

The HRVA covered the geographic scope of the EA. The Committee reviewed all 57 natural and human caused hazards that could potentially disrupt the EA and require a response.



The Committee also received information on each of the hazards that had historically impacted the EA.

Out of Scope

The HRVA did not assess the risk or impacts within the boundaries of member municipalities and First Nations located with the EA. However, the Committee recognized that hazards occur across jurisdictional boundaries. The HRVA did not assess hazards specific to individual properties and climate change modelling was not in the scope of this project.

Authority

This HRVA is a requirement mandated by the *LAEMR* of the *EPA*. Section 6 (2) of the *EPA* requires local authorities to, “prepare or cause to be prepared local emergency plans respecting preparation for, response to, and recovery from emergencies and disasters.” According to Section 2 (1) (a) and (b) of the *LAEMR*, the local emergency plans must reflect the potential emergencies, and disasters that could affect the jurisdictional area. The local authority’s assessment of the relative risk of occurrence and the potential impact on people and property must be considered.

Committee

The EA HRVA was conducted by a Committee made up of local community members, stakeholders, and the Electoral Area D Director.

The Committee members were:

- Mark Parker, EA D Director, Committee Chair
- Adam Patrick, Stellat'en First Nation
- Alana Legere, West Fraser Saw Mills
- Ashley Heathcliff, Nadleh Whut'en First Nation, EOC Planning Lead/ Community Liaison
- Audrey Fennema, Fraser Lake ESS Director
- Bob Storey, Resident
- Dave Christie, Village of Fraser Lake, Economic Development
- Jason Regnier, Norstar Forestry
- Jason Rummung, Staff Sargent, RCMP
- Jo-Anne Fiske, Norstar Forestry
- Joe Pecheco, Village of Fraser Lake Volunteer Fire Department, Fire Chief
- Juan Cereno, Nadleh Whut'en First Nation, Emergency Program Coordinator
- Lor-Lee Pacheco, Fraser Lake Community Health Centre, Head Nurse
- Michael Lee, BC Emergency Health Services, Manager of the Nechako Region
- Yvan Laramee, Fort Fraser Volunteer Fire Department, Fire Chief

The Regional District of Bulkley-Nechako would like to thank each of the members for their contribution to the HRVA process.



HAZARD IDENTIFICATION

“A hazard is a process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption, or environmental degradation.”

United Nations Office for Disaster Risk Reduction

Geographic Setting

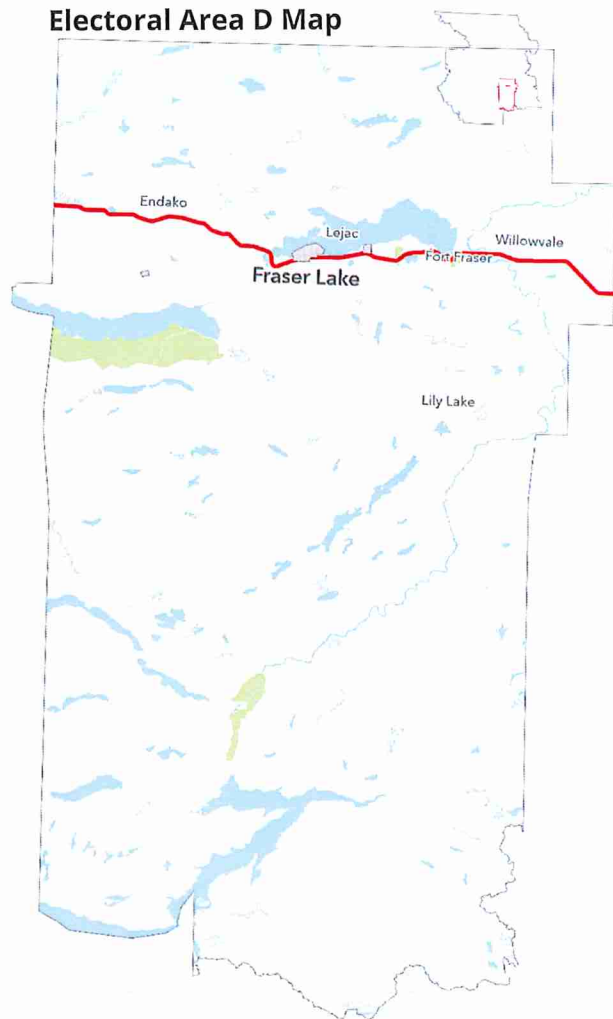
The EA covers 4781.7 square kilometers, with the western boundary along Highway 16 approximately 3.2 km east of Butler Road. The eastern boundary along Highway 16 is about 6 km east of Willowvale Road and 3.8 km west of Bearhead Road. It runs along the Nechako Pit Road, and Telegraph Road approximately 2 km southeast of Horn Road.

The EA has 1,607 residents identified in the 2021 Census. The EA includes:

- Fort Fraser with approximately 345 residents, Endako with about 125 residents, East Francois Lake or Glenannan with a population of approximately 230 residents, and the area surrounding the Village of Fraser Lake.
- Fraser Lake Sawmill, owned by West Fraser Timber Company.
- Endako mine, which is currently in Care & Maintenance mode, however Centerra Gold is expected to re-evaluate the status of the mine as market conditions warrant.

The geographic scope of the EA includes the Village of Fraser Lake, with a population of 965 citizens, located on Highway 16 between

Electoral Area D Map












the District of the District of Vanderhoof and the Village of Burns Lake. The Village of Fraser Lake is a supply centre for the rural residents and First Nations in the area.

The EA is in the Dekelh Traditional Territory with three First Nation communities:
























- Stellat'en First Nation has approximately 583 band members. The Stellakoquo Reserve is located at the west end of Fraser Lake near the mouth of the Stellako and Endako Rivers and has approximately 200 residents.
- The Nadleh Whut'en First Nation has approximately 600 band members. The Nautley reserve is located west of Fort Fraser. The Band Office provides services to 7 reserves.
- The Cheslatta Carrier Nation has five reserves within the EA that are supported by the Band Office located in the geographic area of EA E.

The Committee determined there were 42 of the 57 hazards that should be reviewed for the EA. The Committee determined the likelihood and potential severity of consequences for each of the 42 hazards.

The following table and graphics reflect the results of the likelihood and consequence scoring by the committee.

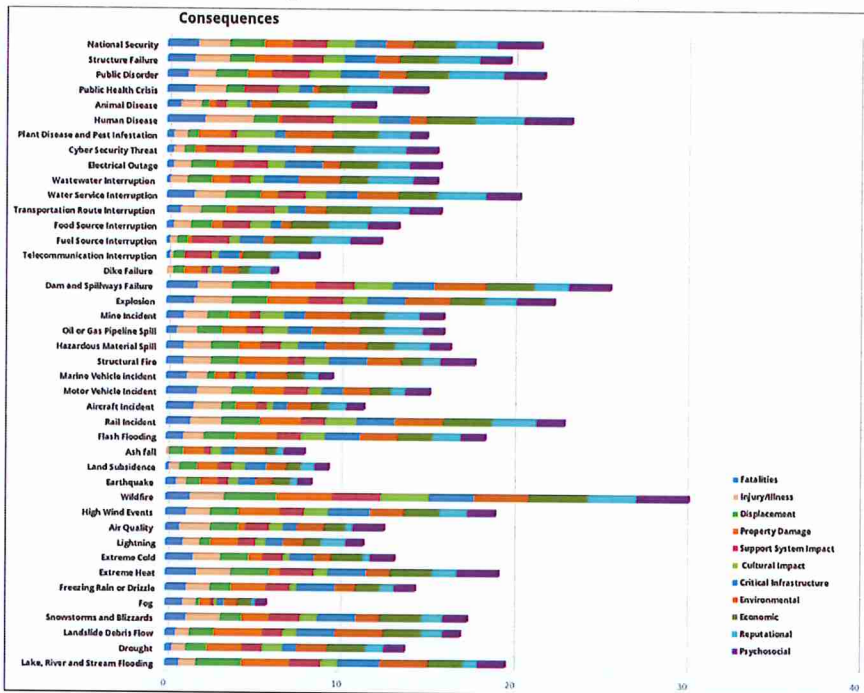
Priority	Hazard List	Current Likelihood	Consequence Total	Future Likelihood
1	 Wildfire	C - Probable	30	D - Likely
2	 Dam and Spillways Failure	C - Probable	26	D - Likely
3	 Human Disease	C - Probable	23	C - Probable
4	 Rail Incidents	D - Likely	23	E - Almost certain
5	 Explosions	D - Likely	22	D - Likely
6	 Public Disturbance	D - Likely	22	E - Almost certain
7	 National Security Threat	D - Likely	22	E - Almost certain
8	 Water Service Interruption	D - Likely	20	D - Likely
9	 Structural Failure	E - Almost certain	20	E - Almost certain
10	 Lake, River, and Stream Flooding	D - Likely	20	D - Likely
11	 Extreme Heat	D - Likely	19	E - Almost certain
12	 Hurricane/ Typhoon/High Wind	D - Likely	19	E - Almost certain
13	 Flash Flooding	B - Unlikely	18	B - Unlikely
14	 Structure Fire	B - Unlikely	18	B - Unlikely
15	 Snowstorms and Blizzards	C - Probable	17	D - Likely
16	 Landslide/ Debris Flow	C - Probable	17	C - Probable
17	 Hazardous Material Spill	C - Probable	16	D - Likely
18	 Mine Incident	B - Unlikely	16	B - Unlikely



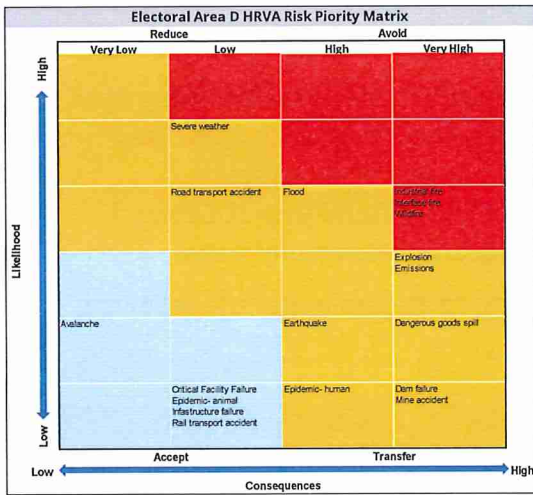
Priority	Hazard List	Current Likelihood	Consequence Total	Future Likelihood
19 	Oil or Gas Pipeline Spill	C - Probable	16	C - Probable
20 	Transportation Route Interruption	B - Unlikely	16	B - Unlikely
21 	Electrical Outage	D - Likely	16	D - Likely
22 	Cyber Security Threat	C - Probable	16	C - Probable
23 	Wastewater Interruption	C - Probable	16	C - Probable
24 	Motor Vehicle Incident	B - Unlikely	15	C - Probable
25 	Plant disease and Pest Infestation	B - Unlikely	15	B - Unlikely
26 	Public Health Crisis	B - Unlikely	15	C - Probable
27 	Freezing Rain or Drizzle	A - Rare	14	A - Rare
28 	Drought	D - Likely	14	D - Likely
29 	Food Source Interruption	C - Probable	13	D - Likely
30 	Extreme Cold	C - Probable	13	D - Likely
31 	Air Quality	D - Likely	13	D - Likely
32 	Fuel Source Interruption	C - Probable	12	C - Probable
33 	Animal Disease	C - Probable	12	C - Probable
34 	Lightning	D - Likely	11	E - Almost certain
35 	Aircraft Incident	C - Probable	11	D - Likely
36 	Marine Vessel Incident	D - Likely	10	E - Almost certain
37 	Land Subsidence	D - Likely	9	E - Almost certain
38 	Telecommunications Interruption	D - Likely	9	D - Likely
39 	Earthquake	E - Almost certain	8	E - Almost certain
40 	Ash Fall	D - Likely	8	D - Likely
41 	Dike Failure	B - Unlikely	6	D - Likely
42 	Fog	C - Probable	6	D - Likely



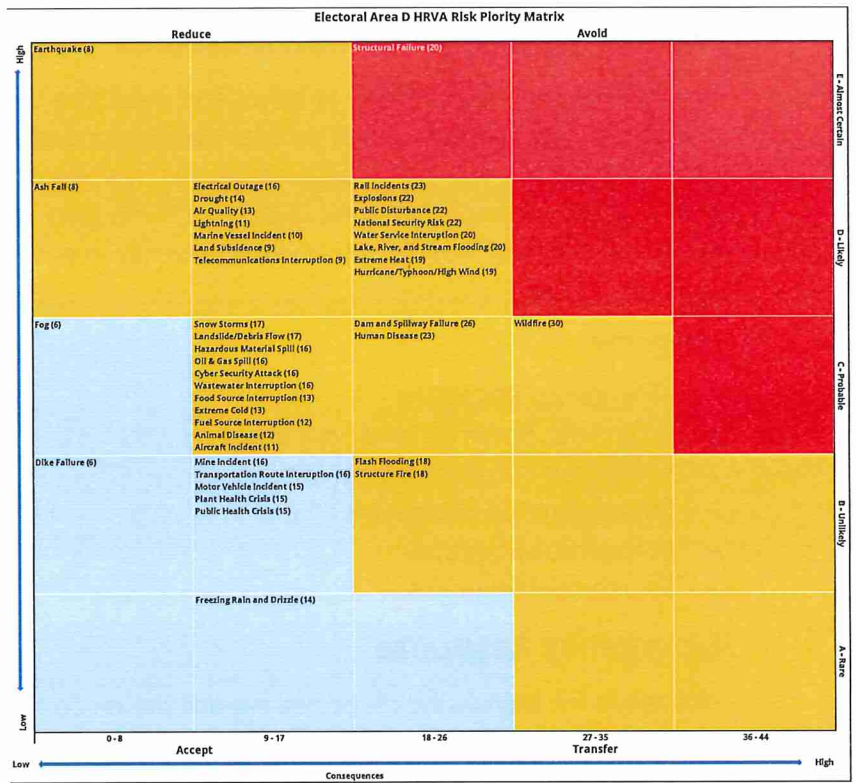
The following graphics reflect the results of the consequence scoring by the committee showing the 11 categories that were considered. Each Committee member had an opportunity to score on the 11 categories for each of the 42 identified hazards.



Below is the 2005 EA Hazard Matrix



Below is the revised EA Hazard Matrix



RISK REDUCTION STRATEGIES

"We cannot stop natural disasters, but we can arm ourselves with knowledge: so many lives wouldn't have to be lost if there was enough disaster preparedness."

Petra Nemcova, Advocate for UNDRR

Identifying Risk Reduction Measures

With the identification of the hazards and risks, the Committee considered the existing Risk Reduction Measures and provided feedback on potential Risk Reduction Measures. The following section lists the known measures, resources, and community emergency planning documents that are available in the region and at the community level. Efforts to build resiliency are most effective when undertaken at the regional and community level.

Below is information that provides a snapshot of the existing strategies under the following categories:

- Emergency Response
- Programs, Services, and Education
- Social and Non- Structural Mitigation
- Environmental Mitigation
- Economic Mitigation
- Structural Mitigation

Emergency Response

Strategies for increasing response capacity and coordination.

- Regional District of Bulkley-Nechako Emergency Preparedness Plan 2003 updated in 2011. This plan is being replaced by a Comprehensive Emergency Management Plan, with the following addendums approved by the Regional Board of Directors:
 - Farmed Animal Mass Carcass Disposal Emergency Plan 2010.
 - Livestock Evacuation Plan 2020.
 - Pandemic Response 2020.
 - Crisis Communication Plan 2021.
 - RDBN Business Continuity Plan 2021.
 - Evacuation Route Planning 2022.
 - Regional Emergency Support Services (ESS) Plan.
- Village of Fraser Lake Emergency Preparedness Plan 2016.
- Stellat'en Emergency Plan Updated Jan 2010.



- Nadleh Whut'en Emergency Plan Updated 2013.

Regional Response Preparedness

- Annual Seasonal preparedness meeting with stakeholders and partners across the RDBN.
- Monthly and Semi-Annual Regional Emergency Support Services (ESS) meetings.
- Annual Network of Emergency Support Services Teams Conference.
- Bulkley Nechako Emergency and Public Alerts, powered by Voyent Alert! – ongoing training and inclusion is available for all member municipalities and First Nations.

Rail Disaster

- CN First Responder Training and Resources - [Transportation Community Awareness and Emergency Response](#).

Oil and Gas Pipeline Spill

- PNG Pipeline has a strong emergency and safety program, including a [Transmission Pipeline Emergency Response Plan](#).

Programs, Services, and Education

Strategies for enhancing public awareness and capabilities of response personnel.

- [RDBN FireSmart Program](#) - FireSmart is a federal, provincial, and community-based program that encourages the public to take simple, scientifically proven steps to increase wildfire resiliency.

Social and Non- Structural Mitigation

Plans, Bylaws, Regional Strategies for encouraging safer more sustainable communities.

Policies, plan, and other resources

Developing land-use policies and official community plans that integrate the HRVA lens to reduce risks and improve public safety.

- [RDBN Housing Needs Assessment 2021](#).
- RDBN [Area D: Endako, Fort Fraser, Fraser Lake Rural Official Community Plan](#).
- [Fraser Lake Official Community Plan 2010](#).
- [Fraser Lake Age-Friendly Action Plan 2019](#).

Regional Resources

- [Regional Adaptation Strategies: Bulkley-Nechako & Fraser-Fort George](#).
- [RDBN Food and Agriculture Plan 2020](#).

Environmental and Structural Mitigation

Strategies for repairing or preventing further damage to the environment, infrastructure, and homes.



Wildfire

- [Trail by Fire: Nadleh Whut'en and the Shovel Lake Fire, 2018.](#)
- Village of Fraser Lake Community Wildfire Protection Plan 2013.
- [Shovel Lake Wildfire Ecosystem Restoration Plan 2019.](#)

Rural Fire Department Support

- Annual Rural Fire Chief's Meeting.
- Support, training, administrative support, and funding support to rural fire departments through the RDBN Regional Fire Chief.

Rural Fire Protection

- Agreement with the Fort Fraser Volunteer Fire Department to provide Fire Protection to a specified area of Electoral Area D. (see Appendix A)

Flooding

- [Nechako Reservoir Dam Emergency Plan \(DEP\)](#) Nov 2020.
- Inundation Maps for Area D: Skins Lake Spillway ([Maps 5-9](#)) Fort Fraser ([Maps 10-11](#)).
- [RDBN Floodplain Management Bylaw No. 1878, 2020](#) and [Mapping](#).

Geotechnical

- [Geotechnical Report Guidelines RDBN brochure.](#)

Air Quality

- [Towards a Healthy Nechako: Nechako Watershed Strategy - Version 1](#)

Plant Infestations

- Northwest Invasive Plant Council Landowner Weed Removal Rebate, an annual rebate program for 50% up to \$500 for certified removal of invasive plants on private land.

Oil and Gas Pipeline Spill

- PNG Pipeline has a strong emergency and safety program, including a [Transmission Pipeline Emergency Response Plan](#).
- Coastal GasLink has prepared a comprehensive Emergency Response Plan.

Economic Mitigation

Strategies for increasing regional economic resilience.

- Regional Economic Development Plan 2022 – 2024 includes 4 goals:
 - To improve or develop critical infrastructure to support economic and social development.
 - To support stability and growth in the Agriculture Sector and for Small Business.
 - To increase and streamline communication and partnerships within and outside the region.
 - To develop and market the incredible built and natural amenities in the region.
- [NDIT Business Façade Improvement Program](#).



- Regional Connectivity Service Establishment – the RDBN is pursuing partnerships to ensure that all residents have access to high-speed internet and cellular connectivity through the Connectivity Strategy.
- [Connecting Consumers and Producers](#) is a marketing project that promotes local food producers and provide resources to consumers that support eating locally produced food all year round. The program has an online directory and funding available for local food events in the region.

Future Risk Reduction Strategy Suggestions

The Committee was asked to consider other possible Risk Reduction Strategies that would support efforts to build resiliency. Recommendations have been consolidated and listed in the final RDBN HRVA Report presented to the Board of Directors on April 6th, 2023.

NEXT STEPS

“Emergency management responsibilities in Canada are shared by Federal, Provincial, and Territorial governments and their partners, including Indigenous peoples, municipalities/communities and individual citizens who have a responsibility to be prepared for disasters and contribute to community resiliency.”

An Emergency Management Framework for Canada - Third Edition

Once all EA HRVA Final Reports are reviewed by their respective Committee a Final RDBN HRVA Report will be prepared that includes the EA HRVA results and identified Risk Reduction Actions.

The Risk Reduction Actions identified by the Committee will be prioritized based on the likelihood and consequences of the hazard(s) they mitigate. Funding and partnership opportunities to support implementation of the Risk Reduction Actions identified will be sourced and options will be presented to the RDBN Board.

A public education campaign to provide information to residents on the identified risks, what risk reduction efforts are happening, and what they can do to reduce the risks for themselves, and their families will be implemented.

The RDBN will review the HRVA annually and amend information based on new and emerging information. A full review of the HRVA will be conducted every 5 years at a minimum.



