



Regional District of Bulkley-Nechako
Electoral Area E (Francois/Ootsa Lake Rural)
Hazard Risk & Vulnerability Report
February 7, 2023

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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.



FOUR PILLARS OF EMERGENCY MANAGEMENT

MITIGATION

PREPAREDNESS

RESPONSE

RECOVERY



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 E
EPA	<i>Emergency Program Act 1996</i>
HRVA	Hazard, Risk & Vulnerability Analysis
BLSAR	Burns Lake Search & Rescue
LAEMR	<i>Local Authority Emergency Management Regulation</i>
RDBN	Regional District of Bulkley-Nechako
SAR	Search & Rescue



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 E Director.

The Committee members were:

- Clint Lambert, EA E Director, Committee Chair
- Anne MacDowall, Colleymount Recreation Committee
- Barbara Tom, Cheslatta Carrier Nation
- Cole McEntire, Southside Volunteer Fire Department, Deputy Fire Chief
- Cynthia Rassveld, BC Emergency Health Services, Ambulance Unit Chief
- Ginger Moyah, SD 91 Teacher
- Jim D'Andrea, Cheslatta Carrier Nation
- John and Cia Solecki, Lakes District Cattlemen's Association
- Ken Neilson, Chinook Community Forest, General Manager
- Monika Eriksen, Free Growing, Forester
- Nyree Hazelton, Burns Lake / Southside, School District 91 Board Trustee
- Ron Van Tine, Waterbridge Equipment Ltd.
- Scott Zayac, Chinook Emergency Response Society
- Travis Crowther, Nee Tahi Buhn First Nation
- Trevor Moyah, Councillor

The Regional District of Bulkley-Nechako would like to thank each member 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

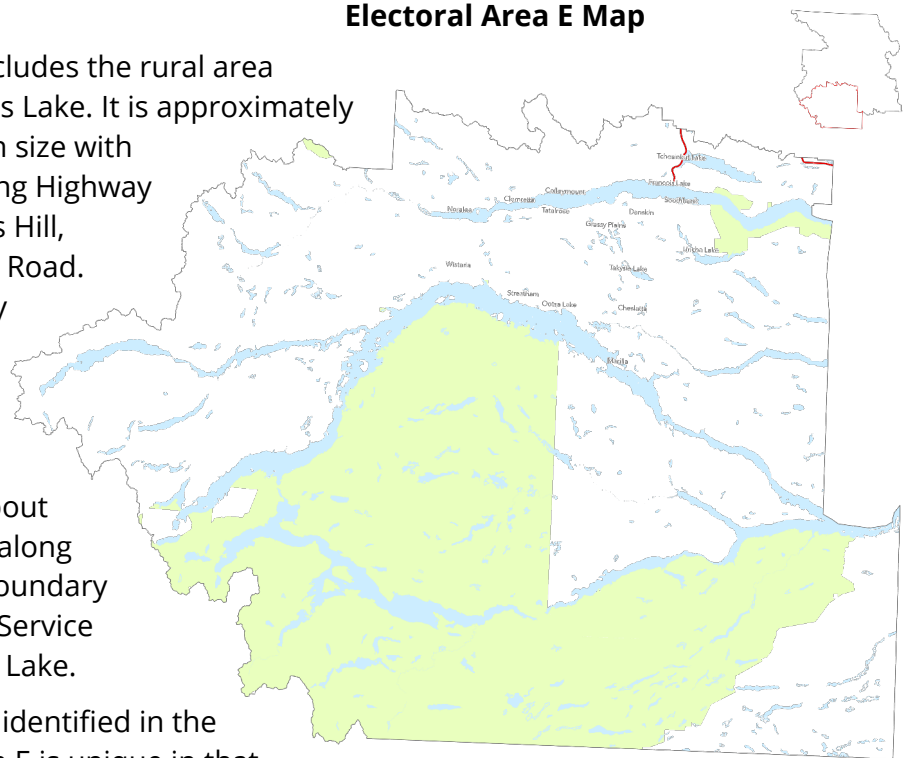
The scope the EA covers includes the rural area south of the Village of Burns Lake. It is approximately 17,745 square kilometres in size with the northern boundary along Highway 16 near the top of Hopper's Hill, about 1 km south of Gilgan Road. The northeastern boundary along Highway 16 is near the top of Priestly Hill at the junction of Tercer Forest Service Road. The eastern boundary is about 3.2 km east of Butler Road along highway 16. The western boundary along Morice-Owen Forest Service Road is at the end of Owen Lake.

The EA has 1,512 residents identified in the 2021 Census. Electoral Area E is unique in that there is no municipality within its borders; instead it consists of a number of robust communities. A large portion of this vast area is remote with limited or no access.

The EA includes:

- The unincorporated communities of Tchesinkut Lake, Francois Lake, Southbank, Colleymount, Clemretta, Noralee, Grassy Plains, Danskin, Uncha Lake, Takysie Lake, Tatalrose, Wistaria, Streatham, Ootsa Lake, Cheslatta and Marilla.
- Multiple provincial parks and protected areas that include Entiako Park, Entiako Protected Area, and Tweedsmuir Park.
- The Nechako Reservoir managed by Rio Tinto Mining Corporation.

Electoral Area E Map

















The forestry, agriculture and tourism sectors are the major industries in the area. The Francois Lake Forester, owned and operated by Waterbridge Equipment Ltd., is a free ferry that is the connector for the southside of Francois Lake. Capable of transporting up to eight loaded logging trucks, the Forester is a key infrastructure component in the EA..

The geographic scope of the EA is in the Nedut'en/Witsuwit'en Traditional Territory with three First Nation communities:

- The Cheslatta Carrier Nation has approximately 383 members. The Band Office, based at Southbank, on the south shore of Francois Lake. supports 8 reserves totalling at approximately 1403 ha.
- The Skin Tyee Nation has a membership of approximately 184 people. The main community and Band Office of the Skin Tyee Nation is located at Uncha Lake on the Skins Lake 16B reserve.
- Nee Tahi Buhn has approximately 140 members and 5 reserves covering approximately 657 ha. The most populated reserve Uncha Lake 13A is located on the northeastern end of Uncha Lake.

The Committee determined there were 38 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 38 hazards.

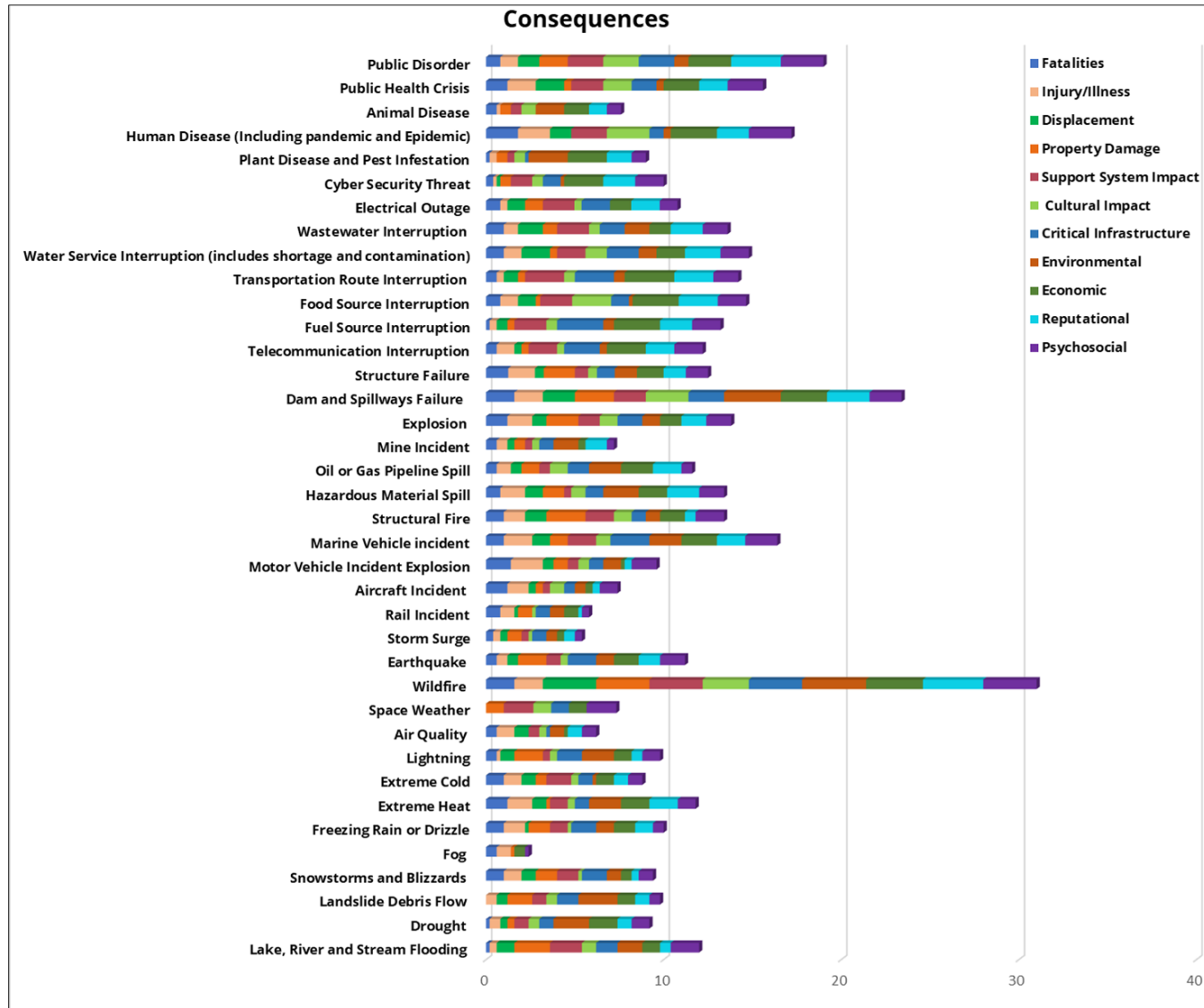
The following table and graphics reflect the results of the likelihood and consequence scoring by the committee.

Priority	Hazard List	Current Likelihood	Consequence Total	Future Likelihood
1	 Wildfire	D - Likely	31	D - Likely
2	 Dam and Spillways Failure	B - Unlikely	23	C - Probable
3	 Public Disturbance	C - Probable	19	C - Probable
4	 Human Disease	D - Likely	17	D - Likely
5	 Marine Vehicle Incident	C - Probable	16	C - Probable
6	 Public Health Crisis	C - Probable	16	C - Probable
7	 Water Service Interruption	C - Probable	15	C - Probable
8	 Food Source Interruption	C - Probable	15	C - Probable
9	 Transportation Route Interruption	C - Probable	14	C - Probable
10	 Explosions	A - Rare	14	A - Rare
11	 Wastewater Interruption	B - Unlikely	14	B - Unlikely
12	 Structure Fire	D - Likely	13	D - Likely
13	 Hazardous Material Spill	B - Unlikely	13	B - Unlikely
14	 Fuel Source Interruption	C - Probable	13	C - Probable

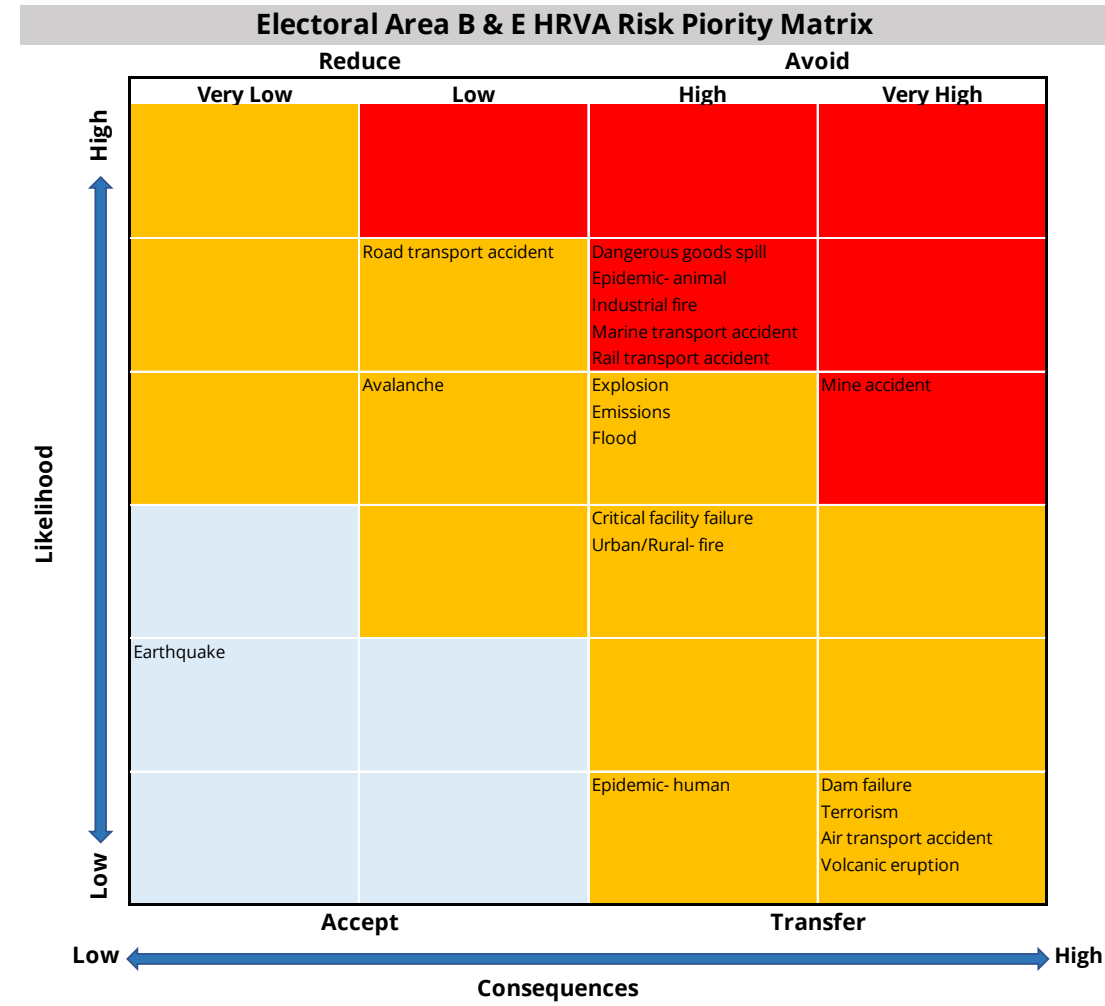


Priority	Hazard List	Current Likelihood	Consequence Total	Future Likelihood
15	 Structural Failure	B - Unlikely	13	B - Unlikely
16	 Telecommunications Interruption	D - Likely	12	D - Likely
17	 Lake, River, and Stream Flooding	D - Likely	12	D - Likely
18	 Extreme Heat	C - Probable	12	D - Likely
19	 Oil or Gas Pipeline Spill	A - Rare	12	C - Probable
20	 Earthquake	A - Rare	11	A - Rare
21	 Electrical Outage	E - Almost Certain	11	E - Almost Certain
22	 Freezing Rain or Drizzle	D - Likely	10	D - Likely
23	 Cyber Security Threat	C - Probable	10	D - Likely
24	 Lightning	E - Almost Certain	10	E - Almost Certain
25	 Landslide/ Debris Flow	B - Unlikely	10	B - Unlikely
26	 Motor Vehicle Incident	C - Probable	10	C - Probable
27	 Snowstorms and Blizzards	D - Likely	9	D - Likely
28	 Drought	C - Probable	9	C - Probable
29	 Plant disease and Pest Infestation	E - Almost Certain	9	E - Almost Certain
30	 Extreme Cold	D - Likely	9	D - Likely
31	 Animal Disease	C - Probable	18	C - Probable
32	 Aircraft Incident	A - Rare	7	A - Rare
33	 Space Weather	B - Unlikely	7	B - Unlikely
34	 Mine Incident	A - Rare	7	B
35	 Air Quality	D - Likely	6	D - Likely
36	 Rail Incident	A - Rare	6	A - Rare
37	 Storm Surge	A - Rare	5	A - Rare
38	 Fog	E - Almost Certain	2	E - Almost Certain

The following graphic reflects 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 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.



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 for Emergency Support Services Teams Conference.
- Voyent Alert – ongoing training and inclusion of indigenous community partners.

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.
- Public Awareness for Emergency Preparedness on [Facebook](#) and the RDBN Website [RDBN Website](#).

Social and Non-Structural Mitigation

Plans, Bylaws and 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](#).
- [Regional District of Bulkley-Nechako Electoral Area E - Francois/Ootsa Lake Rural ELECTORAL AREAS HOUSING NEEDS REPORT](#).
- [Cheslatta Carrier Nation Comprehensive Community Plan March 2017](#).
- RDBN [Southside Rural Community Plan Resource Document \(Electoral Area E\)](#).

Health

- [Lakes District Aboriginal Community Resource Guide – A tool for collaborative planning in patient care – Jan 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

- [Wildfire Risk Reduction Danskin and Southbank.](#)
- [Community voices as agents of change: 2018 wildfire experiences in the southside. By Susan Miller, UNBC May 2021.](#)

Rural Fire Department Support

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

Rural Fire Protection

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

Flooding

- [Nechako Reservoir Dam Emergency Plan \(DEP\)](#) Nov 2020.
- Inundation Maps for Area E: Skins Lake Spillway ([Maps 1-5](#)).
- [RDBN Floodplain Management Bylaw No. 1878, 2020](#) and [Mapping](#).

Geotechnical

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

Plant Infestations

- The Northwest Invasive Plant Council Landowner Weed Removal rebate is 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](#).

Mining Studies

- Huckleberry Mine tailings storage facilities [Emergency Preparedness and Response plan Extracted from: Operation, Maintenance and Surveillance Manual; Section 9 Prepared by BGC, June 31, 2013.](#)

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 provides 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 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, as well as 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.

