



Regional District of Bulkley-Nechako
Electoral Area F (Vanderhoof Rural)
Hazard, Risk & Vulnerability Report
February 16, 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 F
EPA	<i>Emergency Program Act 1996</i>
HRVA	Hazard, Risk & Vulnerability Analysis
BVSAR	Bulkley Valley 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 F Director.

The Committee members were:

- Jerry Peterson, previous EA F Director, Committee Chair
- Aman Parhar, Omineca Express, Publisher/Editor
- Chris Mushumanski, Nechako Valley Search & Rescue, Search Manager
- Donna Williams, District of Vanderhoof, Emergency Support Services Director
- Geoff Sargent, Yellowhead Road & Bridge, Quality Manager
- Gilbert Vickers, Saik’uz First Nation, Fire Chief
- Ian Leslie, District of Vanderhoof, Fire Chief
- James Simpson, Northern Health, Health Service Administrator
- Jason Alexis, Saik’uz First Nation, Economic Development Officer
- John Kochel, Nechako Regional Cattlemen’s Association
- Ken Isaak, Rio Tinto, Plant Protection Coordinator Head of Safety
- Ken Young, School District 91, Principal NVSS
- Kevin Day, RCMP, Staff Sargent
- Michelle Roberge, RDBN, Agricultural Coordinator
- Michelle Racher, Omineca Regional Response Coordinator ORR
- Nadine Frenkel, School District 91
- Wayne Salewski, Resident

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 the rural community surrounding the District of Vanderhoof. It is 5,617 square kilometres in size. The western boundary runs along Highway 16 about 6 km east of Willowvale Road. The western boundary extends to the Canfor mill on Highway 16. The eastern boundary of the Regional District is about 500 metres east of Lloyd Drive. The northern boundary is along Highway 27 about 1 km north of Cook Road.

The EA lies within the interior plateau of BC, which is dominated by gently rolling hills and fertile agricultural lands. The landscape features steep rocky bluffs, mountains, lakes and rivers.

The EA has 3,517 residents identified in the 2021 Census.

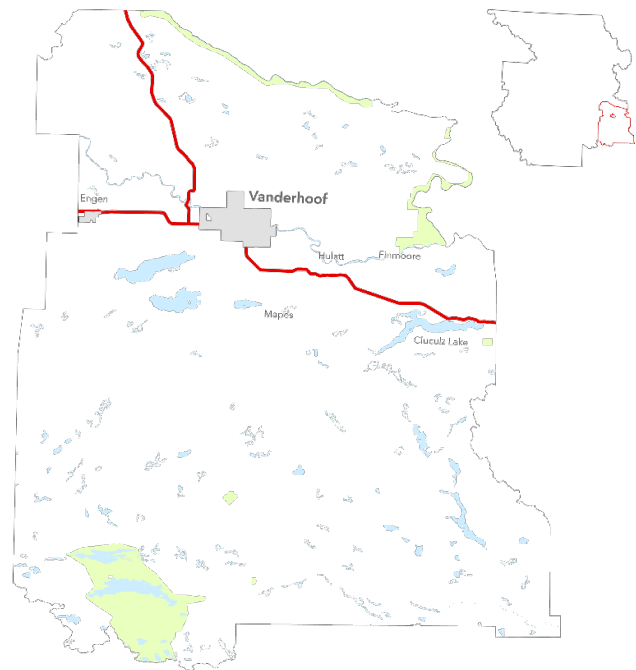
The EA includes:

- The unincorporated communities of Engen and Cluculz Lake.
- The District of Vanderhoof, with a population of 4,326 residents identified in the 2021 Census.

The geographic scope of the EA is in the Dakelh Traditional Territory with three First Nation communities:

- Saik'uz First Nation is a community of approximately 342. The primary community is situated on the east end of Nulki Lake, 14 kilometres south of the town of Vanderhoof. There are 10 reserves with a total area of 3,235 hectares.

Electoral Area F Map




















- Nazko First Nation has two unpopulated reserve totalling approximately 107 ha in size.
- Nadleh Whut'en has 1 reserve, Fondeur 9, which is 64.8 ha in size.

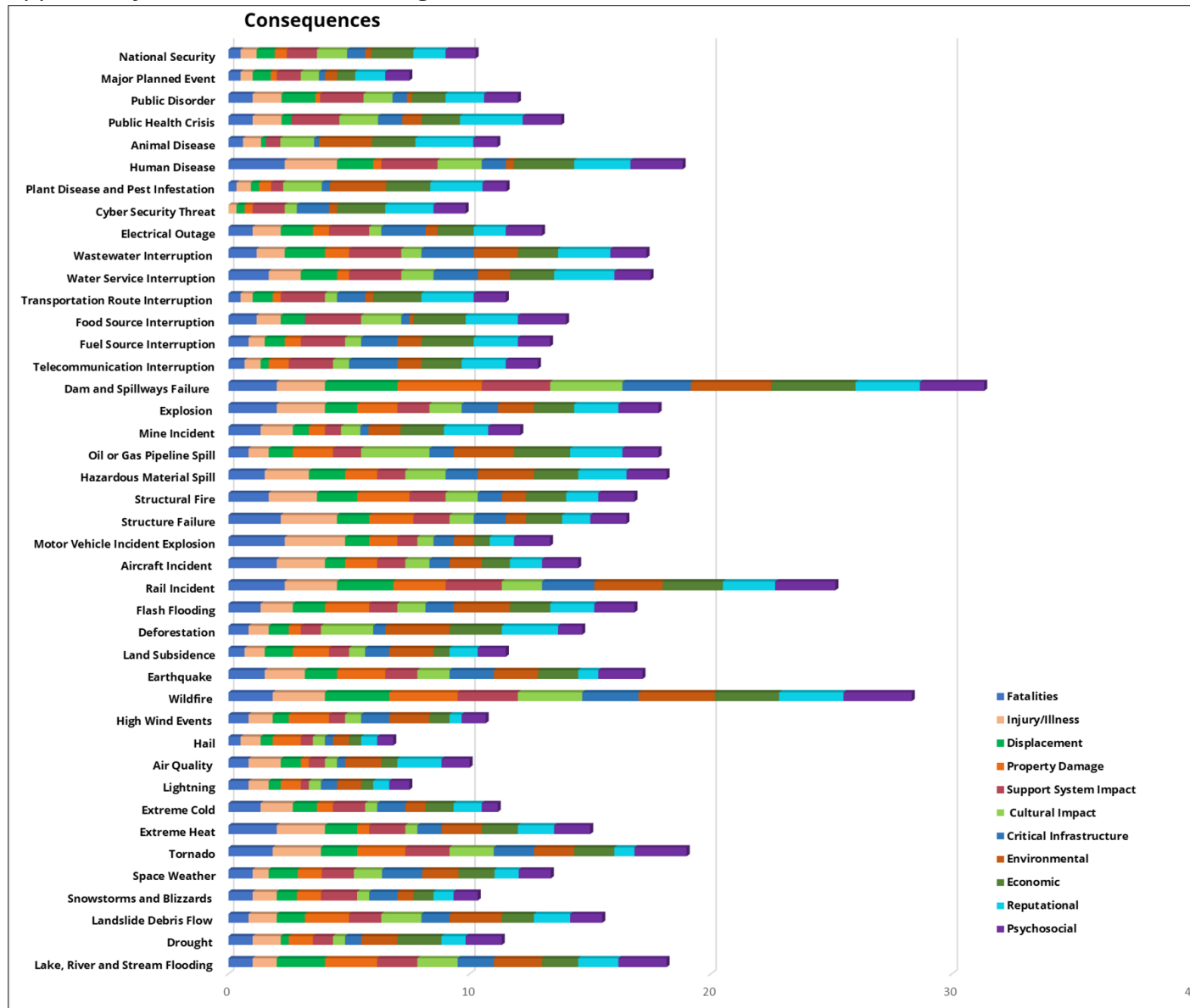
The Committee determined there were 42 of the 57 hazards that should be reviewed for the EA. The Committee determined the likelihood and potential severity of consequences for each of the 42 hazards.

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

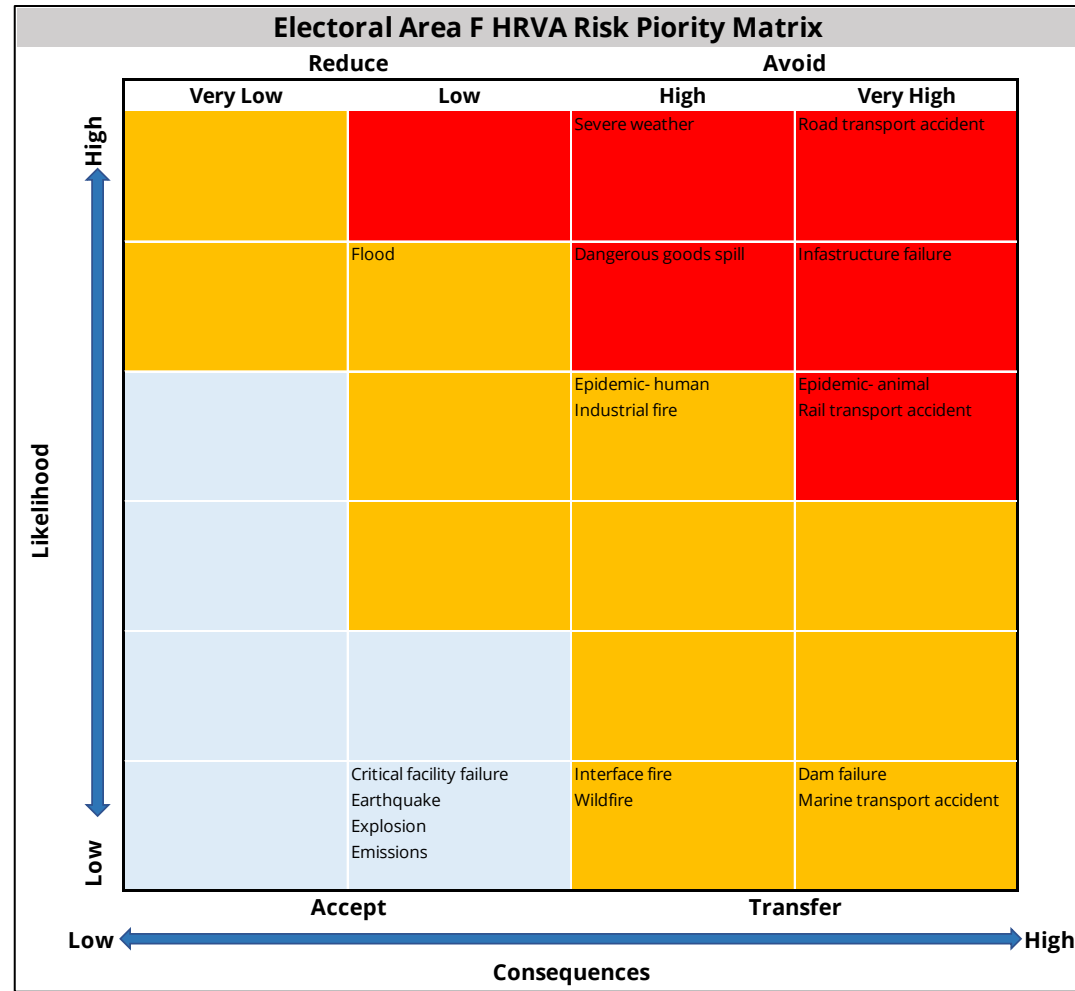
Hazard	Hazard List	Current Likelihood	Consequence Total	Future Likelihood
1 	Dam and Spillways Failure	B - Unlikely	31	B - Unlikely
2 	Wildfire	D - likely	28	E - Almost Certain
3 	Rail Incidents	D - likely	25	D - likely
4 	Tornado	B - Unlikely	19	B - Unlikely
5 	Human Disease	C - Probable	19	D - likely
6 	Lake, River, and Stream Flooding	D - likely	18	D - likely
7 	Hazardous Material Spill	C - Probable	18	D - likely
8 	Oil or Gas Pipeline Spill	C - Probable	18	C - Probable
9 	Explosions	B - Unlikely	18	C - Probable
10 	Water Service Interruption	C - Probable	18	C - Probable
11 	Wastewater Interruption	C - Probable	17	C - Probable
12 	Earthquake	B - Unlikely	17	B - Unlikely
13 	Structure Fire	D - likely	17	E - Almost Certain
14 	Flash Flooding	C - Probable	17	C - Probable
15 	Structural Failure	C - Probable	17	C - Probable
16 	Landslide/ Debris Flow	C - Probable	16	C - Probable
17 	Extreme Heat	D - likely	15	D - likely
18 	Deforestation	D - likely	15	D - likely
19 	Aircraft Incident	C - Probable	15	C - Probable
20 	Food Source Interruption	C - Probable	14	D - likely
21 	Public Health Crisis	C - Probable	14	D - likely
22 	Space Weather	B - Unlikely	13	B - Unlikely
23 	Motor Vehicle Incident	D - likely	13	D - likely
24 	Fuel Source Interruption	C - Probable	13	C - Probable
25 	Electrical Outage	D - likely	13	E - Almost Certain

Hazard	Hazard List	Current Likelihood	Consequence Total	Future Likelihood
26	 Telecommunications Interruption	D - likely	13	E - Almost Certain
27	 Mine Incident	B - Unlikely	12	C - Probable
28	 Public Disturbance	C - Probable	12	C - Probable
29	 Plant disease and Pest Infestation	C - Probable	12	D - likely
30	 Transportation Route Interruption	C - Probable	12	D - likely
31	 Land Subsidence	B - Unlikely	12	B - Unlikely
32	 Drought	C - Probable	11	D - likely
33	 Extreme Cold	D - likely	11	D - likely
34	 Animal Disease	C - Probable	11	D - likely
35	 Hurricane/ Typhoon/High Wind	C - Probable	11	D - likely
36	 Snowstorms and Blizzards	E - Almost Certain	10	E - Almost Certain
37	 National Security Threat	C - Probable	10	C - Probable
38	 Air Quality	E - Almost Certain	10	E - Almost Certain
39	 Cyber Security Threat	C - Probable	10	C - Probable
40	 Lightning	E - Almost Certain	8	E - Almost Certain
41	 Major Planned Event	C - Probable	8	C - Probable
42	 Hail	C - Probable	7	C - Probable

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 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

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:
 - Livestock Evacuation Plan 2020.
 - Crisis Communication Plan 2021.
 - Pandemic Response 2020.
 - Evacuation Route Planning 2022.
 - RDBN Business Continuity Plan 2021.
 - Farmed Animal Mass Carcass Disposal Emergency Plan 2010.
- Regional Emergency Support Services (ESS) Plan.
- District of Vanderhoof Emergency Management Plan.
- Saik'uz First Nations Emergency Plan 2018.
- Hazard Risk and Vulnerability Assessment for the District of Vanderhoof 2007.



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.

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 Vanderhoof Rural Official Community Plan](#).
- [Vanderhoof Official Community Plan 2020](#).
- Saik'uz Comprehensive Community Plan.
- [District of Vanderhoof Housing Needs Assessment 2020](#).

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

- Provincial wildland urban interface fuel management program.



- Saik'uz Community Wildfire Protection Plan.
- Vanderhoof Community Forest Wildfire Risk Management Plan 2018.

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 District of Vanderhoof to provide Fire Protection to a specified area of Electoral Area F. (Appendix A)

Flooding

- [Nechako Reservoir Dam Emergency Plan \(DEP\)](#) Nov 2020.
- Inundation Maps for Area F: Vanderhoof ([Maps 13-18](#))
- Ministry of Environment [Flood Plain mapping](#) along the Nechako River.
- [District of Vanderhoof Flood Plain Management Bylaw no. 1174, 2017.](#)
- [RDBN Floodplain Management Bylaw No. 1878, 2020.](#)

Geotechnical

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

Water

- [Assessment of the Vanderhoof South Drinking Water Supply: Source Water Characteristics 2005.](#)

Air Quality

- [Vanderhoof Woodstove Exchange Program.](#)

Plant Infestations

- Northwest Invasive Plant Council Landowner Weed Removal Rebate. 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.

