



Regional District of Bulkley-Nechako
Electoral Area G (Houston Rural)
Hazard Risk & Vulnerability Report
January 27, 2022

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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 G
EPA	<i>Emergency Program Act 1996</i>
HRVA	Hazard, Risk & Vulnerability Analysis
HSAR	Houston 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 including local community members, stakeholders, and the Electoral Area G Director.

The Committee members were:

- Christopher Newell, EA G Director, Committee Chair
- Alana Dickson, BC Ambulance Granisle, Unit chief
- Andy Muma, Houston Search and Rescue, President
- Byron Sketchley, Topley Volunteer Fire Department, Fire Chief
- Dwayne Anderson, School District 54, Principal
- Jerry Madden, Fort Babine Community Director Lake Babine Nation, EOC Committee
- Jessie Zhu, Village of Granisle, Emergency Program Coordinator
- Jim Daigneault, District of Houston, Fire Chief
- Laura Blackwell, Blackwater Press, Publisher
- Mark Power, Tachet, Operations Manager,
- Ryan Fillmore, Houston RCMP, Staff Sargent
- Sandy Anaka, Pleasant Valley Cattlemen’s Association
- Tim Anderson, District of Houston, Councillor
- Vince Ross, Resident
- Wendy Curtis, Granisle Better at Home, Program Coordinator

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 15,091 square kilometers, with the western boundary located at the Top of Hungry Hill approximately 0.5 km west of Summit Lake Road, just over 2 km east of Hungry Hill Way and 1.6 km east of Walcott Station Road. The eastern boundary is approximately 3.8 km east of Topley along Highway 16. The southern boundary is approximately 5.5 km north of Owen Lake Road along the Morice-Owen Forest Service Road. The EA has 836 residents identified in the 2021 Census.

The EA includes:

- The unincorporated communities of Perow, Kuldo, Smithers Landing, Topley, Topley Landing, Buck Flats, the area surrounding the Village of Granisle and the area surrounding the District of Houston.
- Huckleberry Mine, 125 km south of Houston, which started operations in 1997 as an open pit copper mine. The mine operations ceased in August 2016 and remains on care and maintenance status.
- Vast wilderness and natural landscapes, including provincial parks around the Morice Lakes and large rivers like the Morice and Bulkley rivers.

Map of Electoral Area G



The geographic scope of the EA includes the Village of Granisle, located on the shores of Babine Lake, with a population of 337; the District of Houston is located along Highway 16 between the Villages of Burns Lake and Telkwa with a population of 3,052.

The EA is within the Nedut'en/Witsuwit'en Territory. There are three populated reserves within the EA:





















- Wit'at Reserve located 165 miles northeast of Burns Lake, at the mouth of Babine Lake, the population is approximately 200 members.
- Old Fort Reserve located approximately 20 miles northeast of Granisle on Babine Lake with temporary residents dwelling there up to 10 months of the year and is only accessible by boat.
- Tachet Reserve is located 60 miles northwest of Burns Lake, near Topley Landing, at the mouth of Fulton River with a population of more than 200 members.

The Committee determined there were 37 of the hazards that should be reviewed for the EA. The Committee determined the likelihood and potential severity of consequences for each of the 37 hazards.

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

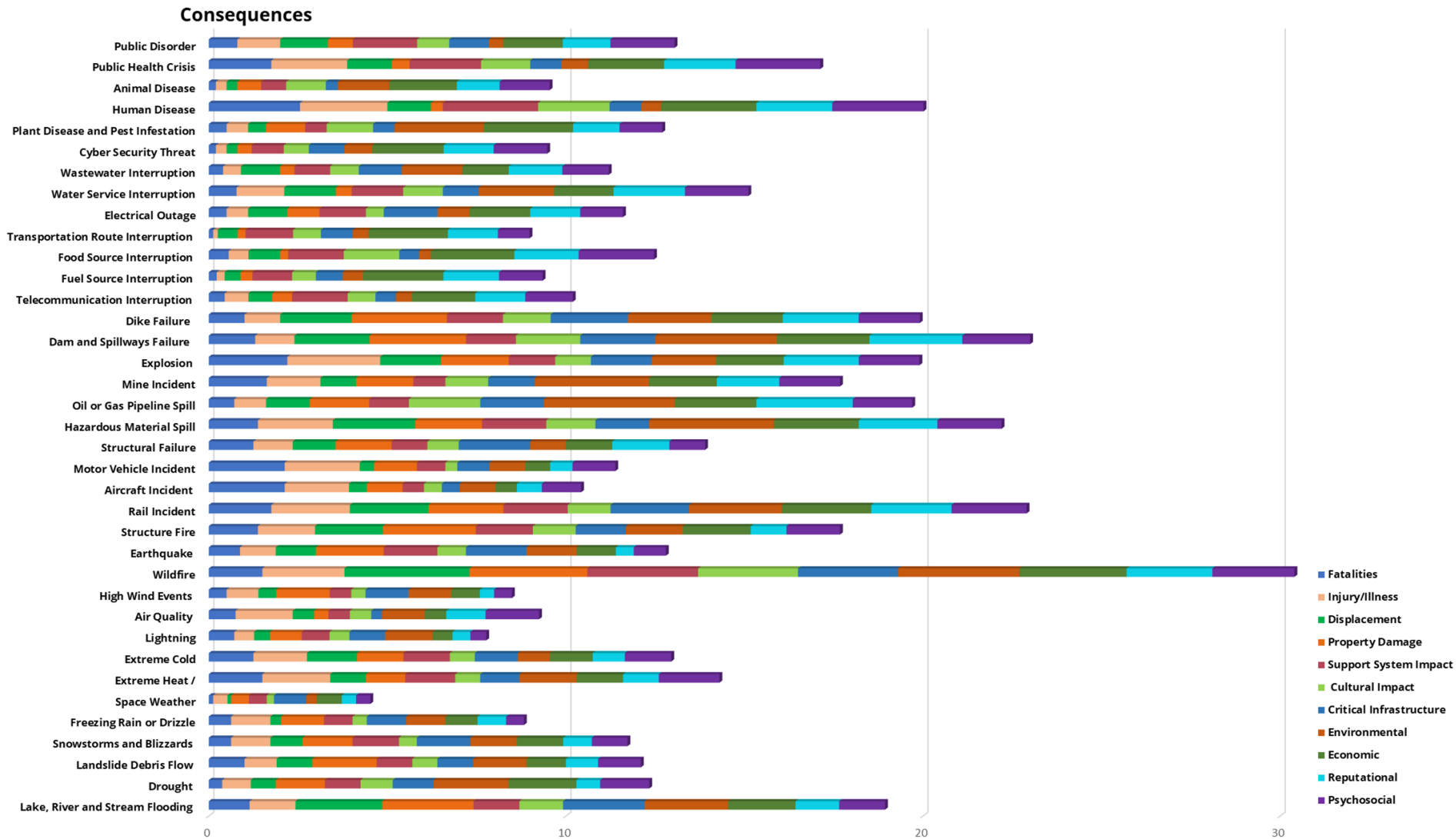
Priority	Hazard List	Current Likelihood	Consequence Total	Future Likelihood
1	 Wildfire	D - Likely	30	D - Likely
2	 Dam and Spillway Failure	B - Unlikely	23	B - Unlikely
3	 Rail Incidents	C - Probable	23	C - Probable
4	 Hazardous Material Spill	C - Probable	22	C - Probable
5	 Human Disease	D - likely	20	D - Likely
6	 Dike Failure	C - Probable	20	B - Unlikely
7	 Explosions	B - Unlikely	20	B - Unlikely
8	 Oil or Gas Pipeline Spill	C - Probable	20	C - Probable
9	 Lake, River, and Stream Flooding	D - Likely	19	D - Likely
10	 Mine Incident	B - Unlikely	18	B - Unlikely
11	 Structure Fire	D - Likely	18	D - Likely
12	 Public Health Crisis	C - Probable	17	D - Likely
13	 Water Service Interruption	C - Probable	15	C - Probable
14	 Extreme Heat	C - Probable	14	D - Likely
15	 Structural Failure	B - Unlikely	14	C - Probable
16	 Public Disturbance	C - Probable	13	D - Likely
17	 Extreme Cold	D - Likely	13	D - Likely



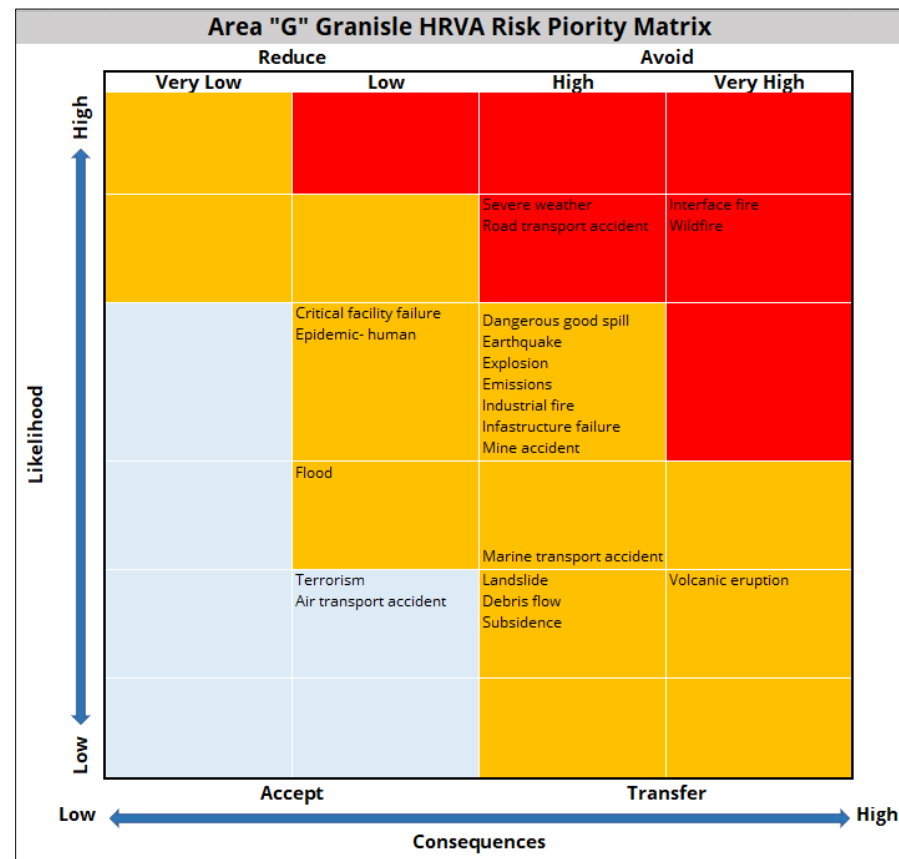
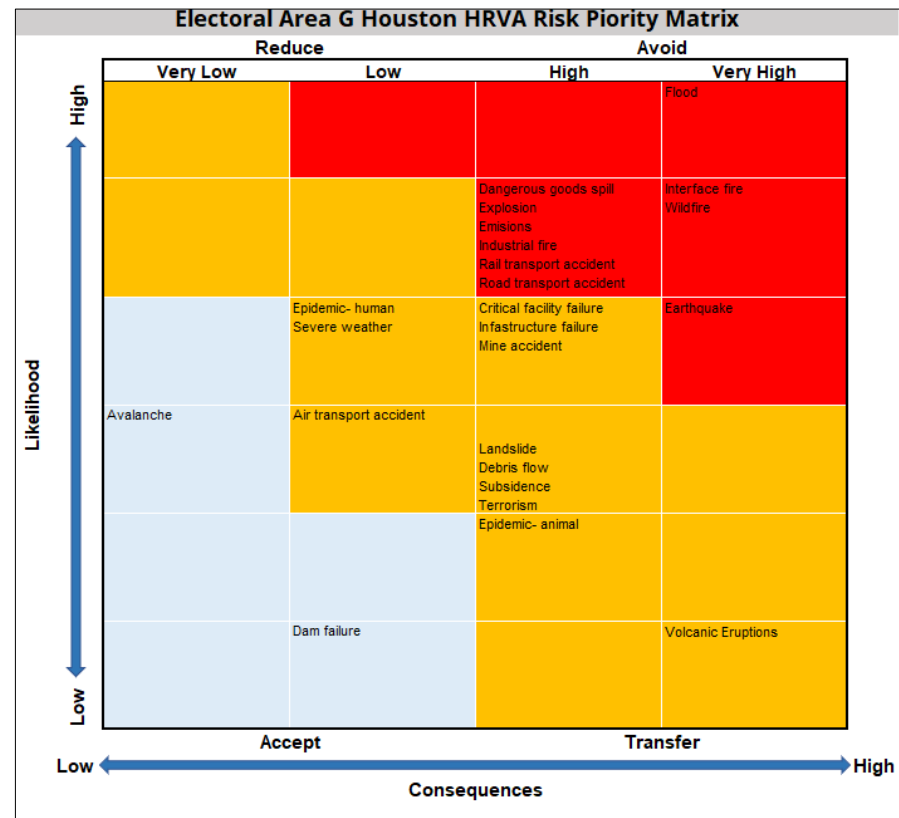
Priority	Hazard List	Current Likelihood	Consequence Total	Future Likelihood
18	 Earthquake	B - Unlikely	13	B - Unlikely
19	 Plant disease and Pest Infestation	C - Probable	13	D - Likely
20	 Food Source Interruption	C - Probable	12	D - Likely
21	 Drought	C - Probable	12	C - Probable
22	 Landslide/ Debris Flow	B - Unlikely	12	C - Probable
23	 Snowstorms and Blizzards	E - Almost Certain	12	E - Almost Certain
24	 Wastewater Interruption	B - Unlikely	12	B - Unlikely
25	 Motor Vehicle Incident	E - Almost Certain	11	E - Almost Certain
26	 Electrical Outage	E - Almost Certain	11	E - Almost Certain
27	 Aircraft Incident	B - Unlikely	10	C - Probable
28	 Telecommunications Interruption	C - Probable	10	D - Likely
29	 Animal Disease	C - Probable	9	C - Probable
30	 Cyber Security Threat	C - Probable	9	D - Likely
31	 Fuel Source Interruption	C - Probable	9	C - Probable
32	 Air Quality	E - Almost Certain	9	E - Almost Certain
33	 Transportation Route Interruption	C - Probable	9	D - Likely
34	 Freezing Rain or Drizzle	E - Almost Certain	9	E - Almost Certain
35	 Hurricane/ Typhoon/High Wind	D - Likely	8	D - Likely
36	 Lightning	E - Almost Certain	8	E - Almost Certain
37	 Space Weather	A - Rare	5	B - Unlikely



The following graphic 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 37 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 seven 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:
 - 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, 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, Houston, Topley, Granisle Rural Official Community Plan 2011.
- [Houston Official Community Plan 2019](#).
- [Granisle Official Community 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.



Fire

- [Houston Wildfire Protection Plan](#) 2018.
- [Village of Granisle Community Wildfire Protection Plan](#) 2017.

Rural Fire Department Support

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

Rural Fire Protection

- Agreement with the District of Houston to provide Fire Protection to a specified area of Electoral Area G. (see Appendix A)
- Agreement with the Topley Volunteer Fire Department to provide Fire Protection to a specified area of Electoral Area G. (see Appendix A)

Flooding

- [District of Houston Floodplain mapping](#).
- [RDBN Floodplain Management Bylaw No. 1878, 2020](#) and [Mapping](#).
- [Ministry of Environment Floodplain Mapping](#).

Geotechnical

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

Drought

- District of Houston [Bylaw No. 1064](#) - Water Restriction.

Air Quality

- [Bulkley Valley Lakes District \(BVLVD\) airshed management plan](#).
- Village of Granisle [Open Air Burning Regulations Bylaw 2019](#).
- Village of Granisle [Outdoor Solid Fuel Bylaw 2008](#).

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 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.

