



**Regional District of Bulkley-Nechako**  
**Electoral Area A (Smithers/Telkwa Rural)**  
**Hazard, Risk & Vulnerability Analysis**  
**December 5, 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.

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

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## 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 conducted in 2002. Since the 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 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 *Local Authority Emergency Management Regulation (LAEMR)* of the *Emergency Program Act 1996 (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 A Director. The Committee members were:

- Mark Fisher, EA A Director, Committee Chair
- Anastasia Ledwon, Bulkley Valley Search and Rescue President
- Cormac Hikisch, Northern Health, Health Services Administrator
- Debby Meissner, Resident
- Dean Klubi, RCMP, Corporal
- Derek Dickson, Village of Telkwa, Fire Chief
- Don Ford, Emergency Support Services Volunteer
- Eva McNulty, Blue Nadina Consulting
- Jaclyn Drygas, BC Emergency Health Services
- Jason Majore, Witset Executive Director
- Jay Moreton, BC Emergency Health Services
- Jeff Walsh, BC Wildfire Service
- John Johnson, BC Emergency Health Services, Unit Chief
- Lindsay Newman, Vista Radio
- Matt Herzog, Smithers Fire Rescue and Emergency Support Services Director
- Megan D’Arcy, Regional District of Bulkley-Nechako Agriculture Coordinator
- Megan Glover, Village of Telkwa Emergency Program Coordinator

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 EA covers 3,677 square kilometers, its western boundary is located almost 2 km east of Telkwa High Road junction approximately 2 km west of River Road junction. The eastern boundary begins at the top of Hungry Hill, about 5 km west of Summit Lake Road. The eastern boundary at Walcott-Quick Road/Morice Telkwa Forest Service Road is approximately 1.6 km east of Walcott Station Road.

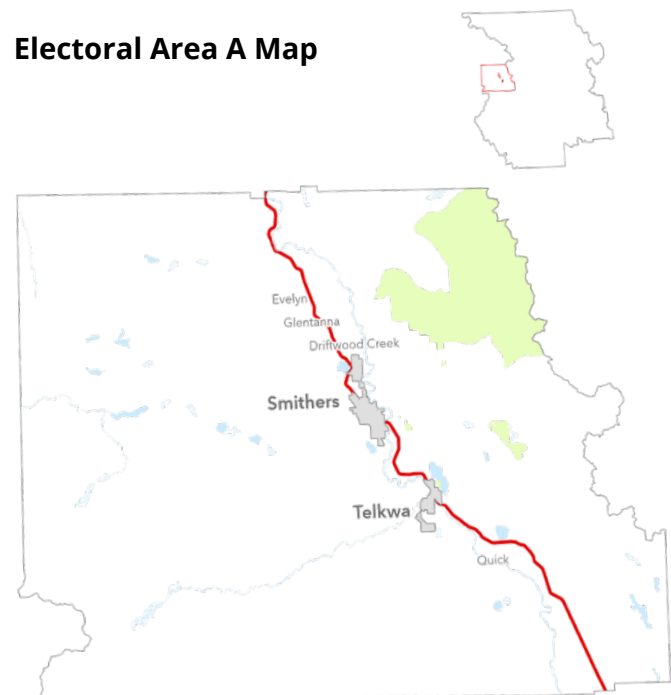
The EA has 5,587 residents identified in the 2021 Census. The EA includes:

- Driftwood Creek, Glentanna, Evelyn, Quick, Hudson Bay Mountain Ski Community, the areas surrounding the Village of Telkwa and the Town of Smithers, as well as many small neighbourhoods.
- The Hudson Bay Mountain to the west, the Babine Mountain range to the east and Telkwa Range to the South.
- A portion of the Bulkley Valley transected by the Bulkley River.

The geographic scope of the EA includes the Town of Smithers, located in the Bulkley Valley. The town is located halfway between the cities of Prince Rupert and Prince George along Highway 16, with a population of 5,378. The Village of Telkwa is also located in the Bulkley Valley between the District of Houston and the Town of Smithers along the banks of the Bulkley and Telkwa Rivers, with a population of 1,474.

The EA is situated on the Yintah (land) and traditional territory of the Wet'suwet'en, home to the Gitdumden (Wolf/Bear) and Laksilyu (Small Frog) Clans' people.

**Electoral Area A Map**













The Committee determined there were 37 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 37 hazards.

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

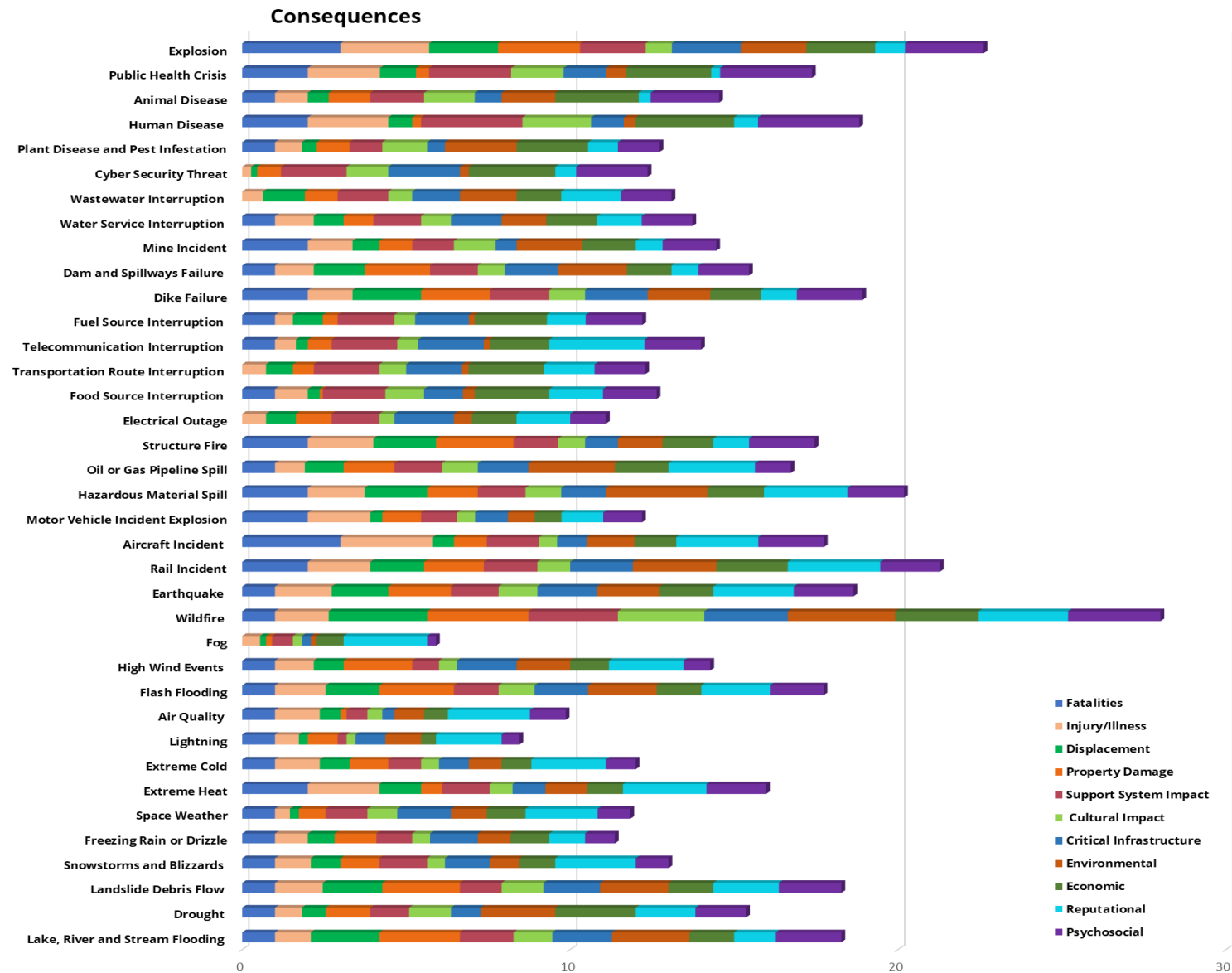
Priority	Hazard List	Current Likelihood	Consequence Total	Future Likelihood
1	 Wildfire	D - Likely	28	D - Likely
2	 Explosions	B - Unlikely	23	B - Unlikely
3	 Rail Incidents	D - Likely	21	D - Likely
4	 Hazardous Material Spill	D - Likely	20	D - Likely
5	 Dike Failure	B - Unlikely	19	C - Probable
6	 Human Disease	D - Likely	19	D - Likely
7	 Earthquake	A - Rare	19	B - Unlikely
8	 Lake, River, and Stream Flooding	D - Likely	18	E - Almost Certain
9	 Landslide/ Debris Flow	C - Probable	18	C - Probable
10	 Aircraft Incident	B - Unlikely	18	B - Unlikely
11	 Flash Flooding	D - Likely	18	D - Likely
12	 Structure Fire	E - Almost Certain	17	E - Almost Certain
13	 Public Health Crisis	D - Likely	17	E - Almost Certain
14	 Oil or Gas Pipeline Spill	B - Unlikely	17	C - Probable
15	 Extreme Heat	D - Likely	16	D - Likely
16	 Dam and Spillways Failure	B - Unlikely	15	B - Unlikely
17	 Drought	C - Probable	15	D - Likely
18	 Animal Disease	C - Probable	15	D - Likely
19	 Mine Incident	B - Unlikely	14	C - Probable
20	 Hurricane/ Typhoon/High Wind	C - Probable	14	D - Likely
21	 Telecommunications Interruption	D - Likely	14	D - Likely
22	 Water Service Interruption	C - Probable	14	D - Likely
23	 Wastewater Interruption	B - Unlikely	13	C - Probable
24	 Snowstorms and Blizzards	E - Almost Certain	13	E - Almost Certain
25	 Plant disease and Pest Infestation	D - Likely	13	D - Likely
26	 Food Source Interruption	D - Likely	13	D - Likely
27	 Cyber Security Threat	D - Likely	12	D - Likely



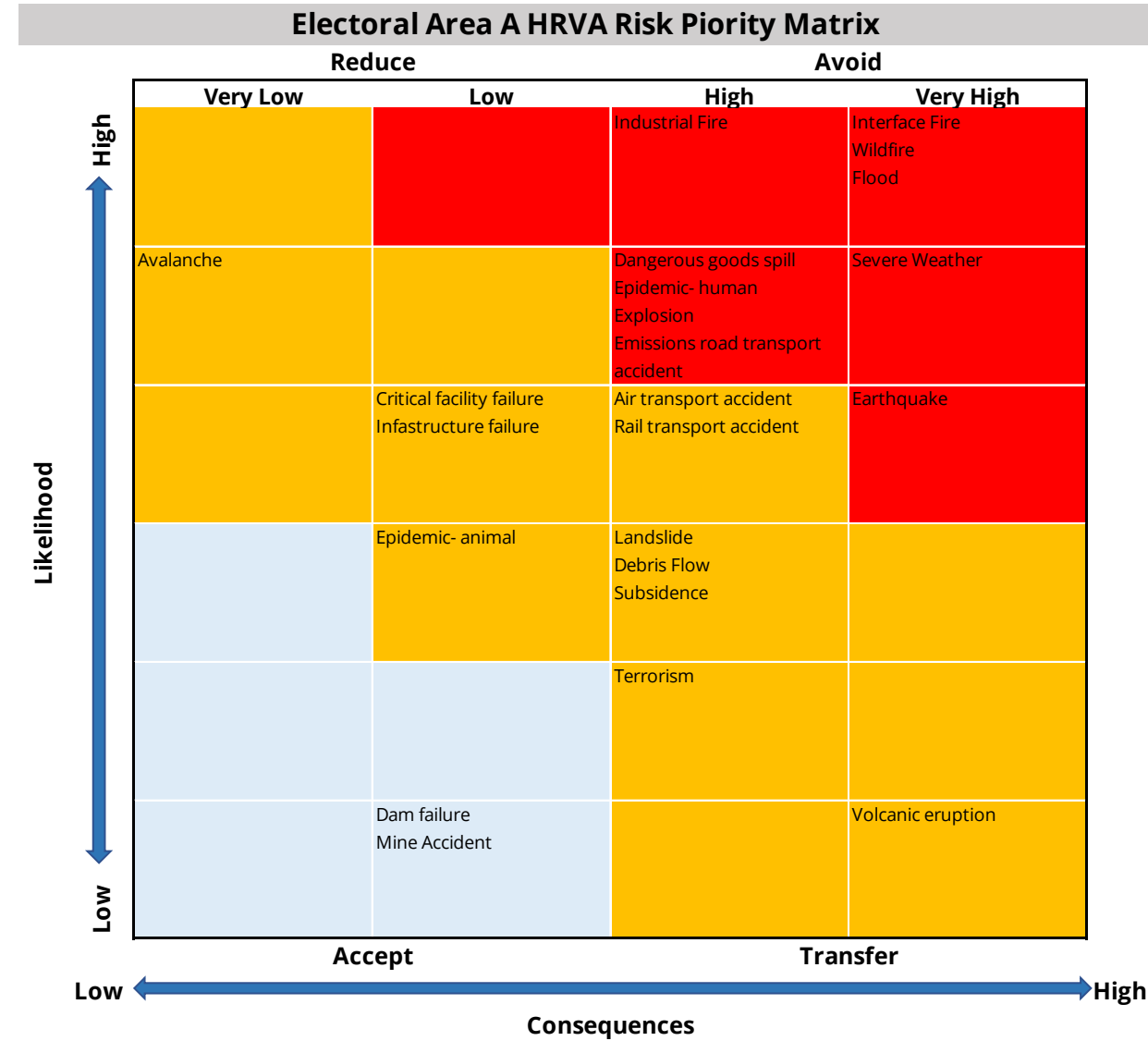
Priority	Hazard List	Current Likelihood	Consequence Total	Future Likelihood
28	 Transportation Route Interruption	D - Likely	12	D - Likely
29	 Fuel Source Interruption	C - Probable	12	D - Likely
30	 Motor Vehicle Incident	E - Almost Certain	12	E - Almost Certain
31	 Extreme Cold	D - Likely	12	D - Likely
32	 Space Weather	B - Unlikely	12	B - Unlikely
33	 Freezing Rain or Drizzle	E - Almost Certain	11	E - Almost Certain
34	 Electrical Outage	E - Almost Certain	11	E - Almost Certain
35	 Air Quality	E - Almost Certain	10	E - Almost Certain
36	 Lightning	E - Almost Certain	8	E - Almost Certain
37	 Fog	E - Almost Certain	6	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 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*

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## 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](#).

## Airport Safety Plan

- The Smithers Regional Airport is mandated in accordance with Transport Canada Aerodrome Standards & Recommended Practices TP312E maintain and update an Emergency Response Plan for the airport grounds, operations, and air space under their jurisdiction.

## 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.
- [Neighbourhood Emergency Preparedness Program \(NEPP\) for Area A](#) residents 2022 pilot project– program designed to build neighbourhood level 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 [Smithers Telkwa Official Community Plan](#) 2014.
- Smithers [Official Community Plan 2010](#) includes flood and environmental development permit areas.
- Telkwa Official Community Plan 2011.
- [RDBN Housing Needs Assessment 2021](#).
- [Village of Telkwa Housing Needs Assessment 2020](#).



- Town of Smithers Housing needs Assessment 2020.
- Age Friendly Assessment and Action Plan 2016.
- [Village of Telkwa Integrated Community Sustainability Plan](#) 2011.

## Environmental and Structural Mitigation

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

### Wildfire

- Smithers Wildfire Protection Plan 2012.
- Telkwa Community Wildfire Protection Plan 2008.
- [Crown Land Wildfire Risk Reduction 2020/202](#). This program is funded in Area A in the following prescribed mitigation areas:
  - Hudson Bay Mountain 110Ha.
  - Smithers Telkwa WRR Plan 41,858.
  - Wetzinkwa Community Forest - Site Level 300ha.
  - Wetzinkwa Comfor – Operational 100 ha.

### 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 Town of Smithers to provide Fire Protection to a specified area of Electoral Area A. (see Appendix A)
- Agreement with the Village of Telkwa to provide Fire Protection to a specified area of Electoral Area A. (see Appendix A)

### Flooding

- [RDBN Floodplain Management Bylaw No. 1878, 2020](#).
- [RDBN Ebenezer Flats Flood Mitigation Study 2019](#).
- [Ministry of Environment Floodplain Mapping](#).
- Village of Telkwa dike management and planning.
- Stormwater mitigation features in municipalities and in the region with MOTI, e.g. storm sewers, culverts, ditches, overland flow on roadways, streams.
- Regional District Bulkley Nechako owns 56, 000 Sandbags, 9000 of them are in Area A located at the Transfer Station and the Smithers Fire Hall.
- [Village of Telkwa Floodplain Management Bylaw 2020](#).

### Land Slides and Erosion

- [Alluvial Fan Study \(Lake Kathlyn Area, Smithers\)](#) 1991.
- Geotechnical Assessment Potential Terrain Hazards (Slope Stability) Lower Viewmont Road Area 2006.



- [Ebenezer Flats/Kidd Rd Erosion Protection Study](#) 2008.

## Geotechnical

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

## Drought

- Town of Smithers Bylaw No. 1811 - Water Restriction.
- [Village of Telkwa Water Conservation Plan Policy and Bylaw](#).

## Air Quality

- [Bulkley Valley Lakes District \(BVL\) airshed management plan](#).
- Town of Smithers and the Bulkley Valley Woodstove Exchange.

## Plant Infestations

- Seymour Lake Conservation Society – Yellow Floating Heart Mitigation and Yellow Iris Annual Control Projects - control the introduction and expansion of invasive plants such as yellow floating heart (*Nymphoides peltata*) and yellow flag iris (*Iris pseudacorus*); Educating local residents and lake users about lake; Lake monitoring projects such as water quality/chemistry sampling, and aquatic plant surveys. Seymour Lake Conservation Society, BC Lake Stewardship Society, Northwest Invasive Plant Council, Ministry of Environment, and Ministry of Forests, Lands, and Natural Resource Operations.
- Lake Kathlyn Aquatic Weed Harvesting - Lake Kathlyn Protection Society.
- 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.

## Economic Mitigation

- 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 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 6<sup>th</sup>, 2023.

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# 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*

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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.

