



**Regional District of Bulkley-Nechako**  
**HRVA Electoral Area D**

**Risk Assessment Summary**  
**Resiliency Strategies**  
**Backgrounder**

**September 20, 2022**

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## Preface

### Purpose of Backgrounder and Workbook

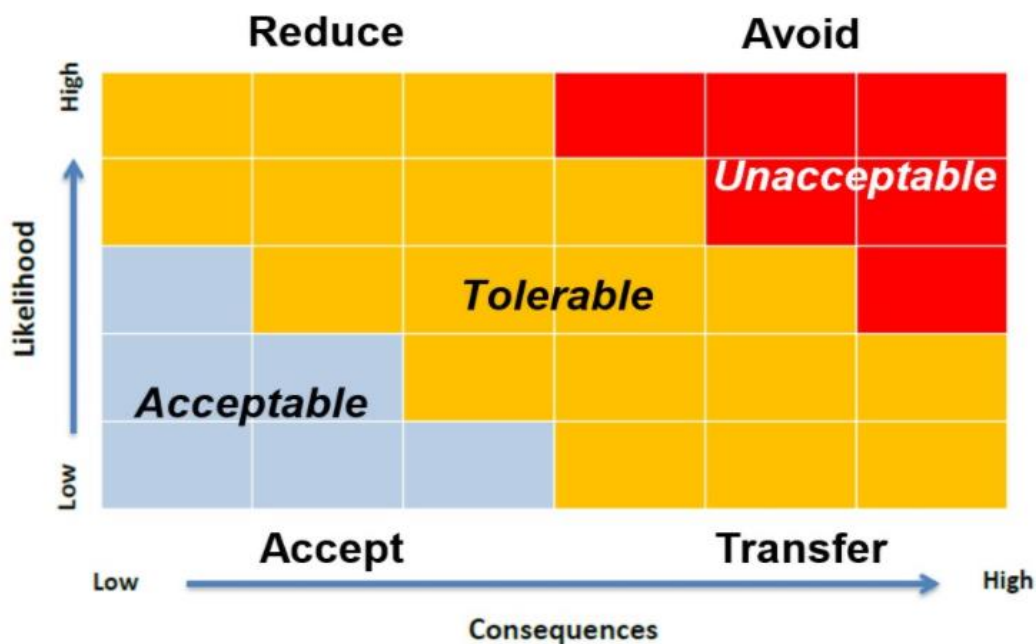
The Regional District of Bulkley-Nechako (RDBN) is in central British Columbia with an area of 77,000 square kilometres. The RDBN is broken down into 7 Electoral Areas (EA). The focus of this document is Electoral Area D Fraser Lake Rural.

The HRVA Electoral Area D Risk Assessment Summary Resiliency Strategies Backgrounder will provide information and resources to committee members to inform the scope and conversations of the Hazard, Risk, and Vulnerability Analysis's (HRVA) Committee meeting. In addition, the background paper is designed to be workshopped, edited and form part of the final HRVA document for Electoral Area D.

An HRVA contributes to building resilience to disasters by understanding risk, risk drivers, and risk reduction strategies. There are many ways to build resilience in a community and this chapter begins to prioritize the likelihood and consequence of the risks of each hazard being considered while leading the committee through the conversation of what are acceptable, tolerable, and unacceptable risk. Ultimately taking the conversation to strategies that are being and can be implanted to support a community and region in its journey to building stronger more resilience neighbourhoods.

### Risk Matrix

In this backgrounder the results of the HRVA Committees Hazard Likelihood and Consequence Scoring will be shared in a **Risk Matrix**. A Risk Matrix is a useful tool for a local authority during the process of risk management to help determine options to reduce, avoid, accept, or transfer responsibility of the four pillars of emergency management (Mitigate, Prepare, Respond, Recover).



**Risks** – A concept that takes into consideration the **likelihood** that a hazard will occur, as well as the **severity of possible impacts** to human health, property, the environment, and other things of value. *EMBC 2<sup>nd</sup> Edition, Fall 2020. Companion Guide to the HRVA.*

### **Risk Level = Likelihood x Consequence**

*Where Likelihood refers to the Frequency of the occurrence and Consequence refers to the Severity of the effects.*

<b>Risk Level Colour Codes</b>	Low likelihood / low consequence	High likelihood/ low consequence	Medium likelihood / Med Consequence	Low likelihood / high consequence	High likelihood / high consequence
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<b>Likelihood Scoring</b>	A – Rare	B – Unlikely	C – Possible	D – Likely	E – Almost Certain
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<b>Consequence Total</b>	Consequence Scores are an amalgamation of 11 specific categories found within the EMBC HRVA Consequence Tables. Each individual consequence category is scored from 0 - 4 (None - Extreme), with a possible combined high score of 44 for any single hazard. Consequence categories include Fatalities, Injuries, Displacement, Psychosocial, Support System, Cultural Impact, Property Damage, Critical Facilities, Environmental Damage, Economic Impact, Reputational Impact.
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## **All-Hazard Likelihood and Consequence Scoring Results**

The following Hazard Risk Summary is being presented to the HRVA Committee.

Likelihood Scoring:

- The likelihood scores were counted and the median (middle value) of everyone's scores were used.

Consequence Scoring:

- Consequence Scores are an amalgamation of 11 specific categories in the HRVA Consequence Tables. Each individual consequence category was scored from 0 - 4 (None - Extreme), with a possible combined high score of 44 for any single hazard. The mean (average) scoring of these consequences was used.





## Hazard Risk Summary

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

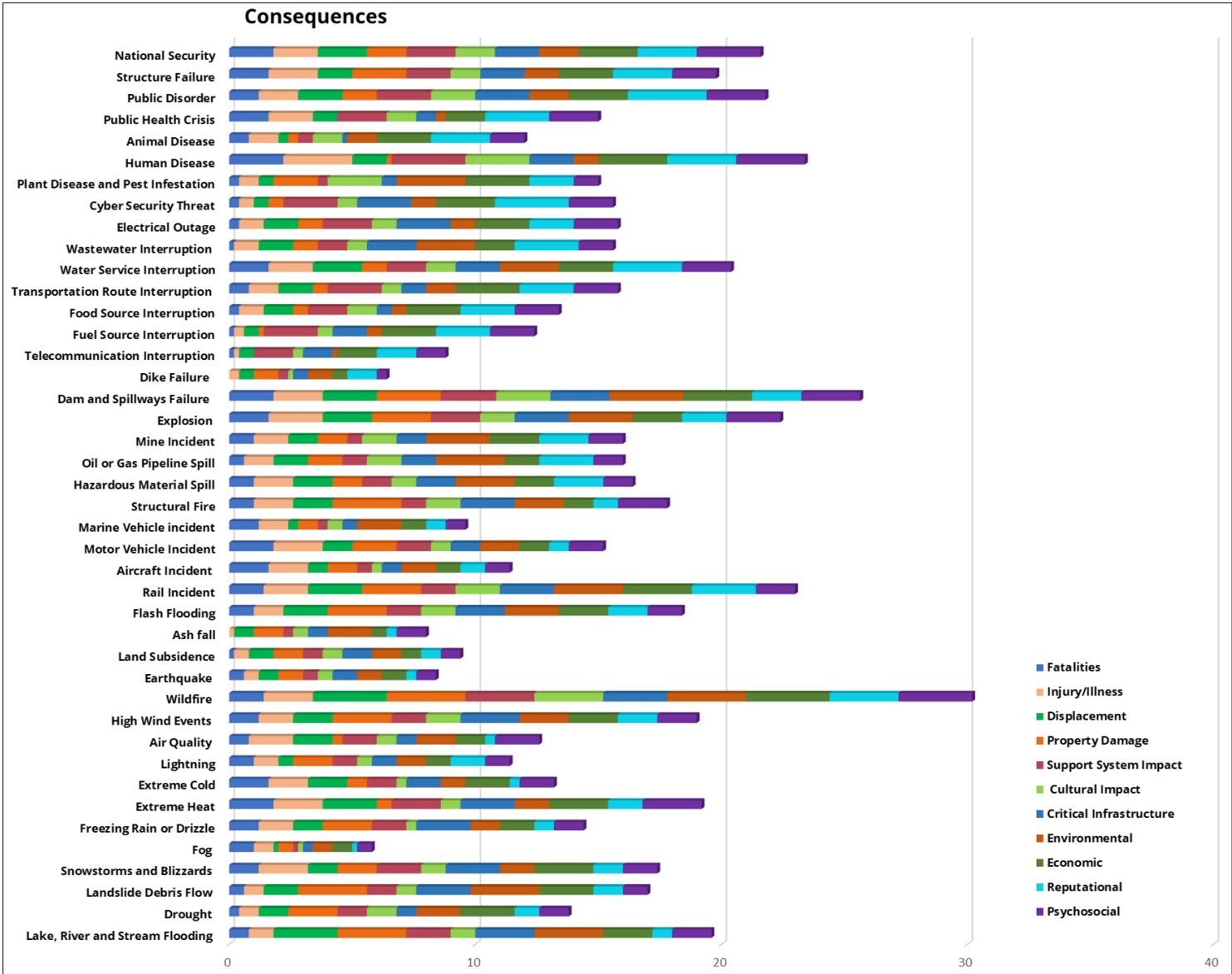
Priority	Hazard List	Current Likelihood	Consequence Total	Future Likelihood
1 	Wildfire	C - Probable	30	D - Likely
2 	Dam and Spillways Failure	C - Probable	26	D - Likely
3 	Human Disease	C - Probable	23	C - Probable
4 	Rail Incidents	D - Likely	23	E - Almost certain
5 	Explosions	D - Likely	22	D - Likely
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
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



Priority	Hazard List	Current Likelihood	Consequence Total	Future Likelihood
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



Consequence Summary



## Hazard Risk Matrix





## Identifying Risk Reduction Measures

With the identification of the hazards and risks, the next step for the region is to specify approaches to further manage and mitigate the risk. The following section lists the known Risk Reduction Measures, resources, and community emergency planning documents that are available in the region and at the community level. Efforts to build resiliency and recovery capacity 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 and Structural Mitigation Risk.
- Economic Mitigation.

This list will be augmented through the HRVA engagement, as relationships and new opportunities become available.

Participants are asked to review the list, share their knowledge, and ideas for new strategies that contribute to resiliency within the region.

### Emergency Response

Strategies for increasing response capacity and coordination.

- Village of Fraser Lake Emergency Preparedness Plan 2016.
- Stellat'en Emergency Plan Updated Jan 2010.
- Nadleh Whut'en Emergency Plan Updated 2013.
- 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.

### 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, 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](#).

## Drought

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

## Air Quality

- [Bulkley Valley Lakes District \(BVLD\) 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:
  - 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 - 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.



## Risk Reduction Measure Ideas

Description	Hazard	(To be determined by RDBN staff) Partners
Create the RDBN's heat response plan in accordance with Provincial recommendations	Extreme heat	HEMBC RDBN
Advocate for the Province to bring in the Resilient Minds Program - Building the Psychological Strength of Fire Fighters.	Structural/Wildfire	RDBN – Rural Fire Department Volunteers



## Appendix A: Rural Fire Protection Area

