Regional District of Bulkley-Nechako

# HRVA Electoral Area F

# Risk Assessment Summary

# Resiliency Strategies

# Backgrounder

**September 28, 2022**

# Table of Contents

**PREFACE** ..... **1**
**Purpose of Backgrounder and Workbook** ..... **1**
**Risk Matrix** ..... **1**
**ALL-HAZARD LIKELIHOOD AND CONSEQUENCE SCORING RESULTS** ..... **2**
**Hazard Risk Summary** ..... **3**
**Consequence Scoring Summary** ..... **5**
**Hazard Risk Matrix** ..... **6**
**IDENTIFYING RISK REDUCTION MEASURES** ..... **7**
**Existing Risk Reduction Measures** ..... **7**
**Emergency Response** ..... **7**
Regional Response Preparedness ..... 7
Rail Disaster ..... 7
Oil and Gas Pipeline Spill ..... 8
**Programs, Services, and Education** ..... **8**
**Social and Non- Structural Mitigation** ..... **8**
Policies, plan, and other resources ..... 8
Regional Resources ..... 8
**Environmental and Structural Mitigation** ..... **8**
Wildfire ..... 8
Rural Fire Department Support ..... 8
Rural Fire Protection ..... 8
Flooding ..... 9
Geotechnical ..... 9
Water ..... 9
Air Quality ..... 9
Plant Infestations ..... 9
Oil and Gas Pipeline Spill ..... 9
**Economic Mitigation** ..... **9**
**APPENDIX A: RURAL FIRE PROTECTION AREA** ..... **1**

# Preface

## Purpose of Backgrounder and Workbook

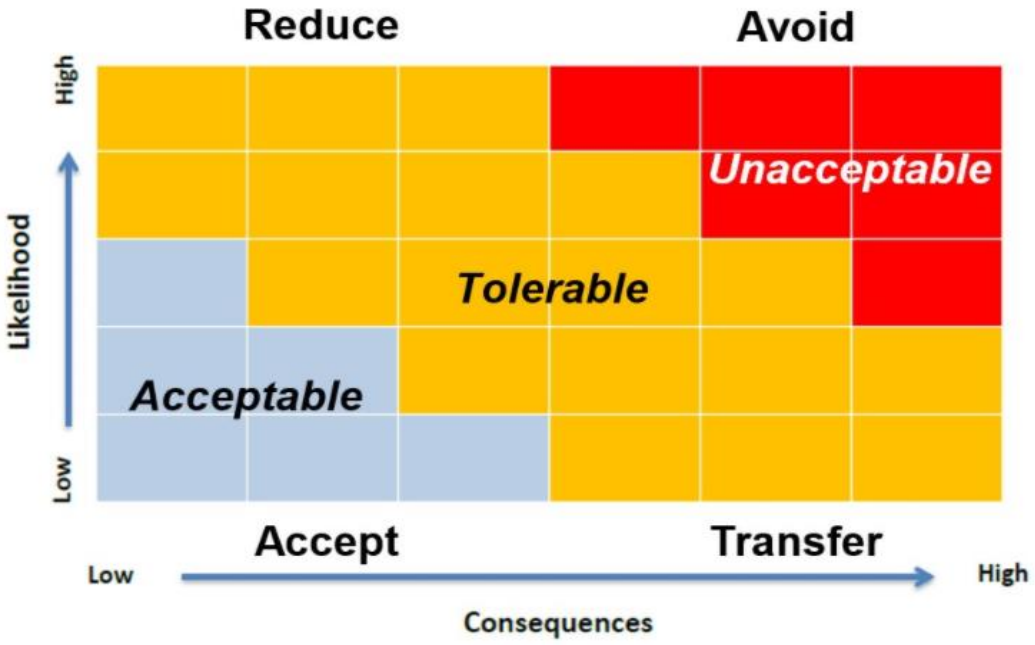
The Regional District of Bulkley-Nechako (RDBN) is in central British Columbia with an area of 77,000 square kilometres. The RDBN is broken down into 7 Electoral Areas (EA). The focus of this document is Electoral Area F Vanderhoof Rural.

The HRVA Electoral Area F 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 F.

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 Matrices.** A Risk Matrix can be a useful tool for a local authority during the process of risk management to help determine options to reduce, avoid, accept, 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 2nd 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.***

| **Risk Level Colour Codes** | Low likelihood / low consequence | High likelihood/ low consequence | Medium likelihood / Med Consequence | Low likelihood / high consequence | High likelihood / high consequence |
|---|---|---|---|---|---|

| **Likelihood Scoring** | A – Rare | B – Unlikely | C – Possible | D – Likely | E – Almost Certain |
|---|---|---|---|---|---|

| **Consequence Total** | 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. |
|---|---|

## 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:

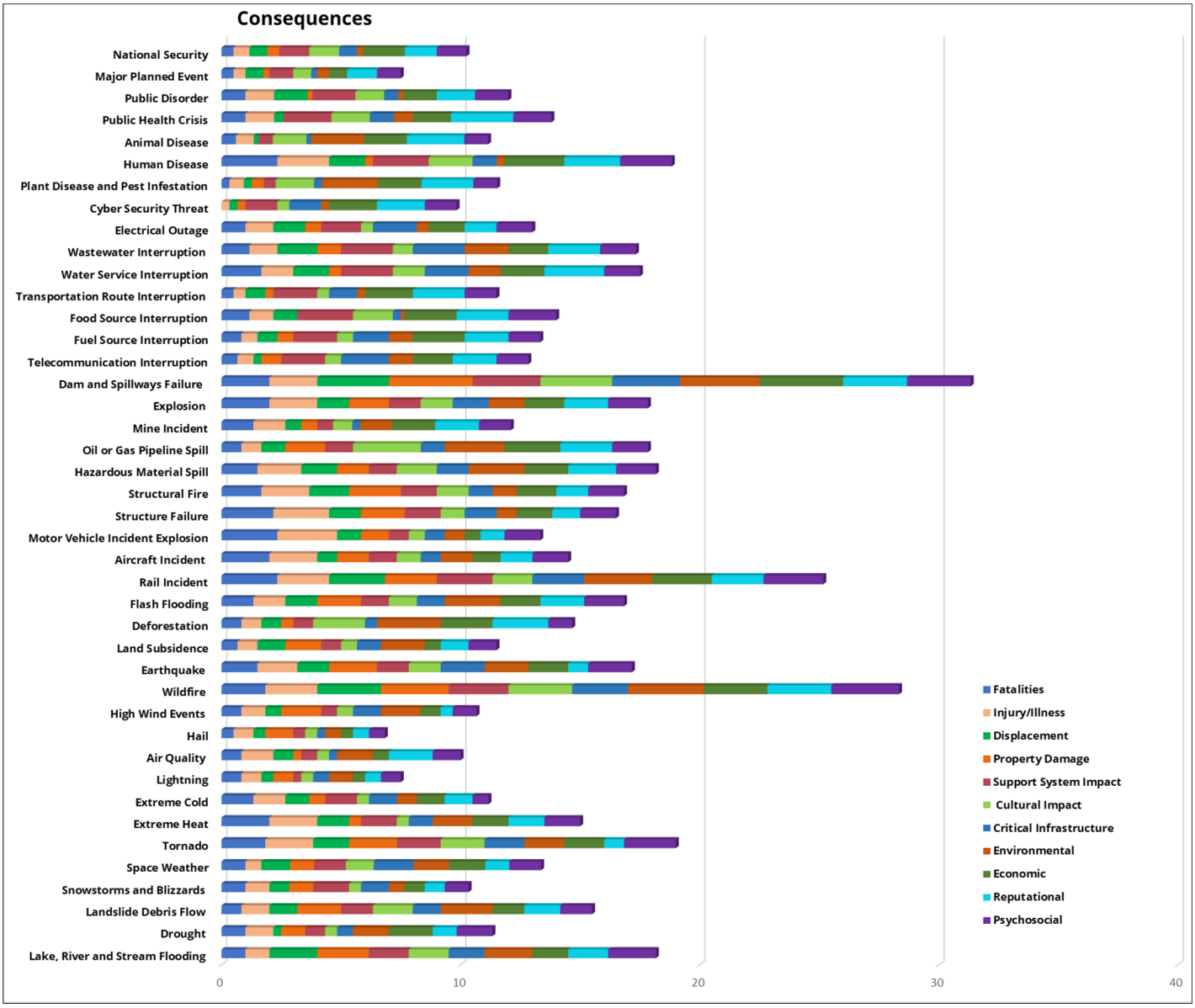
- Consequence Scores are an amalgamation of 11 specific categories in the HRVA Consequence Tables. Each individual consequence category was scored from 0 - 4 (None - Extreme), with a possible combined high score of 44 for any single hazard. The mean (average) scoring of these consequences was used.

## Hazard Risk Summary

| Priority | 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 |
| 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 |

| Priority | Hazard List | Current Likelihood | Consequence Total | Future Likelihood |
|---|---|---|---|---|
| 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 |

## Consequence Scoring 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.

The following list is organized into five categories: Emergency Response; Programs, Services, and Education; Social and Non- Structural Mitigation; Environmental and Structural Mitigation Risk; Economic Mitigation. This is a preliminary list that will be augmented through the HRVA engagement, and as relationships and new opportunities become available.

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

## Existing Risk Reduction Measures

### Emergency Response

Strategies for increasing response capacity and coordination.

- 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 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 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, 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:
  - 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.

# Appendix A: Rural Fire Protection Area