



Regional District of Bulkley-Nechako HRVA Electoral Area 'F' Committee

Summary - Hazard Identification Workshop

Date: February 3rd, 2022

Time: 12 noon – 3 pm

Format: Zoom

Participants

Name	Organization
Area F Director	Jerry Petersen
District of Fort St. James Fire Chief	Jason Alexis
Takla First Nation	Gilbert Vickers
Nak'azdli Whut'en First Nation	Wayne Salewski
RCMP	Michelle Roberge
BC Ambulance Fort St. James	Michelle Roacher
Deborah Jones-Middleton	RDBN
Christopher Walker	RDBN
Liliana Dragowska	RDBN

Overview

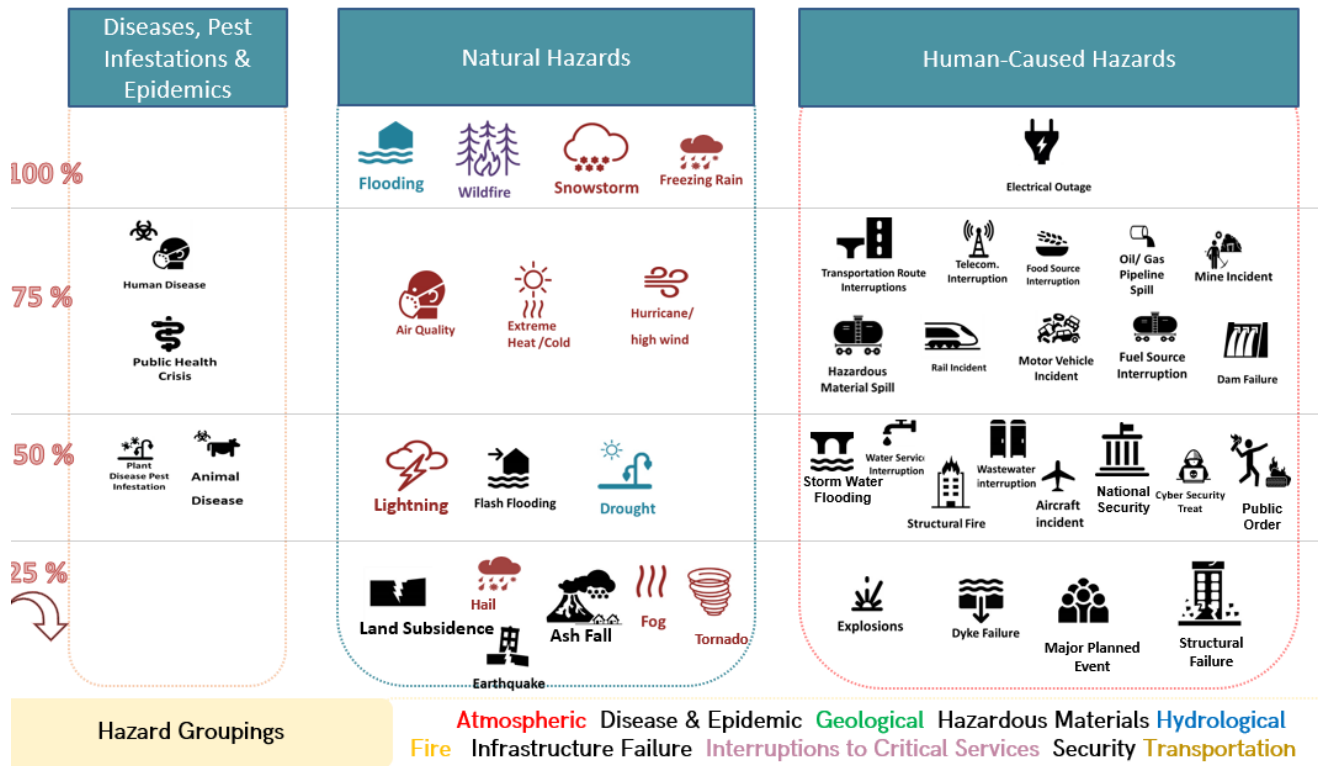
On Thursday, February 3rd, 2022, participants from the HRVA Committee for Electoral Area 'F' came together on Zoom to discuss and select the hazards that will be included in the process. This document provides a summary of what was discussed throughout the session. Thank you to everyone who took the time out of their work week to contribute to this session.

The Hazard Identification workshop objectives were as follows:

- select hazard for the electoral area 'F' HRVA project focus;
- review and discuss known and historical hazards in electoral area 'F';
- discuss, define, and identify on a map any unique local hazards in electoral area 'F';
- identify additional hazard information needs/ sources.

The session began with a welcome from Director Petersen and a round table of introductions. This was followed by a presentation from Liliana reviewing the objectives of the meetings, overview of the HRVA committee process, summary of the hazard identification background paper, and presenting the results of the hazard identification survey for Electoral Area 'F'. The hazards identified in the backgrounder were discussed by participants during the presentation and comments and notes were recorded.

The results of the HRVA committee Hazard Selection Survey were shared and discussed and can be found below:



Hazard Discussion

Participants were asked to discuss the following questions with regards to each Hazard identified by staff and in the committee survey:













- Should this hazard be included in Area F HRVA?
- Is the hazard confined to a specific location in the electoral area? ID on map.
- What do you know about this hazard?
- What do we need to know about this hazard?





Participants were asked to refer to the two reference documents. The discussion notes and additional hazard research will be added to the Hazard Identification Background paper for Area 'F'. The revised hazard background paper will be distributed and used by the advisory committee to assist in scoring the likelihood and consequence of hazards on the Electoral Area.

The reference documents used included [Area F RDBN Hazard Identification Backgrounder](#) and [All 57 Hazard Definitions](#).








The notes below summarize the group discussions.


Natural Hazards









Hazard Grouping	Notes	Include
<p style="text-align: center;">Atmospheric</p>  <p style="text-align: center;">Snowstorm</p>  <p style="text-align: center;">Air Quality</p>  <p style="text-align: center;">Lightning</p>  <p style="text-align: center;">Extreme Heat/Cold</p>  <p style="text-align: center;">Hurricane/ high wind</p>  <p style="text-align: center;">Hail</p>  <p style="text-align: center;">Space Weather</p>  <p style="text-align: center;">Tornado</p>	<ul style="list-style-type: none"> ➤ Include extreme heat/cold, hail, high wind, snowstorms, lightning, space weather, and localized tornados. ➤ Extreme heat/cold – during the heat system the summer of 2021 cooling centers where not open for vulnerable populations in Vanderhoof. ➤ Heat/cold event affect livestock as well as the farmers and rancher who are working in the conditions with the animals. ➤ Residents maybe under-educated for heat events and the effects of heat. ➤ High wind events causing funnel clouds develop in the area. Timber gets knocked down, causes risk to population near timber stands. Especially in pine and spruce beetle kill areas. Funnel clouds have caused damage to roofs in the Vanderhoof area. ➤ Housen Bay – 100-yard funnel cloud pushed trees the lane maybe 15 years ago? ➤ Nulki Hill Km 40 on the Clucuz Rd there is a wind Farm being tested for the last five years ➤ District of Vanderhoof will be putting in a new Purple Area Monitoring station. ➤ Rain on snow events increasing every year and is a concern. Infrastructure not being designed for these melting events mid-winter. 	<p>Yes</p>
<p style="text-align: center;">Hydrological</p>  <p style="text-align: center;">Flooding</p>  <p style="text-align: center;">Flash Flooding</p>  <p style="text-align: center;">Drought</p>	<ul style="list-style-type: none"> ➤ When drought and high precipitation events are combined this led to higher risk of flash flooding and landslide events. This can be seen in the region over lands that have been affected by forest fire and logging. ➤ Smaller water channels that get major increases in volume in short periods leads to higher risk of flooding and damage to infrastructure. ➤ In 2008/2009 District of Vanderhoof updated flood mapping. ➤ Deforestation causing increase in drought conditions. ➤ Hydrological conditions drying out soils and causing saturation during flash flooding events. ➤ Rio Tinto if released is of big concern. ➤ Creek connecting Tachick Lake to Nulki Lake, next to Stoney Creek is of minor concern during highwater. ➤ Lessons from South, small water ways can have massive impact on communities during a flash flood. 	<p>Yes</p>
<p style="text-align: center;">Fire</p>  <p style="text-align: center;">Wildfire</p>	<ul style="list-style-type: none"> ➤ Within the District of Vanderhoof municipal boundary there are many neighbourhoods with large slash piles. <p>Comments and questions for consideration and further research:</p> <ul style="list-style-type: none"> ➤ What are the alternatives to burning slash piles in the District of Vanderhoof and crown land areas? Is chipping possible? ➤ What is the percentage of natural vs human caused wildfire starts in the area? Need to talk about human caused fires ie grass fires, campfires, industry, rail? What was more expensive and caused more damage? 	<p>Yes</p>

Hazard Grouping	Notes	Include
<p>Geological</p>  <p>Landslide/ Avalanche</p>  <p>Land Subsidence</p>  <p>Earthquake</p>  <p>Ash Fall</p>	<ul style="list-style-type: none"> ➤ Landslide concern on riverbanks ➤ In the direction of Prince Rupert there was a 7.2 magnitude earthquake that was felt in some areas of Vanderhoof. Earthquake tremors may follow fault lines and impact Vanderhoof area. Stories of doors and windows opening and closing. <p>Comments and questions for consideration and further research:</p> <ul style="list-style-type: none"> ➤ Are potholes on the roads and highway to Prince George caused by land subsidence? 	<p>Yes, to all, Ash Fall No?</p>



Human-Caused Hazards



Hazard Grouping	Notes	Include
<p>Transportation</p>  <p>Rail Incident</p>  <p>Motor Vehicle Incident</p>  <p>Aircraft Incident</p>	<ul style="list-style-type: none"> ➤ Concern and high risk with the location of train in relation to the highway, town infrastructure, and rural residents. ➤ Risk of hazardous material spills and capacity to respond. ➤ Oil tanker truck spill on highway. ➤ There is a training flight area over Vanderhoof that could have an increase in risk for rural residents or be a flagged area for first responders. <p>Comments and questions for consideration and further research:</p> <ul style="list-style-type: none"> ➤ Double check ICBC causality rates. 	<p>Yes</p>
<p>Hazardous Materials and Explosions</p>  <p>Explosions</p>  <p>Oil Gas Pipeline Spill</p>  <p>Mine Incident</p>  <p>Hazardous Material Spills</p>	<ul style="list-style-type: none"> ➤ There are three mills in Area 'F', risk of explosion or structural fire exists, and Burns Lake is an example of this risk. ➤ Blackwater project is not operational yet, but what could be a factor to consider. Mount Milligan could have a potential impact on EA 'F' because of hazardous material trucks moving through the community or impacts on the water shed? ➤ What about the contaminated lands that are in and around Vanderhoof because of BCR and CN lands – these have never been remediated and how do they impact the water table and create drinking water challenges? <p>Comments and questions for consideration and further research:</p> <ul style="list-style-type: none"> ➤ How would black water gold impact the water sheds in the region if it is developed? 	<p>Yes</p>

Hazard Grouping	Notes	Include
<p>Interruptions to Critical Services</p>  <p>Electrical Outage</p> <p>Food Source Interruption</p> <p>Telecommunications Interruptions</p> <p>Transportation Interruptions</p> <p>Wastewater Interruptions</p> <p>Water Interruptions</p> <p>Fuel Source Interruptions</p> <p>Storm Water Flooding</p>	<ul style="list-style-type: none"> ➤ Area 'F' has two bridges to access the northside of the Nechako, detour routes needed for emergencies depending on location of incidents. ➤ Storm water flooding can cause the contamination of personal wells and soil ➤ Last year Facebook went down for a day causing panic and confusion. This provides an example of how a larger scale event could have on the public. ➤ Bulkley-Nechako Emergency and Public Alerts – need to share and advertise this service to residents in Vanderhoof, Rural Area "f" and Saik'uz. The system will communication via landline, cell, app, and email, however individuals need to sign up. ➤ Saik'uz community has been on a boil water advisory for a number of years due to fertilizers in the underground aquifers. First Nation Health Authority: https://www.fnha.ca/Documents/Drinking-Water-Advisory-Monthly-Summary.pdf ➤ If Saik'uz water is affected, are rural residential wells also threatened? ➤ Vanderhoof arsenic in water: https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/water-quality-reference-documents/dwa-vanderhoof_south.pdf This study found that Review of the Vanderhoof ground water data indicates an overall good raw drinking water quality. ➤ Food supply is dependent on supply, there are no food hubs. Recent disturbance in supply chains in the RD and health authority. How do we become more secure? ➤ Wildlife populations and food supply of indigenous communities is being heavily impacted. ➤ Impacts of roads on wildlife populations. ➤ Saik'uz has been developing community gardens and orchards, and berry patches in community to build food security and education with community members. Received approval in 2022 for a new community green house. ➤ TELUS Tower installed in Saik'uz in 2021, one fiber optic line to the band office, then broad cast in the community. ➤ Saik'uz fire department has a satellite phone for back up. <p>Comments and questions for consideration and further research:</p> <ul style="list-style-type: none"> ➤ What are the backup systems for telecommunications and delivery of critical information? ➤ What is the percentage of people who still have landlines? ➤ Contact FNHA and request information on the contaminants and better understand if these are spreading and what can be done to mitigate. ➤ What are the health impacts of water contaminants in rural areas? ➤ Nechako Valley Agricultural User Group currently doing a study and collecting data on passive seismic study on the health of the aquifer in Vanderhoof. Wayne is part of this group. 	<p>Yes</p>

Hazard Grouping	Notes	Include
<p>Infrastrucutre</p>  <p>Structural Fire</p>  <p>Dike Failure</p>  <p>Dam Failure</p>  <p>Structural Failure</p>	<p>➤ Affects or information on the Nechako Reservoir: https://www.getinvolvednechako.ca/our-operations/</p>	<p>Yes, structural fire, dam failure</p>
<p>Security</p>  <p>National Security</p>  <p>Major planned event</p>  <p>Cyber Security Threat</p>  <p>Public Order</p>		
<p>Deforestation</p>	<p>➤ Over harvesting of wood and the affects of forest fires have devastated the traditional territory in Siak'uz and Area 'F'.</p> <p>➤ 2021 fire destroyed the last old growth areas in the Siak'uz territory, it was hard to put the fire out because there were no roads in this area.</p> <p>➤ This has drastically impacted moose populations and habitat.</p> <p>➤ Old Growth New beginnings Saik'uz First Nation: https://www.youtube.com/watch?v=OqBF_2GNBUk</p> <p>➤ Deforestation causing drought conditions.</p> <p>➤ Resource extraction centre in BC, we are increasing the risk to the land base. RD how proud are they that we have the largest mill in the area, how is this linked to an increase in risk to forest fires and other natural hazards and events.</p>	

Disease, Pest Infestations, Epidemics Hazards

Hazard Grouping	Notes	Include
<p>Disease and Epidemics</p>  <p>Animal Disease</p>  <p>Plant Disease and Pest Infestation</p>	<p>➤ Discussion on invasive plants and what is being done about Knapp Weed - https://bcinvasives.ca/</p> <p>➤ How to report Invasive Plant and animal Species: App to report invasive species: https://apps.apple.com/us/app/report-invasives-bc/id1004208197 i.e., reporting invasive fish species in rivers and lakes?</p> <p>Comments and questions for consideration and further research:</p> <p>➤ Vanderhoof and this area has a large grasshopper problem as it cuts down hay and affects feed. Need to research the topic and issue – talk to Vanderhoof cattlemen's association.</p>	<p>Yes</p>

Hazard Grouping	Notes	Include
 Human Disease  Public Health Crisis	<ul style="list-style-type: none"> ➤ Concern about Radon. Is this a natural Hazard or human health result? ➤ Air quality valley areas impacts on human health in localized areas. <p>Comments and questions for consideration and further research:</p> <ul style="list-style-type: none"> ➤ What are the health risks of Radon and how do we know if this is a risk and something that could create a human health issue? ➤ What are the attraction and retention package or offers in Area C for doctors and nurses? 	Yes

Summary of Hazards Selected

The first step in the HRVA process was to identify the possible hazards that will need to be analyzed in the study area. The list below is an adaptation of hazards identified in the BC Emergency Management Regulation and a reflection of the HRVA Committees Selection of Hazards as discussed. Climate change is recognized as having impacts on the frequency and intensity of many hazards and may also cause new hazards to emerge. This list will guide the HRVA analysis moving forward. The objective moving forward will be to prioritize the mostly likely hazards and consider historic experiences and future likelihood when scoring the frequency, severity, and consequence of each specific hazard.



Regional District Bulkley Nechako HRVA 2022

HRVA Hazard List

Community: Electoral Area F

Date: 14-February-2022

This hazard list is an adaptation of hazards identified within the BC Emergency Management Regulation

Atmospheric

- 1. Air Quality ↗
- 2. Extreme Heat ↗
- 3. Extreme Cold ↗
- 4. Fog ↗
- 5. Freezing Rain or Drizzle ↗
- 6. Space Weather ↗
- 7. Hail ↗
- 8. Hurricane/Typhoon/High Wind Event ↗
- 9. Lightning ↗
- 10. Snowstorms and Blizzards ↗
- 11. Tornado ↗

Disease & Epidemic

- 12. Animal Disease ↗
- 13. Human Disease (Includes Pandemic/Epidemic) ↗
- 14. Plant Disease and Pest Infestation ↗
- 15. Public Health Crisis

Fire

- 16. Structure Fire
- 17. Wildfire ↗

Geological

- 18. Avalanche ↗
- 19. Landslide/Debris Flow ↗
- 20. Land Subsidence (and Sinkholes) ↗
- 21. Submarine Slides

Seismic

- 22. Earthquake
- 23. Liquefaction
- 24. Tsunami (Telegenic and Terrestrial)

Volcanic

- 25. Ash Fall
- 26. Volcanic Flow (Pyroclastic, Lava, Lahars)

Hazardous Materials and Explosions

- 27. Explosions
- 28. Hazardous Materials Spill
- 29. Mine Incident

- 30. Nuclear Incident
- 31. Oil or Gas Pipeline Spill
- 32. Space Debris

Hydrological

- 33. Drought ↗
- 34. Seiche ↗
- 35. Storm Surge ↗

Flooding

- 36. Lake, River, and Stream Flooding ↗
- 37. Coastal Flooding ↗
- 38. Storm Water Flooding (urban, local, pluvial) ↗
- 39. Flash Flooding ↗

Infrastructure Failure

- 40. Dam and Spillways Failure ↗
- 41. Dike Failure ↗
- 42. Structure Failure ↗

Interruptions to Critical Services

- 43. Electrical Outage ↗
- 44. Food Source Interruption (supply chain, or community food stores) ↗
- 45. Telecommunications Interruption ↗
- 46. Transportation Route Interruption ↗
- 47. Wastewater Interruption ↗
- 48. Water Service Interruption (Includes shortage and contamination) ↗
- 49. Fuel Source Interruption ↗

Security

- 50. Cyber Security Threat
- 51. National Security Threat
- 52. Public Disturbance
- 53. Major Planned Event

Transportation

- 54. Aircraft Incident
- 55. Marine Vehicle Incident
- 56. Motor Vehicle Incident
- 57. Rail Incident
- 58. Deforestation

Note: Climate change is recognized as having impacts on the frequency and intensity of many hazards and may also cause new hazards to emerge. Those hazards identified as being impacted by changing climatic conditions are indicated with a "↗".

Next Steps

Committee members discussed the need for Liliana to share a summary of selected hazards to be confirmed at the next committee meeting to be incorporated into the provinces online tool.

Committee members are asked to review the notes and selected hazard and provide additional thoughts, comments, stories, and experiences to form part of the project documentation.

Committee members were asked to complete an evaluation of the meeting once a summary is sent out and to complete the doodle poll for availability on a next meeting day on understanding community resiliency to the selected hazards.

Liliana has gathered additional information and resources on hazards identified by the committee and included them in the revised Hazard Background document for reference as the committee moves through the process. This document will be sent out to committee members and posted on the RDBN's website under the HRVA project update.

DRAFT