



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

Summary - Hazard Identification Workshop

Date: December 1st, 2021

Time: 9 am – 12 pm

Format: Zoom

Overview

On Wednesday, December 1st, 2021, participants from the HRVA Committee for Electoral Area 'C' 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:

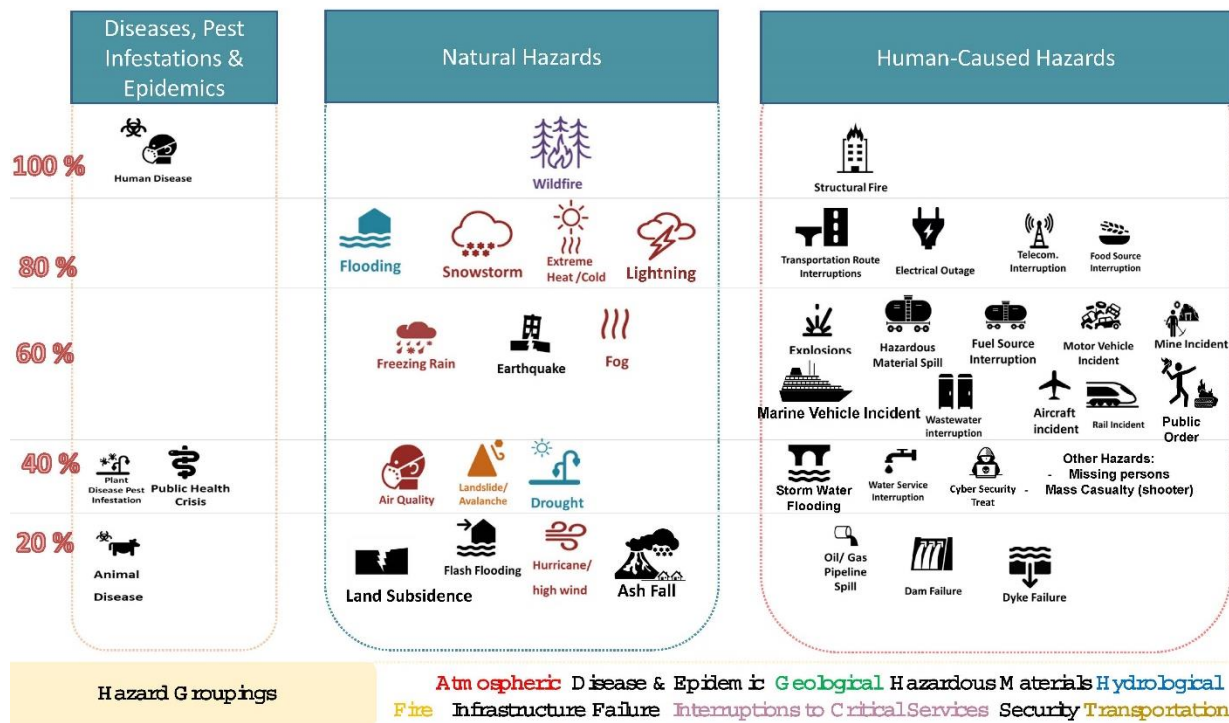
- select hazard for the electoral area "C" HRVA project focus;
- review and discuss known and historical hazards in electoral area "C";
- discuss, define, and identify on a map any unique local hazards in electoral area "C";
- identify additional hazard information needs/ sources.

Participants

Name	Organization
Area C Director	Tom Greenaway
District of Fort St. James Fire Chief	Ryan D. McVey, Fire Chief
Takla First Nation	Jeremiah Louis, Fire Chief/EPC
Nak'azdli Whut'en First Nation	Vale Gainor, EOC Director
RCMP	Sean Wadelius, Staff Sargent
BC Ambulance Fort St. James	Drew Hunsaker
Resident	Cam McCormick
Forsite Forestry Consulting	Chelsea Heyer, RPF, SAS
Mount Milligan	Jafar Gadzhiev
Deborah Jones-Middleton	RDBN
Christopher Walker	RDBN
Liliana Dragowska	RDBN

9:00 AM - 9:30 AM Welcome, Introductions, Goals and Outcomes

The session began with a welcome from Director Greenaway 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 'C'. The results of the survey the HRVA committee members completed before the workshop were as follows:



9:30 AM – 11:30 PM - World Café Breakout Groups

Participants were broken out into groups under each of the three sub-topic areas. Groups were given 30 minutes in the first round, and 25 min in subsequent round to discuss the following questions?

- Should this hazard be included in Area C HRVA?
- Is the hazard confided 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 and join into one of three live google jam boards that were used to record the breakout room conversations.

The discussion notes and additional hazard research have been added to the Hazard Identification Background paper for Area 'C'. 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 [RDBN Hazard Identification Backgrounder](#) and [All 57 Hazard Definitions](#).

Natural Hazards

Hydrological



Flooding



Flash Flooding



Drought

Atmospheric



Snowstorm



Freezing Rain



Lightning



Air Quality



Hurricane/
high wind



Extreme
Heat /Cold



Fog

Fire



Wildfire

Geological



Landslide/
Avalanche



Earthquake



Ash Fall



Land Subsidence

Breakout Room #1

The notes below summarize the discussion. Additional information and notes can be viewed on the [Google Jam Board #1](#):

Hazard Grouping	Notes	Include
Atmospheric	<ul style="list-style-type: none"> ➤ Include extreme heat/cold, freezing rain, fog, Hail, high wind, snowstorms. Lightning, space weather. ➤ Dog Creek Area and Braeside Area see significant fog. ➤ Air quality is not a usual issue. ➤ Snowstorm, freezing rain up Takla, Yekooche and Tachie are more at risk on road surfaces with distance. ➤ Nak'azdli purchased several air conditioning unit to set up a colling station if required to support elders during extreme heat wave events. ➤ Lightning is a significant risk regarding wildfire starts. <p>Comments and Questions for consideration and further research:</p> <ul style="list-style-type: none"> ➤ Will we see a decrease in air quality due to weather changes and increases in wildfires? ➤ What is the volume of precipitation trends and forecasts? ➤ What are the ramification for the most vulnerable populations during extreme heat events? What mitigation need to be in place? 	Yes
Flooding	<ul style="list-style-type: none"> ➤ Hudson's Bay Creek caused flooding due to significant rainfall on snow that affected 3 homes in October in Takla. This creek has a possible freshet issue. ➤ Tear drop FSR is impacted annually with erosion and flooding. Single access and egress for residents. There is a backroad to PG that is not always open. ➤ Binche and T'latzen are at risk of flooding. ➤ Sowchea Bay is a big issue as is Nak'azdli reserve along the lower road. 30 homes more at risk, the rest is up high. ➤ Yekooche is at risk of flooding, a lot of the area is low land. 	yes

Hazard Grouping	Notes	Include
	<ul style="list-style-type: none"> ➤ Takla Main Road is lake shore a large sluff into the lake, the road would be an issue. There is no study we are aware of on Reserve Road, FLNRORD looks after the road past the reserve. <p>Comments and Questions for consideration and further research:</p> <ul style="list-style-type: none"> ➤ A mitigation for one hazard can impact another. Ex. Removing trees around roads to reduce wildfire risk may cause flooding risk. ➤ Observe what will happen at Sowchea Creek area due to logging around Yekooche. ➤ Opportunity to maintain the teardrop road and the 400 road to keep the road open would require good spring maintenance. Can this be passed on to FLNRORD or MoTI? 	
Drought	<ul style="list-style-type: none"> ➤ Seeing drying forests and increase in wildfire risks. ➤ There have been some periods of time where they have experienced drought – 2014, 2015, 2018. 	
Fire	<p>Comments and questions for consideration and further research:</p> <ul style="list-style-type: none"> ➤ A fire at or near the Cunningham FSR would cut off Yekooche. Leo Creek FSR would cut off Takla. North Road would cut off Mason Creek and Germasens landing. ➤ Need for a fire break along the pipeline north of the community. ➤ Concerns about Dickson Mountain Way. ➤ Mount Poke and FSJ there is a lot of ground fuel, this is a provincial park. FSJ is working with FLNRORD and Parks to look at mitigation options for the area. ➤ Interested in the status of Fire Smart in each area. 	Yes
Geological	<ul style="list-style-type: none"> ➤ Hudson's Bay Creek splits Takla Landing, there is a looser slope that is falling including trees into the creek during freshet. Slow moving landslide, the bridge is over this creek and connects the community. Under the Bridge is a wastewater pipe connecting 100 homes to the Takla septic system, if this was to fail, 16 out of the 100 homes would be cut off completely. ➤ Ash from fires in 2018 was experienced, but none from Mt St. Helen's in the 80's. ➤ A lot of FSR access roads have slope stability issues that could be affected with high precipitation. ➤ The teardrop FSR seems to get washed out every year. <p>Comments and questions for consideration and further research:</p> <ul style="list-style-type: none"> ➤ Are there dormant volcanoes in the north that could send ash to Area C? 	Yes landslide earthquake and ask fall
Seismic	<ul style="list-style-type: none"> ➤ Earthquakes happened in early 80's ➤ Takla feels tremors. ➤ Pinche Mine was developed along the Pinche Fault line, the mine was shut down 45 years ago. 	yes

HUMAN-CAUSED HAZARDS

Hazardous Materials and Explosions



Infrastructure Failure



Interruptions to Critical Services



Transportation



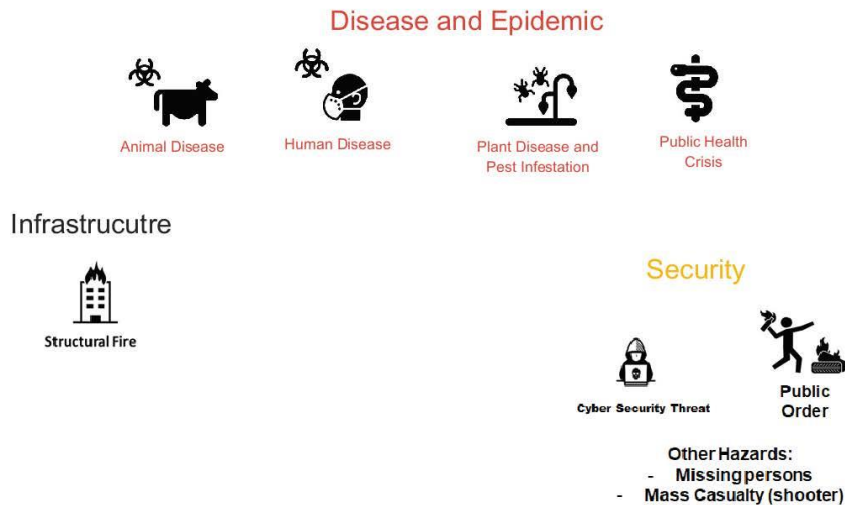
Breakout Room #2

The notes below summarize the discussion in each group. Additional information and notes can be viewed on the [Google Jam Board #2](#):

Hazard Grouping	Notes	Include
Hazardous Material and Explosions	<ul style="list-style-type: none"> ➤ Explosions several potential locations, fuel storage facilities, propane storage and pipelines. ➤ Wastewater lines in Takla, one goes right over Hudson's Creek, very exposed. ➤ Hazardous material for fire department only Ryan and Deputy Chief have training. Prince George fire department is the closest certified group? ➤ Bowzers fire suppression retardant transported in high concentrations, impacts environment severely, kills fish in creeks and need to be cleaned up properly. ➤ Oil tanker truck spill on highway <p>Comments and questions for consideration and further research:</p> <ul style="list-style-type: none"> ➤ Rail line bringing Hazardous materials through community. ➤ What are the plans for the Bio Plant – the pressure generated in the turbine and boiler could cause explosion? ➤ What hazardous materials are being trucked through FSJ up the North Road? ➤ Mining Companies are trucking hazardous chemicals and materials through the community and on the highways? Can we ask Mount Milligan what hazardous materials are being transported? 	Yes
Infrastructure Failure – dam and dike failure	<ul style="list-style-type: none"> ➤ Takla Landing – 6 homes protected by makeshift dikes along lake protecting the road and homes. ➤ Dam failures that affect the Stuart run affect the salmon and Takla and other First Nations food sources. ➤ Sowchea Creek, beaver dams up stream cause flooding, currently there is a large beaver dam, if it breaches there will be substantial flooding. 	Yes

Hazard Grouping	Notes	Include
	Comments and questions for consideration and further research: <ul style="list-style-type: none"> ➤ What are the current emergency procedures, risk and consequence of failure of the Mount Milligan and Pinche mine tailings ponds? 	
Interruptions to Critical Services	<ul style="list-style-type: none"> ➤ One electrical line to FSJ. ➤ There is a power plant in FSJ that has the potential to run many homes, however there is no switching gear to provide the power - opportunity to explore for the region. ➤ Telecommunication is one line to FSJ and above. ➤ Takla uses satellite phones and generators for powering the community and other critical infrastructure. ➤ One main transport route for the area. ➤ There are only two gas station in FSJ all brought in by truck on the one transportation route, if fuel was interrupted or block this would cause an issue in the community. ➤ Takla uses virtual doctor for health. If it does down this creates a major issue for people. ➤ Solar flares interrupt telecommunications and cause major issues. 	Yes
Transportation Aircraft, Motor vehicle and rail.	<ul style="list-style-type: none"> ➤ Lots of air traffic through the region, helicopters, small aircrafts, industrial. ➤ Strong wind events that can cause aircraft incidents. ➤ MVI's on the highway affect all communities relying on the one route in and out. Closures can last for days if they involve hazardous materials. 	Yes

Disease / Human Caused Hazards



Breakout Room #3

The notes below summarize the discussion in each group. Additional information and notes can be viewed on the [Google Jam Board #3](#):

Hazard Grouping	Notes	Include
Disease and Epidemics	<ul style="list-style-type: none"> ➤ Yes, include animal, human and plant disease, pest infestation ➤ Risk of bovin – economic impacts in ranching community, there is no experience locally but could change any time. ➤ Moose and fish population hazards – rural communities are reliant on food harvested from the land. Food security is a huge issue the distance to Vanderhoof or FSJ for a family to get groceries could make a family go broke just from gas alone. ➤ Susceptibility to spread human disease when large families are forced into confined housing or housing that is not suitable. Housing is a challenge in our communities' and creates cascading hazards. ➤ More pests could cause economic impacts in the resource sector and the ranching sectors. ➤ Fir beetle and Spruce Beetle need attention. ➤ Increase in grasshopper populations on farmers' fields devastating crops. ➤ Traditional medicines and harvest are affected by natural disasters, fire and drought. ➤ The FSJ hospital deferring patients to Vanderhoof because of a lack of nurses and staff in the summer of 2021. There are 8-12 nursing positions available in FSJ at one time. ➤ Overdose Opioid crisis is affecting FSJ and other rural areas. Death in Takla in November. ➤ Fall is the worst time of year for overdoses. In FSJ 3-4 overdoses a week, almost as bad as Prince George with strong relationship to socioeconomic wellbeing of people. ➤ Fear that with road closures to the south there maybe a reduction in drug supply from the south causing a shortage of clean drugs to run out in the community and creating the potential of people making their own in more dangerous ways. 	Yes

Hazard Grouping	Notes	Include
	<ul style="list-style-type: none"> ➤ Opioid and mental health is a huge issue in the community, watching generations of locals struggle with these issues and now children are suffering. Need to talk with people who have lived experience to better understand and support community challenges. ➤ Hard to attract medical professionals to remote areas in FN communities and FSJ. Takla can't compete with the attraction packages that FSJ is offering. <p>Comments and questions for consideration and further research:</p> <ul style="list-style-type: none"> ➤ 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. ➤ What are the attraction and retention packages or offers in Area C for doctors and nurses? 	
Security and Cyber	<ul style="list-style-type: none"> ➤ Public order is challenging in the community but not a large deal with a few people expressing concern. ➤ Living through restrictions for COVID, anti-protests more prevalent with almost militant type behaviors. ➤ Aging population create more susceptibility to fraud and scams. ➤ Takla does not have a high risk of cyber security but lots of phone scams. Cyber security a concern for local governments and First Nations. 	Yes
Unique Hazards	<ul style="list-style-type: none"> ➤ Missing Persons: <ul style="list-style-type: none"> ○ Recent lost hunter involved a man from Yekooche. ○ Convergent volunteers are available in the community to assist with searches, these are volunteers not fully trained for search and rescue.. ○ Searches happen on a regular basis in the area with 3 already in 2021. ○ Infrastructure need for SAR, funding structure is based on call outs currently and needs more support for the rural areas to be ready, trained and resourced with volunteers. ○ In 2021 there was a search that lasted 65 days with drilling thousands of holes in the lake. Everyone across the region participated and demonstrated how community focused and resilient and dedicated the rural residents are to the region and the people living there. ➤ Mass Casualty: <ul style="list-style-type: none"> ○ Nov 2021 example of shooter in Vanderhoof required people to shelter in place. ○ Member of Takla who live in Vanderhoof where calling Takla to find out what was happening. Takla has a larger coverage area than traditional communities, since the community provides services to their people no matter where they are in the province. 	Yes
Structural Fires	<ul style="list-style-type: none"> ➤ Only one place to get fuel in town FSJ – Sowchea Rd has a small general store and a small card lock north of town. If a large fire was to occur than people would not have the capacity to get fuel. ➤ Only two grocery stores, one in FSJ and one in Nak'azdli, if a fire were to occur this would impact food supply to the entire region. ➤ There is not enough resources to fight a larger structural fire or apartment fires in FSJ. 5 apartment complexes in town with 30 units in each one. 	yes

Hazard Grouping	Notes	Include
	<ul style="list-style-type: none"> ➤ Lack and challenge around putting up temporary housing or shelter in FSJ. ➤ Several large fires in FSJ – Canfor Fires, the FSJ Fire department responded with everyone and it was note enough, residents and workers helped to control that fire. ➤ There was an apartment fire before FSJ had a ladder truck, one casualty. ➤ Germanson and Manson Creek, Cassiar ranch Pinchi Lake area have no fire protection, just private residents with fire pumps and no formal training. ➤ Takla is working on developing a fire department, they are 3.5 hours away from FSJ so no mutual aid is possible. 5year project (3years into this project) to get the fire department started. ➤ Tachie has a truck and station but no certified fire fighters ➤ Germansen Landing, 6 hours from FSJ, West Arm, Wolverine Lake, Bear Lake, all reserves with structures on them and are extremely remote. ➤ There were sprinkler systems put in for 12 homes in these areas but they have note been maintained and are not operable. ➤ Many First Nations communities will do cultural burning in the spring that will go right next to homes on reserves. ➤ Tachie is starting up a fire department 	

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 consider the mostly likely hazards and consider historic experience data when scoring the frequency, severity, and consequence of each specific hazard.



Hazard Selection Area C

HRVA Hazard List

Community: Electoral Area C

Date: 01-December-2021

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

- ☒ Missing Person
- ☒ Mass Casualty

11:30 AM – 11:45 AM Wrap up and next steps

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

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 the new year on 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