# HRVA Prioritizing Risk & Resiliency Strategies

September 20, 2022 9:00 am Microsoft Teams

### In Attendance

- Mark Parker
- Bob Storey
- Dave Christie

### Regrets

- Audrey Fennema
- Yvan Laramee
- Jason Rumming
- Lora-lee Pacheco
- Adam Patrick

## **Introduction Summary Hazard Matrix**

- Alana Legere
- Joe Pacheco
- Juan Cereno
- Ashley Heathcliff
- Michael Lee
- Jason Regnier
- Jo-Anne Fiske



- > This is the common Hazard Risk Matrix.
- The hazard list referenced within this report is based on the 42 or the 57 hazards, the Hazard Risk Matrix, as shown here, is a useful tool for a local authority during the process of determining the level of risk and the potential consequences to help determine options to reduce, avoid, accept, or transfer responsibility of the four pillars of emergency management (Mitigate, Prepare, Respond, Recover).
- > Methodology How is the matrix created and what does it tell us:
  - For the Likelihood Scoring we used the Median Score.
  - For the Consequence (impact expressed in numbers) Scoring we used the mean, which is the average score.

# **Hazard Scoring**

This table summarizes the likelihood scoring and consequence scoring. The different colours represent where they fall on the Hazard Risk Matrix for Acceptable, Tolerable and Unacceptable.

Priority	Hazard List	Current Likelihood	Conseque nce Total	Future Likelihood
1 赫	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 <u>ж</u>	Explosions	D - Likely	22	D - Likely
6 🔥	Public Disturbance	D - Likely	22	E - Almost certain
7 <u></u> 畫	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 - <u>☆</u> - ŵ	Extreme Heat	D - Likely	19	E - Almost certain
12 <b>A</b>	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
<sup>20</sup>	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

Priority	Hazard List	Current Likelihood	Conseque nce Total	Future Likelihood
24	Motor Vehicle Incident	B - Unlikely	15	C - Probable
<sup>25</sup> **	Plant disease and Pest Infestation	B - Unlikely	15	B - Unlikely
<sup>26</sup> マ	Public Health Crisis	B - Unlikely	15	C - Probable
27	Freezing Rain or Drizzle	A - Rare	14	A - Rare
<sup>28</sup>	Drought	D - Likely	14	D - Likely
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 2	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
<sup>38</sup> (( <u>A</u> ))	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
<sup>42</sup> <i>111</i>	Fog	C - Probable	6	D - Likely

#### **Consequence Scoring Summary**

0- None	1 - Low	2 - Medium	3 - High	4 - Extreme
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Here is a visual breakdown of the total scores for the Consequence Scoring, based on the 11 sub-categories, which were totaled and into are reflected in the consequence stacking table.



#### Comments:

- > Interesting how wildfire was rated the highest, while ash fall was the lowest.
  - The ash fall is referenced to volcanic ash, not wildfire ash.
  - I think the Committee would have based this on the wildfire ash.
- > Traffic volume has increased in the past two years.
  - Potential for more accidents.
- > There has also been a noticeable increase in train activity, and with the increase in Port capacity we will continue to see further increases.
- > Surprised to see the Dam and Spillway Failure rated so high.
- This would affect Nautley, Fort Fraser and Vanderhoof more so than Fraser Lake.

## Hazard Matrix

		Ar	ea "D" HRVA Risk Piority N	latrix		
High	Earthquake (8)	Reduce	Structural Failure (20)	Avoid		E - Almost Certain
Likelihood	Ash Fall (8)	Electrical Outage (16) Drought (14) Air Quality (13) Lightning (11) Marine Vessel Incident (10) Land Subsidence (9) Telecommunications Interruption (9)	Rail Incidents (23) Explosions (22) Public Disturbance (22) National Security Risk (22) Water Service Interuption (20) Lake, River, and Stream Flooding (20) Extreme Heat (19) Hurricane/Typhoon/High Wind (19)			D - Likely
	Fog (6)	Snow Storms (17) Landsilde/Debris Flow (17) Hazardous Material Spill (16) Oil & Gas Spill (16) Cyber Security Attack (16) Wastewater interruption (16) Food Source interruption (13) Extreme Cold (13) Fuel Source Interruption (12) Animal Disease (12) Aircraft Incident (11)	Dam and Spillway Failure (26) Human Disease (23)	Wildfire (30)		C - Probable
	Dike Failure (6)	Mine Incident (16) Transportation Route Interuption (16) Motor Vehicle Incident (15) Plant Health Crisis (15) Public Health Crisis (15)	Flash Flooding (18) Structure Fire (18)			B - Unlikely
Low		Freezing Rain and Drizzle (14)				A - Rare
1017	0-8	9 - 17 Accept	18 - 26	27 - 35 Transfer	36 - 44	High
2010	Consequences					

Here are the results shown in the Hazard Risk Matrix.

Comments:

Surprised that the Dam and Spillway failure is under probable, this has been rated as a 26, the committee does see this as a risk.



# **Resiliency Strategies**

Going back to the idea of how we use the Hazard Matrix when looking for Resiliency Strategies, the highest priority Risk Reduction Ideas would be for the Unacceptable and Tolerable hazards. Strategies can include ways to reduce the risk, avoid the risk or transfer the risk.

# **Identifying Risk Reduction Measures**

- Emergency Response:
  - Strategies for increasing response capacity and coordination.
- > Programs, Services and Education:
  - Strategies for enhancing public awareness and capabilities of response personnel.
- Social and Non-Structural Mitigation:
  - Plans, Bylaws, Regional Strategies for encouraging safer more sustainable communities.
- > Environmental Mitigation:
  - Strategies for repairing or preventing further environmental damage.
- Economic Mitigation
  - Strategies for increasing regional economic resilience.
- Structural Mitigation:
  - Strategies for preventing damage to infrastructure and homes.
- The Fort Fraser Fire Protection Service Area is a strategy providing Fire Protection to a specified area of Electoral Area D.





Risk Reduction

## **Measures Form**

- > When considering your suggestions please consider:
  - What is Practical?
  - What falls under the jurisdiction of the RDBN? What can the RDBN do?
  - What risks does the RDBN to transfer and advocate for?
  - What risks can external agencies reduce?
  - What risk can residents assist in reducing?
  - How do we reduce, transfer and avoid risks? Where are the opportunities.

Comments/Questions:

- Is there a partnership with the Province of BC regarding environmental mitigation strategies with preparation with preventing further environmental damage? (As this is out of local government mandate)
  - Yes, advocacy is a strategy that the Regional District could move forward with. This
    is a high priority and would like to bring this to the Board of Directors.
- Emergency Operation Centre and Incident Command is a vital part of emergency response and could be added into the risk reduction.

# Next Steps

- > Return completed Risk Reduction Measure Form by *Friday October 7 by 4:30 pm*.
- The RDBN will be hosting a lunch or dinner in Fraser Lake once the draft HRVA is completed and will present the document to the committee.