

Willox Creek, BC, July 2020

### Collaborative Disaster Risk Reduction & Climate Adaptation:

Regional District of Fraser Fort George Board Presentation

**Presented by:** Kris Holm (BGC) Kim Menounos (Fraser Basin Council)

### Date:

February 22, 2024





### B.C. has enacted a new Emergency and Disaster Management Act.

- **Provincial responsibilities** for emergency management organization.
- Local responsibilities for risk management.
- **Private sector responsibilities** for critical infrastructure risk management.
- **Requirements to consider Indigenous knowledge** in cooperation with Indigenous governing bodies.



The Collaborative Disaster Risk Reduction & Climate Adaptation Project supports planning and emergency management decisions through Districtwide screening of geohazard risk.



# Project partners include the RDFFG, all four municipalities in the District, the Lheidli T'enneh First Nation, and the McLeod Lake Indian Band.

### **Project Partners**

Lheidli T'enneh First Nation, McLeod Lake Indian Band, Village of Valemount, Village of McBride, District of Mackenzie, City of Prince George, RDFFG (lead).

**Project Advisory Committee** Provincial (MoTI, WLRS, EMCR) and Project Partner Representation

### **Project Coordinator**

Fraser Basin Council (Kim Menounos, Terry Robert)

#### **Professional Services**

BGC Engineering (Kris Holm, Project Lead & BGC technical team)

### Geohazard risk management advances in steps.



# The regional assessment start by identifying 'hot spots' where hazard inventories intersect valued assets.



Hazard

Hazard Threat (population, buildings & infrastructure)

(Previous Project Example: CSRD, Clear-water Floods)

### We estimate risk at screening level by addressing a series of questions:

Where is the geohazard and what is it like?

What is the probability of a hazard scenario occurring?

What is the probability the hazard scenario reaches an element at risk?

What is the probability the element at risk is present at the time of impact?

What are the losses given impact? [safety, economic, environmental, reputational...]

Indigenous knowledge provides invaluable input to understand the nature of past events.

Hazard

Consequence

Artwork by Sophia Zubrycky

### Three mapping types or "Tiers" used to define hazard extents

<u>Tier 1</u> <u>Hazard Identification</u> Floods, Steep Creeks and Landslides (entire District)



<u>Tier 2</u> <u>Base Level Hazard Mapping</u> Flood Hazards (Select Areas]



<u>Tier 3</u> <u>Detailed Hazard Mapping</u> (not this Study)





### "Tier 1" Steep creek mapping: 310 fan features







### "Tier 1" Landslide mapping: 1,100 landslide features



10





### Tier 1 (Floodplain Identification)

### Tier 2 (Floodplain Mapping)

LEGEND

0

REGIONAL DISTRICT

OF FRASER-FORT

OTHER REGIONAL

FIRST NATIONS

MUNICIPALITY **ELECTORAL AREA** 

GEORGE

DISTRICT

RESERVE

PREVIOUS HISTORICAL FLOODPLAIN

MAPPING

FLOODPLAIN

MUNICIPALITY

MAJOR ROAD

WATERCOURSE

(3) McLennan River

and Swift Creek

at Valemount

Valemount

CITY

0

٠

(2) Fraser

River at

McBride

MAPPING AREA

**PROPOSED TIER 2** 



### **Project Timeline**

#### SEPTEMBER - DECEMBER 2023

Datagathering Advisory and Partner meetings Website launch

#### JANUARY-MARCH 2024

Advisory and Partner meetings **RDFFG Board presentation Indigenous & Local gov't engagement** Hazard inventory ongoing

#### APRIL-JUNE 2024

Indigenous & Local gov't engagement Draft hazard & asset inventories Draft hazard mapping

#### JULY-AUGUST 2024

Advisory meeting Fieldwork (BGC) Partner meetings (in field) Post-field mapping update

#### SEPTEMBER-NOVEMBER 2024

Completion of hazard mapping Regional Risk Estimation complete Advisory & Partner meetings Data sharing agreements with First Nations

#### JANUARY - MARCH 2025

**Draft Report & Data** for review Council presentations Indigenous government engagement Press release

#### APRIL-MAY 2025 Report feedback review

**JULY 2025 Final Assessment Report** Press release Community presentations



## Closing

This presentation required a number of complex issues to be reduced to general concepts in a series of concise bullet points, photographs, and/or diagrams. The content of this presentation is not intended for design decisions or construction. This presentation is for general informational purposes only. BGC Engineering Inc.'s report(s) may contain more specific details concerning the issues identified in this presentation. Please consult BGC for further clarification if you have any questions or concerns.

Prepared by: Kris Holm, M.Sc., P.Geo. **Client:** 

Fraser Basin Council

Reviewed by: Elisa Scordo, M.Sc., P.Ag., P.Geo. Marc-André Brideau, Ph.D., P.Geo.

Date: February 12, 2024

## Contact us

#### Kris Holm (BGC)

Principal Geoscientist | BGC Engineering Inc.

kholm@bgcengineering.ca | 778-558-4892

#### Kim Menounos (Fraser Basin Council)

Manager, Northern Interior Region | Fraser Basin Council (she/her) <u>KMenounos@fraserbasin.ca</u> | 250-617-4821



### **Project Deliverables**

- Assessment Report
- Maps (provided as GIS data and Cambio web application)
- Risk Register with tabulated results for all hazard areas
- Community presentations