

ENGINEERING DEPARTMENT

NOVEMBER 30, 2023

COLD SPRING CREEK DEBRIS FLOW MITIGATION PROJECT

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INTRODUCTION

- **Project History**
- **Final Design**
- **Construction and Schedule**
- **Funding and Budget**
- **Next Steps**

PROJECT HISTORY

- **Cold Spring Creek Debris Flood Funding, Phase 1 (2019)**
- **Hazard and Risk Assessments (2020/21)**
- **ARDM Funding Application and Award (2021)**

PROJECT DESIGN OBJECTIVES

- **There were two primary objectives:**
 - 1. Reduce the risk of life loss from debris flows**
 - 2. Reduce the damage from debris floods**
- **The 100 to 300 year return period event was the target debris flow event.**
- **Containment volume between 68,000 to 90,000 cubic meters**

WHAT IS THE HAZARD?



Cold Spring
Creek

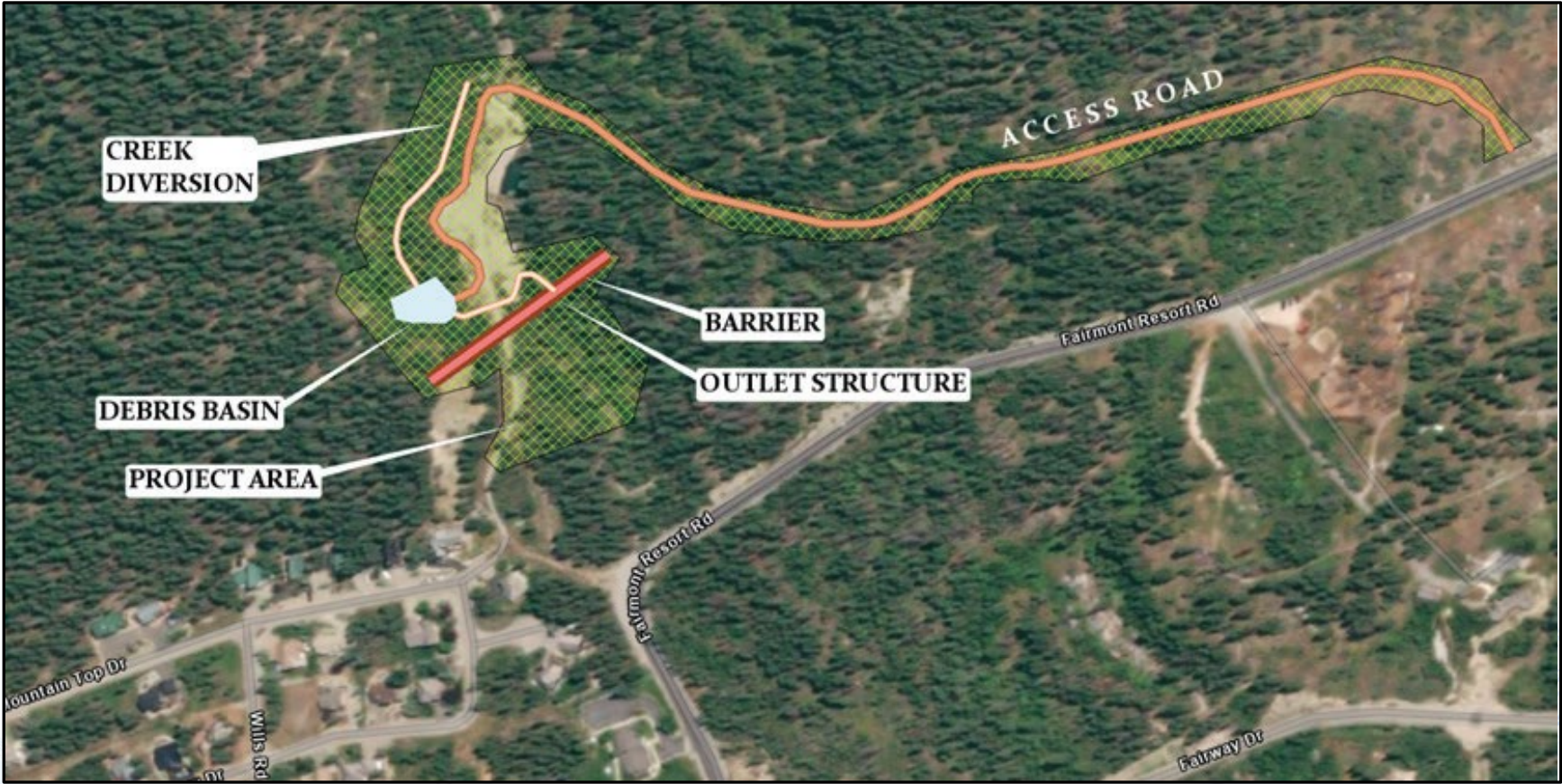
Fairmont Creek 2012



PROJECT DESIGN

- **Barrier and Outlet Structure**
 - 8m tall at the creek channel, 3m wide outlet
 - 134m long RCC barrier
- **Creek Diversion and Basin**
- **Ancillary Works**
 - Access Road
 - Water Lines

PROJECT DESIGN

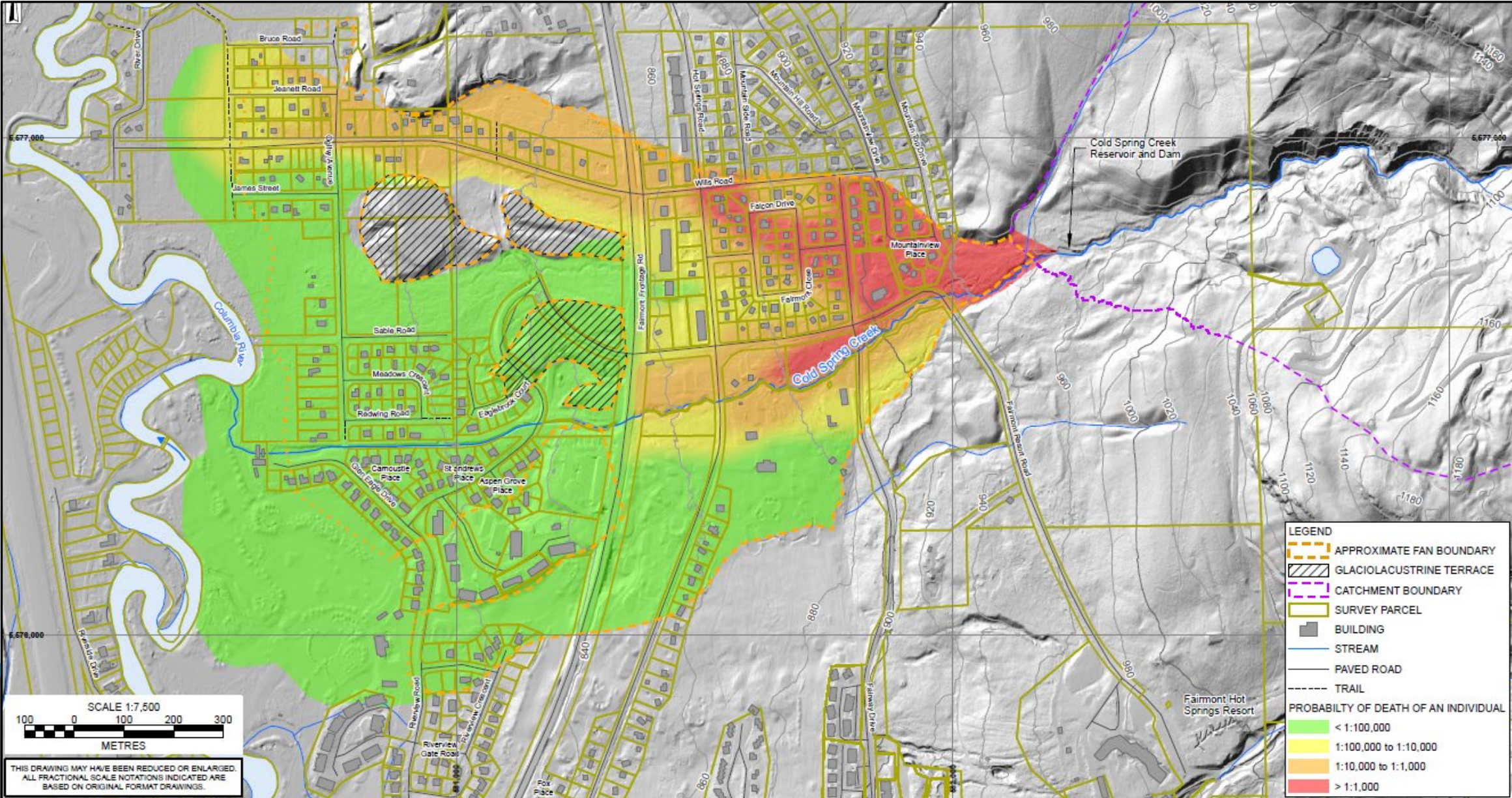


PROJECT DESIGN



- Access road.
- Diversion Start
- Weir Location
- Culvert directs clear water flow to the reservoir from the weir up to approximately 0.8 m³/s
- Existing dam and reservoir
- Existing creek channel
- Outlet structure will allow water to flow through but will hold back debris.
- End of diversion
- Existing creek channel
- Barrier constructed of RCC.
- Basin for debris containment.
- Excess clear flow and debris flood/flow material follows this diversion path

RISK ASSESSMENT MAP – Pre-Construction



CONSTRUCTION

- **General Contractor –**
 - **Mackay Contracting**
- **Schedule –**
 - **September 2023 Start**
 - **Substantial Completion – September 2024**



CONSTRUCTION PROGRESS AND SCHEDULE

Fall 2023 Progress:

- Basin excavation
- Access road construction
- Weir construction and culvert installation
- Watermain construction and tie-ins – **SERVICE INTERRUPTION**

2024 Construction:

- Outlet structure
- Barrier

PROJECT BUDGET

• Initial Budget		
• Phase 1	\$ 1,375,000	
• Phase 2	<u>\$ 9,723,000</u>	
	\$11,098,000	
• Post Tender Budget	<u>+ \$ 2,500,000</u>	
	\$13,598,000	
• Fairmont Flood and Landslide Service Area		\$1,000,000
• Growing Communities Fund		\$1,500,000

FAIRMONT FLOOD AND LANDSLIDE SERVICE – COLD SPRING CREEK PROJECT

- **\$13.6 million debris flow mitigation project 91.5% funded:**

Phase 1: UBCM Structural Flood Mitigation Funding	\$ 750,000
Phase 1: Fairmont Flood and Landslide Service Area	\$ 150,000
Phase 1: Community Works Funding	\$ 475,000
Phase 2: Adaptation, Resilience/Disaster Mitigation Grant	\$9,723,000
Phase 2: Fairmont Flood and Landslide Service Area	\$1,000,000
Phase 2: Growing Communities Fund	<u>\$1,500,000</u>

New Total Project Budget **\$13,598,000**

COLD SPRING CREEK PROJECT – SERVICE AREA SHARE

• Reduce 23 budget – hazard assessment granted	\$ 85,000
• Reduce 23 – 27 budget – cancel reserve contrib	199,000
• STB payments Phase 1 already in financial plan	150,000
• STB phase 2 = 5 years @ 5% *	<u>716,000</u>
	\$1,150,000

* Phase 2 average payments = \$165,000 per year = 2024 Tax Increase

FAIRMONT FLOOD AND LANDSLIDE – ESTIMATED 2024 TAXES

- Tax Requisition of \$489,000
- Millrate \$0.90/\$1,000 of assessment
- Cost per average resident (assessed at \$456,614) = \$377
- Taxation increase from 2023 = \$135 (on average resident)
- Future mitigation projects would require amendment to the taxation maximum

NEXT STEPS

UBCM Funding:

- **Fairmont Creek Hazard and Risk Assessment Update (\$150,000)**
- **Fairmont Hot Springs Development Guidance Project (\$60,000)**



DEVELOPMENT GUIDANCE PROJECT

Guidance Report to Inform:

- **Guide future development within hazard area**
- **Provide policy guidance**
- **Develop resident, Board and staff knowledge of hazard risks**

Funding:

- **UBCM providing \$60,000 grant**
- **RDEK providing \$5,000**

DEVELOPMENT GUIDANCE PROJECT TIMELINE

Milestones	Q4 2023		Q1 2024		Q2 2024		Q3 2024		Q4 2024	
RFP/EOI Process	Active	Active	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed
Guidance Reporting	Completed	Completed	Active	Active	Active	Active	Completed	Completed	Completed	Completed
Engagement	Completed	Completed	Completed	Completed	Active	Active	Completed	Completed	Completed	Completed
Draft Report	Completed	Completed	Completed	Completed	Completed	Completed	Active	Active	Completed	Completed
Information Sessions	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Active	Completed	Completed
OCP/Policy Implementation	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Active	Active
Final Project Report	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Active

Thank you!

FAIRMONT FLOOD AND LANDSLIDE SERVICE AREA

- **New Service Area Established in 2014**
- **Community Consultation**

