

FAIRMONT HOT SPRINGS FLOOD & LANDSLIDE



COMMUNITY UPDATE // SEPTEMBER 2023

COLD SPRING CREEK DEBRIS FLOW MITIGATION PROJECT

After many months of work and planning, construction is beginning this week on the Cold Spring Creek Debris Flow Mitigation Project with the construction contract being awarded to MacKay Contracting, based out of Cranbrook.

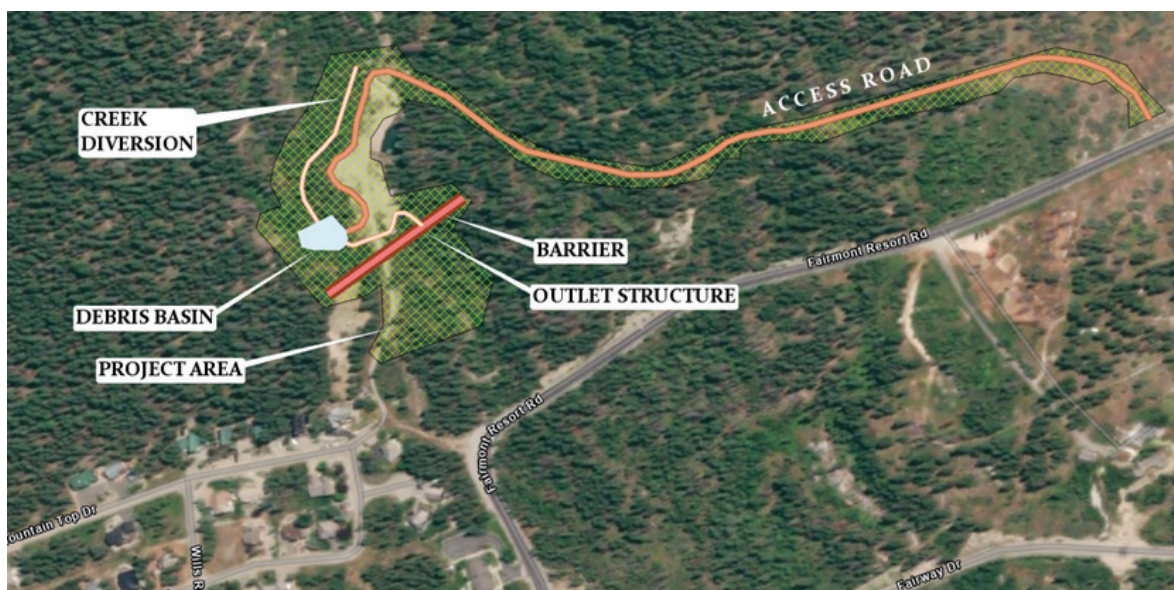
PROJECT OVERVIEW

We are building a large debris flow barrier that is designed to contain between 68,000 to 90,000 cubic meters of debris flow material which is roughly a 100 to 300 year debris flow event. This project will significantly reduce the debris flow risk in the community.

There are a few key construction components:

- 1. The Barrier and Outlet Structure:** The barrier will be approximately 8m tall above the existing Cold Spring Creek channel with a 3m wide vertical outlet opening at the channel. The outlet will have steel bars that will capture debris but allow water to pass through. The barrier will be constructed of roller compacted concrete (RCC) which is a concrete mixture that is placed in lifts and compacted.
- 2. The Creek Diversion and Basin:** There will be a basin excavated behind the barrier for debris storage and the creek will be diverted into the basin and will then flow out of the outlet structure which will be located at the existing Cold Spring Creek channel.
- 3. The Water Lines:** The water lines that service the community are located in the project area. The lines will be reinforced and relocated as part of the project. There will be a brief interruption to the water service to the community later this fall when the new lines are tied in.
- 4. The Access Road:** An access road will be constructed to upstream of the barrier for both construction and future maintenance.

PROJECT LOCATION MAP



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CONSTRUCTION

This is a large civil construction project and during construction, the work area will be closed to the public for the safety of both the public and the workers. As with previous work in the area, the most noticeable impact in the community will be increased traffic. There will be signage and flaggers, when necessary, but it is important for everyone to use extra caution. If there are any concerns about safety, please contact the RDEK.

TENDERING

As this is a fairly complex project, the construction was tendered through a two part process. A contractor pre-qualification was publicly posted on BC Bid in December 2022. The pre-qualification asked for information about contractor experience, proposed subcontractors and key positions for the project (site superintendent, project manager, etc.), proposed methodology and allowed for the contractors to discuss project risks and proposed mitigation. The goal of this process was to ensure that the contractors that submitted bids for the project construction were qualified. Through this pre-qualification, four contractors were pre-qualified to bid.

The tender was sent to the pre-qualified contractors on April 4, 2023 and closed on May 4, 2023. Three of the four contractors submitted bids. All of the bids were over the available construction budget with MacKay Contracting being the low bidder.

BUDGET AND COSTS

Over the past two years since the project began, inflation has increased at an unprecedented rate and there have been significant impacts to the project. After receiving the tender submissions, the team closely reviewed the design and costs to determine the best course of action. The design had already been refined and optimized and further changes would result in reduced protection to the community which was not desirable. Cancelling the tender and reissuing at a later date would be unlikely to result in a lower bid.

With that in mind, three primary actions were taken to move the project forward so that the construction contract could be awarded and the construction started in 2023 and be finished by the end of 2024:

- 1. Removing Optional Work:** Some optional work could be removed from the tender to reduce the total cost without changing the functionality of the project. As it was important to maintain both the debris flood and debris flow aspects, items that could be removed entirely were limited.
- 2. Negotiating With the Contractor:** As the low bid was over the project budget we were able to negotiate with the low bidder. The RDEK is working with MacKay Contracting to identify items where savings can be found.
- 3. Finding Additional Funds:** Additional funds have been added to the project. We have added \$1,000,000 from the Fairmont Creek Flood and Landslide Service Area and \$1,500,000 from the Province of BC, Growing Communities Fund to increase the project budget by \$2,500,000. We are continuing to look for other sources of funding to offset these funding sources, and if we are successful, it will be used to reduce the amount of funding from the Growing Communities Fund.

Current funding for the project is:

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 and Disaster Mitigation Program Grant	\$9,723,000
Phase 2: Fairmont Flood and Landslide Service Area	\$1,000,000
Phase 2: Growing Communities Fund	\$1,500,000
New Total Project Budget	\$13,598,000

SCHEDULE

The project will be constructed over two years and should be completed by the end of 2024. 2023 construction is beginning in mid September and will wrap up for the season in the late fall. It will start up again in the spring as early as conditions allow and is to be substantially complete by the end of September 2024.

The first year of construction will be focused on the access road, water main relocation, creek diversion, basin excavation and starting the outlet structure. The second year will be construction of the RCC barrier and completion of the outlet structure.



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SERVICE AREA TAXATION IMPACTS

In 2021, the allowable taxation limits for the Fairmont Flood and Landslide Service Area were increased from \$0.20/\$1,000 assessed value to \$0.90/\$1,000 assessed value to cover the costs of operating and maintaining the debris flow infrastructure, debris removal and service area contributions to the project. We have not increased the taxes to the upper limit so far but we will need to do so in 2024 to cover the additional \$1,000,000 contribution from the service area to the project. This \$1,000,000 contribution is possible through short term borrowing and will be repaid over the next five years. After the five years, taxation is expected to remain at the maximum in order to properly maintain the new infrastructure and begin rebuilding the operating/capital reserve.

If future mitigation projects are required in the community, additional taxation increases will be necessary. Information related to additional increases above the current \$0.90/\$1,000 of assessment and the type of assessment method would be shared with the community early in the budget process.

DEBRIS FLOW WARNING SYSTEM

The RDEK has been working with BGC Engineering on a debris flow warning system for the community of Fairmont Hot Springs for the last year. The warning system adds a layer of protection and reduces debris flow risk by providing us with information to alert the community when the risk is heightened.

The system has three components:

- Precipitation thresholds were determined at which debris flows may be triggered on Fairmont or Cold Spring Creek.
- Weather forecasts are used to anticipate conditions which may meet the precipitation thresholds.
- Real time weather is monitored to measure actual precipitation amounts.

We have been trialing the system throughout the spring and summer and have made some adjustments to the thresholds. We will be communicating more with the community in the Fall to explain how the system works and what you can expect to see from it.

This weather station is an integral part of the Warning System



FAIRMONT CREEK HAZARD AND RISK ASSESSMENT UPDATE

The existing hazard and risk assessment for Fairmont Creek was completed in 2013. Since 2013, debris flow mitigation work has been completed on the creek and there have been several debris events. With this new information, it is time to update the hazard and risk assessment for Fairmont Creek.

The RDEK has received funding from the Community Emergency Preparedness Fund, Disaster Risk Reduction – Climate Adaptation Stream (DRR-CA) through UBCM to complete this assessment. We will procure an engineering consultant this fall to complete the assessment with the bulk of the work being completed by the end of summer 2024.

DEVELOPMENT GUIDANCE PROJECT

The RDEK has also received funding through the same funding program for the Fairmont Hot Springs Development Guidance Project. The goal is to produce a guidance report prepared by a Qualified Professional that will provide the RDEK, developers and property owners with clear direction on land use policies and/or Development Permit Areas that will advise development proposals pre and post mitigation.

CONTACT

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