FAIRMONT HOT SPRINGS DEBRIS FLOODS

Regional District of East Kootenay

COMMUNITY UPDATE // SEPTEMBER 2020

MAY 31, 2020 EVENT

On May 31, 2020 33mm of rain fell at Fairmont Hot Springs following two days of extremely hot weather and substantial snowmelt. As a result of the combined rain and snowmelt, both Cold Spring Creek and Fairmont Creek experienced debris floods.

In Fairmont Creek, approximately 20,000 cubic meters of debris was deposited in the upper catchment basins upstream of the resort and an additional 10,000 cubic meters was deposited in the armoured channel that flows through the golf course and into the golf course pond. This is approximately 50% of the volume of material that was deposited on the fan in the 2012 event. The 2020 event was estimated to be roughly a 1-in-35 year event. Previously, the return period of the 2012 event was estimated to be a 1-in-500 year event; however, an updated geotechnical assessment in June has now estimated it to be a 1-in-165 year event.

In Cold Spring Creek, approximately 2,000 cubic meters of debris was deposited in the Cold Spring Reservoir and an additional 2,000 cubic meters was deposited in the lower Cold Spring Debris Trap.

In addition to the large volumes of debris that were captured in the traps, the high flows overwhelmed culverts along both creeks causing minor localized flooding.

RESPONSE EFFORTS TO DATE

Immediately after the debris flood event, the response efforts were focused on ensuring public safety so that the evacuation orders and alerts could be removed.

One of the first things we did was have the upper watersheds on both creeks assessed by a geomorphologist from Northwest Hydraulic Consultants (NHC) who observed the creeks both by helicopter and on the ground on June 1 and 2. He was able to confirm that there were no debris dams in either creek that posed an imminent threat to the community and the RDEK was advised to remove the evacuation order based on that observation.

In order to remove the evacuation alerts, we needed to restore storage capacity in the debris traps. We were given target volumes to achieve before the alerts could be removed and were advised to ultimately restore all of the traps to 100% capacity. The complete assessment report from NHC is available at www.rdek.bc.ca under the Reports tab on the Engineering Department's page.

The following work has been completed on Fairmont Creek:

- Approximately 12,500 cubic meters of debris has been removed from behind the upper Weirs 1 and 2 (combined).
- Approximately 5,500 cubic meters of debris has been removed from behind Weir 3.
- The creek channel and berm upstream of the campground access road has been repaired.
- The creek channel immediately upstream of the Fairmont Ridge development has been repaired.
- The widened and armoured creek channel through the golf course has been cleared of debris (approximately 2,500 cubic meters) and the storage pond on Hole 12 of the golf course has had approximately 9,500 cubic meters of material removed.
- Blocked culverts have been cleared.

The following work has been completed on Cold Spring Creek:

- Material has been removed from the reservoir behind the Cold Spring Creek Dam to restore capacity to 100%.
- Some minor repairs of the armoured channel in the lower part of the creek.
- Blocked culverts have been cleared.

RECOVERY WORK REMAINING

There is still some work being coordinated to recover from the event. On Cold Spring Creek the lower debris trap and creek channel needs to be cleared of debris. This work is planned to take place this fall. On Fairmont Creek, there are repairs downstream of Weir 2 that need to be completed. These repairs will also take place this fall or next summer.

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PAYMENT FOR THE EMERGENCY RESPONSE AND RECOVERY WORK

The RDEK has been working closely with Emergency Management BC (EMBC) since the event occurred. Portions of the response work will be paid by EMBC, portions will be paid by Disaster Financial Assistance (DFA) funds and the remainder will be paid by the Service Area. The amounts have not yet been finalized.

REGULAR MAINTENANCE AND INSPECTIONS

The RDEK regularly inspects the debris flow mitigation infrastructure on Fairmont and Cold Spring Creeks with maintenance being conducted as needed.

In 2019, both of the debris traps on Cold Spring Creek were cleaned and debris was removed from the creek channels upstream of some of the Cold Spring Creek culverts. Debris was removed from behind Weir 1 on Fairmont Creek and the access to the upper weirs was improved to facilitate the 2019 and future clean out efforts.

The debris containment structures were inspected the week before the May 31, 2020 event occurred following a small event that occurred on May 21. There was debris from the spring freshet in the upper Cold Spring Creek Reservoir and the Weir 1 Basin on Fairmont Creek. Plans were being made to remove the material as soon as possible but we were unable to do so prior to the May 31 event.

There have been small amounts of debris deposited in the Hole 12 Pond over the last few years. Debris removal in the pond was included in the 2020 maintenance budget but the small amount of existing material prior to the event was not concerning.

COLD SPRING CREEK DEBRIS FLOW MITIGATION PROJECT

Debris flow mitigation on Cold Spring Creek was identified by the RDEK Board in its 2019/2020 Strategic Plan. In October 2019, the RDEK applied for $750,000 in funding from the Union of BC Municipalities Structural Flood Mitigation Program for a debris flow mitigation project on the creek. The funding was awarded in March 2020. $150,000 in reserves are being added to the project to bring the current budget to $900,000.

The engineering contract was awarded to McElhanney on May 29, 2020. As part McElhanney's proposal, they have partnered with BCG Engineering to update the hazard assessment for Cold Spring Creek. The assessment report will be finalized shortly and will be made available to the public in the near future. This assessment is quite different from the previous assessment that was competed in 2015 and shows that the hazard has been understated in the past.

The mitigation on Cold Spring Creek will be completed in several phases. The design for Phase 1 is currently underway with construction expected to occur in 2021. Future phase(s) will occur as funding becomes available. RDEK staff are actively pursuing funding opportunities which typically are matched with service area contribution.

Public meetings are being planned for this fall to present the findings of the assessment to the community, to discuss the details of the project and to discuss future funding options and contributions from service area customers.

Sign up for Community Email Updates **www.rdek.bc.ca**

If you have any questions about the Cold Spring Creek Debris Flow Mitigation Project, please contact:
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