

# Report

Date September 4, 2024  
Subject Chemainus River Actions Update

---

File:

## PURPOSE

To provide an update on actions related to flooding and erosion in the flood plain of the Chemainus River. A staff presentation will be provided at the meeting.

## BACKGROUND

The Chemainus River has received attention from all levels of government, particularly after the Atmospheric River Event (ARE) in November of 2021. That event caused significant damage to homes, farms, and businesses in the area. Many people were displaced, roads closed, and land irreversibly altered from all practical perspectives. Another flood on December 26, 2022, forced evacuations and severely impacted homes in the area.

Studies performed for the Province, CVRD, North Cowichan, and Halalt First Nation concluded the need for better management of the watershed and works in the river to reduce the damage caused by flooding. The community has consistently requested better management of the river for decades.

Beginning in 2022, the Flood Debris Management Secretariat (FDMS) has worked with North Cowichan, Halalt First Nation, and some community members on projects to provide some flood protection, sediment removal, and stream channel work.

The following section provides Council with an update on the works that have either been completed, are underway, and may still occur under the recovery program.

## DISCUSSION

The following is a list and brief description of works completed, underway, or contemplated generally as a result of the FDMS funding.

### 1. Left bank side channel (2022)

This work was completed in November of 2022 and consisted of excavating gravels from an old channel immediately downstream of the highway bridges and flowing past two of the wells drilled for water to supply Chemainus. The intent was to provide a second path for the river to flow once it began high flow rates due to storm events.

The channel was put into service near the end of 2022 during a holiday season storm and flooding. This resulted in the shifting of the gravel within the channel, and some scour around trees. Other events have activated flow in the channel, leading to tree debris being left behind when the river flow diminishes.

It has a demonstrable function, but the benefits are qualitative only at this time.

## **2. Sediment removal (2023)**

An area of the river downstream of the railway bridge and within sight upstream of the Chemainus Road bridge has historically been subjected to gravel deposition and removal. Removal for the first time since 2007 began in September of 2023 with permission from the affected landowners. Nearly 9,000 cubic metres of gravel was removed, and approximately half was delivered to North Cowichan's storage area in Crofton. The remainder was used for the flood barrier wall discussed in paragraph 3.

## **3. Flood barrier wall (2023)**

Computer modelling of a flood barrier wall extending downstream of the highway near the bridges through private property (Russell Farms) and Halalt First Nation showed that it could protect and reduce flooding within Halalt First Nation without harming other properties. The FDMS then funded the project in 2023 using a temporary dike design consisting of geotextile fabric-lined gabion baskets (steel mesh) linked together. A landowner agreement was signed with the province to provide the rights for the work to be started and completed before high risk of flooding.

The wall was designed and constructed to be temporary and provide some protection while Halalt First Nation raised and constructed/reconstructed homes. The fabric is expected to last 5 years in these exposure conditions and will result in a semi-permeable barrier. The landowner agreement terminates 3 years after commencement, and at that time, the province will cease to maintain, and it may remove the barrier.

Flood waters did not impact the barrier in the winter of 2023/2024 and remains untested.

## **4. Bendway weirs (under construction)**

Bendway weirs can be described as low-level, totally submerged rock structures positioned from the outside bank of a riverbend, angled upstream toward the flow. They can be used to reduce bank erosion by redirecting the main flow of the river away from the riverbank. The FDMS approved the concept and funding in 2023, and construction began in August 2024. A total of six weirs will be installed on the river's right bank downstream of the highway bridges to reduce erosion along this bend. Other related works will be completed between the weirs and the flood barrier to help control flood waters. The bendway weirs do not impact flooding but are expected to reduce erosion and, thus, sediment downstream.

Work is about 40% complete and should be done by mid-October. Work in the river is expected to be completed before September 13.

## **5. Transect survey (2024)**

Ten sites are being surveyed for comparison to previous surveys. This will provide information regarding changes in the river and determine the changes directly or indirectly attributed to the work described in the previous paragraphs. The survey should be completed before mid-September, and the analysis will follow.

**6. Left bank side channel (possible 2025)**

Possible additional work in the left bank side channel depends on the analysis of the survey work noted in paragraph 5. If work in this channel is approved, designs will be completed, and gravel removal completed in the summer of 2025.

**7. Chemainus Road flood gates (2024)**

Ministry of Transportation and Infrastructure (MOTI) plans to install a gate across Chemainus Road near the intersection of Chemainus/Westholme/Mount Sicker Roads and another gate on Crofton Road near the intersection of Chemainus Road and all within the MOTI jurisdiction. These gates would close the road to traffic during times of flooding. Currently, municipal staff put up moveable barricades to discourage motorists from driving through the flood areas.

MOTI will be meeting with Halalt First Nation and municipal staff to discuss operation and a protocol for the use of the gates prior to installation in the fall.

**RECOMMENDATION**

This report is for Council's information only.

Report prepared by:



---

David Conway  
Director, Subdivision and Environmental Services

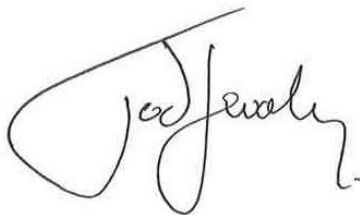
Report reviewed by:



---

Neil Pukesh  
Acting General Manager, Planning, Development  
and Community Services

**Approved to be forwarded to Council:**



---

Ted Swabey  
Chief Administrative Officer