

To: Electoral Area Services Committee

Date: 2025-09-04

From: Graham Daneluz, Director of Planning & Development

Subject: Request from BC Ministry of Environment to Transition Responsibility for Lorenzetta Creek Recovery Works to FVRD

Reviewed by: Sterling Chan, Deputy Director of Engineering
Tareq Islam, Director of Engineering and Utilities
Beth Klein, Controller/Deputy CFO
Jennifer Kinneman, Chief Administrative Officer

RECOMMENDATION

THAT the Fraser Valley Regional District Board Chair send a letter to the Province of BC Minister of Environment & Parks expressing gratitude for undertaking works to recover from the 2021 atmospheric river event which caused debris floods, flooding, avulsion at Lorenzetta Creek and in other locations in the region;

AND FURTHER THAT the FVRD Board decline the transfer to FVRD of Water Sustainability Act permit and Fisheries Act authorization issued to the Province of BC for the Lorenzetta Creek Recovery Works undertaken by the Province of BC;

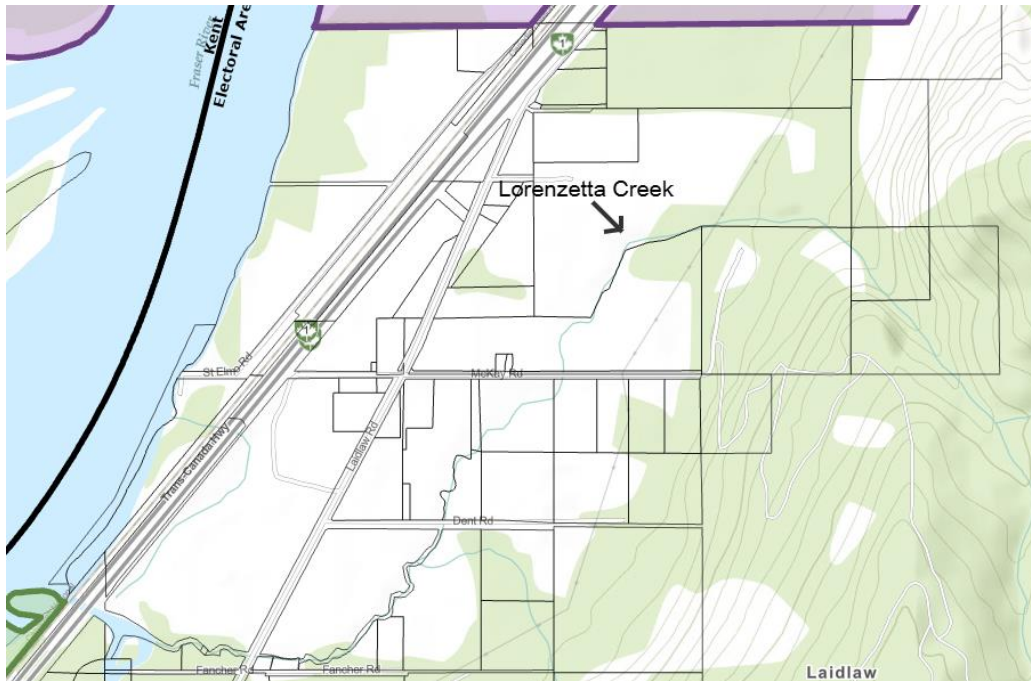
AND FINALLY THAT the FVRD Board direct staff to explore the potential for FVRD or potentially a third party to provide contract-based services limited to monitoring and reporting on the performance of the Lorenzetta Creek Recovery Works without accepting transfer of Fisheries Act and Water Sustainability Act authorizations.

BACKGROUND

Lorenzetta Creek is located in Laidlaw in Electoral Area B as shown in the map below. It is a steep-gradient mountain stream approximately 8.7 km long draining into Wahleach Creek and then to the Fraser River. The steep upland reach is 6.4 km long; it drains an area of Crown land approximately 10 km². The 2.3 km reach on the valley bottom flows across or along about 17 parcels of private land within the Agricultural Land Reserve and the Fraser River floodplain, under McKay, Dent and Laidlaw Road bridges, and then joins Walheach Creek before emptying into the Fraser River.

Lorenzetta Creek is a 'flashy' system that moves large quantities of bedload. Accordingly, it has a history of avulsion, flood and debris events in the lower reach. Channel instability, debris flow/floods and flooding have resulted from sediment accumulation on the fan and instabilities in the upper watershed.

Lorenzetta Creek supports coho, pink, and chum salmon as well as steelhead and cutthroat trout.



While the historical record is incomplete, FVRD files indicate events occurred in Lorenzetta Creek in:

- Oct 1945 - debris flood
- early **1970's** - debris flow
- 1981 - debris flow
- 1984 – debris flood, channel avulsion and flooding
- Nov 2017 - debris flood and channel avulsion
- Feb 2020 –flooding
- Nov 2021 – debris flood, channel avulsion and flooding
- Jan 2022 - flooding
- Nov/Dec 2023 – channel avulsion

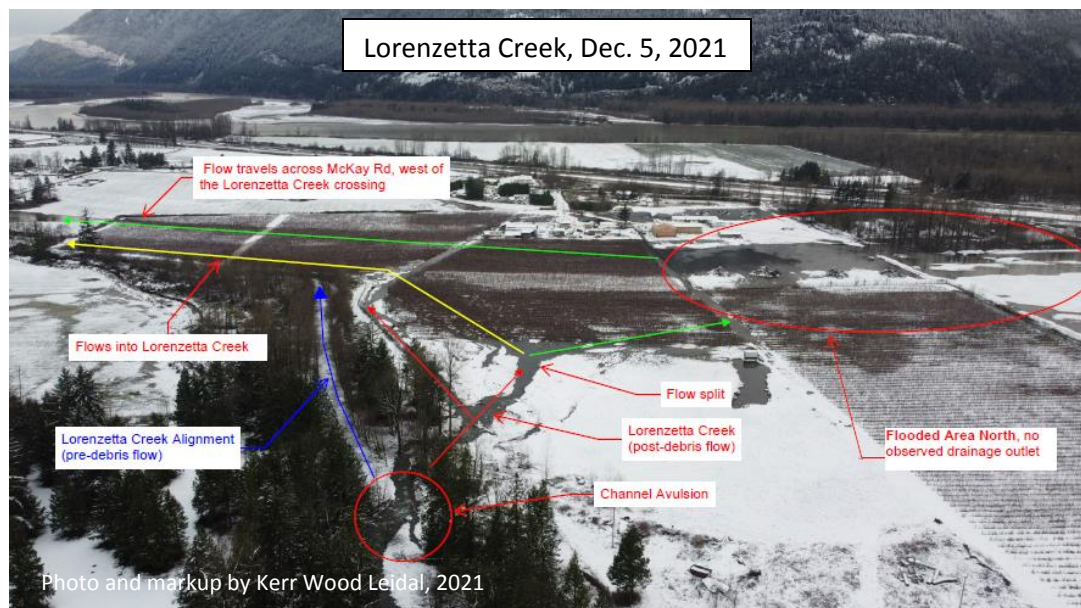
2021 Atmospheric River Event

During the 2021 atmospheric river event (ARE), high flows and sediment transport in Lorenzetta Creek led to an avulsion, debris flood and flooding which caused damage including:

- flooding of several properties and Laidlaw Road;
- loss of the 2022 blueberry crop in the flooded area due to deposition of material, flood damage, and septic system overflow into the field;
- flooding of the Transmountain Pipeline expansion construction site;
- loss of farming equipment; and,
- environmental damage from septic system overflow and displacement of salmon.

As a result, an evacuation order was issued for 12 properties and FVRD undertook emergency works to return the stream to its channel and re-establish 750 m of infilled channel in the lower reach. The emergency works - which cost about \$88,000 - stabilized the incident, reduced the potential for further damage, and supported the return of evacuated residents but did not return the stream to pre-event conditions or risk levels.

The image below provides details of the 2021 event in Lorenzetta Creek.



ARE Recovery Works

Following the 2021 ARE, FVRD requested funding from the Disaster Financial Assistance program to return the Lorenzetta Creek channel to pre-event condition and reduce risks to residents. The funding was not approved because FVRD does not own or operate any infrastructure at this location.

Fortunately, the Province of BC established a task force led by the Ministry of Environment & Parks (ENV) to implement recovery **work in Lorenzetta Creek and in other locations in FVRD's electoral areas** (such as Blue Creek (H) and Hatzic Valley (F)). Working with a budget of \$3.4 million, the ENV-led Task Force undertook to:

restore channel capacity to a level equal to the pre-flood 2021 ARE conditions, with minimal disturbance to existing creek banks, riparian areas, and in-stream fish habitat. This restoration required sediment removal throughout the project reach, as well as construction of a deepened and widened channel section near the upper reach and excavation of large pools to accommodate future sediment deposition without increasing downstream flood risk. The design also incorporated fish habitat features to offset riparian impacts associated with the channel modifications.

[The] recovery and restoration works were not intended to provide long-term or comprehensive flood protection for the surrounding area. Rather, the project scope was limited to creek restoration, bank stabilization, and capacity improvements in areas affected by the 2021 flood event. In areas downstream that remain prone to overtopping, future measures such as bank raising or riprap armouring could be considered to further reduce flood risk.

Key elements of the... works are as follows:

- *Deepened and widened upper channel section to increase capacity of the creek to handle future high flows and sediment accumulation.*
- *Deep habitat ponds for increased channel capacity and fish habitat.*
- *Excavated material placed in low spots along the lower channel in selected locations to repair damaged banks reduced overland flooding of adjacent farmland.*
- *Armoured banks using instream boulder material at locations where erosion and avulsions occurred.*
- *Live willow staking of disturbed banks to improve bank stability and added riparian vegetation.*
- *Large woody debris installation within the channel to improve fish habitat.*
- *Widening and deepening of a historic side channel to increase overall capacity and add additional fish habitat.¹*

Note that the works do not involve debris basins or other infrastructure designed and permitted to be maintained in the future.

A more detailed description and 'as-built' drawings can be found in Technical Memorandum from Kerr Wood Leidal dated June 27/25 attached hereto. The work of the Lorenzetta Creek Task Force represents a major commitment and investment from the province to support recovery. ENV did an excellent job, and the works provide a significant reduction in risk for the community over the post-event stream condition. A sincere expression of gratitude for the work done by the province is appropriate.

DISCUSSION

The works of the Lorenzetta Creek Task Force were completed under two key regulatory approvals:

1. an authorization from Fisheries & Oceans Canada under Sections 34.4(2)(b) and 35(s)(b) of the federal *Fisheries Act* for works likely to result in the harmful alteration, disruption or destruction of fish habitat (HADD); and,

¹ Kerr Wood Leidal. CR-33 Lorenzetta Creek Flood Recovery Project, Operation & Maintenance of Lorenzetta Creek Flood Recovery Works. June 27, 2025.

2. a permit to occupy crown land and make changes in or about a stream under Section 26(1) of the provincial *Water Sustainability Act*.

Both of these approvals require 10 years of monitoring and reporting by a qualified professional, and contingency measures if the habitat off-setting elements of the works are not performing as designed.

ENV has proposed that these approvals be transferred to FVRD and that FVRD assume responsibility for all permit requirements including ongoing monitoring and reporting.

To support this request, ENV has provided a detailed Operations & Maintenance Plan with reporting templates and has offered a one-time funding contribution of \$261,400, which is the estimated costs for monitoring and reporting. This funding is intended to cover regulatory reporting costs through to project completion. It would not cover operational overhead, inflation, or costs to repair the works. Any costs beyond monitoring and reporting would be the responsibility of FVRD.

This proposal is made in a letter dated July 4, 2025, from Mr. Ralph Mohrmann, Director of Environmental Disaster Operations Team, Environmental Emergency Branch of the Ministry of Environment & Parks. The letter is attached hereto, as is the Operation & Maintenance plan which include copies of the approvals referenced above.

Jurisdiction & Responsibility

The Mohrmann letter states that “floodplain and riparian management fall under local jurisdiction” and that assuming “responsibility for ongoing regulatory reporting is consistent with [FVRD’s] jurisdictional role.”

Jurisdiction and responsibility for streams is complicated. It is best described as shared among various agencies at all levels of government. FVRD has no legal obligation or statutory responsibility to accept any role with respect to the Lorenzetta Creek works.²

Where FVRD elects to take on operation and maintenance of flood reduction works, the *Local Government Act* (s. 338) generally requires that it must first adopt a service establishing bylaw. The process for establishing a service is described below.

² Broadly speaking, provincial legislation enables, but does not require, local governments to regulate private land development activities that may negatively impact streams, or which may be negatively impacted by streams (development permit areas and floodplain management bylaws, for example). There are no proactive requirements to take action with respect to stream maintenance. The *Local Government Act* (LGA) enables, but does not compel, regional districts to establish services areas for the provision of flood mitigation infrastructure and services. If a regional district elects to establish a service area for this purpose, the LGA prescribes the process and requirements for it. The LGA also enables the expropriation of stream channels for the purpose of works to maintain proper flow (LGA s. 313). One instance where provincial legislation compels local government action is the *Riparian Areas Protection Act* which requires local governments to withhold approval for development within riparian zones on private land until notified by the province that a Riparian Assessment has been accepted.

FVRD staff participating on the Lorenzetta Creek Task Force advised early on that the province should not expect FVRD to take responsibility for the completed works and suggested exploration of alternative approaches to both recovery and to long-term maintenance of any recovery works.

Regional District Service Area Model

“Generally, a regional district must adopt a service establishing bylaw in order to provide a new service to the community. This bylaw outlines what the service is, how it will be delivered, who will benefit, the maximum cost and how the costs will be recovered. Before a service establishment bylaw can be enacted it must also be approved by the electors or taxpayers that will be affected by, or benefit from the service.” Typically, those benefiting from the service pay for it.³

The process to establish a service is:

1. Service establishing bylaw drafted and board gives it three readings
2. Provincial review and statutory approval by the Inspector of Municipalities (6-8 weeks)
3. Approval of the electors (if applicable, 8-11 weeks)
4. Adoption of the bylaw by the board

If the Board wishes to accept the transfer of the approvals for the work and take on monitoring/reporting, it is recommended that a service area be established. The funds offered by ENV are anticipated to cover professional services for monitoring and reporting. However, there would be additional costs for operational overhead, inflation and quite likely costs for repairs or performance improvements. A service area would be appropriate for establishing a tax requisition from benefiting parcels to cover these costs. Without one, such costs would be unfunded liabilities.

Alternative to a Service Area

It may be an option to provide only monitoring and reporting services to ENV, under a contract if **FVRD does not accept ‘ownership’ of the approvals and the unfunded liabilities associated with them.**

Risk Considerations

There are a number of risk considerations the Board should be aware of when considering the request by ENV to assume responsibility for the Lorenzetta Creek works, including:

- Lorenzetta Creek and its watershed produce flashy flows (i.e. rapid increases in stream flows after the onset of rainfall) and transport a large volume of sediment from the upper watershed to the valley bottom. High flows combined with sediment deposit in the lower reaches causes erosion, avulsion, and debris floods/flows. As a result, it is difficult to predict how the work will perform over time and the costs associated with maintaining them.

³ Province of BC. Regional District Service Establishment. <https://www2.gov.bc.ca/gov/content/governments/local-governments/governance-powers/powers-services/regional-district-powers-services/service-establishment>. Accessed Aug 18/25.

- There is a high probability during the 10-year monitoring/reporting period that an avulsion, erosion or debris flood/flow event will occur in the stream which causes major damage to the works. In fact, this happened during the construction of the Lorenzetta Creek Recovery Works. In November and December of 2023, when construction of the works had not yet been completed, intense rainfall led to high flows, sediment deposition and channel avulsion. Emergency repairs were required to restore the creek. FVRD files indicate that in the period from 1970 to 2025, at least eight such events of varying magnitudes occurred. This translates to an average of about 1.3 events in each 10-year period. With climate change, the frequency of these events may increase. Accordingly, it can be anticipated that a similar event will occur during the 10-year monitoring period.
- The works include a variety of habitat elements such as deep pools, large woody debris (LWD) installations, and riparian planting, that were required by regulatory agencies to offset – or compensate for - negative impacts to stream habitat associated with the project. The 10-year monitoring/reporting period is intended to monitor the performance of these offsetting works and ensure that their effectiveness is maintained and the habitat benefits of the offsetting works are realised. There is a high likelihood that major events in the stream, such as an avulsion, debris flow or erosion, would negatively impact these habitat works or cause them to cease to function. For example, sediment deposit will infill habitat pools and potentially bury LWD. Erosion may destroy riparian planting or dislodge LWD. Under the terms of the permits, the regulatory agencies may require the works to be repaired or re-established if they are damaged.
- If FVRD takes ownership of the approvals without establishing service area with corresponding taxation, the repair or replacement of damage to habitat offset features represents a potential unfunded liability and a financial risk because there would be no source of funding for costs and staff resources to cover them. If service area and taxation are established, it will be difficult to estimate long-term costs due to the flashy and unstable nature of the stream system.
- The works are located on private property. No legal rights-of-way have been established to guarantee access to the works to fulfill monitoring and other permit requirements. Property owners are often motivated to provide access for construction works but may become less inclined to provide unencumbered access over time, especially if the works are not being managed to their satisfaction.
- Taking on the approvals and providing monitoring/reporting may become a '**backdoor**' to even longer-term responsibility for the stream and the entirety of the Lorenzetta Creek recovery works beyond the 10-year monitoring period. For example, if a debris flow occurs in Year 8 and damages the offsetting works, the repair works will require additional environmental authorizations which will come with new 10-year monitoring/reporting requirement. Additionally, public perception, reliance or expectation may be a further source of pressure to expand FVRD's **responsibility for the works** and Lorenzetta Creek generally.

- For properties in the immediate area, the Lorenzetta Creek Recovery Works result in lower risk of flooding by an undefined amount when compared to the post-2021 ARE condition. It is not possible to quantify or meaningfully define the amount the risk has been reduced. Furthermore, the risk reduction benefits will diminish as natural ongoing stream processes erode bank protection and fill in the channel.

'Flood Gap' Policy

The FVRD Board commissioned a Flood Infrastructure Policy Update and Gap Analysis in November 2023. The intent of the Flood Gap Analysis is to develop a flood infrastructure servicing policy framework to aid in managing FVRD local service areas and to prioritize upgrades, projects, and initiatives related to flood infrastructure in electoral areas.

The [*Flood Infrastructure Management Service Provision, Policies to Guide Service Delivery in the Electoral Areas of the FVRD*](#) policy is not yet adopted but in June it was reviewed by the Electoral Area Services Committee and Board.

Once the policy is adopted, it will provide guidelines for the acquisition of additional flood infrastructure management responsibilities and require comprehensive assessment of their financial feasibility, effectiveness, and risk.

The Lorenzetta Creek Recovery Works are unlikely to meet the requirements of the policy because rights-of-way are not in place to guarantee access to the works, there is high uncertainty about costs, and a small benefiting area to support cost recovery through property taxes.

COST

To support the transition of responsibility of the Lorenzetta Creek Recovery Works to FVRD, ENV is offering a one-time funding contribution of \$261,400. This amount is based on **a consultant's estimate** of costs for professional monitoring and reporting only for the 10-year period. It does not cover operational overhead, inflation or any costs to repair damage to the works. Any such additional costs or changes in scope would be the responsibility of the FVRD. Without the establishment of a service area to address these additional costs, it is likely that unfunded liabilities would arise.

CONCLUSION

Staff recommend that the Board decline the transfer of the Fisheries Act authorization and the Water Sustainability Act permit for the Lorenzetta Creek Recovery Works to FVRD.

If the Board is willing to consider taking on monitoring and reporting for the works, it should explore doing so under a full cost recovery contract with the Ministry of Environment & Parks rather than taking on all the responsibilities and potential liabilities associated with holding the approvals.

Furthermore, it may be possible to identify a third party such as a watershed-based NGO who is interested in providing monitoring and reporting services to ENV.

If it appears feasible to provide services under a contract, a proposed contract will have to come back to the Board for consideration before being executed.

Options:

1. Refuse Transfer of the Approvals; Explore Contract Services for Monitoring/Reporting Only

This is the staff recommendation as described above.

2. Explore Service Area Establishment

If the Board is potentially amenable to accepting the transfer of the Fisheries Act and Water Sustainability Act approvals to FVRD and taking on all the obligations of these approvals including monitoring and reporting, it should direct staff prepare a feasibility report for consideration. This report should follow the guidelines set out in the draft *Flood Infrastructure Management Service Provision, Policies to Guide Service Delivery in the Electoral Areas of the FVRD*. This could be considered in conjunction with the 2026 work plan and budgets for completion next year.

If the Board wishes to explore service area establishment, the following motion would be appropriate:

THAT the FVRD Board direct staff to include assessment of the feasibility of establishing a service area for operations and maintenance of the Lorenzetta Creek Recovery Works for consideration in conjunction with the 2026 work plan and budgets