

District of Barriere
REPORT TO COUNCIL
Memorandum

Date: June 29, 2026	File: 530.20/Rpts
To: Council	From: Chief Administrative Officer
Re: Floodplain Mapping and Flood Mitigation Plan Projects – Final Update	

Purpose

To provide Council a final update for the Floodplain Mapping and Flood Mitigation Plan projects.

Background

Council initiated the Floodplain Mapping project in 2022 when Staff were directed to apply to the Community Emergency Preparedness Fund (CEPF). The Flood Mitigation project on the other hand was applied for in early 2024 through the same funding stream.

Since the funding approval by UBCM (received in January 2022 for the Mapping portion and July 2024 for the Mitigation portion), an extensive study on the Barriere river system and potential flood inundation has been completed by True Consulting.

Over the years, the findings have been shared with Council, the Official Community Plan (OCP) Refresh included updated floodplain information, and additional public feedback was also sought out through the Open House in January 2026. Further, direct engagement with Simpcw First Nation occurred in April 2026 in regard to the findings of the Flood Mitigation Plan and potential next step. Simpcw has provided a letter of support toward the next step in enhancing the District’s flood mitigation works.

The attached memorandum from True Consulting is summarized on a high level in bullet form below:

- The mapping update replaced the 1982 floodplain mapping, incorporated a 5% climate change adjustment to design flows, updated elevations to Canadian Geodetic Vertical Datum of 2013 (CGVD2013), and established 200-year floodplain mapping and Flood Construction Levels for the Barriere River and North Thompson River.
- The updated floodplain mapping has been incorporated into the 2026 Official Community Plan update, including flood hazard polygons and associated Flood Construction Level isolines.
- The Flood Mitigation Plan assessed flood risks, reviewed existing flood protection infrastructure, identified vulnerable critical infrastructure, and developed structural and non-structural strategies to improve resilience and recovery following a major flood event.

- A Flood Protection Works Inspection Report was completed as part of the mitigation work to document the condition of existing flood protection infrastructure and associated risks.
- The highest-priority recommended projects are Floodplain Land Use Regulation and a Flood Protection Assets Management Plan, with additional medium- and low-priority projects identified for erosion protection, riverbank restoration, landslide risk assessment, flood response planning, and public education. Some of these projects are not within the District's jurisdiction and require third parties to undertake the work.
- Community engagement included a January 2026 open house co-hosted with Simpcw First Nation and a dedicated April 2026 session with Simpcw representatives to share findings, discuss priorities, and explore partnership opportunities.
- Next steps include prioritizing projects within the District's 5-year capital plan, pursuing funding opportunities, advancing discussions with regulators and partners, making the reports publicly available, and monitoring implementation over time.

This now substantially completes this Floodplain Mapping and Flood Mitigation Plan project.

Next Steps

- TRUE Consulting has finalized the grant reporting on our behalf.
- Future Council should, at a strategic planning session, discuss the next potential projects highlighted by the Flood Mitigation Plan (FMP)

Attachments

1. Memorandum from True Consulting – June 16, 2026

Prepared by:
D. Drexler, Chief Administrative Officer



Memorandum

To: District of Barriere
Attn: Daniel Drexler, CAO
Date: June 16, 2026

From: TRUE Consulting
File No: 346-601-001

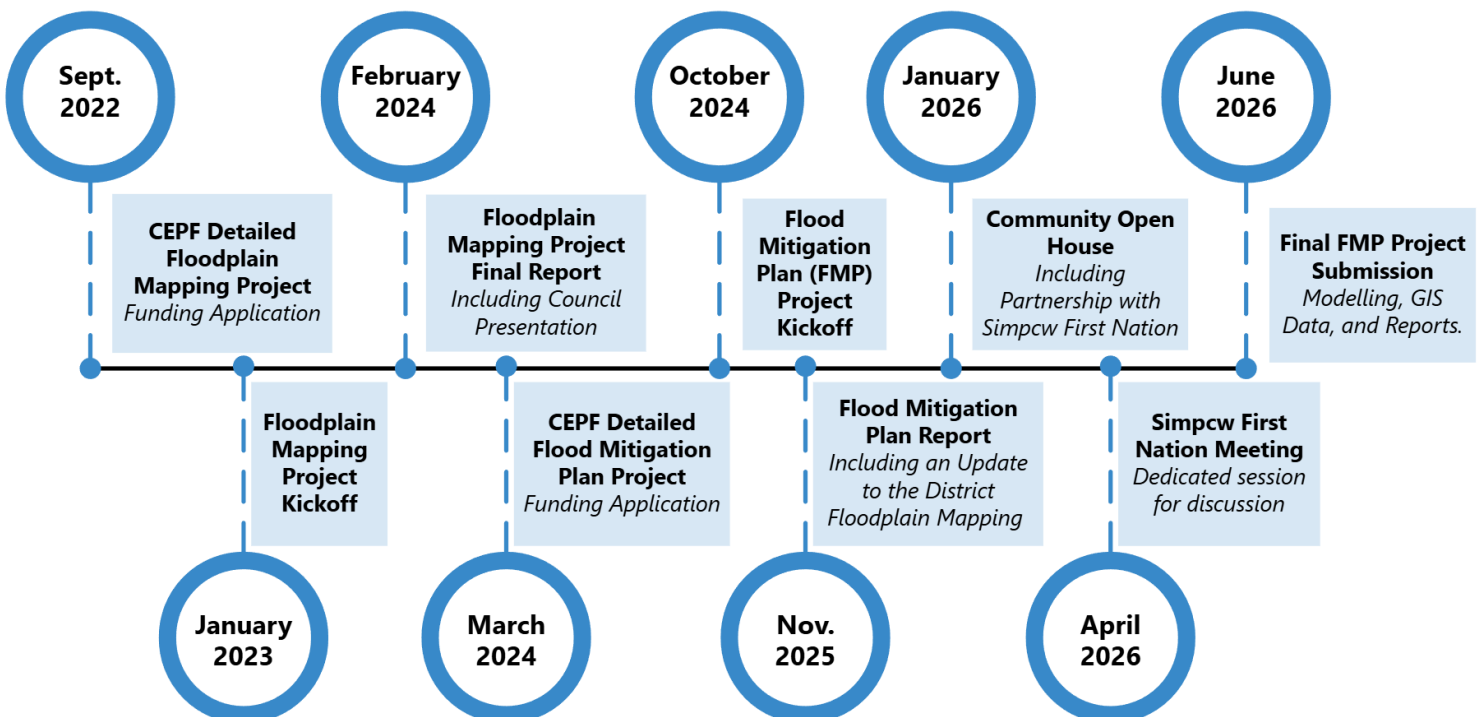
RE: *Floodplain Mapping & Mitigation Plan Summary (2026)*

1. Background

The District of Barriere has adopted a proactive approach to floodplain management through the development of a community-wide Floodplain Mapping project (February 2024), followed by a Flood Mitigation Plan (November 2025). Both projects have been supported by the Union of British Columbia Municipalities (UBCM) through its Community Emergency Preparedness Fund (CEPF), which aims to enhance the resilience of local governments, First Nations, and communities in responding to emergencies and reducing risks from future natural hazards and climate-related impacts.

The timeline for the overall District flood management strategy is summarized below:

District's Flood Management Strategy Timeline



Specific project objectives and deliverables are detailed in the sections below:

2. Floodplain Mapping Update

The primary objectives of the floodplain mapping project included:

- Updating the 1982 floodplain mapping conducted by the British Columbia Water Management Branch (BCWMB), which delineated the 200yr floodplain for the North Thompson River and Barriere River;
- Incorporating projected climate change impacts (+5% adjustment to design flows);
- Updating elevations to the Canadian Geodetic Vertical Datum of 2013 (CGVD2013);
- Extending the Barriere River 2023 study to include the North Thompson River 200yr floodplain within the District's municipal boundary; and
- Presenting Flood Construction Levels (FCLs) for both the Barriere River and North Thompson River floodplains.

The project produced a set of maps that delineate the 200-year floodplain and associated FCLs for both the North Thompson River and Barriere River. Figure 1 illustrates one of the three flood inundation maps developed as part of the project.

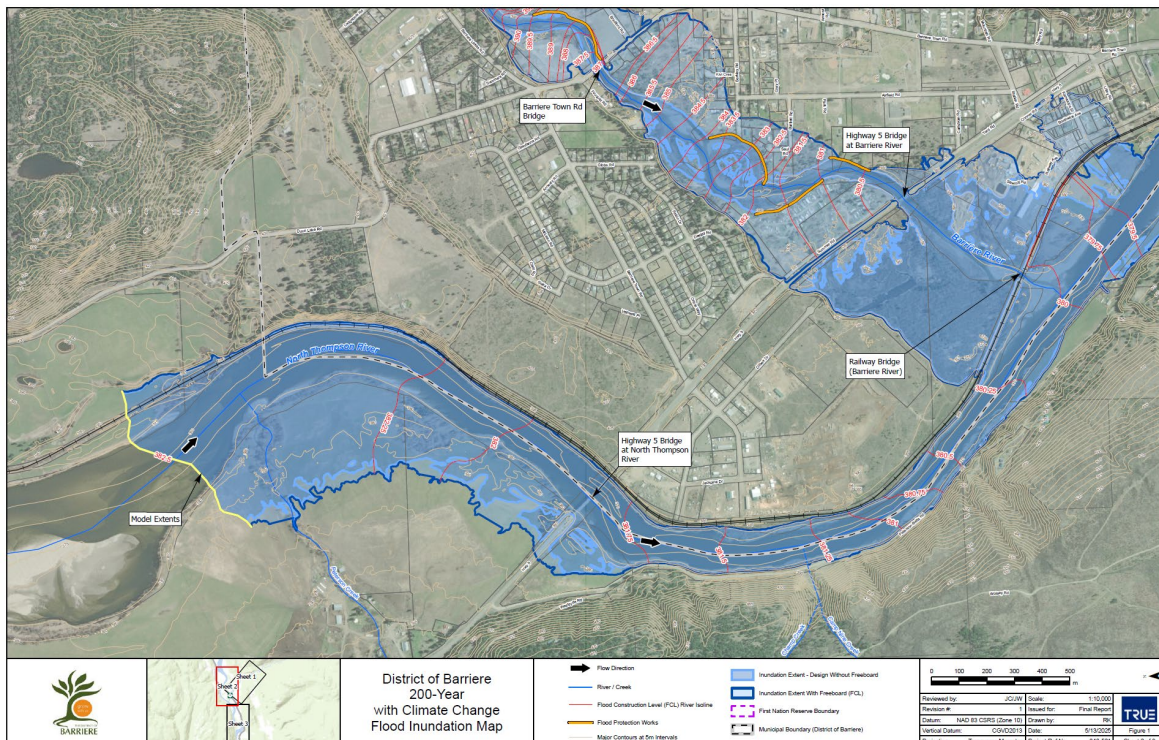
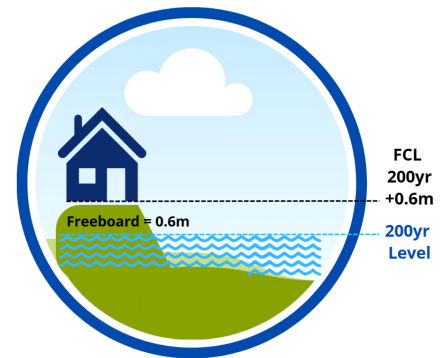


FIGURE 1 FLOODPLAIN MAPPING UPDATE

Flood Construction Levels (FCLs) represent the minimum elevation at which the habitable area of a building must be constructed to reduce flood risk. For the District of Barriere, FCLs were estimated based on the projected 200yr flood level plus a 0.6 m freeboard.

The updated floodplain mapping was incorporated into the 2026 Official Community Plan (OCP) update, specifically within Map No. 6 (Environmental), which includes flood hazard polygons and associated FCL isolines.



3. Flood Mitigation Plan

The primary objectives of the flood mitigation plan included:

- Flood risk assessment, identifying existing flood management infrastructure, and assessing its conditions and projected performance during a flood event;
- Characterizing the flooding mechanisms per area of interest;
- Identifying critical infrastructure within the floodplain and their associated vulnerability; and
- Presenting a set of structural and non-structural strategies to reduce the District's vulnerability in a major flood event and enhance the District's resilience and support recovery to normal operations following a flood event.

As part of the Flood Risk Assessment, a stand-alone *Flood Protection Works Inspection Report* was developed and included in the Mitigation Plan appendices. The inspection report presented a detailed analysis of the District's flood protection infrastructure including existing conditions and associated flood hazard risk.

Barriere stands out for its proactive approach to floodplain management and adaptability. Most of the identified critical infrastructure within the floodplain has adopted adaptive measures to reduce potential flood impacts; however, some assets remain vulnerable. Continued efforts are required to advance toward a more flood-resilient community.

A range of risk reduction projects were identified, including both structural (infrastructure) and non-structural (policy and program) measures. Each project was assessed at a conceptual level and is accompanied by cost estimates to support planning and budget allocation.

To prioritize these projects, a Multi-Criteria Analysis (MCA) was conducted, emphasizing social, environmental, and economic impacts alongside risk reduction. The P1 – Floodplain Land Use Regulation emerged as the highest-priority project due to its proactive approach in informing the community about floodplain areas and regulating development in flood-prone zones to reduce potential flood impacts. P2 – Flood Protection Assets Management Plan was also ranked as a high priority because of its practical implementation and the importance of monitoring and maintaining the District's existing flood protection infrastructure.

Additional initiatives include structural upgrades to key transportation links, to be executed by third parties, as well as the Barriere River and Louis Creek Riverbank Restoration Program and the Landslide Risk Assessment, which aim to evaluate and reduce risks associated with riverbank erosion and potential landslides that could obstruct main watercourse channels. These measures aim to protect critical infrastructure and mitigate potential impacts from a 200yr flood scenario, which, while infrequent, could have severe consequences.

The following table summarizes the recommended flood mitigation projects.

TABLE 1 PROJECTS SUMMARY

PROJECT NO.	PROJECT TITLE	PRIORITY	TYPE	COST ESTIMATE
P1	Floodplain Land Use Regulation	High	Non-Structural	\$ 125,000
P2	Flood Protection Assets Management Plan	High	Non-Structural	Locally implemented
P3	Highway 5 Bridge Abutment Erosion Protection	Medium	Structural	TBD by MoTT
P4	Barriere River and Louis Creek Riverbank Restoration Program	Medium	Structural	\$ 145,000
P5	CN Railway Flood Resilience Initiative	Medium	Structural	TBD by CN Railway
P6	Landslide Risk Assessment	Medium	Non-Structural	\$ 92,000
P7	Flood Response Plan	Low	Non-Structural	\$ 112,000
P8	Flood Education Program	Low	Non-Structural	\$ 88,000
Total				\$ 562,000

4. Community Open House 2026

On January 27, 2026, the District of Barriere and Simpcw First Nation co-hosted a Community Open House to share current projects, discuss long-term planning, and highlight how both communities are working together. The event facilitated public discussion on key topics, including:

- Simpcw–District partnerships, cultural connections, and community safety;
- Flood Mitigation Plan, Leonie Lake Dam Decommissioning, and asset planning; and
- Water, wastewater, roads, and local infrastructure services

As a key stage of the community engagement phase for the Flood Mitigation Plan, the Open House allowed attendees to review the latest District Floodplain Mapping Update and evaluate proposed initiatives. Notably, both the mapping update and the flood mitigation plans are supported and funded through the Province’s Community Emergency Preparedness Fund (CEPF).

Using interactive discussions and poster boards, the project team illustrated:

- Inundation Extents & Flood Construction Levels (FCLs): Visual mapping of potential flood risks and hydraulic modelling visual tools.
- Proposed Mitigation Projects: Structural and non-structural solutions, including erosion protection for critical transportation corridors, land-use regulation, riverbank restoration, and community-wide strategies.

The event fostered meaningful dialogue and reinforced a shared commitment to collaboration. The District and Simpcw First Nation concluded the open house with a pledge to maintain ongoing community engagement throughout the development and implementation of these flood mitigation initiatives.



FIGURE 2 COMMUNITY OPEN HOUSE EVENT

5. First Nation Dedicated Session

On April 20, 2026, a dedicated session was held with Simpcw First Nation representatives. Related to the District's flood management strategy, the event allowed:

- Sharing floodplain mapping updates, including reports and publicly available maps; and
- Discussing the District's proactive approach for flood risk management, prioritizing planned development out of hazardous areas and enhancing resilience for assets within the watercourse floodplains; and
- Sharing potential flood mitigation projects and next steps in the District's flood management strategy.

The event allowed the discussion of future management options, potential partnership opportunities, and a joint commitment to support initiatives that reduce community vulnerability against natural disaster with a nature-centered perspective.

6. Next Steps

Implementation of the Floodplain Mapping Update and Flood Mitigation Plan will require a phased and coordinated approach, recognizing that flood management is an ongoing process. Initial efforts should focus on advancing priority projects while aligning with funding opportunities, regulatory requirements, and community engagement.

Key next steps include:

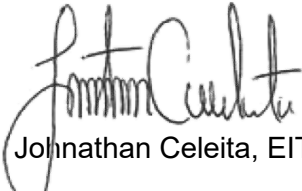
- Prioritize mitigation projects and incorporate them into the District's 5-year capital plan;
- Advance priority projects and initiate discussions with regulatory agencies and project partners;
- Pursue available funding opportunities (e.g., UBCM, DRIF) to support implementation;
- Make the Floodplain Mapping Update and Flood Mitigation Plan publicly available through the District website, supported by additional communication channels (e.g., public notices, open houses, and social media); and
- Monitor implementation progress and update the plan periodically to reflect new information and changing conditions.

Please feel free to contact the undersigned if you have any questions or require further clarification.

Regards,

Prepared by:

Reviewed by:



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