

Schedule D Salmon River Floodplain Maps

Salmon River-Lakes Official Community Plan Bylaw No. 3422, 2026



DEVELOPMENT AND USE OF FLOODPLAIN MAPS IN BC

The Flood Hazard Identification and Mapping Program (FHIMP) is a cost-shared program between Natural Resources Canada and the Provinces and Territories. The initiative in B.C. is administered by the Fraser Basin Council. The mapping projects included engagement with First Nations governments and local governments to inform the projects with community interests, concerns and experiences.

Flood plain maps are an important tool to help First Nations and local governments make informed decisions about land use, development, and flood-related policies. Flood plain maps also support First Nations and local government emergency preparedness and response roles. In the case of local governments these maps help them fulfill their responsibilities for land use planning and flood plain management, under the *Local Government Act*. Good information about potential flood depth, extent, and velocity can inform different kinds of planning and decision making such as:

- Informing land use planning policies and development decisions;
- Assessing potential impacts to people and other community values and assets;
- Preparing or updating emergency response plans; and
- Informing other flood mitigation and climate adaptation measures.

It is generally recommended that First Nations and local governments use the best available information to inform their flood-related policies, plans, and bylaws. It is the purview of the local government to determine when bylaw updates are appropriate, as well as the information used to do so. Flood construction levels and setbacks are included on some of the maps produced in this program. These are suggested flood construction levels and setbacks, based on the expertise and judgement of qualified professionals and available guidance. The maps are intended as a tool that may be used by local governments in establishing local government flood construction levels and setbacks.

When using the flood plain maps for decisions, planning, or flood responses, please be aware of the accuracy limitations in the flood levels, flood extents, and flow velocities provided in those maps. For example, limitations could include limited topographic and river bathymetry survey data, limited historical flood data, uncertainties in river geomorphology, and uncertainties in the science of climate change impacts.

These flood plain maps were produced by the respective consulting companies following practices described in the applicable federal¹ and provincial² guidelines and in accordance with generally accepted engineering and geoscience practices.

¹ Federal Flood Mapping Guideline Series.

² BC Floodplain Mapping and Geomatics guidelines; FLNRORD's Specification for Airborne LiDAR (2020); Coastal Floodplain Mapping Guidelines and Specifications (2011); EGCBC Professional Practice Guidelines – Floodplain Mapping in BC (2017) and Legislated Flood Assessments in a Changing Climate in BC (2018).

GENERAL NOTES

1. Please refer to the Limitations disclaimer below.
2. These maps were produced by Associated Engineering (B.C.) Ltd. for the Fraser Basin Council in conjunction with the Fraser, Nechako, Salmon, and Chilako Rivers Flood Mapping Study Report (2024). This report provides context and information that may be valuable in understanding these maps.
3. The hydraulic analysis assumes a stationary channel. Erosion, deposition, lateral migration, degradation, and aggradation are expected to occur over time and may alter flood levels and extents. The Salmon River is particularly susceptible to geomorphological change.
4. Obstructions due to debris or ice jams may cause flood levels to exceed those indicated.
5. Flood maps represent riverine flooding and do not consider other forms of flooding which may result from storm water, ground water and other processes. Minor tributaries that do not peak at the same time as the major rivers do not have a modelled inflow; however, these reaches may be backwatered.
6. The accuracy of the floodplain extents is limited by the accuracy of the design flood discharge, available hydrometric records and climate projection data, the hydraulic model, and the digital surface representation of the local topography (i.e. bare-earth) and bathymetry.
7. Floodplain maps should be regarded as an administrative tool that indicates flood hazard including flood levels and extents for a designated flood. A Qualified Professional must be consulted for site-specific engineering analysis.
8. Wind generated wave effects on the river surfaces have not been included in analysis or mapping.
9. In addition to the above, the following statements apply to all flood modelling:
 - a. The flood extent limits are not established on the ground by legal survey.
 - b. Building control elevations should be based on field survey and established benchmarks (converted as necessary to match the vertical datum and origin referenced on these maps).

Flood Extent Maps:

1. Flood Extent Maps assume that river flows remain confined by existing flood structures including official and unofficial dikes and berms. The integrity of these structures has not been verified.
2. Flood Extent Maps do not include a freeboard provision.
3. Flood Extent Maps are for present day conditions and do not include the future impacts of climate change.

DATA SOURCES

1. 2023 bathymetric survey collected by CRA-Canada Surveys Inc.
2. 2019 LiDAR acquired from LiDAR BC.
3. Aerial imagery was provided by GeoBC and supplemented by Bing Aerial.
4. Roadway, railway and hydrotechnical feature GIS data was acquired from the iMap BC Portal.
5. Landcover layers were acquired from Natural Resources Canada and Esri.
6. Supplemental data was provided by the City of Prince George, the Regional District of Bulkley-Nechako, the District of Vanderhoof, the Regional District of Fraser-Fort George, Canadian National Railway and the Government of British Columbia.

LIMITATIONS

This document has been prepared by Associated Engineering (B.C.) Ltd. as part of the Fraser, Nechako, Salmon, and Chilako Rivers Flood Mapping Study for the Fraser Basin Council, the Province of British Columbia, and the Government of Canada as part of the Flood Hazard Identification and Mapping Program for the benefit of the following community partners: the City of Prince George, the District of Vanderhoof, the Lheidli T'enneh First Nation, the Regional District of Bulkley-Nechako and the Regional District of Fraser-Fort George. The information and data contained herein represent Associated Engineering (B.C.) Ltd.'s best professional judgement in light of the knowledge and information available to Associated Engineering (B.C.) Ltd. at the time of preparation and was prepared in accordance with generally accepted engineering and geoscience practices.

The services provided by Associated Engineering (B.C.) Ltd. in the preparation of this study were conducted in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practicing under similar conditions. No other warranty expressed or implied is made.

This document and associated project deliverables may be used and relied upon by the Fraser Basin Council, its officers, and employees as well as all orders of government and other public and private sector organizations to understand clearwater flood hazards for specific flood scenarios and water bodies. The floodplain maps produced as part of this project are intended to inform decision-making in support of land use planning, flood mitigation, emergency preparedness and response and adaptation to a changing climate. Associated Engineering (B.C.) Ltd. and the Fraser Basin Council are not liable in any way whatsoever, to any party, for any injury, loss, or damage suffered by such parties arising from the misuse, misinterpretation, or reliance upon, this report or any of its contents.

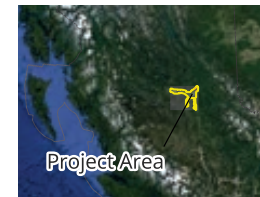
- LEGEND**
- MUNICIPAL BOUNDARY
 - LHEIDLI TENNEH RESERVE BOUNDARIES
 - COMMUNITIES
 - MAPPING LIMITS
 - MAP VIEWPORTS

*NOT ALL LEGEND ITEMS ARE APPLICABLE ON ALL MAP SHEETS



Coordinate System: NAD 1983 CRS UTM ZONE 10N
Units: METERS; Vertical Datum: CGVD 2013

MAP LOCATION



This project is funded by the Government of Canada and the Government of B.C.

SALMON RIVER NEAR PRINCE GEORGE FLOOD EXTENT MAPS INDEX MAP SHEET 0 OF 3

AE PROJECT No.	2022-2648-00
SCALE	AS SHOWN
ENGINEER	A. MACISAAC
DIB	C. SARGES
REVIEWER	A. GEORGE
REV	1
DATE	20240719
DESCRIPTION	ISSUED AS NEAR FINAL



Schedule D Salmon River Floodplain Maps

Salmon River-Lakes Official Community Plan Bylaw No. 3422, 2026



LEGEND

- ROADS
- RAILWAY
- 5 m CONTOURS
- CADASTRAL
- MUNICIPAL BOUNDARY
- MODEL COMPONENTS
- MAPPING LIMITS
- CHANGE IN PRIMARY FLOOD SCENARIO
- 20-YEAR FLOOD EXTENT
- 100-YEAR FLOOD EXTENT
- 500-YEAR FLOOD EXTENT

*NOT ALL LEGEND ITEMS ARE APPLICABLE ON ALL MAP SHEETS

FLOWS¹ (m³/s)

	SALMON RIVER	FRASER RIVER
20-year	A 363 B 62	1539 4597
100-year	A 499 B 62	1539 5837
500-year	A 553 B 62	1539 6335

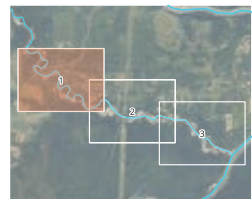
NOTES

- Flood extents are determined by either Scenario A (Salmon River peak flow, coincident Fraser River flow) or Scenario B (Fraser River peak flow, coincident Salmon River flow). All flows are daily averages.
- This study utilized 2023 bathymetric survey collected by C&A-Canada Surveys Inc., 2019 LIDAR from LIDAR BC, and historic and present-day imagery. Aerial imagery was provided by GeoBC and Bing.
- Results are based on statistical hydrologic analyses and 2D hydraulic modelling.
- Hydrological and hydraulic model calibration was completed using the best available data. However, uncertainty remains due to data limitations and future climate.
- Flood plain mapping is based on current hydraulic conditions and considers current and future climate. Flood hazards may shift over time as a result of erosion, deposition, lateral migration, degradation, and aggradation.
- In areas with extreme meandering, water can leave the primary channel during large flood events and flow directly down the floodway. Under these conditions, the river is at risk of partial or complete river avulsion at the sharper river bends.
- For further information, see the Index Map and Fraser, Nechako, Salmon, and Chilako Rivers Flood Mapping Study Report (2024).



Coordinate System: NAD 1983 CSRS UTM ZONE 10N
Units: METERS, Vertical Datum: CGVD 2013

MAP LOCATION



This project is funded by the Government of Canada and the Government of B.C.

SALMON RIVER NEAR PRINCE GEORGE PRESENT DAY FLOOD EXTENT MAPPING SHEET 1 OF 3

AE PROJECT No.	20220406-00	
SCALE	1:500	
ENGINEER	A. MACISAAC	
DIST.	C. SIBBERS	
REVIEWER	A. GEORGE	
DATE	11/07/2024	
DESCRIPTION	ISSUED AS NEAR FINAL	

Schedule D Salmon River Floodplain Maps

Salmon River-Lakes Official Community Plan Bylaw No. 3422, 2026

IF NOT BEING ADJUSTED SCALES

SEE MAP SHEET 1

SEE MAP SHEET 3



LEGEND

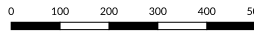
- ROADS
 - RAILWAY
 - 5m CONTOURS
 - CADASTRAL
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 - MAPPING LIMITS
 - CHANGE IN PRIMARY FLOOD SCENARIO
 - 20-YEAR FLOOD EXTENT
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 - 500-YEAR FLOOD EXTENT
- *NOT ALL LEGEND ITEMS ARE APPLICABLE ON ALL MAP SHEETS

FLOWS¹ (m³/s)

		SALMON RIVER	FRASER RIVER
20-year	A	363	1539
	B	62	4597
200-year	A	499	1539
	B	62	5837
500-year	A	553	1539
	B	62	6335

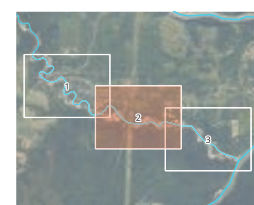
NOTES

- Flood extents are determined by either Scenario A (Salmon River peak flow, coincident Fraser River flood) or Scenario B (Fraser River peak flow, coincident Salmon River flood). All flows are daily averages.
- This study utilized 2023 bathymetric survey collected by C&A-Canada Surveys Inc., 2019 LIDAR from LIDAR BC, and historic and present-day imagery. Aerial imagery was provided by GeoBC and Bing.
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Coordinate System: NAD 1983 CSRS UTM ZONE 10N
Units: METERS, Vertical Datum: CGVD 2013

MAP LOCATION



SALMON RIVER NEAR PRINCE GEORGE PRESENT DAY FLOOD EXTENT MAPPING SHEET 2 OF 3

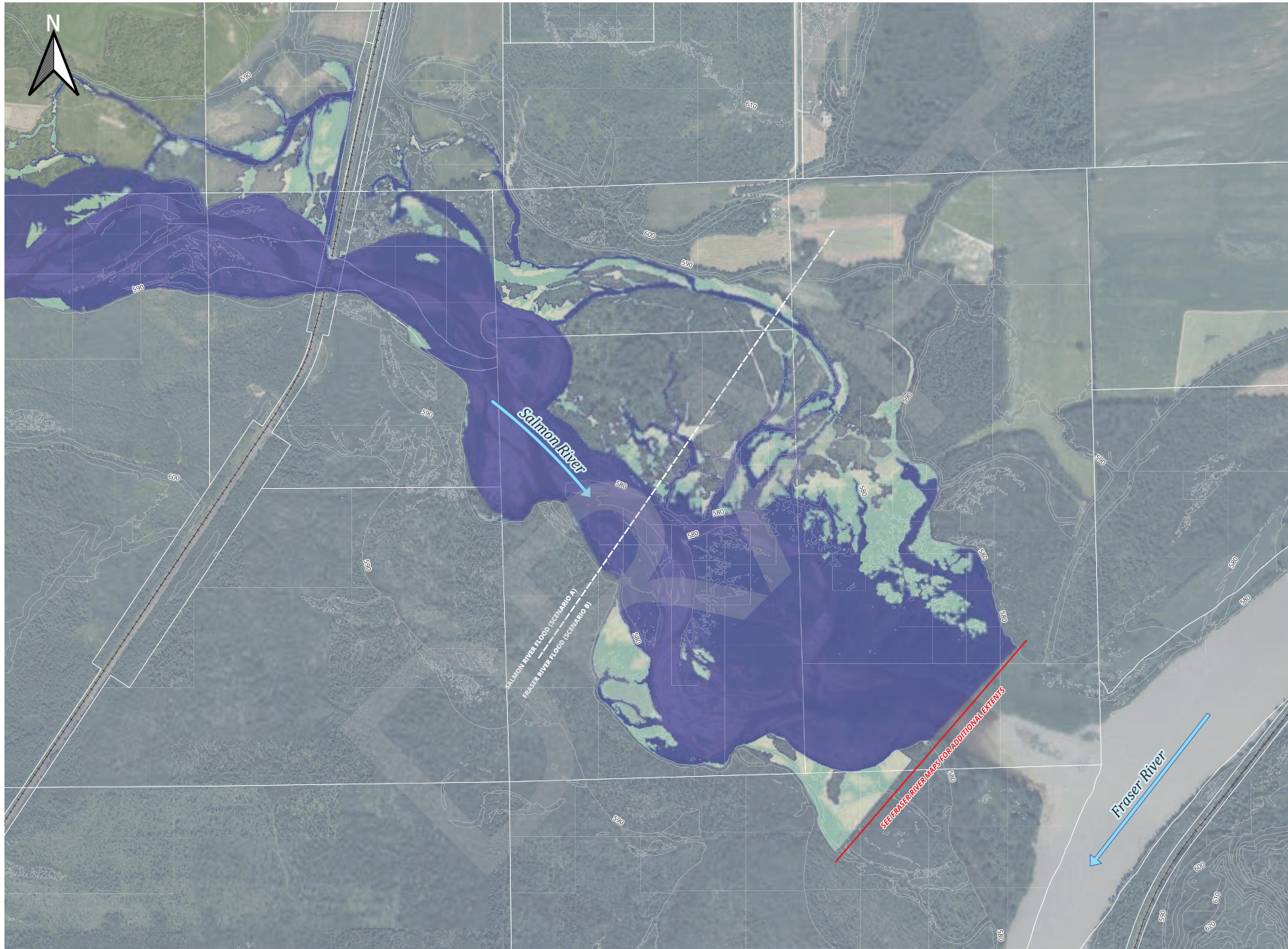
AE PROJECT No.	2022040-00	
SCALE	1:5000	
ENGINEER	A. MACISAAC	
DR	C. SIKORSKI	
REVIEWER	A. GEORGE	
REV	1	
DATE	20240719	
DESCRIPTION	ISSUED AS NEAR FINAL	

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IF NOT BEING ADJUSTED SCALES SHOWN ARE INTENDED FOR AND USE DRAWINGS UNLESS NOTED OTHERWISE

SEE MAP SHEET 2



LEGEND

- ROADS
- RAILWAY
- 5 m CONTOURS
- CADASTRAL
- MUNICIPAL BOUNDARY
- MODEL COMPONENTS
- MAPPING LIMITS
- CHANGE IN PRIMARY FLOOD SCENARIO
- 20-YEAR FLOOD EXTENT
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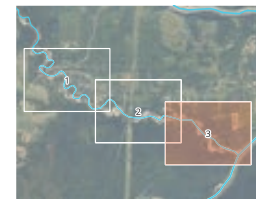
NOTES

- Flood extents are determined by either Scenario A (Salmon River peak flow, coincident Fraser River flow) or Scenario B (Fraser River peak flow, coincident Salmon River flow). All flows are daily averages.
- This study utilized 2023 bathymetric survey collected by C&A-Canada Surveys Inc., 2019 LIDAR from LIDAR BC, and historic and present-day imagery. Aerial imagery was provided by GeoBC and Bing.
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MAP LOCATION



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SALMON RIVER NEAR PRINCE GEORGE PRESENT DAY FLOOD EXTENT MAPPING SHEET 3 OF 3

AE PROJECT No. 2022046-00
SCALE 1:500
ENGINEER A. MACISAAC
DRAFTER C. SIBBERS
REVIEWER A. GEORGE
REV 1
DATE 03/07/19
DESCRIPTION ISSUED AS NEAR FINAL

