

## **FRASER BASIN COUNCIL**

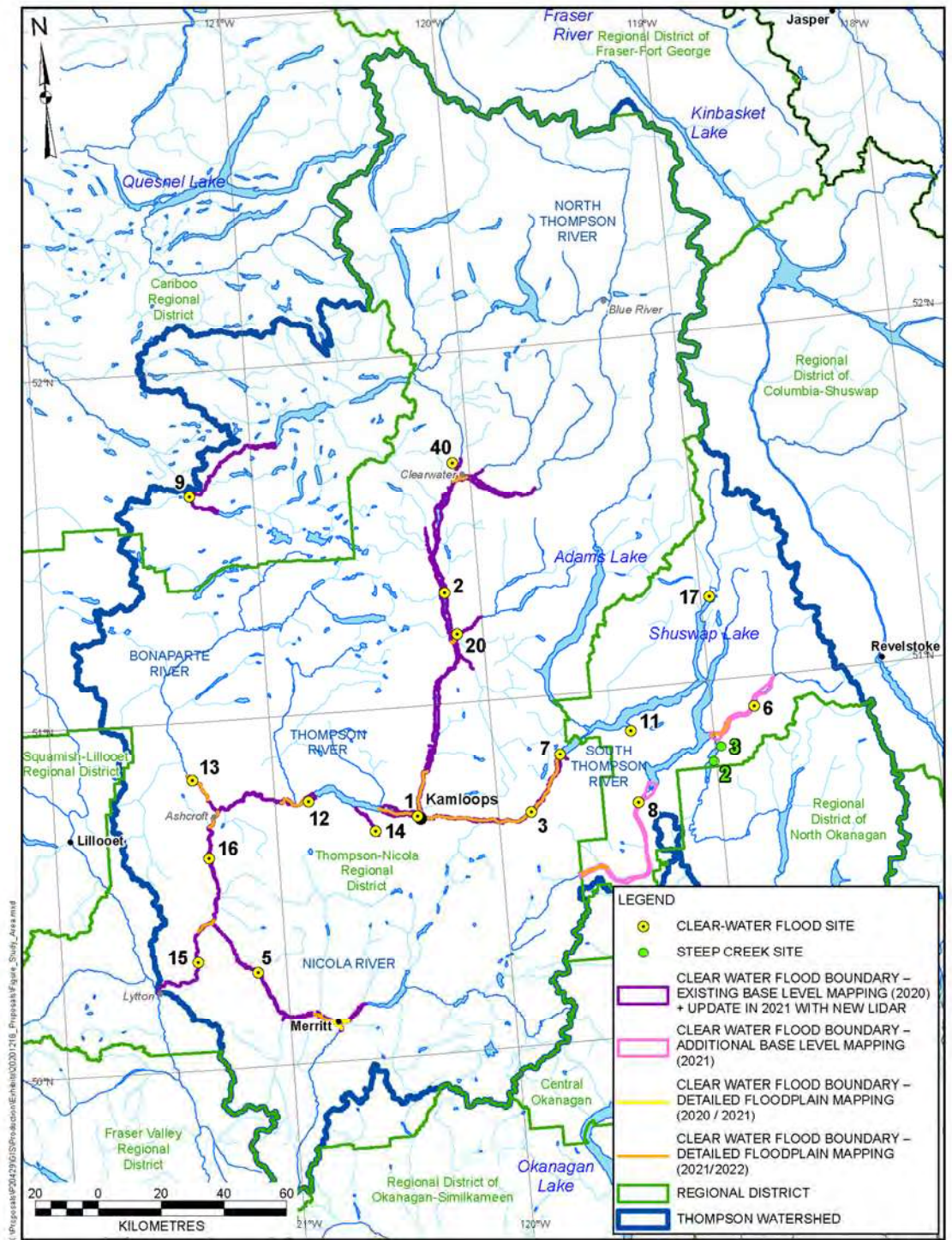
# **NDMP STREAM 2 APPLICATION: THOMPSON RIVER WATERSHED FLOOD MAPPING**

## **WORK PLAN (FINAL)**

*Work Plan Extract*

PROPOSAL NO.: P20429

DATE: June 4, 2021



**Figure 5-1. Flood mapping areas. Clear-water flood mapping areas are numbered as points; the mapping extent will extend upstream and downstream from the points. Study extents subject to refinement as part of the final work plan development.**

**Table 5-1. Summary of clear-water and steep-creek areas selected to be mapped.**

Flood Process Type	Site No.	Watershed (Area)	Jurisdiction	Historical Floodplain Mapping?	Base Level Flood Mapping (BGC April 30, 2020)?	Detailed Flood Mapping Length (km)	Approx. Base Level Flood Mapping Length (km)	Upstream Watershed Area (km <sup>2</sup> )	Watershed Wildfire (2014-2018)	Comments
Clear-water	1	Thompson River at Kamloops	TNRD	Yes	Yes	21	18	38,060	Yes	Confluence of the North and South Thompson Rivers to Kamloops Lake selected for detailed floodplain mapping.
	2	North Thompson (Kamloops to Vavenby)	TNRD	Yes	Yes	22	145	18,610	Yes	North Thompson River from Westsyde to Rayleigh is selected for detailed floodplain mapping. The remaining area will be mapped using new lidar at a base level of mapping.
	3	South Thompson River (Kamloops to Chase)	TNRD	Yes	Yes	55	59	16,110	Yes	South Thompson River from Kamloops to Chase selected for detailed floodplain mapping.
	5	Nicola River (Merritt to Lower Nicola)	TNRD	Yes	Yes	12	68	6,700	Yes	Many of the areas in Nicola/Merritt Valley were impacted by 2017 and 2018 flooding. BGC completing detailed flood mapping within the boundary of the City of Merritt (BGC, 2021); the work would extend mapping downstream of Merritt approximately a further 8 km to encompass settled areas of the Lower Nicola Band.
	6	Eagle River (Malakwa to Sicamous)	CSRD	Yes	No	18	30	970	Yes	Flooding at the western extent of Eagle River is influenced by lake levels on Shuswap and Mara Lakes. Costs for flooding damage in Sicamous area (including steep creeks on Sicamous and Hummingbird Creeks) totalled approximately \$3.8M (Public Safety Canada, n.d.). Sicamous completed a hydrological connectivity study and applied for flood mitigation funding for Sicamous Creek. Detailed floodplain mapping is within the District of Sicamous. The remaining area will be mapped using new lidar at a base level of mapping.
	7	Chase Creek (Chase)	TNRD	No	Yes	3	5	290	No	Past flood events from high water levels, Little Shuswap Lake. A section of Cache Creek is selected for detailed floodplain mapping.
	8	Salmon River (Falkland to Salmon Arm) (Base Level) Salmon River at Falkland (Detailed Mapping)	CSRD	Yes	No	16	50	1,480	Yes	Flooding at the northern extent of Salmon River is influenced by lake levels on Shuswap Lake. The work excludes lower reaches within the City of Salmon Arm which have updated floodplain mapping (2011). BGC will provide continuous base level floodplain mapping of Salmon River from Falkland to Salmon Arm (50 km). Detailed mapping will be completed for a 10 km reach at Falkland.
	12	Thompson River at Savona	TNRD	No	Yes	19	38	39,420	Yes	Past flood events from rise of Kamloops Lake and flooding on Deadman Creek. Flooding has caused damage to property within Savona and infrastructure (bridges and railway lines) along Thompson River. Flooding in 1990 caused approximately \$50,000 in damage (Septer, 2007).

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	13	Bonaparte River (Bonaparte 3 FN Reserve to Thompson River confluence)	TNRD	Yes	Yes	23	17	5,060	Yes	Flooding in 1990 caused approximately \$100,000 in damage (Septer, 2007). 40% of Bonaparte River catchment was burned in 2017 Elephant Hill wildfire. Existing floodplain mapping limited to Cache Creek and could be extended to Ashcroft. Cache Creek has recently completed detailed floodplain mapping. The work would not duplicate existing detailed mapping.
	15	Thompson and Nicola Rivers at Spences Bridge	TNRD	Yes	Yes	11	36	55,040	Yes	History of past flood and landslide events along the Thompson River corridor between Spences Bridge to Lytton. In 1899 a landslide event dammed the Thompson River at Spences Bridge.
	16	Thompson River at Ashcroft	TNRD	No	Yes	11	19	46,910	Yes	History of past flood and landslide events along the Thompson River corridor between Ashcroft to Spences Bridge. Potential for landslide dam induced flooding.
	20	Barriere River at Barriere	Barriere	Yes	Yes	7	13	1,149	No	Past flood events forced residents to be evacuated and relocated over multiple days (1972). The 1997 flood event damage totalled \$100,000 (Septer, 2007). Eighty-nine people were affected due to flooding in 1999. Two ice jams caused flooding in Barriere River in 2005.
	40	Clearwater River and North Thompson River at Village of Clearwater	Village of Clearwater (in TNRD)	Yes	Yes	12	9	10,216	Yes	Past flood events have forced residents to be evacuated (1928 and 1972). Environmental impact due to flooding include loss of salmon spawning in 1980 due to a major flood. In 1991, the cost of flood damage due to road washouts totalled approximately \$690,000 (Septer, 2007). In 2005, Community of Birch Island, approximately 12 km north of Clearwater, experienced flooding due to ice jams. Detailed mapping would be within Clearwater village boundaries to include a portion of the Clearwater and North Thompson Rivers.
Steep Creeks	2	Hummingbird Creek	CSRD	No	No	n/a	n/a	40	No	Fan-delta into Mara Lake, high aggradation and avulsion potential, events in 1997, 2012, and possibly in 1930s. Event in 1997 caused extensive damage to homes and cabins.
	3	Sicamous Creek	Sicamous (in CSRD)	No	No	n/a	n/a	71	No	Fan-delta into Mara Lake, high aggradation and avulsion potential, events in mid-1920s, 1935, 1950s, 1997, and 2012. Event in 2012 avulsed and damaged several homes. Creek is subject of ongoing litigation from 2012 event.