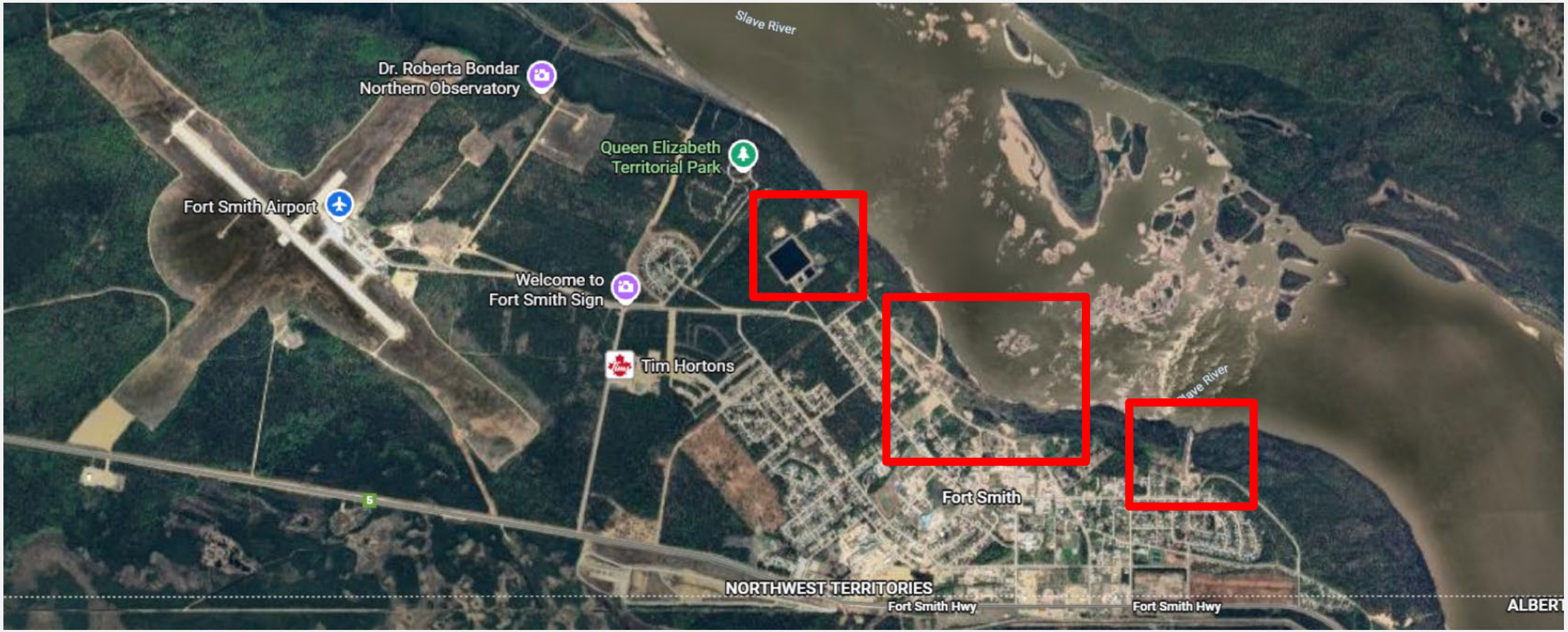
FORT SMITH RIVERBANK EROSION

NWTAC Riverbank Erosion Workshop

December 2025

OUR RIVER – GREAT SLAVE CORRIDOR



Sewage Lagoon

Raw Water Intake

Remediated 1968 Landslide Area

HISTORICAL LANDSLIDES

The aftermath of the slide | All photos by John Dougherty

HISTORICAL LANDSLIDES

- 1908 bank collapse – buildings and dock facilities damaged and a warehouse fire
- 1930s and 1940s – damage to portage trails between Fort Fitzgerald and Fort Smith
- 1930s and 1940s – damage to boat launch roadway
- 1968 – major landslide at the main townsite
- 2004 – slide impacting the sewage lagoon outflow infrastructure
- Ongoing erosion of the slope toe by the Slaver River with bank slumping all along the toe

WORK SINCE THE SLIDES

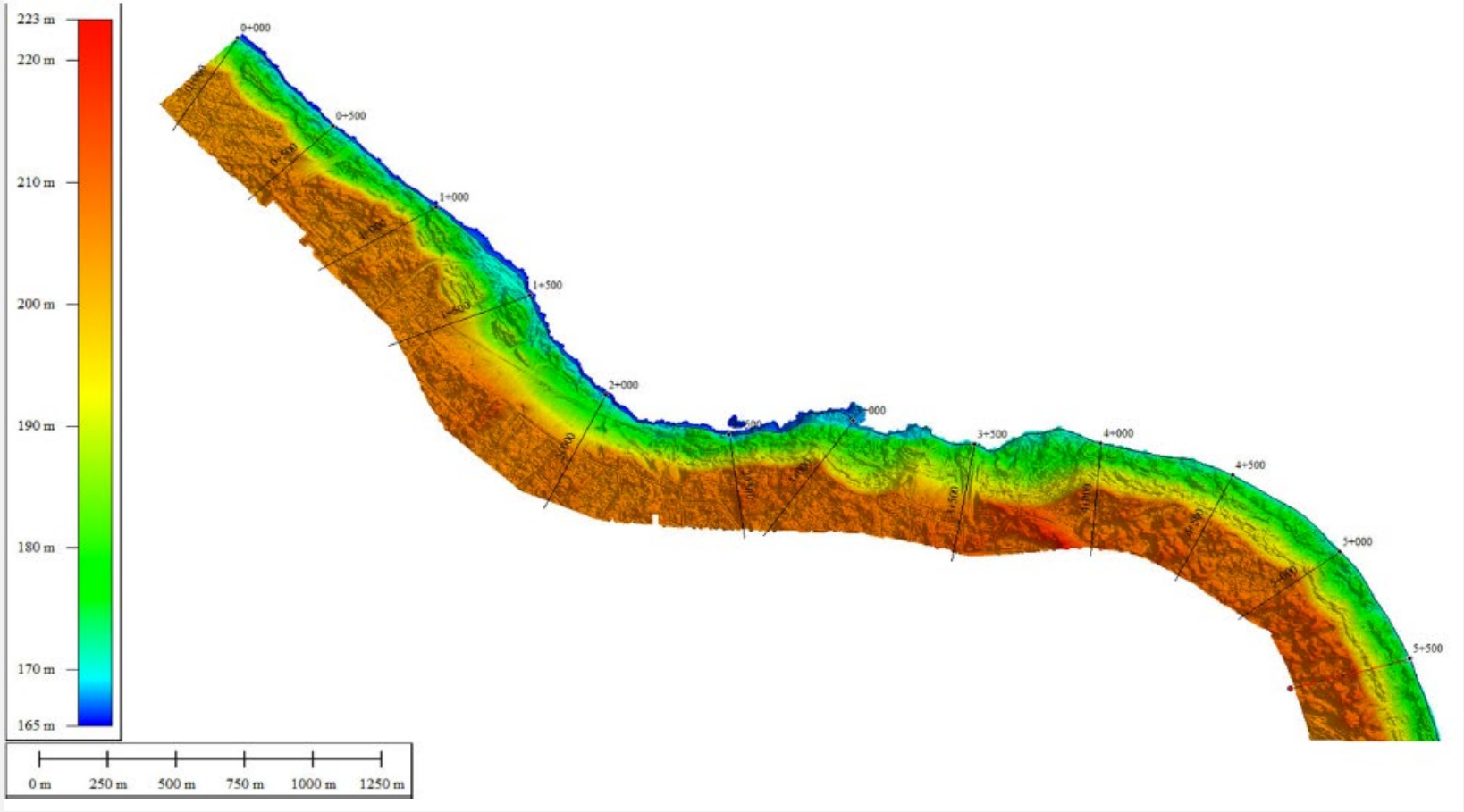
- **Remediation work** along 1968 landslide, sewage outflow, and raw water intake
- **Environmental Zone** added to Zoning Map Homes moved from areas of potential slide risk
- **Dewatering ground water** above the slope by creating a drainage canal and horizontal drains.
- **Town water treatment plant moved** away from the slide zone.
- **Geotechnical assessments** and slope stability assessments conducted in 2000s.
- **A remediation design** and construction plan memo was issued.
- **Ongoing monitoring** project annually to date.

RE-ZONING OF RIVERBANK

WATER DIVERSION – KAESER CANAL

MONITORING AND ASSESSMENT APPROACHES

- Boreholes testing
- Trial horizontal drains
- Slope stability recommendations drafted
- No development zone created
- Slope stability modelling
- Impact assessment for earthquakes
- Solutions costing
- Site visits and photographs
- LIDAR scanning



CHALLENGES AND ONGOING WORK

- Large slope length
- Tall slope
- Rapid erosion at the toe of the bank
- Permafrost melt
- Challenging sandy soil types
- High ground water table
- Existing municipal infrastructure in the remediation area.

The Town of Fort Smith continues to use federal CIRNAC CCPN funding to support annual monitoring including ground truthing and drone LIDAR mapping.

Plans have been drafted but require a significant amount of funding. This is further complicated by multiple stake holders in the riverbank corridor as well as municipal infrastructure that would need to be re-located or re-engineered.