



**Title:** Carmacks Flood Mapping Study  
Composite Flood Hazard Extents  
0.5% Annual Exceedance Probability (AEP) with Factor of Safety for Climate Change

**Client/Project:**  
Government of Yukon  
Department of Environment  
Water Resources Branch

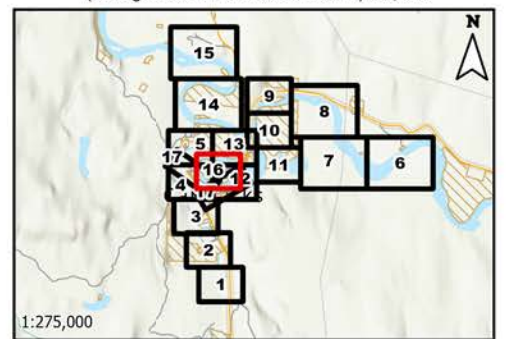
**Project:** 12322320

**Project Location:** Carmacks, Yukon

Prepared by MANDERSON on 2024-05-27  
Requested by JMUIRHEAD on 2024-01-07  
Review by JMUIRHEAD on 2024-05-27

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|---|---|
| Flow Direction  | Hydraulic Model Cross-Sections            |
| Point of Interest                                     | Inundation under Modelled Ice Jam Runs    |
| Bridge  | Inundation under Modelled Open Water Runs |
| Highway   | Composite Flood Hazard Extent             |
| Local Road  | Ice Jam Location (toe of jam)             |
| Little Salmon / Carmacks First Nation Settlement Land | 50 % AEP Extent                           |
| Land Parcels  | Hydraulic Model Cross-Sections            |
| Municipal Boundary                                    | Cross-Section Number                      |
| Study Area  | WSE (m) in Main Channel of Cross-Section  |

Map Publication Date: May 27, 2024  
0 40 80 120 160 200 m  
(At original document size of 11x 17) 1:5,000



- Notes**
- Coordinate System: NAD 1983 UTM Zone 8N  
Vertical Datum: CGVD2013, Geoid: CGG2013a
  - Data Sources: GeoYukon, Canada Lands Survey (CLS) CCM 982, Carvec.
  - Background: World Topographic Map: Northwest Territories, State of Alaska, Esri Canada, Esri, TomTom, Garmin, SafeGraph, MET/INASA, USGS, EPA, NPS, USDA, NRCAN, Parks Canada  
World Hillshade: Esri, USGS
  - Nordenskiöld River Climate Change Factor of Safety = 1.2 and Yukon River Climate Change Factor of Safety = 1.1 as identified during meetings with YG, NRCAN, ECCO on September 8, 2023 and November 6, 2023
  - Flood hazard extents shown on these maps are based on LIDAR collected on June 8 - 10 of 2019, and bathymetric/topographic survey collected in July and August of 2023.