



Existing Conditions Fact Sheet: Surface Water

Issued: October 2023

Surface water is water that collects above the earth's surface and can be in the form of a permanent waterbody, like a lake or river, or as a temporary feature, such as seasonal spring run-off. Surface water has significant impacts on community well-being and day-to-day life. It is important culturally, spiritually, recreationally and is an essential source of drinking water. Surface water also supports environmental biodiversity and helps sustain all forms of life.

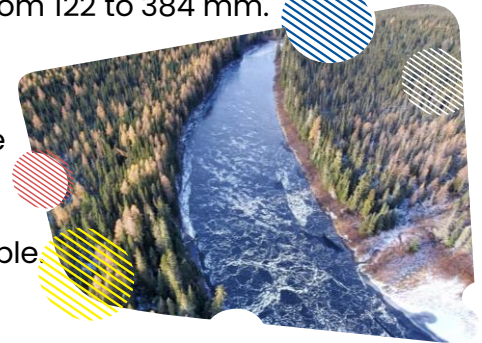
Our Studies

The proposed routes of the Community Access Road cross a total of 94 individual waterbodies. These waterbodies included catchment areas that ranged from less than 1 km² to 18,350 km² and generally drained to the east or north (eventually reaching James Bay).

Our Findings

Surface water is largely controlled by snowmelt and rainfall. The spring and fall usually see higher flows due to snowmelt in April-May, and rainfall in October-November. The summer and winter months have low to moderate flows due to dry or frozen conditions. Mean annual surface water yields varied from 122 to 384 mm.

Between 2020 and 2022, field teams visited 55 waterbodies that could be crossed by the Community Access Road. The watercourse crossing locations were generally found to have moderate- to well-defined channels that cut across bog and fen (wetlands) and the bed and banks of the channels were generally stable



Study Areas

Study areas identify the geographic limit where potential effects of the road may occur. The existing conditions are documented for three study areas:

- Project Development Area (PDA): the area of direct disturbance
- Local Study Area (LSA): the area where direct effects of the road are likely to take place
- Regional Study Area (RSA): the area where indirect effects are likely to occur



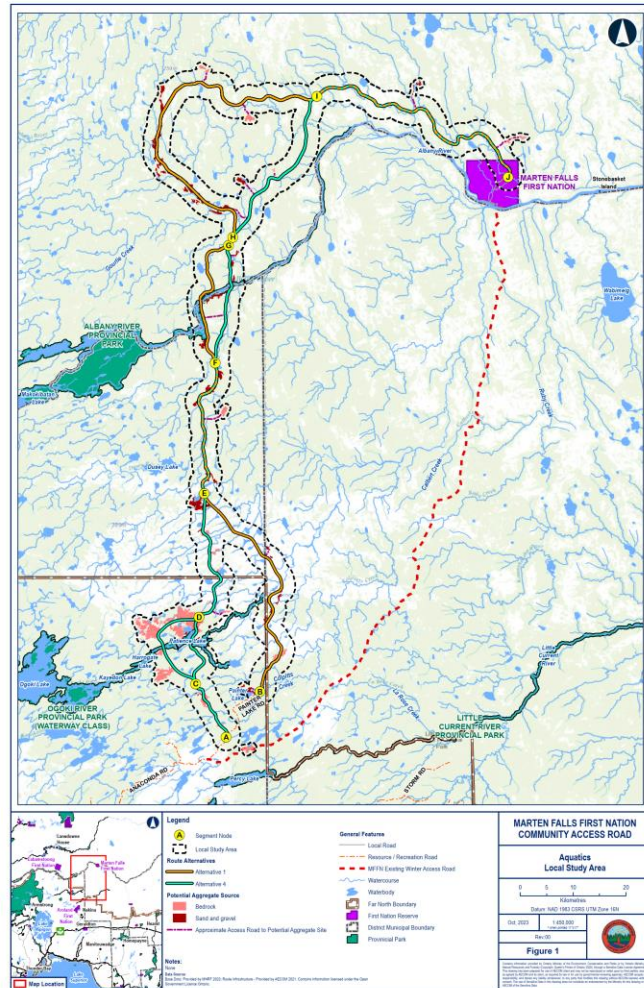


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Initial desktop research had shown that the surface water and sediment quality of the waterbodies crossed by the Community Access Road generally met the relevant regulatory guidelines and standards, noting that the concentrations of some metals (e.g., aluminum, cadmium, and iron for water and chromium, manganese, nickel for sediment) were elevated, likely due to natural background conditions at certain locations. Turbidity (the cloudiness of water caused by suspended particles) ranged from very low to low.

The surface water and sediment quality results from sampled waterbodies at crossing locations generally met guidelines, standards, and objectives for water and sediment quality. However, concentrations of iron and manganese at several of the water body crossing locations exceeded guidelines for water quality. Concentrations of organic nitrogen and ammonia nitrogen, chromium, iron, manganese, nickel, and phosphorus at several the waterbody crossings exceeded guidelines for sediment quality. These results varied little with catchment size. However, the results for water quality did vary depending on flow at the time of the sampling, with higher concentrations of metals found during low-flow conditions in the summer.



Contact Information

You are welcome to contact the Project Team at any time with questions or comments.

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