

Sustainable Northern Transportation Policy Making: Supporting Communities and Resource Development through Adapted, Responsive Transportation Network Analysis

PROJECT DESCRIPTION

"Northern Canada holds vast natural resources, and developing these resources is projected to be a major driver of economic growth in the next several decades. At the same time, the north's communities and highly fragile ecosystems are experiencing disproportionate impacts of a rapidly changing climate. Northern governments and resource industries need high-quality quantitative analysis tools to inform government policies and stakeholder decision-making processes on transportation infrastructure, to best serve communities and support natural resource development in this sensitive environment. Our project will deliver an interdisciplinary analysis tool for assessing network growth options under uncertainties, tailored to Northern Canada and the Arctic. The analysis tool will use real options models to generate optimal choices for network growth (which project, where, when) by incorporating multiple climate and resource development uncertainties.

The expected outcome of this project is a data-driven analysis tool specifically designed for the northern Canadian context that fills gaps in northern transportation analysis and policy-making. The project will 1) improve governments' abilities to develop policies that consider responsible, efficient resource development against environmental and social considerations, explicitly considering uncertainty, 2) quantify decision-making on transportation infrastructure investment by government and industry, strengthening Canada's economy and northern communities, and 3) contribute a real options based methodology for transportation network analysis."

FACULTY-DEPARTMENT

Engineering - Civil & Environmental Engineering

DESIRED FIELD OF (STUDENT) STUDY

Civil engineering (or almost any engineering discipline), operations research, applied mathematics, systems engineering

Contact: Brendan Cavanagh, Internship Coordinator (Inbound)
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INTERNSHIP LOCATION

University of Alberta Main Campus - Edmonton

NUMBER OF INTERNSHIP POSITIONS

1

INTERNSHIP START DATE

Preferably June 1, but can accommodate up to July 4

INTERNSHIP END DATE

3 months from start date

ARE THE DATES FLEXIBLE?