

Project Dashboard

Far North Fiber Marine Route Survey (149421)

Proposal Status: Conformity Determination Issued

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Project Overview

Type of application: **New**

Proponent name:	Ik Icard
Company:	Far North Digital

Schedule:

Start Date:	2022-08-01
End Date:	2024-10-31
Operation Type:	Seasonal

Project Description:

The Far North Fiber cable project is the first submarine fiber optic cable to be laid through the Arctic Ocean and the Northwest Passage connecting Asia and Northern Europe. The 14,000km route will extend through Canadian waters entering the Queen Elizabeth Islands from the west through McClure Strait, and proceeding through Viscount Melville Sound, Barrow Strait and Lancaster Sound, then exiting into Baffin Bay and south through Davis Strait into the North Atlantic Ocean. The cable will incorporate a number of branching units which will provide for future branches to strategic landing sites in Canada's Arctic Archipelago. Per March 3, 2021 guidance from NPC staff, this application is made for and limited to activities involved in the marine route survey for the future communications corridor. This application #149421 to the Nunavut Planning Commission seeks a Conformity Determination as prerequisite to the Nunavut Impact Review Board's commencing its screening process. The application is intended to cover marine survey activities that will determine a suitable route for the future installation of the Far North Fiber cable. In preparation for the marine survey, a "cable route study (CRS)" is first performed, starting with a desktop study. The CRS identifies technical feasibility and risk factors of the project prior to offshore survey and detailed engineering designs. The study collects published and unpublished data including bathymetric data, meta-ocean data, GIS spatial data, and nautical charts and develops constraint maps identifying potential route options. The final report typically consists of multiple sections including: route description, route position list (RPL), depth and slope profiles; bathymetry; geology; fisheries; environmental conditions; and hazards and obstructions. The CRS results will define the route to be surveyed during the main survey campaign. The approximate route length of the cable through Canada's territorial seas is 1,360 kilometers. Of that, roughly 900 km traverses Nunavut waters. The survey corridor will be 500 meters wide along the length of the route. The Marine Survey will be performed along the cable route to ensure that the cable system is installed on the most benign seabed, avoiding any adverse impacts on sensitive living marine resources and clear of any features which could pose a threat to the design life of the cable system. The geophysical and geotechnical investigation of the route establishes a detailed profile of the seabed corridor where the cable is to be laid. The survey will include a Burial Assessment Survey (BAS) which consists of Cone Penetrometer Testing (CPT) and measurements to predict the soil type, its relative density and shear strength. The output of this activity enables production of a unique cable profile which is specifically adapted to the nature of the seabed to ensure long-term durability of the cable. Geophysical Survey - deep-water surveys to generate an end-to-end assessment of the cable route design, and characterization of the seafloor along the intended cable corridor. Tasks associated with the marine survey through Canada's Northwest Passage include the following: •Topographical Survey •Bathymetry Collection (Side Scan, Multi-Beam, Sub-Bottom Profiling) •Sub-Surface Sampling •Geological Interpretation •3D Model Route Simulation Geotechnical Burial Assessment - accurate burial assessment and feasibility. •Seabed Depth •Evaluate slope, erosion, seismic profiles, sediment and other seafloor characteristics. •Cone Penetrometer Testing (CPT): Penetration, Relative Density, Shear Strength •Interpreted Sediment Lithology

•Geotechnical Coring •Route Obstacles •Geotechnical Interpretation/Engineering Data returns along the route survey corridor include: Bathymetry, Multibeam Echo Sounder (MBES) •500m corridor – Inshore and up to 1000m WD •3 x WD (with 10,000m max. Width) in Deep Water Side Scan Sonar (SSS) & Sub-bottom Profiling (SBP) •500m corridor – inshore and up to 1000m WD Seabed Sampling •10km average spacing in shallow water (SW) Route Development •Up to 10% of planned survey acquisition time Burial assessment survey (BAS) •CPT (Cone Penetrometer Testing) on average every 4km of the buried route •Cone penetration tests up to 5m •Measurements allow prediction of soil type, relative density (sands) or shear strength (clays) •Average sampling interval: every 2 to 4km depending on the region. Project timeline makes conservative allowance for survey activities over the entire cable route from Japan to Europe for up to two and a half years, affording opportunity for weather and ice dependent effort in the Arctic for up to three summer seasons, 2022-2024. Survey operations will be conducted on a 24-hour basis, weather and sea conditions permitting, and the survey vessel will display the shapes and lights prescribed in the International Rules for the Prevention of Collisions at Sea (COLREGS) Rule 27, to indicate that the survey vessel is restricted in its ability to maneuver. A listening watch will be maintained at all times on VHF Channel 16, and the vessel will actively transmit an AIS signal. Coordinates of the survey area will be broadcast at regular intervals on Channel 16 and appropriate working channels as prescribed Notices to Mariners.

Personnel:

Persons:	50
Days:	28

Project Map

List of all project geometries:

ID	Geometry	Location Name
6913	polyline	New project geometry

Planning Regions:

Qikiqtani

Kivalliq

Affected Areas and Land Types

Settlement Area

North Baffin Planning Region

Project Land Use and Authorizations

Project Land Use

Offshore Infrastructure

Marine-Based Activities

Licensing Agencies

DFO: 0

TC: 0

NIRB: 0

IC: 0

Other Licensing Requirements

No data found.

Material Use

Equipment

Type	Quantity	Size	Use
marine survey vessel	1	approx. 75m	geophysical and geotechnical cable route survey

Fuel Use

Type	Container(s)	Capacity	UOM	Use
Diesel	6	60	Cubic Meters	vessel main engine propulsion,

shipboard
generators

Hazardous Material and Chemical Use

Type	Container(s)	Capacity	UOM	Use
No records found.				

Water Consumption

Daily Amount (m ³)	Retrieval Method	Retrieval Location
0		

Waste and Impacts

Environmental Impacts

Survey vessel is approximate 65-75m, of 1940 gross tons. Operating fuel consumption is 4 cubic m/day. Waste generated will be diesel exhaust of the main propulsion engines, auxiliary power generators, and ancillary small engines. Occasional, sporadic support from nearby communities may require smaller diesel or gas engine-driven vessels as the cable laying operation progresses through the marine waters of Nunavut's Northwest Passage. Household waste will be contained and retained on board for disposal per local regulation on port call.

Waste Management

Waste Type	Quantity Generated	Treatment Method	Disposal Method
No data found.			