

The Department of Community and Government Services, Government of Nunavut is proposing the Undersea Fibre Optic Cable Installation Linking Greenland, Nunavut and Quebec Project. The Project will construct a submarine fiber optic system connecting Iqaluit, Kimmirut and Cape Dorset with an international connection to Nuuk, Greenland. The installation will include the future capability to connect to northern Baffin Island and the Kivalliq region. An additional component of the Project proposes to install fibre optic cable from Sanikiluaq to a similar fibre project to be installed by the Kativik Regional Government in Nunavik, Quebec. The scope of the Project comprises the submarine infrastructure and cable landing infrastructure and includes the construction, operation, maintenance, decommissioning and abandonment of a fibre optic cable system. Approximately 2,400km of fibre optic cable will be installed including all submarine and cable-landing infrastructure, the fibre optical cable, powered repeaters, and line terminating equipment, power-feeding equipment and monitoring equipment. Based on the current timeline, the Project will begin construction in the summer of 2019 for some of the terrestrial components and install the marine cable infrastructure during the open water season of 2020. It is expected that the project in-service operation will begin in the first quarter of 2021. The life expectancy of the system is expected to be over 25 years. For the marine operations, different classes of vessel and equipment may be required. The vessels are usually mid-sized and are commonly used in Canadian waters. The cable is installed using a cables ship which will operate during the open water during the August-September 2020 installation window. Depending on the operations to be undertaken, the crew of the cables ship will consist of approximately 40 to 80 personnel including the master, chief mate, chief engineer and medically trained personnel. Staff scheduling will plan for work to be carried out continuously over a 24-hour per day basis for the offshore activities. Marine and habitat observers will be on board to ensure there is no interference with fisheries or mammals. In addition, 2 or more, shallow draft vessels or barges may be required for shore-end cable installation at landing sites. The type of vessel to be used will depend on the installation methodology, which will be determined based on the results of the marine survey. On the terrestrial side, the installation of the cable at the landing sites and to the cable station will require heavy machinery. Horizontal Directional Drilling may be required to provide a trenchless method of installing the cable from shore to off-shore. For the shore-landing component, a concrete vault known as a Beach Manhole will be constructed approximately 10 to 30 m inland from the mean high water tide level. A winch of sufficient strength is securely anchored on the beach adjacent to the location of the manhole. Where a traditional landing is possible, a trench is excavated during low tide to a depth of approximately 2 to 3 m from the manhole over the exposed beach to the low tide mark. The cable is then pulled from the cables ship with floats identifying its location in the water. A small boat or divers are then used to place the cable on the seabed and beach trench. Once in place, the beach trench is backfilled to the original elevation. Cable burial to 1 to 3 m on the beach is performed with an excavator and limited to the depth of loose sediment over underlying rock. If required, horizontal directional drilling will be undertaken to connect the marine cable to the manhole. The cable installation contractor will place terrestrial markers at each landing site to remind residents and boaters of the presence of the cable. Once buried, the land in the right-of-way for the cable route will be restored to its previous condition. Human resources required for project construction are highly skilled and specialized. For the most part, workers will be existing employees of the contractors retained for project construction. Contracting opportunities exist for the supply of various materials and equipment, fuel, materials storage and inspection services. Local contractors and residents would be hired to build and install the beach manholes and backhaul tie-ins.

ᐅᐃᐱᑎᓚ: Le ministère des Services communautaires et gouvernementaux du Nunavut propose le projet d'installation de câbles à fibres optiques sous-marins entre le Groenland, le Nunavut et le Québec (Undersea Fibre Optic Cable Installation Linking Greenland, Nunavut and Quebec). Ce projet vise la construction d'un réseau sous-marin à fibres optiques reliant Iqaluit, Kimmirut et

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Operations Phase: from 2019-05-29 to 2020-12-29

Operations Phase: from 2020-11-29 to 2049-11-29

Post-Closure Phase: from to

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|---------------------|------------------------|---------------------------|--|---|--|
| SAN Segment | Equipment installation | Marine | N/A Multi beams scans shows nothing of interest | N/A Multi beams scans shows nothing of interest | NA |
| CAP Segment | Equipment installation | Marine | N/A Multi beams scans shows nothing of interest | N/A Multi beams scans shows nothing of interest | NA |
| KIM Segment | Equipment installation | Marine | N/A Multi beams scans shows nothing of interest | N/A Multi beams scans shows nothing of interest | N/A |
| IQA Segment | Equipment installation | Marine | N/A Multi beams scans shows nothing of interest | N/A Multi beams scans shows nothing of interest | N/A |
| CAP Trunk Segment | Equipment installation | Marine | N/A Multi beams scans shows nothing of interest | N/A Multi beams scans shows nothing of interest | N/A |
| Nuuk Trunk Segment | Equipment installation | Marine | N/A Multi beams scans shows nothing of interest | N/A Multi beams scans shows nothing of interest | N/A |
| KIM Trunk Segment | Equipment installation | Marine | N/A Multi beams scans shows nothing of interest | N/A Multi beams scans shows nothing of interest | N/A |
| CAP Segment | Equipment installation | Marine | N/A Multi beams scans shows nothing of interest | N/A Multi beams scans shows nothing of interest | N/A |
| Nuuk Trunk Segment | Equipment installation | Marine | N/A Multi beams scans shows nothing of interest | N/A Multi beams scans shows nothing of interest | N/A |
| Cape Dorset Landing | Equipment installation | Inuit Owned Surface Lands | The site investigation in Cape Dorset was conducted on September 24, 2016. The preferred site is located east of the hamlet in an open and flat area and was selected as it has the best potential for a conventional cable burial installation. | None identified | None Identified |
| Cape Dorset Landing | Equipment installation | Inuit Owned Surface Lands | NA | NA | NA |
| Sanikiluaq Landing | Equipment installation | Commissioners | NA | NA | NA |

| | | | | | |
|------------------|------------------------|---------------|----|---------|----|
| Site | | | | | |
| Kimmirut Landing | Equipment installation | Commissioners | NA | NA | NA |
| Iqaluit Landing | Equipment installation | Commissioners | NA | unknown | NA |
| Nuuk Landing | Equipment installation | Private | NA | NA | NA |

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|--------|--|---|---------------|
| ᓄᓇᓕᓯᓪᓐ | Allain, Erik; McCaie, Tracey ; Hack, Justin; Dewar, Spencer; Rochette, David | Crown-Indigenous Relations and Northern Affairs Canada | 2018-09-18 |
| ᓄᓇᓕᓯᓪᓐ | Flsherty, Harry; Nimchuck, Sheldon; | Qikiqtaaluk Business Development Corporation | 2018-10-26 |
| ᓄᓇᓕᓯᓪᓐ | Uniuqsaraq, Hanna | Nunavut Tunngavik Incorporated | 2018-10-26 |
| ᓄᓇᓕᓯᓪᓐ | D'Orazio, Rosanne; Fortier, Joel | Qikiqtani Inuit Association (QIA) | 2018-11-21 |
| ᓄᓇᓕᓯᓪᓐ | NA | City of Iqaluit, NTI, Government of Nunavut (CIO, Director of Planning, Comms/Policy, Project Manager, Economic Department of Transport and Telecom), Hunter & Trapper Association. | 2016-09-23 |
| ᓄᓇᓕᓯᓪᓐ | Calvery, Ryan | Industry Canada - Submarine Cable Licence | 2018-09-12 |

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Transboundary

South Baffin

$\Delta^{\alpha} \Gamma^{c}$

[illegible]

Project transportation types

| Transportation Type | How the Material Will be Moved | Length of Use |
|---------------------|--|---------------|
| Air | Specialised worker will be flown in; some light material could also be aircargo. | |
| Water | The cable installation uses cables ships; Some material will be sealifted. | |
| Land | Personnel movements to site. | |

Project accomodation types

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| Information is not available | | | | |

$$4^a 0 \Gamma \Delta C \dot{\sigma}^c \dot{\gamma}^c \quad 4^b \dot{\gamma}^b C \Delta \Gamma L \dot{\gamma}^c$$

Known impact were documented in the project description within the impacted area if any.

Additional Information

SECTION A1: Project Info

SECTION A2: Allweather Road

SECTION A3: Winter Road

SECTION B1: Project Info

SECTION B2: Exploration Activity

SECTION B3: Geosciences

SECTION B4: Drilling

SECTION B5: Stripping

SECTION B6: Underground Activity

SECTION B7: Waste Rock

SECTION B8: Stockpiles

SECTION B9: Mine Development

SECTION B10: Geology

SECTION B11: Mine

SECTION B12: Mill

SECTION C1: Pits

SECTION D1: Facility

SECTION D2: Facility Construction

SECTION D3: Facility Operation

SECTION D4: Vessel Use

SECTION E1: Offshore Survey

SECTION E2: Nearshore Survey

SECTION E3: Vessel Use

Unknown

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Nunavut is the only jurisdiction in Canada that does not have a fibre optic backbone. The territory is 100% satellite dependent. Connectivity and bandwidth issues continue to negatively affect the delivery of services within GN departments and in communities across the territory. The current landscape of telecommunications in Nunavut means that network capacity is costly, service quality is low and the GN has little influence on pricing and availability. The Undersea Fibre Optic Cable Installation project will address these significant concerns.

Miscellaneous Project Information

[illegible]

Cumulative Effects

Impacts

$\mathcal{L}(\mathcal{A}) \cap \mathcal{L}(\mathcal{B}) = \mathcal{L}(\mathcal{A} \cap \mathcal{B})$

[illegible][illegible]

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|----|----------|-------------------------|
| 1 | polyline | SAN Segment |
| 2 | polyline | CAP Segment |
| 3 | polyline | Cape Dorset Landing |
| 4 | polyline | KIM Segment |
| 5 | polyline | IQA Segment |
| 6 | polyline | CAP Trunk Segment |
| 7 | polyline | Nuuk Trunk Segment |
| 8 | polyline | KIM Trunk Segment |
| 9 | point | Sanikiluaq Landing Site |
| 10 | point | Cape Dorset Landing |
| 11 | point | CAP Segment |
| 12 | point | Kimmirut Landing |

| | | |
|----|-------|--------------------|
| 13 | point | Iqaluit Landing |
| 14 | point | Nuuk Landing |
| 15 | point | Nuuk Trunk Segment |