NIRB Application for Screening #126222

The Kivalliq-Baffin Connector Horizontal Directional Drilling Engineering Support Program

Application Type: New

Project Type: Scientific Research

Application Date: Saturday, August 9, 2025

Period of operation: from 2025-08-15 to 2026-10-26

Project Proponent: Victoria
Government of Nunavut
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Canada
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DETAILS

Non-technical project proposal description

English: The Government of Nunavut's Department of Transportation and Infrastructure Nunavut (GN-TIN) has been awarded funding by the Canadian Radio-television and Telecommunications Commission (CRTC) to support the construction of a 1,066 km fibre optic cable in southern Nunavut. The Kivalliq-Baffin Connector Project (the KBC Project) will connect four Nunavut communities to high-speed internet: Iqaluit, Kimmirut, and Kinngait on the southern coast of Baffin Island (Qikiqtani Region), and Salliq [Coral Harbour] on Southampton Island (Kivalliq Region). The KBC Project will connect to an existing Branching Unit (BU) in Salluit (Nunavik) built for the Kativik Regional Government's (KRG) Eastern Arctic Underwater Fibre Optic Network (EAUFON) Project. Three of the Nunavut communities will be serviced through a marine approach (Kimmirut, Kinngait, Salliq [Coral Harbour]), with Iqaluit's approach being either terrestrial cable lay from Kimmirut or a marine approach. Dynamic Ocean Consulting Ltd (Dynamic Ocean) has been retained by the GN-TIN as the regulatory specialist to support the permitting for KBC Project. This Project Description (PD) is specific to the Horizontal Directional Drilling (HDD) Engineering Support Program that is required at each of the marine landings. Worley Canada Services Ltd., operating as Worley Consulting has been retained by GN-TIN as the professional engineering company providing geophysical/geological expertise to support the HDD Engineering Support Program. The investigations that will be done to support the KBC HDD Engineering Support Program will be composed of the geophysical, topographical, geotechnical and potentially biological surveys as described below, which will occur on land and in the marine environment to encompass the areas required for HDD: •Geotechnical (Borehole drilling, thermistors). •Geophysical (Swath bathymetry (MBES), Side Scan Sonar (SSS), magnometer, Subbottom profiler (SBP), Multichannel Analysis of Surface Waves (MASW), Seismic Refraction, Electrical Resistivity Tomography (ERT), Downhole Optical Televiewer (OTV) and/or Acoustic Televiewer (ATV). •Topographical survey (LiDAR, Orthoimagery). •Biological survey (underwater video) (potential). The investigations noted above will take place in 2025 and 2026. Approximately 40 days are required in each community, and it is likely to occur over multiple deployments to maximize open water or iced ocean conditions. Whether the programs are performed simultaneously or sequentially will be a decision based on logistics for availability of crew and equipment. Some activities may be required to occur over a 24-hour period, but the communities will be engaged in advance to confirm there are limited noise disturbances. Appropriate measures will be in place to minimize negative effects to terrestrial and marine habitats.

French: Le ministère des Transports et de l'Infrastructure du Nunavut (TIN) a obtenu un financement du Conseil de la radiodiffusion et des télécommunications canadiennes (CRTC) pour soutenir la construction d'un câble de fibre optique de 1 066 km dans le sud du Nunavut. Le projet Kivalliq–Baffin Connector (le projet KBC) reliera quatre communautés du Nunavut à l'internet haute vitesse : Iqaluit, Kimmirut et Kinngait, situées sur la côte sud de l'île de Baffin (région de Qikiqtani), ainsi que Salliq (Coral Harbour), sur l'île Southampton (région de Kivalliq). Le projet KBC sera raccordé à une unité de dérivation (Branching Unit- BU) existante à Salluit (Nunavik), construite dans le cadre du projet de réseau de fibre optique sous-marin de l'Est de l'Arctique (EAUFON) du Gouvernement régional de Kativik. Trois des communautés du Nunavut seront desservies par une approche maritime (Kimmirut, Kinngait, Salliq [Coral Harbour]), tandis que l'approche pour Iqaluit se fera soit par la pose d'un câble terrestre à partir de Kimmirut, soit par une approche maritime. Dynamic Ocean Consulting Ltd (Dynamic Ocean) a été retenue par le ministère des TIN comme spécialiste en réglementation pour soutenir l'obtention des permis nécessaires au projet KBC. La présente description du projet concerne spécifiquement le programme de soutien en ingénierie pour le forage directionnel horizontal (FDH), requis à chacun des points d'accès marins. Worley Canada Services Ltd., opérant sous le nom de Worley Consulting, a été retenue par le ministère TIN comme la firme d'ingénierie responsable de fournir l'expertise géophysique et géologique pour appuyer ce programme. Les enquêtes réalisées dans le cadre du programme de soutien en ingénierie pour le FDH comprendront des levés géophysiques, topographiques, géotechniques, et potentiellement biologiques, tel que décrit ci-dessous. Ces travaux auront lieu à la fois sur terre et dans l'environnement marin, dans les zones concernées par le FDH: Géotechnique (forage de sondes, thermistances) Géophysique (bathymétrie multifaisceaux (MBES), sonar à balayage latéral (SSS), magnétomètre, profileur de sub-surface (SBP), analyse multi-canaux des ondes de surface (MASW), réfraction sismique, tomographie de résistivité électrique (ERT), enregistreur optique de paroi (OTV) et/ou enregistreur acoustique (ATV)) Levés

topographiques (LiDAR, ortho-imagerie) Étude biologique (vidéo sous-marine) (potentielle) Les études mentionnées ci-dessus auront lieu en 2025 et 2026. Environ 40 jours seront nécessaires dans chaque communauté, et les travaux devraient se dérouler en plusieurs phases afin d'optimiser les périodes d'eau libre ou les conditions de glace marine. La décision de mener les programmes simultanément ou de manière séquentielle dépendra des considérations logistiques liées à la disponibilité des équipes et de l'équipement. Certaines activités pourraient devoir être réalisées en continu sur une période de 24 heures, mais les communautés seront consultées à l'avance afin de s'assurer que les nuisances sonores restent limitées. Des mesures appropriées seront mises en place pour réduire au minimum les effets négatifs sur les habitats terrestres et marins.

Inuktitut: to be provided before application goes to the registry

Inuinnaqtun: N/A

Personnel

Personnel on site: 15

Days on site: 160

Total Person days: 2400

Operations Phase: from 2025-08-15 to 2026-10-26

Activities

Location	Activity Type	Land Status	Site history	Site archaeological or paleontological value	Proximity to the nearest communities and any protected areas
Kinngait HDD Study Area	Scientific/International Polar Year Research	Crown	N/A	N/A	Kinngait is within the Western Hudson Strait Ecologically and Biologically Significant Area (EBSA). See Figure 1-1 of the NIRB Application Letter for locations of community and protected areas.
KBC Project Cable Route	Scientific/International Polar Year Research	Marine	N/A	N/A	The KBC Project marine route has been provided for project background context.
Coral Harbour (Salliq) HDD Study Area	Scientific/International Polar Year Research	Crown	N/A	N/A	Coral Harbour (Salliq) is within the Southampton Area of Interest. See Figure 1-1 of the NIRB Application Letter for locations of community and protected areas.
Kimmirut HDD Study Area	Scientific/International Polar Year Research	Crown	N/A	N/A	Kimmirut is within the Western Hudson Strait Ecologically and Biologically Significant Area (EBSA). See Figure 1-1 of the NIRB Application Letter for locations of community and protected areas.
Iqaluit - HDD Study Area	Scientific/International Polar Year Research	Crown	N/A	N/A	Iqaluit is in Frobisher Bay. See Figure 1-1 of the NIRB

					Application Letter for locations of community and protected areas.

Community Involvement & Regional Benefits

Community	Name	Organization	Date Contacted
Kimmirut	Hamlet of Kimmirut	Hamlet of Kimmirut	2025-06-18
Kimmirut	Mayukalik Hunters & Trappers Association	Mayukalik Hunters & Trappers Association	2025-06-18
Cape Dorset	Hamlet of Kinngait	Hamlet of Kinngait	2025-06-18
Cape Dorset	Aiviq Hunters & Trappers Association	Aiviq Hunters & Trappers Association	2025-06-18
Coral Harbour	Hamlet of Coral Harbour (Salliq)	Hamlet of Coral Harbour (Salliq)	2025-06-18
Coral Harbour	Aiviit Hunters & Trappers Organization	Aiviit Hunters & Trappers Organization	2025-06-18

Authorizations

Indicate the areas in which the project is located:

Transboundary
Kivalliq
South Baffin

Authorizations

Regulatory Authority	Authorization Description	Current Status	Date Issued / Applied	Expiry Date
Nunavut Water Board	Water License, to be submitted if water withdrawal from freshwater courses is required (not expected at this time).	Not Yet Applied		
Government of Nunavut, Community and Government Services	Land Use Permit-Kinngait, Lands department will be engaged to determined if required.	Not Yet Applied		
Government of Nunavut, Community and Government Services	Land Use Permit-Kimmirut, Lands department will be engaged to determined if required.	Not Yet Applied		
Qikiqtani Inuit Association	Right of Way-Kimmirut, pending submission.	Not Yet Applied		
Crown-Indigenous Relations and Northern Affairs Canada	Land Use Permit-Kinngait, pending submission.	Not Yet Applied		
Crown-Indigenous Relations and Northern Affairs Canada	Land Use Permit-Coral Harbour (Salliq), pending submission.	Not Yet Applied		
Crown-Indigenous Relations and Northern Affairs Canada	Land Use Permit-Kimmirut, pending submission.	Not Yet Applied		
Crown-Indigenous Relations and Northern Affairs Canada	Land Use Permit-Iqaluit, pending submission.	Not Yet Applied		
Nunavut Research Institute	Scientific Research License, pending submission.	Not Yet Applied		
Other	Nunavut Planning Commission, Conformity Determination No. 150863.	Active	2025-06-18	

Project transportation types

Transportation Type	Proposed Use	Length of Use
Air	Field team will mobilize to each community by air travel.	

Project accomodation types

Community

Material Use

Equipment to be used (including drills, pumps, aircraft, vehicles, etc)

Equipment Type	Quantity	Size - Dimensions	Proposed Use
Cone Penetration Tests	1	2.5 m x 1.5 m	To support determination of simultaneous laying and burial of the cable.
Mounted drill (CME45/55)	1	2.5 m x 5.5 m x 3 m	Geotechnical drill rig for onshore and marine boreholes.
Multibeam Echosonar	1	1 m x 50 cm	Bathymetry with an approximately 200 m wide survey corridor along HDD alignment.
Side Scan Sonar	1	2 m x 50 cm	Seabed type / conditions along and perpendicular to HDD alignment.
Electrodes and Cables	2	100 m x 5 cm	Differentiate surficial geology above the bedrock.
OTV / ATV Probe	1	2 m x 5 cm	Assess structural geology and groundwater conditions.
Borehole Caliper	1	To be determined	Records borehole diameter and combined with the OTV / ATV probe, assesses the structural geology and groundwater conditions.
Winch	1	To be determined	Used to lower the OTV / ATV probe.
Magnetometer	1	2 m x 50 cm	Combined with SSS to assess seabed morphology and submerged objects.
Airgun	1	90 cm x 9 m	Seismic source for seismic refraction and Multi-channel Analysis of Surface Waves.
Sub-bottom Profile	1	1 m x 1 m	Ground conditions below seabed with an approximately 200 m wide survey corridor along HDD alignment.
Sound Velocity Profiler	1	8 cm x 27 cm	To measure the speed of sound at different water column depths.
Drone	1	To be determined	Drone to conduct LiDAR and aerial surveys.
Remotely Operated Vehicle	1	72 cm x 24 cm x 44 cm	Visual observations of seabed conditions along and perpendicular to the HDD alignments.
Drop Camera	1	2.5 m x 1.5 m	Visual observations of seabed conditions along

			and perpendicular to the HDD alignments.
Hydrophone	1	530 mm long x 60mm diameter	Assess for noise (anthropogenic) and sound (marine mammals).
Thermistor Strings	2	20 m x 5 cm	Measure ground temperature to understand depth of ground above permafrost.

Detail Fuel and Hazardous Material Use

Detail fuel material use:	Fuel Type	Number of containers	Container Capacity	Total Amount	Units	Proposed Use
Information is not available						

Water Consumption

Daily amount (m3)	Proposed water retrieval methods	Proposed water retrieval location
3	Pumped by contractor.	Fresh water will be obtained from the hamlets' water truck for onshore drilling. Each community will be engaged in advance to confirm. Ocean water will be pumped from the ocean for marine drilling.

Waste

Waste Management

Project Activity	Type of Waste	Projected Amount Generated	Method of Disposal	Additional treatment procedures
Other	Other, Some non-combustible waste will be created from consumables during the Program (bottles, bags, gloves, etc.). The field crew will use existing facilities to process sewage and human waste.	Unknown at this time.	The KBC HDD Engineering Support Program will utilize a “pack in, pack out” policy in terms of waste management.	N/A

Environmental Impacts:

Environmental impacts associated with the KBC HDD Engineering Support Program are expected to be minimal and mitigatable. Potential impacts to terrestrial and marine habitat and wildlife may occur,; however, field personnel will be accompanied by local field assistants to confirm minimal disturbance. Temporary sediment suspension is likely to occur but ; however turbidity is not expected to result in exceedances of the federal Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines (WQG), and the footprint of the boreholes is not expected to be impactful to the seabed. For a detailed explanation of all mitigation measures proposed for the KBC HDD Engineering Support Program, please see section 5.3 of the attached Environmental Management Plan.

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

SECTION F1: Site Cleanup

SECTION G1: Well Authorization

SECTION G2: Onland Exploration

SECTION G3: Offshore Exploration

SECTION G4: Rig

SECTION H1: Vessel Use

There will be a small vessel used for the marine based activities including offshore boreholes, and geophysical activities that will be done to assess the seabed subsurface.

SECTION H2: Disposal At Sea

SECTION I1: Municipal Development

Description of Existing Environment: Physical Environment

Existing conditions of the surrounding physical environment was assessed through desktop review. Pertinent water bodies include the Hudson Bay, Hudson Strait and Frobisher Bay. The KBC HDD Engineering Support Program will take place in proximity to the Southampton Area of Interest, the Western Hudson Strait Ecologically and Biologically Significant Area, and the East Bay (Qaqsauqtuuq) and Harry Gibbons (Ikkattuaq) Migratory Bird Sanctuaries.

Description of Existing Environment: Biological Environment

Existing conditions for fish and marine mammals was assessed through desktop review. The Hudson Strait waters are biologically important for a variety of marine mammals, including bowhead whales, narwhal, Atlantic walrus, and belugas. As summarized in the Recommended Nunavut Land Use Plan (RNLUP) effects to marine mammals are expected to be minimal, as there will be marine mammal observers on the vessel to document and observe species and behaviour of marine mammals. Certain activities as well will require management of exclusion zones.

Description of Existing Environment: Socio-economic Environment

Letters to communicate the KBC HDD Engineering Support Program activities haves been sent to the Hamlet and theas associated Hunters and Trappers Association or Organization of Coral Harbour (Salliq), Kimmirut, and Kinngait. The addition of the KBC HDD Engineering Support Program activities in Iqaluit is a more recent development and consultation with the Hamlet of Iqaluit and their Hunters and Trappers Association is in progress.

Miscellaneous Project Information

N/A

Identification of Impacts and Proposed Mitigation Measures

Six main potential environmental effects have been identified for the KBC HDD Engineering Support Program. Potential effects are considered: a) disturbance or injury to fish and marine mammals due to underwater noise;, b) sediment and water quality degradation,; c) physical damage to marine organisms,; d) modifications and destruction to fish habitat,; e) important marine habitats; and f) waste production. A

robust mitigation plan has been developed which and includes: having local field assistants visually inspect for disturbance to terrestrial or marine life,; maintaining a small non-invasive research team that will only be present for a short-term,; and responding and reporting to spills in accordance to the Spill Contingency Planning and Reporting Regulations.

Cumulative Effects

The KBC HDD Engineering Support Program is not expected to result in cumulative effects. The KBC HDD Engineering Support Program is short-term in nature and appropriate mitigation and monitoring measures will be in place to minimize the potential for negative effects to the marine environment.

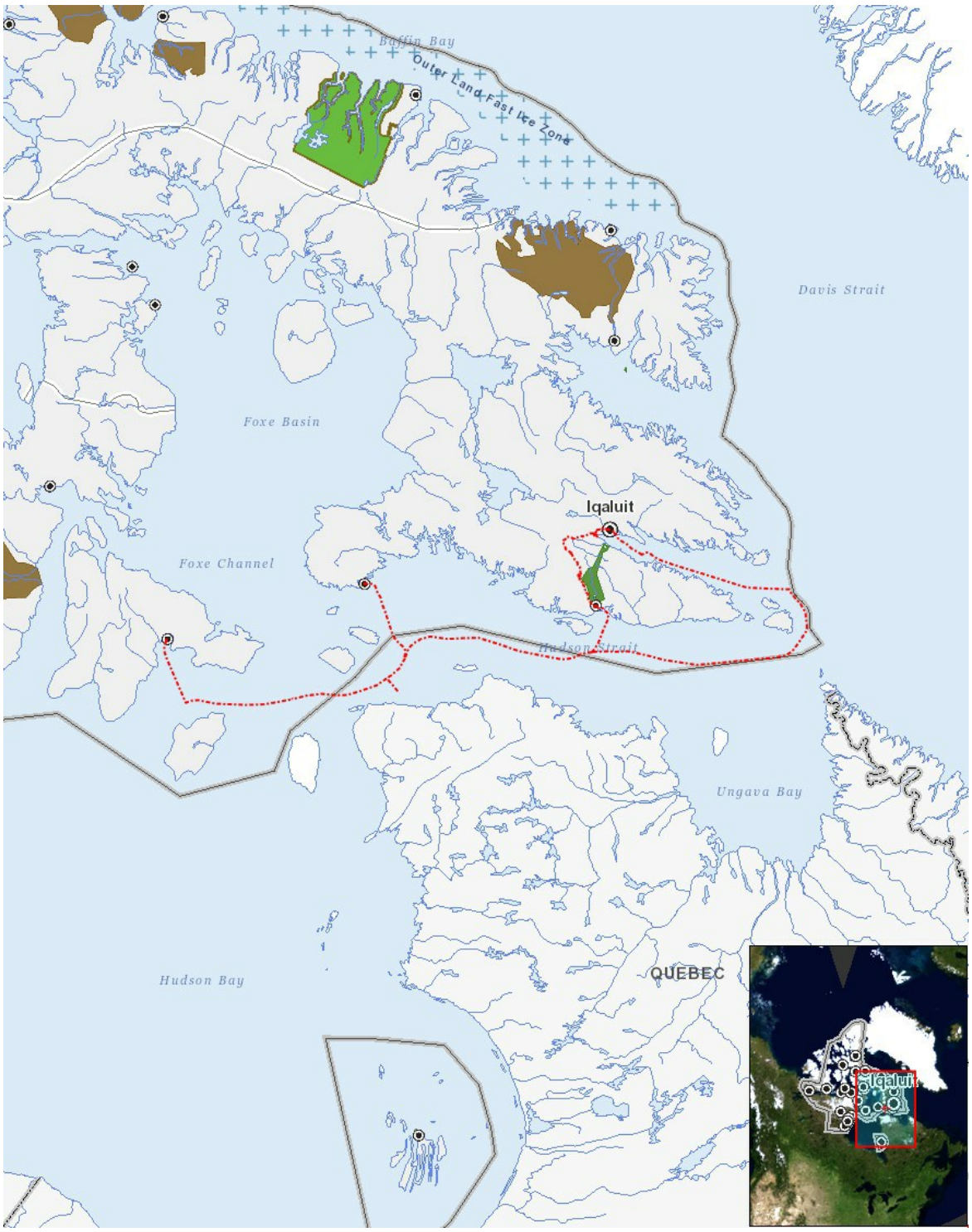
Impacts

Identification of Environmental Impacts

	PHYSICAL	Designated environmental areas	Ground stability	Permafrost	Hydrology / Limnology	Water quality	Climate conditions	Eskers and other unique or fragile landscapes	Surface and bedrock geology	Sediment and soil quality	Tidal processes and bathymetry	Air quality	Noise levels	BIOLOGICAL	Vegetation	Wildlife, including habitat and migration patterns	Birds, including habitat and migration patterns	Aquatic species, incl. habitat and migration/spawning	Wildlife protected areas	SOCIO-ECONOMIC	Archaeological and cultural historic sites	Employment	Community wellness	Community infrastructure	Human health
Construction																									
-			-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-
Operation																									
Scientific/International Polar Year Research		M	-	-	-	M	-	-	M	M	-	-	M		-	M	M	M	M		M	P	-	P	-
Decommissioning																									
-			-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-

(P = Positive, N = Negative and non-mitigatable, M = Negative and mitigatable, U = Unknown)

Project Location



List of Project Geometries

1	polygon	Iqaluit - HDD Study Area
2	polygon	Kinngait HDD Study Area
3	polygon	Kimmirut HDD Study Area
4	polygon	Coral Harbour (Salliq) HDD Study Area
5	polyline	KBC Project Cable Route