March 4, 2025

Mr. Goump Djalogue
Senior Planner, Nunavut Planning Commission
P.O. Box 2101
Iqaluit, Nunavut X0B 0C0

Dear Mr. Djalogue:

***RE: Qikiqtarjuaq Marine Infrastructure Project, NU, Application for Land Use Conformity Review***

# Introduction

The Government of Nunavut is proposing to construct a deep-sea port facility in Qikiqtarjuaq, Nunavut (the Project). CBCL Limited (CBCL) was retained by the Government of Nunavut to provide architectural and engineering services for the Project.

# Project Contact Information

## Project Name

Qikiqtarjuaq Marine Infrastructure Project

## Proponent and Representative Details

**Proponent**
Government of Nunavut – Community and Government Services

**Proponent Contact**
Justin McDonell, P.Eng.
A/ Manager Project Management
PO Box 1000 Station 200
Iqaluit, Nunavut X0A 0H0
Phone: 867-975-5441
Email: jmcdonell@GOV.NU.CA

**Consultant Representative**
CBCL Limited

**Consultant Contact**
Loretta Hardwick, M.Sc.
Regulatory and Permitting Lead
112 Kent Street, Suite 400
Place De Ville Tower B
Ottawa, Ontario K1P 5P2
Phone: 343-552-2235
Email: lhardwick@cbcl.ca

# Project Description

## Project Purpose and Need

The primary objective of the Project is to improve the marine infrastructure in Qikiqtarjuaq including the construction of a deep-sea port, to support the needs of northern marine trade corridors, and especially the Davis Strait and Baffin Bay marine traffic.

## Project Location and Land Use

### Project Location

The Project will be located at Qikiqtarjuaq, Nunavut (Figure 1, attached), specifically in and on the shore of Broughton Channel (Figure 2, attached). The footprint of the new deep-water port will fall partially within the upland, tidal zone, and seabed area along the shoreline of Broughton Channel approximately one kilometre south of the Qikiqtarjuaq Airport.

### Planning Region

The project will be carried out in the Qikiqtaaluk Region in southeastern Baffin Island.

### Land Use and Ownership

Based on the 2015 Qikiqtarjuaq Community Plan and Zoning By-law, current land use at the proposed location for the Project falls into the following categories:

- Transportation
- Industrial

The entire Project area—including portion of Broughton Channel between Broughton Island and the mainland of Baffin Island—is designated in the 2015 Qikiqtarjuaq Community Plan and Zoning By-law as municipal lands under the administration of the Hamlet of Qikiqtarjuaq.

## Project Overview and Components

The Project is a coastal infrastructure project that consists of the construction and operation of a 75-metre (m) long closed face marginal wharf structure with 10 m depth at low tide, and 18,000 square metres ($m^2$) of laydown space. The Project will also include an approximately 200-m long access road from municipal roads to the facility, a crane to offload cargo, wastewater receiving systems, VHF radio communications station, services to allow for freezer containers, operations and security office, and power distribution. The proposed locations of project components are shown on Figure 2 (attached); Port Area 1 on Figure 2 shows the wharf and laydown area while Port Area 2 shows the armour stone protection around the marine perimeter.

In addition to the physical components of the Project, the following activities will be carried out during construction:

- Establishment of temporary construction work camp
- Establishment of temporary construction staging, laydown, and storage areas
- Dredging and reuse of dredged material
- Quarrying (drilling, blasting, excavation)
- Hauling quarried material from the quarry to the port site
- Upland pile driving
- Infilling
- Utility pole and lighting installation
- Building construction
- Marine-based concrete caisson installation (built off-site)

Construction of the Project will involve land-based (e.g., site preparation, quarrying rock) and marine-based activities (e.g., marine construction, dredging of material from the harbour bottom). Dredged materials may be reused as fill during construction. Rock sourced from a new local quarry will be used during construction. Rock will be hauled from the quarry via existing hamlet roads.

## Project Schedule

Construction is scheduled to commence with mobilization of equipment and materials, and potentially some site preparation work in 2026. Site construction works will commence in 2026 and be completed by fall of 2029, with construction shut down over the winter seasons. Operation of the port is expected to commence at the start of the open water season in 2030.

## Personnel

During construction, it is estimated that there will be 25 to 30 personnel required. Construction personnel will be required during the open-water season and those that are not residents of Qikiqtarjuaq will depart for the winter. During the active construction seasons, personnel will be onsite over a period of approximately 130 days for a total of 520 construction days per person over the course of the four-year construction phase. During operation, the port will be managed by the Department of Economic Development and Transportation (EDT). The number of personnel required during operation has not yet been determined.

## Equipment and Materials

Equipment and materials required during construction of the Project will be determined by the contractor; however, the following sections provide an estimate of the equipment and materials that are likely to be required, based on the schematic design of the Project, the Project location, and experience with similar projects.

## Equipment

Table 1 provides a summary of the types and quantities (units) of equipment that is estimated to be used during construction of the Project, along with the size (weight or dimensions) and proposed use. Equipment for managing the port during operation will include a mobile crane for loading and unloading ships, freezer units for storage of perishable goods, a forklift for material handling, and personal vehicles of employees.

**Table 1 Estimate of Equipment Use During Project Construction**

| Type | Units | Description | Size (m) | Use |
|---|---|---|---|---|
| Drilling rig | 2 | 5 ton | 5.5 x 2.3 | Quarrying |
| Excavator | 5 | 30 - 60 ton | 4 x 3.5 | Quarrying, material handling, excavating |
| Rock truck | 4 | 35 ton articulating | 11.1 x 4.2 | Transporting quarried rock |
| Transport truck | 2 | 40 tons | 16 x 2.9 | Transporting equipment and materials |
| Front end loader | 3 | 966 - 988 | 7.5 x 2.5 | Material loading and handling |
| Compactor | 1 | 20 ton | 6.2 x 2.5 | Work surface and road compaction |
| Bulldozer | 1 | D8 | 3.2 x 2.7 | Work surface and road levelling |
| Grader | 1 | 140 ton | 10.1 x 2.5 | Work surface and road grading |
| Spud barge/ derrick | 1 | 20m x 50m deck with 150 ton crane | 20 x 50 | Dredging, transporting material and equipment |
| Material scow | 2 | 500 cubic metre | 47 x 11 | Dredging and disposal of dredged material |
| Tug | 1 | 1000 - 1500 horsepower | 14.85 x 5.8 | Transport and movement of marine equipment |
| Work boat | 2 | 50 - 500 horsepower | 9.75 x 2.9 | Transport and movement of marine equipment and personnel |
| Pick-up truck | 3 | 3/4 ton | 4.8 x 1.9 | Transport and movement of equipment and personnel |
| Fuel/service truck | 1 | 10 ton | 13 x 2.5 | Transport fuel from Government of Nunavut Petroleum Products Division dispensers to mobile equipment |
| Water truck | 1 | 10 ton | 9.5 x 2.5 | Transport water from municipal water to work camp and construction site |
| Wastewater truck | 1 | 10 ton | 9.5 x 2.5 | Transport wastewater from work camp and construction site to municipal wastewater treatment facility |
| Telehandler/ forklift | 1 | 5 ton | 6.2 x 2.6 | Material and equipment loading, handling, and movement |

| Type | Units | Description | Size (m) | Use |
|---|---|---|---|---|
| Rough terrain crane | 1 | 250 ton | 14.5 x 7.9 | Material and equipment loading, handling, and movement |
| Rock Crusher for quarry | 1 | 125 ton | 14.6 x 4.2<br>14.3 x 4.2<br>17 x 3.6 | Portable jaw crusher, cone and screening plant for the manufacturing of aggregate |
| Supply ship (Might Servant 2) | 1 | 29,193 gross tonnage, 40,190 deadweight tonnage | 190.03 length x 40 beam x 4 minimum draft | Transporting concrete caissons site |

## Fuel

Table 2 provides a summary of the types and quantities (units and volume) of fuel that is estimated to be used during construction of the Project, along with the proposed storage and use. Fuel storage and dispensing is not currently part of the project design but is expected to be required in the future.

**Table 2 Estimate of Fuel Use During Project Construction**

| Fuel | Storage Method / Container Volume | Number of Containers | Total Volume ($m^3$) | Use |
|---|---|---|---|---|
| Diesel | Fuel will be dispensed on a daily basis from existing facilities in Qikiqtarjuaq | n/a | 5,700 | Mobile equipment, remote generators and heaters |
| Gasoline | Fuel will be dispensed on a daily basis from existing facilities in Qikiqtarjuaq | n/a | 140 | Small work boats, small generators and ATVs |
| Propane | 100-lb (25 gallon) compressed gas tanks | 10 | 1 | Camp use (heating, cooking, refrigeration) |
| Acetylene | 4 $m^3$ compressed gas cylinder | 20 | 80 | Metal cutting and welding torches |

## Hazardous Materials and Chemicals

Table 3 provides a summary of the types and quantities (units and volume) of hazardous materials and chemicals that are estimated to be used during construction of the Project, along with the proposed storage and use. During operation, hazardous materials and chemicals are expected to be similar to that used during construction, with the exception of explosives, which are not expected to be used during operation.

**Table 3 Estimate of Hazardous Materials and Chemicals Use During Project Construction**

| Chemical / Material | Storage Method / Container Volume | Number of Containers | Total Volume | Use |
|---|---|---|---|---|
| Oils and lubricants | 22.7-L (5-gallon) supplier containers | 10 | 227 L (50 gallons) | Maintenance of mobile equipment |
| Paint | 4.5-L (1-gallon) supplier containers | 10 | 45 L (10 gallons) | Painting wharf hardware and miscellaneous components |
| Explosives | To be determined. Storage and handling will be in accordance with licence, certificate or permit issued under the Explosives Act and Regulations | | | Quarrying |

## Water Use

Because commercial accommodations in Qikiqtarjuaq are limited, it is expected that the contractor will establish a temporary work camp to accommodate personnel during construction. Water will be required primarily for cooking and consumption at the work camp and to a lesser degree at the construction site. During construction, it is estimated that approximately 6 $m^3$ per day will be required for a total of 520 construction days. Water is not required during the winter shut-down periods.

During construction and operation, potable water will be delivered by bulk truck from the community water supply. The amount of water required during operation of the port has not been determined as it is not currently part of the project design but is expected to be required in the future.

## Waste Management

Table 4 provides a summary of the types and quantities (units and volume) of fuel that is estimated to be used during construction of the Project, along with the proposed storage and use. During operation, wastes are expected to consist of combustible and non-combustible waste generated from the on-site office, as well as small amounts of hazardous waste that may be generated during routine maintenance activities. Waste generated during operation will be managed in a manner similar to that during construction.

**Table 4 Estimate of Waste Production and Disposal During Project Construction**

| Waste Type | Associated Project Activity | Projected Amount Generated | Method of Disposal |
|---|---|---|---|
| Hazardous | Construction | 100 L | Packaged, sealed and transported south in shipping containers for |

| Waste Type | Associated Project Activity | Projected Amount Generated | Method of Disposal |
|---|---|---|---|
| | | | disposal in accordance with applicable regulations |
| Combustible wastes | Camp | 2 tonnes | Municipal landfill |
| Non-Combustible wastes | Camp | 0.5 tonnes | Municipal landfill |
| Greywater | Camp | 800 $m^3$ | Collected in wastewater truck and transported to municipal wastewater treatment facility |
| Sewage (human waste) | Camp | 1500 $m^3$ | Collected in wastewater truck and transported to municipal wastewater treatment facility |
| Overburden (organic soil, waste rock) | Quarrying | Negligible | Stockpiled at quarry |
| Marine sediment | Dredging | 25,000 $m^3$ | Infilling, reuse, and/or land disposal |

# Permits, Authorizations, and Approvals

Table 5 presents a list of approvals, permits, authorizations, and licenses that are expected to be required for construction of the Project, after the Nunavut Planning Commission completes a review of the Project proposal to determine conformity.

**Table 5 Approvals, Permits, and Authorizations for Project Construction**

| Approval / Permit / License /Authorization | Regulatory Authority | Associated Component or Activity |
|---|---|---|
| Screening of Project Proposal | Nunavut Impact Review Board | Entire Project |
| *Fisheries Act* Authorization | Fisheries and Oceans Canada (DFO) | Construction below high-water mark |
| Approval under *Canadian Navigable Waters Act* | Transport Canada | Installation of structures that will impact navigation |
| Explosives License | Natural Resources Canada | Quarrying |
| Type B Water License | Nunavut Water Board (NWB) | Water use for camp |
| Explosives License | Government of Nunavut Workers Safety & Compensation Commission (WSCC) | Quarrying (acquisition and storage of explosives) |
| Commercial / Industrial Land Lease | Hamlet of Qikiqtarjuaq | Port |
| Land Use Permit | Hamlet of Qikiqtarjuaq | Quarrying, camp site |
| Quarrying Permit | Hamlet of Qikiqtarjuaq | Quarrying |
| Fire Marshall Approval | Hamlet of Qikiqtarjuaq | Port, work camp |

| Approval / Permit / License /Authorization | Regulatory Authority | Associated Component or Activity |
|---|---|---|
| Development Permit/ Agreement | Hamlet of Qikiqtarjuaq | Port, work camp, quarry |
| Obstacle Notice and Assessment | Transport Canada, Civil Aviation Office, Prairie and Northern | Proximity to airport |
| Land Use Review | NAV Canada, Land Use Office | Qikiqtarjuaq Airport zoning regulations |
| Qikiqtarjuaq Airport Zoning | GN – Nunavut Airports, Operations & Safety | Proximity to airport |
| Aids to Navigation Review | Canadian Coast Guard (CCG) | Safe marine navigation measures |

# Consultation

Community consultation sessions have included members of the Hamlet Council, local elders, community members, as well as other organizations. Additionally, independent from the port project, Qikiqtarjuaq is undergoing long term community planning. Community consultation will help to ensure that the port project and long-term port master plan is consistent with the community strategy and plans. The Team will continue to gather and summarize input, concerns, knowledge, and experience from community members and local/regional businesses and share the updates with regional/territorial/national stakeholders who have lobbied for the long anticipated deep-sea harbour.

Community consultations have been broken down into three separate consultation meetings taking place within the community.

## Community Consultation 1

The initial consultation on the Project design took place in December 2023. At the time of the initial meeting, design elements were in early stages. For the information that was available at the time of the meeting, the project team met with community representatives by meeting with Hunters and Trappers Organization (HTO), Hamlet Council, and Qikiqtani Inuit Association (QIA). The purpose of the initial stakeholder meeting was to update community members on the following:

- Introduce the project team.
- Layout the design process and present project timeframes.
- Present preliminary findings from initial coastal and bathymetric survey and present justification for the proposed project site.
- Confirm community agreement for the proposed project site.
- Identity any community concerns or applicable information associated with the proposed site.

A critical milestone for this consultation was to verify the community agreement with the site location. Information from this session was required to then begin conversations with shipping companies about locations, mooring, and ship movement logistics. Additionally, this information was required to confirm borehole locations for the upcoming field programs and permitting applications.

## Community Consultation 2

The second community consultation took place in the Hamlet of Qikiqtarjuaq March 18 to 20, 2024 to update the Hamlet, HTO, QIA, Arctic Fisheries Alliance and public on the following:

- The preferred option that was being presented in a high level site plan.
- Overview of the upcoming field programs
- Proposed work areas

The following input from the community was sought during these sessions:

- Set up working group
- Identify members for Traditional Knowledge (TK) study
- Identify areas of concern with work that is proposed
- Begin discussion on land use in the vicinity of the harbour

The material provided and presented during Consultation Number 2 was to present the various field studies that are to take place and determine if there was any concern or additional information that would be beneficial to the design team.

## Community Consultation 3

The third community consultation took place in the Hamlet of Qikiqtarjuaq the week of October 7 to 9, 2024. The following meetings were held:

- October 7, 2024, with Working Group for general update and Traditional Knowledge Gathering
- October 7, 2024, with Hamlet Council and HTO for general update
- October 8, 2024, meeting with Elders and HTO for Traditional Knowledge Gathering
- October 8, 2024, Community Open House

This was the third of the three consultations planned for this project with the objective to obtain community concerns, address questions, and provide information to stakeholders on the project planning and development.

# Environmental Impacts, Mitigation, and Management

## Environmental and Socio-economic Impacts

The potential adverse environmental and socio-economic effects of the Project are anticipated to occur primarily during construction. The potential effects during operation are expected to be predominantly positive socio-economic effects. The potential adverse and positive environmental and socio-economic effects associated with construction and operation of the Project are outlined below:

- Atmospheric Environment
  - Changes in local air quality (emissions from operation of combustion engines, dust)
  - Changes in local acoustic environment (noise from operation of equipment, blasting, and pile driving)
  - Changes in local ambient light (lighting during construction and operation)
- Terrestrial Environment
  - Change in terrain (from quarrying and infilling)
  - Changes in soil quality (impacts from accidental spill of fuel or hazardous material)
  - Disturbance to terrestrial wildlife
- Aquatic Environment
  - Changes in water quality (impacts from accidental spill of fuel or hazardous material, increase in suspended sediment during construction)
  - Disturbance to marine wildlife
  - Alteration or loss of fish habitat
- Socio-economic Environment
  - Change in land use
  - Conflict with resource users (disruption to navigation, hunting, or fishing)
  - Disturbance to local community from increase in traffic, noise, light, and dust
  - Increased pressure on municipal services and infrastructure
  - Increase in capacity for marine infrastructure users (fishing, shipping, docking)
  - Increase in potential for economic development during operation
  - Increase potential for local employment
  - Improved function and capacity for storage

## Environmental Mitigation and Management

Potential adverse environmental effects of the Project will be mitigated and managed through the development and implementation of a Construction Environmental Management Plan (CEMP) and an Operation Environmental Management Plan (OEMP). The CEMP and OEMP will detail the environmental protection requirements and mitigation measures that will be adhered to on the Project site and will provide a framework for the development and implementation of safe and environmentally responsible practices to reduce environmental effects of the Project. The CEMP

and OEMP will provide overall strategies and guidance for compliance with relevant environmental legislation and policies, as well as compliance with the terms and conditions of permits and approvals obtained. Construction personnel will be trained in the requirements of the CEMP and advised of the regulatory requirements and conditions for the Project construction. Operation personnel will be trained in the requirements of the OEMP and advised of the regulatory requirements and conditions for the Project operation.

The CEMP will include the following, some of which will be developed by the contractor:

- Project overview and purpose of the plan
- Outline of relevant regulatory requirements and conditions
- Description of roles and responsibilities
- Mitigation and management plans
- Spill prevention, contingency, and emergency response plan
- Erosion and sediment control plan
- Waste management plan
- Traffic management plan
- Blasting management plan
- Marine construction management plan
- Wildlife mitigation and monitoring plan
- Monitoring and reporting requirements

The OEMP will include the following, which will be developed by the Government of Nunavut Department of Community and Government Services (CGS) or Department of Economic Development and Transportation (EDT):

- Project overview and purpose of the plan
- Outline of relevant regulatory requirements and conditions
- Description of roles and responsibilities
- Mitigation and management plans
- Spill prevention, contingency, and emergency response plan
- Erosion and sediment control plan
- Waste management plan
- Traffic management plan
- Safety plan
- Wildlife mitigation and monitoring plan
- Monitoring and reporting requirements
- Inspection, reporting, and conformance requirements
- Training and competency requirements
- Communications procedures

## Closure

We trust this letter provides the information required to support the Nunavut Planning Commission's review of the proposal for the Qikiqtarjuaq Marine Infrastructure Project to determine conformity land use plans. If you have any questions or require further details, please do not hesitate to contact the undersigned.

Yours very truly,

CBCL Limited

Loretta Hardwick, M.Sc.
Director, Environmental Science
Direct: 343-552-2235
E-Mail: lhardwick@cbcl.ca

David Parsons, P.Eng.
Project Manager

Attachments: Figures

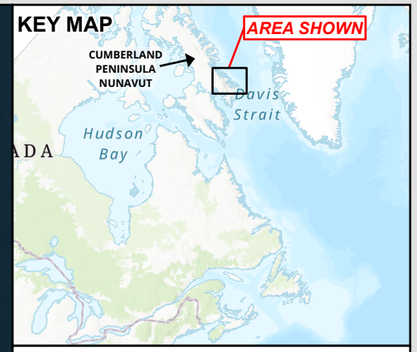
CC: Justin McDonell, P.Eng., Government of Nunavut, Community and Government Services

Report No: 234414.00

# Attachment A

Figures


**KEY MAP**




**LEGEND**

- Qikiqtarjuaq Marine Infrastructure Site

Nunavut

CBCL

# QIKIQTARJUAQ MARINE INFRASTRUCTURE

## PROJECT LOCATION

| DATE: | PROJ N°: | FIGURE: |
|---|---|---|
| 2025-02-18 | 234414.00 | 1 |
| DRAWN BY: | CHECKED BY: | APPROVED: |
| CM | KH | LH |

NOTES:

@ 11 X 17

0 10,000 20,000 40,000
Metres

1:1,000,000 Coordinate System: NAD 1983 CSRS UTM Zone 20N

N

BROUGHTON CHANNEL

QIKIQTARJUAQ

Proposed Camp Pad Area (actual area will be smaller)

Proposed Stockpile Areas

Proposed Quarry Location

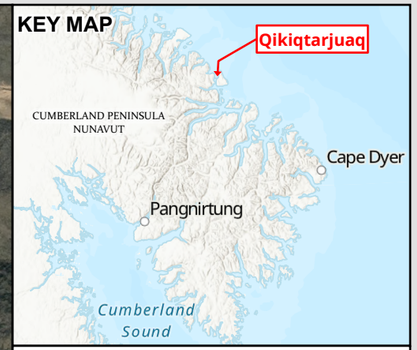
Quarry Site

Port Service Road

Port

BROUGHTON ISLAND

**KEY MAP**




**LEGEND**

- Port - Area 1
- Port - Area 2
- Proposed Camp Pad Area
- Proposed Quarry Location
- Proposed Stockpile Area
- Quarry Site
- Service Road

# QIKIQTARJUAQ MARINE INFRASTRUCTURE

## PROPOSED LOCATIONS OF PROJECT COMPONENTS

| DATE: | PROJ N°: | FIGURE: |
|---|---|---|
| 2025-02-18 | 234414.00 | 1 |
| DRAWN BY: | CHECKED BY: | APPROVED: |
| CM | KH | LH |

NOTES:

@ 11 X 17

0 250 500 1,000 Metres

N

1:20,000 Coordinate System: NAD 1983 CSRS UTM Zone 20N

Document Path: X:\Halifax\Data\Projects\2023\234414.00 Gov of NU A&E Marine Infrastructure\44 CAD\08 GIS\PRO\234414_Qikiqtarjuaq.aprx - cmacdonald - 18/Feb/2025