Qikiqtarjuaq Marine Infrastructure Project

Project Proposal

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CBCL

Nunavut

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Project No. 234414.00

Contents

1 Introduction

1.1 Project Overview

The Government of Nunavut Department of Transportation and Infrastructure is proposing to construct a deep-sea port facility (the Project) in Qikiqtarjuaq in Qikiqtaaluk Region. This coastal infrastructure project will consist of a new closed-face marginal wharf structure complete with modern equipment and tools to accommodate commercial, scientific, and tourist vessels.

The primary objectives of the Project are to improve marine infrastructure in the community and provide facilities to support marine traffic in the Davis Strait and Baffin Bay. The need for a deep-sea port was initially identified in the 2005 *Fish Plant Feasibility Study* by Marcop Developments Limited (TriNav Fisheries Consultants Inc. 2020) and reiterated in the *Infrastructure Plan for Qikiqtarjuaq* (Municipality of Qikiqtarjuaq 2020).

Construction will involve both land-based (e.g., site preparation, rock quarrying) and marine-based activities (e.g., harbour dredging, construction of wharf and armour stone protection). Rock and fill will be excavated from a new quarry. A temporary camp will be established to accommodate workers during construction. Traffic between construction areas and the camp, quarry, and stockpile areas will make use of existing roads.

1.2 Project Location

The Project will be located in the Municipality of Qikiqtarjuaq, Qikiqtaaluk Region, Nunavut, south of the main commercial and residential area of the community. **Figure 1** illustrates the proposed site configuration and locations of project components: Port Area 1 is the wharf and laydown area; Port Area 2 shows the armour stone protection around the marine perimeter. The project footprint will overlap with upland, tidal zone, and seabed areas along the western shoreline of Broughton Island, south of the Qikiqtarjuaq Airport. The entire Project area, including port, access road, haul roads, quarry, stockpile areas, and temporary work camp, is located between 0.5 and 2.5 km away from residential areas in the community.

BROUGHTON CHANNEL

QIKIQTARJUAQ

Proposed Camp Pad Area (actual area will be smaller)

Proposed Stockpile Areas

Proposed Quarry Location

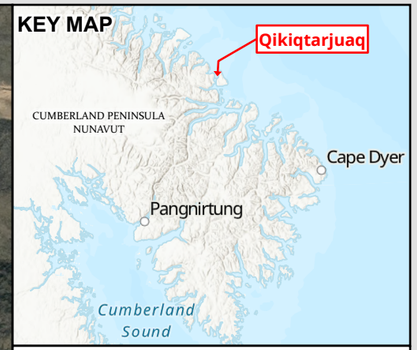
Quarry Site

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

Schedule 3 of the Qikiqtarjuaq Community Plan (Municipal By-law 243) shows the proposed port location is zoned Industrial and Transportation; the proposed quarry location is zoned Nuna; the proposed stockpile areas are zoned Open Space; and the proposed temporary work camp area is zoned Residential and Open Space. The Nunavut Planning Commission (NPC) has drafted a land use plan covering the Municipality of Qikiqtarjuaq, but it is not yet in effect (NPC 2023).

The entire Project footprint is on lands administered by the Municipality of Qikiqtarjuaq.

1.3 Regulatory Framework

The Project is located in the Nunavut Settlement Area (NSA) which is governed under the Nunavut Land Claims Agreement (NLCA) and the *Nunavut Planning and Project Assessment Act* (NPPAA). Proposed developments within the NSA are required to be reviewed for land use conformity by the NPC and subsequently by the Nunavut Impact Review Board (NIRB) to determine if environmental review is required. CBCL Limited, on behalf of the Government of Nunavut, submitted a project proposal to the NPC in March of 2025. The NPC issued a determination of conformity and referred the project to NIRB for screening on April 14, 2025. The purpose of this Project Proposal is to provide the information required by the NIRB to complete their screening and has been prepared in accordance with the requirements outlined in the Proponent's Guide (NIRB 2020).

Construction of the Project is expected to require permits, authorizations, and approvals from various agencies (**Table 1**). These approvals can only be obtained after the NIRB has completed their screening. The NIRB screening process provides government and non-government organizations the opportunity to comment on the Project Proposal, and several agencies not listed in **Table 1** may be invited to comment, including the Nunavut Wildlife Management Board (NWMB), Nunavut Marine Council (NMC), Nunavut Tunngavik Inc. (NTI), and Qikiqtaaluk Wildlife Board (QWB).

Table 1. List of permits, authorizations, approvals, and licenses that are expected to be required for the Project.

Type of Approval	Regulatory Authority	Associated Component/ Activity
Fisheries Act Authorization	Fisheries and Oceans Canada (DFO)	Dredging, infilling, marine construction
Canadian Navigable Waters Act Approval	Transport Canada	Dredging, infilling, marine construction
Disposal at Sea Permit	Environment and Climate Change Canada (ECCC)	At-sea disposal of dredged material
Type B Water License	Nunavut Water Board (NWB)	Water use for construction
Explosives License	Nunavut Workers Safety & Compensation Commission (WSCC)	Quarrying (acquisition, storage, and use of explosives)
Explosives License	Natural Resources Canada	Quarrying

Type of Approval	Regulatory Authority	Associated Component/ Activity
Quarrying Permit	Municipality of Qikiqtarjuaq	Quarrying
Land Use Permit Industrial Land Lease	Municipality of Qikiqtarjuaq	Quarrying, hauling, work camp
Fire Marshall Approval	Municipality of Qikiqtarjuaq	Port, work camp
Development Permit/ Agreement	Municipality of Qikiqtarjuaq	Port, work camp, quarry
Obstacle Notice and Assessment	Transport Canada, Civil Aviation Office, Prairie and Northern	Proximity to Qikiqtarjuaq Airport
Land Use Review	NAV Canada, Land Use Office	Qikiqtarjuaq Airport zoning regulations
Qikiqtarjuaq Airport Zoning	GN – Nunavut Airports, Operations & Safety	Proximity to Qikiqtarjuaq Airport
Aids to Navigation Review	Canadian Coast Guard (CCG)	Safe marine navigation measures

1.4 Proponent Information

The Government of Nunavut is the Project proponent (Applicant) and has retained CBCL Limited (Consultant) to assist with the regulatory process, detailed design, tendering, and construction administration. The Government of Nunavut will retain ownership and maintenance responsibilities of the completed facility. Contact information for representatives of the Applicant and Consultant are provided in **Table 2**.

Table 2. Applicant and Consultant contact information.

Applicant	Consultant
Government of Nunavut Community and Government Services P.O. Box 1000 Station 200 Iqaluit, NU X0A 0H0 **Representative:** Justin McDonell, P.Eng. A/ Manager Project Management 867-975-5441 jmcdonell@gov.nu.ca	CBCL Limited 1505 Barrington Street, Suite 901 PO Box 606 Halifax, NS B3J 2R7 **Representative:** Loretta Hardwick, M.Sc. Regulatory and Environmental Lead 343-552-2235 lhardwick@cbcl.ca

2 Public Participation and Engagement

2.1 Engagement

The need for a deep-sea port facility was initially identified in 2005 (TriNav Fisheries Consultants Inc., 2020) and community consultation on a deep-sea port was initiated in 2009 for the Qikiqtarjuaq Integrated Community Infrastructure Sustainability Plan (Aarluk Consulting Inc., 2011). After a federal funding agreement was established in 2022, the Government of Nunavut initiated the design and construction process, including community consultation. Three community consultation sessions for the Project during the design stage were held between 2023 and 2024, and included members of the municipal council, local Elders, community members, and other organizations (**Table 3**). Community consultation will help to ensure that the Project and long-term port master plan align with the community strategy and plans.

Table 3. Dates and participants in consultation sessions for the Project.

Date	Participants
December 2023	Hamlet Council, Hunters and Trappers Organization (HTO), Qikiqtani Inuit Association (QIA)
March 18-20, 2024	General public, HTO, QIA, Arctic Fisheries Alliance
October 7, 2024	Working group, Hamlet Council, HTO
October 8, 2024	Elders, HTO, general public

2.1.1 Community Consultation 1

The first consultation session for the Project took place in the early stages of project design in December of 2023. The project team met with the municipal council, HTO, and QIA with the following objectives:

- 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

An important outcome of this session was confirmation of the preferred site location by the community, which enabled conversations with shipping companies about logistical requirements and helped refine locations of field investigations in 2024.

2.1.2 Community Consultation 2

The second community consultation took place in Qikiqtarjuaq from March 18 to 20, 2024 to update the municipal council, 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 study
- Identify areas of concern with work that is proposed
- Begin discussion on land use in the vicinity of the harbour

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

2.1.3 Community Consultation 3

The third community consultation took place in 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 municipal 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.

2.2 Summary of Issues and Concerns

Elders, municipal leaders, and other community members were broadly in support of a new deep-water port for Qikiqtarjuaq. The main issues and concerns were about expediency of construction, since the Project has been in planning stages since at least 2005. Participants in engagement sessions noted many potential benefits to the community and made comparisons to communities in Greenland which have seen benefits from the construction of new port facilities.

One Elder expressed concern that the use of blasting to construct the new port could affect groundwater, although this was disputed by others. Blasting will not be used as a construction method except possibly to excavate rock from the existing quarry.

Local Elders and members of the HTO voiced concerns about underwater construction noise deterring marine mammals, which are hunted by the community. They recognized, however, that any disruption would be temporary and that an operational deep-water port would be beneficial to hunting and fishing. Measures to mitigate the effects of construction noise on marine mammals are recommended in **Section 5.4.3** which will prevent or minimize construction interference with hunting and fishing.

3 Local Traditional Knowledge

3.1 Traditional Knowledge Gathering

CBCL conducted five meetings in Qikiqtarjuaq in 2024 to gather community and traditional knowledge (Inuit Qaujimajatuqangit) of wildlife and land use in and around the Project study area. Important species, habitats, and harvesting areas were identified which could be affected by construction and operation of the new port (**Table 4**).

Table 4. Species, habitat, and cultural activities identified by participants in IQ gathering sessions in Qikiqtarjuaq.

Item	Details
Seaweed Harvesting	Residents harvest kelp and rockweed in an area on the western shore of the Broughton Channel.
Clam Digging	People collect soft-shelled clams (*Mya* spp.) from the intertidal zone adjacent to the community and at another site south of the Project location.
Shrimp Harvesting	People harvest shrimp from a marine area southwest of the community.
Marine and Anadromous Fish	Community members identified important fish species, habitats, and harvesting areas in waters around Broughton Island.
Fishing	Residents fish for Arctic Char along the coast of Baffin Island north of Qikiqtarjuaq; some residents (mostly children) fish for sculpin off the existing wharf in the community.
Seals and Walrus	Community members provided information about where and when seals and walruses are typically seen in the area. Locals have observed a decline in the number of seals in the Broughton Channel since the 1960s.
Whales	Bowhead whales are sometimes seen during spring and fall migration. Residents identified several areas where Narwhals and other whales are netted.
Polar Bears	Residents indicated that Polar Bears are seen frequently in the region; at least one resident has worked as a guide for tourists wanting to see Polar Bears in Auyuittuq National Park.
Berry Picking	People collect berries – likely bog blueberry (*Vaccinium uliginosum*) – in an area near the proposed marine port and has become more common since the access road was built.
Gull Colonies	Colonies of likely Glaucous Gull (*Larus hyperboreus*) and Iceland Gull (*L. glaucoides*) are present on mainland or islands north and south of Qikiqtarjuaq.

Item	Details
Caribou	The last caribou harvest on the island was in the early 1950s near the reservoir, but locals reported they are seeing caribou coming back to the area. Tracks were reported on the mainland adjacent to Qikiqtarjuaq.
Egg Picking	People collect eggs from Thick-billed Murre (*Uria lomvia*) and gulls.
Foxes	Foxes are present year-round and can be found anywhere. Species were not specified but both Red Fox (*Vulpes vulpes*) and Arctic Fox (*V. lagopus*) are likely.
Rabbits	Arctic Hares (*Lepus arcticus*) are present year-round and can be found anywhere on the island.
Wolves	Present year-round and there is a wolf den at the north fjord. Tracks have been observed near the local dump.
Ptarmigan	Ptarmigan – presumably Rock Ptarmigan (*Lagopus muta*) – are present year-round and can be found anywhere on the island.
Eiders	Present in September, October, and November and are common. Species were not specified but King Eider (*Somateria spectabilis*) and Common Eider (*S. molissima*) could both be present.
Golden Eagle	Locals have heard reports of Golden Eagle (*Aquila chrysaetos*) nests approximately 65 to 80 km south of the community.
Gyrfalcons	Present in the area.
Owls	Owls – presumably Snowy Owls (*Bubo scandicus*) – are present in the area.
Murre Colonies	A colony of probably Thick-billed Murres is present on an island south of Qikiqtarjuaq.

3.2 Integration into Design and Assessment

The proposed port location was selected based on community knowledge of marine conditions in Broughton Channel. The location of the temporary work camp was identified by the community as a site that does not experience spring flooding.

Some Elders expressed concerns that construction activity could deter marine mammals, which are hunted by the community. Mitigation measures to avoid negative effects on marine mammals are discussed in this report (**Section 7.2.4**).

4 Project Description

4.1 Purpose and Scope

The primary objective of the Project is to improve marine infrastructure to support northern marine trade corridors in the Davis Strait and Baffin Bay. The development of the Project will also bring opportunities to support the growing fisheries, tourism, and trade industries in Nunavut. The Government of Nunavut Department of Community and Government Services is committed to constructing a deep-sea port in the community to advance the objectives of the plan.

Qikiqtarjuaq currently has a small harbour which cannot accommodate commercial fishing vessels and does not meet the needs of the community. A deep-sea port will provide improved facilities for the community and for shipping traffic in the Davis Strait, as well as providing commercial and employment opportunities.

4.2 Project Components

Figure 1 illustrates the Project components and overall site configuration. The Project will consist of the following components:

- 75 m long closed-face marginal wharf structure with armour stone protection
- 275 m access road connecting to existing municipal roads
- Crane for offloading cargo
- Wastewater receiving systems
- VHF radio communications station
- Freezer container facilities
- Operations and security office
- Power distribution

4.3 Construction

Construction of the above components will require the following components:

- Quarrying operations (e.g., blasting, excavation) at a new quarry in Qikiqtarjuaq
- Temporary materials stockpile areas
- Temporary staging/laydown areas
- Temporary camp to accommodate workers.
- Dredging and disposal of dredged material (may be used for construction)
- Utility installation (e.g., poles, lighting)

Rock and gravel required to construct the new port and access road will be sourced from a new quarry. The proposed quarry is approximately 2 km by road from the port site. The road that will be used to haul material from the quarry has been recently constructed by the municipality; a short (275 m) access road will be constructed as part of the Project to connect the port facilities to the newly constructed road. Infilling and excavation will be carried out to establish the port facilities and expand the upland area for the laydown area. Some dredging may be required to construct the new wharf. Disposal locations for dredged material have not yet been selected; it may be stockpiled on land for use by the community or reused at the Project site.

4.3.1 Access/Transportation

Personnel will travel to Qikiqtarjuaq via air transportation using the existing airport. Equipment and materials will be transported to the site via marine and air transportation. Hauling of materials and equipment between stockpile areas and construction areas will make use of existing roads.

4.3.2 Personnel and Accommodations

It is estimated that 25 to 30 personnel will be required during construction and may include residents of Qikiqtarjuaq, but additional personnel will need to be brought in from abroad. The number of active personnel will be greatest during the open-water season and those from abroad will return home during the winter.

There are limited existing accommodations in the community of Qikiqtarjuaq, so a temporary camp will be established near the quarry to accommodate workers from abroad. Limited volumes of water will be required primarily for cooking and consumption at the work camp and to a lesser degree at the construction site. It is estimated that approximately 6 m^3 per day will be required during construction. Water is not required during the winter shut-down periods. Greywater and sewage will be collected from the camp by a wastewater truck and transported to the municipal treatment facility.

4.3.3 Schedule

Construction will occur over four years from 2026 to 2029, with construction shut down over the winter seasons. Mobilization of equipment and materials, and potentially some site preparation works, will occur in 2026. The majority of construction will occur in 2027, 2028, and 2029. Operation of the port is expected to begin at the start of the open-water season in 2030.

4.3.4 Equipment and Materials

This section provides estimates and overviews of the equipment and materials that may be used for construction based on the Project design and experience on similar projects. The

exact specifications of equipment and materials to be used for construction will be determined by the contractor.

4.3.4.1 Equipment

Table 5 provides a summary of the types, quantities, dimensions, and uses of the equipment expected to be used during construction. Equipment to be used during operation of the new port 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 5. Equipment expected to be used during construction.

Type	Units	Description	Size (m)	Use
Drilling rig	2	5 ton	5.5 x 2.3	Quarrying
Excavator	5	30-60 ton	4.0 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 ton	16.0 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 levelling
Spud barge/ derrick	1	20 m x 50 m deck with 150 ton crane	20.0 x 50.0	Dredging, transporting material and equipment
Material scow	2	500 cubic metre	47.0 x 11.0	Dredging and disposal of dredged material
Tug	1	1,000-1,500 horsepower	14.9 x 5.8	Transport and movement of marine equipment
Work boat	2	50-500 horsepower	9.8 x 2.9	Transport and movement of marine equipment and personnel
Pickup truck	3	¾ ton	4.8 x 1.9	Transport and movement of equipment and personnel
Fuel/service truck	1	10 ton	13.0 x 2.5	Transport fuel from Government of Nunavut Products Division dispensers to mobile equipment
Water truck	1	10 ton	9.5 x 2.5	Transport water from municipal water to camp and construction site
Wastewater truck	1	10 ton	9.5 x 2.5	Transport wastewater from 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
Rough terrain crane	1	250 ton	14.5 x 7.9	Material and equipment loading, handling, and movement

Type	Units	Description	Size (m)	Use
Rock crusher	1	125 ton	14.6 x 4.2 14.3 x 4.2 17.0 x 3.6	Portable jaw crusher, cone, and screening plant for the manufacture of aggregate at the quarry
Supply ship (Might Servant 2)	1	29,193 gross tonnage, 40,190 deadweight tonnage	190 length x 40 beam x 4 min. draft	Transporting concrete caissons to site

4.3.4.2 Fuel

Table 6 summarizes the types, quantities, storage methods, and uses of fuel expected to be used during construction. Fuel storage and dispensing is not currently part of the Project design but is expected to be required in the future.

Table 6. Fuel expected to be used during construction.

Fuel	Storage Method/ Container Volume	No. of Containers	Total Volume (m^3)	Use
Diesel	Dispensed daily from existing facilities in Qikiqtarjuaq	n/a	5,700	Mobile equipment, remote generators and heaters
Gasoline	Dispensed daily from existing facilities in Qikiqtarjuaq	n/a	140	Small work boats, small generators, and ATVs
Propane	100 pound (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

4.3.4.3 Hazardous Materials and Chemicals

Table 7 summarizes the types, quantities, storage methods, and uses of hazardous materials and chemicals expected to be used during construction. Hazardous materials and chemicals to be used during operation of the new port are expected to be similar, with the exception of explosives which will not be used during operation.

Table 7. Hazardous materials and chemicals expected to be used during construction.

Chemical/ Material	Storage Method/ Container Volume	No. of Containers	Total Volume (L)	Use
Oils and lubricants	22.7 L (5 gallon) supplier containers	10	227	Maintenance of mobile equipment
Paint	4.5 L (1 gallon) supplier containers	10	45	Painting wharf hardware and miscellaneous components
Explosives	Storage and handling will be in accordance with license, certificate, and/or permit(s) issued under *Explosives Act* and regulations.			Quarrying

4.3.5 Waste

Table 8 summarizes the types and disposal methods of waste expected to be produced during construction. During operation of the port, combustible and non-combustible wastes are expected to be generated from the site office and small amounts of hazardous waste (e.g., fuels, oils) may be generated during routine maintenance activities. Waste generated during operation will be managed in a manner similar to during construction.

Table 8. Estimated waste production and disposal during construction.

Type	Source	Est. Amount	Disposal Method(s)
Hazardous	Construction	100 L	Packaged, sealed, and transported south in shipping containers for disposal according to applicable regulations
Combustibles	Camp	2 tonnes	Municipal landfill
Non-combustibles	Camp	0.5 tonnes	Municipal landfill
Greywater	Camp	800 m^3	Collected by wastewater truck and transported to municipal wastewater treatment facility
Sewage (human waste)	Camp	1,500 m^3	Collected by 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

4.4 Operation and Maintenance

The Project consists of the construction and operation of a 75 m long closed-face marginal wharf structure with 10 m depth at low tide and 18,000 m^2 of laydown space. The port has been designed to accommodate ships up to 150 m in length and 9.9 m draft, which includes a wider range of vessels than are currently able to access Qikiqtarjuaq. Vessels that could be accommodated include commercial, scientific, and recreational boats, and even small cruise ships, but it is unknown what types of vessels may ultimately visit the port. Vessels will dock under their own power as the port will not employ tugboats or other docking aids.

The Project will also include an operations and security office, wastewater receiving systems, power transmission lines, and an approximately 275 m long access road connecting the facility to existing municipal roads. Equipment will include a mobile crane to offload cargo, VHF radio communications station, and services to allow for freezer containers. The port, as currently designed, will not provide fuel services.

The facility has a design service life of 50 years with regular inspection, maintenance, and repairs. Some components, such as the wharf structure itself, may exceed this, but utilities and mobile equipment and tools will require infrequent replacement due to regular, unavoidable wear and tear.

4.5 Alternatives Considered

The proposed location of the new deep-water port was determined in consultation with community members who provided important knowledge about maritime conditions in the Broughton Channel. This location was preferred because it has relatively steep slopes which allow for a shorter wharf and therefore smaller subtidal footprint. It also experiences less longshore sediment transport and is not an important area for fishing or hunting.

Options for constructing a new deep-water port on the existing harbour or other location closer to built-up areas of Qikiqtarjuaq were assessed. These options were not preferred because they would require extensive dredging and excavation and because port operations could cause disruptions to the community (e.g., odours from a future fish processing plant).

Five options were considered for quarrying rock and fill for construction. The project will require a large volume of armour to be produced for the shore protection of the laydown area. The preferred option is to excavate construction material from a new quarry as the existing quarries cannot supply the required volume and quality or armour stone needed for the Project. The new quarry location was selected with input from the municipality, HTO, and community members.

Four options were considered for accommodating workers from abroad during construction. Making use of existing accommodations in Qikiqtarjuaq was not preferred because it would strain community resources. Three locations for a temporary work camp were considered and the preferred location was selected because community members identified it as a site that does not experience seasonal pooling of meltwater.

There is ongoing evaluation of design alternatives, namely moving the wharf face closer to the shore to reduce the subtidal footprint. This may require redesign of other construction elements, so the feasibility of this alternative is still being studied. All Project options (with the exception of the status quo or “do nothing”) will result in effects to subtidal, tidal, and terrestrial areas, but these will be small in scope and the benefits of the Project to the socio-economic environment are expected to exceed any negative effects on the bio-physical environment.

5 Existing Bio-physical Environment

Qikiqtarjuaq is located in the Baffin Island Coastal Lowlands (Ecoregion 6) of Canada's Arctic Cordillera ecozone. More specifically, it is located on Broughton Island, which is east of the much larger Baffin Island and separated from it by the 2 to 3 km wide Broughton Channel. Baffin Island is generally referred to as the "mainland" by residents of Qikiqtarjuaq. The Project Study Area is located on Broughton Channel on the western side of Broughton Island. It is not located in or near any designated ecologically or biologically significant areas. Auyuittuq National Park is located on Baffin Island approximately 30 km southwest of the study area.

5.1 Atmospheric

5.1.1 Air Quality

No quantitative air quality studies have been done in Qikiqtarjuaq. Air quality is expected to be generally good and similar to other Arctic communities. There are no major industrial sources of emissions in the community. Emissions come largely from diesel power generation and vehicular exhaust.

5.1.2 Ambient Noise

Noise monitoring was carried out from July 4 to 11, 2024, between 8:00 AM and 7:30 PM at seven locations in Qikiqtarjuaq. Results indicated noise levels of between 31 and 72 decibels (dB) in the community. This is consistent with the results of a Strategic Environmental Assessment prepared for the Baffin Bay/Davis Strait area (Nunami Stantec 2019), which measured typical airborne noise of 20 A-weighted decibels (dBA) in wilderness areas, 50 to 70 dBA in townsites, and isolated occurrences of greater than 120 dBA (e.g., during aircraft take off). Because the entire Project Study Area is located less than 1 km from the Qikiqtarjuaq Airport, it is expected to experience occasional noise >120 dBA.

5.1.3 Ambient Light

As it is located above the Arctic Circle, Qikiqtarjuaq experiences 24 hours of daylight from late May to mid-July and 24-hours of darkness for most of December. No studies of ambient light have been conducted in the study area. The community of Qikiqtarjuaq has

streetlights, other lighting infrastructure, and lights on buildings which are assumed to be the only artificial lights in the surrounding area.

5.2 Terrestrial

More detailed information about terrestrial baseline studies can be found in the Qikiqtarjuak Marine Infrastructure Terrestrial Baseline Report (CBCL Limited 2024).

5.2.1 Soils and Terrain

The Project Study area is on the west side of Broughton Island, which lies in the Davis Strait off the northern shore of Baffin Island. The island is part of the Arctic Cordillera mountain range and is generally a plateau which rises sharply from sea level to 200 m elevation with a maximum elevation of around 400 m. The community of Qikiqtarjuaq is located on the island's only low-lying plain. The Project Study area is located on low slopes rising from sea level to approximately 100 m elevation. Permafrost underlies much of the study area.

Geotechnical investigations were completed in 2024 by Adaptive Baseline Geotechnical Limited. Soils in the area around the proposed port consist primarily of sand, which is consistent with being located in a sandy beach shoreline community as determined through ecological land classification (ELC) (see **Section 5.2.2**). There is no submarine permafrost beneath the proposed wharf, but permafrost exists approximately 1.6 m below the surface in upland areas within the Project footprint. (Adaptive Baseline Geotechnical Limited 2024).

5.2.2 Vegetation

The Project is located in bioclimate subzone C as defined by the Circumpolar Arctic Vegetation Map for the North American Arctic ecozone (CAVM Team 2003). This subzone is characterized by hemi-prostrate dwarf shrubs and sedges and supports between 75 and 100 vascular plant species. More specifically, the study area is located in Circumpolar Arctic Vegetation Unit P2 (prostrate/hemi-prostrate dwarf shrub tundra), which is characterized by shrubs less than 15 cm tall, particularly Arctic Bell-heather (*Cassiope tetragona*).

Vegetation surveys by CBCL in 2024 documented 118 species in the Project Study Area, including 57 vascular plants, 53 lichens, seven mosses, and one liverwort. No species at risk or species of conservation concern were identified, and all of the species recorded are native to the area. The most common vascular plant species were Arctic Bell-heather, willows (*Salix* spp.), sedges (*Carex* spp.), and Bog Bilberry. The most common non-vascular groundcover taxa were rock tripes (*Umbilicaria* spp.), reindeer lichens (*Cladonia* spp.), snow lichens (*Flavocetraria* spp.), peatmosses (*Sphagnum* spp.), and haircap mosses (*Polytrichum* spp.).

CBCL conducted an ELC survey concurrently with vegetation surveys in 2024. Five unique vegetation communities were mapped in the study area: Rocky and Sandy Beach Shoreline

(RSB), Dwarf Shrub Tundra (DST), Upland Rocky Slope (URS), Upland Bedrock (UPB), and Disturbed (DIS). None of these communities are considered to be rare or significant in Nunavut. The location of the proposed port overlaps with Rocky and Sandy Beach Shoreline and Disturbed communities; the quarry will be constructed on Upland Bedrock and Upland Rocky Slope communities. The project will make use primarily of existing roads, which are surrounded by Dwarf Shrub Tundra.

Traditional knowledge identified parts of the Project Study Area as important for berry picking, which likely refers to Bog Bilberry, a common edible berry in the area.

5.2.3 Wildlife and Habitat

As indicated above, onshore areas of the proposed port overlap with Rocky and Sandy Beach Shoreline (RSB) and Disturbed (DIS) vegetation communities, and the quarry area overlaps with Upland Bedrock (UPB) and Upland Rocky Slope (URS) communities. These communities are of limited value to wildlife except as movement areas and potential habitat for birds that nest on bare ground. Intertidal areas provide foraging opportunities for marine birds and small mammals at low tide.

CBCL conducted breeding bird surveys in July and September of 2024, which consisted of area searches in terrestrial habitats and visual surveys at five marine bird observation points. A total of 16 bird species were documented with three exhibiting breeding behaviour: American Pipit (*Anthus rubescens*), Horned Lark (*Eremophila alpestris*), and Snow Bunting (*Plectrophenax nivalis*). The only bird with confirmed breeding evidence was Horned Lark, which likely nested within or very close to the Project Study Area. None of the bird species observed are rare or at risk in Nunavut.

CBCL did not directly observe any non-avian vertebrates (e.g., mammals) in the study area during field investigations in 2024. Scat was observed belonging to Arctic Hare (*Lepus arcticus*) and several unidentified mammals, indicating that small mammals travel through and potentially forage in the Project Study Area.

Traditional knowledge verified that lemmings, Arctic Hare, and Ermine (*Mustela ermine*) likely occur in the Project Study Area. A whale carcass and caribou jawbone observed in the study area in 2024 indicate that hunters use the proposed port location as a site for processing game. Community members indicated that there are no caribou on Broughton Island, but that caribou have been harvested across the channel on the mainland (i.e., Baffin Island).

5.2.4 Species at Risk and Species of Conservation Concern

Species at risk (SAR) receiving regulatory protection are listed as Special Concern, Threatened, Endangered, or Extirpated on Schedule 1 of the federal *Species at Risk Act*

(SARA). Species of conservation concern (SoCC) include species not listed on Schedule 1 but assessed by COSEWIC as At Risk, and species with a conservation status of S3, S2, S1, or SH in Nunavut. **Table 9** lists terrestrial SAR and SoCC (including marine and migratory birds) that could potentially be found within the Project Study Area. Sources consulted included field investigations, multiple desktop resources, traditional knowledge, SARA registry documents, land use planning documents (NPC 2021, 2023), eBird, iNaturalist, and NatureServe Explorer.

Field investigations and community consultation determined that the Project Study Area generally contains low value habitat for SAR and does not contain critical habitat for any of the species in **Table 9**. No terrestrial SAR or SoCC were observed in the study area during field investigations in 2024, and traditional knowledge gathering did not identify the presence of any SAR or SoCC.

Table 9. SAR and SoCC with potential to occur in the Project area.

Species	Status	Likelihood of occurrence in the Project area
Plants		
Porsild's Bryum ***Haplodontium macrocarpium***	COSEWIC – Threatened SARA – Threatened Nunavut – SNR	Low
Migratory Birds		
Buff-breasted Sandpiper ***Calidris subruficollis***	COSEWIC – Special Concern SARA – Special Concern Nunavut – S3	Possible
Ivory Gull ***Pagophila eburnea***	COSEWIC – Endangered SARA – Endangered Nunavut – S1	Possible
Peregrine Falcon ***Falco peregrinus***	COSEWIC – Not at Risk SARA – Special Concern Nunavut – S4	Low
Red Knot rufa subspecies ***Calidris canutus rufa***	COSEWIC – Endangered SARA – Endangered Nunavut – S2	Possible
Red-necked Phalarope ***Phalaropus lobatus***	COSEWIC – Special Concern SARA – Special Concern Nunavut – S3	Low
Ross's Gull ***Rhodostethia rosea***	COSEWIC – Threatened SARA – Threatened Nunavut – S1	Unlikely
Terrestrial Mammals		
Wolverine ***Gulo gulo***	COSEWIC – Special Concern SARA – Special Concern Nunavut – S3	Unlikely
Barren-ground Caribou	COSEWIC – Threatened	Unlikely

Species	Status	Likelihood of occurrence in the Project area
Rangifer tarandus groenlandicus	SARA – Not listed (under consideration) Nunavut – S4	

5.3 Freshwater

5.3.1 Surface Water Resources

There are no permanent surface water features in the Project Study Area. The largest drainage feature is an ephemeral stream to the east of the proposed work camp which runs adjacent to the existing quarry. The only other drainage features are gullies and rivulets which convey ephemeral flows during snowmelt and rainfall. Freshwater pooling occurs during and after snowmelt on flatlands around the community, but the Project footprint, including temporary work camp and staging/laydown areas, is located entirely on lands that do not experience seasonal pooling.

5.3.2 Freshwater Fish and Fish Habitat

No freshwater fish occur in the study area due to a lack of suitable freshwater features. Anadromous fish occur in marine waters in the study area but complete freshwater phases of their life cycle elsewhere.

5.4 Marine

5.4.1 Marine Water and Sediments

CBCL conducted a marine water quality survey in September of 2024. Water samples were taken at seven offshore locations in the Project Study Area. Marine water quality parameters were consistent across all sample locations and depth profiles with the exception of dissolved oxygen, but this was determined to reflect equipment error (CBCL Limited 2025b).

Marine sediment sampling was conducted concurrently with water sampling. Sediment samples were collected from 10 offshore locations in the Project Study Area. Sediment was composed primarily of sand with some silt and gravel. Arsenic levels in excess of the Canadian Council of Ministers of the Environment (CCME) Interim Sediment Quality Guideline (ISQG) were detected at two locations but were still below the applicable Possible Effects Level (PEL).

5.4.2 Marine Fish and Fish Habitat

The Project study area is located in the Broughton Channel which divides Broughton Island from Baffin Island and is part of the Davis Strait. Open water season typically spans from

mid-July to mid-October. Benthic habitats in the Project Study Area are composed primarily of coarse sand with some silt and gravel.

CBCL conducted marine surveys in early September of 2024 to characterize and describe fish and fish habitat and document the existing marine environment in the Broughton Channel, including the intertidal zone. The intertidal zone in the Project Study Area is relatively steep sloped and composed of coarse sand in the upper zone and fine sediments with cobbles and boulders in the lower zone. Loose bands of algal wrack occur in upper and mid intertidal levels. There are no existing human structures in the intertidal zone in the Project Study Area.

Subtidal benthic habitats in the Project Study Area are quite uniform and dominated by fine sediments with scattered boulders. Marine flora in the intertidal and subtidal zones is scarce due to seasonal ice scour and a lack of rocky substrates. Some community members harvest kelp and other edible seaweeds from the general area, but only small amounts of edible seaweed occur in the Project Study Area.

Marine fauna in the Project Study Area includes polychaete worms and other invertebrates. A dense population of soft-shelled clams (*Mya truncata*) occurs offshore adjacent to the community of Qikiqtarjuaq, but they are not abundant in the Project Study Area. The only abundant zooplankton species found during surveys was *Pseudocalanus minutus*, a copepod considered to be a key grazer on Arctic shelves (Hopcroft 2009). Copepods are important food for pelagic fish such as Arctic Char, but they do not occur in high enough abundance for the Project Study Area to be an important foraging area.

At least six marine fish species occur in the Broughton Channel, but only three were recorded in the Project Study Area during field investigations: Arctic Staghorn Sculpin (*Gymnocanthus tricuspis*), Fish Doctor (*Gymnelus viridis*), and Shorthorn Sculpin (*Myxocephalus scoparius*). None of these are considered rare or at risk in Nunavut.

The community noted Arctic Char, sculpin, and soft-shelled clams as important species for fishing and harvesting during IQ workshops in 2023. But the Project Study Area was not identified as an important location for these activities.

5.4.3 Marine Mammals

Parts of the Davis Strait east of Broughton Island are mapped as moderate to high sensitivity areas for Bowhead Whale, Beluga, and other toothed whales by DFO, but these species are rarely sighted in the Broughton Channel. No whales were observed in the channel during field work in 2024, but remains of a whale processed by hunters was seen just north of the proposed port location.

During consultation with Elders and the HTO in 2023, seal hunting was noted as an important cultural activity in Qikiqtarjuaq and concerns were raised that construction

activities could deter seals from the area. However, they also indicated that the new port would provide improved facilities and long term net benefit for hunters. Mitigation measures to reduce the effects of construction activity on seals and other marine mammals are outlined in **Section 7.4.4**.

5.4.4 Species at Risk and Species of Conservation Concern

Marine SAR and SoCC are defined the same was as terrestrial species (see **Section 5.2.4**). **Table 10** lists marine SAR and SoCC that could potentially be found within the Project Study Area based on sources including field investigations, desktop resources, traditional knowledge, SARA registry documents, land use planning documents, iNaturalist, and NatureServe Explorer.

Field investigations and community consultation determined that the Project Study Area generally contains low value habitat for maritime SAR and does not contain critical habitat for any of the species in **Table 10**. No SAR or SoCC were observed in the study area during field investigations in 2024, but traditional knowledge gathering and background information determined that 3 SAR and 10 SoCC have potential to occur in the study area. The only SoCC confirmed to occur in the study area are Polar Bears (*Ursus maritimus*), which have been reported by residents in Qikiqtarjuaq and are known to occur on Baffin Island across the Broughton Channel from the study area.

Table 10. SAR and SoCC with potential to occur in the Project area.

Species	Status	Likelihood of occurrence in the Project area
Fish		
Atlantic Wolffish ***Anarhichas lupus***	COSEWIC – Special Concern SARA – Special Concern E. Arctic Ocean – S3	Unlikely
Lumpfish ***Cyclopterus lumpus***	COSEWIC – Threatened SARA – No Status E. Arctic Ocean – S2S3	Possible
Northern Wolffish ***Anarhichas denticulatus***	COSEWIC – Threatened SARA – Threatened E. Arctic Ocean Rank – S2	Possible
Roundnose Grenadier ***Coryphaenoides rupestris***	COSEWIC – Endangered SARA – No Status E. Arctic Ocean – S2	Unlikely
Spotted Wolffish ***Anarhichas minor***	COSEWIC – Threatened SARA – Threatened E. Arctic Ocean – S3	Unlikely
Thorny Skate ***Amblyraja radiata***	COSEWIC – Special Concern SARA – No Status E. Arctic Ocean – S3	Likely

Species	Status	Likelihood of occurrence in the Project area
Mammals		
Atlantic Walrus (Central-Low Arctic pop.) ***Odobenus rosmarus rosmarus***	COSEWIC – Special Concern SARA – No Status E. Arctic Ocean – S3	Possible
Beluga Whale (Eastern High Arctic-Baffin Bay pop.) ***Delphinapterus leucas***	COSEWIC – Special Concern SARA – No Status E. Arctic Ocean – S3B	Possible
Bowhead Whale (Eastern Canada-Western Greenland pop.) ***Balaena mysticetus***	COSEWIC – Special Concern SARA – No Status E. Arctic Ocean – S3B	Possible
Harbour Porpoise ***Phocoena phocoena***	COSEWIC – Special Concern SARA – Threatened E. Arctic Ocean - SNA	Unlikely
Killer Whale (Northwest Atlantic/Eastern Arctic pop.) ***Orcinus orca***	COSEWIC – Special Concern SARA – No Status E. Arctic Ocean – S3	Possible
Ringed Seal ***Pusa hispida***	COSEWIC – Special Concern SARA – No Status E. Arctic Ocean – S4	Possible
Polar Bear ***Ursus maritimus***	COSEWIC – Special Concern SARA – Special Concern E. Arctic Ocean – S3	Confirmed

6 Existing Socio-economic and Cultural Environment

The Municipality of Qikiqtarjuaq includes all of Broughton Island and a portion of Baffin Island and the Davis Strait. The community is accessible year-round via air travel from Iqaluit and has an existing harbour on the Broughton Channel where locals launch small boats during the ice-free season.

6.1 Population and Language

According to Statistics Canada (2024), Qikiqtarjuaq had a population of 593 residents in 2021, most of whom were Inuit (93%). Nearly one-third of the population are children between 0 and 14, and nearly two-thirds are between the ages of 15 and 64; a very small percentage of the population is 65 or older. Over 94% of residents speak Inuktitut as their primary language but most are also fluent in English.

6.2 Education and Employment

In 2021, less than one-quarter (23%) of residents over the age of 15 had a high school diploma or equivalent and only 12% had post-secondary education (Statistics Canada 2024). Unemployment is high in the community; in 2021, only 36% of residents over 15 claimed to be employed and only 49% were participating in the workforce. Of the working population, about one-third (30%) are employed in public administration and 20% in retail; the remaining workforce is in a mix of industries. Community engagement revealed that much of the population is involved in hunting, fishing, and other wage-based activities. The nearby Auyuittuq National Park provides income opportunities for some residents who provide wilderness guide services to tourists.

6.3 Housing and Community Infrastructure

Most built-up areas, including all residential areas of Qikiqtarjuaq, are located about 2.5 km north of the proposed deep-water port location. In 2021, there were 193 private dwellings in the community of which 164 were permanently occupied (Statistics Canada 2024).

The community has a school for Kindergarten to Grade 12, a community centre, health centre, police station, two grocery stores, and two hotels. The Qikiqtarjuaq Airport is located approximately 1 km to the southwest of the community and has year-round flights

to and from Iqaluit. The Broughton Island North Warning System Radar Station is located 10 km to the east of the community near the highest point on the island.

6.4 Transportation

Over 15 km of regularly maintained gravel roads drivable by cars and trucks connect the community of Qikiqtarjuaq, the new port location, and the airport. Other parts of the island are accessible by ATV or snowmobile.

6.5 Archaeological and Cultural Historic Resources

An archaeological baseline study of the Project Study Area was conducted by ERM Consultants Canada Limited in 2024. Thirty-seven (37) archaeological sites were identified in the area, indicating Inuit and potentially Thule historical features. Hearths, inukshuks, and other archaeological features were identified.

The footprints of the new port, access road, staging areas, and temporary work camp are all located more than 30 m away from archaeological sites. Eight sites were found in the area of the proposed quarry. These features will need to be avoided by excavation and stockpiling and protected from accidental damage during construction.

6.6 Current and Traditional Land Use

Residents of Qikiqtarjuaq use parts of the study area for a variety of cultural, traditional, and recreational activities (see **Section 3**). Residents currently launch boats from the existing harbour and travel to various locations in the Broughton Channel, Baffin Island, or farther away to hunt, fish, collect clams and seaweed, and participate in other activities. An area just inland of the proposed port location is a popular spot for berry picking.

The proposed location of the new quarry is a popular picnic spot for locals who access it via a trail across the road from the fuel depot. This location and the access trail will be closed during construction to ensure public safety. Community access will be restored after construction, but the area will look much different due to excavation of the quarry. Municipal council members are aware that the proposed quarry overlaps with this location.

7 Potential Environmental Effects and Mitigation Measures

Project screening by NIRB is conducted to identify potential effects of the Project – including construction and operation – on elements of the biophysical, socioeconomic, and cultural environments. This section describes potential environmental effects and discusses mitigation measures that could be implemented to avoid or minimize effects. **Table 11** summarizes the potential interactions between the Project and environmental Valued Components (VCs). Interactions may be positive or negative or, in some cases, both positive and negative. Negative interactions may be mitigable—resulting in no residual effects—but some are non-mitigable and are expected to result in unavoidable residual effects

Measurable environmental effects of the Project have been identified for the following VCs:

- **Atmospheric Environment:** Air quality, ambient noise, ambient light.
- **Terrestrial Environment:** Permafrost, soils and terrain, vegetation, wildlife and wildlife habitat.
- **Freshwater:** Surface water resources (hydrology and water quality).
- **Marine Environment:** Tidal and bathymetry, marine water and sediments, marine fish and fish habitat, marine mammals, SAR and SoCC.
- **Socio-economic Environment:** Employment and business opportunities, community infrastructure, human health and safety, community wellness and traditional land uses, archaeological and cultural historic resources.

The following VCs are not expected to experience measurable or significant environmental effects and are not evaluated further:

- **Atmospheric Environment:** Climate conditions.
- **Terrestrial Environment:** Ground stability, environmentally sensitive areas, SAR and SoCC.
- **Freshwater:** Freshwater fish and fish habitat.

Mitigation measures have been recommended for the potential effects identified in **Table 11**. These include changes to project configuration, engineering, and construction approaches, as well as other specific measures. Mitigation measures will be included in a Construction Environmental Management Plan (CEMP) detailing environmental protection requirements during construction. The CEMP details the environmental protection

requirements and mitigation measures that will be adhered to on the Project site and provides a framework for the development and implementation of safe and environmentally responsible practices to reduce environmental effects of the Project. The CEMP provides an overall strategy and guidance for compliance and relevant environmental legislation and policies, as well as compliance with terms and conditions of permits and approval obtained. Construction personnel will be trained in the requirements of the CEMP and advised of the regulatory requirements and conditions for the Project construction. Mitigation measures are outlined in the following sections; however, further detail will be provided in the CEMP.

Table 11. Potential interactions between the Project and environmental VCs.

Project Components and Activities	Valued Components (VCs)																		
	Atmospheric			Terrestrial				Freshwater	Marine					Socio-economic					
	Air Quality	Ambient Noise	Ambient Light	Permafrost	Soils and Terrain	Vegetation	Wildlife and Habitat	Surface Water Resources (Hydrology, Water Quality)	Tides and Bathymetry	Marine Water and Sediments	Marine Fish and Fish Habitat	Marine Mammals	Marine SAR and SoCC	Employment Opportunities	Community Infrastructure	Human Health and Safety	Community Wellness and Traditional Land Uses	Archaeological and Cultural Historic Resources
Construction																			
Establishment of temporary work camp	M	M			M	M	M	M						P	P/M	M		
Establishment of temporary staging, laydown, and storage areas	M	M			M	M	M	M						P				M
Dredging and disposal of dredged material	M	M							N	M	M	M	M	P	P			
Quarrying (drilling, blasting, excavation)	M	M		M	N	N	M	M						P		M		M
Transportation of material and equipment	M	M					M	M						P		M		M
Construction of new port facilities	M	M		M	N	N	M			M	M	M	M	P				
Pile driving for new port	M	M									M	M	M	P			M	
Infilling for new port	M	M			N	N	M		N	N	M	M	M	P				
Installation of utility poles, lighting, and navigation aids	M													P	P			
Post-construction																			
Work camp decommissioning	M						M	M						P				
Restoration of staging, laydown, and storage areas								M						P				
Port operations	M		M							M	M	M	M	P	P	P/M	P	

Legend: “P” = potential positive effect; “M” = potential negative effect that is mitigable; “N” = potential non-mitigable effect; “U” = potential effects unknown; blank cells indicate no anticipated measurable effects.

7.1 Atmospheric Environment

7.1.1 Air Quality

Effects on air quality are expected to be intermittent and long term, but not significant, provided that mitigation measures are implemented. Dust is expected to increase during construction due to quarrying and use of existing roads to transport materials between the quarry/stockpile areas and the construction site. Both marine and land construction equipment will generate airborne emissions (e.g., carbon monoxide, sulphur dioxide, fine particulate matter, etc.). Boats and vehicles visiting the port during operation will also generate airborne emissions.

Mitigation Measures (Construction)
Proper implementation of the following measures during construction will reduce negative effects on air quality:

1. Reduce the number of trips required along haul roads by using larger vehicles to carry material, where appropriate.
2. Install rumble strips between haul roads and construction, quarrying, and stockpiling sites to capture fine particles.
3. Apply calcium chloride and/or water along haul roads and around construction/ quarrying/stockpiling areas to reduce airborne dust.

Mitigation Measures (Post-construction)
Proper implementation of the following measures during operation of the new port will reduce negative effects on air quality:

1. Minimize idling of boats and other vehicles while in port.

7.1.2 Ambient Noise

Effects on ambient noise are expected to be intermittent, short to medium term, and not significant. Quarrying, pile driving (if required), and use of equipment during construction will cause an increase in noise. This is predicted to range up to 90 dBA within 15 m of the source (e.g., construction machinery), but blasting at the quarry will cause sporadic busts of louder noise. Port operations are not expected to significantly increase ambient noise.

Mitigation Measures (Construction)
Proper implementation of the following measures during construction will reduce negative effects on ambient noise:

1. Limit quarrying and pile driving activities to daytime hours.
2. Keep equipment in good working order.

Mitigation Measures (Post-construction)
Proper implementation of the following measures during operation of the new port will reduce negative effects on ambient noise:

1. Minimize idling of boats and other vehicles while in port.

7.1.3 Ambient Light

Effects on ambient light are expected to be intermittent and long term, but not significant. Construction will not measurably affect ambient light since it will take place during daytime hours and during the period when the area experiences almost complete daylight. Navigation aids and other lights at the new port, and new lighting along roads connecting the port to the community of Qikiqtarjuaq, will increase ambient light. Because the new port is located more than 1 km away from residential areas, lighting is unlikely to be a nuisance and will increase safety for community members and other port users.

Mitigation Measures (Design)
The following measures will be incorporated into the Project design to reduce negative effects on ambient light:

1. Fixtures on streetlamps and port lights not required for navigation will direct light downwards or focused on specific use areas.

Mitigation Measures (Post-construction)
Proper implementation of the following measures during operation of the new port will reduce negative effects on ambient light:

1. Ensure lights not required for navigation are directed only where necessary for security and operation.

7.2 Terrestrial

7.2.1 Permafrost

Effects of the project on permafrost are expected to be mitigable. The potential for differential earth settlement due to permafrost melting under future climate change scenarios will be integrated into the engineering and design of the wharf, buildings, and access road.

Construction specifications will prescribe limits of excavation to avoid disturbing permafrost in construction areas. Permafrost disturbance during construction is most likely to occur at the new quarry, although depth to permafrost at the quarry location is uncertain. In the event that permafrost is accidentally disturbed during quarrying operations or construction, a site-specific mitigation plan will be prepared detailing how further impacts will be mitigated. This may include managing drainage and recontouring the exposed area with unused soil/rock to prevent further degradation.

No effects on permafrost are expected due to operation of the port.

Mitigation Measures (Design)
The following measures will be incorporated into the Project design to reduce negative effects on permafrost.

1. The wharf, buildings, and access road will be designed to minimize permafrost disturbance.
2. The Project will be engineered to withstand differential earth settlement due to predicted permafrost losses under a high emissions climate change scenario.

Mitigation Measures (Construction)
Proper implementation of the following measures during construction will reduce negative effects on permafrost:

1. Include contract specifications which prescribe limits of excavation to avoid accidental disturbance of permafrost.
2. If permafrost is accidentally disturbed during quarry operations or other construction activities, a site-specific mitigation plan will be prepared.

7.2.2 Soils and Terrain

Effects of the Project on soils and terrain are expected to be long-term but not significant. Long-term effects are unavoidable because construction will require the excavation at a new quarry, infilling at the port construction site, and movement of earth between the quarry and the construction site. Construction areas are located on terrain with little to no topsoil, so effects on soil from those activities will be negligible. The possibility of fuels, oils, or other pollutants spilling from machinery and contaminating soils along haul roads is unlikely but exists for every construction project.

The temporary work camp may cause soil disturbance from the movements of vehicles and workers, but the site will be decommissioned and restored once construction is complete. Port operations will not affect soils and terrain.

Mitigation Measures (Construction)
Proper implementation of the following measures during construction will reduce negative effects on soils and terrain:

1. Implement a blasting management plan in accordance with applicable permits and licenses.
2. Implement a spill prevention, contingency, and emergency response plan.
3. Equip all vehicles and machinery with a spill kit able to contain potential spills of fuels, oils, or other pollutants.
4. In the event of a spill, contaminated soils will be removed, transported, and/or disposed of according to applicable environmental regulations.
5. Implement a waste management plan to ensure that waste materials are contained and disposed of in an environmentally acceptable manner and in compliance with applicable regulations.

7.2.3 Vegetation

Effects of the Project on vegetation are expected to be minor, short-term, and not significant. Construction, quarrying, and stockpiling areas are located in ecological

communities with little to no vegetation cover. Establishment of the work camp will require removal of a small amount of vegetation. If the camp will be decommissioned, vegetation will be restored once construction is complete. There is some discussion about retaining the work camp for future port and community use, which would result in long-term effects on vegetation, but this is still being studied.

The possibility of fuels, oils, or other pollutants spilling from machinery and affecting vegetation along haul roads is unlikely and will be mitigated by the same measures recommended for soil protection (see Section 7.2.2). Port operations will not affect vegetation.

Mitigation Measures (Construction)
Proper implementation of the following measures during construction will reduce negative effects on vegetation:

1. Implement a spill prevention, contingency, and emergency response plan.
2. Equip all vehicles and machinery with a spill kit able to contain potential spills of fuels, oils, or other pollutants.
3. In the event of a spill, contaminated soils will be removed, transported, and/or disposed of according to applicable environmental regulations.
4. Implement a waste management plan to ensure that waste materials are contained and disposed of disposed of in an environmentally acceptable manner and in compliance with applicable regulations.

Mitigation Measures (Post-construction)
Proper implementation of the following measures during operation of the new port will reduce negative effects on vegetation:

1. If the community's preference is to decommission the work camp, the site should be restored to natural conditions.

7.2.4 Wildlife and Habitat

Effects of the project on wildlife habitat are expected to be long-term but not significant. Permanent removal of some wildlife habitat is unavoidable within the footprint of the new port. This will include a small amount of intertidal areas which are foraging habitat for birds and small mammals, and rocky beach areas which may be suitable nesting habitat for certain birds. Operation of the port could deter wildlife from the immediate area due to increased light and human activity, but this can be mitigated by implementing mitigation measures for ambient light and noise as described in Section 7.1.

Expansion of the existing quarry will result in the loss and alteration of rocky upland areas which may be nesting habitat for certain birds (e.g., American Pipit) and movement areas for other wildlife. However, the area to be removed is negligible in the context of these communities on Broughton Island. The quarry site is frequently used by the community and adjacent areas may continue to be used after construction is complete.

Increased traffic along haul roads during construction and along the access road during port operation could potentially increase mortality rates of wildlife, but this can be mitigated by reducing speeds. The typical bird nesting period in this region overlaps with the construction period, so there is a possibility that birds could nest in work areas or that construction activity could damage nests.

Mitigation Measures (Construction)
Proper implementation of the following measures during construction will reduce negative effects on wildlife and habitat:

1. If a bird nest or other wildlife feature (e.g., denning site) is discovered within or adjacent to the Project footprint during construction, work in the area will cease and an appropriate exclusion zone will be established around the nest. Contractors will be prohibited from entering the exclusion zone until the young have fledged or the feature is abandoned.
2. Enforce 40 km/h speed limits on haul roads and access roads.
3. Store food and waste in containers that do not attract wildlife.
4. Implement a zero-tolerance policy for harassment, disturbance, and feeding wildlife.
5. Implement a system for workers to report wildlife observations.
6. Inspect work areas for bird nests daily prior to the start of work.

Mitigation Measures (Post-construction)
Proper implementation of the following measures during operation of the new port will reduce negative effects on vegetation:

1. Restore the temporary work camp site to natural conditions.
2. Enforce 40km/h speed limit along access road.
3. Ensure lights not required for navigation are directed only where necessary for security and operation.

7.3 Freshwater

7.3.1 Surface Water Resources (Hydrology and Water Quality)

Surface water is extremely limited in the study area so effects on freshwater quantity and quality are expected to be negligible. The proposed location of the temporary work camp was selected because residents indicated it does not experience water pooling during and after snowmelt.

The largest drainage feature in the Project Study Area is an ephemeral stream adjacent to the existing quarry. Existing haul roads and the proposed new 200 m access road pass by seasonal freshwater pools and gullies which convey brief ephemeral flows during snowmelt and rainfall. Leaks or spills of fuel or hazardous substances during quarrying or

equipment transport could potentially contaminate surface water pools or make their way to the ocean if not properly contained.

Mitigation Measures (Design)
The following measures will be incorporated into the project design to avoid negative effects on surface water resources:

1. The temporary work camp will be situated in a location that does not experience surface water pooling.

Mitigation Measures (Construction)
Proper implementation of the following measures during construction will reduce negative effects on surface water resources:

1. Implement mitigation measures to prevent and respond appropriately to leaks or spills of hazardous materials (see **Section 7.2.3**).

7.4 Marine

7.4.1 Tidal and Bathymetry

Effects of the Project on bathymetry and tidal regimes in the Broughton Channel are expected to be long-term but not significant. Changes to bathymetry in the Broughton Channel will be localized around the new port. Dredged material will be stockpiled at an appropriate location on land to be used for construction, by the community, or disposed of in accordance with territorial regulations.

The new port is aligned parallel to the shoreline and no perpendicular jetties or other structures are proposed, so no significant changes in tidal conditions or disruption to longshore sediment transport are expected. Wave-driven erosion in the Project area is not significant since it is located on the sheltered side of Broughton Island.

Mitigation Measures (Design)
Proper implementation of the following measures during construction will reduce negative effects to bathymetry as a result of construction:

1. Disposal of dredged material will be in accordance with territorial regulations.

7.4.2 Marine Water and Sediments

Effects of the Project on marine water quality and sediments are expected to be short-term and not significant. In-water work during construction could stir up sediment and temporarily affect water quality by increasing turbidity and suspended solids. Dredging, pile-driving, and placement of materials in subtidal waters are the activities most likely to disturb marine sediments, but these will occur intermittently, so any resuspension of fine sediments will be brief.

Marine sediments in the construction area have low levels of metals and other contaminants, so there is no concern about contaminants entering the marine environment as a result of sediment resuspension. Equipment or vehicle leaks are a potential source of marine contamination, and this risk will increase during port operation due to the anticipated increase in the number of vessels in the Broughton Channel. Measures to prevent or mitigate leaks or spills from vessels are provided below.

Mitigation Measures (Construction)
Proper implementation of the following measures during construction will reduce negative effects on marine water and sediments:

1. Implement an erosion and sediment control plan to control the movement of suspended sediment during construction.
2. Conduct regular turbidity monitoring during construction.
3. Inspect all marine equipment for fuel leaks and refuel using best practices that reduce the risk of spills.
4. Implement a spill prevention, response, and contingency plan and immediately report any marine contaminant spills to the appropriate regulatory authorities.

Mitigation Measures (Post-construction)
Proper implementation of the following measures during operation of the new port will reduce negative effects on marine water and sediments:

1. Establish spill prevention, response, and contingency plans in case of spills of fuels or other hazardous substances from vessels in the Broughton Channel.

7.4.3 Marine Fish and Fish Habitat

Effects of the project on marine fish and fish habitat will be long-term but not significant. These effects are unavoidable because dredging and infill of marine sediments are required to construct the new deep-water port. However, habitat of similar composition and structure is widespread in the Broughton Channel so losses as a result of construction will be negligible. Armour stone protection around the new port could provide an increase in rock habitat for marine fish.

Sessile organisms (e.g., clams, mussels, and other animals that live on or in the substrate) may be harmed or killed by pile driving, dredging, and/or disposal of dredged sediment, but this effect will be small in geographic scope and not significant in the context of the Broughton Channel which contains large areas of similar habitat. Underwater noise caused by pile driving or dredging could cause fish to avoid areas near construction which will prevent direct harm.

Dredged sediments will be uncontaminated and are of similar composition to much of the Broughton Channel, so disposal of dredged sediments at sea, if required, will not measurably affect fish or fish habitat in disposal-at-sea locations.

Mitigation Measures (Construction)
Proper implementation of the following measures during construction will reduce negative effects on marine fish and fish habitat:

1. Implement soft-start procedures for pile driving to generate underwater noise above auditory thresholds and consider using vibratory piling equipment to reduce noise effects on the community and marine fauna.
2. Establish an aquatic acoustic monitoring program to measure underwater noise at 10 m from pile-driving activities. If underwater noise exceeds 30 kPa, a stop-work order may be issued.
3. Conduct regular turbidity monitoring during construction.

7.4.4 Marine Mammals

Effects of the Project on marine mammals are expected to be intermittent, short-term, and not significant. Marine mammals could be affected by noise generated from pile driving or other in-water work activities. This could include hearing damage (e.g., temporary threshold shifts) in animals close to the construction site, but most will be deterred by noise which will reduce the risk of injury. Other effects may include alterations to foraging habitat due to dredging and infilling, but the project footprint does not overlap with significant foraging habitat.

During consultation in 2023, Elders and members of the HTO expressed concern about the effects of construction on marine mammals in the Broughton Channel, which are hunted by the community. However, they acknowledged that any negative effects would be temporary and that the operational port would provide better facilities for hunters.

Mitigation Measures (Construction)
Proper implementation of the following measures during construction will reduce negative effects on marine mammals:

1. Implement marine mammal monitoring throughout construction; if marine mammals are sighted in proximity to construction areas, work activity should cease until the animal has left the area.
2. Implement soft-start procedures for pile driving to generate underwater noise above auditory thresholds and consider using vibratory piling equipment to reduce noise effects on the community and marine fauna.
3. Establish an aquatic acoustic monitoring program to measure underwater noise at 10 m from construction activities. If underwater noise exceeds 30 kPa, a stop-work order may be issued.

7.4.5 Marine Species at Risk and Species of Conservation Concern

Effects of the project on marine SAR and SoCC are expected to be short or long-term, depending on the species, but not significant.

If Lumpfish, Northern Wolffish, or Thorny Skate occur in the Project area, effects on their habitat may be unavoidable because dredging and infill of marine sediments are required to construct the new deep-water port. However, habitat of similar composition and structure is widespread in the Broughton Channel so losses as a result of construction will be negligible. Armour stone protection around the new port could provide an increase in rock habitat for these species. Direct harm as a result of construction activities is considered to be unlikely since the fish are mobile and will avoid areas of the seafloor with active construction.

Atlantic Walrus, Beluga Whale, Bowhead Whale, and Killer Whale occur sporadically in the Broughton Channel, usually during migration. No calving areas or resident habitat for these species occurs in the Project area, so there will be no effects on these habitats as a result of construction or operation of the port. The main effect of concern is that construction noise and other activity could deter these species from their typical migration routes. This can be mitigated by implementing the measures for marine mammals outlined in **Section 7.4.4**.

Ringed Seal occurs in the Broughton Channel and, along with other seals, is actively hunted by the community. The main effect of concern is that Ringed Seals could be deterred by construction noise and activity, which could alter movement patterns and interrupt community hunting. This can be mitigated by implementing the measures for marine mammals outlined in **Section 7.4.4**.

Polar Bears occur frequently on Broughton Island and in the Broughton Channel but are unlikely to be directly affected by construction or operation of the port. The main effect of concern is that activity at the port and traffic between the port and the community may increase the probability of negative interactions between bears and humans. This can be mitigated by employing wildlife monitors during construction, and properly storing waste, food, harvested fish, and other potential attractants during construction and operation.

Mitigation Measures (Construction)

Proper implementation of the following measures during construction will reduce negative effects on marine SAR and SoCC:

1. Implement marine mammal monitoring throughout construction; if marine mammals are sighted in proximity to construction areas, work activity should cease until the animal has left the area.
2. Implement soft-start procedures for pile driving to generate underwater noise above auditory thresholds and consider using vibratory piling equipment to reduce noise effects on the community and marine fauna.
3. Establish an aquatic acoustic monitoring program to measure underwater noise at 10 m from pile-driving activities. If underwater noise exceeds 30 kPa, a stop-work order may be issued.
4. Conduct regular turbidity monitoring during construction.

Mitigation Measures (Operation)
Proper implementation of the following measures during port operation will reduce negative effects on marine SAR or SoCC:

1. Store fish and other food items at the port in a manner that reduces odours attractive to Polar Bears.

7.5 Socio-economic

Community members in Qikiqtarjuaq have generally responded favourably to the construction of a new deep-water port, beginning as early as 2005 and leading up to formal consultation for the Project in 2023. The Project will provide safe maritime access and meet the current and future needs of the community as climate change continues to extend the open water season in the Davis Strait. Many community benefits have been identified, and net positive effects are expected for employment and business opportunities, community infrastructure, human health and safety, and community wellness.

7.5.1 Employment and Business Opportunities

The effects of the Project on employment and business opportunities are expected to be positive and long-term. Construction contract(s) for the Project will promote Inuit benefits and employment in accordance with Article 24 of the NLCA. Where possible, services will be procured from local Inuit (e.g., site preparation, equipment servicing, and other construction support). Specialized positions may be difficult to employ locally and will be sourced from outside the community where necessary. Workers from abroad living in the temporary camp may contribute to the local economy.

Construction activities could temporarily displace recreational and commercial fishers if fish are deterred from the area, but the maritime area around the proposed port was not identified as an important fishing spot. Potential negative effects on commercially important fish (e.g., Arctic Char) will be mitigated by following the measures outlined in **Section 7.4.3**.

Recreational and commercial fishing opportunities will be greatly expanded during operation since the new port will accommodate much larger boats than can currently dock in the community. The European Commission has studied the impact of commercial fisheries development in Greenland and reports that commercial fishery represents approximately 25% of the gross domestic product in Greenland, and provides a mixed economy in which the population can participate in both subsistence fishing, hunting and gathering as well as commercial fishing (Reithe and Armstrong, 2023).

7.5.2 Community Infrastructure

The effects of the Project on community infrastructure are expected to be positive and long-term. Currently, a small wharf exists in Qikiqtarjuaq which can only accommodate small boats. The new deep-water port will improve maritime access to the community,

especially as climate change is predicted to extend the open-water season in the Broughton Channel and Davis Strait. It will also provide expanded facilities to store fish and game for commercial and recreational fishers and hunters.

The existing wharf in Qikiqtarjuaq will not be affected by construction or operation of the port since it is located more than 2 km north of the Project. Routes between the quarry, stockpile areas, temporary work camp, and construction site are all located >500 m from the community of Qikiqtarjuaq, so no significant increase in traffic within the community is expected. Construction contract(s) will include provisions to repair roads, ditches, culverts, and/or other infrastructure if damage occurs due to construction.

Construction activities and the arrival of workers from abroad will cause increased demand for supplies and services in Qikiqtarjuaq (e.g., fuel, food, water). Provision of supplies and services to meet increased needs will be a requirement of construction contract(s) for the Project. The temporary work camp will generate waste (e.g., sewage, organic waste, package waste) and proper disposal of this waste will be the responsibility of the contractor.

Mitigation Measures (Construction)
Proper implementation of the following measures during construction will reduce negative effects on community infrastructure:

1. Construction contract(s) to include provision of supplies, resources, and services for construction activities and workers to offset the demand on existing community resources.

7.5.3 Human Health and Safety

The effects of the Project on human health and safety are expected to be positive and long-term. A deep-water port will improve community safety by providing safe docking facilities for a wide range of vessels. It may also reduce congestion in the existing wharf, although this was not identified as a significant existing issue.

Increased dust and noise during construction is unlikely to significantly affect human health since the quarry, stockpile areas, construction area, and haul roads are all located >500 m away from residential areas. Increases in dust and noise will be mitigated by implementing the measures outlined in Section 7.1. Likewise, construction is not expected to cause increased traffic in the community since haul routes between Project components bypass existing built-up areas. Potential effects of vehicle traffic will be managed by implementing a traffic management plan.

Mitigation Measures (Construction)
Proper implementation of the following measures during construction will reduce negative effects on human health and safety:

1. Implement mitigation measures for air quality and ambient noise as outlined in Section 7.1.
2. Implement a Traffic Management Plan with established speed limits for construction vehicles and procedures to avoid conflict between construction traffic and other traffic in the community.

7.5.4 Community Wellness and Traditional Land Use

Effects of the Project on community wellness and traditional land use are expected to be positive and long-term. A new deep-water port will expand facilities available for fishing and hunting, which are important cultural activities. The existing wharf will not be affected by construction or operation of the port, so ongoing activities will not be affected.

The proposed quarry overlaps with a popular local picnic spot and access trail which will be closed during construction to ensure public safety. The area will be reopened to the public after construction but will look much different due to excavation of the quarry. Municipal council is aware of this impact and agreed that the community benefits of the new port outweigh the loss of the picnic area.

Maritime areas in the immediate vicinity of the proposed port location were not identified as important for fishing or harvesting marine mammals, but Elders and other community members voiced concern about construction activity deterring marine mammals from the Broughton Channel generally which could pose challenges to harvesting the animals. Measures to mitigate the effects of underwater construction noise on marine mammals will help reduce potential negative effects on hunting (see Section 7.4.4).

During community consultation in 2023, it was identified that some terrestrial habitats in the vicinity of the new port location are used for berry picking, an important cultural activity. These areas will not be affected by the Project because the construction footprint does not overlap with ecological communities where berries are abundant.

7.5.5 Archaeological and Cultural Historic Resources

No effects on archaeological resources are anticipated as long as mitigation measures are implemented as described below. Buffers can be established around archaeological sites adjacent to haul roads and bordering the proposed quarry, which will prevent accidental damage. No effects on archaeological resources are expected as a result of port operation.

Mitigation Measures (Construction)
Proper implementation of the following mitigation measures will avoid negative effects on archaeological resources:

1. Install safety fencing to delineate a 30 m buffer zone around archaeological sites within 30 m of haul roads and the proposed quarry. Sites are mapped in the baseline archaeological study report (ERM Consulting Canada Limited 2025).

2. If undocumented archaeological features are discovered during construction, work in the area should cease and the find reported to the Nunavut Department of Culture and Heritage for guidance on how to proceed.

8 Residual and Cumulative Effects

8.1 Summary of Residual Environmental Effects

The overall effects of the Project are expected to be positive and long-term, especially because of the significant benefits to community infrastructure and employment opportunities in Qikiqtarjuaq. Nonetheless, there may be residual negative effects on some aspects of the bio-physical environment as described below.

8.1.1 Atmospheric

Although increases in ambient light will be mitigated to an extent, navigation lights and lighting around the port and access road will result in a net increase in ambient light during operation of the port. The potential effects of the predicted increase in ambient light on wildlife are expected to be negligible and there will be a significant positive effect on safety and security for the community.

8.1.2 Terrestrial

There will be a permanent loss of approximately 6,000 m^2 of upland habitat within the footprint of the new port and access road. The quarry will result in a loss of some rocky upland habitat, but physiographic conditions in the quarry are expected to be generally similar to existing rocky upland habitat despite the change in local topography. The areas to be removed are not significant foraging, breeding, or movement areas for any wildlife, and no SAR or SoCC will be affected. The overall effect of the Project on the terrestrial environment of Broughton Island is expected to be negligible and there will be significant socio-economic benefits from the new deep-water port.

8.1.3 Marine

There will be a permanent loss of or change in approximately 28,000 m^2 of marine habitat within the footprint of the new port. The areas to be removed are not identified as significant marine fish habitat, so the overall effect on marine life is expected to be negligible. The potential changes to marine habitat as a result of dredging are expected to be negligible within the context of the Broughton Channel as a whole. Installation of

armour stone protection around the new port may increase the area of rocky marine habitat.

8.1.4 Socio-economic

The effects of the Project on marine mammals in the Broughton Channel, which are hunted by local Inuit, was identified as a concern by Elders during consultation. While construction activities could disturb marine mammals if not mitigated (see **Section 7.4.4**), port operation is not expected to affect them, so no negative residual effects to traditional land use are anticipated. The new port will provide better facilities for local Inuit to harvest and process marine mammals, resulting in a net positive residual effect overall.

Overall, the new deep-water port is expected to have significant positive residual effects on employment and business opportunities, community infrastructure, human health and safety, and traditional land use.

8.2 Potential Cumulative Environmental Impacts

The only other development project currently proposed in Qikiqtarjuaq is a new hospital, which is in the planning phase with an anticipated opening date of 2030, the same year as the new deep-water port. The Municipality of Qikiqtarjuaq is also considering upgrading the existing potable water supply to meet future demand. The coincident openings of these facilities will cumulatively be of significant socioeconomic benefit to the community. Cumulative effects on the biophysical environment are difficult to quantify, but as the new hospital will be located in the built-up part of the community it is not expected to result in a significant loss of terrestrial habitats or have residual effects on ambient light or other VCs. The upgraded water supply facility has not yet been designed, but is expected to be in the same or similar location as the existing facility.

Past projects evaluated by the NIRB in the area are all scientific research projects involving no new construction. Between 2017 and 2014, the NIRB conducted a Strategic Environmental Impact Assessment of Baffin Bay and the Davis Straight to facilitate oil and gas exploration in the region, but no exploration projects are currently proposed in the area around Qikiqtarjuaq (Nunami Stantec 2019). A recent past activity was the construction of the new Qikiqtarjuaq Research Centre which is located in the built-up part of the community.

The Project is expected to have overall net positive, long-term effects for the community of Qikiqtarjuaq, and may facilitate future projects of net benefit by expanding commercial access to the community.

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