

Table of Contents

B-1 Cumulative Effects Overview	1
B-1.1 List of Past and Present Projects	1
B-1.1.1 Methods	1
B-1.1.2 Results	2
B-1.2 Reasonable Foreseeable Future Developments	7
B-1.2.1 Methods	7

LIST OF TABLES

Table B.1-1: Communities	2
Table B.1-2: Roads.....	2
Table B.1-3: Active Mineral Exploration Projects.....	3
Table B.1-4: Inactive Mineral Exploration Projects.....	4
Table B.1-5: Mining Project.....	4
Table B.1-6: Quarry/Borrow Pits	4
Table B.1-7: Tourism Caribou Hunting Lodges	4
Table B.1-8: Tourism Fish and Hunting (no caribou) Lodges	4
Table B.1-9: Contaminated Sites (active sites).....	5
Table B.1-10: Present Vessel Traffic.....	5
Table B.1-11: Anticipated Vessel Traffic.....	7
Table B.1-12: Major Developments	8

LIST OF FIGURES

Figure 1: Past and Present Developments and Cumulative Effects Study Areas	6
Figure 2: Reasonably Foreseeable Future Developments.....	9

B-1 CUMULATIVE EFFECTS OVERVIEW

B-1.1 List of Past and Present Projects

B-1.1.1 Methods

To quantify past and present development, a geospatial database containing the type and location of past and present development was compiled. The following sources were reviewed for information on development and other human activity:

- NIRB permitted and licensed activities within Nunavut;
- NWB permitting and licensed activities within Nunavut;
- KivIA Land Management Application (KIA 2021);
- Nunavut Mineral Exploration, Mining and GeoScience Overview (INAC 2017);
- Federal Contaminated Sites Inventory (Treasury Board 2021);
- Location of hunting and fishing camps from operator websites;
- Websites or reports from developers and operators
- Conversations with knowledgeable individuals; and
- Knowledge of the area and Project status.

The developments included were current to September 1, 2021. Data were divided into points and lines. The following limitations and assumptions guided the preparation of the database:

- The accuracy of the location of the developments is variable; in some cases it is precise, in other cases the exact site of the activities were not recorded, or the activities were dispersed in nature (such as exploration camps with drilling programs).
- Any developments within municipal boundaries were not included, as the community is assumed to be the greater source of disturbance.
- Contaminated sites of moderate or high priority (as defined by Treasury Board 2021) were included; sites of low or unassigned priority were not included. Low priority contaminated sites are typically point-source sites considered too small to be relevant at the spatial scales for cumulative effects assessment.
- Developments for which the land use permit was issued more than five years ago were considered to be inactive. Similarly, contaminated sites were considered to be inactive.
- All permitted developments and activities were assumed to be operating throughout the year, for the full duration of the land use permit. This is a conservative assumption, as many activities are seasonal and many are not active each year of the five year span of the land use permit.
- Activities that did not trigger land use permits were considered to have a negligible effect on the environment, and were not included. This included traditional outpost camps.
- Developments were described by their land use permit category, unless additional information was available. Land use permits for Research Projects and Territorial Campgrounds were not

included as these likely have negligible effects on the biophysical environment. Land use permits for miscellaneous activities were included.

- Mineral exploration projects often include a camp and multiple drilling locations in the vicinity. For the purposes of this assessment, operations by a single proponent working from a single camp were consolidated into a single feature, although it may contain multiple drill camps or possibly satellite camps. Exact details of camp and drill locations are not typically recorded. The seasonal use of the camps was not investigated, it was assumed that all camps were active throughout the year.

B-1.1.2 Results

Previous and existing developments in the various cumulative effect study areas include roads, communities (including airports, roads borrow pits and quarries, fuel storage), shipping corridors, hunting or fishing camps, mines, mineral exploration camps, and contaminated sites (Figure 1). Tables B.1-1 to B.1-10 below describe the status and nature of previous and existing developments. Figure 1 shows location of these activities.

Table B.1-1: Communities

Province/Territory	Community
Saskatchewan	Stony Rapids
Manitoba	Tadoule Lake, Lac Brochet, Churchill
Nunavut	Arviat, Whale Cove, Rankin Inlet, Baker Lake, Naujaat

Table B.1-2: Roads

Road	Description
Manitoba Provincial Road 394	Running from Lynn Lake in Manitoba to the community of Kinoosao in Saskatchewan. It was constructed in 1961, and is an all weather gravel road.
Meadowbank AWAR	All Weather Access Road from Baker Lake to Agnico Eagle Meadowbank Complex. 110 km long all weather gravel road. Type of traffic: Mining traffic.
Whale Tail Haul Road	From Whale Tail to the Meadowbank Complex. 64 km long all weather gravel road. Type of traffic: Haul truck and other mining traffic.
ATV and snowmobile trails outside municipal boundaries	Kivalliq communities have networks of ATV and snowmobile trails to facilitate access to the land, travel between communities and/or provide access to cabins.

Table B.1-3: Active Mineral Exploration Projects

Project Name	Description
Kahuna Diamond Project (Nunavut)	The Kahuna diamond project is located between the communities of Rankin Inlet and Chesterfield Inlet. Bulk sampling was completed in 2006 to 2008. A summer field program was completed in 2020, which included grab sampling over 40 km ² , as well as completing regional surface mapping. Solstice Gold Inc. has identified three highly prospective areas in which gold-bearing boulders are interpreted to indicate a local bedrock source. Including two electromagnetic geophysical anomalies identified in 2019, Solstice now has five drill-ready targets on the property. For the purposes of this assessment, it is assumed that the Kahuna Project proceeds to operation.
Greyhound and White Hills Project (Nunavut)	<p>The Greyhound Project consists of 22 claims on two separate parcels. Gold79 Mines (formally Aura Silver Resources Inc.) is the sole owner of the one parcel with seven claims (6,072 ha). Agnico Eagle owns 51% of the second parcel (15,676 ha) which has 15 claims. Greyhound project is located 38 km north of Baker Lake, and about 32 km south of the Meadowbank Mine. In May 2020, Gold79 announced seven new gold target areas for the next exploratory drilling program at Greyhound; however, due to COVID-19 restrictions, the timing of future drilling remains subject to decisions of the Agnico Eagle management and local community approvals. If conditions permit, the proposed program could take place in 2021.</p> <p>The White Hills property is a 17,211 ha parcel adjacent to the Greyhound claims and is 100 per cent owned by Agnico Eagle.</p> <p>Both properties are located along the AWAR connecting the community of Baker Lake to the Meadowbank Complex 35 km to the north. Exploration or mining at the Greyhound Project would utilize the AWAR, as well as being supported by dry-cargo ships, marine tankers or barges from outside Hudson Bay or from Churchill to Baker Lake using the existing shipping routes in Chesterfield Inlet, Hudson Bay and Hudson Strait.</p>
Pistol Bay Project	The Pistol Bay Project is located near Whale Cove and currently operated by Nord Gold SE. The summer 2016 field season involved an extensive work program at the Pistol Bay Project, including drilling, till sampling, and geological mapping. The till sampling program focused on following up the anomalous gold results from the 2015 program around the Gill South prospect. In 2017, Northquest focused on detailed geological mapping, prospecting, and rock chip sampling conducted over all known targets in the claim block (INAC 2017). In 2018 a field program included geological mapping, rock chip sampling, and till sampling. Due to COVID-19 restrictions, an exploration program planned for the 2020 field program did not occur. Nordgold's ore reserves was sitting at 15.2 Moz of gold in 2020.
Whale Cove Exploration Project	The Whale Cove Exploration Project is located 20 to 70km south, west and north of the Kivalliq community of Whale Cove. Exploration activities including drilling, prospecting and geophysical activities. No holes were drilled in 2019-2020 and nothing is planned for 2021.
Qilalugaq Diamond Project	The Qilalugaq Diamond Project, owned by North Arrow Minerals, is located 9km northeast of the Kivalliq community of Naujaat. It consists of 7 mining leases and 3 mineral claims covering 10,743 ha. Numerous exploration campaign were conducted since the discovery of diamond in the area in 2003. Eight kimberlite pipes and a number of associated kimberlite dykes have been identified within the Project. The company is working towards a Preliminary Economic Assessment for the Project. Additional delineation drilling activities are planned for 2022.
Meadowbank Precious Metals Property	The Meadowbank Precious and Base Metals Property, owned by 5530 Nunavut Inc a wholly owned subsidiary of Western Atlas Resources, is located approximately 50 km north of the community of Baker Lake. It consists of 580 km ² of mineral claims divided into 3 non-contiguous blocks located along Agnico Eagle's all weather access road and Whale Tail Haul road between Baker Lake and the Whale Tail Project. Geological mapping, geochemical sampling, geophysical surveys and ground surveys were completed starting in 2017. Additional exploration work is planned for 2021.
Parker Lake and Cone Hill Projects	This project is owned by Agnico Eagle Mines. The Parker Lake mineral property is located on Inuit Owned Land between 120km and 160km Northwest of the Rankin Inlet community and between 100km and 135km Southeast of the Baker Lake community. Three holes were drilled in 2019. The Cone Hill mineral property is located on Crown Land between 158km and 174km Northwest of the Rankin Inlet community and between 85km and 105km east of the Baker Lake community. Six holes were drilled on the property in 2019.

Table B.1-4: Inactive Mineral Exploration Projects

Province/Territory	Description
Nunavut	Chidliak Nanuq in Kivalliq (Peregrine Diamond), Kiggavik-Sissons (Orano Canada), Gibson MacQuoid (North Country Gold Corp), Ferguson Lake (Canadian North Resource and Development Corporation), Ferguson Lake Project (Trevor Boyd), Angilak (ValOre Metals Corp), Marce Claims Exploration (Anconia Resources Corp), Noomut Project (William Love), Luxx Project (North Arrow Minerals), Kuulu Project (NxGold), Huckleberry (John Tugak), Tugak Gold Project (Corrine Tugak), Napajut Lake Property (Exploratus Limited)

Table B.1-5: Mining Project

Project Name	Description
Meadowbank Complex	The Meadowbank Complex has been operating since 2010. Mining of the Meadowbank area was completed in 2019 with the Goose, Portage, Vault and Phase pits being completely mined out. Mining is currently occurring at the Whale Tail and IVR deposits located 70 km north of the Meadowbank mine. The approved mine life is until 2026. Additional exploration activities are occurring in the area to extend the life of the mine beyond 2026. Activities at the mine site include an all weather access road, borrow pits and quarries, camp, mill, and water and waste management infrastructures.

Table B.1-6: Quarry/Borrow Pits

Project Name	Description
Rankin Inlet sandpit	The Rankin Inlet sandpit is a borrow pit located 7 km north of Rankin Inlet. It has been used since the last 30 years as a source of sand and gravel material to the Hamlet and local contractors.

Table B.1-7: Tourism Caribou Hunting Lodges

Lodge Name	Description
Lodge at Little Duck	Full service lodge located on the migration route of the Qamanirjuaq caribou herd. The lodge is open in September/October. It is located just south of the Manitoba/Nunavut border. Since 1995, the Government of Manitoba allocates only 250 Non Resident Caribou tags on an annual basis to a number group of outfitters operating in the Province. Little Duck Lodge has 3 camps in Nunavut where they bring hunters.
Munroe Lake Lodge	Full service lodge on the migration route of the Qamanirjuaq caribou herd.
Webber's Lodges	Full service lodge on the migration route of the Qamanirjuaq caribou herd. Located just south of the Manitoba/Nunavut border.

Table B.1-8: Tourism Fish and Hunting (no caribou) Lodges

Province/Territory	Lodge Names
Manitoba	Big Sand Lake Lodge, Gangler's, Lynn's Lake Fly-in Outpost camps
Saskatchewan	Hasbala Lake, Misaw Lake Lodge, Wolf Bay Lodge, Milton Lake Lodge
Northwest Territories	Scott Lake Lodge

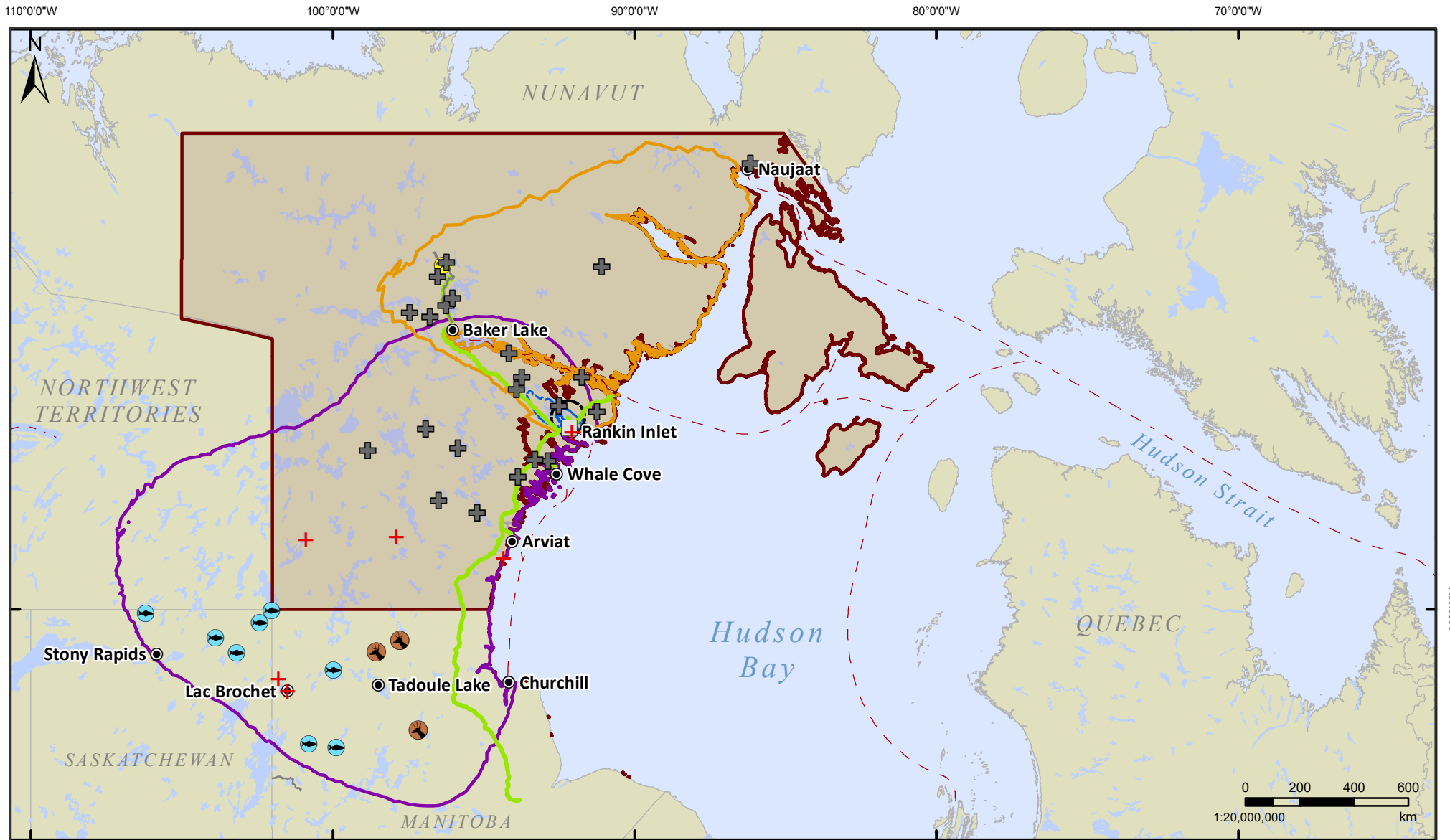
Table B.1-9: Contaminated Sites (active sites)

Province/Territory	Number
Nunavut	4
Manitoba	2

Table B.1-10: Present Vessel Traffic

	Dry Cargo Return Trips	Fuel Cargo Return Trips	Total Number of Return Trips
Current Shipping Volumes			
Resupply Vessels for Arctic Communities	13	15	28
Research vessels			2
Tourist Cruise Ships			10
Meadowbank Gold Project	10	0 ^a	10 ^a

(a) Traffic has been included in the Meliadine Gold Project traffic volume range (i.e., up to 6 ships for fuel) as ships resupply both Meadowbank and Meliadine Gold Projects during a single trip most of the time.



Meliadine Project

Past and Present Developments and Cumulative Effects Study Areas

Date: 12/8/2021

Map Number: MEL-001

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere

Projection: Mercator Auxiliary Sphere

Datum: WGS 1984



Legend

- Community
- Orange outline Lorillard Caribou Home Range
- Purple outline Qamanirjuaq Caribou Home Range
- Black dashed outline Terrestrial Regional Study Area (RSA)
- Blue dashed outline Watershed Boundary
- Red outline Kivalliq Region
- Red dashed line Shipping Corridor

Past and Present Projects

- ⊕ Mineral Exploration
- ⊗ Mining
- Quarries/Borrow Pits
- ⊙ Tourism Caribou Hunting Lodge
- ⊙ Tourism Fishing and Hunting (no caribou) Lodge
- ⊕ Contaminated Sites (active sites)
- Green line Kivalliq Hydro-Fiber Link Project
- Grey line All-Weather Road

B-1.2 Reasonable Foreseeable Future Developments

B-1.2.1 Methods

Reasonably foreseeable future developments are defined by the NIRB as projects or activities that are currently under regulatory review or that will be submitted for regulatory review in the near future, as determined by the existence of a proposed project description, letter of intent, or any regulatory application filed with an authorizing agency (NIRB 2012). Further to the NIRB definition the following were also considered in the selection of RFFD:

- The RFFD should have a reasonable likelihood of initiating during the life of the Project.
- The RFFD should have the potential to change the Project impact predictions.

Each of the RFFDs was considered for overlap with the Project from the perspective of the cumulative effect categories (caribou, terrestrial, aquatic resources, traditional land use, and socio-economics). The pathway was determined to be either valid or invalid depending on whether the RFFDs occurred within the relevant study area, providing an indication for the potential for cumulative effects.

From the definition and considerations above, Table B.1-11 and B.1-12 presents marine shipping and projects that were selected as a suite of major developments that may occur in the cumulative effects study areas in the foreseeable future and activities (Figure 2).

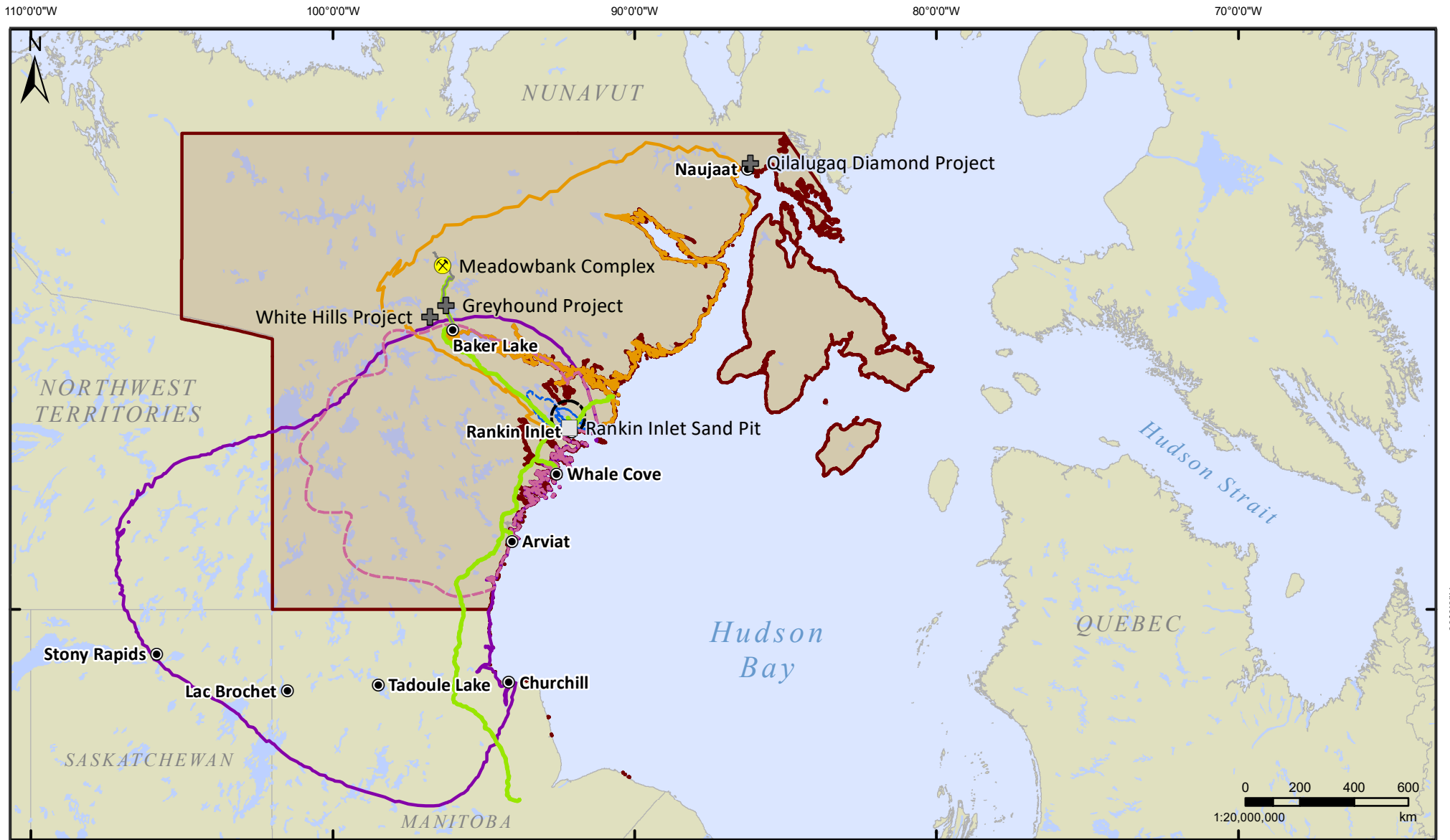
Table B.1-11: Anticipated Vessel Traffic

	Dry Cargo Return Trips	Fuel Cargo Return Trips	Total Number of Return Trips
Meadowbank Gold Project	10	0 ^a	10 ^a
Qilalugaq Project	6	4	10

(a) Traffic has been included in the Meliadine Gold Project traffic volume range (i.e., up to 6 ships for fuel) as ships resupply both Meadowbank and Meliadine Gold Projects during a single trip most of the time.

Table B.1-12: Major Developments

Project Name	Description
Kivalliq Hydro-Fiber Link Project	The Kivalliq Hydro-Fiber link project is led by the Kivalliq Inuit Association and would comprise a 1200km long power line running from Manitoba (Gillam) to the Kivalliq communities of Arviat, Whale Cove, Rankin Inlet, Chesterfield Inlet and Baker Lake via a 370km long lower voltage feeder line. Fiber optic would also run along that power line. The project is in its baseline data research and designing stage. For the purposes of this assessment, it is assumed that the Project proceeds to construction and operation during the Meliadine mine life.
Qilalugap Diamond Project	Numerous exploration campaigns were conducted since the discovery of diamond in the area in 2003. AS such, for the purposes of this assessment, it is assumed that the Qilalugap Project proceeds to operation.
Rankin Inlet Sandpit Project	The Rankin Inlet sandpit is a borrow pit located 7 km north of Rankin Inlet. It has been used since the last 30 years as a source of sand and gravel material to the Hamlet and local contractors. It is expected that it will continue to be used during Meliadine Extension life of mine.
Meadowbank Complex	It is assumed that mineral exploration will continue around the Meadowbank Complex with the goal being to extend the life of mine beyond what has been approved by regulatory agencies (i.e., 2026). Areas being currently explored are White Hills, Greyhound, Whale Tail, and Meadowbank. Existing infrastructures such as camp, mill, road, airstrip at the Meadowbank Complex would continue to be used. Additional infrastructures such as roads, camp, water and waste management infrastructures could be built around the future deposit depending on its location.



Meliadine Project

Reasonably Foreseeable Future Developments
and Cumulative Effects Study Areas



Date: 12/8/2021
 Map Number: MEL-002
 Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
 Projection: Mercator Auxiliary Sphere
 Datum: WGS 1984

Legend

- Community
 - ▭ Lorillard Caribou Home Range
 - ▭ Qamanirjuaq Caribou Home Range
 - ▭ Caribou Regional Study Area (RSA)
 - ▭ Caribou Effects Study Area (CESA)
 - ▭ Watershed Boundary
 - ▭ Kivalliq Region
- Past and Present Projects**
- ⊕ Mineral Exploration
 - ⊗ Mining
 - ▭ Quarries/Borrow Pits
 - All-Season Road
 - Kivalliq Hydro-Fiber Link Project