New Nain Airport

Summary of Registration for Environmental Review / Registration Document / Initial Project Description

4 December 2023

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Acronyms and Abbreviations

AC CDC	Atlantic Canada Conservation Data Centre
CNLOPB	Canada-Newfoundland and Labrador Offshore Petroleum Board
CO	Carbon monoxide
CO_2	Carbon dioxide
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CWCS	Canadian Wetland Classification System
CWS	Canadian Wildlife Service
DFO	Fisheries and Oceans Canada
EA	Environmental Assessment
ECCC	Environment and Climate Change Canada
EIS	Environmental Impact Statement
ELC	Ecological land classification
ER	Environmental Review
ERR	*Environmental Review Regulations*
ESA	*Endangered Species Act*
ESC	Existing stream crossing
FSC	Food, Social, Ceremonial
GIS	Geographic Information System
GHG	Greenhouse gas
HC	Health Canada
HVGB	Happy Valley – Goose Bay
IA	Impact Assessment
IAA	*Impact Assessment Act*
IAAC	Impact Assessment Agency of Canada
IBA	Important Bird Area
LIA	Labrador Inuit Association
LIL	Labrador Inuit Lands
LILCA	*Labrador Inuit Land Claims Agreement*
LISA	Labrador Inuit Settlement Area
LSA	Local Study Area
NEPA	*Nunatsiavut Environmental Protection Act*
NL	Newfoundland and Labrador

Acronyms and Abbreviations

NLNR	Nunatsiavut Lands and Natural Resources
NLECC	Newfoundland and Labrador Environment and Climate Change
NG	Nunatsiavut Government
NGC	Nunatsiavut Group of Companies
NICG	Nain Inuit Community Government
NO_x	Nitrogen oxides
PM	Particulate matter
Project	New Nain Airport Project
PSC	Proposed stream crossing
Registration	Registration for Environmental Review / Registration Document / Initial Project Description
RERI	*Regulations Regarding Environmental Reviews of Initiatives on Labrador Inuit Lands*
SACC	Strategic Assessment of Climate Change
SAR	Species at risk
SARA	*Species at Risk Act*
SO_x	Sulphur oxides
TC	Transport Canada
TLH	Trans-Labrador Highway
VOCs	Volatile organic compounds

Units and Symbols

‘	Minutes
“	Seconds
^{o}C	Degree Celsius
%	Percent
<	Less than
#	Number
cm	Centimetre
ft	Feet
k	Thousands
km	Kilometre
km^2	Square kilometre
m	Metre
M	Million
m^2	Square metre
mm	Millimetre
MW	Megawatt
NM	Nautical mile

Introduction

This document is the Registration for Environmental Review / Registration Document / Initial Project Description (Registration) for the New Nain Airport Project (Project). It is intended to satisfy the requirements for initiation of environmental assessment (EA) of the three applicable regulatory regimes: Nunatsiavut Lands and Natural Resources (NLNR), Newfoundland and Labrador Environment and Climate Change (NLECC) and Impact Assessment Agency of Canada (IAAC). This document is organized to align with the required information outlined in the *Information and Management of Time Limits Regulations*.

Part A: General Information

1. Project Name, Type or Sector and Proposed Location

The Project is a New Airport for Nain, the northernmost Inuit Community in Labrador, Newfoundland and Labrador (NL). Nain lies north of Unity Bay, about 50 km from the Atlantic Ocean and 370 km north of Happy Valley-Goose Bay (HVGB). The Nunatsiavut Government (NG) is planning to build the new certified airport to replace the existing airstrip at Nain. The three main components of the Project, shown Figure 1.1, are:

- Airport, which refers to the terminal, equipment maintenance hangar, apron, groundside parking and related facilities, as well as an area of 1,300 m^2 set aside for potential future development.
- Runway, a new airstrip approximately 1,830 m (6,000 ft) in length and 30 m (100 ft) in width, exclusive of the apron (manoeuvring areas).
- Access Road, a new road approximately 13 km long joining the Airport to Nain.

The New Nain Airport will operate 24 hours a day, seven days a week and will be able to serve as the emergency response centre for the region.

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Project Component

- Alternative airport site
- Original access road alignment
- Access road
- Proposed temporary road
- Airport footprint
- Runway

Labrador Inuit Lands

- Labrador Inuit Settlement Area (LISA)
- Labrador Inuit Lands (LIL)
- Nain Inuit Community Government / Municipal Planning Area

Other

- Existing airstrip

Magnetic North
True North
-22°

1:50 000
0 500 1 000 m
NAD 1983 UTM Zone 20N
2023-11-14 13:55

Figure 1.1

Project Location and Alternative Airport Sites

AECOM

2. Proponent Name and Contact Information

The Project proponent is the NG, which is a self-governing Inuit region in NL. Nain is the administrative capital of the NG and the President of Nunatsiavut is Johannes Lampe.

Proponent Contact:	Colin Gilbride, P.Eng. Director of Infrastructure and Planning Nunatsiavut Government
Address:	P.O. Box 92, Makkovik, NL A0P 1J0
Telephone:	Office: (709) 923-2007 Mobile: (709) 899-0935
Email:	colin.gilbride@nunatsiavut.com
Web:	www.nunatsiavut.com

3. Engagement with Jurisdictions or Agencies

The NG, provincial and federal regulatory regimes outline requirements for the EA process, permits required for construction and operation of the Project, and conditions under which the Project will operate. Regulatory consultation for the Project began in 2022 to determine potential Project-related regulatory requirements and is ongoing. Engagement has included the following government departments and agencies:

- EA regulators
  - IAAC
  - NLECC
  - NLNR
- Other NG regulators / agencies
  - NLNR (re: camps and quarries)
- Other provincial regulators / agencies
  - NLECC: Pollution Prevention Division
  - NLECC: Water Resources Management Division
  - NL Fisheries, Forestry and Agriculture: Wildlife Division
  - NL Health and Community Services
  - NL Municipal and Provincial Affairs
  - NL Executive Council: Office of Indigenous Affairs and Reconciliation
- Other Federal Authorities / agencies
  - Fisheries and Oceans (DFO)
  - Canadian Wildlife Service (CWS)
  - Transport Canada (TC)
  - Health Canada (HC)
  - Environment and Climate Change Canada (ECCC)
  - Department of National Defence
  - Natural Resources Canada (NRCAN)
  - Employment and Social Development Canada

- Women and Gender Equality Canada (WAGE)
- Indigenous Services Canada (ISC)
- Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)

These stakeholders have been invited to engage in further consultation as appropriate. Since early 2023, the NG has requested meetings to present the Project, receive feedback on the regulatory regimes and access regulator expertise. The proponent team has also attempted to contact the Nain Inuit Community Government (NICG) about land use planning and permitting, but has not received a response to date.

To date, key questions or comments regarding the Project (from regulators) include the following:

– Project location (e.g., alternatives considered);
– Project schedule (e.g., timing of EA);
– Project benefits (e.g., employment);
– Consultation and engagement (e.g., Indigenous groups, stakeholders and the public);
– Temporary facilities (e.g., worker accommodations, road for marine access);
– Construction materials (e.g., aggregate sources);
– Site access (e.g., Access Road);
– Natural environment: fish (e.g., Arctic char), birds, wildlife, rare species (e.g., caribou, plants), aquatic environment;
– Land and resource use (e.g., permanent, seasonal or temporary residences and harvesting areas of Nunatsiavut Beneficiaries);
– Land use zoning in Nain;
– Cultural heritage and archaeological sites;
– Management of hazardous materials, including transport of jet fuel;
– Air quality related to diesel generators; and
– Greenhouse gas (GHG) emissions.

4. Engagement with Indigenous Groups

The Project is primarily for the people of Nain and the NG is committed to engagement with Nunatsiavut Beneficiaries, interested parties and members of the public to ensure the best possible outcomes for the community and the environment in compliance with applicable regulations. Beyond regulatory requirements, the NG is committed to identifying and addressing adverse Project-related issues and enhancing benefits.

Before formal engagement on the Project began, key issues and interests reported to the proponent by Nunatsiavut Beneficiaries regarding the Project included:

– The urgency of replacing the airstrip with a better facility;
– The feasibility of a new airport;
– Increasing road access may result in break-ins at camps;
– Snow-clearing on the Access Road;
– Public safety -- avalanches around Blow Hold Pond on the Access Road; and
– Accessing the Airport (e.g., time to get to the Airport, inability to walk to the Airport, parking at the Airport).

Table 4.1 provides an overview of current and upcoming engagement activities planned for 2023 and 2024.

Table 4.1 ***2023-2024 Engagement Plan Overview***

Activity	Description	Actual / Estimated Timing
Proponent-led Project Information Meeting: New Nain Airport Project	Proponent (NG) held initial Project Information Meeting in Nain to describe the Project, work to date and plans to continue work throughout 2023 and 2024, and to answer questions from attendees.	October 16, 2023
Information sharing and early consultation	Establish contact and share information with a broad list of stakeholders and community members, including Indigenous communities and organizations e.g., government staff, Rights Holders, stakeholders and residents of Nain. Distribute Project Information Sheet #1 to list of community members and stakeholders to present Project overview, work completed (2018-present) including site-selection, and work underway to progress feasibility studies. Provide proponent and consultant contact information with invitation to submit additional questions or comments.	November 2023
	Distribute additional Project Information Sheets to list of community members and stakeholders as needed. Subjects can include: – Questions raised during the October 16, 2023 Project Information Session; – Description and updates on the 2023 field program including key findings.	January – March 2024
Targeted engagements	Invite key community members, stakeholders and Indigenous communities to participate in dedicated meetings to discuss the proposed New Nain Airport: Nain, Hopedale, Innu Nation, Mushuau Innu First Nation (Natuashish) and Sheshatshiu Innu First Nation.	November 2023 to Winter 2024

Table 4.1 ***2023-2024 Engagement Plan Overview***

Activity	Description	Actual / Estimated Timing
Broad engagement: Interviews	Invite key community members, Rights Holders and stakeholders to participate in interviews related to the Project to determine the potential impacts on the community and region. This information will contribute to the Project's consultation record and analysis of impacts. Prepare discussion questions based on themes and / or subjects raised during early engagement activities; conduct interviews to validate baseline data and inform effects assessment (e.g., development of valued components, identification of indicators and mitigation).	December 2023 - Spring 2024
Consultation meetings (Indigenous)	Host a series of consultation meetings with potentially impacted Indigenous communities (Nain, Hopedale, Innu Nation) to receive input on the Project and identify key concerns, interests and impacts of the Project. Follow-up consultation meetings or information sharing with Indigenous communities will be determined in consultation with the communities and according to their interests. Further consultation will reflect priorities raised during discussions and indicate how feedback was incorporated into Project planning and in the draft EIS.	Winter 2024 – Summer 2024
Consultation meetings (Community and Stakeholder)	Host a series of consultation meetings with Nain stakeholders and community members to continue to share information on the Project (e.g., technical information, field-Project updates), receive feedback and identify key concerns, interests and impacts of the Project. Follow-up consultation meetings or information sharing with Nain stakeholders and community members will reflect the priorities and interests raised during discussions and indicate how feedback was incorporated into Project planning and in the draft EIS.	Winter 2024 – Summer 2024

Table 4.1 ***2023-2024 Engagement Plan Overview***

Activity	Description	Actual / Estimated Timing
Record of engagement	Prepare final documentation of engagement activities and results. Consultation summary will include records of participants, input received and how it was used in the effects assessment and identify mitigations.	Summer 2024

The proponent held a public information session in Nain on October 16, 2023. A presentation describing the Project was provided to about 25 attendees, including community residents, NG elected officials and staff members. Questions and concerns raised during the public information session included:

- Location
  - Concern that the Airport will be more distant from Nain, where people without vehicles are accustomed to walking to and from the airstrip.
- Site Selection
  - Interest in why this site was selected as opposed to other potential sites.
- Land Use
  - Interest in why the Airport would be fenced, resulting in an exclusion area for harvesting.
  - Interest in the upcoming land use study.
- Airport Operations
  - Interest in who the Airport owner and operator would be.
  - Interest in whether Nain residents would be employed in Airport operations.
  - Interest in what type of aircraft would be used.
- Air Cargo
  - Interest in timely delivery and safe storage of frozen and perishable food and other goods at the Airport.
- Access Road
  - Concern about heavy snow and potential avalanches along the Access Road, particularly at Blow Hole Pond.
- Old Airstrip
  - Interest in potential uses of the old airstrip infrastructure.

5. Relevant Studies

No regional assessments as defined in Sections 92 and 93 of the *Impact Assessment Act* (IAA) have been carried out within the Project area.

6. Strategic Assessments

The ECCC Strategic Assessment of Climate Change, under Section 95 of the IAA, requires the impact assessment (IA) to consider the extent to which the effects of a designated project contribute to or hinder Canada's ability to meet its climate change commitments, such as the Paris Agreement, and objectives, such as the 2030 target and net-zero emissions by 2050 (ECCC 2020). An initial Project GHG estimate in accordance with the Strategic Assessment of Climate Change (SACC) guidelines is described in the IPD.

Part B: Project Information

7. Project Purpose and Need

For northern Labrador Indigenous communities, the airstrips are the only year-round connection to the rest of the province. Marine access is limited as the ferry only operates in ice-free seasons (four to five months from June to October-November). The airstrips are critical infrastructure as they facilitate movement of food, medical supplies and other essential goods, maintain access to necessary services such as healthcare, support attraction and retention of staff in important service areas (e.g., healthcare, education, policing), help to maintain in-person contact with family and friends, provide local employment and support economic development.

The existing Nain airstrip has operational complexities and is unsuitable for upgrading. The location and alignment of the airstrip and direction of prevailing winds result in delay or cancellation of nearly half of regular flights, which delays shipments of essential goods. Due to the surrounding mountainous environment and strong winds, the airstrip is not certified for night-flying operations. This is particularly challenging in medical emergencies when evacuation is often necessary due to limited local medical services.

The Nain airstrip is located on the coast with a 1 m (3 ft) buffer above ocean water. During storm surges, such as one that occurred in December 2022, the airstrip has been partially flooded by sea water. Storm surges result in erosion that can affect load-bearing capacity of the airstrip. This presents the possibility that the airstrip could become unusable on a short- or long-term basis. During the marine shipping season, the ferry takes three days from HVGB to Nain.

In Nain, fixed-wing aircraft remains the best and only means of year-round transportation of people, food and medical supplies and for emergency evacuations. The existing airstrip is precarious because of sea level rise, which is expected to worsen with accelerating climate change. It is imperative that a new airport be constructed as soon as possible, as an analysis has concluded that the infrastructure cannot be upgraded at the current location.

8. Project Activities and Physical Works

8.1 Construction

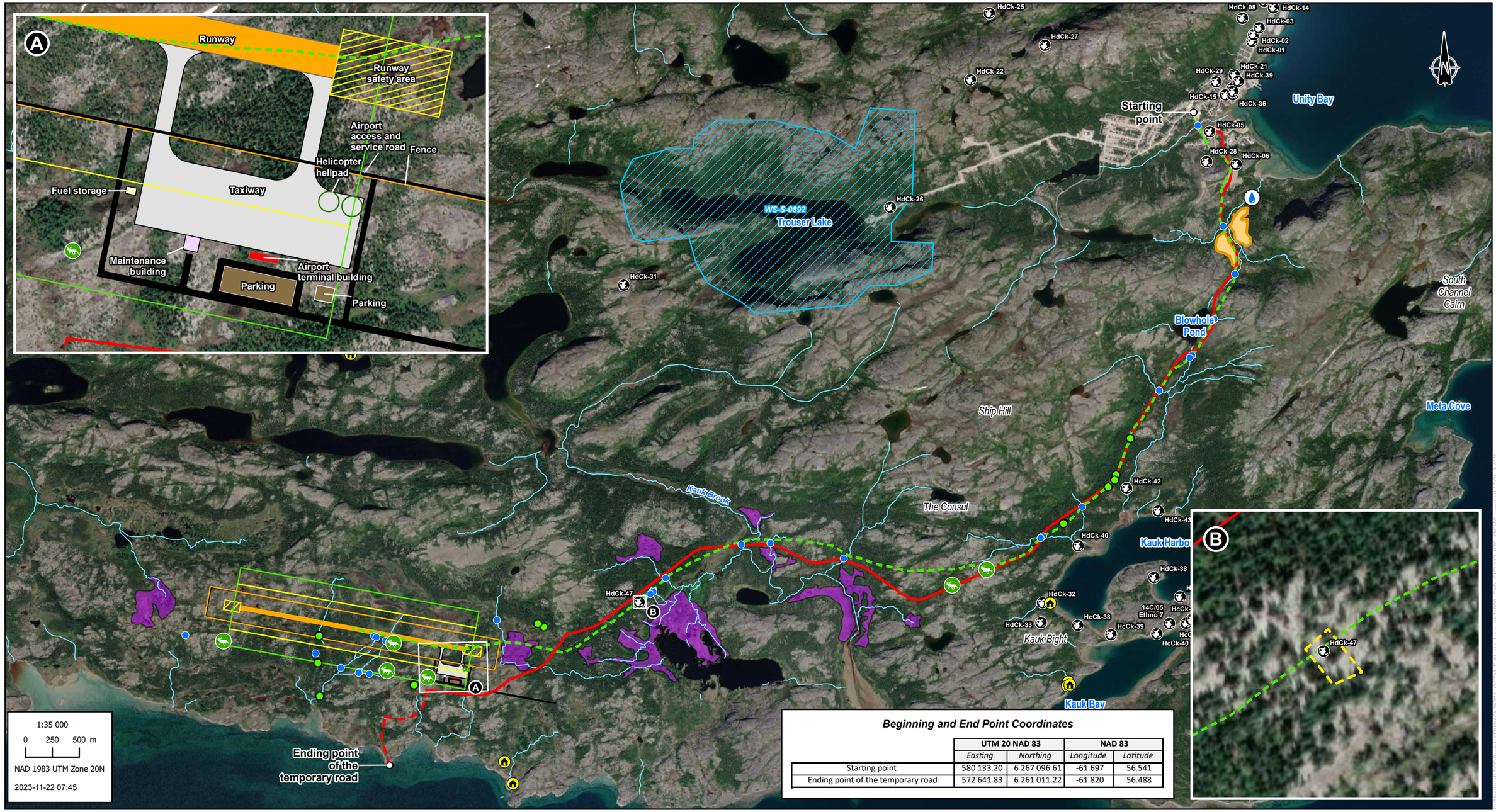
It is anticipated that construction activities for the Project will include the following:

- Brush / tree trimming, crushing and clearing;
- Grubbing;
- Topsoil stripping and mulching of vegetation material mixing to be used in the affected area after completion;
- Dewatering and water control measures;
- Subgrade preparation;
- Preparation / treatment, placement and compaction of granular materials;
- Installation of stormwater management infrastructure;
- Placement of topsoil;
- Access Road construction;
- Installation of bridge and culverts;
- Installation of fencing;
- Installation of visual aids, communication infrastructure and approach lighting;
- Placement of conduits and cabling;
- Construction of the terminal building and hangar; and
- Construction of power facilities.

Temporary facilities, including site trailers, material and equipment storage yards and accommodations, as well as construction maintenance equipment will be installed. Hydrocarbons needed for construction will be delivered to Nain and stored in appropriate, environmentally safe temporary facilities at the construction site.

All backfill materials for the Airport and Access Road will come from the site with optimization of cut / fill balance. Other materials (for buildings, electricity, drinking water pumping station, water reserves and other Project-related materials) will come from outside the site, mainly by ship to the port of Nain or directly by waterway along the Airport site's coastline. A marine site near the Airport may be used to land barges to deliver equipment and materials for construction with a temporary access road from the shore (Figure 2.1). No marine infrastructure will be installed on the coast. The temporary road will be removed and the area reclaimed at the end of construction. Soil and topsoil excavated during Project construction will be re-used wherever possible for fill or landscaping. Temporary erosion and sedimentation control measures (e.g., settling ponds, silt fencing) will be required during construction to prevent release of sediment-laden water to environmentally sensitive areas.

Brush will be chopped / shredded and may be burnt on-site if required, with the approval of Department of Fisheries, Forestry and Agriculture during Forest Fire Season, or may be removed to an approved waste disposal site for proper disposal with the permission of the owner / operator of the waste disposal site. Where burning is permitted, tires and used or waste oil will not be used to aid in the burning of brush.



Beginning and End Point Coordinates

	UTM 20 NAD 83		NAD 83	
	Easting	*Northing*	*Longitude*	*Latitude*
Starting point	580 133.20	6 267 096.61	-61.697	56.541
Ending point of the temporary road	572 641.83	6 261 011.22	-61.820	56.488

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Project Component

- Original access road alignment
- Access road
- Proposed temporary road
- Fence
- Transitional surface (23 m)
- Transitional surface (45 m)
- Helicopter parking
- Runway safety area
- Airport terminal building
- Airport access and service road
- Fuel storage
- Maintenance building
- Parking
- Runway
- Taxiway

Environmental Constraints

- Watercourse
- Watercourse crossing (desktop)
- Additionnal watercourse crossing (2023 field mapping)
- Potential permafrost
- Caribou track observation

Socio-Economic Constraints

- Cabin
- Archaeological site
- Archaeological site protection area
- Untreated drinking water source
- Protected Public Water Supply Area
- Quarry

Figure 2.1

Project Components and Initial Environmental / Socio-economic Constraints

AECOM

8.2 Operations

Unlike the existing airstrip, the New Nain Airport will be capable of operating 24 hours per day, taking into account weather conditions that are increasingly intense due to climate change. No de-icing facilities are planned as part of the Project. The larger Runway will be capable of landing De Havilland Canada (DHC)-8 turboprop aircraft and jets (e.g., Boeing 737-200) and will also be capable of landing larger Boeing 737-700 and 737-800 series airplanes.

During operations, all supplies will be transported to the Airport via the Access Road. Transport and storage of diesel and jet fuel will be in compliance with regulations such as *Canada Transportation of Dangerous Goods Act and Regulations,* NL *Dangerous Goods Transportation Act and Regulations*, NL *Storage and Handling of Gasoline and Associated Products Regulations, 2003* and NL *Used Oil and Used Glycol Control Regulations, 2018.*

8.3 Decommissioning

Closure, decommissioning and rehabilitation is not anticipated as the Airport will be essential for Nain for the long-term. The proposed infrastructure is anticipated to have a life cycle of more than 50 years. If closure and decommissioning are required, these processes will be subject to appropriate regulatory regimes at that time. Progressive reclamation does not apply in the context of the Project.

9. Estimated Maximum Project Capacity

Based on the Guide to Preparing an Initial Project Description and a Detailed Project Description (IAAC 2019), the maximum capacity is not considered relevant for the Project; however, the following metrics may be relevant:

- The Runway is proposed to be approximately 1,830 m long; and
- The Airport is expected to support between 130 and 140 flights per month, including both arrivals and departures. It is likely there will eventually be fewer flights as larger aircraft will be able to use the Airport.

10. Project Schedule

The preliminary engineering design and feasibility studies are scheduled to be completed by the end of 2024 and Project construction is expected to commence in 2027, with commissioning in 2030. The current estimated schedule for the Project is provided in Table 10.1.

Table 10.1 Project Milestones and Dates

Key Milestones	Completion Dates
Submission of Registration to IAAC, NG and NLECC	November 2023
Start of the final phase of feasibility studies	October 2024
Completion of R12: Environmental Impact Assessment Submission	November 2024
Completion of feasibility studies report	December 2024
EA decision (IAAC, NG, NLECC)	December 2025
Financing completed	April 2026
Development and construction phases	2025-2030
Detailed engineering, applications for certificates of authorization, obtaining certificates and construction work (in phases)	2026
Mobilisation and construction	2027-2030
Commissioning and operational phase	End of 2030

11. Project Alternatives

As a result of ongoing issues at the Nain airstrip, the NG has considered several alternatives, which include:

– Upgrading the existing airstrip at the same location; and
– Constructing new airport infrastructure, including an access road.

These alternatives are addressed below.

11.1 Alternatives to the Project

The existing Nain airstrip has reached the end of its service life and any improvements would temporarily extend its usability (NG 2018a). Due to the coastal and mountainous environment (and the lack of adequate equipment and lighting), operations are restricted to day flights. Even with upgrades to equipment and lighting for night operations, the topography would prevent expansion of the airstrip and installation of instruments conducive to flight operations in poor weather.

The existing airstrip is at risk of accelerated degradation due to climate change. Sea level rise has resulted in higher tides and increased intensity of storm surges. These conditions will lead to erosion of the coastal banks of the airstrip, further limiting potential expansion and instrument installation. In addition, thawing permafrost will result in heaving of the airstrip surface structure and loss of load-bearing capacity. These factors present further barriers to potential improvements as sea level rise is expected to increase annually due to climate change. Construction of new airport infrastructure would provide a more reliable and resilient alternative to the existing airstrip.

11.2 Alternative Means

Three candidate sites for the New Nain Airport (Sites 1, 2 and 3) were considered within a radius of approximately 15 km to the south and southwest of Nain (Figure 1.1).

The area available on Site 1 is too narrow to offer sufficient surface area to develop the necessary facilities and provide standard clearances. The lack of usable space would also prohibit installation of an approach lighting system and room for potential future expansion. The configuration of Site 1 does not align with the prevailing winds for aviation purposes. The altitude would also require steep grades in sections of the 2.1-km access road, which could be problematic in winter conditions. In addition, Site 1 is above critical altitude for cloud cover, making it unsuitable for landing aircraft. Lastly, several existing antennas could present obstacles and impede runway approach procedures.

Site 2 presents topographic constraints similar to Site 1: it is situated in a narrow valley that may not have enough usable space to accommodate all required facilities. The slopes of the valley would require steep grades for the 2.5-km access road, which also could be problematic in winter. Site 2 is also above critical altitude for cloud cover. Like Site 1, several existing antennas could present obstacles and impede runway approach procedures. In addition, this site is within the Protected Public Water Supply Area for Trouser Lake, which is Nain’s drinking water supply.

Site 3 was selected as the most favourable location for new airport infrastructure. This site is located on a plateau 2 km wide and 10 km long, generally level and offering 4,000 m of usable length. It is large enough to allow development of the planned infrastructure: a 1,500 to 1,800 m runway, a taxiway, an apron and various buildings with a provision for potential future expansion. The plateau has bedrock outcrops in some places and is covered by light vegetation and evergreens in others. No permafrost was found under the Runway area.

A potential site to the north of Nain near Akpiksai Bay was eliminated from the selection process due to having a higher elevation, steep surrounding mountains and lack of a large plateau to accommodate the infrastructure. For safe approach and landing, airplanes require a long time to descend and stabilize and a large space without obstructions (e.g., mountains) on each side of the aircraft to protect it and enable it to manoeuvre at low altitude. Flights are often cancelled at the existing Nain airstrip as aircraft are unable to descend safely in poor weather.

Additional alternatives considered for the Project are summarized as follows:

- Groundwater will be used for water supply. Desktop analysis shows it would be technically complex to pump surface water to the Airport, as most of the large waterbodies with adequate recharge are more than 2 km.
- Power will be produced by diesel generators via a modern efficient energy system with fuel storage at the Airport site. Various hybrid (diesel – renewable energy) scenarios were explored to assess the effectiveness of the electrical supply, as well as necessary capital investment and resulting operational costs and GHG generation. A thorough feasibility study on selected scenarios is recommended.
- Access Road design and route selection are underway and have been modified to account for the presence of other land uses, an archeological feature, wetlands, potential permafrost, streams and potential fish habitat, as well as to ensure a strong geotechnical foundation.
- The proposed alignment of the Access Road will go through the Blow Hole Pond area, which has steep terrain and is known for avalanches. The Project engineers are reviewing design options used in other snowy mountainous regions (e.g., the Rocky Mountains or the Alps) to reduce the risk of an avalanche on the Access Road. Design options include measures such as cutting slopes back or creating avalanche protection structures. The pass will be monitored for avalanche potential during operations, and snowpack management techniques (e.g., setting off controlled avalanches) can be considered for public safety if required.
- Routing the Access Road from the northern side of Nain was not considered due to having to pass through the provincially protected Trouser Lake Watershed (domestic water supply for Nain). Given limited aggregate resources at Nain, optimized cut and fill techniques will be used for development of the Access Road, Runway and Airport instead of using the community quarries.
- Any facilities for construction workers will be at the Airport site instead of seeking accommodations in Nain.
- Sewage will be treated in an on-site septic system instead of connecting to the community system.
- All solid wastes from construction will be separated for reuse, construction and demolition disposal and removed from Nain for disposal elsewhere instead of using the community waste disposal site.

Part C: Location Information and Context

12. Geographic Information

The Airport is approximately 13 km from Nain and sits on a plateau, approximately 500 m from the coast at an elevation of roughly 40 m above sea level (Figure 1.1). Airport coordinates are shown in Table 12.1.

Table 12.1 Airport Coordinates

UTM 20 NAD83		NAD83	
Easting	**Northing**	**Longitude**	**Latitude**
570,970.65	6,262,677.06	-61.847	56.503
570,918.57	6,262,395.03	-61.848	56.501
573,671.97	6,262,177.85	-61.803	56.498
573,595.02	6,261,701.16	-61.805	56.494

The Access Road options are shown in Figure 2.1 and the coordinates are provided in Table 12.2.

Table 12.2 Access Road Coordinates

Access Road Point	UTM 20 NAD83		NAD83	
	Easting	**Northing**	**Longitude**	**Latitude**
Starting point	580 133.20	6 267 096.61	-61.697	56.541
End point (Airport access)	572 641.83	6 261 011.22	-61.820	56.488

Table 12.2 Access Road Coordinates

Access Road Point	UTM 20 NAD83		NAD83	
	Easting	Northing	Longitude	Latitude
Temporary construction access end point	572 788.64	6 262 153.08	-61.818	56.498

The Project is in the Labrador Inuit Settlement Area (LISA) and on Labrador Inuit Lands (LIL) created through the *Labrador Inuit Land Claims Agreement* (LILCA). The LILCA establishes Inuit fishing, hunting, trapping and gathering rights in the LISA and specific provisions for those who live outside the LISA. The LISA extends eastward 12 nautical miles (NM) offshore into the Labrador Sea - referred to as the Zone in Schedule 2A of the LILCA.

Labrador Inuit have exclusive rights and ownership of LIL, which cover approximately 15,800 km^2. The *Labrador Inuit Lands Act* (Chapter 11) details many of the requirements for an Environmental Review (ER) on LIL. As per section 11.2.1 of LILCA, no project on LIL can commence until an ER has been completed and the required permits, licences or other authorizations under an Inuit law have been issued by the appropriate authority and the NG. The Airport and Runway are on a parcel of LIL (LIL-08). Along the Access Road, two smaller parcels (LIL-03C and LIL-05C) have been avoided by the current road alignment.

In Canada, federal lands include national parks, Indian reserves, land claims agreement areas (e.g., LILCA) and military bases. The other nearest federal lands are First Nation communities, national parks / reserves and the military installation at HVGB (Table 12.3).

Table 12.3 Nearest Federal Lands

Federal Lands	Distance
Natuashish Indian Reserve 2	72 km
Torngat Mountains National Park	240 km
Akami−Uapishkᵘ−KakKasuak−Mealy Mountains National Park Reserve	346 km
Sheshatshiu Indian Reserve 3	348 km
Kawawachikamach Village	360 km
Matimekosh Indian Reserve 3 / Lac John Indian Reserve	365 km
Canadian Forces Base 5 Wing Goose Bay	367 km

13. Biophysical Environment

A description of the physical and biological environment of the Project location follows, divided into the following sections:

- Climate and Atmosphere
- Topography, Geology and Permafrost
- Groundwater and Surface Water
- Terrestrial Environment
- Aquatic Environment
- Protected and Special Areas

In addition to publicly available information, this section includes information from environmental studies that the NG has conducted for the Project. The Local Study Area (LSA) consists of a 100-m buffer zone around the Airport and on either side of the Runway and the Access Road.

13.1 Climate and Atmosphere

The Project is in the Coastal Barrens ecoregion, extending from Napaktok Bay southwards to the Strait of Belle Isle and characterized by long, sheltered coastal inlets. The ecoregion has a low sub-Arctic maritime climate typified by short, cool and moist summers and long, cold winters (Riley, Notzl and Greene 2013; Ecosystems Science Directorate, Environment Canada 1999).

The climate in northern Labrador is a transition zone between Artic and sub-Artic climates and is influenced by the Labrador Current and proximity to the Labrador Sea. The fall and winter seasons consist of intense, low-pressure weather systems with coastal gale- to storm-force winds and heavy snow due to polar circulation that brings cold air masses to Labrador. The region experiences strong seasonal variations in the strength and position of predominant winds, general air circulation and seasonal storm systems. Winter winds have a strong and persistent westerly flow, and summer winds are generally easterly (Vale NL 2021b).

Climate data from 1981-2010 at the Nain airstrip climate station showed the highest daily average temperatures of 11.0 °C in August and the lowest -17.6 °C in January (Government of Canada 2023). Precipitation ranged from 57.0 mm in May to 98.6 mm in July. Average annual precipitation was 925.4 mm, about half of it was snow.

Since October 2021, weather data have been collected daily for the Project by an automated meteorological station at the Airport site. The data is being analyzed to account for current weather conditions and potential changes in the design of the Airport. A preliminary climatological report has been prepared using data collected from October 2021 to November 2022. The final climatological report, analyzing all data collected from October 2021 to October 2023, will be available in November 2023 in R5: Meteorological Studies and Report - Phase 2.

The dominant wind direction at the Airport location is west-southwest compared to the existing airstrip, where records show prevailing west-northwest winds (Stantec 2023, Draft report for R5: Meteorological Studies and Report - Phase 2). Throughout the year, the wind direction retains a dominate westerly component, particularly during fall and winter with stronger easterly to north-easterly components in summer. However, across all seasons, the highest wind speeds were observed from the west-southwest.

Climate change has had a substantial effect on the Labrador Inuit. Traditional and subsistence activities, as well as transportation on the land and sea are affected by the warmer temperature and variability and change in snow and ice cover.

Future climate projections provided by ClimateData.ca (a collaboration between ECCC, the Computer Research Institute of Montréal, CLIMAtlantic, Ouranos, the Pacific Climate Impacts Consortium, the Prairie Climate Centre and HabitatSeven) were accessed for Nain. For the 1971-2000 period, the annual average temperature was -3.4 ºC. Under a high GHG emissions scenario, annual average temperatures are projected to be -0.5 ºC for the 2021-2050 period, 2.2 ºC for the 2051-2080 period and 4.5 ºC for the last 30 years of this century. Average annual precipitation for the 1971-2000 period was 792 mm. Under a high GHG emissions scenario, precipitation is projected to be 18% higher for the 2051-2080 period and 23% higher for the last 30 years of this century (ClimateData.ca 2023). These data represent an accelerated rate of climate change.

The closest air quality monitoring station managed by ECCC as part of the National Air Pollution Surveillance Program is in Labrador City, approximately 500 km to the southwest of Nain. However, due to Nain's location, air quality in the LSA is generally not expected to be affected by human activity. In July 2023, a forest fire 30km from Nain resulted in air quality and visibility issues; the airstrip was not operational for two days The potential effects on air quality from Project construction and operations will be assessed in the EA.

13.2 Topography, Geology and Permafrost

The Coastal Barrens ecoregion, which spans three-quarters of the Labrador Coast, has highly variable topography. The last glaciation scoured most of the soil, creating a landscape dominated by exposed bedrock and sparse, thin soils (Riley, Notzl and Greene 2013). The offshore Labrador Current cools the coast and influences the location of the treeline. The prevailing influence of the Icelandic Low brings exceptionally heavy rain and snow for such a cold climate at sea level, with up to 5 m of snow each winter. The northern sections of the coast are more sheltered from harsh, coastal weather events by a deep archipelago. Hundreds of offshore islands, islets and shoals provide a 40-km-wide buffer from the open Labrador Sea.

The Nain Coast Ecodistrict, part of the Nain structural province of the Canadian Shield, is dominated by metamorphic gneiss with igneous anorthosites. Bedrock exposures dominate and surficial deposits are scarce. This northern coastal district is notable for its steep elevations, rising to heights of 1,040 m above surface level with average elevations of 168 m above surface level. Steep and abrupt cliffs and slopes rise above the water and narrow valleys. The ecodistrict includes many deep, narrow fjord valleys that extend north from Sango Bay to the mouth of Okak Bay, including Mugford Bay in the north (Riley, Notzl and Greene 2013).

Nain is surrounded by discontinuous scattered permafrost (<50% of land surface). Consistent with observations in other parts of northern Canada, permafrost is degrading in Nunatsiavut due to changing climate conditions (Goldhar, Bell and Sheldon 2013).

Topographic surveys in the LSA were completed during summer 2022. It is apparent that the selected site for the Airport is the only large non-mountainous area near the community. The plateau presents a rocky relief in some places. It is covered by vegetation composed of tamarack and other evergreens in other places. Permafrost is expected in non-rocky areas (NG 2020a).

13.3 Groundwater and Surface Water

In Labrador, river and stream flows are low from January until April or May when they increase dramatically. Monthly stream flows peak in May or June and then gradually decline until August or September. A secondary peak of monthly discharge has been observed in October. Monthly discharges decline from October to December until the spring flow (Government of NL 1997).

In 2022, field work identified water features as intersecting the Access Road. These included streams:

- Two unnamed streams – proposed stream crossing (PSC) 1 and PSC 2;
- Kauk Brook (PSC 3); and
- Two streams intersecting the existing road into Nain -- Nain Brook (existing stream crossing (ESC) 1) and Annainak Brook (ESC 2).

Both ESCs have structures such as culverts in place. North of PSC 1, a pond (Blow Hole Pond) is present within 25 m of the Access Road.

A desktop assessment and terrain analysis of hydrological features in the LSA was conducted as a component of R6: Hydrological Study. During the summers of 2022 and 2023, automatic water level sensors were used to capture continuous water level data in two streams (ephemeral or permanent). In early July 2023, precise drone imagery and field surveys of the entire Access Road route were used to identify and map additional water crossings. As a result, a total of four watersheds and 35 stream crossings with potential to interact directly with the Project were identified. The stream crossings, most of which are described as small (<1 m width) with poorly defined channels and likely seasonal flow (ephemeral), are shown in Figure 2.1.

Surface water chemistry in Labrador reflects the composition of soils and bedrock. In areas where underlying geology consists primarily of gneiss and granite bedrock, surface water tends to be slightly acidic, coloured, highly corrosive and of low mineral content (AECOM 2013).

Regional data on groundwater quality and quantity in Labrador are generally scarce. Estimated annual water surplus, groundwater recharge and surface water runoff rates have been calculated for Labrador using an analytical model. On average, groundwater recharge accounts for approximately 17% of the total water balance of Labrador, with surface runoff accounting for the remaining 83%. Groundwater movement is mildly to strongly affected by permafrost in both the discontinuous and continuous permafrost zones (AECOM 2013).

13.4 Terrestrial Environment

13.4.1 Vegetation and Wetlands

An unsupervised ecological land classification (ELC) exercise was conducted as part of R3: Environmental Review - Desktop Assessment to identify special habitats and provide a baseline classification for future studies (e.g., for stratifying effort by habitat type). Based on the ELC, 1.7% of habitat within the LSA was wetlands. Wetlands within a 100-m buffer of the Runway and Access Road were confirmed by either classification and functional assessment

on the ground or classification and general assessment by helicopter. Wetlands were classified according to the Canadian Wetland Classification System (CWCS) into five classes: bog, fen, swamp, marsh and shallow water.

Data from the Atlantic Canada Conservation Data Centre (AC CDC) indicate that none of the vegetation species found in the Nain region is listed under the federal *Species at Risk Act* (SARA) and / or the NL *Endangered Species Act* (ESA) and all are considered secure by the AC CDC and International Union for Conservation of Nature (Canadian Endangered Species Conservation Council 2016). Two rare flora species within a 5-km radius of the Project site were identified: Mountain sandwort (*Mononeuria groenlandica*) and Scheuchzer cotton-grass (*Eriophorum scheuchzeri*). Neither of these plant species is currently listed on Schedule 1 of SARA or the candidate list (Group 1 – High Priority) of Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and, locally, they both rank as S3S4 (uncommon to fairly common) (Canadian Endangered Species Conservation Council 2016; COSEWIC 2022).

Given the lack of information on vegetation species at risk (SAR) for the Nain region, a field assessment was completed in July 2023 and September 2023 to assess in further detail indicative habitat types for SAR. As a result, 13 SAR (provincially ranked as vulnerable or imperilled, or a combination of both, by the AC CDC) were identified as:

- Alpine pondweed (Potamogeton alpinus; S2S4);
- Elephant's-head lousewort (Pedicularis groenlandica; S3S4);
- Fragile fern (Cystopteris fragilis; S3S4);
- Greenland stitchwort (Mononeuria groenlandica; S3S4);
- Hairy butterwort (Pinguicula villosa; S2S3);
- Hooded ladies-tresses (Spiranthes romanzoffiana; S3S4);
- Moor rush (Juncus stygius; S3S4);
- Multi-rayed goldenrod (Solidago multiradiata; S3S4);
- Northern bog sedge (Carex gynocrates; S3S4);
- Rusty woodsia (Woodsia ilvensis; S3S4);
- Saltmarsh sedge (Carex salina; S2S3);
- Scheuchzer's cottongrass (Eriophorum scheuchzeri; S3S4);
- Small Burreed (Sparganium natans; S2S4).

13.4.2 Avifauna

During the initial site visit on June 21, 2022, song recorders were deployed at two locations in the LSA. In addition, a comprehensive review of historical bird data was conducted as part of R3: Environmental Review - Desktop Assessment, including information provided from the AC CDC.

Documents from previous projects in the area were reviewed, in addition to data requests to the CWS, the NL Wildlife Division and the NG. Six avian SAR possibly present in the Nain region include ivory gull (*Pagophila eburnean*), the eastern population of harlequin duck (*Histrionicus histrionicus*), red-necked phalarope (*Phalaropus lobatus*), short-eared owl (*Asio flammeus*), rusty blackbird (*Euphagus carolinus*) and the anatum/tundrius subspecies of peregrine falcon (*Falco peregrinus anatum / tundrius*). Though not immediately adjacent to the LSA, the coastline to the south of Nain is characterized by hundreds of islands, islets and shoals designated together as an Important Bird Area (IBA). The islands and inlets in this IBA support at least two nationally threatened species, the harlequin duck (*Histrionicus histrionicus*) and the peregrine falcon (*Falco peregrinus anatum*).

13.4.3 Terrestrial Wildlife

Information from the NL Wildlife Division, AC CDC, the Nature Conservancy and the CWS were used to establish a preliminary overview of occurrences and distribution of terrestrial wildlife (including mammals and amphibians). In addition to the desktop review, acoustic bat detectors were deployed during the initial site visit at two locations along the Access Road to gather data on the potential presence of endangered bat species. The 2023 wildlife field program included deployment of six additional bat detectors in the LSA. A terrestrial wildlife survey was completed in early July 2023, in conjunction with the summer avian / SAR survey.

Eighteen mammals are common to the Nain region; five mammalian SAR possibly present in the Nain region include the eastern population of wolverine (*Gulo gulo*), the eastern migratory population of caribou (*Rangifer tarandus*), polar bear (*Ursus maritimus*), little brown bat and northern myotis.

Caribou have declined in recent years and residents indicate they have not seen caribou around Nain in more than a decade (G. Dicker 2019 pers. comm. in R3: Environmental Review - Desktop Assessment). During 2023 field work for R12: Environmental Impact Assessment, caribou tracks were observed in the west end of the LSA.

13.5 Aquatic Environment

13.5.1 Freshwater Environment

Watercourses in the Nain region generally flow toward the east and south, often through deep valleys. Bottom substrates consist of a high percentage of sand and gravel, and tributaries are often inaccessible to migrating fishes in some of the steep-walled canyons that parallel the main stems of rivers (Anderson 1985). Some of the streams that cross the Access Road could provide suitable habitat for fish and benthic macroinvertebrates. Seven anadromous and freshwater fish populations, include five salmonid species, are found in the Nain-Okak region.

From consultation in 2019 with local residents familiar with the area of the Access Road and intersecting streams, there is low potential for salmon or char in the small streams. However, it was noted that the potential for brook trout is high and there is potential for char to be present in waterbodies in the LSA, especially Kauk Brook.

The 2023 aquatic field program included assessment of all waterbodies intersecting the LSA, which consisted of fish and fish habitat surveys with supporting environmental media sampling (e.g., fish, benthic invertebrates and surface water) for particular waterbodies as required. Surveys were conducted in July 2023 to coincide with open-water season in Nain and to avoid critical life cycle activities for fish. The number of water crossings was verified using drone-imagery and field surveys conducted under R4: Surficial Geology, Geomorphology, Permafrost and Hydrogeological Investigations and R12: Environmental Impact Assessment.

No anadromous fish, freshwater fish or freshwater invertebrate SAR were identified in R3: Environmental Review - Desktop Assessment, nor were any SAR captured during the 2023 field assessment.

13.5.2 Marine Environment

The Project is located along the coast of Labrador. The Nain area is composed of Webb Bay, Tikkoatokak Bay, Nain Bay, Anaktalik Bay and Voisey's Bay. Due to high amounts of nutrient loading from local rivers, these marine coastal areas have high levels of nearshore marine productivity (DFO 2021). Each of the embayments has tidal connection to the Labrador Sea. The Labrador Current transports cold, relatively fresh polar waters south along the Labrador coast to the northeast Newfoundland Shelf and the Grand Banks. Due to climate warming, the marine areas surrounding and in the LSA are expected to experience an increase in freshwater flux from melting Arctic ice and subsequent changes in water column stratification.

Readings of tide-gauge 1430 located in the Port of Nain, close to the airstrip, show that water levels at high tide with surges have increased over the past 10 to 15 years. These tides can be amplified by low-pressure wave systems that have become more frequent in the Nain region over the last few years. The tide-gauge reports a high tide of 3.40 m (NG 2018a).

The average sea level in Nain was stable for a long time. However, due to the effects of global warming, icesheets are melting and the average sea level is rising. Furthermore, it is expected that the level will rise another 10 cm over the next 30 years (NG 2018a).

No field studies of the marine environment were conducted in 2023. The proponent has initiated discussions to access marine data being collected for other initiatives. The Atlantic population of fin whales, federally listed as Special Concern, may be present in the marine area adjacent to the LSA at various times of year (COSEWIC 2019). Based on available information, it is unlikely that northern wolffish or spotted wolffish (both federally listed as threatened) would be present in marine areas adjacent to the LSA due to their specific habitat preferences (COSEWIC 2012a, COSEWIC 2012b).

13.6 Protected and Special Areas

The following protected and special areas were identified in the vicinity of the Project:

- The Project intersects the George River Caribou Herd Sensitive Wildlife Area. The Sensitive Wildlife Area designation does not prohibit development, but development proposals are referred to the Provincial Wildlife Division.
- Two IBAs are in the Nain area: Nain Coastline and Offshore Islands Southeast of Nain. Designation as an IBA does not provide protection, though some IBAs are legally protected through other mechanisms; the Nain sites are not protected.
- The Torngat Mountains National Park is located approximately 240 km northwest of the Project.
- Kuururjuaq National Park is located approximately 257 km northwest of the Project.
- The Imappivut (our oceans) Marine Management Plan is being developed by the NG with support from the Government of Canada (NG 2018b). It will provide a framework for using Inuit knowledge in decision-making in the Zone, the coastal waters of the LISA. This planning initiative covers the entire 17,000 km coastline of Nunatsiavut, 12 NM out along the shoreline and an additional 188 NM out to sea (Dives 2017).
- The Project is in the Taiga Shield conservation region (Bird Conservation Region 7NL, Taiga Shield and Hudson Plains) and along the Atlantic Migratory Bird Flyway (Environment Canada 2014; Riley, Notzl and Greene 2013). Neither of these areas is protected.

14. Human Environment

14.1 Indigenous Peoples

14.1.1 Labrador Inuit Land Claims Agreement

The Labrador Inuit Association (LIA) was formed in 1973 to advance land claims (NG 2023). In 1977, the LIA filed a statement of claim with the Government of Canada seeking rights to the land and sea ice in Northern Labrador. The LILCA was signed in December 2005. The first elected Nunatsiavut Assembly was sworn in in October 2006.

14.1.2 Nunatsiavut Government

The NG is an Inuit regional self-government with the power to establish its own justice system and laws to govern matters such as land and resource management, education, health, housing, culture and language (NG 2023). Nunatsiavut Beneficiaries live in five Inuit communities in Labrador -- Nain, Hopedale, Postville, Makkovik and Rigolet, and elsewhere (NG 2023). Hopedale is the legislative capital of Nunatsiavut, while Nain is the administrative capital. Each Inuit Community Government is responsible for serving the needs of residents.

The Nunatsiavut Assembly is made up of elected officials, including a President, First Minister and Speaker. Ordinary Members are elected from each of the five Inuit Communities, as well as for Upper Lake Melville and Canada (NG 2023). The Chairpersons of the NunaKatiget Inuit Community Corporation (representing Beneficiaries in HVGB and Mud Lake) and Sivunivut Inuit Community Corporation (representing Beneficiaries in North West River and Sheshatshiu) serve on the Nunatsiavut Assembly. The AngajukKâk, or mayor, of each Community Government represents constituents as an ex-officio member of the Nunatsiavut Assembly.

14.1.3 Nain

The Project is in Nunatsiavut on LIL. A portion of the Access Road is on Nain Inuit Community lands. The NICG is led by a mayor (Angajukkâk), deputy mayor (Deputy Angajukkâk) and five councillors.

14.1.4 Demographic Characteristics

Nunatsiavut Beneficiaries were estimated at approximately 6,500 in 2020 with about 2,500, or 38%, living in Nunatsiavut (Rivet 2020b). The 2021 census also shows 9,365 individuals in NL identifying as Inuit, of which 5,925 lived in Labrador and 2,095 lived in Nunatsiavut (Statistics Canada 2023). The population of Nain is young and increasing. The 2021 median age of residents of Nain was younger than Nunatsiavut, Labrador and NL, and the population of the latter three had also decreased (Statistics Canada 2023).

In 2021, the total birth rate for Nain was 14.6, nearly twice that of NL (NL Statistics Agency 2023). In 2021, Nain had 20 deaths, a 100% increase over 2020. The 2021 median age of death in Nain was 63 years, compared to 77 years for NL. The median age of death can change greatly year to year, especially for small communities.

Nain's population is dominantly Inuit. The community has a small proportion of people who identify as non-Indigenous or First Nations (Statistics Canada 2023). More than half of the population of the whole of Labrador identifies as non-Indigenous followed by Inuk. English is the mother tongue of more than 80% of Nain residents, followed by Inuktitut at approximately 15% (Statistics Canada 2023). English is also the dominant mother tongue in Labrador and NL.

In Nain, households tend to be larger due to a higher number of children and two or more generations living in the same household. The 2021 census indicates approximately 18% of homes had more than 5 persons living in them (Statistics Canada 2023). This may be an indication that some homes in Nain are overcrowded. In 2021, 23.3% of families in Nain were one-parent families led by women, compared to nearly 12% in Labrador and in NL respectively (Statistics Canada 2023).

School enrolment in Local Area 80: Labrador North, which includes Nain, Natuashish, Hopedale, Postville and Makkovik, has generally declined since 1990 (NL Statistics Agency 2023). Enrolment at Jens Haven Memorial all grades school in Nain was 220 in the 2022-2023 school year (NL Department of Education 2022).

In 2021, a higher proportion of people in Nain reported having no certificate, degree or diploma compared to Labrador and NL (Statistics Canada 2023). This rate was higher for men than women in Nain and NL. In Nain, the highest proportion of people 25 to 64 years of age and older with a post-secondary education had obtained a college or other non-university certificate / diploma, followed by an apprenticeship or trades certificate / diploma (Statistics Canada 2023). In both jurisdictions, women are more likely to have university education and men are more likely to be trained in a trade.

In 2021, the largest employment sectors in Nain were public administration followed by health care and social assistance, which are both important employers of women. Men were also most likely to be employed in public administration, in addition to being well represented in construction or mining, quarrying and oil and gas extraction, similarly to men throughout NL (Statistics Canada 2023).

In 2021, overall labour force participation and employment rates in Nain were higher than for NL. Women in Nain experienced higher employment than men, while the reverse was true for NL generally (Statistics Canada 2023). People in Nain were more likely to work full time year-round in permanent positions than in NL. In 2020, median individual income was the same as for NL, but median household income was higher in Nain. Women earned more income than men in Nain, while the reverse was true for NL.

In 2020, median family income in Nain was higher than that of NL but less than of Labrador; the same was true for one-parent families. Couples with children had lower income in Nain compared to NL and Labrador (Statistics Canada 2023). The 2020 self-reliance ratio for Nain was 75.8% (NL Statistics Agency 2023). A higher self-reliance ratio indicates a lower dependency on government support. The self-reliance ratio in NL was 80.0%, meaning individuals in NL were on average more reliant on employment income than those in Nain. Reliance on government transfers in Nain was similar to NL, though access to COVID 19 funding was higher in Nain. Labrador shows higher reliance on employment income than the other jurisdictions, owing to high employment rates in areas such as Labrador West and Churchill Falls.

The 2021 census identified the proportion of population with low income in 2020 based on the low-income measure after tax. For most age groups and genders, individuals in Nain were more likely to experience low income than their Labrador or NL counterparts (Statistics Canada 2023). In each area, women over 65 were most likely to have low income. The same was true for women aged 18-64 in Labrador and NL.

In 2021, 85.5% of those employed in the census subdivision for Nain worked in Nain, which was higher than for those employed in the relevant CD for Labrador and NL. A small portion of workers in NL commutes to other provinces for work, but this is less common in Nain. Close to 13% of employed people in Nain commute to work outside of the community within NL, but this is more common elsewhere in Labrador and NL. In each jurisdiction, a portion of employees (most often women) worked from home (Statistics Canada 2023). The ability to work from home is related to the type of work and infrastructure, such as reliable internet service.

14.2 Physical and Cultural Heritage

Prior to European contact, the Labrador Inuit held their own spiritual beliefs centred around the most powerful Inuit spirit, Torngarsoak (Parks Canada 2022). AngajukKât (leaders) and shamans would communicate with Torngarsoak in hopes of good weather and bountiful hunting. Non-adherence to rules and practices associated with spiritual beliefs would result in consequences such as storms, winds or unsuccessful hunting. Though many of the Labrador Inuit were converted to Christianity by the Moravians, the people still hold strong spiritual connections to ancient beliefs and to Torngait as the place where spirits dwell. The Inuit continue to travel north from their communities to the Torngat Mountains area for hunting, fishing and travelling throughout the year. Special places include Sallikuluk (Rose Island) in Saglek Bay, where there are more than 600 known traditional Inuit graves and two areas that have a number of traditional Inuit sod house foundations.

The *Labrador Inuit Lands Act* (Part 2, Division 3: Archaeology, Burial Sites and Human Remains) provides protection of archaeological resources on LIL along with related information. Many artefacts have been identified in coastal Labrador, with a high concentration of sites around Nain and in surrounding rivers and coastal areas (PAO n.d.). Nain sites are identified as Inuit, Intermediate Period, Innu, Maritime Archaic, Recent Period and European.

Nearly 800 Thule and Inuit archaeological sites have been identified in NL (PAO n.d.). The area now known as the Torngat Mountains National Park has been important to the Thule and / or the Inuit for thousands of years (Parks Canada 2022). Hundreds of archaeological sites have been identified in the Park, some nearly 7,000 years old. Along with the Thule culture, these sites show evidence of other prehistoric cultures. Artefacts include tent rings, stone caribou fences, food caches and burial sites. The chert quarry at Ramah was a source of glass-like tool material used by Indigenous peoples for thousands of years.

Various places have been identified in northern Labrador for their importance to Indigenous Peoples past and present (Parks Canada 2022). The Torngat Mountains National Park provides general protection to sites within the Park, including:

- Sallikuluk (Rose Island), located in Saglek Bay at the southern boundary of the park. More than 600 known traditional Inuit graves and two areas of traditional Inuit sod house foundations have been identified.
- Silluak (North Arm), a fjord at the western end of Saglek Bay that has been used for thousands of years by Inuit and their predecessors. An archaeological inventory is underway.
- Upingivik, a traditional whale hunting area located in the northerly reaches of the park. Inuit who lived on Killiniq Island in the past travelled to Upingivik during the spring and fall migrations to hunt whales, walruses and eider ducks. Inuit, mostly from Nunavik, still travel to Upingivik to hunt whale and other animals for sustenance and to meet and share with other Inuit.
- Ramah, rich in natural and cultural resources, and located in the southern region of the park, about 50 km from the boundary. Ramah is the site of chert quarries.
- PitukKik (Nakvak Brook), a small cove inside Saglek Fjord in the southern region of the park, where Nakvak Brook flows into the sea. This area is one end of the traditional Inuit travel route between the Labrador Sea and Ungava Bay.

More recent history of European and Canadian presence in the Torngat Mountains National Park includes the remains of the Moravian Missions, Hudson’s Bay Company trading posts, a World War II German remote control meteorological station and Saglek Radar Station, part of the American distant early warning line system remaining from the Cold War (Parks Canada 2022). The Inuit maintain and administer the Moravian churches in the various communities. Four sites in northern Labrador have been designated as national historic sites: Okak, Kitjigattalik - Ramah Chert Quarries, Hopedale Mission, and Hebron Mission. They include ancient archaeological sites and the remains of the Moravian missions (Parks Canada n.d.).

Limited archaeological studies have been conducted in Nain (Fitzhugh in LIA 1977). The remains of Inuit winter sod houses have been identified throughout Nunatsiavut along the Labrador Coast from Hamilton Inlet north to Saglek. Where more extensive investigation has been undertaken on islands near Nain (including the Dog Islands), various sites hold historical resources mainly consisting of tent rings and sod houses, but also other items, including a small number of burial cairns and stone fox traps. Tent rings and other evidence of Inuit occupation have been identified around Nain and the Kauk Bight / Kauk Bluff Island area to the east of the Airport site.

During site investigations for R4: Surficial Geology, Geomorphology, Permafrost and Hydrogeological Investigations in July 2023, the Project archaeologist identified and reported a cultural artefact (location shown in Figure 2.1). Based on this discovery, a full Stage 1 and Stage 2 archaeological study has been completed and the results will be provided in the EA.

14.3 Land and Resource Use

The Labrador Inuit have established Aboriginal rights under section 35 of the Canada *Constitution Act, 1982*; Nunatsiavut Beneficiaries have treaty rights, including the right to harvest throughout the LISA (NG 2005). Indigenous Peoples' right to fish for food, social and ceremonial (FSC) purposes is collective rather than individual, and catches may not be sold (DFO 2022). Designated Indigenous harvesters may catch what is needed for themselves and / or their community for FSC purposes. The NG holds FSC fishing licences for Arctic char, salmon and trout throughout the LISA and licences for salmon, trout, Arctic char, smelts and seals in Upper Lake Melville (DFO 2019). Beneficiaries have the right to harvest at any time of the year throughout the LISA for any species or stock of fish or aquatic plants, up to the quantity needed for FSC purposes (NG 2023).

The LILCA outlines conditions for hunting, trapping and fishing in the LISA. Overlap Agreements were established with Innu Nation and Nunavik Inuit to allow Labrador Inuit to harvest for FSC purposes beyond the LISA (CNLOPB 2021). Labrador Inuit travel north from Nain each summer to fish Arctic char, which is also a source of income (Pedersen 2016). Non-Beneficiaries must obtain a permit from the NG to pursue any activities in LIL (NLDFFA 2022).

14.3.1 Current Use of Land and Resources for Traditional Purposes

The most extensive study to date of Inuit land and resource use in Labrador was completed in 1976. An anthropologist along with local fieldworkers conducted interviews and prepared maps of land use in Labrador Inuit communities (LIA 1977). Mapping around Nain identified spring, summer, fall and / or winter Aullâsimavet in coastal locations on islands, including Satosoak Island, Akuliakatak Peninsula, Kauk Bight, Kauk Bluff Island and on Tasiyuyaksuk Brook and Anaktalik Brook (Brice-Bennett in LIA 1977). At that time, no Aullâsimavet were identified on the land proposed for the Airport and Runway. Camps were identified in Nain, but the mapping is not sufficiently detailed to understand the spatial relationship with the Access Road.

Historic and current land use is primarily driven by presence or absence of sea ice (NG 2018c). A 2008 report discussed harvesting around Nain, identifying key resources from spring to fall as Canada geese, migratory ducks, seabirds, eggs, seals, Arctic char, Atlantic salmon and polar bears (Hood 2008). During freeze-up and in winter, the Inuit harvested Canada geese, seals and walrus. Caribou was the only species identified as being harvested year-round, though the preferred time to harvest caribou hides for clothing was September and October. The geographic range of caribou varied and core winter concentration areas nearest to Nain were in the Kiglapait Mountains near Kingurutik Lake and between Tasisuak Lake and Anaktalik Brook. Prior to the mid-1960s, caribou hunting required lengthy trips up the Fraser Valley to an inner plateau about 80 km inland from Nain.

Many Inuit still undertake traditional land and resource use activities, including hunting, fishing and trapping, in the LISA. Key harvested resources, identified by at least 50% of households in 2007, included Atlantic salmon, Arctic char, caribou, eider ducks and eggs (Felt et al. 2012). Caribou are currently under a hunting ban, but each year a quota is approved by the Government of NL for sharing among Indigenous groups. For the Inuit, traditional food is important due to its cultural, social and nutritional qualities. In a 2012 health survey, 90% of Labrador Inuit (15 years of age and older) indicated that in the previous 12 months they had participated in hunting, fishing, trapping or gathering plants (Statistics Canada 2015). In coastal and marine environments, the Inuit harvest plants, berries,

wood, animals, birds, marine mammals, fish and shellfish, often returning to the same areas year after year. Many Inuit have cabins they use for hunting, fishing, harvesting and recreation (NG 2018c).

Residents of Nain have a long and rich history of fishing, hunting, trapping and foraging. The general area surrounding the Airport site has been historically used for berry picking, fox trapping and ptarmigan and spruce grouse hunting. In the past, the area was also used for caribou hunting, primarily from the George River Herd (LIA 1977).

No prior or current developments or Aullâsimavet are in the Project area. Aullâsimavet are in the general area near the coast.

The Project could potentially lead to changes in land and resource use. Construction and operation could affect traditional or recreational land use activities of the people of Nain. A land use study will be conducted by NLNR in conjunction with the people of Nain.

14.4 Community Health and Well-being

14.4.1 Health Care

Labrador Grenfell Health operates the Nain Community Clinic, which provides primary health care during regular hours with a registered nurse on call for after-hour emergencies (LGH n.d.). The clinic includes exam rooms, an emergency room, basic equipment and a supply of essential medications. Services are provided by nurses / nurse practitioners and personal care attendants in consultation with a physician at the closest referral centre. The clinic offers some testing and basic laboratory tests. Specimens are sent out for processing at a central laboratory. The clinic receives regular physician visits and videoconferencing is used to consult with physicians at a tertiary site for emergency care or follow-up.

Patients may be transferred by air to the Labrador Health Centre in HVGB or facilities in St. John's for further care (LGH n.d.). The Labrador Health Centre is staffed by a general surgeon, an anaesthetist and an obstetrician / gynaecologist along with family. Visiting medical specialists also provide services at the Labrador Health Centre.

The Government of NL's air ambulance program transports critical care patients between medical facilities and non-emergency patients when a road ambulance or commercial flight is unsuitable (NL Health and Community Services n.d.). Two fixed-wing aircraft with teams of critical care paramedics and registered nurses operating out of St. John's and HVGB serve the whole province. Supplementary patient transport services are provided by private companies (PAL Aerospace 2023).

The NG Mental Wellness and Healing division provides prevention, intervention and other services (NG 2023). The division's focus includes mental health / illness and addictions with programs such as: Youth Services, Fetal Alcohol Spectrum Disorder, Inuit Child First Initiative, Justice Services, Trauma and Addictions Mobile Treatment Team, Residential School Survivor Support, Child Services and special projects (e.g., Sexual Violence Program, Harm Reduction Specialist Services). Mental health and addictions workers offer services in each Inuit Community. Other programs are delivered regionally. All initiatives aim to incorporate best clinical practices in consideration of Inuit culture and community context.

Services for youth include hands-on learning for employment skills (e.g., carpentry, small engine mechanics, promotion of education) (NG 2023). A Youth Administrator coordinates initiatives, such as participation in community, regional and national youth events, training, educational and employment opportunities and cultural and traditional knowledge and skill-building. Youth outreach workers in Nain and Hopedale provide services (e.g., programs that provide food, shelter and / or social connections) to children and youth who may be at risk. The Nain Youth Centre provides a safe and secure environment for youth ages 13-30 in need of support.

Nunatsiavut Justice Services supports community members charged under the justice system, those at risk of involvement in the criminal justice system and inmates at correctional institutions such as the Labrador Correctional Centre in HVGB (NG 2023). Justice Services also provides sexual violence prevention and outreach counselling services to individuals with sexual violence offenses.

14.4.2 Food Security

A study on food insecurity in Canada indicates that 17.9% of households in NL had experienced some degree of food insecurity in 2021 (Tarasuk and Fafard 2021). The report also states 30.7% of Indigenous people in Canada were identified as living in food-insecure households.

A 2013-2014 household food security study conducted in the five Labrador Inuit communities indicated that 61.1% of Nunatsiavut households were marginally, moderately or severely food insecure (NG 2017). Nain and Hopedale, the two most northerly communities, experienced the highest degree of food insecurity at 79.4% and 83.1%, respectively. The degree of food insecurity was lower in Makkovik (35.1%), Postville (39.6%) and Rigloet (21.6%).

In Nunatsiavut, the availability of market food is impacted by transportation and storage (Bowers 2022). Food is transported to communities in winter by airplane and in summer by airplane along with marine ferry in ice-free months. Air transportation is limited by short runways that impact the size of planes that can be used, and small planes limit the amount of food that can delivered at one time. In addition, the existing airports and ferry terminals do not have food storage facilities, which impacts food availability and quality. During months when food shipments arrive by air only, food availability and quality is compromised by delayed and cancelled flights, especially in Nain. In addition, the caribou hunting ban and climate change (unreliable ice) have made it increasingly difficult to obtain food through hunting and fishing in traditional harvesting areas.

The NG and the Labrador Inuit communities are engaged in initiatives to understand and address food insecurity. The NiKigijavut Nunatsiavutinni (Our Food in Nunatsiavut) project involves completing Community-led Food Assessments to examine food security issues and enhance or develop solutions (Inuit Tapiriit Kanatami 2023). The NiKiKautik (A Place Where Food Is) Program in Nain teaches traditional Inuit and contemporary healthy cooking skills using wild meats from the Community Freezer Program and store-bought foods.

As development projects have the potential to affect natural resources, country foods will be included in the EA. Selected species are Arctic char as fish, grouse and hare (game) and waterfowl / migratory birds if feasible.

14.4.3 Adequate Housing

Adequate and suitable housing and a safe environment are important for mental and physical well-being and a higher quality of life. Living in poor housing conditions is associated with the spread of infectious and respiratory diseases, chronic illness, injuries and poorer mental health. Though housing conditions of First Nations, Inuit and Métis people in Canada have improved, the Indigenous population is still much more likely to live in inadequate housing than the non-Indigenous population (Statistics Canada 2022).

In 2021, Nain had a total of 380 private dwellings with 350 occupied by usual residents (Statistics Canada 2023). Nain had a larger average household size (3.4 persons) than Labrador (average 2.5 persons) or NL (average 2.3 persons). In Nain, households with five or more persons were more common (18.4%) than in Labrador (7.7%) or NL (4.2%). Nain had a high rate of home ownership, similar to that of NL, but the proportion of homes needing major repairs was much higher in Nain than for Labrador or NL. The percentage of one-maintainer households was lower than that of the other jurisdictions and no households in Nain were paying more than 30% of income on shelter costs.

Housing conditions for Indigenous people in Canada and Nunatsiavut are improving due to investments in new housing and home repairs (Statistics Canada 2022). Since 2016, 24 new housing units have been constructed in Nunatsiavut (CIRNAC 2019). The NG has also implemented a housing repair program and initiatives to improve comfort and energy efficiency. In the 2016-2017 construction season, approximately 95% of housing work in Nunatsiavut was completed by Inuit businesses.

14.4.4 Qanuippitaa? National Inuit Health Survey

To date, Inuit health surveys have been inconsistent. Surveys were conducted in Nunatsiavut in 2007-2008 (Qanuippitaa? National Inuit Health Survey 2021). The Qanuippitaa? National Inuit Health Survey is a permanent Inuit health survey founded in 2018 and owned, controlled and led by Inuit organizations. The initial work included training and resources to ensure Inuit communities have the skills and capacity to have control over data collection and analysis. Data collection for Nunatsiavut began in March 2023 in Rigolet (Nunatsiavut Tugaprik 2023).

14.5 Economy, Employment and Business

14.5.1 Main Economic Sectors

Some of the main employers in Nain are the NG, NICG and other industry sectors. In 2021, more than 50% of the Nain workforce was employed in “Public Administration”, “Health Care and Social Assistance” and “Construction” (Statistics Canada 2023). Women were dominant in “Educational Services”, “Health Care and Social Assistance”, “Retail Trade”, while men dominated in other categories such as “Agriculture, Forestry, Fishing and Hunting”, “Arts, Entertainment and Recreation”, “Construction”, “Mining, Quarrying and Oil / Gas Extraction” and “Transportation and Warehousing”.

14.5.2 Nunatsiavut Group of Companies

The holding company Nunatsiavut Group of Companies (NGC) is involved in wholly owned or partnership ventures in fisheries, air and marine transportation, commercial real estate, construction and heavy civil, logistics and the Torngat Mountains Base Camp (NGC 2021). These companies provide employment opportunities in Inuit communities, including Nain. Profits from NGC are also invested in programs and services for Labrador Inuit.

14.5.3 Seafood Harvesting and Processing

The economy includes both seafood harvesting and processing. Nuluak Fisheries, NGC’s fishing operation, holds commercial-communal licences for shrimp, turbot and crab (NGC 2021). Shrimp and turbot quotas are fished by third parties, which provide royalties to NGC. Torngat Fish Producers Co-Op Society operates seafood processing facilities, including one in Nain licenced for groundfish species, wild salmonids (Arctic char) and scallops (Government of NL 2022a). In 2020, 28 employees per shift processed char and scallops (OKalaKatiget Society 2020). There were five licenced commercial char fishermen and a three-person scallop fishing crew in Nain.

14.5.4 Mining

The mining industry is a key economic driver in NL. In 2022, 500 mineral exploration applications were approved with an estimated $189 M to be spent on exploration activities (Government of NL 2022b). This, the largest exploration investment since 2012, is driven by the search for gold, iron ore and critical minerals.

Quarry resources are identified within Nain’s Municipal Planning Area. One Quarry Permit is listed as being 1 ha and under a current permit to Nunatsiavut Construction Inc. (NL Mining and Mineral Development n.d.), which is a subsidiary of NGC (NGC 2021).

Vale NL’s Voisey’s Bay nickel-copper-cobalt mine is approximately 35 km southwest of Nain. The project began production through an open pit mine in 2005 and has reserves to operate until 2034 (Government of NL 2022b). The underground expansion project, commissioned in 2021, resulted in an annual production capacity of 40,000 tonnes of nickel concentrate, with by-products of about 20,000 tonnes of copper and 2,600 tonnes of cobalt.

Vale NL has impact benefits agreements with the NG and Innu Nation (Vale NL 2021a). Inuit and Innu employees together represent approximately 50% of Vale NL’s workforce, while 65% of procurement contracts are awarded to Indigenous businesses or partnerships (Vale NL 2021a; Canadian Mining Journal 2021). Voisey’s Bay is a fly-in / fly-out worksite with employees typically on two-week rotations (Vale NL 2021a).

To decrease reliance on fossil fuels and reduce long-term operating costs, Vale NL is planning a wind energy project (Government of NL 2022b). The use of wind turbines will offset more than 13% of diesel requirements.

14.5.5 Tourism

The NG has developed a revised tourism strategy focussed on Labrador Inuit culture, deriving economic benefits from visitors, engaging communities, leveraging partnerships and offering excellent experiences and service (NG 2021a). Nain offers experiences such as hiking and learning about Inuit culture and practices (Tourism Nunatsiavut n.d.). Torngat Arts and Crafts Inc. sells local and regional crafts made by Inuit artists from Nunatsiavut

(Craft Labrador n.d.). Nain is the gateway to the Torngat Mountains National Park, a stopping point for small cruise ships that travel along coastal Labrador and Greenland and a stop-over for a long-distance snowmobile race.

14.5.6 Scientific Research

The Nunatsiavut Research Centre in Nain supports programs that contribute to local knowledge and enhancing the health and well-being of Inuit (NG 2021b). It also focuses on increasing local capacity of the Labrador Inuit by providing opportunities to participate in field and laboratory research. The NG leads or co-leads various research projects and the Nunatsiavut Research Centre provides a shared space for staff and research partners.

14.6 Infrastructure and Services

14.6.1 Municipal and Recreation Services

The NICG provides community infrastructure and services such as drinking water (Trouser Lake water supply), collecting and treating wastewater and managing solid waste. The waste disposal site is near Nain on Akpiksai Bay, approximately 500 m from the airstrip. Current and recent infrastructure improvements include a new water supply system, upgrades to the water system and replacement of the Sandbanks Road water main, along with upgrades to the sewerage and sewage treatment system (Infrastructure Canada 2021).

Each of the Inuit Communities has its own landfill and waste is collected between two and five times weekly, depending on the community and season, mainly due to wildlife issues (NLMAE 2019). In Nain, waste is delivered to the waste disposal site where waste is burned year-round. Landfill issues in Nunatsaivut include lack of capacity and cover material as well as being too close to communities, airports and / or open water. Due to access limitations, it is expected that these communities will continue to manage waste locally, though practices should be improved to manage hazardous waste, eliminate open burning and optimize landfill space through waste diversion, site upgrades or developing new sites.

The Nain Husky Centre provides an ice rink for hockey and ice-skating (OKâlaKatiget Society 2017). The Jeremias Sillitt Community Centre provides a gym, workout room and multipurpose room (DJG 2023). This site and the Illusuak Cultural Centre are used for recreation programming and cultural events.

14.6.2 Safety and Emergency Services

Policing in Nain is provided by the Royal Canadian Mounted Police (RCMP 2015). NL Search and Rescue maintains a trained volunteer search and rescue team at Nain (NLSR 2016). Nain maintains a volunteer fire department (OKalaKatiget Society 2022).

The Nain Transition House provides support to women facing domestic violence (THANL 2020). The NG is engaged in implementing culturally appropriate, community-based justice in the Inuit Communities and working with other agencies to deliver related services.

14.6.3 Transportation

Nain is accessible by aircraft, ferry and snowmobile depending on the season. Air Borealis (PAL Airlines) offers regularly scheduled commercial flights from HVGB direct and / or stopping in coastal communities to and from Nain (Air Borealis 2022). The cost of moving freight in Nunatsiavut is high, resulting in inflated costs at retail (Bowers 2022). The airstrip infrastructure limits the type and size of planes that operate, meaning that insufficient goods are delivered. Lack of appropriate storage facilities at the airports results in food spoilage during transport, especially when flights are delayed or cancelled. Airports are affected by the jurisdictions involved. The airstrips are owned and operated by NL on lands owned by the NG. The Government of Canada regulates air safety and is responsible for infrastructure in Indigenous communities. The availability and cost of air transportation (e.g., usage fees and fuel) involve the private sector. The NG is advocating for improved airstrips but encounters federal and provincial struggles with jurisdictional overlap (Bowers 2022).

During ice-free months (generally July – October), the MV Kamutik W operates from HVGB to Nain with stops in Rigolet, Postville, Makkovik, Hopedale and Natuashish to deliver freight and passengers. It takes about three days

to get from HVGB to Nain. The ferry service is funded by the Government of NL and operated by Nunatsiavut Marine Inc., an NGC company (NGC 2021).

14.6.4 Energy

In isolated Labrador communities, customers receive power from diesel generators operated by Newfoundland and Labrador Hydro (NL Hydro). NL Hydro is working with Indigenous governments and communities to explore options for renewable energy sources (NL Hydro 2023). The NG and NL Hydro are examining the potential use of wind turbines and batteries in Nain to reduce use of diesel, air emissions and related costs (NRCAN 2021; VOCM News 2022). The NG is also investing in 240 high-efficiency wood stoves in the Inuit Communities and conducting a pilot project to ship firewood harvested in Newfoundland by Nunatsiavut Marine to Nain and Hopedale (NRCAN 2021).

14.6.5 Health Care

The Nain community clinic, which provides primary health care to residents, has clinical exam rooms, an emergency room, basic medical equipment and a supply of essential medications. Care is provided by registered nurses who have an expanded scope of practice and consult with a physician at the closest referral centre as required (Labrador-Grenfell Health 2022). The nearest hospital is the Labrador Health Centre in HVGB, and Labrador-Grenfell Health provides air medevac for emergency transfer of patients, which is limited to daylight hours and can be affected by weather conditions. The NG provides support services to address mental health / mental illness and addictions (NG 2023).

14.6.6 Family and Seniors' Services

The NG operates the Pigutsavik Centre, a provincially regulated child care facility in Nain (NL Department of Education 2023). The centre has capacity for 26 children from 18 months to just under six years of age and operates daytime hours, week days. Nain has a provincial Family Resource Centre that provides programs and support to families with small children. With funding from Indigenous Services Canada, the NG partnered with the College of the North Atlantic (CNA) to offer an indigenized early childhood education certificate program (CNA 2020). The first graduates, six students from Nain, completed the program in 2019.

Nunatsiavut has limited capacity for seniors' housing and long-term care, and the number of seniors in each community seeking care is low compared to larger centres, which makes it difficult to develop facilities. In 2020, of the 20 spaces in a private care home in Mary's Harbour (southern Labrador), eight were occupied by residents of Inuit Communities (CBC News 2020). The distance and cost of visiting limits face-to-face contact with families. The NG, with provincial support, created three seniors' apartment units in Nain and is seeking additional funding for a complex or assisted living accommodations to keep seniors in the community.

14.6.7 Education

The Newfoundland and Labrador English School District provides primary and secondary educational services to children in Nunatsiavut communities. Jens Haven Memorial in Nain provides kindergarten to high school education (NL Department of Education 2022). The NG supports the education system to enrich the educational experiences of Inuit children, including providing funds for Inuit cultural and Inuktitut language programming (NG 2023).

Nain experiences shortages of teachers. In 2022, the Newfoundland and Labrador English School District reassigned four teachers from the Grade 12 academic stream (students planning to pursue university education) to fill vacant positions at the junior high school level (Saltwire Network 2022). The Centre for Distance Learning and Innovation (a division of Newfoundland and Labrador English School District) provides high school distance education to rural areas through virtual classes. The unreliable Nain internet is particularly challenging for students who need to engage in online learning due to shortages of high school teachers (CBC News 2022). Parents feel that this poses a risk to students who wish to pursue university education.

The Nunatsiavut Education Division provides programs and services to Labrador Inuit seeking post-secondary education and / or labour market training (NG 2023). Academy Canada offers adult basic education programs in Labrador communities, including Nain (Academy Canada 2023).

Part D: Federal, Provincial, Territorial, Indigenous and Municipal Involvement and Effects

15. Financial Support from Federal Authorities

The NG has received $3.45 M from the Government of NL and $3.45 M from Transport Canada to conduct feasibility studies for replacement and relocation of the Nain airstrip. It is anticipated that the Project will be constructed using federal funding and other potential options, such as a public-private partnership model.

16. Use of Federal Lands for Project

The Project is in the LISA and on LIL, both established by the LILCA.

17. Jurisdictions That Have Powers, Duties or Functions in Relation to an Assessment of the Project's Environmental Effects

Projects on LISA and / or LIL are also within the scope of the NEPA (NG 2012a). The Project triggers a detailed ER based on Section D of the RERI ("D.8: an airport or runway excluding an ice strip") (NG 2012b). The NG's RERI identify requirements for project registrations for summary and detailed reviews. Section 25 states the following:

"25. A proponent must register the proponent's initiative with the minister for purposes of both summary reviews and detailed reviews:

(a) by delivering to the minister the same information as the proponent has provided to:

(i) the government of Newfoundland and Labrador with respect to Environmental Assessment of the initiative pursuant to Provincial Law and

(ii) the responsible authority of the Government of Canada with respect to Environmental Assessment of the initiative under federal Law; or

(b) where the initiative is not subject to federal or Provincial Law or has been exempted from Environmental Assessment under federal or Provincial law by delivering the information referred to in section 27."

This means that a Registration prepared for NLECC and / or IAAC could satisfy the needs of NLNR. As the Project is on LIL, NLNR requires a detailed ER.

The Project is located in Labrador and a provincial Registration is required under the *Newfoundland and Labrador Environmental Protection Act* as per section 46 of the *Environmental Assessment Regulations*, which states that *"*An undertaking that will be engaged in the establishment and operation of permanent airports on land or water shall be registered." Following Registration and review of the information provided and receipt of comments by government agencies and the public, the Minister determines whether a project is released from EA (generally with conditions) and the project may move to the permitting stage. If not released, the project will be subject to either an

Environmental Preview Report (EPR) to address requirements for additional information or an Environmental Impact Statement (EIS) where the project is anticipated to result in significant potential adverse environmental effects, or the public has expressed a high level of concern. A project is sometimes considered unacceptable, and Cabinet may determine that the project will not proceed.

The *Physical Activities Regulations* of the IAA identify activities that constitute designated projects. Designated projects under these regulations include construction and operation of new aerodromes that would meet specified thresholds or criteria. Specifically, Item 46 provides:

– "The construction, operation, decommissioning and abandonment of a new aerodrome with a runway length of 1,000 m or more."
– "The construction, operation, decommissioning and abandonment of a new aerodrome that is capable of serving aircraft of Aircraft Group Number IIIA or higher."

Upon submission of an IPD to IAAC, the proponent enters into a process that involves five phases (i.e., planning, impact statement, impact assessment, decision-making and post decision) based on the current IAA. However, based on a Supreme Court of Canada decision (October 13, 2023), the Government of Canada has confirmed its intention to amend the IAA.

The Project must be carried out in compliance with applicable NG, provincial and federal regulations, and municipal legislation as appropriate. Legislative requirements include addressing potential adverse impacts and concerns raised by regulators, Indigenous Peoples and members of the public.

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– "The construction, operation, decommissioning and abandonment of a new aerodrome that is capable of serving aircraft of Aircraft Group Number IIIA or higher."

The Runway is proposed to be approximately 1,830 m long. No other criteria presented in the *Physical Activities Regulations* are applicable to the proposed Project.

Part E: Potential Effects of the Project

18. Air Quality and Climate Change

18.1 Air Emissions

During construction, air emission sources will include generators and mobile equipment such as trucks and excavators. Air emission sources during Project operations are summarized below:

– Combustion of aviation fuel produces nitrogen oxides (NO_x), carbon monoxide (CO), sulphur oxides (SO_x), hydrocarbons and particulate matter (PM).
– Aircraft tires may release PM as they are worn and burnt during take-off and landing though this would be more likely on asphalt.
– Vehicles travelling to and from the Airport, as well as ground service equipment, generate NO_x, PM and ozone through the burning of gasoline and diesel fuel.

Proposed mitigation measures to avoid or reduce effects on air quality include:

– Use machinery and vehicles that minimize air emissions (e.g., low fuel consumption) according to the latest ECCC standards, or zero-emission vehicles (for on-road and off-road vehicles).

- Equipment will be maintained and inspected regularly, in compliance with applicable regulations and a preventive maintenance program to ensure proper functioning.
- Dust from Project activities will be controlled as necessary through application of water as a suppressant according to weather conditions and development activities (e.g., construction / use of Access Road).
- Use of a gravel Runway and Access Road surface treated with a polymer to control dust.
- Inspect air conditioning, ventilation and heating units to ensure proper operation of equipment and limit the risk of refrigerant leaks, if necessary.

18.2 Greenhouse Gas Emissions

For the purposes of the Registration, GHG considerations include the following:

- The Airport will require energy generation for heating and lighting at the terminal. Due to high cost of non-renewable energy sources and requirement for diesel back-up, a diesel generation system will be used at this time. However, the Airport's diesel generation system will be modern and efficient.
- The Airport will be independent of the current diesel system in Nain and, following decommissioning of the existing airstrip, the NG anticipates it will be possible to remove one of the existing generators from service.
- Operation of the Airport is not anticipated to result in an increase in GHG emissions from flights when compared with operation of the existing airstrip. For instance, the Airport will accommodate larger aircraft with increased loads, resulting in fewer flights.
- The Runway will be a gravel surface treated with a polymer that improves efficiency of aircraft on take-offs and landings.
- A more effective Airport will result in reduction of fuel usage and wastage due to aborted flights (~50% of flights at Nain are cancelled). A more efficient Airport will decrease the number of flights diverted from Nain. Flight diversions result in additional fuel consumed to fly to another airport and / or transport passengers to their original destination. By reducing flight diversions, it maybe possible for the operation of the Airport to have a net benefit for GHG emissions and climate change.
- Fossil fuels will be used to operate mobile equipment during construction and operations.
- Use of the Access Road will result in increased GHG emissions from vehicles, but emissions are not expected to be greater than the reduction in emissions from flight diversions.
- The NG will follow all requirements for long-term mitigation measures to offset carbon use. Carbon neutral energy sources such as wind / solar will be considered in future as these become more effective and feasible in northern climates. The Airport will be net-zero GHG by 2050.

These considerations will be confirmed as Project design progresses in the Impact Assessment phase. It is also important to note that the NG is implementing carbon neutral energy projects to reduce reliance on fossil fuels. These include the Nain Wind Micro-Grid Project and a 24-kW solar system at the Nain JS Community Centre, which is one of four solar installations in Nunatsiavut (NL Hydro 2023).

An initial estimate of GHG emissions associated with the Project based on the SACC guidelines is provided in the IPD. The GHGs assessed for the Project are methane and nitrous oxide, based on expected construction and operation activities as detailed below:

- Use of diesel-combustion construction equipment;
- Rock blasting;
- Land cover changes (deforestation and wetland loss);
- Operation of diesel-powered generators;
- Incoming and outgoing aircraft flights; and
- Use of vehicles and equipment for general Airport operation.

19. Noise and Vibrations

The Airport will be located approximately 13 km from Nain, while the existing airstrip is in the community. From this perspective, the operation of the Airport is anticipated to result in significantly lower noise levels at residential receptors when compared to the existing airstrip. Similar to air emissions, the most significant noise sources of noise and vibrations during Project construction are generators and mobile equipment, including trucks and excavators. Equipment will be maintained and inspected regularly in compliance with applicable regulations.

The most significant source of noise during Project operations will be aircraft take-off and landing. Other sources of noise during operations include taxiing aircraft, the application of reverse-thrust (an optional braking aid on landing), engine tests and vehicle traffic at the Airport and along the Access Road. As with emissions, the aviation industry has been successful in developing relatively quieter aircraft. Every new aircraft must comply with noise standards developed by the International Civil Aviation Organisation. Changes to ambient noise levels and presence of periodic vibrations have the potential to adversely affect wildlife migration patterns and behaviour.

The effects of noise and vibrations will be assessed through a desktop study using inputs obtained from Project sources, and assumptions applied to address information gaps. The EA will identify Project activities and infrastructure that may adversely affect noise and vibrations and exceed accepted criteria. If criteria are expected to be exceeded, mitigation measures will be developed to minimize potential effects. As noise and vibrations are two different types of emissions with different effect, these are also assessed independently of each other.

Noise and vibration guidelines and best practices from other jurisdictions (e.g., Canadian provinces, United States of America) will be reviewed and adopted for this analysis for the construction and operations phases. Depending on the source of noise and vibrations and applicable criteria, predictions at sensitive receptors are conducted differently (modelling) for facility noise, road transportation and aircraft noise.

Proposed mitigation measures to avoid or reduce effects on noise and vibrations include:

- Perform initial and regular inspections of machinery to ensure good operational condition.
- Implement a preventive maintenance program and inspection of equipment to ensure proper functioning.
- Use light vehicles with effective mufflers to reduce noise level at the source.
- Where practical, leave trees and other vegetation in place or encouraged to grow to muffle nuisance noise.

20. Water Resources

Project activities have the potential to affect surface water, hydrology and groundwater in the area via several pathways. There is also the potential for effects to surface water and groundwater to indirectly affect vegetation and wetlands, fish and fish habitat, and wildlife and migratory birds.

Construction activities may produce sediment-laden runoff, which can degrade the water quality of nearby watercourses. Construction of the Access Road will require installation of either culverts or bridges to allow five natural watercourses to pass beneath the road. Culverts and / or bridges are to be designed and installed appropriately to allow for fish passage. The use of construction equipment in or near watercourses has the potential to disturb sediment and release other deleterious substances, including fuel oil in the event of a spill. Construction activities may also result in areas of exposed soil, which can produce sediment-laden runoff during precipitation events if erosion and sedimentation control measures are not in place.

Several potential contaminants will be in use during Project operation, including maintenance and painting chemicals. Fuel may also be released to the environment from the on-site fuel tanks and refuelling stations in the event of an accident or spill. These contaminants have the potential to be leached into groundwater or contaminate stormwater runoff, which can pollute nearby watercourses.

The Airport’s water needs will be primarily supplied from groundwater, with the potential for surface water to be an emergency back-up source. The withdrawal of water has the potential to reduce the quantity of water available in a surface waterbody to support fish and fish habitat. The withdrawal of water from a groundwater aquifer has the

potential to lower the groundwater table, adversely affecting the quantity of groundwater available for use (e.g., potable consumption).

For hydrogeology and groundwater elevations, relevant groundwater data from additional geotechnical investigations will be incorporated into the EA. Additional data to support the hydrology assessment, such as stream discharge at low flows, have been collected during the field program. Field data have been collected for watercourses and waterbodies crossed and adjacent to the Project area. The following baseline data collection and analyses will be conducted as part of the EA:

- Low flow for fish passage;
- Effects to natural processes (e.g., sediment transport, erosion, lateral mobility) in rivers;
- Water supply and drainage modification to wetlands, streams and lakes;
- Effects of water demand on discharge or lake levels if a water intake is installed in a lake or a river; and
- Water quality (e.g., physicochemical parameters and relevant chemical constituents along with analytical quality baseline characterization, including sampling site selection, monitoring duration and frequency, sampling protocol and analytical protocol – including quality assurance and quality control measures) at various locations, such as the Airport wastewater outlet, water intake and municipal intake.

For groundwater, the following baseline data collection and analyses will be conducted during the EA preparation:

- Domestic, communal or municipal water wells within the LSA and RSA;
- Structural geology of the hydrogeological environment, including major faults, fracture density and orientation with respect to groundwater flow directions;
- Baseline groundwater quality data for physicochemical parameters and relevant chemical constituents (e.g., routine parameters and metals);
- Hydrogeological maps and cross-sections of the study area showing water table elevations, potentiometric contours, interpreted groundwater flow directions, groundwater divides and areas of recharge and discharge; and
- Groundwater flow boundaries of the hydrogeological environment providing hydraulic properties of the hydrostratigraphic units, including data on hydraulic conductivity, specific storage, transmissivity, storativity, saturated thickness, porosity and specific yield, as applicable.

For the effects assessment, a 3-dimensional numerical groundwater flow model will be developed based on the conceptual model of the hydrogeological environment. The purpose of this model is to gauge if the proposed potable well(s) capture zone would have adequate potable water supply based on the water volume requirements of the Project.

Proposed mitigation measures to avoid or reduce effects on water resources include:

- Install a geomembrane downstream of crossings and around work areas to intercept surface material particles, use culverts of sufficient size to prevent narrowing of flow sections at crossing points and install sediment barriers around the edges of aquatic environments to prevent transport of fine particles during work.
- A wastewater treatment plant will be constructed at the Project site to treat wastewater to acceptable standards prior to release to the environment.
- Siting infrastructure to avoid potential permafrost.
- Apply dust control measures according to conditions (meteorology) and development activities that generate dust (e.g., construction / use of Access Road).
- Treating the Runway and Access Road gravel with a polymer to control sedimentation in run-off.
- Conduct preventive inspections of fuel storage areas and supply vehicles, machinery and worksite facilities with emergency kits for recovery of petroleum products and hazardous materials.

21. Geology, Soils and Terrain

During construction, the uppermost surface soil mineral and organic topsoil will be stripped to provide a stable surface for Project infrastructure. The salvaged surface soil and organic material will be stored and protected from disturbance during Project construction until it can be replaced for reclamation activities. Rock blasting will also occur to level out slopes for the Access Road and Runway. Specific effects to geology, soils and terrain from the Project include:

- Loss of salvaged topsoil from Project site preparation and erosional loss over time.
- Degradation of physical or chemical characteristics of salvaged topsoil through disturbance, soil mixing, soil rutting and compaction from construction equipment.
- Disturbance of sensitive organic or permafrost soils, which can interrupt surface water drainage patterns.
- Disturbance of rock wall faces and steeply sloping terrain, as landform stability is important for safe travel along the Access Road.

Proposed mitigation measures to avoid or reduce effects on geology, soils and terrain during construction include:

- Select locations and routing for Project infrastructure to minimize the need for rock blasting, maximize cut and fill construction and avoid potential permafrost areas.
- Develop a surface soil handling plan for construction, which will establish topsoil stripping depths and delineate protected soil stockpile locations. Salvage topsoil and surface organic soil materials for the construction of the temporary access road is an important step to ensure successful reclamation.
- Implement wind and water erosion and sedimentation control measures on salvaged soils (e.g., seeding, placement of straw bales and straw) to preserve salvaged topsoil materials for reclamation. Implement wet weather shutdown to prevent soil degradation during wet weather or wet soil conditions, which can result in rutting, compaction and degradation of soils for future use.
- Remove rocks from the area that will have salvage topsoil materials replaced for reclamation.
- Strip subsoil materials (15 to 30 cm depth) before topsoil replacement.
- Re-establish surface water drainage disturbed by construction before topsoil replacement operations occur, and ensure there is no evidence of surface water ponding or pooling across the site.

22. Vegetation and Wetlands

Project activities have the potential to affect vegetation and wetlands both directly and indirectly. Direct effects may occur through construction of Project infrastructure, while indirect effects may result from:

- Changes to local hydrology resulting in wetting or drying of wetlands, such as inadvertent drainage or impoundment and groundwater drawdown associated with water withdrawal.
- The spread or introduction of invasive species into upland habitats and wetlands through construction equipment, vehicles or runoff from. Increased traffic during the construction and operations phases can elevate this risk.
- Potential sedimentation within wetlands or upland habitats because of up-gradient activities (e.g., earth moving, removal of vegetation, soil stockpiling). Depending on the degree, a sedimentation event may suffocate wetland vegetation and increase nutrient levels.
- Dust deposition, which can, similarly to sediment, also introduce minerals and nutrients into wetlands and stress wetland vegetation (particularly non-vascular species).
- Changes to wetland microclimate and habitat functions because of proximity to Project infrastructure and edge effects.

Desktop-derived data along with baseline data collected during field assessments will be used to determine the quantity and quality of wetlands and vegetation communities, potential habitat for rare plants and rare plant

population if warranted. Although Project activities and physical works may affect wetlands and vegetation to varying degrees, considerations are primarily related to potential effects on:

- Reduction of wetland areas and ecological communities that include habitat for rare plants and wildlife;
- Reduction of biodiversity and rare plant populations;
- Reduction in wetland function.

Mountain sandwort (*Mononeuria groenlandica*) and Scheuchzer cottongrass (*Eriophorum scheuchzeri*) have been recorded within a 5-km radius of the Project. Given the relative scarcity of information for the Nain region, the field program includes a search for indicative habitat types for SAR and a rare plants survey. Ground-truthing and riparian / wetland delineation will refine wetland habitat types identified during the desktop review. Wetlands will be characterized according to the CWCS into five classes: bog, fen, swamp, marsh and shallow water wetlands (National Wetlands Working Group 1997).

The EA will identify Project activities and infrastructure that may adversely affect wetlands and vegetation. The effects assessment will involve analyzing Project footprint disturbance to vegetation communities map units, which will inform the extent of effects.

Proposed mitigation measures to avoid or reduce effects on climate, air quality, noise / vibrations and water resources also apply to biological environment. In addition to measures applied to the physical environment, the following mitigation measures are proposed to protect vegetation and wetlands:

- Minimize vegetation disturbance, as maintaining terrestrial, riparian and wetland ecosystems plays a role in supporting biodiversity, hydrology, wildlife habitats and traditional use of resources.
- Project infrastructure will be micro-sited to avoid direct effects to wetland habitat, where practicable.
- Implement construction methods that reduce the potential to drain or flood surrounding wetlands (e.g., appropriately sized / spaced culverts, no unpermitted pilling of soil / grubbing, no unnecessary ditching / artificial channelization).
- Minimize erosion of wetland soils by limiting flow velocities using hydraulic dissipation techniques and directing runoff through natural upland vegetation, wherever practical.
- Implement temporary erosion and sediment control measures (e.g., rig matting, geotextiles, vegetated buffer zones, berms, fibre rolls, silt fencing). The type of control (if applicable) is dependent on topography. Inspect erosion and sediment controls on a regular basis and correct deficiencies (e.g., inadequate control, damage, ineffectiveness) in a timely manner.
- Treat the gravel Runway and Access Road surface with a polymer to control dust and sedimentation.
- Employ measures to reduce the spread of invasive species (particularly by vehicles) into wetlands and retain habitat integrity. Equipment and vehicles will arrive to site clean and free of soil or vegetation debris. Inspect vehicles regularly, particularly vehicles arriving from outside the Nain area.

23. Fish and Fish Habitat

Fish and aquatic SAR are protected under federal legislation by the *Fisheries Act* and *SARA*. Habitat that supports fish may be altered, disturbed or destroyed as a result of direct or indirect disturbances from the Project. Works determined to result in Harmful Alteration, Disruption or Destruction (HADD) of fish habitat or death of fish by means other than fishing require authorization under Section 35 of the *Fisheries Act*.

Project activities have the potential to affect fish and fish habitat both directly and indirectly. Direct effects may occur by removal of fish habitat through dewatering, infilling or excavating watercourses. Indirect effects may occur by several pathways, including:

- Flow reductions in watercourses by changes in corresponding catchment areas;
- Release of deleterious substances, including total suspended solids, to watercourses;
- Operation of a marine vessel during construction to transport construction equipment;
- Transport and use of construction equipment in or near water; and

– Impingement or entrainment of fish through water management activities.

Project activities and physical works may affect different fish and fish habitat components to varying degrees. Issues are primarily related to potential effects on:

– SAR or species of conservation concern;
– Death of fish;
– HADD.

Proposed mitigation measures to avoid or reduce effects on climate, air quality, noise / vibrations, surface water, hydrology and groundwater all also apply to the aquatic environment. In addition to measures applied to the physical environment, the following mitigation measures are proposed to protect fish and fish habitat:

– If works occur within close proximity to freshwater or estuarine environments, apply to DFO for a Request for Review of Project works near water that may cause HADD.
– Conduct work outside the fish and fish habitat Restricted Activity Period.
– Ensure free passage of fish at all times during temporary diversion of a watercourse.
– Avoid movement of any vehicle or construction equipment within 20 m of a permanent watercourse or 5 m of an intermittent watercourse and, if such movement is necessary, divert water flowing in ruts to a vegetated area at least 20 m from a watercourse.
– Install culverts in a manner that facilitates flow of water by embedding the base of the culvert below the natural streambed, stabilizing with rock fill and constructing stream crossings during summer low-flow period (mid-July to early September), where possible.
– Avoid direct contact with aquatic areas on site and adjacent to the site. Minimize disturbance, where possible.
– Develop and implement a spill response plan.
– Develop and implement a marine mammal management plan.
– Plan the locations of temporary workspaces to minimize the need for aquatic area disturbance.
– Minimize frequent access to the freshwater environment to avoid cumulative impacts (e.g., erosion, run-off, elevated total suspended solids).

24. Wildlife and Migratory Birds

Considerations related to terrestrial species important to the Inuit (e.g., snowshoe hare, migratory birds) are primarily related to potential effects on:

– Wildlife habitat availability resulting from habitat loss and fragmentation, and from reduced habitat effectiveness (e.g., from noise, human presence);
– Habitat connectivity caused by barriers to wildlife movements;
– Wildlife populations resulting from increased levels of direct and indirect mortality risks;
– Wildlife diversity resulting from changes in wildlife habitat availability;
– Wildlife diversity resulting in habitat patch size (e.g., effects of fragmentation);
– Wildlife diversity resulting from changes in rare species occurrence; and
– Project-related effects to wildlife and migratory birds are possible via several pathways, including:
    - Reduction in the type and extent of habitats;
    - Bird strikes and road kill;
    - Disturbance from light pollution; and
    - Disturbance from noise pollution.

Habitat loss occurs when infrastructure is constructed within previously undisturbed areas, destroying, fragmenting or degrading the habitat of flora and fauna. Habitat fragmentation occurs when a larger area of habitat is divided by roads, fencing or other infrastructure, creating barriers to foraging and migration. Habitat degradation reduces

the attractiveness of the habitat for flora and / or fauna, and may result from the removal of wetlands or vegetation, the introduction of invasive species, or contamination of surface water, sediment or soil.

Aircraft operation may result in bird strikes during take-off and landing. Approximately 85% of bird strikes involve aircraft below 800 ft and up to 40% of bird strikes take place beyond the airport perimeter (CAA 2001). Changes in avifauna song characteristics, reproduction, abundance, stress levels and species richness have been documented due to sustained noise pollution at sound levels greater than 45 A-weighted decibels. Noise pollution from the Project can result in behavioural changes, lead to changes in wildlife communities and alter species interactions (Francis et al. 2009).

In 2023, three field surveys were dedicated to avifauna. These included spring migratory birds survey; summer avian / SAR / terrestrial wildlife survey, fall migratory birds survey and country foods.

Proposed mitigation measures to avoid or reduce effects on climate, air quality, noise / vibrations, surface water, hydrology and groundwater all also apply to migratory bids. In addition to measures applied to the physical environment, the following mitigation measures are proposed to protect migratory birds:

- Minimize the Project footprint to the extent possible to reduce effects on habitat.
- Minimize vegetation disturbance, as maintaining terrestrial, riparian and wetland ecosystems plays a role in supporting biodiversity, hydrology, wildlife habitats and traditional use of resources.
- Suspend noisy activities if caribou are observed near the work areas.
- Schedule construction activities to avoid avian migration periods as per ECCC guidelines.
- Impose a speed limit on the Access Road to reduce potential for wildlife collisions.
- Implement a bear management plan and garbage management plan to minimize bear / human interactions.
- Maintain cross road movements during Access Road construction (e.g., provide breaks in any soil berms or slash pile rows).

25. Indigenous Peoples

For Indigenous groups and communities, developments may affect Aboriginal Rights within the meaning of section 35 of the Canada *Constitution Act,1982* and Treaty Rights. The Inuit have protected Rights established through this Act and the LILCA. The LILCA is a modern, comprehensive treaty and land claims agreement that gives the NG ownership and authority, including administration, control, development, conservation and management of LIL (LIA 2005). The LILCA also provides harvesting rights in the LISA and the Labrador Sea, where Nunatsiavut Beneficiaries have protected rights to hunting, fishing and harvesting. No presence or activities by anyone other than Nunatsiavut Beneficiaries is allowed on LIL without prior approval of the NG through a permit. This will apply to all components and activities related to the Project and to all activities by non-Beneficiaries present on LIL for the Project.

- The Project will comply with all applicable regulations and permitting regimes of the NG, along with those of NICG, Government of NL and Government of Canada.
- The proponent will continue to work with Rights Holders to identify and develop potential measures to avoid or mitigate any potential effects of the Project on Aboriginal Rights, Treaty Rights and interests.

26. Land and Resource Use

Developments have the potential to result in land use conflicts where resources overlap with lands used for traditional purposes by Indigenous Peoples and / or used by others. The Project will result in changes in the landscape including access. Construction of the Project will result in direct disturbance to natural areas, leading to the loss (quantity / quality) of available resources (e.g., vegetation, wildlife habitat) related to land use activities such as hunting, trapping and plant gathering. Airport operation (e.g., vehicular traffic, aircraft noise) may also displace wildlife and further hunting and trapping in the area. Development of the Access Road will extend all-

weather access into previously remote areas west of Nain; this may benefit land users who use conventional vehicles. However, the improvement in access may lead to an increase in land use activities in these areas, which may reduce resources and negatively affect current users. Some residents have expressed concerns that increased access may result in break-ins at camps.

A land use study initiated by NLNR will seek information from Labrador Inuit / Nain residents on land use activities within the broader region surrounding the Project. Information obtained from this study will be used to further refine understanding of potential Project effects and identify mitigation measures. In addition, data have been requested from the NLNR on the location of Aullâsimavet (leased to Nunatsiavut Beneficiaries through the *Labrador Inuit Land Titles Act*), which may be identified.

- Project components have been, and will continue to be, sited to avoid where possible features known to be environmentally sensitive and / or of cultural importance to the Inuit.
- Mitigation measures for Project effects on resources related to land use activities, such as vegetation, wildlife, fish and fish habitat, are described above.
- The Project will be developed in accordance with NG regulations and any applicable local and provincial land use regulations.

27. Physical and Cultural Heritage

Heritage resources include archaeological remains, both above ground and buried; historic buildings and sites (e.g., registered heritage buildings, cemeteries, parks, historic areas / landscapes and structures of architectural or historic merit). Development projects, particularly construction activities, may adversely affect artefacts through land disturbance. Changes to physical heritage may also result from introducing anthropogenic features in the landscape, and by alterations to biophysical environment components of importance to Indigenous Peoples.

Heritage assets are irreplaceable and more difficult to understand if removed from their context (e.g., the landscape in which they are found). If disturbance is unavoidable, mitigation measures include removing archaeological artefacts for recording and preservation in conformity with applicable regulations.

For the Project, historic resources of interest would be limited to archaeological remains that may occur within the Project footprint as the area is undeveloped. A professional archaeologist, engaged to undertake a heritage resources study in 2022 and 2023 (under permit to NG), identified an archaeological site along the Access Road route.

- Based on the archaeological finding, the Access Road has been rerouted to avoid Project effects on the archaeological site, which has been reported to the NG and protected in the location where it was found, in keeping with the *Labrador Inuit Lands Act*.
- Any further cultural resources identified through Project activities will be managed and reported in compliance with legislation and best practices.

28. Community Health and Well-being

Labrador's northerly communities rely on air transportation year-round. Marine transport is available in summer when ports are ice-free and the ferry from HVGB stops in each community for loading and unloading, completing one return trip to Nain each week. Long shipping times, combined with the short marine season, result in higher costs and lower availability of goods. Food in particular costs more and fresh food is subject to spoilage, both affecting food security. Also, the communities have limited capacity and rely on air travel to access services (e.g., health care) in larger centres such as HVGB and St. John's. Limited access to health services adversely affects community health and well-being.

Nain is most affected by cancelled flights and potential emergency closures due to issues at the existing airstrip. With the Airport, the people of Nain will have better access to food and other essential goods that are delivered by

air year-round, especially given the potential to use larger aircraft. The improved ability to travel out of the community as needed for services (not available locally) will help Nain residents to access essential health care and other services in a timelier fashion. The ability of planes to take off and land at night will improve management of medical emergencies. A more reliable Airport will be an asset to Indigenous and non-Indigenous residents in Nain, the other Inuit communities of Nunatsiavut as well as Mushuau Innu First Nation at Natuashish through improved reliability of air transportation throughout Northern Labrador.

The Airport will be less convenient to access from Nain, but the location will serve to reduce potential adverse effects (e.g., noise, air quality) on the community and eliminate the potential of an aviation incident or airstrip closure (due to damage from sea level rise and storm surges) affecting the community. However, concerns have been expressed regarding the safety of the Access Road given local experience with heavy snow and avalanches around Nain.

Developments may result in wastes or emissions that are harmful to the environment and affect human health and well-being. Information from other VCs will be used to predict effects on human health and well-being in the EA. For instance, the effects of the Project on air quality and noise will be used as the basis for HHRA, which will involve the following:

- Identification of a list of common and priority air pollutants, including toxins and persistent and bioaccumulative substances for air quality modelling and assessment of:
    - Potential emissions from aircraft,
    - On-site energy generators,
    - Fuel and chemical storage areas, and
    - Heavy vehicle and construction equipment use during Project construction and operations.
- To address effects on human health, the EA will include the following studies and analyses:
    - Identification of health effect-related topics of potential concern (e.g., air quality, noise and light pollution, surface water quality and fish and aquatic species, particularly those integral to the local diet and economy (e.g., Arctic char, a cornerstone to local diet and fishing industry in Nain), description of perception of risk to human health associated with Project construction and operations in an undisturbed northern environment, protection of country foods through management of air quality, noise and vibrations, using criteria from applicable regulations and guidance published by HC, ECCC, Canadian Council of Ministers of the Environment, Government of NL, Public Health Agency of Canada and other credible health and environmental protection agencies and compilation of the potential for risks to human health from each potential exposure pathway, mechanism of exposure and sources of contaminant releases to air, water and land associated with Project construction and operations.
- The location of the Airport will result in elimination of community safety issues during take-off and landing.
- Aircraft will no longer be operating adjacent to the community, resulting in a safer environment.
- The Airport will be fenced for aviation and public safety purposes in accordance with TC's Aerodromes Standards and Recommended Practices - TP 312.
- The Access Road route has been selected to avoid steep slopes and narrow passes wherever possible.
- The Access Road will be designed for existing conditions using wind and snow deposition modelling to predict avalanche locations so these areas may be avoided.
- The sides of the road will be terraced and specialized infrastructure will be installed around known avalanche areas (i.e., Blow Hole, Mount Sophie) to reduce potential for snow avalanches.
- Speed limits will be controlled to reduce the potential of wildlife collisions or accidents due to vehicular circulation along the Access Road.
- A shuttle service will be provided from Nain to and from the Airport.

29. Economy, Employment and Business

Development projects, especially construction of large infrastructure, result in economic opportunities through procurement and employment.

More information on procurement will be available through R10: Construction and Supply Strategy and R11: Cost Estimation, which will be available in May 2024. Provisions will be made for local, regional and provincial procurement and business opportunities wherever feasible. Specialized goods and services may be sourced from other provinces.

Detailed information will be provided in the EA on the construction workforce, Project spending, employment and procurement opportunities in Nain and Nunatsiavut related to Project construction. Operating airports and aviation also generate employment and economic benefits. Employment can be divided into direct, indirect, induced and catalytic. Table 29.1 provides examples of each. At this point, it is anticipated that the Airport itself will employ approximately 10 people in Nain. This does not include airline and security staff employed by other agencies. The Airport will result in new long-term employment opportunities in Nain.

Table 29.1 Types of Air-Port-Related Employment

Effect	Definition	Examples
Direct	Employment related to the operation of airports or airlines	Airport operator, airlines, handling agents, security, concessions, freight agents, flight caterers, hotels, car parking, aircraft servicing, fuel storage
Indirect	Employment supported by the supply chain of goods and services to the direct activities	Utilities, retail, advertising, cleaning, food, construction, information technology, fuel
Induced	Employment supported by the spending of incomes earned in the direct and indirect activities	Retail, restaurants, entertainment
Catalytic	Employment supported by the attraction, retention or expansion of economic activity as a result of access by air	Tourism

A more reliable airport will be an asset to businesses and service providers throughout northern Labrador. Existing businesses in Nain, Nunatsiavut and Natuashish will benefit from improved air access year-round for more reliable delivery of goods. This will help to provide in better quality products (i.e., fresh food) and less wastage at grocery stores, hotels and restaurants, possibly resulting in lower prices and / or more profitable businesses.

Limited effects are anticipated on businesses and other industrial activities. Two quarries (with limited remaining resources) and the NL Hydro power generating station are identified along or near the Access Road. Discussions have been initiated with NL Industry, Energy and Technology and NG regarding quarries and aggregate resources near Nain.

- The Access Road has been rerouted to avoid disturbance to two quarries located near Nain.
- The existing quarries will not be used for this Project. R10: Construction and Supply Strategy will provide information on the precise location of quarries, which will be along the Access Road.

30. Federal Lands

The Project occurs within the Province of NL; no other provinces are involved. The Project is within the land claims area established by the LILCA, which is Federal Lands. Impacts on Federal Lands could result from construction and operations infrastructure and activities. Likewise, mitigations for impacts on the biophysical and human environment would be applicable to Federal Lands.

31. Waste and Emissions

31.1 Solid Waste

Municipal solid waste generated at the Airport will consist of metal, glass, plastic, paper and cardboard products and disposed of at an approved waste disposal site. Municipal solid waste will be generated from three primary sources:

- Terminal waste – from public areas and airport administrative offices;
- Airline waste – from airplanes and airline offices; and
- Cargo waste – from cargo operations.

Solid waste generated during Project construction may include left-over concrete, wood, metals, roofing materials, plastic and piping and others. Construction debris will be assessed and separated for reuse and recycling wherever possible. Any material not reused will be sent to an approved construction and demolition waste disposal site, recycling facility or waste disposal site outside of Nain.

A waste management plan will be prepared for construction and operations. Operational waste will be consistent with waste generated from aircraft and the terminal building at the existing airstrip. International flights are not planned for the Airport.

Waste management includes control of litter and debris. All waste material generated during construction and operations will be placed in suitable refuse containers and removed to an approved waste disposal site on a weekly basis, with the prior approval of the waste disposal site owner / operator. Derelict vehicles, scrapped equipment and other large debris will not to be stored on site and will be disposed of at an approved waste disposal site or scrap yard on a regular basis, with prior approval of the site owner / operator.

Lavatory waste generated at the Airport will be managed to minimize risk to human health and the environment and avoid uncontrolled releases. If the flow of sewage will be less than 4,546 L/day, detailed plans and specifications for a sewage disposal system will be submitted to Service NL for evaluation and to obtain a “Certificate of Approval”. If a wastewater treatment plant will be constructed to treat wastewater, it will be designed by a qualified professional engineer and meet the requirements of the *Environmental Control Water and Sewage Regulations (65/03)* under the *Water Resources Act*, Schedule A.

Hazardous materials used during Project construction and operations will include diesel, gasoline, oil, lubricants and solvents. Hazardous waste is expected to include used oil, oil filters and waste material from aircraft and ground vehicle washing and cleaning. Firefighting foam used at the Airport will not contain Per-and Polyfluoralkyl Substances.

Jet A fuel will be transported to Nain and delivered to the Airport in a similar manner as for the current airstrip. This procedure will include arrival by tanker to the wharf at Nain twice per year (following marine ice break-up in spring and before winter freeze-up in fall) and delivery by an aviation fuel truck to specialized double-walled fuel storage at the Airport. Similar procedures will be followed for delivery and storage of diesel fuel.

Hazardous materials and waste will be transported, stored and handled in accordance with regulatory requirements and disposed of at an approved facility. Plans will be prepared for managing hazardous materials and waste, as well as emergency response.

31.2 Waste Water Effluent

Lavatory waste generated at the Airport will be managed to minimize risk to human health and the environment and avoid uncontrolled releases. A wastewater treatment plant will be constructed at the Project site to treat wastewater to acceptable standards prior to release to the environment. Hazardous materials and waste will be transported, stored and handled in accordance with regulatory requirements and disposed of at an approved facility, and will not be released as effluent.

Temporary erosion and sedimentation control measures (e.g., settling ponds, silt fencing) will be implemented during construction to prevent release of sediment-laden water to environmentally sensitive areas.

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