

Environmental Protection Operations Directorate
Prairie & Northern Region
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ECCC File: 6300 000 047/001
NIRB File: 25YN061



October 29, 2025

via email at: info@nirb.ca

Amir Pourmahabadian
Senior Impact Assessment Officer
Nunavut Impact Review Board
29 Mitik Street
P.O. Box 1360
Cambridge Bay, NU X0B 0C0

Dear Amir Pourmahabadian:

RE: 25YN061 – Government of Nunavut – The Kivalliq-Baffin Connector Horizontal Directional Drilling Feasibility Study" Project Proposal

Environment and Climate Change Canada (ECCC) has reviewed the information submitted to the Nunavut Impact Review Board (NIRB) by the Government of Nunavut ("the Proponent") regarding the above-mentioned Kivalliq-Baffin Connector Horizontal Directional Drilling Feasibility Study" Project Proposal.

ECCC provides expert information and knowledge to project assessments on subjects within the department's mandate, including climate change, air quality, water quality, biodiversity, environmental emergencies preparedness and responses. This work includes reviewing proponent characterization of environmental effects and proposed mitigation measures. We provide advice to decision-makers regarding a proponent's characterization of environmental effects, the efficacy of their proposed mitigation activities, and may suggest additional mitigation measures. Any comments received from ECCC in this context does not relieve the proponent of its obligations to respect all applicable federal legislation.

The following comments are provided:

1. Air emission standards for terrestrial equipment

Reference(s)

- Kivalliq-Baffin Connector Project Horizontal Directional Drilling Engineering Support Program, Environmental Management Plan, Section 5.3.7 and Appendix A

Comment



ECCC appreciates the mitigation measures presented in Table 5-7 of Section 5.3.7. In Appendix A, Figures A-1 through A-4 show the drilling study areas for the four terrestrial sites. For Kinnigait and Kimmerut in particular, the sites are in close proximity to community structures, and it is preferred to have equipment equipped with engines emitting reduced air emissions.

ECCC Recommendation(s)

ECCC requests that externally supplied equipment be equipped with engines meeting at least Tier 3 (preferably Tier 4) emission standards where feasible and practical.

2. Drilling mud additive

Reference(s)

- Kivalliq-Baffin Connector Project, Horizontal Directional Drilling Engineering Support Program, Environmental Management Plan; Table 2-2: Description of Activities; Table 5-3: Sediment and Water Quality; Table 5-10: Waste Management

Comment

The project activities include drilling boreholes on land and in the marine environment. The drilling fluids and cuttings will be left on site, and their impact has been considered as Table 5-3 states: "Drill muds, additives, and other products shall be non-toxic and environmentally friendly." Further details on the drilling mud additives are provided in Table 5-10: "All drill fluids used will be bio-degradable gum xanthum and have minimal impact on the environment." ECCC notes that there may be a mistake in the additive name. Xanthan gum is a commonly used drilling mud additive which has been demonstrated to be non-toxic but no toxicity information was found on xanthum gum.

ECCC Recommendation(s)

ECCC recommends the Proponent clarify whether the planned additive for drilling mud is xanthan gum.

3. Monitoring turbidity in water

Reference(s)

- Kivalliq-Baffin Connector Project, Horizontal Directional Drilling Engineering Support Program, Environmental Management; Table 2-2: Description of Activities; Section 4.2: Sediment and Water Quality Degradation; Table 5-12: Reclamation Requirements; Section 5.4.3: Turbidity
- Section 7 Effects Analysis: Turbidity in the Greater Atlantic Region (National Oceanic and Atmospheric Administration Fisheries; consulted on 24-10-2025, <https://www.fisheries.noaa.gov/new-england-mid-atlantic/consultations/section-7-effects-analysis-turbidity-greater-atlantic-region>)

Comment

Several project in-water activities interact with the seabed, however the Proponent concludes: “Turbidity is not anticipated to exceed the Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines (WQG) (CCME, 2002), and turbidity beyond a compliance monitoring zone (generally 30 m from source) is not expected to occur.” Though some of the activities seem unlikely to cause much turbidity, the discharge of drill cuttings to the marine environment, as described in Table 5-12, could potentially cause suspended sediment plumes.

The turbidity monitoring described in Section 5.4.3 is not sufficiently detailed to evaluate if it will be adequate to respond to increases and prevent impacts to aquatic life. “The compliance monitoring will be performed if a turbidity plume is detected beyond a 30 m Compliance Monitoring Zone (CMZ) as per the thresholds summarized in Table 5-13.” It is not clear if the method of detection of turbidity plumes beyond the CMZ is visual observation or measured by turbidity meter. Visual observation may not be sufficiently precise to respect the thresholds in Table 5-13 (NOAA Fisheries, 2025). Assessment of potential effects related to turbidity require an understanding of the background turbidity, against which monitoring data during works is compared to assess whether guidelines are exceeded. Waiting for a plume to be detected is also problematic because it would not allow for background turbidity measurements, which should be made before work is initiated. ECCC notes that monitoring programs during in water works often use periodic or continuous turbidity monitoring to measure and respond to increases in turbidity and prevent impacts to aquatic life.

ECCC Recommendation(s)

- Discuss how drill cuttings will be discharged to the marine environment and if necessary, propose measures to mitigate suspended sediment plumes from this activity; and
- Further describe the planned turbidity monitoring including the methods and instruments used for monitoring and the sampling frequency and timing.

4. Species at Risk

Reference(s)

- Kivalliq-Baffin Connector Project Horizontal Directional Drilling Engineering Support Program, Environmental Management Plan

Comment

Species at risk are assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) or added to Schedule 1 of the *Species at Risk Act* (SARA) on a regular basis. It is important for proponents to ensure they are aware of what species are present in the project area and take appropriate actions to ensure compliance with the SARA.

The killing, harming or harassing of listed species as well as the damage and destruction of their residences is prohibited under SARA. In the territories, the prohibitions apply automatically to:

- Threatened, Endangered and Extirpated species listed on Schedule 1 of SARA on lands under the authority of the federal Minister of Environment.
- Migratory Birds (as defined under the *Migratory Birds Convention Act* [MBCA]) everywhere they are found.

These prohibitions can apply elsewhere if there is an order put in place.

The destruction of critical habitat of species listed under Schedule 1 of SARA is prohibited on all lands identified within the critical habitat protection order for the species.

ECCC Recommendation(s)

As species are assessed and listed on a regular basis, ECCC recommends the Proponent:

- Consult the Species at Risk registry to obtain the most current information for their operations.
- Consult the Government of Nunavut to identify appropriate mitigation and/or monitoring measures to avoid and lessen project effects to species under their management responsibility.

5. Species at Risk – SAR Missing

Reference(s)

- Kivalliq-Baffin Connector Project Horizontal Directional Drilling Engineering Support Program, Environmental Management Plan

Comment

Section 79 of SARA requires the assessor and decision body to ensure that where a project is likely to affect a listed species or its critical habitat, all adverse effects of the project are identified and considered in the assessment of the project. Appropriate measures must be taken to avoid or lessen those effects and include monitoring. Measures should be consistent with applicable recovery documents.

Section 79 applies to all listed species on Schedule 1 of SARA including those listed as Special Concern, Threatened, Endangered and Extirpated. As a matter of best practice, COSEWIC-assessed species should be assessed similarly to those listed under SARA.

The Proponent has not identified all species at risk that are likely to be present in the Project area, and the Proponent has not identified all adverse effects of the Project on species at risk.

Table I in Appendix I (attached) contains a list of the species that are likely to be encountered in the Project area that have been assessed as at risk by COSEWIC or listed on Schedule 1 of SARA.

The Project may have adverse effects on listed species including direct habitat loss, impacts due to noise, dust or other sensory disturbances, wildlife injury or mortality and wildlife attraction.

ECCC Recommendation(s)

ECCC recommends the Proponent:

- Identify adverse effects of the Project on the species at risk likely to be affected and their critical habitat;
- Ensure that measures are taken to avoid or lessen those adverse effects and monitor them to inform adaptive management.

If the Proponent encounters species at risk, the primary mitigation measure should be avoidance. ECCC recommends:

- Mitigation and monitoring measures be consistent with applicable species at risk Recovery Strategies and Action Plans or Management Plans.
- At a minimum, monitoring should include recording timing and location of observed species at risk, their behavior when encountered, and actions taken by the Proponent to avoid disturbance to the species, its habitat, and/or its residence.
- The Proponent submit monitoring reports to the appropriate regulators and organizations with management responsibility for that species.

6. Migratory Birds – Project Activities (habitat disturbance) Within Migratory Bird Habitat During Nesting Season

Reference(s)

- Kivalliq-Baffin Connector Project Horizontal Directional Drilling Engineering Support Program, Environmental Management Plan

Comment

This project involves habitat alteration and disturbance during the general nesting period.

The project is located in nesting zones N8, N9, and N10. In this area, migratory birds may be found nesting from mid-May to mid-August.

During this period, activities that may disturb or alter nesting habitat may increase the risk of destruction of the nests and eggs of migratory birds. It is important to note that breeding periods may vary from year to year due to climatic conditions and some species may nest outside the dates provided if conditions are favourable.

If there are occupied migratory bird nests where work is planned, activities that could disturb or destroy nests should be avoided, adapted, rescheduled, or relocated. The best way to avoid disturbing or destroying active nests is to avoid conducting harmful activities during the breeding season.

Determining the presence of nesting migratory birds may help reduce risks, but active nest searches are not recommended as the ability to detect nests is very low while the risk of disturbing and/or damaging active nests is high.

As detailed in ECCC's Guidelines to Avoid Harm to Migratory Birds, nest surveys to determine occupancy may only be appropriate when all of the following conditions are met:

- Conducted by skilled and experienced observers;
- Using appropriate methods;
- Only a few nesting spots or a small community of migratory birds are expected; and
- The activities will take place in simple habitats

Proponents are reminded that migratory bird species may nest on the ground, in ground cavities, in grasses, shrubs, cliffs, trees, tree cavities, and other sites, and that nest sites are often cryptic or camouflaged, making them difficult to locate.

ECCC Recommendation(s)

ECCC recommends the Proponent avoid habitat alteration and disturbance during the general nesting season, which extends from mid-May to mid-August for the project location.

If these activities cannot be avoided, the Proponent should consider options such as adapting, rescheduling, or relocating activities. If a nest containing a migratory bird or egg is discovered/disturbed, the Proponent should:

- Halt all disruptive activities in the nesting area until nesting is complete and the young have fledged; and
- Establish a protective buffer zone around the nests. The buffer zone must be determined by a setback distance appropriate for the species, the intensity of the disturbance and the surrounding habitat until the young have naturally and permanently left the vicinity of the nest. Proponents are encouraged to follow the guidance on ECCC's Guidelines to Avoid Harm to Migratory Birds.

For further questions or technical information, please contact ECCC (cwsnorth-scfnorth@ec.gc.ca).

7. Migratory Birds Contamination of Water Bodies

Reference(s)

- Kivalliq-Baffin Connector Project Horizontal Directional Drilling Engineering Support Program, Environmental Management Plan

Comment

Fuel and/or other hazardous materials may be stored, handled or transported near a water body that may be used by birds.

ECCC advises the Proponent that section 5.1 of the *Migratory Birds Convention Act* prohibits persons from depositing substances harmful to migratory birds in waters or areas frequented by migratory birds or in a place from which the substance may enter such waters or such an area.

ECCC Recommendation(s)

ECCC recommends the Proponent ensure their employees and contractors are made aware of plans and commitments related to storing, handling and transporting of petroleum products and other hazardous substances and take all necessary precautions to prevent spills.

8. Migratory Birds Oil Spills

Reference(s)

- Kivalliq-Baffin Connector Project Horizontal Directional Drilling Engineering Support Program, Environmental Management Plan

Comment

There is a potential for large release of pollutants into marine environments where birds may congregate.

Migratory birds are particularly vulnerable to pollution incidents (e.g. oil spills, etc.) in their feeding areas. Proponents should determine what steps would be taken to mitigate the impacts of pollution incidents on migratory birds and their important habitats.

Having this information outlined and available not only benefits wildlife but also gives clear direction to staff and contractors on what to do during a pollution incident if wildlife is nearby.

ECCC Recommendation(s)

ECCC recommends the Proponent incorporate into existing emergency response plans:

- Steps to protect wildlife (including migratory birds) in the event of a pollution incident and keep wildlife out of contaminated areas;
- Equipment and resources available for incident response; and
- Measures to take if wildlife does come in contact with the spill.

9. Migratory Birds Drones/Aircraft

Reference(s)

- Kivalliq-Baffin Connector Project Horizontal Directional Drilling Engineering Support Program, Environmental Management Plan

Comment

The Proponent indicates there may be a potential for low-level drone flights during the spring, summer or fall in areas of high bird concentrations (key habitat sites, Important Bird Areas, Wildlife Key Areas or colonies).

ECCC Recommendation(s)

In order to reduce drone/aircraft disturbance to migratory birds and subject to pilot discretion regarding safety, ECCC recommends:

- Avoiding known concentrations of birds such as Important Bird Areas, Key Habitat Sites, and Sea Duck Key Habitat Sites (e.g., Qaqsauqtuuq Migratory Bird Sanctuary [Common Eider colony, Snow Goose colony], Ikkattuaq Migratory Bird Sanctuary [Lesser Snow Goose colony], Fraser Island [Common Eider colony], Markham Bay [Common Eider colony, Iceland Gull nesting], Hantzcsch Island [Black-legged Kittiwake colony, Thick-billed Murre colony], Digges Sound [Thick-billed Murre colony], Cape Pembroke [Thick-billed Murre colonies], Boas River [Lesser Snow Goose colonies], Frobisher Bay, Killiniq Island) by a lateral distance of at least 1.5 kilometres.
- Avoiding the seaward side of seabird colonies and areas used by flocks of coastal migrating waterfowl by 3 kilometres.
- Avoiding excessive hovering or circling over areas of high bird concentrations.
- If avoidance is not possible, maintaining a minimum flight altitude of 1,100 metres (3,500 feet) over these areas.
- Informing operators/pilots of these recommendations and of areas of high bird concentrations.

The Proponent should ensure these measures are incorporated into wildlife management plans.

10. ECCC Contact Information

Reference(s)

- Kivalliq-Baffin Connector Project Horizontal Directional Drilling Engineering Support Program, Environmental Management Plan

Comment

The Proponent has provided an environmental management plan but has not identified ECCC as a contact for instances involving migratory birds.

ECCC has management responsibilities for migratory birds under the *Migratory Birds Convention Act* (MBCA). ECCC should be contacted in instances involving:

- Interactions and incidents involving the potential disturbance of individuals or nests and any mortality events of these species;
- Wildlife monitoring reports and annual reports that pertain to these species; and
- Updates to wildlife management and monitoring plans, or their equivalents, in relation to these species

ECCC Recommendation(s)

ECCC recommends the Proponent notify ECCC's Canadian Wildlife Service (cwsnorth-scfncord@ec.gc.ca) for instances involving:

- Interactions and incidents involving the potential disturbance of individuals or nests and any mortality events of these species;

- Wildlife monitoring reports and annual reports that pertain to these species; and
- Updates to wildlife management and monitoring plans, or their equivalents, in relation to these species.

If you need more information, please contact Jennifer Sabourin at Jennifer.Sabourin@ec.gc.ca.

Sincerely,



Jennifer Sabourin
Environmental Assessment Officer

Attachment(s): 291025-NIRB 25YN061-GN-Kivalliq-Baffin Connector Horizontal Directional Drilling-ECCC Appendix I

cc: Eva Walker, Head, Environmental Assessment North (NT and NU)