



September 03, 2026

Viren Nasit
Senior Impact Assessment Officer
Nunavut Impact Review Board
P.O. Box 1360
Cambridge Bay, NU X0B 0C0

Via Email: info@nirb.ca

Re: Government of Canada Screening Comments – Nunavut Nukkiksautiit Corporation's "Iqaluit Nukkiksautiit Project" Proposal (NIRB File No. 26UN010).

Dear Viren Nasit,

On August 12, 2026, the Nunavut Impact Review Board (NIRB) issued its Notice of Screening and Comment Request for Nunavut Nukkiksautiit Corporation's ("the Proponent") **Iqaluit Nukkiksautiit Project** (NIRB File No. 26UN010). As part of the screening process, NIRB invited regulators, interested parties, and potentially affected communities and groups to provide comments on the project proposal by September 3, 2026.

The Northern Projects Management Office (NPMO) of the Canadian Northern Economic Development Agency has coordinated and consolidated comments from Government of Canada departments into a single submission, attached herein, with comments organized by department. NPMO is coordinating this submission on behalf of Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC), Fisheries and Oceans Canada (DFO), Health Canada (HC), Transport Canada (TC), Natural Resources Canada (NRCan) and Environment and Climate Change Canada (ECCC). The NPMO would be happy to answer any questions to clarify or improve understanding of the comments.

Please direct any questions, comments or correspondence regarding this submission to Alexie Baillargeon, Project Manager, at Alexie.Baillargeon@cannor.gc.ca or 867-222-1895.

Sincerely,

Aminul Haque
Senior Project Manager
Northern Projects Management Office
Canadian Northern Economic Development Agency

Attachment: Government of Canada Screening Comments – Iqaluit Nukkiksautiit Project (NIRB File No. 26UN010)



Cc Spencer Dewar, Regional Director General, Nunavut Region, Crown-Indigenous Relations and Northern Affairs Canada

Jody Small, Regional Director, Prairie and Northern Region, Environmental Protection, Operations Directorate, Environment and Climate Change Canada

Deborah Yu, Director General, Explosives, Regulatory and Business Services Branch, Lands and Minerals Sector, Natural Resources Canada

Duwayne Williams, Regional Director General, Ontario, Prairie and Northern Region, Transport Canada

Miranda MacPherson, Director, Chemicals and Environmental Health Management Bureau, Healthy Environments and Consumer Safety Branch, Health Canada

Andrew Randall, Regional Director, Aquatic Ecosystems, Arctic Regions, Fisheries and Oceans Canada



Government of Canada Screening Comments – Iqaluit Nukkiksautiit Project (NIRB File No. 26UN010)

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)

CIRNAC 1: Project Scope and Public Engagement

CIRNAC notes that due to the scale, nature, and location of the Project within the Kuugaaluk River system, and considering this is the first hydroelectric project in Nunavut, the Project has the potential to arouse public concern. The Project includes a 7,136 ha reservoir inundation area, an approximately 66 km all-season access road, a 66 km 69 kV transmission line, dam construction, and material quarrying. The magnitude of concern would be clarified through further opportunities for the public to provide comments on the Project.

Public engagement issues that could be addressed as the Project advances include:

- Integration of Inuit Qaujimajatuqangit (IQ) over the full lifecycle of the Project and all Project activities;
- Mitigation measures designed to reduce potential residual and cumulative effects on applicable Valued Ecosystem and Socio-Economic Components;
- The experience of community members who participate in traditional and non-traditional activities within, or in close proximity to, the Project area;
- Local Inuit employment, training, capacity building, and procurement opportunities during construction and long-term operations; and
- Regular, accessible updates to the affected communities regarding Project milestones, water management, and construction schedules.

CIRNAC 2: Eco-systemic and Socio-economic Effects

Given the extent of the Project's physical landscape transformation, including flooding over 7,000 hectares for reservoir creation, altering hydrological regimes, and introducing a 66 km linear infrastructure corridor, a technical evaluation would allow for fulsome assessment of potential adverse effects. However, CIRNAC defers to NIRB in exercising its discretion to determine whether a review or regulatory authorization processes are more appropriate to evaluate potential eco-systemic and socio-economic effects.

If NIRB determines a review is required, CIRNAC could recommend specific technical matters for evaluation in accordance with its mandate.

CIRNAC 3: Potential Adverse Effects and Mitigation Measures

CIRNAC is of the view that a hydroelectric project in the Arctic environment is not necessarily of a type where potential adverse effects are highly predictable. There are no comparable major hydroelectric developments in Nunavut that have undergone impact assessment and long-term operational monitoring under changing climatic and continuous permafrost conditions. While standard mitigation technologies exist for northern civil works, their efficacy in this specific hydrological and permafrost context requires detailed, site-specific evaluation.



CIRNAC 4: Potential for Positive Effects to Inuit through Employment, Training, and Procurement Opportunities

CIRNAC recognizes that the Proponent is a 100% majority-Inuit-owned entity aiming to deliver long-term clean energy to Iqaluit. To maximize positive local benefits, CIRNAC recommends the Proponent establish formal plans for prioritizing local Inuit employment, apprenticeship, skills development, and local business contracting throughout all project phases. Specific attention should be given to building long-term local capacity for ongoing facility operations, remote monitoring, and environmental stewardship.

CIRNAC 5: Dam Safety and Emergency Preparedness Framework

CIRNAC emphasizes that detailed dam breach modelling, inundation mapping, and comprehensive Dam Safety Management Plans must be fully developed and evaluated. Operational plans, including the Emergency Preparedness Plan and Emergency Response Plan, must clearly articulate downstream notification procedures and community safety measures. The Proponent should also refer to the [Canadian Dam Association's](#) Dam Safety Guidelines and relevant technical bulletins.

CIRNAC 6: Other Matters

CIRNAC's jurisdictional responsibility in relation to the Project currently includes Ministerial responsibilities for approval of the water licence and administration of Crown land. CIRNAC notes that these roles are subject to change, as certain federal responsibilities will transition to the Government of Nunavut on April 1, 2027 in accordance with the Nunavut Lands and Resources Devolution Agreement.

Fisheries and Oceans Canada (DFO)

Fisheries and Oceans Canada (DFO) is a federal department responsible for protecting Canada's three oceans and waterways ensuring they remain healthy for future generations and providing economic opportunities to Canadians and coastal communities. DFO's FFHPP administers and ensures compliance for development projects taking place in and around fish habitat under the fish and fish habitat protection provisions of the Fisheries Act and relevant provisions of the Species at Risk Act.

The fish and fish habitat protection provisions of the Fisheries Act include: a prohibition against causing the death of fish, by means other than fishing (section 34.4); a prohibition against causing the harmful alteration, disruption or destruction of fish habitat (section 35); a framework of considerations to guide the Minister's decision-making functions (section 34.1); and ministerial powers to ensure the free passage of fish or the protection of fish or fish habitat (section 34.3).

DFO is in the opinion that the proposed project is likely to raise significant public concern due to the possible impacts of the project on fish and fish habitat both in the Kuugaaluk River and downstream into Irvine Inlet and Cumberland Sound.

In addition, project related activities, including the development of the hydroelectric dam facility, upstream reservoir, and related infrastructure (e.g. roads with watercourse crossings) have the



potential to significantly disrupt flows in the Kuugaaluk River, resulting in potential impacts to fish and life processes (e.g. spawning, rearing, migration) and available fish habitat (e.g. access to overwintering habitat) in the area.

Specifically, flow and water levels changes may impact Arctic Char populations which depend on the Kuugaaluk River and contribute to the food web that supports other freshwater, anadromous, and marine species, including impact associated with the protected Cumberland Sound Beluga whale population. In addition, Arctic Char is an important subsistence and commercial resource for Inuit in this region, and any impact to the species may impact harvesters.

DFO is of the view that the proposed project requires an in-depth analysis under our mandate, specifically its potential impacts on fish and fish habitat. At this stage, the information provided (e.g. baseline data) is insufficient to properly evaluate the scale and duration of impacts to fish and fish habitat in the Kuugaaluk River and downstream.

DFO understands that the project proponent, Nunavut Nukiksautiit Corporation, is aware of their requirements to comply with the *Fisheries Act*, and is anticipating the submission of a Request for Review to DFO for this project at a later date to obtain the correct advice and authorizations for the proposed works. Appropriate baseline information will be critical for DFO to provide appropriate advice and mitigation measures to limit the impacts to fish and fish habitat and develop a comprehensive offsetting plan should compensation for project impacts be required.

Health Canada (HC)

Health Canada (HC) is the federal department responsible for helping Canadians maintain and improve their health. At the request of a Responsible Authority, Review Panel, or other jurisdiction conducting an environmental assessment, HC makes available specialist or expert information or knowledge in its possession on human health issues related to the potential environmental impacts of a proposed project.

HC has no regulatory responsibilities concerning this project and will not issue any approvals or make any regulatory decisions.

HC has reviewed the Project Proposal for Nunavut Nukiksautiit Corporation's "Iqaluit Nukiksautiit Project", which succinctly describes potential effects to human health. This includes potential effects from exposure to contaminants such as methylmercury, which is commonly associated with the inundation of reservoirs for hydro-electric projects. While HC cannot comment on the significance of project-related adverse impacts based on the information available, the potential for methylmercury exposure via country foods is often of interest to local communities and harvesters.

Within the scope of HC's mandate, and where appropriate to support the NIRB process, the department can provide technical expertise on contamination of country foods (also known as traditional foods), Human Health Risk Assessments (HHRA), and health effects related to air quality, noise, and drinking and recreational water quality.



Transport Canada (TC)

Transport Canada (TC) affirms that the proponent will need one or more regulatory approvals under the *Canadian Navigable Waters Act* (CNWA) for this project to proceed.

- The dam component of the hydroelectric station is considered a Major Work under the CNWA.
 - Regulatory approval for the hydroelectric station would cover project components in navigable waterways directly associated with the hydroelectric station.
 - The Navigation Protection Program (NPP) file number, 2025-615109, has been assigned to the hydroelectric station. NPP will commence a formal review once the proponent submits a formal application.
- Watercourse crossings on the access road and transmission line may require an application for approval or other appropriate submission under the CNWA.
 - The proponent will need to determine submission requirements for access road and transmission line crossings based on the navigability of the watercourse and the design of the crossing structure at each location.
 - More information than was provided in the Proposal would be required to make these determinations, including the physical characteristics of the watercourses, any past, current, or likely future use for navigation by vessel, and the design details of each crossing structure.
 - Each of these crossings would need to be considered individually and would have its own file number assigned.
 - Any components that qualify under the CNWA Minor Works Order will not require approval.

NPP's online Project Review Tool (<https://npp-submissions-demandes-ppn.tc.canada.ca/projectreview-outildexamenduprojet>) is available to assist interpretation of the CNWA (<https://laws-lois.justice.gc.ca/eng/acts/N-22/FullText.html>) and Minor Works Order (<https://laws-lois.justice.gc.ca/eng/regulations/sor-2021-170/FullText.html>).

Natural Resources Canada (NRCan)

NRCan notes that the Project includes a hydroelectric generating facility, transmission line and supporting infrastructure. Limited information on potential environmental effects and baseline is provided in the project proposal, and more information would be required to determine the potential for significant adverse environmental effects.

Within the context of NRCan's mandate, the following technical expertise would be provided if the NIRB refers the project for a Review as per the *Nunavut Project Planning and Assessment Act* (NuPPAA):

- Geochemical characterization
- Permafrost
- Natural hazards
- Explosives storage and manufacture.



NRCan may revise its technical expertise depending on additional information that may be relevant to the Project activities and could be provided as the Project moves forward.

NRCan's participation in the pre-screening and screening phases of the NIRB process

NRCan participated to the project technical workshop in April 2026 organized by the Northern Projects Management Office (NPMO) and provided expertise in permafrost and geochemical characterization.

NRCan reviewed the Iqaluit Nukkiqsautiit Hydroelectric Project Proposal (Dillon, August 2026) and is providing the following comments:

- **Geochemical characterization program** — Table 1 of the project proposal identifies metal leaching/acid rock drainage (ML/ARD) assessment as part of the geochemical studies planned for borrow and quarry material. Given the scale of rock excavation identified (over 200,000,000 m³ across four hard rock source areas) the project proposal should describe how the proponent intends to characterize the ML/ARD potential of these rock types and volumes, to support protection of water quality.
- **Road corridor material** — Section 4.5.4.2 of the project proposal identifies that road granular material will be sourced from borrow areas adjacent to the road alignment, separate from the dam-site quarry sources. The project proposal should clarify whether this road corridor material is also intended to be included in the ML/ARD characterization program.
- **Alternatives management** — The project proposal should describe how the proponent intends to manage excavated material should the ML/ARD characterization program identify parameters of concern for metal leaching or acid rock drainage.
- **Natural hazards** -The project is located in a region of low-moderate seismic activity and the proponent has indicated that the proponent intends to design the dam to the level of a 1 in 10,000 year seismic event in the Canadian Dam Association (CDA) Guidelines. In additions to the above, the Geological Survey of Canada of NRCan proposes the following suggestions:
 - include a short description of "Natural Hazards" (under *section 5*, Physical environment pg. 75) that could include seismic and landslide hazards
 - add a discussion of faults (Section 1.1.1 Table 1 under "Geotechnical Studies" pg. 7, there are many faults in the vicinity of the proposed dam site), which could also be included in Section 4.1.2 Geological Setting.
 - provide the codes and standards that will be used in the dam design.
 - 6.2 potential effects and mitigation (pg. 91) add "Seismic and landslide" here.
 - In 6.3.1 adaptive and iterative design approach (pg. 93), mitigation measures for the dam design could be included here (e.g., CDA Guidelines, National Building Code of Canada (NBCC 2025 or previous editions)



- **Permafrost** – NRCan’s comments on permafrost with respect to dam stability, foundation conditions, materials and geotechnical investigations were discussed at the Iqaluit Nukkiqsautiit Hydroelectric Project Workshop in April 2026.

NRCan notes that with respect to explosives storage and manufacturing, the *Explosives Act* and Regulations ensure the advancement of explosives safety and security technology. As a result, explosives storage and manufacturing are not expected to cause adverse effects and any potential effects are highly predictable and mitigable with known technology as per the *Explosives Act* and Regulations.

NRCan is responsible for administering the *Explosives Act*, Regulations, and pursuing the advancement of explosives safety and security technology. Our principal priority is the safety and security of the public and of all workers involved in the explosives industry in Canada. Through the Explosives Regulatory Division, NRCan provides services and support to the explosives industry, including manufacturers, importers, distributors, and users of explosives.

The manufacturing of explosives requires a licence issued by NRCan under the *Explosives Act*. That licence could include the storage of explosives.

NRCan may have a regulatory involvement in the project if an explosives storage licence or manufacturing license is required for the project. If such a licence is required, the Minister of Natural Resources would be considered a responsible Minister under NuPPAA for the screening phase and, if applicable, during subsequent review of the project.

Environment and Climate Change Canada (ECCC)

ECCC provides expert information and knowledge to project assessments on subjects within the department’s mandate and within federal jurisdiction, including greenhouse gas emissions and climate change, air quality, water quality and quantity, migratory birds, federally listed species at risk, environmental emergencies preparedness and response, and climate and meteorology. This work includes reviewing proponents’ characterization of environmental effects and proposed mitigation measures, and providing information and knowledge to decision-makers on activities needed to mitigate these environmental effects within federal jurisdiction. Any comments received from ECCC in this context do not relieve the developer of its obligations to respect all applicable federal legislation.

ECCC has identified the following items which fall within its mandate and areas of expertise that we feel would require further technical assessment, should a NIRB Review occur.

1. Surface water quality

Reference(s)

Project Proposal, Iqaluit Nukkiqsautiit Project (August 2026, NNC)

Comment



ECCC has reviewed the Project Proposal and has identified the following pathways associated with the proposed Project that may have the potential to negatively impact surface water quality:

- Changes to surface water quality within the reservoir and downstream of the dam due to water quality alterations from water impoundment and flooding of the surrounding tundra (e.g. mercury methylation, nutrients, dissolved oxygen, pH etc.)
- Runoff and leaching from use and management of nitrogen-based explosives have the potential to introduce nutrients into surface waters
- Sedimentation and erosion during construction of the all-season road, transmission line, and associated water crossings
- Potential impacts to water quality from metal leaching or acid rock drainage from quarried rock used during construction
- Leaks and spills of fuels and contaminants entering surface waters
- Wastewater and sewage releases to surface waters

ECCC recommendation(s)

ECCC recommends that the above items are included in any further technical assessment of potential effects to water quality and identification of potential mitigation measures.

2. Changes to surface water quantity affecting instream flows

Reference(s)

Project Proposal, Iqaluit Nukkiqsautiit Project (August 2026, NNC)

- Section 4.2.1. Water Supply
- Section 4.3 Water Availability
- Table 9 Estimated Mean Daily and Monthly Flow Volumes
- Section 5.1.4.1 Hydrology

Comment

Within ECCC's Meteorological Service of Canada (MSC), the National Hydrological Services (NHS) provides water quantity data to Canadians and delivers expert engineering and technical services to support key federal mandates in hydrology, hydraulics and water resources management. In partnership with the provinces and territories, the NHS is responsible for delivering the National Hydrometric Program, which involves monitoring water quantity and flow across Canada. Changes to surface water quantity have the potential to cause adverse effects on instream flows, water quality and fish habitat.

The dam is designed to impound water in the upstream headwaters of the Kuugaaluk River system. Downstream of the dam, the river will travel a considerable distance before emptying into Cumberland Sound. It is in this downstream distance where water quantity effects will be most greatly felt.

Historical flow records in the Kuugaaluk River near the Project site are sparse and annual average inflow is estimated from synthetic hydrologic records, with preliminary modelling indicating that flows exceed the estimated flow required for the 15MW operating case. Intake flows are based on a flow record synthesized from an index gauge: Iqaluit Kuunga (also known



as Sylvia Grinnell), presumed Water Survey of Canada (WSC) gauge 10UH001. For reference, the index gauge has a drainage area of 2,990 km² (the flows were synthesized for a drainage basin with 3,804 km²).

The Proponent states that a multi-year field program was initiated in 2024, continued in 2025 and is ongoing as additional monitoring is required to define long-term flow patterns, low flow conditions, and freshet dynamics. Monitoring flows have not been compared to synthetic hydrologic records for these years.

Preliminary Instream Flow Release (IFR) was assumed by the Proponent at approximately 10% of seasonal flows as an early design-capacity assumption, while the screen-level planning range is 1 to 4 m³/s carried as a planning assumption. Table 9 shows the estimated mean monthly flow. The assumed 10% would be zero from January to May, 11 m³/s in June, 20 m³/s in July, 9 m³/s in August, and 7 m³/s in September, with the June to September values substantially exceeding the screen-level planning range indicating that a higher IFR may be required during the peak flow period if the 10% assumption is applied. Conversely, assuming a minimum planning range of 1 m³/s from January to May would alter the natural winter flow regime, potentially affecting instream flow, water quality and fish habitat during the winter flow season.

ECCC's MSC-NHS notes that the Proponent has not provided details on inflow rates for initial reservoir-filling, and duration of reservoir-filling period (assumed by the Proponent to be within a year). The Proponent has not provided enough information on the magnitude of project effects on downstream flows during the reservoir-filling period and strategy to minimize effects on instream flows, water quality and fish habitat from changes to water quantity.

It is highly likely that there will be project-caused adverse effects due to changes to water quantity. Dam projects involve ground disturbance of large quantities of material and have the potential to alter the natural hydrological regime (Chien, 1985; Atieh *et al.* 2017, Sanyal *et al.* 2020; Huokuna, 2022). The magnitude of such effects depends greatly on the operational schedule of the dam and its releases.

ECCC recommendation(s)

For any further technical assessment, ECCC recommends the Proponent include detailed descriptions of:

- Its existing and proposed hydrometric and hydrometeorological field programs, including duration of monitoring, correlational studies with the index gauge, location of monitoring stations, etc.
- The existing hydrology, including the catchment area of both the index gauge (e.g., 10UH001 Iqaluit Kuunga) and the gauge point (e.g., the proposed reservoir outlet) should be explicitly defined, along with key hydroclimatic indicators (including, but not
 - limited to percentage of land covered by glaciers, land cover, rainfall, water yield, snowpack, aridity index)
- The methodology to estimate baseline and project affected flows, including data processing, key assumptions, techniques for prediction in ungauged basins and gap filling



- A comparison between observed flows and synthetic flow records, including performance metrics, to demonstrate the suitability of the proposed method to quantify baseline flows and potential changes to flows in the Kuugaaluk River
- The proposed operational approach, particularly with regard to instream flow releases (i.e., environmental flows), reconciling assumptions for IFR and working range
- The proposed strategy for initial reservoir-filling
- The proposed monitoring and adaptive management plan, especially considering the large amount of uncertainty in the hydrologic regime in this data-sparse region
- How climate change will affect the hydrological regime and how the generating facility's operational approach will adapt to respond to these effects

ECCC notes that hydrology within the watershed in Northern Canada may be heavily affected by blowing snow and sublimation, which may complicate the transferability of the index gauge to the study area. See the relevant literature for more information on the selection of the appropriate index gauge (Archfield and Vogel 2010; Patil and Stieglitz, 2012; Farmer and Vogel, 2013). Publicly available data in this region is sparse, and there are known issues with snow precipitation measurement in the north (Woo *et al.* 1983; Goodison *et al.* 1998; Pomeroy and MacDonald 2007; Durat *et al.* 2026 preprint). For any further technical assessment, the Proponent should describe how these uncertainties have been managed.

Further references:

Archfield, S. A., & Vogel, R. M. (2010). Map correlation method: Selection of a reference stream gauge to estimate daily streamflow at ungauged catchments. *Water Resources Research*, 46(10), W10513. <https://doi.org/10.1029/2009WR008481>

Atieh, M., Taylor, G., Sattar, A. M. A., & Gharabaghi, B. (2017). Prediction of flow duration curves for ungauged basins. *Journal of Hydrology*, 545, 383-394. <https://doi.org/10.1016/j.jhydrol.2016.12.030>

Chien, N. (1985). Changes in river regime after the construction of upstream reservoirs. *Earth Surface Processes and Landforms*, 10(2), 143-159.

Durat, J., Thompson, H. D., Thériault, J. M., & Marsh, P. (2026). Proposed improvement of the detection and measurements of light precipitation in the Canadian Arctic. *EGUsphere* [preprint]. <https://doi.org/10.5194/egusphere-2025-5195>

Farmer, W. H., & Vogel, R. M. (2013). Performance-weighted methods for estimating monthly streamflow at ungauged sites. *Journal of Hydrology*, 477, 240-250. <https://doi.org/10.1016/j.jhydrol.2012.11.032>

Goodison, B. E., Louie, P. Y. T., & Yang, D. (1998). WMO Solid Precipitation Measurement Intercomparison: Final Report. Instruments and Observing Methods Report No. 67, WMO/TD No. 872. Geneva, Switzerland: World Meteorological Organization.

Huokuna, M., Morris, M., Beltaos, S., & Burrell, B. C. (2022). Ice in reservoirs and regulated rivers. *International Journal of River Basin Management*, 20(1), 1-16. <https://doi.org/10.1080/15715124.2020.1719120>



MacDonald, J.P., & Pomeroy, J. W. (2008). Gauge Undercatch of Two Common Snowfall Gauges in a Prairie Environment. *Proceedings of the 64th Eastern Snow Conference*, 64: 119-126.

Patil, S., & Stieglitz, M. (2012). Controls on hydrologic similarity: Role of nearby gauged catchments for prediction at an ungauged catchment. *Hydrology and Earth System Sciences*, 16(2), 551-562. <https://doi.org/10.5194/hess-16-551-2012>

Sanyal, J., Lauer, J. W., & Kanae, S. 2020. Examining the downstream geomorphic impact of a large dam under climate change. *Catena*, 196, 104850. <https://doi.org/10.1016/j.catena.2020.104850>

Woo, M.-K., Heron, R., Marsh, P., & Steer, P. (1983). Comparison of weather station snowfall with winter snow accumulation in high Arctic basins. *Atmosphere-Ocean*, 21(3), 312-325. <https://doi.org/10.1080/07055900.1983.9649171>

3. Migratory bird and species at risk baseline information

Reference(s)

Project Proposal, Iqaluit Nukkiqsautiit Project (August 2026, NNC)

- Section 5.2.3 Wildlife

- Section 6.1 Valued Ecosystem and Socio-Economic Components

Comment

Migratory birds have been identified as a proposed Wildlife Valued Ecosystem Component (VEC); however, the Project Proposal contains limited information regarding migratory bird species composition, seasonal occurrence, habitat use, or abundance within the Project Area. The proposal acknowledges that wildlife surveys were conducted during late summer 2026 and that survey timing limited the detectability of migratory birds. Future migratory bird surveys are proposed; however, no information is provided on the timing or types of surveys planned for migratory birds in future field seasons. No inventory of migratory bird species, including federally listed migratory bird Species at Risk (SAR), is provided.

As indicated in the proposal, the information provided is to inform baseline data needs and future assessment considerations rather than to predict effects. Currently, there is insufficient information regarding migratory birds, federal SAR, including migratory bird SAR, and their habitats to evaluate potential project effects.

ECCC recommendation(s)

For any further technical assessment, ECCC recommends the Proponent provide additional information to better understand the potential impacts and mitigation measures for migratory birds, federal SAR, including migratory bird SAR, and their habitats. Should the project proceed to a NIRB Review, more information regarding reservoir filling, transmission lines, and baseline information would help reviewers assess the risks and mitigation adequacy of avoiding and minimizing impacts to migratory birds, federal SAR, including migratory birds, and their habitats.



ECCC recommends the proponent develop plans to mitigate impacts, following the mitigation hierarchy, and manage risks to migratory birds, federal SAR, including migratory bird SAR, and their habitats.

Additional information should be provided regarding migratory bird baseline studies, including:

- Boundaries for the migratory bird VEC Local Study Area (LSA) and Regional Study Area (RSA), including rationale (see item 2 in E000's comments on the Iqaluit Nukkiqsautiit Project Terrestrial Field Program; attached and sent to NNC by email July 3, 2026)
- Migratory bird species known or expected to occur within the LSA and RSA;
- Migratory bird SAR known or expected to occur within the Project area;
- Survey methods, timing, geographic coverage, and target species groups (see item 4 in E000's comments on the Iqaluit Nukkiqsautiit Project Terrestrial Field Program)
- Breeding, nesting, staging, moulting, and migration habitat characterization; and
- How baseline information will be sufficient to support future assessment of Project-related effects on migratory birds, including migratory bird SAR and their habitats.

4. Pathways of Effects for migratory birds – reservoir filling and transmission lines

Reference

Project Proposal, Iqaluit Nukkiqsautiit Project (August 2026, NNC)
- Section 6.4.1 Assessment Focus and Pathways

Comment

Pathways of Effects are not identified for migratory birds for the reservoir filling or for the presence of transmission lines. The proposed reservoir would inundate approximately 7,136 ha of terrestrial and freshwater habitat. The Project Proposal describes the presence of tundra, wetlands, riparian habitats, lakes, rivers, graminoid tundra, and shrub habitats that may support migratory birds; however, the proposal does not quantify the amount or type of migratory bird habitat that would be permanently lost or altered by reservoir creation and operation.

The Project Proposal includes the construction and operation of an approximately 66 km overhead transmission line. The Project Proposal does not assess the potential for migratory bird mortality, injury, or disturbance associated with transmission infrastructure, including collision risks and interactions with bird movement and migration corridors.

ECCC recommendation(s)

For any further technical assessment, ECCC recommends the Proponent describe effects pathways for the reservoir filling, which should include relevant habitat types for migratory birds, such as:

- Wetlands;
- Riparian habitats;
- Nesting habitat;
- Brood-rearing habitat;



- Moulting habitat;
- Staging habitat; and
- Habitat that may support migratory bird Species at Risk.

Effects pathways for the transmission line should also be included in any further technical assessment. The assessment of potential effects on migratory birds should include, but is not limited to:

- Collision risk;
- Potential effects on movement and migration pathways;
- Potential effects on various migratory bird types (e.g., waterfowl, shorebirds, passerines, etc.)
- Identification of sensitive areas; and
- Proposed mitigation, following the mitigation hierarchy, and monitoring measures.

5. Migratory bird Species at Risk

Reference(s)

Project Proposal, Iqaluit Nukkiksautiit Project (August 2026, NNC)
- Section 5.2.3.3 Species at Risk

Comment

The Project Proposal does not identify any migratory bird Species at Risk, which are also protected under the *Migratory Birds Convention Act*, that are known or expected to occur within the Project Area.

ECCC recommendation(s)

For any further technical assessment, ECCC recommends the Proponent include effects and mitigation measures, following the mitigation hierarchy for the following migratory bird species at risk:

- Buff-breasted Sandpiper (Special Concern);
- Harlequin Duck (Special Concern);
- Ivory Gull (Endangered);
- Red Knot *rufa* subspecies (Endangered); and
- Red-necked Phalarope (Special Concern)

6. Timing of project activities relative to migratory bird nesting period

Reference(s)

Project Proposal, Iqaluit Nukkiksautiit Project (August 2026, NNC)
- Section 6.2 Potential Effects and Mitigation

Comment(s)

Construction-timing restrictions are identified as a method to reduce disturbance to wildlife and habitat. The Project Proposal indicates that construction activities may include clearing, grading, quarrying, road construction, transmission line construction, blasting, and camp development.



No specific information is provided regarding seasonal timing restrictions for construction or operations activities to avoid disturbance or destruction of active migratory bird nests or impacts to migrating birds. The project would be located in Zone N10, with a general nesting season from late May to mid-August. Birds may be migrating in this area from late May to October. 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 nesting and migration periods may vary from year to year due to seasonal 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 nest occupancy may only be appropriate when all these conditions are met:

- Conducted by skilled and experienced observers;
- Using appropriate methodology;
- Only a few nesting spots or a small community of migratory birds is 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, human-made structures, and other sites, and that nest sites are often cryptic or camouflaged, making them difficult to locate.

ECCC recommendation(s)

ECCC advises the Proponent that activities that may impact migratory birds, their nests, or their habitats should be avoided during the general nesting period (late May to mid-August) and migration periods (late May to October). Consider options such as avoiding, adapting, rescheduling or relocating activities. If a nest containing a migratory bird or egg is discovered/disturbed:

- 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 [ECCC's Guidelines to Avoid Harm to Migratory Birds](#).



7. Contamination of water bodies used by migratory birds

Reference(s)

Project Proposal, Iqaluit Nukkiqsautiit Project (August 2026, NNC)
- Section 6.6.3 Spill Prevention and Response

Comment

The Proponent indicates that fuel and/or other hazardous materials may be stored, handled or transported near a water body that may be used by migratory birds. Additionally, the nature of the proposed activities (e.g., machinery and equipment use) being conducted in and near a water body that may be used by migratory birds increases the risk of accidental release of hazardous materials. ECCC advises the Proponent that Section 5.1(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)

Plans related to the using, storing, handling, and transporting of petroleum products and other hazardous substances should be developed and communicated to staff and contractors, and all necessary precautions should be taken to prevent spills and accidental releases into waters or areas frequented by migratory birds.

8. Nature of “major maintenance waste”

Reference(s)

Project Proposal, Iqaluit Nukkiqsautiit Project (August 2026, NNC)
- Table 13 Screening-Level Construction and Operations Waste Estimates

Comment

One of the Project’s waste streams, applicable only during the operations phase, is listed in Table 13 as “major maintenance waste”, with an estimated quantity of “Approximately 10 - 50 t of solids and 10,000 - 25,000 L of liquids per major event”. The nature of this waste (i.e., whether it would be considered hazardous or non-hazardous), anticipated frequency of generation (e.g., produced annually, every 10 years, etc.), and details of storage (e.g., covered storage, secondary containment required, etc.) are not currently provided in the table. It is also unclear how items in this waste stream would differ from those in the other waste streams.

ECCC recommendation(s)

ECCC recommends the Proponent include, in any further technical assessment, additional details regarding the hazardous or non-hazardous nature of the waste, frequency that it would be generated, and how it would be stored prior to disposal, including details to differentiate “major maintenance waste” from the other waste streams listed in Table 13.



9. Recommended setback distances for fuel storage and refueling, and additional best-practices

Reference(s)

Project Proposal, Iqaluit Nukkiksautiit Project (August 2026, NNC)

- Section 4.5.5.3 Fuel Source, Storage, and Containment
- Section 6.6 Fuel and Hazardous Materials Management

Comment

Sections 4.5.5.3 and 6.6 state that fuel and hazardous materials will be stored and dispensed “away from waterbodies” to the extent practicable. Because a specific setback distance has not been specified, ECCC is not able to assess the effectiveness of the setback for preventing spills from reaching waterbodies.

ECCC recommendation(s)

ECCC recommends that fuel storage and dispensing occur greater than 31 m from waterbodies in alignment with best practices in Nunavut. Since many of the elements of the construction and operation of this project will take place in close proximity to water, ECCC recommends that the Proponent consider implementing in their Spill Prevention and Response Plan and/or Fuel Management Plan, the following additional measures to reduce the potential for fuels and hazardous substances from reaching waterbodies:

- Spills during fuel transfer
 - Use fuel nozzles equipped with automatic shutoffs
 - Station operators at both ends of hoses during refueling operations, unless both ends of the hose are visible and readily accessible by one operator
 - Discharge all fuel remaining in hoses into equipment or return it to the storage container
 - Use drip trays or absorbent mats that prevent drips when refueling vehicles or equipment in an area that does not have secondary containment
 - Provide adequate lighting at refueling areas
- Spills from equipment
 - Use secondary containment for any stationary equipment with a built-in fuel tank
 - Use biodegradable hydraulic oil (when appropriate) for equipment that is working near or in water
 - Park vehicles and equipment at least 31 m from the normal high-water mark of any water body when they are not in use (i.e., idling or parked for greater than two hours)
 - Use spill mats, drip pans, or drip trays under all equipment that is not in use
 - Conduct regular inspections and maintenance of all vehicles and equipment

10. Assessment of risk from accidents and malfunctions

Reference(s)

Project Proposal, Iqaluit Nukkiksautiit Project (August 2026, NNC)

- Section 6.5 Accidents and Malfunctions



Comment

The Proposal specifies that “A *Project-wide Emergency Response and Accident Risk Plan will identify credible accident scenarios, evaluate potential consequences and establish prevention, preparedness, communication, evacuation, notification, response and recovery procedures. A construction-phase version will be completed before major construction mobilization and updated before operations*”. Although the Plan described by the Proponent details important information and would be a useful addition to the suite of plans developed for the Project, a thorough risk assessment for accidents and malfunctions should be conducted.

ECCC recommendation(s)

For any further technical assessment, ECCC recommends that the Proponent conduct a thorough risk assessment for accidents and malfunctions. This analysis should include, but is not limited to:

- A description of the plausible worst-case accident and malfunction scenarios as well as the more likely but lower consequence alternative scenarios, for all phases of the Project
- Assessment of risk (considering probability of occurrence and severity of consequences)
- Determination of mitigation measures to reduce the risk
- Calculation of residual risk (risk remaining after application of mitigation measures)

11. Assessment of effects of the environment on the Project

Reference(s)

Project Proposal, Iqaluit Nukkiksautiit Project (August 2026, NNC)
- Section 5.1.1 Climate and Permafrost

Comment

The proposal currently provides a high-level overview of climate and permafrost conditions but does not make a strong link between how they may impact the construction and operation of the Project, or how they may interact with the Project and create risk of impacts to valued components. An understanding of the risks associated with environmental effects on, and interactions with, the Project is important to support informed decision-making during the impact review process. This assessment is especially important for this Project because it is being developed in an isolated area of the Arctic with extreme climate conditions (e.g., temperature and precipitation) and is intended to operate over a long time period, during which permafrost conditions are projected to change, leading to a changing risk profile over the life of the Project.

ECCC recommendation(s)

For any further technical assessment, ECCC recommends the Proponent develop a thorough analysis considering the effects of the environment on the Project over the projected life of the Project (i.e., incorporating projections of future climatic conditions), the pathways of effects, the resulting risk, and any mitigation measures that will be implemented to reduce the risk.



12. Climate change resilience

Reference(s)

Project Proposal, Iqaluit Nukkiqsautiit Project (August 2026, NNC)

- Section 5.1.1 Climate and Permafrost
- Section 4.7.6 Closure Planning
- Section 6.4.2 Climate change and Adaptive Management

Comment

In various sections of the Project Proposal, the Proponent indicates that understanding potential interactions between the Project, climate change and permafrost are key issues for planning and design of the proposed Project. They indicate that future work will be undertaken to study these issues and inform planning, design, adaptive management and closure plans.

ECCC recommendation(s)

ECCC recommends that the Proponent consult the [“Draft technical guide related to the Strategic Assessment of Climate Change: Assessing climate change resilience”](#). This draft guidance document (published in March 2022 in support of the [Strategic Assessment of Climate Change](#)) provides useful guidance on how to consider a project’s resilience to climate change over its lifetime.

13. Climate change and greenhouse gas emissions

Reference(s)

Project Proposal, Iqaluit Nukkiqsautiit Project (August 2026, NNC)

- Section 6.8 Air Quality and Greenhouse Gases

Comment

The Proponent states that “quantitative estimates of diesel displacement and associated greenhouse gas reductions will be confirmed through detailed operational modelling and will be reported in subsequent regulatory submissions as project design advances.” To assist the Proponent in this quantitative estimate, the Proponent can refer to the [Strategic Assessment of Climate Change](#) (SACC) and the associated Technical Guides.

ECCC recommendation(s)

For any further technical assessment, ECCC recommends the Proponent consider the impact of the Project on federal and territorial (as available) emissions reduction efforts and on global greenhouse gas (GHG) emissions. To assist in this comparison, ECCC recommends the Proponent include an estimate of the annual emissions from the Project’s construction, operations, and decommissioning. ECCC recommends the Proponent include the GHG emissions from the land use change impacts of the Project and evaluate the impact on carbon sinks.



ECCC also recommends, for any future technical assessment, that the Proponent consider potential GHG mitigation measures for the Project and outline a plan to achieve net-zero by 2050, as described in the SACC and the Technical Guides.

14. Air Quality

Reference(s)

Project Proposal, Iqaluit Nukkiksautiit Project (August 2026, NNC)

- Section 1.1.1, Table 1. Summary of Status of Information Collected
- Section 4.5.2 Major Equipment

Comment

ECCC may provide more comments on potential effects to air quality and identification of potential mitigation measures should further details become available. ECCC noted the following items in our review of the Project Proposal:

- Table 1 and other references to the all-season road do not specify whether the road will be paved or gravel. For the latter case, dust control mitigation measures will need to be specified.
- Section 4.5.2 mentions that the detailed screening-level equipment inventory, including approximate quantities, principal purpose, expected duration of use and mobilization method, is provided in Appendix C (Major Equipment and Mobilization Estimate); however, Appendix C appears to be unavailable.

ECCC recommendation(s)

For any further technical assessment, ECCC recommends the Proponent include information on the road surface type, dust control mitigation measures, and equipment inventory.

Attachment:

20260629 NNC-Iqaluit Nukkiksautiit Project-Terrestrial Workplan-ECCC comments.pdf

Environmental Protection Operations Directorate
Prairie & Northern Region
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June 29, 2026

via email at: jbyrne@qcorp.ca

Jill Byrne
Project Manager
Nunavut Nukkiqsautiit Corporation
200 – 5300 Qulliq Court
Iqaluit, NU X0A 2H0

Dear Jill Byrne:

RE: Nunavut Nukkiqsautiit Corporation - Iqaluit Nukkiqsautiit Project Terrestrial Field Program - ECCC Comments

Environment and Climate Change Canada (ECCC) has reviewed the information provided by Nunavut Nukkiqsautiit Corporation ("the Proponent") regarding the above-mentioned baseline study work plan.

ECCC provides expert information and knowledge to project assessments on subjects within the department's mandate and within federal jurisdiction, including greenhouse gas emissions and climate change, air quality, water quality and quantity, migratory birds, species at risk, environmental emergencies preparedness and response, and climate and meteorology. This work includes reviewing proponents' characterization of environmental effects and proposed mitigation measures, and providing information and knowledge to decision-makers on activities needed to mitigate these environmental effects within federal jurisdiction. 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. Information on migratory birds and Species at Risk (SAR)

Reference:

Iqaluit Nukkiksautiit Project Terrestrial Field Program

- Section 1.1.2 Regional Study Area, pp. 3-4

Comment:

The workplan indicates that assessment within the Regional Study Area (RSA) will be conducted by desktop review and lists multiple data sources to inform the review. Crowd-sourced databases such as eBird could also be used during desktop studies to provide information on migratory birds and species at risk present in the project area, and spring and fall migration sightings.

Recommendation:

ECCC recommends the Proponent consider eBird as an additional source of information on migratory birds and species at risk in the project area.

2. Geographic coverage of surveys to assess project-related effects on migratory birds

Reference:

Iqaluit Nukkiksautiit Project Terrestrial Field Program

- Section 1.1 Study Area, p. 1
 - Section 1.1.1 Local Study Area, pp. 1-2
 - Section 1.1.2 Regional Study Area, pp. 3-4

Comment:

It is unclear if the Local Study Area (LSA) and RSA are sized appropriately to adequately assess the different types of migratory birds that may be found in the project area. The study area map (Figure 1-1) indicates the extent of the LSA, however further information on the size of the LSA and rationale for the size should be provided. The LSA may be sufficient to assess project-related effects on passerines (e.g., song or perching birds); however, the current size of the LSA is insufficient to assess project-related effects on all migratory birds. For example, shorebirds, gulls, and waterfowl, which are known to occur in the project area, exhibit flushing and disturbance behaviours at a distance of 1 km.

The RSA is described as encompassing the Hall Peninsula, but it is not shown on a map, so the full extent is unclear. To assess project-related effects on migratory birds, the RSA should be a minimum of 20 km beyond the LSA. The workplan indicates that a desktop study will be used to assess the RSA in 2026; it is unclear if there will be field surveys conducted in the RSA in 2027 based on the findings of the desktop study.

Recommendation:

ECCC recommends the Proponent clarify the following:

- a) the migratory bird groups to be assessed within the LSA and RSA;
- b) the size of the LSA to be surveyed in 2026;

- c) the size of the RSA being considered for the desktop review; and
- d) if there will be a 2027 field survey program within the RSA, based on the results of the desktop study.

3. Survey scope and data collection considerations

Reference:

Iqaluit Nukkiksautiit Project Terrestrial Field Program
 - 4.3. Wildlife Surveys pp. 9-10

Comment:

In Section 4.3, the Proponent refers to identification of key wildlife habitats, including “staging areas”. It is unclear if “staging areas” refers only to caribou, or also to migratory birds. Key wildlife habitats in the project area are missing for migratory birds, including migratory bird species at risk; they should include habitats such as wetlands, rivers, lakes, and a minimum 1 km buffer. It is unclear what geographic scale is associated with the consideration of “migratory patterns associated with corridors/routes”, and whether these extend beyond the LSA or the desktop RSA.

Recommendation:

ECCC recommends the Proponent:

- a) confirm if “staging areas” include areas used by migratory birds;
- b) include key wildlife habitats for migratory birds; and
- c) provide the scale at which migratory patterns associated with corridors/routes are being considered.

4. Survey timing and methods for assessing project-related effects on migratory birds

Reference:

Iqaluit Nukkiksautiit Project Terrestrial Field Program
 - Section 4. Field Methods

- Table 4-1 Terrestrial Field Survey Schedule, p. 7
- Section 4.3.2 Waterbird Surveys, p. 11
- Section 4.3.3 Standwatches, p. 11
- Section 4.3.4 Wildlife Transects, pp. 11-12

Comment:

Survey methods and timing of waterbird surveys, standwatches, and wildlife transects do not appear suitable to assess project-related effects to migratory birds. The dates provided in Table 4-1 for “Waterbird Surveys, Standwatches, and Wildlife Transects” (July 21 to 28 and August 10 to 17) are too late to capture the presence of breeding

waterbirds, particularly shorebirds. Breeding bird surveys in the project area should be conducted between mid-June and mid-July to capture nesting presence. Spring migration arrival surveys should be conducted from the end of May to mid-June.

Aerial surveys proposed for waterbirds are not suitable for shorebirds. The proposed timing of the aerial surveys is too late in the season to target most species of breeding migratory waterbirds (e.g., sea ducks, gulls, shorebirds). The timing of these surveys also does not consider the spring migration period.

Standwatch surveys are planned too late in the season, they are unlikely to be representative of all breeding bird species, and they should be augmented with area search methods (e.g., Arctic Program for Regional and International Shorebird Monitoring (PRISM) or other plot-based methods). Arctic PRISM is a suitable survey method for all non-colonial migratory bird species in the project area. Autonomous Recording Unit (ARU) deployment at standwatch locations should be considered, provided those locations are in suitable migratory bird habitat.

Recommendation:

ECCC recommends the Proponent:

- a) confirm the target Valued Components (VCs) for migratory bird surveys (i.e., are the migratory bird surveys meant to target only “waterbirds” or all “breeding birds”?);
- b) confirm what groups of migratory birds are considered “waterbirds”;
- c) confirm the survey type proposed for each target VC/migratory bird grouping;
- d) confirm the habitat type of the standwatch locations;
- e) consider the placement of ARUs in suitable standwatch locations;
- f) confirm if area search methods are planned to provide baseline information for migratory birds; and
- g) confirm if there are considerations to conduct Arctic PRISM surveys in the project area to provide baseline information on migratory birds.

If you need more information, please contact Erik Allen at Erik.Allen@ec.gc.ca.

Sincerely,

Erik Allen
Senior Environmental Assessment Officer

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