



Baffinland Iron Mines Corporation's Mary River Project, 'Phase 2 Development'

**Presentation to the
Nunavut Water Board**
Technical Session
Iqaluit, NU
November 12, 2021



Overview

1. Fisheries and Oceans Canada (DFO) – Fish and Fish Habitat Protection Program (FFHPP) Legislation and Policy
2. NWB Technical Comments & Recommendations
 - a) Resolved issues
 - b) Outstanding issues
3. Conclusions
4. Questions and Comments

FFHPP – Legislation

- **The new *Fisheries Act* (2019):** As of **August 28th, 2019**, new Fish and Fish Habitat Protection Provisions (FFHPP) of the *Fisheries Act* came into force:
 - Section 34.4(1)
 - prohibits the carrying on of any work, undertaking or activity, other than fishing, that results in the death of fish
 - Sections 35(1)
 - prohibits the harmful alteration, disruption or destruction of fish habitat.

FFHPP – Legislation

- **Species at Risk Act**
 - Sections 32, 33, 58
 - Prohibits killing, harming, harassing, capturing or taking of listed species, destruction of residence, critical habitat
- **Nunavut Land Claims Agreement (Article 12)**

FFHPP – Policy

Fish and Fish Habitat Protection Program Policy Statement (2019)

- Guidance on undertaking effective measures to offset death of fish and the harmful alteration, disruption or destruction of fish habitat.

Policy for Applying Measures and Standards to Offset Impacts to Fish and Fish Habitat Under the Fisheries Act (2019)

- Guidance on how to apply measures and standards to offset for impacts to fish and fish habitat.

NWB Technical Comments & Recommendations

Fisheries and Oceans Canada's (DFO) comments are focused on freshwater water withdrawals and the freshwater impacts of the proposed railway.

DFO has reviewed the updated application submitted by Baffinland on September 17, 2021, as well as BIM's "Partial Responses to October 2021 Technical Comments".

Watercourse Crossings

Resolved issues

- 3.1.1** DFO recommends Baffinland provide rationale for the selection of crossing infrastructure for fish bearing watercourses. DFO notes this can be provided to DFO as part of the Proponent's 'DFO Request for Review' submission and/or Application for *Fisheries Act* authorization, during DFO's regulatory phase. → **Resolved**
- 3.1.2** DFO reiterates the recommendation that Baffinland provide the full scope and visual of catchment areas associated with fish-bearing water crossings. → **Resolved**

Watercourse Crossings

Resolved issues

- 3.1.3** DFO recommends the Proponent provides maps for the entirety of the road and label all crossings, which includes the locations of proposed changes to existing Tote Road crossings (as currently provided) and the locations for crossings that are expected to remain as they are. → **Resolved**

Watercourse Crossings

Resolved issues

- 3.2.1** DFO recommends that Baffinland clarify when they will provide updated hydrological modelling. → **Resolved**
- 3.2.2** DFO recommends that Baffinland provide the flow volumes referenced as section 7.1.5.3 on page 23, in section 7.2.1.5 of attachment 7.2 of the updated application: North Railway Design Criteria, or provide the appropriate reference. → **Resolved**
- 3.2.3** DFO recommends Baffinland clarify which flood return period is intended for use for the hydrologic analysis. → **Resolved**

Watercourse Crossings

Resolved issues

- 3.2.5** DFO recommends the Proponent clarify the intent of the statement: “mitigation measures, specific to bridges along the rail corridor, will be applied if flow velocities are found to restrict fish passage”, and respond with clarification why the proposed bridges will not incorporate appropriate fish passages in the initial design. → **Resolved**

Water Withdrawal

Resolved issues

- 3.3.4** DFO further recommends Baffinland provide additional rational/ assessment to support the assertion that 40% of the 10-year dry unit runoff water withdrawal from non-fish-bearing streams will not negatively affect downstream fish-bearing waterbodies. DFO notes this information can be provided as part of the Proponent's 'DFO Request for Review' submission and/or Application for *Fisheries Act* authorization, during DFO's regulatory phase. → **Resolved**

Blasting

Resolved issues

3.4.1 DFO recommends that Baffinland revise their instantaneous pressure threshold limit of 100 kPa to 50 kPa when calculating setback distances and update their conclusions as necessary. → **Resolved**

Watercourse Crossings

Outstanding issues

- 3.2.4** DFO recommends Baffinland provide further information in regard to the potential cumulative impacts of all crossings on flow and fish passage (short-term and permanent; Tote Road, North Rail and Temporary Access Roads), including clear identification of crossings that occur on the same waterbody.

Watercourse Crossings

Outstanding issues

DFO remains concerned about potential cumulative impacts of crossings on the Tote Road and the proposed Northern Railway:

- additional crossings proposed for Tote Road realignment
- chronic fish passage issues associated with the Tote Road crossings
- proposed railway crossings within 20 m of Tote Road crossings



Photo Credit: DFO

Watercourse Crossings

Outstanding issues

- 3.2.4.1** DFO recommends Baffinland submit an application to DFO for any new crossings or modifications to existing crossings for the Tote Road to ensure there are no residual impacts to fish and fish habitat.
- 3.2.4.2** DFO recommends remediation of Tote Road crossings be completed prior to completion of the proposed Northern Railway.

Watercourse Crossings

Outstanding issues

- 3.2.4.3** DFO recommends that culverts proposed for the Northern Railway within 20 m of Tote Road culvert crossings be modified to bridges or open-bottom structures, or that additional mitigation and contingency measures be provided to ensure cumulative impacts are avoided, mitigated, and offset, where required.
- 3.2.4.4** DFO recommends the AEMP be reviewed and ensure cumulative effects monitoring is included in the AEMP.

Watercourse Crossings

Outstanding issues

- 3.2.4.5** DFO recommends that Baffinland analyze monitoring reports related to the Tote Road existing watercourses crossings and provide a comprehensive report on “lessons learned” for the Tote Road that would include strategic analysis of what will be done differently to ensure the fish-passage issues will be avoided, mitigated and addressed for the Northern Railway.

Watercourse Crossings

Outstanding issues

DFO remains concerned about fish passage for the Northern Railway.

- 3.2.6** DFO recommends Baffinland annually monitor crossings identified as high-risk for fish passage issues to proactively identify and remediate fish-passage issues.

Water Withdrawal

Outstanding issues

- 3.3.1** DFO recommends Baffinland provide a detailed water withdrawal plan, which can be provided to DFO as part of the Proponent's 'DFO Request for Review' submission and/or Application for *Fisheries Act* authorization, during DFO's regulatory phase.

Water Withdrawal

Outstanding issues

DFO remains concerned about water withdrawal activities for the Phase 2 Development Proposal.

3.3.1.1 DFO recommends Baffinland provide additional details on site-specific characteristics for water withdrawal sites, including shallow water areas that may be affected during drawdown.

3.3.1.2 DFO recommends Baffinland follow DFO's *'Interim code of practice: End-of-pipe fish protection screens for small water intakes in freshwater'* and provide details to DFO in a Request for Review in the event this code of practice cannot be followed.

Water Withdrawal

Outstanding issues

- 3.3.2** DFO recommends Baffinland support and clarify their statement that site-specific conditions would indicate that water withdrawal in fish bearing waters in excess of the 10% guidelines would not have significant impacts to fish habitat.
- 3.3.2.1** DFO recommends that Baffinland provide an analysis on the proposed threshold of 10% of the 10-year annual low flow volume would not impact fish habitat in Camp Lake.
- 3.3.2.2** DFO additionally recommends that Baffinland follow the '*DFO Protocol for Winter Water Withdrawal from Ice-covered Waterbodies in the Northwest Territories and Nunavut*' for any winter water withdrawals in fish-bearing waterbodies.

Water Withdrawal

Outstanding issues

- 3.3.3** DFO recommends Baffinland conduct a thorough localized assessments on the waterbodies selected for water withdrawal in order to adequately assess the potential impacts on the fish habitat resulting from 20% of the 10-year dry unit runoff water withdrawal on fish-bearing watercourses and connecting waterbodies. [...] DFO notes this information can be provided as part of the Proponent's 'DFO Request for Review' submission and/or Application for *Fisheries Act* authorization, during DFO's regulatory phase.

Water Withdrawal

Outstanding issues

- 3.3.3.1** DFO recommends Baffinland provide a comprehensive list of all water-withdrawal sites for all activities in summer and winter.
- 3.3.3.2** DFO requests clarification on how Qualified Professionals will determine safe water withdrawal rates for fish, and when these activities will be conducted relative to biologically significant periods for fish.

Water Withdrawal

Outstanding issues

- 3.3.3.3** DFO recommends Baffinland develop a management plan to respond to potential impacts from water withdrawals during low water periods, including the management of stranding fish such as occurring at Site BG32.
- 3.3.3.4** DFO recommends Baffinland provide a monitoring plan for daily water withdrawals to track near real-time water use, and monitor changes in flow to identify a decrease of 10% of instantaneous flow at the withdrawal site or downstream withdrawal sites.
- 3.3.3.5** DFO recommends that Baffinland submit Requests for Review and fish and fish habitat information for any waterbodies and watercourses where DFO's guidelines on water withdrawals cannot be met.

Conclusion

If the Phase 2 Development Proposal is approved, Baffinland will be required to submit a Request for Review for any water withdrawal activities where DFO's guidelines cannot be followed.

Baffinland will also be required to submit an application to DFO for any works in or near water associated with Tote Road modifications or construction of the Northern Railway.

Conclusion

DFO will continue to work with Baffinland, stakeholders, and impacted communities, to ensure impacts related to fish and fish habitat arising from maintenance and modifications to the Tote Road, construction and maintenance of the Northern Railway, and water withdrawal activities are effectively avoided, mitigated, monitored and offset, where required.

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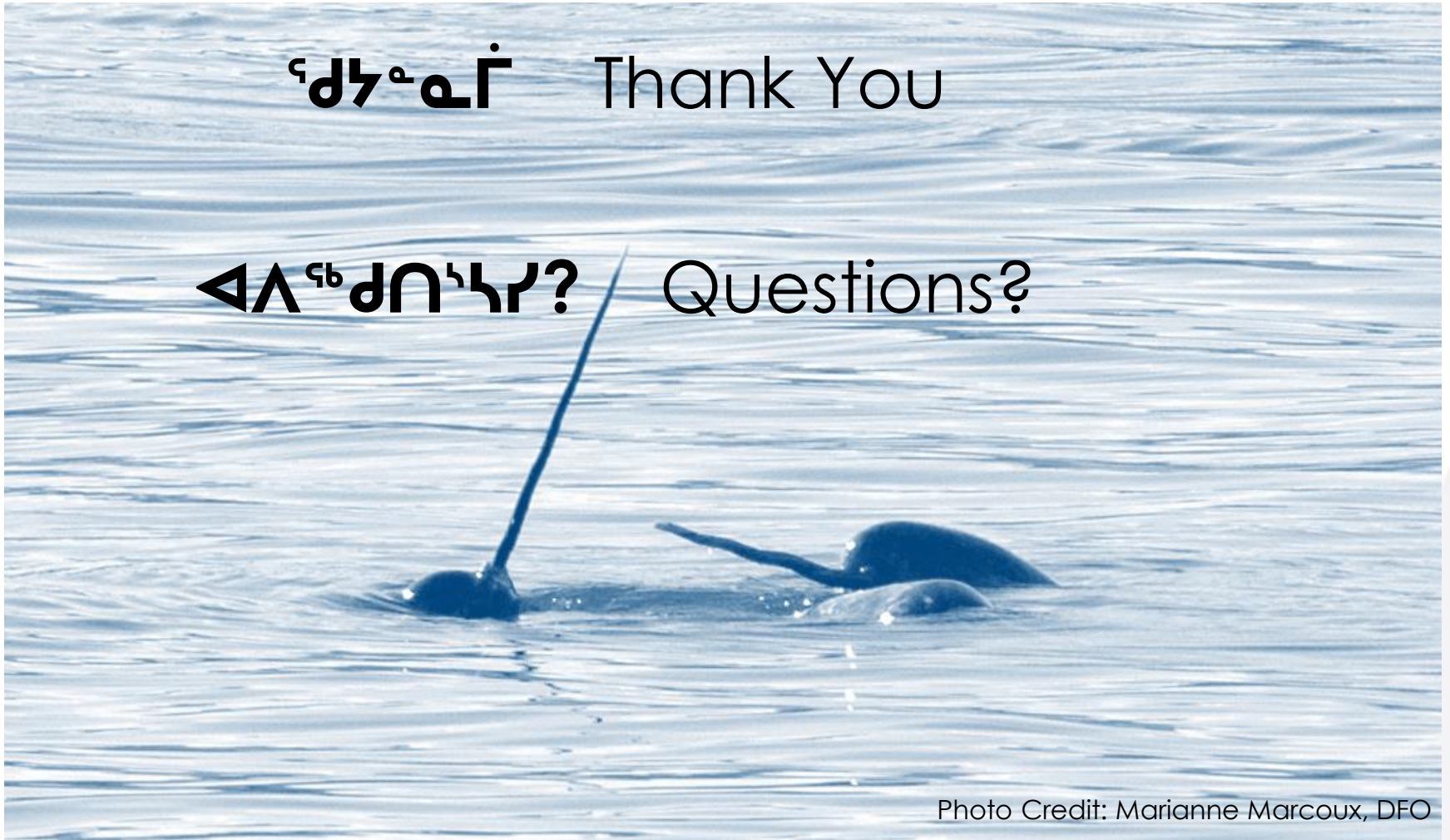


Photo Credit: Marianne Marcoux, DFO