

November 21, 2022

**Attention: Nunavut Water Board**

**Subject:** Additional Information Requested for Proposed Permanent Crossing Plan- 2022/2023 Tote Road Culvert Upgrades

Fisheries and Oceans Canada (DFO) received your proposed permanent crossing plan for culvert upgrades along the Tote Road on October 31, 2022. DFO-FFHPP focused our review around crossings BG-04 (Km 94), CV-216 (Km 80.5) and BG-50 (Km 63) as these culverts were requested to have priority review. This letter focuses on information gaps/questions identified in the proposed plan.

The following points/questions were observed for the proposed culvert upgrades:

- Describe how fish passage was assessed including calculations:
  - DFO-FFHPP would like to note that crossing designs should pass all lengths of fish rather than the noted maximum 256 mm length, therefore:
    - Please provide clarification as to why improvements were seen to only allow <50% passage at BG-04 and only <25% passage at CV-216?
  - The proponent indicates that if followed a modified BC Minister of Environment guide, *Field Assessment for Determining Fish Passage Status of Closed Bottom Structures*:
    - Please describe how this is an appropriate methodology to follow for Arctic fish passage;
    - Were alternative guides or methodologies more or less applicable to an Arctic environment assessed?
      - If so, describe why they were discarded;
    - Provide rationale for modifications to the guide, such as why certain metrics considerations, e.g., stream width ratio and slope scoring were not included in the fish passage assessment?
- Please describe the standard upon which design effectiveness was assessed?
  - Example: 3 Q 10?
- Please provide a rationale for accepting a moderate risk of preventing fish passage in many cases?
- Please provide an updated footprint for proposed culvert extensions.
  - Will there be any new impacts to the channel from set proposed extensions?
- Please provide clarification as to why only one (1) culvert is proposed to be embedded 40% at each site.
  - Please provide site specific designs that display which culvert will be embedded 40%. For example will the culvert be located in the main channel? Low flow channel? Overflow?
  - Were velocity calculations adjusted to accommodate the proposed 40% embedment?
  - Please provided spacing dimensions between each proposed culvert.
  - Please provide clarification on whether backfill material will be placed within culverts.
  - DFO-FFHPP notes that all culverts proposed to be installed are required to be embedded
- Please provide clarification on number of culverts proposed to be installed at CV-216?

- Table C.6 states 5; however previously in Appendix B11, 4 culverts were stated
- Have alternative options been explored other than CSP culverts?
  - Example: clear span bridges or open bottom box culverts?
- Please provide a monitoring plan to assess the long term effectiveness of the remediation plans, including adaptive management responses in the event of failure.

DFO-FFHPP requested a follow up conversation on Friday November 18, 2022 with Baffinland to discuss the points noted above. Baffinland through a virtual zoom call discussed their answers and were to provide a table summarizing them following the conversation. It was also noted that the proposed plans are to be permanent upgrades and DFO is willing to open discussions to accommodate timelines for the import of alternative structures. Currently, DFO-FFHPP is looking for further information and clarification on how Baffinland proposes to permanently upgrade watercrossing along the Tote Road.

Thank you,

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