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October 11, 2017

Our file *Notre référence*
16-HCAA - 00272
Your file *Votre référence*
EA1617-01

Mackenzie Valley Environmental Impact Review Board
Attention: Mark Cliffe-Phillips, Executive Director
200 Scotia Centre
5102-50th Ave
Yellowknife, NT, X1A 2N7

Dear Mr. Cliffe-Phillips:

Subject: Fisheries and Oceans Canada – Technical Submission for the Government of the Northwest Territories Tł̨chq̨ All-Season Road Project

The Fisheries Protection Program (the Program) of Fisheries and Oceans Canada (DFO-FPP) would like to thank the Mackenzie Valley Environmental Review Board (MVEIRB) for the opportunity to provide comments on the Government of the Northwest Territories (GNWT) Tł̨chq̨ All-Season Road Project.

DFO-FPP's submission provides a summary of our involvement as well as our technical review of the information provided by the GNWT, throughout this environmental assessment.

DFO-FPP is of the opinion that, based on the information provided by the proponent to date, it is likely that impacts to fish and fish habitat can be fully mitigated. DFO-FPP recommend that the proponent use of our standard guidelines provided on our website (<http://www.dfo-mpo.gc.ca/pnw-ppe/ mesures-mesures/measures-mesures-eng.html>) to avoid and mitigate impacts to fish and fish habitat, as well as best management practises during construction of the culverts and clear-span bridges.

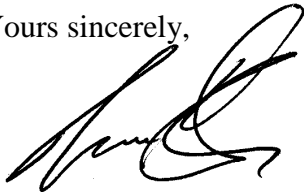
DFO notes that, the site-specific engineering design drawings with detailed construction, mitigation and monitoring plans will be required (should the project be approved to proceed to regulatory phase) for DFO-FPP to determine if regulatory approvals under section 35(2) of the *Fisheries Act*, is required for any crossing.

With respect to impacts to fisheries from human fishing pressures created as a result of the operation of the Tłıchǫ All Season Road, DFO will work closely with the Wek'eezhii Renewable Resources Board (WRRB), Tłıchǫ Government and associated communities, and GNWT to develop an appropriate plan to monitor and manage new and increased fishing access that occurs at that time.

In conclusion, DFO-FPP does not have any outstanding issues to bring forward to the MVEIRB on this project and would therefore respectfully note that our department's attendance at the hearings may not be required. If the MVEIRB, the public, or any parties to this environmental assessment have questions related to our submission or conclusions, DFO would be pleased to respond in writing.

If you have any questions, please contact Mark D'Aguiar at 867-669-4911, or by email at Mark.D'Aguiar@dfo-mpo.gc.ca. Please refer to the file number referenced above when corresponding with DFO-FPP.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'C. Thomas Hoggarth', with a stylized flourish at the end.

C. Thomas Hoggarth
A/Regional Director
Ecosystems Management – Central & Arctic Region

Fisheries and Oceans Canada

Technical Report

Project Description Report and Adequacy Statement Responses

**Tłıchq All-Season Road Project -
The Government of the Northwest Territories, Department of
Infrastructure**

Submitted to:

Mackenzie Valley Environmental Impact Review Board (MVEIRB)

Oct 11, 2017

DFO File No: 16-HCAA-00272

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Executive Summary

The Tłı̄chq̄ All-Season Road (TASR) Project is a proposed 94 km long all-season road proposed by the Government of the Northwest Territories, Department of Infrastructure that is anticipated to connect Highway 3 to the community of Whati, Northwest Territories. The TASR Project alignment crosses approximately 15 watercourses, including the Duport River, La Martre River, James River and an unnamed major watercourse.

The Fisheries Protection Program of Fisheries and Oceans Canada (DFO-FPP) is responsible on behalf of the department for regulatory review of proposed developments occurring in or near Canadian fisheries waters. DFO-FPP has reviewed the Developer's Assessment Report (DAR) for the TASR Project and is providing its comments based on our mandate to maintain the sustainability and ongoing productivity of commercial, recreational and Aboriginal fisheries. DFO's primary focus in reviewing proposed developments in and around fisheries waters is to ensure that works, undertakings and activities are conducted in such a manner that is in compliance with the applicable provisions of the *Fisheries Act*.

The fisheries protection provisions of the *Fisheries Act (2013)*, specifically subsection 35(1), state that “No person shall carry on any work, undertaking or activity that results in serious harm to fish that are part of a commercial, recreational or Aboriginal fishery or to fish that support such a fishery.” However, under paragraph 35(2)(b) of the *Fisheries Act*, the Minister of Fisheries and Oceans may issue an authorization with terms and conditions in relation to a proposed work, undertaking or activity that may result in *serious harm to fish*. *Serious harm to fish* is defined in Section 2 of this Act as the death of fish, or permanent alteration to or destruction of fish habitat.

DFO is providing the following technical review submission to the Mackenzie Valley Environmental Impact Review Board. The technical review comments in this submission are categorized under the following general topics: Potential Impacts to Fish and Fish Habitat: Watercourse Crossings, and Fisheries Management and Harvesting.

Potential Impacts to Fish and Fish Habitat: Watercourse Crossings

The proponent has committed to providing final designs for all watercourse crossings to DFO-FPP prior to constructing the crossings where works will take place below the High Water Mark and where there is potential for the water body to support large-bodied fishes. Prior to issuance of any approvals, DFO-FPP will require more detailed information with respect to final crossing design, fish habitat present, site-specific mitigation measures and monitoring, to address the information requirements necessary to make a regulatory decision under section 35(2) of the *Fisheries Act*. DFO-FPP has concluded that provided the appropriate mitigation and monitoring plans are developed and adhered to, and applicable DFO guidance is followed, negative impacts to fish and fish habitat from the construction and operation of the Tłı̄chq̄ All –

Season Road can be effectively managed and significant impacts to fish and fish habitat can be avoided.

Fisheries Management and Harvesting

Fisheries resources in the vicinity of the road are co-managed by Wek'eezhii Renewable Resources Board (WRRB), DFO Fisheries Management, the Tłıchǫ Government (TG) and associated communities. As such, DFO will ensure that the proponent has engaged the co-management boards and affected Aboriginal groups to acquire relevant fisheries information and to manage potential impacts from increased harvesting that may result from the TASR.

DFO will work closely with the Wek'eezhii Renewable Resources Board (WRRB), Tłıchǫ Government and associated communities, and GNWT to develop an appropriate plan to monitor and manage new and increased fishing access that occurs at that time.

1.0 Introduction

This technical review submission summarizes Fisheries and Oceans Canada's (DFO) assessment and recommendations concerning the proposed Tłıchq All –Season Road Project. The purpose of this submission is to provide expert advice to the Mackenzie Valley Environmental Impact Review Board (MVEIRB) to assist in their assessment of potential environmental impacts associated with this proposal.

As directed by the MVEIRB, this submission is the product of a detailed analysis of the Project Description Report and Adequacy Statement documentation, with the objective of assessing the quality of the supplemental and/or revised information presented by the Developer in support of the Project proposal, and reflects DFO's mandate.

2.0 Mandate, Relevant Legislation and Policy

The *Constitution Act* (1982) provides the federal government with exclusive authority for coastal and inland fisheries within Canada's territorial boundaries. DFO exercises this power through, the administration of the *Fisheries Act* and some aspects of the *Species at Risk Act*. Under the *Fisheries Act*, DFO is responsible for the management, protection and conservation of fish (which include marine mammals as defined by the *Fisheries Act*) and their habitats. The Minister of Fisheries and Oceans is one of the competent ministers under the *Species at Risk Act* (SARA).

In general, the Fisheries Protection Program of DFO undertakes the review of proposed developments in and around fisheries waters to ensure that works, undertakings and activities are conducted in such a way that the proponents are in compliance with the applicable provisions of the *Fisheries Act*.

The mandate of the Fisheries Protection Program is to maintain the sustainability and ongoing productivity of commercial, recreational and Aboriginal fisheries. Subsection 35 (1) of the fisheries protection provisions of the *Fisheries Act* states that "No person shall carry on any work, undertaking or activity that results in *serious harm to fish* that are part of a commercial, recreational, or Aboriginal fishery or to fish that support such a fishery.

Fisheries and Oceans Canada interprets *serious harm to fish* as:

- the **death of fish**;
- a **permanent alteration** to fish habitat of a spatial scale, duration or intensity that limits or diminishes the ability of fish to use such habitats as spawning grounds, or as nursery, rearing, or food supply areas, or as a migration corridor, or any other area in order to carry out one or more of their life processes;

- the **destruction of fish habitat** of a spatial scale, duration, or intensity that fish can no longer rely upon such habitats for use as spawning grounds, or as nursery, rearing, or food supply areas, or as a migration corridor, or any other area in order to carry out one or more of these life processes.

However, under paragraph 35(2)(b) of the *Fisheries Act*, the Minister of Fisheries and Oceans may issue an authorization with terms and conditions in relation to a proposed work, undertaking or activity that may result in *serious harm to fish*, subject to the consideration of the four factors in Section 6 of the *Fisheries Act*:

1. The contribution of the relevant fish to the ongoing productivity of commercial, recreational or Aboriginal fisheries;
2. Fisheries management objectives;
3. Whether there are measures and standards to avoid, mitigate or offset *serious harm to fish* that are part of a commercial, recreational or Aboriginal fishery, or that support such a fishery; and
4. The public interest.

The Fisheries Protection Program is guided by the “Fisheries Protection Policy Statement,” the intent of which is to provide guidance to Canadians to ensure that they are complying with the *Fisheries Act*. It strengthens the Government’s ability to address key threats to the productivity and sustainability of our fisheries, through standards and guidelines to avoid, mitigate and offset impacts to fisheries and to ensure compliance with these requirements.

The “Fisheries Productivity Investment Policy: A Proponent’s Guide to Offsetting” provides guidance on undertaking effective measures to offset *serious harm to fish* that are part of or that support a commercial, recreational or Aboriginal fishery, consistent with the fisheries protection provisions of the *Fisheries Act*. The objective of offsetting is to counterbalance unavoidable *serious harm to fish* and the loss of fisheries productivity resulting from a project.

The *Species at Risk Act* is intended to prevent Canadian indigenous species, subspecies and distinct populations of wildlife from being extirpated or becoming extinct; to provide for the recovery of wildlife species that are extirpated, endangered or threatened as a result of human activity; and to manage species of special concern to prevent them from becoming endangered or threatened. The Minister of Fisheries and Oceans is the competent minister for listed aquatic species that are fish (as defined in section 2 of the *Fisheries Act*) or marine plants (as defined in section 47 of the *Fisheries Act*).

For more information, see: <http://www.dfo-mpo.gc.ca/pnw-ppe/pol/index-eng.html>

3.0 Technical Review Comments

3.1 Watercourse Crossings

3.1.1 Documents Reviewed

- Tłıchq All Season Road, Project Description Report, March 2016;
 - Section 3.2.1
 - Section 4.4.3.2
 - Section 3.3
 - Appendix R Tłıchq Road Alignment, Hydrologic and Hydraulic Study
 - Tłıchq All Season Road, Fish and Fish Habitat Protection Plan, March 2016
- GNWT Responses to Information Request GoC-DFO-1 (Dated October 20, 2016)
- GNWTs TASR Adequacy Statement Response EA1617-01 (Dated April 12, 2017):
- GNWT Response to Fisheries and Oceans Canada (DFO) Comments on TASR Road Crossings (Dated January 25, 2017): DFO Comments presented to GNWT during Dec 15, 2016 meeting.
 - Appendix - Technical Memorandum: Hydraulic Assessment of TASR Culverts for Fish Passage

3.1.2 Proponent's Assessment and Conclusions

The GNWT had originally indicated that the 94 km long all-season road would require 16 watercourse crossings, of which four will be bridge crossings and 11 will be culvert crossings. The developer had concluded that *“Following the process as outlined on the Fisheries Protection Program website...[and] a self- assessment was conducted for the proposed TASR and appropriate mitigations have been identified in order to ensure serious harm to fish is avoided (see Section 6.8 and 8.9 of PDR for further discussion). The results of the self-assessment and associated mitigations indicate that a review is not required for this project”*. GNWT also indicated that (Section 4.4.3.2 Culverts) that *“once geo-technical information is obtained and on-site studies can be completed, the culvert sizing will be finalized”*.

During the Information Requests for the pre application review (for the Type A water licence Application), DFO disagreed with the conclusion and requested additional information on all watercourse crossings including physical and biological characteristics of each watercourse channel (width, depth, substrate types), predicted changes to fish and fish habitat, and fish presence/absence. DFO also requested that GNWT submit final detail design drawings and associated calculations for the extent of direct footprint (temporary or permanent) for fish habitat impacts below the HWM for the 16 watercourses. In addition, DFO requested details regarding the construction practices (and mitigations) for in-water works.

In GNWT's response to the Information Requests, and through discussions between DFO and GNWT, GNWT provided details on several of the watercourses outlining their marginal fish habitat value, and how by following best management practices and implementing mitigation measures (table 3.2-1 of ASR), the proposed works likely present low risk to fish and fish

habitat. As well, GNWT clarified that all of the larger watercourse crossings will be clear span bridges and that all culverts on fish bearing or assumed fish bearing watercourses will be sized to allow for fish passage. GNWT indicated that their design and assessment of the TASR water crossings were based on the precautionary approach that all watercourses were presumed fish bearing. As such, each culvert crossing was *“assessed to hydraulic needs and then enlarged to accommodate fish passage, ice management, debris management and nuisance beaver management”*.

During a meeting between DFO and GNWT on Dec 15, 2017, DFO provided a series of comments to the Project Description Report (PDR) which included further requests for clarification on the construction of the proposed road crossings, and the assessment of fish use and habitat suitability of streams intersected by the TASR. On January 25, 2017, GNWT provided a *‘Response to Fisheries and Oceans Canada (DFO) Comments on TASR Road Crossings’* memo which outlined the hydraulic assessment of the culvert crossings, maps illustrating the road alignment relative to nearby watercourses and waterbodies (to determine fish migratory potential of each watercourse), and rationale for the likelihood of fish occurrences in each watercourse. In addition, the GNWT confirmed that clear span bridges with no workings or footprint below the high water mark will be installed for the major watercourses. At least three of the 16 crossings have potential for workings below the Ordinary High Water Mark (OHWM) where there is potential for small and/or large-bodied fish, however the GNWT committed to respecting timing windows and confirmed that *“As there is work below the OHWM and there is potential for large bodied Fish, GNWT- will provide final designs for these crossings to DFO for their review prior to construction, as required”*.

GNWT concluded that *“Serious harm to fish may result from the installation of the road crossings where temporary or permanent fill is placed below the OHWM in a stream where large-bodied fish may be present (e.g. crossing 10a, 11, 13). However, proposed mitigation combined with the selected design features for the crossings will minimize, if not eliminate, any effects to fish and fish habitat. Residual serious harm to fish is not expected at any of the proposed crossings along the road alignment. For crossings where works will occur below the OHWM and that existing habitat is considered suitable for large bodied fish species, information will be provided to DFO for their review prior to construction.*

3.1.3 DFO’s Conclusions and Recommendations

DFO notes that on January 25, 2017, GNWT provided DFO with information that was required to proceed with a determination of potential impacts to fish and fish habitat as result of the TASR project. This included information regarding the connection of the watercourses to downstream fish bearing waterbodies or watercourses, evaluation of habitat connectivity, fish suitability expectation with rationale, and a determination of whether or not small bodied or large bodied fish would likely use the watercourse as a migratory corridor.

During a joint DFO-FPP and Golder site visit that occurred on September 20-21, 2017 along a portion the TASR alignment, DFO confirmed the accuracy of the developers watercourse

characterizations (ephemeral, intermittent, permanent) and well as the potential fish bearing and fish habitat status for each of the crossings described in the Developers PDR and Adequacy Statement Response (ASR).

The use of arch culverts and clear span bridges have historically been recommended by DFO as opposed to closed-bottom culverts, as the latter impacts the bed and banks of the watercourse and requires works below the OHWM which may result in the permanent alteration and/or destruction of fish habitat and require Authorization under the *Fisheries Act*. If installed correctly using appropriate robust mitigation, monitoring and construction best practices, and sized adequately, an arch culvert and/or clear-span bridge can avoid any disturbance below the OHWM and eliminate any potential impacts to fish and fish habitat. DFO also believes that impacts as a result of most typical water crossings can be sufficiently mitigated and avoided using standard practices if implemented correctly and monitored for effectiveness.

DFO notes that although general mitigation measures to avoid impacts to fish and fish habitat were provided in Table 3.2-1 of the ASR., in the absence of detailed engineering designs, what the full suite of measures is that the GNWT intends to implement to avoid, mitigate or offset serious harm to fish as defined in *the Fisheries Act* as a result of the proposed water crossings is unclear. DFO acknowledges GNWT's commitments as follows: *"the number and specific location of these culverts will be identified during the final stages of the detailed design phase for the development of the road and are typically only completed prior to construction"* and the GNWT *"will provide final designs for this crossing to DFO for their review prior to construction, as required"*. DFO-FPP further notes that detailed site-specific engineered drawings for the water crossings, with a detailed methodology of how each crossing will be constructed and impacts to fish and fish habitat mitigated will be required to be submitted to DFO-FPP prior to construction, should the project be approved to proceed.

DFO-FPP has concluded that provided the appropriate mitigation and monitoring plans are developed and adhered to, and applicable DFO guidance is followed, impacts to fish and fish habitat from the working, activities, or undertakings as a result of the construction of the water crossings along the Tłıchq All-Season Road can be effectively managed and significant impacts to fish and fish habitat can be avoided.

3.2 Fisheries Management and Harvesting

3.2.1 Documents Reviewed

- Tłıchq All Season Road, Project Description Report, March 2016;
- GNWTs TASR Adequacy Statement Responses, April 2017:
 - Section 3.1.6.3

3.2.2 Proponent's Assessment and Conclusions

The GNWT has provided an overview of the current harvesting pressure and local fish harvester traditional use for the watercourses crossed by the TASR Project (section 3.1.6.3) and conducted an effects analysis (section 3.3.1) on the potential overexploitation of large-bodied fish populations due to improved road access. The developer provided their analysis criteria in tables 3.3-4 -3.3-9 of the ASR and summarized that *“there is a low to moderate level of uncertainty related to the effects analysis related to the primary pathway of potential overexploitation of large-bodied fish populations due to improved road access...[and] as the actual number of fishers that will access waterbodies along the TASR unknown...[and] However the effects on VC abundance and associated fishery will be low due to the general remoteness of the locations, low level of existing harvest pressure and the ability of these water bodies to handle a higher level of harvest pressure”* .

In section 3.5.2 the Developer concludes that *“incremental and cumulative changes to fish abundance from the Project and other developments should not have a significant adverse impact on the ability of VC populations.....to be self-sustaining and ecologically effective, where self-sustaining and ecologically effective populations of fish VC's are the foundation for ongoing productivity of fisheries”*

The developer also notes that DFO will enforce NWT fishery regulations, and that the developer will ensure DFO and the Tłıchq Government are aware of the changing access. They further note that a review of how fisheries will be managed in the area, including monitoring, may be required.

3.2.3 DFO's Conclusions and Recommendations

DFO acknowledges that the GNWT has provided an assessment of the effects of potential overexploitation of large-bodied fish populations due to improved road access, and DFO concurs with the GNWT that it is the responsibility of DFO Fisheries Management and its co-management partners to manage fisheries resources along the highway corridor. The fisheries resources in the vicinity of the road are co-managed by Wek'eezhii Renewable Resources Board (WRRB), DFO-Fisheries Management and Tłıchq Government and associated communities. As such, DFO will ensure that the proponent has engaged the co-management boards and affected

Aboriginal groups to acquire relevant fisheries information, to identify priority Aboriginal subsistence fisheries/waterbodies where harvesting pressure may change as a result of increased access through the development of an all season road, and will ensure that potential impacts are managed.

Should the project be approved to proceed to regulatory phases, and a timeline for completion determined, DFO will work closely with the Wek'eezhii Renewable Resources Board, the GNWT, and Tłıchǫ communities to develop an appropriate plan to monitor and address impacts to Fisheries from new and increased fishing access that occurs at that time.