



GWICH'IN LAND AND WATER BOARD

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REASON FOR DECISION

Issued Pursuant to Section 54 of the *Waters Act*.

File Number:	G15L8-001 and G15L8-002 (Amendments)	Type:	"B" Water Licences
Applicant:	GNWT Department of Transportation (DOT)		
Activity:	Watercourse training and the deposit of waste for the purpose of construction and maintenance of the landings at the Peel River and Mackenzie River ferry crossings.		
Board Meeting:	Wednesday, May 18 th , 2016		

With respect to this application, notice was given in accordance with sections 63 and 64 of the *Mackenzie Valley Resource Management Act (MVRMA)*, and section 43(1) of the *Waters Act*.

1.0 BACKGROUND

On November 30 2015, the Gwich'in Land and Water Board (GLWB) issued two Type "B" Water Licences to the GNWT Department of Transportation (DOT) for the purpose of watercourse training and the deposit of waste associated with the construction and maintenance of the ferry landings at the Peel River Crossing, (G15L8-001¹, km 74.5 Dempster Highway #8), and at the Mackenzie River and Arctic Red River Crossings (G15L8-002², km 143.6 Dempster Highway #8). Each Licence was issued for a five year term, and was subject to a number of terms and conditions developed in response to recommendations made by reviewing organizations, and by commitments made by DOT.

On March 4th, 2016, DOT submitted an application for an amendment to both G15L8-001 and G15L8-002³. It requested changes to Part B, Section 5, Section 6 a) and c), Section 7, and Section 8; these General Conditions pertain to requirements for community meetings, Local Area Monitoring Plan (LAMP) reporting, LAMP revision deadlines, and reporting on sedimentation and sediment control methods.

¹ See GLWB Online Registry (www.glwb.com) for [DOT - Water Licence G15L8-001 - Nov30 15](#)

² See GLWB Online Registry for [DOT - Water Licence G15L8-002 - Nov30 15](#)

³ See GLWB Online Registry for [DOT - Water Licence Amendment Application - Mar04 16](#)

The amendment application was circulated for review on March 22, 2016. Reviewer comments were due April 14, 2016 and proponent comments due April 21. DOT requested an extension to the deadline on April 14, was given until May 5th to respond. The GLWB met on May 18, 2016 to decide on the application.

2.0 DECISION

After reviewing the submission of the Applicant and the written comments and submissions received by the Board, and having due regard to the facts and circumstances, the merits of the submissions made to it, and to the purpose, scope, and intent of the MVRMA and the Waters Act and Regulations made thereunder, the Board has determined that Water Licences G15L8-001 and 002 be amended, subject to the terms and conditions contained below. The Board's reasons for this decision are as follows:

2.1 Amendment to Part B, Section 5

The Licensee shall meet with the communit(ies) annually to: prior to submission of the Annual Report referred to in Part B, Item 4, but after the close of the ferry season for the calendar year being reported in the Annual Report to:

- a) present tabular summaries of the volumes of all granular material placed and removed for each ferry landing location, specifying dates of placement as well as dates of removal, and the source of the granular material
- b) report on the activities and findings under the approved Local Area Monitoring Plan referred to in Part B, Item 7;
- c) update the community on any studies conducted or in progress;
- d) receive and document community observations, concerns, and suggestions associated with the licensed undertaking;
- e) update the community on any changes in operation.

This Condition was developed in 2010⁴ as a result of reviewers requesting improved community engagement, and was carried over during the 2015 renewal.

DOT requested an extension to the timeline for these annual meetings, and indicated that due to operational requirements, DOT staff would be unable to attend the meetings at the time required by the Licence. DOT stated their preference to use travel plans already in place during June/July when staff will be in the communities in support of the LAMP program. In addition, DOT has committed to the publication of a twice-per-year newsletter which will provide updates on activities at the ferry landings, and will provide contact information for any parties with questions or concerns. Reviewers continue to support face to face meetings, including a preference for end of season meetings, and have indicated their tentative support of the newsletter⁵.

⁴ See GLWB Online Registry for [DOT - Water Licence G99L8-001 \(2010\) - Nov03 10](#)

⁵ See GLWB Online Registry for [DOT - Amendment - Comment Table - May05 16](#)

The Board notes that DOT has fulfilled its past commitment to meet with communities annually, and appreciates the commitment to provide additional communication through the newsletter. The Board also acknowledges DOT's personnel and budgetary constraints, and has thus removed the specific requirements for timing of the annual meetings, with the expectation that DOT will select meeting dates that satisfy both their travel requirements, and the needs of communities.

2.2 Amendment to Part B Section 6

The Licensee shall submit to the Board, by ~~March~~ December 31, 2016, a summary report of the 2011-2015 Local Area Monitoring Plan for the Peel River ferry landings. This Report shall include, but not be limited to:

- a) an analysis of the suite of bathymetric maps; ~~including a discussion of the changes in river morphology (if any) that have taken place near the ferry landings in the past 5 years, and a comparison to any changes at upstream control sites;~~
- b) a summary of fish harvesting statistics, including a discussion on any trends in the data, and comments on the relationship (if any) between the changes in river morphology and fish harvest success;
- c) a discussion of the effectiveness of aerial imagery as a means to identify changes in river morphology; ~~include 3D riverbed images and/or aerial image overlays from ferry landing sites, and a comparison of imagery from control areas;~~
- d) a discussion of any changes or modifications made to the original monitoring plan, and lessons learned from these changes;
- e) suggestions for future updates to the study design that could improve the effectiveness of the monitoring plan

Part B Section 6, pertains to the requirement to provide a summary report which analyzes the information gathered during DOT's five year LAMP program. The LAMP monitoring program was developed by DOT in 2011, in order to satisfy the Licence Condition G99L8-001(2010), Part B Section 3 c). This condition required the development of a monitoring program which included "*methods for annual assessment of i) river morphology, ii) fish harvesting, iii) physical extent of the ferry landings.*"

2.21 Part B Section 6 a)

In the 2016 amendment application, DOT requested that the requirement for "*a discussion of the changes in river morphology (if any) that have taken place near the ferry landings in the past 5 years, and a comparison to any changes at upstream control sites*" be removed from the condition. In the amendment application DOT stated that this requests "falls outside of the scope of the original LAMP" and that the "maps produced will not contribute to the kind of discussion being sought by this section". DOT also stated that "the Department is able to discuss the bathymetric maps that were produced for the LAMP report, however we are unable to speak to changes in river morphology and to any changes which may or may not have occurred upstream."

The Board notes that DOT was responsible for the design of the LAMP, and within the approved program specified their intention to use bathymetric maps to monitor and analyze changes in river morphology^{6,7}, as well as an intention to collect data from upstream sites for comparison⁸. Condition G15L8-001 Part B, Section 6 a) was developed from these commitments made by DOT in the Board-approved May 21, 2011 LAMP, and from information retrieved from the Licensee's Annual Reports.

During the amendment review period, two reviewing organizations also noted that commitments made within the 2011 LAMP (in response to the 2010 Licence) would suggest that a discussion of river morphology was within the scope of the LAMP. DOT countered that "River Morphology can be defined as the change to the shape and direction of river channels over time using fluvial processes such as erosion, transportation and sedimentation, and that Bathymetry can be said to be the study of underwater depth of lake or ocean floors." And while "DOT has been able to capture the depth of the water at two points during the year, which can be used to show high water and low water events, a 'snapshot' of conditions at that time. The information gathered cannot be used to describe...fluvial processes". DOT acknowledged that "after five years of gathering information DOT has determined that certain aspects of the LAMP produced better data than others. DOT has determined the Bathymetric monitoring does not bring the type of useful information to the discussion as had been previously thought."

While the Board is concerned that the data collected and maps produced in support of the LAMP are unsuitable for the analyses of river morphology as was originally intended, it acknowledges that if the required information is not available, it cannot be reported on. Thus, the Board has removed the requirement from the Licence. Similarly, the requirement for a comparison to upstream control sites has also been removed, since data from these locations was also not collected.

2.21 Part B Section 6 c)

DOT requested an extension to the timelines to December 31, 2016 "due to the timelines associated with searching for and acquiring any aerial photographs of the landing sites, and then analyzing them to determine any changes in river morphology due to the ferry landings". It also requested that the 3D imagery requirement be removed from the Licence.

During the review period, two reviewers commented that imagery should be provided, and one agreed to the proposed timeline of December 31, 2016. DOT acknowledged that they are "unable to produce 3D models since the data that was captured under the LAMP was only related to river depths and not substrate levels which would also be required in order to have the 3D images being sought".

⁶ See GLWB public Registry for [DOT - 2011 LAMP - River Morphology Monitoring - pg. 9, par. 2](#)

⁷ See GLWB public Registry for [DOT - 2014 Annual Report - LAMP - Conclusion - pg. 6, par. 4](#)

⁸ See GLWB public Registry for [DOT - 2011 LAMP - Purpose and Scope - pg. 4, par. 1](#)

The Board notes that DOT designed and developed the LAMP, and within indicated their intention to utilize aerial imagery⁹, both from ferry landing sites and control areas¹⁰, as well as 3D models¹¹ to help determine potential impacts from the construction of the ferry landings. Condition G15L8-001 Part B, Section 6 c) was developed from these commitments. The Board acknowledges, however, that if the required data was not collected, that the images cannot be produced. As such, it has removed the requirement for 3D riverbed images and/or aerial image overlays and the comparison to control areas. It is the Board's expectation that DOT use the imagery they have access to, in order to satisfy the amended condition.

2.3 Amendment to Part B Section 7

The Licencee shall, in consultation with the [GRRB], the Gwichya Gwich'in [RRC] and/or the Tetlit Gwich'in [RRC], submit to the Board for approval, by March 31, 2017 ~~2016~~, an updated version of the [LAMP] for the [Peel and Mackenzie] River ferry landings. This updated report shall include, but not be limited to:

- a) the incorporation of Traditional Knowledge in the study design;
- b) methods for capturing, reporting and analyzing qualitative fish health data;
- c) any of the improvements, as outlined in Part B, Item 6 (e);

This Condition was developed as a result of reviewer comments regarding the design and effectiveness of the LAMP monitoring program brought forward during the 2015 Licence renewal; these include the appropriate use of traditional knowledge in the study design, and adding methods to assess fish health during the harvest surveys.

DOT requested a one year extension to the submission deadline, to "ensure that the monitoring program is as effective as possible". In its amendment application, DOT stated that it would be building on the success of community participation and survey methods and working with other GNWT departments to develop "an updated LAMP program aimed at further clarifying the ferry landings and their place within the river environment".

A number of comments on the LAMP re-design were brought forward during the amendment review period, with three reviewers emphasizing the importance of Traditional Knowledge and recommending inclusion of the Gwich'in Social and Cultural Institute in the development of the TK survey. One reviewer requested the LAMP be expanded and modelled on DOT's 2003 Aquatic Effects Assessment Study¹², which examined the impacts of ferry operations on the rivers. DOT responded that they were looking at modifying their LAMP program, but suggested that a more in-depth study should be championed by the Gwich'in Renewable Resources Board and through the NWT Cumulative Impact Monitoring Program (CIMP) funding.

The Board acknowledges that re-designing a monitoring plan, in conjunction with other GNWT departments, and co-management partners will take time, as such the condition has been amended to reflect the one year extension.

⁹ See GLWB public Registry for [DOT- 2011 LAMP - 7.1 Ariel Photography - pg. 13, par. 2](#)

¹⁰ See GLWB public Registry for [DOT- 2011 LAMP - 7.2 Satellite Images - pg. 14, par. 3](#)

¹¹ See GLWB public Registry for [DOT- 2011 LAMP - 4.4 Compilation of Annual Data - pg. 11, par. 1](#)

¹² See GLWB public Registry for [DOT - Aquatic Effects Assessment Study - 2003](#)

2.4 Amendment to Part B, Section 8

The Licensee shall submit to the Board for approval, by October ~~March~~31, 2016, a report pertaining to sedimentation and sediment control methods. This report shall address, but not be limited to:

- a) the types of sediment control measures that were employed over the course of the 2010-2015 Licence period and a discussion of their effectiveness;
- b) plans to address sediment control in the upcoming renewal period;
- c) background information on natural sedimentation in the Peel and Mackenzie Rivers;
- d) a discussion on the cumulative effects of sediment deposition into the river systems by various sources, including ferry landing operations.

This Condition was developed in response to ongoing dialogue between DOT and community members regarding the effect of gravel placement at the ferry landings on downstream fishing activities. Traditional users have stated the gravel placement has led to the infilling of eddies and the creation of sandbars which impacts their local fishery. DOT argues that the volume of gravel deposited into the rivers is insignificant compared to background levels, and that the changes in morphology are the result of natural processes. DOT also notes that as part of the LAMP program, annual surveys are reporting successful fish harvests by downstream fishers.

DOT's amendment application requests that Condition G15L8-001 Part B, Section 8 be removed from the licence. It argues that the Department uses "practicable erosion and sediment controls and is actively involved as erosion and sediment control practitioners" and believes that "current methods have been effective at controlling sediment from the landings" and that "inspection reports have consistently noted that sediment control measures are effective". DOT re-iterates "that the amount of clean, locally sourced material that DOT uses on the landing is insignificant compared with the amount of naturally occurring sediment already present in the rivers and the sheer number of naturally occurring contributors to the sediment load of the river".

Both 2010 and 2015 Licences require DOT to employ sediment control measures while working instream, and to include a discussion of the methods used and their effectiveness in the Annual Report. A review of Licence inspections indicate that DOT recorded non-compliance for "no detectable sedimentation control measures being employed while ferry landings were being built up" in August 2011 at both the Peel and Mackenzie crossings. As of November 2015 only one other inspection had been performed during the 2010 to 2015 Licence term (Mackenzie Landing in October 2013) making it difficult to assess further compliance. 2011-2013 Annual reports indicate sediment control measures were impractical (2011)¹³ not used (2012)¹⁴, and unsuccessful and discontinued (2013)¹⁵. 2014 Methods were described as "minimize the use of new granular material and use suitable equipment to adjust the landing and help control any sedimentary issues"¹⁶.

¹³ See GLWB public Registry for [DOT - 2011 Annual Report - Aug21 12](#)

¹⁴ See GLWB public Registry for [DOT - 2012 Annual Report - Jun11 13](#)

¹⁵ See GLWB public Registry for [DOT - 2013 Annual Report - Apr01 14](#)

¹⁶ See GLWB public Registry for [DOT - 2014 Annual Report - Mar31 15](#)

The Board notes that concerns surrounding sedimentation and sediment control measures continue to be brought forward by reviewers. During the amendment review, four organizations responded in support of the reporting requirement. One reviewer requested that the details of the sediment control methods used be explained to the community, or if control methods are not feasible, that this be explained as well. Another organization indicated "that best management practices for erosion and sedimentation control should be utilized for the project, to the extent possible" and that "the condition related to planned sediment control options be kept in the Water Licence". A different reviewer reiterated community concerns about sediment accumulation impacting traditional fishing, and another proposed the use of a monitor to ensure that gravel was being placed as reported.

The Board believes that additional clarity is required in this area, and as such rejects DOT's request to remove the reporting requirement. The report will provide DOT an opportunity to clarify the sediment control measures that are used, and to discuss the challenges and successes of operating within the context of a large river system.

CONCLUSION

Subject to the terms and conditions set out in the amended Licence, and for the reasons expressed herein, the GLWB is of the opinion that the licensed undertaking for water use and waste disposal associated with the Peel River Ferry Landings and Arctic Red River and Mackenzie Ferry Landings can be completed by the Licensee while providing for the conservation, development, and utilization of waters in a manner that will provide the optimum benefit for all Canadians, and in particular, for the residents of The Gwich'in Settlement Area.

Amended Water Licences G15L8-001 and G15L8-001 contain provisions that the Board feels necessary to ensure and monitor compliance with the MVRMA and the *Waters Act* and the Regulations made thereunder and to provide appropriate safeguards in respect of the Applicant's deposit of waste.

SIGNATURE



Paul Sullivan
Chair, Gwich'in Land and Water Board

Date: May 18, 2016