

### Review Comment Table

<b>Board:</b>	MVLWB
<b>Review Item:</b>	Government of Yukon - Department of Highways and Public Works - New Type A Land Use Permit and New Type B Water Licence - MV2019X0027 MV2019L8-0013
<b>File(s):</b>	<a href="#">MV2019L8-0013</a> <a href="#">MV2019X0027</a>
<b>Proponent:</b>	Government of Yukon - Department of Highways and Public Works
<b>Document(s):</b>	<a href="#">Water Licence Application</a> (695.25 kb) <a href="#">Waste Management Plan</a> (383.91 kb) <a href="#">Spill Contingency Plan</a> (458.53 kb) <a href="#">Project Description Report</a> (22.7 MB) <a href="#">Engagement Plan and Record</a> (5.45 MB) <a href="#">Land Use Permit Application</a> (715.49 kb) <a href="#">Draft Water Licence</a> (63 KB) <a href="#">Draft Land Use Permit</a> (57 kb) <a href="#">GRRB Request for Extension to Comment Submission Date</a> (100 kb)
<b>Item For Review Distributed On:</b>	Oct 15 at 14:31 <a href="#">Distribution List</a> Oct 24 at 10:04 <a href="#">Distribution List</a>
<b>Reviewer Comments Due By:</b>	Nov 14, 2019
<b>Proponent Responses Due By:</b>	Nov 21, 2019
<b>Item Description:</b>	<p>October 24, 2019</p> <p>Good morning,</p> <p>The Gwich'in Renewable Resources Board (GRRB) has requested an extension to the comment submission date. Board staff have extended the comment submission date to have comments be submitted on November 14, 2019 and the responses date for responses to be submitted November 21, 2019.</p> <p>If you have any questions, please contact the staff identified below</p> <p>AlecSandra Macdonald, 867-777-4954</p> <p>Tyree Mullaney, 867-766-7464</p>

Government of Yukon – Department of Highways and Public Works (GY - DHPW) has submitted a complete application for a type A land use permit (permit) as well as a type B water licence (licence).

GY-DHPW is proposing the Dempster Fibre Project (DFP), that will see the construction of an approximately 800-km fibre optic line from Dawson City, Yukon, to Inuvik, Northwest Territories. For the purposes of the Land Use Permit and Water Licence application, the project is defined as the section of the DFP located in the Northwest Territories.

The fibre optic cable will enter the Northwest Territories at the Yukon/Northwest Territories border and then travel approximately 271 km north to Inuvik. The project is located entirely within the Gwich'in Settlement Area (GSA), passing through the communities of Fort McPherson and Tsiigehtchic.

#### Project Components:

- Fibre optic cable and conduit to be installed adjacent to the Dempster Highway along the Right of Way, extending from the Yukon border to Inuvik; and
- Handholes along the route.

The project will connect to an existing terminal facility in Inuvik and to existing buildings in communities along the route to provide service to those communities.

Construction and operation of the project will require the following supporting activities:

- Geotechnical drilling to supplement any potential gaps or unknown conditions that are encountered;
- Use of pre-existing staging areas for equipment and materials (up to five staging areas may be used at one time);
- Construction of temporary camps to accommodate work crews;
- Clearing of vegetation as required in the right of way;
- Installation of conduits and fibre optic cable; and
- Ongoing operations and maintenance.

Reviewers are invited to submit comments and recommendations using the Online Review System (ORS) by the review comment deadline specified below. If reviewers seek clarification on the submission, they are encouraged to correspond directly with the Applicant prior to submitting comments and recommendations.

Please provide comments and recommendations on the documents linked below. Reviewers may also wish to consider providing an overarching recommendation

	<p>regarding whether they are in support of the submission, to provide context for comments and recommendations and to assist the Board with its decision.</p> <p>Please note that the draft Permit has been developed using the MVLWB's current Standard Land Use Permit Conditions Template. The purpose of this draft Permit is to allow reviewers to comment on possible conditions. These draft materials are not intended to limit in any way the scope of reviewers' comments. The Board is not bound by the contents of the draft Permit and will make its decision at the close of the proceeding on the basis of all the evidence and arguments filed by all reviewers.</p> <p>Under the Preliminary Screening Requirement Regulations of the Mackenzie Valley Resource Management Act (MVRMA), the Board must conduct a preliminary screening for an application for a proposed development that requires a land use permit, unless it is exempt from preliminary screening in accordance with the Exemption List Regulations. Reviewers are encouraged to provide comments and recommendations (e.g. on impacts and mitigation measures) to assist with the completion of the preliminary screening.</p> <p>Please be advised that comments made by reviewers regarding impacts of this project to wildlife and wildlife habitat in this preliminary screening will inform the GNWT Minister of Environment and Natural Resources' determination regarding whether a Wildlife Management and Monitoring Plan will be required for this project as per Section 95 of the Wildlife Act.</p> <p>Under the Gwich'in Land Use Plan (GLUP), the Board must confirm the Applications conform with the GLUP. Reviewers are encouraged to provide comments and recommendations on conformity with the GLUP.</p> <p>All documents that have been uploaded to this review are also available on our public Registry. If you have any questions or comments about the ORS or this review, please contact Board staff identified below.</p> <p>AlecSandra Macdonald, 867-777-4954</p> <p>Tyree Mullaney, 867-766-7464</p>
<b>Contact Information:</b>	<p>AlecSandra Macdonald 867-777-4954</p> <p>Tyree Mullaney 867-766-7464</p>

### Comment Summary

ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Analysis
1	General File	<b>Comment</b> <a href="#">(doc)</a> Yukon Government -DHPW: Responses and Attachment Package <b>Recommendation</b>		
Fisheries and Oceans Canada: Triage Group Fisheries Protection Program				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Analysis
1	Government of Yukon - Department of Highways and Public Works - New Type A Land Use Permit and New Type B Water Licence - MV2019X0027 MV2019L8-0013 (MVLWB)	<p><b>Comment</b> Your proposal has been reviewed to determine whether it is likely to result in the death of fish by means other than fishing and/or the harmful alteration, disruption or destruction of fish habitat which are prohibited under subsections 34.4(1) and 35(1) of the Fisheries Act; and, effects to listed aquatic species at risk, any part of their critical habitat or the residences of their individuals in a manner which is prohibited under sections 32, 33 and subsection 58(1) of the Species at Risk Act. Please note that this review only covers the Northwest Territories portion of the project, under Fisheries and Oceans Canada's Central and Arctic Region. For questions regarding Yukon, contact Holly Pulvermacher at Holly.Pulvermacher@dfo-mpo.gc.ca or 250-756-7032.</p> <p><b>Recommendation</b> Provided that the plans are implemented in the manner, and during the timeframe, described, the Fish and Fish Habitat Protection Program (the Program) is of the view that your proposal will not require an authorization under the Fisheries Act or the Species at Risk Act. Should your plans change or if you have omitted some information in your proposal, further review by the Program may be required. It remains your responsibility to remain in compliance with the Fisheries Act, avoid prohibited effects on listed aquatic species at risk, any part of their critical habitat or the residences of their individuals, and prevent the introduction of non-indigenous species. It is also your Duty to Notify DFO if you have caused, or are about to cause, the death of fish by means other than fishing and/or the</p>	<b>Nov 22:</b> The Proponent acknowledges Fisheries and Oceans Canada's comments.	Proponent response satisfactory

		harmful alteration, disruption or destruction of fish habitat.		
GNWT - Lands: Darren Campbell				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Response
41	General File	<b>Comment</b> <a href="#">(doc)</a> Cover Letter - GNWT Comments on DFL <b>Recommendation</b>		
42	General File	<b>Comment</b> <a href="#">(doc)</a> GNWT DFL Reclaim Estimate <b>Recommendation</b>		
1	Draft Water Licence Topic: Water Licence Scope Pg. 1 of 15	<b>Comment</b> The proposed scope of the water licence does not include withdrawing water or depositing waste, or the construction, operation and maintenance of temporary camps. GNWT notes the application for the water licence includes the use of water for camps and horizontal directional drilling. As well, the Waste Management Plan identifies that greywater may be deposited in a sump or natural depression and that drilling cuttings and fluids may be disposed of in natural depressions. According to the draft Standard Water Licence Conditions provided for review by the MVLWB, the scope of the water licence should include the items noted above. <b>Recommendation</b> 1) GNWT recommends the water licence scope include the withdrawal of water, the deposit of waste and the construction, operation and maintenance of temporary camps.	<b>Nov 22:</b> The Proponent does not have any concerns with these recommendations.	Board staff have updated the scope to include withdrawal of Water, deposit of Waste and construction, operation and maintenance of temporary camps.
2	Draft Water Licence Topic: Water Use Conditions Pg. 8 of 15 (draft Standard Water Licence Conditions Part D)	<b>Comment</b> The draft Standard Water Licence Conditions provided for review by the MVLWB include conditions in Part D related to water use. GNWT notes conditions 3, 4, 8 and 9 in Part D are not included in the draft water licence. <b>Recommendation</b> 1) GNWT recommends the draft standard conditions 3, 4, 8 and 9 in Part D be included in the water licence as follows: The Licensee shall only withdraw Water using the Water Supply Facilities, unless otherwise authorized in writing by an Inspector. Prior to obtaining Water from a licensed Water source, the Licensee shall	<b>Nov 22:</b> The Proponent does not have any concerns with these recommendations.	Recommended conditions were added to draft WL. (Part D Conditions 4 - 7) Definition for Water Supply facilities also added.  For Board consideration

		<p>post sign(s) to identify the intake for the Water Supply Facilities. All sign(s) shall be located and maintained to the satisfaction of an Inspector. In any single ice-covered season, the Licensee shall not withdraw greater than 10% of the available Water volume of any Watercourse, as calculated using the appropriate maximum expected ice thickness. Each year, prior to the [enter: the day and month of the effective date] and in advance of any Water use, the Licensee shall pay the Water Use Fee in accordance with the MVLWBs Water Use Fee Policy.</p>		
3	<p>Land Use Permit Application General Comment(s) Provision of Municipal Services to Camps</p>	<p><b>Comment</b> Land Use permit application references private services for sewage and grey water disposal and only the Inuvik solid waste facility (Appendix J - Confirmation of capacity) to be used for solid waste disposal. It is assumed that no waste will be disposed of in Fort McPherson and Tsiigehtchic. Community Administration in these 2 communities have not had any communication with the proponent with regard to the provision of municipal services, including potable water and waste (solid and sewage).</p> <p><b>Recommendation</b> Proponent should summarize the details of any sewage or waste disposal agreements with the communities of Fort McPherson and Tsiigehtchic.</p>	<p><b>Nov 22:</b> The Proponent was informed by the communities of Fort McPherson and Tsiigehtchic that they are not likely to have capacity for waste disposal for the Project. We will re-engage with them closer to construction to see if there are any service agreements that could be arranged. If no agreements can be arranged, the Proponent will not use municipal sewage and waste services in the communities of Fort McPherson and Tsiigehtchic.</p>	<p>Staff acknowledges the email from Inuvik stating its willingness to accept Project waste, however per the G17L3-001 D.3. "Sewage and solid Waste from industrial, commercial and institutional operators working outside of the local government boundaries of Inuvik shall not be accepted at the Waste Disposal Facilities, unless otherwise authorized in writing by an</p>

				Inspector." New WL condition F.10. addresses this requirement.  For Board consideration
4	Land Use Permit Application General Comment(s)	<p><b>Comment</b> The applicant has indicated circumstances where going off the Public Highway Boundaries is necessary. This is to avoid certain physical features, unstable ground, junctions for services to communities and access to communication towers. Some of the communication towers are in sensitive areas (Richardson Mountains) with unstable soil conditions. Trenching up (in altitude) to these towers would pose a significant risk of erosion due to the very shallow soil and vegetation conditions. An aerial options would have an impact to a lesser extent, and a cable laid on the ground surface would be the least intrusive option, but still might entrain run-off leading to rills.</p> <p><b>Recommendation</b> The proponent should explain, in detail, how the soil surface will be protected against erosion in these sensitive areas, paying particular attention to the method of cable installation.</p>	<p><b>Nov 22:</b> Erosion and sediment control practices will be detailed in a Project-specific Erosion and Sedimentation Control (ESC) plan developed by the contractor. The ESC will include mitigation measures for erosion and sediment control defined in the Supporting Information Report and will be provided to the Board prior to construction.</p>	<p>WL Conditions F.6 and F.7 Address the requirement for a Board approved ESC Plan. LUP Condition 14 - 16 Address Erosion and Sedimentation.</p> <p>For Board consideration</p>
5	Land Use Permit Application General Comment(s) Emergency Response Services	<p><b>Comment</b> It is unclear what the project would be requiring in terms of emergency response from the municipalities: Town of Inuvik, Hamlet of Fort McPherson, Charter Community of Tsiigehtchic. Capacity considerations and the delivery of services outside of municipal boundaries is an issue. Project Description references off site resources page 12 , and includes fire departments of 3 NWT communities. Further reference to emergency response services on page 4 for Inuvik. The GNWT is not aware of any engagement with the municipalities and their emergency personnel in providing services to the project. The 911 emergency service has</p>	<p><b>Nov 22:</b> The Proponent will contact the local emergency services to determine what capacities/services they are able to provide and involve them when our contractor develops a site-specific Health and Safety Plan.</p>	<p>Board staff acknowledge YG - DHPW's commitment to develop a Health and Safety Plan. Since the H&amp;S Plan does not pertain directly to the the use of Land or Water and/or the Deposit of Waste, it will</p>

		<p>been implemented as of Monday November 4th.</p> <p><b>Recommendation</b> Proponent should summarize any emergency response agreements with the communities of Fort McPherson and Tsiigehtchic.</p>		not require Board approval, but should be submitted to the Board for inclusion on the public registry.
6	Draft Land use Permit Topic: Protection of Historical, Archaeological and Burial Sites (Draft Condition 34: Archaeological Buffer)	<p><b>Comment</b> A buffer of 30 m is sufficient for the three identified archaeological sites recorded within 100 m of the Dempster Highway.</p> <p><b>Recommendation</b> The Culture and Heritage Division recommends that the Archaeological Buffer condition is changed to 30 m.</p>	<b>Nov 22:</b> A 30 m buffer will be applied to all three known archaeological sites.	LUP Condition 37 has been updated to require a 30 m Archeological buffer.
7	Securities	<p><b>Comment</b> As discussed in the cover letter, GNWT has prepared a RECLAIM estimate and has shared it with the applicant. The estimate is attached for the Board's consideration.</p> <p><b>Recommendation</b> The GNWT recommends that the Board set security under the land use permit at \$98,811 and under the water licence at \$91,350.</p>	<b>Nov 22:</b> The Proponent does not have any concerns with these recommendations.	LUP Condition 40 and WL Schedule 2 updated to reflect recommendation
8	Project Description Report General Comment(s)	<p><b>Comment</b> Throughout the document statements are made that the cable will be installed outside the road structure whenever possible</p> <p><b>Recommendation</b> In the NT portion of the Dempster Highway, the installation of the fiber optic cable in the road structure or prism has not been authorized. The cable is to be installed not less than 20 m from the highway centre line.</p>	<b>Nov 22:</b> Cable installation within the road prism will not be considered without written authorization from the Department of Infrastructure. The Proponent is working with the Department of Infrastructure on a cable alignment that avoids interference with their operations while also minimizing the clearing of vegetation. In general, the line will be 20 m away from the highway	Noted

			<p>centre line but in some locations it will be further or closer depending on site specific conditions. Detailed drawings have been shared with the Department of Infrastructure for review and comment and will continue to be shared as they are updated and developed. Final cable routing in the NT will be submitted to Department of Infrastructure for approval.</p>	
9	<p>Project Description Report General Comment(s) Topic: Wildlife: NWT Listed and Pre-listed Species at Risk</p>	<p><b>Comment</b> Section 76 and 77 of the Species at Risk Act (NWT) requires the Minister of Environment and Natural Resources to make a submission to the body responsible for assessing the potential impacts of a proposed development, or for considering a land use Permit or water Licence application, respecting the potential impacts of the proposed development, Permit or Licence application on a NWT-listed or pre-listed species or its habitat. NWT-listed species are those that are on the NWT List of Species at Risk. Pre-listed species are those that have been assessed by the NWT Species at Risk Committee (SARC) but have not yet been added to the NWT List of Species at Risk. The Proponent should be aware that NWT-listed or pre-listed species at risk and their habitat may also be subject to protection under existing sections of the NWT Wildlife Act. As a best practice, ENR encourages the proponent to consider potential impacts, mitigation measures and monitoring requirements for species at risk listed under the federal Species at Risk Act, as well as those designated as at risk by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) that may</p>	<p><b>Nov 22:</b> The Proponent acknowledges GNWT's comments</p>	<p>WL Condition B. 22 and LUP Condition 71 Require that a Wildlife Management and Mitigation plan be submitted to the Board for approval.</p> <p>For Board consideration.</p>

		<p>occur in the project area, and the prohibitions that may apply to these species under federal legislation. The project area overlaps with the ranges of the following NWT-listed and/or pre-listed species: .</p> <p>Boreal Caribou - listed as of Feb 2014, Threatened in the NWT Potential impacts to the species at risk listed above from the project sensory disturbance, destruction of habitat, risk of injury, risk of mortality, reduced habitat quality, and disruption or barriers to movements or migration.</p> <p><b>Recommendation</b> 1) The GNWT is satisfied that with the development of a Wildlife Management and Monitoring Plan that addresses the recommendations provided [in other comments in this document concerning Wildlife Management], and application of other wildlife mitigation and monitoring measures outlined in the Proponents LUP/WL application and supporting documents, potential impacts to the species at risk listed above can be avoided or minimized.</p>		
10	<p>Project Description</p> <p>Report General Comment(s)</p> <p>Topic: Streams and Rivers Water Source Information</p>	<p><b>Comment</b> YG has noted that in addition to the Peel, Arctic Red and Mackenzie Rivers, two other rivers and four streams may be used as water sources. GNWT notes no additional information was provided regarding the proposed water sources such as flow measurements and the rate of withdrawal from these rivers and streams. To ensure the environment is protected, instantaneous flow measurements should be taken prior to withdrawal to ensure the rate of withdrawal will not have unanticipated impacts.</p> <p><b>Recommendation</b> 1) GNWT recommends the Board include a condition in the water licence to limit the rate at which water may be withdrawn from streams and rivers that is in relation to the instantaneous flow. 2) GNWT recommends YG provide the requested quantities of water to be withdrawn annually from each source. 3) GNWT recommends YG identify current and/or previous licenced water users</p>	<p><b>Nov 22:</b> 1) The Proponent does not have any concerns with this recommendation. 2) The quantities of water to be withdrawn annually from each source will be determined by the contractor and shared with the Board prior to withdrawal from each source. 3) The Proponent is willing to work with the Board to identify other licenced users of each water source and notify each licenced user prior to withdrawal.</p>	<p>Board staff sent an information request to the Government of the Yukon to provide the additional information being requested by GNWT.</p>

		upstream or downstream of the rivers and streams proposed as potential water sources.		
11	Project Description Report General Comments(s) Topic: Plans	<p><b>Comment</b> The Project Description Report refers to several different plans that YG commits to providing at various stages of the project. GNWT notes it is unclear why the Emergency Frac-out Response Plan, Inspection and Maintenance Plan, Permafrost Protection Plan and, Construction Environmental Management Plan are not included as required submissions for Board approval in the draft water licence.</p> <p><b>Recommendation</b> 1) The GNWT recommends the water licence require that any plans that are associated with the use of water or deposit of waste such as the Emergency Frac-out Response Plan, Inspection and Maintenance Plan, Permafrost Protection Plan and, Construction Environmental Management Plan be submitted for Board approval.</p>	<b>Nov 22:</b> The Proponent will submit the plans listed above to the Board for approval prior to construction.	<p>The following conditions address the recommendation for Board-approved management Plans :.</p> <p>Emergency Frac-out Response Plan (LUP 72, WL F.12),</p> <p>Inspection and Maintenance Plan ( LUP 73, WL B.21),</p> <p>Permafrost Protection Plan (LUP 70, WL F.11) and,</p> <p>Construction Environmental Management Plan (LUP 69 WL E.3)</p> <p>For Board consideration</p>
12	Project Description Report General Comment(s) Topic: Lakes and Ponds Water Source Information	<p><b>Comment</b> YG has noted that three lakes and one pond may be used as water sources. YG rationalizes that "During the field review, only established water withdrawal sites in current use or with indications of recent use during highway maintenance activities were recorded. These site require no access development, and, because of their current or recent use, are can be assumed to be acceptable as water sources." It is unclear to GNWT which sources are currently being used by other users and what the potential environmental impact may be as a result of another user withdrawing from the same</p>	<b>Nov 22:</b> If required by the Board, information on total water volumes and quantities of water to be withdrawn will be provided to the Board for each of the four sources identified prior to water withdrawal at that source.	Board staff sent an information request to the Government of the Yukon to provide the additional information being requested by GNWT.

		<p>water source. GNWT notes no additional information was provided regarding the proposed water sources. It is therefore unclear if these water sources are able to sustain winter withdrawals or what the potential impacts to these sources could be. GNWT also notes it is the responsibility of the proponent to provide information required to assess potential environmental impacts to ensure its current application is complete. While YG does commit that all water withdrawals will conform to DFO's Protocol for Winter Water Withdrawal from Ice-covered Waterbodies in the Northwest Territories and Nunavut (2010), this document requires that the proponent gather bathymetric information on the source to determine maximum depth of water (under-ice) and total available water.</p> <p><b>Recommendation 1)</b> The GNWT recommends the three lakes and one pond not be approved as a water source to support this undertaking until the following information is received and considered by the Board: Bathymetric information on each source including depths and available water under-ice; Requested quantities of water to be withdrawn annually from each source by YG; Information on any Water Licences that are currently licenced to withdraw water from the same sources; Information on any Water Licences that were previously approved to withdraw from these water sources; and, A comparison of total water volumes requested and approved from each source against total water available under-ice. If the above is not available to the applicant, the applicant should at the very least provide a table top assessment of the size, depth and volume of water available in each source.</p>		
13	<p>Project Description Report Paragraph - 2.1.1.4 Warning Signs and Posters Pg. .15 (Marking</p>	<p><b>Comment</b> The final location of the line will be surveyed at the time of installation with the records being stored with Highways and Public Works.</p> <p><b>Recommendation</b> Copies of the final survey are to be sent to Mr Mark Cronk, Director</p>	<p><b>Nov 22:</b> The Proponent will provide copies of the final survey to the GNWT INF Director Design and Technical Services and the</p>	Noted

	of fibre optic line and survey data).	Design and Technical Services GNWT-INF, and Mr Merle Carpenter, Regional Superintendent, Beaufort Delta Region, GNWT-INF	Regional Superintendent, Beaufort Delta Region,	
14	Project Description Report Fill material p.17	<p><b>Comment</b> It is unclear how much fill material will be required for the project.</p> <p><b>Recommendation</b> The GNWT recommends including an estimate of how much fill material could be required for the project so reviewers can better understand the scope of possible disturbance and how much new material is being added to the project area.</p>	<p><b>Nov 22:</b> The estimated quantity of granular fill required on the Northwest Territories side is in the order of 30,000 m<sup>3</sup>, as calculated in the table [See cover letter attached].</p>	Staff notes that the application indicated that fill will be sourced from local contractors. Quarrying is not included in the scope of project activities.
15	Project Description Report Paragraph 3.1.1 Summary of Geotechnical Studies Pg. 19 (HDD drilling across the Mackenzie River, Arctic Red River and Peel Rivers)	<p><b>Comment</b> There are ferry operations and maintenance of the ferry landings in both areas where HDD (Drilling) could occur.</p> <p><b>Recommendation</b> Close liaison with the Regional Superintendent of the GNWT-INF Beaufort Delta Region is required to ensure that neither the HDD drilling nor the placement of the fibre optic cable will impact ferry operations, ice road construction, or maintenance of the ferry landings or operations of the ferries. The HDD for the crossings of these rivers will have to be outside of the ROW in order not to be impacted by future work on the ferry landing or possible future dredging of the rivers for ferry operations.</p>	<p><b>Nov 22:</b> The HDD design and drill program for the three river crossings have not been finalized at this stage of design. Close liaison and coordination with the Regional Superintendent of the GNWT-INF Beaufort Delta Region will be undertaken during construction to ensure that the HDD activity required to cross the rivers will not impact ferry operations. Further, placement of the fibre optic cable will be done after the HDD activity is completed and will be coordinated to ensure that activity will not impact ferry operations. The setback distance for the HDD drill pad is estimated to be</p>	LUP Condition 22 requires a heavy equipment setback of 100m, unless otherwise described in the application.

			<p>between 150 m and 200 m from the river highwater mark. This distance will be discussed and coordinated with the Regional Superintendent. The drill depth will be engineered to ensure that the final conduit and cable minimum depth will be &gt;5m below the surface where any dredging and other ferry operations take place. The crossing distance for these rivers is sufficiently large that the setback must accommodate the proper bore hole arc to be well below the deepest portion of the riverbed.</p>	
16	<p>Project Description Report Government of Yukon - Highways and Public Works 3.2.4.1 Shallow Buried Pg. 24</p>	<p><b>Comment</b> Shallow plowing and shallow trenching involve the use of heavy equipment or light equipment. Despite the preventing measures rutting may occur within ROW due to construction activity.</p> <p><b>Recommendation</b> The GNWT recommends that any ruts that form be backfilled sufficiently with soil and organics immediately to reduce erosion and sedimentation. If organic materials are insufficient then "vegetative matting" is recommended.</p>	<p><b>Nov 22:</b> The Proponent will implement these recommendations in the Erosion and Sediment Control Plan.</p>	<p>WL Condition F 6 and F. 7 and LUP Condition 14 require the submission of a Board-approved Erosion and Sediment Control Plan</p>
17	<p>Project Description Report Surface lay hazards p.26</p>	<p><b>Comment</b> The PDR indicates that "because the conduit is stiff, there may be some depressions in the ground where the conduit is not in contact with the ground."</p> <p><b>Recommendation</b> The GNWT recommends the proponent clarify this sentence. It isn't clear how the stiffness of the conduit will leave depressions in the ground, if it isn't in contact with the ground?</p>	<p><b>Nov 22:</b> This sentence is in reference to existing depressions. Where existing depressions are encountered, the surface laid cable may not be fully in contact with the ground. This is</p>	<p>Clarification noted</p>

			more likely to occur when depressions are small or have sharp angles. The conduit can only bend to a certain degree, and may not follow all the natural depression contours. See illustration [in cover letter, attached]. The cable will not create depressions.	
18	Project Description Report Geographic Characterization Paragraph 5.1.1.2. Pg. 37	<p><b>Comment</b> Section 2. The chainage marking for the retrogressive slump is at kilometer 27.5, not kilometer 30.5 as stated in the report The chain mark for the chainage marking of the retrogressive slump was incorrectly entered in the report</p> <p><b>Recommendation</b> The GNWT recommends the retrogressive slump chainage marking be changed from km 30.5 to km 27.5.</p>	<b>Nov 22:</b> The chainage marking will be reviewed and adjusted in future materials for the Project.	Clarification noted
19	Project Description Report permafrost degradation p.40	<p><b>Comment</b> "More frequent and/or costly maintenance of fibre line and highway infrastructure could be required."</p> <p><b>Recommendation</b> Appendix A of the PDR (letters of support) indicate that a utilities agreement will be made between YTG and GNWT-INF. Maintenance costs will be the responsibility of the of Utility and the GNWT will be excluded from liability for loss, damage or delay resulting from the failure of delivery of goods or services.</p>	<b>Nov 22:</b> Liabilities, financial impacts, etc. are covered in the utilities agreement and the overall contract between Government of Yukon and Government of Northwest Territories.	Clarification noted
20	Project Description Report Topic: Permafrost Lessons Learned Section 5.1.3 Pg. 42	<b>Comment</b> Section 5.1.3 of the Project Description Report explains that the applicant has committed to several mitigation measures to eliminate, reduce or control potential effects of Project activities on sensitive, ice-rich permafrost and other valued components it supports. A footnote to this states "The maintenance challenges on the Mackenzie Valley Fibre Link have resulted in lessons learned for fibre installations in sensitive permafrost areas that are being carefully reviewed and taken into account by the design and permitting teams for the Project."	<b>Nov 22:</b> The Permafrost Protection Plan will be developed in consideration of the lessons learned through the Mackenzie Valley Fibre Link Project (which are described in the response to comments 9 and 20).	LUP Condition 69 and WL Condition E.3 have been updated to require that a Construction Environmental Management Plan be submitted to the Board for approval

		<p><b>Recommendation 1)</b> GNWT recommends a condition of the water licence require the Permafrost Protection Plan include relevant lessons learned from the Mackenzie Valley Fibre Link or other relevant projects with respect to fibre installation in sensitive permafrost areas.</p>		
21	<p>Project Description Report Topic: Project Disturbance Footprint Section 5.1.3 page 42</p>	<p><b>Comment</b> Section 5.1.3, page 42, of the Project Description states that "Installation of the fibre optic line will occur within the ROW of existing roads or highways, with only a few exceptions, to reduce effects on surrounding permafrost".</p> <p><b>Recommendation 1)</b> GNWT recommends that Government of the Yukon clarify where the project footprint might deviate from the existing ROW, the area of clearing required outside of the ROW, and provide the MVLWB with shapefiles of their proposed project footprint, for posting on the Public Registry.</p>	<p><b>Nov 22:</b> The five locations where the fibre line leaves the Dempster Highway ROW are listed in Table 1-1 on page 4. Two of these locations are microwave towers, and the fibre line will be located in the ROW of their access roads. The other three locations are where the line exits the Dempster ROW to connect to the central offices in Fort McPherson, Tsiigehtchic, and Inuvik. Preliminary routing maps for the municipalities have been attached [see attachment]</p>	Noted
22	<p>Project Description Report Topic: Borrow Pit Water Source Section 5.2.2 Pg. 56</p>	<p><b>Comment</b> YG has identified seven borrow pits as potential water sources. Section 5.2.2 of the Project Description Report states "Water quality tests will be conducted prior to withdrawal from old gravel or borrow pits. If the water quality is not determined to be suitable, the source will not be used unless treatment is possible." GNWT notes it is unclear what will be considered "suitable" and the procedure that will be used to sample the borrow pits (e.g. number of samples taken).</p> <p><b>Recommendation 1)</b> GNWT recommends YG clarify the procedure that will be used to sample the borrow pits including but not limited to the water quality standard that will be considered suitable and the number</p>	<p><b>Nov 22:</b> The procedure that will be used to sample the borrow pits will be included in the Construction Environmental Management Plan, which will be provided to the Board for approval.</p>	<p>LUP 69 Condition and WL e.3 Condition have been updated to require that a Construction Environmental Management Plan be submitted to the Board for approval</p>

		of samples that will be taken at each borrow pit.		
23	Project Description Report Topic: Water Quality Assessments Section 5.2.3 Pg. 57	<p><b>Comment</b> One of the mitigation measures related to fish and fish habitat listed in Section 5.2.3 of the Project Description Report includes "A qualified Environmental Monitor will conduct monitoring, including water quality assessments, with an emphasis on those works with the greatest potential to impact fish habitat (e.g., stream crossings)." GNWT notes the methods, procedure and reporting for water quality assessments should be further outlined in one of the management plans (e.g. Construction Environmental Management Plan).</p> <p><b>Recommendation</b> 1) GNWT recommends YG further outline the methods, procedure and reporting for water quality assessments in one of the management plans to be submitted to the Board for approval.</p>	<b>Nov 22:</b> The methods, procedure and reporting for water quality assessments will be further outlined in the Construction Environmental Management Plan, which will be provided to the Board for approval.	LUP Condition 69 and WL Condition E3 have been updated to require that a Construction Environmental Management Plan be submitted to the Board for approval  Board direction
24	Project Description Report fueling distance from water p.58	<p><b>Comment</b> From the MVLUR 6 Unless expressly authorized by a permit or in writing by an inspector, no permittee shall (a) conduct a land-use operation within 30 m of a known monument or of a known or suspected historic or archaeological site or burial site; (b) excavate land within 100 m of a watercourse at a point that is below its ordinary high-water mark; (c) deposit excavated material on the bed of a watercourse; or (d) place a fuel or supply cache within 100 m of a watercourse at a point that is below the ordinary high-water mark of that watercourse.</p> <p><b>Recommendation</b> GNWT recommends that any operational changes that are required in the field that result in fuel being cached or re-fueling within 100m of a watercourse shall be authorized by an inspector.</p>	<b>Nov 22:</b> The Proponent does not have any concerns with this recommendation.	LUP condition 41 addresses this recommendation
25	Project Description Report Topic: Wildlife Mitigation Measures and	<b>Comment</b> Several of the mitigation measures for wildlife described in section 5.3.3 of the Project Description require further detail and development to demonstrate how the desired outcome of the mitigation measures will be achieved.	<b>Nov 22:</b> A WMMP will be developed for the Project prior to construction. Wildlife monitoring reports will be submitted to GNWT	LUP Condition and WL Condition have been updated to require that a

<p>Development of a Wildlife Monitoring Program Section 5.3.3 Pgs. (65-66)</p>	<p>Some of these mitigation measures are highlighted in the excerpts below. Section 5.3.3, page 65-66, of the Project Description states the following: "A wildlife monitoring program will be developed that will include having a wildlife monitor on-site during construction to ensure that mitigation measures are applied. Reporting requirements will be defined as part of the program. Reports will be shared with GTC." "Construction activities will minimize the volume levels, duration, and frequency of noise sources, to the extent possible." "Project activities will not disturb, block or cause substantial diversion to migrating caribou." "Project activities will not alter caribou migration habitat in a way that will prevent caribou from using it in the future." "No construction activities shall take place within 300 m of an active raptor nest from April 15 to August 15." Section 5.3.4 states the following: "Construction activities and the establishment of temporary camps will increase sensory disturbance to wildlife and decrease habitat quality. These disturbances can be mitigated by avoiding spatial and temporal overlap of certain activities with specific species during sensitive times of year (i.e., calving, overwintering, breeding). The temporal extent of the sensory disturbance to any one area is not projected to last more than a few weeks (e.g., HDD). If care is taken to avoid overlapping potential sensory disturbances with sensitive times of the year for specific species, the magnitude of the effect should be minimal. Furthermore, the duration of the sensory disturbance should be minimal, as the equipment and temporary camps are constantly moving as progress on the Project is made. The frequency of the sensory disturbance will be low, since the equipment will move through an area and not return."</p> <p><b>Recommendation</b> 1) ENR recommends that the Government of Yukon develop a Wildlife Management and Monitoring Plan (WMMP) for the project. 2) ENR recommends that all</p>	<p>ENR. In developing the WMMP, the Proponent will consult ENR's WMMP guidelines. Project-specific mitigation measures mentioned in the above recommendation will be included in the WMMP.</p>	<p>WMMP be submitted to the Board</p>
--	---	--	---------------------------------------

		<p>wildlife monitoring reports be submitted to GNWT-ENR as well. 3) In developing the WMMP, the Government of Yukon should consult ENRs WMMP guidelines available at <a href="https://www.enr.gov.nt.ca/en/services/wildlife-management-and-monitoring-plans">https://www.enr.gov.nt.ca/en/services/wildlife-management-and-monitoring-plans</a> 4) The WMMP should describe the specific mitigation measures that will be applied to:</p> <p>a. minimize the volume levels, duration, and frequency of noise sources b. avoid disturbing, blocking or causing substantial diversion to migrating caribou, c. avoid altering caribou migration habitat in a way that will prevent caribou from using it in the future, d. document the presence of active raptor nests within 300 m of construction activities between April 15 August 15. It should be noted that, as per paragraph 51(1)(c) of the Wildlife Act and section 5.2 of the Wildlife General Regulations, inactive raptor nests must also be protected from destruction during the remainder of the year. e. avoid spatial and temporal overlap of certain activities with specific species during sensitive times of year (i.e., calving, overwintering, breeding), and identify the specific time periods that define these sensitive times f. document the presence of caribou within 1 km of project activities. The WMMP should include a protocol for surveying for caribou presence within 1 km of the project, and should explain how such surveys will be carried out in forested habitat.</p>		
26	Project Description Report ROW ponds p.73	<p><b>Comment</b> "ponds created through disturbance continued to expand in size, thus there could be long-term, irreversible effects over small areas along the ROW."</p> <p><b>Recommendation</b> The GNWT recommends that remediation methods be specified for ponding areas. Ponding, and subsequently erosion, can spread to surrounding lands. These areas will require LUP conditions for erosion and sediment control.</p>	<p><b>Nov 22:</b> Erosion and sediment control practices will be detailed in a Project-specific Erosion and Sedimentation Control (ESC) plan developed by the contractor. The ESC will include mitigation measures. for erosion and sediment control defined in the</p>	LUP Condition 14 and WL Condition F.6 have been updated to require that a ESCP be submitted to the Board for approval

			Supporting Information Report and will be provided to the Board prior to construction.	
27	Project Description Report municipal development permits p.78	<p><b>Comment</b> The GNWT encourages project proponents to keep the municipalities (Hamlet and Charter, and Town of Inuvik) informed of project activities in advance and be aware of the requirements for development permitting within municipal boundaries. At this time Tsiigehtchic doesn't have a development permit process but SAO and Council request communication to be aware of activities within their municipal boundaries.</p> <p><b>Recommendation</b> None</p>	<p><b>Nov 22:</b> The Proponent is ground-truthing the proposed routing through the communities over the next couple of months and will engage with each community to discuss the routing with them. The Proponent will also apply for required municipal approvals and will continue to keep all of the municipalities along the route up to date on the Project status.</p>	Noted - Condition requires the submission of an updated Engagement Plan and Record.
28	Project Description Report municipal development permits p.78	<p><b>Comment</b> Hamlet of Fort McPherson is currently reviewing their Community Plan and Zoning Bylaw and it is anticipated that the new planning documents will be adopted in 2020 to support development permitting within the boundaries of Fort McPherson. The Charter Community of Tsiigehtchic is preparing to initiate a Request For Proposal process to hire a professional planning consultant to develop a Community Plan and Zoning Bylaw. Currently there is no planning documents or development permitting process in place.</p> <p><b>Recommendation</b> The GNWT recommends the proponent review the relevant draft zoning by-laws and community plans for potential issues as an added measure of due diligence.</p>	<p><b>Nov 22:</b> The Proponent will review the relevant draft zoning by-laws and community plans for potential issues as an added measure of due diligence.</p>	Noted
29	Project Description Report Topic: Closure and Reclamation Section 7 Pg. 80	<p><b>Comment</b> Section 7 of the Project Description Report explains that restoration plan that will be developed by the contractor and submitted to the MVLWB prior to construction and will include restoration activities for the construction</p>	<p><b>Nov 22:</b> Decommissioning and closure will be completed with the objective of returning the Project area to a</p>	LUP Condition and WL Condition have been updated to require that a

		<p>stage and operations stage. Later in the application (Section 11 of the Project Description Report), it is noted that the typical lifespan of a fibre optic line is 20 to 25 years and at the end of the project's operational life, it will be decommissioned according to best available practices at that time. YG then commits to providing a decommissioning plan to the MVLWB prior to the start of decommissioning activities. Based on this description, the restoration activities with respect to the fibre optic line for construction and operations should be considered progressive reclamation and the decommissioning phase should be considered final closure and reclamation. GNWT understands that large sections of the project will be underground, however according to Appendix K there are also large sections of surface-laid cable and other sections where the construction technique has yet to be determined. Since there are sections of the cable above ground, any section of the fibre optic line that will require an activity to decommission the area should be considered part of closure and reclamation. GNWT understands that best practices may change with time, however since it is known that the lifespan of the fibre optic line is 20 to 25 years, at minimum, a conceptual decommissioning plan should be included as part of the Closure and Reclamation Plan.</p> <p><b>Recommendation 1)</b> GNWT recommends at minimum, a conceptual plan for decommissioning the fibre optic line be included in the Closure and Reclamation Plan.</p>	<p>pre-Project state to the extent possible while minimizing ground disturbance. The conceptual plan for decommissioning is as described below. This information will be included in the Reclamation Plan. This objective will be achieved by removing all surface infrastructure related to the fibre optic line, including the following: aerial installation from existing poles, handholes, marker posts and any surface laid cable. At the time of removal, available best practices for decommissioning will be followed and methods to avoid ground disturbance will be used to the extent possible. However, it is inevitable that some ground disturbance will occur as a result of accessing the infrastructure and use of machinery. The ground disturbance will be limited to the highway RoW and is anticipated to involve trampled down vegetation and small ruts from equipment use. In order to minimize ground disturbance, Project components installed beneath the surface</p>	<p>Closure and Reclamation Plan be submitted for Board approval.</p> <p>Board direction.</p>
--	--	--	---	--

			<p>will remain in place. The fibre optic line is the primary Project component that will exist below-ground. After 25 years, the ground supporting the underground cable will have settled and there will be revegetation occurring above the cable. Therefore, it is expected that the removal of the underground fibre optic line will result in more environmental degradation than leaving it buried in place. Best Management Practices that will be implemented to minimize impacts related to erosion/sedimentation during and after removal of surface infrastructure include re-contouring handhole locations to ensure natural drainage occurs, revegetating areas with native grasses, shrubs and trees, avoiding placement of stockpiles within riparian areas, scheduling removal activities to occur during frozen ground conditions, and scheduling work around watercourses to avoid wet, windy and rainy periods. A Decommissioning Plan</p>	
--	--	--	---	--

			will be developed prior to conducting decommissioning activities. The Decommissioning Plan will address both below-ground and above-ground components. An estimated timeframe for decommissioning and closure will be included in the Plan.	
30	Project Description Report Topic: Heritage Resources	<p><b>Comment</b> The results of the 2016 HROA (AOA), 2016 PHFA and 2019 HROA-PHFA Updating Report have been accepted by the Culture and Heritage Division. General and specific avoidance and mitigation measures are provided in Section 5.5.3 of the Project Description.</p> <p><b>Recommendation</b> Provided that mitigation measures outlined in Section 5.5.3 of the Project Description are followed, no further archaeological work is required. Should the project footprint deviate from the existing ROW into areas of potential identified during the 2016 HROA, further work in the form of an Archaeological Impact Assessment (AIA) may be required and the Culture and Heritage Division) should be consulted.</p>	<b>Nov 22:</b> The Proponent acknowledges GNWT's comments	Noted
31	Appendix A - Geotechnical Design Brief FINAL 5.6 Road Embankment Installation Pg. 22 (pg. 306 of the PDF)	<p><b>Comment</b> In some circumstances the only economically practical installation method is to install the cable within the existing road embankment.</p> <p><b>Recommendation</b> Installation of the fibre optic cable in the embankment of NT highways is not currently authorized by GNWT-INF. The norm will be to install the fibre optic cable not less than 20.0 m from the centre line of the road. Any deviations planned by the proponent will required approval from GNWT-INF.</p>	<b>Nov 22:</b> Cable installation within the road prism will not be considered without written authorization from the Department of Infrastructure. The Proponent is working with the Department of Infrastructure on a cable alignment that avoids interference with their operations while also minimizing the clearing of vegetation. In general,	Noted

			<p>the line will be 20 m away from the highway centre line but in some locations it will be further or closer depending on site specific conditions. Detailed drawings have been shared with the Department of Infrastructure for review and comment and will continue to be shared as they are updated and developed. Final cable routing in the NT will be submitted to Department of Infrastructure for approval.</p>	
32	<p>Appendix B - DFL PRELIMINARY ROUTE DESIGN GUIDE - Sixth (6th) Pg. Segment #3 (YT Km 403 - NT Km 73), Page 361 of PDR, Culverts. (This also applies to further sections extending into NT i.e. Segment 4 onwards)</p>	<p><b>Comment</b> Statement reads "Directionally drill the conduit underneath the culvert. Crossing at 45 deg, underneath the culvert/road may also be easier to achieve depending on the terrain profile." For NT, there should not be any conduit crossing underneath the culvert.</p> <p><b>Recommendation</b> The GNWT recommends that the proponent amend the statement for NT culverts so it is clear that there will be no installation of cable or conduit at or within 10 m distance from the existing inlet or outlet of the culverts.</p>	<p><b>Nov 22:</b> Cable installation within 10 m of culverts will not be considered without written authorization from the Department of Infrastructure. The Proponent is working with the Department of Infrastructure on a cable alignment that avoids interference with their operations while also minimizing the clearing of vegetation. In general, the line will be at least 10 m away from the existing inlet or outlet of the culvert but in some locations it will be further or closer depending on site specific conditions. Detailed drawings have been shared with the</p>	

			Department of Infrastructure for review and comment and will continue to be shared as they are updated and developed. Final cable routing in the NT will be submitted to Department of Infrastructure for approval.	
33	Appendix G - DFL Conceptual Design Brief (FINAL) Item 3, NT Highway Consideration Pg. 14	<p><b>Comment</b> The statement is incorrect that there is existing conduit at Campbell Creek Bridge and MVFL is contained in the conduit. It was clarified during earlier consultation that there is no conduit currently attached to the Campbell Creek bridge.</p> <p><b>Recommendation</b> The statement should be corrected and it is noted that new line will be laid by HDD (precision drilling).</p>	<b>Nov 22:</b> The Proponent will use HDD to cross Campbell Creek. Future materials developed for the Project will include this correction.	Noted
34	Appendix G. - DFL Conceptual Design Brief (FINAL) DFL-ELE-STAN-DBF-103001 Pg. 40	<p><b>Comment</b> DFL Conceptual Design showing that cable alignment will exist on both sides of the highway, +/- 20.0m from the road centerline</p> <p><b>Recommendation</b> The GNWT recommends the applicant clarify if cable will be placed in the alignment on both sides of the Highway No. 8, and drawing reflect cable placement not less than 20.0 m from the centre line of the road rather than +/- 20.0m.</p>	<b>Nov 22:</b> The cable may be installed on either side of the highway based on ground and site conditions. At any given point along the highway, the cable will be on one side or the other, but not both at once. See responses to questions 31 and 54 regarding cable alignment from the highway centre line.	Noted
35	Appendix H - Consultation and Engagement	<p><b>Comment</b> Table 1 p.7 - doesn't include the Community of Fort McPherson The engagement log does not include any discussions that would have occurred between the GNWT, Yukon and NWTel.</p> <p><b>Recommendation</b> The GNWT recommends the inclusion of all party engagement records, between the GNWT, Communities and developers, during the pre-application phase as a measure of due diligence and as a</p>	<b>Nov 22:</b> Fort McPherson was engaged during pre-submission. Two open houses were scheduled for April 26 and May 8 to provide members of Hamlet of Fort McPherson, general public, and Tetlit Gwich'in Council to	Conditions require the submission of an updated Engagement Record and Plan

		reference for potential future planning (project amendments) engagements.	engage and provide comments, concerns, and questions about the proposed Project. Members of the Hamlet Council participated in the open house on May 8th. Yukon Government will be applying for permit from the Hamlet of Fort McPherson and will continue to engage with Hamlet members and staff to discuss local municipal regulatory requirements. GNWT and Northwestel were part of Project development and communication with them was not considered to be part of the public engagement process.	
36	Appendix I - Waste Management Plan Topic: Waste Management	<b>Comment</b> The proposed Waste Management Plan does not include the volume of waste that could be generated and the size of storage containers that will be available on site. As well, the Waste Management Plan should include secondary containment for the temporary storage of hazardous waste. <b>Recommendation</b> 1) GNWT recommends the Waste Management Plan include the volume of waste that could be generated and the size of storage containers that will be available on site. 2) GNWT recommends the Waste Management Plan include secondary containment for the temporary storage of hazardous waste.	<b>Nov 22:</b> The Waste Management Plan will be updated by the contractor prior to construction. The updated plan will include the volume of waste that could be generated, the size of storage containers that will be available on site, and a requirement for secondary containment for the temporary storage of hazardous waste.	Conditions require the submission of an updated Waste Management Plan
37	Appendix I - Waste Management Plan	<b>Comment</b> Section 4.3.5 of the Waste Management Plan explains that "If this becomes impractical, due to distance or other reasons, greywater will be treated and	<b>Nov 22:</b> The Proponent does not have any concerns with this recommendation.	WL has been updated to include Condition F.4 ,

	<p>Topic: Sumps Section 4.3.5 Pg. 6</p>	<p>discharged to a sump or natural depression located at least 100 m from the ordinary high-water mark of any waterbody and in compliance with all applicable legislation." However, Section 4.3.4 explains that sewage will be transported for disposal in municipal sewage disposal facilities (pending approval from the municipality) or porta-johns and/or pacto toilet systems will be used. As well, the Waste Management Plan explains that drill cuttings and fluid will initially be contained and stored in mud tanks at the respective drilling locations and may be disposed of in nearby natural depressions, transported for disposal in existing Dempster Highway borrow pits (subject to landowner permission) or, subject to community approval, in the nearest municipal solid waste facilities located along the highway. GNWT notes Part G, Condition 19 of the draft Standard Water Licence Conditions provided for review by the MVLWB reflects the requirement of depositing waste at least 100 m from a watercourse.</p> <p><b>Recommendation</b> 1) GNWT recommends a condition be included in the water licence so the Licensee shall not deposit waste, including wastewater, to any Watercourse, or to the ground surface within 100 metres of the Ordinary High-Water Mark of any Watercourse. GNWT notes the water licence should be clear that this deposit of waste does not include sewage.</p>		<p>which addresses the 100 meter watercourse setback.</p> <p>Board direction.</p>
38	<p>Appendix K - Mapbook (Table 1-1 p.4 of PDR).</p>	<p><b>Comment</b> It is unclear from the mapbook where the five locations where the fibre line leaves the Dempster ROW are located</p> <p><b>Recommendation</b> Suggest updating mapbook to identify the five areas from table 1-1 where the fibre line leaves the Dempster right of way.</p>	<p><b>Nov 22:</b> The five locations where the fibre line leaves the Dempster Highway ROW are listed in Table 1-1 on page 4. Two of these locations are microwave towers, and the fibre line will be located in the ROW of their access roads. The other three locations are where the line exits</p>	<p>Noted</p>

			the Dempster ROW to connect to the central offices in Fort McPherson, Tsiigehtchic, and Inuvik. Preliminary routing maps for the municipalities have been attached.	
39	Appendix M - Spill Contingency Plan Regional Contact Information	<p><b>Comment</b> Spill contingency plan Include Inuvik Region contact numbers for Environment and Natural Resources o Main line - 867-678-6650 o Regional Environmental Assessment Coordinator - 867-678-6653</p> <p><b>Recommendation</b> add the regional contact information to the spill contingency plan</p>	<p><b>Nov 22:</b> The Spill Contingency Plan will be updated by the contractor prior to construction. All contact information will be updated including the regional contact information.</p>	WL Condition G.3. and LUP Condition 51 Require that an updated Spill Contingency Plan be submitted to the Board for approval.
40	Appendix M - Spill Contingency Plan Topic: Spill Contingency Planning	<p><b>Comment</b> The Spill Contingency Plan does not include MSDS for hazardous materials or a map of the project area. The map should identify to the extent practical: nearby communities, infrastructure, any probable spill locations and direction of water flow for nearby waterbodies, storage location of hazardous material, location of all response equipment and, environmentally sensitive areas.</p> <p><b>Recommendation</b> 1) GNWT recommends the Spill Contingency include MSDS and a map that identifies the components noted above to the extent practical.</p>	<p><b>Nov 22:</b> The Spill Contingency Plan will be updated by the contractor prior to construction. The updated plan will include the MSDS for each hazardous substance found onsite, and a map that identifies the components noted in the above comment to the extent practical.</p>	WL Condition G.3. and LUP Condition 51 Require that an updated Spill Contingency Plan be submitted to the Board for approval.
GTC Department of Cultural Heritage : Sharon Snowshoe				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Analysis
22	General File	<p><b>Comment</b> <a href="#">(doc)</a> GTC Department of Cultural Heritage - Letter</p> <p><b>Recommendation</b></p>		
1	General	<p><b>Comment</b> We have reviewed the above application and have the following concerns and questions.</p> <p><b>Recommendation</b> None</p>	<b>Nov 22:</b> n/a	Noted

2	Invasive Species	<p><b>Comment</b> Is there at least a few seasons' worth of monitoring/reporting of invasive plants planned as part of the project proposal? How will invasive plant spread be managed, if related to the project?</p> <p><b>Recommendation</b> None</p>	<p><b>Nov 22:</b> The Proponent has focused on preventing the spread of invasive species due to construction activities associated with the Project. Mitigation measures that will be applied for this purpose are: . Equipment will be inspected and cleaned before mobilization to site and before moving to new areas, particularly when leaving areas where invasive plants are known to occur. . Efforts will be made to source native fill and non-native fill will be devoid of invasive plants. Fill material required for the Project will be purchased through local contractors. . Information on relevant potential invasive species will be made available to all operators to ensure adequate identification and removal during equipment inspection and cleaning. . Efforts will be made to source native fill material for construction. Monitoring is not proposed, primarily because the Project is located in a highway corridor that is subject to active vegetation management and</p>	
---	------------------	--	---	--

			because the Proponent has chosen to focus on the prevention of the spread of invasive during construction.	
3	Native Plants	<p><b>Comment</b> If and where remediation is needed, will the project commit to using northern grown and/or native plants, as much as possible?</p> <p><b>Recommendation</b> None</p>	<p><b>Nov 22:</b> Yes, if remediation is needed, the Proponent will use northern-grown or native plants as much as possible.</p>	Noted
4	Berry Harvesting	<p><b>Comment</b> If the project will be undertaken during the summer months, there may be interactions with berry harvesting</p> <p><b>Recommendation</b> The project should engage with berry harvesters to make sure that parking for harvesting, safety of pedestrians, and other factors have been discussed.</p>	<p><b>Nov 22:</b> The Proponent has and will continue to work with the communities to ensure all users of the area are as informed as possible. Depending on the area and conditions, the rate of travel for the installation can be anywhere from 100 m to 3 km /per day so the temporal interruption to any individual location will be minimal. Signage along the highway will identify upcoming areas of work to assist all users. A Traffic Management Plan will be developed prior to construction and will specify signage requirements.</p>	Board Staff Note GY-DHPW;s commitments to developing a Traffic Management Plan . Because the Plan does not pertain directly to the use of land or water and/or the deposit of waste.
5	Crime	<p><b>Comment</b> Is surface-laid cable susceptible to crime/hacking? Will this put northerners data at risk?</p> <p><b>Recommendation</b> None</p>	<p><b>Nov 22:</b> All optical circuits use encryption algorithms to secure the data. As such, the fibre line will not increase the risk related to crime/hacking.</p>	Noted

6	Cumulative effects	<p><b>Comment</b> Cumulative effects do not seem to be considered thoroughly?</p> <p><b>Recommendation</b> None</p>	<p><b>Nov 22:</b> Response: It is our understanding that a Proponent is not required to consider cumulative effects in their application to the MVLWB. In addition, few residual effects were identified as a result of the Project, and those that were identified were not considered significant. Combined with the fact that the Project is located in a disturbed area subject to ongoing vegetation clearing plans, it was the Proponent's professional judgement that a cumulative effects assessment would not be necessary for the Project</p>	Noted
7	Climate Change	<p><b>Comment</b> Climate change planning and risk scenarios do not seem to be covered thoroughly?</p> <p><b>Recommendation</b> None</p>	<p><b>Nov 22:</b> The Proponent completed a Greenhouse Gas Mitigation Assessment and a Climate Change Resilience Assessment as part of a federal initiative to decrease greenhouse gas emissions and to address climate change, respectively. The reports are attached.</p>	Noted
8	Archaeological	<p><b>Comment</b> Post impact assessment and an archaeological monitor are requested for areas where there will be ground-altering impacts and high archaeological potential, especially considering the lack of subsurface testing.</p> <p><b>Recommendation</b> None</p>	<p><b>Nov 22:</b> Ecofor made recommendations to avoid impacts to heritage resources in moderate to high potential areas (see Appendix E of the Supporting Information</p>	WL Condition B 23 and LUP Condition require the submission of a Heritage Resource Protection

			<p>Report). These recommendations will be followed to the extent possible. It is unlikely that heritage resources will be discovered given that the Project is in the highway ROW. However, a Chance Find Procedure will be developed for the Project. The Chance Find Procedure will include a requirement for training of field personnel on archaeological and cultural heritage resources that could be found on-site. On-site presentation of these procedures will be necessary for all staff performing ground disturbance, and if feasible, in collaboration with affected/local Indigenous groups. Training will be provided to Project staff prior to construction that will focus on the identification.</p>	Plan (Also referred to as Chance Find Procedure)
9	Recreational Travel	<p><b>Comment</b> Will the cleared areas open new trails for hunting and recreating and if so, do the communities want this or not? I.e. page 32 "Once the fibre line is installed, it is anticipated that recreational travel in the highway ROW will improve due to the vegetation clearing activities to make room for the equipment."</p> <p><b>Recommendation</b> None</p>	<p><b>Nov 22:</b> The vegetation clearing is limited to the highway ROW. It will result in the existing cleared area being widened slightly but it will not create any new trails that leave the highway ROW.</p>	Clarification noted

10	MVFL Lessons	<p><b>Comment</b> Is there a formal process to identify and integrate lessons learned from Mackenzie Valley fibre link project? If not, why not?</p> <p><b>Recommendation</b> None</p>	<p><b>Nov 22:</b> Lessons learned from the Mackenzie Valley Fibre Line (MVFL) have been incorporated into the design process. The Proponent has had discussions with parties involved with the MVFL. For example, we have had discussions with GNWT and Northwestel and incorporated their concerns into the design. In addition, the design team has reviewed a number of MVFL documents that are in the public domain, including post-construction reports. Some of the measures that have been included in the Project based on lessons learned from similar projects are: . The owner's design engineer will directly supervise the contractor. . The design has been separated from construction to allow for more up-front planning to identify and address environmental risks on similar projects. . Geotechnical studies were completed for the large HDD crossings. In addition, extensive geotechnical data is available on the Dempster Highway ROW. . The Proponent</p>	<p>Board staff notes GY - DHPW commitment to include Lessons learn into Permafrost Protection Plan.</p>
----	--------------	--	--	---

			has included both transportation groups in Project design to incorporate approximately 40 years of detailed historical data. . The spatial scope of the Project is being limited to the Highway ROW, which has been previously disturbed and is subject to ongoing disturbance.	
11	Animals	<p><b>Comment</b> Considering the size of grizzlies and the fact that they are curious and dig/chew, will they be able to dig up and harm the line if laid on the surface? Will other animals chew or dig at it, such as wolves or foxes? If considered unlikely, is this due to actual experience in similar areas?</p> <p><b>Recommendation</b> None</p>	<p><b>Nov 22:</b> There is a possibility of wildlife, including grizzly bears, digging up or chewing on the fibre optic line. The Project has been designed to mitigate this concern, for example, by using a robust cable with a high strength rating and burial techniques wherever possible. In addition, the cable is not electrified and will not cause harm to wildlife that have chewed through the conduit.</p>	Clarification noted
12	Wildfire	<p><b>Comment</b> How will the line withstand wildfires, which are increasing in frequency? Will the likelihood of fire (through changing fire regimes) be included in the decision matrix?</p> <p><b>Recommendation</b> None</p>	<p><b>Nov 22:</b> Utilizing the cleared area of the ROW will reduce this risk, as will the use of proposed burial techniques. Also, the cable will be encased in metal which protects the glass fibre from fire damage. If the fibre line is damaged by fire, maintenance will occur.</p>	Clarification noted

13	Indigenous Ecological Knowledge	<p><b>Comment</b> Have harvesters who make use of the highway corridor been consulted about both long-standing patterns and recent changes to the road and its immediate environment, especially relating to permafrost and wildlife behavior? There appears to be little in the way of Indigenous ecological knowledge included in the bio/physical sections of the report, which is a problematic oversight.</p> <p><b>Recommendation</b> None</p>	<p><b>Nov 22:</b> The Proponent included Indigenous ecological knowledge from the Gwich'in Land Use Plan, which is based on existing traditional and scientific knowledge about the region, when developing the Dempster Fibre Project and conducting the assessment. The Proponent included information in the currently approved Gwich'in Land Use Plan, as well as the draft updated version of the plan. A project-specific traditional ecological knowledge study was not considered to be required given the location of the project and predicted impacts. Long-standing patterns and recent changes in relation to the Dempster Highway corridor and its immediate environment would fall under the jurisdiction of the Government of Northwest Territories.</p>	Clarification noted
14	Climate Change	<p><b>Comment</b> Why is climate change, which is vastly anthropogenic, referred to as a natural process?</p> <p><b>Recommendation</b> None</p>	<p><b>Nov 22:</b> The Dempster Fibre Line is being designed in consideration of climate change.</p>	Clarification noted
15	Plant Communities	<p><b>Comment</b> If areas exist where previous disturbances from the highway or other recent changes have promoted the growth of willows or other brush, will the remediation attempt to reduce brushy</p>	<p><b>Nov 22:</b> Remediation will not remove or modify existing vegetation. The vegetation</p>	Clarification noted

		<p>growth and restore previous, natural plant communities?</p> <p><b>Recommendation</b> None</p>	<p>communities in the ROW are dynamic as they are subject to a continuous vegetation clearing plan implemented by the Government of Northwest Territories. Any vegetation removal or modification would cause disturbance and would be temporary until the next clearing cycle.</p>	
16	Local Names	<p><b>Comment</b> Local names for fish species should be local to the Gwich'in area when conducting engagement tasks-check with GRRB for more information (e.g. burbot vs. loche). As much as possible, Gwich'in language names for animals should also be included.</p> <p><b>Recommendation</b> None</p>	<p><b>Nov 22:</b> An index of the Gwich'in names of the wildlife and fish species referred to in the application will be developed. This index will be developed in collaboration with Gwich'in groups and will be used for ongoing Project engagement activities.</p>	Clarification noted
17	Photos	<p><b>Comment</b> The project description would have been more understandable if there were more photos of the exact type of work, and more images that were drafted for the public. It was hard to estimate what the actual damage would look like and what the drilling would look like, how large the cables actually will be, and so on. Life-like drawings or actual photos would be helpful.</p> <p><b>Recommendation</b> None</p>	<p><b>Nov 22:</b> The Proponent acknowledges that additional photos and images may improve an understanding of the Project. We will take this under consideration for future submissions to the Land and Water Boards.</p>	Clarification noted
18	Monitoring	<p><b>Comment</b> Can permafrost monitoring, seismic monitoring, or other monitoring be done along the cable or at the handholes, to support decision-making and policy in the Gwich'in area? For example, with dataloggers.</p> <p><b>Recommendation</b> None</p>	<p><b>Nov 22:</b> Yes, monitoring can be conducted. We have reached out to a few institutions to see if they are interested in any of the research opportunities. We</p>	Clarification noted

			invite anyone who is interested in monitoring or researching permafrost in the area to get in touch with us.	
19	Theft Prevention	<b>Comment</b> Will the proponent team run an educational campaign that the cable holds nothing of value, to prevent attempted theft? <b>Recommendation</b> None	<b>Nov 22:</b> This is under consideration and is being discussed with the telecommunications operator.	Clarification noted
20	Tsiigehtchic	<b>Comment</b> . Would a wireless solution from the planned cable route into Tsiigehtchic be considered if the drilling fails, to prevent the installation of poles and aerial wires, and at the discretion of the community? <b>Recommendation</b> None	<b>Nov 22:</b> Aerial installations are not being considered or proposed for any of the three ferry crossings. We have studied all of the large water crossings and the indications are that HDD is viable. It is understood that if this were to change, the Proponent will consider viable alternative options and a revised application would need to be submitted.	Clarification noted
21	General	<b>Comment</b> As with any application, if archaeological or heritage materials are encountered during the development within the Gwich'in Settlement Area, all work must cease immediately as required by law, and the DCH and the Prince of Wales Northern Heritage Centre in Yellowknife must then be contacted. <b>Recommendation</b> None	<b>Nov 22:</b> n/a	LUP Condition 37 addresses the procedure for site discovery and notification
Gwich'in Renewable Resources Board: Staff Gwichin Renewable Resource Board				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Analysis
1	GRRB comments	<b>Comment</b> Ensure that the problems with backfill of trenches and uneven trench depth that happened on the Mackenzie Valley fibre	<b>Nov 22:</b> Lessons learned from the MVFL have been	Clarification noted

		<p>line project are not repeated here. The RRCs brought up those issues to the Proponent as well. This will require careful consideration and monitoring throughout the project.</p> <p>&lt;strong&gt;Section 5.3.3 General mitigation measures related to wildlife and wildlife habitat Proponent mentions that reports will be shared with GTC. Please request the report to be shared with GRRB as we are the organization mandated to manage wildlife</p> <p>Can the proponent explain the rationale behind the distance recommended for raptor nests</p> <p>Can the proponent explain the rationale behind the distance recommended migratory birds nests?</p> <p>Other risks to fish and fish habitat appear to be adequately addressed by the Proponent mitigation plan.</p> <p><b>Recommendation</b> Please respond to the questions outlined above.</p>	<p>incorporated into the design process. The Proponent has had discussions with parties involved with the MVFL. For example, we have discussed with GNWT and Northwestel and incorporated their concerns into the design. In addition, the design team has reviewed a number of MVFL documents that are in the public domain, including post-construction reports. Some of the measures that have been included in the Project based on lessons learned from similar projects are: . The owner's design engineer will directly supervise the contractor. . The design has been separated from construction to allow for more up-front planning to identify and address environmental risks on similar projects. . Geotechnical studies were completed for the large HDD crossings. In addition, extensive geotechnical data is available on the Dempster Highway ROW. . The Proponent has included both transportation groups in Projet design to incorporate 40 years of</p>	
--	--	--	---	--

			<p>detailed historical data.</p> <p>. The spatial scope of the Project is being limited to the Highway ROW, which has been previously disturbed and is subject to ongoing disturbance. The Proponent commits to also sharing the report with GRRB. The setback recommended for raptor nests was adapted from the Gwich'in Land Use Plan recommendations and was increased slightly to be conservative (from 250 m to 300 m). The setback recommended for migratory bird nests (30 m) was developed based on professional judgement, industry standard, and guidance provided by Environment Canada on establishing buffer zones and setback distances. Both setbacks are intended to be conservative to accommodate the species most sensitive to disturbance.</p>	
--	--	--	--	--

