

Mackenzie Valley Highway Project Technical Data Report—Cultural and Traditional Land Use

Prepared for:

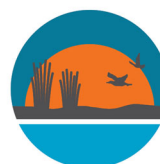
Government of the Northwest Territories

Prepared by:

K'alo-Stantec Limited

December 2022

Project No.: 1232210301



K'alo-Stantec

Limitations and Sign-off

This document entitled Mackenzie Valley Highway Project Technical Data Report—Cultural and Traditional Land Use was prepared by K'alo-Stantec Limited ("K'alo-Stantec") for the account of Government of the Northwest Territories (the "Client") to support the regulatory review process for its Developers Assessment Report (DAR) (the "Application") for the Mackenzie Valley Highway Project (the "Project"). In connection therewith, this document may be reviewed and used by the Department of Infrastructure (INF) for the Government of the Northwest Territories participating in the review process in the normal course of its duties. Except as set forth in the previous sentence, any reliance on this document by any other party or use of it for any other purpose is strictly prohibited. The material in it reflects K'alo-Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between K'alo-Stantec and the Client. The information and conclusions in the document are based on the conditions existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, K'alo-Stantec did not verify information supplied to it by the Client or others, unless expressly stated otherwise in the document. Any use that another party makes of this document is the responsibility and risk of such party. Such party agrees that K'alo-Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other party as a result of decisions made or actions taken based on this document.

Prepared by _____

(signature)

Laura Nuttall, on behalf of

Kathrin Janssen

Traditional Knowledge Facilitator

Reviewed by _____

(signature)

Laura Nuttall

Traditional Knowledge Facilitator

Reviewed by _____

(signature)

Colin Buchanan, Ph.D., Principal

Principal, Indigenous Services Technical Lead

Approved by _____

(signature)

Erica Bonhomme M.Sc., P.Geo.

Principal, Environmental Services

Executive Summary

The Government of the Northwest Territories (GNWT), Department of Infrastructure (INF) is proposing the Mackenzie Valley Highway Project (the Project) that will extend the Mackenzie Valley Highway (MVH) from Wrigley to Norman Wells. The Project consists of a 321 km all-season highway that largely follows the route of the existing Mackenzie Valley Winter Road, and the construction and operation of temporary and permanent borrow sources. The project highway alignment will pass through the Dehcho Territory and a portion of the Tulita District of the Sahtu Settlement Area (SSA) within the Northwest Territories (NT).

This technical data report (TDR) presents a review of relevant traditional land use information summarized from publicly available sources for consideration in the baseline reporting and Developers Assessment Report (DAR). This TDR is presented in the Indigenous Knowledge (IK) Baseline Table, which is a tabular summary that provides information on existing conditions and potential project effects, as identified by Indigenous groups in the source documents

Major themes emerging from the source documents include:

- The Mackenzie River and its basin provide important wildlife habitat for a number of species, such as moose, boreal woodland caribou, and furbearers.
- Traditionally harvested species such as woodland and barren ground caribou, moose, furbearers, waterfowl (including geese, swan, and ducks), and fish (including lake whitefish, lake trout, inconnu and northern pike) are found throughout the region.
- The boreal caribou population is reported to be relatively stable in most areas.
- Boreal caribou are particularly sensitive to sensory disturbance; noise and light disturbance were identified as major factors that impacts boreal woodland caribou.
- Linear disturbances can lead to an increase in predation of boreal caribou and other game animals.
- Major habitat changes that have occurred in the Dehcho region have been due to oil and gas development, introduction of bison, and forest fires.
- Habitat in the Dehcho Region remains relatively pristine.
- Petiniæah (Bear Rock) Conservation Zone is an important wildlife area for moose, furbearer habitat, boreal woodland caribou, bears, waterfowl, and migratory birds. Bear Rock is an important heritage resource and has significant cultural values for local Sahtu Dene.
- Subsistence harvesting remains important for Indigenous residents; activities such as hunting, fishing, fuel wood harvesting, and berry picking all contribute to subsistence.
- Subsistence harvesting continues to be relied on to off-set the cost of imported foods.
- Fort Good Hope-Colville Lake Group Trapping Area was identified as an important area not only for trapping but for providing control over land and resource management in the area.



Mackenzie Valley Highway Project
Technical Data Report—Cultural and Traditional Land Use

Executive Summary
December 2022

- Moose are identified as the most important species for subsistence harvest; at least five moose pasture areas have been identified that are found along the project highway alignment.
- Fishing is a commonly practiced subsistence activity in the region.
- Historical cabins are located along the Mackenzie River both north and south of Wrigley; cabins, rare features, historic sites and archaeological sites are known to exist throughout the MVH Project Area.
- The MVH will allow local residents and visitors to access the harvesting areas or heritage value areas year-round. Increased harvesting may be an indirect effect of the Project.
- Concerns were expressed regarding impacts to the cultural value of the areas, resulting in a diminished historical and social identity for PKFN community.
- Concerns were expressed about the potential number of people involved in the construction of the Great Bear River Bridge and the proximity of the work camps to the community.
- Dehcho First Nations are particularly concerned about the immediate and cumulative impacts of development in the region. Seismic lines, sensory disturbance from oil and gas exploration activities, oil and contaminant spills, and use of seismic wire.
- The Dehcho region is reported to be getting warmer and wetter overall, with more rainfall in August and September and even into October.

Additional IK information obtained through the engagement program for the Project may identify further cultural and traditional use activities and practices.

Table of Contents

1	INTRODUCTION.....	1
1.1	Types of Information	3
1.2	Limitations	4
2	STUDY AREA.....	5
2.1	Project Development Area	5
2.2	Local Study Area	5
2.3	Regional Study Area	5
3	REVIEW OF EXISTING DATA.....	6
4	TRADITIONAL LAND USE BASELINE TABLE.....	9
5	CLOSURE.....	108
6	REFERENCES.....	109
6.1	Literature Cited.....	109
6.2	Personal Communications	110

List of Figures

Figure 1.1	MVH Project Area and Study Areas.....	2
------------	---------------------------------------	---



Abbreviations

%	percent
~	approximately
>	greater than
3D	three-dimensional
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CWS	Canadian Wildlife Service
DAR	Developers Assessment Report
DLUPC	Dehcho Land Use Planning Committee
GNWT	Government of the Northwest Territories
GTA	Group Trapping Area
IBA	Important Bird Area
IK	Indigenous Knowledge
INF	Department of Infrastructure
km	kilometre
KM	kilometre marker
km ²	square kilometre
LSA	Local Study Area
m	metre
MVH	Mackenzie Valley Highway
MVRMA	<i>Mackenzie Valley Resource Management Act</i>
NT/NWT	Northwest Territories
NW	northwest
PDA	Project Development Area
PDR	Project Description Report
PKFN	Pehdzeh Ki First Nation
RCMP	Royal Canadian Mounted Police
RSA	Regional Study Area
SDMCLCA	Sahtu Dene and Métis Comprehensive Land Claim Agreement

Mackenzie Valley Highway Project
Technical Data Report—Cultural and Traditional Land Use

Abbreviations
December 2022

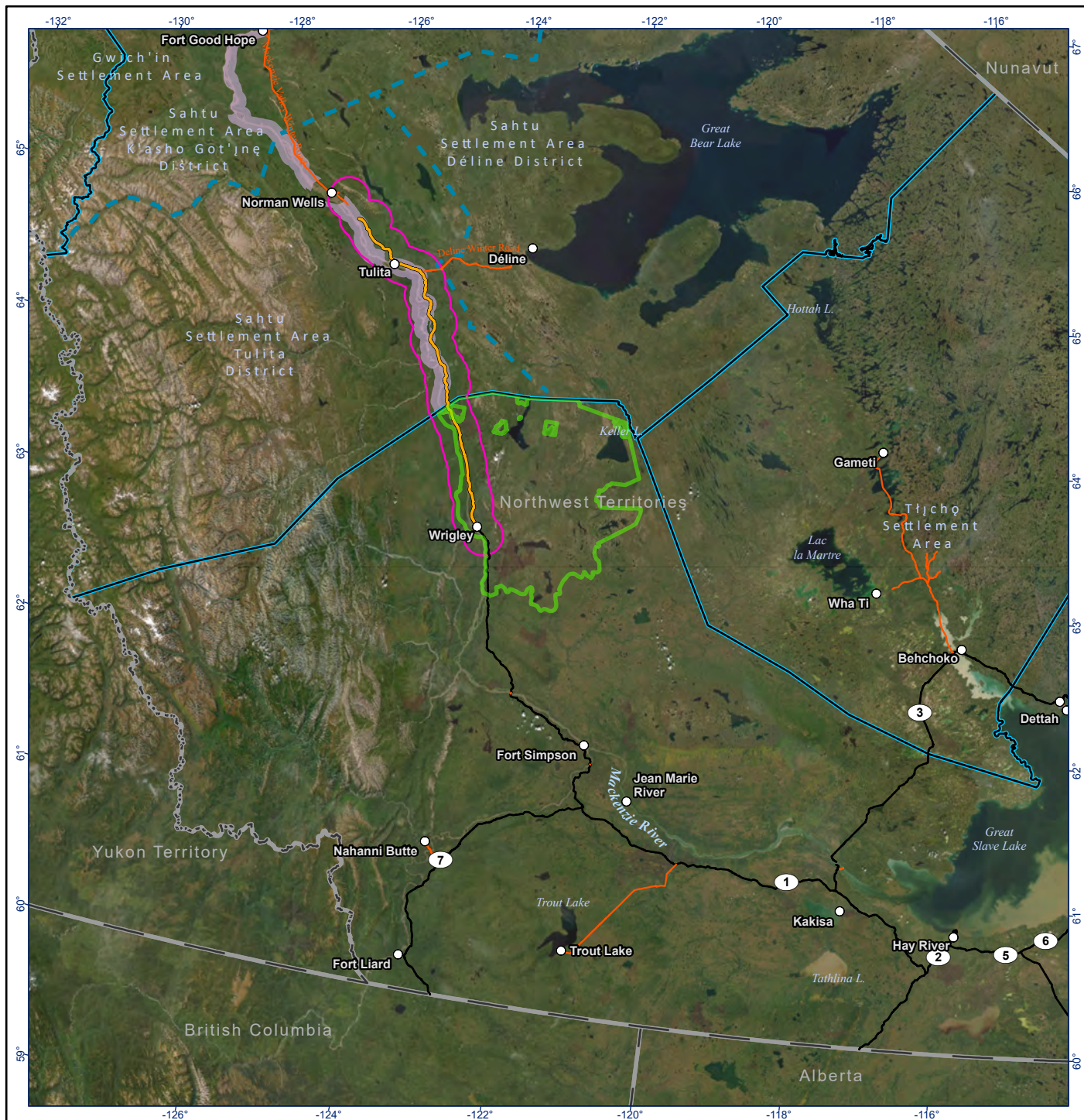
SLUP	Sahtu Land Use Plan
SLUPB.....	Sahtu Land Use Planning Board
SMZ.....	Special Management Zone
SSA	Sahtu Settlement Area
TDR	Technical Data Report
TEK	traditional ecological knowledge
the Project	Mackenzie Valley Highway Project
TK.....	traditional knowledge
TLU.....	traditional land use
ToR.....	Terms of Reference

1 Introduction

The Government of the Northwest Territories (GNWT), Department of Infrastructure (INF) is proposing the Mackenzie Valley Highway Project (the Project) that will extend the Mackenzie Valley Highway (MVH) from Wrigley to Norman Wells. The Project consists of a 321 kilometres (km) all-season highway that largely follows the route of the existing Mackenzie Valley Winter Road, and the construction and operation of temporary and permanent borrow sources. The project highway alignment will pass through the Dehcho Territory and a portion of the Tulita District of the Sahtu Settlement Area (SSA) within the Northwest Territories (NT; Figure 1.1).

The Project is subject to an environmental assessment and the requirements of Part 5 of the *Mackenzie Valley Resource Management Act* (MVRMA). This technical data report (TDR) presents the existing conditions for the cultural and traditional land use to support the Developer's Assessment Report (DAR), as required by the Terms of Reference (ToR; MVEIRB, 2015).

The TDR for cultural and traditional land use presents a tabular summary that categorizes applicable Indigenous Knowledge (IK) and Traditional Land Use (TLU) information within relevant valued component categories to identify the most relevant IK and TLU information so that it may be more effectively considered in the baseline reporting and DAR. The IK Baseline Table summarizes relevant IK information obtained from a review of publicly available source documents for Indigenous groups engaged on the Project. The IK Baseline Table was developed to facilitate the inclusion of IK and TLU throughout the development of the DAR, including the methodology, characterization of existing conditions, assessment of potential effects, identification of thresholds and limits, proposed mitigation measures and monitoring, and consideration of cumulative effects. This Table provides information on existing conditions and potential project effects, as identified by Indigenous groups in the source documents.



- Deh Cho Special Management Area
- Pehdzeh Ki Ndeh Area Of Interest
- Mackenzie Valley Highway Project
- Regional Study Area
- Community
- All-Season Road
- Winter Road
- District Boundary
- Region Boundary
- Settlement Area Boundary
- Territorial Boundary

0 40 80 Kilometres
(At original document size of 8.5x11)
1:600,000



Project Location: Wrigley to Norman Wells, NWT
Client/Project: 144903025-0051 REVA

Government of Northwest Territories
Mackenzie Valley Highway

Figure No.

1.1

Title

MVH Project Area and Study Areas

Notes

1. Coordinate System: NAD 1983 Northwest Territories Lambert
2. Data Sources: Centre for Geomatics Government of NWT, Government of Canada, Stantec
3. Background: World Topographic Map: Esri, FAO, NOAA, USGS, NRCan
World Imagery: Earthstar Geographics
World Hillshade: Esri, USGS. Imagery date: 2021

Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

1.1 Types of Information

The IK contained in this report is primarily qualitative, based on personal experience, oral traditions, and cultural identity and values and reflects the comments, observations, and experience of the study participants in the source documents. Indigenous knowledge is typically shared orally, passing from one generation to the next. Current observations about the natural environment are often rooted in knowledge and experience that extends far into the past. For the purposes of this TDR, IK may be understood to represent an Indigenous group's collective body of knowledge and understanding of a particular natural and cultural environment, accumulated and transmitted through generations of living on the land within a traditional territory or land use area. IK is cumulative and dynamic and adapts to social, economic, environmental, spiritual, and political change. The concept denotes a holistic perspective encompassing many aspects of a people's worldview and traditional ways of living. The knowledge is comprised of, but not limited to, knowledge about the environment including its use and management, values about the environment, and knowledge about traditional social, cultural, and socio-economic phenomena, both past and current.

Further, IK may be understood to be comprised of two distinct but interrelated components, traditional ecological knowledge (TEK) and TLU:

- TEK represents Indigenous knowledge about the natural and cultural environment, accumulated over generations of living on the land. TEK reflects knowledge about the environment, including management of the environment and related values. Specific forms of TEK can include knowledge about resource distribution, populations and movement patterns, schedules for resource harvesting, and species-specific habitat and behaviour. TEK also includes information on aspects of environment, including weather patterns, flood and fire cycles, effects of snowfall on travel, hunting, and other activities; information about landmarks, navigability of trails, rivers, and waterbodies; as well as general environmental conditions.
- TLU represents Indigenous knowledge about the activities, practices and places, locations and areas related to use of traditional resources, such as collection of plants and organic materials; and practices including hunting, trapping, and fishing. TLU also refers to any travel that occurs to engage in such harvesting practices. TLU includes information about how and where resources are harvested; identification of harvested species and information regarding harvesting practices (such as seasonality); information about travel and trails, or places of habitation and settlement such as cabins or campsites; as well as information about sacred areas such as burials or ceremonial sites. TLU also includes information regarding the context of use; for example, the social regulation of who hunts and when, how harvested resources are distributed within the community, and restrictions on hunting. Additional contextual information related to TLU may include temporal information (e.g., when certain sites are used or harvesting occurs, whether use occurred in the past or present) or information regarding the uses of harvested plants or animals (e.g., subsistence, medicinal, ceremonial).

Also, relevant socio-economic information contained in the source documents for Indigenous groups engaged on the Project has been included in the IK Baseline Table. This includes information about Indigenous employment and livelihood, infrastructure and services, human health, and community health and wellbeing.

Available IK information has been categorized in the IK Baseline Table according to the valued components for the DAR, including the identified key lines of inquiry (moose, caribou, and harvesting).

1.2 Limitations

IK information was obtained from publicly available sources. A lack of IK for a specific area or activity does not necessarily represent a lack of cultural and traditional use for that location or activity, especially where no Project-specific IK is available.

Additional IK information obtained through the engagement process for the Project may serve to confirm the IK information obtained through publicly available sources and provide more specific information about cultural and traditional use sites, area, practices, and activities.

2 Study Area

The MVH Project is located in the Mackenzie Valley region of the NT between the current terminus of the existing all-weather highway in Wrigley (Highway #1, kilometre marker [KM] 690) and Norman Wells (KM 1011). The project highway alignment parallels the Mackenzie River to its east and passes through the community of Tulita (KM 938). The Project is located within the Sahtu Settlement Region and is subject to the *Sahtu Dene and Métis Land Claim Settlement Act*, 1994.

The local and regional study areas presented in this TDR are the areas where data was compiled/collected to allow for an understanding of the environment in support of the Project-specific effects assessment and the cumulative effects assessment. The spatial boundaries for cultural and traditional land use are consistent with those for wildlife and wildlife habitat because there are demonstrable links between wildlife and wildlife habitat and traditional hunting and concern for caribou populations. Descriptions of study areas are provided below and are shown in Figure 1.1.

2.1 Project Development Area

The Project Development Area (PDA) is the area to be utilized by the Project and includes the alignment of the MVH between Wrigley and Norman Wells and a 100 metres (m) buffer on either side.

2.2 Local Study Area

The Local Study Area (LSA) for cultural and traditional land use is consistent with that for wildlife and wildlife habitat and is a 1 km buffer around the project highway alignment. The size of the LSA is based on measurable effects to traditionally harvested species, while also considering recommended setback distances for wildlife and wildlife habitat features. The size of the LSA is also consistent with guidance provided by Environment and Climate Change Canada (Dufour, 2020, pers. comm.).

2.3 Regional Study Area

The Regional Study Area (RSA) for cultural and traditional land use is consistent with that for wildlife and wildlife habitat and is a 15 km buffer around the project highway alignment that is used to capture a wide-range of wildlife species and wildlife habitats that could potentially be affected cumulatively by the Project and other past, present, and reasonably foreseeable projects. This is consistent with other highway projects in the NT (e.g., Inuvik to Tuktoyaktuk Highway [Kiggiak - EBA Consulting Ltd., 2011]) and follows recommendations from Environment and Climate Change Canada (Dufour, 2020, pers. comm.).

3 Review of Existing Data

The IK Baseline Table (Section 4) provides a review of relevant publicly available sources of IK information for Indigenous groups engaged on the Project to deepen the understanding of current use by these Indigenous groups. Sources consulted are listed below.

1. 5658 NWT Ltd. and GNWT (5658 NWT Ltd. and Government of Northwest Territories). 2011. Project Description Report for Construction of the Mackenzie Valley Highway Tulita District, Sahtu Settlement Area.

The Project Description Report (PDR) serves as the initial guiding document for the proposed expansion of the MVH through the Tulita District in the SSA, and it is based on nearly five decades of initiatives, studies, strategies, consultations and reports. TLU information was gathered from a series of public consultation meetings as well as from the draft *Sahtu Land Use Plan (SLUP)* (SLUPB, 2013), *Rakekee Gok'e Godi: Places We Take Care Of* (Sahtu Heritage Places and Sites Joint Working Group, 2000), *Spirit of the Mountains: Shuhtagot'ine Nene and Naats'ihch'oh Traditional Knowledge Study* (SENES, 2009), and *Traditional Knowledge Study Report: Great Bear River Bridge* (EBA, 2006).

2. Dehcho First Nations. 2011. Traditional Knowledge Assessment of Boreal Caribou (Mbedzih) in the Dehcho Region. Prepared by Dehcho First Nations for the Canadian Wildlife Service. Published by the Dehcho First Nations Fort Simpson, Northwest Territories.

Environment Canada, through the Canadian Wildlife Service (CWS), commissioned this study to gather traditional knowledge (TK) to help guide and inform the development of the boreal caribou National Recovery Strategy and Action Plan. A series of harvester meetings were held in Dehcho communities to gather TK information on boreal caribou in the Dehcho region. A total of 49 harvesters participated. Community summaries were developed using information shared at community meetings, recorded on topographic maps, and information compiled from previous studies. Community summaries were provided to each community for review and verification. Individual community summaries and maps detailing TK about caribou habitat, harvesting locations and movement were produced as confidential appendices to the study. Information about these types of locations is presented in narrative within the main body of the report.

3. Dessau. 2012. Mackenzie Valley Highway Extension Pehdzeh Ki Ndeh – Dehcho Region. Project Description Report. Prepared for Government of the Northwest Territories, Department of Transport.

The PDR identifies, analyses, and collates pertinent and available information for the MVH Project to meet the Preliminary Screening requirements of the process administered by the Mackenzie Valley Land and Water Board. There is a body of information from past studies and reports, mostly from the period 1973 to 2005, which were used to prepare the PDR for the section of the MVH alignment that occurs in the Dehcho region. This information, supplemented by input received through consultations in 2010 and 2011, have been used to characterize the biophysical and human environments and to

predict environmental impacts, gaps in information, and subsequent assessment needs for the MVH Project in the Pehdzeh Ki Ndeh - Dehcho Region.

4. EBA (EBA Engineering Consultants). 2006 Traditional Knowledge Study Report Tulita, NT, Great Bear River Bridge

The TK study was conducted between Feb 18-24, 2006 and included visits to the site of the Great Bear River Bridge with interested community members, attendance and presentation by representative of Tulita Yamoria Community at Community Leaders Meeting, group meetings with community elders/fisher/trappers and one-on-one discussions with local community members. A total of eleven participants, including elders, hunters, fishermen and others who frequent the area regularly were part of the TK study.

5. Golder. 2015. Central Mackenzie Surface Water and Groundwater Baseline Assessment. Report 1: Technical State of Knowledge. Report Number: 1401835 Final Report 1. May 21, 2015.

The report provides a compilation of surface and groundwater scientific data and Indigenous knowledge in the Sahtu Region, providing a baseline assessment of available traditional and local knowledge about permafrost, surface water, groundwater, and climate in the Central Mackenzie Valley. Information was compiled through a review of publicly available secondary sources, largely reflecting a broad-based review of traditional land use practices at a regional level. These documents were reviewed for information about traditional use and knowledge of water systems throughout the K'asho Got'ine and Tulita regions.

6. GNWT (Government of the Northwest Territories). 2018. NWT Community Survey. NWT Bureau of Statistics.

The report contains statistics compiled every 5 years reporting on Indigenous participation in traditional activities, frequency of hunting and fishing, by community.

7. IMG-Golder (IMG-Golder Corporation). 2006. Draft Report on Renewable Resource Assessment of the Pehdeh Ndeh Area of Interest. Prepared for the Canadian Parks and Wilderness Society, Northwest Territories Chapter. Yellowknife.

The report was prepared for the Canadian Parks and Wilderness Society was intended to conduct a draft assessment of the status of renewable resource and assist in the determination of the social and economic implications of the renewable resources and their uses within the Pehdzeh Ki Ndeh area of interest. The Pehdzeh Ki Ndeh is defined as an estimated 17,053 square kilometres (km²) tract of land centered at approximately 123°W and 63°50'N, a 25 km buffer around the area and the community of Wrigley. Renewable resources assessed include wildlife, fish, trees, plants, art and craft materials, wilderness, and renewable energy. Subsistence harvesting, commercial harvesting, socio-economic, and environmental components were considered for each renewable resource. Although the report relies largely on scientific publications and other ecology and resource assessment, traditional knowledge is included through interviews with Wrigley residents, Band Office representatives, and other knowledgeable persons.

8. SLUPB (Sahtu Land Use Planning Board). 2013. Sahtu Land Use Plan. Government of Northwest Territories. Good Hope.

The Sahtu Land Use Plan (SLUPB, 2013) is the mechanism by which Sahtu Dene and Métis exercise their rights under the Sahtu Dene and Métis Comprehensive Land Claim Agreement (SDMCLCA) to participate in decision making concerning the use, management, and conservation of land, water and resources. This is done by providing broad direction to community organizations, governments, regulators and applicants about how land (including water and other resources) is to be conserved, developed, and used within the SSA; it outlines appropriate land use activities, as well as where and under what conditions they can be conducted. Objectives of the land use plan are to recognize and encourage the Sahtu way of life, encourage self-sufficiency of the Sahtu, enable the Sahtu to participate fully in all aspects of the economy, integrate management of wildlife and wildlife habitat with management of all land and water use to protect and conserve wildlife and environment of the settlement area for present and future generations (SLUPB, 2013:10).

9. Sahtu Heritage Places and Sites Joint Working Group. 2000. Rakekée Gok'é Godi: Places We Take Care Of.

The Sahtu Heritage Places and Sites Joint Working Group was created pursuant to the Sahtu Dene and Métis Comprehensive Land Claim Agreement (1993). The Joint Working Group's responsibility is to make recommendations to the appropriate Minister and the Sahtu Tribal Council on heritage places and sites. This report looks at 40 places and sites that are of importance to the Sahtu Dene and makes recommendations regarding their protection.

10. McDonald, Rhea. 2010. Boreal Caribou Traditional Knowledge Collection Study: The Sahtu Settlement Area. Edited by Andrea Hrynkiw and Glen Guthrie and McDonald. For the Canadian Wildlife Service, Environment Canada.

For the study, 14 Elders, harvesters, and knowledge holders from Sahtu communities were interviewed regarding boreal woodland caribou in the Sahtu Settlement area. The participants were asked a series of questions to gain knowledge about the boreal woodland caribou and its habitat. Maps were also available for participants to identify important areas related to caribou distribution. This study provides traditional knowledge about caribou population, health, distribution, habitat, and the cultural importance to Sahtu communities. The study contains one map that describes caribou habitat and harvesting sites. The work was governed by the Dehcho First Nations' Traditional Knowledge Research Protocol (2004).

11. Tulita Renewable Resource Council. 2019. Traditional Knowledge Study for the Great Bear River Bridge Project. Prepared by Tulita Renewable Resource Council.

The Traditional Land Use Study was conducted February 18-19th, 2019 by looking at the TLU data surrounding the proposed Great Bear River Bridge. Ten harvesters were interviewed as a part of the study using a survey form format.

4 Traditional Land Use Baseline Table

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Valued Component					
Air Quality					
<u>Potential Project Effects</u> During the Wrigley Community Consultation (January 25-26th, 2012) the following additional concerns were identified: • More dust Contaminates hauled through the land, more pollution on the road			Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: 130	
<u>Existing Conditions</u> Boreal caribou are particularly sensitive to sensory disturbance and have been affected by sensory disturbance from oil and gas exploration in the past (and currently in the Cameron Hills). The potential impact of pending and future development remains a major concern.	Cameron Hills is outside the RSA (~466 km from the PDA)		Dehcho First Nations	Dehcho First Nations, 2011:14	
Noise					
<u>Existing Conditions</u> Boreal caribou are particularly sensitive to sensory disturbance and have been affected by sensory disturbance from oil and gas exploration in the past (and currently in the Cameron Hills). The potential impact of pending and future development remains a major concern.	Cameron Hills is outside the RSA (~466 km from the PDA)		Dehcho First Nations	Dehcho First Nations, 2011:14	
Harvesters note that boreal caribou are sensitive to other localized disturbances, including increased use of skidoos, increased use of motorized boats, heavy truck traffic, and low flying aircraft.		Finding means to reduce sensory disturbances would therefore benefit boreal caribou populations, especially reducing sensory disturbances at critical periods, such as during calving and over-wintering periods, needs to be a priority	Dehcho First Nations	Dehcho First Nations, 2011:14	
Even though there are a number of all season and winter roads crisscrossing the Dehcho region, and a reasonable number of boreal caribou sightings along these roads, there are no known incidences of boreal caribou being struck by vehicles. Sensory disturbance from large trucks, particularly on winter roads, is more of a concern	The PDA is located within the Dehcho Region		Dehcho First Nations	Dehcho First Nations, 2011:15	
<u>Potential Effects</u> Noise is given as a major factor that impacts boreal woodland caribou. These disturbances include drilling, seismic cut-line activities, slashing, and machines including helicopters and All-terrain vehicles that conduct work during the summer. Caribou prefer old growth areas and have a tendency to stay away from winter roads because of noise pollution. Weather also plays a significant role in the health and well-being of boreal woodland caribou. Increasing extremes in annual temperatures and flooding negatively impact herds.			Sahtu	McDonald, 2010:5	
<u>Potential Effects</u> Industry and general development are major factors that affect caribou. Noise pollution produced by these activities precludes animals from taking advantage of resources in these areas.			Sahtu	McDonald, 2010:5	
<u>Potential Effects</u> Noise and lights disturb caribou. Any development should not occur during the calving season or near caribou habitat.			Sahtu	McDonald, 2010:5	
<u>Existing Conditions</u> Boreal woodland caribou are typically found in old growth forested areas and stay away from winter roads because of the noise pollution. Therefore, motor vehicle collisions with boreal woodland caribou do not occur in the SSA.			Sahtu	McDonald, 2010:6	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Hydrogeology					
No information regarding hydrogeology was identified in review of available sources					
<u>Existing Conditions</u> Springs, mostly underground, from Tłegóhtú (Norman Wells) to the Sahtu Deh (Great Bear River) have been mapped. Springs that flow year-round have been investigated in several locations near Prohibition Creek, Vermilion Creek, and Nota Creek. Under frozen conditions, these streams produce a layered ice feature known as aufeis deposits.	Tłegóhtú (Norman Wells) to the Sahtu Deh (Great Bear River) intersects portions of the PDA Prohibition Creek, Nota Creek, and Vermilion Creek intersect the PDA.			Golder, 2015: 2-37	
<u>Existing Conditions</u> A spring location in Kweten?íá or Peten?íá (Bear Rock) was identified by community members.	The PDA intersects Bear Rock Conservation Zone.		Sahtu	Golder, 2015: 2-38	
<u>Concerns</u> During 2003 community meetings, residents expressed concerns about potential groundwater changes, patterns of surface water flow, and the amount of runoff.		During a community meeting, mitigations to address residents' concerns were developed including water withdraw and release should adhere to regulatory guidelines and retain natural drainage or implement drainage diversions.		Golder, 2015: 2-40	
Surface Water Quality and Quantity					
<u>Existing Conditions</u> According to interviews with Sahtu harvesters <i>ice</i> breaks are very powerful during the spring break around the area of the proposed Great Bear River Bridge	Great Bear River is a tributary to the Mackenzie and intersects the PDA	A Sahtu harvester requested to put markers in water to alert bridge footings. (Great Berar River Bridge)	Sahtu	Tulita Renewable Resource Council, 2019: 4,23	
<u>Potential Project Effects</u> During the Wrigley Community Consultation (January 25-26th, 2012) the participants identified concerns around the environment regarding the construction of the MVH. Impacts to water in general and the Mackenzie in particular are mentioned as concerns.			Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012: 129	
During the Wrigley Community Consultation (January 25-26th, 2012) the following additional concerns were identified: Willowlake River is contaminated; we need to protect the Blackwater area	Willowlake River is a tributary to the Mackenzie south of Wrigley and outside the RSA (~62 km from the PDA) The Blackwater River intersects the PDA The Blackwater River southeast of Blackwater Lake is outside the RSA (~47 km from PDA)		Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012: 130	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Surface Water Quality and Quantity (cont'd)					
<u>Existing Conditions</u> Water levels throughout Sahtu become very low around October, typically freezing in October and November.			Sahtu Elders and land users	Golder, 2015: 2-18	
<u>Existing Conditions</u> The Mackenzie River water drops from time to time, creating conditions that can be dangerous in that ice thickness cannot be determined through the water.			Sahtu Elders and land users	Golder, 2015: 2-18	
<u>Existing Conditions</u> Paddling on Moose Lake is no longer possible as the lake has dried. Elders have linked decreasing water levels to reduced fish and wildlife habitat, and it affects land users' travel and fishing.	Unable to determine location of Moose Lake		Sahtu	Golder, 2015: 2-21	
<u>Existing Conditions</u> In the spring, Big Smith Creek has high flows, draining out in fall. Parts of the creek are open water over winter, with water running under the surface ice.	Big Smith Creek is within the PDA.			Golder, 2015: 2-26	
<u>Existing Conditions</u> Community members have expressed concern that development may impact water quality through increased sediment from vegetation clearing along waterbodies; impacts of blasting; impacts from melting permafrost (erosion, flooding, scouring, reduced land subsistence); and impacts on fish and wildlife, and their habitats,			Elders and land users in the Sahtu region	Golder, 2015: 2-16	
<u>Concern</u> During a workshop held in 2015, residents expressed concern about impacts to Tłegqhtł (Norman Wells) water quality; given the speed at which surface and ground water flows through this system (the karst system) concerns about contamination by development could be far reaching. Concerns for water and groundwater quality, muskeg damage from equipment, subsidence of land leading to flooding were also raised.	Tłegqhtł (Norman Wells) area intersects portions of the PDA	During community meetings, mitigation measures to address concerns were developed, including water withdraw and release adhere to regulatory guidelines, disturbance of springs and aquifers be reduced, install diversion ditches on sidehill slopes so sediment from potential subsidence doesn't enter streams, implement waste and spill mitigations, retain shore and wetlands plants.		Golder, 2015: 2-38	
<u>Concern</u> Community members expressed the importance of maintaining all stream flows during and after project development to provide fish habitat and access to spawning areas.		Maintain stream flows through natural drainage or drainage diversions.	Sahtu Elders and land users	Golder, 2015: 2-20	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
<i>Terrain, Soils and Permafrost</i>					
<i>Existing Conditions</i> Warmer temperatures, melting permafrost and other environmental changes create concerns related to the environment.			Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-36	
<i>Existing Conditions</i> Forest fires are known to damage boreal caribou habitat, particularly deep burning fires that destroy lichen cover. Once a fire has damaged a habitat area, boreal caribou generally do not go back into the area for foraging purposes, and it can take decades for the land to recover. However, boreal caribou may use burned areas as travel corridors and have been observed foraging on fresh growth. Boreal caribou do not frequent burned areas in the mid to late winter, even as travel corridors.			Dehcho First Nations	Dehcho First Nations, 2011:10	
The Dehcho region is clearly getting warmer and wetter overall, with more rainfall in August and September and even into October. This change is creating more incidences of ice crusting along the ground which may make it more difficult for boreal caribou to forage for ground lichens. Sudden thaws and melting during winter months also create crusts on the snow that make it difficult for boreal caribou to move around and escape predators. In some instances, frost heaves that harbor lichens are diminishing or melting entirely which reduces availability of this particularly rich habitat site. Wetter summers and falls are resulting in higher water levels on smaller rivers and streams, increasing boat access (particularly jet boat access) into boreal caribou habitat areas previously difficult to access at these times of year.	The PDA is located within the Dehcho Region	Climate change does not yet appear to be affecting ground or hanging lichens, although some monitoring of future changes to lichen due to climate change should be undertaken.	Dehcho First Nations	Dehcho First Nations, 2011:15	
<i>Existing Conditions</i> Permafrost has traditionally been used for meat storage.				Golder, 2015: 2-15	
<i>Existing Conditions</i> According to Elders, muskeg and lakes south of Tulita freeze over during October and November; access to the lower bench portion of Little Bear River may have soft spots from areas of muskeg.	The area south of Tulita falls within the RSA (~ 3 km from PDA). Little Bear River is a tributary to the Mackenzie River and is within the RSA. (~9 km from PDA)			Golder, 2015:2-16	
<i>Potential Effects</i> Permafrost throughout the Little Bear River area can cause frost boils which can develop into sinkholes. Melting permafrost can cause landslides and water pooling on the land. Water storage, particularly when stored water cannot drain in spring, can destabilize permafrost. Even small disturbances to permafrost can create large environmental effects.	Little Bear River is a tributary to the Mackenzie River and is within the RSA. (~9 km from PDA)	According to interviews Elders and land users in the K'ásho Got'İne and Tull't'a regions, constructing drainage ditches away from roads and drilling holes at strategic locations in the frozen surface will improve drainage and erosion concerns. It is recommended that permafrost not be disturbed.	Elders and land users in the K'ásho Got'İne and Tull't'a regions	Golder, 2015: 2-14	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
<i>Terrain, Soils and Permafrost (cont'd)</i>					
<i>Existing Conditions</i> Land clearing for seismic operations is associated with fast-melting permafrost, leading to problems with vegetation re-establishment and erosion and slumping on the banks of the Sahtu waterbodies. Islands in K'áalq Túé (Willow Lake/ Brackett Lake) have experienced slumping, cabins in K'áalq Túé (Willow Lake/ Brackett Lake) have had to relocate due to eroding banks, and erosion is suspected to be affecting fish passage between K'áalq Túé (Willow Lake/ Brackett Lake) and Kelly Lake. Permafrost melt from development has also been linked to erosion in Sahtu Deh (Great Bear River) and other waterbodies in the area.	K'áalq Túé (Willow Lake/ Brackett Lake) is outside the RSA (~26 km from the PDA) Sahtu Deh (Great Bear River) is a tributary to the Mackenzie River and intersects the PDA	Limit project footprints and avoid uncommon landforms and steep slopes to the extent practical. Include adequate protection of permafrost under disturbed areas in closure and reclamation plans. Engage local landowners in permafrost monitoring to best assess the effects.	Elders in the K'ásho Got'íne and Tulít'a regions	Golder, 2015: 2-15	
<i>Vegetation</i>					
<i>Existing Conditions</i> According to the map data collected during consultation with Pehdzeh Ki First Nation (PKFN), there is a rare plant location west of the proposed highway at KM 724 near the Mackenzie River.	The rare plant location at KM 724 is in the LSA		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 1, Map Sheet 7-P	
<i>Existing Conditions</i> According to the map data obtained through public consultation with PKFN, there is a rare plant location observed to the east of the existing winter road around KM 782.	The rare plant location at KM 782 is in the LSA		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012 : App 1, Map Sheet 17-P	
During the Wrigley Community Consultation (January 25-26th, 2012) the participants identified concerns around the environment regarding the construction of the MVH. Concerns revolved around impacts to the land and forest. Reforestation was important to the participants.			Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: 129	
<i>Existing Conditions</i> Forest fires are known to damage boreal caribou habitat, particularly deep burning fires that destroy lichen cover. Once a fire has damaged a habitat area, boreal caribou generally do not go back into the area for foraging purposes, and it can take decades for the land to recover. However, there is evidence that boreal caribou may use burned areas as travel corridors and that some foraging on fresh growth does occur. Boreal caribou do not frequent burned areas in the mid to late winter, even as travel corridors.	The PDA is located within the Dehcho Region		Dehcho First Nations	Dehcho First Nations, 2011:10	
<i>Potential Project Effects</i> During consultations in 2004 and 2005, community members expressed concern that development may affect human health through water and air quality; and the health of the region's wildlife, fish and vegetation.		Improved and more frequent communication with communities regarding water quality and fish health were recommended.	Elders and land users in the Sahtu region	Golder, 2015: 2-17	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Wildlife and Wildlife Habitat					
<u>Existing Conditions</u> The Sahtu Land Use plan states that the Deh Cho is identified as a Special Management Zone to protect the water quality, riparian habitat, cultural/heritage sites, areas that are important for wildlife and wildlife harvesting. The Special Management Zone consists of a 5 km buffer applied to the length of the Mackenzie River as it runs through the Sahtu Settlement Area. The Sahtu Land Use Plan was approved August 2013.	The PDA is within the Deh Cho Special Management Zone		Sahtu	SLUPB, 2013:170	The Deh Cho Special Management Zone consists of a 5 km buffer applied to the length of the Mackenzie River as it runs through the SSA. Lands within the community boundaries of Tulita, Norman Wells and Fort Good Hope are exempt from the SLUP.
<u>Existing Conditions</u> Wildlife is assessed as being a key renewable resource in the Pehdzeh Ki Ndeh. Subsistence harvesting is an important resource use among Study Area residents and provides a fairly high amount of meat to families. Moose are acknowledge as being the most important subsistence harvest species and there are numerous areas in the Pehdzeh Ki Ndeh known to be valuable moose habitat, concentrated around the shores of its many lakes.	The PDA is located within the Pehdzeh Ki Ndeh		Pehdzeh Ki First Nation; Dehcho First Nations	IMG-Golder, 2006: 2-3	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions:</u> The Sahtu Land Use Plan states that the Petiniæah (Bear Rock) Conservation Zone is an important wildlife area for moose, furbearer habitat, boreal woodland caribou and bears.	The PDA intersects Petiniæah (Bear Rock) Conservation Zone		Sahtu	SLUPB, 2013:124	Petiniæah (Bear Rock) Conservation Zone lies within the Mackenzie River Special Management Zone across from Tulita at the confluence of the Mackenzie and Great Bear Rivers.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Wildlife and Wildlife Habitat (cont'd)					
<u>Existing Conditions:</u> The Sahtu Land Use Plan states that the Petiniæah (Bear Rock) Conservation Zone is an important wildlife area for moose, furbearer habitat, boreal woodland caribou and bears.	The PDA intersects Petiniæah (Bear Rock) Conservation Zone		Sahtu	SLUPB, 2013:124	Petiniæah (Bear Rock) Conservation Zone lies within the Mackenzie River Special Management Zone across from Tulita at the confluence of the Mackenzie and Great Bear Rivers.
<u>Existing Conditions</u> The Sahtu Land Use Plan reports that within the Deh Cho Special Management Zone water quality and riparian habitat is of primary concern. The Mackenzie River and its basin provide important wildlife habitat for a number of species such as moose, boreal woodland caribou, furbearers. Important Wildlife Areas for furbearers, moose and muskox, riparian areas with high moose density in winter time all exist in the zone.	The PDA is within the Deh Cho Special Management Zone Portions of the Mackenzie River intersect the LSA		Sahtu	SLUPB, 2013:170	The Deh Cho Special Management Area consists of a 5 km buffer that is applied to the length of the Mackenzie River as it runs through the SSA. Lands within the community boundaries of Tulita, Norman Wells and Fort Good Hope are exempt from the SLUPB.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Wildlife and Wildlife Habitat (cont'd)					
<u>Existing Conditions</u> The Renewable Resource Assessment of the Pehdzeh Ki Ndeh area of Interest Report states that moose are found throughout the area. There are calving areas on the shores Blackwater Lake, east of Blackwater Lake on the shores of Notseglee Lake on Tonaeenlee Lake, the shores of Fish Lake and northwest of Fish Lake.	Blackwater Lake, Notseglee Lake, Tonaeenlee Lake, and Fish Lake are outside the RSA (Fish Lake: ~32 km from PDA. Blackwater Lake: ~45 km from PDA. Tonaeenlee Lake: ~53 km from PDA. Notseglee Lake: ~65 km from PDA.)		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 20	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> The Renewable Resource Assessment of the Pehdzeh Ki Ndeh area of Interest Report states that some barren ground caribou of the Bathurst herd are found around the eastern boundary of Pehdzeh Ki Ndeh and some members of the Bluenose East herd are found north of Blackwater Lake and Keller Lake.	Blackwater Lake and Keller Lake are outside the RSA (Blackwater Lake: ~45 km from PDA. Keller Lake: ~99 km from PDA)		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 20-21	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> The Renewable Resource Assessment of the Pehdzeh Ki Ndeh area of Interest Report states that Boreal woodland caribou are year- round inhabitants of the Pehdzeh Ki Ndeh and use the shores of Blackwater Lake and Fish Lake as calving areas. There is a wintering ground in the highlands east of Blackwater Lake. The McConnell Range along the western border of the Study Area is a summering area and the higher areas are suspected to act as calving areas	Blackwater Lake and Fish Lake are outside the RSA (Fish Lake: ~32 km from PDA. Blackwater Lake: ~45 km from PDA.) McConnell Range is inside the RSA, located east (~10 km) of the existing winter road between Wrigley and Tulita.		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 20-21	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Boreal caribou are common throughout the Dehcho region, although some areas tend to have higher concentrations of individuals. To some degree, population densities and trends can be inferred by traditional observations of average group sizes as well as by community harvesting levels. From this perspective, the boreal caribou population in the Dehcho is relatively stable in most areas, with a tendency toward a slow decline in others, particularly in those areas impacted by forest fires, introduction of bison, and/or high levels of sensory, hunting, and/or developmental pressures.	The PDA is located within the Dehcho Region		Dehcho First Nations	Dehcho First Nations, 2011:3	Dehcho Region includes Wrigley
<u>Existing Conditions</u> Traditional knowledge information about boreal caribou recruitment activities (calving) is not extensive, likely given that boreal caribou spread out over large areas and generally stay in wetlands and burned areas that are difficult to access during the spring calving season. By the fact that populations are generally stable and that group sightings in fall and winter generally include a mix of adult and younger animals (with adults being the majority of the group), it is inferred that recruitment is stable.			Dehcho First Nations	Dehcho First Nations, 2011:4	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Wildlife and Wildlife Habitat (cont'd)					
<u>Existing Conditions</u> In the Wrigley area, the population of boreal caribou is moderate to high throughout most of the area and is considered stable in most areas, with some decline in the corridor between the Mackenzie River (Dehcho) and the Franklin Mountains. The strongest population is to the east of the Franklin Mountains. Group sizes of 6-7 animals are common in the fall through early winter with groups as large as 30-40 animals not uncommon in late winter, particularly east of the Franklin Mountains.	Wrigley and Franklin Mountains intersect the PDA Mackenzie River is within the LSA		Dehcho First Nations	Dehcho First Nations, 2011:4	
<u>Existing Conditions</u> It appears that the entire Dehcho region could be referred to as boreal caribou range, in that boreal caribou populations, in varying levels (likely dependent on habitat availability and habitat pressures), are found throughout the entire region. Although the Mackenzie Mountains are generally identified as mountain caribou range, there is also evidence from Nahanni Butte and Wrigley that there is some interaction between mountain caribou and the boreal caribou that inhabit the foothills and river valleys along the eastern edge of the Mackenzie Mountains, which means that the boreal caribou range in the Dehcho extends to some degree into the Mackenzie Mountains.	Mackenzie Mountains is outside the RSA (~1 km from PDA) Nahanni Butte is outside the RSA (~233 km from the PDA) Wrigley intersects the PDA		Dehcho First Nations	Dehcho First Nations, 2011:5:	Dehcho Region includes Wrigley
<u>Existing Conditions</u> From a traditional knowledge perspective, the degree to which individual boreal caribou move throughout the entire Dehcho range and therefore interact is not known, but it is known that many groups of boreal caribou have relatively significant 'linear' seasonal movement or migration patterns while others remain for the most part in large multi-habitat areas and simply shift the pattern of use of those areas based on seasonal habitat preferences	The PDA is located within the Dehcho Region		Dehcho First Nations	Dehcho First Nations, 2011:5:	Dehcho Region includes Wrigley
<u>Existing Conditions</u> Significant 'linear' movements appear to occur in the Wrigley area (groups of boreal caribou cross the Mackenzie River south and north of the community on the ice from east to west in the late winter / early spring and return during the late summer / early fall);	Wrigley intersects the PDA Mackenzie River (south and north of Wrigley) is within the LSA		Dehcho First Nations	Dehcho First Nations, 2011:6:	Dehcho Region includes Wrigley
<u>Existing Conditions</u> In the Wrigley area east of the Franklin Mountains, there is considerable overlap between boreal caribou range and barren-ground caribou range in the mid-winter months. Groups of boreal caribou have been observed walking and feeding among large herds of barren-ground caribou, particularly around the Fish Lake area. The barren-ground caribou, which come down from the Sahtu so are part of what is referred to as the Bluenose West herd, only recently returned to this area after being away for approximately fifty years.	Wrigley and Franklin Mountains intersect the PDA Fish Lake is outside of RSA (~32 km from PDA)		Dehcho First Nations	Dehcho First Nations, 2011:6	Dehcho Region includes Wrigley
<u>Existing Conditions</u> Overall, range and movement patterns appear to differ somewhat within the Dehcho region (significant 'linear' movement versus less obvious 'rotational' movement), with varying degrees of overlap between community land use areas, such that it would be difficult to clearly identify separate populations (subpopulations) within the region. All population groups move throughout the year in response to common seasonal habitat preferences	The PDA is located within the Dehcho Region		Dehcho First Nations	Dehcho First Nations, 2011:6	Dehcho Region includes Wrigley
<u>Existing Conditions</u> The general seasonal habitat trend is for boreal caribou to spread out throughout marsh and wetlands during the spring calving period; to stay close to and in areas with greater amounts of muskeg terrain throughout summer; to move more freely in fall and early winter throughout a range of habitats, while gathering into larger groups; and to overwinter in larger groups in areas that have higher amounts of thicker brush (both black spruce and pine) while remaining close to muskeg and 'willow prairie' areas that harbor ground lichens and sedge grasses.	The PDA is located within the Dehcho Region		Dehcho First Nations	Dehcho First Nations, 2011:6	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Wildlife and Wildlife Habitat (cont'd)					
<u>Existing Conditions</u> Dehcho region generally appears to provide the wide and diverse range of habitat types that woodland caribou use throughout the year along with ready access, in most areas, to both hanging and ground lichens and other foraging vegetation. Boreal caribou rely on ground and hanging lichens as well as sedge grasses for feed and remain close to habitat where this type of food is accessible.	The PDA is located within the Dehcho Region		Dehcho First Nations	Dehcho First Nations, 2011:7	
<u>Existing Conditions</u> Areas with 'white muskeg' are known to be good habitat as well as areas with rich 'hanging moss'. Open 'bog' areas (a few large bogs are located in the Dehcho Region, particularly between Fort Simpson and Jean Marie River) are avoided by caribou.	Fort Simpson and Jean Marie River are outside the Project RSA (Fort Simpson: ~79 km from PDA. Jean Marie River: ~220 km from PDA)		Dehcho First Nations	Dehcho First Nations, 2011:7	
<u>Existing Conditions</u> There appears to be a correlation between boreal caribou presence and pine forested areas. There are a large number of 'endaa' (wallows or licks) throughout the Dehcho, but the location of these sites is kept confidential unless there is a specific threat from development	The PDA is located within the Dehcho Region		Dehcho First Nations	Dehcho First Nations, 2011:7	
<u>Existing Conditions</u> Boreal caribou generally do not congregate in the same areas as moose due to habitat preference and well as predator avoidance.	The PDA is located within the Dehcho Region		Dehcho First Nations	Dehcho First Nations, 2011:7	
<u>Existing Conditions</u> There has been minimal change to boreal caribou habitat since oil and gas exploration was halted in the early 1970s. The Dehcho Region landscape, now that many seismic lines have grown in, remains relatively pristine habitat	The PDA is located within the Dehcho Region		Dehcho First Nations	Dehcho First Nations, 2011:7	
<u>Existing Conditions</u> Spring (late March through May): Once the snow crust softens, boreal caribou move from their overwintering habitat in relatively large groups and begin to travel to and spread out over calving areas, which are generally in wetlands, marshlands, or even burn areas that are difficult for predators to access. The largest concentrations of boreal caribou are generally seen in late winter / early spring, just before they disperse to calving areas. Summer (June through early August): Throughout the summer, boreal caribou primarily utilize muskeg areas or areas with access to muskeg. They lay in heavy moss that has permafrost under it in order to stay cool. They appear to move around less frequently during the mid summer months but begin to move more in late summer / early fall. Fall / Early Winter (late August through November): Fall is a transitional period, in that boreal caribou begin to move around over a wider and more diverse habitat area during the rutting and post rutting period. This is the time of year when boreal caribou are often seen along or crossing water bodies. Their primary habitat is 'open' country, and they still spend considerable time in muskeg areas that harbor ground lichens as well as sedge grasses. Winter (November through March): As winter progresses, boreal caribou tend to spend less time in open and muskeg areas and concentrate in larger groups on higher ground in thicker brush areas, where there is still access to open areas that harbor ground lichens. As the snow gets deeper and crusts (generally January through mid March), they remain more often in areas of dense pine or thickly wooded black spruce where snow is softer, where there is hanging lichen, and where there remains access to open, mixed vegetation for ground foraging. This particular mix of habitat, which supports larger groups in smaller habitat use areas, appears critical for over-wintering survival	The PDA is located within the Dehcho Region		Dehcho First Nations	Dehcho First Nations, 2011:7-8	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Wildlife and Wildlife Habitat (cont'd)					
		Based on Dehcho First Nations knowledge, factors affecting calf survival include the following: - Minimizing disturbance to boreal caribou cows during the mid to late winter when energy conservation is important, and relocation is difficult due to snow conditions - Protecting known and likely calving habitat and minimizing disturbances in wetland / marsh / and burn areas during late April through early June Controlling known calf predator populations (wolves and bears)	Dehcho First Nations	Dehcho First Nations, 2011:10	
<u>Existing Conditions</u> Although, for the most part, boreal caribou habitat in the Dehcho is relatively pristine, major habitat changes that have occurred in the Dehcho have been due to oil and gas development, introduction of bison, and forest fires.	The PDA is located within the Dehcho Region		Dehcho First Nations	Dehcho First Nations, 2011:10	
<u>Existing Conditions</u> Forest fires are known to damage boreal caribou habitat, particularly deep burning fires that destroy lichen cover. Once a fire has damaged a habitat area, boreal caribou generally do not go back into the area for foraging purposes, and it can take decades for the land to recover. However, there is evidence that boreal caribou may use burned areas as travel corridors and that some foraging on fresh growth does occur. Boreal caribou do not frequent burned areas in the mid to late winter, even as travel corridors.	The PDA is located within the Dehcho Region		Dehcho First Nations	Dehcho First Nations, 2011:10	
<u>Existing Conditions</u> In the Dehcho Region, a few boreal caribou habitat areas have been impacted by forest fire, but the habitat east of the Franklin Mountains in the Wrigley area have been relatively fire free and habitat remains in good shape.	Wrigley and Franklin Mountains intersect the PDA	Dehcho First Nations request that particularly rich habitat areas, known to harbor quality lichen cover, need to be documented and listed under the GNWT's 'values at risk' protocol for fire protection decision-making purposes.	Dehcho First Nations	Dehcho First Nations, 2011:11	Dehcho Region includes Wrigley
<u>Existing Conditions</u> Participants in a 2014 Tulit'a TK Study identified Dehdélel̥q Tué (Sucker Lake/ Three Day Lake) as important wildlife habitat.	A portion of Dehdélel̥q Tué (Sucker Lake/ Three Day Lake) overlaps with the RSA. (~14 km from PDA)			Golder, 2015: 2-17	
<u>Existing Conditions</u> Dehcho First Nations are particularly concerned about the immediate and cumulative impacts of development in the region. Seismic lines, sensory disturbance from oil and gas exploration activities, oil and contaminant spills, and use of seismic wire all resulted in immediate impacts to boreal caribou. Animals were driven away from development activities and did not return to these areas for many years; some animals became entangled in seismic wire and died.	The PDA is located within the Dehcho Region		Dehcho First Nations	Dehcho First Nations, 2011:11	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Wildlife and Wildlife Habitat (cont'd)					
<u>Potential Project Effects</u> Dehcho First Nations expressed concerns about animals becoming contaminated through exposure to oil and other contaminants left on or under the ground.					
<u>Potential Project Effects</u> Where development stopped and once many of the seismic lines grew back in, boreal caribou appear to have re-adapted to the landscape and the re-grown lines do not appear to be a deterrent to use. Some elders have commented that where intensive three-dimensional (3D) seismic has continued, boreal caribou have become more wary and do not linger as long in open areas as they did prior to these disturbances.			Dehcho First Nations	Dehcho First Nations, 2011:11	
<u>Existing Conditions</u> Wolf populations throughout the Dehcho region appear to be increasing, due in part to the fact that fewer of these animals are trapped or hunted today than in the past, for both cultural and socio-economic reasons. However, wolf pack sizes are considered to be normal for the area (generally 4-7 animals in a pack) and there is no evidence of increased killing of boreal caribou by wolves.	The PDA is located within the Dehcho Region		Dehcho First Nations	Dehcho First Nations, 2011:12	
<u>Potential Project Effects</u> Harvesters know that seismic and other lineal disturbances open corridors for wolves and can lead to an increase in predation of boreal caribou and other game animals and are concerned about this impact.			Dehcho First Nations	Dehcho First Nations, 2011:12	
<u>Existing Conditions</u> An increase in the bear population throughout the Dehcho region has been observed. Study participants reported that it was not uncommon to see a sow bear with three cubs, which would normally be considered quite unusual. It is known that bears will kill boreal caribou calves in the spring time. The increase in bears is largely due to the fact that the harvesting of bears for meat and fur has declined considerably, as harvesters are uncomfortable harvesting and eating bears that may have been foraging in dumps or other contaminated sites.	The PDA is located within the Dehcho Region		Dehcho First Nations	Dehcho First Nations, 2011:12	
<u>Existing Conditions</u> Cougars have been increasingly seen (directly or through tracks) throughout the Dehcho region over the past decade and are suspected of preying on boreal caribou, although there is no direct evidence to date of this occurring. This increase in cougars appears to be associated with a concurrent increase in whitetail deer (jumping deer) in the area and extensive oil and gas exploration activity occurring in northern Alberta and British Columbia (perhaps pushing cougars northward).	The PDA is located within the Dehcho Region. Wrigley is within the PDA		Dehcho First Nations	Dehcho First Nations, 2011:13	
<u>Existing Conditions</u> Increased predation of boreal caribou by wolves, bears, and cougars may be offset by the fact that other prey species are available. Moose populations remain high throughout the Dehcho region, there has been a large increase in bison populations in the Fort Providence and Nahanni Butte areas, whitetail deer populations appear to be gradually increasing and, in the past few years, signs of elk have appeared in the Mackenzie Mountains west of Wrigley and around Trout Lake. Beaver populations have also been increasing due to less trapping activity, and it is known that wolves and bear prey on beaver.	The PDA is located within the Dehcho Region Fort Providence, Nahanni Butte, Mackenzie Mountains, and Trout Lake are outside the RSA. (Mackenzie Mountains: ~1 km from PDA. Nahanni Butte: ~233 km from PDA. Trout Lake: ~296 km from PDA. Fort Providence: ~358 km from PDA.)	Ongoing monitoring of predator and prey species needs to be carried out, with a focus on boreal caribou predation rates. Measures to increase harvesting to more historical and traditional levels also need to be considered.	Dehcho First Nations	Dehcho First Nations, 2011:13	
<u>Existing Conditions</u> Overall, boreal caribou in the Dehcho region appear to be in good health. There are no reported incidents of unusual internal parasites or evidence of disease and animals are generally fat when harvested in the fall and winter. The only two health issues that harvesters express concern about are the handling and collaring of boreal caribou for research purposes and the appearance of two apparently stressed and unusually thin animals in the Trout Lake area	The PDA is located within the Dehcho Region Trout Lake is outside the RSA (~296 km from PDA)		Dehcho First Nations	Dehcho First Nations, 2011:13	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Wildlife and Wildlife Habitat (cont'd)					
<u>Potential Project Effects</u> Harvesters have seen collared animals with open sores on their necks and at least one collared animal appears to have died either through starvation or disease because its remains were not scavenged. Elders are increasingly uncomfortable about the need to chase, net, and handle animals for collaring; about the weight and size of the collars around the animals' necks; and about the impact of begin disrespectful to the animals on the long-term sustainability of the population.		Collaring remains a controversial issue. In spite of concerns by elders, most communities agreed to collaring in order to get baseline data for management purposes. Now that adequate data has been gathered and given ongoing concerns about the negative impacts of collaring, the general consensus is that collaring should not continue. There are two main concerns: 1) that netting, handling, and collaring of animals causes physical injury and weakening of collared animals, and 2) that netting, handling, and collaring of animals is culturally inappropriate and disrespectful. Other means of carrying out research, using less intrusive methods, need to be developed.	Dehcho First Nations	Dehcho First Nations, 2011:13-14	
<u>Existing Conditions</u> Boreal caribou are particularly sensitive to sensory disturbance and have been affected by sensory disturbance from oil and gas exploration in the past (and currently in the Cameron Hills). The potential impact of pending and future development remains a major concern.	Cameron Hills is outside the RSA (~466 km from PDA)		Dehcho First Nations	Dehcho First Nations, 2011:14	
<u>Potential Project Effects</u> Harvesters note that boreal caribou are sensitive to other localized disturbances, including increased use of skidoos, increased use of motorized boats, heavy truck traffic, and low flying aircraft.		Finding means to reduce sensory disturbances would therefore benefit boreal caribou populations, especially reducing sensory disturbances at critical periods, such as during calving and over-wintering periods, needs to be a priority	Dehcho First Nations	Dehcho First Nations, 2011:14	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Wildlife and Wildlife Habitat (cont'd)					
<u>Potential Project Effects</u> Over-harvesting is of moderate concern at this time, with most concerns being expressed about the following areas: to the southwest of Buffalo Lake, to the west of the community of Hay River, along the river systems around Fort Providence, and around the Fish Lake and Willowlake River areas near Wrigley. Over-harvesting by Dehcho harvesters is not the issue, because traditional harvesting has clearly declined over the past few decades for a number of reasons but there has been a slow increase in non-Dehcho and non-Dene hunters coming into a few reasonably accessible habitat areas in the Dehcho during the fall and winter months.	Wrigley intersects the PDA Fish Lake, Buffalo Lake, Hay River, and Fort Providence are outside the RSA (Fish Lake: ~25 km from PDA. Fort Providence: ~358 km from PDA. Hay River: ~484 km from PDA. Buffalo Lake: ~523 km from PDA) Willowlake River is a tributary to Mackenzie south of Wrigley and outside the RSA (~53 km from PDA)	It is not known how many animals non-Indigenous hunters are taking so this situation needs to be more closely monitored	Dehcho First Nations	Dehcho First Nations, 2011:14	
<u>Potential Project Effects</u> Even though there are a number of all season and winter roads crisscrossing the Dehcho region, and a reasonable number of boreal caribou sightings along these roads, there are no known incidences of boreal caribou being struck by vehicles. Sensory disturbance from large trucks, particularly on winter roads, is more of a concern	The PDA is located within the Dehcho Region		Dehcho First Nations	Dehcho First Nations, 2011:15	
<u>Existing Conditions</u> The Dehcho region is clearly getting warmer and wetter overall, with more rainfall in August and September and even into October. This change is creating more incidences of ice crusting along the ground which may make it more difficult for boreal caribou to forage for ground lichens. Sudden thaws and melting during winter months also create crusts on the snow that make it difficult for boreal caribou to move around and escape predators. In some instances, frost heaves that harbor lichens are diminishing or melting entirely which reduces availability of this particularly rich habitat site. Wetter summers and falls are resulting in higher water levels on smaller rivers and streams, increasing boat access (particularly jet boat access) into boreal caribou habitat areas previously difficult to access at these times of year.	The PDA is located within the Dehcho Region	Climate change does not yet appear to be affecting ground or hanging lichens, although some monitoring of future changes to lichen due to climate change should be undertaken.	Dehcho First Nations	Dehcho First Nations, 2011:15	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
<i>Wildlife and Wildlife Habitat (cont'd)</i>					
		Dehcho First Nations provided community-based recommendations to be considered by Canadian Wildlife Service in its development of a National Caribou Recovery Strategy and Action Plan, including: • Finalize and approve the Dehcho Land Use Plan and formally establish the Dehcho Resource Management Authority to implement the land use plan and other wildlife and resource management activities as they relate to boreal caribou. • Finalize the establishment of current Candidate Protected Areas in the Dehcho, with full surface and sub-surface protection from industrial development, in order to preserve large undisturbed boreal caribou habitat areas. • Restrict and monitor industrial development generally during critical boreal caribou calving and over-wintering periods • Halt new boreal caribou collaring research and work with harvesters to develop alternative research and population monitoring methods, including greater use of community-based monitoring, aerial surveys, and less intrusive technical monitoring devices Restrict further expansion of imported bison populations into boreal caribou habitat areas by opening these areas to bison harvesting	Dehcho First Nations	Dehcho First Nations, 2011:15-16	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
<i>Wildlife and Wildlife Habitat (cont'd)</i>					
		- Carry out more detailed analyses of critical habitat characteristics, with a particular focus on calving and over-wintering habitat as well as lichen availability, quality, density, and vulnerability (from development, airborne pollution, and climate change) - Verify special habitat sites / areas – such as wallows/licks, rich lichen areas, old growth forest areas, calving areas, etc. – and locate these sites / areas on GNWT ‘values at risk’ maps to guide forest fire management decisions - Restrict non-Dene hunting for boreal caribou during the overwintering period and in locations where overhunting appears to be impacting populations (i.e., shorten current season, review hunting zones, and protect mature bulls) - Identify and implement measures to encourage increased traditional harvesting of wolf and bear in order to limit population growth, while monitoring predator populations. Ensure that Dehcho harvesters respect critical habitat periods and voluntarily maintain current harvesting levels rather than expanding or increasing harvest levels.			
<i>Existing Conditions</i> The Renewable Resource Assessment of the Pehdzeh Ki Ndeh area of Interest Report states that lynx is found in the Blackwater River system southeast from the lake and on the shores of Fish Lake.	Blackwater River southeast of Blackwater Lake and Fish Lake are outside the RSA (Fish Lake: ~25 km from PDA. Blackwater River: ~47 km from PDA)		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 20	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Wildlife and Wildlife Habitat (cont'd)					
<u>Existing Conditions</u> The Renewable Resource Assessment of the Pehdzeh Ki Ndeh area of Interest Report states that marten is found in the Blackwater system southeast of the lake and on the shores of Fish Lake.	Blackwater River southeast of Blackwater Lake and Fish Lake are outside the RSA (Fish Lake: ~25 km from PDA. Blackwater River: ~47 km from PDA)		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 20	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> The Renewable Resource Assessment of the Pehdzeh Ki Ndeh area of Interest Report states that mink is found in the Blackwater system southeast of the lake and on the shores of Fish Lake.	Blackwater River southeast of Blackwater Lake and Fish Lake are outside the RSA (Fish Lake: ~25 km from PDA. Blackwater River: ~47 km from PDA)		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 20	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> The Renewable Resource Assessment of the Pehdzeh Ki Ndeh area of Interest Report states that beaver is found in the Blackwater River system southeast from the lake, the chains of small lakes east of Blackwater Lake, the shores of Fish Lake, the shores of Spuice/Tseepantee Lake.	Blackwater River southeast of Blackwater Lake and Fish Lake and Spuice/Tseepantee Lake are outside the RSA (Fish Lake: ~25 km from PDA. Blackwater River: ~47 km from PDA. Tseepantee Lake: ~94 km from PDA)		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 20	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Moose are found throughout the Pehdzeh Ki Ndeh in every season. They occur in notably higher densities in the lower lying parts of the Franklin Mountains – in the spruce forests, bogs, ponds and streams. Southeast of Blackwater Lake is considered key moose habitat. Moose are habitually seen on the shores of the larger lakes and along the river valleys in the area.	The PDA is within Pehdzeh Ki Ndeh Franklin Mountains is within the PDA Blackwater Lake is outside the RSA (~45 km from PDA)		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 20	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Wildlife and Wildlife Habitat (cont'd)					
<u>Existing Conditions</u> Moose in the Pehdzeh Ki Ndeh share calving grounds with boreal woodland caribou on the north and south shores of Blackwater Lake and the shores of Fish Lake.	Blackwater Lake and Fish Lake are outside the RSA (Fish Lake: ~25 km from PDA. Blackwater Lake: ~45 km from PDA)		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 22	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> The Renewable Resource Assessment of the Pehdzeh Ki Ndeh area of Interest Report states that moose thrive on post burn vegetative communities and there are two significant burn areas from within the last 10 years. One is located in the south-east portion of the Pehdzeh Ki Ndeh and the other lies along the southwest shore of Blackwater Lake	Blackwater Lake is located outside the RSA (Blackwater Lake: ~45 km from PDA)		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 22	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> The Renewable Resource Assessment of the Pehdzeh Ki Ndeh area of Interest Report reported that within the Dehcho region, local knowledge and sporadic surveys have indicated that moose populations in the area are either decreasing or considered to be stable.	The PDA is located within the Pehdzeh Ki Ndeh area The PDA is within the Dehcho Region		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 22	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley. Deh Cho Region is assumed to correspond to the Deh Cho Territory cited by the GNWT.
<u>Existing Conditions</u> The Renewable Resource Assessment of the Pehdzeh Ki Ndeh area of Interest Report has stated that Boreal woodland caribou are year-round inhabitants of Pehdzeh Ki Ndeh. In the east central part of the area, there is a plateau that reportedly acts as a wintering ground for caribou.	The PDA intersects the Pehdzeh Ki Ndeh area		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 23	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Wildlife and Wildlife Habitat (cont'd)					
<u>Existing Conditions</u> Woodland caribou use the shores of Blackwater Lake and Fish Lake as calving grounds. The McConnell Range along the western border of the Pehdze Ki Ndhe is a summering area and the higher areas are suspected to act as calving areas. Their preferred habitat is old growth (over 100 years old) coniferous forests that tend to foster extensive lichen growth on trees and the forest floor. In winter, they prefer upland areas with less snow and in the summer, they favour forest edges, marshes and meadows where their diet consists of od new plants and grasses. Burns in the area within the past fifteen years around the Blackwater Lake area have cleared this type of habitat.	Blackwater Lake and Fish Lake are outside of RSA (Fish Lake: ~25 km from PDA. Blackwater Lake: ~45 km from PDA) McConnell Range is inside the RSA, located east (~10 km) of the existing winter road between Wrigley and Tulita.		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 23	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> The Renewable Resource Assessment of the Pehdzeh Ki Nheh area of Interest Report indicated that woodland caribou in the Dehcho are believed to be declining due to changing habitat conditions and increasing moose numbers, which may attract predators such as wolves and black bears.	The PDA is located within the Dehcho Region The PDA is located within the Pehdzeh Ki Nheh area		Pehdzeh Ki Dehcho First Nations	IMG-Golder, 2006: 23	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley. Deh Cho Region is assumed to correspond to the Deh Cho Territory cited by the GNWT.
<u>Existing Conditions</u> The Renewable Resource Assessment of the Pehdzeh Ki Nheh area of Interest Report reports that the boreal ecotype of woodland caribou numbers approximately 5,200 in the NT according to the NWT government, which lists their population as “sensitive”. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC ¹) has recognised them as “threatened”. Prime factors adding to the boreal caribou’s population status uncertainty are habitat loss, diseases and human activities – especially those that develop linear corridors, as in oil and gas developments.	The PDA is located within the Pehdzeh Ki Nheh area		Pehdzeh Ki DehchoFirst Nations	IMG-Golder, 2006: 23	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.

¹ Reference to COSEWIC status is as appeared in the original source. Currently, Barren-ground caribou are designated as threatened by COSEWIC but are not currently listed under Schedule 1 of the federal *Species at Risk Act*. Boreal caribou are designated as threatened by the COSEWIC and under Schedule 1 of the federal *Species at Risk Act*. For further information regarding the COSEWIC status of caribou, see Technical Data Report—Caribou and Moose.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Wildlife and Wildlife Habitat (cont'd)					
<u>Existing Conditions</u> The Pehdzeh Ki Nheh lies within the established lynx range. The Renewable Resource Assessment of the Pehdzeh Ki Nheh area of Interest Report indicated lynx habitat throughout the Blackwater River system and along the shores of Fish Lake. Lynx and many other furbearers' populations fluctuate with cycling prey numbers which include small mammals and hares.	The Blackwater River southeast of Blackwater Lake, and Fish Lake are outside the RSA (>30 km from PDA)		Pehdzeh Ki Dehcho First Nations	IMG-Golder, 2006: 23	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> The Renewable Resource Assessment of the Pehdzeh Ki Nheh area of Interest Report states that marten is found in the Blackwater system southeast of the lake and on the shores of Fish Lake. The Horn Plateau to the south of the Pedzeh Ki Ndeh is considered prime marten habitat, whose population may act as a source for surrounding areas. Marten populations are likely stable and are considered "secure" in the NT.	The Blackwater River southeast of Blackwater Lake, Fish Lake and the Horn Plateau are outside the RSA (Fish Lake: ~25 km from PDA. Blackwater River: ~47 km from PDA. Horn Plateau: ~177 km from PDA)		Pehdzeh Ki Dehcho First Nations	IMG-Golder, 2006: 24	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> The Renewable Resource Assessment of the Pehdzeh Ki Nheh area of Interest Report states that mink is found through the Blackwater River system and along the shores of Fish Lake. Mink populations are believed to be stable and are ranked as secure in the NT.	The Blackwater River intersects the PDA Fish Lake is outside the RSA (~25 km from PDA)		Pehdzeh Ki Dehcho First Nations	IMG-Golder, 2006: 25	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Beaver is found through the Blackwater River system and along the shores of Fish Lake an along the shores of Tseepantee Lake.	The Blackwater River intersects the PDA Fish Lake and Tseepantee Lake are outside the RSA (Fish Lake: ~25 km from PDA. Tseepantee Lake: ~94 km from PDA)		Pehdzeh Ki Dehcho First Nations	IMG-Golder, 2006: 25	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Red fox, fisher, wolverine, otter and muskrat are all also found in the Pehdzeh Ki Ndeh and sometimes trapped.	The PDA is within the Pehdzeh Ki Ndeh		Pehdzeh Ki Dehcho First Nations	IMG-Golder, 2006: 25	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Wildlife and Wildlife Habitat (cont'd)					
<u>Existing Conditions</u> The Renewable Resource Assessment of the Pehdzeh Ki Nheh area of Interest Report has stated a 2002 report found that the highest concentration of moose are on the shores of the Blackwater Lake, on Tonnaneenlee Lake, the shores of Fish Lake and northwest of Fish Lake. The highest concentrations of caribou are reported as being on the shores of Blackwater Lake and east of Blackwater Lake in the winter. The old army road traverses the Blackwater River system where moose and caribou are known to occur and calve.	Blackwater Lake Tonnaneenlee Lake and Fish Lake are outside the RSA (Fish Lake: ~25 km from PDA. Blackwater River: ~47 km from PDA. Tonnaneenlee Lake: ~50 km from PDA)		Pehdzeh Ki Dehcho First Nations	IMG-Golder, 2006: 27	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Moose habitat is located directly on the west side of the proposed Great Bear River Bridge.	The Great Bear River flows into the Mackenzie River and is located within the PDA		Sahtu	EBA, 2006:6	
<u>Existing Conditions</u> According to the Traditional Knowledge Study conducted by the EBA in 2006 calving areas for moose are located on the islands in the Mackenzie River to the SW and SE of Tulita.	Portions of the Mackenzie River are located within the LSA		Sahtu	EBA, 2006: Fig1	
<u>Potential Effects</u> The proposed Highway construction period is scheduled to occur primarily in winter, with some grading, compacting, surfacing, selective culvert installation and adjustment activities taking place in spring or summer. As such, the construction activities should have little to no effect on traditional harvesting activities that occur during spring, summer and fall. However, Highway construction may affect the local distribution of some wildlife during the winter months. Wildlife may avoid areas under construction due to human activity and vehicle movement.	PDA		Sahtu	5658 NWT Ltd. and GNWT, 2011:12-12	
<u>Potential Effects</u> The presence of the Highway is expected to provide easier access to harvesting areas, heritage value areas, and traditional trails located near the alignment. This may be considered either a positive or a negative effect, depending on the extent of the impact from increased access. The Highway will allow local residents and visitors to access the harvesting areas or heritage value areas year-round. Increased harvesting may be an indirect effect of the Highway.	PDA		Sahtu	5658 NWT Ltd. and GNWT, 2011:12-12	
<u>Existing Conditions</u> The Sahtu consider boreal woodland caribou to be very important. The families in the communities use the hides for clothing and the meat is used as a food source.			Sahtu	McDonald, 2010:2	
<u>Existing Conditions</u> The harvest of Boreal woodland caribou took place in the Stewart Lake area southward towards the mouth of the Keele and Redstone Rivers. This practice no longer occurs.	The Redstone River and Keele River are located within the RSA (Redstone River: ~2 km from PDA. Keele River: ~3 km from PDA) Stewart Lake is outside the RSA (~24 km from PDA)		Sahtu	McDonald, 2010:2	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Wildlife and Wildlife Habitat (cont'd)					
<u>Existing Conditions</u> Boreal woodland caribou can be found in two general areas on each side of the Mackenzie River. The east side of the river includes areas around Kelly Lake, Lennie Lake and Oscar Lake. Boreal woodland caribou are also found on the west side of the Mackenzie River between Stewart Lake, Tate Lake and Rusty Lake to the south along the Keele River. Participants identified two other lakes by name (Clarke Lake and Fish Lake). However, their locations were not provided so they cannot be included with the others. Both, elders and active hunters stated that these groups tend to stay away from cut lines and roads.	Kelly Lake, Lennie Lake, Oscar Lake, Stewart Lake, Tate Lake and Rusty Lake are outside the RSA (Tate Lake: ~23 km from PDA, Stewart Lake: ~24 km from PDA, Kelly Lake: ~24 km from PDA, Lennie Lake: ~42 km from PDA, Rusty Lake: ~33 km from PDA)		Sahtu	McDonald, 2010:2	
<u>Existing Conditions</u> According to the participants, the primary food consumed by boreal woodland caribou includes willow tips, grasses, white lichen, and spruce tree moss. Salt licks are also actively sought out by the caribou.			Sahtu	McDonald, 2010:4	
<u>Existing Conditions</u> The Sahtu boreal woodland caribou groups do not migrate very far during any time of the year. Primary habitat has remained fairly stable in recent years due to the low incidence of disturbance by fire and the populations have remained fairly stable.			Sahtu	McDonald, 2010:4	
<u>Existing Conditions</u> Small populations of boreal woodland caribou can be observed within the Tulita area during the summer months. These are located in open meadows on high ground, where they forage for mosses. They are also found near rivers and lakes during times of high insect infestation.	The PDA intersects Tulita		Sahtu	McDonald, 2010:4	
<u>Existing Conditions</u> Elders reported that there is a resident boreal woodland caribou group of 10-15 animals in the Kelly Lake area that are present throughout the year. They are seen near rivers in the spring when they seek out salt licks. During winter, they travel wherever there is adequate cover provided by forest growth and hard ground. During the fall time, they go to the high ground and come together for the annual rut, but not in large numbers.	Kelly Lake is outside the RSA (~24 km from PDA)		Sahtu	McDonald, 2010:4	
<u>Existing Conditions</u> The consensus of the people interviewed is that there are more caribou within the region now. All interviewees reported seeing more signs of groups of caribou. This is attributed to a decrease in industrial activities throughout their habitat in recent years as caribou tend to avoid developed areas including roads and seismic lines. Lots of tracks are evident throughout the year and caribou are only hunted when opportunistically encountered by hunters.			Sahtu	McDonald, 2010:5	
<u>Potential Effects</u> Noise is given as a major factor that impacts boreal woodland caribou. These disturbances include drilling, seismic cut-line activities, slashing, and machines including helicopters and All-terrain vehicles that conduct work during the summer. Caribou prefer old growth areas and have a tendency to stay away from winter roads because of noise pollution. Weather also plays a significant role in the health and well-being of boreal woodland caribou. Increasing extremes in annual temperatures and flooding negatively impact herds.			Sahtu	McDonald, 2010:5	
<u>Potential Effects</u> Industry and general development are major factors that affect caribou. Noise pollution produced by these activities precludes animals from taking advantage of resources in these areas.			Sahtu	McDonald, 2010:5	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Wildlife and Wildlife Habitat (cont'd)					
<u>Existing Conditions</u> People from all SSA communities have observed an increase in wolf populations in recent years. This increase appears to be linked to a decrease in wolf trapping activities by SSA residents in recent years. Other observations include a general increase in the abundance of moose, muskox and beavers. The elders are adamant that there is a connection between the numbers of kinds of prey species and the availability of food resources. Muskoxen are a fairly new inhabitant in many parts of the SSA. An increase in the number of prey species like muskox and moose results in less caribou being taken by predators. This is definitely having an effect on the boreal woodland caribou populations. If there is a decrease in the number of prey species like muskox, then predators will hunt caribou.			Sahtu	McDonald, 2010:5	
<u>Potential Effects</u> Noise and lights disturb caribou. Any development should not occur during the calving season or near caribou habitat.			Sahtu	McDonald, 2010:5	
<u>Existing Conditions</u> Over harvesting is not a concern in the SSA as they are mostly opportunistically harvested.			Sahtu	McDonald, 2010:6	
<u>Existing Conditions</u> Boreal woodland caribou are typically found in old growth forested areas and stay away from winter roads because of the noise pollution. Therefore, motor vehicle collisions with boreal woodland caribou do not occur in the SSA.			Sahtu	McDonald, 2010:6	
<u>Potential Effects</u> Several general threats were identified. Both winter road and boat access to the SSA by nonresident hunters may impact populations. However, climate change, development, industry and predation were cited as the most significant impacts to boreal woodland caribou populations.		Suggested mitigations include less development, encouraging trapping of predators, regulations, and avoidance.	Sahtu	McDonald, 2010:7	
<u>Existing Conditions</u> The MVH Extension Project is located within the habitat range of the Woodland Caribou Boreal Population. One suspected Woodland Caribou calving range is located in the terrain north and south of Ochre River, while summering areas are known to exist throughout the Mackenzie Valley, north of Wrigley up to the Sahtu territorial border.	Ochre River is a tributary to the Mackenzie River and is within the PDA		Pehdzeh Ki First Nation/ Dehcho First Nations	Dessau, 2012: 76	
<u>Existing Conditions</u> The community of Wrigley indicates that ungulates regularly frequent areas north of Blackwater River near traditional hunting grounds	The Blackwater River intersects the PDA		Pehdzeh Ki Dehcho First Nations	Dessau, 2012: 76	
<u>Existing Conditions</u> The MVH extension is located within a year-round moose range along the existing winter road between KM 708 and 709.	The PDA intersects the moose range		Pehdzeh Ki Dehcho First Nations	Dessau, 2012: 77 and App. 1- Map (sheet 4-P)	
<u>Existing Conditions</u> Furbearer habitat is present throughout the area of the Mackenzie Valley, including along the MVH extension route.	Within PDA		Pehdzeh Ki /Dehcho First Nations	Dessau, 2012: 77	
<u>Existing Conditions</u> The Pehdzeh Ki Ndeh Conservation Zone is a part of the Dehcho Land Use Plan and is intended to protect the local PKFN's subsistence harvesting needs. The area provides habitat for moose, woodland and barren-ground caribou, black bears, wolves, migratory birds and fish, and represents an important cultural area for the community of Wrigley.	The PDA intersects the Pehdzeh Ki Ndeh Conservation Zone		Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012: 97	
<u>Existing Conditions</u> According to the map data obtained from public consultation with PKFN, a moose pasture area is located just east of the proposed highway around KM 749.	Within LSA		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 1, Map sheet 12-P	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Wildlife and Wildlife Habitat (cont'd)					
<u>Existing Conditions</u> According to the map data obtained from public consultation with PKFN a moose pasture area is located just west of the existing winter road around KM 754.	Within LSA		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 1, Map sheet 12-P	
<u>Existing Conditions</u> According to the map data obtained through public consultation with PKFN ungulates have been observed to the east of the existing winter road around KM 776.	Within LSA		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 1, Map sheet 16-P	
<u>Existing Conditions</u> According to the map data obtained through public consultation with PKFN ungulates have been observed to the west of the existing winter road around KM 777 along the Mackenzie River.	Within LSA		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 1, Map sheet 17-P	
<u>Existing Conditions</u> According to the map data obtained through public consultation with PKFN ungulates have been observed about 1.5 km east of the proposed highway road around KM 781.	Within RSA		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 1, Map sheet 17-P	
<u>Existing Conditions</u> According to the map data obtained through public consultation with PKFN ungulates have been observed to the southwest of KM 790 (existing winter road).	Within LSA		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 1, Map sheet 19-P	
<u>Existing Conditions</u> According to the map data obtained through public consultation with PKFN a moose pasture area is intersected by the existing winter road between KM 708 and 709.	PDA intersects moose pasture		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 4, Map Sheet 2	
<u>Existing Conditions</u> According to the map data obtained through public consultation with PKFN a moose pasture area is located just north along the existing winter road at KM 750.	Within LSA		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 4, Map Sheet 6	
<u>Existing Conditions</u> According to the map data obtained through public consultation with PKFN a moose pasture area is located along the shore of the Mackenzie River south of the existing winter road at KM 754	Within LSA		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 4, Map Sheet 7	
<u>Existing Conditions</u> The area around Willow Lake (called Brackett Lake on the official maps) and wetlands nearby support large populations of animals. The oral tradition records many stories, which tell of the importance of this lake.	Willow Lake (Brackett Lake) is outside the RSA (~26 km from PDA)		Sahtu	The Sahtu Heritage Places and Sites Joint Working Group, 2000:94	
<u>Existing Conditions</u> Four Mile Island was identified as a great place for hunting ducks as they migrated west each year.	Four Mile Island is an island located in the Mackenzie River SW of Tulita and it is within the RSA (~2 km from PDA)		Sahtu	EBA, 2006: 6, 7	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Wildlife and Wildlife Habitat (cont'd)					
<u>Existing Conditions</u> According to the TLU study conducted by the EBA in 2006 the 1995 fire cleared much of the land surrounding Tulita, allowing moose to freely move about. Calving areas for moose are located on both Islands across the Mackenzie (Windy Island and Four Mile Island). The willows for feeding are prominent in these two locations and therefore, no concern was expressed about the impact on moose habitat.	Four Mile Island and Windy Island are islands located in the Mackenzie River SW of Tulita and are within the RSA (Four Mile Island: ~2 km from PDA, Windy Island: ~4 km from PDA)		Sahtu	EBA, 2006: 9	
During the Wrigley Community Consultation (January 25-26th, 2012) the participants identified concerns around the environment regarding the construction of the MVH. One of the concerns was the impact of the project on wildlife.			Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: 129	
<u>Existing Conditions</u> Porcupine quills have been used for hundreds of years by artists in the communities of the Dehcho region and the use of them precedes the use of beadwork as a form of artistic enhancement for clothing and other works of art. Artists in Wrigley today do not produce a large amount of quillworks and it is estimated that only between 2 and 3 porcupines per year are harvested in Pehdzeh Ki Ndeh for arts and crafts purposes.	The PDA intersects the Pehdzeh Ki Ndeh and the Dehcho area		Pehdzeh Ki Dehcho First Nations	IMG-Golder, 2006: 68	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Potential Project Effects</u> During consultations in 2004 and 2005, community members expressed concern that development may affect human health through water and air quality; and the health of the region's wildlife, fish and vegetation.		Improved and more frequent communication with communities regarding water quality and fish health were recommended.	Elders and land users in the Sahtu region	Golder, 2015: 2-17	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Birds and Bird Habitat					
<u>Existing Conditions</u> The Sahtu Land Use Plans notes that species and habitat in the Petiniæah (Bear Rock) Conservation Zone include waterfowl and migratory bird habitat including nesting area for raptors, important breeding duck habitat, a CWS key migratory bird terrestrial habitat site. The Canadian Wildlife Service (CWS) has identified three Important Bird Areas (IBA) in the Sahtu Settlement Area. Two of the IBAs are located within Bear Rock area. These areas are considered key migratory bird terrestrial habitat sites in the NT. These IBAs represent important breeding habitat for globally and continentally significant concentrations of several species. The Lower Mackenzie River Islands IBA, a globally significant site, is a major stopover along the Western Central Flyway, hosting as many as 112,800 waterfowl and most of the Western Central Flyway population of Snow Geese (estimated to be half a million) in spring.”	There are two IBAs that intersect Bear Rock: 1. The Lower Mackenzie River Islands IBA starts at Fort Good Hope and runs down the Mackenzie for 270 km to where the Tree River joins the Mackenzie. The IBA consist of a 5 km buffer on either side of the Mackenzie River. 2. The Middle Mackenzie River Islands IBA consists of a 250 km stretch (5 km buffer on either side) of the Mackenzie River between Redstone River and a spot 30 km north of Oscar Creek. Norman Wells and Fort Norman are located along that stretch. The PDA intersects the IBAs.		Sahtu	SLUPB, 2013:124 and 170	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Birds and Bird Habitat (cont'd)					
<u>Existing Conditions</u> The Sahtu Land Use plan states that The Deh Cho is identified as a Special Management Zone to protect the water quality, riparian habitat, cultural/heritage sites, areas that are important for wildlife and wildlife harvesting. Special Management Zone (SMZ) designation will also allow for continued use of the river as an important regional and territorial transportation corridor (barge traffic, landing sites, winter road)."	The PDA intersects the Deh Cho Special Management Zone		Sahtu	SLUPB, 2013:170	The Deh Cho Special Management Zone consists of a 5 km buffer that is applied to the length of the Mackenzie River as it runs through the SSA. Lands within the community boundaries of Tulita, Norman Wells and Fort Good Hope are exempt from the SLUPB.
<u>Existing Conditions</u> The Renewable Resource Assessment of the Pehdzeh Ki Nheh area of Interest Report states that goose is found in the Blackwater River system southeast from the lake	The Blackwater River southeast of Blackwater Lake is outside the RSA. (~47 km from PDA)		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 20	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> The Renewable Resource Assessment of the Pehdzeh Ki Nheh area of Interest Report states that tundra swan and trumpeter swan are found in the Blackwater River system southeast from Blackwater Lake,	The Blackwater River southeast of Blackwater Lake, and Fish Lake is outside the RSA. (Fish Lake: ~25 km from PDA. Blackwater River: ~47 km from PDA)		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 20	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Birds and Bird Habitat (cont'd)					
<u>Existing Conditions</u> The Renewable Resource Assessment of the Pehdzeh Ki Nheh area of Interest Report states that duck is found in the Blackwater River system southeast from Blackwater Lake,	The Blackwater River southeast of Blackwater Lake, and Fish Lake is outside the RSA. (Fish Lake: ~25 km from PDA. Blackwater River: ~47 km from PDA)		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 20	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Five wetlands in the Pehdzeh Ki Ndheh have been specifically identified as having importance to waterfowl. One wetland immediately north of Wrigley, one east of Wrigley at mile 442 on the Mackenzie Highway, one south of Smith Creek and two north of Blackwater River. The wetland east of Wrigley is home to many aquatic plants and so is an important food resource for waterfowl. A spring survey in 1973, counted just under 3,000 birds with more than 20 species including surf scoter, lesser scaup, mallards, green winged teal, and pintails.	The Blackwater River intersects the PDA Wrigley is in the LSA Smith Creek is a tributary to the Mackenzie south of Wrigley and outside the RSA (~9 km from PDA)		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 26	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> All of the drainage areas along the MVH extension route are considered potential waterfowl habitat (EBA Engineering, 2003). This includes the Mackenzie, Blackwater and Ochre Rivers, as well as major creeks and other smaller watercourses. Waterfowl such as duck and geese species are traditionally harvested by Dehcho First Nations, including PKFN, and traditional hunting grounds located near Blackwater River and Vermillion Creek South may be utilized for harvesting this resource.	Portions of the Mackenzie River are within the LSA Blackwater River, Ochre River and Vermillion Creek South are within the PDA		Pehdzeh Ki / Dehcho First Nations	Dessau, 2012: 78	
<u>Existing Conditions</u> The Pehdzeh Ki Ndeh Conservation Zone is a part of the Dehcho Land Use Plan and is intended to protect the local PKFN's subsistence harvesting needs. The area provides habitat for migratory birds and represents an important cultural area for the community of Wrigley.	The PDA intersects the Pehdzeh Ki Ndeh Conservation Zone		Pehdzeh Ki / Dehcho First Nations	Dessau, 2012: 97	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Birds and Bird Habitat (cont'd)					
<u>Existing Conditions</u> According to interviews with Sahtu harvesters the following wildlife can be found in the area around the proposed Great Bear River Bridge: Moose, Caribou, Bears, Marten, Beavers, Muskrats, Otters, Foxes, Rabbits, Chicken, Ptarmigan, Wolves, Wolverines, Squirrels, Weasels, Minks, Lynx's and other animals.	The Great Bear River is a tributary to the Mackenzie River and intersects the PDA			Tulita Renewable Resource Council, 2019: 3; 6; 11; 14; 17; 20; 23;26	
<u>Potential Effects:</u> They are concerned the proposed Great bear Bear River project will impact the wildlife in the area.					
<u>Existing Conditions</u> One Wrigley trapper who harvests from the Pehdzeh Ki Ndeh reported harvesting approximately 1 swan, 15-20 ptarmigan, 50 geese and 100 ducks in the previous year. It can be assumed that waterfowl and ptarmigan are harvested by other residents as well.	The PDA intersects the Pehdzeh Ki Ndeh area Wrigley intersects the PDA		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 27	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
Fish and Fish Habitat					
<u>Existing Conditions</u> Fish are acknowledged as being an important renewable resource in the Pehdzeh Ki Ndeh. Subsistence fishing is a commonly practiced activity, with the Mackenzie River, Wrigley River, Willowlake River, the River Between Two Mountains, Blackwater Lake, Greasy Lake and Highland Lake being important waterbodies for subsistence harvesting. The primary species caught are lake whitefish, lake trout, inconnu and northern pike.	Portions of the Mackenzie River are within the LSA Wrigley River is within the RSA (~4 km from PDA) Willow Lake River is a tributary to Mackenzie south of Wrigley and outside the RSA (~53 km from PDA) Blackwater Lake is outside the RSA (~45 km from PDA) Greasy Lake and Highland Lake, located SE of Wrigley, are outside the RSA (Greasy Lake: ~61 km from PDA, Highland Lake: ~70 km from PDA)		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006:3	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Fish and Fish Habitat (cont'd)					
<u>Existing Conditions</u> Pehdzeh Ki Ndeh has five larger fish bearing lakes: Keller Lake, Blackwater Lake, Fish Lake, Greasy Lake and Highland Lake.	Keller Lake, Blackwater Lake, Fish Lake, Greasy Lake and Highland Lake are all outside the RSA (Fish Lake: ~25 km from PDA, Blackwater Lake: ~45 km from PDA, Greasy Lake: ~61 km from PDA, Highland Lake: ~70 km from PDA, Keller Lake: ~99 km from PDA)		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006:37	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley. The PDA intersects the Pehdzeh Ki Ndeh on the western boundary. Most of the land is located east of the PDA though.
<u>Existing Conditions</u> Grayling is commonly present in the Great Bear River.	The Great Bear River is a tributary to the Mackenzie at Tulita and is within the PDA		Sahtu	5658 NWT Ltd. and GNWT, 2011:8:35	
<u>Existing Conditions</u> As reported in the Dehcho Land Use Plan, as of 2003, nine known fish spawning sites are located near the MVH extension route. Spawning sites are located near the mouths of the Ochre and Blackwater Rivers, as well as in other tributaries along the route. The procurement of fish resources, particularly Whitefish, is an important subsistence harvesting activity that may be tied to traditional use, and non-traditional land use (for both subsistence and commercial uses) throughout the Mackenzie Valley.	Ochre River and the Blackwater River intersect the PDA		Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012:78	
<u>Existing Conditions</u> The Pehdzeh Ki Ndeh Conservation Zone is a part of the Dehcho Land Use Plan and is intended to protect the local PKFN's subsistence harvesting needs. The area provides habitat for fish and represents an important cultural area for the community of Wrigley.	The PDA intersects the Pehdzeh Ki Ndeh Conservation Zone		Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012:97	
<u>Existing Conditions</u> According to interviews with Sahtu harvesters, a small amount of small-sized bull trout are in Great Bear River and Mackenzie River	Portions of the Mackenzie River intersect the LSA Great Bear River is a tributary to the Mackenzie River and intersects the PDA		Sahtu	Tulita Renewable Resource Council, 2019:3	
<u>Existing Conditions</u> According to interviews with Sahtu harvesters there is Bull Trout in Great Bear Lake	Great Bear Lake is outside of RSA (~81 km from PDA)		Sahtu	Tulita Renewable Resource Council, 2019:21	
<u>Existing Conditions</u> According to interviews with Sahtu harvesters fish species in Great Bear River includes blue fish, coney, trout, suckers, small white fish, thlo cha (bull trout), jack fish, salmon, grayling	Great Bear River is a tributary to the Mackenzie River and intersects the PDA		Sahtu	Tulita Renewable Resource Council, 2019:3,6,9,12,15,18,21,24	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
<i>Fish and Fish Habitat (cont'd)</i>					
<i>Existing Conditions</i> Lakes and waterways in the Sahtu Settlement Area are reported to be abundant in fish; common species include trout, loche, whitefish, norther pike, and inconnu.	Portions of the PDA are within the Sahtu Settlement Area		Sahtu	Golder, 2015: 2-1	
<i>Existing Conditions</i> Participants in a 2014 Tulit'a TK Study identified Dehdélelq Tué (Sucker Lake/ Three Day Lake) as important fish habitat.	A portion of Dehdélelq Tué (Sucker Lake/ Three Day Lake) falls within the RSA. (~18 km from PDA)			Golder, 2015: 2-17	
<i>Existing Conditions</i> The streams in the Sahtu area are all fish bearing, though fish may only be found at certain times of year.	Portions of the PDA intersect Sahtu Region			Golder, 2015: 2-16	
	Great Bear River is a tributary to the Mackenzie and intersects the PDA	According to interviews with Sahtu harvesters GNWT-INF should focus efforts to improve, create or retore fish habitat at the mouth of Great Bear River	Sahtu	Tulita Renewable Resource Council, 2019: 16	
<i>Potential Effects</i> According to interviews with Sahtu harvesters the bridge footings will damage the rocks and sand, therefore it will impact the fish	Great Bear River is a tributary to the Mackenzie and intersects the PDA		Sahtu	Tulita Renewable Resource Council, 2019: 19	
<i>Potential Project Effects</i> During consultations in 2004 and 2005, community members expressed concern that development may affect human health through water and air quality; and the health of the region's wildlife, fish and vegetation.		Improved and more frequent communication with communities regarding water quality and fish health were recommended.	Elders and land users in the Sahtu region	Golder, 2015: 2-17	
<i>Existing Conditions</i> Land clearing for seismic operations is associated with fast-melting permafrost, leading to problems with vegetation re-establishment and erosion and slumping on the banks of the Sahtu waterbodies. Islands in K'áalq Túé (Willow Lake/ Brackett Lake) have experienced slumping, cabins in K'áalq Túé (Willow Lake/ Brackett Lake) have had to relocate due to eroding banks, and erosion is suspected to be affecting fish passage between K'áalq Túé (Willow Lake/ Brackett Lake) and Kelly Lake. Permafrost melt from development has also been linked to erosion in Sahtu Deh (Great Bear River) and other waterbodies in the area.	Sahtu Deh (Great Bear River) is a tributary to the Mackenzie River and intersects the PDA K'áalq Túé (Willow Lake/ Brackett Lake) is outside the RSA (~26 km from the PDA)	Limit project footprints and avoid uncommon landforms and steep slopes to the extent practical. Include adequate protection of permafrost under disturbed areas in closure and reclamation plans. Engage local landowners in permafrost monitoring to best assess the effects.	Elders in the K'ásho Got'íne and Tulit'a regions	Golder, 2015: 2-15	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Non-traditional Land and Resource Use					
<u>Existing Conditions</u> Dehcho First Nations report that non-Dene harvesting of boreal caribou appears to be steady or rising slightly.			Dehcho First Nations	Dehcho First Nations, 2011:8	
<u>Potential Project Effects</u> During the Wrigley Community Consultation (January 25-26th, 2012) the following additional concerns were identified: • Increase in resource development in the area • Industry will have easier access			Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012: 130	
<u>Potential Project Effects</u> Over-harvesting is of moderate concern at this time, with most concerns being expressed about the following areas: to the southwest of Buffalo Lake, to the west of the community of Hay River, along the river systems around Fort Providence, and around the Fish Lake and Willowlake River areas near Wrigley. Over-harvesting by Dehcho harvesters is not the issue, because traditional harvesting has clearly declined over the past few decades for a number of reasons but there has been a slow increase in non-Dehcho and non-Dene hunters coming into a few reasonably accessible habitat areas in the Dehcho during the fall and winter months.	Wrigley intersects the PDA Fish Lake, Buffalo Lake Hay River, and Fort Providence are outside the RSA (Fish Lake: ~25 km from PDA. Fort Providence: ~358 km from PDA. Hay River: ~484 km from PDA. Buffalo Lake: ~523 km from PDA) Willow Lake River is a tributary to Mackenzie south of Wrigley and outside the RSA (~53 km from PDA)	It is not known how many animals non-Indigenous hunters are taking so this situation needs to be more closely monitored	Dehcho First Nations	Dehcho First Nations, 2011:14	
<u>Existing Conditions</u> Closure / limiting of the barren-ground caribou harvest north of Yellowknife and increased access to river systems in the fall using jet boats has added to overharvesting concerns. Also, as favored boreal caribou habitat becomes more widely known over time, particularly winter habitat, these areas become more heavily targeted.	Yellowknife is outside the RSA (~468 km from PDA)		Dehcho First Nations	Dehcho First Nations, 2011:14	
<u>Potential Project Effects</u> Harvesters are concerned about harvesting larger boreal caribou bulls, because these are considered the best breeders and they would like to see both voluntary and imposed restriction on the harvesting of large bulls. A number of communities raised concerns about the harvesting of mature mountain caribou bulls as well, particularly by outfitters, and feel that this practice weakens population health.		Harvesters support monitoring and, perhaps, changes to the non-Dene boreal caribou harvesting season to better protect over-wintering boreal caribou populations	Dehcho First Nations	Dehcho First Nations, 2011:14	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
<i>Non-traditional Land and Resource Use (cont'd)</i>					
		Dehcho First Nations provided community-based recommendations to be considered by Canadian Wildlife Service in its development of a National Caribou Recovery Strategy and Action Plan, including: • Finalize and approve the Dehcho Land Use Plan and formally establish the Dehcho Resource Management Authority to implement the land use plan and other wildlife and resource management activities as they relate to boreal caribou. • Finalize the establishment of current Candidate Protected Areas in the Dehcho, with full surface and sub-surface protection from industrial development, in order to preserve large undisturbed boreal caribou habitat areas. • Restrict and monitor industrial development generally during critical boreal caribou calving and over-wintering periods • Halt new boreal caribou collaring research and work with harvesters to develop alternative research and population monitoring methods, including greater use of community-based monitoring, aerial surveys, and less intrusive technical monitoring devices Restrict further expansion of imported bison populations into boreal caribou habitat areas by opening these areas to bison harvesting	Dehcho First Nations	Dehcho First Nations, 2011:15-16	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Non-traditional Land and Resource Use (cont'd)					
		• Carry out more detailed analyses of critical habitat characteristics, with a particular focus on calving and over-wintering habitat as well as lichen availability, quality, density, and vulnerability (from development, airborne pollution, and climate change). • Verify special habitat sites / areas – such as wallows/licks, rich lichen areas, old growth forest areas, calving areas, etc. – and locate these sites / areas on GNWT ‘values at risk’ maps to guide forest fire management decisions • Restrict non-Dene hunting for boreal caribou during the overwintering period and in locations where overhunting appears to be impacting populations (i.e., shorten current season, review hunting zones, and protect mature bulls). • Identify and implement measures to encourage increased traditional harvesting of wolf and bear in order to limit population growth, while monitoring predator populations. Ensure that Dehcho harvesters respect critical habitat periods and voluntarily maintain current harvesting levels rather than expanding or increasing harvest levels.			

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Heritage Resources					
<u>Existing Conditions</u> “Petiniæah commonly known as Bear Rock, is a large karst formation across from the community of Tulita. The mountain is one of the most sacred sites for the Dene living in and outside of the Sahtu. Archaeological sites are known to exist.”	The PDA intersects Petiniæah (Bear Rock) Conservation Zone		Sahtu	SLUPB, 2013:124	
<u>Existing Conditions</u> The Deh Cho is identified as a Special Management Zone includes archaeological and burial sites.	The PDA intersects the Deh Cho Special Management Zone		Sahtu	SLUPB, 2013:170	The Deh Cho Special Management Zone consists of a 5 km buffer applied to the length of the Mackenzie River as it runs through the SSA. Lands within the community boundaries of Tulita, Norman Wells and Fort Good Hope are exempt from the Sahtu Land Use Plan (SLUP).
<u>Existing Conditions</u> Archaeology sites are clustered at the north and west ends of Blackwater Lake, the mouth of the Blackwater River, the shores of Fish Lake and at the mouths of different creeks and rivers along the Mackenzie River, including the Ochre River and the River Between Two Mountains	The mouths of the Blackwater and Ochre River are within the LSA The mouth of the River Between Two Mountains is south of Wrigley and outside of RSA (~35 km from PDA) Blackwater Lake and Fish Lake are outside the RSA (Fish Lake: ~32 km from PDA. Blackwater Lake: ~45 km from PDA)		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006:81	The Pehdzeh Ki Ndeh is an estimated 17,053 km² tract of land centered around the community of Wrigley.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Heritage Resources (cont'd)					
<u>Existing Conditions</u> There are numerous locations within Pehdzeh Ki Ndeh that are valued as conservation sites. These include cabins, rare features, historic sites and archaeological sites. Over 15 such sites have been identified along the Mackenzie River within Pehdzeh Ki Ndeh, at least 8 along the River Between Two Mountains and the Fish Lake area, at least 2 around Tseepantee Lake, at least 1 at Keller Lake and at least 8 along the Blackwater River and Blackwater Lake area.	The Blackwater River intersects the PDA The River Between Two Mountains is south of Wrigley and outside of RSA (~35 km from PDA) Fish Lake, Tseepantee Lake, Keller Lake and Blackwater Lake are outside of the RSA (Fish Lake: ~32 km from PDA. Blackwater Lake: ~45 km from PDA. Tseepantee Lake: ~94 km from PDA. Keller Lake: ~99 km from PDA.)		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006:81	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Historical cabins are located along the Mackenzie River both north and south of Wrigley. These are accessible by land or water and are often used seasonally by local trappers. There are also cabin clusters on Fish Lake, Tah the tié Lake (at the headwater of the Blackwater River) and single cabins scattered elsewhere in Pehdzeh Ki Ndeh.	Portions of the Mackenzie River intersect the LSA Fish Lake is outside the RSA (~32 km from PDA) Tah the tié Lake is outside the RSA (~47 km from PDA) The PDA intersects the Pehdzeh Ki Ndeh		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006:81	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> A historic camp is located at the lower terrace of Steep Creek within 30 m of the proposed highway (LbRn-1).	Steep Creek is located within the LSA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-11	
<u>Existing Conditions</u> A cabin is located at the lower terrace of Steep Creek within 30 m of the proposed highway (LbRn-2).	Steep Creek is within the LSA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-11	
<u>Existing Conditions</u> A grave is located at the upper terrace of the Saline River more than 500 m from the highway. (LbRn-4)	Saline River is within the LSA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-11	
<u>Existing Conditions</u> A cabin is located at the lower terrace of Saline River 400 m from the proposed highway (LbRn-5)	Saline River is within the LSA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-11	
<u>Existing Conditions</u> A cabin and grave are located on the upper terrace of Steep Creek 500 m from the proposed highway. (LbRn-8)	Steep Creek is within the LSA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-11	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Heritage Resources (cont'd)					
<u>Existing Conditions</u> A historic camp is located at the confluence of Steep Creek and the Mackenzie River over 30 m from highway. (LbRn-10)	The confluence of Steep Creek and the Mackenzie River is within the LSA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-11	
<u>Existing Conditions</u> Cabins are located at the confluence of Little Smith Creek and the Mackenzie River over 1 km from highway. (LcRo-3)	The confluence of Little Smith Creek and the Mackenzie River is within the RSA (~1 km from PDA)		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-11	
<u>Existing Conditions</u> A cabin is located at the confluence of Little Smith Creek and the Mackenzie River over 1 km from the highway (LcRo-5)	The confluence of Little Smith Creek and the Mackenzie River is within the RSA (~1 km from PDA)		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-11	
<u>Existing Conditions</u> A camp is located on the upper terrace of an unnamed creek 400 m from the proposed highway. (LdRo-15)	Within LSA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-11	
<u>Existing Conditions</u> A camp and cabin (Rosie's cabin) are located at an unnamed lake 50-125 m from the proposed highway. (LeRo-4)	Within LSA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-11	
<u>Existing Conditions</u> A camp and trail are located on the proposed highway. (LfRp-7)	Within PDA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-11	
<u>Existing Conditions</u> A camp is located at an unnamed lake 125 m from the proposed highway. (LfRq-3)	Within LSA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-11	
<u>Existing Conditions</u> A trail is located along Great Bear River starting 0-30 m from the proposed highway. (LfRq-10)	Within PDA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-11	
<u>Existing Conditions</u> A camp and trail are located at Great Bear River 400 m off the proposed highway. (LfRq-11)	Within LSA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-11	
<u>Existing Conditions</u> A historic camp is located at Great Bear River over 800 m from the proposed highway. (LfRq-12)	Within LSA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-11	
<u>Existing Conditions</u> A camp is located on Great Bear River at Great Bear Rock. (LfRq-13)	The PDA intersects Bear Rock Conservation Zone.		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-11	
<u>Existing Conditions</u> A historic camp is located at Great Bear River over 100 m off the proposed highway. (LfRq-15)	Within LSA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-11	
<u>Existing Conditions</u> A cache cut stumps and a trail are located at Bear Rock Lake 40 m from the proposed highway. (LfRr-1)	Within PDA (?)		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-11	
<u>Existing Conditions</u> A historic camp is located at Bear Rock Lake 300 m from the proposed highway. (LfRr-2)	Within LSA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-11	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Heritage Resources (cont'd)					
<u>Existing Conditions</u> A historic camp is located at Bear Rock Lake 240 m from the proposed highway. (LfRr-5)	Within LSA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-11	
<u>Existing Conditions</u> A historic camp is located at Jungle Ridge Creek 140 m from proposed highway. (LgRr-1)	Within LSA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-11	
<u>Existing Conditions</u> A historic feature is located at Prohibition Creek over 150 m from proposed highway. (LgRs-2)	Within LSA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-11	
<u>Existing Conditions</u> Cabins are located at Canyon Creek over 1 km from proposed highway. (LhRt-1)	Within RSA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-11	
<u>Existing Conditions</u> A cabin is located at Canyon Creek over 1 km from the proposed highway and Great Bear River Bridge. (LhRt-2)	Within RSA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-11	
<u>Existing Conditions</u> A cabin is located at Bosworth Creek 800 m from the proposed highway and the Great Bear River Bridge. (LhRu-1)	Within LSA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-11	
<u>Existing Conditions</u> A cabin is located at Oscar Creek 900 m from the proposed highway and Great Bear River Bridge. (LiRw-1)	Within LSA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-11	
<u>Existing Conditions</u> A trail is located at Oscar Creek 0-700 m from the proposed highway. (LiRw-4)	Within LSA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-11	
<u>Existing Conditions</u> Research of published Sahtu Dene traditional knowledge has indicated that Bear Rock is an important heritage resource. This large rock ridge west of the Great Bear River has significant cultural values for local Sahtu Dene. It is described as one of the most important sacred sites	The PDA intersects Bear Rock Conservation Zone		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-10	
<u>Existing Conditions</u> The entire length of the Great Bear River is also considered an important heritage resource to the Sahtu Dene who have many stories about it.	Great Bear River is a tributary to the Mackenzie River and intersects the PDA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-10	
<u>Potential Effects</u> The presence of the Highway is expected to provide easier access to harvesting areas, heritage value areas, and traditional trails located near the alignment. This may be considered either a positive or a negative effect, depending on the extent of the impact from increased access. The Highway will allow local residents and visitors to access the harvesting areas or heritage value areas year-round. Increased harvesting may be an indirect effect of the Highway.	PDA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 12-12	
<u>Existing Conditions</u> Traditional hunting grounds in the vicinity of Whitesand Creek may also be used in the harvesting of caribou and are located near concentrations of archaeological sites, which may indicate use of the area as far back as the prehistoric period.	Whitesand Creek is a tributary to the Mackenzie River and within the PDA		Pehdzeh Ki / Dehcho First Nations	Dessau, 2012: 76	
<u>Existing Conditions</u> A historic camp is located at the confluence of Hodgson Creek and Mackenzie River within 500 m of proposed project components. (KhRk-5)	Within LSA		Pehdzeh Ki / Dehcho First Nations	Dessau, 2012:95	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Heritage Resources (cont'd)					
<u>Existing Conditions</u> A historic camp is located on the lower terrace of Ochre River within 200 m of proposed project components. (KiRI-4)	Within LSA		Pehdzeh Ki / Dehcho First Nations	Dessau, 2012:95	
<u>Existing Conditions</u> A historic cabin is located on the upper terrace of the Ochre River within 600 m of proposed project components. (KiRI-8)	Within LSA		Pehdzeh Ki / Dehcho First Nations	Dessau, 2012:95	
<u>Existing Conditions</u> A historic trap is located at the Ochre River/Mackenzie confluence within 700 m of proposed project components. (KiRI-9)	Within LSA		Pehdzeh Ki / Dehcho First Nations	Dessau, 2012:95	
<u>Existing Conditions</u> A camp is located at the Whitesand Creek/Mackenzie confluence about 250 m from proposed project components. (KjRI-8)	Within LSA		Pehdzeh Ki / Dehcho First Nations	Dessau, 2012:95	
<u>Existing Conditions</u> A trail is located on upper terrace of the Whitesand Creek within 800 m of proposed project components. (KjRI-9)	Within LSA		Pehdzeh Ki / Dehcho First Nations	Dessau, 2012:95	
<u>Existing Conditions</u> A historic trap is located on the lower terrace of the Vermillion Creek South within 700 m of proposed project components. (KkRI-2)	Within LSA		Pehdzeh Ki / Dehcho First Nations	Dessau, 2012:95	
<u>Existing Conditions</u> A historic camp is located at the base of terrace of Vermillion Creek South within 1.4 km of proposed project components. (KkRI-3)	Within RSA		Pehdzeh Ki / Dehcho First Nations	Dessau, 2012:95	
<u>Existing Conditions</u> A historic cabin is located on Blackwater River within 1.2 km from proposed project components. (KIRm-1)	Within RSA		Pehdzeh Ki / Dehcho First Nations	Dessau, 2012:95	
<u>Existing Conditions</u> A cabin is located on the lower terrace of the Blackwater River within 500 m of proposed project components. (KIRm-2)	Within LSA		Pehdzeh Ki / Dehcho First Nations	Dessau, 2012:95	
<u>Existing Conditions</u> A historic camp is located on the lower terrace of Blackwater River within 100 m of proposed project components. (KIRm-4)	Within LSA		Pehdzeh Ki / Dehcho First Nations	Dessau, 2012:95	
<u>Existing Conditions</u> A historic shelter is located on Blackwater River within 200 m of proposed project components. (KIRm-7)	Within LSA		Pehdzeh Ki / Dehcho First Nations	Dessau, 2012:95	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Heritage Resources (cont'd)					
<u>Existing Conditions</u> A trading post is located on the lower terrace of the Blackwater River, possibly right on the winter road. (KIRm-9)	Within PDA		Pehdzeh Ki / Dehcho First Nations	Dessau, 2012:95	
<u>Existing Conditions</u> A historic camp is located on the lower terrace of the Blackwater River within 300 m of proposed project components. (KIRm-10)	Within LSA		Pehdzeh Ki / Dehcho First Nations	Dessau, 2012:95	
<u>Existing Conditions</u> One or more graves are located east of the Mackenzie River, possibly right on the winter road. (KIRm-12)	Within PDA		Pehdzeh Ki / Dehcho First Nations	Dessau, 2012:95	
<u>Existing Conditions</u> A trading post is located on the shore of the Mackenzie River within 500 m of proposed project components. (KIRm-11)	Within LSA		Pehdzeh Ki / Dehcho First Nations	Dessau, 2012:95	
<u>Potential Effects</u> The areas north of Wrigley along the Mackenzie River and its tributaries are known to contain a number of protected archaeological and heritage sites. These sites are important aspects of PKFN cultural heritage in the region. Any impact to cultural heritage in the form of disturbance or removal of known, and undiscovered buried archaeological sites located along the route, will result in a reduced cultural, scientific and public value to the Mackenzie Valley area.	North of Wrigley along the Mackenzie River is within the RSA		Pehdzeh Ki / Dehcho First Nations	Dessau, 2012:225	
<u>Potential Effects</u> Based on consultation with PKFN, and a review of available resources, including community mapping and a database of known heritage sites held by GNWT, 35 archaeological sites appear to be located within approximately 1.5 km of the current winter road alignment, and 21 sites are within 500 m of the alignment. The following locations along the proposed alignment (as currently planned to follow the winter road) may have conflicts with recorded archaeological sites: • Blackwater River • 2.2 km north of Blackwater River • Ochre River • Unnamed drainage 2 km north of Whitesand Creek There may be a grave or graves near the Blackwater River. These must be located to ensure that the road or any construction-related activities remain as far away as possible.	Ochre River intersects PDA Unnamed Creek 2 km north of Whitesand Creek intersects PDA The Blackwater River intersects PDA	In addition, 2.2 km north of Blackwater River there are recorded sites that must be considered in the analysis of options for the crossing of the Blackwater River and the approaches to the bridge. The highway itself will not impact these sites, but the crossing infrastructure and related works may result in impacts to these sites.	Pehdzeh Ki / Dehcho First Nations	Dessau, 2012:225	
<u>Existing Conditions</u> Fort Norman was constructed in 1810 at the confluence of the Mackenzie and Great Bear Rivers. In 1844 it was moved about 48 km upstream to a site a few miles below the Keele River, called 'Old Fort Point', near the site of the old North West Co. Fort Castor. In 1851 it was moved back to its present site. Old Fort Point (LdRn-1)	Old Fort Point is located on the west side of the Mackenzie River within the RSA (~48 km from PDA)		Sahtu	The Sahtu Heritage Places and Sites Joint Working Group, 2000: 98	
		According to the draft <i>SLUP</i> (SLUPB 2013), a land use activity shall not take place within 500 m of suspected or known burial sites, historical sites or archaeological sites	Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-36	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Employment and Economy					
<u>Existing Conditions</u> Recreational fishing opportunities exist in Pehdzeh Ki Ndheh. There are several older cabins throughout the area, which could potentially be used for sport fishing purposes and the possibility for sport fishing exists at Blackwater and Fish Lakes. Presently, only one outfitter takes tourists on sport fishing trips and these trips are understood to be limited to the Mackenzie River and its major tributaries.	Blackwater Lake and Fish Lake are outside of RSA (Fish Lake: ~32 km from PDA. Blackwater Lake: ~ 45 km from PDA) Portions of the Mackenzie River intersects the LSA		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006:4	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Commercial fishing activities in Pehdzeh Li Kdeh have been limited to attempts at Keller and Blackwater lakes, but these endeavours were found to be not economically viable. Commercial fishing efforts in the region are likely to be faced with restricting factors such as the cold climate, parasitic infestations in the fish, high transportation, fuel, labour, material and fishing gear costs.	Keller Lake and Blackwater Lake are outside of RSA (Blackwater Lake: ~45 km from PDA. Keller Lake: ~ 99 km from PDA.)		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006:4	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> There is a high economic value for wildlife subsistence harvesting because of the savings realized by Wrigley residents who do not have to purchase meat at its equivalent high replacement value			Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006:3	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Trapping is strongly associated with cultural traditions. Pehdzeh Li Ndheh is known furbearer habitat, and some trapping is known to take place in the area. Overall, fur harvest returns to the community of Wrigley show significant income is derived from this resource use	The PDA intersects the Pehdzeh Li Ndheh		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006:3	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Employment and Economy (cont'd)					
<u>Existing Conditions</u> Fish are acknowledged as being an important renewable resource in the Pehdzeh Ki Ndeh. Subsistence fishing is a commonly practiced activity, with the Mackenzie River, Wrigley River, Willow Lake River, the River Between Two Mountains, Blackwater Lake, Greasy Lake and Highland Lake being important waterbodies for subsistence harvesting. The primary species caught are lake whitefish, lake trout, inconnu and northern pike. These fish resources are considered to have an important cultural value for Wrigley residents and are also of significant economic value because of the savings realized by not purchasing fish meat at its market value.	Portions of the Mackenzie River are within the LSA Wrigley River is within the RSA (~4 km from PDA) The River Between Two Mountains, Willow Lake River, Blackwater Lake, Greasy Lake and Highland Lake are outside the RSA (River Between Two Mountains: ~35 km from PDA, Blackwater River: 45 km from PDA, Willow Lake River: ~53 km from PDA, Greasy Lake: ~61 km from PDA, Highland Lake: ~70 km from PDA)		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 2-3	The Pehdzeh Ki Ndeh is an estimated 17,053 km² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Trees are utilized for many different reasons within the Pehdzeh Ki Ndeh, including as construction and building materials, for fuel and for other purposes. The harvest for fuel wood to heat individual homes is common and residents of Wrigley are granted free access to forested areas to harvest wood. The utilization of personally harvested fuel wood is acknowledge as having a high economic value for Wrigley residents because of the individual costs saved through not having to purchase fuel wood and not to heat with fuel	The PDA intersects the Pehdzeh Ki Ndeh		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 5	The Pehdzeh Ki Ndeh is an estimated 17,053 km² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> The Pehdzeh Ki Kdheh wilderness has been a tourist attraction for several decades, but it is not well understood how important this industry is for the present economic stability of the community of Wrigley. The average number of tourists to Wrigley over the years is unknown and it is uncertain what the spending trends are of tourists once they enter the community. Accommodation options are limited to one hotel and one designated campground purchasing opportunities for tourists are very limited and there is a general perception that there is not an abundance of activities for tourists to participate in once they are in the community. <u>Potential Project Effects</u> There are many tourism attractions in the Pehdzeh Ki Ndeh however and independent travellers with their own boats, or tourists travelling with the community's outfitting guide, may explore the area from the Mackenzie River and its navigable tributaries. There is also the option of exploring the area for the land with a guide from Wrigley who offers hiking and biking adventures to tourists. In general, because of Wrigley's remote location and subsequent low level of tourist visitation, lack of retail outlets where tourists can support the local economy and minimal accommodations and recreational facilities within the community, it is assumed that tourism is not presently a significant industry in Wrigley, although there is room for expansion.	The PDA intersects the Pehdzeh Ki Ndeh Portions of the Mackenzie River intersect the LSA Wrigley is located within the LSA		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 7	The Pehdzeh Ki Ndeh is an estimated 17,053 km² tract of land centered around the community of Wrigley.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Employment and Economy (cont'd)					
<u>Existing Conditions</u> Both animal and vegetation parts from Pehdzeh Ki Ndeh are acknowledged as having an economic value when utilized as art and craft materials.	The PDA intersects the Pehdzeh Ki Ndeh		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 6	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Activities such as hunting, fishing, fuel wood harvesting and berry picking are still important contributors to a subsistence existence for residents of the Pehdzeh Ki Ndeh area and augment the local economy in various ways.	The PDA intersects the Pehdzeh Ki Ndeh		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 14	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Subsistence hunting is defined as harvesting by Aboriginal residents for food and personal use. The NTs prohibitive cost of imported commercial food products makes subsistence hunting one of the most familiar of the wildlife uses. The NT spends annually \$130 million on food imports, harvesting of local country food saves Study Area residents the cost of buying imported foods and in this way adds to the overall savings of each harvester. In 1988, the GNWT estimated that the foods being harvested annually in the NT equal \$70 million. Food prices in Wrigley are estimated to be 74% greater than food prices in Yellowknife. This reported value is based solely on food items purchased in stores	Wrigley intersects the PDA		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 26	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Subsistence hunting comprises an important part of life for many northern people, A high percentage of Pehdzeh Ki Ndeh residents are reported to hunt. The NT's Bureau of Statistics found that 43.1% of people over the age of 15 in the Dehcho region hunted or fished for subsistence in 2002 as dis 46% of Sahtu residents over the age of 15. The large percentage of Study Area residents who partake in hunting likely translate to high numbers of game animals harvested in the region.			Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 26	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Trapping holds a central place in NT's history and is still of paramount importance to many people in the NT. 20.1% of Wrigley's population over the age of 15 were reported trapping in the year 2003. Many people are interested in being able to follow a traditional lifestyle. However, the number of people reported to actively trap seems to be decreasing despite government incentives and comparatively high fur prices. The NT's annual fur sale value decreased 80% from \$6.1 million in 1987/88 to \$1 million in 1993. The GNWT estimates that the NT's current furbearer population would stand to benefit from an additional 200-300 trappers. High wages in the non-traditional sectors are blamed for taking workers away from trapping activities.			Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 30	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Employment and Economy (cont'd)					
<u>Existing Conditions</u> The Renewable Resource Assessment of the Pehdzeh Ki Nheh area of Interest Report noted that one trapper mainly traps for income and only a minimal number of animals are used domestically or sold locally.			Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 31	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> The percentage of households in Wrigley whose total consumption of meat and fish consists of a minimum of 75% country foods was 41 % in 2004. This figure has increased substantially from previous years in which the survey was conducted. In 1999, only 28% of Wrigley households reported 75% or greater of their diet coming from county foods and this figure was 13% in the 1994 survey	Wrigley intersects the PDA		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 32	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> The Renewable Resource Assessment of the Pehdzeh Ki Nheh area of Interest Report noted that Wrigley trappers have received an average of \$6,920.23 per year for their fur harvest.	Wrigley intersects the PDA The PDA intersects the Pehdzeh Ki Nheh area		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 34	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> In the Dehcho region in 1989 it was estimated that 181 artists worked to produce arts and crafts items. The most popular items sold were baskets, apparel, tuftings and jewelry, generating an estimated \$0.5 million in the Dehcho. During the 1990's it was determined that throughout the Northwest Territories (prior to separation with Nunavut) 46% of art items went to tourists, 30% to collectors and 23% to non-tourists.	The PDA intersects the Dehcho Region		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 69	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley. Deh Cho Region is assumed to correspond to the Deh Cho Territory cited by the GNWT.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Employment and Economy (cont'd)					
<u>Existing Conditions</u> More recently, tourists have been found to spend an estimated \$2 million per year on arts and crafts in the Northwest Territories. Little information is available on the economic value of arts and crafts in the Dehcho region today, or specifically for the community of Wrigley. Considering most local artists do not create their works for sale and because there is no retail location in the community for the sale of arts and crafts items, it is assumed that arts and crafts activities have a minimal influence on the economy of Wrigley.	The PDA intersects the Dehcho Region Wrigley intersects the PDA		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 69	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley. Deh Cho Region is assumed to correspond to the Deh Cho Territory cited by the GNWT.
<u>Existing Conditions</u> Trapping provides some value to Pehdzeh Ki Nheh area residents through direct income although it is acknowledged that many more residents likely trap for food (hares), other domestic use (parka trims) and local sales. Additionally, to their economic value, both resource uses are known to be of high cultural importance to the residents	The PDA intersects the Pehdzeh Ki Nheh area		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 95	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> According to interviews with Sahtu harvesters the Great Bear River is travelled for tourism.	The Great Bear River is a tributary to the Mackenzie and intersects the PDA		Sahtu	Tulita Renewable Resource Council, 2019: 19, 22	
<u>Existing Conditions</u> Concerns regarding security during construction and future operation of the Great Bear River Bridge.		Request for local groups to rotate security responsibilities to allow residents the opportunity of work on the project.	Sahtu	EBA, 2006: 9	
<u>Potential Project Effects</u> Based on the information gathered during the public consultation held on July 7 th , 2011 and January 25-26 th , 2012 some of the main concerns regarding the MVH Extension Project in the Pehdzeh Ki Ndeh – Dehcho Region are related to training and job opportunities as well as socioeconomic impacts.		In general, members from PKFN see the project as an opportunity for training and employment. Their members would like to be involved in the construction of the new bridges and of the MVH extension project, as well as its maintenance once constructed.	Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012: 113	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Employment and Economy (cont'd)					
<u>Potential Project Effects</u> During the Wrigley Community Consultation (January 25-26th, 2012) the following additional concerns were identified: • Lose job opportunities to competitors • Current work in Ochre River – they could have given a notice to PKFN (Provide list of needs in services, so that the people got the opportunity to get involved in the work) • Competitive bidding - out right sole source opportunity for maintenance			Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: 130	
Infrastructure, Services and Institutional Capacity					
<u>Potential Effects</u> The community is concerned about the potential number of people involved in the construction of the Great Bear River Bridge and the proximity of the work camps to the community.	Great Bear River Bridge is within PDA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-37	
<u>Potential Project Effects</u> During the Wrigley Community Consultation (January 25-26th, 2012) the participants identified concerns around Service and Infrastructure regarding the construction of the MVH. Concerns revolved around a new store, community health care, a new Royal Canadian Mounted Police (RCMP) station, better education and transportation and access to a mine across the river.			Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: 129	
<u>Potential Project Effects</u> During the Wrigley Community Consultation (January 25-26th, 2012) the following additional concerns were identified: • Increase in resource development in the area • Industry will have easier access			Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: 130	
<u>Potential Project Effects</u> During consultations in 2004 and 2005, community members expressed concern about the pressure major developments may have on local infrastructure, particularly local water and waste disposal systems.			Elders and land users in the Sahtu region	Golder, 2015: 2-17	
Education, Training and Skills					
<u>Potential Effects</u> According to the two-day consultation activities held in Wrigley on January 25th and 26th, 2012, the main concerns regarding the MVH Extension Project in the Pehdzeh Ki Ndeh - Dehcho Region are related to the following elements: • Education and Training • Employment opportunities • Youth • Economic growth • Protection of traditional land • activity sites In general, members from PKFN are not against the MVH extension on their territory, but they are concerned about the future of their children. Essentially, PKFN people hope that the project will bring about an improvement in their quality of life.		They would like to have better access to education and training opportunities for their children in order for them to get good jobs and to benefit from the economic growth accompanying the MVH project. The need for grade 12 level education in Wrigley as well as specific training in heavy equipment operation (HEO) was mentioned several times during the consultations. Youth involvement throughout the MVH project is of utmost importance for the PFKN and the community members as they would like to see them take part of the entire process	Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: 125	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Education, Training and Skills (cont'd)					
		Community members feel that it is imperative to the success of the Great Bear River Bridge that the local residents are able to take advantage of certified training	Sahtu	EBA, 2006: 8	.
Potential Project Effects Based on the information gathered during the public consultation held on July 7 th , 2011 and January 25-26th, 2012 some of the main concerns regarding the MVH Extension Project in the Pehdzeh Ki Ndeh – Dehcho Region are related to training and job opportunities as well as socioeconomic impacts.		In general, members from PKFN see the project as an opportunity for training and employment. Their members would like to be involved in the construction of the new bridges and of the MVH Extension Project, as well as its maintenance once constructed.	Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012: 113	
Potential Project Effects During the Wrigley Community Consultation (January 25-26th, 2012) the following additional concerns were identified: • increase in traffic • Easy access by general public • Migration to area by no PKFN members • Lack of control of the areas to be accessibly by others • Influx of visitors • Sharing resources due to access for harvesting. Case example in existing traditional areas			Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012: 130	Access and traffic
Human Health and Community Wellness					
Existing Conditions Sathu Vision: "The ecological integrity of the region is maintained. The land, water and natural resources on which people depend are clean, healthy and abundant. There is a balance of industrial development and vast wilderness areas, a model of development hand in hand with environmental protection. Conservation Zones and legislated protected areas protect the most important places and values for future generations, while careful management allows sustainable development to proceed in all other areas... Communities have sufficient authority, capacity and involvement in managing and monitoring land use to work in true partnership with land and resource managers, co-management Boards, and regulators. Together, they provide a clear, efficient regulatory system that promotes sustainable development. Land use activities are designed, regulated and implemented with consideration for the specific values and characteristics of the people and the region. Land use decisions respect and integrate Sahtu Dene and Métis traditional laws, beliefs and management practices with scientific and regulatory frameworks. There is trust and respect amongst all participants in land and resource management. Long-term economic planning has resulted in strong renewable and non-renewable industries, providing economic self-sufficiency and stability, and employment diversity for the region. Residents are able to find work in their communities and on the land. Good access and infrastructure in the region reduce the cost of power, goods and services. A strong emphasis on training has created a skilled workforce to maximize employment and business opportunities."			Tulia/Sahtu	SLUPB, 2013:12	
Potential Effects The community is concerned about the potential number of people involved in the construction of the Great Bear River Bridge and the proximity of the work camps to the community.	Great Bear River Bridge is within PDA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-37	
Potential Effects Community is concerned about the potential level of activity relative to the Project. Community members commented on potential exposures for the youth, inclusive of an increase in drugs circulating around the community, alcohol, crime, and sex.			Sahtu	EBA, 2006: 7	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Human Health and Community Wellness (cont'd)					
<u>Potential Project Effects</u> During the Wrigley Community Consultation (January 25-26th, 2012) the following additional concerns were identified: Increase in social issues, crime and violence			Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: 130	Human health and wellness
<u>Potential Project Effects</u> In Wrigley, elders noted that boreal caribou that were harvested close to the Norman Wells Pipeline had the taste associated with stress			Dehcho First Nations	Dehcho First Nations, 2011:11	
<u>Potential Project Effects</u> During consultations in 2004 and 2005, community members expressed concern that development may affect human health through water and air quality; and the health of the region's wildlife, fish and vegetation.		Improved and more frequent communication with communities regarding water quality and fish health were recommended.	Elders and land users in the Sahtu region	Golder, 2015: 2-17	
Cultural and Traditional Land Use					
<u>Existing Conditions</u> "When they selected the GTA around 1951, they looked at the map. It was only for us; it was our land. They wanted us to select a small piece of land but our elders selected a big piece of land. We need to hold onto what our elders selected for us; they did not choose for others in the region. I was there when the Elders selected the GTA. Everything selected in that area is for the K'asho Got'ine control. They selected that land because everyone was attacking that area. It is for the future generation; we want our future generation to be in control. We have to start making good decisions for our future generation. Our leaders selected that GTA. We want to keep it that way. It is for our use. We lived on this land for millions of years. We discuss what is going on here. It is like our words are being wasted. I wish that it was written down that the land was selected for us and not only for the surface but for the subsurface."	The Group Trapping Area (GTA) is north of Norman Wells and outside of the RSA		Elder Gabe Kochon of Fort Good Hope, SLUPB Follow-up Meeting, June 14, 2011, Fort Good Hope.	SLUPB, 2013:16	
<u>Existing Conditions</u> Big Smith Creek has been a good source of drinking water for many years.	Big Smith Creek is within the PDA			Golder, 2015: 2-17	
<u>Potential Effects</u> Concerns were expressed about the increased access to areas used by Elders, trappers and hunters once the Great Bear Bridge and the Highway are constructed. The concerns specifically relate to accessing these areas during summer periods when there is typically limited access.	Great Bear Bridge is within the PDA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-36	
<u>Potential Effects</u> The fact that their territory will be more accessible and exposed to outsiders, as pointed out during the door-to-door survey, is also a major preoccupation for the public consultation participants. PKFN would like its traditional lands and resources to be protected from outsiders. PKFN shared with the MVH Team Members data regarding the location of several important traditional land use sites and ancestral areas and trails where its members practice their activities. Though this information is of sensitive nature and is usually kept confidential, PKFN thought it best to share this information in order to ensure that their traditional and ancestral sites will be respected and taken into account within the mitigation measures. This additional information has been included in a confidential map appended to the report and represents sensitive components that will have to be assessed and taken into account during the next stages of the MVH Project.			Pehdzeh Ki/Dehcho First Nations	Dehcho First Nations, 2011: 125	
<u>Concerns:</u> Based on the information gathered during the public consultation held on July 7 th , 2011 and January 25-26th, 2012 some of the main concerns regarding the MVH extension project in the Pehdzeh Ki Ndeh – Dehcho Region are related to surface and land claims as well as traditional land use and knowledge and sensitive heritage and cultural considerations.		It is very important to PKFN members that their traditional land use sites and knowledge be protected.	Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: 113	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Hunting					
<u>Existing Conditions</u> Moose are harvested from Petiniæah commonly known as Bear Rock.	The PDA intersects Bear Rock Conservation Zone		Sahtu	SLUPB, 2013:124	
<u>Existing Conditions</u> Wildlife is assessed as being a key renewable resource in the Pehdzeh Ki Ndeh. Subsistence harvesting is an important resource use among Pehdzeh Ki Ndeh residents and provides a fairly high amount of meat to families. Moose are acknowledge as being the most important subsistence harvest species and there are numerous areas in the Pehdzeh Ki Ndeh known to be valuable moose habitat, concentrated around the shores of its many lakes. Subsistence harvesting is strongly connected with Traditional Knowledge and possesses a high cultural value in this respect. There is a high economic value for wildlife subsistence harvesting because of the savings realized by Wrigley residents who do not have to purchase meat at its equivalent high replacement value.	The PDA intersects the Pehdzeh Ki Ndeh area		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 2-3	The Pehdzeh Ki Ndeh is an estimated 17,053 km² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> The Sahtu Land Use Plan states that people harvest furbearer, moose, barren-ground caribou and bears in the Norman Range Ecoregion.	The LSA intersects the Norman Range Ecoregion briefly to the northwest of Tulita		Sahtu	SLUPB, 2013:153	Norman range ecoregion is very large and is intersected by the wildlife RSA.
<u>Existing Conditions</u> “The Deh Cho is identified as a Special Management Zone to protect the water quality, riparian habitat, cultural/heritage sites, areas that are important for wildlife and wildlife harvesting. SMZ designation will also allow for continued use of the river as an important regional and territorial transportation corridor (barge traffic, landing sites, winter road).”	The LSA intersects portions of the Deh Cho Special Management Zone		Sahtu	SLUPB, 2013:170	The Deh Cho Special Management Zone consists of a 5 km buffer applied to the length of the Mackenzie River as it runs through the SSA. Lands within the community boundaries of Tulita, Norman Wells and Fort Good Hope are exempt from the SLUP.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Hunting (cont’d)					
<u>Existing Conditions</u> Along the Deh Cho: “Special Harvesting Areas as per the Sahtu Dene and Metis Comprehensive Land Claim Agreement (SDMCLCA) for moose, waterfowl and birds, plant and berry picking sites and fish camps are located along the river.”	Portions of the Mackenzie River (Deh Cho) intersect the LSA		Sahtu	SLUPB, 2013:171	The Deh Cho Special Management Zone consists of a 5 km buffer applied to the length of the Mackenzie River as it runs through the SSA. Lands within the community boundaries of Tulita, Norman Wells and Fort Good Hope are exempt from the SLUP.
<u>Existing Conditions</u> Renewable resources harvested and collected in the Pehdzeh Ki Ndeh are utilized by artists in Wrigley for arts and crafts purposes. Animal parts such as antlers, bones, fur, hide and sinew are collected or harvested in the area. Moose and caribou are the primary ungulates whose antlers, hide and hair are used for carving clothing, souvenirs and tufting, beaver, marten, fox, wolverine and rabbit are the fur-bearing animals whose pelts are most often used for clothing and decorative trim on other items.	The PDA intersects the Pehdzeh Ki Ndeh area		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 6	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> The Dehcho and Sahtu residents have been utilizing the Pehdzeh Ki Ndeh area for centuries. As will all of the original inhabitants of the Northwest Territories, renewable resources were depended on for survival, wildlife, fish, trees, plants and other land and water resources played an integral role in the lives of these people and continue to do so today.	The PDA intersects the Pehdzeh Ki Ndeh area		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 14	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Hunting (cont’d)					
<u>Existing Conditions</u> Activities such as hunting, fishing, fuel wood harvesting and berry picking are still important contributors to a subsistence existence for residents of the Pehdzeh Ki Ndeh area and augment the local economy in various ways.	The PDA intersects the Pehdzeh Ki Ndeh area		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 14	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> The Renewable Resource Assessment of the Pehdzeh Ki Ndeh area of Interest Report reported moose to be the most significant animal south of the tree line in the NT for meat harvesting and consumption.	The PDA intersects the Pehdzeh Ki Ndeh area		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 22	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Traditionally, black bears have been harvested by residents of Wrigley.	The PDA intersects the Pehdzeh Ki Ndeh area Wrigley intersects the PDA		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 22	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Subsistence hunting is defined as harvesting by Aboriginal residents for food and personal use. The NTs prohibitive cost of imported commercial food products makes subsistence hunting one of the most familiar of the wildlife uses...Harvesting of local country food saves Pehdzeh Ki Ndeh residents the cost of buying imported foods and in this way adds to the overall savings of each harvester. In 1988, the GNWT estimated that the foods being harvested annually in the NT equal \$70 million.	The PDA intersects the Pehdzeh Ki Ndeh area		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 26	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Hunting (cont’d)					
<u>Existing Conditions</u> Subsistence hunting comprises an important part of life for many northern people, a high percentage of Study Area residents are reported to hunt. The NT’s Bureau of Statistics found that 43.1% of people over the age of 15 in the Dehcho region hunted or fished for subsistence in 2002 as dis 46% of Sahtu residents over the age of 15.	The PDA intersects the Dehcho Region		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 26	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley. Deh Cho Region is assumed to correspond to the Deh Cho Territory cited by the GNWT.
<u>Existing Conditions</u> The Renewable Resource Assessment of the Pehdzeh Ki Ndeh area of Interest Report estimates that the community harvested about 50 caribou, woodland and barren ground combined and about 75 moose in 2005. In the neighboring Sahtu area, hunting pressure on boreal caribou is “light” with each community typically taking less than 50 animals per year. Based on this estimate, moose are the most important subsistence harvest species in the area. However. These numbers are only estimates and the actual numbers may deviate substantially from year to year.	The PDA intersects the Pehdzeh Ki Ndeh area The PDA intersects the Sahtu area		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 27	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> One Wrigley trapper who harvests from the Pehdzeh Ki Ndeh reported harvesting approximately 1 swan, 15-20 ptarmigan, 50 geese and 100 ducks in the previous year. It can be assumed that waterfowl and ptarmigan are harvested by other residents as well.	The PDA intersects the Pehdzeh Ki Ndeh area Wrigley intersects the PDA		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 27	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> The Renewable Resource Assessment of the Pehdzeh Ki Ndeh area of Interest Report has stated a 2002 report found that the highest concentration of moose are on the shores of the Blackwater Lake on Tonnaneenlee Lake, the shores of Fish Lake and northwest of Fish Lake. The highest concentrations of caribou are reported as being on the shores of Blackwater Lake and east of Blackwater Lake in the winter. Since caribou and moose are more likely to be found in these areas, this is also likely where they are harvested. They are also harvested where there is easier access into the area.	Blackwater Lake and Fish Lake are outside of RDA (>30 km from PDA) Tonnaneenlee Lake is outside of the RSA (~50 km from PDA)		Pehdzeh Ki Dehcho First Nations	IMG-Golder, 2006: 27	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Hunting (cont’d)					
<u>Existing Conditions</u> The Renewable Resource Assessment of the Pehdzeh Ki Ndeh area of Interest Report reports that moose are hunted from areas adjacent to camps and traplines. Several camps and traditional trails are scattered throughout the Pehdzeh Li Ndeh and it is likely that they facilitate hunting in the area. Many mineral licks are reported immediately to the east of the Mackenzie Highway. These ungulate attractants existing next to a major transportation corridor is likely a hunter draw.	The PDA intersects the Pehdzeh Ki Ndeh area The Mackenzie Highway is within the PDA		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 27	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Pehdzeh Ki Ndeh is one source of renewable resource materials for artists residing in Wrigley. Materials harvested or collected include animal parts such as hide, fur, sinew and vegetation matter, such as lichen, bark and berries.	The PDA intersects the Pehdzeh Ki Ndeh area Wrigley is within LSA		Pehdzeh Ki Dehcho First Nations	IMG-Golder, 2006: 63	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Concerns have been raised in the Dehcho region regarding the harvesting of renewable resources by non-residents. Traditional materials such as birch bark, fur and hides are valued by residents of the area, and they want assurance that these resources will be properly used and not wasted in order to maintain sustainable harvest levels.	The PDA intersects the Dehcho Region		Pehdzeh Ki Dehcho First Nations	IMG-Golder, 2006: 64	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley. Deh Cho Region is assumed to correspond to the Deh Cho Territory cited by the GNWT.
<u>Existing Conditions</u> Antler and bone materials are often used for or incorporated into carvings, used in beadwork, or used as decoration for other arts and crafts. The bones and antlers of animals harvested or collected in Pehdzeh Ki Ndeh are used by artists in Wrigley.	The PDA intersects the Pehdzeh Ki Ndeh area Wrigley is within LSA		Pehdzeh Ki Dehcho First Nations	IMG-Golder, 2006: 67	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
<i>Cultural and Traditional Land Use – Hunting (cont’d)</i>					
<i>Existing Conditions</i> The hair of the moose and caribou are particularly prized for their value in the art of tufting. The preferred hair to use are the white ones on the shoulder and rump of the animal. Hair from animals harvested in Pehdzeh Ki Ndeh area is used in the creation of quality tufting works in Wrigley.	The PDA intersects the Pehdzeh Ki Ndeh area Wrigley is within LSA		Pehdzeh Ki Dehcho First Nations	IMG-Golder, 2006: 67	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<i>Existing Conditions</i> The hide from animals, in particular moose and caribou, is a very important renewable resource used in the arts and crafts industry. Tanned hide is used to make clothing items such as pants, mitts, mukluks and parkas and is also used in various arts and crafts projects such as for canvas material for beadwork, for pieces of souvenir items such as miniature snowshoes and canoes and as handles on birch bark baskets. Hides are tanned in Wrigley by at least one artist and the animals from which the hides were gathered were typically harvested in Pehdzeh Ki Ndeh.	The PDA intersects the Pehdzeh Ki Ndeh area Wrigley is within LSA		Pehdzeh Ki Dehcho First Nations	IMG-Golder, 2006: 68	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<i>Existing Conditions</i> Porcupine quills have been used for hundreds of years by artists in the communities of the Dehcho region and the use of them precedes the use of beadwork as a form of artistic enhancement for clothing and other works of art. Artists in Wrigley today do not produce a large amount of quillworks and it is estimated that only between 2 and 3 porcupines per year are harvested in Pehdzeh Ki Ndeh for arts and crafts purposes.	The PDA intersects the Pehdzeh Ki Ndeh and the Dehcho area		Pehdzeh Ki Dehcho First Nations	IMG-Golder, 2006: 68	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<i>Existing Conditions</i> Sinew is important in the arts and crafts industry as a quality stitching material. It was traditionally used for sewing projects, in beadwork and incorporated into other items such as snowshoes but has become less utilized in recent times as other materials such as dental floss are more readily accessible. Sinew from large animals harvested in Pehdzeh Ki Ndeh is used by artists in Wrigley.	The PDA intersects the Pehdzeh Ki Ndeh area Wrigley is within LSA		Pehdzeh Ki Dehcho First Nations	IMG-Golder, 2006: 68	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<i>Existing Conditions</i> Animals from Pehdzeh Ki Ndeh are important in the arts and crafts industry in Wrigley. It is roughly estimated that 75 animals per year (typically moose and caribou, with fewer beaver, fox, wolverine and an assortment of other mostly fur-bearing animals) are harvested in the area for arts and crafts purposes. Animals are taken from throughout the area, with certain harvesting sites perhaps being more readily accessed by the trail system that exists in Pehdzeh Ki Ndeh.	The PDA intersects the Pehdzeh Ki Ndeh area Wrigley is within LSA		Pehdzeh Ki Dehcho First Nations	IMG-Golder, 2006: 68	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<i>Existing Conditions</i> According to the Sahtu Renewable Resource Board map data upland game and moose are harvested along the highway from KM 880 to 970 around Tulita, around Norman Wells and KM 1050.	Within PDA		Sahtu	5658 NWT Ltd/GNWT, 2011: Fig 8-4	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Hunting (cont’d)					
<u>Existing Conditions</u> According to the Sahtu Renewable Resource Board map data Barren-ground Caribou is harvested around KM 900, 930 and between KM 990 and 1030.	Within PDA		Sahtu	5658 NWT Ltd/GNWT, 2011: Fig 8-4	
<u>Existing Conditions</u> According to the Sahtu Renewable Resource Board map data Boreal Woodland Caribou is harvest west of the highway along KM 810, along the highway between KM 830 and 840 as well as just south of the highway along KM 960 and along the highway around Norman Wells.	Within PDA		Sahtu	5658 NWT Ltd/GNWT, 2011: Fig 8-4	
<u>Existing Conditions</u> According to the Sahtu Renewable Resource Board map data Boreal Mountain Caribou are harvested west of the highway between KM 820 and 850.	Within RSA		Sahtu	5658 NWT Ltd/GNWT, 2011: Fig 8-4	
<u>Existing Conditions</u> According to the Sahtu Renewable Resource Board map data waterfowl is harvested all along the Mackenzie River around Norman Wells and Tulita as well as around the Mackenzie River between KM 840 and 850.	Portions of the Mackenzie River are within the LSA Norman Wells and Tulita within the PDA		Sahtu	5658 NWT Ltd/GNWT, 2011: Fig 8-7	
<u>Existing Conditions</u> According to the Traditional Knowledge Study conducted by the EBA in 2006 duck hunting grounds are located on the south side of the Mackenzie River just east of Tulita and duck migration route is identified as extending east off the hunting grounds.	Within the RSA		Sahtu	EBA, 2006: Fig1	
<u>Existing Conditions</u> Boreal woodland caribou are used as a subsistence food source throughout the Sahtu region. However, not many people actively pursue these animals, and most are harvested opportunistically when encountered while hunting other species. When groups of boreal woodland caribou are encountered, only a few caribou from each group are harvested. More bulls are harvested than cows and calves.	The PDA intersects the Sahtu Region		Sahtu	McDonald, 2011:7	
<u>Existing Conditions</u> According to the map data compiled by McDonald Boreal Woodland Caribou are harvested just north of Tulita and along the winter road between Tulita and Norman Wells.	Tulita and Norman Wells are within the PDA		Sahtu	McDonald, 2011:9	
<u>Existing Conditions</u> The harvesting of large ungulates, including moose and caribou, represents an important resource procurement activity. Historically, the movements of the caribou herds were closely related to procurement strategies of subsistence resources and even affected the seasonal movements of Aboriginal populations. The proposed MVH extension is found within the range of both the Woodland Caribou Boreal population and moose.	PDA intersects the range of the Woodland Caribou Boreal population and moose (precise location unknown)		Pehdzeh Ki Dehcho First Nations	Dessau, 2012: 75	
<u>Existing Conditions</u> Areas utilized for big game hunting have not been identified by the Dehcho Land Use Plan, primarily due to the sensitivity of the data.			Pehdzeh Ki Dehcho First Nations	Dessau, 2012: 75	
<u>Existing Conditions</u> Through their comprehensive investigation of traditional activities in the Dehcho Region, Norwegian and Cizek (2004) found that between 22 and 36% of all dietary protein requirements were fulfilled by wild foods. According to data collected during the MGP EIS, in the Dehcho Region, between 1993 and 2002, the community of Wrigley showed an increase in traditional activities overall. In 1998, a recorded 34% of adults reported to have hunted or fished, while 53% indicated that they consumed country foods.	The PDA intersects the Dehcho Region Wrigley intersects the PDA		Pehdzeh Ki Dehcho First Nations	Dessau, 2012: 75	Deh Cho Region is assumed to correspond to the Deh Cho Territory cited by the GNWT.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
<i>Cultural and Traditional Land Use – Hunting (cont’d)</i>					
<i>Existing Conditions</i> Along the MVH extension route, the Blackwater and Ochre Rivers, as well as Whitesand Creek are the areas in which traditional wildlife harvesting activities are focused.	The Blackwater River, the Ochre River and the Whitesand Creek are tributaries to the Mackenzie River and intersect the PDA		Pehdzeh Ki Dehcho First Nations	Dessau, 2012: 76	
<i>Existing Conditions</i> Traditional hunting grounds in the vicinity of Whitesand Creek may also be used in the harvesting of caribou and are located near concentrations of archaeological sites, which may indicate use of the area as far back as the prehistoric period.	Whitesand Creek is a tributary to the Mackenzie and intersects the PDA		Pehdzeh Ki Dehcho First Nations	Dessau, 2012: 76	
<i>Existing Conditions</i> Information from the community of Wrigley indicates that at least five moose pasture areas are found along the proposed route. At least one traditional hunting ground overlaps with these pasture areas in the area of Vermillion Creek South and Bob’s Canyon Creek, which has been used for the past 100 years for hunting moose. Additional moose hunting areas are located near Whitesand Creek and Eentsaytoo Lake, located north of the Blackwater Creek confluence with Mackenzie River.	Vermillion Creek South, Whitesand Creek and Bob’s Canyon Creek are tributaries to the Mackenzie and intersect the PDA Blackwater Creek is a tributary to the Mackenzie and intersects the PDA Eentsaytoo Lake is within LSA		Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012: 77	
<i>Existing Conditions</i> A spiritual site associated with moose hunting in the Mackenzie Valley area is located just south of Blackwater Creek. The site is important because it is home to a rock to which spiritual offerings are made by PKFN members while hunting.	Blackwater Creek is a tributary to the Mackenzie and intersects the PDA		Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012: 77	
<i>Existing Conditions</i> The route of the MVH extension is also found within year-round black bear range. Harvesting of bears may occur within the traditional hunting grounds located north of Blackwater River, Vermillion Creek South and Whitesand Creek.	Blackwater River, Vermillion Creek South and Whitesand Creek are tributaries to the Mackenzie and intersect the PDA		Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012: 77	
<i>Existing Conditions</i> Waterfowl such as duck and geese species are traditionally harvested by Dehcho First Nations, including PKFN, and traditional hunting grounds located near Blackwater River and Vermillion Creek South may be utilized for harvesting this resource.	Blackwater River and Vermillion Creek South are tributaries to the Mackenzie and intersect the PDA		Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012: 78	
<i>Potential Effects</i> In considering the socio-cultural history and traditional land uses that exist in the area of the Mackenzie Valley, north of the community of Wrigley, it is evident that the proposed MVH extension route will interact with a number of areas traditionally used for the harvesting of wildlife and vegetation resources. This will include areas important for the harvesting of caribou, moose, small game and vegetation, as well as additional non-traditional hunting and economic land uses that may be permitted in the vicinity of the Project area.	Within PDA		Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012: 224	
<i>Existing Conditions</i> According to the map data obtained from public consultation with PKFN a traditional hunting ground is located just west of the proposed highway between KM 730 and 731.	Within PDA		Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012: App 1, Map Sheet 8-P	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Hunting (cont’d)					
<u>Existing Conditions</u> According to the map data obtained from public consultation with PKFN a traditional hunting ground is located just west of the proposed highway between KM 753 and 754.	Within PDA		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 1, Map Sheet 12-P	
<u>Existing Conditions</u> According to the map data obtained from public consultation with PKFN a traditional hunting ground is located just east of the proposed highway between KM 751 and 752.	Within PDA		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 1, Map Sheet 12-P	
<u>Existing Conditions</u> According to the map data obtained from public consultation with PKFN a traditional hunting ground is located along/in the Mackenzie River west of the existing winter road KM 786.	Within LSA		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 1, Map Sheet 18-P	
<u>Existing Conditions</u> According to the map data obtained from public consultation with PKFN a traditional hunting ground is located north of KM 731. This area is considered a moose sensitive area.	Within LSA		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 4, Map Sheet 4	
<u>Existing Conditions</u> According to the map data obtained from public consultation with PKFN a traditional hunting ground is located along both sides of the existing winter road extending about 1 km north of the Mackenzie River between KM 749 and 755. This area includes Bob’s Canyon Creek, which is considered by PKFN participant(s) to be the best creek for moose hunting. <u>Potential Effects/Concerns</u> PKFN are concerned that the proposed highway alignment is located too close to the Mackenzie River.	Bob’s Canyon Creek is a tributary to the Mackenzie River and intersects the PDA	PKFN suggest the alignment should take a straight line from KM 749 to 754 instead of following the existing winter road. PKFN suggests moving up the bridge at Vermillion Creek South to protect the traditional hunting ground	Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 4, Map Sheet 6	
<u>Existing Conditions</u> According to the map data obtained from public consultation with PKFN a very large important hunting ground is located on both sides of the existing winter road stretching from KM 785 to 789 including the Mackenzie River to the south and the Eentsaytoo Lake to the North. Eentsaytoo Lake is also considered a traditional lake for moose.	The PDA intersects hunting ground Eentsaytoo Lake is within PDA		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 4, Map Sheet 10	
<u>Existing Conditions</u> The area around Willow Lake (called Brackett Lake on the official maps) is important for hunting, and the lake and wetlands nearby support large populations of animals. The oral tradition records many stories, which tell of the importance of this lake.	Willow Lake (Brackett Lake) is outside the RSA (~25 km from PDA)		Sahtu	The Sahtu Heritage Places and Sites Joint Working Group, 2000:96	
<u>Existing Conditions</u> According to <i>The Places We Take Care Of</i> the Mackenzie River continues to provide critical moose and waterfowl hunting areas.	Portions of the Mackenzie intersect the LSA		Sahtu	The Sahtu Historic Places and Sites Joint Working Group, 2000: 104	
<u>Existing Conditions</u> According to <i>The Places We Take Care Of</i> the Sahtu Dene and Métis have travelled for centuries and used the traditional resources distributed over the Sahtu region. Moose, woodland and barren ground caribou, Dall’s sheep, beaver, marten, muskrats, waterfowl and other birds, fish, hare, and other small game continue to be critical subsistence resources.			Sahtu	The Sahtu Historic Places and Sites Joint Working Group, 2000: 18	
<u>Existing Conditions</u> According to <i>The Places We Take Care Of</i> Caribou are of prime importance to life in the Sahtu region. Caribou are hunted in all seasons, providing critical sources of food. Caribou also provided hides for clothing and shelter, sinew for sewing, and bones and antler for tools and implements. Consequently, caribou occupy an important position in Sahtu Dene and Métis culture and history, and many heritage places are linked to this 'giver of life'.			Sahtu	The Sahtu Historic Places and Sites Joint Working Group, 2000: 18	
<u>Existing Conditions</u> The Great Bear River is used by boats for hunting.	The Great Bear River is a tributary to the Mackenzie and intersects the PDA		Sahtu	Tulita Renewable Resource Council, 2019	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
<i>Cultural and Traditional Land Use – Hunting (cont’d)</i>					
<i>Existing Conditions</i> Throughout the Dehcho Region, there appears to be a decline in the harvesting of boreal caribou by Dehcho First Nations members, although boreal caribou continue to be harvested. Reasons for this decline include: • harvesters do not spend as much time on the land today as previous generations did • boreal caribou are sensitive to sensory disturbance and the use of skidoos decreases incidental contact • the use of boreal caribou hides for snowshoe lacing and dog harnesses has diminished • most harvesters prefer moose to boreal caribou, so boreal caribou are mostly harvested on an opportunistic basis while doing other land use activities • some harvesters are aware that boreal caribou are at risk and have cut back on harvesting	The PDA is located within the Dehcho Region		Dehcho First Nations	Dehcho First Nations, 2011:8	
<i>Existing Conditions</i> Harvesting of boreal caribou generally takes place in the fall and winter months, when the animals are moving around more (fall / early winter) or are in larger groups in more concentrated areas (mid to late winter/early spring).			Dehcho First Nations	Dehcho First Nations, 2011:8	
<i>Existing Conditions</i> Dehcho First Nations report that non-Dene harvesting of boreal caribou appears to be steady or rising slightly.			Dehcho First Nations	Dehcho First Nations, 2011:8	
<i>Existing Conditions</i> Harvesting of boreal caribou generally takes place in the fall and winter months, when the animals are moving around more (fall / early winter) or are in larger groups in more concentrated areas (mid to late winter/early spring).			Dehcho First Nations	Dehcho First Nations, 2011:8	
<i>Potential Project Effects</i> In Wrigley, elders noted that boreal caribou that were harvested close to the corridor had the taste associated with stress	Wrigley intersects the PDA		Dehcho First Nations	Dehcho First Nations, 2011:11	
<i>Existing Conditions</i> Although boreal caribou are currently an ‘incidental species from a harvesting perspective, they are highly valued by Dehcho First Nations. Caribou meat is valued for human consumption and the hide is valued for making specialized craft products such as snowshoe lacing, dog harnesses, and drums, because it doesn’t stretch as much as moose hide.			Dehcho First Nations	Dehcho First Nations, 2011:9	
<i>Existing Conditions</i> Dehcho First Nations have a spiritual relationship with boreal caribou that carries with it obligations not to unduly harm or disrespect the animals. For this reason, Dehcho First Nations are very uncomfortable with the collaring that has been carried out for research purposes. They feel that collaring is not respectful toward the integrity of the animal. This disrespect will result in the Creator ‘taking the animals away’.			Dehcho First Nations	Dehcho First Nations, 2011:9	
<i>Existing Conditions</i> Dehcho First Nations make tobacco or other offerings before hunting in a particular area or, in the past, held ceremonies at seasonal gatherings to thank the Creator for animals harvested over the past year. Taboos relating to the use of boreal caribou hair and antlers are still followed in some communities today.			Dehcho First Nations	Dehcho First Nations, 2011:9	
<i>Existing Conditions</i> Dehcho First Nations feel that it is human behavior toward boreal caribou (and other animals) that is affecting their well-being and that we therefore have to be conscious of our behavior toward these animals if they are going to be sustained. Decisions affecting boreal caribou need to be made from a relationship-based, land-based perspective and not on the basis of paper research and reports.			Dehcho First Nations	Dehcho First Nations, 2011:10	
<i>Potential Project Effects</i> Harvesters know that seismic and other linear disturbances open corridors for wolves and can lead to an increase in predation of boreal caribou and other game animals and are concerned about this impact.			Dehcho First Nations	Dehcho First Nations, 2011:12	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Hunting (cont’d)					
<u>Existing Conditions</u> An increase in the bear population throughout the Dehcho region has been observed. Study participants reported that it was not uncommon to see a sow bear with three cubs, which would normally be considered quite unusual. The increase in bears is largely due to the fact that the harvesting of bears for meat and fur has declined considerably, as harvesters are uncomfortable harvesting and eating bears that may have been foraging in dumps or other contaminated sites.			Dehcho First Nations	Dehcho First Nations, 2011:12	An increase in the bear population throughout the Dehcho region has been observed. Study participants reported that it was not uncommon to see a sow bear with three cubs, which would normally be considered quite unusual. It is known that bears will kill boreal caribou calves in the spring time. The increase in bears is largely due to the fact that the harvesting of bears for meat and fur has declined considerably, as harvesters are uncomfortable harvesting and eating bears that may have been foraging in dumps or other contaminated sites.
<u>Potential Project Effects</u> Harvesters know that boreal caribou (and other big game) that are highly stressed from sensory or other disturbances taste differently. In the Trout Lake area, two animals were killed within the past year that exhibited signs of stress and were also unusually thin. Aside from the taste being bad and having limited fat, the animals did not show signs of illness.	Trout Lake is outside the RSA (~296 km from PDA)	There is no local explanation for this phenomenon, so it needs to be monitored.	Dehcho First Nations	Dehcho First Nations, 2011:14	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Hunting (cont’d)					
<u>Existing Conditions</u> The 2018 NWT Community Survey by the NWT Bureau of Statistics reported that in Norman Wells 45.1% of Indigenous persons in the community went hunting and fishing; in Tulita 46.1% of Indigenous persons in the community went hunting and fishing; and in Wrigley 68.5% of Indigenous persons in the community went hunting and fishing.	Norman Wells, Tulita, and Wrigley intersect the PDA			GNWT, 2018	
<u>Existing Conditions</u> The 2018 NWT Community Survey by the NWT Bureau of Statistics reported on the following frequency of hunting or fishing by Indigenous persons in communities within the Project area ² : In Norman Wells, 22.9% of Indigenous persons reported hunting or fishing frequently throughout the year; 19.8% reported hunting or fishing occasionally more than day trips; 30.2% reported hunting or fishing occasionally (only day trips); and 27.1% reported rarely hunting or fishing. In Tulita, 23.4% of Indigenous persons reported hunting or fishing frequently throughout the year; 27.5% reported hunting or fishing occasionally more than day trips; 29.3% reported hunting or fishing occasionally (only day trips); and 20.4% reported rarely hunting or fishing. In Wrigley, 55.6% of Indigenous persons reported hunting or fishing frequently throughout the year; 20.6% reported hunting or fishing occasionally more than day trips; 20.6% reported hunting or fishing occasionally (only day trips). The percentage of Indigenous persons rarely hunting or fishing was not recorded.	Norman Wells, Tulita, and Wrigley intersect the PDA			GNWT, 2018	
<u>Existing Conditions</u> The Sahtu (Great Bear Lake) watershed is known for winter caribou and year-round moose hunting.	A portion of the PDA overlaps with Sahtu (Great Bear Lake) watershed		Sahtu	Golder, 2015: 2-4	
<u>Existing Conditions</u> Moose skin boats were used for travel from the mountains to the Tull’t’a area for fur and dry meat trade.	Tulita is within the PDA.		Shuhta Got’lne (Shit’a Got’lne)	Golder, 2015: 2-5	
<u>Existing Conditions</u> The Willow Lake (Brackett Lake or K’áalq Tué) area is important for hunting; the area’s lake and wetlands support large numbers of waterfowl and other wildlife.	Willow Lake (Brackett Lake or K’áalq Tué) is outside the RSA (~25 km from PDA)		K’áalq Got’lne (Willow Lake People)	Golder, 2015: 2-6	
<u>Existing Conditions</u> Tull’t’a is a traditional camp site for caribou and, less commonly, muskox hunting.	Tulita is within the PDA.			Golder, 2015: 2-7	
<u>Existing Conditions</u> The Dəo (Mackenzie River) is important for moose and waterfowl hunting for local residents.	Portions of Dəo (Mackenzie River) intersect the LSA			Golder, 2015: 2-31	
<u>Existing Conditions</u> Paddling on Moose Lake is no longer possible as the lake has dried. Elders have linked decreasing water levels to reduced fish and wildlife habitat, and it affects land users’ travel and fishing	Unable to determine location of Moose Lake		Sahtu	Golder, 2015: 2-21	

² Totals may not add up to 100% due to rounding.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Hunting (cont’d)					
<u>Existing Conditions</u> Moose, caribou, furbearers, and waterfowl are harvested from Fall Stone Lake, Mackay Creek, Tate Lake, Stewart Lake, Rusty Lake, Yellow Lake, Little Bear River, Kweten?iá or Peten?iá (Bear Rock) area, Moose Lake, and along the Dəo (Mackenzie River).	Little Bear River is a tributary to the Mackenzie River and is within the RSA. (~9 km from PDA) The PDA intersects Petiniæah (Bear Rock) Conservation Zone Portions of Dəo (Mackenzie River) intersect the LSA Fall Stone Lake, Mackay Creek, Tate Lake, Stewart Lake, Rusty Lake, and Yellow Lake are outside the RSA. (Fall Stone Lake: ~25 km from PDA. Mackay Creek: ~18 km from PDA. Tate Lake: ~24 km from PDA. Stewart Lake: ~25 km from PDA. Rusty Lake: ~30 km from PDA. Yellow Lake: ~30 km from PDA.) Unable to determine location of Moose Lake		Sahtu	Golder, 2015: 2-32	
Cultural and Traditional Land Use – Trapping					
<u>Existing Conditions</u> Red fox, fisher, wolverine, otter and muskrat are all also found in the Pehdzeh Ki Ndeh and sometimes trapped.	The PDA intersects the Pehdzeh Ki Ndeh area		Pehdzeh Ki Dehcho First Nations	IMG-Golder, 2006: 25	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> The Fort Good Hope-Colville Lake Group Trapping Area (GTA), which is the basis for the K’asho Got’ine District boundary, is the traditional territory of the K’asho Got’ine people. The Group Trapping Area was first registered in the 1956 Northwest Territories Game Ordinance (Part VII), which allowed those named in the group (or their dependants) the exclusive right to hunt fur-bearing animals (beaver, fisher, fox, lynx, marten, mink, muskrat, otter, skunk, squirrel, weasel or ermine) within the area described in the certificate of registration. It still exists under the current NWT Wildlife Act (Trapping Regulations).	The Group Trapping Area is located north of Norman Wells and is outside the RSA	N/A	Tulita/Sahtu	SLUPB, 2013:15	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Trapping (cont'd)					
<u>Existing Conditions</u> Furbearers are harvested from Petiniæah commonly known as Bear Rock.	The PDA intersects Bear Rock Conservation Zone		Sahtu	SLUPB, 2013:124	
<u>Existing Conditions</u> The Sahtu Land Use Plan states that furbearers are harvested from the Norman Range Ecoregion.	The LSA intersects a small portion of the Norman Range Ecoregion		Sahtu	SLUPB, 2013:153	Norman range ecoregion is very large and is intersected by the wildlife RSA.
<u>Existing Conditions</u> The Sahtu (Great Bear Lake) watershed is known for beaver and muskrat trapping.	A portion of the PDA overlaps with Sahtu (Great Bear Lake) watershed		Sahtu	Golder, 2015: 2-4	
<u>Existing Conditions</u> Families would travel from the mountains in the fall to the Tulít'a area to trap until January.	Tulita is within the PDA		Shuhta Got'İne (Shit'a Got'İne)	Golder, 2015: 2-5	
<u>Existing Conditions</u> The Sahtu Land Use Plan identifies the Deh Cho as a Special Management Zone to protect the areas that are important for wildlife and wildlife harvesting among other things.	The PDA intersects the Deh Cho Special Management Area		Sahtu	SLUPB, 2013:170	The Deh Cho Special Management Zone consists of a 5 km buffer applied to the length of the Mackenzie River as it runs through the SSA. Lands within the community boundaries of Tulita, Norman Wells and Fort Good Hope are exempt from the SLUP.
<u>Existing Conditions</u> Trapping is strongly associated with cultural traditions. Pehdzeh Li Ndheh is known furbearer habitat, and some trapping is known to take place in the Area. Overall, fur harvest returns to the community of Wrigley show significant income is derived from this resource use	The PDA intersects the Pehdzeh Li Ndeh area. Wrigley is within LSA		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 3	The Pehdzeh Ki Ndeh is an estimated 17,053 km² tract of land centered around the community of Wrigley.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Trapping (cont'd)					
<u>Existing Conditions</u> Beaver, marten, fox, wolverine and rabbit are the fur-bearing animals whose pelts are most often used for clothing and decorative trim on other items.			Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 6	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Trapping holds a central place in NT's history and is still of paramount importance to many people in the NT. 20.1% of Wrigley's population over the age of 15 were reported trapping in the year 2003. Many people are interested in being able to follow a traditional lifestyle. However, the number of people reported to actively trap seems to be decreasing despite government incentives and comparatively high fur prices. The NT's annual fur sale value decreased 80% from \$6.1 million in 1987/88 to \$1 million in 1993. The GNWT estimates that the NT's current furbearer population would stand to benefit from an additional 200-300 trappers. High wages in the non-traditional sectors are blamed for taking workers away from trapping activities.			Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 30	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> The Renewable Resource Assessment of the Pehdzeh Ki Ndeh area of Interest Report reports that the following furbearer species were sold to fur auctions in the area between 2000-2005: beaver, muskrat, marten, fox, wolf, mink, lynx, wolverine. Marten is by far the most sold furbearer, followed by muskrat and beaver. Animals such as fox, and wolf are only occasionally harvested in the Pehdzeh Ki Ndeh.	The PDA intersects the Pehdzeh Ki Ndeh area		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 31	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> The Renewable Resource Assessment of the Pehdzeh Ki Ndeh area of Interest Report reported that there are five trappers from Wrigley that used the Pehdzeh Ki Ndeh to harvest furbearers in 2006. One trapper noted that he mainly traps for income and only a minimal number of animals are used domestically or sold locally. He reported trapping the following species: wolverine, marten, fox, beaver, hare, squirrel.	The PDA intersects the Pehdzeh Ki Ndeh area Wrigley is within LSA		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 31	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> The Renewable Resource Assessment of the Pehdzeh Ki Ndeh area of Interest Report noted that Wrigley trappers have received an average of \$6,920.23 per year for their fur harvest.	The PDA intersects the Pehdzeh Ki Ndeh area Wrigley is within LSA		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 34	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Trapping (cont'd)					
<u>Existing Conditions</u> Pelts from animals such as fox, beaver, wolverine, marten, wolf, mink, rabbit and others are often used in the arts and crafts industry in the creation of clothing and souvenirs and as decoration on different item. The pelts of animals harvested in Pehdzeh Ki Ndeh are used by artists in Wrigley	The PDA intersects the Pehdzeh Ki Ndeh area		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 67	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> According to the Sahtu Renewable Resource Board map data hare is trapped along both sides of the highway around Norman Wells (KM 990-1060), Tulita (KM 880-960) and in between (KM 970-980).	The PDA intersects the trapping area around Norman Wells, Tulita and in between		Sahtu	5658 NWT Ltd. and GNWT, 2011:Fig 8-5	
<u>Existing Conditions</u> According to the Sahtu Renewable Resource Board map data marten is harvested in a few select spots along the highway from KM 830 to 920 as well as along the highway and north of KM 1040.	Within the PDA		Sahtu	5658 NWT Ltd. and GNWT, 2011:Fig 8-5	
<u>Existing Conditions</u> According to the Sahtu Renewable Resource Board map data dry furbearers are harvested along the highway around KM 800, KM 830-850, around Tulita and Norman Wells as well as around KM 1050.	The PDA intersects the trapping area Tulita and Norman Wells are within the PDA		Sahtu	5658 NWT Ltd. and GNWT, 2011:Fig 8-5	
<u>Existing Conditions</u> According to the Sahtu Renewable Resource Board map data beaver, muskrat and mink are harvested along the Mackenzie River around Tulita and Norman Wells	The PDA intersects the trapping area Tulita and Norman Wells are within the PDA		Sahtu	5658 NWT Ltd. and GNWT, 2011:Fig 8-6	
<u>Existing Conditions</u> Trapping in Wrigley was shown to have declined steadily from 100% of surveyed male community members between the ages of 25 and 59 who participated in 1987 to only 24% who participated in 2002.			Pehdzeh Ki Dehcho First Nations	Dessau, 2012:76	
<u>Existing Conditions</u> Traditional trapping activities, which focus on furbearing animals such as the martin, the beaver and the muskrat, occur along the route and are centred on trapline cabins. Some trapline cabins have been identified along the proposed MVH Extension Project by members of the Wrigley community; in the areas of Whitesand and Dam Creeks, and Blackwater River.	Blackwater River, Whitesand and Dam Creeks are tributaries to the Mackenzie River and intersect the PDA		Pehdzeh Ki Dehcho First Nations	Dessau, 2012:76	
<u>Existing Conditions</u> There are several cabins and traplines found in the Pehdzeh Ki Ndeh area around the lakes that connect to Wrigley by traditional trails, several of which are found along the winter road alignment	The PDA intersects the Pehdzeh Ki Ndeh area Wrigley is within LSA		Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012:97	
<u>Existing Conditions</u> According to the map data obtained through consultation with PKFN traplines are located around the existing winter road between KM 730 and 731.	The PDA intersects the trapline area		Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012: App 1, Map Sheet 8-P	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Trapping (cont'd)					
<u>Existing Conditions</u> According to the map data obtained through public consultation with PKFN traplines are located to the west and east of the existing winter road around KM 762 and 763.	The PDA intersects the trapline area		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 1, Map Sheet 14-P	
<u>Existing Conditions</u> According to the map data obtained through public consultation with PKFN traplines are located to the west and east of the existing winter road around KM 773 and 774.	The PDA intersects the trapline area		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 1, Map Sheet 16-P	
<u>Existing Conditions</u> According to the map data obtained through public consultation with PKFN traplines are located just to the south of the existing winter road at KM 784.	The PDA borders on the trapline area		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 1, Map Sheet 18-P	
<u>Existing Conditions</u> According to the map data obtained through public consultation with PKFN a trapline area is intersected by the existing winter road between KM 730 and just west of 731.	The PDA intersects the trapline area		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 4, Map Sheet 4	
<u>Existing Conditions</u> According to the map data obtained through public consultation with PKFN a trapline area is located to both sides of the existing winter road between KM 762 and 763.	The PDA intersects the trapline area		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 4, Map Sheet 7	
<u>Existing Conditions</u> According to the map data obtained through public consultation with PKFN a trapline area is intersected by the existing winter road between KM 773 and just west of 775.	The PDA intersects the trapline area		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 4, Map Sheet 8/9	
<u>Existing Conditions</u> According to the map data obtained through public consultation with PKFN a trapline area is located to the east of KM 784 of the existing winter road	The PDA borders on the trapline area		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 4, Map Sheet 9	
<u>Existing Conditions</u> The area around Willow Lake (called Brackett Lake on the official maps) is important for trapping, and the lake and wetlands nearby support large populations of animals. The oral tradition records many stories, which tell of the importance of this lake.	Willow Lake (Brackett Lake) is outside of RSA (~25 km from PDA)		Sahtu	The Sahtu Heritage Places and Sites Joint Working Group, 2000:94	
<u>Existing Conditions</u> According to <i>The Places We Take Care Of</i> the Sahtu Dene and Métis have travelled for centuries and used the traditional resources distributed over the Sahtu region. Beaver, marten, muskrats, hare, and other small game continue to be critical subsistence resources.			Sahtu	The Sahtu Heritage Places and Sites Joint Working Group, 2000:18	
Wolf populations throughout the Dehcho region appear to be increasing, due in part to the fact that fewer of these animals are trapped or hunted today than in the past, for both cultural and socio-economic reasons. However, wolf pack sizes are considered to be normal for the area (generally 4-7 animals in a pack) and there is no evidence of increased killing of boreal caribou by wolves.	The PDA is located within the Dehcho Region		Dehcho First Nations	Dehcho First Nations, 2011:12	
<u>Existing Conditions</u> The 2018 NWT Community Survey by the NWT Bureau of Statistics reported that in Norman Wells 4.2% of Indigenous persons in the community went trapping; in Tulita 5.2% of Indigenous persons in the community went trapping; and in Wrigley 37% of Indigenous persons in the community went trapping.	Norman Wells, Tulita, and Wrigley intersect the PDA			GNWT, 2018	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Trapping (cont'd)					
<u>Existing Conditions</u> The Willow Lake (Brackett Lake or K'áalq Tué) area is important for trapping; the area's lake and wetlands support large numbers wildlife.	Willow Lake (Brackett Lake or K'áalq Tué) is outside the RSA (~25 km from PDA)		K'áalq Got'İne (Willow Lake People)	Golder, 2015: 2-6	
Cultural and Traditional Land Use – Fishing					
<u>Existing Conditions</u> Fish are harvested from Petiniæah commonly known as Bear Rock.	The PDA intersects Bear Rock Conservation Zone		Sahtu	SLUPB, 2013:124	
<u>Existing Conditions</u> The Sahtu Land Use Plan states that Norman Range Ecoregion is an area where fish are harvested in the following fish bearing lakes: Moon Lake, Sam McRae Lake, Turton Lake, Chick Lake, Oscar Lake, Kelly and Lennie Lake	The LSA intersects a small portion of the Norman Range Ecoregion Moon Lake, Sam McRae Lake, Turton Lake, Chick Lake, Oscar Lake, Kelly and Lennie Lake are outside of RSA (Kelly Lake: ~24 km from PDA, Lennie Lake: ~42 km from PDA, Moon Lake: ~70 km form PDA, Turton Lake: ~71 km from PDA, Sam McRae Lake: ~90 km form PDA, Chick Lake: ~112 km from PDA)		Sahtu	SLUPB, 2013:153	Norman range ecoregion is very large and is intersected by the wildlife RSA.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Fishing (cont’d)					
<u>Existing Conditions</u> “The Deh Cho is identified as a Special Management Zone to protect the water quality, riparian habitat, cultural/heritage sites, areas that are important for wildlife and wildlife harvesting. SMZ designation will also allow for continued use of the river as an important regional and territorial transportation corridor (barge traffic, landing sites, winter road).”	The PDA is within the Deh Cho Special Management Zone		Sahtu	SLUPB, 2013:170	The Deh Cho Special Management area consists of a 5 km buffer applied to the length of the Mackenzie River as it runs through the SSA. Lands within the community boundaries of Tulita, Norman Wells and Fort Good Hope are exempt from the SLUP.
<u>Existing Conditions</u> Fish are acknowledged as being an important renewable resource in the Pehdzeh Ki Ndeh. Subsistence fishing is a commonly practiced activity, with the Mackenzie River, Wrigley River, Willowlake River, the River Between Two Mountains, Blackwater Lake, Greasy Lake and Highland Lake being important waterbodies for subsistence harvesting. The primary species caught are lake whitefish, lake trout, inconnu and northern pike. These fish resources are considered to have an important cultural value for Wrigley residents and are also of significant economic value because of the savings realized by not purchasing fish meat at its market value.	Portions of the Mackenzie River are within the LSA Wrigley River is within the RSA (~4 km from PDA) Willowlake River and the River Between Two Mountains are tributaries flowing into the Mackenzie south of Wrigley and outside of RSA (River Between Two Mountains: ~35 km from PDA, Willowlake River: ~53 km from PDA) Blackwater Lake, Greasy Lake and Highland Lake are outside of RSA (Blackwater Lake: ~45 km from PDA, Greasy Lake: ~61 km from PDA, Highland Lake: ~70 km from PDA)		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 3	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Fishing (cont’d)					
<u>Existing Conditions</u> The Dehcho and Sahtu residents have been utilizing the Pehdzeh Ki Ndeh area for centuries. As will all of the original inhabitants of the Northwest Territories, renewable resources were depended on for survival, Wildlife, fish, trees, plants and other land and water resources played an integral role in the lives of these people and continue to do so today.	The PDA intersects the Pehdzeh Ki Ndeh area		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 14	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Activities such as hunting, fishing, fuel wood harvesting and berry picking are still important contributors to a subsistence existence for residents of the Pehdzeh Ki Ndeh area and augment the local economy in various ways.	The PDA intersects the Pehdzeh Ki Ndeh area		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 14	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> A variety of fish species occurring in the Pehdzeh Ki Ndeh are known to be important food species and include: loche (burbot), pickeral (walleye), jackfish (northern pike), longnose sucker, white sucker, Arctic grayling (bluefish), broud whitefish, chum salmon (dog-face salmon), coney (inconnu),lake cisco, lake trout, lake whitefish (crooked back), round whitefish, mountain whitefish, and trout-perch	The PDA intersects the Pehdzeh Ki Ndeh area		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 37	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Fishing (cont’d)					
<u>Existing Conditions</u> The majority of residents in Wrigley are involved in subsistence fishing. Harvesting occurs mainly through the use of gill nets, but some fish are taken by angling. Lake whitefish, lake trout, inconnu and northern pike are the main harvest species for Wrigley residents, but arctic grayling, burbot and longnose sucker and walleye are also harvested. Residents usually fish for subsistence in the Mackenzie River (south of Wrigley to its confluence with the Willowlake River). The Wrigley and Willowlake Rivers and the River Between Two Mountains system. Blackwater, Fish and Highland Lakes are known to be fished extensively in winter.	The Mackenzie River south of Wrigley is outside the RSA Willowlake River and the River Between Two Mountains are tributaries flowing into the Mackenzie south of Wrigley and are outside of the RSA (River Between Two Mountains: ~35 km from PDA, Willowlake River: ~53 km from PDA) Blackwater, Fish and Highland Lakes are outside the RSA (Fish Lake: ~25 km from PDA, Blackwater Lake: ~45 km from PDA, Highland Lake: ~61 km from PDA)		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 38	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Wrigley residents eat the flesh of all fish species and the eggs/ or liver of some species. Lake whitefish is used for many purposes and the preferred source of dried fish. During summer and fall, Wrigley residents harvest inconnu and arctic grayling, which they either eat fresh, freeze (inconnu) or feed to dogs. Lesser quantities of walley and burbot are taken. There is little fishing activity reported to occur during springtime.			Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 38	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Fishing (cont’d)					
<u>Existing Conditions</u> The Renewable Resource Assessment of the Pehdzeh Ki Ndeh area of Interest Report has identified several places in Pehdzeh Ki Ndeh as being traditional subsistence fishing sites. Blackwater Lake: lake whitefish, lake trout, artic grayling, northern pike and burbot), Fish Lake: lake Whitefish, longnose suckers, arctic grayling, walleye, northern pike. Paeenfee Lake: lake whitefish, burbot, northern pike. Long Lake: lake whitefish, walleye, northern pike and burbot Greasy Lake: lake whitefish, lake trout and longnose sucker Keller Lake and surroundings: lake Whitefish, lake trout Highland Lake: lake Whitefish, lake trout and northern pike Hodson Creek: arctic grayling, longnose sucker and round whitefish Fish are also harvested for subsistence from Notseglee Lake and Nothaykay Lake.	Blackwater Lake, Fish Lake, Paeenfee Lake, Greasy Lake, Keller Lake and Highland Lake are outside the RSA (Paeenfee Lake: ~24 km from PDA, Fish Lake: ~25 km from PDA, Blackwater Lake: ~45 km from PDA, Greasy Lake: ~61 km from PDA, Highland Lake: ~70 km from PDA, Keller Lake: ~99 km from PDA Long Lake is outside the RSA (by Yellowknife) (~465 km from PDA) Hodgson Creek is a tributary to the Mackenzie River north of Wrigley and intersects the PDA Notseglee Lake and Nothaykay Lake are outside the RSA (Nothaykay Lake: ~46 km from PDA, Notseflee Lake: ~65 km form PDA)		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 39	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Subsistence Fishing is reported to be an important resource use for residents of Wrigley. In 2004, 41% of the residents reported that 75% or more of meat and fish consumed is locally harvested.	LSA		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 39	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> According to the Sahtu Renewable Resource Board map data fish is harvested in in various spots along the Mackenzie River around Norman Wells and Tulita as well as northwest (NW) of Norman Wells along the Mackenzie River.	Portions of the Mackenzie River intersect the LSA		Sahtu	5658 NWT Ltd. and GNWT, 2011:Fig 8-7	
<u>Existing Conditions</u> According to the Traditional Knowledge Study conducted by the EBA in 2006 a fish netting area is located in the Great Bear River about 9 km up from the confluence with the Mackenzie River.	Within RSA		Sahtu	EBA, 2006: Fig1	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Fishing (cont’d)					
<u>Existing Conditions</u> According to the Traditional Knowledge Study conducted by the EBA in 2006 a fishing area (grayling) is located in the Great Bear River right at the proposed Great Bear River bridge.	The PDA intersects the fishing area		Sahtu	EBA, 2006: Fig1	
<u>Existing Conditions</u> According to the Traditional Knowledge Study conducted by the EBA in 2006 a fish netting area is located on the east side of the Great Bear River right on the confluence with the Mackenzie River on the west side of Tulita.	The fish netting area is located within the RSA		Sahtu	EBA, 2006:7 and Fig1	
<u>Existing Conditions</u> According to the Traditional Knowledge Study conducted by the EBA in 2006 a fish netting area is located on the north shore of the Mackenzie River about 60 km west of Tulita	The fish netting area is located within the RSA		Sahtu	EBA, 2006: Fig1	
<u>Existing Conditions</u> The area around Willow Lake (called Brackett Lake on the official maps) is important for fishing, and the lake and wetlands nearby support large populations of animals. The oral tradition records many stories, which tell of the importance of this lake.	Willow Lake (Brackett Lake) is outside the RSA (~25 km from PDA)		Sahtu	The Sahtu Heritage Places and Sites Joint Working Group, 2000: 94	
<u>Existing Conditions</u> According to <i>The Places We Take Care Of</i> the Mackenzie River continues to provide critical domestic fisheries.	Portions of the Mackenzie River intersect the LSA		Sahtu	The Sahtu Heritage Places and Sites Joint Working Group, 2000:104	
<u>Existing Conditions</u> According to the <i>Places We Take Care Of</i> Great Bear River is good for fishing.	Great Bear River is a tributary to the Mackenzie River and intersects the PDA		Sahtu	The Sahtu Heritage Places and Sites Joint Working Group, 2000:106	
<u>Existing Conditions</u> According to the <i>Places We Take Care Of</i> the Sahtu Dene and Métis have travelled for centuries and used the traditional resources distributed over the Sahtu region. Fish continue to be critical subsistence resources.			Sahtu	The Sahtu Heritage Places and Sites Joint Working Group, 2000:106	
<u>Existing Conditions</u> According to interviews with Sahtu harvesters they fly fish in Great Bear River	Great Bear River is a tributary to the Mackenzie River and intersects the PDA		Sahtu	Tulita Renewable Resource Council, 2019:12	
<u>Potential Effects</u> According to interview with Sahtu harvesters the PDA is currently intact. They request to not place steel poles in the river, it will damage river; put bridge off rocks and sands; any changes will decrease fish, fish can be restored, but not same amount			Sahtu	Tulita Renewable Resource Council, 2019:4	
<u>Existing Conditions</u> According to interview with Sahtu harvesters the Great Bear River is used by boats for fishing.			Sahtu	Tulita Renewable Resource Council, 2019:4	
<u>Existing Conditions</u> The 2018 NWT Community Survey by the NWT Bureau of Statistics reported that in Norman Wells 45.1% of Indigenous persons in the community went hunting and fishing; in Tulita 46.1% of Indigenous persons in the community went hunting and fishing; and in Wrigley 68.5% of Indigenous persons in the community went hunting and fishing.	Norman Wells, Tulita, and Wrigley intersect the PDA			GNWT, 2018	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Fishing (cont’d)					
<u>Existing Conditions</u> The 2018 NWT Community Survey by the NWT Bureau of Statistics reported on the following frequency of hunting or fishing by Indigenous persons in communities within the Project area ³ : In Norman Wells, 22.9% of Indigenous persons reported hunting or fishing frequently throughout the year; 19.8% reported hunting or fishing occasionally more than day trips; 30.2% reported hunting or fishing occasionally (only day trips); and 27.1% reported rarely hunting or fishing. In Tulita, 23.4% of Indigenous persons reported hunting or fishing frequently throughout the year; 27.5% reported hunting or fishing occasionally more than day trips; 29.3% reported hunting or fishing occasionally (only day trips); and 20.4% reported rarely hunting or fishing. In Wrigley, 55.6% of Indigenous persons reported hunting or fishing frequently throughout the year; 20.6% reported hunting or fishing occasionally more than day trips; 20.6% reported hunting or fishing occasionally (only day trips). The percentage of Indigenous persons rarely hunting or fishing was not recorded.	Norman Wells, Tulita, and Wrigley intersect the PDA			GNWT, 2018	
<u>Existing Conditions</u> The Sahtu (Great Bear Lake) watershed is known for spring fishing.	A portion of the PDA overlaps with Sahtu (Great Bear Lake) watershed		Sahtu	Golder, 2015: 2-4	
<u>Existing Conditions</u> Fish from Lac St. Teresa, Kelly Lake, Turton Lake, and Turilĭ (Johnny Hoe River) are reported to be contaminated from natural-source mercury. Traditional fishing here has been abandoned by many members of the Délĭne community.	Lac St. Teresa, Kelly Lake, Turton Lake, and Turilĭ (Johnny Hoe River) are outside the RSA. (Lac St Teresa: ~130 km from PDA, Kelly Lake: ~24 km from PDA, Turton Lake: ~50 km from PDA, Johnny Hoe River: ~120 km from PDA)		Sahtu	Golder, 2015: 2-4	
<u>Existing Conditions</u> Families would travel from the mountains to the Tulĭt’a area to fish in fall until January.	Tulita is within the PDA		Shuhta Got’ĭne (Shit’a Got’ĭne)	Golder, 2015: 2-5	
<u>Existing Conditions</u> The Willow Lake (Brackett Lake or K’áalq Tué) area is important for fishing.	Willow Lake (Brackett Lake or K’áalq Tué) is outside the RSA (~25 km from the PDA)		K’áalq Got’ĭne (Willow Lake People)	Golder, 2015: 2-6	
<u>Existing Conditions</u> Three Day Lake is part of the ‘chain of fish lakes’; an important fishing area.	A portion of Three Day Lake overlaps with the RSA (~14 km from PDA)	Communities have requested that development avoid the ‘chain of fish lakes’; from Three Day Lake to Stewart Lake.		Golder, 2015: 2-30	
<u>Existing Conditions</u> The Dəo (Mackenzie River) is an important fishery for local residents.	Portions of Dəo (Mackenzie River) intersect the LSA			Golder, 2015: 2-31	

³ Totals may not add up to 100% due to rounding

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Fishing (cont’d)					
<i>Existing Conditions</i> Windy Island is part of traditional travel routes and a traditional fishery.	Windy Island is within the RSA (~4 km from PDA)		Sahtu	Golder, 2015: 2-27	
<i>Existing Conditions</i> Paddling on Moose Lake is no longer possible as the lake has dried. Elders have linked decreasing water levels to reduced fish and wildlife habitat, and it affects land users’ travel and fishing	Unable to determine location of Moose Lake		Sahtu	Golder, 2015: 2-21	
<i>Existing Conditions</i> Waterbodies and watercourses harvested for fish include Dəo (Mackenzie River), Kwetenʔıá or Petenʔıá (Bear Rock) area, Windy Island, Little Bear River, Fall Stone Lake, Yellow Lake, Mirror Lake, and the ‘chain of fish lakes’ (including Dehdéleʔ Tué [Sucker Lake/Three Day Lake]).	Portions of Dəo (Mackenzie River) intersect the LSA The PDA intersects Petiniæah (Bear Rock) Conservation Zone Windy Island is within the RSA (~4 km from PDA) Little Bear River is a tributary to the Mackenzie River and is within the RSA (~9 km from PDA). Fall Stone Lake, Yellow Lake, and Mirror Lake are outside the RSA. (Fall Stone Lake: ~25 km from PDA. Yellow Lake: ~30 km from PDA. Mirror Lake: ~40 km from PDA) A portion of Dehdéleʔ Tué (Sucker Lake/Three Day Lake) overlap with the RSA (~14 km from PDA)		Sahtu	Golder, 2015: 2-32	
<i>Concern</i> Residents have expressed concern that development and increased activity in the Dəo (Mackenzie River) region could negatively impact the fishery.	Portions of Dəo (Mackenzie River) intersect the LSA			Golder, 2015: 2-33	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Plant Gathering					
<u>Existing Conditions</u> The Sahtu Land Use plan states that plants are harvested in the Norman Range Ecoregion.	The LSA intersects a small portion of the Norman Range Ecoregion		Sahtu	SLUPB, 2013:153	Norman range ecoregion is very large and is intersected by the wildlife RSA.
<u>Existing Conditions</u> The Sahtu Land Use plan states that plants are harvested along the Deh Cho.	Portions of the Mackenzie River intersect the LSA		Sahtu	SLUPB, 2013:171	The Deh Cho Special Management Zone consists of a 5 km buffer applied to the length of the Mackenzie River as it runs through the SSA. Lands within the community boundaries of Tulita, Norman Wells and Fort Good Hope are exempt from the SLUP.
<u>Existing Conditions</u> Trees are utilized for many different reasons within the Pehdzeh Ki Ndeh, including as construction and building materials, for fuel and for other purposes. The harvest for fuel wood to heat individual homes is common and residents of Wrigley are granted free access to forested areas to harvest wood. The utilization of personally harvested fuel wood is acknowledge as having a high economic value for Wrigley residents because of the individual costs saved through not having to purchase fuel wood and not to heat with fuel.	The PDA intersects the Pehdzeh Ki Ndeh area		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 5	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Plants have been used for many different purposes within the Pehdzeh Ki Ndeh, such as for berry picking, medicinal, ritual and spiritual reasons, as wild plant food reasons, but is acknowledge that such harvesting takes place within the Pehdzeh Ki Ndeh.	The PDA intersects the Pehdzeh Ki Ndeh area		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 5	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Plant Gathering (cont’d)					
<u>Existing Conditions</u> Vegetation parts are known to be used in the creation of arts and crafts works, such as birchbark for basket making, wood for carving and as components for souvenir items, and lichens and berries for dyeing ingredients			Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 6	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> The Dehcho and Sahtu residents have been utilizing the Pehdzeh Ki Ndeh area for centuries. As will all of the original inhabitants of the Northwest Territories, renewable resources were depended on for survival. Trees and plants among other land and water resources played an integral role in the lives of these people and continue to do so today.	The PDA intersects the Pehdzeh Ki Ndeh area		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 14	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Activities such as fuel wood harvesting and berry picking are still important contributors to a subsistence existence for residents of the Pehdzeh Ki Ndeh area and augment the local economy in various ways.	The PDA intersects the Pehdzeh Ki Ndeh area		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 14	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Berry picking is a very common activity in Wrigley and practiced by nearly all of the residents of the community. The most common berry picking places are along the highway towards Fort Simpson and the existing gas pipeline corridor near Wrigley (both within the Pehdzeh Ki Ndeh). People may also take advantage of the trail systems that winds through Pehdzeh Ki Ndeh to access berry patches. Berries being picked include blueberries, low bush cranberries, cloudberrries, and rose hips.	The PDA intersects the Pehdzeh Ki Ndeh area The highway from Wrigley towards Fort Simpson is outside the RSA (~1 km from PDA) Wrigley is within LSA		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 55	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Many plant species have long served medicinal, ritual and spiritual purposes for the Dehcho people. Different plant species serve different functions, such as the relief of coughs and colds through herbal teas. The Dehcho people collect varies plants throughout the Pehdzeh Ki Ndeh.	The PDA intersects the Pehdzeh Ki Ndeh area		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 55	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Plant Gathering (cont’d)					
<u>Existing Conditions</u> Both wild and domestic plant foods may be harvested in the Pehdzeh Ki Ndeh.	The PDA intersects the Pehdzeh Ki Ndeh area		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 58	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Berry picking is one popular activity which helps to supplement food costs for Wrigley residents, although the food replacement values of berry picking are unknown. Many different species are expected to be harvested, but the exact species, specific locations of harvest and harvested quantities are unknown.			Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 61	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Medicinal plants may be considered to have an economic replacement value. It is difficult to quantify the values of medicinal plant use because methods of harvest, doses, frequencies of use and present market values of supplementary non-traditional medicines change over time.			Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 61	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Ritual and spiritual plant uses are considered to have no economic replacement value. These species are respected and utilized for specific purposes, and it is assumed that no other plant species could serve the same purpose. It is also assumed that the plants gathered from Pehdzeh Ki Ndeh for such purposes are not sold. These resource uses are known to possess an inherent cultural value that connects the harvesters with their tradition and their land.	The PDA intersects the Pehdzeh Ki Ndeh area		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 62	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Pehdzeh Ki Ndeh is one source of renewable resource materials for artists residing in Wrigley. Materials harvested or collected include animal parts such as hide, fur, sinew and vegetation matter, such as lichen, bark and berries.	The PDA intersects the Pehdzeh Ki Ndeh area		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 63	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Plant Gathering (cont’d)					
<u>Existing Conditions</u> Birchbark is used to create traditional lightweight, waterproof and rot-resistant birch bark baskets. There are not many sources of birchbark in the Pehdzeh Ki Ndeh area. Most likely it is harvested from other areas for use by Wrigley artists, but it is possible that it is also harvested from areas within Pehdzeh Ki Ndeh.	The PDA intersects the Pehdzeh Ki Ndeh area		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 66	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Traditionally, different lichen, berries, flowers, plants and bark materials were valued for their abilities to dye art and craft materials, in particular porcupine quills. It is possible that some of these natural renewable resources are still harvested within Pehdzeh Ki Ndeh, but it is unknown which areas are most intensely used for such purposes.	The PDA intersects the Pehdzeh Ki Ndeh area		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 66	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Spruce roots and spruce gum are important in the creation of birch bark baskets. The roots are used to sew the pieces of bark together and the gum is used as a sealant in the basket's seams, aiding in its waterproofing. Spruce roots are best when gathered in June and are typically harvested from the Fort Liard and Trout Lake areas of the Deh Cho. It is probable that they are also harvested in areas of Pehdzeh Ki Ndeh, for there are extensive areas of needleleaf forest cover with black spruce stands throughout the study area	The PDA intersects the Pehdzeh Ki Ndeh area Fort Liard and Trout Lake are outside the RSA (Trout Lake: ~296 km from PDA, Fort Liard: ~333 km from PDA)		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 67	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> The wood of various trees and shrubs is often used in arts and crafts, or during the traditional tanning process for hides. The wood may be used solely for or incorporated into carvings, souvenirs (such as miniature snowshoes, bows and arrows, miniature canoes), birch bark baskets (red willow strips are commonly used for reinforcing the basket and its lid), beadwork and canes. The different types of wood from trees and shrubs may be harvested in various areas of the Pehdzeh Ki Ndeh, but the exact distribution or abundance of these renewable resource uses is unknown.	The PDA intersects the Pehdzeh Ki Ndeh area		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006: 67	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> A blueberry picking area is located on the west side of the proposed Great Bear River Bridge.	Within PDA		Sahtu	EBA, 2006: 6	
<u>Existing Conditions</u> According to the TLU study conducted by the EBA in 2006 berry picking grounds are located on the north side of the Mackenzie River just east of Tulita.	Within RSA		Sahtu	EBA, 2006: Fig1	
<u>Existing Conditions</u> Spruce and birch bark canoes were used for travel from the mountains to the Tulít’a area.	Tulita is within the PDA		Shuhta Got’İne (Shit’a Got’İne)	Golder, 2015: 2-5	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Plant Gathering (cont’d)					
<u>Existing conditions</u> The harvesting of vegetation is an important traditional activity in this area of the Mackenzie Valley for subsistence, medicinal purposes and for art materials. During community interviews, two locations of rare plants were identified along the MVH extension route, south of Blackwater River and south of Whitesand Creek. However, it is also likely that other locations throughout the valley contain sources of traditionally harvestable vegetation. Not only are the berries used for subsistence, but some berries, along with other vegetation types such as birchbark, wood and lichens are used for art materials.	Blackwater River and Whitesand Creek are tributaries to the Mackenzie River and intersect the PDA		Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012:78	
<u>Potential Effects</u> Given the importance of traditional practices for PKFN in the areas surrounding the Project, impacts may also occur to the cultural value of these areas, resulting in a diminished historical and social identity for PKFN community, who maintain right and title within their asserted traditional territory. Areas most likely to experience this potential impact include those that contain culturally significant sites, such as burial, spiritual and ceremonial areas, the harvest of medicinal plants, as well as areas of concentrations of archaeological heritage sites. Portions of the MVH extension located near the Blackwater and Ochre Rivers, and Whitesand Creek are especially susceptible to this impact, as they are focal points for current and historical traditional uses of the landscape.	Blackwater River, Ochre River and Whitesand Creek are all tributaries to the Mackenzie River and intersect the PDA		Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012:225	
<u>Existing Conditions</u> According to interviews with Sahtu harvesters, berries are picked along the Great Bear River.	The Great Bear River is a tributary to the Mackenzie River and intersects the PDA		Sahtu	Tulita Renewable Resource Council, 2019: 19	
<u>Existing Conditions</u> The 2018 NWT Community Survey by the NWT Bureau of Statistics reported that in Norman Wells 31.9% of Indigenous persons in the community gathered berries; in Tulita 27.9% of Indigenous persons in the community gathered berries; and in Wrigley 50% of Indigenous persons in the community gathered berries.	Norman Wells, Tulita, and Wrigley intersect the PDA			GNWT, 2018	
Cultural and Traditional Land Use – Trails and Travelways					
<u>Existing Conditions</u> Traditional trails are present in Petiniæah commonly known as Bear Rock.	The PDA intersects Bear Rock Conservation Zone		Sahtu	SLUPB, 2013:124	
<u>Existing Conditions</u> “The Deh Cho is identified as a Special Management Zone to protect the water quality, riparian habitat, cultural/heritage sites, areas that are important for wildlife and wildlife harvesting. SMZ designation will also allow for continued use of the river as an important regional and territorial transportation corridor (barge traffic, landing sites, winter road). Traditional trails, recreation, community gathering places, log timber collection areas, cabins.”	The PDA is within the Deh Cho Special Management Zone		Sahtu	SLUPB, 2013:170	The Deh Cho Special Management Zone consists of a 5 km buffer applied to the length of the Mackenzie River as it runs through the SSA. Lands within the community boundaries of Tulita, Norman Wells and Fort Good Hope are exempt from the SLUP.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Trails and Travelways (cont'd)					
<u>Existing Conditions</u> Several camps and traditional trails are scattered throughout the Pehdzeh Ki Ndeh and it is likely that they facilitate hunting in the area. Many mineral licks are reported immediately to the east of the Mackenzie Highway. These ungulate attractants existing next to a major transportation corridor is likely a hunter draw.	The PDA intersects the Pehdzeh Ki Ndeh		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006:27	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> According to the Sahtu Land Use Planning Board map data, there are a lot of trails from and to Tulita and Norman Wells. Most trails are along waterways such as Great Bear River, Keele River and the Mackenzie River. Other trails are connecting towns with lakes such as Brackett Lake, Kelly Lake and Lennie Lake. Trails are used year-round to provide access to a vast harvesting region. The trails link thousands of place names, each with a story, to the place.	The PDA intersects many trails The PDA intersects Great Bear River Portions of the Mackenzie River intersect the PDA Keele River is within the RSA (~3 km from PDA) Brackett Lake, Kelly Lake and Lennie Lake are outside the RSA (Brackett Lake: ~26 km from PDA, Kelly Lake: ~24 km from PDA, Lennie Lake: ~42 km from PDA)		Sahtu	5658 NWT Ltd. and GNWT, 2011: Fig 8-3 and p8-35	
<u>Existing Conditions</u> Great Bear River has been a well-used travel route between Great Bear Lake and the Mackenzie River for a considerable period of time.	The PDA intersects the trail along Great Bear River to Great Bear Lake Portions of the Mackenzie River intersect the PDA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-10	
<u>Existing Conditions</u> The chain of lakes comprising Brackett (called Willow by Dene) Lake, Kelly Lake and Mahony Lake were of key importance in the Sahtu Dene people's seasonal round.	Brackett Lake, Kelly Lake and Mahony Lake are outside of the RSA (Brackett Lake: ~26 km from PDA, Kelly Lake: ~24 km from PDA, Mahony Lake: ~53 km from PDA)		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-10	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Trails and Travelways (cont'd)					
<u>Existing Conditions</u> A group of people who regularly camped at Willow Lake were known as “the Willow Lakers”, and they typically travelled to Willow Lake from Tulita along the Great Bear River and the Willow (now called Brackett) River; in past times, they also ranged north to Mahony Lake or sometimes to Great Bear Lake. One of the sites recorded west of the Great Bear River is a trail which was probably one of the routes travelled by the Willow Lakers	The Great Bear River is a tributary to the Mackenzie River and intersects the PDA, therefore the trail from Tulita to Willow Lake along the Great Bear River also intersects the PDA Mahony Lake and Great Bear Lake are outside the RSA (Mahony Lake: ~53 km from PDA, Great Bear Lake: ~81 km from PDA)				
<u>Potential Project Effects</u> The presence of the Highway is expected to provide easier access to harvesting areas, heritage value areas, and traditional trails located near the alignment. This may be considered either a positive or a negative effect, depending on the extent of the impact from increased access. The Highway will allow local residents and visitors to access the harvesting areas or heritage value areas year-round. Increased harvesting may be an indirect effect of the Highway.			Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-10	
<u>Potential Project Effects</u> An additional benefit of the Highway will be that it will provide a single route of effects; that is, during summer and winter months, people will be encouraged, and will likely find it more convenient, to use this main route for travel rather than traveling across the land on new trails. It will serve to localize the effects of travel rather than creating a “spider-web” of effects across the area, such as may currently occur.			Sahtu	5658 NWT Ltd. and GNWT, 2011: 12-12	
<u>Existing Conditions</u> The trails are primarily concentrated along the Mackenzie, Blackwater and Ochre Rivers and lead to various points of interest such as Wrigley, Blackwater Lake, Fish Lake where many cultural and spiritual sites are located. Members from PKFN also use those trails when practicing natural resources harvesting activities such as fishing, hunting, trapping, snaring and gathering of medicinal plants and other types of vegetation.	The trails along Blackwater and Ochre River are intersected by the PDA The trails along the Mackenzie River are likely within the LSA Wrigley is located within the LSA Blackwater Lake and Fish Lake are outside the RSA (Fish Lake: ~25 km from PDA, Blackwater Lake: ~45 km from PDA)		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: 79	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Trails and Travelways (cont'd)					
<u>Existing Conditions</u> The Pehdzeh Ki Ndeh Area contains the Old Wrigley town site, as well as burial sites and traditional travel routes near its western boundaries.	The PDA intersects the Pehdzeh Ki Ndeh area Old Wrigley Town Site is outside the RSA (~16 km from PDA)		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: 97	
<u>Existing Conditions</u> There are several cabins and traplines found in the Pehdzeh Ki Ndeh area around the lakes that connect to Wrigley by traditional trails, several of which are found along the winter road alignment.	The PDA intersects the Pehdzeh Ki Ndeh area Wrigley is within LSA		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: 97	
<u>Existing Conditions</u> The Mountain Dene trail starts on the Mackenzie River at Tulita, crosses the Mackenzie Lowlands to Stewart and Tate Lakes, crossing the Keele drainage and on to Drum Lake in the Mackenzie Mountains. From here it joins a network of trails reaching throughout the mountains, and into the Yukon. Used extensively as a walking trail in the fall and by dog team in the winter, the trail symbolizes the Mountain Dene's use of this rugged environment.	The trail begins across the Mackenzie River from Tulita and is located in the RSA. Stewart and Tate Lakes are outside the RSA (Tate Lake: ~23 km from PDA, Stewart Lake: ~24 km from PDA) The Keele drainage intersects the RSA (~3 km from PDA) Drum Lake is outside the RSA (~91 km from PDA)		Sahtu	The Sahtu Heritage Places and Sites Joint Working Group, 2000:100	
<u>Existing Conditions</u> In <i>The Places We Take Care Of</i> , the authors state that the Mackenzie River has been an important travel route for centuries, and has been the subject of exploration, study and analysis. As a traditional use area, the Mackenzie continues to provide travel access to many other locations.	Portions of the Mackenzie River intersect the LSA		Sahtu	The Sahtu Heritage Places and Sites Joint Working Group, 2000: 104	
<u>Existing Conditions</u> According to the <i>Places We Take Care Of</i> there are many stories about Great Bear River. In ancient times it was the route that Yamoria took while chasing the giant beavers from Great Bear Lake, and many places along the river are associated with this important culture-hero. More recently it was used to ferry supplies between the trading posts at Délíne and Tulita. Most of the stories tell of travel and good times. However, some tell of tragic events.	Tulita is intersected by the PDA The Great Bear River is a tributary to the Mackenzie River and intersects the PDA Deline is outside the RSA (~85 km from PDA)		Sahtu	The Sahtu Heritage Places and Sites Joint Working Group, 2000: 106	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Trails and Travelways (cont'd)					
Existing Conditions According to the <i>Places We Take Care Of</i> Trails, used year-round, provide access to a vast harvesting region, and like beads on a string, the trails link thousands of place names, each with a story, sometimes many, bound to the place. Names and narratives convey knowledge, and in this way Sahtu Dene and Métis culture is tied directly to the landscape. Travel across the Sahtu landscape can be easily and clearly described by reference to these names and indeed travel narratives often appear as no more than long lists of place names. The network of interconnecting trails provides access to a Sahtu land use area encompassing some 300,000 km².			Sahtu	The Sahtu Heritage Places and Sites Joint Working Group, 2000: 18	
Existing Conditions According to interviews with Sahtu harvesters the Great Bear River is used by boats for transportation.	Great Bear River is a tributary to the Mackenzie River and intersects the PDA		Sahtu	Tulita Renewable Resource Council, 2019:10	
Existing Conditions The Dehdélelq Tué (Sucker Lake/Three Day Lake) area is the location of traditional trail to the mountains.	A portion of Dehdélelq Tué (Sucker Lake/Three Day Lake) overlaps with the RSA (~14 km from PDA)		Sahtu Dene	Golder, 2015: 2-25	
Existing Conditions Keele River is part of a traditional travel route from Tulit'a to the Mackenzie Mountains.	Keele River is a tributary to the Mackenzie River and portions are within the PDA		Shúhta Got'íne	Golder, 2015: 2-24, 2-31	
Existing Conditions Old trails in the Big Smith Creek area leads to lakes and trap lines.	Big Smith Creek is within the PDA		Sahtu	Golder, 2015: 2-26	
Existing Conditions The Dəo (Mackenzie River) is an important travel route for local residents.	Portions of Dəo (Mackenzie River) intersect the LSA		Sahtu Dene and Métis	Golder, 2015: 2-31	
Existing Conditions Paddling on Moose Lake is no longer possible as the lake has dried. Elders have linked decreasing water levels to reduced fish and wildlife habitat, and it affects land users' travel and fishing	Unable to determine location of Moose Lake		Sahtu	Golder, 2015: 2-21	
Existing Conditions According to consulted Elders, muskeg and lakes south of Tulita freeze over during October and November; access to the lower bench portion of Little Bear River may have soft spots from areas of muskeg.	The area south of Tulita falls within the RSA (~3 km from PDA). Little Bear River is a tributary to the Mackenzie River and is within the RSA (~9 km from PDA).			Golder, 2015:2-16	
Existing Conditions Windy Island is part of traditional travel routes and a traditional fishery.	Windy Island is within the RSA (~4 km from PDA)		Sahtu	Golder, 2015: 2-27	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Habitation					
<u>Existing Conditions</u> The Sahtu Land Use Plan states that there are cultural and recreation sites, cabins, tent frames, camps and outpost sites in the Norman Range Ecoregion.	The LSA intersects a small portion of the Norman Range Ecoregion		Sahtu	SLUPB, 2013;154	Norman range ecoregion is very large and is intersected by the wildlife RSA.
<u>Existing Conditions</u> Fish camps are located along the Mackenzie River.	Portions of the Mackenzie River intersect the LSA		Sahtu	SLUPB, 2013:171	The Deh Cho Special Management Zone consists of a 5 km buffer applied to the length of the Mackenzie River as it runs through the SSA. Lands within the community boundaries of Tulita, Norman Wells and Fort Good Hope are exempt from the Plan.
<u>Existing Conditions</u> Several camps and traditional trails are scattered throughout the Pehdzeh Li Ndeh and it is likely that they facilitate hunting in the area.	The PDA intersects the Pehdzeh Li Ndeh		Sahtu	SLUPB, 2013:	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Historical cabins are located along the Mackenzie River both north and south of Wrigley. These are accessible by land or water and are often used seasonally by local trappers. There are also cabin clusters on Fish Lake, Tah the tié Lake (at the headwater of the Blackwater River) and single cabins scattered elsewhere in Pehdzeh Ki Ndeh.	Portions of the Mackenzie River intersect the LSA Fish Lake is outside the RSA (~25 km from PDA) Tah the tié Lake is outside the RSA (~47 km from PDA)		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006:27	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Habitation (cont'd)					
<u>Existing Conditions</u> Several lookout towers exist in Pehdzeh Ki Ndeh. One is located in the area's northwest corner, one west of Fish Lake and one on the east bank of the Mackenzie River north of Wrigley.	The PDA intersects the Pehdzeh Li Ndeh Fish Lake is outside of RSA (~25 km from PDA) Portions of the Mackenzie River intersect the LSA Wrigley is within LSA		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006:81	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> According to the TLU study conducted by the EBA in 2006 cabins are located on the south side of the Mackenzie River across from Tulita	Within RSA		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006:81	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> According to the Traditional Knowledge Study conducted by the EBA in 2006 a previous social gathering area is located along the proposed highway on the east side of the Great Bear River close to the proposed Great Bear River Bridge.	The previous social gathering area is bordering on the PDA		Sahtu	5658 NWT Ltd. and GNWT, 2011:Fig 8-8	
<u>Existing Conditions</u> Some trapline cabins have been identified along the proposed MVH Extension Project by members of the Wrigley community; in the areas of Whites and Dam Creeks, and Blackwater River.	Whitesand, Dam Creeks and the Blackwater River intersect the PDA		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: 77	
<u>Existing Conditions</u> The Pehdzeh Ki Ndeh Area contains the Old Wrigley town site			Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: 97	
<u>Existing conditions</u> There are several cabins and traplines found in the Pehdzeh Ki Ndeh area around the lakes that connect to Wrigley by traditional trails, several of which are found along the winter road alignment.	Within PDA Wrigley is within LSA		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: 97	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Habitation (cont'd)					
<u>Potential Effects</u> Cabin sites, which are the focal point for trapping and hunting activities, may also be affected at Dam and Whitesand Creeks, as well as areas south of Blackwater River. Impacts to cabin sites may result in their disuse and a reduced ability for cabin owners to pursue the collection of traditional resources in the area.	Whitesand, Dam Creeks and the Blackwater River intersect the PDA		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: 224	
<u>Existing Conditions</u> According to map data obtained through consultation with PKFN hunting cabins are located around the existing winter road between KM 730 and 731.	The PDA intersects the cabin area		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 1 – map Sheet 8-P	
<u>Existing Conditions</u> According to the map data obtained through public consultation with PKFN hunting cabins are located to the west and east of the existing winter road around KM 762 and 763.	The PDA intersects the cabin area		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 1 – map Sheet 14-P	
<u>Existing Conditions</u> According to the map data obtained through public consultation with PKFN hunting cabins are located to the west and east of the existing winter road around KM 773 and 774.	The PDA intersects the cabin area		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 1 – map Sheet 16-P	
<u>Existing Conditions</u> According to the map data obtained through public consultation with PKFN hunting cabins are located just south of the existing winter road at KM 784.	The PDA borders on the cabin area		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 1 – Map Sheet 18-P	
<u>Existing Conditions</u> According to the map data obtained through public consultation with PKFN an area with hunting cabins is intersected by the existing winter road between KM 730 and just west of 731.	The PDA intersects the cabin area		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 4 – Map Sheet 4	
<u>Existing Conditions</u> According to the map data obtained through public consultation with PKFN an area with a hunting cabin is intersected by the existing winter road between KM 773 and just west of 775.	The PDA intersects the cabin area		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 4 – Map Sheet 8/9	
<u>Existing Conditions</u> According to the map data obtained through public consultation with PKFN an area with a hunting cabin is located to the east of KM 784 of the existing winter road.	The PDA borders on the cabin area		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 4 – Map Sheet 9	
<u>Existing Conditions</u> Willow Lake (called Brackett Lake on the official maps) is the site of an important seasonal camp, and is considered the home of the K'áálô Got'ine, or 'Willow Lake People'. A small community of several cabins is located on the lake. The oral tradition records many stories, which tell of the importance of this lake.	Willow Lake (Brackett Lake) is outside the RSA (~26 km from PDA)		Sahtu	Sahtu Heritage Places and sites Joint Working Group, 2000:94	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Habitation (cont’d)					
<u>Existing Conditions</u> Historical cabins are located along the Mackenzie River both north and south of Wrigley. These are accessible by land or water and are often used seasonally by local trappers. There are also cabin clusters on Fish Lake, Tah the tié Lake (at the headwater of the Blackwater River) and single cabins scattered elsewhere in Pehdzeh Ki Ndeh.	Portions of the Mackenzie River intersect the LSA Fish Lake is outside the RSA (~25 km from PDA) Tah the tié Lake is outside the RSA (~47 km from PDA) The PDA intersects the Pehdzeh Ki Ndeh		Pehdzeh Ki/Dehcho First Nations	IMG-Golder, 2006:81	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Tullt’a is a traditional camp site for caribou and, less commonly, muskox hunting.	Tulita is within the PDA		Sahtu	Golder, 2015: 2-7	
<u>Existing Conditions</u> Traditionally the area around tributaries to Mackenzie River between Norman Wells and Tulita (Prohibition Creek, Vermilion Creek, Nota Creek, Jungle Ridge Creek) has been used for camping.	Prohibition Creek, Vermilion Creek, Nota Creek and Jungle Ridge Creek are tributaries to the Mackenzie River and are within the PDA.			Golder, 2015: 2-26	
<u>Existing Conditions</u> Tent frames and cabins have been found on the Mackenzie River, Gaudet Creek, Kweren?iá (Bear Rock).	The PDA intersects Bear Rock Conservation Zone			Golder, 2015: 2-22	
<u>Existing Conditions</u> Windy Island is part of traditional travel routes and a traditional fishery.	Windy Island is within the RSA (~4 km from PDA)		Sahtu	Golder, 2015: 2-27	
<u>Existing Conditions</u> Land clearing for seismic operations is associated with fast-melting permafrost, leading to problems with vegetation re-establishment and erosion and slumping on the banks of the Sahtu waterbodies. Islands in K’áalq Túé (Willow Lake/ Brackett Lake) have experienced slumping, cabins in K’áalq Túé (Willow Lake/ Brackett Lake) have had to relocate due to eroding banks, and erosion is suspected to be affecting fish passage between K’áalq Túé (Willow Lake/ Brackett Lake) and Kelly Lake. Permafrost melt from development has also been linked to erosion in Sahtu Deh (Great Bear River) and other waterbodies in the area.	K’áalq Túé (Willow Lake/ Brackett Lake) is outside the RSA (~26 km from the PDA) Sahtu Deh (Great Bear River) is a tributary to the Mackenzie River and intersects the PDA	Limit project footprints and avoid uncommon landforms and steep slopes to the extent practical. Include adequate protection of permafrost under disturbed areas in closure and reclamation plans. Engage local landowners in permafrost monitoring to best assess the effects.	Elders in the K’ásho Got’Jne and Tullt’a regions	Golder, 2015: 2-15	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
<i>Cultural and Traditional Land Use – Cultural, Spiritual and Ceremonial Practices or Areas</i>					
<u><i>Existing Conditions</i></u> “In the last thousand years or so our ancestors have talked about taking care of our wildlife. In 1951 I was a couple of years old and all the people around Fort Good Hope and Colville Lake gathered and government came in and said they wanted to make a boundary around that little piece of land. The people disagreed and said, “This is our land and we are going to make a decision on how our land shall be governed and how big it shall be for ourselves. It’s up to us to decide.” All the elders spoke at the time, and they said, “If it’s just a little small piece of land, what good is that for us? We want to make a boundary where it covers all of the areas, all of our burial grounds, all of the areas where our people are resting out on the land.” Everybody that lived in Fort Good Hope and Colville Lake, even the people from the mountains, the river people around Little Chicago, everyone that lived in the surrounding area of Fort Good Hope and Colville Lake gathered and they made that boundary. All out towards the barren lands, all the areas that our people worked in, or harvested, or trapped in that area, that is what they all marked out to be our new trapping area. For as large as our boundary was drawn, this was as far as we had people resting on the land. That is how they decided on this boundary. Before that there was no control on the land. People went out trapping with poisons and that’s why we wanted to make this Group Trapping Area, so that we have control of what goes on our land in regard to trapping and development and everything.”			K’asho Got’ine Elder J. B. Gully of Colville Lake.	SLUP, 2013:16 (SLUPB Public Hearing, May 4, 2011, Norman Wells.)	
<u><i>Existing Conditions</i></u> The Group Trapping Area was established to protect the residents’ harvesting rights from the new outsiders coming on to their lands, but to the residents, it was much more than that – it gave them exclusive control over how their land was used and the ability to protect it. Today, there are many more uses than trapping. The residents of Fort Good Hope and Colville Lake maintain that anyone wanting to conduct any land use within the Group Trapping Area must first come talk to them as the stewards of this area.	The Group Trapping Area is located north of Norman Wells and is outside the RSA		Sahtu	SLUPB, 2013:16	
<u><i>Existing Conditions</i></u> The Deh Cho (Big River) or Mackenzie River is a symbolic focal point of Sahtu Dene and Métis culture and history. It is a significant heritage harvest/subsistence use location for aboriginal people in and outside of the Sahtu region. The Deh Cho is associated with legends including the stories of Yamoria, a well-known culture hero.	Portions of the Mackenzie River intersect the LSA		Sahtu	SLUPB, 2013:170	
<u><i>Existing Conditions</i></u> “In the early 20s, 30s and 40s, outsiders were coming in looking for gold and diamonds and disrupting our way of life. The Elders negotiated with the Crown in England and with the help of a Bishop from France and it resulted in the Group Trapping Area. Now we have that land that the K’asho Got’ine call their home base, their traditional land. From generation to generation we try to make sure that the land and traditional values of our people are protected.”	LSA		SLUPB Public Hearing, May 4, 2011, Norman Wells.	SLUPB, 2013:15, 16	
<u><i>Existing Conditions</i></u> Sahtu vision: “The region has cultural integrity. People use the land as they always have for hunting, trapping, fishing, gathering, spiritual renewal and healing. Elders are respected and play a central role in passing down the language, traditional skills, knowledge, stories and importance of the land to community leaders and the youth, strengthening cultural and spiritual connections to the land. Elders work with teachers to teach both traditional and modern skills in schools, which equip the youth to thrive and adapt in a changing environment.”		N/A	Tulita/Sahtu	SLUPB, 2013:12	
<u><i>Existing Conditions</i></u> The Sahtu Land Use Plan states that Petiniæah is one of the most important sacred sites in Denendeh. It is of cultural value to Dene groups within and outside of the Sahtu. It is the location of a well-known story about Yamoria, a legendary hero who made the land safe for the Dene by chasing away and killing giant beavers that were causing them harm. The Sahtu Land Use Plan also states that Petiniæah commonly known as Bear Rock, is a large karst formation across from the community of Tulita. The mountain is one of the most sacred sites for the Dene living in and outside of the Sahtu area.	The PDA intersects Bear Rock Conservation Zone	N/A	Sahtu	SLUPB, 2013:124	
<u><i>Existing Conditions</i></u> The Sahtu Land Use Plan states that the Norman Range encompasses a number of frequently used traditional, cultural and subsistence use sites.	The LSA intersects part of the Norman Range Ecoregion		Sahtu	SLUPB, 2013:153	Norman range ecoregion is very large and is intersected by the wildlife RSA.

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Cultural, Spiritual and Ceremonial Practices or Areas (cont’d)					
<u>Existing Conditions</u> The Sahtu Land Use Plan identifies The Deh Cho as a Special Management Zone to protect cultural/heritage sites among other things.	The PDA is within the Deh Cho Special Management Area		Sahtu	SLUPB, 2013:170	The Deh Cho Special Management Zone consists of a 5 km buffer applied to the length of the Mackenzie River as it runs through the SSA. Lands within the community boundaries of Tulita, Norman Wells and Fort Good Hope are exempt from the SLUP.
<u>Existing Conditions</u> Renewable resources today play an important role as raw materials for modern arts and crafts pieces and many of these materials may be found within Pehdzeh Ki Ndeh.	The PDA intersects the Pehdzeh Ki Ndeh area		Pehdzeh Ki / Dehcho First Nations	IMG-Golder, 2006:63	The Pehdzeh Ki Ndeh is an estimated 17,053 km ² tract of land centered around the community of Wrigley.
<u>Existing Conditions</u> Sites that were mentioned as very important to PKFN include Blackwater River, a special traditional area that is home to a sacred old grave, and Willowlake River, where there is a burial ground.	The Blackwater River intersects the PDA Prois located south of Wrigley and outside of RSA (~53 km from PDA)		Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012: 71	
<u>Existing Conditions</u> A spiritual site associated with moose hunting in the Mackenzie Valley area is located just south of Blackwater Creek. The site is important because it is home to a rock to which spiritual offerings are made by PKFN members while hunting	Within LSA		Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012: 77	
<u>Existing Conditions</u> The Pehdzeh Ki Ndeh Conservation Zone is a part of the Dehcho Land Use Plan and is intended to protect the local PKFN's subsistence harvesting needs. The area also represents an important cultural area for the community of Wrigley.	The PDA intersects the Pehdzeh Ki Ndeh Area		Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012: 97	
<u>Existing Conditions</u> The Draft Dehcho Land Use Plan explains that Pehdzeh Ki Ndeh Area is home to, “significant ecological and cultural values.” The Pehdzeh Ki Ndeh Area contains the Old Wrigley town site, as well as burial sites and traditional travel routes near its western boundaries. Within the Draft Dehcho Land Use Plan, the Pehdzeh Ki First Nation has identified numerous sacred sites in the proposed Pehdzeh Ki Ndeh Area	The PDA intersects the Pehdzeh Ki Ndeh Area		Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012: 97	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Cultural, Spiritual and Ceremonial Practices or Areas (cont'd)					
<u>Potential Effects</u> Given the importance of traditional practices for PKFN in the areas surrounding the Project, impacts may also occur to the cultural value of these areas, resulting in a diminished historical and social identity for PKFN community, who maintain right and title within their asserted traditional territory. Areas most likely to experience this potential impact include those that contain culturally significant sites, such as burial, spiritual and ceremonial areas, the harvest of medicinal plants, as well as areas of concentrations of archaeological heritage sites. Portions of the MVH extension located near the Blackwater and Ochre Rivers, and Whitesand Creek are especially susceptible to this impact, as they are focal points for current and historical traditional uses of the landscape.	Blackwater and Ochre River intersect the PDA Whitesand Creek intersects the PDA		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: 225	
<u>Existing Conditions</u> According to the map data obtained through public consultation with PKFN a burial area is located on both sides of the existing winter road north of the Blackwater River, east of the Mackenzie River between KM 783 and 785.	The PDA intersects the burial area The existing winter road and proposed alignment both go through the burial area		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App1, Map Sheet 18-P	
<u>Existing Conditions</u> According to the map data obtained through public consultation with PKFN spiritual and cultural sites are located to the east of the proposed highway at KM 782, along the Blackwater River to the east of the pipeline.	Within LSA		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App1, Map Sheet 18-P	
<u>Existing Conditions</u> According to the map data obtained through public consultation with PKFN a burial area is located west of the Blackwater River to KM 785 of the existing winter road.	The PDA intersects burial area		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 4, Map Sheet 9	
<u>Existing Conditions</u> According to the map data obtained through public consultation with PKFN a spiritual/cultural site is located on the west shore of the Blackwater River less than 1 km north of the existing winter road. This site is a spiritual cultural rock where offerings are made when moose hunting.	Within LSA		Pehdzeh Ki/Dehcho First Nations	Dessau, 2012: App 4, Map Sheet 9	
<u>Existing Conditions</u> Red Dog Mountain, a large mountain located on the Keele River, is considered a sacred site by the Mountain Dene. Traditionally, Dene people did not canoe past the mountain, but portaged. Traditional story suggests that the Red Dog is a whirlpool and offerings need to be brought for safe passage.	Red Dog Mountain is located east of the Mackenzie River along the Keele River and is outside the RSA (~54 km from PDA)		Sahtu	The Sahtu Heritage Places and Sites Joint Working Group, 2000:38	
<u>Existing Conditions</u> The story of Bear Rock is well known to all of the Dene groups occupying the Mackenzie region, and it has served as a symbol of cultural and political unity of the Dene Nation for many years. One of the most important sacred sites in Denendeh, Bear Rock is known for its association with the culture-hero, Yamoria. Located across from Tulita, at the confluence of the Mackenzie and Great Bear Rivers, Bear Rock is a prominent landmark visible for many kilometres in all directions.	The PDA intersects Bear Rock Conservation Zone				

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
<i>Cultural and Traditional Land Use – Cultural, Spiritual and Ceremonial Practices or Areas (cont'd)</i>					
<u><i>Existing Conditions</i></u> In December of 1835 three employees of the Hudson's Bay Company Post at Fort Norman were sent to collect a cache of fish at Mahony Lake. Encamped near the lake was a Dene family who, according to oral tradition, were employed to provide meat and fish for the HBC post. Partly as a result of earlier problems between one of these men and a young married Dene woman, a terrible fight ensued, and the three Hudson's Bay employees murdered eleven men, women, and children. One of the men was sent to London, England for trial, and was later transported to Canada. Another was tried for murder in Lower Canada (largely as a result of testimony given by one of his accomplices) and was sentenced to hang, which was later commuted to transportation to Australia. While awaiting a transportation, he was jailed in a prison hulk in England for several years, where he died (Hamar Foster, 1999, pers. comm.). The last man was imprisoned for a short period while awaiting trial but was eventually set free after giving testimony against his accomplice. The story is still recounted in the oral tradition of Tulita, and an excellent description of the event and trial proceedings can be found in Foster (1989). Foster (1989) remarks that the case is important to Canadian social and judicial history because "it is the only offence ever tried by a Canadian court during the HBC's licensed monopoly over the Indian Territories, [and] stands as a little-known example of how imperial law was enforced in the fur trade.	Mahony Lake is outside of RSA (~53 km from PDA)		Sahtu	The Sahtu Heritage Places and Sites Joint Working Group, 2000:102	
<u><i>Existing Conditions</i></u> In <i>The Places We Take Care Of</i> , the authors state that the Mackenzie River is associated with numerous legends, including stories of Yamoria. Called Deh Cho or 'Big River', the river is a symbolic focal point of Sahtu Dene and Métis culture and history.	Portions of the Mackenzie River intersect the LSA		Sahtu	The Sahtu Heritage Places and Sites Joint Working Group, 2000:104	
<u><i>Existing Conditions</i></u> According to <i>The Places We Take Care Of</i> one of the most important themes in understanding Sahtu Dene and Métis history is the relationship between culture and landscape. Virtually all of Sahtu Dene and Métis history is written on the land. As such, the places and sites, which commemorate this relationship, are an integral part of Sahtu Dene and Métis identity.			Sahtu	The Sahtu Heritage Places and Sites Joint Working Group, 2000:16	
<u><i>Existing Conditions</i></u> According to <i>The Places We Take Care Of</i> from the perspective of Sahtu Dene cosmology, the landscape is a living thing, inhabited by entities, or 'powers', both benevolent and malevolent. While travelling across the landscape one must constantly mitigate the impact of personal actions by appeasing these entities with votive offerings, and by observing strict rules of behaviour. At many special places offerings are left to respect the entities that inhabit the land, and it is said that these places, and the entities inhabiting them, are being 'paid'. These offerings may be anything of value, such as matches, tobacco, ammunition, or a few coins. Sometimes more elaborate offerings are left.			Sahtu	The Sahtu Heritage Places and Sites Joint Working Group, 2000:20	
<u><i>Existing Conditions</i></u> According to <i>The Places We Take Care Of</i> burials are always considered sacred places and hence are accorded great respect. Since the coming of Christianity, graves have been surrounded by fences. When burials are encountered while travelling, it is customary to repair grave fences, clear vegetation from the surface of the grave, and to leave offerings of tobacco or other gifts for elders. Sometimes a special ritual, the feeding-the-fire ceremony, is performed near the graves of prominent individuals. Food is ceremonially given to a fire in honour of the dead, and in return the celebrants ask their ancestors for good weather, safe travelling conditions, and success in hunting.			Sahtu	The Sahtu Heritage Places and Sites Joint Working Group, 2000:20	
<u><i>Existing Conditions</i></u> According to <i>The Places We Take Care Of</i> at a few places, where powerful entities are resident, culture-heroes are associated with landscape features, or important events have taken place, special conditions exist providing the locality with power and significance. These places are often prominent landmarks, and consequently become powerful memory aids for recalling the significance of the location. Often special rules are required while travelling in these areas.			Sahtu	The Sahtu Heritage Places and Sites Joint Working Group, 2000:20	
<u><i>Existing Conditions</i></u> According to <i>The Places We Take Care Of</i> as part of a knowledge system, traditional place names serve as memory 'hooks' on which to hang the cultural fabric of a narrative tradition. In this way, physical geography ordered by named places is transformed into a social landscape where culture and topography are symbolically fused.			Sahtu	The Sahtu Heritage Places and Sites Joint Working Group, 2000:23	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Cultural, Spiritual and Ceremonial Practices or Areas (cont’d)					
<u>Existing Conditions</u> According to the TLU study conducted by the EBA in 2006 Bear Rock is a culturally and spiritually important area and is not to be disturbed. Other work occurring in the area sees contractors traveling all the way to Little Bear River area to haul gravel. Although there is gravel in the Bear Rock Area, it is important that it remain undisturbed.	Bear Rock Conservation Zone intersects the LSA Little Bear River is within the RSA (~9 km from PDA)		Sahtu	EBA, 2006:7	
<u>Existing Conditions</u> Dehcho First Nations make tobacco or other offerings before hunting in a particular area or, in the past, held ceremonies at seasonal gatherings to thank the Creator for animals harvested over the past year. Taboos relating to the use of boreal caribou hair and antlers are still followed in some communities today.			Dehcho First Nation	Dehcho First Nations, 2011:9	
<u>Existing Conditions</u> The area around Willow Lake (called Brackett Lake on the official maps) and wetlands nearby support large populations of animals. The oral tradition records many stories, which tell of the importance of this lake.	Willow Lake (Brackett Lake) is outside the RSA (~26 km from PDA)		Sahtu	The Sahtu Heritage Places and Sites Joint Working Group, 2000:94	
<u>Existing Conditions</u> According to the Traditional Land Use study conducted by the EBA in 2006 a swimming area is located about 2.5 km west of KM 940.	Within RSA		Sahtu	EBA, 2006: Fig1	
<u>Existing Conditions</u> According to the <i>Places We Take Care Of</i> (Sahtu Heritage Places and Sites Joint Working Group, 2000), the land itself is of particular importance in transmitting knowledge from one generation to the next.			Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-35	
<u>Existing Conditions</u> Often, “culture-heroes” are associated with landscape features or locations where important events took place. The names and the narratives convey knowledge and tie the Sahtu Dene and Métis culture to the landscape, and also become powerful memory tools for recalling the significance of the location. The narratives provide information about access to harvesting areas, trails, and named places, and are also records of land use overtime and culture.			Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-35	
<u>Existing Conditions</u> For the Dene, the landscape is a living thing, inhabited by entities or powers. At many special places, offerings are left to respect the entities that inhabit the land.			Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-35	
		According to <i>The Places We Take Care Of</i> Heritage places and sites within the Sahtu Dene and Métis settlement region require special protection and commemoration to ensure that they remain pristine for future	Sahtu	The Sahtu Heritage Places and sites Joint Working Group, 2000: 24	
	Great Bear River is a tributary to the Mackenzie and intersects the PDA The PDA intersects Bear Rock conservation Zone	In an interview with a Sahtu harvester he requested Respect the Traditional Boundaries and Sacred lands of the Great Bear River, as well as Bear Rock.	Sahtu	Tulita Renewable Resource Council, 2019: Pg 4	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Cultural and Traditional Land Use – Cultural, Spiritual and Ceremonial Practices or Areas (cont'd)					
	Great Bear River is a tributary to the Mackenzie and intersects the PDA	According to interviews with Sahtu harvesters the area around Great Bear River Bridge should be respected as there are legends surrounding the place and there are traditional and spiritual boundaries including a sacred area with Bear Rock Burial sites as well. One should also pay respects for foreigners travelling the bridge.	Sahtu	Tulita Renewable Resource Council, 2019: 20,23	
<u>Existing Conditions</u> The 2018 NWT Community Survey by the NWT Bureau of Statistics reported that in Norman Wells 24.9% of Indigenous persons in the community produced arts and crafts; in Tulita 22.1% of Indigenous persons in the community produced arts and crafts; and in Wrigley 15.2% of Indigenous persons in the community produced arts and crafts.	Norman Wells, Tulita, and Wrigley intersect the PDA			GNWT, 2018	
<u>Existing Conditions</u> Kweten?iá or Peten?iá (Bear Rock) represents cultural and political unity for the Dene Nation.	The PDA intersects Petiniæah (Bear Rock) Conservation Zone		Dene	Golder, 2015: 2-24	
<u>Existing Conditions</u> Safe travel across the Sahtu (Great Bear Lake) is the subject of stories of significance to the Sahtu Got'íne. The area represents the cultural foundation of the Sahtu Got'íne people.	Sahtu (Great Bear Lake) is outside the RSA (~ 81 km from the PDA)		Sahtu	Golder, 2015: 2-4	
<u>Existing Conditions</u> A limestone outcropping in Tulít'a, known as Kweten?iá or Peten?iá (Bear Rock), is traditionally important to the Dene.	The PDA intersects Bear Rock Conservation Zone		Dene	Golder, 2015: 2-7	
<u>Existing Conditions</u> Camps, archaeological sites, and burials near waterways and lakes in the Sahtu region have been identified.	Portions of the PDA intersect Sahtu region			Golder, 2015: 2-22	
<u>Existing Conditions</u> At Dehdéleq Tué (Sucker Lake/Three Day Lake) there is a burial site of a Sahtu Dene ancestor, and it is a very spiritual area.	A portion of Dehdéleq Tué (Sucker Lake/Three Day Lake) overlaps the RSA	According to 2014 consultation, this area was recommended for avoidance due to shallow waters, and to preserve the quality of water and fishery.	Sahtu Dene	Golder, 2015: 2-25	
Additional Concerns or Issues					
Project Design					
		Caution is needed with all land uses to reduce environmental effects by re-using existing disturbed areas and concentrating land use in existing corridors (SLUPB, 2013).	Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-35	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Additional Concerns or Issues (cont'd)					
		Camps and cabins should be left for Sahtu use and areas with cabins and camps should be avoided.	Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-35	
<u>Potential Effects</u> The community is concerned about the potential number of people involved in the construction of the Great Bear River Bridge and the proximity of the work camps to the community.	Great Bear Bridge is within the PDA		Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-37	
<u>Potential Effects</u> Participants explained that traditional land use areas need to be protected. They feel that once the all-weather highway is complete, more people will move through the Pehdzeh Ki Ndeh - Dehcho Region, increasing the risk that wildlife habitats and important sacred spaces will be altered or negatively impacted. The notion of protecting natural areas, especially the ones related to traditional activities, was expressed by PKFN community throughout the public consultation process.	The PDA intersects the Pehdzeh Ki Ndeh and the Dehcho Region The Blackwater River intersects the PDA Willow Lake River is outside of RSA (~53 km from PDA)	Most importantly, PKFN explained that the rivers, creeks and forests should be protected for the future generations and that moose, caribou and fish also need to be protected. Sites that were mentioned as very important to PKFN include Blackwater River, a special traditional area that is home to a sacred old grave, and Willow Lake River, where there is a burial ground.	Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012:71	Deh Cho Region is assumed to correspond to the Deh Cho Territory cited by the GNWT.
<u>Existing Conditions</u> Due to the fact that the proposed all-weather road will somewhat follow the path of the existing Winter Road, which passes relatively close to the Mackenzie River, the proposed road will also pass close to the Mackenzie River. For this reason, as currently proposed, the future all-weather road in the Dehcho section of the MVH Extension Project has the potential to directly affect traditional activities along the route, as it will intersect high-use areas identified by the Dehcho Land Use Planning Committee (DLUPC).		For this reason, additional realignment proposals, relocating the future all-weather road further in-land, were suggested by the Band Council. One suggestion was to relocate the MVH alignment 5 km in-land, thus distancing it from the Mackenzie River, where numerous traditional land use areas are located. The other suggestions, made by the recently elected Band Council members, attempt to distance the alignment from the Mackenzie River, though remaining as close as possible to the proposed alignment	Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012: 75	
<u>Existing Conditions</u> Clean water is paramount to maintain healthy populations of humans, fish, and wildlife. Community participants in a 2012 Tuli'ta TEK Study consider abundant healthy waterfowl to be an indicator of good water.		All waterbodies and watercourses, regardless of size, be monitored for water quality.	Dene and Métis in the Sahtu	Golder, 2015: 2-16	
<u>Existing Conditions</u> Community members have expressed concern that development may impact water quality through increased sediment from vegetation clearing along waterbodies; impacts of blasting; impacts from melting permafrost (erosion, flooding, scouring, reduced land subsistence); and impacts on fish and wildlife, and their habitats,			Elders and land users in the Sahtu region	Golder, 2015: 2-16	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Additional Concerns or Issues (cont'd)					
Potential Project Effects Based on the information gathered during the public consultation held on July 7 th , 2011 and January 25-26th, 2012 some of the main concerns regarding the MVH Extension project in the Pehdzeh Ki Ndeh – Dehcho Region are related to the road alignment,			Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012: 113	
		PKFN Band Council proposed some realignments to the optimized route which differ from the ones proposed by PKFN community, and more particularly by the elders, during the first round of consultation held in July 2011. The propositions, though trying to remain as close as possible to the optimized alignment and the winter road, tended to move the highway as far possible from the Mackenzie River.	Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012: 125	
Existing Conditions A most-valuable comment coming from consultations with PKFN community was the fact that most traditional activities occur along the Mackenzie River banks.		Therefore, the majority of participants proposed to move the MVH extension in the Pehdzeh Ki Ndeh - Dehcho Region the furthest as possible from the Mackenzie River. A 5 km wide protection corridor was proposed by the Band Council and the public. This would avoid disturbing traditional activities sites and natural resources harvesting along the river. PKFN would prefer the MVH extension to be constructed outside of this 5 km protection corridor	Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012: 125	
Potential Effects Although the seasonal winter road may be currently used to access these areas, the all-weather access created by the MVH extension road may have the impact of increasing access to the Mackenzie River area for individuals and groups not currently utilizing its resources, and potentially not associated with the Pehdzeh Ki First Nation. While the increase in year-round access may benefit the Pehdzeh Ki First Nation by increasing access to resources, this also has the potential to result in a reduction of available traditional resources in the area. However, this may also result in an increased ability to pursue traditional practices in areas adjacent to the Mackenzie Valley.			Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012: 224	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Additional Concerns or Issues (cont'd)					
	Great Bear River is a tributary to the Mackenzie and intersects the PDA	According to interviews with Sahtu harvesters the PDA is currently intact. They request not to place steel poles in the river to build the Great Bear River Bridge as it will damage the river. They request to put bridge off rocks and sand. Any changes to the river will decrease fish. Fish can be restored, but not to the same amount	Sahtu	Tulita Renewable Resource Council, 2019: 4	
	Great Bear River is a tributary to the Mackenzie and intersects the PDA	According to interviews with Sahtu harvesters the Great Bear River Bridge project should be carried out with concern for the Safety of the People. It also needs to be considered how it will impact the waters and land habitats	Sahtu	Tulita Renewable Resource Council, 2019: 5	
	Great Bear River is a tributary to the Mackenzie and intersects the PDA	According to interviews with Sahtu harvesters, life will benefit from the Bridge, but it will also have negative impacts. They request to put the Bridge at the narrowest crossing, so less piers to use for impact on the Land and Water.	Sahtu	Tulita Renewable Resource Council, 2019: 20	
Climate					
<u>Existing Conditions</u> Weather also plays a significant role in the health and well-being of boreal woodland caribou. Increasing extremes in annual temperatures and flooding negatively impact herds.			Sahtu	McDonald, 2010:5	
<u>Existing Conditions</u> Warmer temperatures, melting permafrost and other environmental changes create concerns related to the environment.			Sahtu	5658 NWT Ltd. and GNWT, 2011: 8-36	
<u>Existing Conditions</u> The Dehcho region is clearly getting warmer and wetter overall, with more rainfall in August and September and even into October. This change is creating more incidences of ice crusting along the ground which may make it more difficult for boreal caribou to forage for ground lichens. Sudden thaws and melting during winter months also create crusts on the snow that make it difficult for boreal caribou to move around and escape predators. In some instances, frost heaves that harbor lichens are diminishing or melting entirely which reduces availability of this particularly rich habitat site. Wetter summers and falls are resulting in higher water levels on smaller rivers and streams, increasing boat access (particularly jet boat access) into boreal caribou habitat areas previously difficult to access at these times of year.	The PDA is located within the Dehcho Region	Climate change does not yet appear to be affecting ground or hanging lichens, although some monitoring of future changes to lichen due to climate change should be undertaken.	Dehcho First Nations	Dehcho First Nations, 2011:15	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
<i>Climate (cont'd)</i>					
<i>Existing Conditions</i> Community members have reported that winds in the area are stronger than in the past, and southerly winds have become more frequent.				Golder, 2015: 2-42	
<i>Cumulative Effects</i>					
<i>Existing Conditions</i> Dehcho First Nations are particularly concerned about the immediate and cumulative impacts of development in the region. Seismic lines, sensory disturbance from oil and gas exploration activities, oil and contaminant spills, and use of seismic wire all resulted in immediate impacts to boreal caribou. Animals were driven away from development activities and did not return to these areas for many years; some animals became entangled in seismic wire and died.			Dehcho First Nations	Dehcho First Nations, 2011:11	
<i>Potential Project Effects</i> Dehcho First Nations expressed concerns about animals becoming contaminated through exposure to oil and other contaminants left on or under the ground.					
<i>Potential Project Effects</i> Where development stopped and once many of the seismic lines grew back in, boreal caribou appear to have re-adapted to the landscape and the re-grown lines do not appear to be a deterrent to use. Some elders have commented that where intensive 3D seismic has continued, boreal caribou have become more wary and do not linger as long in open areas as they did prior to these disturbances.			Dehcho First Nations	Dehcho First Nations, 2011:11	
<i>Potential Project Effects</i> The construction of the Norman Wells pipeline caused boreal caribou to leave the corridor area for a number of years before eventually returning.	The Norman Wells Pipeline corridor intersects portions of the RSA		Dehcho First Nations	Dehcho First Nations, 2011:11	
<i>Potential Project Effects</i> Harvesters know that seismic and other linear disturbances open corridors for wolves and can lead to an increase in predation of boreal caribou and other game animals and are concerned about this impact.			Dehcho First Nations	Dehcho First Nations, 2011:12	
<i>Existing Conditions</i> Cougars have been increasingly seen (directly or through tracks) throughout the Dehcho region over the past decade and are suspected of harvesting boreal caribou, although there is no direct evidence to date of this occurring. This increase in cougars appears to be associated with a concurrent increase in whitetail deer (jumping deer) in the area and extensive oil and gas exploration activity occurring in northern Alberta and British Columbia (perhaps pushing cougars northward).	The PDA is located within the Dehcho Region		Dehcho First Nations	Dehcho First Nations, 2011:12	
<i>Existing Conditions</i> Boreal caribou are particularly sensitive to sensory disturbance and have been affected by sensory disturbance from oil and gas exploration in the past (and currently in the Cameron Hills). The potential impact of pending and future development remains a major concern.	Cameron Hills is outside the RSA (~466 km from PDA)		Dehcho First Nations	Dehcho First Nations, 2011:14	
<i>Existing Conditions</i> Land clearing for seismic operations is associated with fast-melting permafrost, leading to problems with vegetation re-establishment and erosion and slumping on the banks of the Sahtu waterbodies. Islands in K'áalq Túé (Willow Lake/ Brackett Lake) have experienced slumping, cabins in K'áalq Túé (Willow Lake/ Brackett Lake) have had to relocate due to eroding banks, and erosion is suspected to be affecting fish passage between K'áalq Túé (Willow Lake/ Brackett Lake) and Kelly Lake. Permafrost melt from development has also been linked to erosion in Sahtu Deh (Great Bear River) and other waterbodies in the area.	K'áalq Túé (Willow Lake/ Brackett Lake) is located outside the RSA (~26 km from PDA) Sahtu Deh (Great Bear River) intersects the PDA	Limit project footprints and avoid uncommon landforms and steep slopes to the extent practical. Include adequate protection of permafrost under disturbed areas in closure and reclamation plans. Engage local landowners in permafrost monitoring to best assess the effects.	Elders in the K'ásho Got'íne and Tullt'a regions	Golder, 2015: 2-15	
<i>Potential Effects</i> Community members have seen negative impacts of development to their water, land, wildlife, and their lifestyle; and expressed concern for these impacts. Everything is connected.				Golder, 2015; 2-16	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Engagement					
<u>Potential Project Effects</u> Based on the information gathered during the public consultation held on July 7 th , 2011 and January 25-26th, 2012 some of the main concerns regarding the MVH Extension Project in the Pehdzeh Ki Ndeh – Dehcho Region are related to community participation.			Pehdzeh Ki/ Dehcho First Nations	Dessau, 2012: 113	
		Dehcho First Nations provided community-based recommendations to be considered by Canadian Wildlife Service in its development of a National Caribou Recovery Strategy and Action Plan, including: • Finalize and approve the Dehcho Land Use Plan and formally establish the Dehcho Resource Management Authority to implement the land use plan and other wildlife and resource management activities as they relate to boreal caribou. • Finalize the establishment of current Candidate Protected Areas in the Dehcho, with full surface and sub-surface protection from industrial development, in order to preserve large undisturbed boreal caribou habitat areas. • Restrict and monitor industrial development generally during critical boreal caribou calving and over-wintering periods • Halt new boreal caribou collaring research and work with harvesters to develop alternative research and population monitoring methods, including greater use of community-based monitoring, aerial surveys, and less intrusive technical monitoring devices Restrict further expansion of imported bison populations into boreal caribou habitat areas by opening these areas to bison harvesting	Dehcho First Nations	Dehcho First Nations, 2011:15-16	

Indigenous Knowledge and Traditional Land Use Information	Location of Sites or Areas Relative to the Project	Indigenous Group Recommendations and Requests	Indigenous group	Source Document Reference	TK Facilitator notes
Engagement (cont'd)					
		- Carry out more detailed analyses of critical habitat characteristics, with a particular focus on calving and over-wintering habitat as well as lichen availability, quality, density, and vulnerability (from development, airborne pollution, and climate change). - Verify special habitat sites / areas – such as wallows/licks, rich lichen areas, old growth forest areas, calving areas, etc. – and locate these sites / areas on GNWT ‘values at risk’ maps to guide forest fire management decisions - Restrict non-Dene hunting for boreal caribou during the overwintering period and in locations where overhunting appears to be impacting populations (i.e., shorten current season, review hunting zones, and protect mature bulls). - Identify and implement measures to encourage increased traditional harvesting of wolf and bear in order to limit population growth, while monitoring predator populations. Ensure that Dehcho harvesters respect critical habitat periods and voluntarily maintain current harvesting levels rather than expanding or increasing harvest levels.			

5 Closure

This TDR was prepared for the sole benefit of GNWT to describe existing conditions related to cultural and traditional land use within the Project LSA and RSA. If you have any questions, please do not hesitate to contact the undersigned.

Respectfully submitted,

K'alo-Stantec Limited

6 References

6.1 Literature Cited

- 5658 NWT Ltd. and GNWT (5658 NWT Ltd. and Government of Northwest Territories). 2011. Project Description Report For Construction of the Mackenzie Valley Highway Tulita District, Sahtu Settlement Area.
- Dehcho First Nations. 2011. Traditional Knowledge Assessment of Boreal Caribou (Mbedzih) in the Dehcho Region. Prepared by Dehcho First Nations for the Canadian Wildlife Service. Published by the Dehcho First Nations Fort Simpson, Northwest Territories.
- Dessau. 2012. Mackenzie Valley Highway Extension Pehdzeh Ki Ndeh – Dehcho Region. Project Description Report. Prepared for Government of the Northwest Territories, Department of Transport
- EBA Engineering Consultants. 2006 Traditional Knowledge Study Report Tulita, NT, Great Bear River Bridge
- Golder. 2015. Central Mackenzie Surface Water and Groundwater Baseline Assessment. Report 1: Technical State of Knowledge. Report Number: 1401835 Final Report 1. May 21, 2015.
- GNWT (Government of the Northwest Territories). 2018. NWT Community Survey. NWT Bureau of Statistics.
- IMG-Golder (IMG-Golder Corporation). 2006. Draft Report on Renewable Resource Assessment of the Pehdeh Ndeh Area of Interest. Prepared for the Canadian Parks and Wilderness Society, Northwest Territories Chapter. Yellowknife.
- Kiggiak - EBA Consulting Ltd. 2011. Environmental impact statement for construction of the Inuvik to Tuktoyaktuk highway, NWT. For Hamlet of Tuktoyaktuk, Town of Inuvik, and Government of Northwest Territories. Inuvik, NWT. 702 pp.
- McDonald, Rhea. 2010. Boreal Caribou Traditional Knowledge Collection Study: The Sahtu Settlement Area. Edited by Andrea Hrynkiw and Glen Guthrie and McDonald. For the Canadian Wildlife Service, Environment Canada.
- MVEIRB (Mackenzie Valley Environmental Impact Review Board). 2015. Terms of Reference EA1213-02 Mackenzie Valley Highway Extension Project Wrigley to Norman Wells Government of Northwest Territories. February 13, 2015. PR#66.
- SENES Consultants Ltd. (SENES). December 2009. Spirit of the Mountains: Shuhtagot'ine Nene and Naats'ihch'oh Traditional Knowledge Study. Prepared for Tulita District Land Corporation
- SLUB (Sahtu Land Use Plan). 2013. Sahtu Land Use Plan Draft No. 3. Available at:
https://sahtulanduseplan.org/sites/default/files/2022-07/plain_language_summary_final.pdf



SLUPB (Sahtu Land Use Planning Board). 2013. Sahtu Land Use Plan. Government of Northwest Territories. Good Hope.

SHPSJWG (Sahtu Heritage Places and Sites Joint Working Group). 2000. Rakekée Gok'é Godi: Places We Take Care Of.

Tulita Renewable Resource Council. 2019. Traditional Knowledge Study for the Great Bear River Bridge Project. Prepared by Tulita Renewable Resource Council.

6.2 Personal Communications

Dufour, Jean-Francois. 2020. Environmental Assessment Officer, Canadian Wildlife Service, Environment and Climate Change Canada, Yellowknife, NT. September 25, 2020.